pennsylvania
DEPARTMENT OF EDUCATION

2021 PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT TECHNICAL REPORT

MATHEMATICS, ENGLISH LANGUAGE ARTS, AND SCIENCE

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GLOSSARY OF COMMON TERMS

The following table contains some terms used in this technical report and their meanings. Some of these terms are used universally in the assessment community, and some of these terms are used commonly by psychometric professionals. A glossary of accommodation terms as applied to the PSSA is provided in Chapter Ten.

Table G–1. Glossary of Terms

Term	Common Definition
Ability	In Rasch scaling, ability is a generic term indicating the level of an individual on the construct measured by an exam. As an example for the PSSA, a student's reading ability is measured by how the student performed on the PSSA Reading test. A student who answered more items correctly has a higher ability than a student who answered fewer items correctly.
Adjacent Agreement	A score/rating difference of one (1) point in value usually assigned by two different raters under the same conditions (e.g., two independent raters give the same scores that differ by one point).
Alternate Forms	Two or more versions of a test that are considered exchangeable, i.e., they are developed using the same test specifications, they measure the same constructs in the same ways, are intended for the same purposes, and they are administered using the same directions. More specific terminology may apply depending on the degree of statistical similarity between the test forms (e.g., parallel forms, equivalent forms, and comparable forms) where parallel forms refers to the situation in which the test forms have the highest degree of similarity to each other.
Average	A measure of central tendency in a score distribution that usually refers to the arithmetic mean of a set of scores. In this case, it is determined by adding all the scores in a distribution and then dividing the obtained value by the total number of scores. Sometimes people use the word average to refer to other measures of central tendency such as the median (the score in the middle of a distribution) or mode (the score value with the greatest frequency).
Bias	In a statistical context, bias refers to any source of systematic error in the measurement of a test score. In discussing test fairness, bias may refer to construct-irrelevant components of test scores that differentially affect the performance of different groups of test takers (e.g., gender, ethnicity, etc.). Attempts are made to reduce bias by conducting item fairness reviews and various differential item functioning (DIF) analyses, detecting potential areas of concern, and either removing or revising the flagged test items prior to the development of the final operational form of the test (see also Differential Item Functioning).
Constructed-Response Item	A constructed-response (CR) item is an item that requires examinees to create their own responses, which can be expressed in various forms (e.g., written essay, created table/graph, formulated calculation, etc.). Such items are frequently scored using more than two score categories, that is, items are polytomously scored (e.g., 0, 1, 2, and 3). This item format is in contrast to when students make a choice from a supplied set of answer options (e.g., multiple-choice (MC) items which are typically dichotomously scored as right = 1 or wrong = 0). It is important to consider whether an item is scored polytomously or dichotomously when interpreting item difficulty and discrimination indices.
Content Validity Evidence	Evidence regarding the extent to which a test provides an appropriate sampling of a content domain of interest (e.g., assessable portions of a state's Grade 6 mathematics curriculum in terms of the knowledge, skills, objectives, and processes sampled).
Core-Linking Item	Items that are utilized during the linking and equating process (see also Linking and Equating). They are a subset of the PSSA operational items and so they 1) are the same on all test forms for any grade/subject-area test and 2) contribute to students' total raw scores and scaled scores.
Criterion- Referenced Interpretation	When a score is interpreted as a measure of a student's performance with respect to an expected level of mastery, educational objective, or standard. The types of resulting score interpretations provide information about what a student knows or can do with respect to a given content area.
Cut Score	A specified point on a score scale such that scores at or above that point are interpreted or acted upon differently from scores below that point (e.g., a score designated as the minimum level of performance needed to pass a competency test). One or more cut scores can be set for a test, which results in differentiating among various proficiency levels. Methods for establishing cut scores vary. For the PSSA, three cut scores are used to place students into one of four performance levels (see also Performance Level Setting).

Term	Common Definition
Decision Consistency	The extent to which classifications based on test scores would match the decisions based on scores from a second, parallel form of the same test. It is often expressed as the proportion of examinees who are classified consistently across the two test administrations.
Differential Item Functioning (DIF)	A statistical property of a test item in which different groups of test takers (who have the same total test score) have different average item scores. In other words, students with the same ability level but different group memberships do not have the same probability of answering the item correctly (see also Bias).
Distractor	An incorrect option in a multiple-choice item.
Equating	The process that results in scores that can be used interchangeably across different test forms and/or test administrations. Equated test scores are considered exchangeable. Consequently, the requirements for equating are strong and somewhat complex (equal construct and precision, equity, and invariance). In practical terms, it is often stated that students should perceive no differences regardless of the test form administered (see also Scale Linking, Pre-equating, and Post-equating).
Equating Block (EB) Items	The PSSA uses multiple test forms for each grade/subject-area test. Each form is composed of operational (OP) items, equating block (EB) items, and field-test (FT) items. EB items are utilized during the linking process (see also Linking). Each test form includes a set of EB items. EB items are not part of any student scores.
Error of Measurement	The amount by which the score actually received (an observed score) differs from a hypothetical true score (see also Standard Error of Measurement).
Evidence-Based Selected-Response (EBSR) Item	A type of item that has two parts and requires the test taker to select a response from a group of possible answer choices in Part One, one of which is the correct answer (or key) to the question posed, and to then select one or two responses from a group of possible answer choices in Part Two, which provide evidence to support the correct answer in Part One.
Exact Agreement	When identical scores/ratings are assigned by two different raters under the same conditions (e.g., two independent raters give a paper the same score).
Field-Test (FT) Items	The PSSA uses multiple test forms for each grade/subject-area test. Each form is comprised of operational (OP) items, equating block (EB) items, and field-test (FT) items. An FT item is a newly developed item that is ready to be tried out to determine its statistical properties (see also *P*-value and Point-Biserial Correlation). Each test form includes a set of FT items. FT items are not part of any student scores.
Frequency	The number of times that a certain value or range of values (score interval) occurs in a distribution of scores.
Frequency Distribution	A tabulation of scores from low to high or high to low showing the number and/or percent of individuals who obtain each score or who fall within each score interval or category.
Infit/Outfit	Statistical indicators of the agreement of the data and the measurement model (see also Outfit/Infit).
Item Difficulty	For the Rasch model, the dichotomous item difficulty represents the point along the latent trait continuum where an examinee has a 0.50 probability of correctly responding. For a polytomous item, the difficulty is the average of the item's step difficulties (see also Step Difficulty).
Key	The correct response option or answer to a test item.
Linking	A generic term referring to a number of processes by which scores from one or more tests are made comparable to some degree. Linking includes several classes of transformations (equating, scale alignment, prediction, etc.). Equating is associated with the strongest degree of comparability (exchangeable scores). Other linkages may be very strong but fail to meet one or more of the strict criteria required of equating (see also Equating). PSSA scores are equated.
Logit	In Rasch scaling, logits are units used to express both examinee ability and item difficulty. When expressing examinee ability, a student who answers more items correctly has a higher logit than a student who answers fewer items correctly. Logits are transformed into Scaled Scores through a linear transformation. When expressing item difficulty, logits are transformed *p*-value (see also *P*-value). The logit difficulty scale is inversely related to *p*-values. A higher logit value would represent a relatively harder item, while a lower logit value would represent a relatively easier item.
Mean	Also referred to as the arithmetic mean of a set of scores, is found by adding all the score values in a distribution and dividing by the total number of scores. For example, the mean of the set {66, 76, 85, 97} is 81. The value of a mean can be influenced by extreme values in a score distribution.

Term	Common Definition
Measure	In Rasch scaling, measure generally refers to a specific estimate of an examinee's ability (often expressed as logits) or an item's difficulty (again, often expressed as logits). As an example for the PSSA, a student's reading measure might be equal to 0.525 logits. Or, a PSSA Reading test item might have logit equal to -0.905.
Median	The middle point or score in a set of rank-ordered observations that divides the distribution into two equal parts such that each part contains 50 percent of the total data set. More simply put, half of the scores are below the median value and half of the scores are above the median value. As an example, the median for the following ranked set of scores {2, 3, 6, 8, 9} is 6.
Multiple-Choice Item	A type of item that requires the test taker to select a response from a group of possible choices, one of which is the correct answer (or key) to the question posed (see also Constructed-Response Item).
N-count	Sometimes designated as *N* or *n*, it is the number of observations (usually individuals or students) in a particular group. Some examples include the number of students tested, the number of students tested from a specific subpopulation (e.g., females), the number of students who attained a specific score, etc. In the follow set {23, 32, 56, 65, 78, 87}, $n = 6$.
Open-Ended Item	A type of constructed-response item found in the mathematics and science assessments that requires examinees to create their own responses, which can be expressed in various forms (e.g., written description, created table/graph, formulated calculation, etc.). Such items are frequently scored using more than two score categories, that is, polytomously (e.g., 0, 1, 2, 3, and 4). This format is in contrast to when students make a choice from a supplied set of answer options (e.g., multiple-choice (MC) items which are typically dichotomously scored as right = 1 or wrong = 0.) When interpreting item difficulty and discrimination indices it is important to consider whether an item is polytomously or dichotomously scored.
Operational Item	The PSSA uses multiple test forms for each grade/subject-area test. Each form is composed of operational (OP) items, equating block (EB) items, and field-test (FT) items. OP items are the same on all forms for any grade/subject-area test. Student total raw scores and scaled scores are based exclusively on the OP items.
Outfit/Infit	Statistical indicators of the agreement of the data and the measurement model. Infit and Outfit are highly correlated, and both are highly correlated with the point-biserial correlation. Underfit can be caused when low-ability students correctly answer difficult items (perhaps by guessing or atypical experience) or high-ability students incorrectly answer easy items (perhaps because of carelessness or gaps in instruction). Any model expects some level of variability, so overfit can occur when nearly all low-ability students miss an item while nearly all high-ability students get the item correct.
Percent Correct	When referring to an individual item, the percent correct is the item's *p*-value expressed as a percent (instead of a proportion). When referring to a total test score, it is the percentage of the total number of points that a student earned. The percent correct score is obtained by dividing the student's raw score by the total number of possible points and multiplying the result by 100. Percent Correct scores are often used in criterion-referenced interpretations and are generally more helpful if the overall difficulty of a test is known. Sometimes Percent Correct scores are incorrectly interpreted as Percentile Ranks.
Percentile	The score or point in a score distribution at or below which a given percentage of scores fall. It should be emphasized that it is a value on the score scale, not the associated percentage (although sometimes in casual usage this misinterpretation is made). For example, if 72 percent of the students score at or below a Scaled Score of 1500 on a given test, then the Scaled Score of 1500 would be considered the 72nd percentile. As another example, the median is the 50th percentile.
Percentile Rank	The percentage of scores in a specified distribution falling at/below a certain point on a score distribution. Percentile Ranks range in value from 1 to 99, and indicate the status or relative standing of an individual within a specified group by indicating the percent of individuals in that group who obtained equal or lower scores. An individual's percentile rank can vary depending on which group is used to determine the ranking. As suggested above, Percentiles and Percentile Rank are sometimes used interchangeably; however, strictly speaking, a percentile is a value on the score scale.
Performance Level Descriptors	Descriptions of an individual's competency in a particular content area, usually defined as ordered categories on a continuum, often labeled from Below Basic to Advanced, that constitute broad ranges for classifying performance. The exact labeling of these categories, and narrative descriptions, may vary from one assessment or testing program to another.

Term	Common Definition
Performance Level Setting	Also referred to as standard setting, a procedure used in the determination of the cut scores for a given assessment that is used to measure students' progress towards certain performance standards. Standard setting methods vary (e.g., modified Angoff, Bookmark Method, etc.), but most use a panel of educators and expert judgments to operationalize the level of achievement students must demonstrate in order to be categorized within each performance level.
Point-Biserial Correlation	In classical test theory this is an item discrimination index. It is the correlation between a dichotomously scored item and a continuous criterion, usually represented by the total test score (or the corrected total test score with the reference item removed). It reflects the extent to which an item differentiates between high-scoring and low-scoring examinees. This discrimination index ranges from –1.00 to +1.00. The higher the discrimination index (the closer to +1.00), the better the item is considered to be performing. For multiple-choice items scored as 0 or 1, it is rare for the value of this index to exceed 0.5.
Post-Equating	Post-equating refers to the method of utilizing data from the current administration for scale linking and equating. Post-equating relies heavily on collecting data from a representative sample, estimating new item parameters, linking the item parameters to the base scale, and estimating student ability based on the linked item parameters. PSSA utilized a post-equated test design prior to 2019, but now employs pre-equating (see also Pre-Equating).
Pre-Equating	Pre-equating refers to the method of utilizing previously estimated and linked item parameters for equating. Because item parameters have already been linked to the base scale, pre-equated solutions are generated prior to the testing window and validated with current data during pre-equating verification. The main purpose of pre-equating verification is to ensure that the data fits the model within expectation (see Chapter Fifteen). PSSA employed pre-equating beginning in 2019 in order to reduce the reporting window (see also Post-Equating).
P-value	An index indicating an item's difficulty for some specified group (perhaps grade). It is calculated as the proportion (sometimes percent) of students in the group who answer an item correctly. *P*-values range from 0.0 to 1.0 on the proportion scale. Lower values correspond to more difficult items and higher values correspond to easier items. *P*-values are usually provided for multiple-choice items or other items worth one point. For open-ended items or items worth more than one point, difficulty on a *p*-value-like scale can be estimated by dividing the item mean score by the maximum number of points possible for the item (see also Logit).
Raw Score (RS)	An unadjusted score usually determined by tallying the number of questions answered correctly, or by the sum of item scores (i.e., points). (Some rarer situations might include formula-scoring, the amount of time required to perform a task, the number of errors, application of basal/ceiling rules, etc.). Raw scores typically have little or no meaning by themselves and require additional information—like the number of items on the test, the difficulty of the test items, norm-referenced information, or criterion-referenced information.
Reliability	The expected degree to which test scores for a group of examinees are consistent over exchangeable replications of an assessment procedure, and therefore, are considered dependable and repeatable for an individual examinee. A test that produces highly consistent, stable results (i.e., relatively free from random error) is said to be highly reliable. The reliability of a test is typically expressed as a reliability coefficient or by the standard error of measurement derived by that coefficient.
Reliability Coefficient	A statistical index that reflects the degree to which scores are free from random measurement error. Theoretically, it expresses the consistency of test scores as the ratio of true score variance to total score variance (true score variance plus error variance). This statistic is often expressed as correlation coefficient (e.g., correlation between two forms of a test) or with an index that resembles a correlation coefficient (e.g., calculation of a test's internal consistency using Coefficient Alpha). Expressed this way, the reliability coefficient is a unitless index. The higher the value of the index (closer to 1.0), the greater the reliability of the test (see also Standard Error of Measurement).
Scale Linking	The first step in any equating process in which independent item estimates are placed on the same scale of measurement (the logit scale). Scale linking results in item parameters that are on the same scale of measurement. Equating procedures can only be implemented once scale linking is achieved (see also Equating). The data used for scale linking can either be from the current administration (see Post-Equating) or from previous administrations (Pre-Equating).

Term	Common Definition
Scaled Score	A mathematical transformation of a logit score developed through a process called scaling. Scaled scores are most useful when comparing test results over time. Several different methods of scaling exist, but each is intended to provide a continuous and meaningful scaled score across different test forms and test administrations.
Selected-Response Item	See Multiple-Choice Item.
Short-Answer Item	A type of constructed-response item found in the grade 3 ELA assessment that requires the test taker to compose an answer based on a passage or passage set the student has read. Each short-answer (SA) item is scored using an item-specific scoring guideline based on a 0–3 point general scoring guideline. Also referred to as Constructed-Response (CR) or Open-ended (OE) Response items.
Spiraling	A packaging process used when multiple forms of a test exist and it is desired that each form be tested in all classrooms (or other grouping unit (e.g., schools)) participating in the testing process. This process allows for the random distribution of test booklets to students. For example, if a package has four test forms labeled A, B, C, and D, the order of the test booklets in the package would be A, B, C, D, A, B, C, D, A, B, C, D, etc.
Standard Deviation (SD)	A statistic that measures the degree of spread or dispersion of a variable (e.g., set of scores). The standard deviation is a commonly used method of examining a distribution's variability since the standard deviation is expressed in the same units as the data. The value of this statistic is always greater than or equal to zero. If all of the scores in a distribution are identical, the standard deviation is equal to zero. The further the scores are away from each other in value, the greater the standard deviation. This statistic is calculated using the information about the deviations (distances) between each score and the distribution's mean. It is equivalent to the square root of the variance statistic.
Standard Error of Measurement (SEM)	The amount an observed score is expected to fluctuate around the true score. As an example, across replications of a measurement procedure, the true score will not differ by more than plus or minus one standard error from the observed score about 68 percent of the time (assuming normally distributed errors). The SEM is frequently used to obtain an idea of the consistency of a person's score in actual score units or to set a confidence band around a score in terms of the error of measurement. Often a single SEM value is calculated for all test scores. On other occasions, however, the value of the SEM can vary along a score scale. Conditional standard errors of measurement (CSEMs) provide an SEM for each possible scaled score.
Step Difficulty	Step difficulty is a parameter estimate in Master's Partial Credit Model (PCM) that represents the relative difficulty of each score step (e.g., going from a score of 1 to a score of 2). The higher the value of a particular step difficulty, the more difficult a particular step is relative to other score steps (e.g., is it harder to go from a 1 to a 2, or to go from a 2 to a 3).
Strand	On score reports, a strand often refers to a set of items on a test measuring the same contextual area (e.g., Number Sense in Mathematics). Items developed to measure the same reporting category would be used to determine the strand score (sometimes called "subscale" score).
Technical Advisory Committee (TAC)	A group of individuals, most often professionals in the field of testing, who are either appointed or selected to make recommendations for and to guide the technical development of a given testing program.
Text-Dependent Analysis Item	A type of constructed-response item found in the ELA assessment in Grades 4–8 that requires the test-taker to compose an essay based on a passage or passage set that the student has read during the test event. Test-takers must draw on basic writing skills while inferring and synthesizing information from the passage in order to develop the response. The text-dependent analysis (TDA) item is scored on a holistic scoring guideline on a 4-point scale and is weighted for scoring purposes.
Validity	The degree to which accumulated evidence and theory support specific interpretations of test scores entailed by the purposed uses of a test. There are various ways of gathering validity evidence.

PREFACE: AN OVERVIEW OF ASSESSMENTS FROM 2003 TO THE PRESENT

The period from 2003 through 2006 brought significant structural changes to the test blueprint for the Pennsylvania System of School Assessment (PSSA). These changes necessitated extensive test development and field testing activity along with phased-in implementation of the operational assessment. Included in this process was the development and implementation of assessments at additional grade levels.

For mathematics and reading, content changes for Grades 5, 8, and 11 were developed in 2003, field tested in spring 2004, and implemented in spring 2005. The *2005 PSSA Technical Report for Reading and Mathematics* provides a description of test development activities including a review of open-ended tasks and multiple-choice items, field testing, selection of items, statistical analysis of assessment data, reliability, validity, standard setting, and other technical characteristics of the operational 2005 PSSA. Test development for the new grade levels of 4, 6, and 7 began in 2004, with field testing in 2005, and full implementation in 2006. Similarly, the *2006 PSSA Technical Report for Reading and Mathematics: Grades 4, 6, and 7* provides a complete description of test development activities, item review, field testing, statistical analysis, item selection, and technical characteristics of the operational 2006 PSSA for these grade levels. In 2007, the Grade 3 reading and mathematics assessment became DRC's responsibility and is covered in the *2007 PSSA Technical Report for Reading and Mathematics*, along with the remaining grades.

Changes implemented in the writing assessment of spring 2006 were designed to sharpen the focus on what is assessed with respect to Academic Standards 1.4 and 1.5. To support this effort, a shift in grade levels assessed was made, moving from Grades 6 and 9 to Grades 5 and 8, thereby aligning assessment to the end of elementary and middle school years. The writing testing window was changed from fall to February 2006 for Grades 5 and 8, making it consistent with Grade 11. Mode-specific scoring guidelines replaced domain scoring, and the introduction of stimulus-based passages and associated multiple-choice items measuring revising and editing expanded the basis of the conventions score. An account of the development of writing prompts and stimulus-based, multiple-choice items, review processes, field testing and item analysis, standard setting, and other technical characteristics of the operational 2006 PSSA may be found in the *2006 PSSA Technical Report for Writing*.

The introduction of an operational science assessment in 2008 moved closer to reality with a major standalone field test at Grades 4, 8, and 11 in April–May of 2007. A description of the development of science scenarios and related multiple-choice, short-answer open-ended, and extended open-ended questions, item review processes, statistical analysis of field test data, and selection of items for the 2008 operational science test may be found in the *2008 PSSA Preliminary Technical Report for Science*. Subsequently, the first operational science assessment took place in the spring of 2008, along with standard setting and reporting of results.

With the exception of some shifting of test windows, the spring assessments of 2009, 2010, 2011, and 2012 were conducted without change in content structure of the PSSA test instruments.

A transition to begin measuring the Pennsylvania Core Standards (PCS) in Mathematics and English Language Arts was initiated with standalone and embedded field test events in 2013 for Grades 3, 4, and 5. The transition continued in 2014 with standalone field tests in Grades 6, 7, and 8 and embedded field tests in Grades 3 through 8. As a part of this transition, starting in spring 2013, the Grade 11 PSSA and the Grade 12 PSSA Retest were dropped in favor of the Keystone Exams in Algebra I, Biology, and Literature. The 2015 administration of the PSSA marked the completion of the transition to the PCS in Mathematics and English Language Arts. Mathematics and ELA were administered in separate testing windows as separate test and answer booklets (in contrast to the combined Mathematics and Reading test and answer booklets used previously) and students in all grades participated in both the Writing and Reading portions of the ELA assessment.

In 2017 and 2018 the PSSA test designs underwent a reevaluation. In an effort to reduce testing time in the classroom the Mathematics, English Language Arts, and Science tests were reduced in overall length. For mathematics and science, the test length was shortened by reducing the number of test questions by reporting category proportionally. For ELA, in contrast, reducing the length of the test meant removing the writing prompt and a group of approximately nine multiple-choice items.

The following pages provide an overview of the year-to-year changes to the PSSA. Tables and descriptions show the subject areas assessed, time of year the testing activity took place, and the type of testing that occurred (e.g., operational, field testing, Grade 12 retest) for each year.

To access any of the PSSA technical reports referenced in the Preface, please go to the Pennsylvania Department of Education website, www.education.pa.gov.

ASSESSMENT ACTIVITIES OCCURRING IN THE 2003–04 SCHOOL YEAR

Table P–1 outlines the operational assessments and field tests administered during the 2003–04 school year. (A spring operational assessment in mathematics and reading took place at Grades 3, 5, 8, and 11.)

As a result of new Assessment Anchor Content Standards (Assessment Anchors) developed by the Pennsylvania Department of Education (PDE) during 2003, new test items were developed (see Chapter Two of the *2005 PSSA Technical Report for Reading and Mathematics*). Following the spring operational assessment, a separate, standalone field test of new items for Grades 5, 8, and 11 was conducted. Note that Grade 11 students also took an operational writing assessment in February, and Grades 6 and 9 students participated in a fall writing assessment. Lastly, Grade 12 students who as 11th graders in the preceding spring failed to attain at least the Proficient level in any subject area were offered an opportunity to retest.

Table P–1. Operational Assessment and Field Testing During the 2003–04 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test (conducted by CTB/ McGraw-Hill)	April 2004
5	Operational mathematics and reading	April 2004
5	Standalone field test in mathematics and reading	April/May 2004
6	Operational writing	October 2004
8	Operational mathematics and reading	April 2004
8	Standalone field test in mathematics and reading	April/May 2004
9	Operational writing	October 2004
11	Operational mathematics and reading	April 2004
11	Standalone field test in mathematics and reading	April/May 2004
11	Operational writing	February 2004
12	Retest opportunity for students who as Grade 11 students in the spring of 2003 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2004

ASSESSMENT ACTIVITIES OCCURRING IN THE 2004–05 SCHOOL YEAR

Table P–2 displays the operational assessments and field tests that took place during the 2004–05 school year. The operational assessment at Grades 5, 8, and 11 used items chosen from the spring 2004 field test. This was the first operational assessment that reflected the Pennsylvania Assessment Anchors and Eligible Content. Fulfilling the No Child Left Behind Act of 2001 (NCLB) requirement that states must implement a test at Grades 3–8, a major field test in mathematics and reading was administered at Grades 4, 6, and 7. Item development for these new grade levels took place during 2004.

The Grades 6 and 9 writing assessment was reevaluated in favor of moving the writing assessment to Grades 5 and 8. This accounts for the separate (standalone) field test at these grade levels. There was also a test administration change from October to February. In addition, the writing assessment underwent changes to align the test to the Academic Standards for writing. New writing prompts and stimulus-based multiple-choice items were also field tested at Grade 11 as part of the operational assessment, hence the reference to an embedded field test. No assessment activity of any kind occurred at Grade 9. As in fall 2003, the retest opportunity at Grade 12 continued.

Table P–2. Operational Assessment and Field Testing During the 2004–05 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test (conducted by CTB/ McGraw-Hill)	April 2005
4	Standalone field test for mathematics and reading	April 2005
5	Operational mathematics and reading with embedded field test	April 2005
5	Standalone field test in writing	February 2005
6	Standalone field test for mathematics and reading	April 2005
7	Standalone field test for mathematics and reading	April 2005
8	Operational mathematics and reading with embedded field test	April 2005
8	Standalone field test in writing	February 2005
11	Operational mathematics and reading with embedded field test	April 2005
11	Operational writing with embedded field test	February 2005
12	Retest opportunity for students who as Grade 11 students in the spring of 2004 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2004

ASSESSMENT ACTIVITIES OCCURRING IN THE 2005–06 SCHOOL YEAR

Table P–3 shows the assessment activities that occurred during the 2005–06 school year. Note that the reading and mathematics operational assessments ran consecutively in Grades 3–8 and Grade 11. For Grades 4, 6, and 7, it was the first year for operational assessments. Field testing for mathematics and reading was embedded as part of the operational assessment at each grade level. At Grade 3, the reference to field testing with items developed by DRC reflects the transition of shifting the assessment from CTB/McGraw-Hill to DRC in 2007. As in previous years, the retest opportunity at Grade 12 continued.

The first operational assessments for writing at Grades 5 and 8 took place in the 2005–06 school year, while the Grade 11 writing assessment continued in the same February testing window. For all three grade levels, the operational writing assessments featured mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis shift in writing modes assessed. See the *2006 PSSA Technical Report for Writing: Grades 5, 8, and 11* for further information about the new writing assessments. Since extensive field testing in February 2005 produced a pool of prompts for use over several years, no additional writing prompts were field tested in 2006. However, new multiple-choice items were field tested in the 2006 writing assessment.

Table P–3. Operational Assessment and Field Testing During the 2005–06 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test of DRC-written items (conducted by CTB/McGraw-Hill)	April 2006
4	Operational mathematics and reading with embedded field test	March 2006
5	Operational mathematics and reading with embedded field test	March 2006
5	Operational writing with embedded field test	February 2006
6	Operational mathematics and reading with embedded field test	March 2006
7	Operational mathematics and reading with embedded field test	March 2006
8	Operational mathematics and reading with embedded field test	March 2006
8	Operational writing with embedded field test	February 2006
11	Operational mathematics and reading with embedded field test	March 2006
11	Operational writing with embedded field test	February 2006
12	Retest opportunity for students who as Grade 11 students in the spring of 2005 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2005

ASSESSMENT ACTIVITIES OCCURRING IN THE 2006–07 SCHOOL YEAR

Table P–4 shows the assessment plan for the 2006–07 school year. Note that the mathematics and reading assessments ran consecutively in Grades 3–8 and Grade 11. For Grades 4, 6, and 7, it was the second year for operational assessments and the first year in which these grade levels were included in the adequate yearly progress (AYP) calculations. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. This was the first year in which DRC was responsible for the Grade 3 assessment, as the transition from CTB/McGraw-Hill was complete. As in previous years, the retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued in the same February testing window featuring the mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed, which were introduced in 2006. Since extensive field testing in February 2005 produced a pool of prompts for use over several years, no additional writing prompts needed to be field tested in 2007. However, new multiple-choice items were field tested in the 2007 writing assessment.

Following the spring operational assessments in writing, reading, and mathematics, a separate, standalone field test in science was administered for Grades 4, 8, and 11 with full implementation scheduled for 2008.

Table P–4. Operational Assessment and Field Testing During the 2006–07 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2007
4	Operational mathematics and reading with embedded field test	March 2007
4	Standalone field test in science	April/May 2007
5	Operational mathematics and reading with embedded field test	March 2007
5	Operational writing with embedded field test	February 2007
6	Operational mathematics and reading with embedded field test	March 2007
7	Operational mathematics and reading with embedded field test	March 2007
8	Operational mathematics and reading with embedded field test	March 2007
8	Operational writing with embedded field test	February 2007
8	Standalone field test in science	April/May 2007
11	Operational mathematics and reading with embedded field test	March 2007
11	Operational writing with embedded field test	February 2007
11	Standalone field test in science	April/May 2007
12	Retest opportunity for students who as Grade 11 students in the spring of 2006 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2006

ASSESSMENT ACTIVITIES OCCURRING IN THE 2007–08 SCHOOL YEAR

Table P–5 shows the assessment plan for the 2007–08 school year. Note that the mathematics and reading assessments ran consecutively in Grades 3–8 and Grade 11. For Grades 4, 6, and 7, it was the third year for operational assessments and the second year in which these grade levels were included in the AYP calculations. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. This was the second year in which DRC was responsible for the Grade 3 assessment. As in previous years, the retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued in the same February testing window featuring the mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed, which was introduced in 2006. Since extensive field testing in February 2005 produced a pool of prompts for use over several years, no additional writing prompts needed to be field tested in 2007. However, new multiple-choice items were field tested in the 2008 writing assessment.

Joining the spring operational assessments in writing, reading, and mathematics was science at Grades 4, 8, and 11. See the *2008 PSSA Technical Report for Science: Grades 4, 8, and 11* for further information about the new science assessments.

Table P–5. Operational Assessment and Field Testing During the 2007–08 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March/April 2008
4	Operational mathematics and reading with embedded field test	March/April 2008
4	Operational science with embedded field test	April/May 2008
5	Operational mathematics and reading with embedded field test	March/April 2008
5	Operational writing with embedded field test	February 2008
6	Operational mathematics and reading with embedded field test	March/April 2008
7	Operational mathematics and reading with embedded field test	March/April 2008
8	Operational mathematics and reading with embedded field test	March/April 2008
8	Operational writing with embedded field test	February 2008
8	Operational science with embedded field test	April/May 2008
11	Operational mathematics and reading with embedded field test	March/April 2008
11	Operational writing with embedded field test	February 2008
11	Operational science with embedded field test	April/May 2008
12	Retest opportunity for students who as Grade 11 students in the spring of 2007 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2007

ASSESSMENT ACTIVITIES OCCURRING IN THE 2008–09 SCHOOL YEAR

Table P–6 shows the assessment plan for the 2008–09 school year. The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued with a February testing window featuring mode-specific scoring guidelines; stimulus-based, multiple-choice items; and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was incorporated in the 2009 assessment along with a set of embedded field test multiple-choice items.

The second operational assessment in science took place in April/May. Similar to the other operational assessments, field testing for science was embedded as part of the operational assessments at each grade level.

Table P–6. Operational Assessment and Field Testing During the 2008–09 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2009
4	Operational mathematics and reading with embedded field test	March 2009
4	Operational science with embedded field test	April/May 2009
5	Operational mathematics and reading with embedded field test	March 2009
5	Operational writing with embedded field test	February 2009
6	Operational mathematics and reading with embedded field test	March 2009
7	Operational mathematics and reading with embedded field test	March 2009
8	Operational mathematics and reading with embedded field test	March 2009
8	Operational writing with embedded field test	February 2009
8	Operational science with embedded field test	April/May 2009
11	Operational mathematics and reading with embedded field test	March 2009
11	Operational writing with embedded field test	February 2009
11	Operational science with embedded field test	April/May 2009
12	Retest opportunity for students who as Grade 11 students in the spring of 2008 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2008

ASSESSMENT ACTIVITIES OCCURRING IN THE 2009–10 SCHOOL YEAR

Table P–7 shows the assessment plan for the 2009–10 school year. A notable change from previous years was that all assessments and make-ups were completed during the testing window from April through the first week of May.

The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was included in the 2010 assessment along with a set of embedded field test multiple-choice items.

The operational assessment for science at Grades 4, 8, and 11 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice (Grades 8 and 11) and open-ended (Grade 11 only) questions. Field testing was embedded as part of the operational assessments at each grade level.

Table P–7. Operational Assessment and Field Testing During the 2009–10 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	April/May 2010
4	Operational mathematics and reading with embedded field test	April/May 2010
4	Operational science with embedded field test	April/May 2010
5	Operational mathematics and reading with embedded field test	April/May 2010
5	Operational writing with embedded field test	April/May 2010
6	Operational mathematics and reading with embedded field test	April/May 2010
7	Operational mathematics and reading with embedded field test	April/May 2010
8	Operational mathematics and reading with embedded field test	April/May 2010
8	Operational writing with embedded field test	April/May 2010
8	Operational science with embedded field test	April/May 2010
11	Operational mathematics and reading with embedded field test	April/May 2010
11	Operational writing with embedded field test	April/May 2010
11	Operational science with embedded field test	April/May 2010
12	Retest opportunity for students who as Grade 11 students in the spring of 2009 failed to reach at least the Proficient level in mathematics, reading, science, or writing	October/ November 2009

ASSESSMENT ACTIVITIES OCCURRING IN THE 2010–11 SCHOOL YEAR

Table P–8 shows the assessment plan for the 2010–11 school year. A change from the previous year is an earlier testing window, beginning in mid-March for mathematics and reading, late-March to April for writing, and early April for science. A make-up period extended into mid-April for all assessments.

The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was included in the 2011 assessment along with a set of embedded field test multiple-choice items.

The operational assessment for science at Grades 4, 8, and 11 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice (Grades 8 and 11) and open-ended (Grade 11 only) questions. Field testing was embedded as part of the operational assessments at each grade level.

Table P–8. Operational Assessment and Field Testing During the 2010–11 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March/April 2011
4	Operational mathematics and reading with embedded field test	March/April 2011
4	Operational science with embedded field test	March/April 2011
5	Operational mathematics and reading with embedded field test	March/April 2011
5	Operational writing with embedded field test	March/April 2011
6	Operational mathematics and reading with embedded field test	March/April 2011
7	Operational mathematics and reading with embedded field test	March/April 2011
8	Operational mathematics and reading with embedded field test	March/April 2011
8	Operational writing with embedded field test	March/April 2011
8	Operational science with embedded field test	March/April 2011
11	Operational mathematics and reading with embedded field test	March/April 2011
11	Operational writing with embedded field test	March/April 2011
11	Operational science with embedded field test	March/April 2011
12	Retest opportunity for students who as Grade 11 students in the spring of 2010 failed to reach at least the Proficient level in mathematics, reading, science, or writing	October/ November 2010

ASSESSMENT ACTIVITIES OCCURRING IN THE 2011–12 SCHOOL YEAR

Table P–9 shows the assessment plan for the 2011–12 school year. The testing window for mathematics and reading began in mid-March, while writing and science began in mid to late April. The make-up period for mathematics and reading extended into late March, while writing and science extended into early May.

The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was included in the 2012 assessment along with a set of embedded field test multiple-choice items.

The operational assessment for science at Grades 4, 8, and 11 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice (Grades 8 and 11) and open-ended (Grade 11 only) questions. Field testing was embedded as part of the operational assessments at each grade level.

Table P–9. Operational Assessment and Field Testing During the 2011–12 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2012
4	Operational mathematics and reading with embedded field test	March 2012
4	Operational science with embedded field test	April 2012
5	Operational mathematics and reading with embedded field test	March 2012
5	Operational writing with embedded field test	April 2012
6	Operational mathematics and reading with embedded field test	March 2012
7	Operational mathematics and reading with embedded field test	March 2012
8	Operational mathematics and reading with embedded field test	March 2012
8	Operational writing with embedded field test	April 2012
8	Operational science with embedded field test	April 2012
11	Operational mathematics and reading with embedded field test	March 2012
11	Operational writing with embedded field test	April 2012
11	Operational science with embedded field test	April 2012
12	Retest opportunity for students who as Grade 11 students in the spring of 2011 failed to reach at least the Proficient level in mathematics, reading, science, or writing	October/ November 2011

TRANSITION TO THE PENNSYLVANIA CORE STANDARDS

The 2012–13 school year began the initial transition for the PSSA Mathematics, Reading, and Writing tests to align to the newly-developed Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards (PCS). The two-stage transition from the Legacy PSSA Mathematics, Reading, and Writing tests to the new PCS-based PSSA tests was proposed to occur during the operational 2013–14 and 2014–15 administrations, with Grades 3, 4, and 5 part of the first phase, and Grades 6, 7, and 8 part of the second phase. (The final decision was made for a single operational transition, to occur during the operational 2014–15 administration.)

As a part of the PCS transition, the Legacy PSSA Reading test and the Legacy PSSA Writing test were phased out and were replaced with an English Language Arts test aligned to the PCS. As part of this transition, there was a standalone field test for the Writing component of the English Language Arts test. This standalone field test included standalone multiple-choice items (as opposed to stimulus-based multiple-choice items on the Legacy Writing test) and writing prompts at each grade. In addition, at Grade 3 there were open-ended items on the standalone ELA Writing test. For Grades 3, 4, and 5, this standalone field test took place during a two-week testing window in early to mid-February 2013. A similar standalone field test took place in February 2014 for Grades 6, 7, and 8. The Reading component of the new PCS ELA test was embedded in the 2013 Reading field test in Grades 3 through 5; additional items for the Reading component of the new PCS ELA test were embedded in the 2014 Reading field test in Grades 3 through 5. The Reading component of the new PCS ELA test in Grades 6 through 8 was embedded in the 2014 Reading field test.

ASSESSMENT ACTIVITIES OCCURRING IN THE 2012–13 SCHOOL YEAR

Table P–10 shows the assessment plan for the 2012–13 school year. PDE modified the order of the testing windows for writing, reading and mathematics, and science. Writing took place earlier than reading and mathematics instead of at the same time as science. The testing window for writing began mid-March; mathematics and reading began early to mid-April, while science began mid to late April. The make-up period for writing extended into mid to late March, while mathematics, reading, and science extended into early May. These operational assessments were all offered in an online format in addition to the paper/pencil format used in previous assessments.

An additional change from previous years was the removal of Grade 11 from the Mathematics, Reading, Science, and Writing. As Grade 11 was no longer a part of the assessments, the fall retest opportunity at Grade 12 was no

longer available. Operational tests continued to be available for Mathematics and Reading at Grades 3–8, Science at grades 4 and 8, and Writing at grades 5 and 8.

Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. The embedded field test items for Grades 3, 4, and 5 were aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards, while the embedded field test items for Grades 6, 7, and 8 continued to be aligned to the previous Assessment Anchor Content Standards.

The operational assessment for Science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

The operational assessment for Writing at Grades 5 and 8 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts along with a set of embedded field test multiple-choice items was included in the 2013 assessment at Grade 8. The operational assessment at Grade 5 included placeholder multiple-choice items for consistency in the length of the multiple-choice section of the assessment; however, students responded to only two writing prompts at Grade 5, as a field-test writing prompt was not needed due to the standalone field test at that grade.

Table P–10. Operational Assessment and Field Testing During the 2012–13 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test (field test aligned to the PCS)	April 2013
3	Standalone field test in ELA: writing (aligned to the PCS)	February 2013
4	Operational mathematics and reading with embedded field test (field test aligned to the PCS)	April 2013
4	Operational science with embedded field test	April 2013
4	Standalone field test in ELA: writing (aligned to the PCS)	February 2013
5	Operational mathematics and reading with embedded field test (field test aligned to the PCS)	April 2013
5	Operational writing	March 2013
5	Standalone field test in ELA: writing (aligned to the PCS)	February 2013
6	Operational mathematics and reading with embedded field test	April 2013
7	Operational mathematics and reading with embedded field test	April 2013
8	Operational mathematics and reading with embedded field test	April 2013
8	Operational writing with embedded field test	March 2013
8	Operational science with embedded field test	April 2013

ASSESSMENT ACTIVITIES OCCURRING IN THE 2013–14 SCHOOL YEAR

Table P–11 shows the assessment plan for the 2013–14 school year. The 2013–14 school year continued the transition for the PSSA Mathematics, Reading, and Writing tests to align to the newly-developed Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards (PCS), as field-test items were aligned to the PCS-aligned Assessment Anchors and Eligible Content. The operational assessments in Mathematics, Reading, and Writing were comprised of items that align to both the PCS and the existing Assessment Anchors and Eligible Content. Reporting in 2013–14 continued to use the previous content structure. The transition from the Legacy PSSA Mathematics, Reading, and Writing tests to the new PCS-based PSSA tests was planned to occur during the operational 2014–15 administration.

As a part of the PCS transition, the Legacy PSSA Reading test and the Legacy PSSA Writing test were phased out and were replaced with an English Language Arts test aligned to the PCS. As part of this transition, there was a standalone field test at Grades 6, 7, and 8 for the Writing component of the English Language Arts test. This standalone field test included standalone multiple-choice items (as opposed to stimulus-based multiple-choice

items on the Legacy Writing test) and writing prompts at Grades 6, 7, and 8. This standalone field test took place during a two-week testing window in early to mid-February. The Reading component of the new PCS ELA test was embedded in the 2014 Reading field test for Grades 6, 7, and 8 and in the 2013 and 2014 Reading field test for Grades 3, 4, and 5.

Writing took place after reading and mathematics but before science. The testing window for mathematics and reading began mid-March; writing began late March to early April; and science began late April. The make-up period for mathematics and reading extended into early April, while the make-up period for writing extended into early to mid-April and science extended into early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format used in previous assessments.

Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. The embedded field test items were aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

The operational assessment for writing at Grades 5 and 8 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. Students responded to only two writing prompts, as a field-test writing prompt was not needed due to the upcoming transition to the ELA assessments.

Table P–11. Operational Assessment and Field Testing During the 2013–14 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2014
4	Operational mathematics and reading with embedded field test	March 2014
4	Operational science with embedded field test	April-May 2014
5	Operational mathematics and reading with embedded field test	March 2014
5	Operational writing	March-April 2014
6	Operational mathematics and reading with embedded field test	March 2014
6	Standalone field test in ELA: writing	February 2014
7	Operational mathematics and reading with embedded field test	March 2014
7	Standalone field test in ELA: writing	February 2014
8	Operational mathematics and reading with embedded field test	March 2014
8	Operational writing with embedded field test	March-April 2014
8	Operational science with embedded field test	April-May 2014
8	Standalone field test in ELA: writing	February 2014

ASSESSMENT ACTIVITIES OCCURRING IN THE 2014–15 SCHOOL YEAR

Table P–12 shows the assessment plan for the 2014–15 school year. The 2014–15 school year completes the transition for the PSSA Mathematics, Reading, and Writing tests to align to the newly-developed Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards (PCS), as both operational and field-test items were aligned only to the PCS-aligned Assessment Anchors and Eligible Content. Reporting in 2014–15 also transitioned to the new content structure. The transition from the Legacy PSSA Mathematics, Reading, and Writing tests to the new PCS-based PSSA Mathematics and ELA tests occurred during the operational 2014–15 administration.

The testing window for English Language Arts began in mid-April followed by the testing windows for Mathematics in mid to late April and then Science in late April to early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format used in previous assessments. The online assessment became available for students to take on iPads and Chromebooks beginning with the 2015 administration.

Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–12. Operational Assessment and Field Testing During the 2014–15 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April 2015
3	Operational ELA with embedded field test	April 2015
4	Operational mathematics with embedded field test	April 2015
4	Operational ELA with embedded field test	April 2015
4	Operational science with embedded field test	April-May 2015
5	Operational mathematics embedded field test	April 2015
5	Operational ELA with embedded field test	April 2015
6	Operational mathematics with embedded field test	April 2015
6	Operational ELA with embedded field test	April 2015
7	Operational mathematics with embedded field test	April 2015
7	Operational ELA with embedded field test	April 2015
8	Operational mathematics with embedded field test	April 2015
8	Operational ELA with embedded field test	April 2015
8	Operational science with embedded field test	April-May 2015

ASSESSMENT ACTIVITIES OCCURRING IN THE 2015–16 SCHOOL YEAR

Table P–13 shows the assessment plan for the 2015–16 school year. The PSSA tests administered in the 2015–16 school year will continue to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts began early to mid-April followed by the testing windows for Mathematics in mid-April and then Science in late April. Makeup assessments were available through early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format used in previous assessments. The online assessments were available for students to take on iPads and Chromebooks.

Field testing for mathematics and English language arts continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–13. Operational Assessment and Field Testing During the 2015–16 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April 2016
3	Operational ELA with embedded field test	April 2016
4	Operational mathematics with embedded field test	April 2016
4	Operational ELA with embedded field test	April 2016
4	Operational science with embedded field test	April 2016
5	Operational mathematics embedded field test	April 2016
5	Operational ELA with embedded field test	April 2016
6	Operational mathematics with embedded field test	April 2016
6	Operational ELA with embedded field test	April 2016
7	Operational mathematics with embedded field test	April 2016
7	Operational ELA with embedded field test	April 2016
8	Operational mathematics with embedded field test	April 2016
8	Operational ELA with embedded field test	April 2016
8	Operational science with embedded field test	April 2016

ASSESSMENT ACTIVITIES OCCURRING IN THE 2016–17 SCHOOL YEAR

Table P–14 shows the assessment plan for the 2016–17 school year. The PSSA tests administered in the 2016–17 school year will continue to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts began early April followed by the testing windows for Mathematics in mid-April and then Science in early May. Makeup assessments were available through early to mid-May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format used in previous assessments. The online assessments were available for students to take on PCs, iPads, and Chromebooks.

Field testing for mathematics and English language arts continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–14. Operational Assessment and Field Testing During the 2016–17 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April 2017
3	Operational ELA with embedded field test	April 2017
4	Operational mathematics with embedded field test	April 2017
4	Operational ELA with embedded field test	April 2017
4	Operational science with embedded field test	May 2017
5	Operational mathematics embedded field test	April 2017
5	Operational ELA with embedded field test	April 2017
6	Operational mathematics with embedded field test	April 2017
6	Operational ELA with embedded field test	April 2017
7	Operational mathematics with embedded field test	April 2017
7	Operational ELA with embedded field test	April 2017
8	Operational mathematics with embedded field test	April 2017
8	Operational ELA with embedded field test	April 2017
8	Operational science with embedded field test	May 2017

ASSESSMENT ACTIVITIES OCCURRING IN THE 2017–18 SCHOOL YEAR

Table P–15 shows the assessment plan for the 2017–18 school year. The PSSA tests administered in the 2017–18 school year continued to aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts was in early to mid-April followed by the testing windows for Mathematics in mid-April and then Science in late-April into early May. The makeup assessments were available through early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format.

Field testing for mathematics and English language arts will continue to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 continued to include multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–15. Operational Assessment and Field Testing During the 2017–18 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April 2018
3	Operational ELA with embedded field test	April 2018
4	Operational mathematics with embedded field test	April 2018
4	Operational ELA with embedded field test	April 2018
4	Operational science with embedded field test	April 2018
5	Operational mathematics embedded field test	April 2018
5	Operational ELA with embedded field test	April 2018
6	Operational mathematics with embedded field test	April 2018
6	Operational ELA with embedded field test	April 2018
7	Operational mathematics with embedded field test	April 2018
7	Operational ELA with embedded field test	April 2018
8	Operational mathematics with embedded field test	April 2018
8	Operational ELA with embedded field test	April 2018
8	Operational science with embedded field test	April 2018

ASSESSMENT ACTIVITIES OCCURRING IN THE 2018–19 SCHOOL YEAR

Table P–16 shows the assessment plan for the 2018–19 school year. The PSSA tests administered in the 2018–19 school year continued to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts was in mid-April followed by the testing windows for Mathematics and science in late-April into early May. The makeup assessments were available through late-April into early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format.

Field testing for mathematics and English language arts continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 continued to include multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–16. Operational Assessment and Field Testing During the 2018–19 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April 2019
3	Operational ELA with embedded field test	April 2019
4	Operational mathematics with embedded field test	April 2019
4	Operational ELA with embedded field test	April 2019
4	Operational science with embedded field test	April 2019
5	Operational mathematics embedded field test	April 2019
5	Operational ELA with embedded field test	April 2019
6	Operational mathematics with embedded field test	April 2019
6	Operational ELA with embedded field test	April 2019
7	Operational mathematics with embedded field test	April 2019
7	Operational ELA with embedded field test	April 2019
8	Operational mathematics with embedded field test	April 2019
8	Operational ELA with embedded field test	April 2019
8	Operational science with embedded field test	April 2019

ASSESSMENT ACTIVITIES OCCURRING IN THE 2019–20 SCHOOL YEAR

The spring 2020 PSSA was cancelled in March 2020 due to the Covid-19 pandemic. No test materials were delivered to the Local Education Agencies (LEAs) for test administration; therefore, no tests were administered and there are no results to analyze for the 2020 PSSA. Additional analyses were conducted following the spring 2021 PSSA administration to evaluate the impact of school closures and absence of a test administration in 2020. The results from these analyses are included in Appendix V of this 2021 PSSA Technical Report.

Because the PSSA test materials were not delivered to the LEAs nor administered to students, the Pennsylvania Department of Education decided to not release form-level or item-level information in order to save items and/or forms for future use. Consequently, the sections of the technical report that identify specific information related to test construction were delayed until the completion of the 2021 PSSA.

Table P–17. Operational Assessment and Field Testing During the 2019–20 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	Cancelled
3	Operational ELA with embedded field test	Cancelled
4	Operational mathematics with embedded field test	Cancelled
4	Operational ELA with embedded field test	Cancelled
4	Operational science with embedded field test	Cancelled
5	Operational mathematics embedded field test	Cancelled
5	Operational ELA with embedded field test	Cancelled
6	Operational mathematics with embedded field test	Cancelled
6	Operational ELA with embedded field test	Cancelled
7	Operational mathematics with embedded field test	Cancelled
7	Operational ELA with embedded field test	Cancelled
8	Operational mathematics with embedded field test	Cancelled
8	Operational ELA with embedded field test	Cancelled
8	Operational science with embedded field test	Cancelled

ASSESSMENT ACTIVITIES OCCURRING IN THE 2020–2021 SCHOOL YEAR

Table P–18 shows the assessment plan for the 2020–021 school year. The PSSA tests administered in the 2020–21 school year continued to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts was in mid-April followed by the testing windows for Mathematics and science in late-April into late September. The makeup assessments were available through late-April into late September. These operational assessments continued to be offered in an online format in addition to the paper/pencil format.

Field testing for mathematics and English language arts continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 continued to include multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–18. Operational Assessment and Field Testing During the 2020–21 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April–September 2021
3	Operational ELA with embedded field test	April–September 2021
4	Operational mathematics with embedded field test	April–September 2021
4	Operational ELA with embedded field test	April–September 2021
4	Operational science with embedded field test	April–September 2021
5	Operational mathematics embedded field test	April–September 2021
5	Operational ELA with embedded field test	April–September 2021
6	Operational mathematics with embedded field test	April–September 2021
6	Operational ELA with embedded field test	April–September 2021
7	Operational mathematics with embedded field test	April–September 2021
7	Operational ELA with embedded field test	April–September 2021
8	Operational mathematics with embedded field test	April–September 2021
8	Operational ELA with embedded field test	April–September 2021
8	Operational science with embedded field test	April–September 2021

ASSESSMENT ACTIVITIES PLANNED FOR THE 2021–22 SCHOOL YEAR

Table P–19 shows the assessment plan for the 2021–22 school year. The PSSA tests administered in the 2021–22 school year will continue to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts will be in mid-April followed by the testing windows for Mathematics and science in late-April into early May. The makeup assessments will be available through early late-April into early May. These operational assessments will continue to be offered in an online format in addition to the paper/pencil format.

Field testing for mathematics and English language arts will continue to be embedded as part of the operational assessments at each grade level. The embedded field test items will continue to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 will continue to include multiple-choice and open-ended questions. Students will respond to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing will be embedded as part of the operational assessments at each grade level.

Table P–19. Operational Assessment and Field Testing During the 2021–22 School Year (Planned)

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	May 2022
3	Operational ELA with embedded field test	April 2022
4	Operational mathematics with embedded field test	May 2022
4	Operational ELA with embedded field test	April 2022
4	Operational science with embedded field test	May 2022
5	Operational mathematics embedded field test	May 2022
5	Operational ELA with embedded field test	April 2022
6	Operational mathematics with embedded field test	May 2022
6	Operational ELA with embedded field test	April 2022
7	Operational mathematics with embedded field test	May 2022
7	Operational ELA with embedded field test	April 2022
8	Operational mathematics with embedded field test	May 2022
8	Operational ELA with embedded field test	April 2022
8	Operational science with embedded field test	May 2022

CHAPTER ONE: BACKGROUND, PURPOSE, AND INTENDED USES OF THE PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT (PSSA)

This brief overview of the Pennsylvania System of School Assessment (PSSA) summarizes the history of the current program's development process, the program's intent and purpose, recent changes to the program, and the student population that participates in the assessments. Pennsylvania's involvement in state-wide assessment actually began in the 1969–70 school year with a purely school-based assessment known as *Educational Quality Assessment* (EQA), which continued through the 1987–88 school year. A state mandated student competency testing program called *Testing for Essential Learning and Literacy Skills* (TELLS) also operated from the school years of 1984–85 through 1990–91.

THE PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT

The Pennsylvania System of School Assessment program was instituted in 1992 as a school evaluation model with reporting at the school level only. Test administration took place in February/March, and school district participation was every third year based on the strategic planning cycle. Mathematics and reading were assessed at Grades 5, 8, and 11; districts could choose to participate in the writing assessment at Grades 6 and 9. The State Board of Education's revisions to Chapter 5 in November 1994 brought major changes to the PSSA, beginning with the spring 1995 assessment. These changes included the following:

- All districts were required to participate in the mathematics and reading assessment each year.
- Student-level reports were generated in addition to school reports.
- The Grades 6 and 9 writing assessments became mandatory on a three-year cycle corresponding with the district's strategic planning cycle.

Yearly administration of the PSSA in 1996, 1997, and 1998 continued at the assessed grades for mathematics and reading, utilizing essentially the same test structure, reporting practices, and testing window. Writing assessment continued on the established mandatory cycle; however, an increasing number of districts chose to participate every year on a voluntary basis.

PENNSYLVANIA ACADEMIC STANDARDS AND THE PSSA

A major structural change took place in test content with the State Board of Education's adoption of the Pennsylvania Academic Standards for Reading, Writing, Speaking and Listening, and Mathematics in January 1999 (Pennsylvania State Board of Education, 1999). These new, more rigorous standards aimed to better prepare students for the 21st century work force. The Academic Standards, which are part of *Chapter 4 Regulations on Academic Standards and Assessment*, detailed what students should know (knowledge) and be able to do (skills) at various grade levels. Subsequently, the State Board approved a set of criteria defining Advanced, Proficient, Basic, and Below Basic levels of performance. Mathematics and reading performance level results were reported at both the student and school levels for the 2000 PSSA. At that point, the PSSA became a standards-based, criterion-referenced assessment measuring student attainment of the Academic Standards while simultaneously determining the extent to which school programs enabled students to achieve proficiency of the Academic Standards. The regulations also stipulated that appropriate results be broadly disseminated to an array of audiences including students, parents, educators, citizens, and state policymakers, including the State Senate, the General Assembly, and the State Board. School reporting was to include the aggregate performance of all students and for relevant subgroups, such as those students with an Individualized Education Plan (IEP). Finally, the data was intended to inform educators regarding school program strengths and weaknesses in order to guide the improvement of curricula and instructional strategies. The data was also intended to be used in the development of strategic plans.

The mathematics and reading assessments from 2001 through 2004 underwent various content enhancements to improve alignment to the Academic Standards. For example, the reading assessment transitioned to utilizing more passages of shorter length and fewer items to improve the range of topics to which students responded. Various reporting modifications were introduced to more effectively communicate results.

ASSESSMENT ANCHOR CONTENT STANDARDS, CONTENT STRUCTURE, AND NEW GRADE LEVELS FOR MATHEMATICS AND READING

Assessment in 2005 was marked by major structural changes to the PSSA. Assessment Anchor Content Standards (Assessment Anchors) developed during the previous school year to clarify content structure and improve articulation between assessment and instruction were implemented in terms of test design and reporting. At the same time, field testing of mathematics and reading occurred at Grades 4, 6, and 7. As specified by PL 107–110, the *No Child Left Behind Act of 2001* (NCLB), states, school districts, and schools must achieve a minimum level of improvement each year, known as adequate yearly progress, or AYP. Accordingly, the third year of calculations for AYP were conducted and reported for Grades 5, 8, and 11.

The 2006 operational mathematics and reading assessment incorporated Grades 4, 6, and 7 for the first time. The assessed grade levels for 2006 included Grades 3–8 and 11. The fourth year of calculations for AYP were conducted and reported for Grades 5, 8, and 11 and, for the first time, Grade 3.

In 2007 the operational mathematics and reading assessment continued in Grades 3–8 and 11. AYP calculations for Grades 4, 6, and 7 took place in 2007 when they were assessed for the second time.

The operational mathematics and reading assessments of 2008, 2009, 2010, 2011, and 2012 continued in Grades 3–8 and 11, utilizing the same content structure. AYP calculations continued for all grades. The operational mathematics and reading assessments continued for Grades 3–8 in 2013 utilizing the same content structure.

TRANSITION TO PENNSYLVANIA CORE STANDARDS-ALIGNED ASSESSMENTS IN ENGLISH LANGUAGE ARTS AND MATHEMATICS

As a part of the transition to align to the Pennsylvania Core Standards, the operational mathematics and reading assessments for Grades 3–8 in 2014 aligned to both the previous Assessment Anchors (those aligned to the Pennsylvania Academic Standards) and the newly developed Assessment Anchors aligned to the Pennsylvania Core Standards. The operational assessments of 2015 in Grades 3–8 marked the completion of the transition to alignment with the Pennsylvania Core Standards in mathematics and English language arts. The 2021 PSSA had nine field-test forms per grade in Grades 3–8, each with core items as well as placeholder items to ensure consistency in the length of the assessment in future years when equating block items are again included in the test design. More information about the operational layout for mathematics and English language arts can be found in Chapter Three.

Preliminary performance level descriptors were developed for mathematics and English language arts in the spring of 2012. These descriptions of the expectations of students at each performance level (Basic, Proficient, and Advanced) were used to guide development of items aligned to the PCS-aligned Assessment Anchors and Eligible Content that were field tested in 2013 (Grades 3, 4, and 5) and in 2014 (Grades 3–8). These performance level descriptors were validated by committees of Pennsylvania educators in February 2015 prior to standard setting in June 2015.

More information regarding the mathematics and reading tests may be found in Chapter Two and in the following Pennsylvania Department of Education publications available on the PDE website: *PSSA Assessment Handbook*, *PSSA English Language Arts Preliminary Item and Scoring Sampler* (one per assessed grade level), and *PSSA Mathematics Preliminary Item and Scoring Sampler* (one per assessed grade level). These handbooks can be accessed by going to www.education.pa.gov.

THE PENNSYLVANIA SCIENCE ASSESSMENT

In accordance with the NCLB requirement to implement an operational science assessment in 2008, a major test development effort in science took place during 2006, followed by a large-scale, standalone field test in April/May of 2007. A full implementation of an operational science assessment at Grades 4, 8, and 11 first occurred in April–May 2008. The 2009 PSSA operational science assessment continued with the same content structure and testing window as in 2008.

Several historical milestones were significant to the development of a science test in Pennsylvania. These include the following:

- The adoption of Act 16 or Pennsylvania Senate Bill 652 in 2000, which redefined the PSSA "as a test developed and implemented by the Department of Education to determine only academic achievement relating directly to objective Academic Standards in the areas of reading, mathematics, and science." (See the *Science Assessment Handbook*, PDE, November 2006).
- Pennsylvania State Board of Education adoption of the *Science and Technology Standards* on July 12, 2001, and the *Environment and Ecology Standards* on January 5, 2002.

Aligned to the *Pennsylvania Science Assessment Anchor Content Standards* and Eligible Content, the science test is designed to measure and report results in four major categories:

- The Nature of Science
- Biological Sciences
- Physical Sciences
- Earth and Space Sciences

Students use their content knowledge and science process skills to answer a set of multiple-choice items and open-ended questions that are standalone or related to a scenario. A science scenario consists of a description of a class project, an experiment, or other research and typically contains text, graphs, charts, and/or tables. Science test questions at Grade 4 consist of standalone multiple-choice and 0–2-point short-answer open-ended items. At Grade 8, multiple-choice questions consist of both standalone and scenario-based items. All open-ended items at Grade 8 are standalone 0–2-point questions. More information may be found in Chapter Two and in the following Pennsylvania Department of Education publications available on the PDE website: *PSSA Assessment Handbook* and *PSSA Science Item and Scoring Sampler Supplement* (one per assessed grade level). These handbooks can be accessed by going to www.education.pa.gov. The establishment of performance levels for science, utilizing the Bookmark method, took place during the summer of 2008. For additional details about sciences standard setting event, refer to the PSSA science performance level setting technical report in 2008.

PURPOSE AND INTENDED USES OF THE PSSA

The preceding discussion provides some important background and rationale for the development of the PSSA. Although the topic of test validity is covered in detail in Chapter Nineteen of this report, some introductory remarks to frame how a validity argument is linked to test purpose and use is appropriate here. Validity is often defined as, the degree to which theory and evidence support the intended purpose and use of test scores. As such, the beginning of any validation process is to clearly articulate test purpose and intended uses. The purpose of the PSSA is to measure how well students acquire the knowledge and skills described in the *Pennsylvania Assessment Anchor Content Standards* (Assessment Anchors) as defined by the Eligible Content for mathematics, ELA, and Science. The intended uses of the PSSA are to:

1. Provide information for use in school and district accountability systems
2. Improve curricular and instructional practices in order to help students reach proficiency in the Pennsylvania Core Standards (ELA and Mathematics) or the Pennsylvania Academic Standards (Science)

It follows, then, that a validity argument must be developed to support claims that PSSA test scores are appropriate for these uses. The *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014) links the concept of validity, test purpose, and test use to this need for evidence that test scores are appropriate for their intended purpose and uses. Briefly, a validity argument is characterized as an accumulation of five sources, or types, of evidence that test scores are appropriate for their intended use, including evidence related to test content, its internal structure and relation to other variables, examinee response processes, and testing consequences. Complete definitions of these sources, and corresponding evidence that PSSA scores may be interpreted as intended is provided in Chapter Nineteen.

CHAPTER TWO: OVERVIEW OF THE PSSA FRAMEWORK

PENNSYLVANIA CORE STANDARDS, PENNSYLVANIA ACADEMIC STANDARDS, ASSESSMENT ANCHOR CONTENT STANDARDS, AND ELIGIBLE CONTENT

PSSA ENGLISH LANGUAGE ARTS, MATHEMATICS, AND SCIENCE

The PSSA Assessment Anchor Content Standards and Eligible Content are based on the Pennsylvania Core Standards in English language arts and mathematics and the Pennsylvania Academic Standards in science. Although the Academic Standards indicated what students should know and be able to do, educator concerns regarding the number and breadth of Academic Standards led to an initiative by the Pennsylvania Department of Education (PDE) to develop Assessment Anchor Content Standards (Assessment Anchors) to indicate which parts of the Academic Standards (Instructional Standards) would be assessed on the PSSA. Based on recommendations from Pennsylvania educators, the Assessment Anchors were designed as a tool to improve the articulation of curricular, instructional, and assessment practices.

With Pennsylvania's decision to adopt the Pennsylvania Core Standards based on the Common Core State Standards, committees of Pennsylvania educators met in October 2011 to write, review, and approve the Assessment Anchors and Eligible Content statements. To provide initial focus, each content and grade span committee was presented with materials specific to the content and grade span in question, including a basic blueprint structure, the Pennsylvania Academic Standards, the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Academic Standards, the Common Core State Standards, and draft Eligible Content statements. Committees then completed an iterative process of reviewing and revising the draft Eligible Content statements followed by discussions across grade-span committees to ensure vertical articulation across the grades. The results from the committee work were evaluated by national, state, and local subject experts, and following revisions, they were ultimately validated by another committee of Pennsylvania educators. Following committee approval, the Pennsylvania Core Standards-aligned Assessment Anchors and Eligible Content for English Language Arts and Mathematics were approved by the State Board of Education in September 2013.

The Assessment Anchors clarify what is expected across each grade span and focus the content of the standards into what is assessable on a large-scale test. The Assessment Anchor documents also serve to communicate Eligible Content, also called assessment limits, or the range of knowledge and skills from which the PSSA would be designed.

The Assessment Anchor's coding is read like an outline. The coding includes the content, grade level, Reporting Category, Assessment Anchor, descriptor (Sub-Assessment Anchor), and Eligible Content. Thus, S.4.A.1.3.1 would be Science, Grade 4, Reporting Category A, Assessment Anchor 1, descriptor (Sub-Assessment Anchor) 3, and Eligible Content 1.

Each of the Assessment Anchors has one or more descriptors (Sub-Assessment Anchors) and Eligible Content varying to reflect grade-level appropriateness. The Assessment Anchors form the basis of the test design. In turn, this hierarchy is the basis for organizing the total content scores (based on the core [common] sections).

Achieve, Inc., Washington, D.C., conducted a preliminary review of the science Assessment Anchors in 2003 to evaluate the alignment with the Academic Standards and produced a follow-up report on the anchors in 2005.

The complete set of Assessment Anchors and Eligible Content aligned to the Pennsylvania Academic Standards can be referenced at PDE's website: www.education.pa.gov.

OVERVIEW OF THE 2021 PSSA

MATHEMATICS ASSESSMENT MEASURES

The Assessment Anchors are organized into four classifications, as listed below.

- A = Numbers and Operations
- B = Algebraic Concepts
- C = Geometry
- D = Data Analysis and Probability

These four classifications are used throughout the grade levels. In addition to these classifications, there are five Reporting Categories for each grade level. The first letter of each Reporting Category represents the classification, and the second letter represents the Domain as stated in the Pennsylvania Core Standards for Mathematics. These Reporting Categories are listed below.

- A = Numbers and Operations
    - A-T = Numbers and Operations in Base Ten (grades 3–5)
    - A-F = Numbers and Operations—Fractions (grades 3–5)
    - A-N = The Number System (grades 6–8)
    - A-R = Ratios and Proportional Relationships (grades 6, 7)
- B = Algebraic Concepts
    - B-O = Operations and Algebraic Thinking (grades 3–5)
    - B-E = Expressions and Equations (grades 6–8)
    - B-F = Functions (grade 8)
- C = Geometry
    - C-G = Geometry (grades 3–8)
- D = Data Analysis and Probability
    - D-M = Measurement and Data (grades 3–5)
    - D-S = Statistics and Probability (grades 6–8)

The PSSA mathematics assessment employs two types of test items: multiple-choice and open-ended. These item types assess different levels of knowledge and provide different kinds of information about mathematics achievement. Psychometrically, multiple-choice items are very useful and efficient tools for collecting information about a student's academic achievement. Open-ended performance tasks generally generate fewer scoreable points than multiple-choice items in the same amount of testing time; however, they provide tasks that are more realistic and are better at sampling higher-level thinking skills. Furthermore, well-constructed scoring guides have made it possible to include open-ended tasks in large-scale assessments such as the PSSA. Trained scorers can apply the scoring guides to efficiently score large numbers of student papers in a highly reliable way. The design of the PSSA attempts to achieve a reasonable balance between the two item types.

Furthermore, the Standards for Mathematical Practice is included in the development and review process of each item. Some items may align to none of the practices while others may align to multiple practices. The Standards for Mathematical Practice originated in the Common Core State Standards for Mathematics and were adopted by Pennsylvania as part of the Academic Standards for Mathematics.

MATHEMATICS MULTIPLE-CHOICE ITEMS

The majority of the mathematics items included on the PSSA are multiple-choice (selected-response) items. This item type is especially efficient for measuring a broad range of content. In the PSSA mathematics assessment, each multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Distractors typically represent incorrect concepts, incorrect logic, incorrect application of an algorithm, or computational errors.

Multiple-choice items are used to assess a variety of skill levels, from short-term recall of facts to problem solving. PSSA items involving application emphasize the requirement to carry out some mathematical process to find an answer, rather than simply recalling information from memory.

OPEN-ENDED TASKS FOR MATHEMATICS

Open-ended, or constructed-response, tasks require students to read a problem description and to develop an appropriate solution. The open-ended items are designed to take about ten minutes per item. Most of the open-ended items have several components to the overall task that may enable students to enter or begin the problem at different places. In some items, each successive component is designed to assess progressively more difficult skills or higher knowledge levels. Certain components ask students to explain their reasoning for engaging in particular mathematical operations or for arriving at certain conclusions. The types of tasks utilized do not necessarily require computations. Students may also be asked to perform such tasks as constructing a graph, shading some portion of a figure, or listing object combinations that meet specified criteria.

Open-ended tasks are especially useful for measuring students' problem-solving skills in mathematics. They offer the opportunity to present real-life situations that require students to solve problems using mathematics abilities learned in the classroom. Students must read the task carefully, identify the necessary information, devise a method of solution, perform the calculations, enter the solution directly in the response space, and, when required, offer an explanation. This provides insight into the students' mathematical knowledge, abilities, and reasoning processes.

The open-ended mathematics items are scored on a 0–4 point scale using an item-specific scoring guideline. The item-specific scoring guideline outlines the requirements for each score point. Item-specific scoring guidelines are based on the "General Description of Mathematics Scoring Guidelines for Open-Ended Items". The general guidelines describe a hierarchy of responses, which represent the five score levels. See Appendix A or the *Mathematics Item and Scoring Samplers* available on the PDE website.

ENGLISH LANGUAGE ARTS ASSESSMENT MEASURES

The content blueprints for the English language arts assessment are shown in the following tables. The blueprints are organized around three Reporting Clusters (Reading, Writing, and Text-Dependent Analysis) based on the expressed emphasis contained within the Pennsylvania Core Standards.

- Reading
    - A = Literature Text
    - B = Informational Text
    - A-K and B-K = Key Ideas and Details
    - A-C and B-C = Craft and Structure/Integration of Knowledge and Ideas
    - A-V and B-V = Vocabulary Acquisition and Use
- Writing
    - D = Conventions of Standard English
- Text-Dependent Analysis
    - E = Text-Dependent Analysis (Grades 4–8 only)

Within the Reading Reporting Cluster, each Eligible Content aligns to a Genre Reporting Category (Literature Text or Informational Text) as well as a Core Competency Reporting Category (Key Ideas and Details; Craft and Structure/ Integration of Knowledge and Ideas; or Vocabulary Acquisition and Use) as shown in the table below.

Table 2–1. English Language Arts Eligible Content Blueprint

Genre	Key Ideas and Details (Key Ideas)	Craft and Structure/Integration of Knowledge and Ideas (CSI)	Vocabulary Acquisition and Use (Vocabulary)
Literature Text	A-K.1.1.1	A-C.2.1.1	A-V.4.1.1
Literature Text	A-K.1.1.2	A-C.3.1.1	A-V.4.1.2
Literature Text	A-K.1.1.3	NA	NA
Informational Text	B-K.1.1.1	B-C.2.1.1	B-V.4.1.1
Informational Text	B-K.1.1.2	B-C.2.1.2	B-V.4.1.2
Informational Text	B-K.1.1.3	B-C.3.1.1	NA
Informational Text	NA	B-C.3.1.2	NA
Informational Text	NA	B-C.3.1.3	NA

The English language arts assessment employs several types of test questions, including standalone and passage-based Multiple-Choice questions (MC), Evidence-Based Selected-Response (EBSR) questions, Short-Answer (SA) questions (Grade 3 only) and Text-Dependent Analysis (TDA) questions (Grades 4–8).

PASSAGE-BASED MULTIPLE-CHOICE ITEMS

Passage-based multiple-choice items measure how well students comprehend the overall meaning of a passage or make basic inferences about it. At times, asking students to choose a preferred answer is the best way to determine whether they have gleaned certain information from a story. Such information may include setting, central idea, or main events and their sequence. These multiple-choice items are aligned to Reporting Categories within the Reading Reporting Cluster.

Each reading multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Incorrect response choices, or distractors, typically represent some kind of misinterpretation, predisposition, unsound reasoning, or casual reading of the item and/or stimuli.

STANDALONE MULTIPLE-CHOICE ITEMS

Standalone multiple-choice items require that a student demonstrate both passive (recognizing and identifying grammatical and mechanical errors in text, such as misspellings, errors in word choice, errors in verb tense, or pronoun usage) and active (choosing the appropriate correction of an embedded error, such as deleting an irrelevant detail, changing the sequence of details, or placing correct marks of punctuation) language skills related to conventions of standard English and knowledge of language. These multiple-choice items are aligned to the Language Reporting Category within the Writing Reporting Cluster.

All language multiple-choice items have four response options that include only one correct answer. The student is awarded one raw score point for choosing the correct response. Incorrect response choices, or distractors, typically represent some kind of misinterpretation or predisposition, unsound reasoning, or casual reading of the item and/or stimuli.

EVIDENCE-BASED SELECTED-RESPONSE ITEMS

Each two-part evidence-based selected-response (EBSR) question is designed to elicit an evidence-based response from a student who has read either a Literature or Informational Text passage. In Part One, which is similar to a multiple-choice question, the student analyzes a passage and chooses the best answer from four answer choices. In Part Two, the student elicits evidence from the passage to select one or more answers based on his/her response to Part One. Part Two is different from a multiple-choice question in that there may be more than four answer options and more than one correct answer. Each EBSR test question is worth either two or three points, and students can receive partial credit for providing a correct response to Part One or for providing one or more correct responses in Part Two. The student is awarded one raw score point for choosing each correct response. Incorrect response choices, or distractors, in both Part One and Part Two typically represent some kind of misinterpretation, predisposition, unsound reasoning, or casual reading of the item and/or stimuli.

SHORT-ANSWER ITEMS (GRADE 3)

Constructed-response tasks such as the short-answer questions included on the assessment for Grade 3 require written responses. These items are designed to address comprehension of text in ways that multiple-choice items cannot. These short written responses require about five minutes per item and allow a student to prepare an answer using supporting details or examples derived from the text. Prior to 2013, these test questions were called "open-ended" items due to the many possible responses students could construct compared to the four static options available in a multiple-choice item. These items began to be labeled as short-answer items during the 2013 administration. The shift in labeling, from "open-ended" to "short-answer," was implemented to draw a greater contrast to the new "Text-Dependent Analysis" questions which require substantial student writing. By comparison, responses to the short-answer items are simpler and require less explication and almost no analysis.

The reading short-answer items are scored on a 0–3-point scale using an item-specific scoring guideline. This scale is consistent with the scale used on the National Assessment of Educational Progress (NAEP). The change from the former 0–4-point scale improves the alignment with the types of tasks required. Each task is text-dependent and is carefully constructed with the scoring guideline reflecting the task requirements. All item-specific scoring guidelines are based on the "General Scoring Guidelines for Short-Answer Reading Items." The general guidelines describe a hierarchy of responses, which represent the four score levels. See Appendix A or the *English Language Arts Item and Scoring Samplers* available on the PDE website.

TEXT-DEPENDENT ANALYSIS ITEMS (GRADES 4–8)

Text-dependent analysis questions require students to draw on basic writing skills while inferring and synthesizing information from a passage or passage set they have read during the test event, in order to develop a comprehensive, holistic essay response. Both Literature and Informational Texts are addressed through this item type. The demand required of a student's reading and writing skills in response to a TDA coincides with the similar demands required for a student to be college and career ready. The essay responses developed for this item type require approximately thirty minutes. These items are reported under the Text-Dependent Analysis Reporting Category, which is found in the Reporting Cluster of the same name.

The text-dependent analysis items are scored on a 1–4-point scale using the holistic "PSSA Text-Dependent Analysis Scoring Guidelines." The TDA scoring guidelines describe a hierarchy of responses, which represent the four score levels, and include comprehension, writing, and analysis skills. See Appendix A or the *English Language Arts Item and Scoring Samplers* available on the PDE website.

PASSAGE COMPLEXITY

The Pennsylvania Core Standards require students to read increasingly complex texts with greater independence and proficiency as they progress toward college- and career-readiness. DRC has worked with PDE to develop a process that measures (1) the quantitative evaluation of the text, and (2) the qualitative evaluation of the text that is reported out on a passage placemat. In addition, a third component, matching reader to text and task, is also taken into consideration during passage evaluation and teacher committee reviews.

QUANTITATIVE EVALUATION

Evaluating the complexity of a passage is essentially a judgmental process by individuals familiar with the classroom context and what is developmentally and linguistically appropriate for students at a given grade level. Although readability indices will be computed and made available on the passage placemat for each passage, we believe that these indices measure different aspects of readability and can result in various interpretations. Because no readability formula is perfect, qualitative measures have been implemented to help determine placement and appropriateness for passages used in the Pennsylvania assessments. These measures include: 1) rubric-based qualitative evaluations, and 2) teacher content review committees to provide expert opinions on grade-level appropriateness as part of matching the reader to text and task considerations.

QUALITATIVE EVALUATION

Rubrics provide the qualitative measures for literary and informational passages. As indicated on these placemats, the quantitative measures suggest the appropriate grade band of the text, while the qualitative rubrics pinpoint the specific grade level. These rubrics provide a powerful and comprehensive way of evaluating a range of stimulus materials that cover the literary and informational scope outlined in the Pennsylvania Core Standards. Passages selected for the Pennsylvania assessments should have evidence of their complexity determination and grade-level placement, based on both quantitative and qualitative measures as specified above.

SCIENCE ASSESSMENT MEASURES

The PSSA science assessment has four major reporting categories: The Nature of Science, Biological Sciences, Physical Sciences, and Earth and Space Sciences. These categories are similar to those used by the National Assessment of Educational Progress (NAEP) and The Third International Mathematics and Science Study (TIMSS). However, the PSSA organizes the categories differently. The science assessment anchors cover seventeen major categories from two sets of standards: Science and Technology Standards (3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, and 3.8) and Environment and Ecology Standards (4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, and 4.9).

The Assessment Anchors are organized into four classifications, as listed below.

- A = Nature of Science
- B = Biological Sciences
- C = Physical Sciences
- D = Earth and Space Sciences

These four reporting categories are used in both grades four and eight. In addition to these reporting categories, there are additional Assessment Anchors for each grade level. The first letter of each Assessment Anchors represents the reporting category, and the second letter represents the Assessment Anchors. These Assessment Anchors are listed below.

- A. The Nature of Science
    - S.A.1. Reasoning and Analysis
    - S.A.2. Processes, Procedures, and Tools of Scientific
    - S.A.3. Systems, Models, and Patterns
- B. Biological Sciences
    - S.B.1. Structure and Function of Organisms
    - S.B.2. Continuity of Life
    - S.B.3. Ecological Behavior and Systems

- C. Physical Sciences
    - S.C.1. Structure, Properties and Interactions of Matter and Energy
    - S.C.2 Forms, Sources, Conversions, and Transfer of Energy
    - S.C.3 Principles of Force and Motion
- D. Earth and Space Sciences
    - S.D.1 Earth Features and Processes that Change Earth and Its Resources
    - S.D.2 Weather, Climate, and Atmospheric Processes
    - S.D.3 Composition and Structure of the Universe

The science assessment employs two types of test items: multiple-choice and open-ended. These item types assess different levels of knowledge and provide different kinds of information about science achievement. The design of the operational 2021 PSSA for science achieves a reasonable balance between the two item types. Concepts include

SCIENCE MULTIPLE-CHOICE ITEMS

The majority of the science items included on the PSSA are multiple-choice (selected-response) items, either as standalone multiple-choice items or as scenario-based multiple-choice items. (Scenario-based multiple-choice items are found in Grade 8 only.) Multiple-choice items are especially efficient for measuring a broad range of content. In the PSSA science assessment, each multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Distractors typically represent incorrect concepts, incorrect logic, or incorrect application of a scientific principle.

Multiple-choice items are used to assess a variety of skill levels, from short-term recall of facts to the application of science content. PSSA items involving application emphasize the requirement to utilize science content to find an answer rather than simply recalling information from memory.

OPEN-ENDED ITEMS FOR SCIENCE

At all grades, standalone open-ended science items require students to read a description of a scientific problem and to develop an appropriate solution. Standalone open-ended items require about five minutes per task.

Open-ended tasks are especially useful for measuring students' skills in science. These tasks may present real-life situations that require students to solve problems using science abilities learned in the classroom. Students must read a task carefully, identify the necessary information, devise a method of solution, enter the solution directly into the answer document, and when required, offer an explanation. This provides insight into students' science knowledge, abilities, and reasoning processes.

The open-ended science items are scored on a 0–2-point scale with an item-specific scoring guideline, and each task is carefully constructed with a scoring guideline reflecting the task requirements. The general guidelines describe a hierarchy of responses, which represent the three score levels. Each item-specific scoring guideline outlines the requirements at each score point, and each item-specific scoring guideline is based on the "Science Scoring Guidelines for Open-Ended Items." See Appendix A or the *Science Item and Scoring Samplers* available on the PDE website.

SCIENCE SCENARIOS FOR GRADE 8

In addition to standalone multiple-choice and open-ended items, the science assessment includes scenarios at Grade 8. In consideration of the multidisciplinary and interdisciplinary nature of science content, science scenarios create stronger connections between The Nature of Science/Science Content and the multiple-choice items associated with a scenario. As a result, science scenarios allow the assessment to efficiently address and utilize the connections among the science content domains. A science scenario contains text, graphics, charts, and/or tables and uses these elements to describe the results of a class project, an experiment, or other similar research. Students use the information found in a science scenario as a platform from which to answer multiple-choice questions. Scenarios and questions reach beyond simple fact recollection; they are designed to challenge students to think and to apply the knowledge and skills learned in their classrooms. Scenarios are designed to reflect multi-dimensional classroom activities that incorporate higher cognitive levels of understanding. Science scenarios challenge students to interpret stimulus content and to apply existing knowledge to new data, while using science knowledge and process skills to arrive at their answers.

CHAPTER THREE: ITEM DEVELOPMENT PROCESS

The core portion of the 2021 PSSA operational administration is made up of items that were field tested primarily in the 2019 PSSA administration. Therefore, the activities that led to the 2021 PSSA operational administration began with the development of the test items that appeared in the field test portion of the 2019 operational administration. In turn, items that appeared on the field test portion of the 2019 operational administration were developed during and prior to 2019. (See Table 3–1 for a graphic representation of the basic process flow and overlap of the development cycles.)

Table 3–1. General Development Timeline Pattern of the PSSA

Operational Admin Year	2014	2015	2016	2017	2018	2019	2021
2016	Initial Item Dev →	Field Test →	Operational Core Admin with embedded equating block items →	Core-to-Core Link			
2017		Initial Item Dev →	Field Test →	Operational Core Admin with embedded equating block items →	Core-to-Core Link		
2018			Initial Item Dev →	Field Test →	Operational Core Admin with embedded equating block items[1]	Core-to-Core Link	
2019				Initial Item Dev →	Field Test →	Operational Core Admin with embedded equating block items	Core-to-Core Link
2020	No testing occurred.						
2021					Initial Item Dev →	Field Test →	Operational Core Admin with embedded equating block items

Table 3–2. General Timeline Associated with 2013 and 2014 Field Test and 2015–2021 Operational Assessment of ELA and Mathematics at Grades 3, 4, 5, 6, 7, and 8

Time Frame	Assessment	Activity
January 2012–July 2012	’13 FT for ’15 OP	Item development for items to embed in 2013 operational test (Grades 3–5 only)
July 2012	’13 FT for ’15 OP	Item review for the embedded field test in 2013 operational assessment (Grades 3–5 only)
September 2012–January 2013	’13 OP & ’13 FT for ’15 OP	Forms construction for 2013 operational assessment with embedded field test (Grades 3–5 only)
January 2013–June 2013	’14 FT for ’15 OP	Item development for items to embed on 2014 operational assessment
February 2013	’13 FT for ’15 OP	2013 standalone field test for ELA: Writing Grades 3–5
March 2013–May 2013	’13 FT for ’15 OP	2013 embedded field test in 2013 operational test (Grades 3–5 only)
June 2013	’14 FT for ’15 OP	Item review for the embedded field test in 2014 operational assessment
July 2013	’13 FT for ’15 OP	Statistical review of 2013 field tested items (Grades 3–5 only)
September 2013–January 2014	’14 OP & ’14 FT for ’15 OP	Forms construction for 2014 operational assessment
January 2014–July 2014	’15 FT for ’16 OP	Item development for items to embed in 2015 operational test
February 2014	’14 FT for ’15 OP	2014 standalone field test for ELA: Writing Grades 6–8
April 2014–May 2014	’14 OP & ’14 FT for ’15 OP	2014 embedded field test in 2014 operational assessment
June 2014	’15 FT for ’16 OP	Item review for the embedded field test in 2015 operational assessment
July 2014	’14 FT for ’15 OP	Statistical review of 2014 field tested items
September 2014–January 2015	’15 OP & ’15 FT for ’16 OP	Forms construction for 2015 operational assessment
April 2015–May 2015	’15 OP & ’15 FT for ’16 OP	2015 operational assessment
January 2015–July 2015	’15 FT for ’16 OP	Item development for items to embed in 2016 operational test
April 2015–May 2015	’14 OP & ’14 FT for ’15 OP	2015 embedded field test in 2015 operational assessment
June 2015	’15 FT for ’16 OP	Item review for the embedded field test in 2016 operational assessment
July 2015	’14 FT for ’15 OP	Statistical review of 2015 field tested items
September 2015–January 2016	’16 OP & ’16 FT for ’17 OP	Forms construction for 2016 operational assessment
April 2016–May 2016	’16 OP & ’16 FT for ’17 OP	2016 operational assessment
January 2016–July 2016	’17 FT for ’18 OP	Item development for items to embed in 2017 operational test
April 2016–May 2016	’15 OP & ’15 FT for ’16 OP	2016 embedded field test in 2016 operational assessment
June 2016	’16 FT for ’17 OP	Item review for the embedded field test in 2017 operational assessment
July 2016	’15 FT for ’16 OP	Statistical review of 2016 field tested items
September 2016–January 2017	’17 OP & ’17 FT for ’18 OP	Forms construction for 2017 operational assessment
April 2017–May 2017	’17 OP & ’17 FT for ’18 OP	2017 operational assessment
January 2017–July 2017	’17 FT for ’18 OP	Item development for items to embed in 2018 operational test
April 2017–May 2017	’16 OP & ’16 FT for ’17 OP	2017 embedded field test in 2017 operational assessment
June 2017	’17 FT for ’18 OP	Item review for the embedded field test in 2018 operational assessment
July 2017	’16 FT for ’17 OP	Statistical review of 2017 field tested items

Table 3–2 (continued). General Timeline Associated with 2013 and 2014 Field Test and 2015–2019 Operational Assessment of ELA and Mathematics at Grades 3, 4, 5, 6, 7, and 8

Time Frame	Assessment	Activity
September 2017–January 2018	’18 OP & ’18 FT for ’19 OP	Forms construction for 2018 operational assessment
April 2018–May 2018	’18 OP & ’18 FT for ’19 OP	2018 operational assessment
January 2018–July 2018	’18 FT for ’19 OP	Item development for items to embed in 2019 operational test
April 2018–May 2018	’18 OP & ’18 FT for ’19 OP	2018 embedded field test in 2018 operational assessment
June 2018	’18 FT for ’19 OP	Item review for the embedded field test in 2019 operational assessment
July 2018	’17 FT for ’18 OP	Statistical review of 2018 field tested items
September 2018–January 2019	’18 OP & ’18 FT for ’19 OP	Forms construction for 2019 operational assessment
April 2019–May 2019	’18 OP & ’18 FT for ’19 OP	2019 operational assessment
January 2019–July 2019	’19 FT for ’21 OP	Item development for items to embed in 2021 operational test
April 2019–May 2019	’19 OP & ’19 FT for ’21 OP	2019 embedded field test in 2019 operational assessment
June 2019	’19 FT for ’21 OP	Item review for the embedded field test in 2021 operational assessment
July 2019	’19 FT for ’21 OP	Statistical review of 2019 field tested items
September 2019–January 2021	’19 OP & ’19 FT for ’21 OP	Forms construction for 2021 operational assessment
April 2021–September 2021	’19 OP & ’19 FT for ’21 OP	2021 operational assessment

Table 3–3. Participating Districts by Region

Region of Commonwealth	School District
Western	Athens Area, Grove City Area, Penn Hills, Pittsburgh Public Schools
Central	Manheim Township, Newport, State College Area, West Shore, Wilkes-Barre Area
Eastern	Haverford Township, Lower Merion, Mid-Valley, Philadelphia City SD, Upper Merion

PROCESS AND PROCEDURES FOR THE 2006 ITEM PILOT

Two parallel forms of the science assessment were designed for each grade level, with a designated administration time of thirty minutes. No attempt was made to replicate the design of a PSSA science operational test for the cognitive lab or pilot test because of testing-time limitations and the objectives of this study. The items were representative of items from each of the proposed PSSA’s four reporting categories (i.e., The Nature of Science, Biological Sciences, Physical Sciences, and Earth and Space Sciences). All test items were approved by PDE before inclusion in the PSSA Science Item Tryout Project.

In Grade 4, each form of the test consisted of ten multiple-choice items, 70 percent of which included graphs, graphics, charts, or tables with relevant information associated with the item. All four reporting strands were assessed in each Grade 4 test form. In Grades 8 and 11, age/grade-appropriate science scenarios were developed. The scenarios included graphics, charts, tables, graphs, and diagrams to support the scenario text. A set of test items associated with each science scenario was developed. In Grade 8, each test form included items from all four reporting strands. In Grade 11, scenarios in test Form A assessed the biological, earth and space, and nature of science reporting strands, while test Form B assessed the physical, earth and space, and nature of science reporting strands.

Scenarios and questions reached beyond simple fact recollection; they were designed to challenge students to think and to apply knowledge and skills learned in their classrooms. The science scenarios were based on Pennsylvania Assessment Anchors and Eligible Content. Scenarios were designed to reflect multi-dimensional classroom activities that incorporate higher cognitive levels of understanding. Each scenario was stimulus-based and included passages with graphics, charts, graphs, or a combination of all three media. Science scenarios

challenged students to interpret passage content while using science knowledge and process skills to determine their answers.

IMPLEMENTATION AND TEST ADMINISTRATION FOR 2006 ITEM PILOT

Two classrooms within one geographic region participated in the project each day. At least two test development specialists were present at all but one school district during the pilot study project sessions; in addition, representatives from PDE attended most sessions. The PSSA Science Item Tryout Project field work occurred during a three-week window, beginning on February 27 and concluding on March 16.

TEST DEVELOPMENT CONSIDERATIONS: ALL ASSESSMENTS

The major considerations in the item development process were the alignment to the Pennsylvania Core Standards-aligned Assessment Anchors and Eligible Content (mathematics and ELA), alignment to the Pennsylvania Academic Standards-aligned Assessment Anchors and Eligible Content (science only), grade-level appropriateness (reading/interest level, etc.), depth of knowledge, cognitive level, item/task level of complexity, estimated difficulty level, relevancy of context, rationale for distractors, style, accuracy, and correct terminology. The *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 2014) and the *Principles of Universal Design* (Thompson, Johnstone, & Thurlow, 2002) guided the development process. In addition, DRC's manual, *Fairness in Testing: Guidelines for Training on Bias, Fairness, and Sensitivity Issues* was used for developing items. All items were reviewed for fairness by bias and sensitivity committees and for content by Pennsylvania educators and field-specialists. Items were also reviewed for adherence to the Principles of Universal Design by representatives from the National Center for Educational Outcomes (NCEO). In addition, the items were reviewed for adherence to the guidelines outlined in the Pennsylvania publication *Principles, Guidelines and Procedures for Developing Fair Assessment Systems: Pennsylvania Assessment Through Themes* (PATT).

BIAS, FAIRNESS, AND SENSITIVITY: ALL ASSESSMENTS

At every stage of the item and test development process, DRC employs procedures that are designed to ensure that items and tests met Standard 7.4 of the Standards for Educational and Psychological Testing (AERA, APA, NCME, 2014).

> *Standard 7.4: Test developers should strive to identify and eliminate language, symbols, words, phrases, and content that are generally regarded as offensive by members of racial, ethnic, gender, or other groups, except when judged to be necessary for adequate representation of the domain.*

To meet Standard 7.4, DRC employs a series of internal quality steps. DRC provides specific training for test developers, item writers, and reviewers on how to write, review, revise, and edit items for issues of bias, fairness, and sensitivity (as well as for technical quality). Training also includes an awareness of and sensitivity to issues of cultural diversity. In addition to providing *internal* training in reviewing items in order to eliminate potential bias, DRC also provides *external* training to the review panels of minority experts, teachers, and other stakeholders.

DRC's guidelines for bias, fairness, and sensitivity include instruction concerning how to eliminate language, symbols, words, phrases, and content that might be considered offensive by members of racial, ethnic, gender, or other groups. Areas of bias that are specifically targeted include, but are not limited to, stereotyping, gender, regional/geographic, ethnic/cultural, socioeconomic/class, religious, and biases against a particular age group (ageism) or persons with disabilities. DRC catalogues topics that should be avoided and maintains balance in gender and ethnic emphasis within the pool of available items and passages.

UNIVERSAL DESIGN: ALL ASSESSMENTS

As stated above, the Principles of Universal Design were incorporated throughout the item development process to allow participation of the widest possible range of students in the PSSA. The following checklist was used as a guideline:

- Items measure what they are intended to measure.
- Items respect the diversity of the assessment population.
- Items have a clear format for text.
- Stimuli and items have clear pictures and graphics.
- Items have concise and readable text.
- Items allow changes to other formats, such as Braille, without changing meaning or difficulty.
- The arrangement of the items on the test has an overall appearance that is clean and well organized.

A more extensive description of the application of the Principles of Universal Design is described in Chapter Four.

DEPTH OF KNOWLEDGE: ALL ASSESSMENTS

An important element in statewide assessment is the alignment between the overall assessment system and the state's standards. A methodology developed by Norman Webb (1999) offers a comprehensive model that can be applied to a wide variety of contexts. With regard to the alignment between standards statements and the assessment instruments, Webb's criteria include five categories, one of which deals with content. Within the content category is a useful set of levels for evaluating depth of knowledge (DOK). According to Webb (1999), "depth-of-knowledge consistency between standards and assessments indicates alignment if what is elicited from students on the assessment is as demanding cognitively as what students are expected to know and do as stated in the standards" (p. 7–8). The four levels of cognitive complexity (i.e., depths of knowledge) are as follows:

- Level 1: Recall
- Level 2: Application of Skill/Concept
- Level 3: Strategic Thinking
- Level 4: Extended Thinking

Depth-of-knowledge levels were incorporated in the item writing and review process, and items were coded with respect to the level they represented. Generally, multiple-choice items are written to DOK levels 1 and 2, evidence-based selected-response items are written to DOK levels 2 and 3, and constructed-response items are written to DOK level 3.

PASSAGE READABILITY

Evaluating the readability of a passage is essentially a judgmental process by individuals familiar with the classroom context and what is linguistically appropriate at a given grade level as described in the section on reading passage selection later in this chapter. Although various readability indices were computed and reviewed, it is recognized that such methods measure different aspects of readability and are often fraught with particular interpretive liabilities. Thus, the commonly available readability formulas were not used in a rigid way, but more informally to provide for several snapshots of a passage that senior test development staff considered along with experience-based judgments in guiding the passage selection process. In addition, passages were reviewed by committees of Pennsylvania educators who evaluated each passage for readability and grade-level appropriateness.

TEST ITEM READABILITY: ALL ASSESSMENTS

Careful attention was given to the readability of the items to make certain that the assessment focus of the item did not shift based on the difficulty of reading the item. Subject areas such as mathematics or science contain many content-specific vocabulary terms. As a result, readability formulas were not used. However, wherever it was practicable and reasonable, every effort was made to keep the vocabulary one grade level below the tested grade level for non-reading tests. There was a conscious consideration made to ensure that each test question was evaluating a student's ability to build toward mastery of the mathematics standards or the science standards versus the student's reading ability. Resources used to verify the vocabulary level were the *EDL Core Vocabularies* and the *Children's Writer's Word Book.*

In addition, every test question is brought before several different committees comprised of grade-level experts in the field of mathematics education and science education. They review each question from the perspective of the students they teach, and they determine the validity of the vocabulary used and work to minimize the level of reading required.

Vocabulary was also addressed at the Bias, Fairness, and Sensitivity Review, although the focus was on how certain words or phrases may represent a possible source of bias or issue of fairness or sensitivity.

TEST DEVELOPMENT PROCESS: ALL ASSESSMENTS

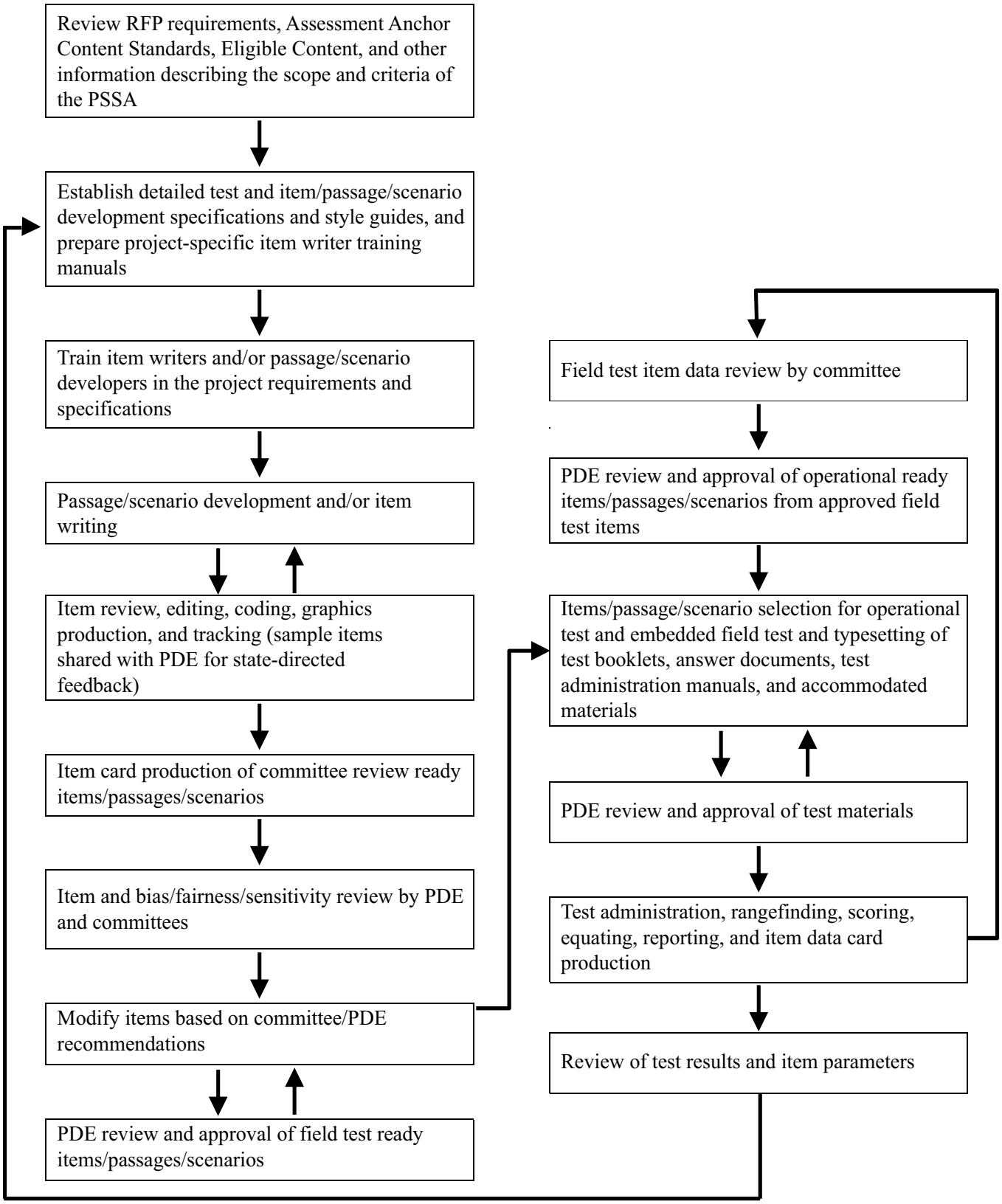
The test development process for passages, scenarios, and items followed a logical timeline, which is outlined below in Table 3–4. On the front end of the schedule, tasks were generally completed with the goal of presenting field test candidate items to committees of Pennsylvania educators. On the back-end of the schedule, all tasks lead to the field test data review.

Table 3–4. Item and Test Development Cycle and Timeline

Steps in Development Cycle	Timeline Before/After New Item Review		
Development planning	Fall	⇩	-12 to -9 months
Reading passage selection	Fall	⇩	-12 to -9 months
Item writer training	Fall/Winter	⇩	-9 months
Initial item authoring	Winter/Spring	⇩	-9 to -4 months
Internal reviews and PDE reviews	Spring/Summer	⇳	-8 to -1 month
Bias, Fairness, and Sensitivity Review	Summer/Fall	⇩	+/- 0 months
New Item Content Review	Summer/Fall	⇨	+/- 0 months
Post-review resolution and clean-up	Summer/Fall	⇩	+1 to +2 months
Build test forms	Fall	⇩	+2 to +4 months
Internal form reviews and PDE reviews	Fall/Winter	⇳	+3 to +4 months
Form printing, packaging, and shipping	Winter/Spring	⇩	+4 to +8 months
Test administration	Spring	⇩	+9 months
Material/data processing, rangefinding, and scoring	Spring/Summer	⇩	+10 to +12 months
Field Test Item Data Review	Summer	⇨	+12 months
Select operational items	Summer/Fall	⇩	+13 to +15 months

The process flowchart in Figure 3–1 illustrates the interrelationship among the steps in the process that occur in a normal year of development (i.e., when the items for field testing are primarily from new development, as opposed to being selected from an existing item bank). In addition, a detailed process table describing the item and test development processes also appears in Appendix C.

Figure 3–1. DRC Item and Test Development Process



The following paragraphs describe the processes which lead up to the operational test in a normal round of development. These processes were used to develop field-test items used as operational items for all administrations.

ITEM DEVELOPMENT PLANNING MEETING: ALL ASSESSMENTS

Prior to the start of any item development work, DRC's test development staff meets with PDE's assessment office to discuss the test development plans for the next PSSA administration, including the test blueprint, the field test plan (including development counts), procedures, timelines, etc. With a complete development cycle lasting several years (from item authoring through field test, data review, and operational usage), the initial planning begins well in advance of the anticipated administration. For the 2021 operational administration, the initial planning meeting for the item authoring process for the 2021 field test occurred in fall 2018. Item authoring began early in 2019, with the item review meetings occurring in June 2019. See Table 3–2.

ITEM WRITER TRAINING: ALL ASSESSMENTS

Item writers were selected and trained for the content areas of mathematics, English language arts, and science. Qualified writers were college graduates with teaching experience and a demonstrated base of knowledge in the content area. Many of these writers were content assessment specialists and curriculum specialists. The writers were trained individually and had previous experience in writing selected-response and constructed-response items. Prior to developing items for the PSSA, the cadre of item writers was trained with regard to the following:

- Pennsylvania Core Standards, Assessment Anchors, and Eligible Content (mathematics and ELA)
- Pennsylvania Academic Standards, Assessment Anchors, and Eligible Content (science)
- Webb's Four Levels of Cognitive Complexity: Recall, Basic Application of Skill/Concept, Strategic Thinking, and Extended Thinking
- General Scoring Guidelines for Each Content Area
- Specific and General Guidelines for Item Writing
- Bias, Fairness, and Sensitivity Guidelines
- Principles of Universal Design
- Item Quality Technical Style Guidelines
- Reference Information
- Sample Items

READING PASSAGE SELECTION

The task of searching for passages was conducted by DRC professionals with classroom experience in reading/language arts. These professionals also underwent specialized training (provided by DRC) in the characteristics of acceptable passages. Guidelines for passage selection included appropriate length, text structure, density, and vocabulary for the grade level. A judgment was also made about whether the reading level required by a particular passage was at the independent level, that is, where the average student should be able to read 90 percent of words in the text independently. Passage finders were given the charge to search for a specified number of passages for each genre. Generally, at least twice as many passages as needed were sought. Most passages acquired for the 2021 field test were authentic in that they were culled from published materials. Approval to reprint was secured from the publishers as necessary. Passages underwent an internal review by several test development content editors to judge their merit with regard to the following criteria:

- Passages have interest value for students.
- Passages are grade-appropriate in terms of text complexity, vocabulary, and language characteristics.
- Passages are free of bias, fairness, and sensitivity issues.
- Passages represent different cultures.
- Passages are from a variety of sources.
- Passages are able to stand the test of time.
- Passages are sufficiently rich to generate a variety of SR and CR items.

- Passages are complete with all necessary permissions documentation.
- Passages avoid dated subject matter unless a relevant historical context is provided.
- Passages should not require students to have extensive background knowledge in a certain discipline or area to understand a text.

Once through the internal review process, those passages deemed potentially acceptable were reviewed by the Reading Content Committee and Bias, Fairness, and Sensitivity Committee for final approval.

ITEM AUTHORING AND TRACKING: ALL ASSESSMENTS

Initially, items are generated with software-prepared PSSA Item Cards, which allows for preliminary sorting and reviewing. Although very similar, the PSSA Item Card for Multiple-Choice Items differs from the PSSA Item Card for Evidence-Based Selected-Response Items and the PSSA Item Card for Constructed-response Items in that the former has a location at the bottom of the card for comments regarding the distractors. Examples of these three cards are shown in Appendix D. In both instances a column against the right margin includes codes to identify the subject area, grade level, content categories, passage information (in the case of reading), item type, depth of knowledge (cognitive complexity), estimated difficulty, answer key (for MC items), and calculator use (for mathematics items).

All items undergoing field testing in 2021 were entered into the DRC Item Development and Educational Assessment System (IDEAS), which is a comprehensive, secure, online item banking system. It accommodates item writing, item viewing and reviewing, and item tracking and versioning. IDEAS manages the transition of an item from its developmental stage to its approval for use within a test form. The system supports an extensive item history that includes item usage within a form, item-level notes, content categories and subcategories, item statistics from both classical and Rasch item analyses, and classifications derived from analyses of differential item functioning (DIF). A sample IDEAS Data Card is presented in Appendix D.

INTERNAL REVIEWS AND PDE REVIEWS: ALL ASSESSMENTS

To ensure that the items produced were sufficient in number and adequately distributed across subcategories and levels of difficulty, item writers were informed of the required quantities of items. As items were written, an item authoring card was completed. It contained information about the item, such as grade level, content category, and subcategories. Based on the item writer's classroom teaching experience, knowledge of the content area curriculum, and cognitive demands required by the item, estimates were recorded for level of cognitive complexity and difficulty level. Items were written to provide for a range of difficulty.

As part of the item construction process, each item was reviewed by content specialists and editors at DRC. Content specialists and editors evaluated each item to make sure that it measured the intended Eligible Content and/or Assessment Anchor Content Standard. They also assessed each item to make certain that it was appropriate for the intended grade and that it provided and cued only one correct answer (MC items only). In addition, the difficulty level, depth of knowledge, graphics, language demand, and distractors were also evaluated. Other elements considered in this process included, but were not limited to, Universal Design, bias, source of challenge, grammar/punctuation, and PSSA style.

Following this internal process, items were reviewed by content specialists at the Pennsylvania Department of Education. PDE staff then consulted with DRC about any general issues or concerns (e.g., style, format, interpretation of Assessment Anchors and Eligible Content) and about edits to specific items. Following PDE's review, the items were prepared for the content review meetings conducted with Pennsylvania educators.

ITEM CONTENT REVIEW IN SUMMER 2019: ALL ASSESSMENTS

Prior to field testing, all newly-developed test items were submitted to content committees for review. The content committees consisted of Pennsylvania educators from school districts throughout the Commonwealth of Pennsylvania, some with postsecondary university affiliations. The primary responsibility of the content committee was to evaluate items with regard to quality and content classification, including grade-level appropriateness, estimated difficulty, depth of knowledge, and source of challenge. With source of challenge, items are identified where the cognitive demand is focused on an unintended content, concept, or skill (Webb, 2002). In addition, source of challenge may be attributed if the reason that an answer could be given results from a cultural bias, an inappropriate reading level, or a flawed graphic in an item, or if an item requires specialized, non-content related knowledge to answer. Source of challenge could result in a student who has mastered the intended content or skill answering the item incorrectly or a student who has not mastered the intended content or skill answering the item correctly. Committee members were asked to note any items with a source of challenge and to suggest revisions to remove the source of challenge. They also suggested revisions and made recommendations for reclassification of items. In some cases when an item was deleted, the committee suggested a replacement item and/or reviewed a suggested replacement item provided by the facilitators. The committee also reviewed the items for adherence to the Principles of Universal Design, including language demand and issues of bias, fairness, and sensitivity.

The content review was held June 18–19, 2019, for science, June 18–20, 2019, for ELA, and June 18–21, 2019, for mathematics. Committee members were approved by PDE, and PDE-approved invitations were sent to them by DRC. PDE also selected internal staff members for attendance. The meeting commenced with a welcome by PDE and DRC. This was followed by an overview of the test development process by DRC. PDE, along with DRC, also provided training on the procedures and forms to be used for item content review.

DRC content assessment specialists facilitated the reviews and were assisted by representatives of PDE. Committee members, grouped by grade level and content area, worked through and reviewed the items for quality and content, as well as for the following categories:

- Assessment Anchor Alignment (classified as Full, Partial, or No)
- Content Limits (classified as Yes or No)
- Grade-Level Appropriateness (classified as At Grade Level, Below Grade Level, or Above Grade Level)
- Difficulty Level (classified as Easy, Medium, or Hard)
- Depth of Knowledge (classified as Recall, Application, Strategic Thinking)
- Appropriate Source of Challenge (classified as Yes or No)
- Correct Answer (classified as Yes or No)
- Quality of Distractors (classified as Yes or No)
- Graphics (classified as Yes or No) in regards to appropriateness
- Appropriate Language Demand (classified as Yes or No)
- Freedom from Bias (classified as Yes or No)

The members then came to a consensus and assigned a status to each item as a group: Approved, Accepted with Revision, Move to Another Assessment Anchor or Grade, or Rejected. All comments were recorded, and a master rating sheet was completed. Committee facilitators recorded the committee consensus on the Item Review Rating Sheet. A sample form and rating criteria may be found in Appendix E.

Security was addressed by adhering to a strict set of procedures. Items in binders were distributed for committee review by number and signed for by each member on a daily basis. All attendees, with the exception of PDE staff, were required to sign a confidentiality agreement. All materials not in use at any time were stored in a locked room. Secure materials that did not need to be retained after the meetings were deposited in secure barrels and the contents shredded.

BIAS, FAIRNESS, AND SENSITIVITY REVIEWS IN JULY AND AUGUST 2019: ALL ASSESSMENTS

Prior field testing, all newly-developed test items for English language arts, mathematics, and science were also submitted to a Bias, Fairness, and Sensitivity Committee for review. This took place from July 29 to August 1, 2019. The committee's primary responsibility was to evaluate items with regard to bias, fairness, and sensitivity issues. They also made recommendations for changes to or deletion of items in order to remove the potential for issues of bias, fairness, and/or sensitivity. Included in the review were proposed reading passages. An expert, multi-ethnic committee composed of men and women was trained by a DRC test development lead to review items for bias, fairness, and sensitivity issues. Training materials included a manual developed by DRC (DRC, 2003–2016). Members of the committee also had expertise with students with special needs and English Learners. PDE staff members were also trained and participated in the review. All mathematics, English language arts, and science items were read by a cross-section of committee members. Each member noted bias, fairness, and/or sensitivity comments on tracking sheets and on the item, if needed for clarification. Committee members individually categorized any concerns as related to ageism, disability, ethnicity/culture, gender, region, religion, socioeconomic status, or stereotyping. These categories were then the framework through which recommendations for modification or rejection of items occurred during the subsequent committee consensus process. The committee then discussed each of the issues as a group and came to a consensus as to which issues should represent the view of the committee. All consensus comments were then compiled, and the suggested actions on these items were recorded and submitted to PDE. This review followed the same security procedures as outlined above, except that the materials were locked up and stored at the DRC offices in Harrisburg. Table 3–5 shows the gender and race/ethnicity composition of the members of the bias committee who reviewed the PSSA items and passages.

Table 3–5. Demographic Composition of the 2019 Bias, Fairness, and Sensitivity Committee

Member #	Gender	Race/Ethnicity	Background
1.	Male	Asian American	National Consultant (Retired Educator)
2.	Male	Asian American	Pennsylvania Educator
3.	Female	Asian American	Pennsylvania School Administrator
4.	Female	Caucasian American	Pennsylvania Educator
5.	Female	Caucasian American	Pennsylvania Educator (SPED)
6.	Female	Caucasian American	National Consultant (Educator)
7.	Male	Caucasian American	University Professor
8.	Male	Caucasian American	National Consultant (Educator)
9.	Female	African American	Pennsylvania (Retired Principal)
10.	Female	African American	Pennsylvania Educator (SPED expertise)
11.	Female	Latino	National Consultant (Community Leader, Disability Rights Activist)
Totals	7 Females, 4 Males	1 Latina, 3 Asian Americans, 5 Caucasian Americans, 2 African Americans	

The results from the Bias, Fairness, and Sensitivity Committee review of mathematics are summarized in Table 3–6.

Table 3–6. Number of Items—2019 Bias, Fairness, and Sensitivity Committee Review for Mathematics

Grade	Total items reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
3	69	69	0	0
4	71	71	0	0
5	72	70	2	0
6	72	72	0	0
7	67	67	0	0
8	68	68	0	0
Total	419	417	2	0

The results from the Bias, Fairness, and Sensitivity Committee review of science are summarized in Table 3–7.

Table 3–7. Number of Items—2019 Bias, Fairness, and Sensitivity Committee Review for Science

Grade	Total scenarios reviewed per grade	Total items reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
4	n/a	106	106	0	0
8	7	133	133	0	0
Total	7	239	239	0	0

The results from the Bias, Fairness, and Sensitivity Committee review of ELA: Reading are summarized in Table 3–8.

Table 3–8. Number of Items—2019 Bias, Fairness, and Sensitivity Committee Review for ELA: Reading

Grade	Total passages reviewed per grade	Total items or prompts reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
3	11	143	126	17	0
4	11	142	141	1	0
5	12	141	139	2	0
6	11	138	137	0	1
7	10	142	142	0	0
8	10	137	136	1	0
Total	65	843	821	21	1

CHAPTER FOUR: UNIVERSAL DESIGN PROCEDURES APPLIED IN THE PSSA TEST DEVELOPMENT PROCESS

Universally designed assessments allow participation of the widest possible range of students and contribute to valid inferences about participating students. Principles of Universal Design are based on the premise that each child in school is a part of the population to be tested and that testing results should not be affected by disability, gender, race, or English language ability (Thompson, Johnstone, & Thurlow, 2002). At every stage of the item and test development process, including the 2014 field test, procedures were employed to ensure that items and subsequent tests were designed and developed using the elements of universally designed assessments developed by the National Center for Educational Outcomes (NCEO).

Federal legislation addresses the need for universally designed assessments. The No Child Left Behind Act (Elementary and Secondary Education Act) requires that each state must "provide for the participation in [statewide] assessments of all students" [Section 1111(b)(3)(C)(ix)(I)]. Both Title 1 and IDEA regulations call for universally designed assessments that are accessible and valid for all students, including students with disabilities and English Learners. The benefits of universally designed assessments not only apply to these groups of students, but to all individuals with wide-ranging characteristics.

DRC's test development team was trained in the elements of Universal Design as it relates to developing large-scale statewide assessments. Team leaders were trained directly by NCEO, and other team members were subsequently trained by team leaders. Committees involved in content review included some members who were familiar with the unique needs of students with disabilities and English Learners. Likewise, some members of the Bias, Fairness, and Sensitivity Committee were conversant with these issues. What follows are the Universal Design guidelines followed during all stages of the item development process for the PSSA.

ELEMENTS OF UNIVERSALLY DESIGNED ASSESSMENTS

After a review of research relevant to the assessment development process and the Principles of Universal Design (Center for Universal Design, 1997), NCEO has produced seven elements of Universal Design as they apply to assessments (Thompson, Johnstone, & Thurlow, 2002). These elements served to guide PSSA item development.

- **Inclusive Assessment Population**

  The PSSA target population includes all students at the assessed grades attending Commonwealth schools. For state, district, and school accountability purposes, the target population includes all students except those who will participate in accountability through an alternate assessment.

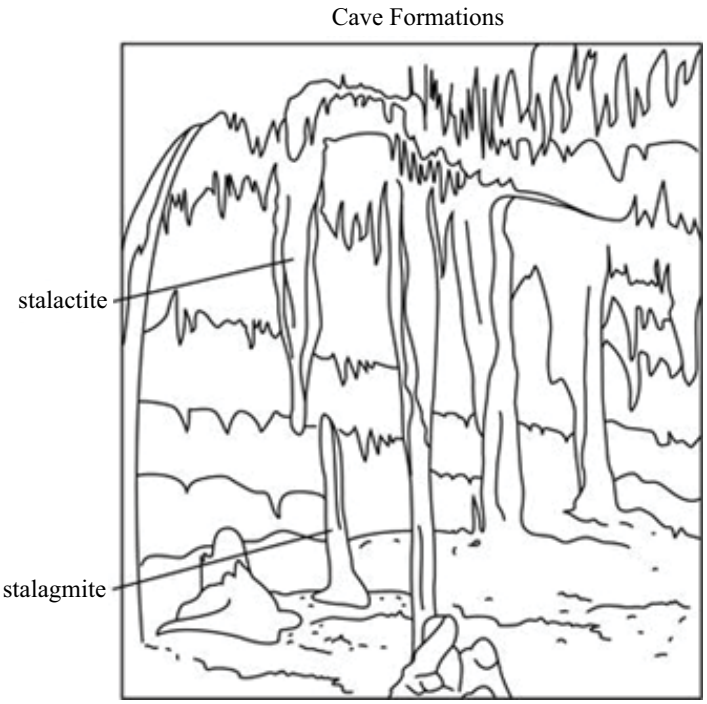
- **Precisely Defined Constructs**

  An important function of well-designed assessments is that they actually measure what they are intended to measure. The Pennsylvania Assessment Anchors and Eligible Content provided clear descriptions of the constructs to be measured by the PSSA at the assessed grade levels. Universally designed assessments must remove all non-construct-oriented cognitive, sensory, emotional, and physical barriers.

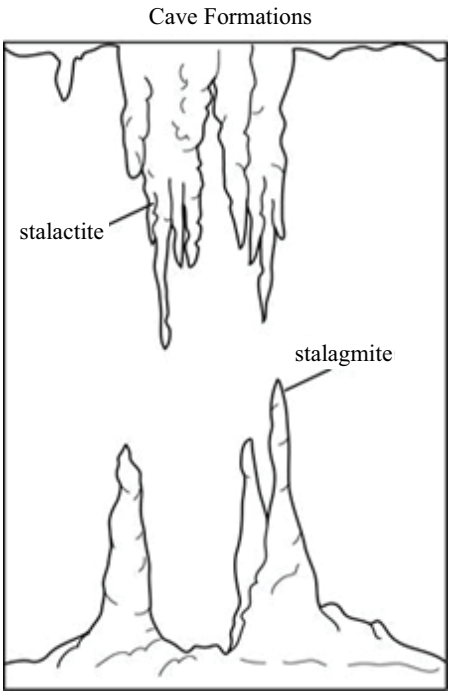
- **Accessible, Non-biased Items**

  DRC conducted both internal and external reviews of items and test specifications to ensure that they did not create barriers because of lack of sensitivity to disability, culture, or other subgroups. Items and test specifications were developed by a team of individuals who understand the varied characteristics of items that might create difficulties for any group of students. Accessibility is incorporated as a primary dimension of test specifications, so accessibility was woven into the fabric of the test rather than added after the fact. The following examples show two graphics with the same construct, example 1 being less accessible and example 2 being more accessible.

Example 1 – Less Accessible:



Example 2 – More Accessible:



- **Amenable to Accommodations**

  Even though items on universally designed assessments are accessible for most students, there are some students who continue to need accommodations. This essential element of a universally designed assessment requires that the test is compatible with accommodations and a variety of widely used adaptive equipment and assistive technology. (See the section on Assessment Accommodations later in Chapter Four.)

- **Simple, Clear, and Intuitive Instructions and Procedures**

  Assessment instructions should be easy to understand, regardless of a student's experience, knowledge, language skills, or current concentration level. Questions that are posed using complex language can invalidate the test if students cannot understand how they are expected to respond to a question. To meet this guideline, directions and questions were prepared in simple, clear, and understandable language that underwent multiple reviews.

- **Maximum Readability and Comprehensibility**

  A variety of guidelines exist to ensure the maximum readability and comprehensibility of a test. These features go beyond what is measured by readability formulas. Readability and comprehensibility are affected by many factors, including student background, sentence difficulty, text organization, and others. All of these features were considered as item text was developed.

  Plain language is a concept now being highlighted in research on assessments. Plain language has been defined as language that is straightforward and concise. The following strategies for editing text to produce plain language were used during the editing process of the new PSSA items:

  - Reduction of excessive length
  - Use of common words
  - Avoidance of ambiguous words
  - Avoidance of irregularly spelled words
  - Avoidance of proper names

- Avoidance of inconsistent naming and graphic conventions
- Avoidance of unclear signals about how to direct attention

- **Maximum Legibility**

  Legibility is the physical appearance of text, the way that the shapes of letters and numbers enable people to read text easily. Bias can result when tests contain physical features that interfere with a student's focus on or understanding of the constructs that test items are intended to assess. A style guide developed and updated annually (DRC, 2004–2013) was utilized, with PDE approval, which included dimensions of style consistent with universal design.

GUIDELINES FOR UNIVERSALLY DESIGNED ITEMS

All test items written and reviewed adhered closely to the following guidelines for Universal Design. Item writers and reviewers used a checklist during the item development process to ensure that each aspect was attended to. For more information on the checklist, see the Universal Design: All Assessments section in Chapter Three of this report.

1. **Items measure what they are intended to measure.** Item writing training included ensuring that writers and reviewers had a clear understanding of Pennsylvania's Core Standards (ELA and mathematics) or Academic Standards (science) and the Assessment Anchors. During all phases of test development, items were presented with content-standard information to ensure that each item reflected the intended Assessment Anchor. Careful consideration of the content standards was important in determining which skills involved in responding to an item were extraneous and which were relevant to what was being tested. In certain types of items an additional skill is necessary, such as the mathematics test, which requires the student to read.
2. **Items respect the diversity of the assessment population.** To develop items that avoid content that might unfairly advantage or disadvantage any student subgroup, item writers, test developers, and reviewers were trained to write and review items for issues of bias, fairness, and sensitivity. Training also included an awareness of, and sensitivity to, issues of cultural and regional diversity.
3. **Items have a clear format for text.** Decisions about how items are presented to students must allow for maximum readability for all students. Appropriate fonts and point sizes were employed with minimal use of italics, which is far less legible and is read considerably more slowly than standard typeface. Captions, footnotes, keys, and legends were at least a 12-point size.[1] Legibility was enhanced by sufficient spacing between letters, words, and lines. Blank space around paragraphs and between columns and staggered right margins were used.
4. **Stimuli and items have clear pictures and graphics.** When pictures and graphics were used, they were designed to provide essential information in a clear and uncluttered manner. Illustrations were placed directly next to the information to which they referred, and labels were used where possible. Sufficient contrast between background and text, with minimal use of shading, increased readability for students with visual impairments. Color was not used to convey important information.
5. **Items have concise and readable text.** Linguistic demands of stimuli and items can interfere with a student's ability to demonstrate knowledge of the construct being assessed. During item writing and review, the following guidelines were used.
   - Simple, clear, commonly-used words were used whenever possible.
   - Extraneous text was omitted.
   - Vocabulary and sentence complexity were appropriate for the grade level being assessed.
   - Technical terms and abbreviations were used only if they were related to the content being measured.
   - Definitions and examples were clear and understandable.
   - Idioms were avoided unless idiomatic speech was being assessed.
   - The questions to be answered were clearly identifiable.

[1] While font size follows specific requirements during online setup of an assessment, the screen resolution used at the local level can impact whether the effective font size is visible to the student.

6. **Items allow changes to format without changing meaning or difficulty.** A Braille version of the PSSA was available at each assessed grade. Attention was given to using items that allow for Braille. Specific accommodations were permitted, such as signing to a student, the use of oral presentation under specified conditions, and the use of various assistive technologies. Spanish versions of the PSSA mathematics and PSSA science tests were available for use by English Learners who would benefit from this accommodation. In the online format, permitted accommodations included text-to-speech audio, a color overlay, contrasting text options, and American Sign Language videos.
7. **The test has an overall appearance that is clean and organized.** Images, pictures, and text that may not be necessary (e.g., sidebars, overlays, callout boxes, visual crowding, shading) and that could be potentially distracting to students were avoided. Also avoided were purely decorative features that did not serve a purpose. Information was organized in a left-right, top-bottom format.

ITEM DEVELOPMENT

DRC worked closely with the Pennsylvania Department of Education to help ensure that PSSA tests complied with nationally recognized Principles of Universal Design. The implementation of accommodations on large-scale statewide assessments for students with disabilities was supported in the development of the PSSA. In addition to the Principles of Universal Design described in the Pennsylvania Technical Report, DRC applied to each content area assessment the standards for test accessibility described in *Tests Access: Making Tests Accessible for Students with Visual Impairments—A Guide for Test Publishers, Test Developers, and State Assessment Personnel* (Allman, 2004). To this end, DRC embraced the following precepts:

Test directions were carefully worded to allow for alternate responses to constructed-response (e.g., open-ended or short-answer) questions.

- During item and bias reviews, test committee members were made aware of the Principles of Universal Design and of issues that might adversely affect students with disabilities, with the goal of ensuring that PSSA tests were bias-free for all students.
- With the goal of ensuring that the PSSA tests are accessible to the widest range of diverse student populations, PDE instructed DRC to limit item types that were difficult to format in Braille and that might become distorted when published in large print. DRC was instructed to limit the following on the PSSA.
    - Mathematics: Complicated tessellations; charts or graphs that extended beyond one page
    - Reading: Graphics and illustrations that were not germane to the content presented
    - All content areas: Unnecessary boxes and framing of text, unless enclosing the text provided necessary context for the student; use of italics (limited to only when it was absolutely necessary, such as with variables)

ITEM FORMATTING

For all content areas, DRC formatted PSSA tests to maximize accessibility for all students by using text that was in a size and font style easily readable. DRC limited shading, graphics, charts, and the number of items per page so that there was sufficient white space on each page. Whenever possible, DRC ensured that graphics, pictures, diagrams, charts, and tables were positioned on the page with the associated test items. DRC used high contrast for text and background where possible to convey pertinent information. Tests were published on dull-finish paper to avoid the glare encountered on glossy paper. DRC paid close attention to the binding of the PSSA test booklets to ensure that they laid flat for two-page viewing and ease of reading and handling.

DRC ensured consistency across PSSA assessments by following these Principles of Universal Design:

- High contrast and clarity was used to convey detailed information.
- Typically, shading was avoided; when necessary for content purposes, 10 percent screens were used as the standard.
- Overlaid print on diagrams, charts, and graphs was avoided.
- Charts, graphs, diagrams, and tables were clearly labeled with titles and with short descriptions where applicable.
- Only relevant information was included in diagrams, pictures, and graphics.
- Symbols used in keys and legends were meaningful and provided reasonable representations of the topics they depicted.
- Pictures that required physical measurement were true to size.

ASSESSMENT ACCOMMODATIONS

While universally designed assessments provide for participation of the widest range of students, many students require accommodations in order to participate in the regular assessment. Clearly, the intent of providing accommodations for students is to ensure that students are not unfairly disadvantaged during testing and that the accommodations used during instruction, if appropriate, are made available as students take the test. The literature related to assessment accommodations is still evolving and often focuses on state policies regulating accommodations rather than on providing empirical data that supports the reliability and validity of the use of accommodations. On a yearly basis, the Pennsylvania Department of Education examines accommodations policies and current research to ensure that valid, acceptable accommodations are available for students. Accommodations manuals, *Accommodations Guidelines* and *Accommodations Guidelines for English Learners*, were developed for use with the 2021 PSSA. The PDE guideline manuals can be accessed by going to www.education.pa.gov.

In addition, Spanish-language versions, translated from the original English versions, were made available for both the mathematics and science PSSAs. The Spanish-translation versions are discussed in Chapter Six.

CHAPTER FIVE: EMBEDDED FIELD TEST

Every PSSA administration, field-test items are embedded in PSSA's operational forms. The main purposes of field-testing items prior to future operational use are (a) to calculate item statistics, (b) to determine whether items meet the criteria with respect to statistical properties for future operational use, and (c) to obtain item parameters for pre-equating purposes. In comparison to standalone field-testing, embedded field-testing allows for more accurate item statistics and item parameters by alleviating concerns of whether students may perceive differences between field-test and operational items. The embedded-field-test approach allows item parameters to be used for future pre-equating purposes and is based on the assumption that students should be equally motivated to take the operational and embedded field-test items, especially when they are not aware of which item is a field-test item. To minimize item context and item position effects (e.g., fatigue and lack of motivation), field-test items were interspersed within the operational sections. With this design, students have a lesser chance of knowing the field-test item positions.

The 2021 PSSA test forms contained common operational items that were identical on all forms along with embedded field-test items. In most instances, the field-test items were unique embedded items within a form; however, there were instances in which an embedded field-test item appeared on more than one form. More information on the field-test designs for all subjects can be found in the content-specific portions of Chapter Three. In general, the field test for each year represents about 50% of the following year's operational form. For example, items from the field test in 2018 represented about half of the operational form in 2019. This chapter presents information about the 2019 embedded field test, including classical item analyses, differential item functioning (DIF) analyses, identification of items for data review, and outcomes from data review.

Due to circumstances surrounding the global COVID-19 pandemic beginning in March 2020 and lasting throughout the 2020–21 school year, several processes were modified. Several of the administration conditions in 2021 were adjusted to allow for additional testing (e.g., elongated testing windows, waiving of accountability), which ultimately changed the administration conditions of the PSSA. The Pennsylvania Technical Advisory Committee (TAC) provided guidance and direction for processes that were modified. With respect to field-test processes, the 2021 field-test items are not eligible for future forms construction given that PSSA is predicated on pre-equating; therefore, item statistics for 2021 field test (FT) items are not presented in this chapter. The information provided in this chapter discusses the typical procedures for PSSA, with footnotes that outline any changes for the 2021 processes.

CLASSICAL ITEM ANALYSIS

Classical item analyses of field-test items are conducted in order to assess the quality of the field-test items and to identify items for data review. Specifically, item difficulty and item-total correlations (the relationship between answering an item correctly and total test score) are estimated for each item, for each option for selected-response (SR) items, and for each score point for multi-point items. SR items include multiple-choice (MC) items for mathematics and science and evidence-based selected-response (EBSR) items and MC items for ELA.

ITEM DIFFICULTY

At the most general level, an item's difficulty is indicated by its mean score in some specified group (e.g., grade level).

$$\bar{x} = \frac{1}{n} \cdot \sum_{i=1}^{n} x_i$$

In the mean score formula above, the individual item scores (x_i) are summed and then divided by the total number of students (n). For multiple-choice items, student scores are represented by 0s and 1s (0 = wrong, 1 = right). With 0–1 scoring, the equation above also represents the number of students correctly answering the item divided by the total number of students. Therefore, this is also the proportion correct for the item, or the p-value. In theory, p-values can range from 0.00[1] to 1.00 on the proportion-correct scale. For example, if an item has a p-value of 0.89, it means 89 percent of the students answered the item correctly. Additionally, this value might also suggest

[1] For MC items with four response options, pure random guessing would lead to an expected p-value of 0.25.

that the item was relatively easy and/or that the students who attempted the item were relatively high achievers. In other words, item difficulty and student ability are somewhat confounded.

For open-ended (OE) items, mean scores can range from the minimum possible score (usually zero) to the maximum possible score (e.g., four points in the case of some mathematics, ELA, and science items). Sometimes a pseudo *p*-value is provided for an OE item. This is done by dividing the mean item score by the maximum possible item score.

The minimum and maximum extremes of the difficulty scale are typically not seen in applied practice. However, understanding the extremes helps illustrate that relatively lower values correspond to more difficult items and that relatively higher values correspond to easier items. (As a result, some assert that this index would be more accurately referred to as the item's easiness.)

Item difficulty is an important consideration for the PSSA tests because of the range of achievement levels of students in Pennsylvania (Below Basic, Basic, Proficient, and Advanced). Items that are either very hard or very easy provide little information about student differences in achievement. However, an item answered correctly by a high percentage of students would suggest that the knowledge or skill the item taps has been mastered by most students. Conversely, an item answered incorrectly by a high percentage of students would suggest few students have mastered the knowledge or skill the item taps. On a standards-referenced test like the PSSA, a test development goal is to include a wide range of item difficulties.

ITEM DISCRIMINATION

At the most general level, item discrimination[2] indicates an item's ability to differentiate between high and low achievers. It is expected that students with high ability (i.e., those who perform well on the PSSA overall) would be more likely to answer any given PSSA item correctly, while students with low ability (i.e., those who perform poorly on the PSSA overall) would be less likely to answer the same item correctly. For the PSSA tests, Pearson's product-moment correlation coefficient between item scores and test scores is used to indicate discrimination. (As commonly practiced, DRC removes the item score from the total score such that the resulting correlations will not be spuriously high.) The correlation coefficient can range from -1.0 to +1.0. If this expectation is met (i.e., high-ability students tend to answer the item correctly while low-ability students answer the item incorrectly), the correlation between the item score and the total test score will be both positive and noticeably large in its magnitude (i.e., well above zero), meaning the item is a good discriminator between high- and low-ability students. This should be the case for all PSSA operational test items.

In summary, the correlation will be positive in value when the mean test score of the students answering the item correctly is higher than the mean test score of the students answering the item incorrectly.[3] In other words, the relationship between student test performance and item performance is expected to be consistent. However, an interaction can exist between item discrimination and item difficulty. Items answered correctly (or incorrectly) by a large proportion of examinees (i.e., the items have extreme *p*-values) can have reduced power to discriminate, and thus, can have lower correlations.

CLASSICAL ITEM ANALYSIS RESULTS

Table 5–1 provides the summary statistics for the difficulty and discrimination for the 2019 field-test items with respect to subject, grade, and item type (see Chapter Eleven for summary statistics for operational items). There is a range of *p*-values across all subjects and grade levels, where mean *p*-values were between 0.38 and 0.60 for SR items and between 0.25 and 0.50 for OE items. The mean item-total correlations were between 0.29 and 0.38 for SR items and between 0.43 and 0.71 for OE items (see Table 5–1).

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[2] As noted earlier, the discrimination index for PSSA dichotomous MC items is typically referred to as the point-biserial correlation coefficient. For OE items, the term item-test correlation is sometimes used.

[3] It is legitimate to view the point-biserial correlation as a standardized mean difference. A positive value indicates that students who chose that response had a higher mean score than the average student; a negative value indicates that students who chose that response had a lower-than-average mean score.

Table 5–1. Summary Statistics of Difficulty and Discrimination by Subject, Grade and Item Type

Subject	Grade	Item Type	N	Mean *p*-val.	Min *p*-val.	Median *p*-val.	Max *p*-val.	Mean I-T Corr.	Min I-T Corr.	Median I-T Corr.	Max I-T Corr.
Mathematics	3	OE	8	0.46	0.24	0.43	0.74	0.67	0.60	0.67	0.75
Mathematics	3	SR	54	0.49	0.12	0.49	0.82	0.36	-0.13	0.40	0.59
Mathematics	4	OE	9	0.30	0.17	0.32	0.38	0.66	0.48	0.70	0.76
Mathematics	4	SR	54	0.42	0.17	0.42	0.81	0.29	-0.14	0.35	0.52
Mathematics	5	OE	9	0.29	0.21	0.31	0.37	0.63	0.53	0.64	0.69
Mathematics	5	SR	54	0.38	0.12	0.36	0.75	0.29	-0.06	0.30	0.53
Mathematics	6	OE	9	0.26	0.12	0.27	0.36	0.67	0.56	0.68	0.74
Mathematics	6	SR	54	0.48	0.16	0.47	0.80	0.37	0.04	0.41	0.56
Mathematics	7	OE	9	0.25	0.16	0.23	0.34	0.71	0.59	0.71	0.77
Mathematics	7	SR	54	0.46	0.17	0.46	0.75	0.35	-0.04	0.39	0.56
Mathematics	8	OE	8	0.30	0.15	0.31	0.42	0.70	0.66	0.70	0.76
Mathematics	8	SR	54	0.44	0.19	0.45	0.68	0.34	0.00	0.38	0.54
ELA	3	OE	9	0.47	0.39	0.48	0.62	0.56	0.50	0.57	0.62
ELA	3	SR	108	0.57	0.12	0.57	0.87	0.38	-0.06	0.39	0.65
ELA	4	OE	9	0.47	0.44	0.47	0.53	0.59	0.56	0.59	0.62
ELA	4	SR	108	0.57	0.19	0.57	0.92	0.37	-0.11	0.40	0.62
ELA	5	OE	9	0.48	0.44	0.47	0.51	0.59	0.54	0.59	0.63
ELA	5	SR	108	0.60	0.18	0.61	0.92	0.38	0.03	0.39	0.62
ELA	6	OE	9	0.50	0.46	0.51	0.53	0.60	0.56	0.60	0.63
ELA	6	SR	108	0.57	0.15	0.60	0.88	0.37	-0.03	0.38	0.64
ELA	7	OE	9	0.50	0.44	0.51	0.54	0.57	0.54	0.58	0.59
ELA	7	SR	108	0.57	0.13	0.60	0.88	0.35	-0.16	0.38	0.64
ELA	8	OE	9	0.50	0.47	0.51	0.53	0.61	0.57	0.61	0.64
ELA	8	SR	108	0.57	0.19	0.57	0.91	0.36	-0.04	0.37	0.65
Science	4	OE	12	0.39	0.16	0.35	0.73	0.43	0.30	0.42	0.64
Science	4	SR	72	0.57	0.23	0.61	0.85	0.35	0.04	0.39	0.52
Science	8	OE	12	0.42	0.01	0.39	0.85	0.43	0.17	0.45	0.57
Science	8	SR	96	0.53	0.21	0.51	0.84	0.36	0.00	0.37	0.54

Note. I-T Corr. is the item-test score correlation.

DIFFERENTIAL ITEM FUNCTIONING

Differential item functioning (DIF) occurs when examinees with the same ability level but different group memberships do not have the same probability of answering an item correctly. When the probability differs, it is important for content experts to review the relevant items for any potential *item bias*. It is important to note that, as a statistical concept, DIF is different from item bias. DIF detects a difference in performance after controlling for student ability, whereas bias is a content issue that can arise in situations where something other than the intended construct of measurement affects the probability of a correct response for a particular group. For example, bias is likely present when an item presents negative group stereotypes that draw the attention of the examinee, uses non-construct-relevant language that is more familiar to one subpopulation than to another, or is presented in a non-construct-relevant format that disadvantages certain learning styles. While the source of item bias can be plain to trained judges, DIF may have no clear cause. In such cases, something other than bias, including construct-relevant content, may be explaining the differential performance on the item. Flagging items with DIF provides an opportunity for reviewers to assess and correct potential bias, but DIF does not necessarily mean that bias is present.

LIMITATIONS OF STATISTICAL DETECTION

No statistical procedure should be used as a substitute for rigorous, hands-on reviews by content and bias specialists. The statistical results can help organize the review so the effort is concentrated on the most problematic cases. Further, no items should be automatically rejected simply because a statistical method flagged them or accepted because they were not flagged.

Statistical detection of DIF is also not an exact science. There have been a variety of methods proposed for detecting DIF, but no single statistic can be considered either necessary or sufficient. Different methods are more or less successful but can also detect DIF at different rates. No analysis can guarantee that a test is free of bias, but thoughtful item development and field-test analysis can prevent potentially biased items from unfairly impacting student scores.

A fundamental shortcoming of all statistical methods used in DIF evaluation is that all are intrinsic to the test being evaluated. If a test is unbiased overall but contains one or two DIF items, any method can identify DIF. However, because all current methods use total test performance as the measure on which to control for group abilities, a test with all DIF items will not be able to separate DIF effects from differences in achievement on the test.

MANTEL-HAENSZEL PROCEDURE FOR DIFFERENTIAL ITEM FUNCTIONING

For MC items, the Mantel-Haenszel procedure (Mantel & Haenszel, 1959) for detecting DIF is a commonly used technique in educational testing. It does not depend on the application or the fit of any specific measurement model. However, it does have significant philosophical overlap with the Rasch model since it uses a test's total score for the analysis.

The procedure as implemented by DRC contrasts a focal group with a reference group. While it makes no practical difference in the analysis which group is defined as the focal group, the group most apt to be disadvantaged by a biased measurement is typically defined as the focal group. In these analyses, the focal groups were female for gender-based DIF and Black for ethnicity-based DIF; reference groups were male and White, respectively. The Mantel-Haenszel (MH) statistic for each item is computed from a contingency table. It has two groups (focal and reference) and two outcomes (right and wrong). The ability groups are defined using the test score distribution for the total examinee population.

The basic MH statistic is a single degree of freedom chi-square that compares the observed number in each cell to the expected number. The expected counts are computed to ensure that the analysis is not confounded with differences in the achievement level of the two groups.

For OE items, a comparable statistic is computed based on the standardized mean difference (SMD) (Dorans, Schmitt, & Bleistein, 1992), which is computed as the differences in mean scores for the focal and reference groups if both groups had the same score distribution.

To assist the review committees in interpreting the analyses, the items are assigned a severity code (A, B, or C) based on the magnitude of the MH statistic, and a direction (minus or plus) based on the direction of the MH statistic. Items classified as A+ or A- have little or no statistical indication of DIF. Items classified as B+ or B- have some indication of DIF but may be judged to be acceptable for future use. Items classified as C+ or C- have strong evidence of DIF and should be reviewed and possibly rejected from the eligible item pool. The plus sign indicates that the item favors the focal group and a minus sign indicates that the item favors the reference group.

RESULTS AND OBSERVATIONS

DIF analyses were conducted on the 2019 field-test items. The number of items from each subject and grade that were assigned to each severity code is shown in Table 5–2 for SR items and Table 5–3 for OE/TDA items. Few SR items were identified as having moderate (B) or severe (C) DIF for gender or ethnicity. The MC results indicate that there is a balance in the number of items with moderate DIF favoring males and females; however, these results do not hold true for ethnicity. Data are not presented for 2021 given the circumstances surrounding the COVID-19 pandemic.

Table 5–2A. DIF Summary for Male/Female—SR Items*

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Mathematics	3	20	33	0	1	0	0	54
Mathematics	4	25	29	0	0	0	0	54
Mathematics	5	27	27	0	0	0	0	54
Mathematics	6	29	24	1	0	0	0	54
Mathematics	7	31	21	2	0	0	0	54
Mathematics	8	23	31	0	0	0	0	54
ELA	3	57	50	1	0	0	0	108
ELA	4	38	66	1	3	0	0	108
ELA	5	69	37	2	0	0	0	108
ELA	6	70	35	1	1	0	1	108
ELA	7	54	51	1	1	0	1	108
ELA	8	58	44	2	4	0	0	108
Science	4	48	22	1	1	0	0	72
Science	8	48	45	3	0	0	0	96

*SR items include multiple-choice items for mathematics and science and multiple-choice and evidence-based selected-response items for ELA.

Table 5–2B. DIF Summary for White/Black—SR Items*

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Mathematics	3	19	35	0	0	0	0	54
Mathematics	4	23	31	0	0	0	0	54
Mathematics	5	23	31	0	0	0	0	54
Mathematics	6	15	37	0	2	0	0	54
Mathematics	7	22	32	0	0	0	0	54
Mathematics	8	24	30	0	0	0	0	54
ELA	3	36	71	0	1	0	0	108
ELA	4	28	77	0	3	0	0	108
ELA	5	28	78	0	2	0	0	108
ELA	6	38	69	0	1	0	0	108
ELA	7	28	76	0	4	0	0	108
ELA	8	41	63	0	4	0	0	108
Science	4	13	57	0	2	0	0	72
Science	8	33	60	0	2	0	1	96

*SR items include multiple-choice items for mathematics and science and multiple-choice and evidence-based selected-response items for ELA.

Table 5–3A. DIF Summary Male/Female—OE Items*

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Mathematics	3	5	2	1	0	0	0	8
Mathematics	4	7	2	0	0	0	0	9
Mathematics	5	7	1	1	0	0	0	9
Mathematics	6	7	2	0	0	0	0	9
Mathematics	7	5	4	0	0	0	0	9
Mathematics	8	3	4	1	0	0	0	8
ELA	3	8	0	1	0	0	0	9
ELA	4	6	0	3	0	0	0	9
ELA	5	3	0	5	0	1	0	9
ELA	6	3	0	5	0	1	0	9
ELA	7	2	0	5	0	2	0	9
ELA	8	1	0	4	0	4	0	9
Science	4	10	1	1	0	0	0	12
Science	8	7	5	0	0	0	0	12

*OE items include open-ended items for mathematics, science, and ELA grade 3 and text-dependent analysis items for ELA grades 4–8.

Table 5–3B. DIF Summary White/Black—OE Items*

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Mathematics	3	0	4	0	1	0	0	8
Mathematics	4	1	7	0	0	0	0	9
Mathematics	5	0	6	0	1	0	0	9
Mathematics	6	1	2	0	2	0	0	9
Mathematics	7	0	3	0	0	0	1	9
Mathematics	8	1	2	0	0	0	0	8
ELA	3	3	6	0	0	0	0	9
ELA	4	1	7	0	1	0	0	9
ELA	5	0	7	0	2	0	0	9
ELA	6	2	5	0	2	0	0	9
ELA	7	1	6	0	2	0	0	9
ELA	8	4	5	0	0	0	0	9
Science	4	2	4	0	0	0	0	12
Science	8	1	3	0	0	0	0	12

*OE items include open-ended items for mathematics, science, and ELA grade 3 and text-dependent analysis items for ELA grades 4–8.

CRITERIA FOR IDENTIFYING ITEMS

As previously discussed, all field-test items were analyzed statistically using conventional item-analysis methods. For SR items, classical item statistics included the corrected point-biserial correlation (Pt. Bis.) for the correct and incorrect responses (distractors), percent correct (*p*-value), and the percent responding to incorrect responses. For constructed-response (CR) items (including open-ended questions, short-answer questions, and text-dependent analysis questions), the statistical indices included the item-test correlation, the point-biserial correlation for each score point, the percent of responses at each score point, and the percent of non-scoreable responses.

In general, more capable students are expected to respond correctly to easy items and less capable students are expected to respond incorrectly to difficult items. If either of these situations does not occur, the item will be reviewed by DRC test development staff and committees of Pennsylvania educators to determine the nature of the problem and the characteristics of the students affected. The primary way of detecting such conditions is through the point-biserial correlation coefficient for dichotomously scored items (MC) and the item-total correlation for polytomously scored items (EBSR and CR). In each case the statistic will be positive if the total test mean score is higher for the students who respond correctly to MC items (or attain a higher CR item score) and negative when the reverse is true.

The following set of criteria was used to identify items for additional review.

For an MC item to be flagged, the criteria included any of the following:

- Percent correct (*p*-value) less than 0.3 or greater than 0.9
- Point-biserial correlation for the correct response less than 0.25 for ELA and mathematics and less than 0.20 for science
- Point-biserial correlation for any incorrect response greater than 0.0
- Percent responding to any incorrect responses greater than the *p*-value
- Gender or ethnic DIF code of either C- or C+

For an EBSR item to be flagged, the criteria included any of the following:

- *p*-value less than 0.3 or greater than 0.9
- Part One point-biserial correlation for the correct response less than 0.25
- Part One point-biserial correlation for any incorrect response greater than 0.0
- Part One percent responding to any incorrect responses greater than Part One *p*-value
- Gender or ethnic DIF code of either C- or C+
- Score proportion less than 0.05

For a CR item to be flagged, the criteria included any of the following:

- *p*-value less than 0.3 or greater than 0.9 for ELA and mathematics and *p*-value less than 0.1 and greater than 0.9 for science
- Score proportion less than 0.05
- Gender or ethnic DIF code of C- or C+

REVIEW OF ITEMS WITH DATA

In the preceding section, it was stated that test development content-area specialists used certain statistics from classical item analyses and DIF analyses of the 2019 field test to identify items for review by Pennsylvania educators. Items not identified for this review had good statistical characteristics and, consequently, were entered into the eligible pool for future item selection. Likewise, items of extremely poor statistical quality were regarded as unacceptable and needed no additional review. DRC content-area test development specialists and DRC psychometric specialists identified the remaining items for further review by a committee of Pennsylvania educators. The intent was to capture all items that needed a closer review; thus, the criteria employed tended to over-identify rather than under-identify items.

The review of the items with associated data was conducted by over 50 Pennsylvania educators (teachers and PDE staff) broken out into subject-area and/or grade-level or grade-span committees. The review for mathematics and ELA grades 3–8 and science grades 4 and 8 took place in July 2019. In these sessions, committee members were first trained by a representative from DRC's psychometrics staff with regard to the statistical indices used in item evaluation. This was followed by a discussion with examples concerning reasons that an item might be retained regardless of the statistics. The committee review process involved a brief exploration of possible reasons for the statistical profile of an item (e.g., possible bias, grade appropriateness, instructional issues) and a decision regarding acceptance. DRC content-area test development specialists facilitated the review of the items. Each committee reviewed the pool of field-tested items and made recommendations on each item and/or scenario/passage. Further discussion on how this information was used is covered in Chapter Six. Data review details and results are shown in Table 5–4.

Table 5–4. 2019 Data Review Committee Results

Subject	Grade	Total No. of Items	Reviewed SR*	Reviewed OE*	Reviewed DIF only	Reviewed Total	Reviewed % of Total	No. of Items Rejected by Committee	% of Items Rejected by Committee	No. of Items Classified as Rejected **	% of Items Classified as Rejected **
Mathematics	3	63	15	6	0	21	33%	8	13%	9	14%
Mathematics	4	63	24	8	0	32	51%	10	16%	10	16%
Mathematics	5	63	29	8	0	37	59%	13	21%	13	21%
Mathematics	6	63	17	6	0	23	37%	8	13%	8	13%
Mathematics	7	63	18	8	0	26	41%	8	13%	8	13%
Mathematics	8	63	16	5	0	21	33%	8	13%	9	14%
ELA	3	111	15	1	0	16	14%	9	8%	9	8%
ELA	4	111	27	9	0	36	32%	8	7%	8	7%
ELA	5	111	24	9	0	33	30%	7	6%	7	6%
ELA	6	111	25	9	1	34	31%	8	7%	8	7%
ELA	7	111	25	9	1	34	31%	12	11%	12	11%
ELA	8	111	26	3	0	29	26%	10	9%	10	9%
Science	4	108	13	1	0	14	13%	8	7%	8	7%
Science	8	132	18	2	1	20	15%	1	1%	1	1%
Totals	N/A	1284	292	84	3	376	29%	118	9%	120	9%

*SR includes multiple-choice items and EBSR items; OE includes open-ended items for mathematics, science, and ELA grade 3 and text-dependent analysis items for ELA grades 4–8.
**Items classified as “Rejected” from 2019 field test (all sources: data review committee, PDE, and DRC)

CHAPTER SIX: OPERATIONAL FORMS CONSTRUCTION FOR 2021

FINAL SELECTION OF ITEMS AND 2021 PSSA FORMS CONSTRUCTION

When the final selection of items for the operational 2021 test was ready to begin, the candidate items that emerged, including those from the spring 2019 field test, had undergone multiple reviews, including:

- Reviews by DRC content-area test development specialists and curriculum specialists to ensure that all items were properly aligned with content standards
- Formal bias, fairness, and sensitivity review by the Bias, Fairness, and Sensitivity Committee consisting of a multi-ethnic group of men and women having expertise with students with special needs and English Learners
- Formal review by the content committees consisting of Pennsylvania educators, including teachers as well as district personnel
- PDE review
- Item data review by members of the PDE subject-area teacher committees

The item and bias reviews are detailed in Chapter Three. The results of the data review are summarized in Chapter Five.

The end product of the above process was an item status designation for each field-tested item. All items having an item status code of Acceptable/Active were candidates to be selected for the 2021 PSSA. To have an item status code of Acceptable/Active meant that the item met the following criteria:

- Appropriately aligned with its designated Assessment Anchor Content Standard (Assessment Anchor) and sub-classifications
- Acceptable in terms of bias/fairness/sensitivity issues, including differential item functioning (for gender and ethnicity)
- Acceptable in terms of psychometric standards, including a special review of flagged items

Next, all relevant information regarding the acceptable items, including associated graphics, was entered into the item banking system known as IDEAS (Item Development and Education Assessment System). From IDEAS and other database sources, Microsoft Excel files were created for each content area at each grade. These files contained all relevant content codes and statistical characteristics. IDEAS also created an item card displaying each acceptable item, any associated graphic, and all relevant content codes and item statistics for use by the content-area test development specialists and psychometric services staff.

DRC test development specialists reviewed the test design blueprint, including the number of items per strand for each content-area test. Special considerations, such as calculator use and manipulatives, were noted.

Psychometricians provided content-area test development specialists with an overview of the psychometric guidelines for forms construction, including guidelines for selecting linking items to link to previous test forms.

Senior DRC content-area test development specialists reviewed all items in the operational pool to make an initial selection for common (core) and equating block positions according to test blueprint requirements and psychometric guidelines. Changes to items were not encouraged since alterations could affect how an item might perform on subsequent testing.

For the common items, this meant that the combination of SR and CR items would yield the appropriate range of points while tapping an appropriate variety of the Assessment Anchors and related Eligible Content within each Reporting Category. Items selected in the first round were examined with regard to how well they went together as a set. Of particular concern were the following:

- One item providing cues as to the correct answer to another item
- Context redundancy (e.g., mathematics items with a sports context)

- Presence of clang (distractors not unique from one another)
- Diversity of names and artwork for gender and ethnicity

The first round of items was then evaluated for statistical features such as an acceptable point-biserial correlation and whether correct answers were distributed equally—that is, whether approximately 25 percent of correct answers appeared in each of the four possible positions (A, B, C, or D). Selected items that were deemed psychometrically less advantageous in contrast to the overall psychometric characteristics of the core resulted in a search by the senior reviewer for suitable replacements. At this point, the second round of items was analyzed. If necessary, this iterative process between content-based selections and statistical properties continued in an effort to reach the best possible balance.

In the case of the core-to-core linking items, content considerations remained relevant, together with statistical features, such as an acceptable point-biserial correlation and whether the items, as a collection, had an average logit value and a test characteristic curve approximating that of the previous year.

The process for selecting equating block items was slightly different. The chief consideration was that items in equating block positions of the various forms mirrored the psychometric considerations of the core. In some cases, the selection of equating block items also required multiple rounds of selection and evaluation until the best possible balance of content and statistical properties was obtained. The content-area test development specialist's task was to distribute these items in equating block positions across the forms so that the MC items assigned to a particular form would go well with one another and reflect the same content and statistical considerations as previously outlined. Additionally, the forms needed to display similar difficulty levels.

Once the recommendations were finalized for the core items, core-to-core linking items, and equating block items, they were submitted to PDE for review. Department staff provided feedback, which could be in the form of approval or recommendations for replacing certain items. Any item replacement was accomplished by the collective effort of the test development specialists, psychometricians, and PDE staff until final PDE approval was given. Once final PDE approval of the forms was given, PDE also participated in the construction and review of scrambled forms.

SPECIAL FORMS USED IN THE 2021 PSSA

SPANISH TRANSLATION OF THE MATHEMATICS AND SCIENCE ASSESSMENTS

Starting with the 2005 assessment, school personnel had the option of allowing Spanish-speaking students who had been enrolled in schools in the United States for less than three years to respond to a Spanish version of the PSSA for mathematics. In 2009, a Spanish version was also added for the science component of the PSSA. The original translation of the items and the *Directions for Administration Manual* was completed by Second Language Testing, Incorporated (SLTI). SLTI used translators with varying cultural and regional backgrounds to create the Spanish versions of the mathematics and science assessments. The translations were then reviewed and verified by DRC's internal Spanish group. As part of the internal review, a Spanish style guide is maintained to document Spanish word choice from administration to administration and across grades within an administration. After discussions with PDE and SLTI, the mathematics assessment for Grades 4–8 and the science assessment for Grades 4 and 8 were designed with a side-by-side format, that is, the English text and Spanish-translated text were printed on facing pages. The Spanish-translated text was on the left-hand side of the page and the original English text on the right-hand (facing) side.

The mathematics answer booklets for Grades 4–8 and the science answer booklets for Grades 4 and 8 were also presented in Spanish and English. In the case of mathematics, each open-ended item covered a total of four pages in the answer booklet. In the case of science, each open-ended item covered either two or four pages in the answer booklet, depending on the length of the original English-language item. In the case of four-page open-ended items, the first set of facing pages of an item was presented in Spanish. The second set of facing pages of an item was presented in the original English. Those students using this accommodated version of the mathematics assessment could write their answers on either the English language pages or on the translated Spanish language pages. Their answers could be written in English, Spanish, or a combination of both Spanish and English as all pages were evaluated and scored, and the highest possible scores from those combinations recorded for the students.

The mathematics scannable booklets for Grade 3 were presented in Spanish and English using a modified over/under format, with the Spanish presented directly above or to the left of the English. To assist the presentation of the two languages on the same page, the English portion was presented in italics and in a smaller font. Those students using this accommodated version of the mathematics assessment could also write their answers in English, Spanish, or a combination of both Spanish and English, with the highest possible scores from those combinations recorded for the students.

For the current Spanish forms, DRC utilized an outside vendor (Victory Productions) for translations of PSSA mathematics and science items by using the style guide setup and continuously used since 2005. Once Victory Productions has completed the initial translation of the entire set of materials, all translated material and the original English version are then sent to Language Services Consultants (LSC) for a third-party verification of the translation. LSC's review helps to ensure the equivalence of the original and translated assessments. When completed, the verified materials, along with any recommendations or questions, are passed back to DRC for processing.

Once Language Services Consultants (LSC) has adjudicated the initial translation completed by Victory Productions, the translated text is returned to DRC for final processing and typesetting. DRC has a Spanish translation team comprised of native Spanish-speaking translators and native English-speakers with formal education in Spanish. DRC's Spanish Team is supported by all content areas and their respective content leads in order to maintain the integrity of each translated item or passage. DRC conducts a minimum of five separate reads during the final preparation of the translated material. These reads include editorial reviews of items and forms and are used to polish language and eliminate any typographical errors.

An initial reading of items and passages is conducted individually by each member of the team. The team then reads, discusses, and edits the items as a group before sending the material to be entered into the item bank that houses Pennsylvania's test items (IDEAS). As part of the discussion and editing process, DRC's Spanish Team may also conduct an informational investigation, validating concepts within the translation related to specialized topics. Once the data entry is completed, DRC's Spanish Team confirms that the correct edits have been made and the items are read once again. After all newly-translated items have been edited and approved in this round of review, a PDF of the entire test form is produced. The Spanish Team then conducts a group review of the complete test form, coinciding with an independent review outside the team, making any edits that are necessary. Within each review, checks are performed to ensure accuracy of semantics, lexicon, syntax, and grammar.

Internal reviewers are instructed to address a number of issues when reviewing a translation, including the following:

- Are the stimulus and the item translated correctly?
- Are there inappropriate omissions in the translation?
- Are there inappropriate additions in the translation?
- Is there any wording that may not be comprehensible to speakers of a particular dialect? If so, the reviewer will enter an alternate wording in parentheses.
- Are standard item writing guidelines followed in the translated version?
- Are any options less or more attractive than in the English version? If so, the reviewer will suggest an alternate wording.
- Is the content of any item culturally insensitive or offensive? Is a substitute item required? Why?
- Is the wording of any item culturally insensitive or offensive?
- Is the language of the translation at the same register as the original?
- Is the language of the translation at an appropriate register for the grade level of the examinee?

Instructions for the appropriate use of these special forms are detailed in accommodation manuals titled *2021 Accommodations Guidelines* and *Accommodations Guidelines for English Learners.*

AUDIO

For students requiring an auditory presentation accommodation, a text-to-speech synthesizer is available to students taking the online mode of test delivery. For each operational exam, one form was selected for the creation of the audio version. Special scripts are crafted, writing out each item, distractor, graphic, and directions to utilize the rich, synthesized voice features while accounting for specific nuances of the intended sounds. The resulting audio information is provided to students receiving the accommodation. Since additional software is required to generate the vocalization from the scripted text and since headphones are required to minimize disruptions within a computer lab setting, local school personnel generally must preplan to use the audio version in order to ensure that the student has a properly equipped computer and a proper setting.

BRAILLE, LARGE PRINT, AND VIDEO SIGN LANGUAGE

Students were able to respond to test materials that were available in Braille, large print, or Video Sign Language. At each grade level assessed, one form was selected for the creation of these accommodations.

The large print edition is a replication of the standard print form; 8.5×11 standard form is enlarged to an 11×17 page format to achieve a font size of approximately 18-point. A side-by-side verification is completed between the standard print and large print forms to ensure that the integrity of all formatting and graphics is maintained on the large print forms.

For Braille production, the final selected form is delivered to American Printing House for the Blind (APH) via APH's secure website. APH ensures that all tests are translated correctly and accurately by using a translator and a validator. After all Braille booklets are printed, APH conducts a quality assurance step to ensure all items are bound in order and directions are included. All Braille booklets are shipped from APH to DRC via UPS.

DRC applies a security barcode to each large print and Braille booklet for purposes of shipping, distributing, and collecting the materials. This security barcode is used with DRC's Operations Materials Management System (Ops MMS).

School personnel were directed to transcribe all student answers (SR and CR) into scannable answer documents exactly as the student responded. No alterations or corrections of student work were permitted, and the transcribed answer document had to have the same form designation as the Braille and large print version.

DRC utilizes Victory Productions for the production of Sign Language Videos. The items are passed to Victory Productions via a secure ftp site. Two to three different interpreters are used to interpret and validate the translations during video recording. After the interpretations are recorded and returned to DRC via a secure ftp site, DRC loads these videos in the online test engine. When school personnel assign the specific sign language accommodation, the student will be able to play each video next to the item.

SUMMARY OF THE TRANSLATION VERIFICATION STUDY BY SLTI OF THE 2009 PSSA SCIENCE ASSESSMENTS

From November 2009 through January 2010 SLTI conducted a translation verification study of the 2009 PSSA Science Assessments titled "Translation Verification Study of the 2009 Pennsylvania System of School Assessment (PSSA) of Science for Grades 4, 8, and 11." In this study, the appropriateness of the transadaptation of the PSSA Science Assessments into Spanish was investigated. Three independent reviewers, specialists in bilingual science education and science translation, determined the appropriateness of each translated or adapted item. The purpose of the report was to conduct qualitative research on the comparability of the Spanish and English versions of the PSSA Science Assessments.

The report of this study by Second Language Testing, Incorporated described the assessments, the purpose of the translation verification study, the reviewers, the translation verification process, and the translation verification results. A total of 185 items covering tests at Grades 4 (63 items), 8 (63 items), and 11 (59 items) were reviewed. The study showed that none of the 185 reviewed items were judged by the reviewers to be inappropriately translated or adapted into Spanish. The study did provide suggestions for nine items that were judged appropriate but whose translation could still be improved in the event the items were used again.

Overall, the report concluded that the transadaptation of the 2009 PSSA Science Assessments was clearly appropriate. Since both the English and Spanish versions are comparable in the sense that both versions assess the same content, use the same format, have equal numbers of items, follow the same test administration and scoring procedures, and are used and interpreted in the same way, the study concluded that the English and Spanish versions of the science assessments measured the same content in two different languages. Thus, the study indicated that both language versions showed the same degree of alignment and the same depth-of-knowledge described in the Assessment Anchors alignment study. As a result, the report concluded that there was no need to conduct a separate alignment study of the Spanish version of the PSSA Science Assessments.

Beyond the findings presented in the study, the report recommended that appropriate quantitative analyses be carried out on construct equivalence. Unless such analyses clearly demonstrate a lack of equivalence, it is appropriate to assume that there is no need to conduct a separate linking study or a separate standard setting study for the Spanish versions of the tests. Both versions can be scored on the same scale, and scores on each version have the same meaning in terms of student mastery of the Science Assessment Anchors as defined by the Eligible Content.

The full report can be obtained by request from the Pennsylvania Department of Education.

SUMMARY OF COMPARABILITY REPORT FROM SIRECI PSYCHOMETRIC SERVICES

In addition to the study conducted by Second Language Testing, Incorporated, a second comparability study of the 2009 PSSA Spanish translations for science was completed in February 2010 by Sireci Psychometric Services. The report of the study is titled “Evaluating the Comparability of English and English-Spanish Science Tests from the Pennsylvania System of School Assessment.”

In this study, the data from the English language and English-Spanish dual-language Pennsylvania science tests for Grades 4, 8, and 11 were analyzed. These analyses were designed to evaluate the consistency of the structure of the data and the consistency of item functioning across the English and Spanish versions of these assessments using various psychometrics methods.

The full report can be obtained by request from the Pennsylvania Department of Education.

CHAPTER SEVEN: TEST ADMINISTRATION PROCEDURES

TEST SESSIONS, TEST SECTIONS, TEST TIMING, AND TEST LAYOUT

Some assessments utilized separate test booklets and answer booklets. An answer booklet was used to respond to the selected-response items (i.e., multiple-choice items and evidence-based selected-response items) and constructed-response items (i.e., open-ended items, short-answer items, and text-dependent analysis items,) and to collect demographic information. The selected-response items and all stimulus-text were placed within the test booklet. Other assessments used a single consumable booklet. When a single scannable answer booklet was utilized, the contents of the answer booklet and the test booklet were combined into one integrated booklet.

Table 7–1. Booklet Type by Administration

Assessment	Grade	Booklet Type
ELA	3	Single Consumable Booklet
ELA	4	Test Booklet and Answer Document
ELA	5	Test Booklet and Answer Document
ELA	6	Test Booklet and Answer Document
ELA	7	Test Booklet and Answer Document
ELA	8	Test Booklet and Answer Document
Mathematics	3	Single Consumable Booklet
Mathematics	4	Test Booklet and Answer Document
Mathematics	5	Test Booklet and Answer Document
Mathematics	6	Test Booklet and Answer Document
Mathematics	7	Test Booklet and Answer Document
Mathematics	8	Test Booklet and Answer Document
Science	4	Test Booklet and Answer Document
Science	8	Test Booklet and Answer Document

Generally, a separate test booklet and answer booklet were used to separate the selected-response items and constructed-response items. For the Grade 3 mathematics and ELA assessments, a single booklet was used for each assessment to accommodate the younger age of the students.

The number of sections for the 2021 operational assessment varied based on the content area of the assessment. The ELA assessments consisted of three sections. The mathematics and science assessments consisted of two sections. See also Appendix G.

Table 7–2. PSSA Test Section Information

Content Area	No. of Sections per Form
ELA	3
Mathematics	2
Science	2

Table 7–3. PSSA Testing Load and Duration by Subject by Grade

Assessment	Grade	Total No. of SR Items per Form per Administration	Total No. of CR Items per Form per Administration	Total Estimated Administration Time per Form (in Minutes)
ELA	3	52	3	134 to 166
ELA	4	57	2	225 to 246
ELA	5	57	2	225 to 246
ELA	6	57	2	225 to 246
ELA	7	57	2	225 to 246
ELA	8	57	2	225 to 246
Mathematics	3	48	4	156
Mathematics	4	48	4	156
Mathematics	5	48	4	156
Mathematics	6	48	4	156
Mathematics	7	48	4	156
Mathematics	8	48	4	156
Science	4	46	6	76
Science	8	48	6	90

Table 7–4. PSSA Testing Load and Duration by Grade by Subject

Grade	Content	Total No. of Items per Form per Administration	Total Estimated Administration Time per Form (in Minutes)	Total No. of Items per Student	Total Estimated Administration Time per Student (in Minutes)
3	ELA	55	134 to 166	107	290 to 322
3	Mathematics	52	156	107	290 to 322
4	ELA	59	225 to 246	163	457 to 478
4	Mathematics	52	156	163	457 to 478
4	Science	52	76	163	457 to 478
5	ELA	59	225 to 246	111	381 to 402
5	Mathematics	52	156	111	381 to 402
6	ELA	59	225 to 246	111	381 to 402
6	Mathematics	52	156	111	381 to 402
7	ELA	59	225 to 246	111	381 to 402
7	Mathematics	52	156	111	381 to 402
8	ELA	59	225 to 246	165	471 to 492
8	Mathematics	52	156	165	471 to 492
8	Science	54	90	165	471 to 492

In general, the estimated testing times allowed 1–3 minutes per multiple-choice item, depending on the content area. The evidence-based selected-response items were estimated to take approximately 3–5 minutes per item, depending on the number of responses required by the item. The open-ended or short-answer items were estimated to take approximately 5–10 minutes per item, also depending on the content area. Text-dependent analysis questions were estimated to take approximately 55–65 minutes per item.

Test administrators were instructed that each section in a form should be scheduled as one assessment session. However, they were allowed to combine multiple sections into a single session, as long as the sections were administered in the sequence in which they are printed in the test booklets (or shown on the screen). In all cases, individual assessment sections had to be completed within one school day.

Since not all students finished the assessment sections at the same time, test administrators were advised to use the flexibility of the time limits to the students' advantage. For example, test administrators managed the testing time so that students did not feel rushed while they were taking any assessment section, and no student was penalized because he or she worked slowly. It was equally stressed to test administrators that a student should not be given an opportunity to waste time. Students were told to close their booklets when they had finished the section of the assessment in which they had been working. Students who finished early were allowed to sit quietly or read for pleasure until all students had finished. Students with special requirements and/or abilities (i.e., physical, visual, auditory, or learning disabilities as defined by their IEP or service contracts) and students who just worked slowly may have required extended time. Special assessment situations were arranged for these students. When all students in a testing session indicated that they had finished an assessment section, test administrators ended the section and began the next section or allowed the students to return to regular activities.

Scheduled extended time was provided by a test administrator, and students were allowed to request extended time if they indicated that they had not completed the task. Such requests were granted if the test administrator found the request to be educationally valid. Test administrators were advised that not permitting ample time for students to complete the assessment might impact the students' and school's performance.

As a general guideline, however, when all students indicated that they had finished a section, that section was closed. Students requiring time beyond the majority of the student population were allowed to continue immediately following the regularly scheduled session in another setting. When such accommodations were made, school personnel ensured that students were monitored at all times to prevent sharing of information. Students were not permitted to continue a section of the assessment after a significant lapse of time from the original session.

TESTING WINDOW

The testing window for the 2021 operational assessments were as follows:

- English Language Arts – April 19 through September 30, 2021
- Mathematics, Science, and Make-ups – April 26 through September 30, 2021

SHIPPING, PACKAGING, AND DELIVERY OF MATERIALS

DRC sent one shipment for the 2021 PSSA operational assessment. The shipment contained the *Handbook for Assessment Coordinators,* the *Directions for Administration Manuals,* the administrative materials (e.g., Return Shipping labels, District/School labels, Do Not Score labels, and Student Precode labels) and secure materials (e.g., consumable test/answer booklets) for each grade tested at a school participating in the English Language Arts, Mathematics, and Science assessments. The shipment was delivered three weeks prior to the start of the testing window.

DRC ensured that all assessment materials were assembled correctly prior to shipping. DRC operations staff used the automated Operations Materials Management System (Ops MMS) to assign secure materials to a school at the time of ship out. This system used barcode technology to provide an automated quality check between items requested for a site and items shipped to a site. A shipment box manifest was produced for and placed in each box shipped. DRC operations staff double-checked all box contents with the box manifest prior to sealing the box for shipping to ensure accurate delivery of materials. DRC operations staff performed lot acceptance sampling on both

shipments. Districts and schools were selected at random and examined for correct and complete packaging and labeling. This sampling represented a minimum of 10 percent of all shipping sites.

DRC's materials management system, along with the systems of shippers, allowed DRC to track materials from DRC's warehouse facility to receipt at the district, school, or testing site. All DRC shipping facilities, materials processing facilities, and storage facilities are secure. Access is restricted by security code. Non-DRC personnel are escorted by a DRC employee at all times. Only DRC inventory control personnel have access to stored secure materials. DRC employees are trained in and made aware of the high level of security that is required.

DRC used United Parcel Service (UPS) to deliver the secure materials to the testing sites.

ONLINE TESTING

Online administration is managed through the DRC INSIGHT Portal that provides tiered, secure access to all required administrative functions. Within the DRC INSIGHT Portal, users manage student information and create test sessions.

Student information from the Pennsylvania Information Management System (PIMS) is imported into the DRC INSIGHT Portal Test Setup application via file transfer. If a record was not transferred via the PIMS file, LEAs also have the opportunity to upload a student(s) directly into the DRC INSIGHT Portal so the student can be included in a test session.

Once the student data is loaded into Test Setup, users organize students into test sessions. Test sessions can be created by class, grade, or school. Through Test Setup, users can also update student accommodation information, print test tickets, and monitor student testing status.

The student login ticket contains unique login credentials used by the student to access the testing software. For a selected test session, users can download and print a PDF document containing instructions, a roster of student tickets being printed, and the actual test tickets. Student test tickets are considered secure materials and LEAs are required to keep printed tickets in a predetermined, locked, secure storage area.

The web-based test engine, DRC INSIGHT Online Learning System, is downloaded onto computers that students will access during the assessment. Test items and forms can only be accessed using a valid test ticket. During testing, responses are sent to a DRC server each time the student navigates away from an item or clicks the *Next* button to submit an answer. The system is configured to allow students to review answers before submitting their test.

TEST SECURITY MEASURES

Test security is essential to obtaining reliable and valid scores for accountability purposes. Test Security Certifications were required to be signed by each building Principal, School Assessment Coordinator, District Assessment Coordinator, Test Administrator, and Proctor after the assessment is administered. All signed Certifications were returned to the Chief School Administrator who must retain the Certifications for three years. The purpose of the Certifications was to serve as a tool to document that the individuals responsible for administering the assessments both understood and acknowledged the importance of test security and accountability. The Certifications attested that all security measures were followed concerning the handling of secure materials. Additional details can be found in the *Handbook for Assessment Coordinators*. A screen shot of the Test Administrator Certificate is provided in Figure 7–1.

Figure 7–1. Test Administrator and Proctor PSSA Test Security Certification

PSSA Test Security Certification

(Test Administrator and Proctor)

District: _____

School: _____

AUN: _____

Maintaining the security and integrity of all assessment materials, preventing any dishonest or fraudulent behavior in the administration and handling of the assessment, and promoting a fair and equitable testing environment are essential in order to obtain reliable and valid student scores. In that regard, I certify the following:

Prior to the administration of the assessment, I completed the Pennsylvania State Test Administration Training, and I understand that the assessment materials are secure, confidential, and proprietary documents owned by the Pennsylvania Department of Education.

I have not reviewed, discussed, disseminated, described, or otherwise revealed the contents of the assessment to anyone. I have not removed any assessment materials from the school building unless I was specifically authorized to administer the assessment to a student on homebound instruction. I have not kept, copied, reproduced, released, or used any assessment, assessment question, specific assessment content, or examinee response to any item or any section of the secure assessment in any manner that is inconsistent with the instructions provided by or through the Pennsylvania Department of Education. I have not provided any examinee with an answer to an assessment question or in any way influenced an examinee's response to any assessment question. I have not in any manner altered or caused the alteration of any examinee response, assessment booklet, or papers used by examinees.

I understand that any breach in assessment security could result in the invalidation of assessment results, professional discipline, and/or criminal prosecution.

I understand that false statements herein are made subject to the penalties of 18 Pa.C.S. § 4904.

Administrator/Proctor Name	Administrator/Proctor Signature	Date of Signature

SAMPLE MANUALS

Copies of the *Handbook for Assessment Coordinators* and the *Directions for Administration Manual*s can be found on the PDE website at www.education.pa.gov.

TESTING WINDOW ASSESSMENT ACCOMMODATIONS

PDE develops an *Accommodation Guidelines* handbook for use with the PSSA administration. This manual can be found on the PDE website at www.education.pa.gov. Additional information regarding assessment accommodations can be found in Chapter Four and Six of this report.

CHAPTER EIGHT: PROCESSING AND SCORING

RECEIPT OF MATERIALS

Receipt of PSSA test materials began on April 26, 2021, and concluded by October 6, 2021. DRC's Operations Materials Management System (Ops MMS) was utilized to receive assessment materials securely, accurately, and efficiently. This system features innovative automation and advanced barcode scanners. Captured data were organized into reports, which provided timely information with respect to suspected missing material.

The first step in the Ops MMS was the Box Receipt System. When a shipment arrived at DRC, the boxes were removed from the carrier's truck and passed under a barcode reader, which read the barcode printed on the return label and identified the district and school. The number of boxes was immediately compared to what was picked up at the district. The data collected in this process were stored in the Ops MMS database. After the barcode data were captured, the boxes were placed on a pallet and assigned a corresponding pallet number.

Once the box receipt process was completed, the materials separation phase began. Warehouse personnel opened the boxes and sorted materials by grade, subject, and status (used or unused booklets) into scanning boxes. Every booklets' security barcode and precode barcode were hand-scanned to link each document to the original box. As the booklets were sorted, the Ops MMS system guided the floor operator to which box to place the document. The Ops MMS system kept count and record of the materials placed in each box. This count remained correlated to the box as an essential quality-control step throughout the secure booklet processing and provided a target number for all steps of the check-in process. Once a box was closed, an MMS Processing Label was placed on that box.

Once labeled, the sorted and counted boxes proceeded to the Quality Assurance process, where a secure booklet check-in operator used a hand scanner to scan the MMS Processing Label. This procedure identified the material type and quantity parameters for what the Ops MMS should expect within a box. The box contents were then loaded into the streamfeeder.

The documents were fed past oscillating scanners that captured both the security code and precode from the booklets. A human operator monitored an Ops MMS screen that displayed scan errors, an ordered accounting of what was successfully scanned, and the document count for each box. The system ensured that each material within the box matched the information obtained from the original hand-scanning process.

When all materials were scanned and the correct document count was confirmed, the box was sealed and placed on a pallet. If the correct document count was not confirmed, or if the operator encountered difficulties with material scanning, the box and its contents were delivered to an exception handling station for resolution.

This check-in process occurred immediately upon receipt of materials; therefore, DRC provided feedback to districts and schools regarding any missing materials based on actual receipt versus expected receipt. Sites that had 100 percent of their materials missing after the date they were due to DRC were contacted, and any issues were resolved.

Throughout the process of secure booklet check-in, DRC project management ran a daily missing materials report. Every site that was missing any number of booklets was contacted by DRC. Results of these correspondences were recorded for inclusion in the final Missing Materials Report if the missing booklets were not returned by the testing site. DRC produced the Missing Materials Report for PDE upon completion of secure booklet check-in. The report listed all schools in each participating district along with security barcodes for any booklets not returned to DRC.

After scannable materials (used answer booklets) were processed through booklet check-in, the materials became available to the DRC Document Processing log-in staff for document log-in. The booklets were logged-in using the following process:

- A DRC scannable barcode batch header was scanned, and a batch number was assigned to each box of booklets.

- The DRC box label barcode was scanned into the system to link the box and booklets to the newly created batch and to create a Batch Control Sheet.
- The DRC box label barcode number, along with the number of booklets in the box, was printed on the Batch Control Sheet for document tracking purposes. All booklets that were linked to the box barcode were assigned to the batch number and tracked through all processing steps. As booklets were processed, DRC staff dated and initialed the Batch Control Sheet to indicate that proper processing and controls were observed.

Before the booklets were scanned, all batches went through a quality inspection to ensure batch integrity and correct document placement.

After a quality check-in at the DRC Document Processing log-in area, the spines were cut off the scannable documents, and the pages were sent to DRC's Imaging and Scoring System.

SCANNING OF MATERIALS

Customized scanning programs for all scannable documents were prepared to read the booklets and to format the scanned information electronically. Before materials arrived, all image scanning programs went through a quality review process that included scanning of mock data from production booklets to ensure proper data collection.

DRC's image scanners were calibrated using a standard deck of scannable pages with 16 known levels of gray. On a predefined page location, the average pixel darkness was compared to the standard calibration to determine the level of gray. Marks with an average darkness level of 4 or above on a scale of 16 (0 through F) were determined to be valid responses, per industry standards. If multiple marks were read for a single item and the difference of the grayscale reads was greater than four levels, the lighter mark was discarded. If the multiple marks had fewer than four levels of grayscale difference, the response was flagged systematically and forwarded to an editor for resolution.

DRC's image scanners read selected-response, demographic, and identification information. The image scanners also used barcode readers to read pre-printed barcodes from a label on the booklets.

The scannable documents were automatically fed into the image scanners where predefined processing criteria determined which fields were to be captured electronically. Open-ended response images were separated out for image-based scoring.

During scanning, a unique serial number was printed on each sheet of paper. This serial number was used for document integrity and to maintain sequencing within a batch of booklets.

A monitor randomly displayed images, and the human operator adjusted or cleaned the scanner when the scanned image did not meet DRC's strict quality standards for image clarity.

All images passed through a software clean-up program that despeckled, deskewed, and desmeared the images. A random sample of images was reviewed for image quality approval. If any document failed to meet image quality standards, the document was returned for rescanning.

Page-scan verification was performed to ensure that all predefined portions of the booklets were represented in their entirety in the image files. If a page was missing, the entire booklet was flagged for resolution.

After each batch was scanned, booklets were processed through a computer-based editing program to detect potential errors as a result of smudges, multiple marks, and omissions in predetermined fields. Marks that did not meet the predefined editing standards were routed to editors for resolution.

Experienced DRC Document Processing editing staff reviewed all potential errors detected during scanning and made necessary corrections to the data files. The imaging system displayed each suspected error. The editing staff then inspected the image and made any needed corrections using the unique serial number printed on the document during scanning.

Upon completion of editing, quality control reports were run to ensure that all detected potential errors were reviewed again and a final disposition was determined.

Before batches of booklets were extracted for scoring, a final edit was performed to ensure that all requirements for final processing were met. If a batch contained errors, it was flagged for further review before being extracted for scoring and reporting.

During this processing step, the actual number of documents scanned was compared to the number of booklets assigned to the box during book receipt. Count discrepancies between book receipt and booklets scanned were resolved at this time.

Once all requirements for final processing were met, the batch was released for scoring and student level processing.

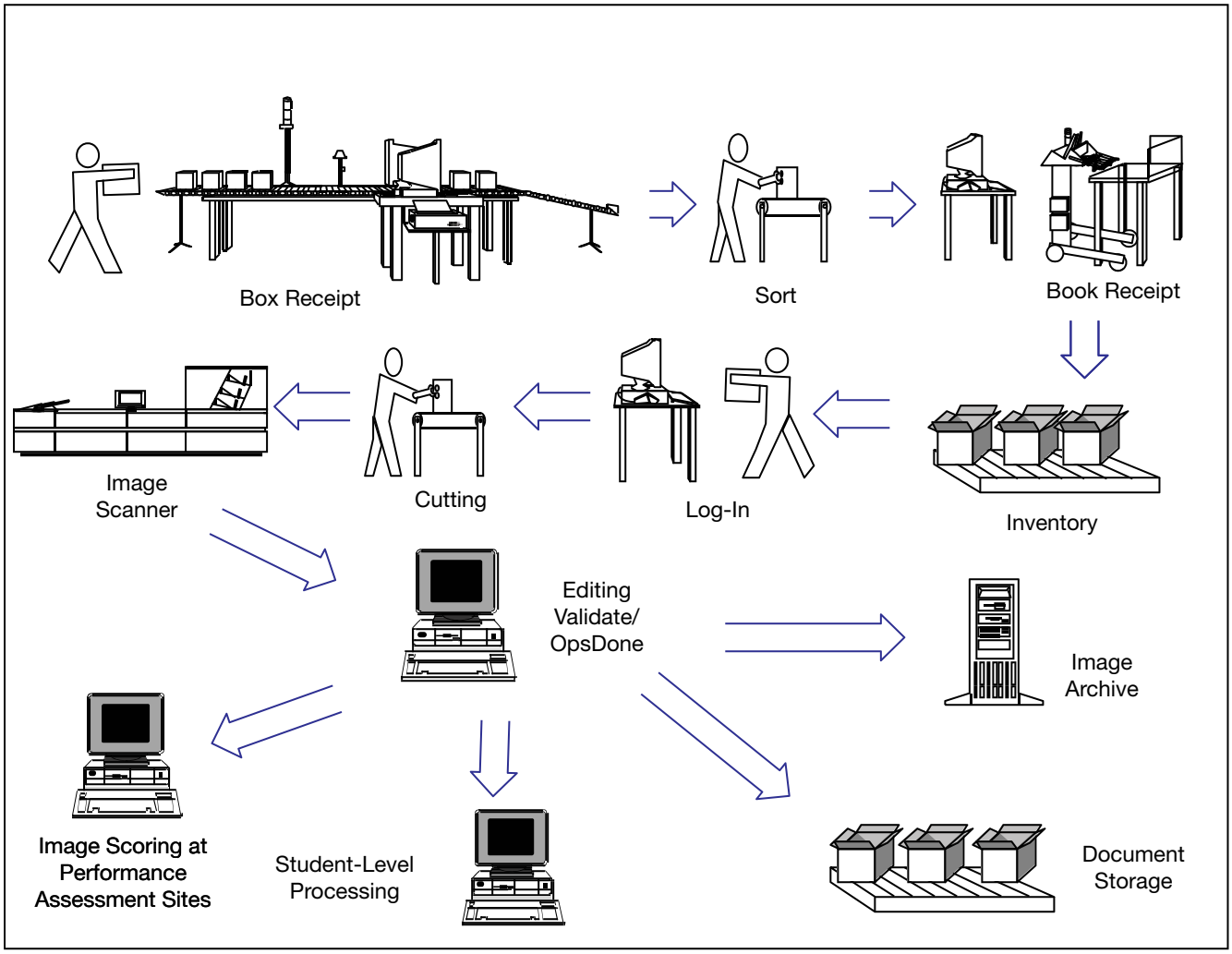
Table 8–1 shows the number of answer booklets received through booklet check-in, the number of booklets that contained student responses that were scanned and scored, the number of test booklets received, and the total number of booklets received for the English Language Arts assessment (ELA), the Mathematics assessment, and the Science assessment.

Table 8–1. Counts of 2021 PSSA Materials Received: Grades 3–8

Grade/Subject	Answer Booklets Received	Used Answer Booklets Received	Test Booklets Received	Total Booklets Received	Total Booklets Shipped
Grade 3 ELA	148,354	94,236	NA	148,354	148,401
Grade 4 ELA	148,927	94,231	148,872	297,799	298,182
Grade 5 ELA	149,655	92,593	149,654	299,309	299,436
Grade 6 ELA	144,315	90,790	144,331	288,646	288,848
Grade 7 ELA	143,287	90,323	143,290	286,577	286,772
Grade 8 ELA	144,639	89,274	144,638	289,277	289,480
Grade 3 Math	149,479	93,983	NA	148,927	149,527
Grade 4 Math	149,044	93,759	149,021	298,065	298,224
Grade 5 Math	149,699	92,032	149,703	299,402	299,540
Grade 6 Math	144,482	90,482	144,491	288,973	289,146
Grade 7 Math	143,002	89,871	142,974	285,976	286,220
Grade 8 Math	144,458	88,949	144,449	288,907	289,136
Grade 4 Science	147,775	93,018	147,760	295,535	295,756
Grade 8 Science	144,168	88,115	144,162	288,330	288,538

Figure 8–1 illustrates the production workflow for DRC's Ops MMS and Image Scanning and Scoring System from receipt of materials through all processing of materials and the presentation of scanned images for scoring.

Figure 8–1. Workflow System



MATERIALS STORAGE

Upon completion of processing, student response documents were boxed for security purposes and final storage:

- Project-specific box labels were created containing unique customer and project information, material type, batch number, pallet/box number, and the number of boxes for a given batch.
- Boxes were stacked on pallets that were labeled with the project information and a list of the pallet's contents before delivery to the Materials Distribution Center for final secure storage.
- Materials will be destroyed one year after contract year ends, with PDE written approval.

ONLINE TESTING

The DRC INSIGHT test engine runs on a custom web browser that is designed to ensure a fully secure environment during testing. The secure browser "locks down" the student's testing device, preventing the student from accessing the desktop, the Internet, and other external programs. For non-secure testing such as practice and training sessions, students can use the Online Tools Training (OTT) environment, which runs on a standard web browser.

The custom browser software is downloaded from the DRC INSIGHT Portal and installed onto student testing devices. The secure browser can be installed on computers individually, or it can be downloaded to a central location, copied, and distributed to multiple computers simultaneously using common network distribution tools. Everything needed for testing is found within the secure browser, eliminating the need for districts to coordinate updates to third-party software.

Prior to operational use, DRC's quality assurance staff will perform full system-level tests in an independent test environment that simulates the production configuration. Tests are run on all supported computer platforms and browsers and include comprehensive review of system functionality, usability, reliability, security, and overall performance. Test content is also validated during this process.

Multiple methods are used to ensure secure data transfer, including encryption technologies and Secure Sockets Layer (SSL) protocol through Hypertext Transfer Protocol Secure (HTTPS). Test content is encrypted at the host server, and remains encrypted throughout all network transmissions; content is decrypted only once the student login is validated. Decrypted test content on the student workstation is stored only in memory during each test session. Once the session is ended (the test is completed or the student logs out), computer memory is purged to ensure security of test content is maintained.

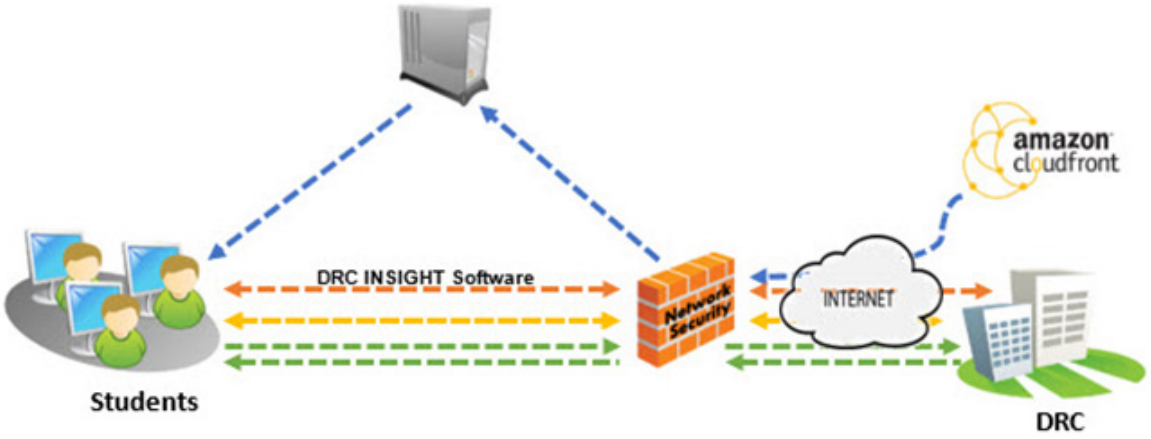
Responses are saved automatically every 45 seconds during testing, or when the student navigates away from an item or answers a selected-response item (whichever comes first). If a particular question takes the student longer than 45 seconds to answer, then the partial, incomplete responses are submitted at 45-second intervals until the student completes the item. This auto-save helps safeguard against students losing their work on longer items, such as constructed-response items. When the student returns to the test after a break or interruption, the student is returned to the point that they left off without having to navigate through all previously answered questions.

Table 8–2. Counts of 2021 PSSA Online Assessments: Grades 3–8

Grade/Subject	Total Online Assessments Completed
Grade 3 ELA	23,222
Grade 4 ELA	25,290
Grade 5 ELA	27,013
Grade 6 ELA	32,031
Grade 7 ELA	36,422
Grade 8 ELA	36,794
Grade 3 Math	23,867
Grade 4 Math	26,011
Grade 5 Math	26,925
Grade 6 Math	32,340
Grade 7 Math	36,604
Grade 8 Math	36,356
Grade 4 Science	25,688
Grade 8 Science	36,661

Figure 8–2 illustrates the secure transfer of online test responses between the student and DRC.

Figure 8–2. Architecture of the Student Testing Experience



SCORING MULTIPLE-CHOICE ITEMS

The scoring process included the scoring of multiple-choice items against the answer key and the aggregation of raw scores from the open-ended responses. A student's raw score is the actual number of points achieved by the student for tested elements of an assessment. From the raw scores, the scale scores were calculated.

The student file was scored against the final and approved multiple-choice answer key. Items were scored as right, wrong, omitted, or double-gridded (more than one answer was bubbled for an item). Sections of the test were evaluated as a whole and an attempt status was determined for each student for each subject. The score program defined all data elements at the student level for reporting.

RANGEFINDING

Due to Coronavirus (Covid-19), we did not have rangefinding in 2021. However, the training materials for all operational items are based on the rangefinding that was initially done for that item when it was field tested.

After student answer documents were received and processed, DRC's Performance Assessment Services (PAS) staff assembled groups of responses that exemplified the different score points for each subject. The score point ranges were represented by the following scoring guidelines:

- 0–3 item-specific scoring guidelines for ELA: reading (short-answer)
- 1–4 holistic scoring guideline for ELA: text-dependent analysis
- 0–4 item-specific scoring guidelines for math
- 0–2 item-specific scoring guidelines for science

  Note: For English language arts and mathematics at all grade levels (3–8), Pennsylvania Core Standards (PCS) items were rangefound and field tested. ELA and Mathematics rangefound/field tested 9 forms per subject, per grade. Science rangefound/field tested 12 forms per subject, per grade level tested (4 and 8). All items were embedded in the 2019 operational PSSA.

Responses were pulled from the embedded field test portion of the PSSA for each subject. Once examples covering the range of score points were selected for each item, sets were assembled for rangefinding, and copies were made for each rangefinding participant. Rangefinding committees consisted of Pennsylvania educators, PDE staff members, DRC Test Development staff, and DRC Performance Assessment Services staff. The rangefinding meetings were as follows:

- ELA: Text-Dependent Analysis (TDA) Field Test Rangefinding (grades 4–8), June 3–7, Lancaster Marriott at Penn Square, Lancaster, PA
- Reading Field Test Rangefinding (grade 3), June 3–5, Lancaster Marriott at Penn Square, Lancaster, PA
- Math Field Test Rangefinding (grades 3–8), June 4–6, Lancaster Marriott at Penn Square, Lancaster, PA
- Science Field Test Rangefinding (grades 4 and 8), June 4–5, Lancaster Marriott at Penn Square, Lancaster, PA

Each rangefinding meeting began in a joint session with a review of the history of the assessment as well as a discussion of the purpose of the rangefinding meeting and the role rangefinding plays within the item development process. The session then broke into subject/grade-specific committees. Sets of student responses were presented to the committees, one item at a time. Each committee initially reviewed and scored student responses as a group to ensure consistency in the interpretation of the scoring guidelines. Committee members then went on to score responses independently. For each student response, committee members' scores were discussed until a consensus was reached. Only those responses for which there was strong agreement among committee members were chosen for inclusion in training materials for DRC raters.

Discussions of student responses included the mandatory use of scoring guideline language. This ensured that committee members remained focused on the specific requirements of each score level. DRC PAS staff took notes addressing how and why the committees arrived at score point decisions, and this information was used by the scoring directors in rater training.

DRC and PDE discussed scoring guideline edits suggested by the rangefinding committees. Changes approved by PDE were then incorporated into the scoring guidelines by DRC Test Development staff. The edited scoring guidelines were used in the preparation of materials and the training of raters.

RATER RECRUITMENT/QUALIFICATIONS

DRC retains a number of raters from year to year; the overall return rate in 2021 was 60%. This pool of experienced raters was drawn from to staff the scoring of the 2021 PSSA. To complete the rater staffing, recruiting events were held and applications for rater positions were screened by DRC's recruiting staff. Candidates were personally interviewed by DRC staff. In addition, each candidate was required to provide an on-demand writing sample, an on-demand math sample, references, and proof of a four-year college degree. In this screening process, preference was given to candidates with previous experience scoring large-scale assessments and degrees emphasizing expertise in mathematics, English language arts, or science. In some locations, staffing partners were used to augment hiring using the same practices as those employed by DRC. The rater pool consisted of educators and other professionals with content-specific backgrounds. These individuals were valued for their content-specific knowledge, but they were required to set aside their own biases about student performance and accept the scoring standards outlined in the PSSA.

LEADERSHIP RECRUITMENT/QUALIFICATIONS

Scoring directors and team leaders were selected from a pool of employees who displayed expertise as raters and leaders on previous DRC projects. These individuals had strong backgrounds in mathematics, English language arts, or science, and demonstrated organizational, leadership, communication, and management skills. All scoring directors had previous leadership experience working on large scale assessments. All scoring directors, team leaders, and raters were required to sign confidentiality agreements before handling secure materials.

Each group of raters was assigned a scoring director. All handscoring activities were led by a scoring director for the duration of the project. Scoring directors assisted in rangefinding, worked with supervisors to create training materials, conducted team leader training, and were responsible for training the raters. The scoring director made sure that reports were available and interpreted those reports for the raters. The scoring director also supervised the team leaders. Scoring directors were monitored by the project managers throughout the project.

Team leaders assisted the scoring director with rater training by answering individual questions that raters may not have felt comfortable asking in a large group. Once raters were qualified, team leaders were responsible for monitoring and maintaining the accuracy and workload of each team member. Ongoing monitoring identified those individuals having difficulty scoring accurately. These raters received one-on-one retraining from the team leader or scoring director. Any rater who could not be successfully retrained had his/her scores purged and was released from the project.

TRAINING

As part of preparation for the 2021 ELA, mathematics, and science assessments, DRC's PAS staff assembled the PDE-approved scoring guidelines and scored student responses approved by rangefinding committees into sets used for training raters. The item-specific scoring guidelines for mathematics, science and ELA: reading (short-answer), as well as the focused holistic scoring guidelines for TDAs served as the raters' constant reference. Responses that were relevant in terms of the scoring concepts they illustrated were annotated and included in an anchor set. The full range of each score point was clearly represented and annotated in the anchor set, which was used for reference by raters throughout the project.

Training sets and qualifying sets contained student responses consensus-scored by rangefinding committee members. Raters were instructed on how to apply the scoring guidelines and were required to demonstrate a clear comprehension of each anchor set by performing well on the associated training materials. Responses were selected for training to show raters the range of each score point (e.g., high, mid, and low 2s). Examples of 0s were also included for all mathematics, reading, and science items. This process helped raters recognize the various ways that a student could respond in order to earn each score point outlined and defined in the scoring guidelines.

The scoring director conducted a team leader training session before training the raters. This session followed the same procedures as rater training, but was more rigorous and in-depth due to the extra responsibilities required of team leaders. During team leader training, all PSSA materials were reviewed and discussed. Team leaders were given access to fully annotated training materials with committee justifications from the rangefinding meetings. To facilitate scoring consistency, it was imperative that all team leaders imparted the same rationale for each response. Once the team leaders were qualified, leadership responsibilities were reviewed and team assignments were given. A ratio of one team leader per 7–10 raters ensured sufficient monitoring rates for team members.

Rater training began with the scoring director providing an intensive review of the scoring guidelines and anchor papers. Next, raters practiced by independently scoring the responses in the training sets. After each training set was taken, the scoring director led a thorough discussion of the responses.

Once the scoring guidelines, anchor sets, and training sets were thoroughly discussed, each rater was required to demonstrate understanding of the scoring criteria by qualifying (i.e., scoring with acceptable agreement to the true scores) on at least one of the qualifying sets. Raters who failed to achieve at least 70 percent exact agreement on the first qualifying set were given additional training, either individually or in a small group setting. Raters who did not perform at the required level of agreement by the end of the qualifying process were not allowed to score any student responses. These individuals were removed from the pool of potential raters in DRC's imaging system and released from the project.

DRC's remote scoring is designed to very closely emulate the work that is done in our physical scoring locations. The platform, content, and expectations for quality remain the same, and interactive technology and content training and discussions are conducted live (virtually). The differences come with the method through which training is delivered (online), and in the modes of communication that are used (web screen sharing, webcast, video chat, and chat). Our scoring leaders are equipped with a variety of tools to ensure every scorer is successful in understanding and applying scoring criteria to student responses.

The 2021 assessment included the opportunity for students to respond in Spanish to mathematics and science items. Rater training for the Spanish language response scoring was conducted by Tri-Lin Integrated Services in San Antonio, Texas, and was overseen by a DRC project manager, who is a Spanish language speaker with a strong handscoring background. All Spanish raters were bilingual and hired specifically to score the Spanish portion of the assessment and were required to meet the same standards set for raters of the English language version of the assessment.

Table 8–3. Qualification Rates for 2021 PSSA Open-Ended Response Items

Subject	% Qualifying	% That Did Not Qualify
ELA	98	2
Math	99	1
Science	100	0

HANDSCORING PROCESS

Student responses were scored independently. All responses were scored once, and ten percent of the responses were scored a second time. The data collected from the ten-percent double-read portion was used to calculate the exact and adjacent agreement rates in the Scoring Summary Reports. The responses that were used for the ten percent read behind were randomly chosen by the imaging system at the item level. Additional read behinds by the team leaders and scoring directors were done to further ensure reliability.

Raters scored the imaged student responses at scoring locations based in Cincinnati, Ohio; Plymouth, Minnesota; Woodbury, Minnesota; Philadelphia, Pennsylvania; Indianapolis, Indiana; Atlanta, Georgia; Lake Mary, Florida; and San Antonio, Texas. Raters scored either on PC monitors at the above locations or remotely, due to some of our scoring centers being closed because of Covid-19.

In all locations for on-site scoring, raters were seated at tables with individual imaging stations. In the case of remote scoring, raters worked in a secure location in their homes. Image distribution was controlled, ensuring that student images were sent only to designated groups of raters qualified to score those items. Imaged student responses were electronically separated for routing to individual raters by item. Raters were only provided with student responses for items that they were qualified to score. Scores were keyed into DRC's imaging system.

To handle possible alerts (i.e., student responses indicating potential issues related to students' safety and well-being that sometimes require attention at the state or local level), DRC's imaging system allows raters to forward responses needing attention to the scoring director. These alerts are reviewed by project management, who then notifies the students' schools and PDE of the occurrences. PDE does not receive any identifying information about the students. At no time in the alerts process do raters, or other DRC handscoring staff, acquire any knowledge concerning a student's personal identity.

HANDSCORING VALIDITY PROCESS

One of the training tools PAS utilized to ensure rater accuracy was the validity process. The goal of the validity process is to ensure that scoring standards are maintained. Specifically, the objective is to make sure that raters score student responses in a manner consistent with statewide standards both within a single administration of the PSSA and across consecutive administrations. During the scoring of the 2021 PSSA, scoring consistency was maintained, in part, through the validity process.

The validity process began with the selection of scored responses. Forty validity papers were selected for each core open-ended (OE) item. These 40 papers were drawn from a pool of exemplars (responses that are representative of a particular score point and have been verified by the scoring director). The scores on validity papers are considered true scores.

The validity papers were then implemented to test rater accuracy. The responses were selected within the imaging system and dispersed intermittently to the raters. By the end of the project, raters had scored all 40 validity papers for any items they were qualified to score. Raters were unaware when they were being dealt pre-scored validity

responses and assumed that they were scoring live student responses. This helped bolster the internal validity of the process. All raters who received validity papers had already successfully completed the training/qualifying process.

The scores that the raters assigned to the validity papers were compared to the true scores in order to determine the validity of the raters' scores. For each item, the percentage of exact agreement as well as the percentage of high and low scores was computed. This data was accessed through the Validity Item Detail Report. The same sort of data was also computed for each specific rater. This data was accessed through the Validity Reader Detail Report. Both of these may be run as daily or cumulative reports.

The Validity Reader Detail Report was used to identify particular raters for retraining. If a rater on a certain day generated a lower rate of agreement on a group of validity papers, it was immediately apparent in the Validity Reader Detail Report. A lower rate of agreement was defined as anything below 70 percent exact agreement with the true scores. Any time a rater's validity agreement rate fell below 70 percent, the scoring director was cued to examine that rater's scoring. First, the scoring director attempted to ascertain what kind of validity papers the rater was scoring incorrectly. This was done to determine whether there was any sort of a trend (e.g., trending low on the 1–2 line). Once the source of the low agreement rate was determined, the rater was retrained. If it was determined that the rater had been scoring live papers inaccurately, then his/her scores were purged for that day, and the responses were re-circulated and scored by other raters.

The cumulative Validity Item Detail Report was utilized to identify potential room-wide trends in need of correction. For instance, if a particular validity response with a true score of 3 was given a score of 2 by a significant number of raters within the room, that trend would be revealed in the Validity Item Detail Report. To correct a trend of this sort, the scoring director would look for student responses similar to the validity paper being scored incorrectly. Once located, these responses would be used in room-wide re-training, usually in the form of an annotated handout or a short set of papers without printed scores given to raters as a recalibration test.

Validity was employed on all operational mathematics, ELA: reading, and science OE items, as well as on all operational TDAs. Each 40-paper validity set was formulated to mirror the score point distribution that the item generated during its previous administration. Each validity set included at least five examples of each score point. Examples of different types of responses were included to ensure that raters were tested on the full spectrum of response types.

The exact rater agreement rate generated during the validity process is sometimes higher than the inter-rater agreement rate for the same item. The reason for this sort of difference often has to do with how validity sets are formulated. The 40 validity papers for each item are intended to cover the full breadth of each score point. For example, each validity set contains examples of high, mid, and low 2s. This sort of scope ensures that the validity process is truly valid in terms of addressing the complete spectrum of response types. However, certain types of responses are generally not included in validity sets. These include line papers (i.e., examples of score points that are so close to the adjacent score point that raters are instructed to consult with a supervisor before assigning a score) and responses that, because of poor word choice/writing, are difficult to understand. The reason for these exclusions is that confusing/line/illegible papers often do not impart a teachable lesson. Since these types of papers are generally unique, any potential lesson the response might teach would apply only to that particular paper. Conversely, papers in validity sets are selected because they represent common response-types and teach lessons that can be applied to other similar papers. Due to this distinction, validity sets sometimes generate a slightly higher agreement rate than is generated during operational scoring. However, in some cases, validity papers can also generate *lower* rates of agreement than inter-rater agreement rate averages. The reason for this sort of difference is that validity is sometimes used to discern scoring trends for specific response types so that targeted retraining can occur. Within this year's TDA validity paper selection there were examples of student responses that were close to scoring lines in several grade levels. These validity papers were selected to address scoring decisions for these item-specific response types and sometimes generated lower rates of agreement than the room-wide inter-rater agreement rate for the same item. For all the reasons cited above, this year's TDA items generated some validity agreement percentages that were slightly lower than room-wide inter-rater agreement rates and others that were at or above room averages. It should be pointed out that for all TDA items, cumulative inter-rater agreement and validity averages were above expected handscoring best practice rates.

QUALITY CONTROL

Rater accuracy was monitored throughout the scoring session by means of daily and on-demand reports. These reports ensured that an acceptable level of scoring accuracy was maintained throughout the project. Interrater reliability was tracked and monitored with multiple quality control reports that were reviewed by quality assurance analysts. These reports and other quality control documents were generated at the scoring centers, where they were reviewed by the scoring directors, team leaders, and project managers. The following reports and documents were used during the scoring of the open-ended items:

The Scoring Summary Report (includes two related reports)

1. The Reader Monitor Report monitored how often raters were in exact agreement with one another and ensured that an acceptable agreement rate was maintained. This report provided daily and cumulative exact and adjacent inter-rater agreement on the ten percent that was double read.
2. The Score Point Distribution Report monitored the percentage of responses given each of the score points. For example, the mathematics daily and cumulative reports showed what percentage of 0s, 1s, 2s, 3s, and 4s a rater had given to all the responses scored at the time the report was produced. It also indicated the number of responses read by each rater so that production rates could be monitored.

The Item Status Report monitored the progress of handscoring. This report tracked each response and indicated the status (e.g., not read, complete, awaiting supervisor review, etc.). This report ensured that all responses were scored by the end of the project.

The Reader Score Report identified all responses scored by an individual rater. This report was useful if any responses needed rescoring due to possible rater drift.

The Validity Reports (addressed in detail on previous pages) tracked how raters performed by comparing pre-scored responses to raters' scores for the same responses. If a rater's scoring fell below the 70 percent determined agreement rate, remediation occurred. Raters who did not retrain to the required level of agreement were released from the project.

The Read-Behind Log was used by the team leader/scoring director to monitor individual rater reliability. Team leaders read randomly-selected, scored items from each team member on a daily basis. If the team leader disagreed with a rater's score, remediation occurred. This proved to be a very effective type of feedback because it was performed in real time with live student responses scored by each rater.

Recalibration Sets were used throughout the scoring sessions to ensure accuracy by comparing each rater's scores with the true scores on a pre-selected set of responses. Recalibration sets helped to refocus raters on Pennsylvania scoring standards. These checks made sure there was no change in the scoring pattern as the project progressed. Raters failing to achieve 70 percent agreement with the recalibration true scores were given additional training to achieve the highest degree of accuracy possible. Raters who were unable to recalibrate were released from the project. The process for creating and administering recalibration sets was similar to the one employed for creating and administering training sets.

Table 8–4. Inter-rater Agreement for 2021 PSSA Mathematics Grades 3–8 Open-Ended Response Items and Validity

Mathematics	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 3	1	91	9	100	92
Grade 3	2	89	11	100	91
Grade 3	3	90	10	100	92
Grade 4	1	91	9	100	91
Grade 4	2	94	6	100	92
Grade 4	3	91	9	100	90
Grade 5	1	95	5	100	98
Grade 5	2	96	4	100	96
Grade 5	3	94	6	100	92
Grade 6	1	89	11	100	90
Grade 6	2	93	7	100	89
Grade 6	3	92	8	100	94
Grade 7	1	92	8	100	94
Grade 7	2	92	8	100	94
Grade 7	3	97	3	100	94
Grade 8	1	91	9	100	92
Grade 8	2	94	6	100	91
Grade 8	3	94	6	100	89

Note. 0–4 possible score points

Table 8–5. Percentages Awarded for Each Possible Score Point 2021 PSSA Mathematics Grades 3–8

Mathematics	Common Item	%0	%1	%2	%3	%4	%B/NS*
Grade 3	1	22	20	17	14	8	18
Grade 3	2	27	24	15	9	5	21
Grade 3	3	7	30	28	14	1	19
Grade 4	1	15	25	19	14	6	21
Grade 4	2	24	29	14	7	1	24
Grade 4	3	32	22	13	9	4	21
Grade 5	1	30	26	12	7	4	20
Grade 5	2	32	26	11	5	3	22
Grade 5	3	18	39	7	14	1	21
Grade 6	1	39	18	10	7	4	23
Grade 6	2	12	47	13	3	0	26
Grade 6	3	19	18	16	10	15	23
Grade 7	1	35	17	11	10	3	24
Grade 7	2	33	27	8	3	1	29
Grade 7	3	31	25	14	4	1	24
Grade 8	1	21	21	11	11	8	28
Grade 8	2	33	22	6	5	2	31
Grade 8	3	18	38	12	3	1	28

Note. *B=blank and NS=non-scoreable

Table 8–6. Inter-rater Agreement for 2021 PSSA Reading Grade 3 Open-Ended Response Items and Validity

Reading	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 3	1	80	20	100	89
Grade 3	2	88	12	100	91

Note. 0–3 possible score points

Table 8–7. Percentages Awarded for Each Possible Score Point 2021 PSSA Reading Grade 3

Reading	Common Item	%0	%1	%2	%3	%B/NS*
Grade 3	1	9	35	29	7	21
Grade 3	2	10	19	29	15	27

Note. *B=blank and NS=non-scoreable

Table 8–8. Inter-rater Agreement for 2021 PSSA ELA Grades 4–8 Text-Dependent Analysis Items and Validity

TDA	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 4	1	88	12	100	83
Grade 5	1	90	10	100	93
Grade 6	1	87	13	100	88
Grade 7	1	87	13	100	86
Grade 8	1	89	11	100	88

Note. 1–4 possible score points

Table 8–9. Percentages Awarded for Each Possible Score Point 2021 PSSA TDA items Grades 4–8

TDA	Common Item	%1	%2	%3	%4	%B/NS*
Grade 4	1	20	39	11	1	28
Grade 5	1	17	47	10	1	26
Grade 6	1	21	36	14	2	27
Grade 7	1	26	33	12	1	27
Grade 8	1	18	33	15	2	31

Note. *B=blank and NS=non-scoreable

Table 8–10. Inter-rater Agreement for 2021 PSSA Science Grades 4 and 8 Open-Ended Response Items and Validity

Science	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 4	1	93	7	100	97
Grade 4	2	94	6	100	96
Grade 4	3	89	11	100	97
Grade 4	4	94	6	100	95
Grade 4	5	93	7	100	98
Grade 8	1	89	10	99	94
Grade 8	2	91	9	100	96
Grade 8	3	96	4	100	95
Grade 8	4	85	14	99	88
Grade 8	5	91	8	99	89

Note. 0–2 possible score points

Table 8–11. Percentages Awarded for Each Possible Score Point 2021 PSSA Science Grades 4 and 8

Science	Common Item	%0	%1	%2	%B/NS*
Grade 4	1	53	18	7	22
Grade 4	2	47	18	13	22
Grade 4	3	16	30	31	22
Grade 4	4	13	53	13	22
Grade 4	5	10	29	39	22
Grade 8	1	15	25	32	28
Grade 8	2	13	30	29	28
Grade 8	3	27	32	11	31
Grade 8	4	38	26	8	29
Grade 8	5	34	19	15	31

Note. *B=blank and NS=non-scoreable

CHAPTER NINE: DESCRIPTION OF DATA SOURCES AND SAMPLING ADEQUACY

This chapter describes the data sources (e.g., *n*-counts, characteristics of students) used for the various analysis procedures discussed in the remaining chapters of this technical report. Psychometric analyses are conducted at several points for the PSSA: 1) early analyses for quality control purposes and key validation; 2) analyses associated with the pre-equating validation; 3) analyses used for item banking; and 4) analyses for the technical report. Detailed information regarding the attributes of students is provided in Chapter Ten.

Due to circumstances surrounding the global Covid-19 pandemic beginning in March 2020 and lasting throughout the 2020–2021 school year, several processes were modified. Several of the administration conditions in 2021 were adjusted to allow for additional testing (i.e., elongated testing windows), which ultimately changed the administration conditions of the PSSA. The Pennsylvania Technical Advisory Committee (TAC) provided guidance and direction for processes that were modified.

PRIMARY STUDENT FILTERING CRITERIA

For many data files, the primary means of filtering students for inclusion/exclusion from any data analysis are based on the state reporting criteria which are outlined below. Within the state reporting rules are separate attempt criteria for individual subject areas. The attempt criteria are discussed more fully below.

STATE REPORTING CRITERIA

The state reporting criteria are as follows:

- The student must be enrolled for the full academic year.
- The student must be attributed to a public district/school (state).
- The student must receive a score (i.e., met the subject attempt logic—see additional information below).
- The student is not a homeschool student.
- The student is not a foreign exchange student.
- The student is not a first year EL student (mathematics/ELA only).

PSSA ATTEMPT CRITERIA

For all data sources, only students who meet the attempt criteria are included. For mathematics, ELA, and science, the attempt criteria required students to complete a minimum of five items (multiple-choice (MC) or open-ended (OE)) in each respective subject area section of the test booklets. All subject counts were based on operational and nonoperational items.

KEY VALIDATION DATA

These data are only mentioned for the sake of completeness, as no formal results from these data are provided in this technical document. An analysis on all operational MC items is conducted early in the scoring process to ensure that the items are performing as expected. This is an important quality check that is always done for the PSSA. This analysis is usually (but not always) done using all students from early-return schools. The sample does not need to be representative of the entire state for these quality checks. Available student data typically suffices if there is reasonable variability in total test scores.

For 2019, this data included all public-school students who 1) had their MC items scanned and scored by early-July and 2) met preliminary attempt criteria (i.e., attempt was determined based on MC items only). Note that the full state reporting criteria were not in effect for this file (only attribution to a public school based on tested site and preliminary attempt criteria were used to filter students).

PRE-EQUATING VALIDATION DATA

Data used for pre-equating validation included students who met the preliminary state reporting criteria (including attempt criteria) by July 30th[1]. The state reporting criteria were preliminary, meaning that attributions and final PIMS[2] information were not complete by this time. No sampling was undertaken in this data (i.e., it included all students who met the above criteria with operational test scores up to this point[3]). This data file was used to analyze differences in the pre-equated solutions and post-equated solutions to make the final decision to proceed with the pre-equated solution.

ITEM BANK DATA

The item bank data included students who met the state reporting criteria by July 30th. No sampling was undertaken in this data (i.e., it included all students who met the above criteria, were administered paper-pencil tests with scored field- test data up to this point). The data banked for field-test items as well as the updates for operational item parameters were based on this data file. In 2021, no field-test open-ended responses were scored; therefore item banking was only conducted for auto-scored items (multiple-choice and evidence-based selected-response item types).

FINAL DATA

This file included all students who met state reporting criteria by January 6, 2022 for all subject areas. The final data reflects update by schools for correction of certain fields (e.g., student ethnicity). All other files contained preliminary data. Most of the results included in this technical report were derived using the final data file.

FINAL *N*-COUNTS FOR ALL DATA SOURCES

The *n*-counts for all data sources are provided in Table 9–1. The pre-equating validation count includes students who met the preliminary state reporting criteria, while the final count includes students who met the final state reporting criteria. A computer-based test (CBT) was offered for all subjects. Final data shows the number of students in both modes. Students administered a mixed-mode test are counted as CBT administrations. The *n* counts of item bank data show only the number of students who took a paper test, because values for item banking (e.g., CTT statistics) were obtained with paper students.

Table 9–1. Data Source *N*-Counts

Subject	Grade	Key Validation (Paper)	Key Validation (CBT)	Pre-equating Validation (Paper/CBT)	Item Bank (Paper)	Final (Paper/ CBT)
Mathematics	3	40939	18528	86629	68130	91693
Mathematics	4	38616	20108	86838	66757	92387
Mathematics	5	37270	21313	86349	65062	90866
Mathematics	6	35274	24313	84515	60227	90563
Mathematics	7	32658	27337	84197	56878	90812
Mathematics	8	32006	26688	81441	54763	85253
ELA	3	43271	18450	86505	68057	90980
ELA	4	42286	19932	86910	66980	91862
ELA	5	40934	21261	86504	65269	91028
ELA	6	37908	24428	85286	60885	90232
ELA	7	35672	27518	85125	57632	90515
ELA	8	34651	26819	81845	55034	85686
Science	4	35413	20440	86327	65914	91071
Science	8	26653	26930	80547	53628	84244

[1] Due to the elongated testing window, there were two reporting windows for PSSA. Pre-equating validation was conducted based on data received within the first reporting window.

[2] Pennsylvania Information Management System

[3] Historically, PSSA has retained all students who met the stated criteria in the calibration data set, even those who had testing accommodations.

COMPUTER-BASED TEST (CBT)

Table 9–2 displays the count of students who took the 2021 PSSA broken out by subject, grade, and mode (e.g., paper, CBT) with the final data. Unlike previous administrations that had a low volume of CBT administrations, between 20% and 33% of administrations were online in 2021. CBT administrations for lower grade levels tended to be slightly lower than higher grade levels.

Table 9–2. Final *N*-Counts and Proportion by Mode

Subject	Grade	*N*-Counts Paper	*N*-Counts CBT	Proportion (%) Paper	Proportion (%) CBT
Mathematics	3	71527	20166	78.01	21.99
Mathematics	4	70684	21703	76.51	23.49
Mathematics	5	68516	22350	75.40	24.60
Mathematics	6	64317	26246	71.02	28.98
Mathematics	7	61550	29262	67.78	32.22
Mathematics	8	57634	27619	67.60	32.40
ELA	3	71456	19524	78.54	21.46
ELA	4	70889	20973	77.17	22.83
ELA	5	68677	22351	75.45	24.55
ELA	6	64360	25872	71.33	28.67
ELA	7	61620	28895	68.08	31.92
ELA	8	57874	27812	67.54	32.46
Science	4	69678	21393	76.51	23.49
Science	8	56375	27869	66.92	33.08

SPIRALING OF FORMS

PSSA forms were spiraled during test administration for all grades and subjects. Appendix H provides summary statistics for scaled scores disaggregated by mode, test form, for each subject and grade. The mean scaled scores across forms are similar, indicating the student populations taking each form are of approximately equal ability and item scrambling are appropriate. This equivalence of ability distributions across forms is the desired outcome of spiraling and allows for optimum analysis of the embedded field-test items.

SCRAMBLING OF FORMS

PSSA forms were scrambled during form construction in response to test security issues raised in prior PSSA administrations. Eight scrambled patterns of operational forms were constructed for each mathematics, ELA, and science assessment. The core form was constructed following the prior test development and psychometric guidelines and will be referred to as the Master Core throughout the remainder of this document. Based on previous TAC recommendation, the Master Core is the pattern of the test that would have been administered to all students in the absence of scrambling.

Once the Master Core was constructed and approved, DRC and PDE content specialists built seven scrambled patterns of the Master Core for each grade and subject. OE items were not scrambled, meaning each operational OE item appeared in the same position on every form. Some MC items also appeared in the same position on multiple forms due to content constraints. In some subjects and grades the number of field-test forms was greater than the number of scrambled patterns. In these instances, the Master Core and scrambled patterns were repeated with no specific pattern appearing more than two times. Due to the historically low enrollment for the PSSA CBT, only three forms were offered for CBT. These forms included the accommodation form, a Master Core form, and one additional scrambled form (scrambled patterns A, B, and C, respectively); therefore, these forms have slightly higher participation than other forms when paper and CBT counts are combined.

When the Master Core was built, the linking position rules were observed for all core-linking and equating block items. The Master Core was used at least as often, or more often, than any scrambled version of the core form. Since form 1 was used for all accommodated forms (e.g., Braille, Large Print, Audio, and Spanish) it was never designated as a Master Core. The specific forms presenting the Master Core vary across grades within each content area. Given that all forms were spiraled at the student level, the distribution of forms is reasonably uniform. The exception is Form 1, which had higher participation since it is the only form used for accommodations.

Based on TAC recommendations to minimize possible item position effects, each section of the Master Core was divided into blocks of non-overlapping MC and EBSR items. Recall that other item types were not part of the scrambling. The blocks typically contained six to seven items (or one passage), but the block sizes varied depending on the content and section. Within each block, items were scrambled following general psychometric and content guidelines to create up to five versions of the block in addition to the Master Core sequencing. The blocks were assembled to create seven scrambled versions of the Master Core (named A, B, C, D, E, F, and G) in addition to the Master Core.

Prior to scrambling the Master Core, DRC and PDE content specialists developed the following general psychometric and content guidelines:

- Items cannot move between blocks.
- DRC and PDE content specialists will work to ensure that the scrambling does not result in making content more difficult than the Master Core item sequence. For example, items of similar cognitive complexity will be swapped rather than random scrambling.
- A block scramble pattern is only valid if it does not contain an invalid key distribution within the block. Additional checks for an invalid key distribution across blocks must be made when combining block scramble patterns to create forms. For example, scrambling must not create more than three (3) of the same key positions in a row.
- A block scramble pattern is only valid if it does not contain an invalid standard (AA/EC) distribution within a block. Additional checks for standard distribution across blocks must be made when combining block scramble patterns to create forms. An exception was made for one mathematics scramble for each grade which ordered items within block by eligible content per PDE request.
- Scrambling should not place a difficult item as the first item in a section or a passage set; however, the first item in a block that does NOT begin a section may be a difficult item since blocks are invisible to the student.
- For passage-based items, a block scramble pattern is only valid if it does not create dissonance between the items and passage(s).
- Within a set of items connected to a paired set of passages, an item associated with both passages can be swapped only with another item associated with both passages. (These items must remain at the end of the set of items associated with the passage set.)

Table 9–3 shows a summary of the scrambling strategy employed for the 2021 PSSAs. Each grade and subject used a total of eight different patterns of the core including the Master Core.

Table 9–3. Form Scrambling

Content	Grade	Forms	Total Patterns	Master Cores
Mathematics	3	9	8	2
Mathematics	4	9	8	2
Mathematics	5	9	8	2
Mathematics	6	9	8	2
Mathematics	7	9	8	2
Mathematics	8	9	8	2
ELA	3	9	8	2
ELA	4	9	8	2
ELA	5	9	8	2
ELA	6	9	8	2
ELA	7	9	8	2
ELA	8	9	8	2
Science	4	12	8	2
Science	8	12	8	2

An important assumption for effectively collapsing forms into pattern groups is that the form spiraling yielded randomly equivalent groups. Table 9–4 provides the count of paper-pencil and online administrations, the mean raw score, the standard deviation by each scramble pattern, form, and mode. Please note that online Form 1 is used for all accommodated administrations and as such reflects different performance than performance on other forms.

Table 9–4E. ELA Mean Scores by Form

Subject	Grade	Form	Count (Paper)	Raw Score Mean (Paper)	Raw Score SD (Paper)	Count (CBT)	Raw Score Mean (CBT)	Raw Score SD (CBT)
ELA	3	01A	7994	23.58	9.30	7851	21.71	9.27
ELA	3	02M	7842	23.79	9.28	5826	24.21	8.69
ELA	3	03B	7941	23.78	9.27	5847	24.44	8.72
ELA	3	04M	7922	23.63	9.23			
ELA	3	05C	7907	23.88	9.21			
ELA	3	06D	7978	24.17	9.11			
ELA	3	07E	7968	23.72	9.18			
ELA	3	08F	7951	24.12	9.14			
ELA	3	09G	7953	24.11	9.32			
ELA	4	01A	7916	33.10	11.71	8637	30.07	12.08
ELA	4	02M	7805	32.75	11.51	6188	34.25	11.17
ELA	4	03B	7957	33.19	11.66	6148	34.22	11.15
ELA	4	04C	7837	33.03	11.64			
ELA	4	05D	7892	33.19	11.47			
ELA	4	06M	7854	33.68	11.79			
ELA	4	07E	7910	33.02	11.70			
ELA	4	08F	7841	33.13	11.65			
ELA	4	09G	7877	33.37	11.60			
ELA	5	01A	7673	33.21	10.64	9097	30.41	10.94
ELA	5	02M	7621	33.21	10.56	6650	33.69	9.96
ELA	5	03B	7628	33.66	10.66	6604	34.10	10.18
ELA	5	04C	7636	33.36	10.71			
ELA	5	05D	7643	33.56	10.86			
ELA	5	06E	7591	33.60	10.88			
ELA	5	07M	7656	33.59	10.51			
ELA	5	08F	7585	33.57	10.70			
ELA	5	09G	7644	33.70	10.70			
ELA	6	01A	7193	33.45	11.76	10536	30.95	12.29
ELA	6	02M	7097	33.73	11.76	7675	34.81	11.53
ELA	6	03B	7099	33.83	11.67	7661	34.55	11.53
ELA	6	04C	7159	33.74	11.51			
ELA	6	05M	7135	33.44	11.67			
ELA	6	06D	7167	33.68	11.64			
ELA	6	07E	7168	33.62	11.56			
ELA	6	08F	7161	33.66	11.68			
ELA	6	09G	7181	33.61	11.62			

Table 9–4E (continued). ELA Mean Scores by Form

Subject	Grade	Form	Count (Paper)	Raw Score Mean (Paper)	Raw Score SD (Paper)	Count (CBT)	Raw Score Mean (CBT)	Raw Score SD (CBT)
ELA	7	01A	6923	34.24	10.80	11270	31.25	11.14
ELA	7	02M	6863	34.33	10.72	8840	33.78	10.38
ELA	7	03B	6843	34.22	10.82	8785	33.82	10.65
ELA	7	04C	6921	33.83	10.79			
ELA	7	05D	6801	34.22	10.69			
ELA	7	06E	6756	34.28	10.77			
ELA	7	07F	6853	34.05	10.74			
ELA	7	08G	6808	34.07	10.73			
ELA	7	09M	6852	34.01	10.79			
ELA	8	01A	6440	34.06	11.40	10775	31.31	12.21
ELA	8	02M	6404	34.29	11.49	8509	33.92	11.52
ELA	8	03B	6443	34.46	11.28	8528	33.90	11.51
ELA	8	04C	6520	34.41	11.52			
ELA	8	05D	6463	34.15	11.23			
ELA	8	06E	6449	34.22	11.39			
ELA	8	07F	6415	34.54	11.38			
ELA	8	08M	6374	34.37	11.55			
ELA	8	09G	6366	34.52	11.36			

Table 9–4M. Mathematics Mean Scores by Form

Subject	Grade	Form	Count (Paper)	RS Mean (Paper)	RS SD (Paper)	Count (CBT)	RS Mean (CBT)	RS SD (CBT)
Mathematics	3	01E	8171	24.74	11.36	8308	23.36	11.33
Mathematics	3	02M	7935	25.44	11.27	5908	26.65	11.13
Mathematics	3	03G	7931	25.11	11.36	5950	26.68	11.09
Mathematics	3	04A	7876	25.20	11.30			
Mathematics	3	05B	7918	25.41	11.35			
Mathematics	3	06C	7860	25.13	11.21			
Mathematics	3	07D	7917	25.11	11.30			
Mathematics	3	08F	7918	25.68	11.36			
Mathematics	3	09M	8001	25.64	11.38			
Mathematics	4	01D	8076	23.40	10.75	9180	22.35	10.56
Mathematics	4	02M	7863	23.96	10.74	6276	25.50	10.44
Mathematics	4	03C	7847	23.85	10.74	6247	25.29	10.33
Mathematics	4	04A	7825	23.96	10.81			
Mathematics	4	05B	7912	24.09	10.72			
Mathematics	4	06E	7780	24.10	10.82			
Mathematics	4	07M	7808	23.96	10.65			
Mathematics	4	08F	7759	24.07	10.63			
Mathematics	4	09G	7814	24.01	10.77			
Mathematics	5	01F	7863	22.30	10.75	9309	20.98	10.39
Mathematics	5	02M	7566	22.71	10.79	6506	24.07	10.51
Mathematics	5	03B	7557	22.47	10.63	6535	23.99	10.52
Mathematics	5	04A	7588	22.61	10.66			
Mathematics	5	05C	7636	22.87	10.62			
Mathematics	5	06D	7519	22.78	10.65			
Mathematics	5	07E	7612	22.77	10.80			
Mathematics	5	08M	7558	22.76	10.65			
Mathematics	5	09G	7617	22.87	10.71			
Mathematics	6	01F	7476	23.63	10.14	10817	22.32	10.21
Mathematics	6	02M	7143	24.03	10.14	7688	25.00	10.11
Mathematics	6	03B	7105	23.69	9.93	7741	24.86	9.97
Mathematics	6	04M	7088	23.82	10.07			
Mathematics	6	05D	7080	23.98	10.03			
Mathematics	6	06E	7142	23.91	10.09			
Mathematics	6	07G	7092	23.80	10.22			
Mathematics	6	08A	7118	24.10	10.04			
Mathematics	6	09C	7073	24.01	10.05			

Table 9–4M (continued). Mathematics Mean Scores by Form

Subject	Grade	Form	Count (Paper)	RS Mean (Paper)	RS SD (Paper)	Count (CBT)	RS Mean (CBT)	RS SD (CBT)
Mathematics	7	01E	7044	20.77	10.30	11487	19.96	10.27
Mathematics	7	02M	6841	21.31	10.43	8882	21.94	10.28
Mathematics	7	03G	6837	20.91	10.41	8893	21.89	10.37
Mathematics	7	04A	6785	21.15	10.48			
Mathematics	7	05C	6831	21.34	10.44			
Mathematics	7	06M	6827	21.26	10.41			
Mathematics	7	07B	6833	21.16	10.55			
Mathematics	7	08D	6764	21.08	10.48			
Mathematics	7	09F	6788	21.31	10.38			
Mathematics	8	01B	6531	22.39	10.64	10752	21.57	10.25
Mathematics	8	02M	6379	22.99	10.62	8444	23.47	10.22
Mathematics	8	03A	6436	22.44	10.48	8423	23.22	10.27
Mathematics	8	04C	6367	22.77	10.63			
Mathematics	8	05M	6325	22.93	10.56			
Mathematics	8	06D	6445	22.82	10.58			
Mathematics	8	07E	6398	22.61	10.50			
Mathematics	8	08F	6442	22.76	10.65			
Mathematics	8	09G	6311	22.82	10.57			

Table 9–4S. Science Mean Scores by Form

Subject	Grade	Form	Count (Paper)	RS Mean (Paper)	RS SD (Paper)	Count (CBT)	RS Mean (CBT)	RS SD (CBT)
Science	4	01A	5992	23.72	9.01	8986	23.73	8.95
Science	4	02M	5834	24.48	8.78	6204	26.31	8.32
Science	4	03B	5721	24.40	8.70	6203	26.12	8.47
Science	4	04C	5766	24.72	8.84			
Science	4	05D	5794	24.49	8.71			
Science	4	06E	5784	24.40	8.72			
Science	4	07F	5797	24.71	8.74			
Science	4	08G	5841	24.49	8.77			
Science	4	09A	5824	24.29	8.72			
Science	4	10M	5719	24.77	8.80			
Science	4	11D	5797	24.54	8.66			
Science	4	12F	5809	24.65	8.66			
Science	8	01A	4969	23.37	9.72	10844	22.97	9.83
Science	8	02M	4665	23.98	9.55	8503	24.75	9.46
Science	8	03B	4710	23.93	9.67	8522	24.77	9.50
Science	8	04C	4667	23.99	9.42			
Science	8	05D	4693	24.22	9.62			
Science	8	06E	4669	24.02	9.58			
Science	8	07F	4680	24.15	9.59			
Science	8	08G	4659	23.91	9.60			
Science	8	09D	4670	24.06	9.54			
Science	8	10B	4652	24.04	9.58			
Science	8	11F	4642	24.06	9.69			
Science	8	12M	4699	24.24	9.60			

Table 9–5 shows the number of students who took each form pattern (recall that pattern M is the Master Core version), and Table 9–6 shows the form to scramble pattern conversion.

Table 9–5. Form Pattern Administration Counts

Subject	Grade	A	B	C	D	E	F	G	M
Mathematics	3	7876	7918	7860	7917	16479	7918	13881	21844
Mathematics	4	7825	7912	14094	17256	7780	7759	7814	21947
Mathematics	5	7588	14092	7636	7519	7612	17172	7617	21630
Mathematics	6	7118	14846	7073	7080	7142	18293	7092	21919
Mathematics	7	6785	6833	6831	6764	18531	6788	15730	22550
Mathematics	8	14859	17283	6367	6445	6398	6442	6311	21148
ELA	3	15845	13788	7907	7978	7968	7951	7953	21590
ELA	4	16553	14105	7837	7892	7910	7841	7877	21847
ELA	5	16770	14232	7636	7643	7591	7585	7644	21927
ELA	6	17729	14760	7159	7167	7168	7161	7181	21907
ELA	7	18193	15628	6921	6801	6756	6853	6808	22555
ELA	8	17215	14971	6520	6463	6449	6415	6366	21287
Science	4	20802	11924	5766	11591	5784	11606	5841	17757
Science	8	15813	17884	4667	9363	4669	9322	4659	17867

Note. Final data was used

Table 9–6. Form to Pattern Conversion Table

Subject	Grade	1	2	3	4	5	6	7	8	9	10	11	12
Mathematics	3	E*	M*	G*	A	B	C	D	F	M			
Mathematics	4	D*	M*	C*	A	B	E	M	F	G			
Mathematics	5	F*	M*	B*	A	C	D	E	M	G			
Mathematics	6	F*	M*	B*	M	D	E	G	A	C			
Mathematics	7	E*	M*	G*	A	C	M	B	D	F			
Mathematics	8	B*	M*	A*	C	M	D	E	F	G			
ELA	3	A*	M*	B*	M	C	D	E	F	G			
ELA	4	A*	M*	B*	C	D	M	E	F	G			
ELA	5	A*	M*	B*	C	D	E	M	F	G			
ELA	6	A*	M*	B*	C	M	D	E	F	G			
ELA	7	A*	M*	B*	C	D	E	F	G	M			
ELA	8	A*	M*	B*	C	D	E	F	M	G			
Science	4	A*	M*	B*	C	D	E	F	G	A	M	D	F
Science	8	A*	M*	B*	C	D	E	F	G	D	B	F	M

Note. * Indicates the form was offered online

SCRAMBLING ANALYSIS

FORM LEVEL

The test-level and item-level effects of scrambling are presented in the following section. Table 9–6 shows the mean raw score difference from the Master Core for each scramble pattern (scramble pattern mean minus Master Core mean). The highlighted mean differences are statistically significant at family-wise Type I error rate (alpha) 0.01 with two-sample t-test. For example, with grade 3 math, seven two sample t-tests are conducted (Master Core vs. A, B, C, D, E, F, and G) and each test had Type I error rate (alpha) of 0.001428571 to keep the family-wise Type I error rate 0.01. Form 1, the form designated for use with accommodations was included in these analyses and as expected, a statistically significant difference was found wherever a pattern corresponds to Form 1. This difference, however, is likely attributable to the general pattern of lower item and test level scores for examinees using accommodations, and not to scrambling effects. Form 1 for all ELA, and science grades followed pattern A, whereas math forms differed by grade level.

Table 9–7 shows that, aside from results that are likely influenced by examinees receiving accommodations, 6 of 36, and 6 of 12 scramble pattern raw score means showed a statistically significant difference from the Master Core in mathematics, and science, respectively. Aside from the accommodated form, there were only 2 patterns with statistical differences in raw scores for ELA scramble patterns aside from the accommodation form.

Table 9–7. Mean Raw Score Differences from the Master Core

Subject	Grade	A	B	C	D	E	F	G
Mathematics	3	-0.64	-0.43	-0.71	-0.73	-1.80	-0.16	-0.06
Mathematics	4	-0.44	-0.31	0.09	-1.56	-0.31	-0.33	-0.39
Mathematics	5	-0.53	0.04	-0.26	-0.36	-0.37	-1.55	-0.26
Mathematics	6	-0.20	0.00	-0.29	-0.32	-0.39	-1.44	-0.50
Mathematics	7	-0.40	-0.38	-0.20	-0.46	-1.28	-0.23	-0.07
Mathematics	8	-0.29	-1.28	-0.40	-0.34	-0.56	-0.40	-0.35
ELA	3	-1.19	0.22	0.03	0.33	-0.13	0.28	0.27
ELA	4	-1.99	0.13	-0.48	-0.32	-0.49	-0.38	-0.14
ELA	5	-1.80	0.37	-0.13	0.07	0.11	0.08	0.21
ELA	6	-2.05	0.19	-0.28	-0.33	-0.39	-0.36	-0.40
ELA	7	-1.63	-0.02	-0.18	0.21	0.26	0.03	0.05
ELA	8	-1.83	-0.03	0.25	-0.01	0.05	0.38	0.35
Science	4	-1.33	0.09	-0.50	-0.70	-0.81	-0.53	-0.72
Science	8	-1.32	-0.05	-0.43	-0.27	-0.39	-0.31	-0.51

Note. Highlighted cells indicate the scramble pattern is statistically significantly different from the Master Core form at family-wise α = 0.01 (corrected for 7 pairwise comparisons) for each subject and grade.

ITEM LEVEL

The item level scrambling was examined using differential item functioning (DIF) described in Chapter Five. The *Mantel-Haenszel* procedure (Mantel & Haenszel, 1959) for detecting differential item functioning is a commonly used technique for MC items in educational testing and contrasts a focal group with a reference group.

In this section, master core form is reference group and non-master core forms were the focal groups. The items are assigned a severity code based on the magnitude of the effect sizes. Items classified as A+ or A- have little or no statistical indication of DIF. Items classified as B+ or B- have some indication of DIF but may be judged to be acceptable for future use. Items classified as C+ or C- have strong evidence of DIF and should be reviewed. Table 9–8 shows the number of items with C DIF items. There was only 1 item in ELA grade 7 exhibiting C DIF.

Table 9–8. The Number of Items with C DIF for Scrambling Effect

Subject	Item Type	Grade	A	B	C	D	E	F	G
Mathematics	MC	3	0	0	0	0	0	0	0
Mathematics	MC	4	0	0	0	0	0	0	0
Mathematics	MC	5	0	0	0	0	0	0	0
Mathematics	MC	6	0	0	0	0	0	0	0
Mathematics	MC	7	0	0	0	0	0	0	0
Mathematics	MC	8	0	0	0	0	0	0	0
ELA	MC	3	0	0	0	0	0	0	0
ELA	MC	4	0	0	0	0	0	0	0
ELA	MC	5	0	0	0	0	0	0	0
ELA	MC	6	0	0	0	0	0	0	0
ELA	MC	7	0	1	0	0	0	0	0
ELA	MC	8	0	0	0	0	0	0	0
Science	MC	4	0	0	0	0	0	0	0
Science	MC	8	0	0	0	0	0	0	0

CHAPTER TEN: SUMMARY DEMOGRAPHIC, PROGRAM, AND ACCOMMODATION DATA FOR THE 2021 PSSA

ASSESSED STUDENTS

The PSSA assessed students include those from public schools who are required to participate as well as those from a small number of non-public schools (fewer than 500 students per grade level) that elected to participate. Also included were home-schooled students (fewer than 100 students per grade) and a small number of foreign exchange students (generally fewer than 30 students per grade through Grade 8). An exception was granted for those IEP students with quite significant cognitive impairments who met each of the following criteria, making them eligible to participate in the Pennsylvania Alternate System of Assessment (PASA) for mathematics, reading, and science: 1) was enrolled in the assessed grade level for the subject area, 2) had a very severe cognitive disability, 3) required very intensive instruction, 4) required very extensive adaptation and support to perform or participate meaningfully, 5) required very substantial modification of the general education curriculum, and 6) participated in the general education curriculum that differed markedly in form and substance from that of other students. (See the *2021 Pennsylvania System of School Assessment: Handbook for Assessment Coordinators*.)

Results for this chapter are presented in tables for the three PSSA subject areas (mathematics, ELA, and science). Accompanying each numbered table is a letter (M, E, or S) to designate the subject area. Mathematics results are indicated by "M," ELA results are indicated by "E," and science results are indicated by "S." Tables 10–1E through 10–1S provide a summary of the assessed students for each subject. The last line combines the number of paper and online tests that are processed. This number is typically less than the "Used Answer Booklets Received" column shown in Table 8–1. The reason for the difference is that completely blank answer booklets (no student name and no items responded to) are removed from the initial batch of materials scanned. See Chapter Eight for more details on processing. Some processed booklets have student identifying information but will not receive a score. These results are presented within the 10–1 tables. Explanations for non-assessed students are provided later in this chapter.

Table 10–1E. Students Assessed on the 2021 PSSA: ELA

Description	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
Total number of PPT processed (Number)	92,972	93,059	91,214	89,522	89,075	88,069
Total number of CBT processed (Number)	23,222	25,290	27,013	32,031	36,422	36,794
Total number of tests processed (Number)	116,194	118,349	118,227	121,553	125,497	124,863
Total number of tests processed with a score (Number)	92,382	93,182	92,214	91,410	91,580	86,656
Total number of tests processed with a score (Percent)	79.5	78.7	78	75.2	73	69.4
Total number of tests processed without a score (Number)	23,812	25,167	26,013	30,143	33,917	38,207
Total number of tests processed without a score (Percent)	20.5	21.3	22	24.8	27	30.6
Students with an English Language Arts score used in state summaries (Number)	90,980	91,862	91,028	90,232	90,515	85,686

Notes. PPT = Paper/Pencil Test
CBT = Computer-Based Test

Table 10–1M. Students Assessed on the 2021 PSSA: Mathematics

Description	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
Total number of PPT processed (Number)	93,013	93,018	91,141	89,609	89,143	88,188
Total number of CBT processed (Number)	23,867	26,011	26,925	32,340	36,604	36,356
Total number of tests processed (Number)	116,880	119,029	118,066	121,949	125,747	124,544
Total number of tests processed with a score (Number)	93,186	93,817	92,152	91,820	91,939	86,281
Total number of tests processed with a score (Percent)	79.7	78.8	78.1	75.3	73.1	69.3
Total number of tests processed without a score (Number)	23,694	25,212	25,914	30,129	33,808	38,263
Total number of tests processed without a score (Percent)	20.3	21.2	21.9	24.7	26.9	30.7
Students with a Mathematics score used in state summaries (Number)	91,693	92,387	90,866	90,563	90,812	85,253

Notes. PPT = Paper/Pencil Test
CBT = Computer-Based Test

Table 10–1S. Students Assessed on the 2021 PSSA: Science

Description	Gr. 4	Gr. 8
Total number of PPT processed (Number)	92,279	87,312
Total number of CBT processed (Number)	25,688	36,661
Total number of tests processed (Number)	117,967	123,973
Total number of tests processed with a score (Number)	92,468	85,240
Total number of tests processed with a score (Percent)	78.4	68.8
Total number of tests processed without a score (Number)	25,499	38,733
Total number of tests processed without a score (Percent)	21.6	31.2
Students with a Science score used in state summaries (Number)	91,071	84,244

Notes. PPT = Paper/Pencil Test
CBT = Computer-Based Test

NON-ASSESSED STUDENTS

As may be observed from Tables 10–1E through 10–1S, not all students were assessed. Although there are a variety of reasons for this, the major ones pertain to the following:

- Extended absence from school that continued beyond the assessment window.
- Failure to meet the attempt criteria on one or more subject-area test sections and no exclusion code was marked by school personnel. For mathematics, ELA, and science, the attempt criteria required a minimum of five items to be completed in each subject area section.
- EL students in their first year in U.S. schools (ELA only).
- Medical emergency.
- Parental request in which the student's parent/guardian reviewed the assessment, found it to be in conflict with his/her religious belief, and requested in writing that the student be excluded from participation.
- Parental request in which the student's parent/guardian chose to have his/her child excluded from participation based on reasons other than conflict with religious belief, even though there is no provision for this exclusion in Pennsylvania regulation.
- Other reasons.

The numbers of students without test scores for these reasons are presented in Tables 10–2E through 10–2S.

Table 10–2E. Counts of Students without Scores on the 2021 PSSA: ELA

Reason for Non-Assessment	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
Extended absence from school (Number)	1,835	1,882	2,133	3,185	3,800	3,638
Extended absence from school (Percent)	7.7	7.5	8.2	10.6	11.2	9.5
Non-attempt (Number)	1,607	1,490	1,582	2,035	2,359	2,930
Non-attempt (Percent)	6.7	5.9	6.1	6.8	7.0	7.7
EL in first year in U.S. schools (Number)	28	39	41	18	27	28
EL in first year in U.S. schools (Percent)	.1	.2	.2	.1	.1	.1
Medical emergency (Number)	117	142	132	184	268	304
Medical emergency (Percent)	.5	.6	.5	.6	.8	.8
Parental request - Chapter 4 (Number)	1,704	1,981	2,180	2,567	3,162	3,630
Parental request - Chapter 4 (Percent)	7.2	7.9	8.4	8.5	9.3	9.5
Parental request - Other reasons (Number)	9,786	10,480	10,793	12,140	13,588	16,428
Parental request - Other reasons (Percent)	41.1	41.6	41.5	40.3	40.1	43.0
Other reasons (Number)	8,735	9,153	9,152	10,014	10,713	11,249
Other reasons (Percent)	36.7	36.4	35.2	33.2	31.6	29.4
Total not assessed (Number)	23,812	25,167	26,013	30,143	33,917	38,207

Table 10–2M. Counts of Students without Scores on the 2021 PSSA: Mathematics

Reason for Non-Assessment	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
Extended absence from school (Number)	2,033	2,078	2,319	3,472	3,955	3,831
Extended absence from school (Percent)	8.6	8.2	8.9	11.5	11.7	10.0
Non-attempt (Number)	1,459	1,284	1,202	1,719	1,918	2,506
Non-attempt (Percent)	6.2	5.1	4.6	5.7	5.7	6.5
Medical emergency (Number)	140	162	139	200	263	361
Medical emergency (Percent)	.6	.6	.5	.7	.8	.9
Parental request - Chapter 4 (Number)	1,689	1,957	2,170	2,534	3,056	3,757
Parental request - Chapter 4 (Percent)	7.1	7.8	8.4	8.4	9.0	9.8
Parental request - Other reasons (Number)	9,610	10,409	10,849	12,053	13,813	16,317
Parental request - Other reasons (Percent)	40.6	41.3	41.9	40.0	40.9	42.6
Other reasons (Number)	8,763	9,322	9,235	10,151	10,803	11,491
Other reasons (Percent)	37.0	37.0	35.6	33.7	32.0	30.0
Total not assessed (Number)	23,694	25,212	25,914	30,129	33,808	38,263

Table 10–2S. Counts of Students without Scores on the 2021 PSSA: Science

Reason for Non-Assessment	Gr. 4	Gr. 8
Extended absence from school (Number)	2,303	4,109
Extended absence from school (Percent)	9.0	10.6
Non-attempt (Number)	1,209	2,435
Non-attempt (Percent)	4.7	6.3
Medical emergency (Number)	175	368
Medical emergency (Percent)	.7	1.0
Parental request - Chapter 4 (Number)	1,978	3,704
Parental request - Chapter 4 (Percent)	7.8	9.6
Parental request - Other reasons (Number)	10,495	16,647
Parental request - Other reasons (Percent)	41.2	43.0
Other reasons (Number)	9,339	11,470
Other reasons (Percent)	36.6	29.6
Total not assessed (Number)	25,499	38,733

COMPOSITION OF SAMPLE USED IN SUBSEQUENT TABLES

Students included in the following demographic analyses were those who contributed to state summary statistics, using the final individual student data file provided to the Pennsylvania Department of Education in December 2021. Students not included in the state summary data were those who were 1) enrolled in a Pennsylvania school after October 1, 2020, 2) coded as EL and enrolled in a US school fewer than 12 cumulative months, 3) foreign exchange students, 4) home schooled, 5) enrolled in a non-public school, or 6) without a subject-area test score.

Demographic data for students taking the PSSA is presented separately for each subject area in Appendix I. Results for accommodations received were collected separately by subject area and are presented in separate tables as well.

COLLECTION OF STUDENT DEMOGRAPHIC INFORMATION

Data for analyses involving demographic characteristics were obtained primarily from information supplied by school district personnel through the Pennsylvania Information Management System (PIMS) and subsequently transmitted to DRC. Updates of attribution data were carried out through the DRC Attribution System. Some data such as accommodation information is marked directly on the student answer document at the time the PSSA is administered.

PARTICIPATION BY ADMINISTRATION MODE

Online (CBT) testing was available for the PSSA. As anticipated the vast majority of students were assessed utilizing paper/pencil tests (PPT). The bottom row of the tables presented in Appendix I present the number of students involved in the PPT and CBT administrations as well as Table 9–2 in Chapter Nine. Overall, the percent of students responding by CBT was approximately 21.46 to 33.08 percent for mathematics and ELA, and science. There was a substantial increase across each subject and grade level between 2019 and 2021. In general for ELA and math, higher grade levels tend to administer more computer-based tests.

DEMOGRAPHIC CHARACTERISTICS

Frequency data for each demographic category is presented in Appendix I. Percentages are based on students with scores in a subject area, which are shown at the bottom of the appropriate table. Included are students receiving education in a non-traditional setting, such as a court-agency placement.

TEST ACCOMMODATIONS PROVIDED

School personnel supplied information regarding accommodations that a student may have received while taking the PSSA. Accommodations are classified in terms of presentation, response, setting, and timing to enable students to better manage disabilities that hinder their ability to learn and respond to assessments. An accommodations manual entitled, 2021 *Accommodations Guidelines: Keystone Exams and PSSA* guides the development and analysis of the PSSA. This manual may be found on the PDE website at www.education.pa.gov. A glossary of accommodation terms as applied to the PSSA is provided in Table 10–3 at the end of this chapter.

The frequency with which accommodations were utilized for PPT and CBT formats is summarized separately for each subject area in Appendix J. Tabled values are based on all students whose score contributed to state summary statistics in a given subject area. In the tables an NA denotes those instances in which a particular accommodation does not apply to one of the testing modes.

PRESENTATION ACCOMMODATIONS RECEIVED

Presentation Accommodations are those that provide alternate ways for students to access and process printed instructional material and assessments. These include auditory, tactile, visual, and combined auditory/visual modes of presentation. The number of presentation accommodations provided in the 2021 PSSA varied by subject and testing mode and are presented in Appendix J.

As depicted in Appendix J, the actual frequencies were low, with all but the read-aloud, audio, and other accommodation being used by less than one percent of assessed students statewide. Among accommodations specific to CBT the use of audio was the most frequent. For CBT administration, there were unique accommodations, audio, color chooser, contrasting text chooser, and refreshable Braille, available for mathematics, ELA, and science. Video sign language was also available for mathematics and science.

RESPONSE ACCOMMODATIONS RECEIVED

Response Accommodations permit students to complete assignments, tests, and activities in different ways to solve or organize problems using some type of assistive device or organizer. The number of response accommodations provided on the 2021 PSSA varied by subject and testing mode and are presented in Appendix J. Very few response accommodations were coded as being utilized by students responding by CBT.

SETTING ACCOMMODATIONS RECEIVED

Setting Accommodations permit a change in location in which a student receives instruction or participates in an assessment. There were four categories of setting accommodations for mathematics, ELA, and science on the 2021 PSSA. As depicted in Appendix J, the most common accommodation across subject areas was small group setting. This was true for PPT and CBT modes of administration.

TIMING ACCOMMODATIONS RECEIVED

Timing Accommodations involve a change in the allowable length of time to complete assignments or assessments, including the way in which time is organized. There were four categories of timing accommodations for mathematics, ELA, and science on the 2021 PSSA. As depicted in Appendix J, the most commonly used accommodation was extended time, followed by frequent breaks. One consistent finding was that students responding by CBT had a higher usage of frequent breaks than observed for students taking a PPT.

ACCOMMODATION RATE FOR NON-IEP AND IEP STUDENTS

A comparison between students without an IEP (non-IEP students) and those with an IEP (IEP students) with regard to having received an accommodation is provided in Appendix K. In this data, accommodated means that a student received one or more of the total number of accommodations available for a given subject area; however, this also varies with administration mode. The total number of available accommodations for students taking a PPT was as follows: mathematics and science, 31; and ELA, 28. The number of available accommodations for students taking a CBT was as follows: mathematics and science, 29; and ELA, 25. The category of non-accommodated indicates that a student did not receive any accommodation during testing.

The general pattern of findings reveals a consistent and substantially higher percentage of IEP students receiving an accommodation in contrast to non-IEP students. This same pattern holds true regardless of test administration mode and PSSA test.

THE INCIDENCE OF ACCOMMODATIONS AND IEP AND EL STATUS

As noted in Appendix L, students with an IEP received an accommodation of some type far more often than non-IEP students, with the exception of the extended time accommodation. As the PSSA is designed as having no time limit, any student may opt for extended time. Certain accommodations with very low frequencies are specific to particular disabilities while others, such as extended time are far more common and may also apply to any student. Accommodations having the largest frequencies can potentially supply the most stable data when separated out for subgroup analysis. Listed below are the most commonly used accommodations, which were chosen for display.

- Some test items/questions read aloud (mathematics, science)
- All test items/questions read aloud (mathematics, science)
- Small group setting (mathematics, ELA, science)
- Extended time (mathematics, ELA, science)
- Frequent breaks (mathematics, ELA, science)
- Some language questions/text-dependent analysis questions read aloud (ELA)
- All language questions/text-dependent analysis questions read aloud (ELA)

Coding for IEP is dichotomous, as students are classified IEP and non-IEP. For purposes of this analysis, an English Learner (EL) is a student classified EL and enrolled in a U.S. school fewer than 12 cumulative months. All other assessed students, including those who have exited an ESL/bilingual program and are in the first or second year of monitoring, are regarded as non-EL. Students coded as EL and enrolled in a U.S. school fewer than 12 cumulative months, are excluded from state summary statistics as stated earlier in this chapter.

Customarily, a considerably larger percentage of IEP students receive a given accommodation than non-IEP students. Although less frequent, certain accommodations also have a high frequency rate for EL students. To separate out the effect of being classified IEP or EL, four possible combinations are presented in the Appendix L. These include general education students who are neither IEP nor EL, students who are IEP but non-EL, students who are EL but non-IEP, and students who are both IEP and EL. The bottom row for each grade provides the total number of assessed students in each of the four classifications.

GLOSSARY OF ACCOMMODATION TERMS

Table 10–3 provides a brief description of accommodation terms as used in the PSSA. Accommodation data was supplied by school personnel as noted in the left column of the table. The right column contains an explanation derived from the PDE publication, 2021 *Accommodations Guidelines: Keystone Exams and PSSA*. This manual may be found on the PDE website at www.education.pa.gov.

Table 10–3. Glossary of Accommodation Terms as Applied in the 2021 PSSA

Type of Testing Accommodation	Explanation
Student used the following Presentation Accommodations	
Braille format	Students may use a Braille format of the test. Answers must then be transcribed into the answer booklet without alteration.
Large print format	Students with visual impairments may use a large print format. Answers must then be transcribed into the answer booklet without alteration.
Magnification device	Devices to magnify print may be used for students with visual impairments and/or print disabilities.
Color overlay	Students with visual impairments may place a color overlay on a printed page of the test document to make text more readable.
Computer assistive technology (e.g., electronic screen reader) (PDE approval required)	Students with severe visual disabilities that prevent them from accessing instructional material or performing the skill may use computer assistive technology; however, PDE must approve the program and functions prior to the test window.
Test items/questions/text-dependent analysis signed	Deaf/hearing impaired students may receive test directions from a qualified interpreter. Signing is also permitted for PSSA ELA writing section multiple-choice items, and text-dependent analysis questions and all items in PSSA mathematics and science and for Keystone Algebra and Biology.
Test items/questions/text-dependent analysis interpreted for EL	A qualified interpreter may translate directions or clarify instructions for the assessments. The interpreter may translate but not define specific words or test questions on the PSSA mathematics, science, ELA writing section multiple-choice items, and text-dependent analysis questions and Keystone Algebra and Biology exams.
Some or all test items/questions/text-dependent analysis read aloud	Students unable to decode text visually may have items/questions read aloud for PSSA ELA writing section multiple-choice items, and text-dependent analysis questions and all items in PSSA mathematics and science and for Keystone Algebra and Biology; however, words may not be defined.
Amplification device	In addition to using hearing aids, an amplification device to enhance clarity may be required.
Other (PDE approval required)	Other presentation accommodations indicated in the *Accommodation Guidelines* may be provided; however, PDE approval is required prior to the test window.
Spanish version for PSSA (Math and Science) and Keystone (Algebra and Biology)	Students whose first language is Spanish and who have been enrolled in U.S. schools for fewer than three years may take this version.
Student used the following Online Presentation Accommodations	
Audio	The online test form reads permissible test directions and items for a student unable to decode text. The accommodation must be marked within the test engine system. The accommodation is available on PSSA mathematics, science, ELA writing section multiple-choice items, and text-dependent analysis questions and Keystone Algebra and Biology exams.
Video sign language (per accommodations guidelines)	Eligible students who use a sign language accommodation during instructional periods may use VSL on the PSSA mathematics and science and Keystone Algebra and Biology assessments.
Color chooser or contrasting text chooser	The use of this accommodation enables a visually impaired student to change the background color or text color to make text more readable.
Refreshable Braille	This accommodation allows students to use a screen reader to produce a Braille translation output.

Table 10–3 (continued). Glossary of Accommodation Terms as Applied in the 2021 PSSA

Type of Testing Accommodation	Explanation
Student used the following Response Accommodations	
Brailler/Note taker (per *Accommodations Guidelines*)	Students using this device as part of their regular instructional program may use it on the assessments; however, without thesaurus, spelling, or grammar checker.
Test administrator scribed **open-ended** responses at student's direction	A test administrator may record word-for-word exactly what a student dictated directly into the test booklet. This includes MC and OE responses Keystone Algebra, Biology, and Literature tests and PSSA mathematics, ELA, and science.
Test administrator marked **multiple-choice** responses at student's direction	A test administrator may mark an answer booklet at the direction of a student (e.g., a student may point to an MC answer with the test administrator marking the response in the answer booklet).
Test administrator transcribed student responses (per **Accommodations Guidelines**)	A test administrator may transcribe (copy) a student's written, typed, or keyed response into a standard answer booklet.
Qualified Interpreter translated, transcribed, and/or scribed student's **signed** responses	A qualified interpreter may interpret a student's **signed** responses into written English for Keystone Algebra and Biology exams, and PSSA mathematics and science assessments. Interpreters are not permitted to make corrections or change the meaning of the response.
Qualified Interpreter translated, transcribed, and/or scribed EL student responses	A qualified interpreter may interpret a student's non-English oral responses into written English for Keystone Algebra and Biology exams, and PSSA mathematics and science assessments. Interpreters are not permitted to make corrections or change the meaning of the response.
Mixed-mode test administration	Examinee taking the PSSA in computer-based mode provides handwritten responses to constructed-response items in paper answer booklet.
Augmentative communication device	Students with severe communication difficulties may use a special device to convey responses, which must be transcribed into the answer booklet by the test administrator.
Keyboard, word processor, or computer (per *Accommodations Guidelines*)	This is an allowable accommodation as a typing function only for students with the identified need. Supports such as dictionaries, thesauri, spell checkers, and grammar checkers must be turned off. Answers must then be transcribed into the answer booklet without alteration.
Translation dictionary for EL student	A word-to-word dictionary that translates native language to English (or vice versa) without word definitions or pictures is allowed on any portion of the Keystone Algebra and Biology exams, and PSSA mathematics and science tests.
Computer assistive technology (e.g., electronic screen reader) (PDE approval required)	Students with blindness or extremely low vision may use dictate text into a computer. Responses must be transcribed verbatim into student's regular answer booklet.
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.
Student used the following Setting Accommodations	
Hospital/home testing	A student who is confined to a hospital or to home during the testing window may be tested in that environment.
One-on-one setting	One-on-one settings are necessitated in certain instances, such as to reduce distraction or in the use of certain devices. A separate room may be used to reduce distraction.
Small group setting	Some students may require a test setting with fewer students or a setting apart from all other students to minimize distraction.

Table 10–3 (continued). Glossary of Accommodation Terms as Applied in the 2021 PSSA

Type of Testing Accommodation	Explanation
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.
Student used the following Timing Accommodations	
Extended time	Extended time may be allotted for each section of the test as a planned accommodation to enable students to finish.
Frequent breaks	Frequent breaks (breaks within a test section) may be scheduled for the completion of each test section; however, a test section must be completed within one school day.
Changed test schedule	Students whose disabilities prevent them from following a regular, planned test schedule may follow an individual schedule that enables test completion.
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.

CHAPTER ELEVEN: CLASSICAL ITEM STATISTICS

This chapter provides an overview of the two most familiar item-level statistics obtained from any classical (traditional) item analysis: item difficulty and item discrimination. The following results were estimated using final data and pertain only to operational PSSA items (i.e., those items that contributed to a student's total test score). Rasch item statistics are discussed in Chapter Twelve and test-level statistics are found in Chapter Seventeen.

ITEM-LEVEL STATISTICS

Appendix F provides classical item statistics and Rasch parameters for all PSSA items. Results are organized by subject and grade. These statistics represent the item characteristics most often used to determine whether an item functioned properly and/or how a group of students performed on a particular item. The item statistics in the appendices include *p*-values for multiple-choice (MC) items and item means for open-ended (OE)[1] items (indicators of item difficulty); point-biserial correlations for MC items and item-test correlations for OE items (indicators of item discrimination); and the proportion of students selecting each MC item option or earning each OE item score point.

ITEM DIFFICULTY

At the most general level, an item's difficulty is indicated by its mean score in some specified group (e.g., grade level).

$$\bar{x} = \frac{1}{n} \cdot \sum_{i=1}^{n} x_i$$

In the mean score formula above, the individual item scores (x_i) are summed and then divided by the total number of students (*n*). For multiple-choice items, student scores are represented by 0s and 1s (0 = wrong, 1 = right). With 0–1 scoring, the equation above also represents the number of students correctly answering the item divided by the total number of students. Therefore, this is also the proportion correct for the item, or the *p*-value. In theory, *p*-values can range from 0.00[2] to 1.00 on the proportion-correct scale. For example, if an item has a *p*-value of 0.89, it means 89 percent of the students answered the item correctly. Additionally, this value might also suggest that the item was relatively easy and/or the students who attempted the item were relatively high achievers. In other words, item difficulty and student ability are somewhat confounded.

For OE items, mean scores can range from the minimum possible score (usually zero) to the maximum possible score (e.g., four points in the case of some mathematics, ELA, and science items). Sometimes a pseudo *p*-value is provided for an OE item. This is done by dividing the mean item score by the maximum possible item score.

The minimum and maximum extremes of the difficulty scale are typically not seen in applied practice. However, understanding the extremes helps illustrate that relatively lower values correspond to more difficult items, and that relatively higher values correspond to easier items. (As a result, some assert that this index would be more accurately referred to as the item's easiness.)

Item difficulty is an important consideration for the PSSA tests because of the ranging achievement levels of students in Pennsylvania (Below Basic, Basic, Proficient, and Advanced). Items that are either very hard or very easy provide little information about student differences in achievement. However, an item answered correctly by a high percentage of students would suggest that the knowledge or skill the item measures has been mastered by most students. Conversely, an item answered incorrectly by a low percentage of students would suggest few students have mastered the knowledge or skill the item taps. On a standards-referenced test like the PSSA, a test development goal is to include a wide range of item difficulties.

[1] OE items for ELA include Short-Answer (SA), Evidence-Based Selected-Response (EBSR), Text-Dependent Analysis (TDA).
[2] For MC items with four response options, pure random guessing would lead to an expected *p*-value of 0.25.

ITEM DISCRIMINATION

At the most general level, item discrimination[3] indicates an item's ability to differentiate between high and low achievers. It is expected that students with high ability (i.e., those who perform well on the PSSA overall) would be more likely to answer any given PSSA item correctly, while students with low ability (i.e., those who perform poorly on the PSSA overall) would be less likely to answer the same item correctly. For the PSSA tests, Pearson's product-moment correlation coefficient between item scores and test scores is used to indicate discrimination. (As commonly practiced, DRC removes the item score from the total score such that the resulting correlations will not be spuriously high.) The correlation coefficient can range from -1.0 to +1.0. If this expectation is met (high-scoring students tend to answer the item correctly while low-scoring students answer the item incorrectly), the correlation between the item score and the total test score will be both positive and noticeably large in its magnitude (i.e., well above zero), meaning the item is a good discriminator between high and low ability students. This should be the case for all PSSA operational test items.

In summary, the correlation will be positive in value when the mean test score of the students answering the item correctly is higher than the mean test score of the students answering the item incorrectly.[4] In other words, this indicates that students who did well on the total test tended to do well on the item as well. However, an interaction can exist between item discrimination and item difficulty. Items answered correctly (or incorrectly) by a large proportion of examinees (i.e., the items have extreme *p*-values) can have reduced power to discriminate, and thus, can have lower correlations.

Discrimination is an important consideration for the PSSA because the use of more discriminating items on a test is associated with more reliable test scores. This in turn means that score estimates will be more precise (i.e., there will be smaller confidence intervals around the scores) and, perhaps more importantly, that more accurate performance level placements will be made. The issues of reliability, confidence intervals, and performance level classifications are further discussed in Chapter Eighteen.

[3] As noted earlier, the discrimination index for PSSA dichotomously-scored MC items is typically referred to as the point-biserial correlation coefficient. For OE items, the term item-test correlation is sometimes used.

[4] It is legitimate to view the point-biserial correlation as a standardized mean difference. A positive value indicates students who chose that response had a higher mean score than the average student; a negative value indicates students who chose that response had a lower than average mean score.

CLASSICAL ITEM ANALYSIS RESULTS

Table 11–1 provides the summary statistics for the difficulty and discrimination with respect to each subject and grade. The spread of item difficulties and discriminations can be seen in both Table 11–1 and Figure 11–1. There is a wide range of difficulties across all subjects, where *p*-values typically range from approximately 0.30 to approximately 0.85. Average *p*-values are consistent with test specifications. The item-total correlations range from about 0.20 to 0.70, where higher item-total correlations are often observed for OE items (see Table 11–2).

Table 11–1. Summary Statistics of Difficulty and Discrimination by Subject and Grade

Subject	Grade	Mean *P*-val.	Min *P*-val.	Q1 *P*-val.	Median *P*-val.	Q3 *P*-val.	Max *P*-val.	Mean I-T Corr.	Min I-T Corr.	Q1 I-T Corr.	Median I-T Corr.	Q3 I-T Corr.	Max I-T Corr.
Mathematics	3	0.51	0.30	0.40	0.48	0.62	0.84	0.44	0.24	0.35	0.44	0.49	0.74
Mathematics	4	0.49	0.26	0.40	0.46	0.59	0.84	0.41	0.20	0.34	0.40	0.45	0.74
Mathematics	5	0.47	0.24	0.36	0.45	0.59	0.88	0.41	0.15	0.32	0.41	0.48	0.75
Mathematics	6	0.49	0.24	0.36	0.44	0.63	0.86	0.38	0.18	0.32	0.38	0.44	0.73
Mathematics	7	0.45	0.18	0.36	0.43	0.50	0.77	0.40	0.19	0.31	0.40	0.49	0.75
Mathematics	8	0.47	0.20	0.40	0.48	0.54	0.72	0.39	0.14	0.32	0.39	0.45	0.76
ELA	3	0.53	0.31	0.45	0.50	0.61	0.80	0.41	0.20	0.31	0.41	0.48	0.69
ELA	4	0.55	0.35	0.46	0.54	0.62	0.80	0.40	0.20	0.33	0.40	0.47	0.63
ELA	5	0.55	0.25	0.45	0.57	0.65	0.85	0.37	0.14	0.32	0.37	0.43	0.60
ELA	6	0.55	0.28	0.49	0.55	0.63	0.84	0.39	0.16	0.31	0.43	0.49	0.60
ELA	7	0.56	0.28	0.50	0.57	0.65	0.79	0.36	0.19	0.27	0.35	0.45	0.60
ELA	8	0.56	0.25	0.46	0.55	0.70	0.82	0.39	0.16	0.31	0.40	0.44	0.65
Science	4	0.52	0.20	0.38	0.53	0.65	0.76	0.35	0.05	0.26	0.36	0.45	0.55
Science	8	0.51	0.25	0.43	0.50	0.60	0.81	0.38	0.14	0.31	0.39	0.45	0.64

Note. I-T Corr. is the item-test score correlation.

Table 11–2 disaggregates results for the MC and OE items. The mean *p*-values for MC items ranged from about 0.46 to 0.52 for Mathematics and from 0.53 to 0.57 for ELA. The mean *p*-values for MC items for Science grades 4 and 8 was 0.53 and 0.52, respectively. Test difficulties of the 2021 tests were similar to that of the 2019 forms, which were intentionally increased in 2018 to align with student performance[5]. On average, OE items were slightly more difficult for mathematics and science, where *p*-values ranged from 0.22 to 0.37 and 0.44, respectively. *P*-values for ELA OE items were similar to that of MC items (0.52 to 0.56).

The mean item-test correlations ranged from roughly 0.33 to 0.42 and 0.42 to 0.72 for the MC and OE items, respectively. These are similar to historic trends. The OE correlations tended to be higher than the MC correlations, which is not surprising because the OE items include more score points. Based on the distribution of the discrimination (correlation) statistics, the overall item quality appears quite good. However, it is difficult to make global conclusions about overall test quality from these item statistics alone. With that caveat in mind, the results presented in this chapter indicate that the PSSA item difficulty and discrimination were in expected and acceptable ranges, and further evidence of the quality of the internal test structure is provided in the chapters that follow.

[5] Although test difficulties were well-aligned with prior PSSA and test specifications, student participation and performance were lower in 2021 likely due to the disruption in learning associated with the Covid-19 pandemic.

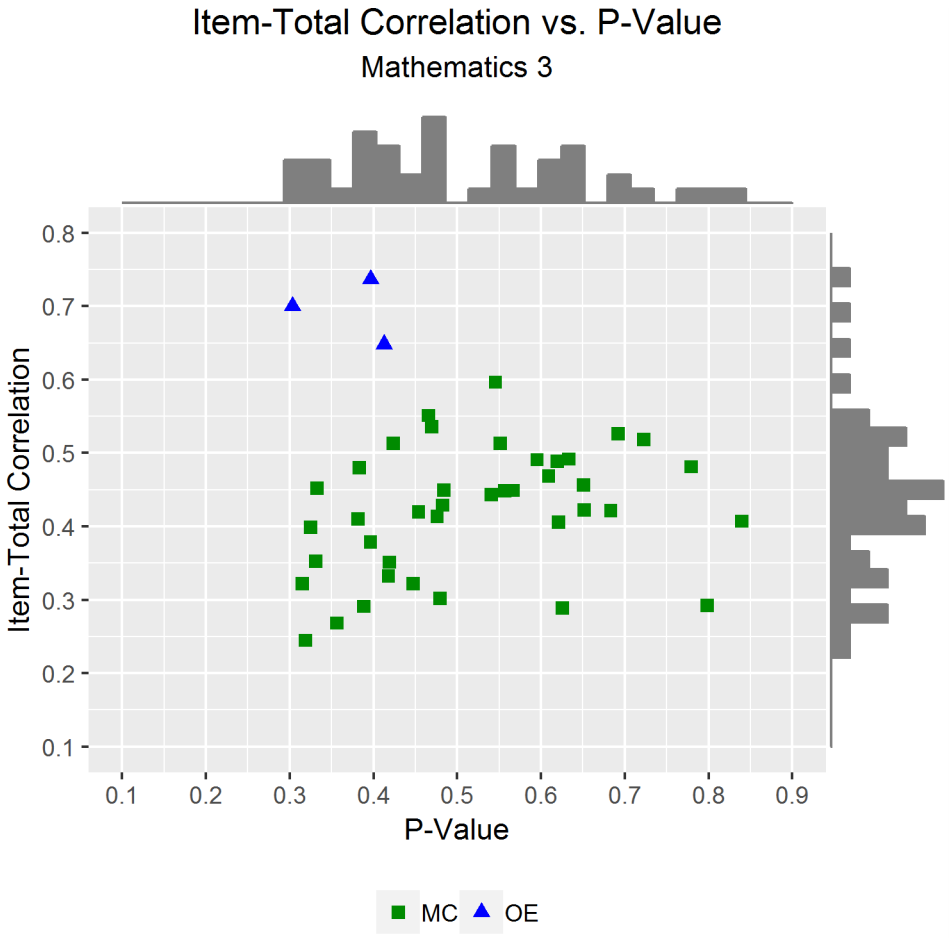
Table 11–2. Sum and Mean Statistics for MC and OE Items

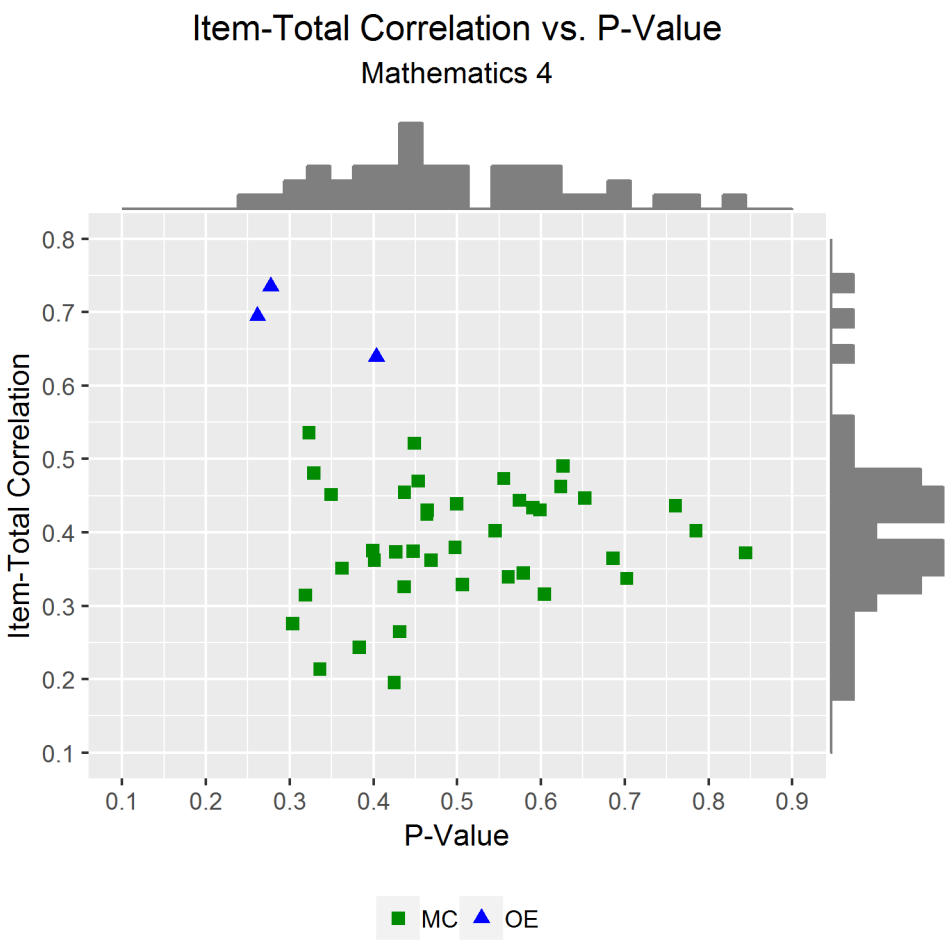
Subject	Grade	MC Points	MC Sum	MC Mean *P*-val.	MC Mean I-T Corr.	OE Points	OE Sum	OE Mean P-val.	OE Mean I-T Corr.
Mathematics	3	40	20.83	0.52	0.42	12	4.45	0.37	0.70
Mathematics	4	40	20.20	0.51	0.39	12	3.77	0.31	0.69
Mathematics	5	40	19.42	0.49	0.39	12	3.28	0.27	0.69
Mathematics	6	40	20.13	0.50	0.36	12	3.74	0.31	0.69
Mathematics	7	40	18.50	0.46	0.38	12	2.64	0.22	0.72
Mathematics	8	40	19.43	0.49	0.37	12	3.27	0.27	0.72
ELA	3	29	15.48	0.53	0.39	16	8.39	0.52	0.52
ELA	4	32	17.57	0.55	0.38	19	10.36	0.55	0.48
ELA	5	32	17.98	0.56	0.36	19	9.90	0.52	0.42
ELA	6	32	17.79	0.56	0.37	19	10.20	0.54	0.52
ELA	7	32	18.03	0.56	0.33	19	10.62	0.56	0.48
ELA	8	32	18.15	0.57	0.37	19	9.98	0.53	0.47
Science	4	38	20.24	0.53	0.34	10	4.40	0.44	0.47
Science	8	38	19.65	0.52	0.36	10	4.37	0.44	0.55

Note. I-T Corr. is the item-test score correlation. OE items for ELA include SA, EBSR, and TDA.

Figure 11–1 presents scatterplots for each subject and grade and displaying each item plotted by its *p*-value on the *x*-axis and its item-total correlation on the *y*-axis. Note that pseudo *p*-values (described above) are used for OE items in these plots. These plots provide information about the distribution of item discrimination and item difficulty in a histogram along the y-axis and x-axis, respectively. Green squares indicate MC items and blue triangles indicate OE items. For ELA, OE items include SA, EBSR, and TDA item types. From the difficulty distributions illustrated in Figure 11–1, a wide range of item difficulties appeared on each exam, which was one test development goal. The bivariate relationship between item discrimination (item-test *correlations*) and difficulty (item *mean* scores) shows a common trend that items with extreme difficulties can have lower discrimination values.

Figure 11–1. Discrimination and Difficulty Scatterplot




Item-Total Correlation vs. P-Value
Mathematics 4
Item-Total Correlation
P-Value
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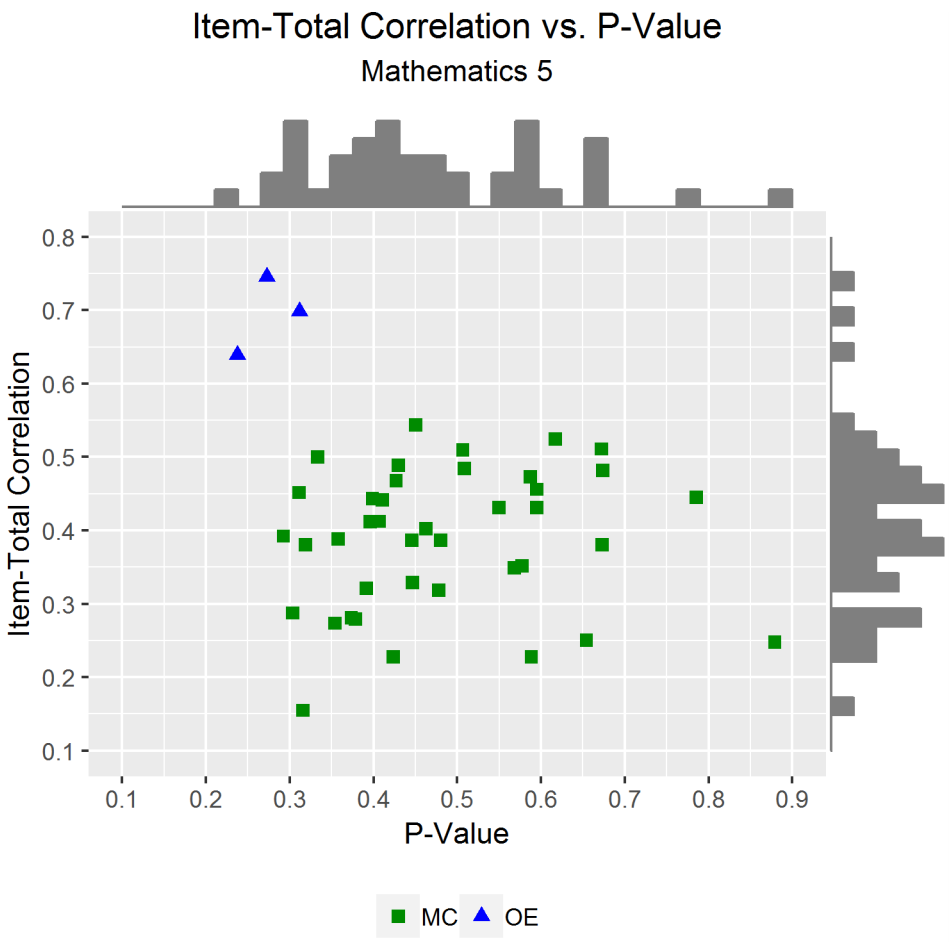
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
MC
OE


Item-Total Correlation vs. P-Value
Mathematics 5
Item-Total Correlation
P-Value
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0.4
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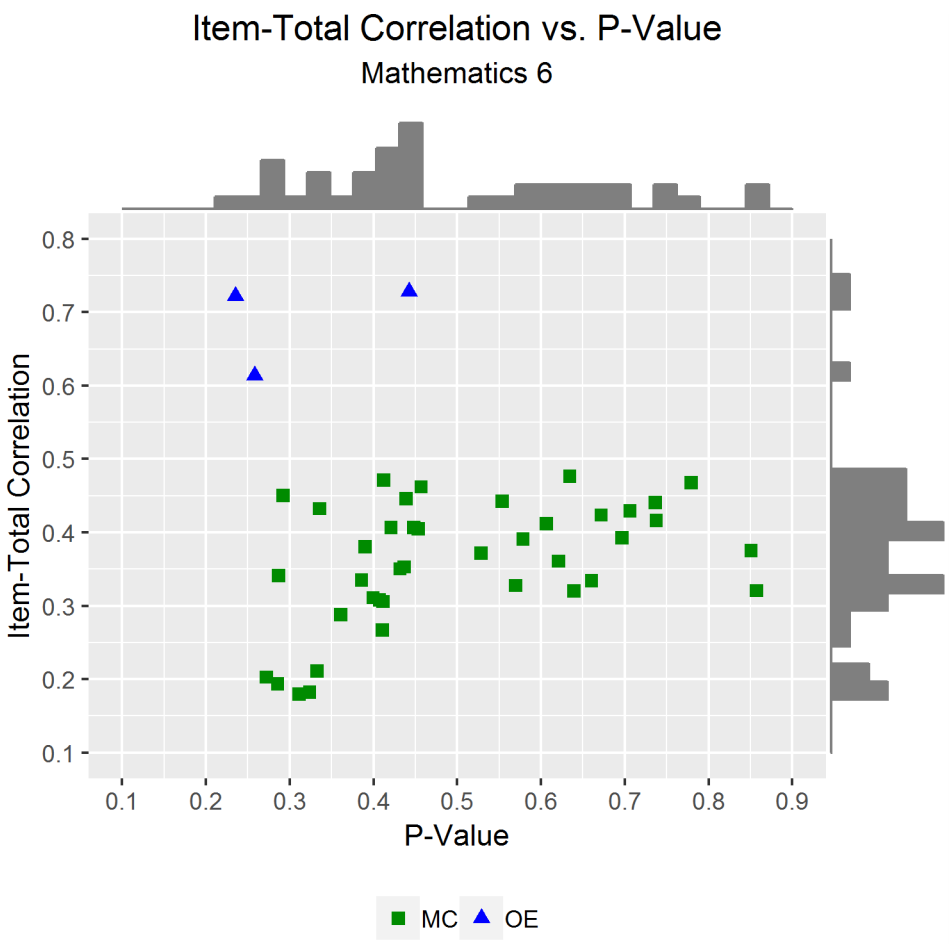
MC
OE


Item-Total Correlation vs. P-Value
Mathematics 6
Item-Total Correlation
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.1
0.2
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0.5
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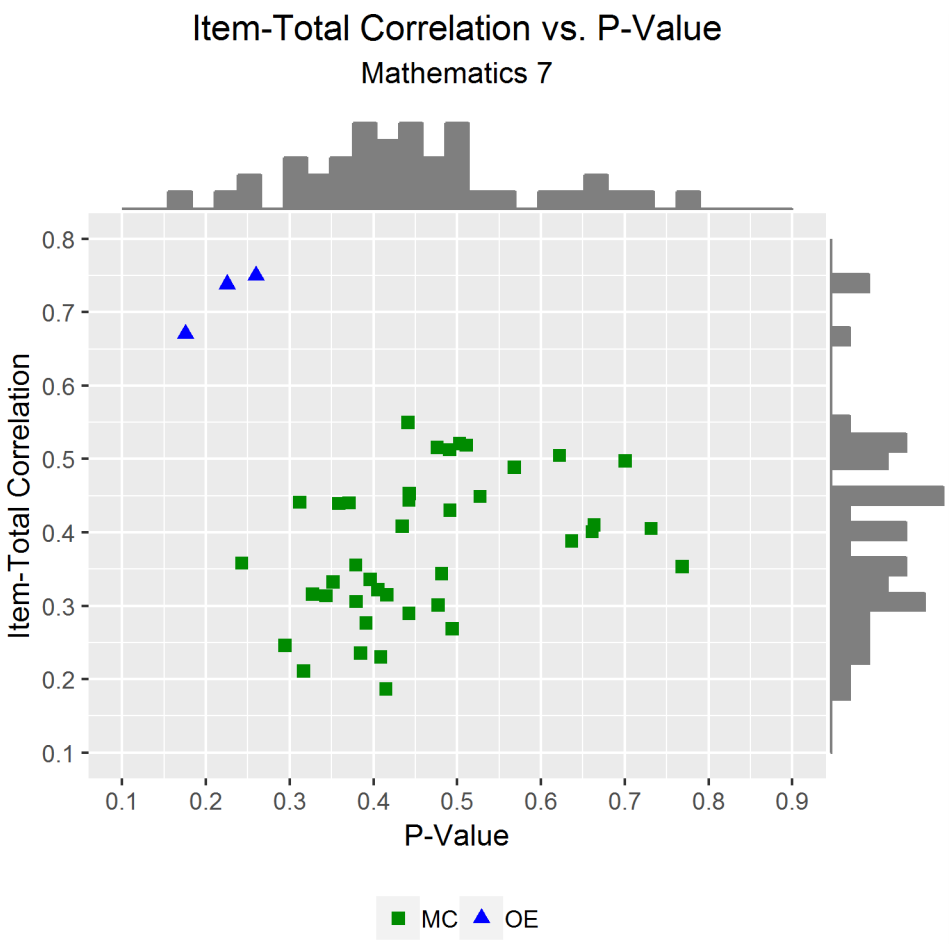
0.8
0.9
P-Value
MC
OE


Item-Total Correlation vs. P-Value
Mathematics 7
Item-Total Correlation
P-Value
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0.4
0.5
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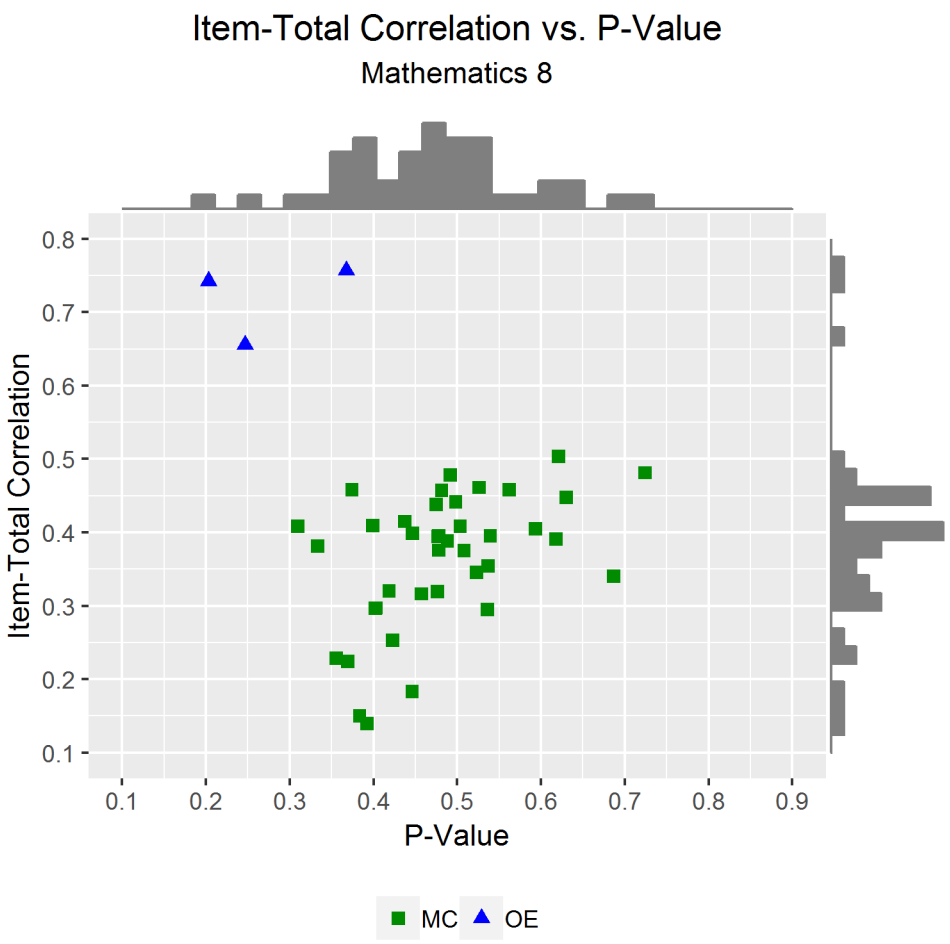
0.8
0.9
MC
OE


Item-Total Correlation vs. P-Value
Mathematics 8
Item-Total Correlation
P-Value
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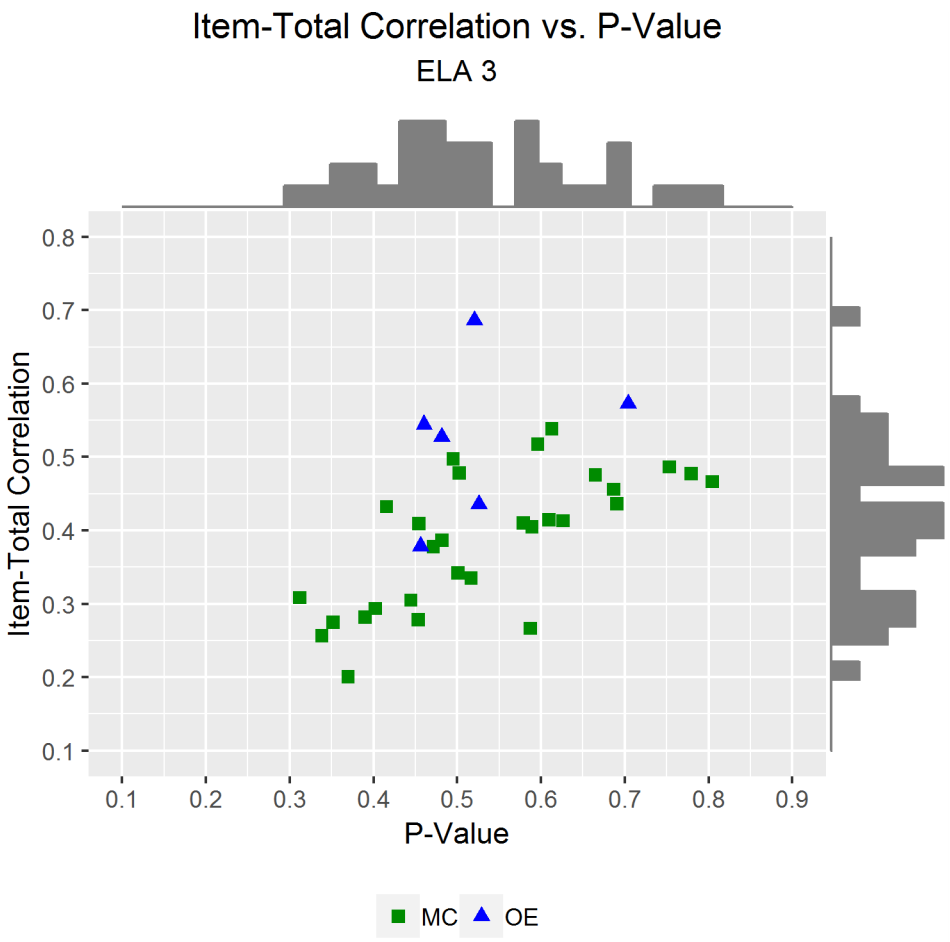
MC
OE


Item-Total Correlation vs. P-Value
ELA 3
Item-Total Correlation
P-Value
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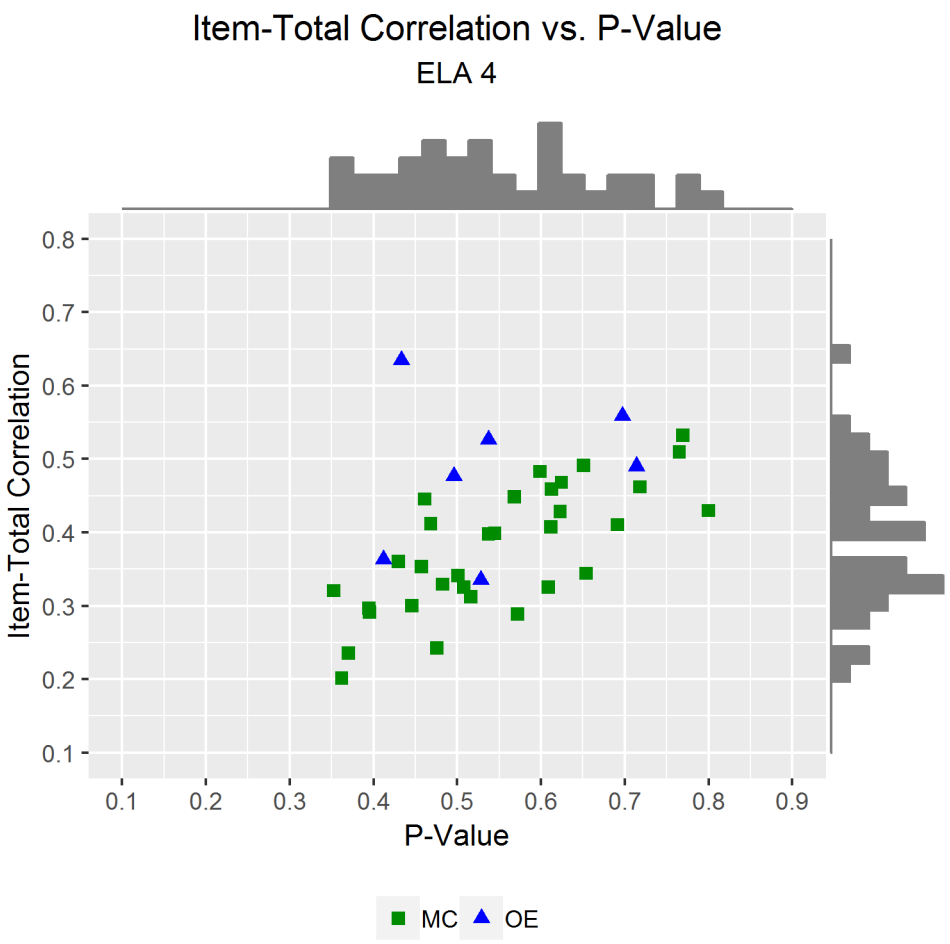
0.3
0.4
0.5
0.6
0.7
0.8
0.9
MC
OE


Item-Total Correlation vs. P-Value
ELA 4
Item-Total Correlation
P-Value
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0.3
0.4
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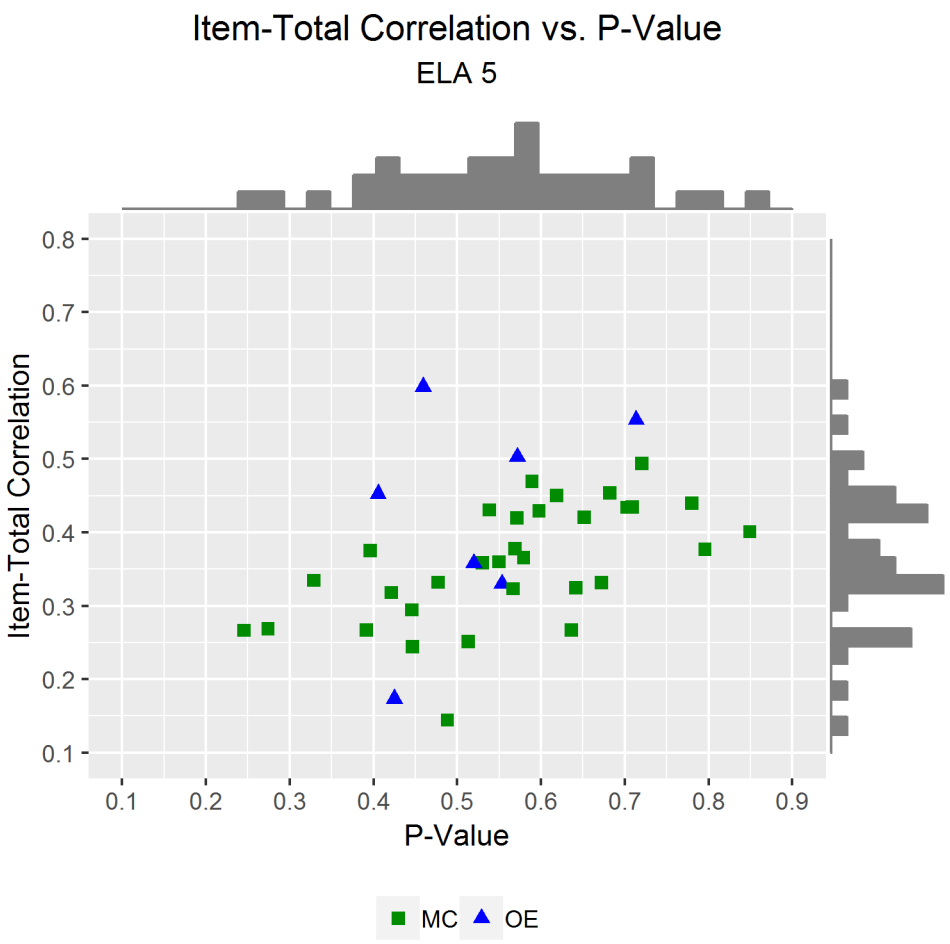
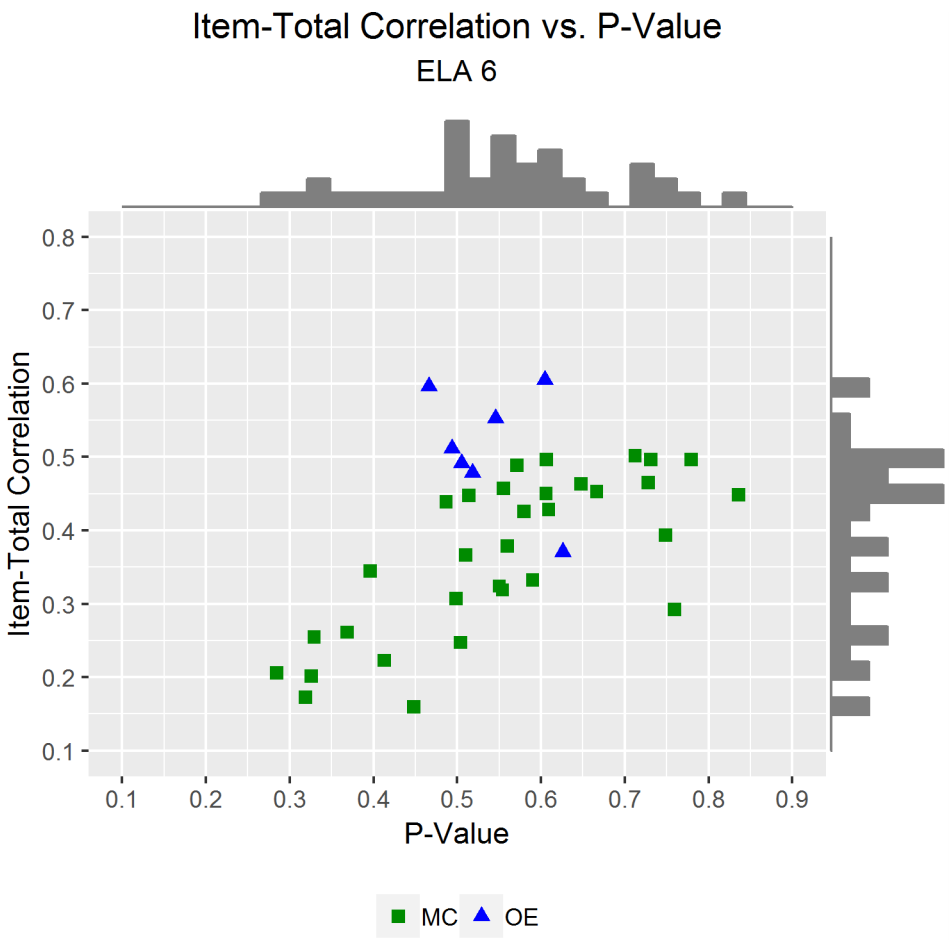
0.6
0.7
0.8
0.9
MC
OE


Item-Total Correlation vs. P-Value
ELA 5
Item-Total Correlation
P-Value
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
MC
OE


Item-Total Correlation vs. P-Value
ELA 6
Item-Total Correlation
P-Value
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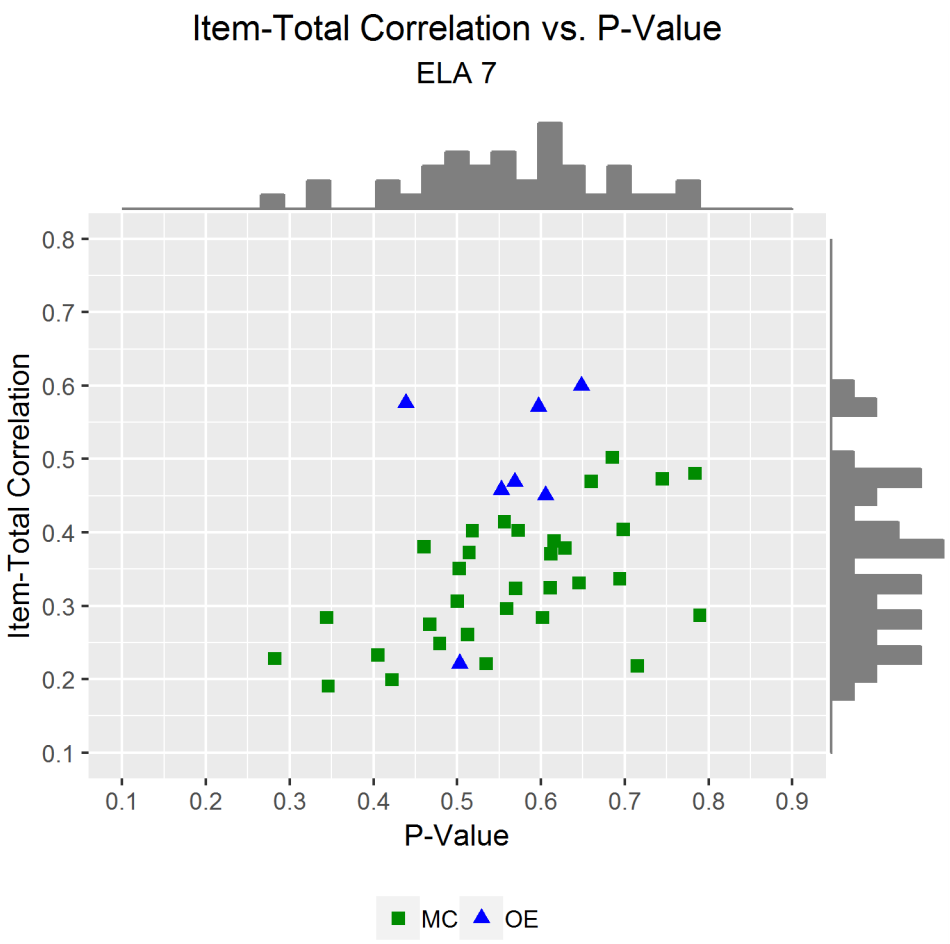
0.4
0.5
0.6
0.7
0.8
0.9
MC
OE


Item-Total Correlation vs. P-Value
ELA 7
Item-Total Correlation
P-Value
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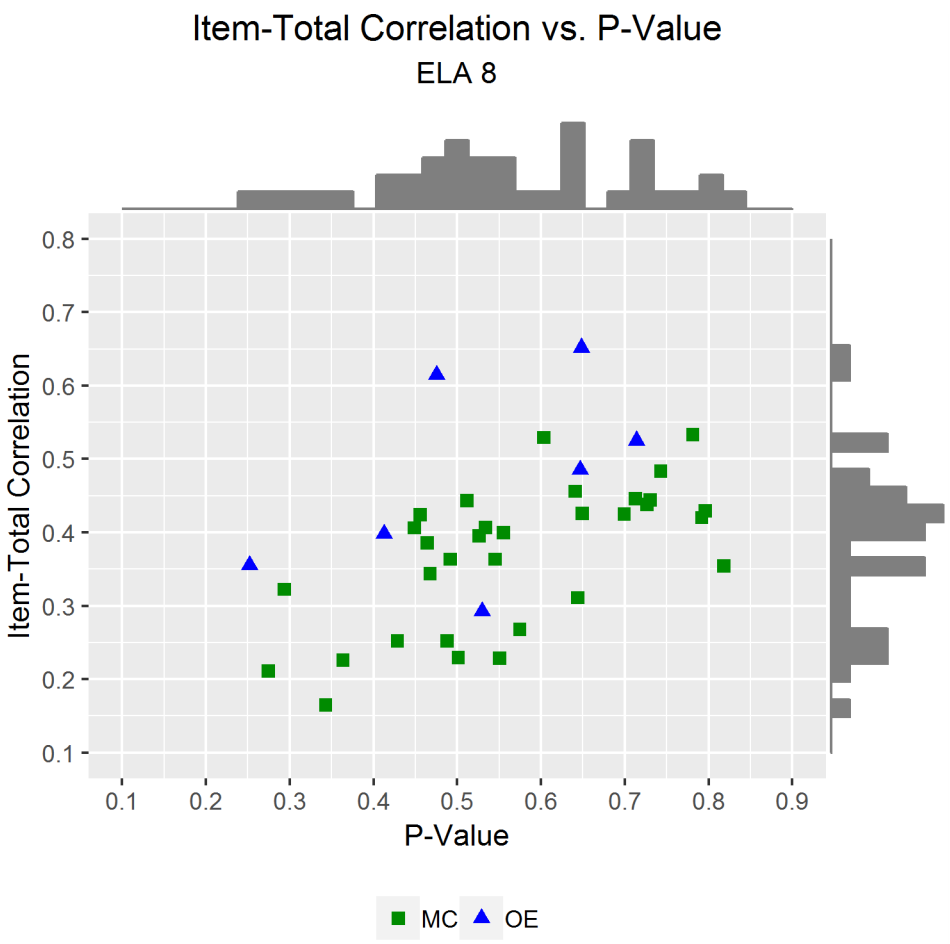
0.7
0.8
0.9
MC
OE


Item-Total Correlation vs. P-Value
ELA 8
Item-Total Correlation
P-Value
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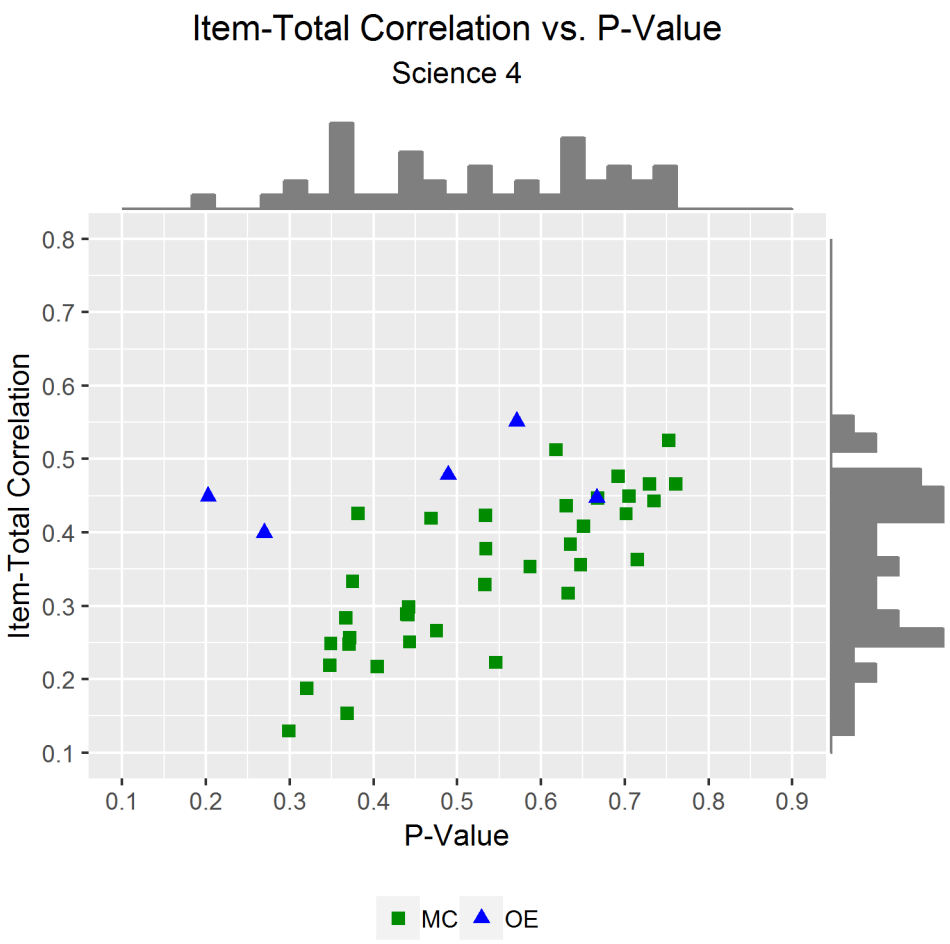
0.6
0.7
0.8
0.9
MC
OE


Item-Total Correlation vs. P-Value
Science 4
Item-Total Correlation
P-Value
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0.3
0.4
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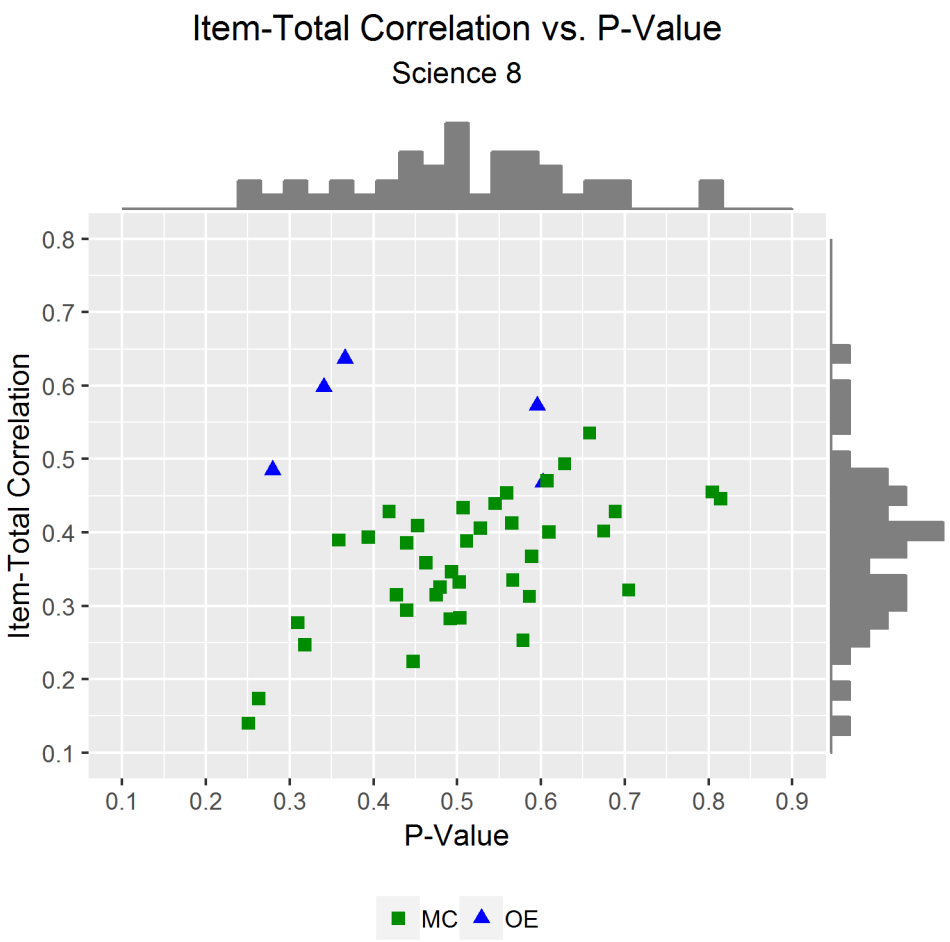
0.8
0.9
MC
OE


Item-Total Correlation vs. P-Value
Science 8
Item-Total Correlation
P-Value
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
MC
OE

CHAPTER TWELVE: RASCH ITEM CALIBRATION

The item response theory (IRT) model used for the PSSA is based on the work of Georg Rasch. Rasch models have had a long-standing presence in applied testing programs and it has been the methodology continually used to calibrate PSSA items in recent history. IRT has several advantages over classical test theory, so it has become the standard procedure for analyzing item response data in large-scale assessments. However, IRT models make several strong assumptions related to dimensionality, local independence, model-data fit, and item parameter invariance. Resulting inferences derived from any application of IRT rests strongly on the degree to which the underlying assumptions are met.

This chapter outlines the procedures used for calibrating the operational PSSA items. Generally, item calibration is the process of assigning a difficulty-parameter estimate to each item on an assessment so that all items are placed onto a common scale. This chapter briefly introduces the Rasch model, reports the results from evaluations of the adequacy of the Rasch assumptions, and summarizes the Rasch item statistics for the PSSA mathematics, ELA, and science tests. Additional Rasch procedures are discussed with respect to equating in Chapter Fifteen.

DESCRIPTION OF THE RASCH MODEL

The Rasch partial credit model (RPCM; Wright and Masters, 1982) was used to calibrate PSSA items because both multiple-choice (MC) and open-ended (OE) items were part of the assessment. The RPCM extends the Rasch model (Rasch, 1960) for dichotomous (0, 1) items so that it accommodates the polytomous OE item data. Under the RPCM, for a given item *i* with m_i score categories, the probability of person n scoring x (x = 0, 1, 2,... m_i) is given by:

$$P_{ni}(X = x) = \frac{\exp\sum_{j=0}^{x}(\theta_n - D_{ij})}{\sum_{k=0}^{m_i}\exp\sum_{j=0}^{k}(\theta_n - D_{ij})},$$

where θ_n represents a student's proficiency (ability) level, and D_{ij} is the step difficulty of the jth step on item i. For dichotomous MC items, the RPCM reduces to the standard Rasch model and the single step difficulty is referred to as the item's difficulty. The Rasch model predicts the probability of person n getting item i correct as follows:

$$P_{ni}(X = 1) = \frac{\exp(\theta_n - D_{ij})}{1 + \exp(\theta_n - D_{ij})}.$$

The Rasch model places both student ability and item difficulty (estimated in terms of log-odds or logits) on the same continuum. When the model assumptions are met, the Rasch model provides estimates of a person's ability which are independent of the items employed in the assessment, and conversely, estimates item difficulty independently of the sample of examinees. (As noted in Chapter Eleven, interpretation of item *p*-values confounds item difficulty and student ability.)

SOFTWARE AND ESTIMATION ALGORITHM

Item calibration was implemented via WINSTEPS 3.81.00 computer program (Wright and Linacre, 2014), which employs unconditional (UCON), joint-maximum-likelihood estimation (JMLE).

SAMPLE CHARACTERISTICS

The characteristics of calibration samples are reported in Chapter Nine. These samples only include the students who attempted the tests. All omits (no response) and multiple responses (more than one response selected) were scored as incorrect answers (coded as 0s) for calibration.

CHECKING RASCH ASSUMPTIONS

Since the Rasch model was the basis of all calibration, scoring, and scaling analyses associated with the PSSA, the validity of the inferences from these results depends on the degree to which the assumptions of the model were met and how well the model fits the test data. Therefore, it is important to check these assumptions. This section evaluates the dimensionality of the data, local item independence, and item fit. It should be noted that only operational items were analyzed since they are the basis of student scores.

UNIDIMENSIONALITY

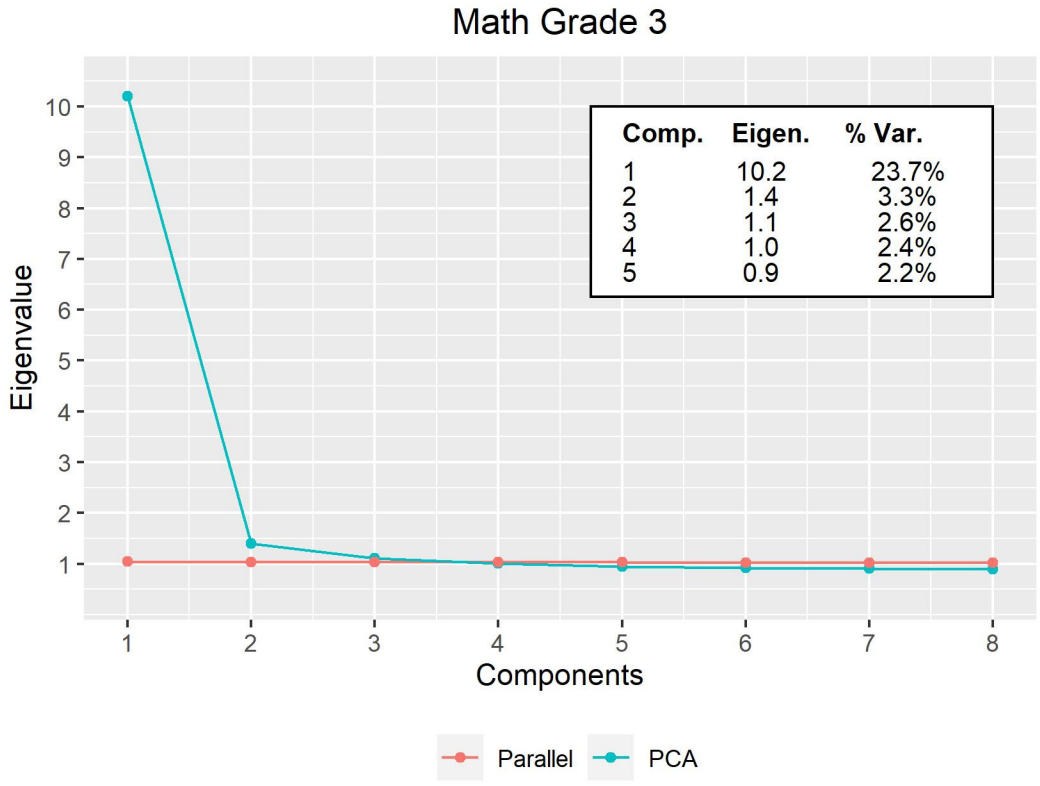
Rasch models assume that one dominant dimension determines the difference among students' performances. Principal Components Analysis (PCA) can be used to assess the unidimensionality assumption. The purpose of the analysis is to verify whether any other dominant component(s) exist among the items. If any other dimensions are found, the unidimensionality assumption would be violated.

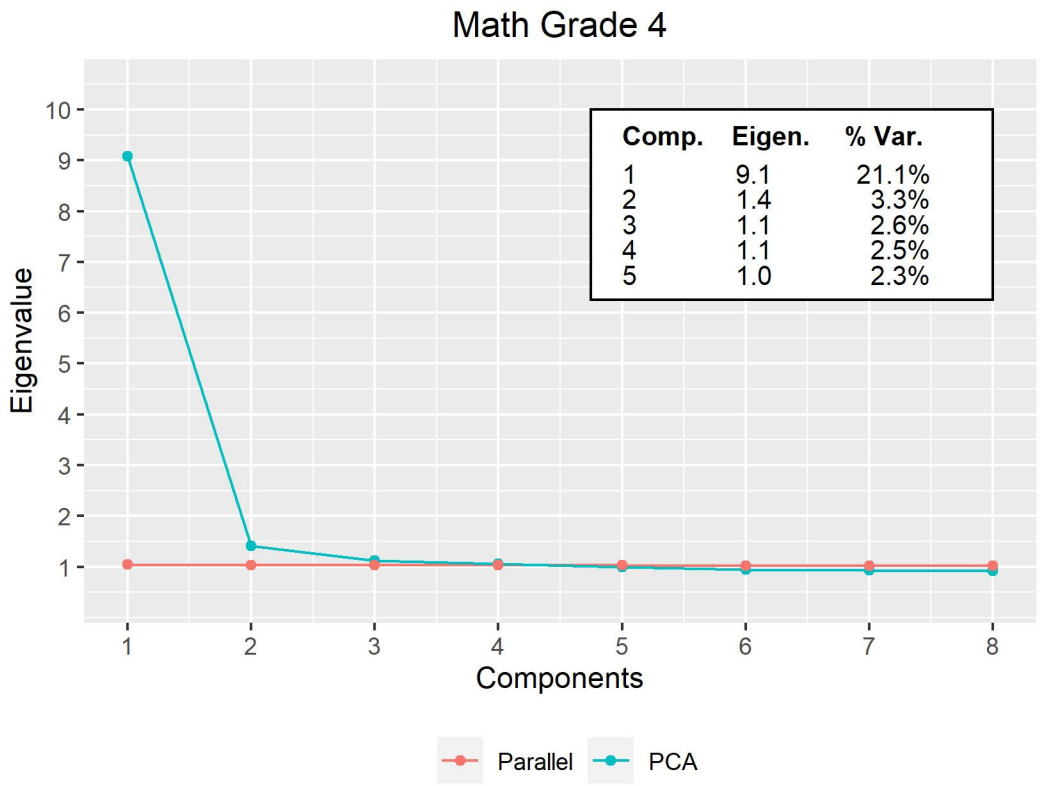
Figure 12–1 shows the PCA results for the mathematics, ELA, and science tests. The results include the eigenvalues and the percentage of variance explained for the first five components as well as the scree plots. The scree plots show the eigenvalues plotted by component number and the results from a parallel analysis. The total number of components in PCA is same as the total number of items in a test; however, Figure 12–1 shows only the first 8 components given that beyond 8th component the additional information would be negligible.

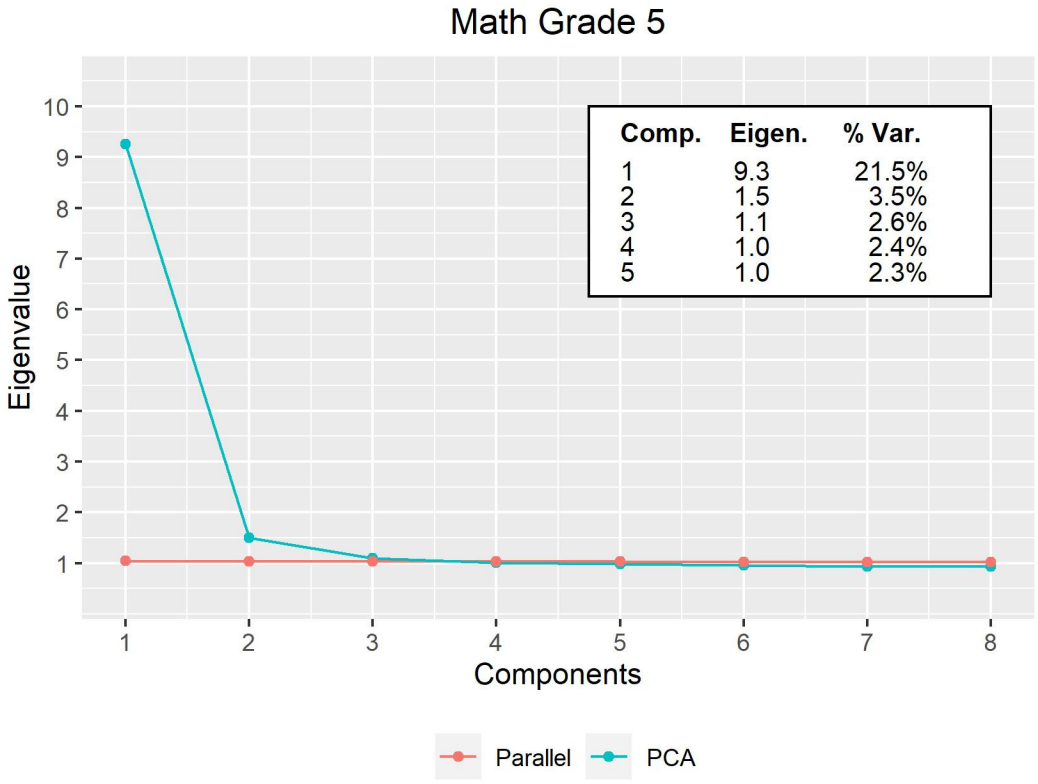
Parallel analysis is a technique to decide how many factors exist in principal components (Horn, 1965). Parallel analysis was also conducted to help distinguish components that are real from components that are random. For the parallel analysis, 100 random data sets were created of size equal to the original data. For each random data set, a PCA was performed and the resulting eigenvalues stored. Then for each component, the upper 95th percentile value of the distribution of the 100 eigenvalues from the random data sets was plotted. Given the size of the data generated for the parallel analysis, the reference line is essentially equivalent to plotting a reference line for an eigenvalue of 1.

As can been seen in Figure 12–1, for PSSA mathematics forms the primary dimension explained between 19.4 to 23.7 percent of the total variance. The second component accounted for approximately 3.0 to 4.2 percent of the variance, with eigenvalues ranging from 1.3 to 1.8. For ELA, the primary dimension explained 17.9 to 22.2 percent and the second dimension explained 3.1 to 4.2 percent of the variance. For science, the primary dimension explained 17.2 to 19.1 percent and the second dimension explained 3.1 to 3.3 percent of the variance. Although the eigenvalues for the second or third component may be greater than 1, the percent of variance explained does not support that any of the examinations measure a second or third dominant dimension. Meaning the results from the PCA suggest that there is one clear dominant dimension for all mathematics, ELA, and science tests.

Figure 12–1. Scree Plots Local Independence



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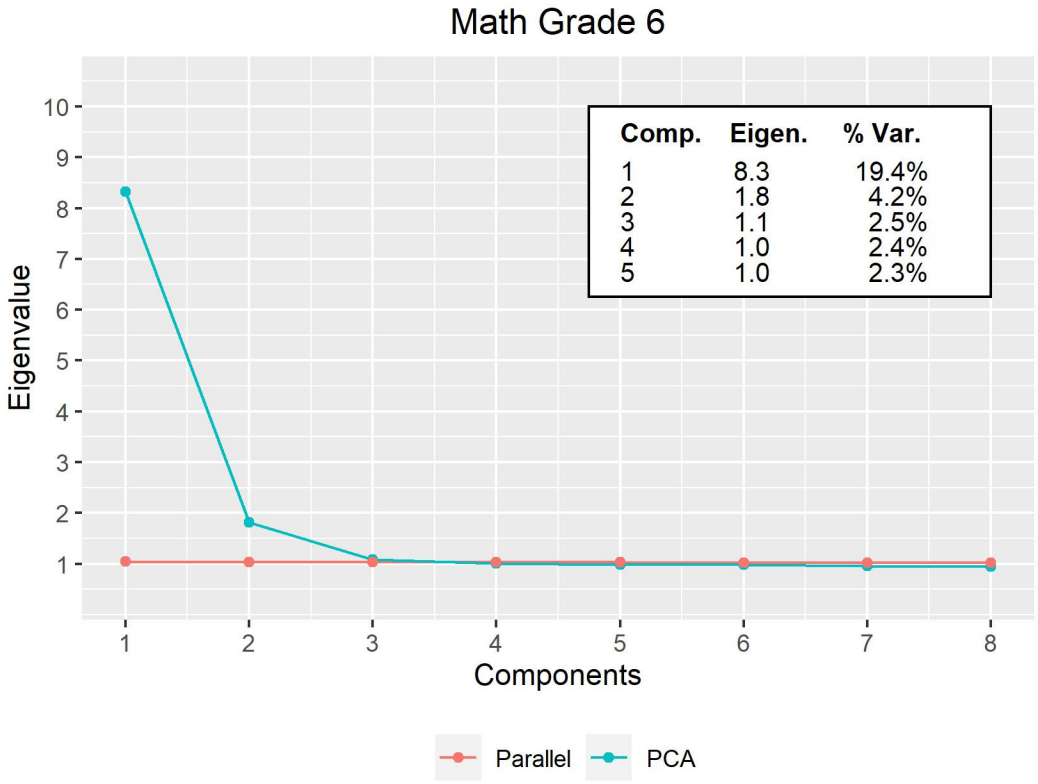
Comp. Eigen. % Var.
1 9.3 21.5%
2 1.5 3.5%
3 1.1 2.6%
4 1.0 2.4%
5 1.0 2.3%
Eigenvalue
Components
Parallel
PCA


Math Grade 6
Comp. Eigen. % Var.
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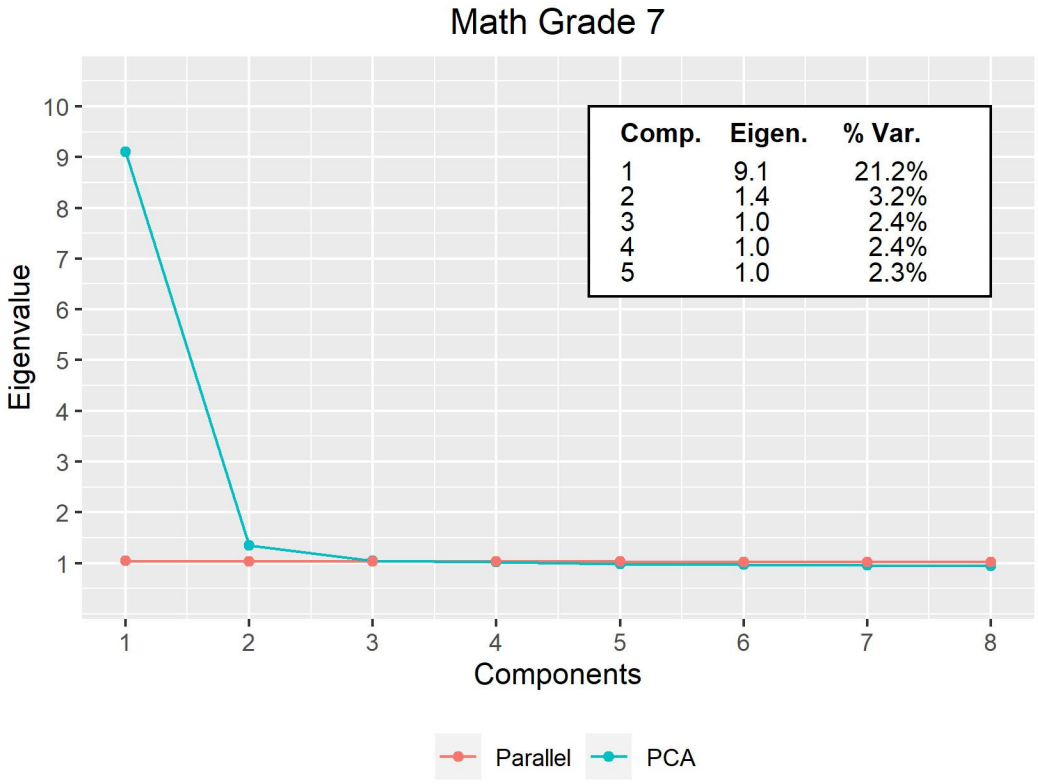
2 1.8 4.2%
3 1.1 2.5%
4 1.0 2.4%
5 1.0 2.3%
Eigenvalue
Components
Parallel
PCA


Math Grade 7
Comp. Eigen. % Var.
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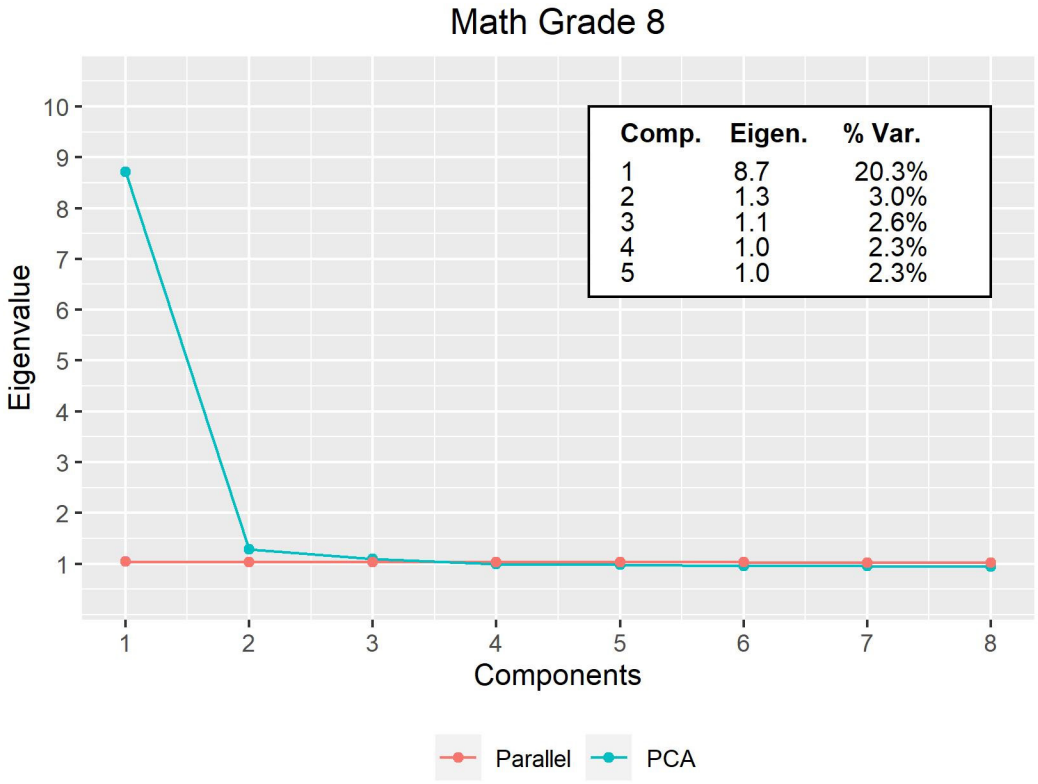
2 1.4 3.2%
3 1.0 2.4%
4 1.0 2.4%
5 1.0 2.3%
Eigenvalue
Components
Parallel
PCA


Math Grade 8
Comp. Eigen. % Var.
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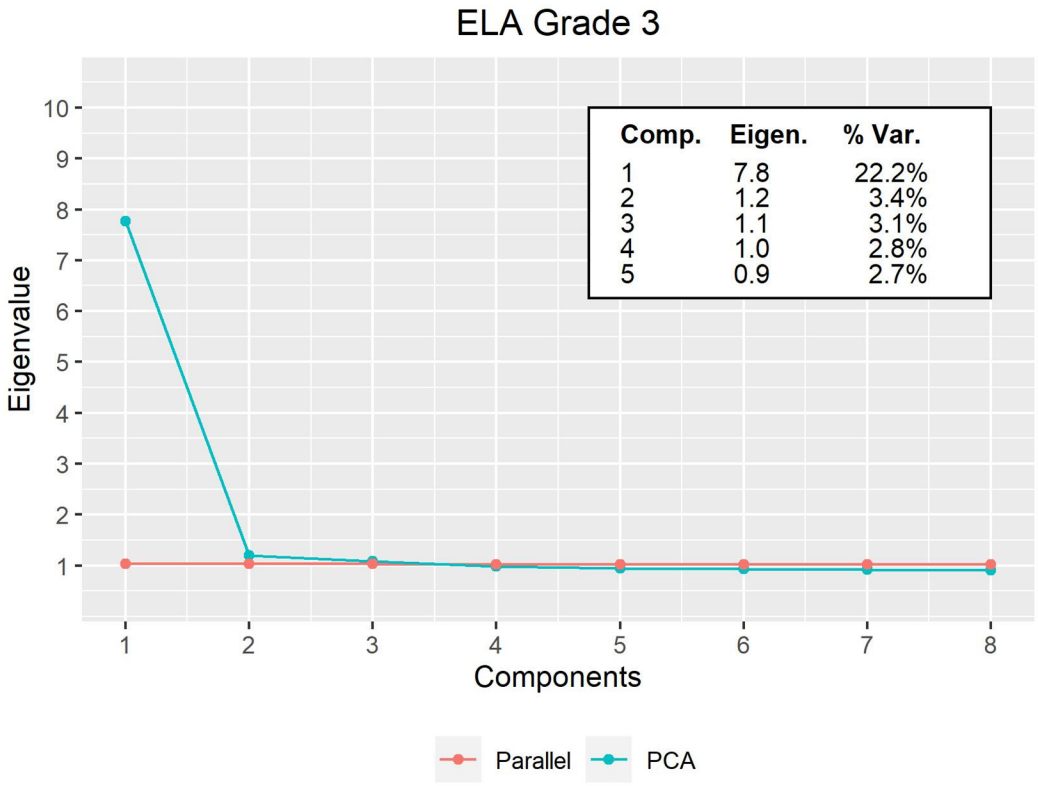
ELA Grade 3
Comp. Eigen. % Var.
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2 1.2 3.4%
3 1.1 3.1%
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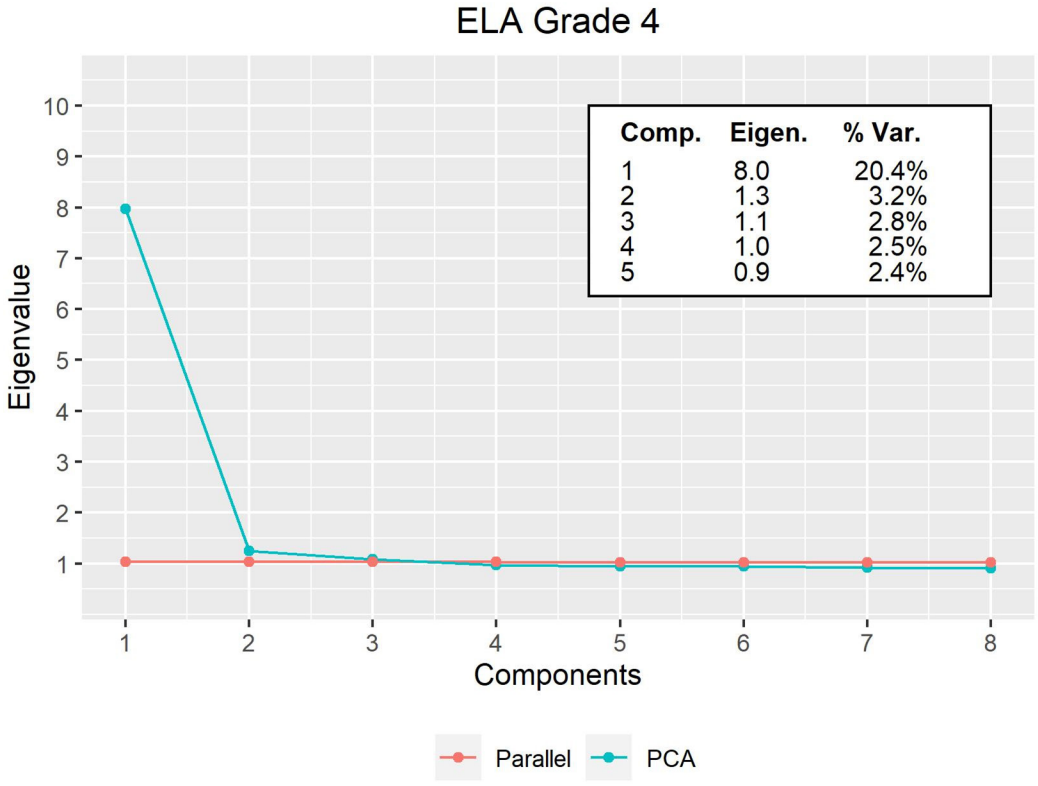
Components
Parallel
PCA


ELA Grade 4
Comp. Eigen. % Var.
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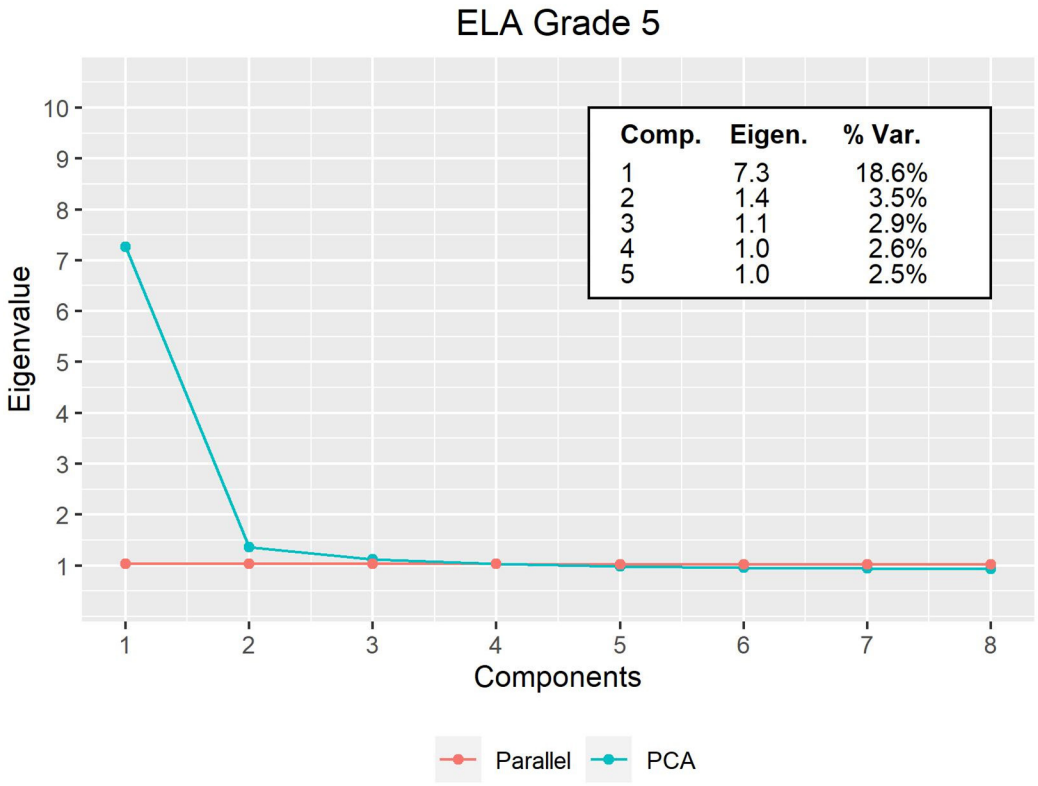
2 1.3 3.2%
3 1.1 2.8%
4 1.0 2.5%
5 0.9 2.4%
Eigenvalue
Components
Parallel
PCA


ELA Grade 5
Comp. Eigen. % Var.
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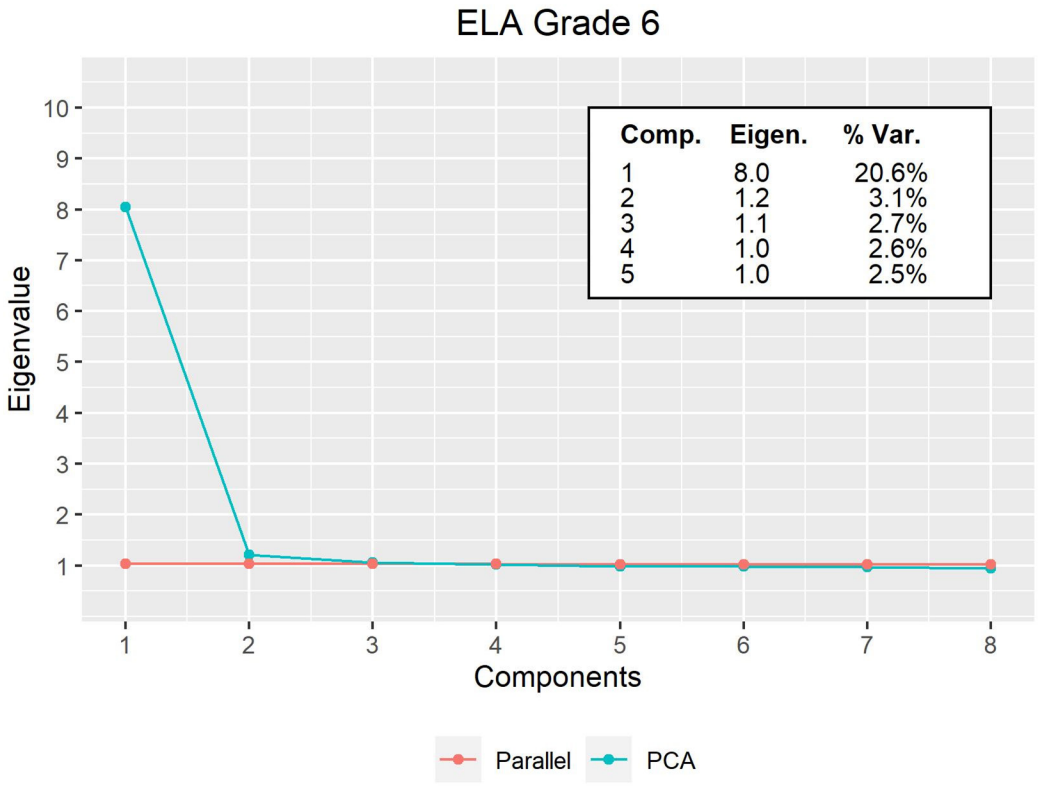
3 1.1 2.9%
4 1.0 2.6%
5 1.0 2.5%
Eigenvalue
Components
Parallel
PCA


ELA Grade 6
Comp. Eigen. % Var.
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4 1.0 2.6%
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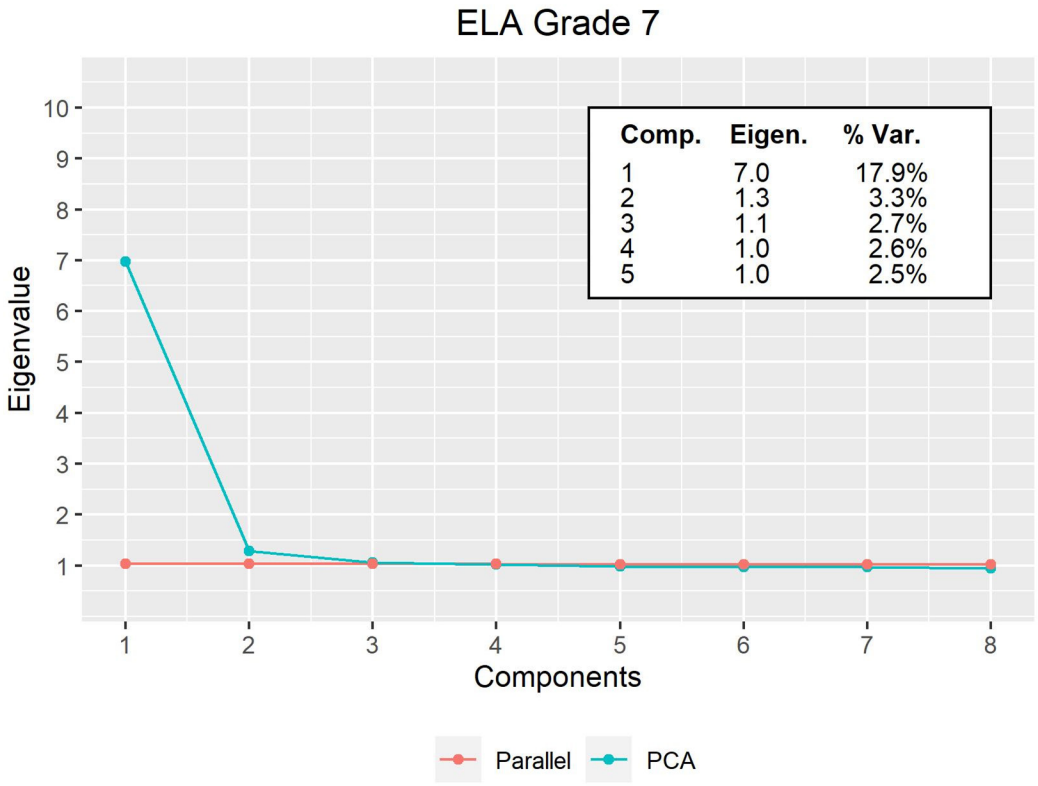
Eigenvalue
Components
Parallel
PCA


ELA Grade 7
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3 1.1 2.7%
4 1.0 2.6%
5 1.0 2.5%
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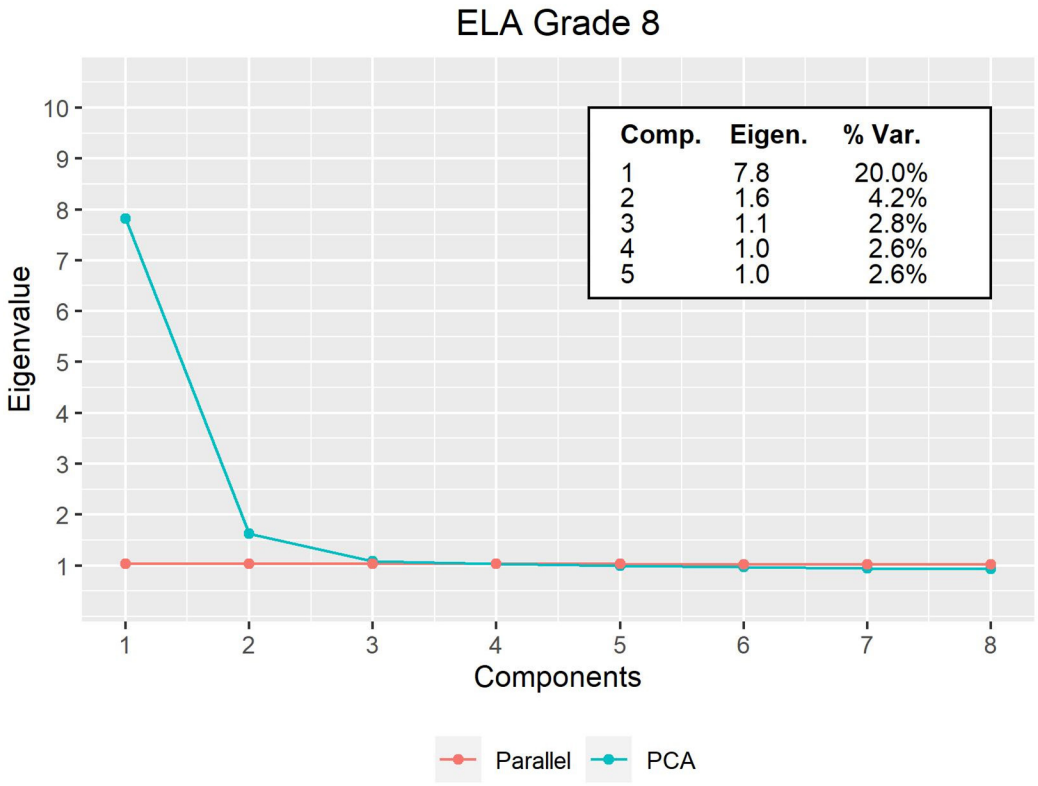
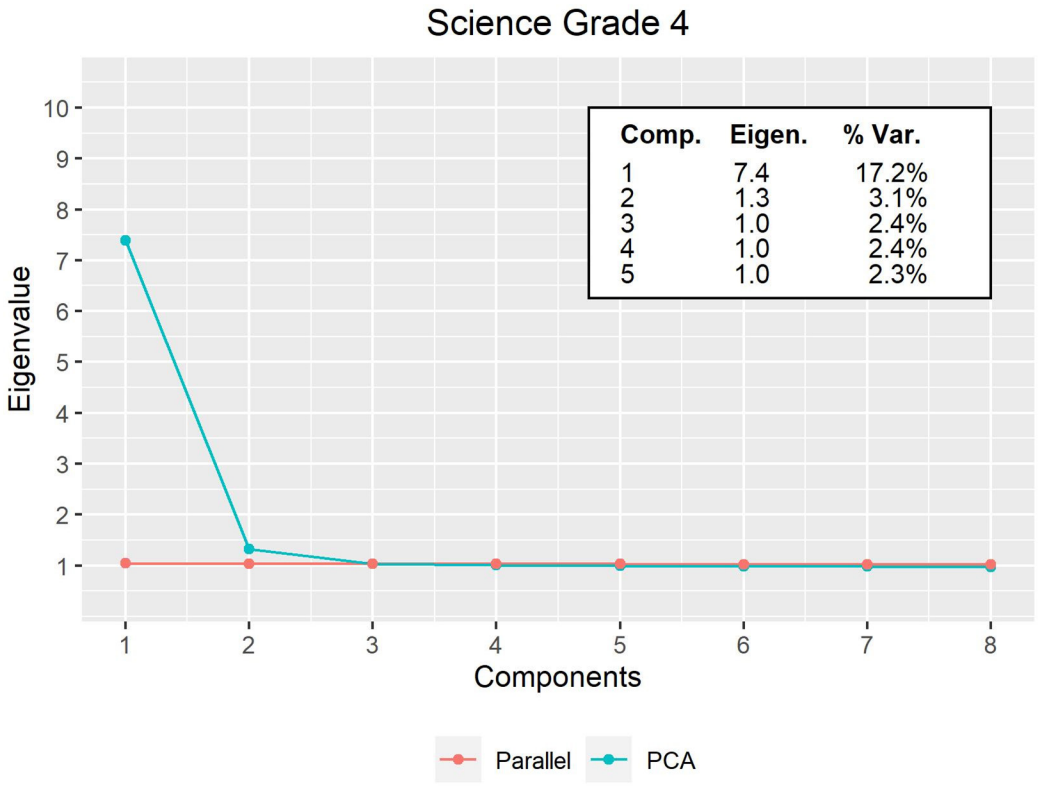
Components
Parallel
PCA


ELA Grade 8
Comp. Eigen. % Var.
1 7.8 20.0%
2 1.6 4.2%
3 1.1 2.8%
4 1.0 2.6%
5 1.0 2.6%
Eigenvalue
Components
Parallel
PCA


Science Grade 4
Comp. Eigen. % Var.
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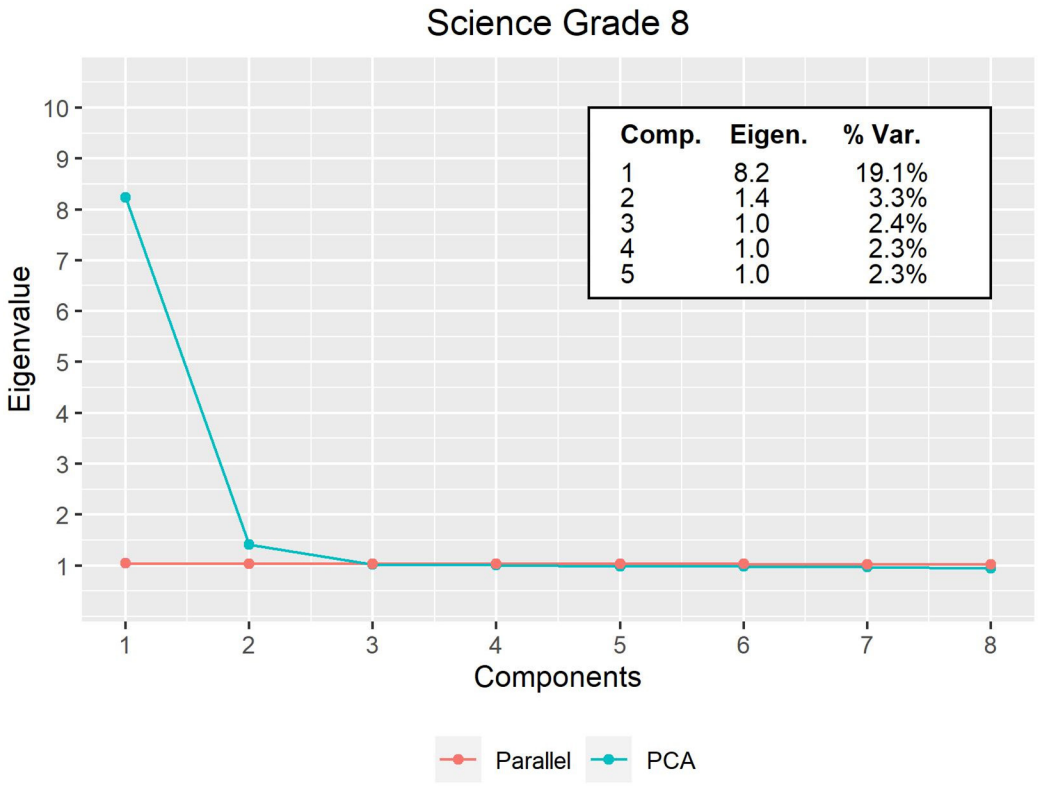
2 1.3 3.1%
3 1.0 2.4%
4 1.0 2.4%
5 1.0 2.3%
Eigenvalue
Components
Parallel
PCA


Science Grade 8
Comp. Eigen. % Var.
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2 1.4 3.3%
3 1.0 2.4%
4 1.0 2.3%
5 1.0 2.3%
Eigenvalue
Components
Parallel
PCA

ITEM INDEPENDENCE

Local independence (LI) is a fundamental assumption of IRT. No relationship should exist between examinees' responses to different items after accounting for the abilities measured by a test. In formal statistical terms, a test X that is comprised of items $X_1, X_2,\ldots X_n$ is locally independent with respect to the latent variable θ if, for all $x = (x_1, x_2,\ldots x_n)$ and θ,

$$P\left(\mathbf{X} = \mathbf{x} \mid \theta\right) = \prod_{i=1}^{I} P\left(X_i = x_i \mid \theta\right).$$

This formula essentially states that the probability of any pattern of responses across all items ($\mathbf{x}$), after conditioning on the abilities (θ) measured by the test, should be equal to the product of the conditional probabilities across each item (cf. the multiplication rule for independent events where the joint probabilities are equal to the product of the associated marginal probabilities).

The equation above shows the condition after satisfying the strong form of local independence. A weak form of local independence (LI) was proposed by McDonald (1979). The distinction is important as many indicators of local dependency are framed by LI. The requirement would be for the conditional covariances of all pairs of item responses, conditioned on the abilities, to be equal to zero. When this assumption is met, the joint probability of responses to an item pair, conditioned on abilities, is the product of the probabilities of responses to these two items, as shown below. (This is a weaker form because higher-order dependencies among items are allowed.) Based on the LI, the following expression can be derived:

$$P\left(X_i = x_i, X_j = x_j \mid \theta\right) = P\left(X_i = x_i \mid \theta\right) P\left(X_j = x_j \mid \theta\right).$$

Marais and Andrich (2008) pointed out that local item dependence in the Rasch model can occur in two ways that some may not distinguish. The first way occurs when the assumption of unidimensionality is violated. Here, other nuisance dimensions besides a dominant dimension determine student performance (this can be called "trait dependence"). The second violation occurs when responses to an item depend on responses to another. This is a violation of statistical independence and can be called response dependence. Many people treat the assumptions of unidimensionality and local independence as one phenomenon and believe that once unidimensionality holds, that local independence also holds. By distinguishing the two sources of local dependence, one can see that while local independence can be related to unidimensionality, the two are different assumptions and therefore, require different tests.

Residual item correlations provided in WINSTEPS for each item pair were used to assess the local dependence among the PSSA items. In general, these residuals are computed as follows. First, expected item performance based on the Rasch model is determined using ability and item parameter estimates. Next, deviations (residuals) between the examinees' expected and observed performance is determined for each item. Finally, for each item pair, a correlation between the respective deviations is computed.

Three types of residual correlations are available in WINSTEPS: raw, standardized, and logit. It should be noted that the raw score residual correlation essentially corresponds to Yen's Q_3 index, a popular LI statistic. The expected value for the Q_3 statistic is approximately -1/(k-1) when no local dependence exists, where k is test length (Yen, 1993). Thus, the expected Q_3 values should be approximately -0.02 for the PSSA tests (since most of the PSSA tests had more than 50 core items). Index values that are greater than 0.20 indicate a degree of local dependence that probably should be examined by test developers (Chen & Thissen, 1997).

Since the three residual correlations are very similar, the default "standardized residual correlation" in WINSTEPS was used for these analyses. Table 12–1 shows the summary statistics—mean, SD, minimum, maximum, and several percentiles (P_{10}, P_{25}, P_{50}, P_{75}, P_{90}) — for all the residual correlations for each test. The total number of item pairs (N) and the number of pairs with the residual correlations greater than 0.20 are also reported in this table. The mean residual correlations were close to 0.00. One item pair in mathematics and seven item pairs in ELA showed residual correlations greater than 0.2, and all were less than 0.3, suggesting local item independence holds well for the 2021 PSSA ELA, mathematics, and science tests. Refer to Table 12–1 and 12–2 for details.

Table 12–1M. Summary of Item Residual Correlations for PSSA Mathematics

Statistic	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
N	903	903	903	903	903	903
Mean	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
SD	0.02	0.02	0.03	0.03	0.03	0.03
Minimum	-0.09	-0.09	-0.10	-0.11	-0.10	-0.12
P10	-0.05	-0.05	-0.06	-0.06	-0.06	-0.05
P25	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
P50	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
P75	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
P90	0.00	0.00	0.01	0.01	0.01	0.01
Maximum	0.11	0.20	0.20	0.14	0.17	0.10
>|0.20|	0	0	1	0	0	0

Table 12–1E. Summary of Item Residual Correlations for PSSA English Language Arts

Statistic	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
N	595	741	741	741	741	741
Mean	-0.03	-0.02	-0.02	-0.02	-0.02	-0.02
SD	0.03	0.03	0.03	0.03	0.03	0.04
Minimum	-0.12	-0.19	-0.19	-0.22	-0.18	-0.28
P10	-0.06	-0.04	-0.05	-0.05	-0.04	-0.05
P25	-0.04	-0.03	-0.03	-0.03	-0.03	-0.03
P50	-0.03	-0.02	-0.02	-0.02	-0.02	-0.01
P75	-0.01	0.00	0.00	0.00	0.00	0.00
P90	0.00	0.01	0.01	0.02	0.01	0.02
Maximum	0.17	0.06	0.22	0.09	0.11	0.27
>|0.20|	0	0	1	2	0	4

Table 12–1S. Summary of Item Residual Correlations for PSSA Science

Statistic	Grade 4	Grade 8
N	903	903
Mean	-0.02	-0.02
SD	0.02	0.02
Minimum	-0.12	-0.09
P10	-0.05	-0.05
P25	-0.04	-0.04
P50	-0.03	-0.02
P75	-0.01	-0.01
P90	0.00	0.00
Maximum	0.09	0.09
>|0.20|	0	0

Table 12–2 lists all item pairs with absolute residual correlations greater than or equal to 0.20. In addition, the item sequence, type, and Eligible Content is also displayed. Item sequence in the table represents the master form's item sequence, but the MC items are scrambled across forms.

There were three item pairs (one in mathematics and two in ELA) in which the correlated item pairs tested similar Eligible Content. In ELA, there were five item pairs with negative residual correlations ranging from -0.28 to -0.21. These correlations were observed between Evidence-Based Selected-Response (EBSR) items and Text-Dependent Analysis (TDA) items showing that, after the relationship between the items and the ELA construct is accounted for, there may be small, but different factors that are contributing to examinee performance on the item pairs. This is a consistent finding with prior administrations. Test blueprints determine what Assessment Anchors, as defined by the Eligible Content, will be assessed. PDE and DRC make every effort to avoid one item cueing another through careful item selection and sequencing, so this is an unlikely source of local item dependence for PSSA.

Table 12–2. Item Pairs with Large Residual Correlations

Subject	Grade	Item 1 Seq.	Item 1 Type	Item 1 Eligible Content	Item 2 Seq.	Item 2 Type	Item 2 Eligible Content	Resid. Corr.
Mathematics	5	21	MC	A-F.1.1.1	27	MC	A-F.1.1.1	0.20
ELA	5	4	MC	D.1.2.3	3	MC	D.1.2.2	0.22
ELA	6	20	ESR	A-K.1.1.2	59	TDA	E.1.1	-0.21
ELA	6	25	ESR	B-C.2.1.1	59	TDA	E.1.1	-0.22
ELA	8	14	MC	B-V.4.1.2	59	TDA	E.1.1	-0.21
ELA	8	24	ESR	A-C.2.1.1	59	TDA	E.1.1	-0.27
ELA	8	25	ESR	A-K.1.1.1	59	TDA	E.1.1	-0.28
ELA	8	26	MC	A-K.1.1.2	25	ESR	A-K.1.1.1	0.27

ITEM FIT

Additional evidence of validity related to the internal test structure is obtained through an ongoing evaluation of item fit, person fit, and test summary statistics. The item fit of the Rasch Model is routinely evaluated within field testing as well as within each operational administration. Person fit of the Rasch model is routinely evaluated and the data are expected to fit well regardless of gender, ethnicity, or level of performance (see Chapter Fifteen and Appendix T). Comparability of each test form is evaluated in terms of the test characteristics curves, test information function, and CSEM (see Chapter Eighteen). Regular maintenance of item fit, person fit, and test summary statistics within a test and across test forms provides validity evidence that supports the PSSA.

WINSTEPS provides two item fit statistics (infit and outfit) for evaluating the degree to which the Rasch model predicts the observed item responses. Each fit statistic can be expressed as a mean square (MnSq) statistic or on a standardized metric (Zstd with mean = 0 and variance = 1). MnSq values are more oriented toward practical significance, while Zstd values are more oriented toward statistical significance. Though both are informative, the Zstd values are very likely too sensitive to the large sample sizes observed on the PSSA. In this situation it is recommended that the Zstd values be ignored if the MnSq values are acceptable (Linacre, 2014).

Both infit and outfit MnSq are the average of standardized residual variance (the difference between the observed score and the Rasch estimated score divided by the square root of the Rasch model variance). The difference is that the outfit statistic gives all examinees equal weight in computing the fit and tends to be affected more by unexpected responses far from the person, item, or rating scale category measure (i.e., it is more sensitive to outlying, off-target, low-information responses). The infit statistic is weighted by the examinee locations relative to item difficulty and tends to be affected more by unexpected responses close to the person, item, or rating scale category measure (i.e., informative, on-target responses). Some feel that extreme infit values are a greater threat to the measurement process than extreme outfit since most tests intend to measure the on-target population rather than extreme outliers.

The expected MnSq value is 1.0 and can range from 0 to infinity. Deviation in excess of the expected value can be interpreted as noise or lack of fit between the items and the model. Values lower than the expected value can be interpreted as item redundancy or overfitting items (too predictable, too much redundancy), and values greater than the expected value indicate underfitting items (too unpredictable, too much noise). Rules of thumb regarding "practically significant" MnSq values vary. More conservative users might prefer items with MnSq values that range from 0.8 to 1.2. Others believe reasonable test results can be achieved with values from 0.5 to 1.5. The results shown in this section highlight values outside of a range of 0.7 to 1.3 given their practical importance.

Table 12–3 presents the summary statistics of infit and outfit mean square statistics for the PSSA ELA, mathematics, and science tests, including the mean, SD, and minimum and maximum values. The number of items within the range of [0.7, 1.3] is also reported. The mean values for both infit and outfit statistics were very close to 1.00 across all subjects and grade levels. Almost all the items had infit values falling in the range of [0.7, 1.3], suggesting reasonable model infit. More outfit values fell either below 0.7 or above the 1.3 threshold. Values above 1.3 can sometimes suggest higher than normal guessing or careless mistake patterns on items, and values below 0.7 can suggest an item is over fit. The maximum outfit values noted are close to the 1.3 threshold, and the minimum values noted are very close to 0.7, which could also suggest well discriminating items. There is slightly more variability in infit and outfit for ELA tests than mathematics, indicated by the mean and distribution of infit and outfit statistics. For example, 85% of the ELA grade 6 items (M = 1.12, SD = 0.23) fit in terms of outfit, whereas 95% of the Math grade 6 items (M=1.01, SD = 0.16) fit the model.

Table 12–3. Summary of Item Infit and Outfit Mean Square Statistics by Subject and Grade

Subject	Grade	Mean*	SD*	Min*	Max*	[0.7,1.3]*	Mean†	SD†	Min†	Max†	[0.7,1.3] †
Mathematics	3	1.02	0.12	0.79	1.33	42/43	1.04	0.20	0.67	1.58	38/43
Mathematics	4	1.02	0.11	0.81	1.31	42/43	1.03	0.16	0.76	1.53	40/43
Mathematics	5	1.00	0.12	0.79	1.32	42/43	1.01	0.19	0.65	1.55	39/43
Mathematics	6	0.98	0.13	0.70	1.23	42/43	1.00	0.20	0.59	1.45	37/43
Mathematics	7	1.01	0.14	0.73	1.28	43/43	1.02	0.19	0.70	1.36	40/43
Mathematics	8	1.01	0.13	0.74	1.32	42/43	1.02	0.18	0.67	1.50	38/43
ELA	3	1.00	0.13	0.77	1.32	33/35	1.00	0.17	0.68	1.37	32/35
ELA	4	1.04	0.14	0.67	1.44	35/39	1.08	0.23	0.64	1.71	32/39
ELA	5	1.02	0.17	0.53	1.70	36/39	1.04	0.22	0.53	1.90	35/39
ELA	6	1.01	0.14	0.63	1.26	38/39	1.05	0.22	0.62	1.62	31/39
ELA	7	1.01	0.11	0.59	1.31	37/39	1.04	0.16	0.60	1.37	37/39
ELA	8	1.01	0.16	0.70	1.42	36/39	1.06	0.26	0.58	1.82	30/39
Science	4	0.99	0.11	0.76	1.30	43/43	1.00	0.17	0.72	1.41	41/43
Science	8	1.00	0.09	0.74	1.19	43/43	1.01	0.14	0.61	1.35	41/43

Notes. *Infit Mean Square
†Outfit Mean Square

RASCH ITEM STATISTICS

As noted earlier, the Rasch model expresses item difficulty (and student ability) in units referred to as logits, rather than on the percent-correct metric. The logit metric has several mathematical advantages. Logits have an interval scale, meaning that two items with logits of 0.0 and +1.0 (respectively) are the same distance apart as two items with logits of +3.0 and +4.0. Logits are not dependent on the ability level of the students. For example, a test form can have a mean logit of zero regardless of how the student sample performed on the item.

The standard Rasch calibration procedure arbitrarily sets the mean difficulty of the items on any form at zero. Under normal circumstances where all students are administered the same set of items, any item with a *p*-value lower than the average item on the form receives a positive logit difficulty and any item with a *p*-value higher than the average receives a negative logit. Consequently, the logits for any calibration, whether it is the grade 3 ELA test or the grade 8 science test, relate to an arbitrary origin defined by the center of items on that form. The average third-grade ELA item will have a logit of zero; the average grade 8 science item will have a logit of zero. Logits for both item difficulties and student abilities are placed on the same scale and relate to the same mean item difficulty.

There are a number of other arbitrary choices that could be made for centering the item difficulties. Rather than using all the items, the origin could be defined by a subset. For the PSSA, all test forms within each subject and grade level share the same operational item set. All items on each form can then be easily adjusted to a single (but still arbitrary) origin by defining the origin as the mean of the operational items. With this done, the origins for all the forms will be statistically equal. For example, items on any two forms that are equally difficult will now have statistically equal logit difficulties. This is partly how PSSA items can be placed on the same logit difficulty scale across years. Chapter Fifteen has more detailed information about the PSSA equating procedure.

Appendix F reports the item statistics including classical and Rasch logit difficulties for all operational items that were used for pre-equating (see Chapter Fifteen). Table 12–4 summarizes the Rasch logit difficulties of the operational items on each test that are on the base scale, which were set in 2015 for math and ELA, and 2008 for science. The minimum and maximum values and standard deviations suggest that the PSSA items covered a relatively wide range of difficulties. It is important to note that the logit difficulty values presented have not been linked to a common scale of measurement across grades and subjects. Therefore, the relative magnitude of the statistics across content areas and grades cannot be compared.

Table 12–4. Summary of Rasch Item Difficulties by Subject and Grade

Subject	Grade	N	Mean	SD	Min	Max
Mathematics	3	43	0.34	0.83	-1.92	1.51
Mathematics	4	43	-0.10	0.80	-2.51	1.14
Mathematics	5	43	0.22	0.74	-1.86	1.33
Mathematics	6	43	0.21	0.82	-1.87	1.64
Mathematics	7	43	0.07	0.73	-2.02	1.75
Mathematics	8	43	-0.21	0.58	-1.57	1.44
ELA	3	35	0.46	0.65	-1.14	1.47
ELA	4	39	0.41	0.66	-1.03	1.67
ELA	5	39	0.27	0.72	-1.51	1.78
ELA	6	39	0.56	0.71	-0.96	1.89
ELA	7	39	0.38	0.61	-0.95	1.83
ELA	8	39	0.19	0.70	-1.21	1.74
Science	4	43	0.86	0.71	-0.48	2.13
Science	8	43	0.42	0.67	-1.22	1.68

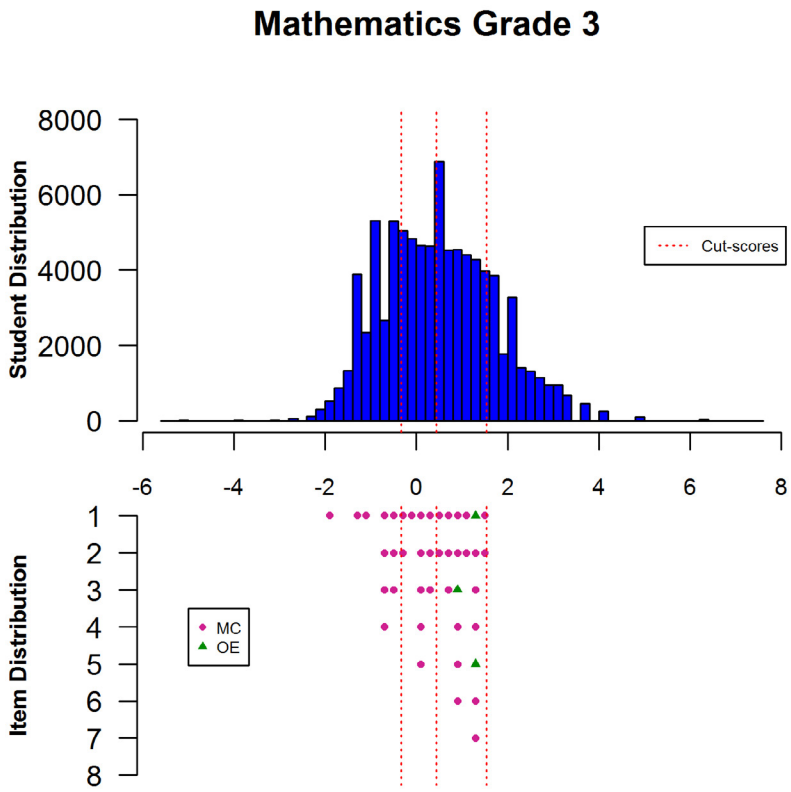
Note. The base scales were set in 2008 for science and 2015 for mathematics and ELA so the means are not expected to be zero.

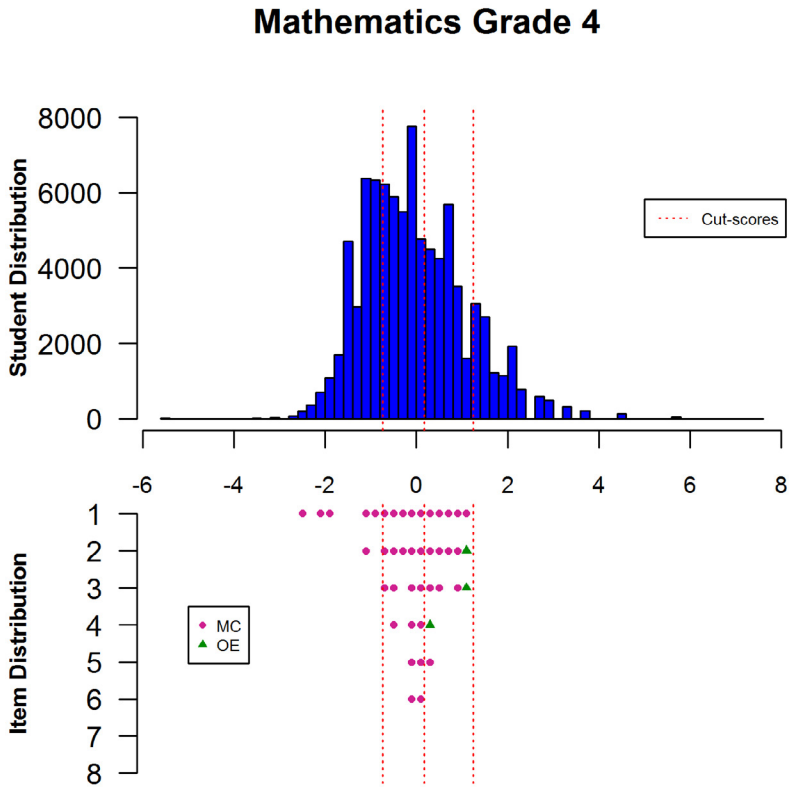
ITEM DIFFICULTY-STUDENT ABILITY WRIGHT MAPS

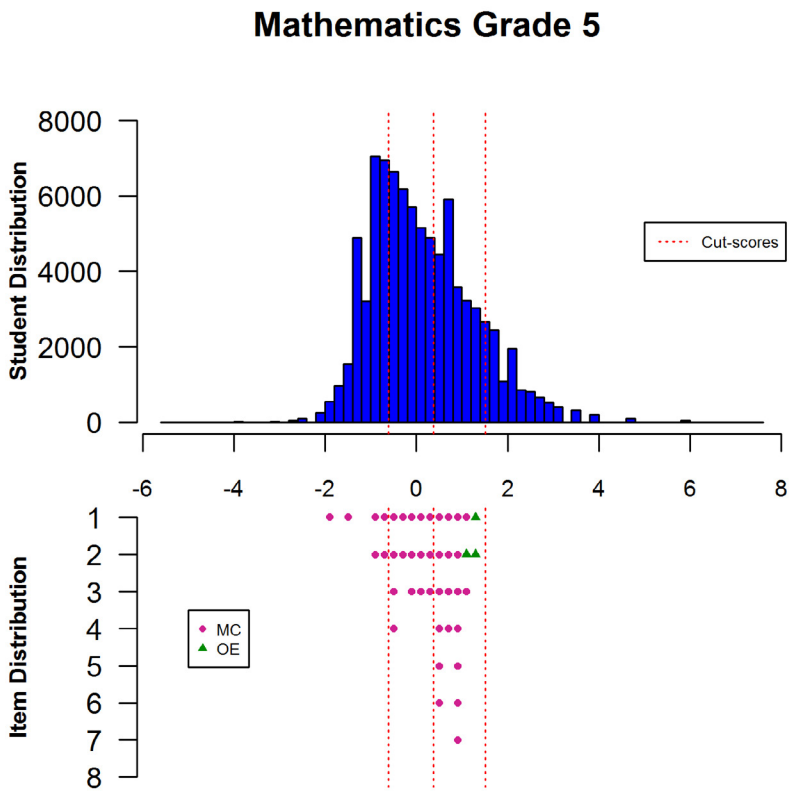
The distributions of the Rasch item logits (item difficulty estimates) are shown on the item difficulty-student ability maps presented in Figure 12–2. In each item-student map, the top bar graph displays the student distribution on the logit scale, and the bottom displays markers of item difficulty parameter estimates. MC items are represented by a circle (all subjects), OE and TDA items are represented by a triangle (all subjects), and ESR items are represented by a square (ELA only). OE, TDA and ESR items are worth multiple points. As noted earlier, the Rasch model enables placement of both items and students on the same scale. Consequently, one can easily visualize information regarding the relationship between the distributions of item difficulty and student ability. The vertical red lines show the cut-points for each performance level. On the top plot, the logit represents lower abilities (negative values) to higher abilities (positive values), whereas on the bottom plot the logit represents easier items (negative values) to harder items (positive values). To achieve precise measures of student ability, the student distribution should mirror the item distribution.

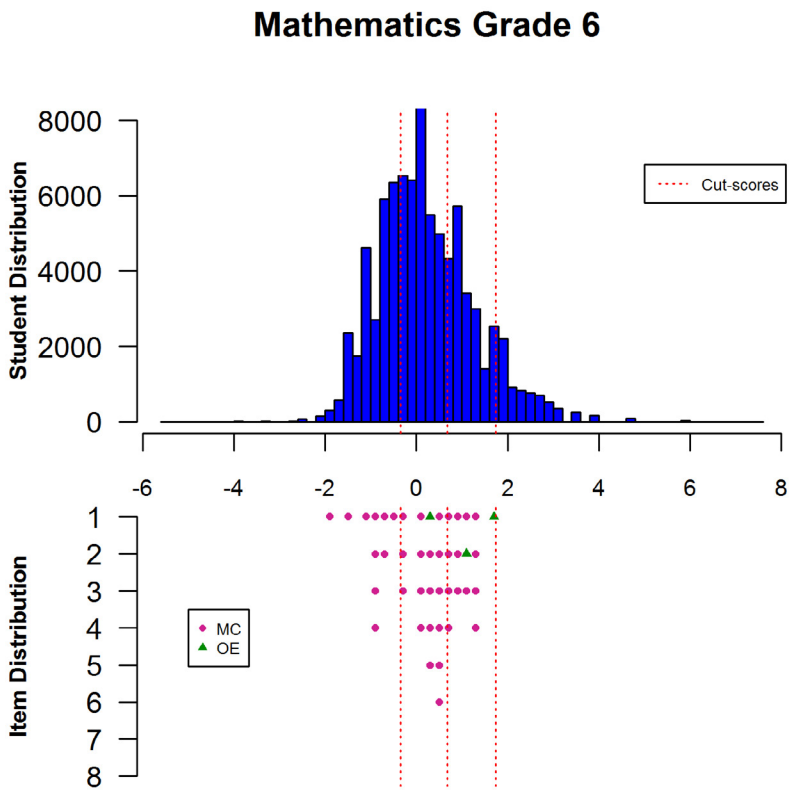
In 2016, a pattern noted across the maps for many grades and content areas was for students to have relatively higher ability and for items to be relatively easier. Accordingly, test development for the 2017 PSSAs focused on centering the predicted test difficulties on the center of the 2016 examinee ability distribution to more closely align item difficulty with examinee performance. The same targets used to construct the 2017 PSSAs were used for future form construction. The Wright maps are presented in Figure 12–2.

Figure 12–2. Wright Maps






Mathematics Grade 5
Student Distribution
8000
6000
4000
2000
0
Cut-scores
-6
-4
-2
0
2
4
6
8
Item Distribution
1
2
3
4
5
6
7
8
MC
OE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Item Distribution
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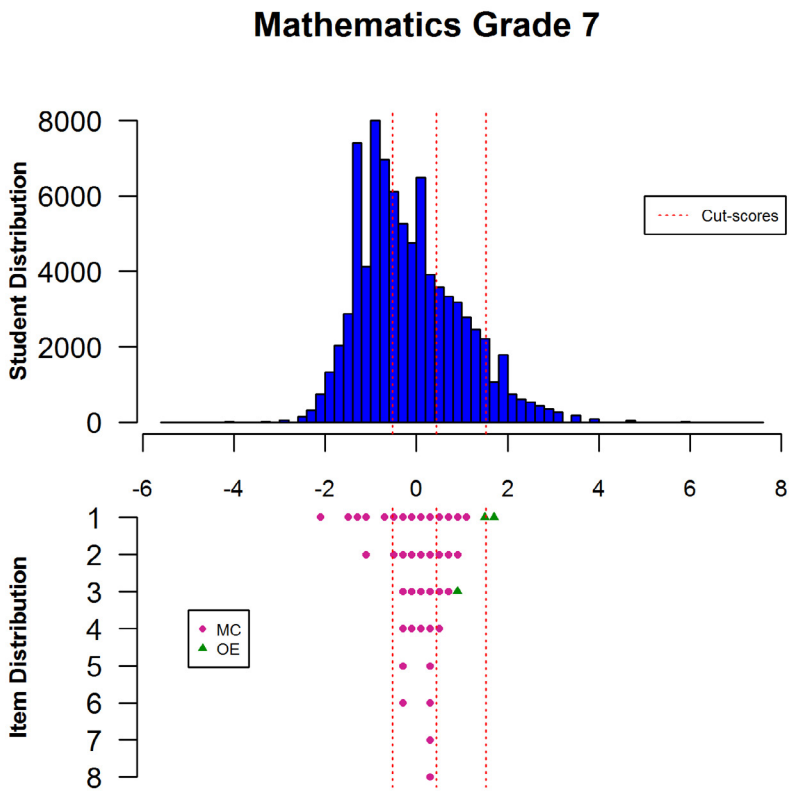
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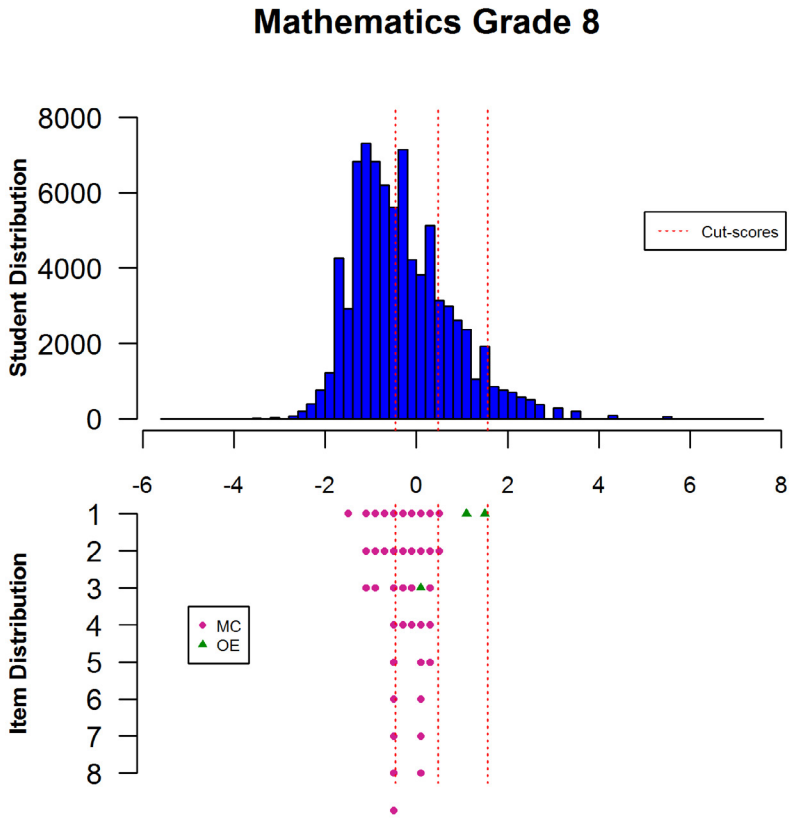
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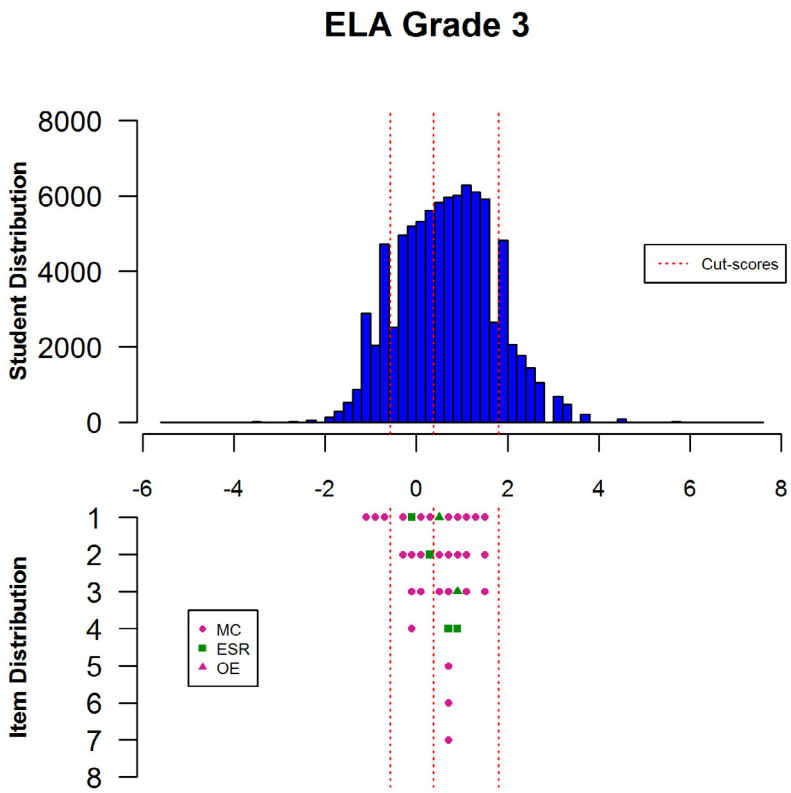
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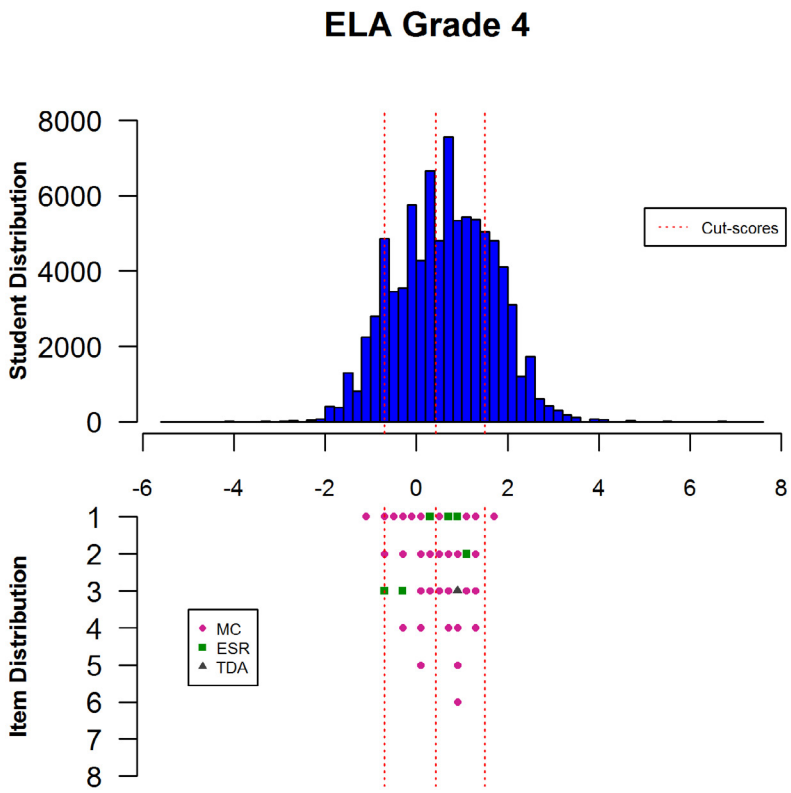
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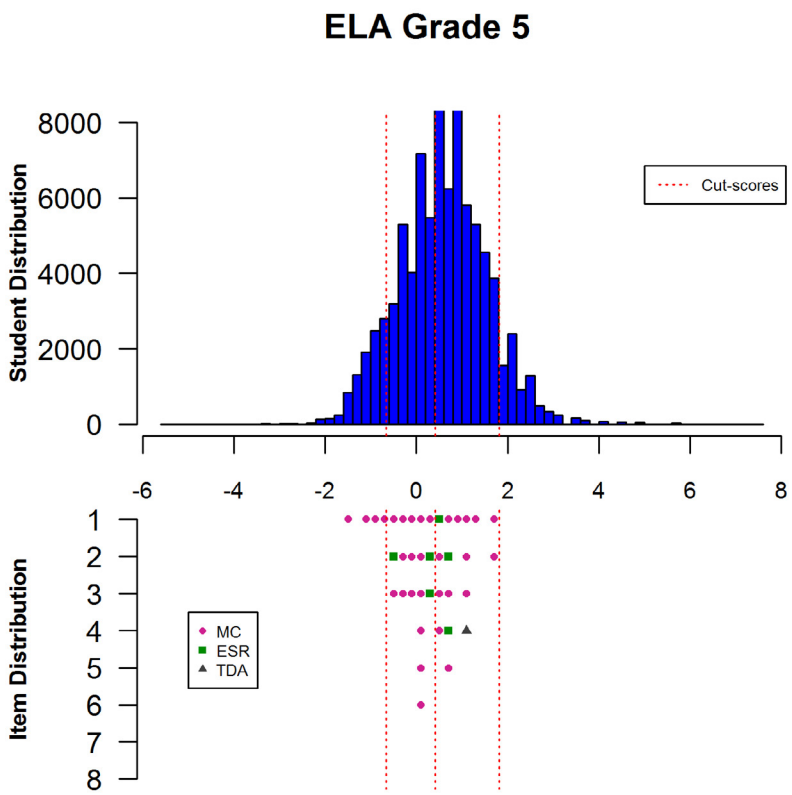
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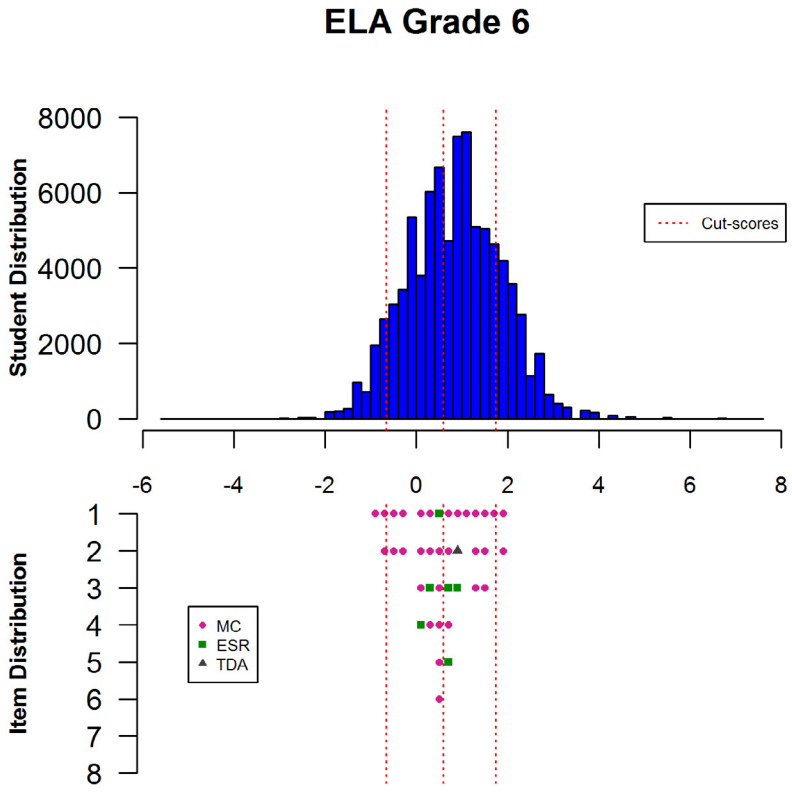
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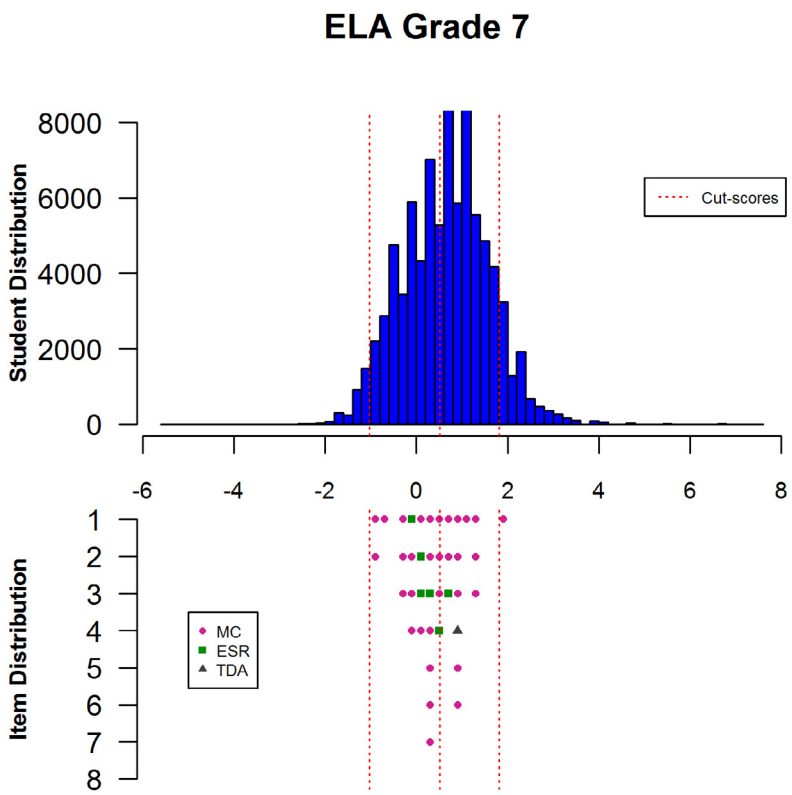
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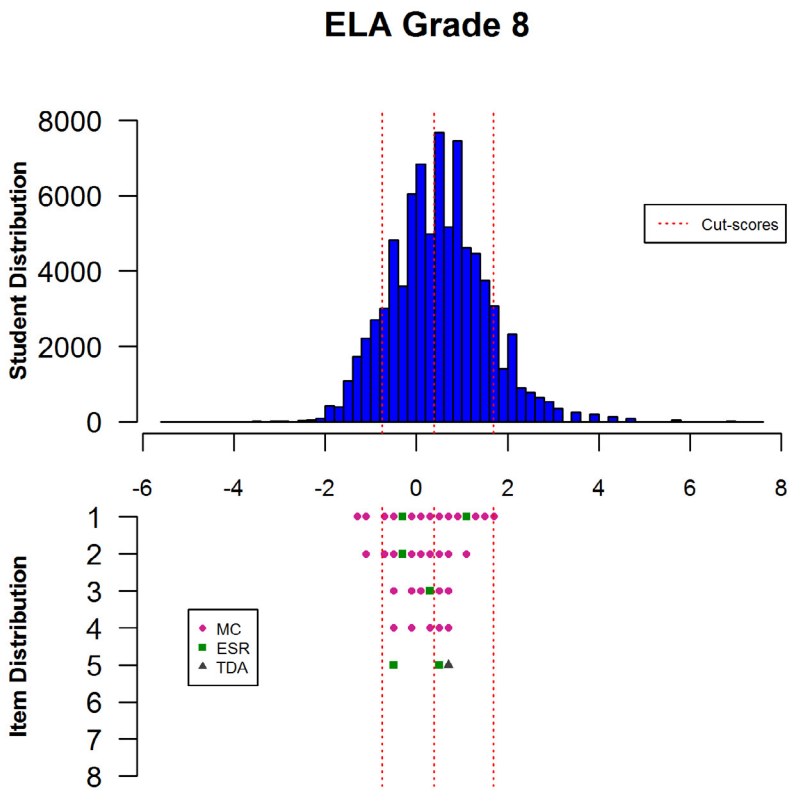
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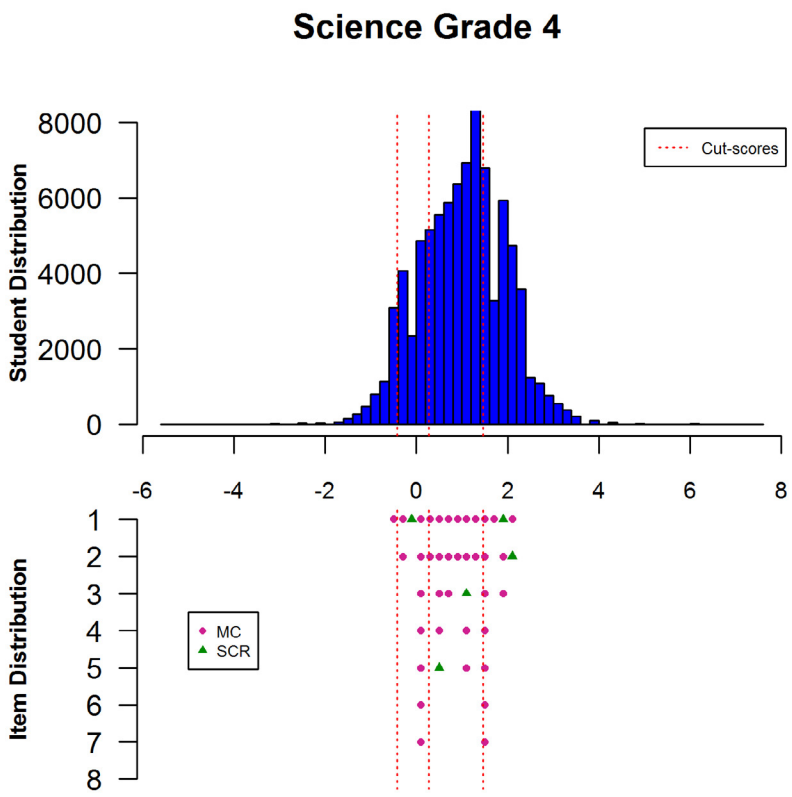
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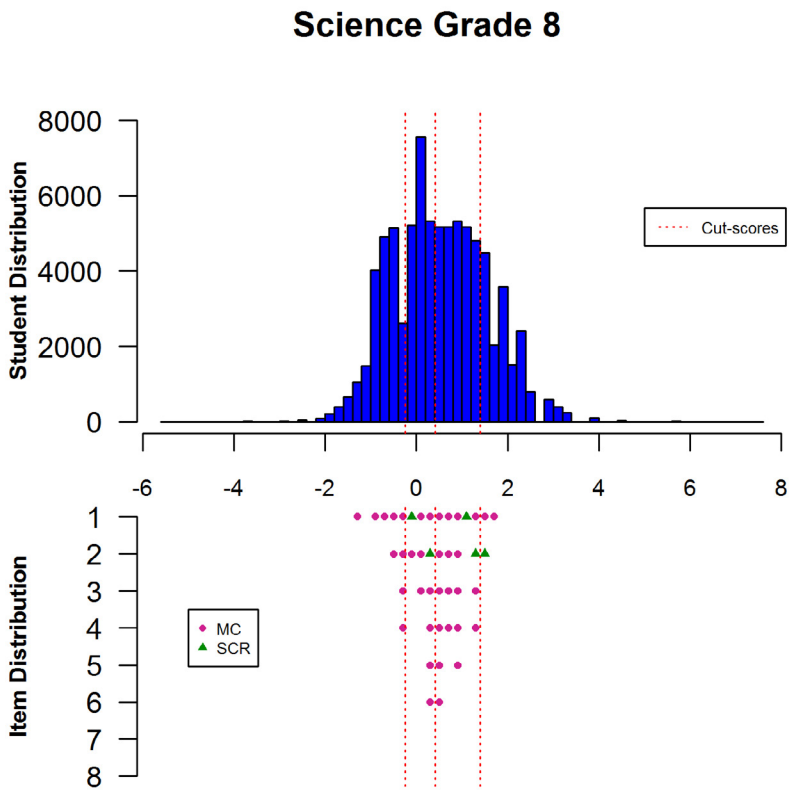
MC
SCR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Item Distribution
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CHAPTER THIRTEEN: PERFORMANCE LEVEL SETTING

Performance level setting events for grades 3 through 8 in mathematics and ELA took place June 9–12, 2015. However, no performance level setting occurred for science in 2015. A history (dates and methodology) of performance level setting events are provided in Table 13–1. The resulting cut scores from those events are provided in Table 13–2. For additional details about science standard setting event, refer to the PSSA science performance level setting technical report in 2008. For mathematics and ELA, please refer to the performance level setting report in 2015 for full details on the procedures used and the standard setting results.

Subsequent to the first administration of the reduced length tests described in detail in the Preface and Chapter Seven, the ELA cut scores reported below in Table 13–2 were validated by Pennsylvania educators during a modified Bookmark standards validation procedure in the Summer of 2018. Please refer to the standards validation report in 2018 for full details.

Table 13–1. Performance Level Setting/Validation Event Dates and Methodology

Subject	Grade	Methodology	Validation?	Event Date
Mathematics	3,4,5,6,7,8	Bookmark	No	Summer 2015
ELA	3,4,5,6,7,8	Bookmark	No	Summer 2015
Science	4, 8, 11	Bookmark	No	Summer 2008

PSSA CUT SCORES

Appendix M provides the scaled score cuts for each PSSA test. For reader convenience, these are documented next in a different format. Table 13–2 documents the cut scores on the scaled-score metric. PSSA scaling procedures are discussed further in Chapter Fourteen.

Table 13–2. PSSA Scaled-Score Metric Cut Scores by Subject and Grade

Subject	Grade	BB/B	B/P	P/A
Mathematics	3	923	1000	1110
Mathematics	4	908	1000	1107
Mathematics	5	901	1000	1113
Mathematics	6	897	1000	1105
Mathematics	7	904	1000	1109
Mathematics	8	906	1000	1108
ELA	3	905	1000	1143
ELA	4	887	1000	1107
ELA	5	893	1000	1139
ELA	6	875	1000	1115
ELA	7	845	1000	1130
ELA	8	886	1000	1130
Science	4	1150	1275	1483
Science	8	1150	1275	1464

Note. BB = Below Basic; B = Basic; P = Proficient; and A = Advanced.

CHAPTER FOURTEEN: SCALING

The purpose of a scaling analysis is to create a score scale. Scaling is used to transform test score values onto a scale more easily interpreted by users. For the PSSA, the resulting scaled scores will be used for score reporting and performance level classification. The PSSA classifies students into four achievement levels: Below Basic, Basic, Proficient, and Advanced.

The adoption of the Pennsylvania Core Standards in 2013 brought several changes to the PSSA in mathematics and ELA. In mathematics, content changed for grade levels, items involved more problem solving for deeper understanding, rulers were provided in grade 3 only, protractors were provided in grade 4, and formula sheets were provided in grades 4 through 8. In ELA, the new PSSA replaced PSSA Reading and PSSA Writing. Additional changes in ELA included reading passages that reflect the increased expectations of text complexity and new item types to reflect the emphasis on text-based answers and evidence to support claims. PSSA science continues to be aligned to the Pennsylvania Academic Standards for Science, Technology, Environment and Ecology.

The changes to mathematics and ELA necessitated performance level setting and the establishment of new score scales in 2015. Therefore, mathematics and ELA scaled scores for 2018 are not comparable to years prior to 2015. Science score scales were established in 2008 and no changes were made to science cut scores or score scales since that time. Therefore, science scaled scores are comparable to previous years back to the 2008 scores. Table 14–1 shows the scaled-score cuts for each subject and grade level.

SCALED SCORES

Individual student scores are reported as scaled scores. However, they are initially estimated as Rasch abilities (more information on the Rasch model is given in Chapter Twelve). Generally, scaled scores are preferred over Rasch ability values for reporting purposes. One issue is that Rasch ability values are on a scale that includes negative and decimal values. By transforming the Rasch ability values to scaled scores, all reported values can become positive integers. Scaled scores are usually obtained through some linear transformation of the Rasch ability values. The linear transformations used for the PSSA produce numeric values with three or four digits that are unit interval scaled scores. Each grade and subject has its own unique PSSA scaled score. Positive scores with no decimals make more sense to parents and students. Since Rasch ability values are comparative after linking to the base year, the transformed scaled scores have a common scale across years, even though the corresponding raw scores may differ. (Equating is discussed further in Chapter Fifteen.)

Essentially, PSSA scaled scores are derived through a two-step process. First, there is a nonlinear transformation that converts number correct scores to Rasch ability logits. Second, a linear transformation is used to convert logits to scaled scores. These and some additional considerations (e.g., rounding rules), are discussed further below.

DEFINITION OF SCOREABILITY

Answer documents are considered scoreable if they meet the attempt logic criterion for inclusion in the data files (see Chapter Nine).

At the item level, responses that were considered non-attempted or non-scoreable were assigned a score of zero. Details by item type are provided below.

- Multiple-choice (MC) items: All omit (no response) and multiple marks (more than one response selected without machine-discernible erasures) were scored as zeros.
- Open-ended (OE) items: All blank, copied, non-scoreable, foreign language, off-task, refusal, or unreadable responses were scored as zeros.
- Evidence-based selected-response (EBSR) items: Blank response for both parts OR part one marked with multiple marks and part two marked for all responses were scored as zeros.

WINSTEPS SCALING

Parameter estimates are derived using the WINSTEPS computer program (Linacre, 2019), which employs unconditional (UCON), joint-maximum-likelihood estimation (JMLE). WINSTEPS provides a conversion table that maps raw scores to logits (Rasch ability estimates). The logits are transformed to scaled scores as discussed below. Every year each test is scaled separately and then linked (see Chapter Fifteen).

ZERO AND PERFECT SCORES

WINSTEPS does not provide a direct ability estimate for zero (no points earned) or perfect (all points earned) raw scores. However, WINSTEPS has a default procedure for estimating such extreme scores, and this was used for the PSSA. Essentially, a fractional raw score (a value less than one) is added to zero scores and subtracted from perfect scores to determine the corresponding logit values for these extreme scores.

LINEAR TRANSFORMATION FORMULAS

PSSA scaled scores are obtained through a linear transformation of the Rasch ability estimates ($\hat{\theta}$). Specifically,

$$SS = m\hat{\theta} + b,$$

where *m* is the slope and *b* is the intercept.

For mathematics and ELA, the slope and intercept for each grade were derived by anchoring the Proficient cut score to a scaled score of 1000 and fixing the slope at 100. For science, the slope and intercept for each grade were derived by anchoring the Basic cut score at 1150 and the Proficient cut score at 1275.[1]

The slopes and intercepts for deriving PSSA scaled scores are provided in Table 14–2.

ROUNDING

The linearly transformed scaled scores are generally rounded to the nearest integer value for reporting purposes. Values greater than or equal to 0.50 are rounded up. Values less than 0.50 are rounded down.[2]

LOWEST OBTAINABLE SCALED SCORES

PSSA mathematics and ELA tests have a lowest obtainable scaled score (LOSS) of 600. For PSSA science, the LOSS values have been set to 1050 for Grade 4 and 925 for Grade 8. The selection of a LOSS is mainly based on two considerations: 1) extreme low scaled scores may have an impact on the average of the scaled scores at school/district level and 2) score truncation makes sense from a score precision perspective given measurement errors at the extremes are large. The LOSS values are documented in Table 14–1. See tables in Appendix N for LOSS *n*-counts.

HIGHEST OBTAINABLE SCALED SCORES

A highest obtainable scaled score (HOSS) is not set for the PSSA. Thus, the maximum possible scaled score value can float for each subject and grade. The upper bound varies from year to year, depending on the difficulty of the test form. Table 14–1 shows the maximum possible observed score for the current year's test. (Note: It may be that no student earned the maximum possible.) See tables in Appendix N for HOSS *n*-counts.

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[1] Anchoring two cut scores for mathematics and ELA was considered. However, this led to large variability in scaled scores across grades. Therefore, it was determined that one cut score would be anchored and the slope set at 100 for all grades.

[2] One exception to this rounding is in science where scores are rounded up (even if less than 0.50) if this action would put the rounded score into a higher performance level. This rounding rule has been in place for science since the establishment of the score scale and cut scores in 2008.

RAW-SCORE-TO-SCALED-SCORE TABLES

Full raw-to-scaled score tables can be found in Appendix N.

Table 14–1. PSSA Scaled Score Cuts for Each Performance Level by Subject and Grade

Subject	Grade	Min	BB/B[1]	B/P[1]	P/A[1]	Max[2]
Mathematics	3	600	923	1000	1110	1577
Mathematics	4	600	908	1000	1107	1553
Mathematics	5	600	901	1000	1113	1556
Mathematics	6	600	897	1000	1105	1513
Mathematics	7	600	904	1000	1109	1546
Mathematics	8	600	906	1000	1108	1495
ELA	3	600	905	1000	1143	1536
ELA	4	600	887	1000	1107	1621
ELA	5	600	893	1000	1139	1660
ELA	6	600	875	1000	1115	1614
ELA	7	600	845	1000	1130	1616
ELA	8	600	886	1000	1130	1654
Science	4	1050	1150	1275	1483	2313
Science	8	925	1150	1275	1464	2299

Notes. 1. BB = Below Basic; B = Basic; P = Proficient; and A = Advanced.
2. Scaled Score Maximum Values are unique for each year's test.

Table 14–2. PSSA Intercept and Slope by Subject and Grade

Subject	Grade	Intercept	Slope
Mathematics	3	956.31	100.00
Mathematics	4	981.92	100.00
Mathematics	5	961.69	100.00
Mathematics	6	931.41	100.00
Mathematics	7	956.16	100.00
Mathematics	8	951.76	100.00
ELA	3	962.47	100.00
ELA	4	957.49	100.00
ELA	5	958.32	100.00
ELA	6	940.78	100.00
ELA	7	947.65	100.00
ELA	8	961.11	100.00
Science	4	1225.65	176.75
Science	8	1196.64	191.54

Notes. Linear Transformation Intercepts and Slopes are used to derive the Scaled Scores.

STRAND (REPORTING CATEGORY) SCORE STRENGTH PROFILE

Strength profiles for strand (reporting category) scores have been provided since 2009. The following process was followed to derive the profile:

- The items for each strand were identified.
- WINSTEPS runs were undertaken that anchored the logit values for each strand's items to get the raw-to-logit score table for each strand. This is sometimes referred to as fixed item parameter scaling.
- The appropriate linear transformations (based on content and grade from Table 14–2) were applied to the logit values to derive strand scaled scores.

The strand scaled scores were categorized as follows: L=Low; M=Medium; H=High. The maximum possible strand scaled score was converted to H in cases where no strand scaled score equaled or exceeded the Advanced scaled score cut. Note that these designations are provided as an indication of performance levels within a strand, but as standards have not been set that describe strand performance as has been done at the overall test level, performance level descriptions for the overall test should not be used to describe strand performance. See Chapter Sixteen for information regarding strength profiles used in score reports.

CHAPTER FIFTEEN: EQUATING

Equating is a statistical process that is used to adjust scores on test forms so that scores on all forms on the test scale can be used interchangeably (Kolen & Brennan, 2004) even though the test forms consist of different items. In large-scale testing programs, it is a common practice to have different item sets appear in different test forms across administrations. Students' raw scores (or number-correct scores) cannot be directly compared between forms or administrations because they depend on the difficulty of the items on a form. The same student can score higher on an easy test than on a difficult test. Although there are various equating methods available for different psychometric paradigms (IRT and CTT), the PSSA utilizes an IRT approach aligned with the assumptions of the Rasch model, the IRT pre-equating method. The first step in any IRT equating method is to conduct scale linking, in which item difficulties from independent calibrations are transformed so that they can be placed on the same scale (Kolen & Brennan, 2014). Once scale linking is conducted, we can proceed with any IRT-based equating methods.

Prior to 2019, the PSSA employed a post-equating design with a chain-linking approach for scale linking. For the first time in 2019, a pre-equating design was implemented for PSSA due to the many advantages it offers. Specifically, employing a pre-equating method allowed for a shortened turn-around for score reporting due to the use of previously linked item parameters for test construction and development of raw-to-scaled-score tables. In this chapter, we provide a brief comparison of pre- and post-equating, the procedure implemented for the 2021 PSSA, and the evaluation of pre-equated and post-equated solutions. Summary results are also presented.

Due to circumstances surrounding the global Covid-19 pandemic beginning in March 2020 and lasting throughout the 2020–2021 school year, several processes were modified. Several of the administration conditions in 2021 were adjusted to allow for elongated testing windows, which ultimately changed the administration conditions of the PSSA. The Pennsylvania Technical Advisory Committee (TAC) provided guidance and direction for process modification. The information provided in this chapter discusses the typical procedures for PSSA, with footnotes that outline any changes for the 2021 processes.

PRE- VS. POST-EQUATING

As with other Pennsylvania assessment programs, the Rasch model is used to guide the test design, form construction, calibration, scaling, and equating of the PSSA. The first step in equating test forms using the Rasch model is to place the item parameters from different administrations on the same scale, also referred to as scale linking. Once the item parameters are on the same scale, the Newton Raphson procedure can be used to convert number-correct scores to Rasch ability levels, which in turn are transformed to scaled scores, ultimately allowing for score comparability within and across administrations.

As is the case with many K–12 large-scale assessment programs, all scored items are field tested prior to operational use. In theory, once the field-test items' difficulties are placed on the base scale one should not expect their Rasch item difficulties to change, except within a reasonable range of measurement error, after they are administered in an operational test provided the Rasch model fits the data. The subsequent use of these item parameters for test scoring is referred to as pre-equating.

In contrast, post-equating requires data from the current administration to be calibrated. Then, newly estimated item parameters are linked and placed on the same scale as banked item parameters, and scores are equated. With this in mind, pre-equating is advantageous because much of the work is completed before test administration, allowing more time for quality control; whereas post-equating relies on the same given timeframe for calibration, scale linking, equating scores, and implementing quality control procedures.

As the calibration of item parameters using IRT methods assumes equivalent samples of students from the same population, the two equating approaches should, in theory, yield the same results. However, this is unlikely to be true in practice, so there are practical advantages and disadvantages of each approach. The use of pre-equating can facilitate the operational process in terms of rapid score reporting, more time for quality control, and more flexibility in the assessment. One successful application of pre-equating is for computer-adaptive tests (CAT), such as the Pennsylvania Classroom Diagnostic tools (CDT), where test questions are tailored to a student's achievement as the test progresses. The CDT is designed to provide diagnostic information about student performance and is available throughout the school year at no cost. CATs require automated scoring for all item types (including constructed-response) and allow for immediate score reporting upon completion of the test. However, a variety of

issues need to be considered when using pre-equating in practice. For example, students may not be motivated to take the field tests, especially standalone field tests, which may make the items appear harder in the field test than in the operational test (Eignor, 1985; Eignor & Stocking, 1986; Stocking & Eignor, 1986; Kolen & Harris, 1990). Other concerns for the field-test items include item context, item position, and sample size. In contrast, post-equating, when applicable, does not have the same motivational concerns as pre-equating. Also, post-equating uses post-administration data and is sometimes considered to yield more accurate analysis results, given that the number of students who take the operational tests is usually large. On the other hand, when the reporting window is extremely tight, post-equating must occur within a very short time and therefore allows less time for the equating analyses and quality control.

CONSIDERATIONS FOR IMPLEMENTING PRE-EQUATING IN PSSA

To implement the pre-equating model in PSSA, additional efforts have been made to enhance the accuracy of pre-equating results based on findings from literature. For example, to address the concerns regarding students' motivation to take field tests, stand-alone field tests were not used; field-test items were embedded throughout the test so that students would perceive no differences between field-test items and operational items. This approach allows Rasch item difficulty estimates to be used for future pre-equating purposes and is based on the assumption that students should be equally motivated to take the operational and embedded field-test items, especially when they are not aware of which items are field-test items. To minimize item context and item position effects (i.e., lack of motivation and fatigue), field-test items were interspersed within the operational sections. With this design, students have a smaller chance of knowing the field-test item positions. Fatigue effects due to field-test items being placed in the last section of the operational test can be mitigated in this design as well. To improve the accuracy of the Rasch item difficulties estimated from the field-test data, DRC scored all MC items and a large sample of CR items, given that larger sample sizes can increase the estimation accuracy. The test designs for the operational PSSA mathematics, ELA, and science assessments used multiple test forms that shared several common elements. The operational items were the same on all forms and for all students. Student total raw scores and scaled scores, as well as accountability reporting, were based exclusively on the operational items.

The primary purpose of implementing pre-equating methodologies in PSSA was to shorten the score reporting window. Although PSSA forms have always been built using previously administered FT items with estimated Rasch difficulties, item selection for assessment programs that utilize pre-equating relies heavily on data-model fit, and in turn, the form construction process relies on items' statistical properties. Once items were selected for forms, approved by DRC staff and PDE, raw-to-scaled score tables were built using the same statistical properties.

SCALE LINKING

PSSA utilizes a chained scale linking design to conduct pre-equating verification, to obtain item parameters for field tested items, and to update item parameters for operational items. Results from scale linking are item parameters (Rasch difficulties and thresholds) for field tested (FT) items that are on the base scale. The chain originates from a scale of measurement defined for each test's base form, which is used as the reference for calibrating all items in the item pool. The base form is usually the form upon which the cut scores were established (see Chapter Thirteen). In the case of the PSSA, scales and cut scores were established for Science in 2008 and for ELA and mathematics in 2015. Therefore, the 2021 mathematics and ELA tests are chain linked to the scales set in 2015 and the science tests are chain linked to the scales set in 2008.

The Rasch Partial Credit Model (RPCM) is used for the calibrating data for the PSSA, given its flexibility for dichotomously scored (i.e., MC) and polytomously scored (i.e., CR, EBSR) item types (Masters, 1982). The RPCM is discussed in detail in Chapter Twelve. Without employing scale linking, Rasch difficulties for the field tested items would not be directly comparable to other items on the base scale. A partially anchored calibration was employed to estimate all 2021 item parameters for each test on its respective base scale. First, all OP item parameters were evaluated for model fit to ensure that previously estimated (banked) item parameters were still reasonable and appropriate. If misfitting items were identified, their parameters were re-estimated (Appendix O for OP item difficulties). Then OP item parameters were anchored and FT item parameters were freely estimated for each subject and grade level. This allowed for the estimation of FT item parameters on the baseline scale (see Appendix F for all item statistics).

For the pre-equating verification, we evaluated the differences between the fully anchored pre-equated solution and the partially anchored pre-equated solution (if misfitting items were identified). Both sets of item parameters were then used to estimate student abilities, which were then transformed to scaled scores. (Transformation formulas are provided in Chapter Fourteen.) The following steps outline the scale linking procedure used for PSSA. All calibration was conducted using WINSTEPS (Linacre, 2019).

1. Calibrate operational (OP) items in a fully anchored design.
    a. Exclude FT items.
    b. Identify include only students that have completed the test.
2. Identify misfitting items from Step 1 using the following criteria.
    a. Identify items with infit mean-square values greater than 1.3.
3. For any item identified in Step 2 due to infit issues, allow OP item parameters to be freely calibrated in a partially-anchored design. This allows for item parameters to be updated for misfitting items.[1]
    a. Exclude FT items.
    b. Include only students that have completed the test.
4. Calibrate OP and auto-scored FT items in a partially-anchored concurrent design.
    a. Anchor OP item parameters to the banked values (used in Step 1) or the updated values (estimated in Step 3).
    b. Include all operational (OP) and auto-scored (MC or EBSR) FT items.
    c. Include only students that have completed the test.

[1] Step 3 is part of the scale maintenance plan discussed later in this chapter.

5. Calibrate OP and FT items in a partially anchored concurrent design.[2]
    a. Anchor OP item parameters to the banked values (used in Step 1) or the updated values (estimated in Step 3).
    b. Anchor FT autoscored item parameters to those estimated in Step 4.
    c. Include all operational (OP) and field-test (FT) items.
    d. Include only students with scores for FT CR items.
    e. The resulting item parameters are banked for future use.

PRE-EQUATING VERIFICATION

Although extra care has been taken to guarantee the success of pre-equating during the test design, form construction, and calibration of embedded field-test items, DRC ensured that the pre-equated results had reasonable data-model fit during the pre-equating verification process. Once sufficient data was available, pre-equating verification was conducted to assess data-model fit and allow the parameters of any misfitting items to be freely calibrated. Any misfitting item was identified, and parameters were freely estimated in a subsequent calibration (using a partially anchored design) to improve data-model fit. The data and results presented in this section refer to misfitting items as those in which infit mean-square values exceeded a criterion of 1.3. The number of items identified during pre-equating verification for each subject and grade level is shown in Table 15–1. No items were identified as misfitting for mathematics grades 6 and 7, ELA grade 6, or science grades 4 or 8. Differences were analyzed between fully anchored pre-equated results (hereinafter "pre-equated") and partially anchored pre-equated results (hereinafter "post-equated"). Pre-equating verification analyses were conducted at the item level, person level, and form level. Complete detailed results from the pre-equating verification analyses can be found in Appendix T.

Table 15–1. Number of Misfitting Items Identified during Pre-Equating Verification.

Grade	Mathematics	ELA	Science
Grade 3	1	2	-
Grade 4	1	3	0
Grade 5	1	2	-
Grade 6	0	0	-
Grade 7	0	1	-
Grade 8	1	2	0

At the same time, DRC test development specialists reviewed all misfitting items (i.e., items with infit mean-square values greater than 1.3) and items with large displacement values (i.e., an absolute value greater than 0.5) to ensure that items were presented in the same manner as they were in prior administrations.

ITEM-LEVEL ANALYSES

Item-level analyses indicate whether the data fit the Rasch model with respect to item-fit statistics. This analysis included the number of items that had reasonable fit statistics (i.e., greater than 0.7 and less than 1.3) supported by prior literature (Wright & Linacre, 1994). Tables 15–2M, 15–2E, and 15–2S show the item fit statistics comparisons for mathematics, ELA, and science, respectively. For ELA, both pre-equated and post-equated solutions showed similar fit to the model in terms of infit and outfit statistics, where the post-equated solution showed slightly better fit in terms of the number of items within the desired range. Overall, across all mathematics and science grade levels, items fit the pre-equated and post-equated solutions similarly. The results show that the data fit the pre-equated solution well.

[2] Step 5 was not conducted given that field-test OE items were not scored in 2021. The results from Step 4 were banked but are not eligible for future use.

Table 15–2M. Mathematics Item Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.7,1.3]*	Mean+	SD+	Min+	Max+	[0.7,1.3]+
3	Pre	86629	1.02	0.12	0.79	1.33	42/43	1.04	0.20	0.67	1.58	38/43
3	Post	86629	1.01	0.11	0.79	1.25	43/43	1.04	0.19	0.67	1.46	38/43
4	Pre	86838	1.02	0.11	0.81	1.31	42/43	1.03	0.16	0.76	1.53	40/43
4	Post	86838	1.02	0.11	0.81	1.28	43/43	1.03	0.15	0.76	1.37	40/43
5	Pre	86349	1.00	0.12	0.79	1.32	42/43	1.01	0.19	0.65	1.55	39/43
5	Post	86349	1.00	0.12	0.79	1.27	43/43	1.01	0.18	0.65	1.45	39/43
6	Pre	84515	0.98	0.13	0.70	1.23	42/43	1.00	0.20	0.59	1.45	37/43
6	Post	84515	0.98	0.13	0.70	1.23	42/43	1.00	0.20	0.59	1.45	37/43
7	Pre	84197	1.01	0.14	0.73	1.28	43/43	1.02	0.19	0.7	1.36	40/43
7	Post	84197	1.01	0.14	0.73	1.28	43/43	1.02	0.19	0.7	1.36	40/43
8	Pre	81441	1.01	0.13	0.74	1.32	42/43	1.02	0.18	0.67	1.50	38/43
8	Post	81441	1.01	0.12	0.74	1.26	43/43	1.02	0.18	0.67	1.50	38/43

Notes. *Denotes Infit
+Denotes Outfit

Table 15–2E. ELA Item Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.7,1.3]*	Mean+	SD+	Min+	Max+	[0.7,1.3]+
3	Pre	86505	1.00	0.13	0.77	1.32	33/35	1.00	0.17	0.68	1.37	32/35
3	Post	86505	1.00	0.12	0.78	1.31	34/35	1.00	0.16	0.69	1.32	32/35
4	Pre	86910	1.04	0.14	0.67	1.44	35/39	1.08	0.23	0.64	1.71	32/39
4	Post	86910	1.03	0.14	0.67	1.42	37/39	1.07	0.21	0.64	1.74	32/39
5	Pre	86504	1.02	0.17	0.53	1.70	36/39	1.04	0.22	0.53	1.90	35/39
5	Post	86504	1.02	0.16	0.53	1.68	36/39	1.04	0.22	0.53	1.87	35/39
6	Pre	85286	1.01	0.14	0.63	1.26	38/39	1.05	0.22	0.62	1.62	31/39
6	Post	85286	1.01	0.14	0.63	1.26	38/39	1.05	0.22	0.62	1.62	31/39
7	Pre	85125	1.01	0.11	0.59	1.31	37/39	1.04	0.16	0.60	1.37	37/39
7	Post	85125	1.01	0.12	0.59	1.32	37/39	1.04	0.16	0.59	1.36	37/39
8	Pre	81845	1.01	0.16	0.70	1.42	36/39	1.06	0.26	0.58	1.82	30/39
8	Post	81845	1.01	0.16	0.70	1.43	36/39	1.06	0.26	0.58	1.80	30/39

Notes. *Denotes Infit
+Denotes Outfit

Table 15–2S. Science Item Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.7,1.3]*	Mean+	SD+	Min+	Max+	[0.7,1.3]+
4	Pre	86327	0.99	0.11	0.76	1.30	43/43	1.00	0.17	0.72	1.41	41/43
4	Post	86327	0.99	0.11	0.76	1.30	43/43	1.00	0.17	0.72	1.41	41/43
8	Pre	80547	1.00	0.09	0.74	1.19	43/43	1.01	0.14	0.61	1.35	41/43
8	Post	80547	1.00	0.09	0.74	1.19	43/43	1.01	0.14	0.61	1.35	41/43

Notes. *Denotes Infit
+Denotes Outfit

PERSON-LEVEL ANALYSES

The second set of analyses conducted consisted of analyzing person-level fit statistics, which can be another indicator of whether the data fit the model. Tables 15–3M, 15–3E, and 15–3S summarize the overall person infit and outfit statistics by grade level for both the pre-equated and post-equated solutions for mathematics, ELA, and science, respectively. The table specifies the mean, standard deviation (SD), minimum (Min), maximum (Max), and proportion of persons that had reasonable fit statistics (i.e., greater than 0.5 and less than 1.5)[3] for both infit and outfit statistics. The results in the tables indicate that person-level fit does not vary by equating method.

Furthermore, Appendix T includes the results for the pre-equating verification, including the person infit boxplots for all subjects and grade levels for both pre-equated and post-equated solutions. Appendix T also provides boxplots disaggregated by gender, ethnicity, English Learners (ELs), and students with individualized educational programs (IEPs). The person infit plots indicate that the data fits the pre- and post-equated solutions similarly.

Table 15–3M. Mathematics Person Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.5,1.5]*	Mean+	SD+	Min+	Max+	[0.5,1.5]+
3	Pre	86629	1.00	0.20	0.49	4.29	98.3%	1.04	0.30	0.05	7.44	92.1%
3	Post	86629	0.99	0.20	0.49	4.28	98.3%	1.04	0.29	0.05	7.35	92.6%
4	Pre	86838	1.01	0.19	0.41	3.31	98.5%	1.03	0.26	0.08	9.90	94.9%
4	Post	86838	1.00	0.19	0.40	3.31	98.5%	1.03	0.25	0.08	9.90	95.4%
5	Pre	86349	0.99	0.19	0.44	3.87	98.5%	1.01	0.23	0.08	8.97	96.1%
5	Post	86349	0.99	0.19	0.43	3.87	98.5%	1.01	0.23	0.08	8.93	96.3%
6	Pre	84515	0.96	0.20	0.48	2.60	98.9%	1.00	0.27	0.06	8.12	94.2%
6	Post	84515	0.96	0.20	0.48	2.60	98.9%	1.00	0.27	0.06	8.12	94.2%
7	Pre	84197	0.99	0.17	0.29	3.26	98.9%	1.02	0.21	0.06	6.47	97.6%
7	Post	84197	0.99	0.17	0.29	3.26	98.9%	1.02	0.21	0.06	6.47	97.6%
8	Pre	81441	0.98	0.17	0.35	3.14	98.6%	1.02	0.18	0.05	4.14	98.6%
8	Post	81441	0.98	0.17	0.35	3.14	98.5%	1.02	0.17	0.05	4.12	98.7%

Notes. *Denotes Infit
+Denotes Outfit

[3] While items and persons are on the same scale, items tend to be more stable. As such, stricter rules are applied to item-fit statistics than person-fit statistics in determining reasonable fit.

Table 15–3E. ELA Person Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.5,1.5]*	Mean+	SD+	Min+	Max+	[0.5,1.5]+
3	Pre	86505	1.02	0.23	0.44	2.98	96.6%	1.00	0.23	0.15	4.41	96.5%
3	Post	86505	1.02	0.22	0.44	2.91	97.1%	1.00	0.22	0.15	4.58	96.7%
4	Pre	86910	1.01	0.30	0.27	3.50	92.8%	1.05	0.34	0.09	6.52	90.5%
4	Post	86910	1.00	0.30	0.27	3.54	93.0%	1.04	0.32	0.09	7.88	91.1%
5	Pre	86504	1.00	0.33	0.16	4.37	93.5%	1.01	0.33	0.05	9.90	94.0%
5	Post	86504	1.00	0.32	0.17	4.21	93.8%	1.01	0.33	0.06	9.90	93.8%
6	Pre	85286	0.97	0.31	0.28	3.45	92.8%	1.02	0.34	0.09	9.59	92.4%
6	Post	85286	0.97	0.31	0.28	3.45	92.8%	1.02	0.34	0.09	9.59	92.4%
7	Pre	85125	0.94	0.26	0.30	2.80	95.9%	1.01	0.28	0.10	9.90	95.1%
7	Post	85125	0.94	0.26	0.30	2.83	96.0%	1.00	0.28	0.10	9.90	95.1%
8	Pre	81845	1.02	0.38	0.18	5.49	91.5%	1.04	0.40	0.06	9.90	91.0%
8	Post	81845	1.02	0.37	0.19	5.34	91.5%	1.04	0.40	0.06	9.90	90.9%

Notes. *Denotes Infit
+Denotes Outfit

Table 15–3S. Science Person Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.5,1.5]*	Mean+	SD+	Min+	Max+	[0.5,1.5]+
4	Pre	86327	0.99	0.15	0.57	1.95	99.8%	1.00	0.21	0.27	3.54	97.3%
4	Post	86327	0.99	0.15	0.57	1.95	99.8%	1.00	0.21	0.27	3.54	97.3%
8	Pre	80547	1.00	0.14	0.58	1.87	99.9%	1.01	0.19	0.21	5.07	97.8%
8	Post	80547	1.00	0.14	0.58	1.87	99.9%	1.01	0.19	0.21	5.07	97.8%

Notes. *Denotes Infit
+Denotes Outfit

NORMALIZED SCALED SCORE DIFFERENCES

On the form-level, we evaluated differences between pre-equated and post-equated results. Normalized differences were calculated as the difference between the scaled score divided by the average CSEM of pre- and post-equated results at each raw score point (see Equation below). Normalized differences were all within reasonable expectations (min = -0.11, max = 0.10), where the largest differences were observed for ELA grade 3 (min = -0.11, max = 0.00). The plots for normalized scaled score differences are included in Appendix T.

$$Normalized\ Scaled\ Score\ Difference = \frac{SS_{Pre} - SS_{Post}}{(CSEM_{Pre} + CSEM_{Post})/_2}$$

PERFORMANCE LEVEL CLASSIFICATION

Pre-equated solutions were considered reasonable if classification consistency did not change more than 5%. Table 15–4 shows the consistency of classifications with respect to performance levels. The three numeric values within each cell refer to the proportion of performance classifications that do not agree at each of the three cuts (Basic, Proficient, and Advanced, respectively). If a numeric entry is followed by a negative sign, then pre-equating resulted in a lower percentage of students in the adjacent performance level when compared to post-equating. On the other hand, if the numeric entry is followed by a positive sign, then pre-equating resulted in a higher percentage of students in the adjacent performance level when compared to post-equating.

Performance level classification was identical between the pre- and post-equated solutions for all subjects and grade levels except ELA grades 4, 5 and 8. ELA grade 4 showed the most movement at the Basic and Advanced performance levels. Specifically, 2% of students were classified as Basic when pre-equating was used and Below Basic when post-equating was used, and 3% of students were classified as Advanced when pre-equating was used and Proficient when post-equating was used. However, these results indicate that no more than 5% of performance level classifications changed between the pre- and post-equated solutions. There were no differences observed in performance level classification for mathematics or science.

After comparing and evaluating the results, the percentage of students classified differently was less than 5% within each classification, subject, and grade level. The TAC agreed that if classification consistency was less than 5%, then pre-equated solutions should be accepted[4]. The comparison of raw-to-scale score conversion tables for pre-equated and post-equated solutions are shown in Appendix T, Table T–1.

Table 15–4. Performance Level Impact Summary Between Pre- and Post-equated Solutions by Subject and Grade

Grade	Mathematics	ELA	Science
Grade 3	Exact	Exact	-
Grade 4	Exact	(2+,0,3+)	Exact
Grade 5	Exact	(0,3-,0)	-
Grade 6	Exact	Exact	-
Grade 7	Exact	Exact	-
Grade 8	Exact	(0,0,2-)	Exact

SCALE STABILITY AND MAINTENANCE

Scale stability is a critical component of any testing program. The 2014 Standards of Educational and Psychological Testing state that “Testing programs that attempt to maintain a common scale over time should conduct periodic checks of the stability of the scale on which the scores are reported” (p.103). Conducting item parameter checks, ensuring that item parameters do not drift over time, and potentially updating operational item parameters are a few ways in which testing programs can maintain scale stability. Although many of these aspects are checked during the pre-equating verification process, it is also important to analyze student performance and scale stability following each administration. Prior to 2021, operational item parameters were updated following each administration by calculating a mean shift constant based on a specified anchor set and transforming all operational item parameters back onto the base scale.

In 2021, operational item parameters were not updated due to the expected impact from the Covid-19 pandemic, including but not limited to the disruption to teaching and learning, the lower participation in state-wide summative assessments, and the elongated testing windows. Similarly, the 2021 field-test items based on the 2021 data will not be used for future forms construction. However, for consistency purposes, field-test item parameters were estimated for MC and EBSR items using a partially anchored concurrent calibration, where OP item parameters were anchored on their previously banked values. Note that field-test OE and TDA items were not scored in 2021.

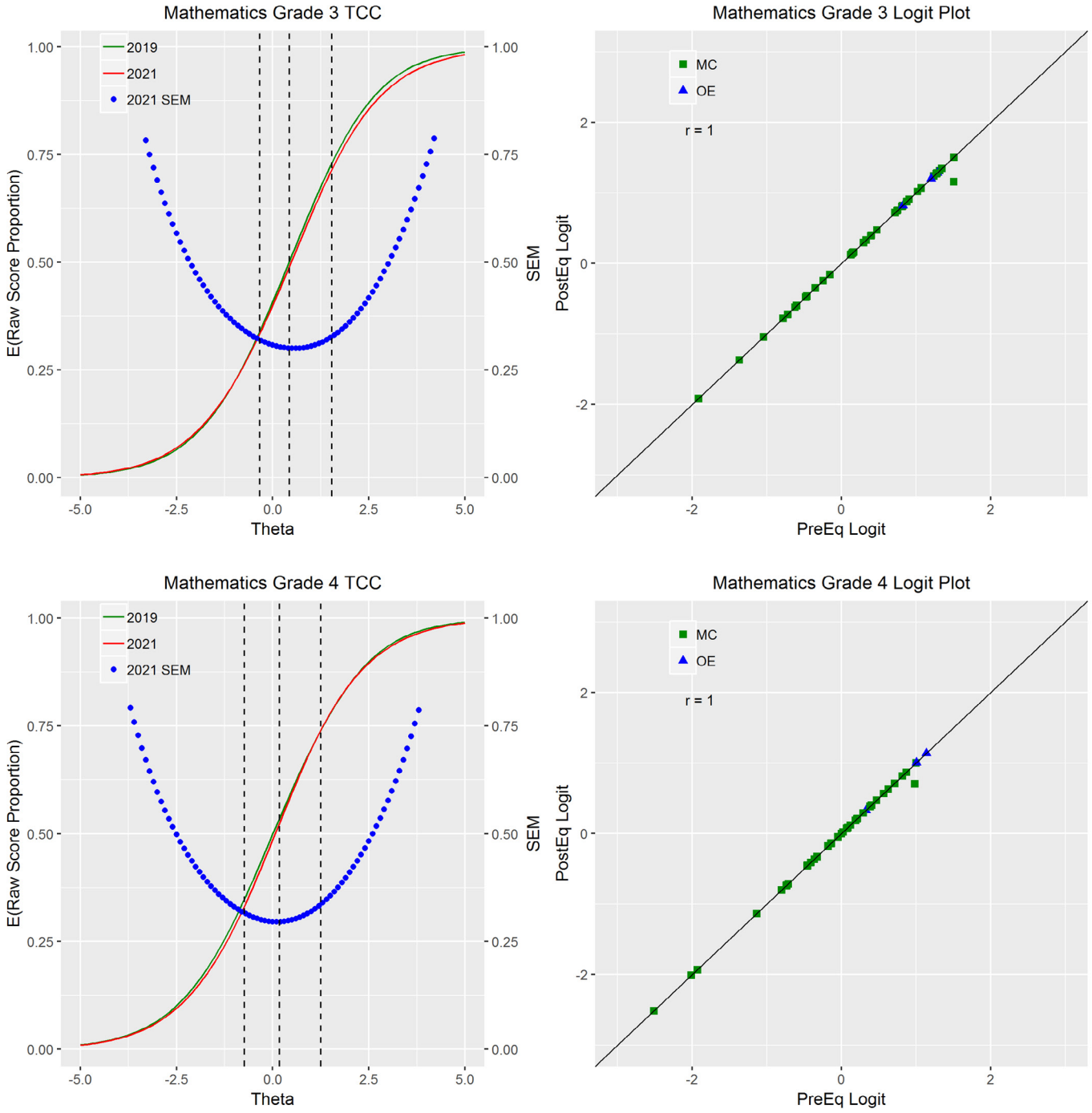
[4] Given the circumstances surrounding the Covid-19 pandemic in addition to the extended testing window and the dual reporting of scores, the PA TAC supported using the pre-equated solution.

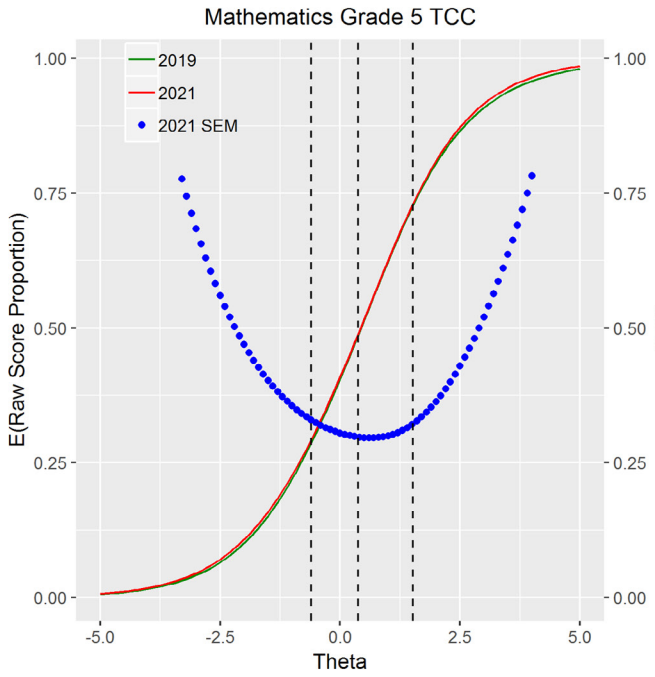
TEST CHARACTERISTIC CURVES AND LOGIT PLOTS

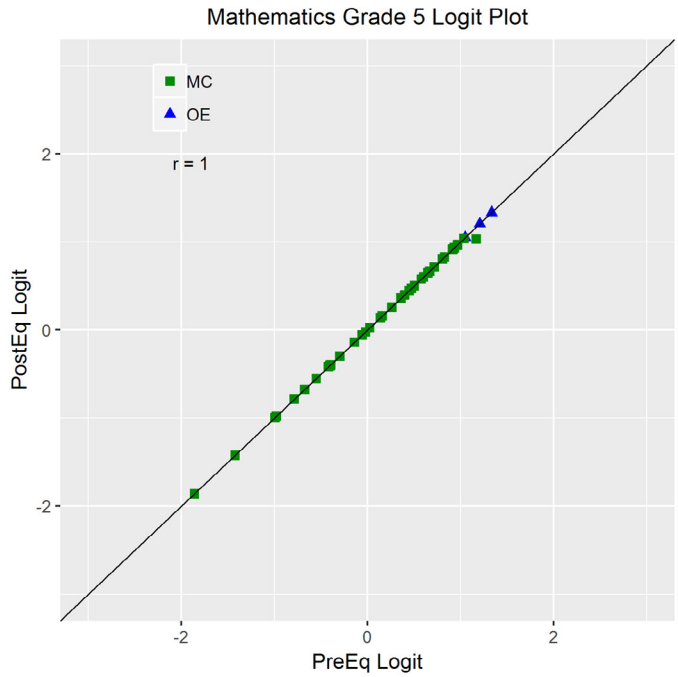
Figure 15–1 helps visualize the across-year differences in the difficulties of operational items. For each subject and grade level, two plots are presented: the test characteristic curves (TCCs) and the relationship between pre-equated and post-equated item difficulties. The plot on the left shows the prior and current TCCs and indicates alignment between the prior and current forms in terms of difficulty in the logit metric. TCCs that are closely aligned translate into similar raw-score cut points and similar test difficulty across years. The three dotted vertical lines represent the Basic, Proficient, and Advanced cut-scores on the logit (theta) scale. All subjects and grades showed very small year-to-year differences in TCCs from 2019 to 2021. The standard error of measurement (SEM) overlays the TCCs to show that the minimum SEM typically occurs close to the Proficient cut-score, which indicates that the Proficient cut-scores tend to be the most precise, as desired.

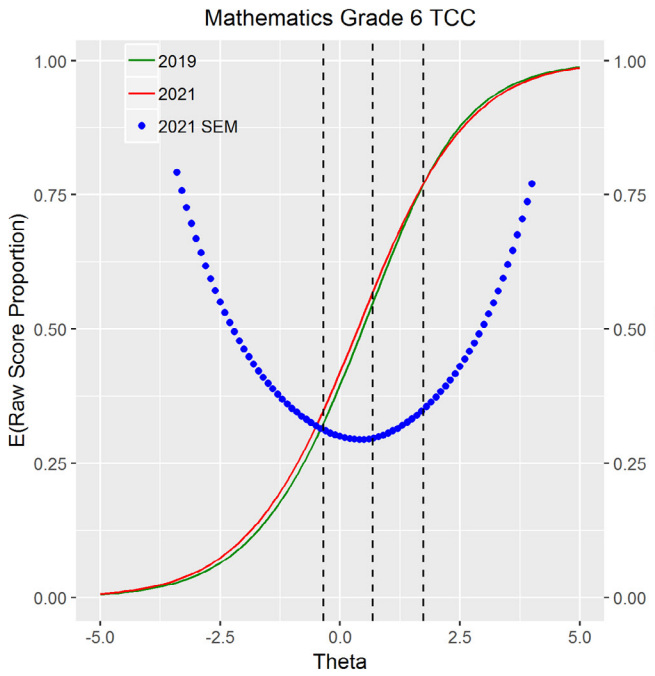
The right plot in Figure 15–1 displays the relationship between the pre-equated item difficulties (x-axis) and the post-equated item difficulties (y-axis) on the logit (theta) scale. The black line represents the identity line; if points fall on the identity line it indicates that there is no difference between the pre-equated and post-equated item difficulty. Points that do not fall on the identity line indicate items that were identified as misfitting during the pre-equating verification process and were freely estimated in a subsequent calibration. In all cases, the item difficulties that were freely estimated under the post-equated model were close to the identity line. The plots provide evidence of reasonable across-year stability of item difficulty, meaning the pre-equated item difficulties were similar to the post-equated item difficulties.

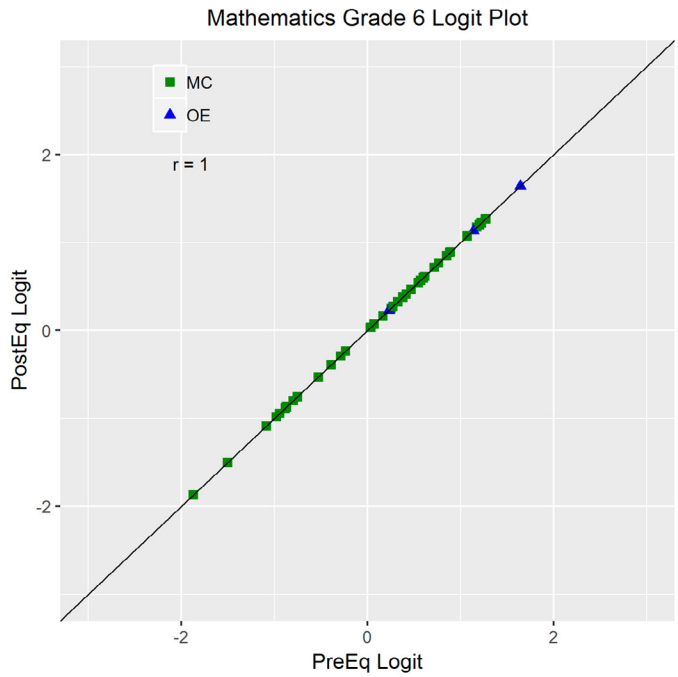
Figure 15–1. Test Characteristic Curves and Logit Plot

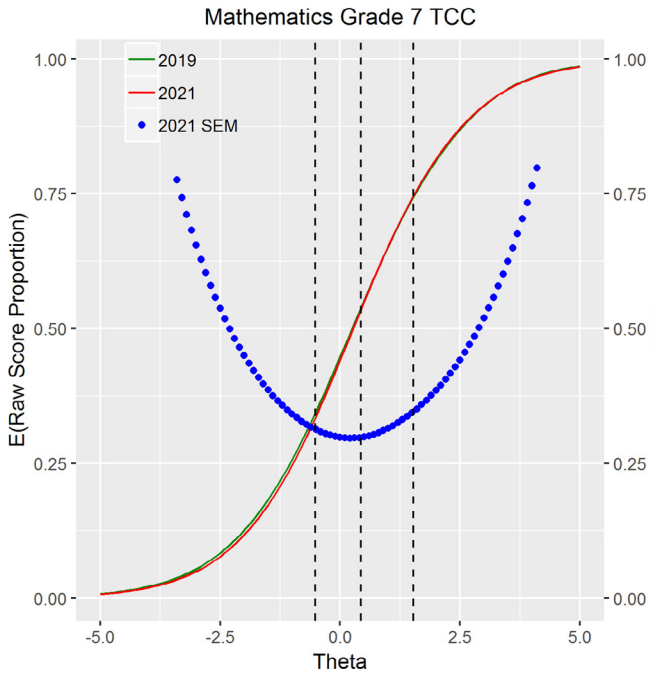


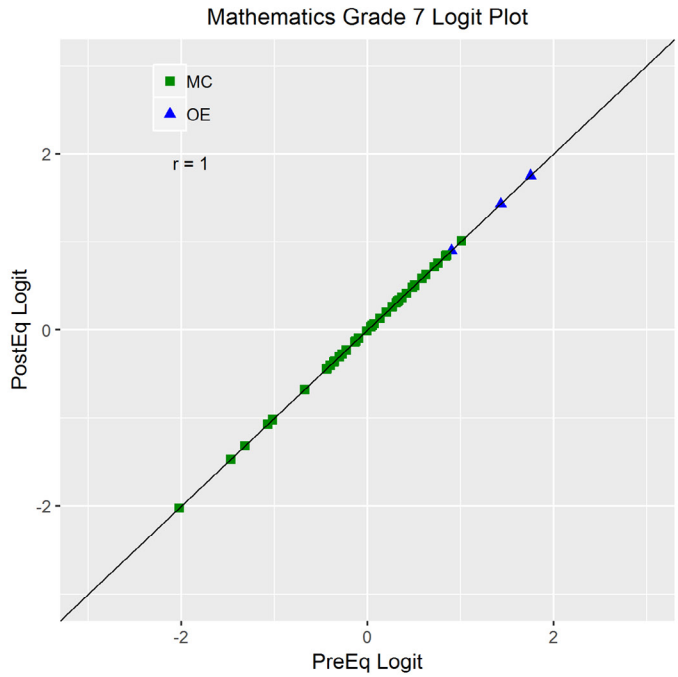

Mathematics Grade 5 TCC
2019
2021
2021 SEM
E(Raw Score Proportion)
SEM
Theta
1.00
0.75
0.50
0.25
0.00
-5.0
-2.5
0.0
2.5
5.0

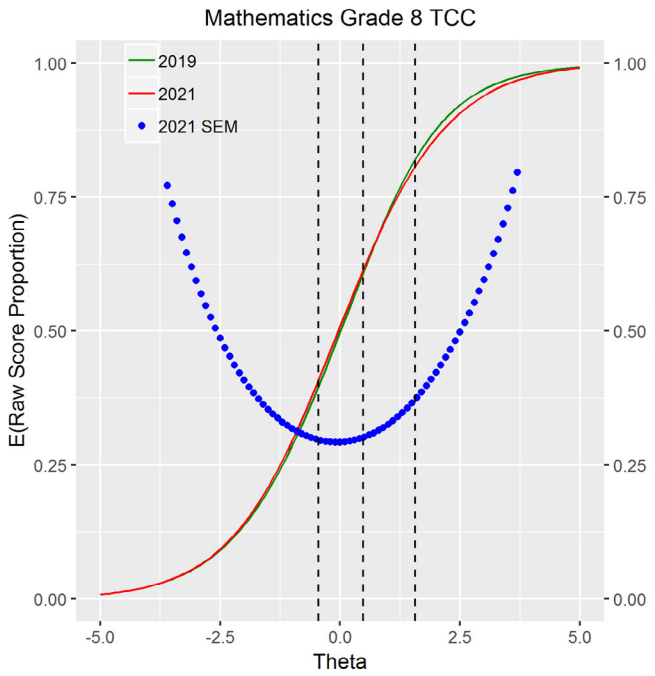

Mathematics Grade 5 Logit Plot
MC
OE
r = 1
PostEq Logit
PreEq Logit
2
0
-2

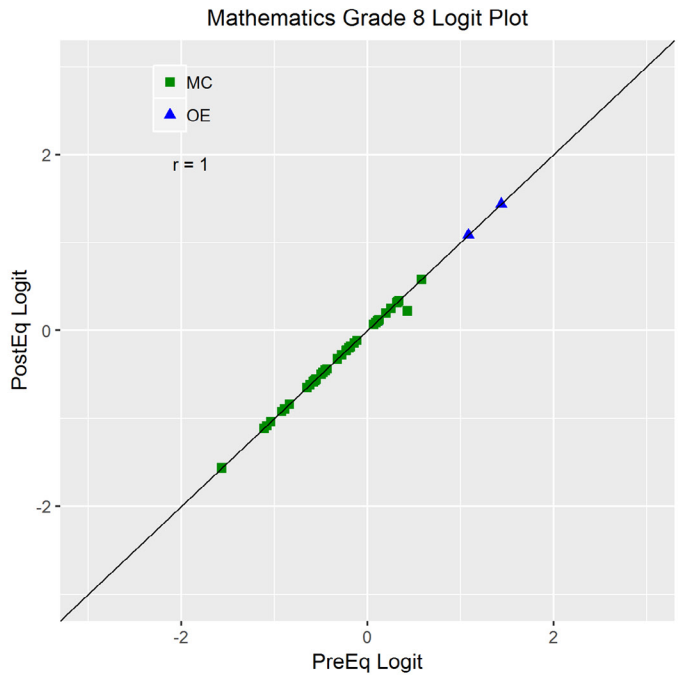

Mathematics Grade 6 TCC
2019
2021
2021 SEM
E(Raw Score Proportion)
SEM
Theta
1.00
0.75
0.50
0.25
0.00
-5.0
-2.5
0.0
2.5
5.0

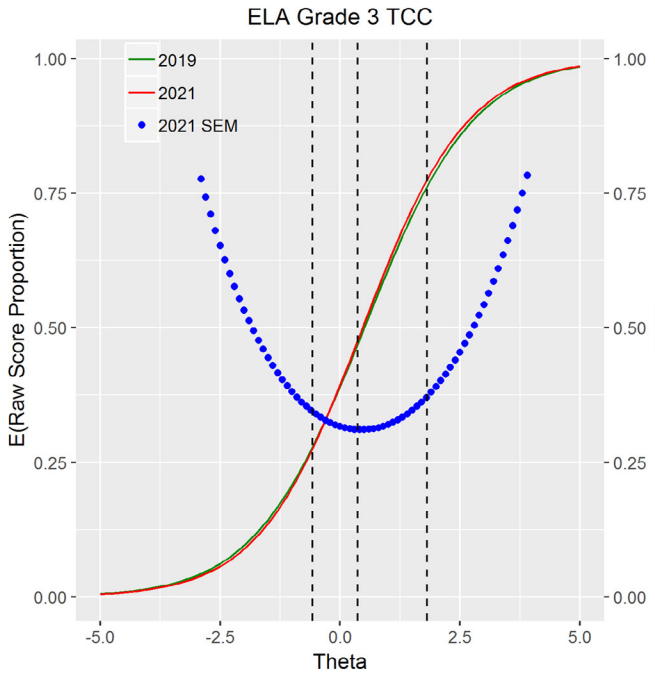

Mathematics Grade 6 Logit Plot
MC
OE
r = 1
PostEq Logit
PreEq Logit
2
0
-2

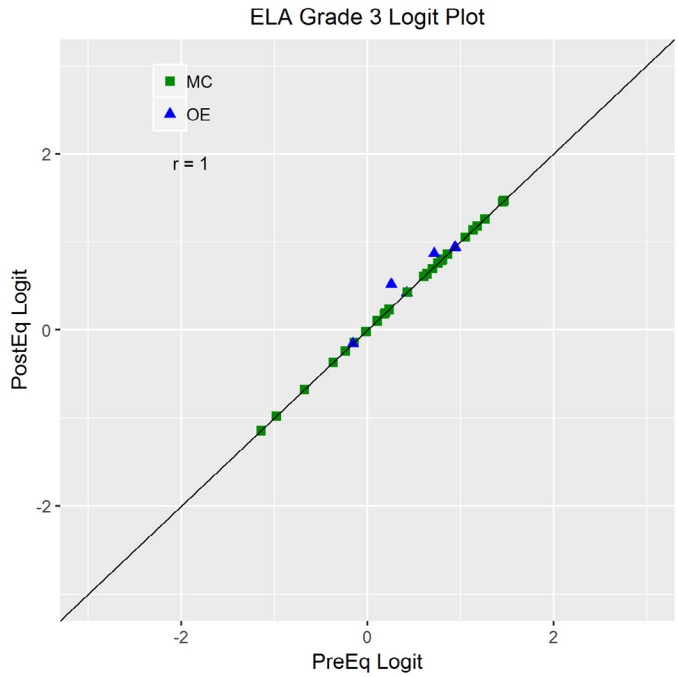

Mathematics Grade 7 TCC
2019
2021
2021 SEM
E(Raw Score Proportion)
SEM
Theta
1.00
0.75
0.50
0.25
0.00
-5.0
-2.5
0.0
2.5
5.0

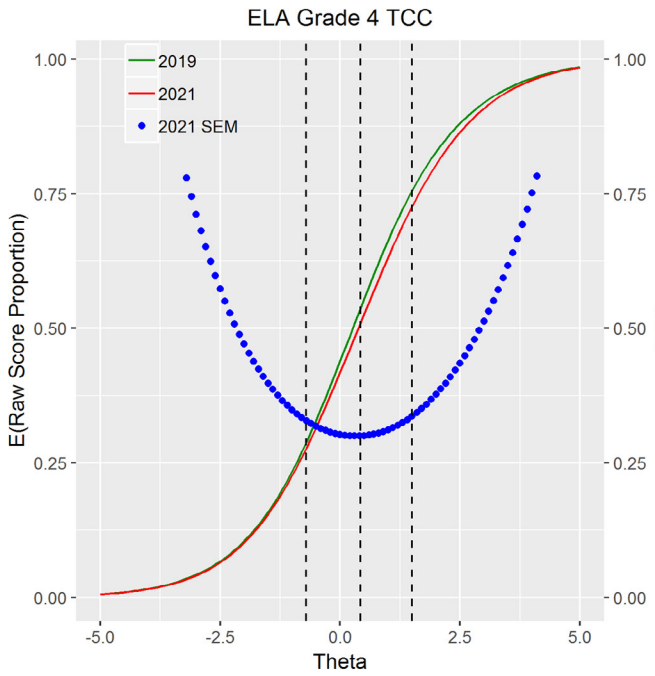

Mathematics Grade 7 Logit Plot
MC
OE
r = 1
PostEq Logit
PreEq Logit
2
0
-2

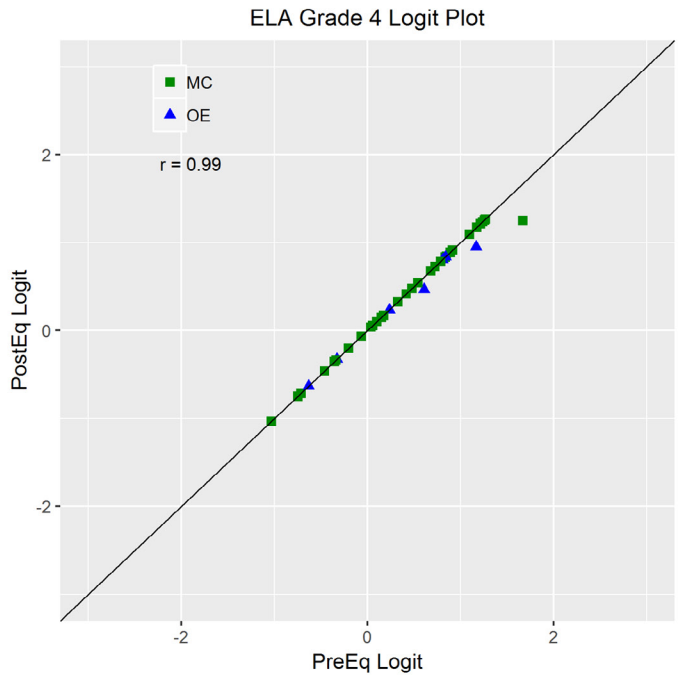

Mathematics Grade 8 TCC
2019
2021
2021 SEM
E(Raw Score Proportion)
SEM
Theta
1.00
0.75
0.50
0.25
0.00
-5.0
-2.5
0.0
2.5
5.0

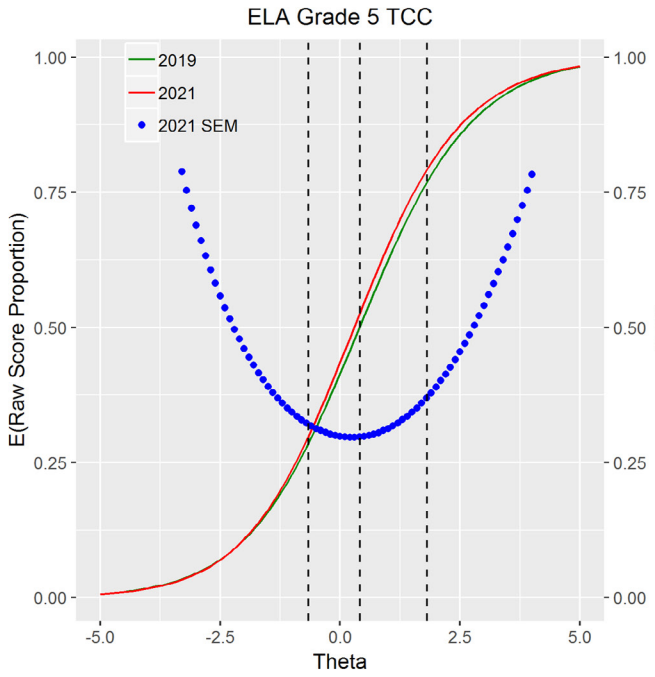

Mathematics Grade 8 Logit Plot
MC
OE
r = 1
PostEq Logit
PreEq Logit
2
0
-2


ELA Grade 3 TCC
2019
2021
2021 SEM
E(Raw Score Proportion)
SEM
Theta
1.00
0.75
0.50
0.25
0.00
-5.0
-2.5
0.0
2.5
5.0


ELA Grade 3 Logit Plot
MC
OE
r = 1
PostEq Logit
PreEq Logit
2
0
-2


ELA Grade 4 TCC
2019
2021
2021 SEM
E(Raw Score Proportion)
SEM
Theta
1.00
0.75
0.50
0.25
0.00
-5.0
-2.5
0.0
2.5
5.0


ELA Grade 4 Logit Plot
MC
OE
r = 0.99
PostEq Logit
PreEq Logit
2
0
-2


ELA Grade 5 TCC
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2021
2021 SEM
E(Raw Score Proportion)
SEM
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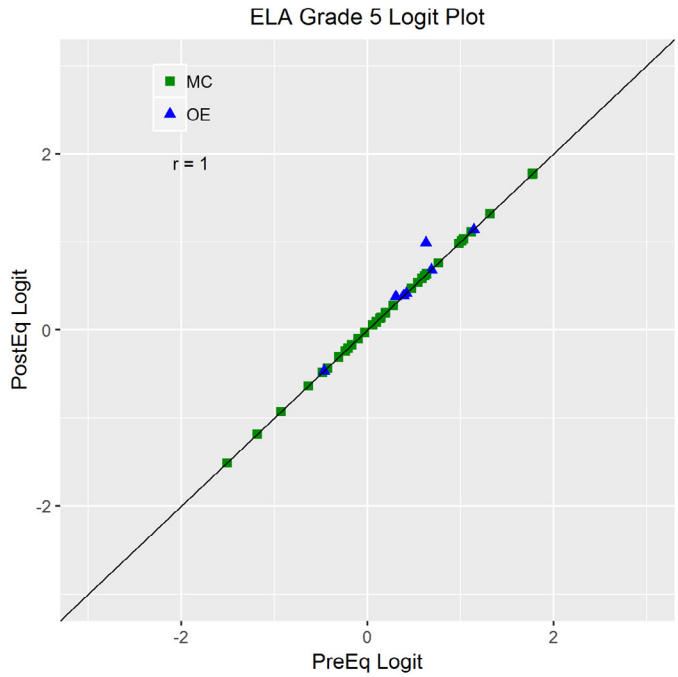
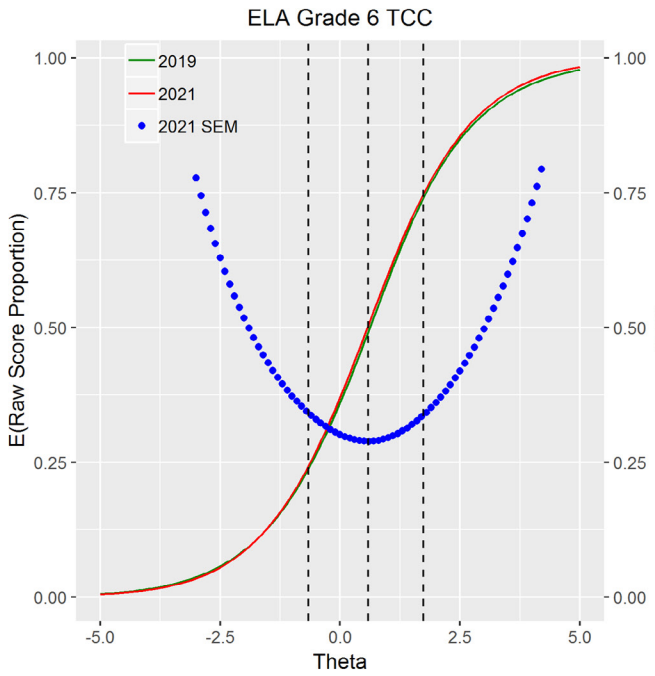
0.00
-5.0
-2.5
0.0
2.5
5.0


ELA Grade 5 Logit Plot
MC
OE
r = 1
PostEq Logit
PreEq Logit
2
0
-2


ELA Grade 6 TCC
2019
2021
2021 SEM
E(Raw Score Proportion)
SEM
Theta
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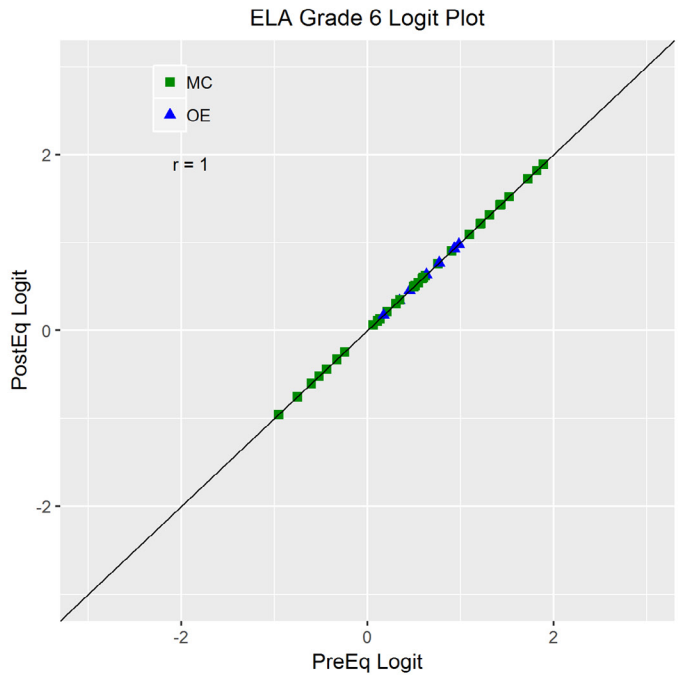
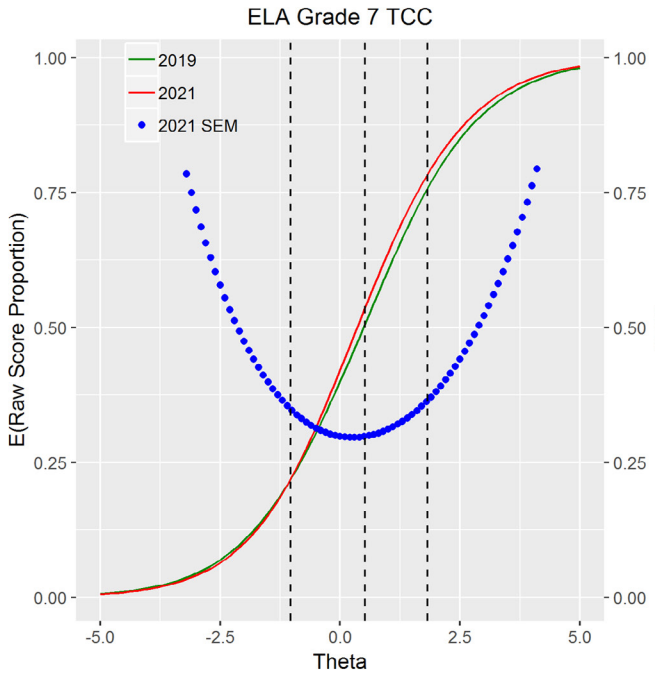
-5.0
-2.5
0.0
2.5
5.0


ELA Grade 6 Logit Plot
MC
OE
r = 1
PostEq Logit
PreEq Logit
2
0
-2


ELA Grade 7 TCC
2019
2021
2021 SEM
E(Raw Score Proportion)
SEM
Theta
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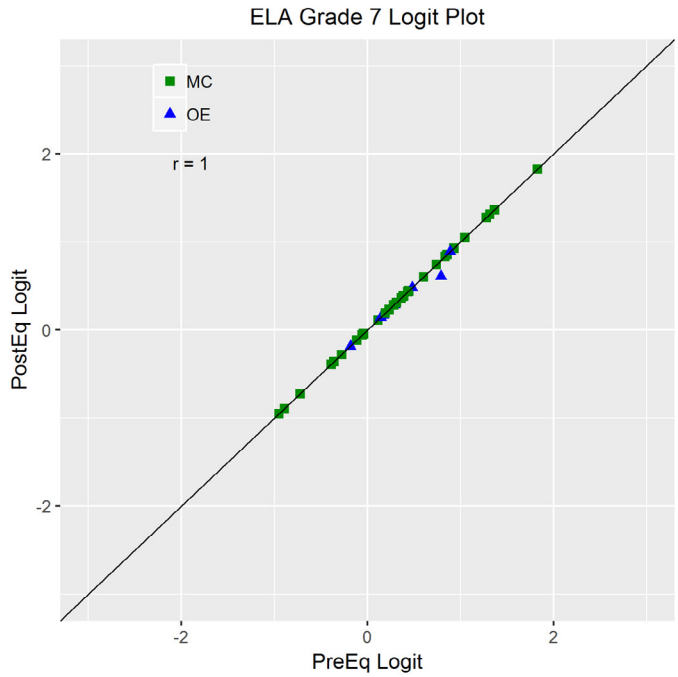
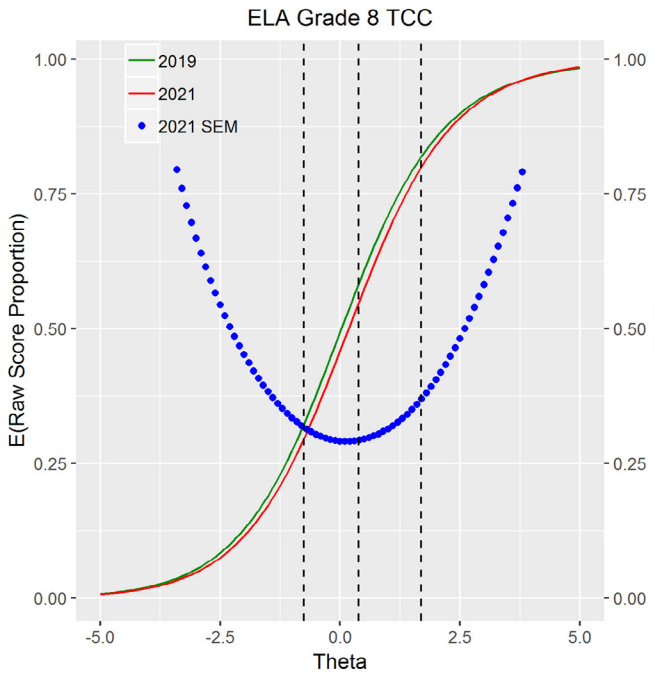
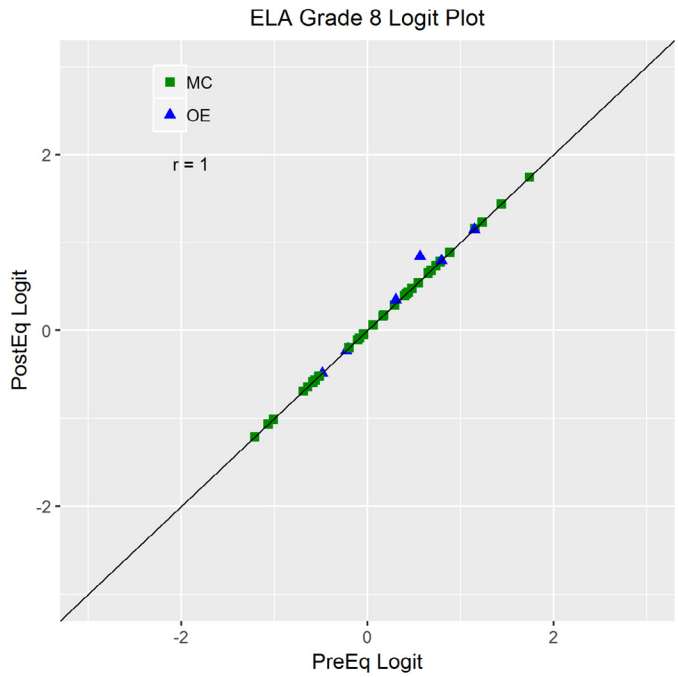
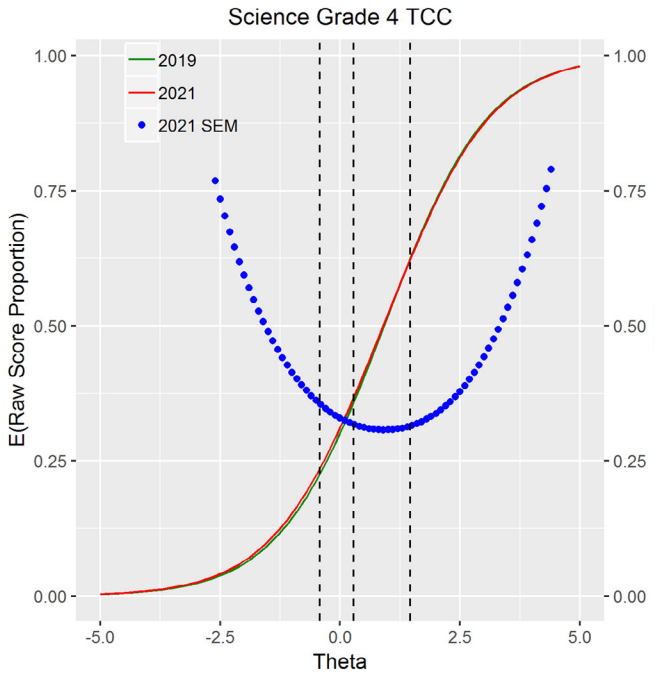
0.50
0.25
0.00
-5.0
-2.5
0.0
2.5
5.0

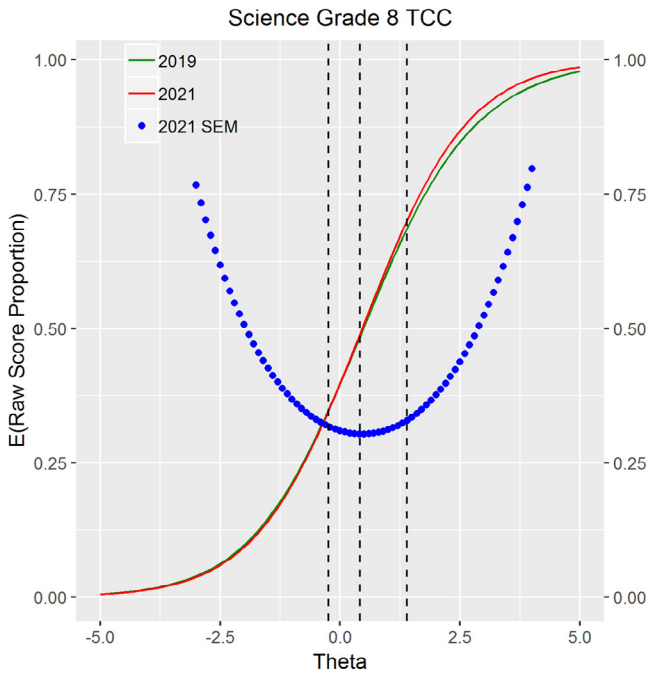

ELA Grade 7 Logit Plot
MC
OE
r = 1
PostEq Logit
PreEq Logit
2
0
-2


ELA Grade 8 TCC
2019
2021
2021 SEM
E(Raw Score Proportion)
SEM
Theta
1.00
0.75
0.50
0.25
0.00
-5.0
-2.5
0.0
2.5
5.0


ELA Grade 8 Logit Plot
MC
OE
r = 1
PostEq Logit
PreEq Logit
2
0
-2


Science Grade 4 TCC
2019
2021
2021 SEM
E(Raw Score Proportion)
SEM
Theta
1.00
0.75
0.50
0.25
0.00
-5.0
-2.5
0.0
2.5
5.0

Science Grade 4 Logit Plot
MC
OE
r = 1
PostEq Logit
PreEq Logit
2
0
-2


Science Grade 8 TCC
2019
2021
2021 SEM
E(Raw Score Proportion)
SEM
Theta
1.00
0.75
0.50
0.25
0.00
-5.0
-2.5
0.0
2.5
5.0

Science Grade 8 Logit Plot
MC
OE
r = 1
PostEq Logit
PreEq Logit
2
0
-2

CHAPTER SIXTEEN: SCORES AND SCORE REPORTS

This chapter provides information about the scores provided for the PSSA (e.g., scaled scores, performance levels, and strand scores), how they are presented on score reports, and appropriate and inappropriate uses of the scores.

Due to circumstances surrounding the global Covid-19 pandemic beginning in March 2020 and lasting throughout the 2020–2021 school year, several processes were modified. Several of the administration conditions in 2021 were adjusted to allow for additional testing (i.e., elongated testing windows), which ultimately changed the administration conditions of the PSSA. Individual Student Reports, Parent Letters, and other reports were delivered later in 2021 and early 2022 in order to accommodate the elongated testing windows.

SCORING THE PSSA

The PSSA is composed of multiple-choice (MC) and open-ended (OE) items. Each correct response to a MC item receives a score of 1. Incorrect responses receive a score of 0. Scores on OE items range from zero to four, depending on the subject and grade. Table 16–1 summarizes the types of items used on each subject-area test. More detailed information about the various item types is provided in Chapter Two.

Table 16–1. Item Types Used by Subject Area

Item Type	Mathematics	ELA	Science
Multiple-Choice	1 point	1 point	1 point
Open-Ended	4 points	N/A	2 points
Short-Answer	N/A	3 points	N/A
Evidence-Based Selected-Response	N/A	2 or 3 points	N/A
Text-Dependent Analysis	N/A	4 points	N/A

Note. Text-dependent analysis items are weighted.

DESCRIPTION OF TOTAL TEST SCORES

Different types of scores have been developed for PSSA reporting. Since the underlying properties of these scores are not necessarily the same, the resulting scores depend on the purposes of the test. The following types of scores are included on score reports for each PSSA subject-area test:

- Raw scores
- Scaled scores
- Performance levels

RAW SCORES

A raw score is the number of points a student earned over the operational MC and OE items. By itself, the raw score has limited utility. One limitation is that it can only be interpreted with reference to the total number of items on a subject-area test (e.g., a raw score of 15 on a 20-item test is different than a raw score of 15 on a 30-item test). In addition, raw scores depend on the difficulty of test items across test forms (e.g., a raw score of 15 on a test with 20 easy items is different than a raw score of 15 on a test with 20 difficult items). Because the difficulty of the items on a test can change from year to year, raw scores should not be compared across tests or administrations.

SCALED SCORES

Scaled scores are introduced in Chapter Fourteen. In the simplest sense, a scaled score is a transformed number-correct score. The specifics of the transformation processes for the PSSA are also discussed in Chapter Fourteen. When all students take the same items, as with the operational items on the PSSA, the more points the student earns, the higher the associated scaled score will be. The value of using the methods described in Chapters Fourteen and 16 to produce a scaled score metric is that it produces more general, interpretable, and equitable results that can be compared across years. As noted above, a raw score of 30 is meaningless unless the maximum raw score is known. The difficulty of the test items was also mentioned as an additional challenge with interpreting raw scores. Number-correct scores are transformed to scaled scores to remove the effects of test length and item difficulty. Strictly speaking, transformation of number-correct scores to percent-correct scores would also remove the effect of test length, but it would do nothing to adjust for the difficulty of the items to support year-to-year equivalence of scores.

Another advantage of scaled scores is that they lend themselves to interpretations of what is referred to as an interval level, whereas raw scores do not. Interval-level scales allow an interpretation of a scaled score difference of 5 points to be the same whether the scores are 1095 vs. 1100 or 1245 vs. 1250. Raw score differences, in this context, cannot be interpreted in this manner and are thus neither generalizable nor equitable.

When test scores are properly equated across years, a scaled score of 1300—or any other value for a subject and grade, should have the same absolute meaning in the current year as it had in previous years. Meaning, if a student's scaled score on a specific subject and grade level increased across two years, then that student's performance improved;[1] it does not say anything about whether this year's test is easier or harder than last year's test. These interpretations require no information about the length or the difficulty of the test in either year, although these variables are essential for the process of deriving the scaled scores.

There is considerable auxiliary information presented in this report that might aid the reader in further contextualizing PSSA scaled scores. The reader is specifically referred to the following information:

- Chapter Fourteen provides information on the development of the PSSA scaled score system, including transformation formulas, rounding rules, and general scale characteristics (e.g., minimum values).
- Chapter Seventeen provides total test score statistics. In particular, Table 17–2 lists the scaled score means and standard deviations for this year's test results.

PERFORMANCE LEVELS

PSSA results are also reported using four Performance Levels: Below Basic, Basic, Proficient, and Advanced. The cut scores on the scaled score metric (i.e., the lowest possible scaled score to enter the Basic, Proficient, and Advanced levels) were presented earlier in this report. However, the information is repeated below (Table 16–2) for convenience.

[1] This example is not an endorsement of conducting a trend analysis with only two years of results. Further, small differences may not be statistically or practically significant.

Table 16–2. PSSA Scaled Score Cuts for Each Performance Level by Subject and Grade

Subject	Grade	Min	BB/B[1]	B/P[1]	P/A[1]	Max[2]
Mathematics	3	600	923	1000	1110	1577
Mathematics	4	600	908	1000	1107	1553
Mathematics	5	600	901	1000	1113	1556
Mathematics	6	600	897	1000	1105	1513
Mathematics	7	600	904	1000	1109	1546
Mathematics	8	600	906	1000	1108	1495
ELA	3	600	905	1000	1143	1536
ELA	4	600	887	1000	1107	1621
ELA	5	600	893	1000	1139	1660
ELA	6	600	875	1000	1115	1614
ELA	7	600	845	1000	1130	1616
ELA	8	600	886	1000	1130	1654
Science	4	1050	1150	1275	1483	2313
Science	8	925	1150	1275	1464	2299

Notes. 1. BB = Below Basic; B = Basic; P = Proficient; and A = Advanced.
2. Scaled Score Maximum Values are unique for each year's test.

Performance levels descriptors (PLDs) are another way to attach meaning to the scaled score metric. PLDs associate precise quantitative ranges of scaled scores with verbal, qualitative descriptions of student performance. While much less precise, the qualitative description of the levels is one way for parents and teachers to interpret the student scores. They are also useful in assessing the status of the school. The Pennsylvania General Performance Level Descriptors, as developed by PDE and teacher panels, are given below. These are also included on student score reports.

- Advanced: The Advanced Level reflects superior academic performance, and work at this level demonstrates a thorough command of, and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates advanced academic preparation for engaging successfully in further studies in this content area.
- Proficient: The Proficient Level reflects satisfactory academic performance, and work at this level demonstrates an adequate command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates academic preparation for engaging successfully in further studies in this content area.
- Basic: The Basic Level reflects marginal academic performance, and work at this level demonstrates a partial command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates additional academic support may be needed for engaging successfully in further studies in this content area.
- Below Basic: The Below Basic Level reflects inadequate academic performance, and work at this level demonstrates a minimal command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates extensive additional academic support may be needed for engaging successfully in further studies in this content area.

DESCRIPTION OF STRAND (REPORTING CATEGORY) SCORES

The following types of scores are provided for PSSA:

- Strand (Reporting Category) Scores
- Strength Profile

STRAND (REPORTING CATEGORY) SCORES

A strand (reporting category) score describes performance of a student, school, or district on a particular strand (content standard defined in the test). For the PSSA, strand scores are raw scores, indicating the points a student or a school/district earned for that strand. Attributes of raw scores are described earlier in this chapter and should be interpreted with caution. This is particularly true with respect to year-to-year comparisons where item difficulties may vary. Strand scores cannot be compared across years because they are not statistically linked nor are they interval scores. Also, it is not advisable to compare strand raw scores even within the same form because some strands may contain items that are easier or more difficult than other strands (the strength profile, discussed below, mitigates this problem to some degree). Another concern is the low reliability of many of these scores, especially for strand scores based on a small number of possible points. Chapter Eighteen provides more information about strand-score reliability.

When compared to other results from the same year, strand scores can be somewhat helpful in identifying a group's strengths and weaknesses as measured by the test. For example, it can be informative to compare average strand scores of a school against the scores of another reference group (e.g., the state average). Hence, strand scores can suggest group strengths and weaknesses relative to another reference group. (Challenges pertaining to interpreting results for individual students are discussed below.)

STRENGTH PROFILE

The strength profile provides another indication of a student's performance within each of the strands. This profile can be used to identify areas in which a student needs to improve and areas in which a student has performed more successfully. Unlike strand scores that are reported as raw scores, strength profile scores categorize students into one of three levels: Low, Medium, and High. These categories take into account the difficulty of the items and are based on the same scaling techniques used to derive the PSSA scaled scores (See Chapter Fourteen for a description of how strength profiles are produced). Scaled scores for reporting categories, however, are not included on score reports. High, medium, and low designations are provided as an indication of performance within a strand, but as standards have been set at the test level only, performance level descriptions for the overall test should not be used as validated descriptions of strand performance.

APPROPRIATE SCORE USES

INDIVIDUAL STUDENTS

Scaled scores on the PSSA indicate a student's achievement of the PSSA Assessment Anchors and Eligible Content. Scaled scores are primarily used to determine student performance level classifications (i.e., a criterion-referenced inference). Scaled scores that are based on Item Response Theory (IRT) models are typically assumed to be of the interval type; so, comparisons may be made on differences in scaled scores. If this assumption holds, then it would be safe to infer for Grade 4 ELA that the ability difference between 1110 and 1120 represents the same ability difference that separates 1250 and 1260. Scaled scores can also be used to compare the performance of an individual student to the performance of a similar demographic or subgroup at a school or district. However, when comparing performance of an individual student, test score standard errors (discussed in Chapter Eighteen) should be considered because scaled scores are estimate of students' achievement which comes with estimation error.

GROUPS OF STUDENTS

Test results can be used to evaluate performance over time. Mean scaled scores can be compared across administrations within the same subject and grade to indicate whether student performance is improving across years. Generally, such trend analyses benefit from using mean results from as many test administration years as possible. Different cohorts of students are used (i.e., the same student or students are not tracked across grade levels). All scores can be analyzed within the same subject and grade for any single administration to determine which demographic or program group had, for example, the highest average performance or the highest percentage of students at or above the Proficient standard.

Strand scores can help evaluate academic areas for relative strengths or weaknesses. These category scores provide information to identify areas where further diagnosis is warranted. Generalizations from test results may be made to the specific content domain represented by the academic standards measured in the PSSA. However, all instruction and program evaluations should include as much information from other sources as possible to provide a more complete picture of student performance.

CAUTIONS FOR SCORE USES

EXTREME ERROR FOR EXTREME SCORES

Student scores toward the minimum or maximum ends of the score range have very large standard errors of measurement and, therefore, such scores should be viewed very cautiously. The maximum scaled score only provides a very rough estimate of a student's ability. For instance, if a student achieved the maximum score for ELA grade 6, it could not be determined whether the student could have achieved an even higher scaled score. If the test were 10 items longer, a different estimate might have been obtained. Similarly, if the items in a new test were more difficult than the items on a previous administration, the maximum scaled score would likely be higher on the new test because it would take a greater level of achievement to answer the items correctly. In this manner, extreme scaled scores may vary from one administration to the next even if the number of test items does not change. The fluctuation of extreme scaled scores complicates the comparisons of students with scaled scores at the extreme ends of the score distribution. To minimize confusion and potential misinterpretation, the minimum scaled scores possible on the PSSA tests have been fixed (see Table 16–2) so they do not change between administrations. However, the maximum scaled score values have not been fixed. Therefore, caution must be taken when comparing scores at the maximum end of the scale.

EACH TEST HAS A UNIQUE SCALE

Scaling was conducted for each subject and grade level separately. Therefore, PSSA scaled scores should be interpreted only within each respective subject and grade. PSSA scaled scores are not status indicators in the same sense as percentile ranks (or scales that are essentially transformations of percentile ranks) and, therefore, cannot be used to profile relative strengths and weaknesses across subject areas. As an example, scaled scores of 1250 in Grade 4 ELA and 1200 in Grade 4 mathematics do not necessarily imply that the student performed better in ELA than in mathematics. Neither do the PSSA scaled scores represent a developmental or vertical scale. This means that, although the content is aligned across grades to reflect the grade-to-grade articulations in the Pennsylvania Standards, across-grade statistical comparisons or growth statements for a student are not appropriate. For example, a 1200 in Grade 4 ELA and a 1200 in Grade 5 ELA does not mean a student had no achievement growth in ELA from Grade 4 to Grade 5.

STRENGTH PROFILE CAVEATS

The category labels of Low, Medium, and High are deliberately used instead of the PSSA performance level names—Below Basic, Basic, Proficient, and Advanced—to acknowledge that the PSSA cut scores were established based on the total test score and standards were set on this total test score. Therefore, the categories should not be interpreted in the same way as PSSA performance levels because they likely do not carry the same meaning.

While the strength profile might facilitate comparisons of a student's strengths and weaknesses across strands in some cases, several factors merit caution. As noted earlier, strand scores are often not as reliable as scores on the full-length test. The scaling underlying the strength profile does not mitigate this problem.

Additionally, the categories reflect more absolute comparisons. Relative comparisons are more difficult to make. As an example, if one scored High in both strand A and B, we know the student did very well in both strands compared to overall performance in the state (i.e., absolute status). However, we do not know whether the student's performance in strand A was better or worse relative to the performance in strand B (relative status).

Finally, some seemingly unusual results might occur that may be difficult for users to understand. As one example, it may be possible for a student to earn Medium in all strands but have an Advanced performance level. This can happen because the strand scores are correlated, meaning the distributional properties of the total score depends not only on the variances of the strand scores, but also on the covariances among the strand scores. (An analogy would be when a school track team places first overall in a competition although they did not win a single event.)

USING PSSA RESULTS FOR OTHER PURPOSES

Scaled scores and performance level classifications are used primarily to measure how well students acquire the knowledge and skills described in the *Pennsylvania Assessment Anchor Content Standards* (Assessment Anchors) as defined by the Eligible Content for mathematics, ELA, and Science. They are also used to provide information on school and district accountability. These same results, plus strand scores and strength profiles are also appropriate for use in improving curricular and instructional practices. Evidence supporting the validity of such interpretations is framed in Chapter Nineteen and provided throughout this technical report.

Other uses or inferences based on PSSA results may or may not be valid as the validity evidence and arguments provided in Chapter Nineteen may not necessarily support other score uses and interpretations. According to the AERA/APA/NCME *Standards* (2014) (i.e., Standard 1.4), if a test is used in a way that has not been validated, it is incumbent on the user to justify the new use, collecting new evidence if necessary. Finally, a universal caveat for any test's result is that it not be used for placement and educational planning alone. Instead, other information about the student (e.g., other test performance data) should be considered.

REPORTS

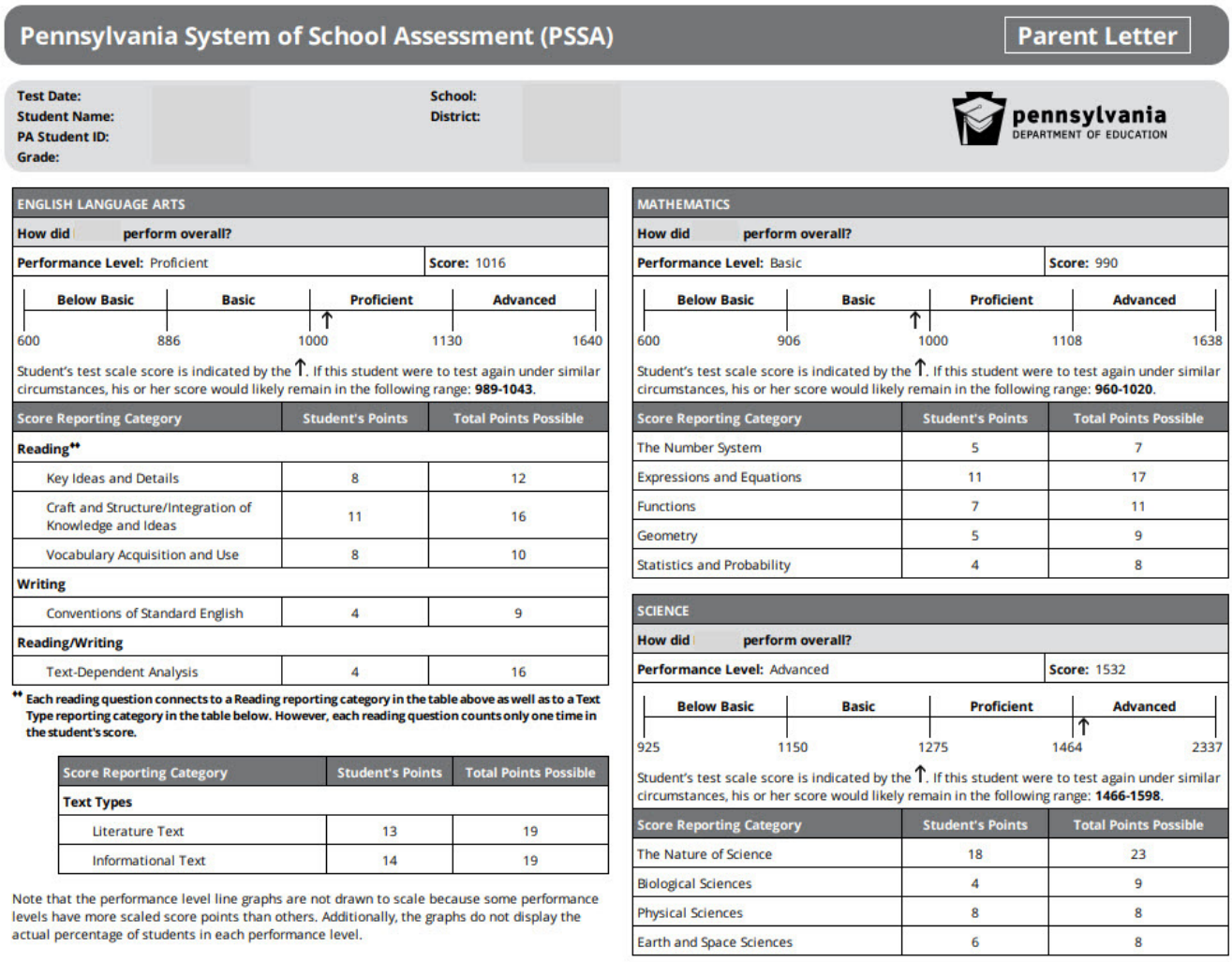
The following score reports are provided to students, parents, schools, and districts for the PSSA tests in mathematics, ELA, and science:

- Individual Student Report
- School Summary Report
- District Summary Report
- Interpretive Guide

PARENT LETTER

Parent letters were delivered to Pennsylvania districts on November 19, 2021 for all test-takers. This score report provided parents and students with their first glimpse of performance on the spring 2021 PSSA tests. This report provides results at the student level. A sample of the report is provided in Figure 16–1.

Figure 16–1. Parent Letter



Pennsylvania System of School Assessment (PSSA) — Parent Letter

Test Date: School:
Student Name: District:
PA Student ID:
Grade:

pennsylvania DEPARTMENT OF EDUCATION

ENGLISH LANGUAGE ARTS

How did perform overall?

Performance Level: Proficient — Score: 1016

Below Basic | Basic | Proficient | Advanced
600 886 1000 1130 1640

Student's test scale score is indicated by the ↑. If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **989-1043**.

Score Reporting Category	Student's Points	Total Points Possible
Reading**		
Key Ideas and Details	8	12
Craft and Structure/Integration of Knowledge and Ideas	11	16
Vocabulary Acquisition and Use	8	10
Writing		
Conventions of Standard English	4	9
Reading/Writing		
Text-Dependent Analysis	4	16

** Each reading question connects to a Reading reporting category in the table above as well as to a Text Type reporting category in the table below. However, each reading question counts only one time in the student's score.

Score Reporting Category	Student's Points	Total Points Possible
Text Types		
Literature Text	13	19
Informational Text	14	19

Note that the performance level line graphs are not drawn to scale because some performance levels have more scaled score points than others. Additionally, the graphs do not display the actual percentage of students in each performance level.

MATHEMATICS

How did perform overall?

Performance Level: Basic — Score: 990

Below Basic | Basic | Proficient | Advanced
600 906 1000 1108 1638

Student's test scale score is indicated by the ↑. If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **960-1020**.

Score Reporting Category	Student's Points	Total Points Possible
The Number System	5	7
Expressions and Equations	11	17
Functions	7	11
Geometry	5	9
Statistics and Probability	4	8

SCIENCE

How did perform overall?

Performance Level: Advanced — Score: 1532

Below Basic | Basic | Proficient | Advanced
925 1150 1275 1464 2337

Student's test scale score is indicated by the ↑. If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **1466-1598**.

Score Reporting Category	Student's Points	Total Points Possible
The Nature of Science	18	23
Biological Sciences	4	9
Physical Sciences	8	8
Earth and Space Sciences	6	8

INDIVIDUAL STUDENT REPORT

An individual student report is provided for all students who took the PSSA. This report was delivered to Pennsylvania school districts on February 4, 2022. Districts are responsible for sending the reports home to individual students. This report is a four-page color document that provides the types of scores explained earlier in this chapter. Appendix R contains detailed information about the development of the Individual Student Reports. Screen shots of the four pages from a sample individual student report are provided in Figures 16–2A to 16–2D.

Figure 16–2A. Page 1 of the Individual Student Report

PENNSYLVANIA
System of School Assessment (PSSA)

Student Report

Student Name:
PA Student ID:
School:
District:
Test Date:
Grade:

Student's Results				
Performance Level				
			Goal Range*	
	Below Basic	Basic	Proficient	Advanced
English Language Arts			✓	
Mathematics	✓			
Science				✓

*Goal Range: The goal is for all students in the Commonwealth of Pennsylvania to score proficient or above.

What Is the Pennsylvania System of School Assessment (PSSA)?

- The PSSA is an assessment system used to measure a student's progression toward mastery of the
  - Pennsylvania Core Standards in English Language Arts and Mathematics
  - Pennsylvania Academic Content Standards in Science
- For additional information, visit the Pennsylvania Department of Education's website at www.education.pa.gov

What Is Included in This report?

- This report provides information about the student's recent performances on the
  - English Language Arts, Mathematics, and Science PSSA assessments
- It is not intended to summarize all aspects of student learning.

For Additional Information

- For more information about a student's performance, consult the school or the classroom teacher.
- A Report Interpretation Guide is available at www.education.pa.gov. Type "student report guide" in the search field or consult the local school district or school.

Performance Levels

The Below Basic Level reflects inadequate academic performance, and work at this level demonstrates a minimal command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates extensive additional academic support may be needed for engaging successfully in further studies in this content area.

The Basic Level reflects marginal academic performance, and work at this level demonstrates a partial command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates additional academic support may be needed for engaging successfully in further studies in this content area.

The Proficient Level reflects satisfactory academic performance, and work at this level demonstrates an adequate command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates academic preparation for engaging successfully in further studies in this content area.

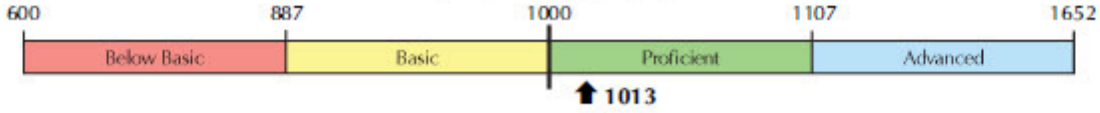
The Advanced Level reflects superior academic performance, and work at this level demonstrates a thorough command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates advanced academic preparation for engaging successfully in further studies in this content area.

pennsylvania
DEPARTMENT OF EDUCATION

Figure 16–2B. Page 2 of the Individual Student Report

English Language Arts

Performance Level



Student's test scale score is indicated by the (⬆). If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **985-1041**

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Reading**			
Key Ideas and Details	**11**	16	**Medium**
Craft and Structure/Integration of Knowledge and Ideas	**7**	13	**Low**
Vocabulary Acquisition and Use	**7**	9	**Medium**
Writing			
Conventions of Standard English (Writing)	**4**	9	**Low**
Text-Dependent Analysis			
Text-Dependent Analysis (Reading/Writing)	**4**	16	**Low**

**Each reading question connects to a Reading reporting category in the table above as well as to a Text Type reporting category in the table below. However, each reading question counts only one time in the student's score.

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Text Types			
Literature Text	**12**	17	**Medium**
Informational Text	**13**	21	**Medium**

To learn more about the Score Reporting Categories, see page 4.

*The Strength Profile (Low, Medium, High): The strength profile provides an indication of this student's performance within each of the reporting categories. The Strength Profile takes into account the difficulty of the assessment questions and can be used to help identify the student's strengths and/or areas of need.

Figure 16–2C. Page 3 of the Individual Student Report

Mathematics

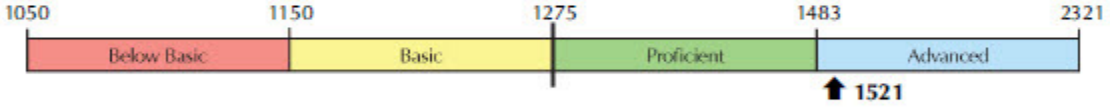
Performance Level

Student's test scale score is indicated by the (⬆). If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **876-936**

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Numbers and Operations in Base Ten	1	10	Low
Numbers and Operations—Fractions	4	11	Low
Operations and Algebraic Thinking	6	13	Low
Geometry	3	8	Low
Measurement and Data	3	10	Low

Science

Performance Level



Student's test scale score is indicated by the (⬆). If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **1465-1577**

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
The Nature of Science	14	24	Medium
Biological Sciences	6	8	High
Physical Sciences	8	8	High
Earth and Space Sciences	4	8	High

Figure 16–2D. Page 4 of the Individual Student Report

Score Reporting Category Descriptions

English Language Arts

- **Key Ideas and Details**
  Students refer to key ideas and details from a text or texts to summarize important ideas and events, determine a theme or main idea, and draw on evidence from text(s) to support inferences and overall understanding.
- **Craft and Structure/Integration of Knowledge and Ideas**
  Students demonstrate understanding of a text or texts by comparing and contrasting points of view and firsthand/secondhand accounts of similar events; by making connections within, between, and/or among texts; by referring to text features to support information; and by analyzing use of evidence to support overall integration of ideas and key aspects of text(s).
- **Vocabulary Acquisition and Use**
  Students demonstrate understanding of vocabulary and figurative language in literature and informational texts.

- **Conventions of Standard English (Writing)**
  Students demonstrate command of the conventions of standard English grammar and usage, capitalization, punctuation, and spelling, as well as use knowledge of language and its conventions for effect.

- **Text-Dependent Analysis (Reading/Writing)**
  Students write a response to literature or informational text or texts, drawing on the evidence presented in the text(s) to support analysis, reflection, and/or research.

- **Literature Text**
  Students read and respond to literature texts, focusing on narrative, poetic, and/or dramatic techniques and drawing on evidence in the texts to support comprehension and understanding.
- **Informational Text**
  Students also read and respond to informational texts, focusing on the information and evidence presented on topics, ideas, or procedures and drawing on evidence in the texts to support comprehension and interpretation.

Mathematics

- **Numbers and Operations in Base Ten**
  Students read, write, round, and compare multi-digit numbers. They demonstrate understanding of place value and relative sizes of numbers and recognize properties of operations. Students use this understanding as well as estimation and mental calculations to perform the four operations on whole numbers.
- **Numbers and Operations—Fractions**
  Students determine fraction equivalence and convert between fractions and decimals. They compare sizes of fractions and decimals using symbols. Students add and subtract fractions with common denominators and multiply a whole number by a fraction.
- **Operations and Algebraic Thinking**
  Students solve problems using all four operations with whole numbers. They use drawings, equations, and symbols to represent quantities and analyze patterns. They also identify factor pairs and multiples of whole numbers 1 through 100.
- **Geometry**
  Students draw, compare, and classify two-dimensional shapes based on their attributes. They identify and draw lines of symmetry.
- **Measurement and Data**
  Students use the four operations and relative sizes of units to solve problems involving measurements, conversions, and time. They represent and interpret data using line plots and other data displays to solve problems. Students use a protractor to draw and measure angles.

Science

- **The Nature of Science**
  Students use reasoning and analysis skills to develop possible solutions for environmental or technological problems. They evaluate tools, processes, and procedures to conduct fair and valid scientific investigations and use models and recognition of patterns to help explain natural and human-made systems.
- **Biological Sciences**
  Students evaluate structures and functions of organisms, describe ecological interactions within living systems, and recognize relationships between humans and the natural world.
- **Physical Sciences**
  Students demonstrate understanding of physical properties of matter. They describe basic energy types and their sources as well as how energy can change form. They also apply the scientific principles of force and motion and compare interactions between matter and energy.
- **Earth and Space Sciences**
  Students identify and describe Earth features and processes that change the environment. They recognize processes associated with weather, climate, and the atmosphere. They also recognize changes caused by the Sun-Earth-Moon system.

SCHOOL AND DISTRICT SUMMARY REPORTS

Summary reports are provided at the school and district level. These reports contain summary information about the percentage of students in each of the four performance levels. Raw scores are also provided by assessment anchor to allow schools or districts to identify strengths or weaknesses at the content strand level. For 2021, the Pennsylvania Department of Education decided to not have these summary reports produced. Districts are able to access this summary data within the *Data Interaction*™ tool.

INTERPRETATIVE GUIDE

An interpretative guide is provided to help parents and other PSSA stakeholders better understand test result information presented in the individual student report. The interpretative guide can be found on the PDE website.

CHAPTER SEVENTEEN: OPERATIONAL TEST STATISTICS

This chapter presents various summary statistics for the PSSA total test scores based on the final data file described in Chapter Nine. Related information covered elsewhere in this report includes the item-level statistics presented in Chapter Eleven (classical item statistics) and Chapter Twelve (Rasch item statistics). These chapters provide additional consideration as item difficulty distributions can affect total score distributions.

PERFORMANCE LEVEL STATISTICS

Table 17–1 presents performance level percentages by grade and content. Appendix Q provides historical statistics including performance level percentages for prior years.

Table 17–1. Performance Level Percentages for 2021 PSSA

Subject	Grade	Below Basic (%)	Basic (%)	Proficient (%)	Advanced (%)
Mathematics	3	30.97	21.75	29.46	17.83
Mathematics	4	33.89	30.56	23.45	12.11
Mathematics	5	31.30	32.61	24.25	11.84
Mathematics	6	35.13	36.64	20.59	7.64
Mathematics	7	46.07	27.05	18.81	8.07
Mathematics	8	53.45	24.46	15.79	6.30
ELA	3	14.01	27.74	44.07	14.18
ELA	4	11.91	31.45	35.20	21.44
ELA	5	10.61	34.40	46.41	8.58
ELA	6	7.12	35.58	39.84	17.45
ELA	7	3.91	42.80	43.46	9.83
ELA	8	11.37	36.00	41.71	10.92
Science	4	7.61	16.58	43.48	32.34
Science	8	26.67	22.50	31.21	19.63

SCALED SCORES

SUMMARY STATISTICS

Table 17–2 provides the scaled score means and standard deviations. See the section Every Test has a Unique Scale in Chapter Sixteen for caveats regarding interpretation of scale scores.

Table 17–2. Means and Standard Deviations for the 2021 PSSA Scaled Scores

Subject	Grade	Mean Scaled Score	SD Scaled Score
Mathematics	3	997.87	121.17
Mathematics	4	970.30	111.98
Mathematics	5	971.14	110.74
Mathematics	6	948.46	104.18
Mathematics	7	936.22	108.50
Mathematics	8	919.00	106.95
ELA	3	1024.61	104.18
ELA	4	1015.07	105.70
ELA	5	1013.21	96.39
ELA	6	1020.17	102.25
ELA	7	1009.38	93.71
ELA	8	1007.74	105.02
Science	4	1395.72	161.83
Science	8	1287.61	193.95

SCALED-SCORE DISTRIBUTIONS

Scaled scores are based on a linear transformation of the Rasch ability estimates. Distributions of the Rasch abilities are provided at the end of Chapter Twelve.

RAW SCORES

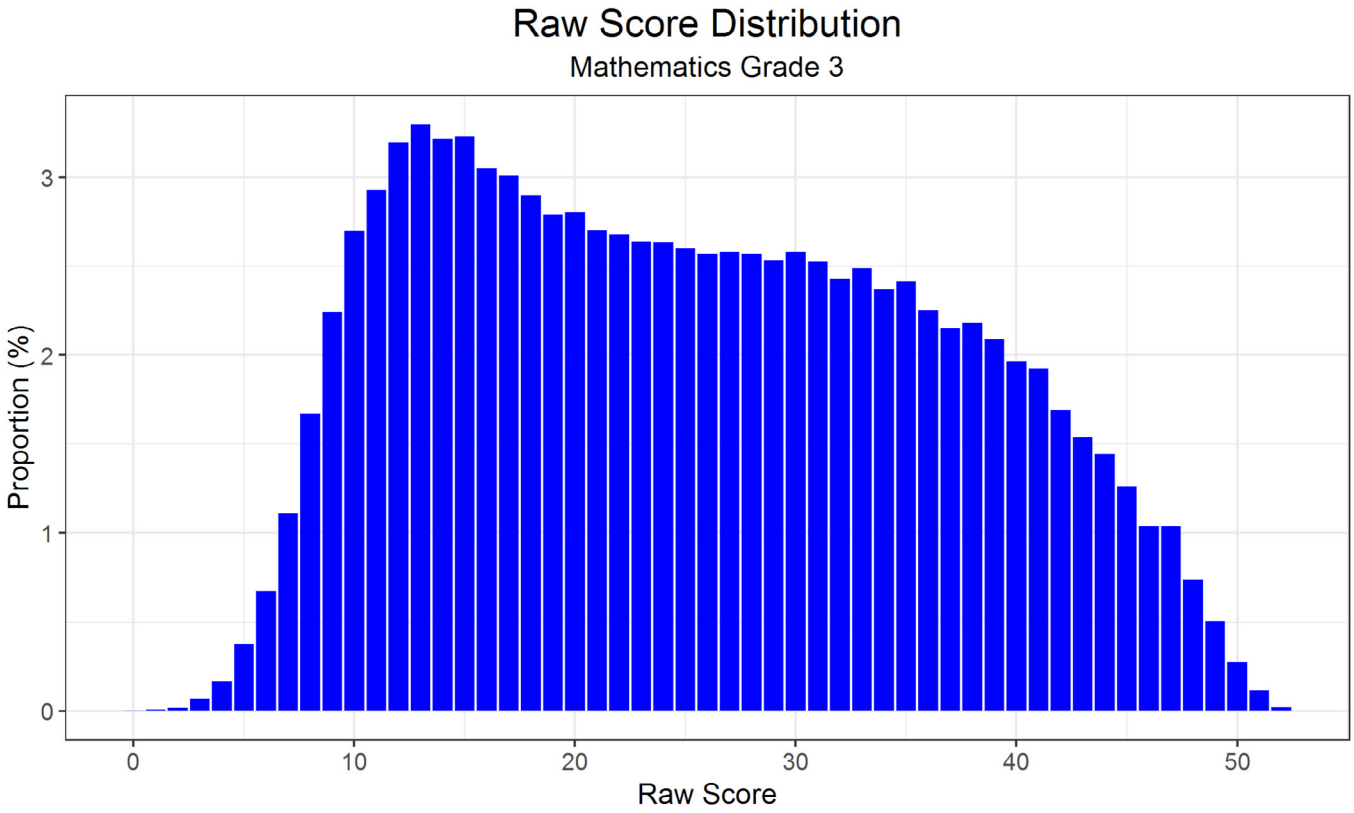
SUMMARY STATISTICS

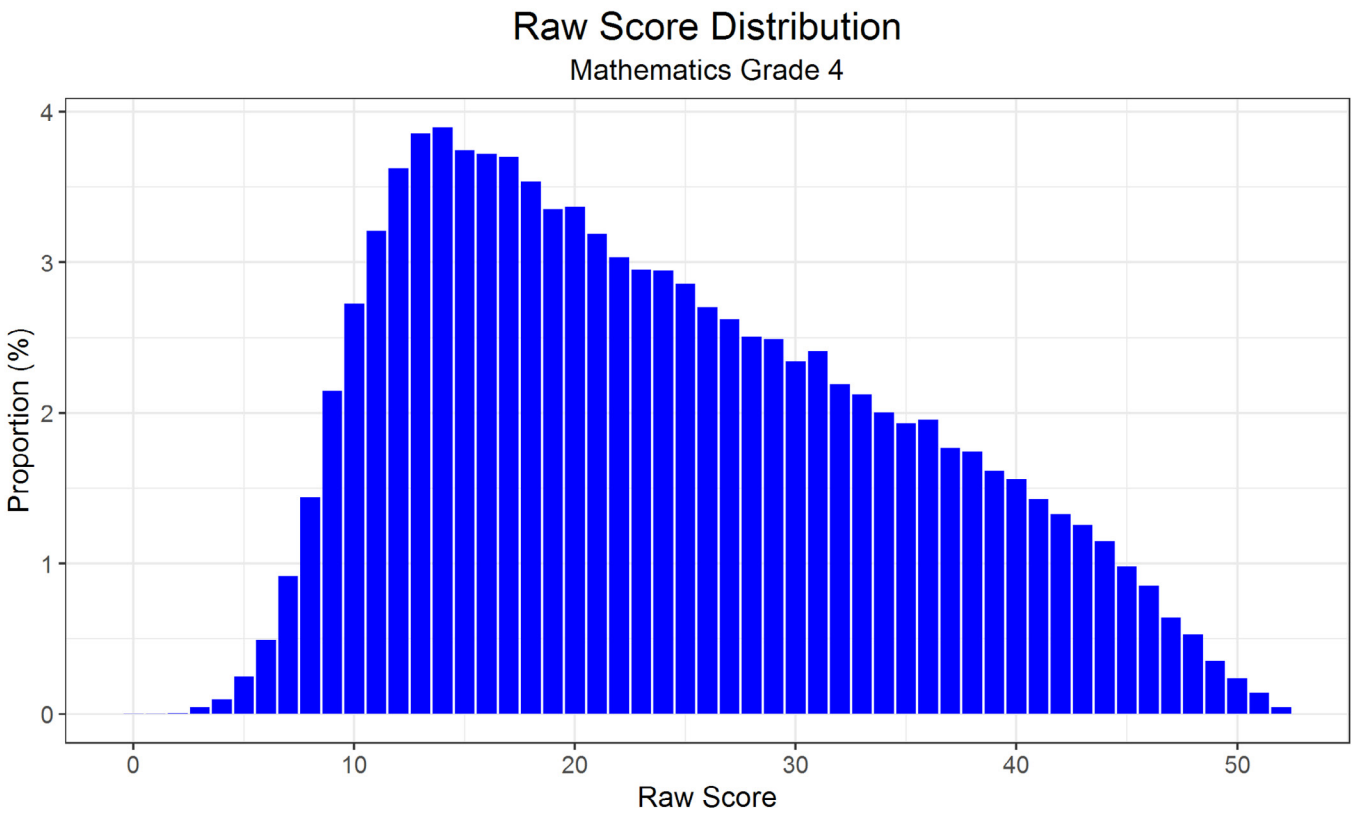
Appendix P provides reliabilities and summary statistics for the operational raw scores. The statistics reported include the number of points possible (Total Points), number of items (N Items), number of students tested (N), mean number of score points received (Mean), standard deviation of test scores (SD), reliability (r), traditional standard error of measurement (SEM), and item types (Item Type(s)) used to determine each score. These statistics are based on the total test using both MC and OE items for the operational sections of each form. For each subject and grade level, tables present reliabilities disaggregated by gender, Ethnicity, whether students had an individualized educational plan (IEP), whether students were considered an English Learner (EL), and whether students had a low-income background (Low Income). For information disaggregated by item type, Chapter Eleven provides breakout statistics for MC and OE items.

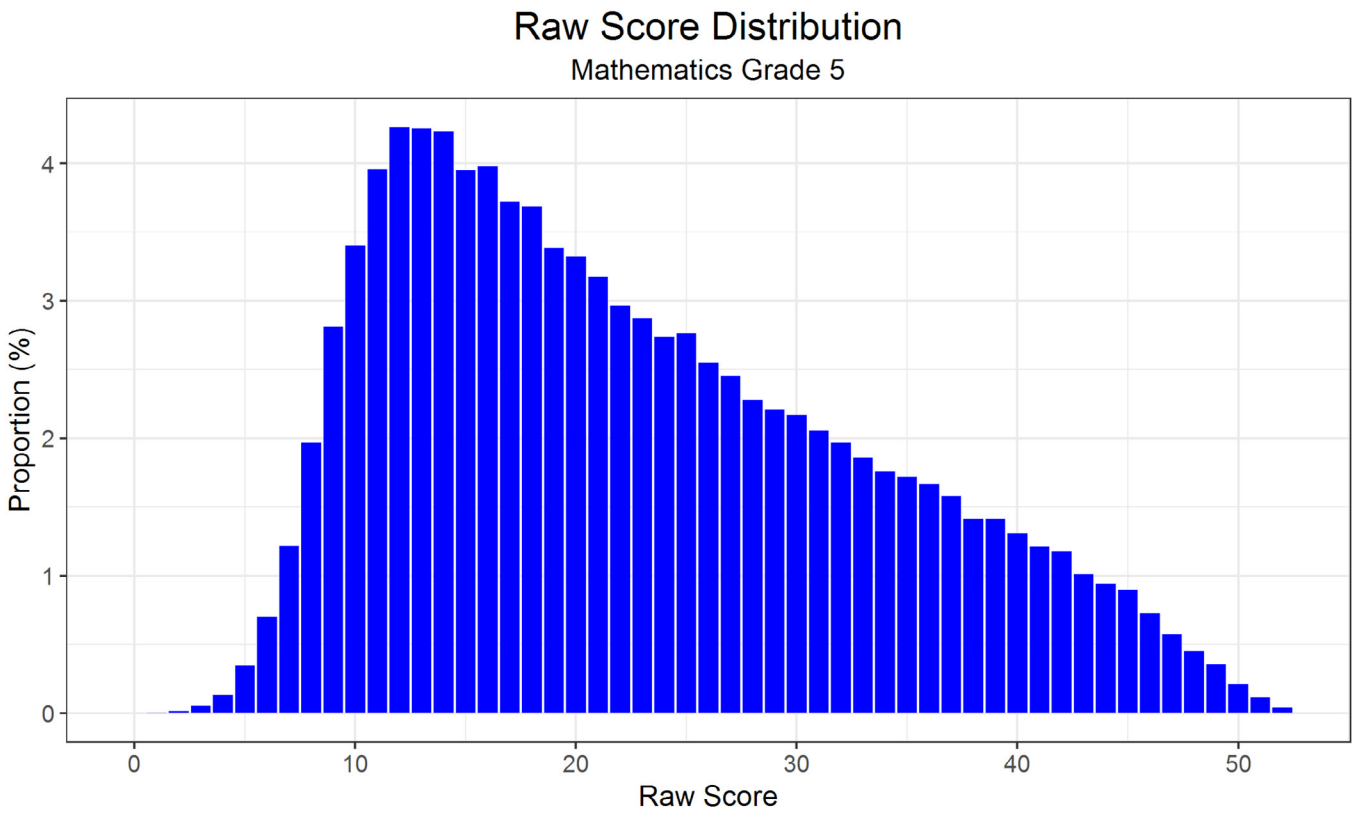
SCORE DISTRIBUTIONS

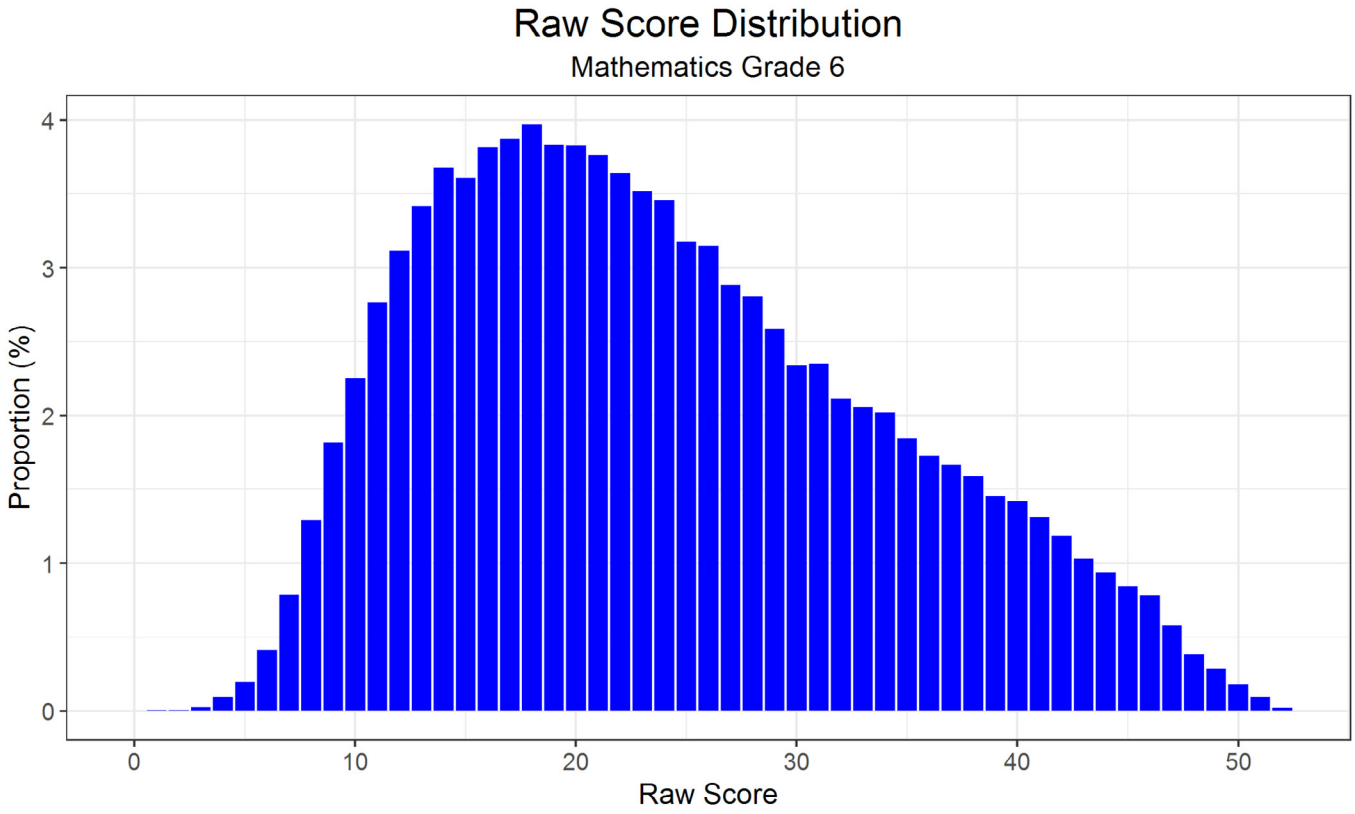
Figure 17–1 displays the raw score relative-frequency distributions as the proportion of students earning each raw score point.

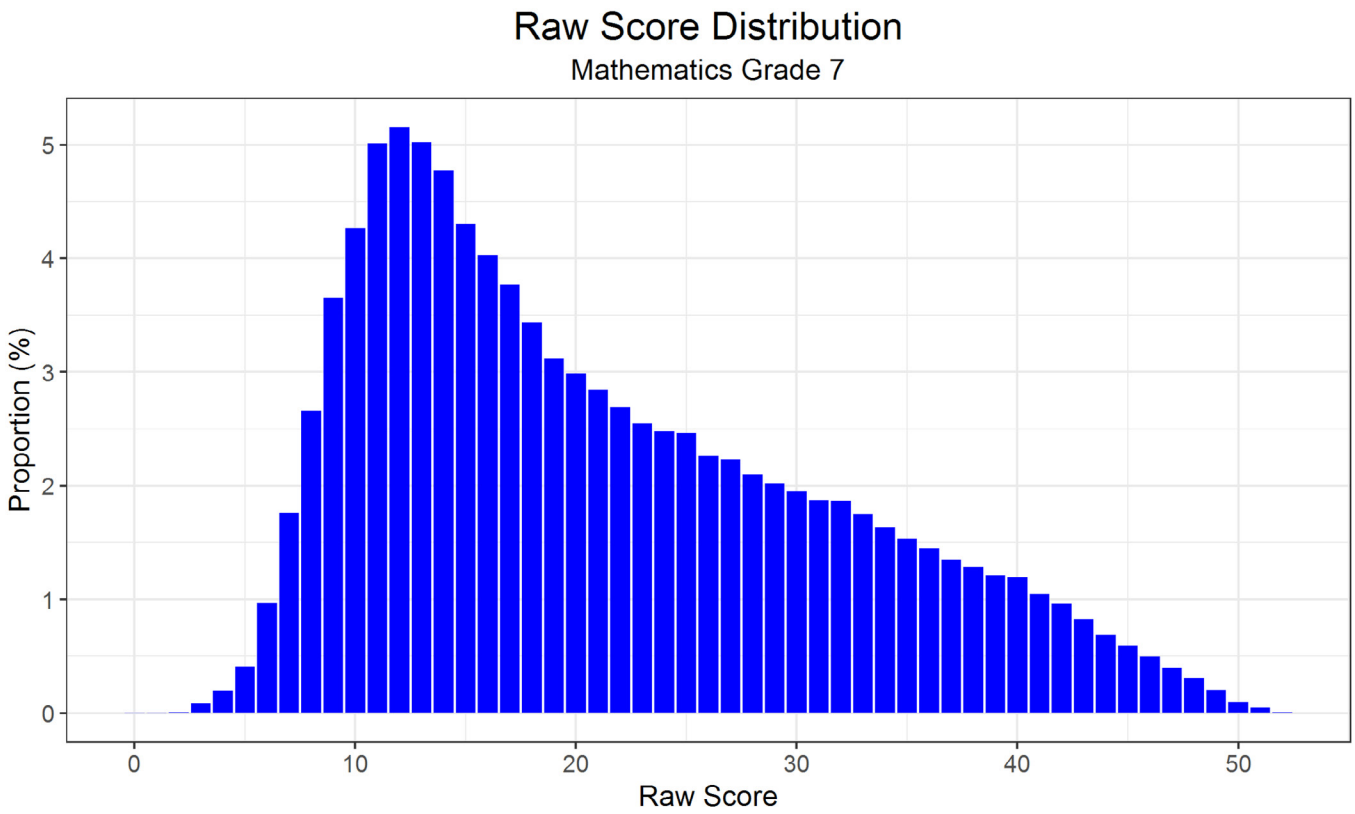
Figure 17–1. 2021 PSSA Raw Score Distributions

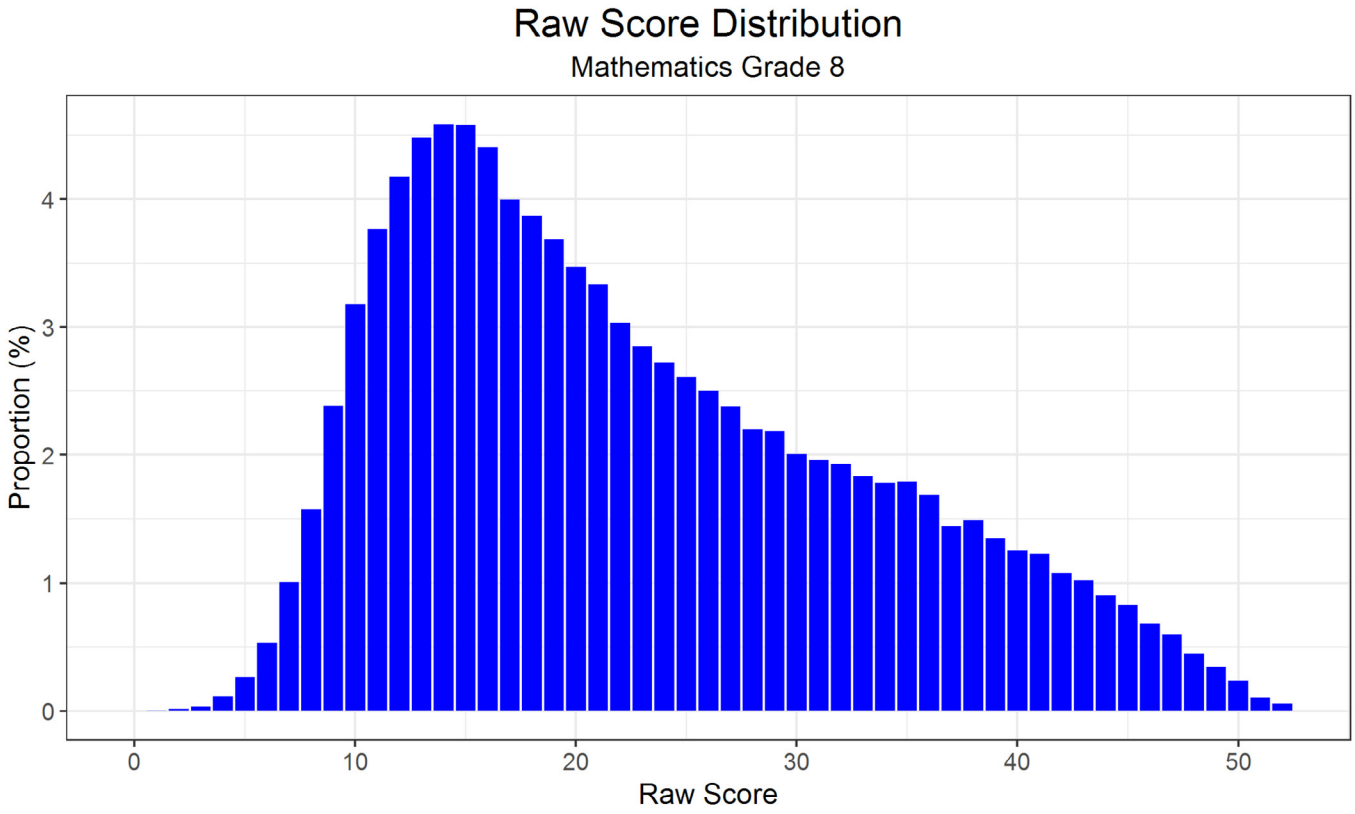


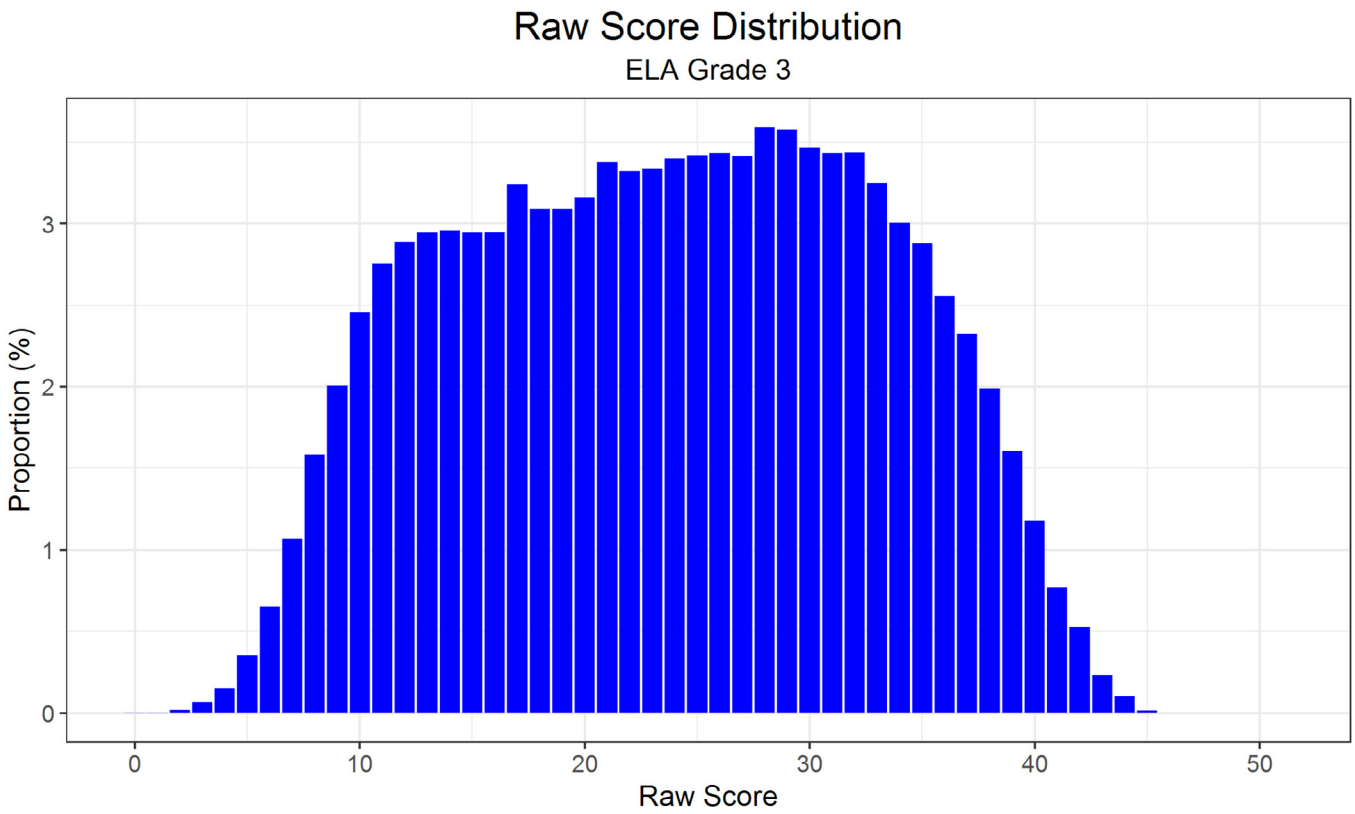


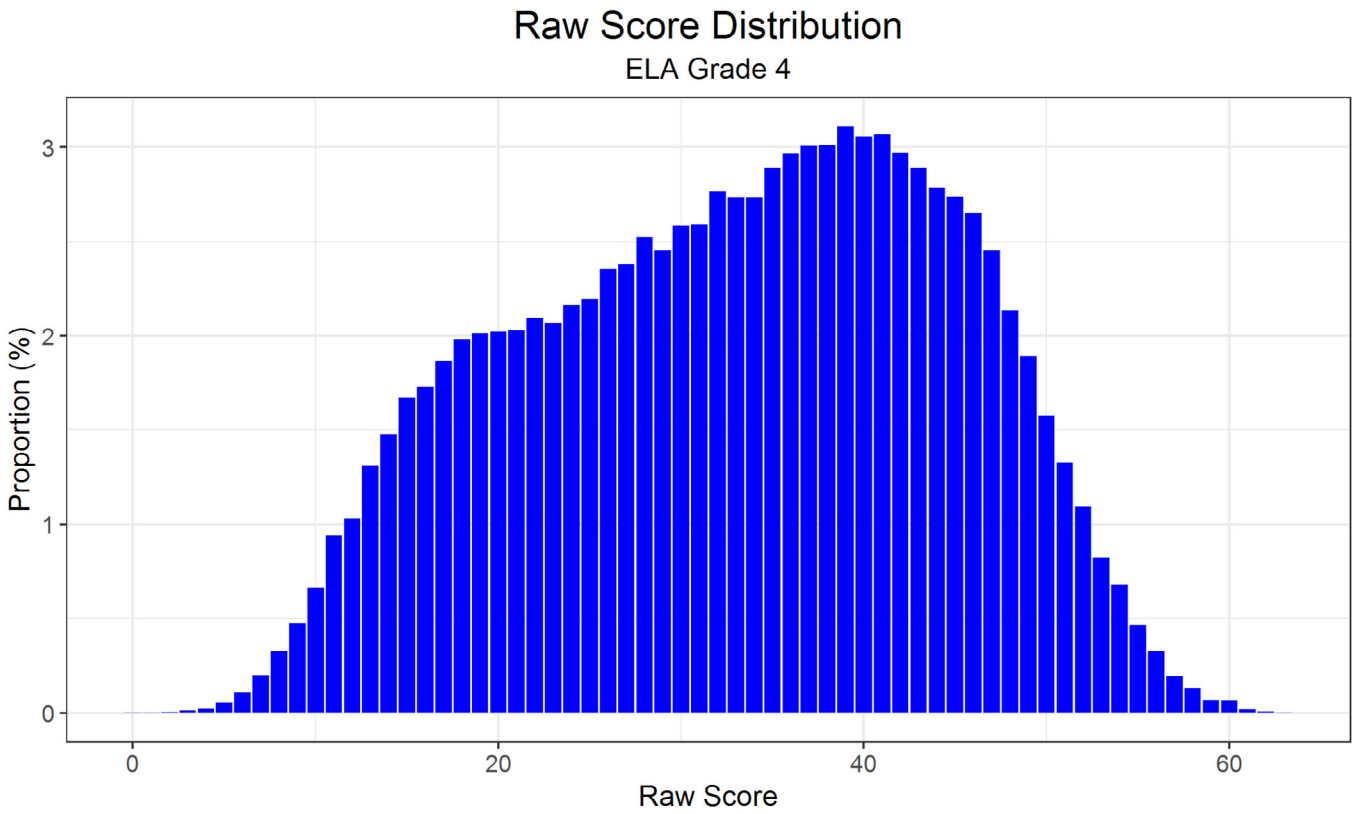

Raw Score Distribution
Mathematics Grade 5
Proportion (%)
0
1
2
3
4
0
10
20
30
40
50
Raw Score

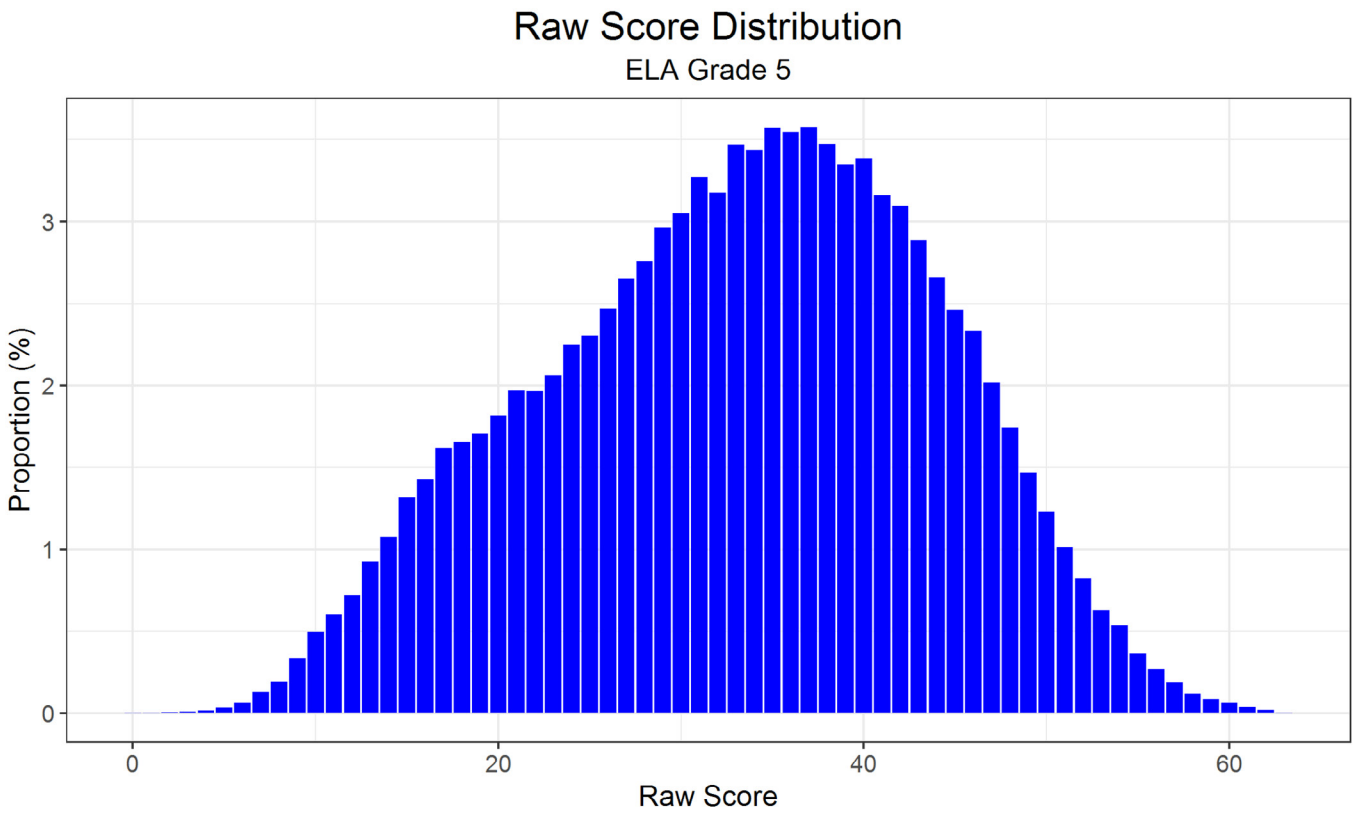

Raw Score Distribution
Mathematics Grade 6
Proportion (%)
0
1
2
3
4
0
10
20
30
40
50
Raw Score

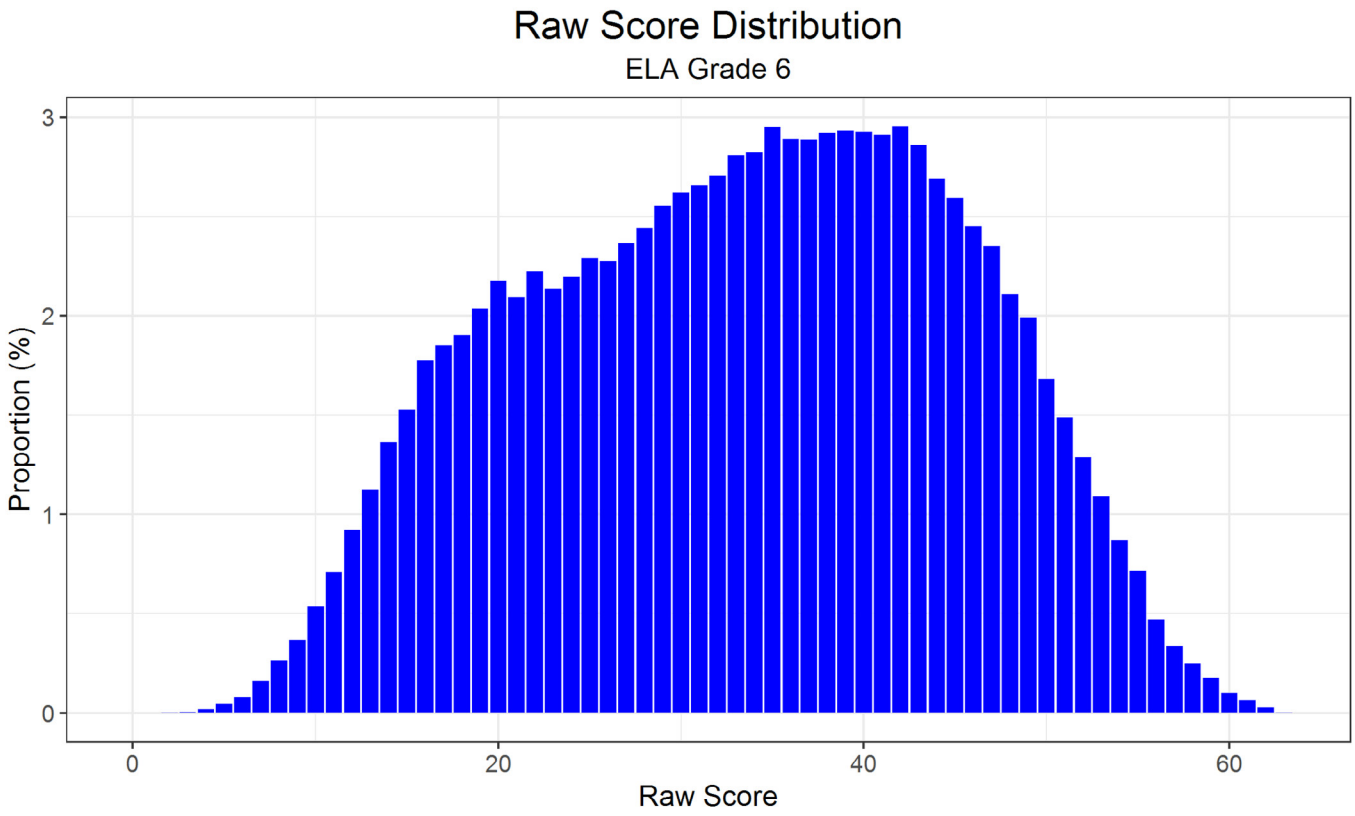

Raw Score Distribution
Mathematics Grade 7
Proportion (%)
0
1
2
3
4
5
0
10
20
30
40
50
Raw Score

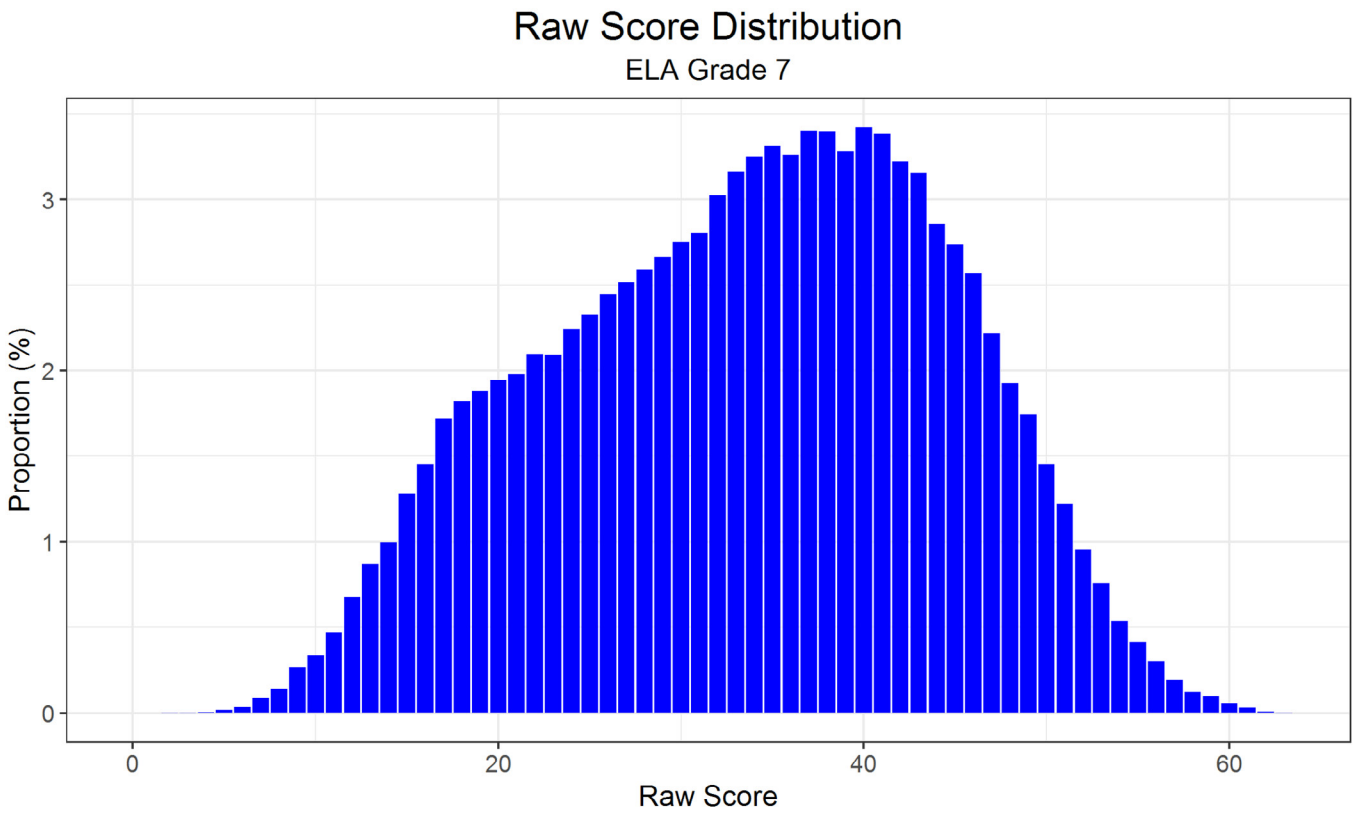

Raw Score Distribution
Mathematics Grade 8
Proportion (%)
0
1
2
3
4
0
10
20
30
40
50
Raw Score

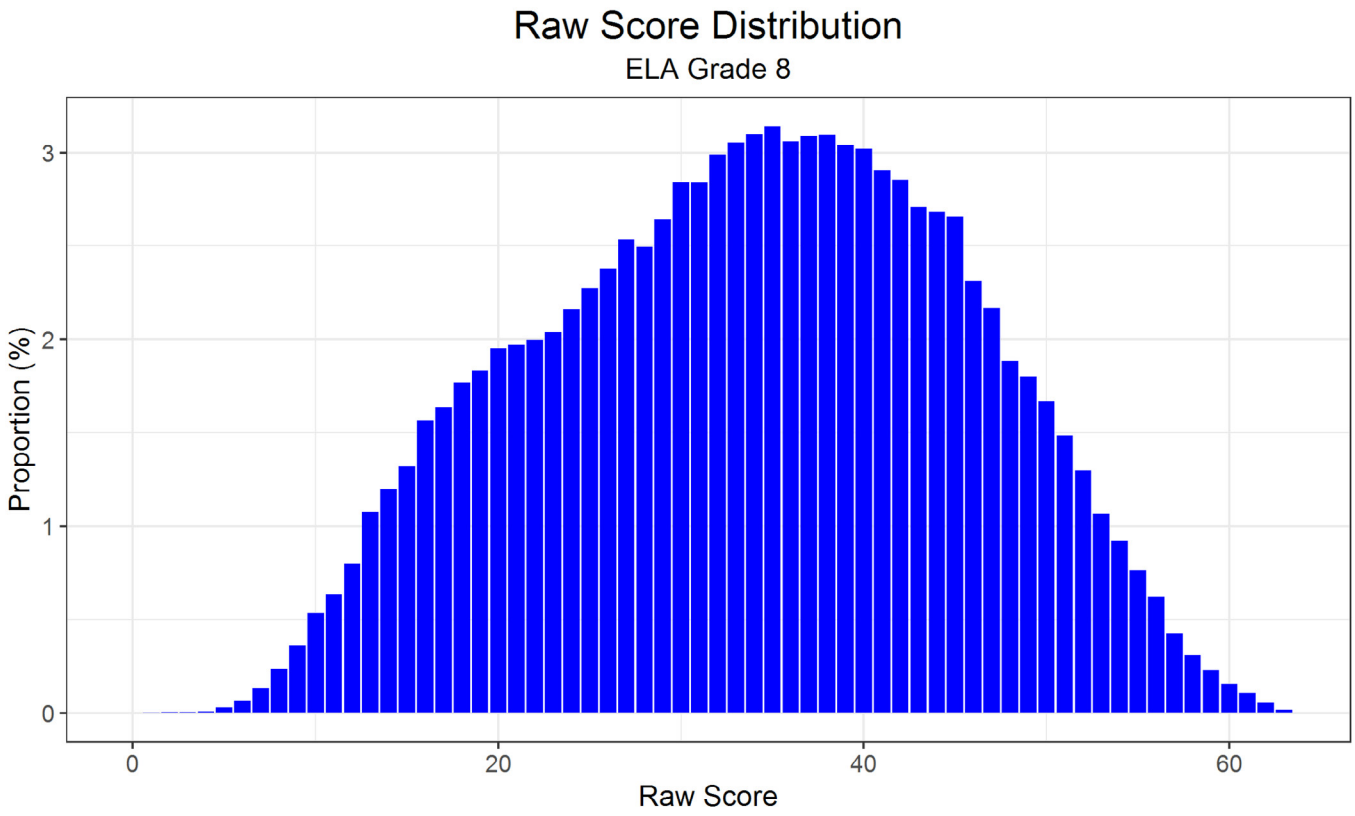

Raw Score Distribution
ELA Grade 3
Proportion (%)
0
1
2
3
0
10
20
30
40
50
Raw Score

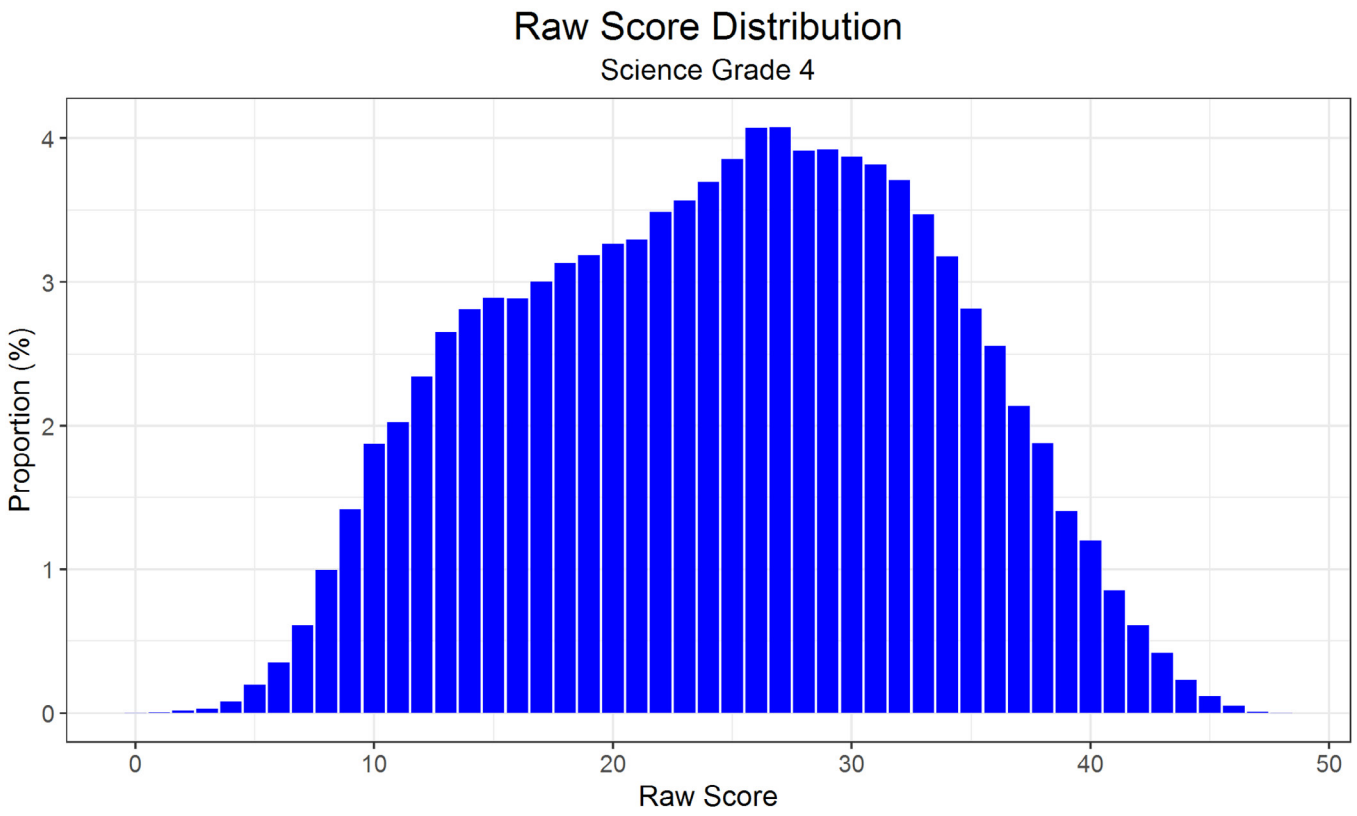

Raw Score Distribution
ELA Grade 4
Proportion (%)
0
1
2
3
0
20
40
60
Raw Score

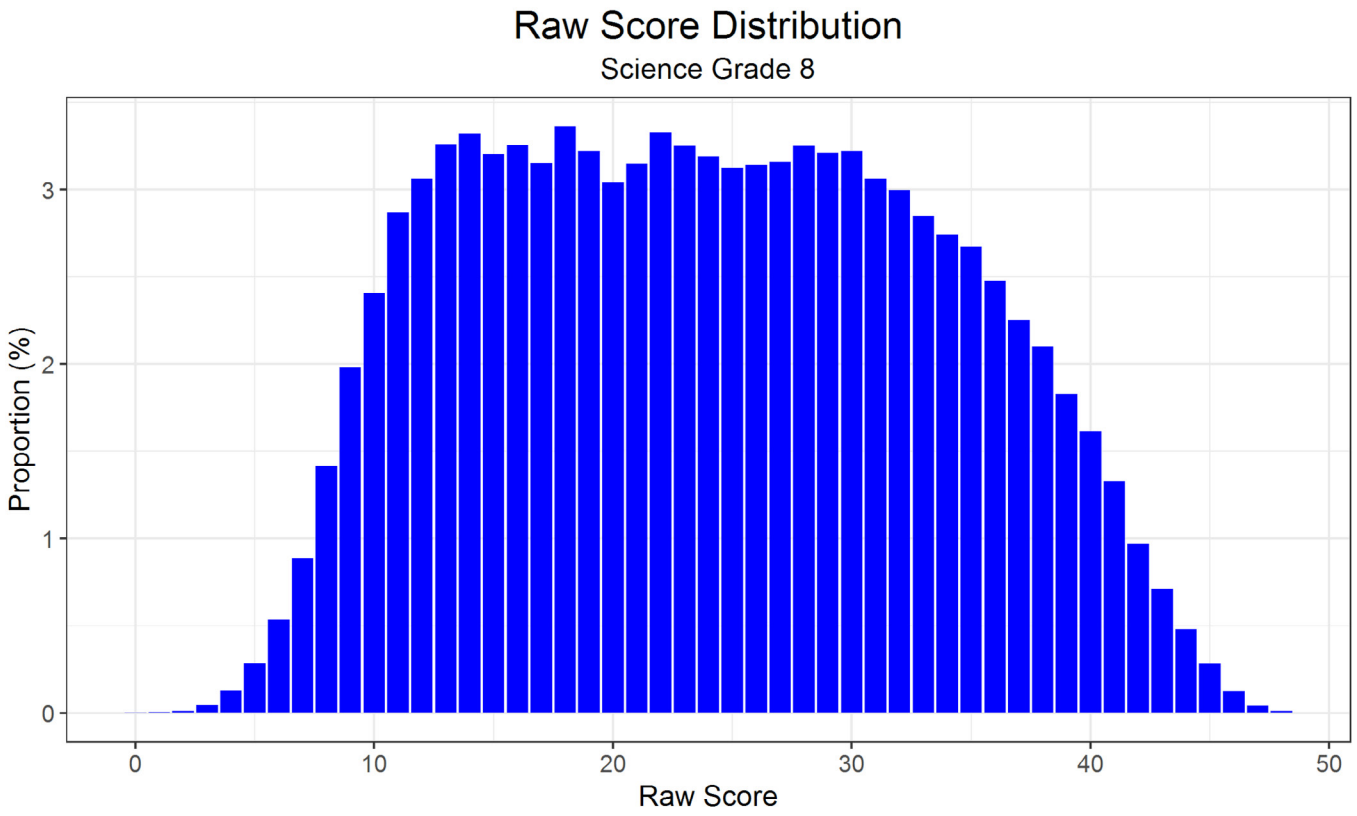

Raw Score Distribution
ELA Grade 5
Proportion (%)
0
1
2
3
0
20
40
60
Raw Score


Raw Score Distribution
ELA Grade 6
Proportion (%)
0
1
2
3
0
20
40
60
Raw Score


Raw Score Distribution
ELA Grade 7
Proportion (%)
0
1
2
3
0
20
40
60
Raw Score


Raw Score Distribution
ELA Grade 8
Proportion (%)
0
1
2
3
0
20
40
60
Raw Score


Raw Score Distribution
Science Grade 4
Proportion (%)
0
1
2
3
4
0
10
20
30
40
50
Raw Score


Raw Score Distribution
Science Grade 8
Proportion (%)
0
1
2
3
0
10
20
30
40
50
Raw Score

CHAPTER EIGHTEEN: RELIABILITY

This chapter addresses the reliability of PSSA test scores. According to the *Standards for Educational and Psychological Testing (*AERA, APA, & NCME, 2014), the general notion of reliability/precision refers to:

> the consistency of scores across replications of a testing procedure, regardless of how this consistency is estimated or reported (p.33).

This chapter will use the term reliability.

Frisbie (2005) highlighted several elements of reliability. First, reliability is a property of test scores, not a test itself. Many may appreciate this distinction, but in casual usage, individuals frequently refer to a reliable test. While reliability concerns test scores (and not the test specifically), it is important to emphasize the fact that test scores can be affected by characteristics of the instrument. For example, all other things being equal, tests with more items or points tend to be more reliable than tests with fewer items or points. Second, reliability coefficients are group specific. Reliabilities tend to be higher in populations that are more heterogeneous and lower in populations that are more homogeneous. Consequently, both test length and population heterogeneity should be considered when evaluating reliability.

There is a reliability consideration that may be less evident from the *Standard's* definition, yet still important for test users to understand. While freedom from measurement error is very important, reliability is specifically concerned with random sources of error. Indeed, the degree of inconsistency due to random error sources is what determines reliability: less consistency is associated with lower reliability and more consistency is associated with higher reliability. Of course, systematic error sources also exist. These can artificially increase reliability and decrease validity. (Validity is further discussed in Chapter Nineteen.)

Another noteworthy issue is that multiple sources of error exist (e.g., the day of testing, the items used, the raters who score the items). However, most widely used reliability indices only reflect a single type of error. Consequently, it is important for test users to understand what specific type of error is being considered in a reliability study, and equally, if not more important, what types are not.

Understanding the distinction between relative error and absolute error is also important as many reliability indices only reflect relative error. Relative error is of interest whenever the relative ordering of individuals respective to their test performance is of interest. Understanding examinee rank-order stability is important; however, such stability might be well achieved even when the specific score values are considerably different. When specific score values are considered important (e.g., if cuts cores are used), then absolute error is too. Generally, there is more error variance when considering the absolute scores of examinees, which in turn suggests lower reliability.

As suggested, reliability is a complex, nonunitary notion that cannot be adequately represented by a single number. There are several reliability indices available, and these may not provide the same results (Frisbie, 2005). The remainder of this chapter covers the following:

- Reliability coefficients and their interpretation
- Unconditional and conditional standard errors of measurement (SEMs and CSEMs)
- Decision consistency
- Rater agreement

RELIABILITY INDICES

As the equation shows below, the reliability coefficient expresses the consistency of test scores as the ratio of true score variance to total score variance. The total variance contains two components: 1) the variance in true scores and 2) the variance due to the imperfections in the measurement process. Put differently, total variance equals true score variance plus error variance.[1]

$$\rho_X^2 = \frac{\sigma_T^2}{\sigma_X^2} = \frac{\sigma_T^2}{\sigma_T^2 + \sigma_E^2}$$

Reliability coefficients indicate the degree to which differences in test scores reflect true differences in the attribute being tested rather than random fluctuations. Total test score variance (i.e., individual differences) is partly due to real differences in the attribute (true variance) and partly due to random error in the measurement process (error variance).

Reliability coefficients range from 0.0 to 1.0. If all test score variances were true, the index would equal 1.0. The index will be 0.0 if none of the test score variances were true. Such scores would be pure random noise (i.e., all measurement error). A reliability index of 1.0 would indicate that scores were perfectly consistent (i.e., contain no measurement error). Although values of 1.0 are never achieved in practice, larger coefficients are more desirable because they indicate that test scores are less influenced by random error. (How big is big enough and how small is too small are issues considered in a later section.)

As previously noted, there are several different indices that can be used to estimate this ratio. One approach is referred to as internal consistency, which is derived from analyzing the performance consistency of individuals over the items within a test. As discussed below, these internal consistency indices do not account for other sources of error, for example, variations due to random errors associated with the linking process, day-to-day variations (student health, testing environment, etc.), and rater inconsistency.

COEFFICIENT ALPHA

Although several reliability indices exist, perhaps the one most frequently reported for achievement tests is Coefficient Alpha. Consequently, this index is the one reported for the PSSA. Alpha indicates the internal consistency over the responses to a set of items measuring an underlying trait, in this case, academic achievement in subject areas such as mathematics, ELA, and science.

Alpha is an internal consistency index. It can be conceptualized as the extent to which an exchangeable set of items from the same domain would result in a similar rank ordering of students. Note that relative error is reflected in this index. Consider two hypothetical vocabulary tests intended for the same group of students. Each test contains different sets of unique words that are believed to be randomly equivalent, perhaps like the ones shown below.

Table 18–1. Two Hypothetical Vocabulary Tests

Test One	Test Two
Abase	Abate
Boon	Bilk
Capricious	Circuitous
Deface	Debase
....	....
Zealous	Zenith

[1] A covariance term is not required as true scores and error are assumed to be uncorrelated in classical test theory.

If a representative group of students could take both tests, and the correlation between the scores could be obtained, then that result would represent the parallel forms reliability of the test scores. However, such data-collection designs are impractical in large-scale settings and experimental confounds like fatigue and practice effects are likely to affect the results. Internal-consistency reliability indices arose in part to provide reliability measures using the data from just a single test administration. So, if students only took Test One and the Coefficient Alpha index for those test scores was high, then this would suggest that Test Two would provide a very similar rank ordering of the students if they had taken it instead. If Coefficient Alpha were low, dissimilar rank orderings would likely be observed—again, relative-error variance is reflected in Alpha. (It should also be noted that Coefficient Alpha is algebraically identical to a *Person* × *Item* design under Generalizability Theory when relative error variance is assumed.)

FORMULA

Consider the data matrix in Table 18–2 representing the scores of persons (*p*) in rows, and items (*i*) in columns. Each cell is the score of person "*p*" on item i, and Y represents each item raw score for each person.

Table 18–2. Person × Item Score (X_{pi}) Infinite (Population-Universe) Matrix

Person	Item 1	Item 2	Item *i*
1	Y_{11}	Y_{12}	$\ldots Y_{1i}$
2…	Y_{21}	Y_{22}	$\ldots Y_{2i}$
p	Y_{p1}	Y_{p2}	$\ldots Y_{pi}$

The general computational formula for Alpha is as follows:

$$\alpha = \frac{N}{N-1}\left(1 - \frac{\sum_{i=1}^{N}\sigma_{Yi}^2}{\sigma_X^2}\right),$$

where *N* is the number of parts (items or testlets), σ_X^2 is the variance of total test scores, and σ_{Yi}^2 is the variance of part i.

FURTHER INTERPRETATIONS

RULES OF THUMB

What reliability value is considered high enough? What values are considered too low? Although frequently asked for, any rules of thumb for interpreting the magnitude of reliability indices are mostly arbitrary. Another approach is to research the reliabilities from similar testing instruments to see what values are commonly observed. For the PSSA, comparisons to tests of similar lengths that were administered to similar student populations from other large-scale assessment programs would be relevant. For many other state assessment programs, reliabilities in the low 0.90s are usually the highest ever observed and reliabilities in the high 0.80s are very common.

The lower a given reliability coefficient, the greater the potential for over-interpretation of the associated results. As suggested above, there is no firm guideline regarding how low is too low. However, as an informative point of reference, a reliability coefficient of 0.50 would suggest that there is as much error variance as true-score variance in the scores.

IS ALPHA A LOWER LIMIT TO RELIABILITY?

According to Brennan (1998), "the conventional wisdom that Coefficient Alpha is a lower limit to reliability is based largely on a misunderstanding." In reflecting on the 50th anniversary of his seminal 1951 article, Cronbach—in Cronbach and Shavelson (2004)—expressed similar misgivings about this conventional wisdom:

> one could argue that alpha was almost an unbiased estimate of the desired reliability…. the almost in the preceding sentence refers to a small mathematical detail that causes the alpha coefficient to run a trifle lower than the desired value. This detail is of no consequence and does not support the statement made frequently in textbooks or in articles that alpha is a lower value to the reliability coefficient. That statement is justified by reasoning that starts with the definition of the desired coefficient as the expected consistency among measurements that had a higher degree of parallelism than the random parallel concept implied.

The assumptions for three common parallelism models are presented in Table 18–3. Alpha's assumptions come from the Essentially-Tau Equivalent model, which does not require equal means or equal variances across test parts. Based on this, Brennan (1998) asserts that the lower-limit issue, as conceptualized by many, provides an answer to a question that is of minimal importance. Reframed differently, the goal of selecting a reliability coefficient is not to find the one that provides the highest coefficient, but the one that most accurately reflects the test data under study.

It is important to note that there are factors encountered in practice that may legitimately make Coefficient Alpha an underestimate of reliability. However, there are also factors that might make Coefficient Alpha an overestimate of reliability. Both possibilities are discussed further below and generally arise when the Essentially-Tau Equivalent assumptions are strained.

Table 18–3. Summary of Expectations/Observable Relationships for Different Parallelism Models

Relationship	Classically Parallel	Essentially-Tau Equivalent	Congeneric
Content Similarity	Yes	Yes	Yes
Equal Means across Parts	Yes	No	No
Equal Variances across Parts	Yes	No	No
Equal Covariances across Parts	Yes	Yes	No
Equal Covariances with Other Variables	Yes	Yes	No

* Other models exist, but are not considered here due to their limited application in practice.

FACTORS OR BIASES THAT MAY UNDERESTIMATE ALPHA

There are factors that might negatively bias Coefficient Alpha, which possibly lower the resultant reliability coefficients. Two situations frequently encountered in practice that might cause this include tests that are composed of mixed item types (e.g., multiple-choice (MC) and open-ended (OE) items) and tests that include a planned stratification of the test items according to topics or subdomains.

Although both situations strictly violate the assumptions on which Coefficient Alpha is derived (i.e., the tests are not based on equal part lengths in the former case and are not randomly parallel in the latter case), neither necessarily guarantees that the reliability will be markedly lower. In the latter case, reliability will be underestimated only when strand items are homogeneous enough for the average covariance within strata to exceed the average covariance between strata. Although both are potential influences for the PSSAs, most of the total test score reliabilities reported in Appendix P are all close to or above 0.90, indicating highly consistent test scores for these instruments.

BIASES THAT MIGHT MAKE ALPHA AN OVERESTIMATE OF RELIABILITY

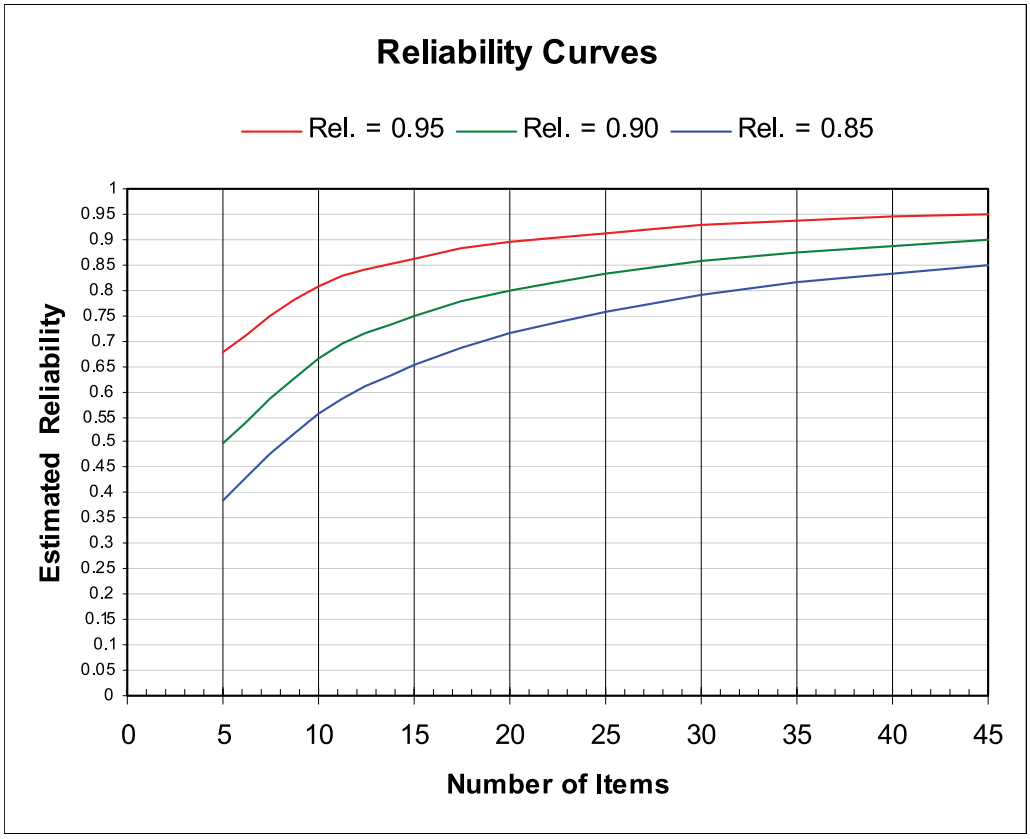
As emphasized in earlier sections, Coefficient Alpha only takes into account measurement error that arises from the selection of items used on a particular test form. There are other sources of random inaccuracy. One is due to the occasion of testing. Other various random conditions that might affect students on any particular testing occasions include illness, fatigue, and anxiety. Also, when a test includes OE items, as the PSSA does, another source that can cause random fluctuation is the OE item scorers. In a sense, Alpha may be positively biased because it does not take into account these other important sources of random error. Any internal consistency reliability index could understate the overall problem of measurement error because it ignores such sources or random error.

Another positive bias can occur when items are associated (clustered) with a common stimulus. Item bundles and testlets are other frequently used terms for this situation. One concrete example is when multiple reading comprehension items are associated with a common passage selection. Again, such a situation does not guarantee that the reliability estimate will be markedly affected, but the potential exists.

STRAND SCORES

As noted in the introduction, reliabilities tend to go up in value with an increase in test length and go down in value with a decrease in test length. Figure 18–1 illustrates this relationship for a hypothetical 45-point test with three total score reliabilities: 0.95, 0.90, and 0.85. As an example, the curve for reliability equal to 0.90 suggests that a 15-item strand would be expected to have a score reliability of 0.75. The use of the Spearman-Brown prophecy formula assumes all items are exchangeable, which in practice they may not be. While such a chart may not perfectly model actual strand correlations, the intent is only to illustrate the substantial impact that limited numbers of strand items can have on strand-score reliability. One should not be surprised that strand scores with more points tend to show higher reliability coefficients and those with fewer points tend to show lower reliability coefficients. Further, what is most important for PSSA users to note is that some strand score reliabilities may be too low to warrant interpretation at the individual student level.

Figure 18–1. Example of the Relationship between Test Length and Reliability



Note. Tabled values derived using the Spearman-Brown formula.

INDIVIDUAL-LEVEL VERSUS GROUP-LEVEL SCORES

The results presented in this chapter pertain to the reliability of individual scores. Group results (e.g., state and district levels) are also provided on PSSA score reports, but the reliability of those scores is not specifically calculated here. However, as a general rule, the reliabilities of group mean scores are almost always higher (sometimes substantially) than the corresponding reliabilities for individual scores. This is especially important to remember for strand scores because those scores can be quite reliable at the group level, even though their individual reliabilities may be low. Because the reliability of group mean scores (e.g., school or district means) tends to be higher than that of individual scores, the interpretation of strand scores at these aggregate levels is likely very reasonable in most instances. Even though the reliability for means scores based on only a few items might be adequate, the validity of those same scores might be suspect because use of only a few items may not adequately cover the construct of interest. Validity is further discussed in Chapter Nineteen.

RELIABILITY OF WRITING SCORES

An extension of Coefficient Alpha that was derived to specifically fit stratified parallel tests (sometimes called stratified alpha; Cronbach, Schonemann, & McKie, 1965) was used to compute the PSSA ELA score reliabilities. This approach is often used when it is believed that Alpha may be yielding a lower coefficient than it should for the reasons noted above. Although originally developed for content-stratified tests, Qualls (1995) demonstrated its utility for mixed-format tests as well when the stratification is based on item type. It may be computed as

$$_{strat\alpha}\rho_{xx'} = 1 - \frac{\Sigma\sigma^2 x_h (1 - {}_{\alpha}\rho_{x_h x_{h'}})}{\sigma^2 x},$$

where *h* indexes the individual strata.

The reliability of ELA assessments (and many other performance-based tests) with mixed-format tends to be lower than reliabilities for other tests. Part of the reason for this is that there can be student-by-task, rater-by-task, and rater-by-examinee response interactions on such assessments. In the case of ELA, individual student performance may fluctuate significantly across text-dependent analysis (TDA) and evidence-based selected-response (EBSR) item types on the same test. In principle, adding more prompts and items can improve reliability to a more acceptable level. However, this is challenging in practice because of costs, testing time, and student fatigue. These conditions can result in reliabilities for ELA assessments that are slightly lower than those for mathematics and science assessments.

STANDARD ERROR OF MEASUREMENT

The reliability coefficient is a unit-free indicator that reflects the degree to which scores are free of measurement error. The reliability coefficient always ranges between 0 and 1 regardless of the test's scale. Reliability coefficients best reflect the extent to which measurement inconsistencies may be present or absent in a group. However, they are not that useful for helping users interpret test scores. The standard error of measurement (SEM) is another indicator of degree of consistency for the scores obtained by individual examinees. A relatively large SEM indicates relatively low reliability. The conditional SEMs (CSEM) discussed further below is the SEM at the score level.

TRADITIONAL STANDARD ERROR OF MEASUREMENT

A precise, theoretical interpretation of the SEM is somewhat unwieldy. A beginning point for understanding the concept is as follows. If everyone being tested had the same true score,[2] there would still be some variation in observed scores due to imperfections in the measurement process, such as random differences in attention during instruction or concentration during testing and the sampling of test items. The standard error is defined as the standard deviation[3] of the distribution of observed scores for students with identical true scores. Because the SEM is an index of the random variability in test scores in actual score units, it represents very important information for test score users.

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[2] True score is the score the person would receive if the measurement process were perfect.

[3] The standard deviation of a distribution is a measure of the dispersion of the observations. For the normal distribution, about 16 percent of the observations are more than one standard deviation above the mean.

The SEM formula is provided below.

$$SEM = SD\sqrt{1—reliability}$$

This formula indicates the value of the SEM depends on both the reliability coefficient and the standard deviation of test scores. If the reliability were equal to 0.00 (the lowest possible value) the SEM would be equal to the standard deviation of the test scores. If test reliability were equal to 1.00 (the highest possible value) the SEM would be 0.0. In other words, a perfectly reliable test has no measurement error (Harvill, 1991). Additionally, the value of the SEM takes the group variation (i.e., score standard deviation) into account. Consider that an SEM of 3 on a 10point test would be very different than an SEM of 3 on a 100-point test.

TRADITIONAL STANDARD ERROR OF MEASUREMENT CONFIDENCE INTERVALS

The SEM is an index of the random variability in test scores in actual score units, which is why it has such great utility for test score users. SEMs allow statements regarding the precision of individual test scores. SEMs help place 'reasonable limits' (Gulliksen, 1950) around observed scores through construction of an approximate score band. Often referred to as confidence intervals, these bands are constructed by taking the observed scores, *X*, and adding and subtracting a multiplicative factor of the SEM. As an example, students with a given true score will have observed scores that fall between +/-1 SEM about two-thirds of the time.[4] For +/-2 SEM confidence intervals, this increases to about 95 percent.

FURTHER INTERPRETATIONS

ONE STANDARD ERROR OF MEASUREMENT FOR ALL TEST SCORES

The SEM approach described above only provides a single numerical estimate for constructing the confidence intervals for examinees regardless of their score level. However, such confidence intervals vary according to a student's score. Consequently, care should be taken using the SEM for students with extreme scores. (In the next sections, an alternate approach is described that conditions the SEM on a student's score estimate.)

GROUP SPECIFIC

As noted in the introduction, reliabilities are group specific. The same is true for SEMs because both score reliabilities and score standard deviations vary across groups.

RAW-SCORE METRIC

The SEM approach is calculated using raw scores, and as such, the resulting confidence interval bands are on the raw score metric. Error bands on the scaled score metric are considered in the next section.

TYPE OF ERROR REFLECTED

The interpretation of the SEM should be driven by the type of score reliability that underpins it. So, the PSSA SEMs involve the same source of error relevant to internal consistency indices. As noted earlier, a precise technical explanation of the SEM (and resulting confidence intervals) can be unwieldy. Because of this, score users are often provided less complex interpretations.

One simpler description is that a confidence interval represents the possible score range one would observe if a student could be tested twice with the same instrument. Taking the same test on a different day implies the only source of random error being considered is related to the occasion of testing, such as a student might be sleepier one day than another, or may be sick, or did not get a good breakfast. There is a reliability index that captures this source of random error, and it is referred to as the test-retest reliability coefficient. This is not the type of reliability computed for the PSSAs. When internal consistency reliability estimates are used, such an explanation blurs the fact that random error based on testing is not considered.

When SEMs are derived from internal consistency reliability estimates, a better approach is to describe the confidence interval as providing reasonable bounds for the range of scores that a student might receive if he or she took an equivalent version of the test; that is, the student took a test that covered exactly the same content

[4] Some prefer the following interpretation: if a student were tested an infinite number of times, the +/-1 SEM confidence intervals constructed for each score would capture the student's true score 68 percent of the time.

but included a different set of items (if an infinite number of tests with equivalent content were taken, the student's true score will lie within the constructed confidence intervals 68 percent of the time). As an example, if the PSSA score was 1150 and the SEM band was 1100 to 1200, then a student would be likely to receive a score somewhere between 1100 and 1200 if a different version of the test had been taken.

RESULTS AND OBSERVATIONS

Reliability coefficients and associated (traditional) SEMs for PSSA scores are documented in Table 18–4 and Appendix P. Values were derived using the PSSA final data file (see Chapter Nine). The reliabilities for all student scores reported in Table 18–4 and Appendix P differ only for ELA grades 4 to 8 as reliabilities were calculated differently. The Stratified Alpha Coefficient based on unweighted raw scores was used to estimate the reliabilities in Table 18–4, whereas the Coefficient Alpha based on total (weighted raw scores) was used to estimate the reliabilities in Appendix P. It is not appropriate to estimate Stratified Alpha by reporting category (as shown in Appendix P) because often the number of items is smaller by reporting category and each category may not include more than one item of each item format. Moreover, the purpose of Appendix P is to show the comparability of the Cronbach Alpha coefficient across reporting categories and also to show the total score reliability for consistency.

Results are organized by subject and grade level. Each table in Appendix P also disaggregates the various reporting categories and groups of interest (i.e., the total student population, gender and ethnic groups, English learners (EL), students with individualized education plan (IEP), and students who are economically disadvantaged). The statistics reported in Appendix P include number of points possible (Total Points), number of items (N Items), number of students tested (N), mean number of score points received (Mean), standard deviation of test scores (SD), reliability (r), traditional standard error of measurement (SEM), and item types (Item Types). Reliabilities for reporting category "E" for ELA grades 4 to 8 are not computed because it only consists of one Text-Dependent Analysis (TDA) item and reliabilities cannot be computed for only one item.

The reliabilities and standard errors are reported in Table 18–4. The reliability of mathematics scores ranges from .89 (Grade 6) to .92 (Grade 3), the reliability of ELA scores ranges from .87 (Grade 5) to .89, and the reliability of scores for Science range from .87 (Grade 4) to .90 (Grade 8).

Table 18–4. Reliabilities and Standard Errors of Measurement

Subject	Grade	Reliability	*SEM*
Mathematics	3	0.92	3.25
Mathematics	4	0.91	3.29
Mathematics	5	0.91	3.24
Mathematics	6	0.89	3.30
Mathematics	7	0.91	3.20
Mathematics	8	0.90	3.31
ELA	3	0.89	3.09
ELA	4	0.89	3.19
ELA	5	0.87	3.22
ELA	6	0.89	3.20
ELA	7	0.88	3.16
ELA	8	0.89	3.22
Science	4	0.87	3.10
Science	8	0.90	3.11

Note. Reliabilities are based on unweighted raw scores.

Note that these tables in Appendix P report the standard deviations of observed scores. Assuming normally distributed scores, one would expect about two-thirds of the observations to be within one standard deviation of the mean. An estimate of the standard deviation of the true scores can be computed as

$$\hat{\sigma}_T = \sqrt{\hat{\sigma}_x^2 - \hat{\sigma}_x^2(1-\hat{\rho}_{xx})}.$$

The results are historically consistent with past PSSA reliability results. The overall test score reliability values are strong, at .87 or above. In theory and in practice, test reliability is influenced by test length. However, theory and practice also provide methods to offset this tendency, and facilitate the production of reliable assessments under different test length scenarios. These methods focus on the statistical information that is provided by items. When this information is proven to be high during field testing, and is balanced with test blueprint requirements, the use of such items allows for the optimization of content validity and test reliability. This is the approach that was used for construction of the 2019 PSSAs and will continue to be used moving forward as the item pool is routinely replenished with similarly high-quality items.

Across the grades and subjects tabled in Appendix P, reliabilities for each reporting category are also provided. Reporting categories are detailed in Chapter Two. Reporting categories with more items tend to show higher reliability coefficients, but the test length reductions implemented in 2018 resulted in a larger decrease of score reliability at the reporting category level compared to the total test level. Also, groups exhibiting more variability in test scores tended to have higher reliability coefficients. Perhaps the most significant result pertains to an earlier caution (i.e., that some reporting category reliabilities may be too low to warrant interpretation at the individual student level). Once again, there is no firm guideline regarding how low is too low. The lower a given reliability coefficient, the greater the potential for over-interpretation. As a point of reference, a reliability coefficient of 0.50 would suggest that there is as much error variance as true-score variance in the scores. It should be noted that the reliability of group mean scores (e.g., school or district means) tends to be higher than that of individual scores, suggesting interpretation of strand scores at these aggregate levels is likely reasonable.

RASCH CONDITIONAL STANDARD ERROR OF MEASUREMENT

The CSEM also indicates the degree of measurement error but does so in scaled-score units and varies as a function of a student's actual scaled score. Therefore, the CSEM may be especially useful in characterizing measurement precision with respect to score levels used for decision-making—such as cut scores for identifying students who meet a performance standard.

Technically, when a Rasch model is applied, the CSEM at any given point on the ability continuum is defined as the reciprocal of the square root of the test information function derived from the Rasch scaling model.

$$CSEM(\hat{\theta}) = \frac{1}{\sqrt{I(\hat{\theta})}}$$

where $CSEM(\hat{\theta})$ is the conditional standard error of measurement and $I(\hat{\theta})$ is the test information function. Test information depends on the sum of the corresponding information functions for the test items. Item information depends on each item's difficulty and conditional item score variance. The formula above utilizes the Rasch ability (θ) metric. The conditional standard error on the scaled score (SS) metric is determined by simply multiplying the $CSEM(\hat{\theta})$ by the slope (multiplicative constant, m) of the linear transformation equation used to convert the Rasch ability estimates to scaled scores.

$$\text{CSEM(SS)} = CSEM(\hat{\theta}) * m$$

Chapter Fourteen provides the linear transformation formulas for each PSSA test.

RASCH CONDITIONAL STANDARD ERROR OF MEASUREMENT CONFIDENCE INTERVALS

CSEMs also allow statements regarding the precision of individual tests scores. And like SEMs, they help place reasonable limits around observed scaled scores through construction of an approximate score band. The confidence intervals are constructed by adding and subtracting a multiplicative factor of the CSEM and may be interpreted as described in the earlier section.

FURTHER INTERPRETATIONS

DIFFERENT CONDITIONAL STANDARD ERROR OF MEASUREMENT FOR DIFFERENT TEST SCORES

The CSEM approach provides different numerical estimates for constructing the confidence intervals for examinees depending on their specific score level. The magnitude of the CSEM values is U-shaped with larger CSEM values associated with lower and higher scores.

GROUP SPECIFIC

Assuming reasonable model-data fit—as explored in Chapter Twelve—the Rasch based CSEMs (conditioned on score level) should not vary across groups.

SCALED-SCORE METRIC

The CSEM and associated confidence interval bands are on the scaled score metric.

TYPE OF ERROR REFLECTED

The SEMs documented on the PSSA score reports are the Rasch-based conditional standard errors of measurement described above. These are provided by the WINSTEPS scaling program described in Chapter Twelve. As noted earlier, these CSEMs are based on the concept of statistical information. To provide a simpler explanation of SEMs to test score users, the earlier description of SEMs framed using the idea of internal consistency reliability was provided in the PSSA score report interpretive documents.[5] Score report content is considered in greater detail in Chapter Sixteen.

RESULTS AND OBSERVATIONS

Figure 18–2 shows the Rasch CSEMs associated across the scaled score distribution. (This information is also provided in the raw-to-scaled score conversion tables in Appendix N.) Values were derived using the pre-equated data file described in Chapter Nine, and the post-equated data file described in Chapter Fifteen. The values are consistent across a large range of the scaled scores, as demonstrated by the relatively flat bottoms of most plots. The values increase at both extremes (i.e., at smaller and larger scaled scores) giving these figures their typical U-shaped pattern. (Only the SEMs for scores greater than the lowest observable scaled scores [LOSS] are shown in the figures; consequently, the complete U-shape does not appear in most plots.) The three red-dashed lines represent the Basic, Proficient, and Advanced scaled score cuts, respectively, moving from lower to higher scaled score values. CSEM values at the cut score lines were generally associated with smaller CSEM values, indicating more precise measurement occurs at these points on the scales. The curves are presented for 2019 for both pre- and post-equating are shown with the curves for the three most recent prior years to demonstrate their relative stability under the reduced test length condition. Note that the curves for 2018 and 2019 are quite similar, whereas a comparison of the curves for 2016 and 2017 reflects intentional shifts in difficulty to better align with student test performance. Similar to the small changes in reliability, the CSEM comparisons show generally that the test length reduction that was implemented first in 2018 resulted in minimal increases in conditional error and are within expectations for a shorter test.

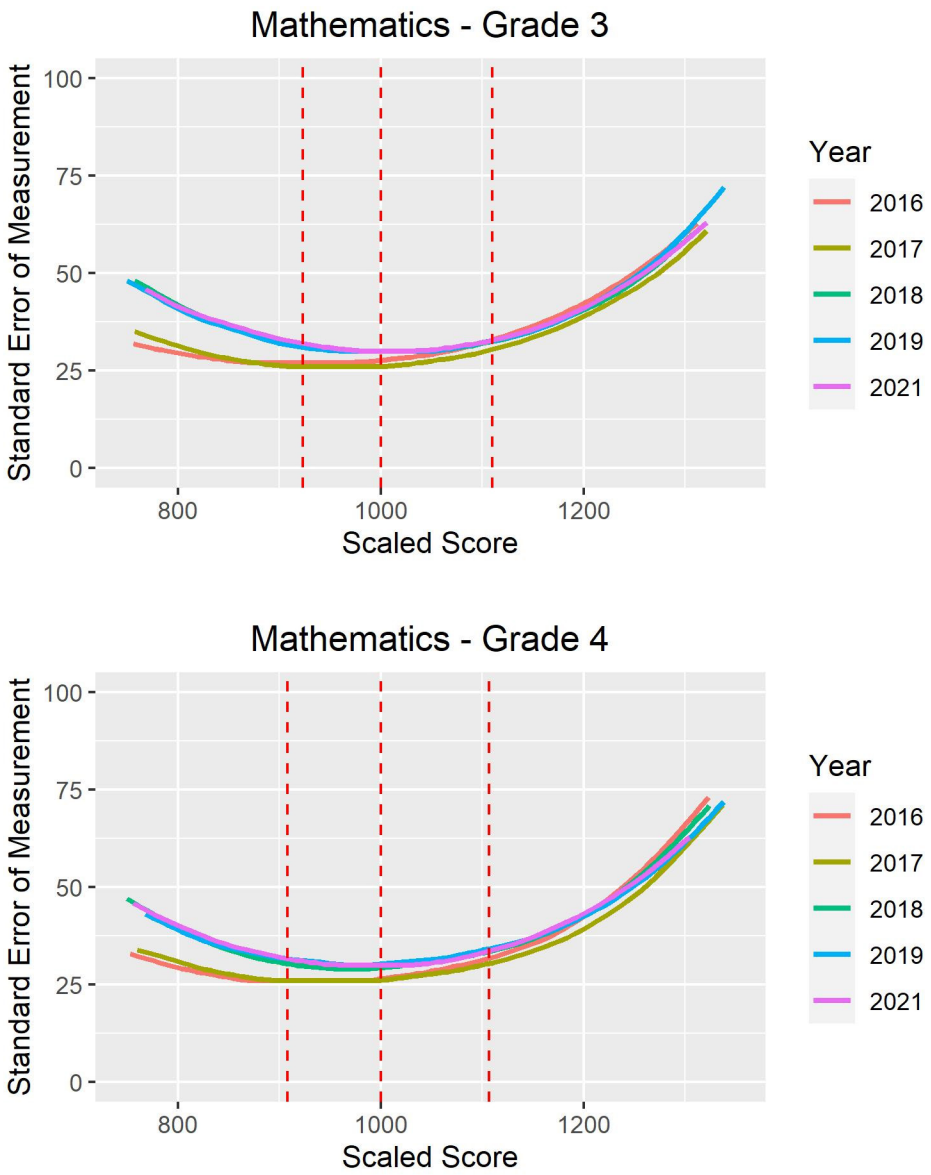
Because the 2019 examinations were pre-equated, considerable effort was placed on producing tables with CSEM as comparable as possible to the 2018 full length tests. Grade 4 Science showed the largest differences in test information around the basic and proficient cut scores, and a corresponding increase in CSEMs in this range. This is primarily due to the result of an effort to shift test difficulty during construction of the 2017 PSSAs to better align test difficulty with student performance distributions in support of providing the best measurement where the most students are in the distribution. The mean scale score for grade 4 science in 2017 was 1405.9 with a standard

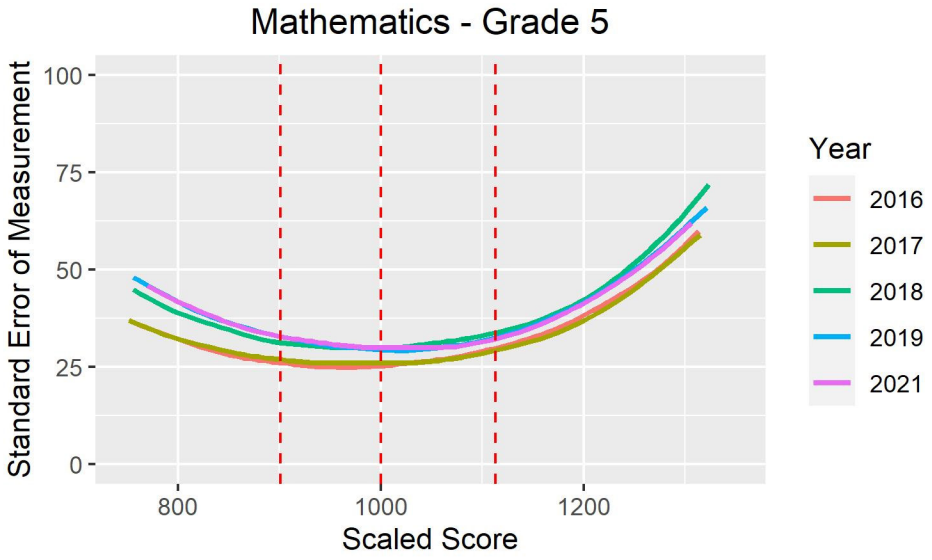
[5] Because IRT CSEMs are based on statistical information, it is questionable whether they account for error variance due to items. However, it seems difficult to construct a simple explanation of IRT CSEMs for the general public.

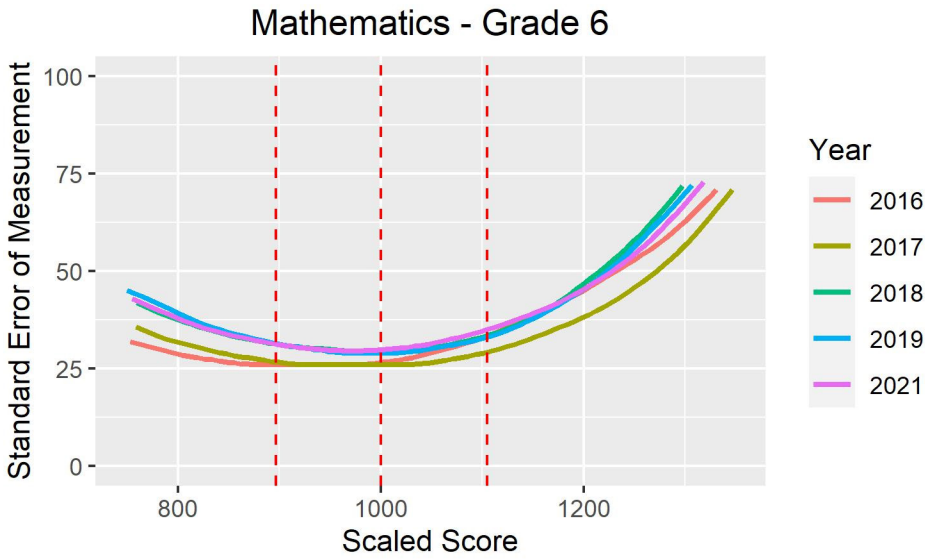
deviation of 170.8. Looking at the CSEMs, we note that this centers the distribution well above the proficient cut score, so future test construction efforts will attend to maintaining the difficulty targets, but will work toward selecting some more items around the proficient and basic cut scores to improve test information at these points, while still providing strong measurement of examinees through the center of the distribution.

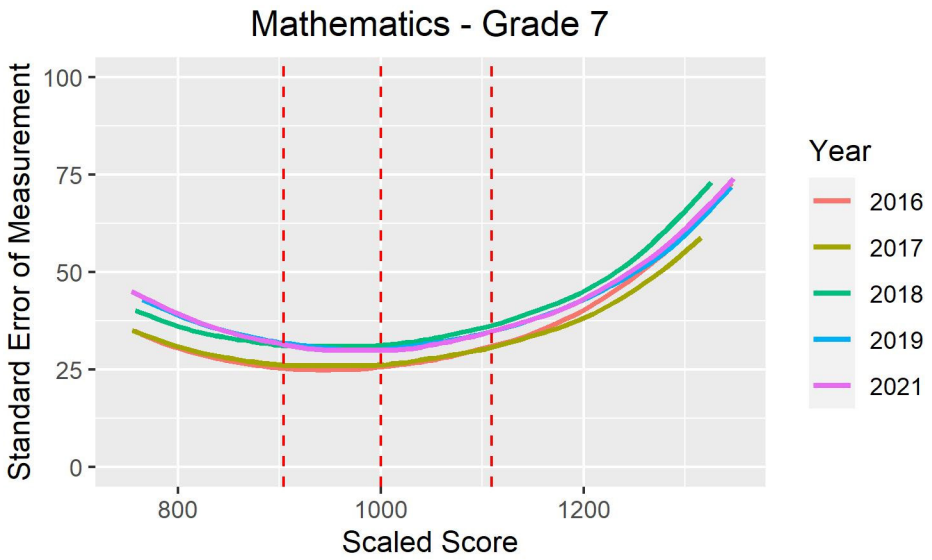
Figure 18–2 displays the CSEM curves for each PSSA from 2016 through 2021 (excluding 2020). Generally, small differences are noted for the shortened tests (beginning in 2018), with increases of roughly 5–8 across the cut points for all tests. Some larger increases are noted in at the lower end of the scales, but some decreases are noted at the upper end of the scales. For example, the more recent science tests (2018 and onward) show a notable reduction in CSEM at the advanced cut point, which is also an artifact of the shift in test difficulty that occurred in 2018. In fact, across all plots, the shape of the 2017 and 2021 curves is quite similar, pointing to good isolation of the statistical impact of the reduction alone as the primary source of difference. The greatest change in CSEM is noted at the basic cut point for the two science tests. This is also likely to be the result of the 2017 shift to test difficulty, impacting science more than ELA and mathematics.

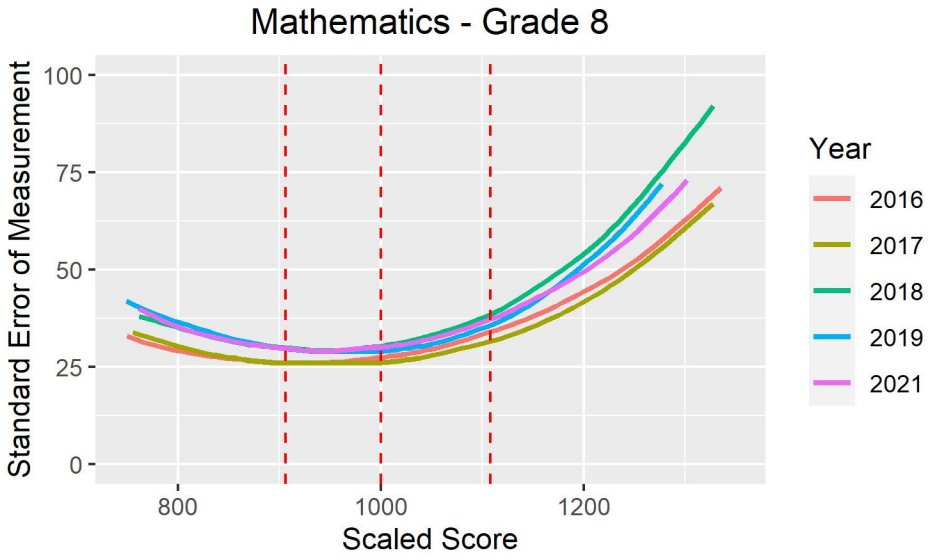
Figure 18–2. Conditional Standard Error Plots by Subject and Grade

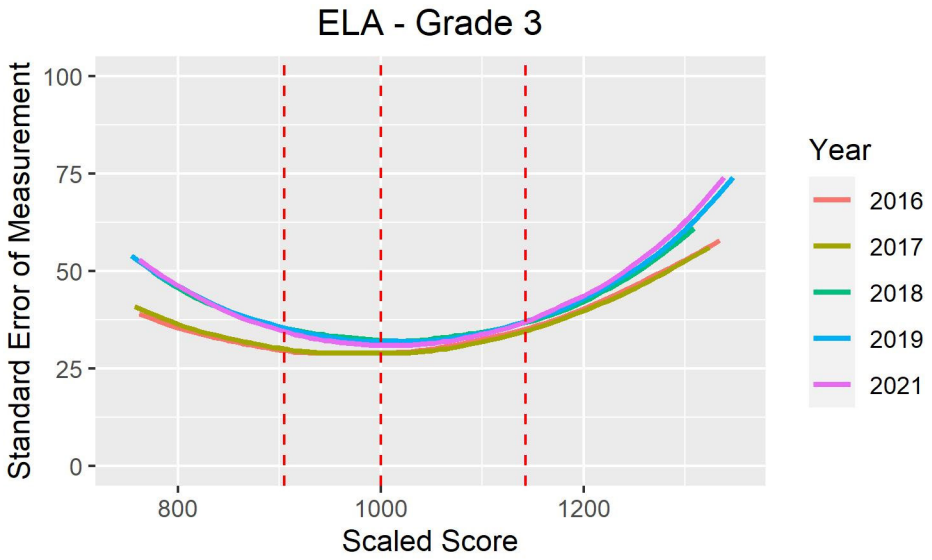


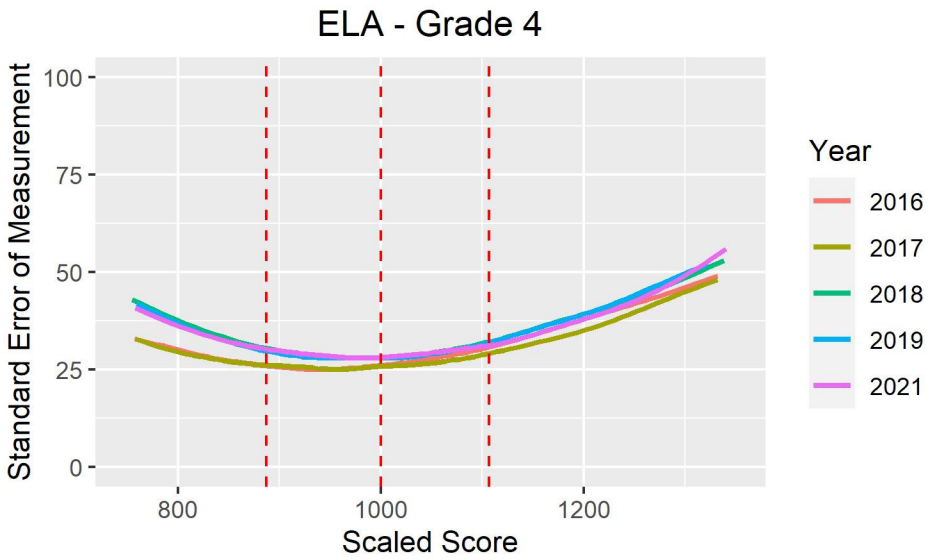

Mathematics - Grade 5
Standard Error of Measurement
100
75
50
25
0
800
1000
1200
Scaled Score
Year
2016
2017
2018
2019
2021

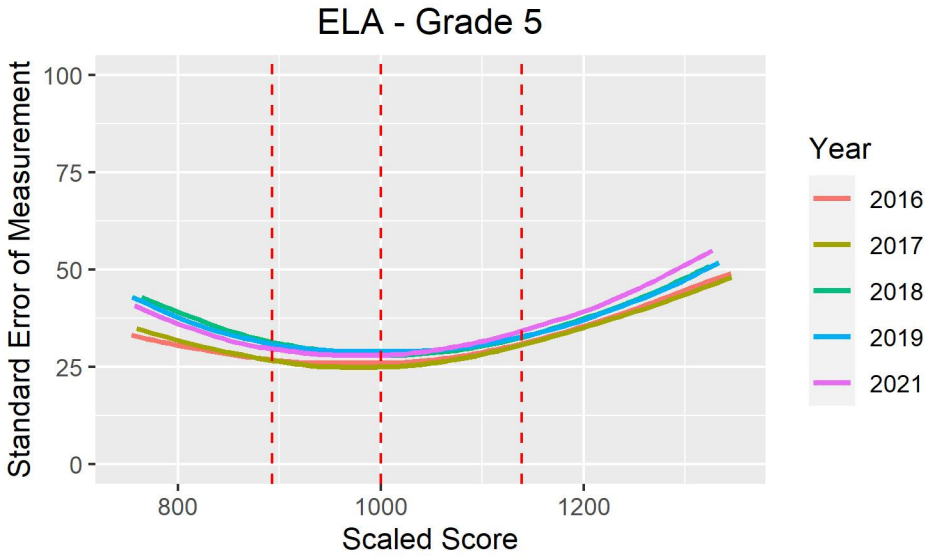

Mathematics - Grade 6
Standard Error of Measurement
100
75
50
25
0
800
1000
1200
Scaled Score
Year
2016
2017
2018
2019
2021

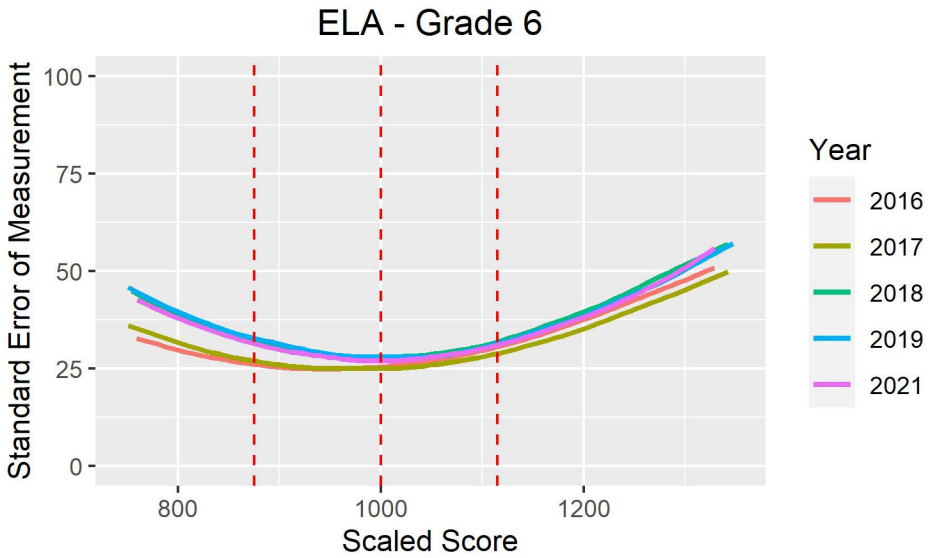

Mathematics - Grade 7
Standard Error of Measurement
100
75
50
25
0
800
1000
1200
Scaled Score
Year
2016
2017
2018
2019
2021

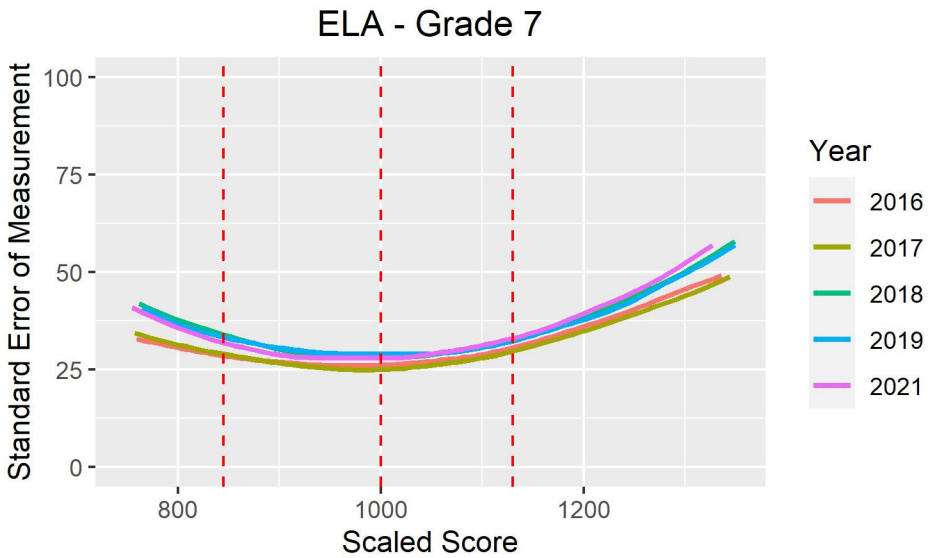

Mathematics - Grade 8
Standard Error of Measurement
100
75
50
25
0
800
1000
1200
Scaled Score
Year
2016
2017
2018
2019
2021

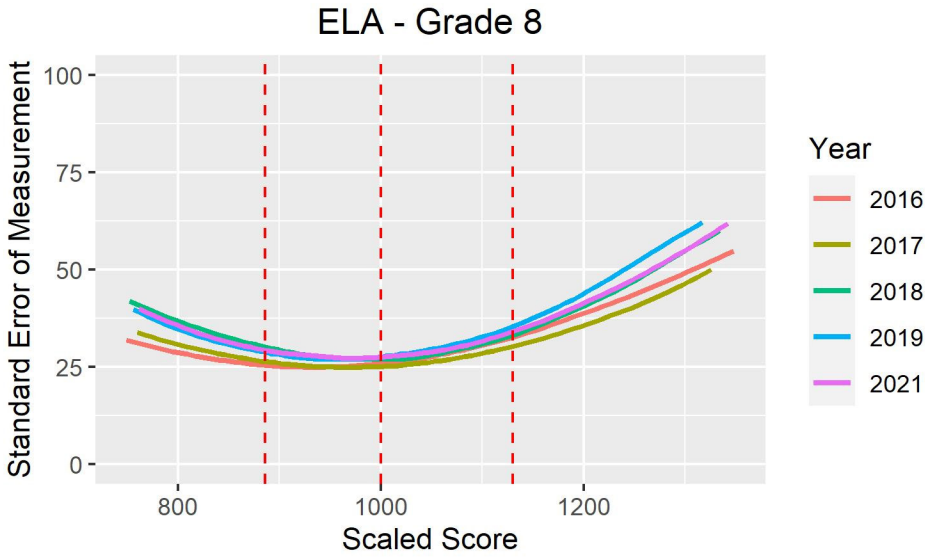

ELA - Grade 3
Standard Error of Measurement
100
75
50
25
0
800
1000
1200
Scaled Score
Year
2016
2017
2018
2019
2021

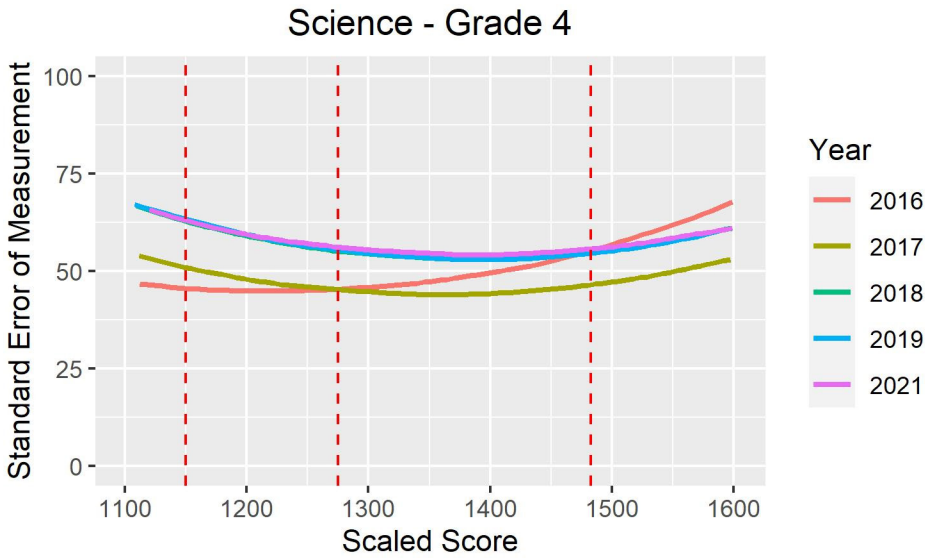

ELA - Grade 4
Standard Error of Measurement
100
75
50
25
0
800
1000
1200
Scaled Score
Year
2016
2017
2018
2019
2021

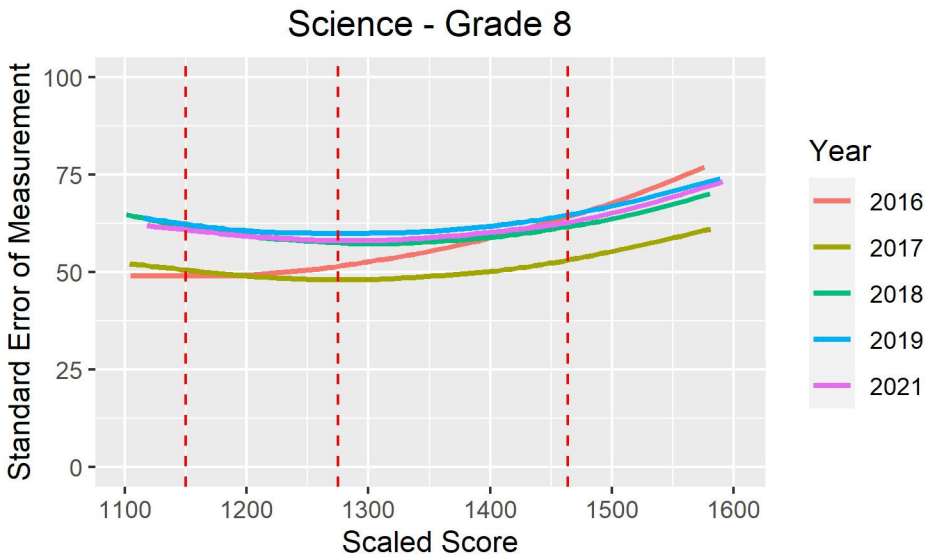

ELA - Grade 5
Standard Error of Measurement
100
75
50
25
0
800
1000
1200
Scaled Score
Year
2016
2017
2018
2019
2021


ELA - Grade 6
Standard Error of Measurement
100
75
50
25
0
800
1000
1200
Scaled Score
Year
2016
2017
2018
2019
2021


ELA - Grade 7
Standard Error of Measurement
100
75
50
25
0
800
1000
1200
Scaled Score
Year
2016
2017
2018
2019
2021


ELA - Grade 8
Standard Error of Measurement
100
75
50
25
0
800
1000
1200
Scaled Score
Year
2016
2017
2018
2019
2021


Science - Grade 4
Standard Error of Measurement
100
75
50
25
0
1100
1200
1300
1400
1500
1600
Scaled Score
Year
2016
2017
2018
2019
2021


Science - Grade 8
Standard Error of Measurement
100
75
50
25
0
1100
1200
1300
1400
1500
1600
Scaled Score
Year
2016
2017
2018
2019
2021

DECISION CONSISTENCY AND ACCURACY

In a standards-based testing program there should be great interest in knowing how accurately students are classified into performance categories. In contrast to Coefficient Alpha that is concerned with the relative rank-ordering of students, it is the absolute values of student scores that are important in decision consistency and accuracy.

Classification consistency refers to the degree to which the achievement level for each student can be replicated upon retesting using an equivalent form (Huynh, 1976). Decision consistency answers the question: What is the agreement between the classifications based on two non-overlapping, equally difficult forms of the test. If two parallel forms of the test were given to the same students, the consistency of the measure would be reflected by the extent that the classification decisions made from the first set of test scores matched the decisions based on the second set of test scores. Consider Tables 18–5 and 18–6 below.

Table 18–5. Pseudo-Decision Table for Two Hypothetical Categories

Tests One and Two	Test One Level I	Test One Level II	Test One Marginal
Test Two Level I	φ11	φ12	φ1●
Test Two Level II	φ21	φ22	φ2●
Test Two Marginal	φ●1	φ●2	1

Table 18–6. Pseudo-Decision Table for Four Hypothetical Categories

Tests One and Two	Test One Level I	Test One Level II	Test One Level III	Test One Level IV	Test One Marginal
Test Two Level I	φ11	φ12	φ13	φ14	φ1●
Test Two Level II	φ21	φ22	φ23	φ24	φ2●
Test Two Level III	φ31	φ32	φ33	φ34	φ3●
Test Two Level IV	φ41	φ42	φ43	φ44	φ4●
Test Two Marginal	φ●1	φ●2	φ●3	φ●4	1

If a student is classified as being in one category based on Test One's score, how probable would it be that the student would be reclassified as being in the same category if he or she took Test Two (a non-overlapping, equally difficult form of the test)?

The proportions of correct decisions, φ, for two and four categories are computed by the following two formulas, respectively:

$$\varphi = \varphi_{11} + \varphi_{22}$$

$$\varphi = \varphi_{11} + \varphi_{22} + \varphi_{33} + \varphi_{44}$$

It is the sum of the diagonal entries—that is, the proportion of students classified by the two forms into the same achievement level—that signifies the overall consistency.

Classification accuracy refers to the agreement of the observed classifications of students with the classifications made based on their true scores. An observed score contains measurement error while a true score is free of measurement error. A student's observed score can be formulated by the sum of his or her true score plus measurement error, or. Decision accuracy is an index to determine the extent to which measurement error causes a classification different than expected from the true score.

Since true scores are unobserved and since it is not feasible to repeat PSSA testing to estimate the proportion of students who would be reclassified in the same performance levels, a statistical model needs to be imposed on the data to estimate the true scores and to project the consistency and accuracy of classifications solely using data from the available administration (Hambleton & Novick, 1973). Although several procedures are available, one well-known method was developed by Livingston and Lewis (1995) utilizing a specific True Score Model. This approach is fairly complex, and the cited source contains details regarding the statistical model used to calculate decision consistency and accuracy from the single PSSA administration.

FURTHER INTERPRETATIONS

Several factors might affect decision consistency and accuracy. One important factor is the reliability of the scores. All other things being equal, more reliable test scores tend to result in more similar reclassifications and less measurement error. Another factor is the location of the cut score in the score distribution. More consistent and accurate classifications are observed when the cut scores are located away from the mass of the score distribution. For example, when scores are close to being normally distributed, the mass is concentrated in the middle of the distribution, and, thus classifications tend to become more consistent when cut scores go up from 70 percent to 80 percent to 90 percent or, alternatively, go down from 30 percent to 20 percent to 10 percent. The number of performance levels is also a consideration. Consistency and accuracy indices for four performance levels should be lower than those based on two categories. This is not surprising since classification and accuracy using four levels would allow more opportunity to change achievement levels. Hence, there would be more classification errors and less accuracy with four achievement levels, resulting in lower consistency indices.

RESULTS AND OBSERVATIONS

The results for the overall consistency across all four performance levels as well as for the dichotomies created by the three cut scores are presented in Table 18–7. The tabled values were derived using the program *BB-Class* (Brennan, 2004) and applies the Livingston and Lewis (1995) method. Across all subjects and grade levels, the overall decision accuracy ranged from the 0.72 to 0.83 (M = 0.77) while the decision consistency ranged from 0.62 to 0.76 (M = 0.69). It should be noted that the overall consistency and accuracy indices across the four performance levels should be lower than those based on two categories (discussed above). Dichotomous decisions between each adjacent pair of performance level classifications have accuracy values that range from 0.88 to 0.97 (M = 0.92) and consistency values that range from 0.83 to 0.96 (M = 0.89).

Table 18–7. Decision Consistency and Accuracy Results

Subject	Grade	Statistic	Overall	Bel. Basic/ Basic	Basic/ Proficient	Proficient/ Advanced
Mathematics	3	accuracy	0.79	0.92	0.92	0.94
Mathematics	3	consistency	0.71	0.89	0.89	0.92
Mathematics	4	accuracy	0.79	0.91	0.93	0.96
Mathematics	4	consistency	0.71	0.87	0.90	0.94
Mathematics	5	accuracy	0.78	0.90	0.92	0.96
Mathematics	5	consistency	0.70	0.86	0.89	0.94
Mathematics	6	accuracy	0.79	0.90	0.93	0.97
Mathematics	6	consistency	0.71	0.86	0.89	0.96
Mathematics	7	accuracy	0.82	0.91	0.94	0.97
Mathematics	7	consistency	0.74	0.87	0.91	0.96
Mathematics	8	accuracy	0.83	0.91	0.94	0.97
Mathematics	8	consistency	0.76	0.88	0.92	0.96
ELA	3	accuracy	0.77	0.93	0.91	0.93
ELA	3	consistency	0.68	0.90	0.87	0.90
ELA	4	accuracy	0.72	0.94	0.89	0.89
ELA	4	consistency	0.62	0.91	0.85	0.85
ELA	5	accuracy	0.76	0.94	0.88	0.94
ELA	5	consistency	0.67	0.92	0.83	0.91
ELA	6	accuracy	0.75	0.95	0.89	0.91
ELA	6	consistency	0.65	0.93	0.84	0.87
ELA	7	accuracy	0.77	0.97	0.88	0.92
ELA	7	consistency	0.68	0.95	0.83	0.89
ELA	8	accuracy	0.75	0.94	0.88	0.93
ELA	8	consistency	0.65	0.91	0.83	0.90
Science	4	accuracy	0.77	0.95	0.92	0.90
Science	4	consistency	0.69	0.93	0.88	0.86
Science	8	accuracy	0.76	0.92	0.91	0.93
Science	8	consistency	0.67	0.88	0.88	0.90

Note. Results derived using PSSA final data file (see Chapter Nine).

RATER AGREEMENT

Because open-ended items are included on the PSSAs, another source of random error is related to the scorers of those items. Frisbie (2005) noted that "test score reliability differs from scorer reliability" and that "the need for one kind of estimate cannot be satisfied by the other." Additionally, the data most easily obtainable that captures this information comes from the "10 percent read behinds" collected during the scoring process (see Chapter Eight for a description). Partly because of the way that this data is obtained and reported (i.e., it is not a ratio of true score variance over observed score variance), the term rater agreement or inter-rater agreement are used here, rather than rater reliability or inter-rater reliability as these terms are somewhat misleading as explained above.

FURTHER INTERPRETATIONS

For the PSSAs, both within-year and across-year rater consistency are available. As part of the data collected for that process, additional across-year rater consistency data is available for consideration.

RESULTS AND OBSERVATIONS

Within-year rater agreement information is provided in Chapter Eight. This information is reformatted in Tables 18–8 through 18–10 for PSSA mathematics, ELA, and science OE items, respectively. In addition, the percentages awarded to each score point are also presented in these tables. As seen from these tables, the inter-rater exact agreement percentages range from 89 percent to 96 percent for mathematics, 80 percent to 90 percent for ELA, and 85 percent to 96 percent for science. Mathematics had validity ranging from 89 percent to 98 percent; ELA had validity ranging from 86 percent to 91 percent; and science had validity ranging from 88 percent to 98 percent. (Validity in terms of scoring practices is discussed further in Chapter Eight.)

Table 18–8a. Inter-Rater Agreement for OE Items—Mathematics

Grade	Item	Percent Exact	Percent Adjacent	Validity
3	1	91	9	92
3	2	89	11	91
3	3	90	10	92
4	1	91	9	91
4	2	94	6	92
4	3	91	9	90
5	1	95	5	98
5	2	96	4	96
5	3	94	6	92
6	1	89	11	90
6	2	93	7	89
6	3	92	8	94
7	1	92	8	94
7	2	92	8	94
7	3	97	3	94
8	1	91	9	92
8	2	94	6	91
8	3	94	6	89

Note. For more information regarding validity, see the section on Handscoring Validity Process in Chapter Eight.

Table 18–8b. Percentage Awarded for Each Score Point for OE Items—Mathematics

Grade	Item	0	1	2	3	4	Blank or non-scoreable
3	1	22	20	17	14	8	18
3	2	27	24	15	9	5	21
3	3	7	30	28	14	1	19
4	1	15	25	19	14	6	21
4	2	24	29	14	7	1	24
4	3	32	22	13	9	4	21
5	1	30	26	12	7	4	20
5	2	32	26	11	5	3	22
5	3	18	39	7	14	1	21
6	1	39	18	10	7	4	23
6	2	12	47	13	3	0	26
6	3	19	18	16	10	15	23
7	1	35	17	11	10	3	24
7	2	33	27	8	3	1	29
7	3	31	25	14	4	1	24
8	1	21	21	11	11	8	28
8	2	33	22	6	5	2	31
8	3	18	38	12	3	1	28

Table 18–9a. Inter-Rater Agreement for OE Items—ELA

Grade	Item	Item Type	Percent Exact	Percent Adjacent	Validity
3	1	SA	80	20	89
3	2	SA	88	12	91
4	1	TDA	88	12	83
5	1	TDA	90	10	93
6	1	TDA	87	13	88
7	1	TDA	87	13	86
8	1	TDA	89	11	88

Note. EBSR items are machine scored because they are two-part MC like items and not shown in this table. For more information regarding validity, see the section on Handscoring Validity Process in Chapter Eight.

Table 18–9b. Percentage Awarded for Each Score Point for OE Items—ELA

Grade	Item	Item Type	0	1	2	3	4	Blank or non-scoreable
3	1	SA	9	35	29	7	NA	21
3	2	SA	10	19	29	15	NA	27
4	1	TDA	NA	20	39	11	1	28
5	1	TDA	NA	17	47	10	1	26
6	1	TDA	NA	21	36	14	2	27
7	1	TDA	NA	26	33	12	1	27
8	1	TDA	NA	18	33	15	2	31

Note. EBSR items are machine scored because they are two-part MC like items and not shown in this table.

Table 18–10a. Inter-Rater Agreement for OE Items—Science

Grade	Item	Percent Exact	Percent Adjacent	Validity
4	1	93	7	97
4	2	94	6	96
4	3	89	11	97
4	4	94	6	95
4	5	93	7	98
8	1	89	10	94
8	2	91	9	96
8	3	96	4	95
8	4	85	14	88
8	5	91	8	89

Note. For more information regarding validity, see the section on Handscoring Validity Process in Chapter Eight.

Table 18–10b. Percentage Awarded for Each Score Point for OE Items—Science

Grade	Item	0	1	2	Blank or non-scoreable
4	1	53	18	7	22
4	2	47	18	13	22
4	3	16	30	31	22
4	4	13	53	13	22
4	5	10	29	39	22
8	1	15	25	32	28
8	2	13	30	29	28
8	3	27	32	11	31
8	4	38	26	8	29
8	5	34	19	15	31

CHAPTER NINETEEN: VALIDITY

As defined in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014), validity refers to "the degree to which evidence and theory support the interpretation of test scores entailed by proposed uses of tests" (p. 11). The *Standards* provides a framework for describing the sources of evidence that should be considered when evaluating validity. These sources include evidence based on 1) test content, 2) response processes, 3) the internal structure of the test, 4) the relationships between test scores and other variables, and 5) the consequences of testing. In addition, when Item Response Theory (IRT) models are used to analyze assessment data, validity considerations related to those processes should also be explored.

The validity process involves the collection of evidence from a variety of sources to support the proposed test score interpretations and uses. This technical report describes throughout, the technical aspects of the PSSA tests in support of their score interpretations and uses. Each of the previous chapters contributes important evidence components that pertain to score validation: test development, test administration, test scoring, item analysis, Rasch calibration, scaling, linking, score reporting, and reliability. This chapter summarizes and synthesizes the evidence based on the *Standards'* framework. The purposes and intended uses of PSSA test scores are reviewed first, then each type of validity evidence is addressed in turn.

PURPOSES AND INTENDED USES OF THE PSSA

The *Standards* emphasize that validity pertains to how test scores are used. To help contextualize the evidence that will be presented below, the purposes of the PSSA will be reviewed first. As stated in Chapter One, the purpose of the PSSA is to measure how well students acquire the knowledge and skills described in the *Pennsylvania Assessment Anchor Content Standards* (Assessment Anchors) as defined by the Eligible Content for mathematics, ELA, and Science. The intended uses of the PSSA are to:

1. Provide information for use in school and district accountability systems
2. Improve curricular and instructional practices to help students reach proficiency in the Pennsylvania Core Standards (ELA and Mathematics) or the Pennsylvania Academic Standards (Science)

TEST LENGTH REDUCTION

The Pennsylvania Department of Education (PDE) established new, reduced length PSSA test designs in 2017 for administration beginning in 2018. The PSSA test length reductions were designed to reduce PSSA testing burdens while maintaining rigor in test reliabilities, and test score validity arguments. The approved test design changes can be briefly summarized as:

- Mathematics
  - Proportional reduction of each reporting category
  - Grades 3–8: 72 to 52 total raw score points
- ELA
  - Removed writing prompt and selection of standalone multiple-choice language items
  - Grade 3: 62 to 45 total raw score points (weighted)
  - Grades 4–8: 84 to 63 total raw score points (weighted)
- Science
  - Proportional reduction of each reporting category
  - Grades 4 and 8: 68 to 48 total raw score points

The PSSA tests have been consistently constructed with attention to balancing content and statistical requirements to optimize test score reliability and validity. This remained true during construction of the reduced length tests. Although test reliability is influenced by test length (Spearman & Brown, 1910), the use of high quality items, with strong statistical features, can facilitate the production of reliable assessments under different test length scenarios. As discussed in Chapter Eighteen, reliability results for the shortened tests continued to show strong internal consistency of scores.

As there was a change to the test blueprint for ELA beyond a proportional reduction of the content, caution was used to ensure that the original 2015 standards appropriately defined performance on the reduced length ELA tests. Consequently, a standards validation was conducted in June of 2018 prior to formally reporting ELA scores. The purpose of the standards validation was to consider if the 2015 cut scores continued to reflect appropriate distinctions in performance on the ELA tests, given the removal of the writing prompt and nine language items. Pennsylvania educators participated in a four-day workshop to review the new tests and applied a modified Bookmark standard setting procedure. Results of the standards validation confirmed that the existing standards still appropriately classify examinee performance into the four levels of Below Basic, Basic, Proficient, and Advance. For example, a score of 1000 was determined to appropriately separate examinee performance on the ELA tests between the Below Basic and Proficient levels. The same was true for each of the remaining cut scores for grades 3 through 8, Below Basic and Advanced. Please refer to the Pennsylvania System of School Assessment Grades 3–8 English Language Arts Standards Validation 2018 Final Technical Report for full details regarding the standards validation design, implementation, committee review, and final results.

Beyond standards validation, the provision of ongoing of validity evidence will continue to be a central feature in the PSSA technical documentation. This chapter proceeds with a discussion of five sources of validity evidence for the PSSA, including studies that were conducted to evaluate the PSSAs for evidence of any shifts in the ELA construct related to the test design modification for ELA, i.e. removal of the writing prompt and nine language items.

EVIDENCE BASED ON TEST CONTENT

Test content validity evidence for the PSSA rests greatly on establishing a link between each component of the assessment (i.e., the items) and what the students should know and be able to do as required by the Assessment Anchors, Eligible Content, and/or the Academic Content Standards (refer to Chapter Two for a description of each of these elements). The PSSA tests are intended to measure students' knowledge and skills described in the Assessment Anchors as defined by the Eligible Content for mathematics, ELA, and science. Thus, the evidence supporting the alignment among the PSSA tasks, the Assessment Anchors as defined by the Eligible Content and the Academic Content Standards should be provided.

Lane (1999) suggests taking the following steps to support the content validity of tests:

- Evaluate the degree to which the test specifications represent and align with the knowledge and skills described in the Assessment Anchors as defined by the Eligible Content for mathematics, ELA, and science.
- Evaluate the alignment between the test items and test specifications to ensure representativeness.
- Evaluate the extent to which the curriculum aligns with the Assessment Anchors. If some contents are not included in the curriculum, then low scores on the test should not be interpreted as meaning that instruction was ineffective.
- Conduct content reviews of the test items using a panel of content experts to see whether they measure the intended construct or are the sources of construct-irrelevant variance.
- Conduct fairness reviews of the items to avoid issues related to a specific subpopulation.
- Evaluate procedures for administration and scoring, such as the appropriateness of instructions to examinees, time limit for the assessment, and training of raters.
- Submit operational tests to third-party, independent reviews.

Chapters Two through Eight of this report present evidence related to test content. As described in these chapters, all PSSA test blueprints (specifications) and items were developed and aligned with the PSSA Assessment Anchors and Eligible Content for mathematics, ELA, and science, consistently following well-established procedures. After the items were developed, they underwent multiple rounds of content and bias reviews. After they were field tested, they were reviewed with respect to their statistical properties. Items selected for the operational assessment had to pass content, psychometric, and PDE reviews. Tests were administered according to standardized procedures with allowable accommodations. The following summarizes the efforts described in greater detail in Chapters Two through Eight:

- DRC used Webb's (1999) Depth of Knowledge (DOK) model to ensure the PSSA items aligned with the Assessment Anchors as defined by the Eligible Content and the Academic Content Standards in terms of both content and cognitive levels.
- DRC established detailed test and item/passage development specifications and ensured the items were sufficient in number and adequately distributed across content and levels of cognitive complexity and difficulty.
- DRC selected qualified item writers and provided training to help ensure they wrote high-quality items.
- Each newly-developed item was first reviewed by content specialists and editors at DRC to make sure that all items measured the intended Assessment Anchors, as defined by the Eligible Content for Mathematics, ELA, and Science. Appropriateness for the intended grade was also considered, as well as depth of knowledge, graphics, grammar/punctuation, language demand, and distractor reasonableness.
- Before field testing, the test items were submitted to content committees (composed of Pennsylvania educators) for review using, but not limited to, the following categories:
    - Overall quality and clarity
    - Anchor, eligible content, and/or standard alignment
    - Grade-level appropriateness
    - Difficulty level
    - Depth of knowledge
    - Appropriate sources of challenge (e.g., unintended content and skills)
    - Correct answer
    - Quality of distractors
    - Graphics
    - Appropriate language demand
    - Freedom from bias
- The items were also submitted to a Bias, Fairness, and Sensitivity Committee for review. This committee reviewed items for issues related to diversity, gender, and other pertinent factors.
- Items passing all the prior hurdles were tried out in a field-test event. Several statistical analyses were conducted on the field-test data, including classical item analyses, distractor analyses, and differential item functioning (DIF). Items were once again carefully reviewed by DRC staff and a committee of Pennsylvania teachers with respect to their statistical characteristics. DIF was used to detect test items that might bias test scores for subgroups. Empirical investigation of DIF strengthens the validity evidence related to score interpretations for student groups by eliminating potential sources of construct-irrelevant variance as such, DIF results might be better considered as internal structure validity evidence.

- The PSSA tests were administered according to standardized procedures with allowable accommodations and recommended testing times.
- As shown in Chapter Eight, the raters for open-ended (OE) items were carefully recruited and well trained. Their scoring was monitored throughout the scoring session to ensure that an acceptable level of scoring accuracy was maintained.

In addition to the foundational and routine procedures described above and in Chapters Two through Five, and summarized in Appendix C, two external studies were conducted to assess the alignment of the PSSA tests to the PSSA Assessment Anchors and Eligible Content. Achieve, Inc., Washington, D.C., conducted a preliminary review of the science Assessment Anchors in 2003 to evaluate the alignment with the Academic Standards and produced a follow-up report on the anchors in 2005.

EVIDENCE BASED ON RESPONSE PROCESSES

Response-process evidence is used to examine the extent to which the cognitive skills and processes employed by students match that identified in the test developer's defined construct domains for all students and for each subgroup. Think-aloud procedures or cognitive labs can be used to collect this type of evidence. In addition, when an assessment includes OE items, an examination of the extent to which the raters interpret and apply the scoring criteria accurately when assigning scores to students' responses on OE items also provides validity of the response-processes evidence.

For the PSSA science tests, DRC conducted a science cognitive lab study to gather relative information about the thinking processes students used to solve science scenario items. The use of the cognitive lab helped ensure that the intended response processes were employed by students.

For all the PSSA tests, well-organized scorer training and subsequent monitoring of rating accuracy helped ensure that raters strictly followed the scoring criteria to minimize rater biases that may affect their scoring. Refer to Chapter Eight for a detailed description of all hand-scoring procedures, and to Chapter Eighteen for statistical information regarding inter-rater reliability.

EVIDENCE BASED ON INTERNAL STRUCTURE

As described in the *Standards* (2014), internal-structure evidence refers to the degree to which the relationships between test items and test components conform to the construct on which the proposed test interpretations are based. For each PSSA test, one total test score as well as strand scores are reported (see Chapter Sixteen for more information about PSSA scores). Additionally, principle component and parallel analyses were conducted and provide strong internal-structure evidence of the unidimensionality of the PSSAs.

ITEM DIFFICULTY RANGES AND DISCRIMINATION

Multiple sources of evidence are provided that address the appropriateness of the range of difficulty and discrimination of the items on the PSSA tests. Plots of item *p*-values by point biserial correlations are provided in Chapter Eleven, and summary statistics are provided for IRT item difficulty parameters in Chapter Twelve.

ITEM RESPONSE THEORY DIMENSIONALITY

Results from principle component and parallel analyses were presented in Chapter Twelve. The PSSA mathematics, ELA and science tests are shown through a principle components analysis to be strongly unidimensional, providing evidence that the tests are measuring a single construct without undue irrelevant variance.

A confirmatory factor analysis was also applied to the 2017 original length and 2021 reduced length test data to assess the degree to which the intended construct for each test explains performance on the operational test items. Specifically, significant factor loadings, consistency of standardized variances of the unique factor scores, and model fit were examined across the CFA models for the original and reduced length tests, for each PSSA test.

Using *Mplus* (Muthén & Muthén, 1998–2012) a single factor model was specified for the original and reduced length tests, for each PSSA test as:

$$y_i = \tau + \Lambda\eta_i + \varepsilon_i$$

where y_2 is the outcome vector, t is the intercept vector, Λ is the factor loading matrix, η_i is the common factor score, and represents the unique factor scores. For each model, the factor variance was fixed to 1.0 for model identification purposes. As the indicators in these models are ordered categorical variables and likely violate the assumption of multivariate normality required for maximum likelihood estimation, the models were fit using robust weighted least squares estimation. Model fit was evaluated for each model using adjusted Chi-Square tests of fit (Satorra & Bentler, 1994; Asparouhov & Muthén, 2010), Root Mean Square Error of Approximation (RMSEA), and the comparative fit index (CFI). RMSEA values below 0.06 and CFI values of 0.90 and above were considered to represent good fit (Hu & Bentler, 1999).

Results for the single factor mathematics model show that factor loadings for all items are statistically significant, with most factor loading values falling above 0.30. This indicates that the construct is explaining individual item performance reasonably well.

The Chi-square test of fit results for the CFAs show that, for all tests, the model does not fit perfectly in the population with p-values < 0.000. MacCallum (2001) notes that this is often the finding with larger sample sizes. Consistent with results from the shortened test in 2018 and 2019 the RMSEA results indicate good fit for the 2021 PSSA with values ranging between 0.015 and 0.025 for the original length tests in 2017 and between 0.015 and 0.029 for the reduced length tests in 2021. The CFI results also show good fit with values ranging from 0.926 to 0.972 for the original length tests in 2017 and from 0.963 to 0.987 for the reduced length tests in 2021. Table 19–1 provide a summary of the CFA results for the 2021 PSSA.

Note that as the models are not nested, a direct statistical comparison of model fit would not be informative. Procedures that allows for the comparison of non-nested models such as Akaike's Information Criterion (AIC; Akaike, 1973) and the Bayesian Information Criterion (BIC; Schwarz, 1978) are designed primarily for model selection purposes, so are less useful here where the model has been chosen based on based on criteria external to the test.

Overall, the factor analysis results suggest that a single factor (the ELA construct as detailed in Chapter Two) is explaining the variance in responses well for both the 2017 and 2021 (Table 19–1) reduced length tests, supporting an overall conclusion of construct stability between the original and reduced length tests.

Table 19–1. CFA Model Fit for Reduced Length PSSAs – 2021

Subject	Grade	N Items	N	RMSEA	CFI	Chi-Square DF	Chi-Square Adj. *P*-Value
Mathematics	3	43	86629	0.020	0.987	860	<.0000
Mathematics	4	43	86838	0.022	0.980	860	<.0000
Mathematics	5	43	86349	0.024	0.977	860	<.0000
Mathematics	6	43	84515	0.028	0.963	860	<.0000
Mathematics	7	43	84197	0.020	0.984	860	<.0000
Mathematics	8	43	81441	0.019	0.985	860	<.0000
ELA	3	35	86505	0.020	0.986	560	<.0000
ELA	4	39	86910	0.018	0.987	702	<.0000
ELA	5	39	86504	0.022	0.976	702	<.0000
ELA	6	39	85286	0.018	0.986	702	<.0000
ELA	7	39	85125	0.018	0.983	702	<.0000
ELA	8	39	81845	0.029	0.964	702	<.0000
Science	4	43	86327	0.015	0.986	860	<.0000
Science	8	43	80547	0.020	0.981	860	<.0000

EVIDENCE RELATED TO THE USE OF THE RASCH MODEL

Since the Rasch model is the basis of all calibration, scaling, and linking analyses associated with the PSSA, the validity of the inferences from these results depends on the degree to which the assumptions of the model are met as well as the fit between the model and test data. As discussed at length in Chapter Twelve, the underlying assumptions of Rasch models were essentially met for all the PSSA data, indicating the appropriateness of using the Rasch models to analyze the PSSA data.

In addition, the Rasch model was also used to link science operational PSSA tests across years. The accuracy of the linking also affects the accuracy of student scores and the validity of score uses. As described in Chapter Fifteen, DRC Psychometric Services staff utilize a linking procedure previously vetted by the Pennsylvania National TAC. Moreover, DRC internal replication and review ensured the accuracy of the linking and equating results.

TEST RELIABILITY, ERRORS OF MEASUREMENT, AND DECISION CONSISTENCY AND ACCURACY

Reliability estimates, SEM, and decision consistency and accuracy results are presented in Chapter Eighteen and provide important evidence that the PSSA tests have strong internal consistency, expected measurement errors, and that examinees are being appropriately classified into performance levels based on the test scores and standards set on those scores.

STRAND CORRELATIONS

Correlations and disattenuated correlations between strand scores within each subject area are presented below. Values were computed using the PSSA final data file (see Chapter Nine). This data can also provide information on score dimensionality that is part of internal-structure validity evidence. As noted in Chapter Two, the PSSA mathematics tests have four strands (denoted by M.A, M.B, M.C, and M.D). The PSSA ELA tests have four strands (denoted by E.A, E.B, E.D, and E.E), except grade 3 which has three strands (E.A, E.B, and E.D). The PSSA science tests have four strands (denoted by S.A, S.B, S.C, and S.D).

For each grade, Pearson's correlation coefficients between these strands are reported in Tables 19–2a through 19–2f. The inter-correlations between the strands within the content areas are positive and generally range from moderate to high in value, and correlations between strands across content areas are generally slightly lower, providing contrasting evidence of convergent and discriminant validity.

Table 19–2a. Correlations between Mathematics and ELA Strands for Grade 3

	M.A	M.B	M.C	M.D	E.A	E.B	E.D
M.A	-						
M.B	0.81	-					
M.C	0.62	0.61	-				
M.D	0.80	0.79	0.62	-			
E.A	0.67	0.68	0.55	0.68	-		
E.B	0.70	0.71	0.57	0.70	0.77	-	
E.D	0.61	0.60	0.51	0.60	0.62	0.63	-

Table 19–2b. Correlations between Mathematics, ELA, and Science Strands for Grade 4

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	E.E	S.A	S.B	S.C	S.D
M.A	-											
M.B	0.78	-										
M.C	0.67	0.64	-									
M.D	0.71	0.66	0.61	-								
E.A	0.65	0.63	0.58	0.55	-							
E.B	0.67	0.65	0.60	0.58	0.74	-						
E.D	0.60	0.57	0.53	0.51	0.59	0.62	-					
E.E	0.56	0.51	0.49	0.48	0.57	0.59	0.50	-				
S.A	0.71	0.68	0.63	0.62	0.71	0.74	0.61	0.57	-			
S.B	0.56	0.54	0.53	0.49	0.58	0.60	0.49	0.47	0.65	-		
S.C	0.59	0.56	0.54	0.51	0.58	0.60	0.50	0.47	0.65	0.55	-	
S.D	0.56	0.54	0.50	0.49	0.54	0.56	0.47	0.43	0.62	0.51	0.52	-

Table 19–2c. Correlations between Mathematics and ELA Strands for Grade 5

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	E.E
M.A	-							
M.B	0.70	-						
M.C	0.73	0.63	-					
M.D	0.74	0.62	0.67	-				
E.A	0.61	0.55	0.54	0.51	-			
E.B	0.68	0.60	0.62	0.59	0.70	-		
E.D	0.57	0.51	0.51	0.50	0.52	0.59	-	
E.E	0.52	0.46	0.45	0.41	0.55	0.53	0.44	-

Table 19–2d. Correlations between Mathematics and ELA Strands for Grade 6

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	E.E
M.A	-							
M.B	0.72	-						
M.C	0.69	0.66	-					
M.D	0.64	0.58	0.56	-				
E.A	0.70	0.61	0.56	0.55	-			
E.B	0.69	0.60	0.55	0.54	0.77	-		
E.D	0.56	0.51	0.48	0.44	0.59	0.58	-	
E.E	0.56	0.50	0.45	0.45	0.56	0.54	0.45	-

Table 19–2e. Correlations between Mathematics and ELA Strands for Grade 7

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	E.E
M.A	-							
M.B	0.81	-						
M.C	0.67	0.64	-					
M.D	0.66	0.64	0.56	-				
E.A	0.60	0.61	0.48	0.49	-			
E.B	0.64	0.64	0.52	0.52	0.73	-		
E.D	0.55	0.54	0.45	0.46	0.55	0.57	-	
E.E	0.52	0.53	0.41	0.42	0.52	0.53	0.43	-

Table 19–2f. Correlations between Mathematics, ELA, and Science Strands for Grade 8

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	E.E	S.A	S.B	S.C	S.D
M.A	-											
M.B	0.66	-										
M.C	0.61	0.75	-									
M.D	0.50	0.65	0.56	-								
E.A	0.48	0.65	0.55	0.52	-							
E.B	0.50	0.68	0.57	0.55	0.72	-						
E.D	0.46	0.61	0.52	0.49	0.62	0.64	-					
E.E	0.45	0.59	0.49	0.45	0.53	0.57	0.50	-				
S.A	0.57	0.77	0.65	0.61	0.70	0.74	0.64	0.57	-			
S.B	0.45	0.62	0.52	0.50	0.61	0.65	0.55	0.49	0.72	-		
S.C	0.44	0.59	0.52	0.47	0.54	0.56	0.48	0.40	0.66	0.56	-	
S.D	0.43	0.59	0.49	0.47	0.55	0.59	0.50	0.46	0.66	0.58	0.53	-

The correlations in Tables 19–2a through 19–2f are based on the observed strand scores. These observed-score correlations are weakened by the existing measurement error contained within each strand. As a result, disattenuating the observed correlations can provide an estimate of the relationships between strands if there were no measurement error. (An important caveat is provided further below.) The disattenuated correlation coefficients (R_{xy}) can be computed by using the formula (Spearman 1904, 1910) below:

$$R_{xy} = \frac{r_{xy}}{\sqrt{r_{xx}\, r_{yy}}},$$

where r_{xy} is the observed correlation, and r_{xx} and r_{yy} are the reliabilities for strand X and strand Y. Disattenuated correlations very near 1.00 might suggest that the same or very similar constructs are being measured. Values somewhat less than 1.00 might suggest that different strands are measuring slightly different aspects of the same construct. Values markedly less than 1.00 might suggest the strands reflect different constructs.

Tables 19–3a through 19–3f show the corresponding disattenuated correlations for the 2021 PSSA tests for each grade. Note that with ELA, text-dependent analysis (TDA) items belongs to a separate strand and is the only item for the strand. Given that this strand (E.E) has only one item, reliability cannot be computed. Therefore, disattenuated correlation cannot be computed with these strands and is not included in Table 19–3. Where reliability can be computed, the disattenuated strand correlations are higher than their observed score counterparts, given that strand scores do not have perfect reliabilities (see Chapter Eighteen).

Some within-subject correlations are very high (e.g., above 0.95), suggesting that the within-subject strands appear to be measuring essentially the same construct. This, in turn, suggests that some strand scores might not provide entirely unique information about the strengths or weaknesses of students.

Table 19–3a. Disattenuated Strand Correlations for Mathematics and ELA for Grade 3

	M.A	M.B	M.C	M.D	E.A	E.B	E.D
M.A	-						
M.B	1.06	-					
M.C	0.93	0.93	-				
M.D	1.04	1.04	0.94	-			
E.A	0.87	0.89	0.82	0.88	-		
E.B	0.91	0.93	0.86	0.92	1.00	-	
E.D	0.90	0.90	0.88	0.90	0.92	0.94	-

Table 19–3b. Disattenuated Strand Correlations for Mathematics and ELA for Grade 4

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	S.A	S.B	S.C	S.D
M.A	-										
M.B	1.03	-									
M.C	1.01	1.02	-								
M.D	1.01	0.99	1.04	-							
E.A	0.85	0.87	0.92	0.83	-						
E.B	0.84	0.86	0.91	0.82	0.98	-					
E.D	0.87	0.89	0.93	0.85	0.91	0.91	-				
S.A	0.89	0.90	0.96	0.88	0.94	0.93	0.90	-			
S.B	0.86	0.87	0.97	0.85	0.95	0.93	0.88	1.01	-		
S.C	0.89	0.90	0.98	0.89	0.92	0.92	0.89	1.00	1.03	-	
S.D	0.89	0.91	0.97	0.89	0.91	0.91	0.88	1.00	1.01	1.01	-

Table 19–3c. Disattenuated Strand Correlations for Mathematics and ELA for Grade 5

	M.A	M.B	M.C	M.D	E.A	E.B	E.D
M.A	-						
M.B	1.09	-					
M.C	1.08	1.22	-				
M.D	0.97	1.05	1.09	-			
E.A	0.81	0.94	0.89	0.74	-		
E.B	0.85	0.98	0.96	0.81	0.96	-	
E.D	0.82	0.96	0.93	0.79	0.84	0.90	-

Table 19–3d. Disattenuated Strand Correlations for Mathematics and ELA for Grade 6

	M.A	M.B	M.C	M.D	E.A	E.B	E.D
M.A	-						
M.B	1.00	-					
M.C	1.00	1.05	-				
M.D	0.96	0.96	0.97	-			
E.A	0.89	0.86	0.83	0.84	-		
E.B	0.88	0.84	0.81	0.82	1.00	-	
E.D	0.87	0.87	0.85	0.82	0.93	0.92	-

Table19–3e. Disattenuated Strand Correlations for Mathematics and ELA for Grade 7

	M.A	M.B	M.C	M.D	E.A	E.B	E.D
M.A	-						
M.B	1.04	-					
M.C	0.98	0.98	-				
M.D	1.00	1.01	1.00	-			
E.A	0.78	0.82	0.75	0.77	-		
E.B	0.84	0.87	0.80	0.84	0.99	-	
E.D	0.84	0.87	0.83	0.87	0.89	0.92	-

Table 19–3f. Disattenuated Strand Correlations for Mathematics, ELA, and Science for Grade 8

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	S.A	S.B	S.C	S.D
M.A	-										
M.B	0.95	-									
M.C	1.02	1.04	-								
M.D	0.93	1.02	1.02	-							
E.A	0.73	0.83	0.81	0.87	-						
E.B	0.76	0.86	0.83	0.91	0.97	-					
E.D	0.77	0.87	0.85	0.91	0.94	0.96	-				
S.A	0.81	0.93	0.91	0.96	0.90	0.94	0.91	-			
S.B	0.76	0.87	0.84	0.91	0.91	0.97	0.92	1.02	-		
S.C	0.77	0.87	0.88	0.90	0.84	0.87	0.84	0.98	0.97	-	
S.D	0.79	0.90	0.88	0.95	0.89	0.95	0.91	1.02	1.04	0.99	-

Some caution is needed in interpreting the disattenuated results because the reliabilities used to calculate the disattenuated correlations are subject to both upward and downward biases. (These are also discussed in some detail in Chapter Eighteen.) Consequently, some of the values tabled above may be higher or lower than they should be, depending on which bias prevails for any given pair of strand scores. When the reliabilities are lower than they should be, the disattenuated correlations will be inflated (and in some instances, can appear larger than the theoretical correlation maximum value of 1.00).

EVIDENCE BASED ON RELATIONSHIPS WITH OTHER VARIABLES

As described in the *Standards* (2014), "Evidence based on relationships with other variables provides evidence about the degree to which relationships are consistent with the construct underlying the proposed test score interpretations" (p. 16). This category of evidence is classified by three types—convergent, discriminant, and criterion-related evidence. Convergent evidence is provided by relationships between students' performance on different assessments intended to measure a similar construct. Discriminant evidence is provided by relationships between students' performance on different tests intended to measure different constructs. Criterion-related evidence, either predictive or concurrent, is provided by relationships between students' test scores and their performance on a criterion measure (Cronbach, 1971; Messick, 1989).

Evidence of the relationship of the PSSA with other variables for previous PSSA mathematics and reading tests has been examined by HumRRO in a series of independent studies using 2001–2003 PSSA data (Koger, Thacker & Dickinson, 2004; Sinclair & Thacker, 2005; Thacker, Dickinson, & Koger, 2004).

As useful validity studies rely heavily on the technical quality of the criteria measures, the Pennsylvania Classroom Diagnostic Tools (CDT) assessments were used to assess convergent and discriminant validity. The CDT is a well-documented high-quality computer-based series of assessments aligned to the same Assessment Anchors and Eligible Content as the PSSA tests. Table 19–4 shows the correlations between the PSSA and CDT assessments. The within subject correlations are strong, ranging from 0.72 to 0.80, where performance on mathematics-based assessments is slightly stronger than ELA AND science. This illustrates a strong positive relationship between the PSSA and the CDT where the subjects are the same or similar. Conversely, the correlations between different content areas in 2021 are noticeably lower, ranging from 0.61 to 0.75. These patterns demonstrate reasonable convergent and discriminant validity of performance on PSSA.

Table 19–4. Correlations among Student Performance on PSSA and CDT

PSSA	CDT	N	R
Mathematics Grade 3	Mathematics - Lower Grades	11958	0.74
Mathematics Grade 3	Reading - Lower Grades	10026	0.68
Mathematics Grade 3	Science - Lower Grades	704	0.62
Mathematics Grade 3	Writing - Lower Grades	1247	0.67
Mathematics Grade 4	Mathematics - Lower Grades	12011	0.76
Mathematics Grade 4	Reading - Lower Grades	10225	0.70
Mathematics Grade 4	Science - Lower Grades	6130	0.64
Mathematics Grade 4	Writing - Lower Grades	1274	0.63
Mathematics Grade 5	Mathematics - Lower Grades	13623	0.77
Mathematics Grade 5	Reading - Lower Grades	11354	0.69
Mathematics Grade 5	Science - Lower Grades	1430	0.61
Mathematics Grade 5	Writing - Lower Grades	1806	0.61
Mathematics Grade 6	Mathematics	15622	0.80
Mathematics Grade 6	Reading/Literature	12491	0.71
Mathematics Grade 6	Science	4033	0.69
Mathematics Grade 6	Writing/English Comprehension	2507	0.69
Mathematics Grade 7	Mathematics	15749	0.78
Mathematics Grade 7	Reading/Literature	13151	0.69
Mathematics Grade 7	Science	6800	0.67
Mathematics Grade 7	Writing/English Comprehension	3121	0.67
Mathematics Grade 8	Mathematics	11856	0.75
Mathematics Grade 8	Reading/Literature	12403	0.67
Mathematics Grade 8	Science	11650	0.65
Mathematics Grade 8	Writing/English Comprehension	3079	0.66
ELA Grade 3	Mathematics - Lower Grades	11986	0.68
ELA Grade 3	Reading - Lower Grades	10050	0.75
ELA Grade 3	Science - Lower Grades	705	0.66
ELA Grade 3	Writing - Lower Grades	1247	0.76
ELA Grade 4	Mathematics - Lower Grades	12025	0.70
ELA Grade 4	Reading - Lower Grades	10244	0.79
ELA Grade 4	Science - Lower Grades	5441	0.71
ELA Grade 4	Writing - Lower Grades	1272	0.74
ELA Grade 5	Mathematics - Lower Grades	13625	0.71
ELA Grade 5	Reading - Lower Grades	11353	0.77
ELA Grade 5	Science - Lower Grades	1429	0.68
ELA Grade 5	Writing - Lower Grades	1809	0.74

Table 19–4 (continued). Correlations among Student Performance on PSSA and CDT

PSSA	CDT	N	R
ELA Grade 6	Mathematics	15681	0.73
ELA Grade 6	Reading/Literature	12537	0.78
ELA Grade 6	Science	3422	0.70
ELA Grade 6	Writing/English Comprehension	2517	0.77
ELA Grade 7	Mathematics	15840	0.71
ELA Grade 7	Reading/Literature	13237	0.75
ELA Grade 7	Science	6227	0.68
ELA Grade 7	Writing/English Comprehension	3145	0.75
ELA Grade 8	Mathematics	11928	0.70
ELA Grade 8	Reading/Literature	12515	0.74
ELA Grade 8	Science	11709	0.70
ELA Grade 8	Writing/English Comprehension	3133	0.72
Science Grade 4	Mathematics - Lower Grades	11968	0.70
Science Grade 4	Reading - Lower Grades	10184	0.75
Science Grade 4	Science - Lower Grades	5393	0.72
Science Grade 4	Writing - Lower Grades	1266	0.69
Science Grade 8	Mathematics	11783	0.72
Science Grade 8	Reading/Literature	12345	0.72
Science Grade 8	Science	11544	0.76
Science Grade 8	Writing/English Comprehension	3070	0.69

To further assess discriminant validity for the 2021 PSSA tests, correlations between students' test scores on different PSSA tests, including mathematics, ELA, and science are shown in Table 19–5. In this table, both the observed and disattenuated correlations are reported.

Table 19–5. Correlations among Students' Performance on All PSSA Tests

Grade	Mathematics/ELA	Mathematics/Science	ELA/Science
3	0.81 (0.90)		
4	0.79 (0.90)	0.80 (0.89)	0.82 (0.95)
5	0.76 (0.87)		
6	0.79 (0.91)		
7	0.75 (0.87)		
8	0.77 (0.89)	0.80 (0.89)	0.82 (0.94)

Note. Numbers in the parenthesis are disattenuated correlations. The PSSA final data file was used for these calculations (see Chapter Nine). Case-wise elimination of missing data was used.

Each PSSA assessment measures a different construct, so the correlations between them were not expected to be extremely high. The values in this table are consistent with this expectation. As can be seen, the correlations between the PSSA subject tests range from 0.75 to 0.82.

As 2015 was the first year of new PSSA mathematics and ELA, several additional analyses were conducted in 2017 in support of the federal peer review process for the PSSA. These studies included 1) an analysis of how well the PSSA scores predict performance (predictive validity) on high school exams in Algebra I and Literature (Keystone exams), and 2) multiple comparisons of PSSA mathematics and ELA results with other external criteria. These studies provide additional evidence in support of arguments for the convergent and discriminant validity of the PSSA test results detailed in the 2015 and 2016 PSSA Technical Reports referenced above. This report provides a summary of these seven additional analyses and results:

- Keystone predictions
- PSSA relation to other variables:
    - PSSA mathematics and ELA relationship with NAEP
    - PSSA mathematics and ELA relationship with Classroom Diagnostic Tools (CDT)
    - PSSA ELA relationship with GRADE (Group Reading Assessment and Diagnostic Evaluation) literacy assessments
    - PSSA mathematics and ELA relationship with Terra Nova Complete Battery ELA and mathematics
    - PSSA mathematics and ELA relationship with teacher ratings of student proficiency
    - PSSA mathematics and ELA subscore correlations

The results of these analyses provide reasonably strong evidence of the convergent and discriminant validity of the PSSA, as well its predictive relationship with college and career readiness expectations. Results for this set of analyses are reported in Appendix T of the 2018 PSSA Technical Report.

EVIDENCE BASED ON CONSEQUENCES OF TESTING

Based on the *Standards* (2014), evidence supporting the appropriateness of the consequences of testing is an additional source of validity information. Often, this part of the validity argument for a test includes evidence that the test serves all students comparably. The most common methods that are used for this purpose are those that examine the invariance of construct measurement across student groups, and those that seek to detect bias in test content that might lead to some construct irrelevant variation in examinee responses.

As reported in Chapter Five and Appendix F, review and consideration of differential item functioning results with respect to gender and ethnicity offers some evidence that construct-irrelevant variance affecting these groups differentially is not present. The presence of construct-irrelevant variance is generally considered to be a serious a threat to the validity of inferences made from test scores, where those differences are due to content that is unrelated to the intended construct for one or more groups. A distinct limitation of DIF methods is that they treat such variance at the examinee group level and not at the individual level. As not all members of a defined group can ever be assumed to share the exact same characteristics, it can be inappropriate to generalize the group level results to all group members. Nevertheless, the presence of suspected group level construct irrelevant variance may indicate the need to review and reconsider the inclusion of items that have been statistically flagged for DIF. As noted in that chapter, field-test items are screened and reviewed for DIF. Only items approved by teacher committees are eligible for operational use.

Additionally, analyses were conducted to assess the comparability of scores across paper-pencil and computer-based modes of assessment (PPT and CBT) by evaluating differences in person fit. Results of these analyses indicate that the PSSA tests are functioning similarly across mode and mode by subgroups. Refer to Appendix S for a detailed discussion of these analyses and findings.

A comprehensive independent study of the invariance of scores across accommodations was also conducted by Sireci and Wells (2016) with results that support claims of measurement invariance across the PSSA tests for accommodated groups with sufficient cases for analysis.

As evidence of consequential validity is related to its uses, as well as to statistical measures of invariance, it is difficult to directly measure all aspects of consequential validity. Test data provide important evidence of the validity of PSSA scores for their intended uses, and as such, may serve to warrant the intended purpose and use that is defined in this technical report and supporting documentation. Generally, the results of the many content development and review procedures, and the statistical analyses discussed throughout this report, provide evidence that PSSA scores are sufficiently comparable across all examinees, regardless of conditions of gender, ethnicity, test mode, and accommodations used. This has remained true under the reduced test length design. Population invariance, however, will be monitored annually for violations.

Regarding the use of test scores, Chapter Sixteen provides an explanation of the different types of scores and shows samples of the various score reports distributed for the PSSA. Chapter Sixteen also provides accurate and clear test score and report information to help users avoid unintended uses and interpretations of the PSSA results. The extent to which various groups of users (e.g., students, teachers, and parents) interpret these scores and reports appropriately affects the validity of subsequent uses of these results. PDE continues to gather evidence to improve or guide decisions pertaining to all aspects of intended and unintended consequences of the PSSA program.

VALIDITY EVIDENCE SUMMARY

Validity evidence related to test content was reviewed earlier in this chapter. Overall, the early chapters of this technical report show that a strong link can be established between each PSSA item and its associated eligible content. Details regarding how the PSSA operational assessments were assembled to reflect the state content standards and detailed information regarding educator reviews (including content, bias, data, and sensitivity reviews) are presented in Chapters Three and Five.

Evidence of the validity of score interpretations is also provided as it relates to response processes. Cognitive labs for Science scenario-based items showed that examinees were responding as intended and routine hand-scoring processes describe in Chapter Eight provide evidence that ratings show reasonable consistency and that rigorous scoring processes are in place to reduce rater bias and increase consistency.

Evidence of the validity related to internal test structure is provided through the results of multiple analyses including, high test score reliabilities, reasonable SEM and CSEM values, good decision consistency and accuracy, strongly unidimensional constructs, and selections of items that have appropriate difficulty ranges, and discriminate performance well.

Strand score inter-correlations are also presented in this chapter. In general, within-subject-area strands (e.g., mathematics) correlate more highly with themselves than they do with other subject-area strands (e.g., ELA). These results, as well as the additional analyses of the relationship between the PSSA ELA and Mathematics tests with other established measures and classroom performance provides evidence of their convergent, discriminant and predictive validity.

A study of the relationship of PSSA scores with CDT scores shows a strong relationship between similar content areas, and a slightly weaker relationship across different content areas, providing useful convergent and discriminant validity evidence.

Last, evidence that PSSA test scores are largely invariant across multiple subgroups of students is also provided through the results of DIF analyses and subsequent item selection processes, a multi-method study on the invariance of accommodated test scores, and a person fit analysis to investigate the comparability of scores from different modes of administration for different populations of students.

APPENDIX A: GENERAL SCORING GUIDELINES

GENERAL DESCRIPTION OF SCORING GUIDELINES FOR READING SHORT-ANSWER QUESTIONS

3 Points

- The response provides a complete answer to the task (e.g., a statement that offers a correct answer as well as text-based support).
- The response provides specific, appropriate, and accurate details (e.g., naming, describing, explaining, or comparing) or examples.

2 Points

- The response provides a partial answer to the task (e.g., indicates some awareness of the task and at least one text-based detail).
- The response attempts to provide sufficient, appropriate details (e.g., naming, describing, explaining, or comparing) or examples; may contain minor inaccuracies.

1 Point

- The response provides an incomplete answer to the task (e.g., indicating either a misunderstanding of the task or no text-based details.
- The response provides insufficient or inappropriate details or examples that have a major effect on accuracy.
- The response consists entirely of relevant copied text.

0 Points

- The response provides insufficient material for scoring.
- The response is inaccurate in all aspects.

Categories within zero reported separately:

BLK (blank)..... No response or written refusal to respond too brief to determine response
OT..... Off task/topic
LOE..... Response in a language other than English
IL..... Illegible

TEXT-DEPENDENT ANALYSIS SCORING GUIDELINES

Score	Description
4	• Effectively addresses all parts of the task demonstrating in-depth analytic understanding of the text(s) • Effective introduction, development, and conclusion identifying an opinion, topic, or controlling idea related to the text(s) • Strong organizational structure that effectively supports the focus and ideas • Thorough analysis of explicit and implicit meanings from text(s) to effectively support claims, opinions, ideas, and inferences • Substantial, accurate, and direct reference to the text(s) using relevant key details, examples, quotes, facts, and/or definitions • Substantial reference to the main idea(s) and relevant key details of the text(s) to support the writer's purpose • Skillful use of transitions to link ideas • Effective use of precise language and domain-specific vocabulary drawn from the text(s) to explain the topic and/or to convey experiences/events • Few errors, if any, are present in sentence formation, grammar, usage, spelling, capitalization, and punctuation; errors present do not interfere with meaning
3	• Adequately addresses all parts of the task demonstrating sufficient analytic understanding of the text(s) • Clear introduction, development, and conclusion identifying an opinion, topic, or controlling idea related to the text(s) • Appropriate organizational structure that adequately supports the focus and ideas • Clear analysis of explicit and implicit meanings from text(s) to support claims, opinions, ideas, and inferences • Sufficient, accurate, and direct reference to the text(s) using relevant details, examples, quotes, facts, and/or definitions • Sufficient reference to the main idea(s) and relevant key details of the text(s) to support the writer's purpose • Appropriate use of transitions to link ideas • Appropriate use of precise language and domain-specific vocabulary drawn from the text(s) to explain the topic and/or to convey experiences/events • Some errors may be present in sentence formation, grammar, usage, spelling, capitalization, and punctuation; errors present seldom interfere with meaning

Score	Description
2	• Inconsistently addresses some parts of the task demonstrating partial analytic understanding of the text(s) • Weak introduction, development, and/or conclusion identifying an opinion, topic, or controlling idea somewhat related to the text(s) • Weak organizational structure that inconsistently supports the focus and ideas • Weak or inconsistent analysis of explicit and/or implicit meanings from text(s) that somewhat supports claims, opinions, ideas, and inferences • Vague reference to the text(s) using some details, examples, quotes, facts, and/or definitions • Weak reference to the main idea(s) and relevant details of the text(s) to support the writer's purpose • Inconsistent use of transitions to link ideas • Inconsistent use of precise language and domain-specific vocabulary drawn from the text(s) to explain the topic and/or to convey experiences/events • Errors may be present in sentence formation, grammar, usage, spelling, capitalization, and punctuation; errors present may interfere with meaning
1	• Minimally addresses part(s) of the task demonstrating inadequate analytic understanding of the text(s) • Minimal evidence of an introduction, development, and/or conclusion • Minimal evidence of an organizational structure • Insufficient or no analysis of the text(s); may or may not support claims, opinions, ideas, and inferences • Insufficient reference to the text(s) using few details, examples, quotes, facts, and/or definitions • Minimal reference to the main idea(s) and/or relevant details of the text(s) • Few, if any, transitions to link ideas • Little or no use of precise language or domain-specific vocabulary drawn from the text(s) • Many errors may be present in sentence formation, grammar, usage, spelling, capitalization, and punctuation; errors present often interfere with meaning

GENERAL DESCRIPTION OF SCORING GUIDELINES FOR MATHEMATICS OPEN-ENDED QUESTIONS

4–The response demonstrates a *thorough* understanding of the mathematical concepts and procedures required by the task.

The response provides correct answer(s) with clear and complete mathematical procedures shown and a correct explanation, as required by the task. Response may contain a minor "blemish" or omission in work or explanation that does not detract from demonstrating a *thorough* understanding.

3–The response demonstrates a *general* understanding of the mathematical concepts and procedures required by the task.

The response and explanation (as required by the task) are mostly complete and correct. The response may have minor errors or omissions that do not detract from demonstrating a *general* understanding.

2–The response demonstrates a *partial* understanding of the mathematical concepts and procedures required by the task.

The response is somewhat correct with *partial* understanding of the required mathematical concepts and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

1–The response demonstrates a *minimal* understanding of the mathematical concepts and procedures required by the task.

0–The response has no correct answer and *insufficient* evidence to demonstrate any understanding of the mathematical concepts and procedures required by the task for that grade level.

Response may show only information copied from the question.

Special Categories within zero reported separately:

BLK (blank).....Blank, entirely erased, or written refusal to respond

OT.....Off-task

LOE.....Response in a language other than English

IL.....Illegible

GENERAL DESCRIPTION OF SCORING GUIDELINES FOR SCIENCE OPEN-ENDED QUESTIONS

2 Points

- The response demonstrates a *thorough* understanding of the scientific content, concepts, and procedures required by the task(s).
- The response provides a clear, complete, and correct response as required by the task(s). The response may contain a minor blemish or omission in work or explanation that does not detract from demonstrating a *thorough* understanding.

1 Point

- The response demonstrates a *partial* understanding of the scientific content, concepts, and procedures required by the task(s).
- The response is somewhat correct with *partial* understanding of the required scientific content, concepts, and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

0 Points

- The response provides *insufficient* evidence to demonstrate any understanding of the scientific content, concepts, and procedures as required by the task(s) for that grade level.
- The response may show only information copied or rephrased from the question or *insufficient* correct information to receive a score of 1.

Special Categories within zero reported separately:

Blank..... Blank, entirely erased, entirely crossed out, or consists entirely of whitespace
Refusal..... Refusal to respond to the task
Off Task..... Makes no reference to the item but is not an intentional refusal
Foreign Language..... Written entirely in a language other than English
Illegible ..... Illegible or incoherent

APPENDIX B: TALLY SHEETS

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items Core		Number of Items EB		Total Number of Items (Core & EB)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-T: Numbers and Operations in Base Ten	1			Use place-value understanding and properties of operations to perform multi-digit arithmetic.														
	1	1		Apply place-value strategies to solve problems.	2				2		2	2				2		2
	1	1	1	Round two- and three-digit whole numbers to the nearest ten or hundred, respectively.	2		1		3		3	2		1		3		3
	1	1	2	Add two- and three-digit whole numbers and/or subtract two- and three-digit numbers from three-digit whole numbers.	1		1		2		2	1		1		2		2
	1	1	3	Multiply one-digit whole numbers by two-digit multiples of ten.	2		1		3		3	2		1		3		3
	1	1	4	Order a set of whole numbers from least to greatest or greatest to least.	1				1		1	1				1		1
	Total for Assessment Anchor A-T.1 Use place-value understanding and properties of operations to perform multi-digit arithmetic.				8		3		11		11	8		3		11		11
Total For Reporting Category A-T					8		3		11		11	8		3		11		11

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-F: Numbers and Operations—Fractions	1			Develop an understanding of fractions as numbers.	1				1		1	1				1		1
	1	1		Develop and apply number theory concepts to compare quantities and magnitudes of fractions and whole numbers.	1				1		1	1				1		1
	1	1	1	Demonstrate that when a whole or set is partitioned into y equal parts, the fraction 1/y represents 1 part of the whole and/or the fraction x/y represents x equal parts of the whole.		4				4	4		1				1	1
	1	1	2	Represent fractions on a number line.			1		1		1			1		1		1
	1	1	3	Recognize and generate simple equivalent fractions.	1		1		2		2	1		1		2		2
	1	1	4	Express whole numbers as fractions, and/or generate fractions that are equivalent to whole numbers.			1		1		1			1		1		1
	1	1	5	Compare two fractions with the same denominator, using the symbols >, =, or <, and/or justify the conclusions.														
	Total for Assessment Anchor A-F.1 Develop an understanding of fractions as numbers.				3	4	3		6	4	10	3	1	3		6	1	7
Total For Reporting Category A-F					3	4	3		6	4	10	3	1	3		6	1	7

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items Core		Number of Items EB		Total Number of Items (Core & EB)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
-O: Operations and Algebraic Thinking	1			Represent and solve problems involving multiplication and division.	1				1		1	1				1		1
	1	1		Understand various meanings of multiplication and division.			1		1		1			1		1		1
	1	1	1	Interpret and/or describe products of whole numbers.	1		1		2		2	1		1		2		2
	1	1	2	Interpret and/or describe whole-number quotients of whole numbers.	1				1		1	1				1		1
	1	2		Solve mathematical and real-world problems using multiplication and division, including determining a missing number in a multiplication and/or division equation.														
	1	2	1	Use multiplication and/or division to solve word problems in situations involving equal groups, arrays, and/or measurement quantities.	1				1		1	1				1		1
	1	2	2	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.	1				1		1	1				1		1
	Total For Assessment Anchor B-O.1 Represent and solve problems involving multiplication and division.				5		2		7		7	5		2		7		7
	2			Understand properties of multiplication and the relationship between multiplication and division.	1				1		1	1				1		1
	2	1		Use properties to simplify and solve multiplication problems.	1				1		1	1				1		1
	2	1	1	Apply the commutative property of multiplication (not identification or definition of the property).	1				1		1	1				1		1
	2	1	2	Apply the associative property of multiplication (not identification or definition of the property).	1		1		2		2	1		1		2		2
	2	2		Relate division to a missing-number multiplication equation.														
	2	2	1	Interpret and/or model division as a multiplication equation with an unknown factor.	1				1		1	1				1		1
	Total For Assessment Anchor B-O.2 Understand properties of multiplication and the relationship between multiplication and division.				5		1		6		6	5		1		6		6
	3			Solve problems involving the four operations, and identify and explain patterns in arithmetic.		4				4	4		1				1	1

B	3	1		Use operations, patterns, and estimation strategies to solve problems (may include word problems).															
	3	1	1	Solve two-step word problems using the four operations. Limit to problems with whole numbers and having whole-number answers.			1		1		1			1		1		1	
	3	1	2	Represent two-step word problems using equations with a symbol standing for the unknown quantity. Limit to problems with whole numbers and having whole-number answers.															
	3	1	3	Assess the reasonableness of answers. Limit problems posed with whole numbers and having whole-number answers.															
	3	1	4	Solve two-step equations using order of operations (equation is explicitly stated with no grouping symbols).															
	3	1	5	Identify arithmetic patterns (including patterns in the addition table or multiplication table) and/or explain them using properties of operations.	1				1		1	1				1		1	
	3	1	6	Create or match a story to a given combination of symbols and numbers.			1		1		1			1		1		1	
	3	1	7	Identify the missing symbol that makes a number sentence true.															
	Total For Assessment Anchor B-O.3 Solve problems involving the four operations, and identify and explain patterns in arithmetic.				1	4	2		3	4	7	1	1	2		3	1	4	
Total For Reporting Category B-O					11	4	5		16	4	20	11	1	5		16	1	17	

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Reason with shapes and their attributes.	1				1		1	1				1		1
	1	1		Analyze characteristics of polygons.	2				2		2	2				2		2
	1	1	1	Explain that shapes in different categories may share attributes and that the shared attributes can define a larger category.	1		1		2		2	1		1		2		2
	1	1	2	Recognize rhombi, rectangles, and squares as examples of quadrilaterals and/or draw examples of quadrilaterals that do not belong to any of these subcategories.	2		1		3		3	2		1		3		3
	1	1	3	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor C-G.1 Reason with shapes and their attributes.				7		3		10		10	7		3		10		10
Total For Reporting Category C-G					7		3		10		10	7		3		10		10

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1			Solve problems involving measurement and estimation of intervals of time, money, liquid volumes, masses, and lengths of objects.														
	1	1		Determine or calculate time and elapsed time.														
	1	1	1	Tell, show, and/or write time (analog) to the nearest minute.	1		1		2		2	1		1		2		2
	1	1	2	Calculate elapsed time to the minute in a given situation.														
	1	2		Use the attributes of liquid volume, mass, and length of objects.														
	1	2	1	Measure and estimate liquid volumes and masses of objects using standard units and metric units.														
	1	2	2	Add, subtract, multiply, and divide to solve one-step word problems involving masses or liquid volumes that are given in the same units.	1				1		1	1				1		1
	1	2	3	Use a ruler to measure lengths to the nearest quarter inch or centimeter.	1		1		2		2	1		1		2		2
	1	3		Count, compare, and make change using a collection of coins and one-dollar bills.														
	1	3	1	Compare total values of combinations of coins and/or dollar bills less than $5.00.														
	1	3	2	Make change for an amount up to $5.00 with no more than $2.00 change given.			1		1		1			1		1		1
	1	3	3	Round amounts of money to the nearest dollar.	1				1		1	1				1		1
	Total For Assessment Anchor D-M.1 Solve problems involving measurement and estimation of intervals of time, money, liquid volumes, masses, and lengths of objects.				4		3		7		7	4		3		7		7

D-M: Measurement and Data	2			Represent and interpret data.		4				4	4		1				1	1
	2	1		Organize, display, and answer questions based on data.														
	2	1	1	Complete a scaled pictograph and a scaled bar graph to represent a data set with several categories.														
	2	1	2	Solve one- and two-step problems using information to interpret data presented in scaled pictographs and scaled bar graphs.			1		1		1			1		1		1
	2	1	3	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Display the data by making a line plot, where the horizontal scale is marked in appropriate units—whole numbers, halves, or quarters.														
	2	1	4	Translate information from one type of display to another. Limit to pictographs, tally charts, bar graphs, and tables.	1				1		1	1				1		1
	Total For Assessment Anchor D-M.2 Represent and interpret data.				1	4	1		2	4	6	1	1	1		2	1	3
	3			Geometric measurement: understand concepts of area and relate area to multiplication and to addition.														
	3	1		Find the areas of plane figures.														
	3	1	1	Measure areas by counting unit squares.	1				1		1	1				1		1
	3	1	2	Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	1				1		1	1				1		1
	Total For Assessment Anchor D-M.3 Geometric measurement: understand concepts of area and relate area to multiplication and to addition.				2				2		2	2				2		2

4			Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	2				2		2	2				2		2
4	1		Find and use the perimeters of plane figures.														
4	1	1	Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, exhibiting rectangles with the same perimeter and different areas, and exhibiting rectangles with the same area and different perimeters. Use the same units throughout the problem.	2				2		2	2				2		2
Total For Assessment Anchor D-M.4 Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.				4				4		4	4				4		4
Total For Reporting Category D-M				11	4	4		15	4	19	11	1	4		15	1	16

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-T: Numbers and Operations in Base Ten	1			Generalize place-value understanding for multi-digit whole numbers.	1				1		1	1				1		1
	1	1		Apply place-value and numeration concepts to compare, find equivalencies, and round.	1				1		1	1				1		1
	1	1	1	Demonstrate an understanding that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.	1		1		2		2	1		1		2		2
	1	1	2	Read and write whole numbers in expanded, standard, and word form through 1,000,000.			1		1		1			1		1		1
	1	1	3	Compare two multi-digit numbers through 1,000,000 based on meanings of the digits in each place, using >, =, and < symbols.	1				1		1	1				1		1
	1	1	4	Round multi-digit whole numbers to any place.	1				1		1	1				1		1
	Total For Assessment Anchor A-T.1 Generalize place-value understanding for multi-digit whole numbers.				5		2		7		7	5		2		7		7
	2			Use place-value understanding and properties of operations to perform multi-digit arithmetic.	1		1		2		2	1		1		2		2
	2	1		Use operations to solve problems.	1		1		2		2	1		1		2		2
	2	1	1	Add and subtract multi-digit whole numbers.	1				1		1	1				1		1
	2	1	2	Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two-digit numbers.	1		1		2		2	1		1		2		2
	2	1	3	Divide up to four-digit dividends by one-digit divisors with answers written as whole-number quotients and remainders.	1				1		1	1				1		1
	2	1	4	Estimate the answer to addition, subtraction, and multiplication problems using whole numbers through six digits.														
	Total For Assessment Anchor A-T.2 Use place-value understanding and properties of operations to perform multi-digit arithmetic.				5		3		8		8	5		3		8		8
Total For Reporting Category A-T					10		5		15		15	10		5		15		15

Grade 04

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-F: Numbers and Operations—Fractions	1			Extend understanding of fraction equivalence and ordering.														
	1	1		Find equivalencies and compare fractions.	1				1		1	1				1		1
	1	1	1	Recognize and generate equivalent fractions.	1				1		1	1				1		1
	1	1	2	Compare two fractions with different numerators and different denominators using the symbols >, =, or < and justify the conclusions.			1		1		1			1		1		1
	Total For Assessment Anchor A-F.1 Extend understanding of fraction equivalence and ordering.				2		1		3		3	2		1		3		3
	2			Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.														
	2	1		Solve problems involving fractions and whole numbers (straight computation or word problems).														
	2	1	1	Add and subtract fractions with a common denominator.														
	2	1	2	Decompose a fraction or a mixed number into a sum of fractions with the same denominator.	1		1		2		2	1		1		2		2
	2	1	3	Add and subtract mixed numbers with a common denominator.	1	4	1		2	4	6	1	1	1		2	1	3
	2	1	4	Solve word problems involving addition and subtraction of fractions referring to the same whole or set and having like denominators.														
	2	1	5	Multiply a whole number by a unit fraction.														
	2	1	6	Multiply a whole number by a non-unit fraction.	1				1		1	1				1		1
	2	1	7	Solve word problems involving multiplication of a whole number by a fraction.														
	Total For Assessment Anchor A-F.2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.				3	4	2		5	4	9	3	1	2		5	1	6

3			Understand decimal notation for fractions and compare decimal fractions.			1		1		1			1		1		1
3	1		Use operations to solve problems involving decimals, including converting between fractions and decimals.	1				1		1	1				1		1
3	1	1	Add two fractions with respective denominators 10 and 100.			1		1		1			1		1		1
3	1	2	Use decimal notation for fractions with denominators of 10 or 100.														
3	1	3	Compare two decimals to hundredths using the symbols >, =, or <, and justify the conclusions.	1				1		1	1				1		1
Total For Assessment Anchor A-F.3 Understand decimal notation for fractions and compare decimal fractions.				2		2		4		4	2		2		4		4
Total For Reporting Category A-F				7	4	5		12	4	16	7	1	5		12	1	13

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B-O: Operations and Algebraic Thinking	1			Use the four operations with whole numbers to solve problems.														
	1	1		Use numbers and symbols to model the concepts of expressions and equations.	1		1		2		2	1		1		2		2
	1	1	1	Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations.	1				1		1	1				1		1
	1	1	2	Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison.	1				1		1	1				1		1
	1	1	3	Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity.	1		1		2		2	1		1		2		2
	1	1	4	Identify the missing symbol that makes a number sentence true.	1				1		1	1				1		1
	Total For Assessment Anchor B-O.1 Use the four operations with whole numbers to solve problems.				5		2		7		7	5		2		7		7
	2			Gain familiarity with factors and multiples.		4				4	4		1				1	1
	2	1		Develop and apply number theory concepts to represent numbers in various ways.	1				1		1	1				1		1
	2	1	1	Find all factor pairs for a whole number in the interval 1 through 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the interval 1 through 100 is a multiple of a given one-digit number. Determine whether a given whole number in the interval 1 through 100 is prime or composite.														
	Total For Assessment Anchor B-O.2 Gain familiarity with factors and multiples.				1	4			1	4	5	1	1			1	1	2

	3			Generate and analyze patterns.														
	3	1		Recognize, describe, extend, create, and replicate a variety of patterns.	1		1		2		2	1		1		2		2
	3	1	1	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	1				1		1	1				1		1
	3	1	2	Determine the missing elements in a function table.			1		1		1			1		1		1
	3	1	3	Determine the rule for a function given a table.	1				1		1	1				1		1
	Total For Assessment Anchor B-O.3 Generate and analyze patterns.				3		2		5		5	3		2		5		5
Total For Reporting Category B-O					9	4	4		13	4	17	9	1	4		13	1	14

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Draw and identify lines and angles, and classify shapes by properties of their lines and angles.														
	1	1		List properties, classify, draw, and identify geometric figures in two dimensions.	1				1		1	1				1		1
	1	1	1	Draw points, lines, line segments, rays, angles, and perpendicular and parallel lines. Identify these in two-dimensional figures.	1	4	1		2	4	6	1	1	1		2	1	3
	1	1	2	Classify two-dimensional figures based on the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	1		1		2		2	1		1		2		2
	1	1	3	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into mirroring parts. Identify line-symmetric figures and draw lines of symmetry.	1				1		1	1				1		1
	Total For Assessment Anchor C-G.1 Draw and identify lines and angles, and classify shapes by properties of their lines and angles.				4	4	2		6	4	10	4	1	2		6	1	7
Total For Reporting Category C-G					4	4	2		6	4	10	4	1	2		6	1	7

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
surement and Data	1			Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.														
	1	1		Solve problems involving length, weight (mass), liquid volume, time, area, and perimeter.	1				1		1	1				1		1
	1	1	1	Know relative sizes of measurement units within one system of units including standard units, metric units, and time. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit.	1				1		1	1				1		1
	1	1	2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects; money, including problems involving simple fractions or decimals; and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	1		1		2		2	1		1		2		2
	1	1	3	Apply the area and perimeter formulas for rectangles in real-world and mathematical problems.														
	1	1	4	Identify time (analog or digital) as the amount of minutes before or after the hour.	1				1		1	1				1		1
	Total For Assessment Anchor D-M.1 Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.				4		1		5		5	4		1		5		5

D-M: Mea	2			Represent and interpret data.														
	2	1		Organize, display, and answer questions based on data.	1				1		1	1				1		1
	2	1	1	Make a line plot to display a data set of measurements in fractions of a unit.	1				1		1	1				1		1
	2	1	2	Solve problems involving addition and subtraction of fractions by using information presented in line plots.														
	2	1	3	Translate information from one type of display to another.														
	Total For Assessment Anchor D-M.2 Represent and interpret data.				2				2		2	2				2		2
	3			Geometric measurement: understand concepts of angle; measure and create angles.	1				1		1	1				1		1
	3	1		Use appropriate tools and units to sketch an angle and determine angle measurements.			1		1		1			1		1		1
	3	1	1	Measure angles in whole-number degrees using a protractor. With the aid of a protractor, sketch angles of a specified measure.	2				2		2	2				2		2
	3	1	2	Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems.	1				1		1	1				1		1
	Total For Assessment Anchor D-M.3 Geometric measurement: understand concepts of angle; measure and create angles.				4		1		5		5	4		1		5		5
Total For Reporting Category D-M					10		2		12		12	10		2		12		12

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-T: Numbers and Operations in Base Ten	1			Understand the place-value system.														
	1	1		Demonstrate understanding of place-value of whole numbers and decimals, and compare quantities or magnitudes of numbers.	1				1		1	1				1		1
	1	1	1	Demonstrate an understanding that in a multi-digit number, a digit in one place represents 1/10 of what it represents in the place to its left.	1		1		2		2	1		1		2		2
	1	1	2	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	1		1		2		2	1		1		2		2
	1	1	3	Read and write decimals to thousandths using base-ten numerals, word form, and expanded form.	1				1		1	1				1		1
	1	1	4	Compare two decimals to thousandths based on meanings of the digits in each place using >, =, and < symbols.	1				1		1	1				1		1
	1	1	5	Round decimals to any place.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor A-T.1 Understand the place-value system.				6		3		9		9	6		3		9		9
	2			Perform operations with multi-digit whole numbers and with decimals to hundredths.	1				1		1	1				1		1
	2	1		Use whole numbers and decimals to compute accurately.	2		1		3		3	2		1		3		3
	2	1	1	Multiply multi-digit whole numbers.	2		1		3		3	2		1		3		3
	2	1	2	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.			1		1		1			1		1		1
	2	1	3	Add, subtract, multiply, and divide decimals to hundredths.	1				1		1	1				1		1
	Total For Assessment Anchor A-T.2 Perform operations with multi-digit whole numbers and with decimals to hundredths.				6		3		9		9	6		3		9		9
Total For Reporting Category A-T					12		6		18		18	12		6		18		18

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-F: Numbers and Operations—Fractions	1			Use equivalent fractions as a strategy to add and subtract fractions.	2				2		2	2				2		2
	1	1		Solve addition and subtraction problems involving fractions.	1				1		1	1				1		1
	1	1	1	Add and subtract fractions with unlike denominators.	3		3		6		6	3		3		6		6
	Total For Assessment Anchor A-F.1 Use equivalent fractions as a strategy to add and subtract fractions.				6		3		9		9	6		3		9		9
	2			Apply and extend previous understandings of multiplication and division to multiply and divide fractions.														
	2	1		Solve multiplication and division problems involving fractions and whole numbers.	1	4			1	4	5	1	1			1	1	2
	2	1	1	Solve word problems involving division of whole numbers leading to answers in the form of fractions.	1		1		2		2	1		1		2		2
	2	1	2	Multiply a fraction by a fraction.														
	2	1	3	Demonstrate an understanding of multiplication as scaling.	1				1		1	1				1		1
	2	1	4	Divide unit fractions by whole numbers and whole numbers by unit fractions.	2		1		3		3	2		1		3		3
	Total For Assessment Anchor A-F.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.				5	4	2		7	4	11	5	1	2		7	1	8
Total For Reporting Category A-F					11	4	5		16	4	20	11	1	5		16	1	17

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B-O: Operations and Algebraic Thinking	1			Write and interpret numerical expressions.	1				1		1	1				1		1
	1	1		Analyze and complete calculations by applying the order of operations.														
	1	1	1	Use multiple grouping symbols in numerical expressions and evaluate expressions containing these symbols.	1		1		2		2	1		1		2		2
	1	1	2	Write simple expressions that model calculations with numbers and interpret numerical expressions without evaluating them.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor B-O.1 Write and interpret numerical expressions.				3		2		5		5	3		2		5		5
	2			Analyze patterns and relationships.														
	2	1		Create, extend, and analyze patterns.	1	4			1	4	5	1	1			1	1	2
	2	1	1	Generate two numerical patterns using two given rules.														
	2	1	2	Identify apparent relationships between corresponding terms of two patterns with the same starting numbers that follow different rules.														
	Total For Assessment Anchor B-O.2 Analyze patterns and relationships.				1	4			1	4	5	1	1			1	1	2
Total For Reporting Category B-O					4	4	2		6	4	10	4	1	2		6	1	7

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Graph points on the coordinate plane to solve real-world and mathematical problems.														
	1	1		Identify parts of a coordinate grid and describe or interpret points given an ordered pair.		4				4	4		1				1	1
	1	1	1	Identify parts of the coordinate plane and the ordered pair. Limit the coordinate plane to quadrant I.	1				1		1	1				1		1
	1	1	2	Represent real-world and mathematical problems by plotting points in quadrant I of the coordinate plane and interpret coordinate values of points in the context of the situation.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor C-G.1 Graph points on the coordinate plane to solve real-world and mathematical problems.				2	4	1		3	4	7	2	1	1		3	1	4
	2			Classify two-dimensional figures into categories based on their properties.	1				1		1	1				1		1
	2	1		Use basic properties to classify two-dimensional figures.			1		1		1			1		1		1
	2	1	1	Classify two-dimensional figures in a hierarchy based on properties.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor C-G.2 Classify two-dimensional figures into categories based on their properties.				2		2		4		4	2		2		4		4
Total For Reporting Category C-G					4	4	3		7	4	11	4	1	3		7	1	8

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D-M: Measurement and Data	1			Convert like measurement units within a given measurement system.														
	1	1		Solve problems using simple conversions.			1		1		1			1		1		1
	1	1	1	Convert between different-sized measurement units within a given measurement system.	2				2		2	2				2		2
	Total for Assessment Anchor D-M.1 Convert like measurement units within a given measurement system.				2		1		3		3	2		1		3		3
	2			Represent and interpret data.														
	2	1		Organize, display, and answer questions based on data.	1				1		1	1				1		1
	2	1	1	Solve problems involving computation of fractions by using information presented in line plots.	1				1		1	1				1		1
	2	1	2	Display and interpret data shown in tallies, tables, charts, pictographs, bar graphs, and line graphs, and use a title, appropriate scale, and labels. A grid will be provided to display data on bar graphs or line graphs.	2				2		2	2				2		2
	Total For Assessment Anchor D-M.2 Represent and interpret data.				4				4		4	4				4		4
	3			Geometric measurement: understand concepts of volume and relate volume to mutliplication and to addition.														
	3	1		Use, describe, and develop procedures to solve problems involving volume.	1				1		1	1				1		1
	3	1	1	Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems.	1		1		2		2	1		1		2		2
	3	1	2	Find volumes of solid figures composed of two non-overlapping right rectangular prisms.	1				1		1	1				1		1
	Total For Assessment Anchor D-M.3 Geometric measurement: understand concepts of volume and relate volume to mutliplication and to addition.				3		1		4		4	3		1		4		4
Total For Reporting Category D-M					9		2		11		11	9		2		11		11

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1			Apply and extend previous understandings of multiplication and division to divide fractions by fractions.														
	1	1		Solve real-world and mathematical problems involving division of fractions.														
	1	1	1	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions.	1	4	1		2	4	6	1	1	1		2	1	3
	Total For Assessment Anchor A-N.1 Apply and extend previous understandings of multiplication and division to divide fractions by fractions.				1	4	1		2	4	6	1	1	1		2	1	3
	2			Compute with multi-digit numbers and find common factors and multiples.														
	2	1		Compute with multi-digit numbers using the four arithmetic operations with or without a calculator.														
	2	1	1	Solve problems involving operations with whole numbers, decimals, straight computation, or word problems.	3				3		3	3				3		3
	2	2		Apply number theory concepts.														
	2	2	1	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12.														
	2	2	2	Apply the distributive property to express a sum of two whole numbers, 1 through 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.			1		1		1			1		1		1
tem	Total For Assessment Anchor A-N.2 Compute with multi-digit numbers and find common factors and multiples.				3		1		4		4	3		1		4		4

A-N: The Number Sys	3			Apply and extend previous understandings of numbers to the system of rational numbers.															
	3	1		Understand that positive and negative numbers are used together to describe quantities having opposite directions or values and locations on the number line and coordinate plane.															
	3	1	1	Represent quantities in real-world contexts using positive and negative numbers, explaining the meaning of 0 in each situation.															
	3	1	2	Determine the opposite of a number and recognize that the opposite of the opposite of a number is the number itself.	1				1		1	1				1		1	
	3	1	3	Locate and plot integers and other rational numbers on a horizontal or vertical number line; locate and plot pairs of integers and other rational numbers on a coordinate plane.			1		1		1			1		1		1	
	3	2		Understand ordering and absolute value of rational numbers.															
	3	2	1	Write, interpret, and explain statements of order for rational numbers in real-world contexts.															
	3	2	2	Interpret the absolute value of a rational number as its distance from 0 on the number line and as a magnitude for a positive or negative quantity in a real-world situation.	1		1		2		2	1		1		2		2	
	3	2	3	Solve real-world and mathematical problems by plotting points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.															
	Total For Assessment Anchor A-N.3 Apply and extend previous understandings of numbers to the system of rational numbers.				2		2		4		4	2		2		4		4	
Total For Reporting Category A-N					6	4	4		10	4	14	6	1	4		10	1	11	

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-R: Ratios and Proportional Relationships	1			Understand ratio concepts and use ratio reasoning to solve problems.														
	1	1		Represent and/or solve real-world and mathematical problems using rates, ratios, and/or percents.	2		1		3		3	2		1		3		3
	1	1	1	Use ratio language and notation to describe a ratio relationship between two quantities.	2				2		2	2				2		2
	1	1	2	Find the unit rate a/b associated with a ratio a:b and use rate language in the context of a ratio relationship.	2		1		3		3	2		1		3		3
	1	1	3	Construct tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and/or plot the pairs of values on the coordinate plane. Use tables to compare ratios.	2				2		2	2				2		2
	1	1	4	Solve unit rate problems including those involving unit pricing and constant speed.	1		1		2		2	1		1		2		2
	1	1	5	Find a percent of a quantity as a rate per 100; solve problems involving finding the whole, given a part and the percentage.	1				1		1	1				1		1
	Total For Assessment Anchor A-R.1 Understand ratio concepts and use ratio reasoning to solve problems.				10		3		13		13	10		3		13		13
Total For Reporting Category A-R					10		3		13		13	10		3		13		13

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B-E: Expressions and Equations	1			Apply and extend previous understandings of arithmetic to numerical and algebraic expressions.														
	1	1		Identify, write, and evaluate numerical and algebraic expressions.	1		1		2		2	1		1		2		2
	1	1	1	Write and evaluate numerical expressions involving whole-number exponents.	1				1		1	1				1		1
	1	1	2	Write algebraic expressions from verbal descriptions.	1				1		1	1				1		1
	1	1	3	Identify parts of an expression using mathematical terms.	1				1		1	1				1		1
	1	1	4	Evaluate expressions at specific values of their variables, including expressions that arise from formulas used in real-world problems.	1				1		1	1				1		1
	1	1	5	Apply the properties of operations to generate equivalent expressions.														
	Total For Assessment Anchor B-E.1 Apply and extend previous understandings of arithmetic to numerical and algebraic expressions.				5		1		6		6	5		1		6		6
	2			Interpret and solve one-variable equations and inequalities.	1				1		1	1				1		1
	2	1		Create, solve, and interpret one-variable equations or inequalities in real-world and mathematical problems.	1	4	1		2	4	6	1	1	1		2	1	3
	2	1	1	Use substitution to determine whether a given number in a specified set makes an equation or inequality true.			1		1		1			1		1		1
	2	1	2	Write algebraic expressions to represent real-world or mathematical problems.														
	2	1	3	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q, and x are all non-negative rational numbers.	1				1		1	1				1		1
	2	1	4	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem and/or represent solutions of such inequalities on number lines.	1				1		1	1				1		1
	Total For Assessment Anchor B-E.2 Interpret and solve one-variable equations and inequalities.				4	4	2		6	4	10	4	1	2		6	1	7

	3			Represent and analyze quantitative relationships between dependent and independent variables.	1		1		2		2	1		1		2		2
	3	1		Use variables to represent two quantities in a real-world problem that change in relationship to one another.	1				1		1	1				1		1
	3	1	1	Write an equation to express the relationship between the dependent and independent variables.														
	3	1	2	Analyze the relationship between the dependent and independent variables using graphs and tables and/or relate these to an equation.			1		1		1			1		1		1
	Total For Assessment Anchor B-E.3 Represent and analyze quantitative relationships between dependent and independent variables.				2		2		4		4	2		2		4		4
Total For Reporting Category B-E					11	4	5		16	4	20	11	1	5		16	1	17

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Solve real-world and mathematical problems involving area, surface area, and volume.														
	1	1		Find area, surface area, and volume by applying formulas and using various strategies.	1				1		1	1				1		1
	1	1	1	Determine the area of triangles and special quadrilaterals.	1				1		1	1				1		1
	1	1	2	Determine the area of irregular or compound polygons.	1	4			1	4	5	1	1			1	1	2
	1	1	3	Determine the volume of right rectangular prisms with fractional edge lengths.			1		1		1			1		1		1
	1	1	4	Given coordinates for the vertices of a polygon in the plane, use the coordinates to find side lengths and area of the polygon.			1		1		1			1		1		1
	1	1	5	Represent three-dimensional figures using nets made of rectangles and triangles.	1				1		1	1				1		1
	1	1	6	Determine the surface area of triangular and rectangular prisms.														
	Total For Assessment Anchor C-G.1 Solve real-world and mathematical problems involving area, surface area, and volume.				4	4	2		6	4	10	4	1	2		6	1	7
Total For Reporting Category C-G					4	4	2		6	4	10	4	1	2		6	1	7

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D-S: Statistics and Probability	1			Demonstrate understanding of statistical variability by summarizing and describing distributions.	2				2		2	2				2		2
	1	1		Display, analyze, and summarize numerical data sets in relation to their context.	1		1		2		2	1		1		2		2
	1	1	1	Display numerical data in plots on a number line, including line plots, histograms, and box-and-whisker plots.	2		1		3		3	2		1		3		3
	1	1	2	Determine quantitative measures of center and variability.	2		1		3		3	2		1		3		3
	1	1	3	Describe any overall pattern and any deviations from the overall pattern with reference to the context in which the data were gathered.	1		1		2		2	1		1		2		2
	1	1	4	Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	1				1		1	1				1		1
	Total For Assessment Anchor D-S.1 Demonstrate understanding of statistical variability by summarizing and describing distributions.				9		4		13		13	9		4		13		13
Total For Reporting Category D-S					9		4		13		13	9		4		13		13

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-N: The Number System	1			Apply and extend previous understandings of operations to add, subtract, multiply, and divide rational numbers.	1	4			1	4	5	1	1			1	1	2
	1	1		Solve real-world and mathematical problems involving the four operations with rational numbers.														
	1	1	1	Apply properties of operations to add and subtract rational numbers, including real-world contexts.	2		1		3		3	2		1		3		3
	1	1	2	Represent addition and subtraction on a horizontal or vertical number line.			1		1		1			1		1		1
	1	1	3	Apply properties of operations to multiply and divide rational numbers, including real-world contexts; demonstrate that the decimal form of a rational number terminates or eventually repeats.	2				2		2	2				2		2
	Total For Assessment Anchor A-N.1 Apply and extend previous understandings of operations to add, subtract, multiply, and divide rational numbers.				5	4	2		7	4	11	5	1	2		7	1	8
Total For Reporting Category A-N					5	4	2		7	4	11	5	1	2		7	1	8

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-R: Ratios and Proportional Relationships	1			Demonstrate an understanding of proportional relationships.														
	1	1		Analyze, recognize, and represent proportional relationships and use them to solve real-world and mathematical problems.	1				1		1	1				1		1
	1	1	1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.	2		1		3		3	2		1		3		3
	1	1	2	Determine whether two quantities are proportionally related.	1		1		2		2	1		1		2		2
	1	1	3	Identify the constant of proportionality in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	2				2		2	2				2		2
	1	1	4	Represent proportional relationships by equations.	2		1		3		3	2		1		3		3
	1	1	5	Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r), where r is the unit rate.	2		1		3		3	2		1		3		3
	1	1	6	Use proportional relationships to solve multi-step ratio and percent problems.	2		1		3		3	2		1		3		3
	Total For Assessment Anchor A-R.1 Demonstrate an understanding of proportional relationships.				12		5		17		17	12		5		17		17
Total For Reporting Category A-R					12		5		17		17	12		5		17		17

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B-E: Expressions and Equations	1			Represent expressions in equivalent forms.														
	1	1		Use properties of operations to generate equivalent expressions.	2		1		3		3	2		1		3		3
	1	1	1	Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients.	2		1		3		3	2		1		3		3
	Total For Assessment Anchor B-E.1 Represent expressions in equivalent forms.				4		2		6		6	4		2		6		6
	2			Solve real-world and mathematical problems using numerical and algebraic expressions, equations, and inequalities.			1		1		1			1		1		1
	2	1		Solve multi-step real-world and mathematical problems posed with positive and negative rational numbers.														
	2	1	1	Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate.	1	4			1	4	5	1	1			1	1	2
	2	2		Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems.	1		1		2		2	1		1		2		2
	2	2	1	Solve word problems leading to equations of the form $px + q = r$ and $p(x+q) = r$, where p, q, and r are specific rational numbers.			1		1		1			1		1		1
	2	2	2	Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers, and graph the solution set of the inequality.	1				1		1	1				1		1
	2	3		Determine the reasonableness of the answer(s) in problem-solving situations.														
	2	3	1	Determine the reasonableness of answer(s) or interpret the solution(s) in the context of the problem.	2				2		2	2				2		2
	Total For Assessment Anchor B-E.2 Solve real-world and mathematical problems using numerical and algebraic expressions, equations, and inequalities.				5	4	3		8	4	12	5	1	3		8	1	9
Total For Reporting Category B-E					9	4	5		14	4	18	9	1	5		14	1	15

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Demonstrate an understanding of geometric figures and their properties.														
	1	1		Demonstrate and apply properties of geometric figures.	1				1		1	1				1		1
	1	1	1	Solve problems involving scale drawings of geometric figures, including finding length and area.	1				1		1	1				1		1
	1	1	2	Identify or describe the properties of all types of triangles based on angle and side measures.			1		1		1			1		1		1
	1	1	3	Use and apply the triangle inequality theorem.			1		1		1			1		1		1
	1	1	4	Describe the two-dimensional figures that result from slicing three-dimensional figures.	2				2		2	2				2		2
	Total For Assessment Anchor C-G.1 Demonstrate an understanding of geometric figures and their properties.				4		2		6		6	4		2		6		6
	2			Solve real-world and mathematical problems involving angle measure, circumference, area, surface area, and volume.	1				1		1	1				1		1
	2	1		Identify, use, and describe properties of angles and their measures.	1				1		1	1				1		1
	2	1	1	Identify and use properties of supplementary, complementary, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.			1		1		1			1		1		1
	2	1	2	Identify and use properties of angles formed when two parallel lines are cut by a transversal.	1				1		1	1				1		1
	2	2		Determine circumference, area, surface area, and volume.	1				1		1	1				1		1
	2	2	1	Find the area and circumference of a circle. Solve problems involving area and circumference of a circle(s).			1		1		1			1		1		1
	2	2	2	Solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	1				1		1	1				1		1
	Total For Assessment Anchor C-G.2 Solve real-world and mathematical problems involving angle measure, circumference, area, surface area, and volume.				5		2		7		7	5		2		7		7
Total For Reporting Category C-G					9		4		13		13	9		4		13		13

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D-S: Statistics and Probability	1			Use random sampling to draw inferences about a population.														
	1	1		Use random samples.														
	1	1	1	Determine whether a sample is a random given a real-world situation.		4				4	4		1				1	1
	1	1	2	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor D-S.1 Use random sampling to draw inferences about a population.				1	4	1		2	4	6	1	1	1		2	1	3
	2			Draw comparative inferences about populations.	1				1		1	1				1		1
	2	1		Use statistical measures to compare two numerical data distributions.														
	2	1	1	Compare two numerical data distributions using measures of center and variability.														
	Total For Assessment Anchor D-S.2 Draw comparative inferences about populations.				1				1		1	1				1		1
	3			Investigate chance processes and develop, use, and evaluate probability models.														
	3	1		Predict or determine the likelihood of outcomes.														
	3	1	1	Predict or determine whether some outcomes are certain, more likely, less likely, equally likely, or impossible.														
	3	2		Use probability to predict outcomes.	1				1		1	1				1		1
	3	2	1	Determine the probability of a chance event given relative frequency. Predict the approximate relative frequency given the probability.			1		1		1			1		1		1
	3	2	2	Find the probability of a simple event, including the probability of a simple event not occurring.	1				1		1	1				1		1
	3	2	3	Find probabilities of independent compound events using organized lists, tables, tree diagrams, and simulation.	1				1		1	1				1		1
	Total For Assessment Anchor D-S.3 Investigate chance processes and develop, use, and evaluate probability models.				3		1		4		4	3		1		4		4
Total For Reporting Category D-S					5	4	2		7	4	11	5	1	2		7	1	8

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-N: The Number System	1			Demonstrate an understanding of rational and irrational numbers.														
	1	1		Apply concepts of rational and irrational numbers.	2				2		2	2				2		2
	1	1	1	Determine whether a number is rational or irrational. For rational numbers, show that the decimal expansion terminates or repeats.	1		1		2		2	1		1		2		2
	1	1	2	Convert a terminating or repeating decimal to a rational number.	1		1		2		2	1		1		2		2
	1	1	3	Estimate the value of irrational numbers without a calculator.	1				1		1	1				1		1
	1	1	4	Use rational approximations of irrational numbers to compare and order irrational numbers.	2		1		3		3	2		1		3		3
	1	1	5	Locate/identify rational and irrational numbers at their approximate locations on a number line.	1				1		1	1				1		1
	Total For Assessment Anchor A-N.1 Demonstrate an understanding of rational and irrational numbers.				8		3		11		11	8		3		11		11
Total For Reporting Category A-N					8		3		11		11	8		3		11		11

Grade 08					Mathematics													
Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1			Demonstrate an understanding of expressions and equations with radicals and integer exponents.														
	1	1		Represent and use expressions and equations to solve problems involving radicals and integer exponents.	1	4	1		2	4	6	1	1	1		2	1	3
	1	1	1	Apply one or more properties of integer exponents to generate equivalent numerical expressions without a calculator.	1				1		1	1				1		1
	1	1	2	Use square root and cube root symbols to represent solutions to equations of the form x^2 = p and x^3 = p, where p is a positive rational number. Evaluate square roots of perfect squares and cube roots of perfect cubes without a calculator.	1		1		2		2	1		1		2		2
	1	1	3	Estimate very large or very small quantities by using numbers expressed in the form of a single digit times an integer power of 10 and express how many times larger or smaller one number is than another.	1				1		1	1				1		1
	1	1	4	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Express answers in scientific notation and choose units of appropriate size for measurements of very large or very small quantities. Interpret scientific notation that has been generated by technology.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor B-E.1 Demonstrate an understanding of expressions and equations with radicals and integer exponents.				5	4	3		8	4	12	5	1	3		8	1	9

B-E: Expressions and Equations	2			Understand the connections between proportional relationships, lines, and linear equations.														
	2	1		Analyze and describe linear relationships between two variables, using slope.														
	2	1	1	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	1		1		2		2	1		1		2		2
	2	1	2	Use similar right triangles to show and explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane.	1				1		1	1				1		1
	2	1	3	Derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.			1		1		1			1		1		1
	Total For Assessment Anchor B-E.2 Understand the connections between proportional relationships, lines, and linear equations.				2		2		4		4	2		2		4		4

3			Analyze and solve linear equations and pairs of simultaneous linear equations.	1				1		1	1				1		1
3	1		Write, solve, graph, and interpret linear equations in one or two variables, using various methods.	1				1		1	1				1		1
3	1	1	Write and identify linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms until an equivalent equation of the form x = a, a = a, or a = b results.	1				1		1	1				1		1
3	1	2	Solve linear equations that have rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.														
3	1	3	Interpret solutions to a system of two linear equations in two variables as points of intersection of their graphs because points of intersection satisfy both equations simultaneously.	1				1		1	1				1		1
3	1	4	Solve systems of two linear equations in two variables algebraically and estimate solutions by graphing the equations. Solve simple cases by inspection.	1				1		1	1				1		1
3	1	5	Solve real-world and mathematical problems leading to two linear equations in two variables.	1		1		2		2	1		1		2		2
Total For Assessment Anchor B-E.3 Analyze and solve linear equations and pairs of simultaneous linear equations.				6		1		7		7	6		1		7		7
Total For Reporting Category B-E				13	4	6		19	4	23	13	1	6		19	1	20

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B-F: Functions	1			Analyze and interpret functions.														
	1	1		Define, evaluate, and compare functions displayed algebraically, graphically, or numerically in tables or by verbal descriptions.	1				1		1	1				1		1
	1	1	1	Determine whether a relation is a function.	1				1		1	1				1		1
	1	1	2	Compare properties of two functions, each represented in a different way.	1		1		2		2	1		1		2		2
	1	1	3	Interpret the equation y = mx + b as defining a linear function whose graph is a straight line; give examples of functions that are not linear.	1				1		1	1				1		1
	Total For Assessment Anchor B-F.1 Analyze and interpret functions.				4		1		5		5	4		1		5		5
	2			Use functions to model relationships between quantities.														
	2	1		Represent or interpret functional relationships between quantities using tables, graphs, and descriptions.	1	4			1	4	5	1	1			1	1	2
	2	1	1	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models and in terms of its graph or a table of values.			1		1		1			1		1		1
	2	1	2	Describe qualitatively the functional relationship between two quantities by analyzing a graph. Sketch or determine a graph that exhibits the qualitative features of a function that has been described verbally.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor B-F.2 Use functions to model relationships between quantities.				2	4	2		4	4	8	2	1	2		4	1	5
Total For Reporting Category B-F					6	4	3		9	4	13	6	1	3		9	1	10

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Demonstrate an understanding of geometric transformations.														
	1	1		Apply properties of geometric transformations to verify congruence or similarity.	1				1		1	1				1		1
	1	1	1	Identify and apply properties of rotations, reflections, and translations.	1				1		1	1				1		1
	1	1	2	Given two congruent figures, describe a sequence of transformations that exhibits the congruence between them.	1		1		2		2	1		1		2		2
	1	1	3	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.			1		1		1			1		1		1
	1	1	4	Given two similar two-dimensional figures, describe a sequence of transformations that exhibits the similarity between them.														
	Total For Assessment Anchor C-G.1 Demonstrate an understanding of geometric transformations.				3		2		5		5	3		2		5		5
	2			Understand and apply the Pythagorean theorem.														
	2	1		Solve problems involving right triangles by applying the Pythagorean theorem.														
	2	1	1	Apply the converse of the Pythagorean theorem to show a triangle is a right triangle.	1				1		1	1				1		1
	2	1	2	Apply the Pythagorean theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	2		1		3		3	2		1		3		3
	2	1	3	Apply the Pythagorean theorem to find the distance between two points in a coordinate system.														
	Total For Assessment Anchor C-G.2 Understand and apply the Pythagorean theorem.				3		1		4		4	3		1		4		4

	3			Solve real-world and mathematical problems involving volume.														
	3	1		Apply volume formulas of cones, cylinders, and spheres.														
	3	1	1	Apply formulas for the volumes of cones, cylinders, and spheres to solve real-world and mathematical problems.		4				4	4		1				1	1
	Total For Assessment Anchor C-G.3 Solve real-world and mathematical problems involving volume.					4				4	4		1				1	1
Total For Reporting Category C-G					6	4	3		9	4	13	6	1	3		9	1	10

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D-S: Statistics and Probability	1			Investigate patterns of association in bivariate data.	2				2		2	2				2		2
	1	1		Analyze and interpret bivariate data displayed in multiple representations.	1				1		1	1				1		1
	1	1	1	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative correlation, linear association, and nonlinear association.	1		1		2		2	1		1		2		2
	1	1	2	For scatter plots that suggest a linear association, identify a line of best fit by judging the closeness of the data points to the line.			1		1		1			1		1		1
	1	1	3	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpeting the slope and intercept.			1		1		1			1		1		1
	1	2		Understand that patterns of association can be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table.	1				1		1	1				1		1
	1	2	1	Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible associations between the two variables.	2				2		2	2				2		2
	Total For Assessment Anchor D-S.1 Investigate patterns of association in bivariate data.				7		3		10		10	7		3		10		10
Total For Reporting Category D-S					7		3		10		10	7		3		10		10

Grade 03 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
A: Literature Text	A-K	1	1	1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	2	2		8			10	2		12	2	1		8			10	1		11
		1	1	2	Recount poems, dramas, or stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.	1		3	4			5		3	8	1		1	4			5		1	6
		1	1	3	Describe characters in a story and explain how their actions contribute to the sequence of events.	2	3		4			6	3		9	2	1		4			6	1		7
		Total For Assessment Anchor A-K.1 Key Ideas and Details				5	5	3	16			21	5	3	29	5	2	1	16			21	2	1	24
	A-C	2	1	1	Explain the point of view from which a story is narrated, including the difference between first- and third-person narrations.	2			4			6			6	2			4			6			6
		Total For Assessment Anchor A-C.2 Craft and Structure				2			4			6			6	2			4			6			6
	A-C	3	1	1	Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters.																				
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas																							
	A-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.	2			4			6			6	2			4			6			6
		4	1	2	Demonstrate understanding of word relationships and nuances in word meanings.	1						1			1	1						1			1
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				3			4			7			7	3			4			7			7
Total For Reporting Category A						10	5	3	24			34	5	3	42	10	2	1	24			34	2	1	37

Grade 03 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
B: Informational Text	B-K	1	1	1	Answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	2						2			2	2						2			2
		1	1	2	Determine the main idea of a text; recount the key details and explain how they support the main idea.		3		5			5	3		8		1		5			5	1		6
		1	1	3	Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.	1			5			6			6	1			5			6			6
		Total For Assessment Anchor B-K.1 Key Ideas and Details				3	3		10			13	3		16	3	1		10			13	1		14
	B-C	2	1	1	Explain the point of view from which a text is written.	1			5			6			6	1			5			6			6
		2	1	2	Use text features and search tools to efficiently locate information relevant to a given topic.	2	2		5			7	2		9	2	1		5			7	1		8
		Total For Assessment Anchor B-C.2 Craft and Structure				3	2		10			13	2		15	3	1		10			13	1		14
	B-C	3	1	1	Describe the logical connection between particular sentences and paragraphs to support specific points in a text.				5			5			5				5			5			5
		3	1	2	Compare and contrast the most important points and key details presented in two texts on the same topic.	1		3				1		3	4	1		1				1		1	2
		3	1	3	Use information gained from illustrations, maps, photographs, and the words in a text to demonstrate understanding of the text.	1						1			1	1						1			1
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				2		3	5			7		3	10	2		1	5			7		1	8
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.	1						1			1	1						1			1
		4	1	2	Demonstrate understanding of word relationships and nuances in word meanings.	1			5			6			6	1			5			6			6
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				2			5			7			7	2			5			7			7
Total For Reporting Category B						10	5	3	30			40	5	3	48	10	2	1	30			40	2	1	43

Grade 03 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	C	1	1		Write opinion pieces on topics or texts, supporting a point of view with reasons.																				
		1	2		Write informative/explanatory texts to examine a topic and convey ideas and information clearly.																				
		1	3		Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 03 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
D: Language	D	1	1	1	Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.	1			2			3			3	1			2			3			3
		1	1	2	Form and use regular and irregular plural nouns.																				
		1	1	3	Use abstract nouns.				1			1			1				1			1			1
		1	1	4	Form and use regular and irregular verbs.	1						1			1	1						1			1
		1	1	5	Form and use the simple verb tenses.	1			1			2			2	1			1			2			2
		1	1	6	Ensure subject-verb and prounoun-antecedent agreement.																				
		1	1	7	Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.				1			1			1				1			1			1
		1	1	8	Use coordinating and subordinating conjunctions.	1						1			1	1						1			1
		1	1	9	Produce simple, compound, and complex sentences.																				
		1	2	1	Capitalize appropriate words in titles.	1			1			2			2	1			1			2			2
		1	2	2	Use commas in addresses.				1			1			1				1			1			1
		1	2	3	Use commas and quotation marks in dialogue.	1			1			2			2	1			1			2			2
		1	2	4	Form and use possessives.	1			1			2			2	1			1			2			2
		1	2	5	Use conventional spelling for high-frequency and other studied words and for adding suffixes to base words.																				
		1	2	6	Use spelling patterns and generalizations in writing words.	1						1			1	1						1			1
		Total For Assessment Anchor D.1 Conventions of Standard English				8			9			17			17	8			9			17			17
		2	1	1	Choose words and phrases for effect.	1						1			1	1						1			1
		Total For Assessment Anchor D.2 Knowledge of Language				1						1			1	1						1			1
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 04 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
A: Literature Text	A-K	1	1	1	Refer to details and examples in a text when explaining what the text explicitly says and when drawing inferences from the text.	4			8			12			12	4			8			12			12
		1	1	2	Determine a theme of a story, drama, or poem from details in the text; summarize the text.	1			4			5			5	1			4			5			5
		1	1	3	Describe in depth a character, setting, or event in a story, drama, or poem, drawing on specific details in the text.	2	5		4			6	5		11	2	2		4			6	2		8
		Total For Assessment Anchor A-K.1 Key Ideas and Details				7	5		16			23	5		28	7	2		16			23	2		25
	A-C	2	1	1	Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.	1						1			1	1						1			1
		Total For Assessment Anchor A-C.2 Craft and Structure				1						1			1	1						1			1
		3	1	1	Compare and contrast the treatment of similar themes and topics and patterns of events in stories, myths, and traditional literature from different cultures.		3						3		3		1						1		1
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas					3						3		3		1						1		1
	A-V	4	1	1	Determine or clarify the meaning of unknown multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.	1			4			5			5	1			4			5			5
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	1			4			5			5	1			4			5			5
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				2			8			10			10	2			8			10			10
Total For Reporting Category A						10	8		24			34	8		42	10	3		24			34	3		37

Grade 04 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
B: Informational Text	B-K	1	1	1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	1	2		5			6	2		8	1	1		5			6	1		7
		1	1	2	Determine the main idea of a text and explain how it is supported by key details; summarize the text.	1	3		5			6	3		9	1	1		5			6	1		7
		1	1	3	Explain events, procedures, ideas, steps, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.	2			5			7			7	2			5			7			7
		Total For Assessment Anchor B-K.1 Key Ideas and Details				4	5		15			19	5		24	4	2		15			19	2		21
	B-C	2	1	1	Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.																				
		2	1	2	Describe the overall structure of events, ideas, concepts, or information and text features in a text or part of a text.	3			5			8			8	3			5			8			8
		Total For Assessment Anchor B-C.2 Craft and Structure				3			5			8			8	3			5			8			8
	B-C	3	1	1	Explain how an author uses reasons and evidence to support particular points in a text.	1	2					1	2		3	1	1					1	1		2
		3	1	2	Integrate information from two texts on the same topic in order to demonstrate subject knowledge.																				
		3	1	3	Interpret text features and/or make connections between text and the content of text features.	2			5			7			7	2			5			7			7
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				3	2		5			8	2		10	3	1		5			8	1		9
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.	1						1			1	1						1			1
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	2			5			7			7	2			5			7			7
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				3			5			8			8	3			5			8			8
Total For Reporting Category B						13	7		30			43	7		50	13	3		30			43	3		46

Grade 04 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	C	1	1		Write opinion pieces on topics or texts, supporting a point of view with reasons and information.																				
		1	2		Write informative/explanatory texts to examine a topic and convey ideas and information clearly.																				
		1	3		Write narratives to develop real or imagined experiences or events using effective techniques, descriptive details, and clear event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 04 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
D: Language	D	1	1	1	Use relative pronouns and relative adverbs.	1			1			2			2	1			1			2			2
		1	1	2	Form and use the progressive verb tenses.	1						1			1	1						1			1
		1	1	3	Use modal auxiliaries to convey various conditions.	1						1			1	1						1			1
		1	1	4	Order adjectives within sentences according to conventional patterns.				1			1			1				1			1			1
		1	1	5	Form and use prepositional phrases.	1						1			1	1						1			1
		1	1	6	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.	1			1			2			2	1			1			2			2
		1	1	7	Correctly use frequently confused words.	1						1			1	1						1			1
		1	1	8	Ensure subject-verb and pronoun-antecedent agreement.	1						1			1	1						1			1
		1	2	1	Use correct capitalization.				1			1			1				1			1			1
		1	2	2	Use commas and quotation marks to mark direct speech and quotations from a text.				1			1			1				1			1			1
		1	2	3	Use a comma before a coordinating conjunction in a compound sentence.	1			1			2			2	1			1			2			2
		1	2	4	Spell grade-appropriate words correctly.																				
		Total For Assessment Anchor D.1 Conventions of Standard English				8			6			14			14	8			6			14			14
	D	2	1	1	Choose words and phrases to convey ideas precisely.				1			1			1				1			1			1
		2	1	2	Choose punctuation for effect.	1			1			2			2	1			1			2			2
		2	1	3	Choose words and phrases for effect.				1			1			1				1			1			1
		Total For Assessment Anchor D.2 Knowledge of Language				1			3			4			4	1			3			4			4
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 04 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
E: Text-Dependent Analysis	E	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			4						4	4			1						1	1
		Total For Assessment Anchor E.1 Evidence-based Analysis of Text						4						4	4			1						1	1
Total For Reporting Category E								4						4	4			1						1	1

Grade 05 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
A: Literature Text	A-K	1	1	1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences and/or making generalizations from the text.	1	3		5			6	3		9	1	1		5			6	1		7
		1	1	2	Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.	4			5			9			9	4			5			9			9
		1	1	3	Compare and contrast two or more characters, settings, or events in a story, drama, or poem, drawing on specific details in the text.	3	3		10			13	3		16	3	1		10			13	1		14
		Total For Assessment Anchor A-K.1 Key Ideas and Details				8	6		20			28	6		34	8	2		20			28	2		30
	A-C	2	1	1	Describe how a narrator's or speaker's point of view influences how events are described; describe an author's purpose and explain how it is conveyed in the text.	1	2		5			6	2		8	1	1		5			6	1		7
		Total For Assessment Anchor A-C.2 Craft and Structure				1	2		5			6	2		8	1	1		5			6	1		7
	A-C	3	1	1	Compare and contrast stories in the same genre on their approaches to similar themes and topics.																				
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas																							
	A-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.	1						1			1	1						1			1
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	1			5			6			6	1			5			6			6
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				2			5			7			7	2			5			7			7
Total For Reporting Category A						11	8		30			41	8		49	11	3		30			41	3		44

Grade 05 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
B: Informational Text	B-K	1	1	1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences and/or making generalizations from the text.	2	2		4			6	2		8	2	1		4			6	1		7
		1	1	2	Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.		5		4			4	5		9		2		4			4	2		6
		1	1	3	Explain the relationships or interactions between two or more individuals, events, ideas, steps, or concepts in a historical, scientific, or technical text based on specific information in the text.	2			8			10			10	2			8			10			10
		Total For Assessment Anchor B-K.1 Key Ideas and Details				4	7		16			20	7		27	4	3		16			20	3		23
	B-C	2	1	1	Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.																				
		2	1	2	Compare and contrast the overall structure of events, ideas, concepts, or information and text features in two or more texts.																				
		Total For Assessment Anchor B-C.2 Craft and Structure																							
	B-C	3	1	1	Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).	1			4			5			5	1			4			5			5
		3	1	2	Integrate information from several texts on the same topic in order to demonstrate subject knowledge.																				
		3	1	3	Interpret text features and/or make connections between text and the content of text features.	2			4			6			6	2			4			6			6
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				3			8			11			11	3			8			11			11
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.	2						2			2	2						2			2
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	3						3			3	3						3			3
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				5						5			5	5						5			5
Total For Reporting Category B						12	7		24			36	7		43	12	3		24			36	3		39

Grade 05 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	C	1	1		Write opinion pieces on topics or texts, supporting a point of view with reasons and information.																				
		1	2		Write informative/explanatory texts to examine a topic and convey ideas and information clearly.																				
		1	3		Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 05 **English Language Arts**

Reporting Category		Assessment	Descriptor (Sub-	Eligible Content	Focus	Points										Items									
						Student (Core			Equating Block (EB)			Total Points (Core &				Number of Items Core			EB			Total Number (Core &			
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
D: Language	D	1	1	1	Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences.	1			1			2			2	1			1			2			2
		1	1	2	Form and use the perfect verb tenses.				1			1			1				1			1			1
		1	1	3	Use verb tense to convey various times, sequences, states, and conditions.	1						1			1	1						1			1
		1	1	4	Recognize and correct inappropriate shifts in verb tense.	1			1			2			2	1			1			2			2
		1	1	5	Use correlative conjunctions.				1			1			1				1			1			1
		1	1	6	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.				1			1			1				1			1			1
		1	1	7	Correctly use frequently confused words.				1			1			1				1			1			1
		1	1	8	Ensure subject-verb and pronoun-antecedent agreement.																				
		1	2	1	Use punctuation to separate items in a series.				1			1			1				1			1			1
		1	2	2	Use a comma to separate an introductory element from the rest of the sentence.	1						1			1	1						1			1
		1	2	3	Use a comma to set off the words yes and no, to set off a tag question from the rest of the sentence, and to indicate direct address.	1						1			1	1						1			1
		1	2	4	Use underlining, quotation marks, or italics to indicate titles of works.	1			1			2			2	1			1			2			2
		1	2	5	Spell grade-appropriate words correctly.																				
		Total For Assessment Anchor D.1 Conventions of Standard English				6			8			14			14	6			8			14			14
		2	1	1	Expand, combine, and reduce sentences for meaning, reader/listener interest, and style.	1			1			2			2	1			1			2			2
		2	1	2	Choose words and phrases to convey ideas precisely.	1						1			1	1						1			1
		2	1	3	Choose punctuation for effect.	1						1			1	1						1			1
		2	1	4	Choose words and phrases for effect.																				
		Total For Assessment Anchor D.2 Knowledge of Language				3			1			4			4	3			1			4			4
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 05 **English Language Arts**

Reporting Category		Assessment	Descriptor (Sub-	Eligible Content	Focus	Points										Items									
						Student (Core			Equating Block (EB)			Total Points (Core &				Number of Items Core			EB			Total Number (Core &			
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
E: Text-Dependent Analysis	E	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			4						4	4			1						1	1
		Total For Assessment Anchor E.1 Evidence-based Analysis of Text						4						4	4			1						1	1
Total For Reporting Category E								4						4	4			1						1	1

Grade 06 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
A: Literature Text	A-K	1	1	1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences and/or generalizations drawn from the text.	1			4			5			5	1			4			5			5
		1	1	2	Determine a theme or central idea of a text and how it is conveyed through relevant details; provide a summary of the text distinct from personal opinions or judgments.		5		4			4	5		9		2		4			4	2		6
		1	1	3	Describe how the plot of a particular story, drama, or poem unfolds; as well as how the characters respond or change as the plot moves toward a resolution.	1	3		4			5	3		8	1	1		4			5	1		6
		Total For Assessment Anchor A-K.1 Key Ideas and Details				2	8		12			14	8		22	2	3		12			14	3		17
	A-C	2	1	1	Determine an author's purpose in a text and explain how it is conveyed in the text; explain how an author develops the point of view of the narrator or speaker in a text; describe the effectiveness of the point of view used by the author.	2						2			2	2						2			2
		2	1	2	Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot.	3			4			7			7	3			4			7			7
		2	1	3	Determine how the author uses the meaning of words or phrases, including figurative and connotative meanings, in a text; analyze the impact of a specific word choice on meaning and tone.	1			4			5			5	1			4			5			5
		Total For Assessment Anchor A-C.2 Craft and Structure				6			8			14			14	6			8			14			14
		3	1	1	Compare and contrast texts in different forms or genres in terms of their approaches to similar themes and topics.																				
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas																							
	A-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.	2						2			2	2						2			2
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	1			4			5			5	1			4			5			5
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				3			4			7			7	3			4			7			7
Total For Reporting Category A						11	8		24			35	8		43	11	3		24			35	3		38

Grade 06 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items Core			Number of Items EB			Total Number of Items (Core & EB)			
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
B: Informational Text	B-K	1	1	1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences and/or generalizations drawn from the text.	1	2		5			6	2		8	1	1		5			6	1		7
		1	1	2	Determine a central idea of a text and how it is conveyed through relevant details; provide a summary of the text distinct from personal opinions or judgments.	1						1			1	1						1			1
		1	1	3	Analyze in detail how a key individual, event, or idea is introduced, illustrated, or elaborated in a text.	1			5			6			6	1			5			6			6
		Total For Assessment Anchor B-K.1 Key Ideas and Details				3	2		10			13	2		15	3	1		10			13	1		14
	B-C	2	1	1	Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.		3						3		3		1						1		1
		2	1	2	Analyze how a particular sentence, paragraph, chapter, section, or text feature fits into the overall development of the ideas.	2	2		5			7	2		9	2	1		5			7	1		8
		2	1	3	Determine how the author uses the meaning of words or phrases, including figurative, connotative, or technical meanings, in a text.	1			5			6			6	1			5			6			6
		Total For Assessment Anchor B-C.2 Craft and Structure				3	5		10			13	5		18	3	2		10			13	2		15
		3	1	1	Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.	3						3			3	3						3			3
		3	1	2	Compare and contrast one author's presentation of events with that of another.																				
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				3						3			3	3						3			3
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.	1			10			11			11	1			10			11			11
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	2						2			2	2						2			2
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				3			10			13			13	3			10			13			13
Total For Reporting Category B						12	7		30			42	7		49	12	3		30			42	3		45

Grade 06 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	C	1	1		Write arguments to support claims with clear reasons and relevant evidence.																				
		1	2		Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.																				
		1	3		Write narratives to develop real or imagined experiences or events using effective techniques, relevant descriptive details, and well-structured event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 06 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
D: Language	D	1	1	1	Ensure that pronouns are in the proper case.																				
		1	1	2	Use intensive pronouns.				2			2			2				2			2			2
		1	1	3	Recognize and correct inappropriate shifts in pronoun number and person.	1						1			1	1						1			1
		1	1	4	Recognize and correct vague pronouns.	2						2			2	2						2			2
		1	1	5	Recognize and correct inappropriate shifts in verb tense.																				
		1	1	6	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.				1			1			1				1			1			1
		1	1	7	Correctly use frequently confused words.				1			1			1				1			1			1
		1	1	8	Ensure subject-verb and pronoun-antecedent agreement.				1			1			1				1			1			1
		1	2	1	Use punctuation to set of nonrestrictive/parenthetical elements.	1			1			2			2	1			1			2			2
		1	2	2	Spell correctly.																				
		1	2	3	Use punctuation to separate items in a series.	1			1			2			2	1			1			2			2
		Total For Assessment Anchor D.1 Conventions of Standard English				5			7			12			12	5			7			12			12
		2	1	1	Vary sentence patterns for meaning, reader/listener interest, and style.				1			1			1				1			1			1
		2	1	2	Maintain consistency in style and tone.	1						1			1	1						1			1
		2	1	3	Choose words and phrases to convey ideas precisely.	1						1			1	1						1			1
		2	1	4	Choose punctuation for effect.	1						1			1	1						1			1
		2	1	5	Choose words and phrases for effect.	1			1			2			2	1			1			2			2
		Total For Assessment Anchor D.2 Knowledge of Language				4			2			6			6	4			2			6			6
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 06 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
E: Text-Dependent	E	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			4						4	4			1						1	1
		Total For Assessment Anchor E.1 Evidence-based Analysis of Text						4						4	4			1						1	1
Total For Reporting Category E								4						4	4			1						1	1

Grade 07 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
A: Literature Text	A-K	1	1	1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences, conclusions, and/or generalizations drawn from the text.	1	2					1	2		3	1	1					1	1		2
		1	1	2	Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text.		2		8			8	2		10		1		8			8	1		9
		1	1	3	Analyze how particular elements of a story, drama, or poem interact.	3			4			7			7	3			4			7			7
		Total For Assessment Anchor A-K.1 Key Ideas and Details				4	4		12			16	4		20	4	2		12			16	2		18
	A-C	2	1	1	Analyze how an author develops and contrasts the points of view of different characters or narrators in a text.	1	3					1	3		4	1	1					1	1		2
		2	1	2	Analyze how a drama's or poem's form or structure contributes to its meaning.																				
		2	1	3	Determine how the author uses the meaning of words or phrases, including figurative and connotative meanings, in a text; analyze the impact of rhymes and other repititions of sounds on a specific verse or stanza of a poem or section of a story or drama.	2			4			6			6	2			4			6			6
		Total For Assessment Anchor A-C.2 Craft and Structure				3	3		4			7	3		10	3	1		4			7	1		8
	A-C	3	1	1	Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.	1						1			1	1						1			1
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas				1						1			1	1						1			1
	A-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.	3			4			7			7	3			4			7			7
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	1			4			5			5	1			4			5			5
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				4			8			12			12	4			8			12			12
Total For Reporting Category A						12	7		24			36	7		43	12	3		24			36	3		39

Grade 07 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
B: Informational Text	B-K	1	1	1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences, conclusions, and/or generalizations drawn from the text.	1	2		5			6	2		8	1	1		5			6	1		7
		1	1	2	Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.	1			5			6			6	1			5			6			6
		1	1	3	Analyze the interactions between individuals, events, and ideas in a text.	1			5			6			6	1			5			6			6
		Total For Assessment Anchor B-K.1 Key Ideas and Details				3	2		15			18	2		20	3	1		15			18	1		19
	B-C	2	1	1	Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.	2						2			2	2						2			2
		2	1	2	Analyze the structure an author uses to organize a text, including how major sections and text features contribute to the whole and to the development of the ideas.	1						1			1	1						1			1
		2	1	3	Determine how the author uses the meaning of words or phrases, including figurative, connotative, or technical meanings, in a text; analyze the impact of a specific word choice on meaning and tone.	2						2			2	2						2			2
		Total For Assessment Anchor B-C.2 Craft and Structure				5						5			5	5						5			5
	B-C	3	1	1	Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.		6		5			5	6		11		2		5			5	2		7
		3	1	2	Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts.																				
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas					6		5			5	6		11		2		5			5	2		7
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.	1			5			6			6	1			5			6			6
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	2			5			7			7	2			5			7			7
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				3			10			13			13	3			10			13			13
Total For Reporting Category B						11	8		30			41	8		49	11	3		30			41	3		44

Grade 07 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	C	1	1		Write arguments to support claims with clear reasons and relevant evidence.																				
		1	2		Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.																				
		1	3		Write narratives to develop real or imagined experiences or events using effective techniques, relevant descriptive details, and well-structured event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 07 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
D: Language	D	1	1	1	Explain the function of phrases and clauses in general and their function in specific sentences.																				
		1	1	2	Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.	1						1			1	1						1			1
		1	1	3	Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.																				
		1	1	4	Recognize and correct inappropriate shifts in pronoun number and person.																				
		1	1	5	Recognize and correct vague pronouns.	1			1			2			2	1			1			2			2
		1	1	6	Recognize and correct inappropriate shifts in verb tense.	1						1			1	1						1			1
		1	1	7	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.	1			2			3			3	1			2			3			3
		1	1	8	Correctly use frequently confused words.	1			1			2			2	1			1			2			2
		1	1	9	Ensure subject-verb and pronoun-antecedent agreement.				1			1			1				1			1			1
		1	2	1	Use a comma to separate coordinate adjectives.	1			2			3			3	1			2			3			3
		1	2	2	Spell correctly.				1			1			1				1			1			1
		1	2	3	Use punctuation to set of nonrestrictive/parenthetical elements.	1						1			1	1						1			1
		1	2	4	Use punctuation to separate items in a series.																				
		Total For Assessment Anchor D.1 Conventions of Standard English				7			8			15			15	7			8			15			15
		2	1	1	Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.																				
		2	1	2	Vary sentence patterns for meaning, reader/listener interest, and style.																				
		2	1	3	Maintain consistency in style and tone.	1						1			1	1						1			1
		2	1	4	Choose punctuation for effect.	1						1			1	1						1			1
		2	1	5	Choose words and phrases for effect.				1			1			1				1			1			1
		Total For Assessment Anchor D.2 Knowledge of Language				2			1			3			3	2			1			3			3
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 07 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
E: Text-Dependent Analysis	**E**	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			4						4	4			1						1	1
		Total For Assessment Anchor E.1 Evidence-based Analysis of Text						4						4	4			1						1	1
Total For Reporting Category E								4						4	4			1						1	1

Grade 08 **English Language Arts**

Reporting Category		Assessment Anchor	DesESRiptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
A: Literature Text	A-K	1	1	1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences, conclusions, and/or generalizations drawn from the text.	1	2		4			5	2		7	1	1		4			5	1		6
	A-K	1	1	2	Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.	3			4			7			7	3			4			7			7
	A-K	1	1	3	Analyze how particular lines of dialogue or incidents in a story, drama, or poem propel the action, reveal aspects of a character, or provoke a decision.	3	2		4			7	2		9	3	1		4			7	1		8
		Total For Assessment Anchor A-K.1 Key Ideas and Details				7	4		12			19	4		23	7	2		12			19	2		21
	A-C	2	1	1	Analyze how differences in the points of view of the characters and the audience or reader ESReate such effects as suspense or humor.	1	3		4			5	3		8	1	1		4			5	1		6
	A-C	2	1	2	Compare and contrast the structure of two or more texts, and analyze how the differing structure of each text contributes to its meaning and style.																				
	A-C	2	1	3	Determine how the author uses the meaning of words or phrases, including figurative and connotative meanings, in a text; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	1			4			5			5	1			4			5			5
		Total For Assessment Anchor A-C.2 ESRaft and Structure				2	3		8			10	3		13	2	1		8			10	1		11
	A-C	3	1	1	Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths and traditional stories, including desESRibing how the material is rendered new.																				
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas																							
	A-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies.	2			4			6			6	2			4			6			6
	A-V	4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	1						1			1	1						1			1
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				3			4			7			7	3			4			7			7
Total For Reporting Category A						12	7		24			36	7		43	12	3		24			36	3		39

Grade 08 **English Language Arts**

Reporting Category		Assessment Anchor	DesESRiptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items Core			Number of Items EB			Total Number of Items (Core & EB)			
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
B: Informational Text	B-K	1	1	1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences, conclusions and/or generalizations drawn from the text.		3		5			5	3		8		1		5			5	1		6
	B-K	1	1	2	Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.	1						1			1	1						1			1
	B-K	1	1	3	Analyze how a text makes connections among and distinctions between individuals, ideas, or events.	2			5			7			7	2			5			7			7
		Total For Assessment Anchor B-K.1 Key Ideas and Details				3	3		10			13	3		16	3	1		10			13	1		14
	B-C	2	1	1	Determine an author's point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.	1	3					1	3		4	1	1					1	1		2
	B-C	2	1	2	Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.	1			5			6			6	1			5			6			6
	B-C	2	1	3	Determine how the author uses the meaning of words or phrases, including figurative, connotative, or technical meanings, in a text; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	1			5			6			6	1			5			6			6
		Total For Assessment Anchor B-C.2 ESRaft and Structure				3	3		10			13	3		16	3	1		10			13	1		14
	B-C	3	1	1	Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.	1	2					1	2		3	1	1					1	1		2
	B-C	3	1	2	Analyze a case in which two or more texts provide conflicting information on the same topic, and identify where the texts disagree on matters of fact or interpretation.																				
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				1	2					1	2		3	1	1					1	1		2
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies.	2			5			7			7	2			5			7			7
	B-V	4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	2			5			7			7	2			5			7			7
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				4			10			14			14	4			10			14			14
Total For Reporting Category B						11	8		30			41	8		49	11	3		30			41	3		44

Grade 08 **English Language Arts**

Reporting Category		Assessment Anchor	DesESRiptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items Core			Number of Items EB			Total Number of Items (Core & EB)			
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	C	1	1		Write arguments to support claims with clear reasons and relevant evidence.																				
	C	1	2		Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.																				
	C	1	3		Write narratives to develop real or imagined experiences or events using effective techniques, relevant desESRiptive details, and well-structured event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 08 **English Language Arts**

Reporting Category		Assessment Anchor	DesESRiptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items Core			Number of Items EB			Total Number of Items (Core & EB)			
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
D: Language	D	1	1	1	Explain the function of verbals in general and their function in particular sentences.																				
	D	1	1	2	Form and use verbs in the active and passive voice.	1			2			3			3	1			2			3			3
	D	1	1	3	Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.																				
	D	1	1	4	Recognize and correct inappropriate shifts in verb voice and mood.																				
	D	1	1	5	Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.				1			1			1				1			1			1
	D	1	1	6	Recognize and correct inappropriate shifts in pronoun number and person.																				
	D	1	1	7	Recognize and correct vague pronouns.																				
	D	1	1	8	Recognize and correct inappropriate shifts in verb tense.	1						1			1	1						1			1
	D	1	1	9	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.	1						1			1	1						1			1
	D	1	1	10	Correctly use frequently confused words.	1			1			2			2	1			1			2			2
	D	1	1	11	Ensure subject-verb and pronoun-antecedent agreement.																				
	D	1	2	1	Use punctuation to indicate a pause or a break.	1						1			1	1						1			1
	D	1	2	2	Use an ellipsis to indicate an omission.																				
	D	1	2	3	Spell correctly.	1						1			1	1						1			1
	D	1	2	4	Use punctuation to set of nonrestrictive/parenthetical elements.				1			1			1				1			1			1
	D	1	2	5	Use punctuation to separate items in a series.	1			1			2			2	1			1			2			2
		Total For Assessment Anchor D.1 Conventions of Standard English				7			6			13			13	7			6			13			13
	D	2	1	1	Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects.				1			1			1				1			1			1
	D	2	1	2	Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.																				
	D	2	1	3	Vary sentence patterns for meaning, reader/listener interest, and style.	1			2			3			3	1			2			3			3
	D	2	1	4	Maintain consistency in style and tone.																				
	D	2	1	5	Choose punctuation for effect.																				
	D	2	1	6	Choose words and phrases for effect.	1						1			1	1						1			1
		Total For Assessment Anchor D.2 Knowledge of Language				2			3			5			5	2			3			5			5
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 08 **English Language Arts**

Reporting Category		Assessment Anchor	DesESRiptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items Core			Number of Items EB			Total Number of Items (Core & EB)			
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
E: Text-Dependent Analysis	E	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			4						4	4			1						1	1
		Total For Assessment Anchor E.1 Evidence-based Analysis of Text						4						4	4			1						1	1
Total For Reporting Category E								4						4	4			1						1	1

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items		
												Core		EB		(Core & EB)		
					MC	SCR	MC	SCR	MC	SCR	Total	MC	SCR	MC	SCR	MC	SCR	Total
	1	1	1	Distinguish between a scientific fact and an opinion, providing clear explanations that connect observations and results (e.g., a scientific fact can be supported by making observations).	1		1		2		2	1		1		2		2
	1	1	2	Identify and describe examples of common technological changes past to present in the community (e.g., energy production, transportation, communications,	1	2			1	2	3	1	1			1	1	2
	1	3	1	Observe and record change by using time and measurement.	3	2	1		4	2	6	3	1	1		4	1	5
	1	3	2	Describe relative size, distance, or motion.														
	1	3	3	Observe and describe the change to objects caused by temperature change or light.	1		1		2		2	1		1		2		2
	1	3	4	Explain what happens to a living organism when its food supply, access to water, shelter, or space is changed (e.g., it might die, migrate, change behavior, eat something else).	3		1		4		4	3		1		4		4
	1	3	5	Provide examples, predict, or describe how everyday human activities (e.g., solid waste production, food production and consumption, transportation, water consumption, energy production and use) may change the environment.	1				1		1	1				1		1
	Total For Assessment Anchor A.1 Reasoning and Analysis				10	4	4		14	4	18	10	2	4		14	2	16

A	2	1	1	Generate questions about objects, organisms, or events that can be answered through scientific investigations.	1		1		2		2	1		1		2		2
	2	1	2	Design and describe an investigation (a fair test) to test one variable.	1		1		2		2	1		1		2		2
	2	1	3	Observe a natural phenomenon (e.g., weather changes, length of daylight/night, movement of shadows, animal migrations, growth of plants), record observations, and then make a prediction based on those observations.	1				1		1	1				1		1
	2	1	4	State a conclusion that is consistent with the information/data.	1		1		2		2	1		1		2		2
	2	2	1	Identify appropriate tools or instruments for specific tasks and describe the information they can provide (e.g., measuring: length - ruler, mass - balance scale, volume - beaker, temperature - thermometer; making observations: hand lens, binoculars, telescope).	1		1		2		2	1		1		2		2
	Total For Assessment Anchor A.2 Processes, Procedures, and Tools of Scientific Investigations				5		4		9		9	5		4		9		9

3	1	1	Categorize systems as either natural or human-made (e.g., ballpoint pens, simple electrical circuits, plant anatomy, water cycle).	2				2		2	2				2		2
3	1	2	Explain a relationship between the living and nonliving components in a system (e.g., food web, terrarium).	2				2		2	2				2		2
3	1	3	Categorize the parts of an ecosystem as either living or nonliving and describe their roles in the system.														
3	1	4	Identify the parts of the food and fiber systems as they relate to agricultural products from the source to the consumer.			1		1		1			1		1		1
3	2	1	Identify what different models represent (e.g., maps show physical features, directions, distances; globes represent Earth; drawings of watersheds depict terrain; dioramas show ecosystems; concept maps show relationships of ideas).Identify what different models represent														
3	2	2	Use models to make observations to explain how systems work (e.g., water cycle, Sun-Earth-Moon system).	1		2		3		3	1		2		3		3
3	2	3	Use appropriate, simple modeling tools and techniques to describe or illustrate a system (e.g., two cans and string to model a communications system, terrarium to model an ecosystem).														
3	3	1	Identify and describe observable patterns (e.g., growth patterns in plants, weather, water cycle).														
3	3	2	Predict future conditions/events based on observable patterns (e.g., day/night, seasons, sunrise/sunset, lunar phases).			1		1		1			1		1		1
Total For Assessment Anchor A.3 Systems, Models, and Patterns				5		4		9		9	5		4		9		9
Total For Reporting Category A: Nature of Science				20	4	12		32	4	36	20	2	12		32	2	34

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items		
												Core		EB		(Core & EB)		
					MC	SCR	MC	SCR	MC	SCR	Total	MC	SCR	MC	SCR	MC	SCR	Total
	1	1	1	Identify life processes of living things (e.g., growth, digestion, respiration).	1		1		2		2	1		1		2		2
	1	1	2	Compare similar functions of external characteristics of organisms (e.g., anatomical characteristics: appendages, type of covering, body segments).														
	1	1	3	Describe basic needs of plants and animals (e.g., air, water, food).														
	1	1	4	Describe how different parts of a living thing work together to provide what the organism needs (e.g., parts of plants: roots, stems, leaves).			1		1		1			1		1		1
	1	1	5	Describe the life cycles of different organisms (e.g., moth, grasshopper, frog, seed-producing plant).		2				2	2		1				1	1
	Total For Assessment Anchor B.1 Structures and Functions of Organisms				1	2	2		3	2	5	1	1	2		3	1	4
	2	1	1	Identify characteristics for plant and animal survival in different environments (e.g., wetland, tundra, desert, prairie, deep ocean, forest).		2	1		1	2	3		1	1		1	1	2
	2	1	2	Explain how specific adaptations can help a living organism survive (e.g., protective coloration, mimicry, leaf sizes and shapes, ability to catch or retain water).														
	2	2	1	Identify physical characteristics (e.g., height, hair color, eye color, attached earlobes, ability to roll tongue) that appear in both parents and could be passed on to offspring.														
	Total For Assessment Anchor B.2 Continuity of Life					2	1		1	2	3		1	1		1	1	2

B	3	1	1	Describe the living and nonliving components of a local ecosystem (e.g., lentic and lotic systems, forest, cornfield, grasslands, city park, playground).															
	3	1	2	Describe interactions between living and nonliving components (e.g. plants – water, soil, sunlight, carbon dioxide, temperature; animals – food, water, shelter, oxygen, temperature) of a local ecosystem.															
	3	2	1	Describe what happens to a living thing when its habitat is changed.			1		1		1			1		1		1	
	3	2	2	Describe and predict how changes in the environment (e.g., fire, pollution, flood, building dams) can affect systems.	1				1		1	1				1		1	
	3	2	3	Explain and predict how changes in seasons affect plants, animals, or daily human life (e.g., food availability, shelter, mobility).	1				1		1	1				1		1	
	3	3	1	Identify everyday human activities (e.g., driving, washing, eating, manufacturing, farming) within a community that depend on the natural environment.															
	3	3	2	Describe the human dependence on the food and fiber systems from production to consumption (e.g., food, clothing, shelter, products).															
	3	3	3	Identify biological pests (e.g., fungi – molds, plants – foxtail, purple loosestrife, Eurasian water milfoil; animals – aphides, ticks, zebra mussels, starlings, mice) that compete with humans for resources.	1				1		1	1				1		1	
	3	3	4	Identify major land uses in the urban, suburban and rural communities (e.g., housing, commercial, recreation).															
	3	3	5	Describe the effects of pollution (e.g., litter) in the community.															
	Total For Assessment Anchor B.3 Ecological Behavior and Systems				3		1		4		4	3		1		4		4	
Total For Reporting Category B: Biology					4	4	4		8	4	12	4	2	4		8	2	10	

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items		
												Core		EB		(Core & EB)		
					MC	SCR	MC	SCR	MC	SCR	Total	MC	SCR	MC	SCR	MC	SCR	Total
C	1	1	1	Use physical properties [e.g., mass, shape, size, volume, color, texture, magnetism, state to describe matter.	2		2		4		4	2		2		4		4
	1	1	2	Categorize/group objects using physical characteristics.														
	Total For Assessment Anchor C.1 Structures, Properties, and Interaction of Matter and Energy				2		2		4		4	2		2		4		4
	2	1	1	Identify energy forms, energy transfer, and energy examples (e.g., light, heat, electrical).														
	2	1	2	Describe the flow of energy through an object or system (e.g., feeling radiant heat from a light bulb, eating food to get energy, using a battery to light a bulb or run a fan).			1		1		1			1		1		1
	2	1	3	Recognize or illustrate simple direct current series and parallel circuits composed of batteries, light bulbs (or other common loads), wire, and on/off switches.	1		1		2		2	1		1		2		2
	2	1	4	Identify characteristics of sound (e.g., pitch, loudness, reflection).	1				1		1	1				1		1
	Total For Assessment Anchor C.2 Forms, Sources, Conversions, and Transer of Energy				2		2		4		4	2		2		4		4
	3	1	1	Describe changes in motion caused by forces (e.g., magnetic, pushes or pulls, gravity, friction).	1	2			1	2	3	1	1			1	1	2
	3	1	2	Compare the relative movement of objects or describe types of motion that are evident (e.g., bouncing ball, moving in a straight line, back and forth, merry-go-round).														
	3	1	3	Describe the position of an object by locating it relative to another object or a stationary background (e.g., geographic direction, left, up).	1				1		1	1				1		1
	Total For Assessment Anchor C.3 Principles of Motion and Force				2	2			2	2	4	2	1			2	1	3
Total For Reporting Category C: Physical Sciences					6	2	4		10	2	12	6	1	4		10	1	11

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items		
												Core		EB		(Core & EB)		
					MC	SCR	MC	SCR	MC	SCR	Total	MC	SCR	MC	SCR	MC	SCR	Total
D	1	1	1	Describe how prominent Earth features in Pennsylvania (e.g., mountains, valleys, caves, sinkholes, lakes, rivers) were formed.	1				1		1	1				1		1
	1	1	2	Identify various Earth structures (e.g., mountains, watersheds, peninsulas, lakes, rivers, valleys) through the use of models.	1				1		1	1				1		1
	1	1	3	Describe the composition of soil as weathered rock and decomposed organic remains.														
	1	2	1	Identify products and by-products of plants and animals for human use (e.g., food, clothing, building materials, paper products).														
	1	2	2	Identify the types and uses of Earth materials for renewable, nonrenewable, and reusable products (e.g., human-made products: concrete, paper, plastics, fabrics).	1		1		2		2	1		1		2		2
	1	2	3	Recognize ways that humans benefit from the use of water resources (e.g., agriculture, energy, recreation).	1				1		1	1				1		1
	1	3	1	Describe types of freshwater and saltwater bodies (e.g., lakes, rivers, wetlands, oceans).														
	1	3	2	Explain how water goes through phase changes (i.e., evaporation, condensation, freezing, and melting).	1		1		2		2	1		1		2		2
	1	3	3	Describe or compare lentic systems (i.e., ponds, lakes, and bays) and lotic systems (i.e., streams, creeks, and rivers).														
	1	3	4	Explain the role and relationship of a watershed or a wetland on water sources (e.g., water storage, groundwater recharge, water filtration, water source, water cycle).	1				1		1	1				1		1
	Total For Assessment Anchor D.1 Earth Features and Processes that Change Earth and its Resources				6		2		8		8	6		2		8		8
	2	1	1	Identify basic cloud types (i.e., cirrus, cumulus, stratus, and cumulonimbus) and make connections to basic elements of weather (e.g., changes in temperature, precipitation).			1		1		1			1		1		1

2	1	2	Identify weather patterns from data charts or graphs of the data (e.g., temperature, wind direction, wind speed, cloud types, precipitation).	1				1		1	1				1		1
2	1	3	Identify appropriate instruments (i.e., thermometer, rain gauge, weather vane, anemometer, and barometer) to study weather and what they measure.			1		1		1			1		1		1
Total For Assessment Anchor D.2 Weather, Climate, and Atmospheric Processes				1		2		3		3	1		2		3		3
3	1	1	Describe motions of the Sun - Earth - Moon system.														
3	1	2	Explain how the motion of the Sun - Earth - Moon system relates to time (e.g., days, months, years).	1				1		1	1				1		1
3	1	3	Describe the causes of seasonal change as they relate to the revolution of Earth and the tilt of Earth's axis.														
Total For Assessment Anchor D.3 Composition and Structure of the Universe				1				1		1	1				1		1
Total For Reporting Category D: Earth and Space Sciences				8		4		12		12	8		4		12		12

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items		
												Core		EB		(Core & EB)		
					MC	SCR	MC	SCR	MC	SCR	Total	MC	SCR	MC	SCR	MC	SCR	Total
	1	1	1	Distinguish between a scientific theory and an opinion, explaining how a theory is supported with evidence, or how new data/information may change existing theories and practices	1				1		1	1				1		1
	1	1	2	Explain how certain questions can be answered through scientific inquiry and/or technological design.	1		1		2		2	1		1		2		2
	1	1	3	Use evidence, such as observations or experimental results, to support inferences about a relationship.	1		1		2		2	1		1		2		2
	1	1	4	Develop descriptions, explanations, predictions, and models using evidence.	1				1		1	1				1		1
	1	2	1	Describe the positive and negative, intended and unintended, effects of specific scientific results or technological developments (e.g., air/space travel, genetic engineering, nuclear fission/fusion, artificial intelligence, lasers, organ transplants).			1		1		1			1		1		1
	1	2	2	Identify environmental issues and explain their potential long-term health effects (e.g., pollution, pest controls, vaccinations).														
	1	2	3	Describe fundamental scientific or technological concepts that could solve practical problems (e.g., Newton's laws of motion, Mendelian genetics).														
	1	2	4	Explain society's standard of living in terms of technological advancements and how these advancements impact on agriculture (e.g., transportation, processing, production, storage).			1		1		1			1		1		1

1	3	1	Use ratio to describe change (e.g., percents, parts per million, grams per cubic centimeter, mechanical advantage).	2				2		2	2				2		2
1	3	2	Use evidence, observations, or explanations to make inferences about change in systems over time (e.g., carrying capacity, succession, population dynamics, loss of mass in chemical reactions, indicator fossils in geologic time scale) and the variables affecting these changes.	1				1		1	1				1		1
1	3	3	Examine systems changing over time, identifying the possible variables causing this change, and drawing inferences about how these variables affect this change.	1				1		1	1				1		1
1	3	4	Given a scenario, explain how a dynamically changing environment provides for the sustainability of living systems.														
Total For Assessment Anchor A.1 Reasoning and Analysis				8		4		12		12	8		4		12		12

A: Nature of Science	2	1	1	Use evidence, observations, or a variety of scales (e.g., mass, distance, volume, temperature) to describe relationships.	1	2			1	2	3	1	1			1	1	2
	2	1	2	Use space/time relationships, define concepts operationally, raise testable questions, or formulate hypotheses.														
	2	1	3	Design a controlled experiment by specifying how the independent variables will be manipulated, how the dependent variable will be measured, and which variables will be held constant.	1	2	1		2	2	4	1	1	1		2	1	3
	2	1	4	Interpret data/observations; develop relationships among variables based on data/observations to design models as solutions.														
	2	1	5	Use evidence from investigations to clearly communicate and support conclusions.	1		1		2		2	1		1		2		2
	2	1	6	Identify a design flaw in a simple technological system and devise possible working solutions.		2				2	2		1				1	1
	2	2	1	Describe the appropriate use of instruments and scales to accurately and safely measure time, mass, distance, volume, or temperature under a variety of conditions.	1				1		1	1				1		1
	2	2	2	Apply appropriate measurement systems (e.g., time, mass, distance, volume, temperature) to record and interpret observations under varying conditions.			1		1		1			1		1		1
	2	2	3	Describe ways technology (e.g., microscope, telescope, micrometer, hydraulics, barometer) extends and enhances human abilities for specific purposes.			1		1		1			1		1		1
	Total For Assessment Anchor A.2 Processes, Procedures, and Tools of Scientific Investigations				4	6	4		8	6	14	4	3	4		8	3	11

3	1	1	Describe a system (e.g., watershed, circulatory system, heating system, agricultural system) as a group of related parts with specific roles that work together to achieve an observed result.															
3	1	2	Explain the concept of order in a system [e.g., (first to last: manufacturing steps, trophic levels); (simple to complex: cell, tissue, organ, organ system)].	2		1		3		3	2		1		3		3
3	1	3	Distinguish between system inputs, system processes, system outputs, and feedback (e.g., physical, ecological, biological, informational).			1		1		1			1		1		1
3	1	4	Distinguish between open loop (e.g., energy flow, food web) and closed loop (e.g., materials in the nitrogen and carbon cycles, closed-switch) systems.															
3	1	5	Explain how components of natural and human-made systems play different roles in a working system.			1		1		1			1		1		1
3	2	1	Describe how scientists use models to explore relationships in natural systems (e.g., an ecosystem, river system, the solar system).	1				1		1	1				1		1
3	2	2	Describe how engineers use models to develop new and improved technologies to solve problems.			1		1		1			1		1		1
3	2	3	Given a model showing simple cause- and-effect relationships in a natural system, predict results that can be used to test the assumptions in the model (e.g., photosynthesis, water cycle, diffusion, infiltration).	1				1		1	1				1		1
3	3	1	Identify and describe patterns as repeated processes or recurring elements in human-made systems (e.g., trusses, hub-and-spoke system in communications and transportation systems, feedback controls in regulated systems).	1				1		1	1				1		1
3	3	2	Describe repeating structure patterns in nature(e.g., veins in a leaf, tree rings, crystals, water waves) or periodic patterns (e.g., daily, monthly, annually).	1				1		1	1				1		1
Total For Assessment Anchor A.3 Systems, Models, and Patterns				6		4		10		10	6		4		10		10
Total For Reporting Category A				18	6	12		30	6	36	18	3	12		30	3	33

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Biological Sciences	1	1	1	Describe the structures of living things that help them function effectively in specific ways (e.g., adaptations, characteristics).	1				1		1	1				1		1
	1	1	2	Compare similarities and differences in internal structures of organisms (e.g., invertebrate/vertebrate, vascular/nonvascular, single-celled/multi-celled) and external structures (e.g., appendages, body segments, type of covering, size, shape).	1		1		2		2	1		1		2		2
	1	1	3	Apply knowledge of characteristic structures to identify or categorize organisms (i.e., plants, animals, fungi, bacteria, and protista).														
	1	1	4	Identify the levels of organization from cell to organism and describe how specific structures (parts), which underlie larger systems, enable the system to function as a whole.	1				1		1	1				1		1
	Total For Assessment Anchor B.1 Structures and Functions of Organisms				3		1		4		4	3		1		4		4
	2	1	1	Explain how inherited structures or behaviors help organisms survive and reproduce in different environments.														
	2	1	2	Explain how different adaptations in individuals of the same species may affect survivability or reproduction success.														
	2	1	3	Explain that mutations can alter a gene and are the original source of new variations.	1				1		1	1				1		1
	2	1	4	Describe how selective breeding or biotechnology can change the genetic makeup of organisms.														
	2	1	5	Explain that adaptations are developed over long periods of time and are passed from one generation to another														
	2	2	1	Identify and explain differences between inherited and acquired traits.														
	2	2	2	Recognize that the gene is the basic unit of inheritance, that there are dominant and recessive genes, and that traits are inherited.														
	Total For Assessment Anchor B.2 Continuity of Life				1				1		1	1				1		1

3	1	1	Explain the flow of energy through an ecosystem (e.g., food chains, food webs).			1		1		1			1		1		1
3	1	2	Identify major biomes and describe abiotic and biotic components (e.g., abiotic: different soil types, air, water sunlight; biotic: soil microbes, decomposers).	1				1		1	1				1		1
3	1	3	Explain relationships among organisms (e.g., producers/consumers, predator/prey) in an ecosystem.			1		1		1			1		1		1
3	2	1	Use evidence to explain factors that affect changes in populations (e.g., deforestation, disease, land use, natural disaster, invasive species).														
3	2	2	Use evidence to explain how diversity affects the ecological integrity of natural systems	1				1		1	1				1		1
3	2	3	Describe the response of organisms to environmental changes (e.g., changes in climate, hibernation, migration, coloration) and how those changes affect survival.			1		1		1			1		1		1
3	3	1	Explain how human activities may affect local, regional, and global environments.														
3	3	2	Explain how renewable and nonrenewable resources provide for human needs (i.e., energy, food, water, clothing, and shelter).														
3	3	3	Describe how waste management affects the environment (e.g., recycling, composting, landfills, incineration, sewage treatment).		2				2	2		1				1	1
3	3	4	Explain the long-term effects of using integrated pest management (e.g., herbicides, natural predators, biogenetics) on the environment.														
Total For Assessment Anchor B.3 Ecological Behavior and Systems				2	2	3		5	2	7	2	1	3		5	1	6
Total For Reporting Category B				6	2	4		10	2	12	6	1	4		10	1	11

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Physical Sciences	1	1	1	Explain the differences among elements, compounds, and mixtures.														
	1	1	2	Use characteristic physical or chemical properties to distinguish one substance from another (e.g., density, thermal expansion/contraction, freezing/melting points, streak test).	1		1		2		2	1		1		2		2
	1	1	3	Identify and describe reactants and products of simple chemical reactions.	1				1		1	1				1		1
	Total For Assessment Anchor C.1 Structures, Properties, and Interaction of Matter and Energy				2		1		3		3	2		1		3		3
	2	1	1	Distinguish among forms of energy (e.g., electrical, mechanical, chemical, light, sound, nuclear) and sources of energy (i.e., renewable and nonrenewable energy)	1				1		1	1				1		
	2	1	2	Explain how energy is transferred from one place to another through convection, conduction, or radiation.	1				1		1	1				1		
	2	1	3	Describe how one form of energy (e.g., electrical, mechanical, chemical, light, sound, nuclear) can be converted into a different form of energy.	1		1		2		2	1		1		2		
	2	2	1	Describe the Sun as the major source of energy that impacts the environment.			1		1		1			1		1		
	2	2	2	Compare the time span of renewability for fossil fuels and the time span of renewability for alternative fuels.														
	2	2	3	Describe the waste (i.e., kind and quantity) derived from the use of renewable and nonrenewable resources and their potential impact on the environment.														
	Total For Assessment Anchor C.2 Forms, Sources, Conversions, and Transer of Energy				3		2		5		5	3		2		5		

3	1	1	Describe forces acting on objects (e.g., friction, gravity, balanced versus unbalanced).	1				1		1	1				1		1
3	1	2	Distinguish between kinetic and potential energy.	1		1		2		2	1		1		2		2
3	1	3	Explain that mechanical advantage helps to do work (physics) by either changing a force or changing the direction of the applied force (e.g., simple machines, hydraulic systems).	1				1		1	1				1		1
Total For Assessment Anchor C.3 Principles of Motion and Force				3		1		4		4	3		1		4		4
Total For Reporting Category C				8		4		12		12	8		4		12		7

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1	1	1	Explain the rock cycle as changes in the solid earth and rock types found in Pennsylvania (igneous – granite, basalt, pumice; sedimentary – limestone, sandstone, shale, coal; and metamorphic – slate, quartzite, marble, gneiss).	1				1		1	1				1		1
	1	1	2	Describe natural processes that change Earth's surface (e.g., landslides, volcanic eruptions, earthquakes, mountain building, new land being formed, weathering, erosion, sedimentation, soil formation).			1		1		1			1		1		1
	1	1	3	Identify soil types (i.e., humus, topsoil, subsoil, loam, loess, and parent material) and their characteristics (i.e., particle size, porosity, and permeability) found in different biomes and in Pennsylvania, and explain how they formed.	1				1		1	1				1		1
	1	1	4	Explain how fossils provide evidence about plants and animals that once lived throughout Pennsylvania's history (e.g., fossils provide evidence of different environments).		2				2	2		1				1	1
	1	2	1	Describe a product's transformation process from production to consumption (e.g., prospecting, propagating, growing, maintaining, adapting, treating, converting, distributing, disposing) and explain the process's potential impact on Earth's resources.	1		1		2		2	1		1		2		2
	1	2	2	Describe potential impacts of human-made processes (e.g., manufacturing, agriculture, transportation, mining) on Earth's resources, both nonliving (i.e., air, water, or earth materials) and living (i.e., plants and animals).			1		1		1			1		1		1

D: Earth and Space Sciences	1	3	1	Describe the water cycle and the physical processes on which it depends (i.e., evaporation, condensation, precipitation, transpiration, runoff, infiltration, energy inputs, and phase changes).															
	1	3	2	Compare and contrast characteristics of freshwater and saltwater systems on the basis of their physical characteristics (i.e., composition, density, and electrical conductivity) and their use as natural resources.	1				1		1	1				1		1
	1	3	3	Distinguish among different water systems (e.g., wetland systems, ocean systems, river systems, watersheds) and describe their relationships to each other as well as to landforms.															
	1	3	4	Identify the physical characteristics of a stream and how these characteristics determine the types of organisms found within the stream environment (e.g., biological diversity, water quality, flow rate, tributaries, surrounding watershed).															
	Total For Assessment Anchor D.1 Earth Features and Processes that Change Earth and its Resources				4	2	3		7	2	9	4	1	3		7	1	8	
	2	1	1	Explain the impact of water systems on the local weather or the climate of a region (e.g., lake effect snow, land/ocean breezes).			1		1		1			1		1		1	
	2	1	2	Identify how global patterns of atmospheric movement influence regional weather and climate.															
	2	1	3	Identify how cloud types, wind directions, and barometric pressure changes are associated with weather patterns in different regions of the country.	1				1		1	1				1		1	
	Total For Assessment Anchor D.2 Weather, Climate, and Atmospheric Processes				1		1		2		2	1		1		2		2	

	3	1	1	Describe patterns of Earth's movements (i.e., rotation and revolution) and the Moon's movements (i.e., phases, eclipses, and tides) in relation to the Sun.	1				1		1	1				1		1
	3	1	2	Describe the role of gravity as the force that governs the movement of the solar system and universe.														
	3	1	3	Compare and contrast characteristics of celestial bodies found in the solar system (e.g., moons, asteroids, comets, meteors, inner and outer planets).														
	Total For Assessment Anchor D.3 Composition and Structure of the Universe				1				1		1	1				1		1
Total For Reporting Category D					6	2	4		10	2	12	6	1	4		10	1	11

APPENDIX C: ITEM AND TEST DEVELOPMENT PROCESS

ITEM AND TEST DEVELOPMENT PROCESS FOR PSSA

Step	Description
1. Review Guiding Documentation	Each year item and test development specialists meet internally to review all guiding documentation related to the PSSA. Documentation reviewed includes the test design blueprints, the Pennsylvania Assessment Anchors and Eligible Content, the test item specifications, the test style specifications (style guide), and all test content descriptions.
2. Meet with PDE to Confirm Understanding of Program	The goal of the meeting each year is to ensure that item and test development teams have a clear understanding of PDE's vision for test development. A successful development cycle requires a clear understanding of Pennsylvania's content-area test specifications and of any unique interpretations of the Pennsylvania Assessment Anchors (if any).
3. Create Preliminary Test Item Development Plan	Item and test development specialists generate a preliminary development plan which includes an overview of the program, the internal and external (PDE) review and approval processes, a projected schedule for development of test items—including the number of test items to be developed for review by PDE and subsequent review by the committees of Pennsylvania educators. Item and test development specialists also generate strategies for securing passages and developing science scenarios and passage-based items, etc.
4. Meet with PDE to Finalize Test Item Development Plan	Over the course of the meeting, item and test development specialists verify all steps in the development process including timelines and schedules for test item/test development.
5. Analyze Item Bank	Existing test items in the current PSSA Item Bank are reviewed for technical psychometric quality as well as for their match to the Assessment Anchors. During this phase, test development specialists also make a tally of the test items by Assessment Anchor—including test development specialists' best thinking regarding the number of usable test items in the existing item bank. A tally is also made of the number of usable passages, as well as other stimulus prompts in the bank, including science scenarios.
6. Refine Test Item Development Plan to Include Writers and Subcontractors	Item and test development specialists identify the writers who will write the test items (test development specialists or other professional item writers, subcontractors, etc.), the estimated number of writers needed, the qualifications of writers, and the approximate number of test items to be submitted by each source.
7. Train Item Writers	Item and test development specialists train item writers, as needed. Item writers who have written for the PSSA in the past receive updated information, as needed.
8. Write and Review Items	Test items are written by item writers after training is complete, and feedback is provided by the item and test development specialists to item writers on a regular basis. As test items are written, they are reviewed and edited in a series of internal reviews. Item and test development specialists review and edit items to include, but not limited to, the following: match to Assessment Anchor/Eligible Content, relevance to purpose, accuracy of content, item difficulty, interest level, grade appropriateness, depth of knowledge and cognitive complexity, adherence to the principles of Universal Design, and freedom from issues of bias/fairness/sensitivity. At the same time, the process of procuring permissions also begins, including securing permissions for passages, art, etc.
9. Enter Test Items into Database	Upon acceptance from item writers, test items are entered into the item management system, IDEAS (*Item Development and Educational Assessment System*). Item data stored in the system database includes, but is not limited to, the following: readability, cognitive level, estimated level of difficulty, alignment to Assessment Anchors, and correlation to stimulus prompts and passages.
10. Prepare Item Set for Sample Item Review by PDE	Item and test development specialists prepare a subset of the items for review by PDE.

Step	Description
11. PDE Conducts Sample Item Review	After a subset of the items is submitted to PDE for review, PDE reviews the items and provides feedback to item and test development teams via a conference call. Items are revised per PDE feedback.
12. Continue to Write and Review Items	The remaining items are written, and feedback is provided by the item and test development specialists to item writers on a regular basis. Items are entered into the item management system, IDEAS (*Item Development and Educational Assessment System*) (See step 8 and step 9).
13. Review Items Prior to Test Item Review and Validation Sessions	Prior to New Item Content Review, all items are submitted to PDE for review. Item and test development specialists incorporate all PDE feedback, and PDE-requested edits to items are made.
14. Prepare for Test Item Review Sessions (the New Item Content Review and the Bias, Fairness, and Sensitivity Review)	Item and test development specialists prepare all items and stimulus passages for review by the New Item Content Review Committee (consisting of Pennsylvania educators) and by the separate Bias, Fairness, and Sensitivity Committee (consisting of a panel of experts including Pennsylvania educators). Item and test development specialists also prepare training materials needed for training committee members to review items for content or for bias, fairness, and sensitivity issues. All training materials and other ancillary materials (e.g., agendas, presentations, etc.) are also developed and then submitted to PDE for review and approval. Invitations are sent to Pennsylvania educators and national experts from PDE-approved committee lists.
15. Conduct Test Item Review Sessions (the New Item Content Review and the Bias, Fairness, and Sensitivity Review)	Committees of Pennsylvania educators and national experts review items in two meetings: one addressing item content and quality, the other addressing bias, fairness, and sensitivity. PDE, with support from item and test development specialists, presents training on how to review new test items for content considerations or bias/fairness/sensitivity issues. At the New Item Content Review, suggested edits to test items are made and/or replacement test items are written during the actual item review so that both the committee and the PDE are able to observe changes to the test items and approve the test items during the committee review process. At the Bias, Fairness, and Sensitivity Review, experts in bias, fairness, and sensitivity review all test items and passages and come to a consensus about any issues that are noted. At both meetings the results are carefully documented.
16. Conduct Item Review Resolution and Cleanup	Following the conclusion of the New Item Content Review Committee meetings, PDE re-examines the consensus changes suggested by the committee members during the New Item Content Review Committee meetings. DRC item and test development specialists then record all of PDE's follow-up decisions and changes. During this cleanup process, PDE either accepts the changes as requested by the committee or rejects the decision of the committee. If a committee decision is rejected, PDE provides an alternate decision for DRC to implement. During this cleanup process, PDE also interprets the report from the Bias, Fairness, and Sensitivity Committee meetings and subsequently identifies changes to test items and passages. DRC item and test development specialists then apply the changes to the test items and passages per PDE's decisions.
17. Submit Field Test Items for Final Sign-Off	PDE-approved changes are applied to the items, scenarios, non-permissioned passages, prompts, etc. (Changes reflect PDE's arbitration of the committee decisions.) Once all revisions to the items, non-permissioned passage text, and/or the art used by test items and passages are completed, the test items are submitted to PDE for final review and sign-off. (Changes requested to permissioned passages are sought from the publisher of record, and, if approved by the copyright holders, changes are implemented.) [PDE's approval process for field test items generally occurs simultaneously with PDE's approval of the core test forms. See step 25.]
*To follow the path for new field test items, skip to **step 22**, or to follow the chronological test development path, continue with **step 18**.*	

Step	Description
18. Review Results of the Field Test	Following the administration of a field test form and the subsequent rangefinding and field test scoring processes for field test items, performance data for all field test items are analyzed by DRC psychometricians and test development specialists. Test item performance data that meet certain triggering criteria are flagged for additional reviews by test development specialists. Flagged field-test items with extreme performance data are considered psychometrically unusable and are removed from future operational consideration. Field-test items with marginal performance data are prepared for the Field Test Item Data Review meeting.
19. Prepare for Field Test Item Data Review	Test development specialists prepare the items and stimulus passages for review by the Field Test Item Data Review Committee (which consists of Pennsylvania educators). Psychometricians also prepare training materials needed for training committee members to review items for their performance. All training materials and other ancillary materials (e.g., agendas, presentations, etc.) are submitted to PDE for review and approval. Invitations are also sent to Pennsylvania educators from PDE-approved committee lists.
20. Conduct Field Test Item Data Review	Committees of Pennsylvania educators review the performance data of flagged field-test items. Psychometricians present training on how to review field-test items based on their performance data. At the Item Data Review, committee members examine the performance of the items and determine whether each field-test item is technically sound and appropriate for use on an operational PSSA test. Since test items cannot be modified at the Field Test Item Data Review, the committee can either accept an item as is, or the committee can reject the item.
21. Conduct Field Test Item Data Review Reconciliation	Following the conclusion of the Field Test Item Data Review Committee meetings, PDE re-examines the consensus decisions (accept or reject) suggested by the committee members during the Field Test Item Data Review Committee meetings. Test development specialists record all of PDE's follow-up decisions and changes. During this cleanup process, PDE either accepts the decisions of the data review committee, or PDE rejects the decisions of the data review committee. If a committee decision is not accepted, PDE provides an alternate decision for test development specialists to implement. All PDE-approved changes to the test items status (accepted or rejected) are incorporated into the *Item Development and Educational Assessment System*, IDEAS.
22. Select Items to Fill Core, Field Test, and Equating Block Positions in Core and Field Test Forms	After the PDE-approved changes to the new field-test items is completed AND the results of the prior field test have been finalized following data review, test development specialists collaborate with psychometricians to follow the Test Design Blueprints and build requirements to make the initial selection of items for core, field-test, and equating block positions for all test forms.
23. Review Core and Equating Block Selections	After test content and psychometric requirements have been achieved for core and equating block positions, the core and equating block items are provided to PDE for review and approval. Any changes to the content of the core or equating block requested by PDE are balanced with psychometric requirements until all core and equating block positions are approved by PDE, test development specialists, and psychometricians. Test development specialists work with psychometricians and PDE staff to create scrambled versions of the core items that will appear across forms.
24. Construct Test Forms	Items, passages, and test components are assembled into forms using the form construction and typesetting function of DRC's *Item Development and Educational Assessment System*, IDEAS. Forms are reviewed internally for style and formatting requirements.
25. Review Typeset Forms	After forms are constructed in IDEAS, draft hard copies of the forms are produced and presented to PDE for review and approval. Any changes to the content of the core or equating block requested by PDE are balanced with psychometric requirements until all core and equating block positions are approved by PDE, test development specialists, and psychometricians. PDE also re-reviews all field-test items appearing in the test forms. DRC applies changes to the field-test items as required.

Step	Description
26. Print Test Forms	Following PDE's approval of the test forms, DRC completes a series of final proofing of all test forms. Final forms (along with ancillary materials) are then approved for printing.
27. Assemble Documentation of Test Materials	Metadata for each test item and form is documented and proofed, including: grade, form, session/section, item sequence, reporting category, Assessment Anchor, descriptor (sub-anchor), Eligible Content, number of points, item type, number of answer options, item usage, stimulus ID, etc.
28. Prepare Online Forms	Following approval of the print forms, all online forms are prepared. Forms are rendered in form sets, and items and forms are compared for continuity with the print forms as well as to ensure that all tools and features are functioning as expected.
*To follow the path for new field test items, return to **step 18**.*	

APPENDIX D: ITEM AND DATA REVIEW CARD EXAMPLES

ITEM REVIEW CARD EXAMPLE

Standard: Use the four operations with whole numbers to solve problems.

1.

A.

B.

PA - Item Card

Item ID	
Content Area	Mathematics
Passage ID	
Passage Title	
Grade	4
CCAACS Standards	B-O.1
Item Type	Open Ended
Points	4
Depth of Knowledge	2
Bloom's Taxonomy	
Est Difficulty	Medium
Key	
Calculator	C

1. ***Continued.*** Please refer to the previous page for task explanation.

C.

Standard: Describe how prominent Earth features in Pennsylvania (e.g., mountains, valleys, caves, sinkholes, lakes, rivers) were formed.

1. [redacted]

PA - Data Card
Item ID
[redacted]
Content Area
Science
Passage ID
Passage Title
Grade
4
Standards
AACS: D.1.1.1
Item Type
Multiple Choice
Points
1
Depth of Knowledge
2
Est Difficulty
Medium
Key
A
Focus

Data Recognition Corporation [redacted]

PA - Master Statistics Data Card

Administration(s)

Form Name	Use Function	Rptg Flag	Seq	Period	Year	Session	Calc	Model/Ext	Grade	N	P-Value	Item Total Corr
				Spring	2015		Yes	Rasch	4	1548	0.54	0.34

Traditional Statistics

N	P-Val	Mean	Item Total Corr
122762	0.54		0.34

Distractor/Step Specific

Label	Proportion	Corr	Avg Meas	Step Meas
A*	0.54	0.34		
B	0.20	-0.10		
C	0.14	-0.21		
D	0.12	-0.16		
MULTS	0.00			
OMITS	0.00			

DIF Analysis

Category	Bias Code	Num Value	N - Ref	N - Focal
MALEFEMALE	A-	-0.26	5349	5011
WHITEBLACK	A+	0.14	7285	1569
WHITEHISPANIC	A-	-0.40	7285	889

Data Recognition Corporation

Reviewer Signature: _____

Item Rating Sheet

Content Area: _____ Grade: _____

	Content Alignment	Rigor Level Alignment				Technical Design			Universal Design		STATUS
	Standards	Grade	Difficulty	Depth of Knowledge	Source of Challenge	Correct Answer	Distractors	Graphics	Language Demand	Bias	Acceptance Status
Unique ID number	—Higher —Lower —None	—Above —At —Below	—Hard —Medium —Easy	—Recall —Application —Strategic Thinking	—Yes —No	—Yes —No	—Yes —No	—Yes —No	—Yes —No	—Yes —No	— Approved as is — Accepted with suggested revisions — Dissenting View

Item Review Criteria Guidelines

The purpose of this form is to provide guidelines to the item review process in terms of item characteristics that are essential in building a fair and balanced assessment. Use these guidelines in conjunction with the Item Rating Sheet when recording your feedback on individual items.

Content Alignment		Options
Standards, Anchors, Eligible Content	Does the content of the item align with the Standard/Anchor/Eligible Content? Each item was written to assess a particular Standard/Anchor/ Eligible Content statement which is indicated on the individual Item Card. Consider the degree to which the item is, in fact, aligned with the indicated eligible content. In making this judgment, it is important to consider whether the **content** is aligned (e.g., do the eligible content and the item both deal with fractions) and whether the required **performance** is aligned (e.g., if the eligible content calls for a comparison to be made, is this reflected in the item).	**HIGHER**—Aligns to the higher level of the EC **LOWER**—Aligns to the lower level of the EC **NONE**—No alignment with EC

Rigor Level Alignment		Options
Grade	Is the item grade-level appropriate? Is the content consistent with the experiences of a student at the grade level assessed? Is the challenge level appropriate for the grade?	**ABOVE** Grade Level **AT** Grade Level **BELOW** Grade Level
Difficulty	Do you agree with the item's difficulty rating? Item Difficulty is indicated as Easy, Medium, and Hard? Is your rating in agreement with the difficulty rating on the Item Form?	**HARD** **MEDIUM** **EASY**
Depth of Knowledge	Depth of Knowledge is based on the alignment work of Norman Webb. Rate each item based on the cognitive demand, using the following levels: 1. Recall – ***Recall*** of a fact, information, or procedure. 2. Basic Application of Skill or Concept – ***Use*** of information, conceptual knowledge, procedures, two or more steps, etc. 3. Strategic Thinking – Requires reasoning, developing a plan or sequence of steps; has some complexity; more than one possible answer. 4. Extended Thinking – Requires an investigation, time to think and process multiple conditions of the problem or task, and more than 10 minutes to do non-routine manipulations. (This level is generally not assessed in on-demand assessments.)	**4** = Extended Thinking **3** = Strategic Thinking **2** = Basic Application **1** = Recall

Source of Challenge	Is the source of challenge appropriately targeted to the content? The hardest part of the item (i.e., source of challenge) should be the content that is targeted. For example, in mathematics, the mathematics should be the major source of challenge rather than the wording or graphic. Students should not give an incorrect answer to a mathematics item because the reading level is too high or a graphic is flawed. Conversely, students should not give correct answers for reasons such as prior knowledge that make the answer to the question obvious (e.g., if the question asks which country has the largest population and students are to read a graph that includes China, there is no need to read the graph to answer the question).	**Y** = Yes **N** = No

Technical Design		**Options**
Correct Answer	Is there one clear, correct answer? There should be no other answer that "could" be correct. CAUTION: This does not mean that "good" distractors are unfair.	**Y** = Yes **N** = No
Distractors	Are distractors fair and appropriate? Distractors that are appropriate offer students reasonable choices that can be arrived at by making common errors. There should be no distractors that make no sense at all. It should be possible to examine each option and to reason how a student with some deficiency in knowledge or skill could choose it. The distractors should be formatted according to acceptable standards of test construction (e.g., a phrase that is common to each distractor should be placed in the stem).	**Y** = Yes **N** = No
Graphics	Are the graphics clear and accurate?	**Y** = Yes **N** = No

Universal Design		**Options**
Language Demand	Is language clear, well-formatted, and precise? Does the item use correct terminology for the content area? In order for all students to enter into the questions of the assessment, they must be able to understand them. If the items are formatted poorly, use unnecessarily complex words or phrases, or use figures or layouts that are difficult to understand, some students will give incorrect answers due to these factors rather than the content that is being assessed.	**Y** = Yes **N** = No
Bias	Is the item free of bias? All students will not be able to enter into the assessment if bias considerations are not resolved. Does the item contain clear bias problems? *A thorough, independent bias review* (separate from this meeting) *will be completed for all items.*	**Y** = Yes **N** = No

Status		**Options**
Acceptance Status	This is an overall judgment about the item. Based on the consensus of the committee, indicate whether the item was approved without revision to the content of the item or whether the item was accepted by the committee after revision of the content of the item. If there is a dissenting view (opposed to the committee consensus), record a brief explanation of the dissenting view on the back of the Item Rating Sheet.	**—Approved** as is **—Accepted** with suggested revisions **—Dissenting View**

NOTES:

- If you leave a box blank on the Item Rating Sheet, it will be recorded to indicate that you did not have any specific feedback for that item or issue.
- If you object to the consensus of the committee, please note this on the item rating sheet and then record a brief explanation of the dissenting view on the back of the Item Rating Sheet.
- **Do NOT remove any items from the item binder at any time.**
- You must sign your Item Rating Sheet.

APPENDIX F: ITEM STATISTICS

Appendix contains item statistics for each item type (multiple-choice, evidence-based selected-response, open-ended, and text-dependent analysis) by each mode (paper/pencil, and computer-based). Note that item statistics are not provided for field-test open-ended items or field-test text-dependent analysis items in 2021.

Multiple-Choice Paper/Pencil Item Statistics

Column Heading	Definition
ContArea	Content
FormGrade	Grade
PubID	Form ID
FormNumber	Form
Standard1	Standard
Depth	Depth of Knowledge
N	N
PValue	*P*-Value
ProportionA	Proportion A
ProportionB	Proportion B
ProportionC	Proportion C
ProportionD	Proportion D
ProportionOMITS	Proportion Omits
ProportionINV	Proportion Invalid Responses
PtBiserial	Point Biserial
CorrelationA	Correlation A
CorrelationB	Correlation B
CorrelationC	Correlation C
CorrelationD	Correlation D
CorrelationOMITS	Correlation Omits
CorrelationINV	Correlation Invalid Responses
FinalB	IRT Difficulty Estimate
FinalBErr	IRT Difficulty Error
Infit	Infit Standardized
InfitMnSq	Infit Mean Square
Outfit	Outfit Standardized
OutfitMnSq	Outfit Mean Square
BiasCodeMALEFEMALE	Male/Female DIF Code
BiasCodeWHITEBLACK	White/Black DIF Code
BiasCodeWHITEHISPANIC	White/Hispanic DIF Code

ContArea	FormGrade	PubID	FormNumt	Standard1	Depth	N	PValue	Proportion	Proportion	Proportion	Proportion	Proportion	Proportion	PtBiserial	Correlation	Correlation	Correlation	Correlation	Correlation	Correlation	FinalB	FinalBErr	Infit	InfitMnSq	Outfit	OutfitMnSq	BiasCodeM	BiasCodeW	BiasCodeWHITEHISPANIC
ELA	3	574375	0	A-C	2	66644	0.6133	0.1757	0.6005	0.1239	0.0791	0.0201	0.0007	0.552	-0.2579	0.5542	-0.2811	-0.2427	-0.1013	-0.036	0.1939	0.0076	-9.8991	0.8561	-9.8992	0.8069	A-	A+	A+
ELA	3	578131	0	A-C	2	66825	0.5189	0.2855	0.1319	0.5095	0.0551	0.0164	0.0017	0.5189	-0.2241	-0.2863	0.5207	-0.2178	-0.0881	-0.0336	0.6067	0.0075	-9.8991	0.9069	-9.8991	0.8887	A-	A-	A-
ELA	3	574376	0	A-K	3	66395	0.4817	0.1776	0.1674	0.4699	0.1607	0.0213	0.0031	0.455	-0.2394	-0.1908	0.4596	-0.1314	-0.1124	-0.0391	0.7959	0.0075	-9.899	0.9669	-5.609	0.9787	A-	A+	A+
ELA	3	574380	0	A-K	2	66578	0.4086	0.3998	0.2209	0.2906	0.067	0.0212	0.0005	0.3269	0.3316	-0.153	-0.0452	-0.2558	-0.0965	-0.0253	1.1782	0.0077	9.9011	1.085	9.9011	1.1498	A-	A+	A+
ELA	3	578133	0	A-K	2	66842	0.6791	0.085	0.6669	0.1487	0.0815	0.017	0.0009	0.5113	-0.2493	0.5153	-0.2678	-0.2348	-0.0992	-0.0325	-0.0127	0.0078	-9.8991	0.8559	-9.8992	0.8162	A+	A+	A-
ELA	3	578135	0	A-K	3	66754	0.3553	0.2057	0.3044	0.3485	0.1222	0.0183	0.0008	0.2983	-0.064	-0.0522	0.3031	-0.2465	-0.0964	-0.0311	1.4536	0.0079	9.9011	1.106	9.9012	1.1981	A+	A+	A+
ELA	3	578136	0	A-K	2	66761	0.5211	0.3767	0.0542	0.0389	0.5112	0.0179	0.0011	0.3861	-0.1786	-0.2408	-0.2146	0.3907	-0.0895	-0.0258	0.6392	0.0075	9.9011	1.0509	9.9011	1.069	A+	A-	A-
ELA	3	574381	0	A-V	2	66925	0.6077	0.1152	0.1139	0.5976	0.1567	0.016	0.0006	0.4382	-0.2489	-0.2732	0.4446	-0.1033	-0.1058	-0.0366	0.1046	0.0077	-4.489	0.9863	1.981	1.0091	A+	A+	A+
ELA	3	574383	0	A-V	2	66519	0.7104	0.0685	0.1534	0.0611	0.6944	0.0221	0.0005	0.4872	-0.2842	-0.2201	-0.247	0.4912	-0.1035	-0.0366	-0.3676	0.0081	-9.8991	0.9098	-9.8991	0.9095	A+	A+	A+
ELA	3	578139	0	A-V	2	67182	0.8243	0.0619	0.8137	0.0633	0.0482	0.0125	0.0004	0.4955	-0.3026	0.4982	-0.2647	-0.2164	-0.0871	-0.029	-0.9784	0.0091	-9.8992	0.8072	-9.8993	0.6769	A-	A-	A-
ELA	3	271995	0	B-C	3	66394	0.4368	0.2067	0.1645	0.4262	0.1782	0.0178	0.0066	0.4748	-0.2876	-0.1894	0.481	-0.077	-0.1256	-0.0629	0.8619	0.0075	-9.8991	0.9394	-9.8991	0.9349	A+	A-	A-
ELA	3	271996	0	B-C	2	66730	0.6317	0.6194	0.0971	0.1915	0.0725	0.018	0.0015	0.567	0.5729	-0.2733	-0.2889	-0.2527	-0.1251	-0.0357	-0.1422	0.0079	-9.8991	0.8895	-9.8992	0.8356	A+	A-	A-
ELA	3	278410	0	B-C	3	66136	0.5128	0.2785	0.4983	0.086	0.1089	0.0272	0.0011	0.534	-0.2065	0.5398	-0.3052	-0.2172	-0.1425	-0.0282	0.4323	0.0075	-9.8991	0.9052	-9.8991	0.8714	A-	A-	A-
ELA	3	579139	0	B-C	3	66474	0.4876	0.4762	0.1803	0.1865	0.1337	0.0225	0.0007	0.4152	0.4185	-0.1934	-0.0886	-0.2512	-0.0922	-0.0349	0.7592	0.0075	2.171	1.0062	5.831	1.0223	A-	A+	A+
ELA	3	579140	0	B-C	3	66968	0.6224	0.6124	0.1513	0.1363	0.0841	0.0151	0.0009	0.4521	0.4567	-0.1438	-0.2694	-0.2388	-0.0915	-0.0381	-0.0175	0.0078	-3.439	0.9891	-6.689	0.9676	A+	A+	A+
ELA	3	271993	0	B-K	2	66320	0.8213	0.0757	0.061	0.0375	0.8003	0.0251	0.0004	0.4859	-0.3613	-0.1867	-0.1911	0.4939	-0.1296	-0.0301	-1.1425	0.0094	-2.029	0.9891	-9.8991	0.8648	A-	A-	A-
ELA	3	579131	0	B-K	2	66893	0.6013	0.2523	0.0738	0.591	0.0658	0.0165	0.0006	0.4439	-0.2156	-0.2125	0.4484	-0.2366	-0.0934	-0.0294	0.1814	0.0076	-7.519	0.9775	-5.759	0.975	A-	A-	A-
ELA	3	579145	0	B-K	3	66767	0.4596	0.1668	0.1622	0.2012	0.4508	0.0181	0.0009	0.3244	-0.1054	-0.2341	-0.0618	0.3301	-0.0967	-0.0335	1.0515	0.0076	9.9011	1.137	9.9012	1.1817	A-	A+	A+
ELA	3	340677	0	B-V	2	66751	0.7088	0.6952	0.0605	0.1121	0.1129	0.0188	0.0004	0.4646	0.4751	-0.2377	-0.2125	-0.2429	-0.1291	-0.0274	-0.238	0.0079	-9.8991	0.9008	-9.8991	0.8511	A-	A+	A+
ELA	3	581150	0	B-V	2	66755	0.597	0.1432	0.5856	0.0437	0.2083	0.0186	0.0005	0.3028	-0.1479	0.3119	-0.2356	-0.0968	-0.1012	-0.0306	0.4301	0.0075	9.9011	1.1113	9.9011	1.1175	A+	A+	A+
ELA	3	252790	0	D	2	67185	0.4913	0.1403	0.1606	0.485	0.2013	0.0115	0.0013	0.4376	-0.2028	-0.1959	0.4382	-0.174	-0.0562	-0.0247	0.6986	0.0075	-0.149	0.9996	0.551	1.0021	A-	A-	A-
ELA	3	255078	0	D	2	67428	0.4495	0.4453	0.252	0.1044	0.1891	0.0073	0.002	0.3512	0.3541	-0.0666	-0.2408	-0.1693	-0.0648	-0.0371	0.7913	0.0075	9.9011	1.0736	9.9011	1.1043	A+	A-	A-
ELA	3	255382	0	D	2	67372	0.3647	0.1296	0.361	0.2956	0.2037	0.0073	0.0027	0.3256	-0.1124	0.3281	-0.1265	-0.1355	-0.0586	-0.0491	1.4706	0.0079	9.9011	1.1156	9.9012	1.1975	A-	A+	A-
ELA	3	408509	0	D	2	67240	0.4084	0.317	0.1301	0.1374	0.4035	0.0084	0.0036	0.3392	-0.1098	-0.1385	-0.1821	0.3414	-0.0645	-0.0208	1.1355	0.0076	9.9011	1.0937	9.9011	1.1353	A+	A+	A+
ELA	3	504073	0	D	3	67416	0.3652	0.3618	0.1058	0.1288	0.3942	0.0085	0.0009	0.2415	0.2439	-0.1689	-0.207	0.0206	-0.0577	-0.0224	1.2632	0.0077	9.9012	1.1627	9.9013	1.2664	A+	A+	A+
ELA	3	504077	0	D	2	67401	0.521	0.1526	0.1096	0.5159	0.2123	0.0075	0.0021	0.3758	-0.1387	-0.2228	0.3784	-0.1542	-0.0642	-0.0222	0.8064	0.0075	9.9011	1.0737	9.9011	1.0935	A-	A-	A+
ELA	3	581079	0	D	2	67332	0.3128	0.245	0.1424	0.2924	0.3095	0.0097	0.001	0.3541	-0.1828	-0.2597	0.0258	0.3554	-0.0585	-0.03	1.464	0.0079	4.771	1.0161	9.9011	1.0706	A+	A-	A-
ELA	3	581086	0	D	2	67453	0.7632	0.1266	0.0523	0.7565	0.0558	0.0072	0.0016	0.5186	-0.3109	-0.2455	0.5205	-0.2544	-0.0633	-0.0403	-0.6765	0.0085	-9.8992	0.8398	-9.8993	0.7359	A+	A+	A+
ELA	3	581087	0	D	2	67312	0.6361	0.1335	0.6291	0.1386	0.0878	0.01	0.001	0.462	-0.2136	0.4632	-0.2596	-0.1938	-0.0572	-0.0267	0.2342	0.0076	-9.8991	0.9424	-9.8991	0.9114	A-	A-	A-
ELA	3	622433	1	A-C	2	7442	0.651	0.6372	0.1983	0.0906	0.0526	0.0195	0.0017	0.3644	0.37	-0.0774	-0.2826	-0.2359	-0.0841	-0.0385	-0.1184	0.0187	-5.329	0.9593	-3.989	0.9521	A-	A+	A+
ELA	3	622431	1	A-K	1	7357	0.8127	0.081	0.7864	0.0418	0.0584	0.0318	0.0005	0.4592	-0.2652	0.447	-0.2426	-0.2108	-0.0702	-0.023	-0.8221	0.0205	-9.8992	0.8358	-9.8993	0.7295	A+	A-	A-
ELA	3	622432	1	A-K	2	7441	0.7246	0.7092	0.1018	0.0801	0.0876	0.0204	0.0009	0.4088	0.4125	-0.162	-0.2103	-0.243	-0.0834	-0.025	-0.3145	0.019	-8.1591	0.935	-8.2391	0.8912	A+	A-	A-
ELA	3	622440	1	A-K	2	7450	0.7474	0.0516	0.0721	0.7323	0.1239	0.0196	0.0005	0.4892	-0.2217	-0.2743	0.4925	-0.2541	-0.1	-0.0217	-0.3754	0.0192	-9.8991	0.858	-9.8992	0.7737	A+	A+	A+
ELA	3	624032	1	A-K	3	7441	0.5198	0.174	0.1951	0.1009	0.5087	0.0205	0.0008	0.2692	-0.0915	-0.1368	-0.1191	0.2758	-0.0896	-0.015	0.549	0.0182	9.9012	1.1834	9.9012	1.2284	A+	A-	A-
ELA	3	622434	1	A-V	2	7506	0.6868	0.1273	0.678	0.0965	0.0854	0.0125	0.0003	0.4907	-0.2609	0.4943	-0.2447	-0.2204	-0.0875	-0.0258	-0.2293	0.0189	-9.8991	0.8673	-9.8992	0.7951	A+	A-	A-
ELA	3	622435	1	A-V	2	7445	0.7821	0.0983	0.0591	0.7659	0.056	0.0203	0.0005	0.5044	-0.3105	-0.2418	0.5022	-0.2218	-0.0829	-0.0242	-0.7624	0.0203	-9.8992	0.8327	-9.8993	0.709	A-	A-	A-
ELA	3	622438	1	A-V	2	7480	0.7496	0.1077	0.0735	0.0651	0.7375	0.0157	0.0005	0.5356	-0.2911	-0.2604	-0.2699	0.5364	-0.0843	-0.0341	-0.5243	0.0195	-9.8992	0.8095	-9.8993	0.7186	A+	A-	A-
ELA	3	576345	1	B-C	2	37005	0.6906	0.0557	0.1363	0.1115	0.6775	0.0181	0.0008	0.4868	-0.2599	-0.2063	-0.2752	0.487	-0.0714	-0.0384	-0.0918	0.0097	-9.8992	0.8444	-9.8992	0.7849	A+	A-	A-
ELA	3	576346	1	B-C	2	37005	0.4547	0.1508	0.2521	0.4461	0.132	0.0182	0.0008	0.3523	-0.2843	0.0296	0.3555	-0.2274	-0.0737	-0.037	0.9982	0.0094	9.901	1.0441	9.9011	1.0646	A-	A-	A-
ELA	3	576347	1	B-C	3	36782	0.5945	0.1332	0.1233	0.1388	0.5797	0.024	0.0009	0.4242	-0.23	-0.2124	-0.1461	0.4241	-0.0656	-0.027	0.5539	0.0093	-9.8991	0.9497	-9.8991	0.9288	A-	A+	A+
ELA	3	576350	1	B-K	3	36685	0.4951	0.2811	0.0976	0.1124	0.4815	0.0268	0.0006	0.3591	-0.0812	-0.201	-0.2247	0.3622	-0.0812	-0.0286	0.8037	0.0094	7.461	1.027	9.291	1.0453	A-	A-	A-
ELA	3	576352	1	B-K	3	37163	0.661	0.1666	0.6512	0.0753	0.0921	0.014	0.0008	0.4996	-0.2981	0.4997	-0.1965	-0.2312	-0.0621	-0.0385	0.156	0.0095	-9.8991	0.8552	-9.8992	0.8012	A-	A-	A-
ELA	3	576354	1	B-V	3	37366	0.6348	0.2589	0.6289	0.0745	0.0283	0.008	0.0014	0.2572	-0.1341	0.2615	-0.1094	-0.1982	-0.0548	-0.0295	0.0312	0.0096	9.9011	1.1066	9.9012	1.1501	A+	A-	A-
ELA	3	581075	1	D	2	7502	0.5189	0.1438	0.2433	0.512	0.0876	0.0129	0.0004	0.2471	-0.2471	0.0443	0.2503	-0.1806	-0.0544	-0.0117	0.4255	0.0182	9.9012	1.1757	9.9012	1.215	A-	A-	A-
ELA	3	629357	1	D	2	7491	0.3309	0.1551	0.3261	0.2882	0.216	0.0135	0.0012	0.257	-0.0883	0.2582	-0.0459	-0.1507	-0.0526	-0.0075	1.4345	0.0192	9.9011	1.1418	9.9013	1.2555	A-	A-	A+
ELA	3	629366	1	D	1	7474	0.7153	0.1001	0.1114	0.7031	0.0684	0.0155	0.0014	0.4916	-0.2833	-0.2302	0.4904	-0.2292	-0.0637	-0.0234	-0.4208	0.0193	-9.8991	0.8904	-9.8992	0.8307	A+	A-	A-
ELA	3	622423	2	A-C	2	7184	0.4427	0.1805	0.1587	0.4254	0.1965	0.0381	0.0008	0.3884	-0.1691	-0.2552	0.3901	-0.039	-0.0953	-0.0292	0.9797	0.0195	1.431	1.0105	3.321	1.0334	A-	A-	A-
ELA	3	622426	2	A-K	2	7327	0.7213	0.1263	0.0666	0.0803	0.707	0.0191	0.0007	0.4945	-0.1882	-0.2986	-0.2801	0.497	-0.0877	-0.0437	-0.3666	0.021	-9.8991	0.8643	-9.8992	0.7836	A+	A-	A-
ELA	3	622428	2	A-K	2	7280	0.6323	0.6158	0.0738	0.1015	0.1827	0.0249	0.0012	0.3742	0.3864	-0.2317	-0.2493	-0.0811	-0.1209	-0.0539	0.0632	0.0199	-3.119	0.9753	-4.219	0.9501	A+	A+	A-
ELA	3	622429	2	A-K	2	7300	0.5411	0.5284	0.0836	0.2634	0.1011	0.0226	0.0008	0.1356	0.1455	-0.2056	0.1377	-0.2111	-0.0816	-0.0205	0.5139	0.0194	9.9012	1.2368	9.9013	1.3202	A+	A+	A+
ELA	3	622430	2	A-K	2	7338	0.4666	0.2443	0.4581	0.1514	0.1279	0.0174	0.0009	0.2401	-0.0661	0.2473	-0.2483	0.0219	-0.0902	-0.0441	0.8852	0.0194	9.9011	1.1074	9.9011	1.1455	A+	A-	A-
ELA	3	622424	2	A-V	2	7278	0.479	0.2849	0.4664	0.1219	0.1005	0.025	0.0013	0.426	-0.1212	0.4294	-0.2015	-0.2598	-0.0926	-0.0289	0.7758	0.0193	-6.659	0.9529	-5.269	0.9506	A+	A+	A-
ELA	3	622425	2	A-V	2	7325	0.6203	0.0697	0.1545	0.6079	0.1478	0.0193	0.0008	0.4654	-0.224	-0.2209	0.4713	-0.2187	-0.1061	-0.0363	0.0745	0.0199	-9.8991	0.9113	-9.8991	0.8639	A+	A+	A+
ELA	3	625180	2	A-V	2	7333	0.3846	0.2292	0.1249	0.2496	0.3773	0.0182	0.0008	0.3882	-0.1064	-0.2961	-0.0782	0.3917	-0.0904	-0.0461	1.3156	0.0199	-7.9491	0.9374	-0.549	0.9936	A-	A+	A+
ELA	3	581089	2	D	2	7352	0.8055	0.04	0.1039	0.7922	0.0474	0.0163	0.0001	0.3825	-0.2236	-0.1952	0.3793	-0.2078	-0.0477	-0.0276	-0.7944	0.0227	-9.8991	0.8647	-9.8992	0.7942	A+	A-	A-
ELA	3	629358	2	D	1	7390	0.5865	0.2888	0.0574	0.5798	0.0626	0.0099	0.0015	0.4325	-0.2402	-0.2147	0.436	-0.1978	-0.0763	-0.0246	0.2655	0.0196	-7.0491	0.9479	-7.3091	0.9236	A+	A-	A-
ELA	3	629367	2	D	1	7334	0.4737	0.1698	0.4647	0.1644	0.1822	0.0181	0.0008	0.3688	-0.125	0.3714	-0.1507	-0.1862	-0.0725	-0.0333	0.7123	0.0193	0.971	1.007	0.641	1.0061	A+	A-	A-
ELA	3	617190	3	A-C	2	7393	0.6295	0.1375	0.6165	0.1432	0.0821	0.0201	0.0005	0.5101	-0.3137	0.5147	-0.1432	-0.2757	-0.1111	-0.0338	-0.0038	0.0201	-9.8991	0.8822	-9.8992	0.8439	A+	A+	A+
ELA	3	617184	3	A-K	2	7351	0.5635	0.115	0.1998	0.1103	0.5487	0.026	0.0003	0.3803	-0.2485	-0.0824	-0.2063	0.3838	-0.0872	-0.0159	0.3808	0.0195	-0.119	0.9991	-1.299	0.9863	A-	A+	A-
ELA	3	617197	3	A-K	2	7416	0.4053	0.4719	0.3982	0.0719	0.0404	0.0164	0.0012	0.3532	-0.0929	0.3576	-0.2648	-0.2405	-0.0923	-0.033	1.1114	0.0196	3.181	1.0244	5.9711	1.0659	A+	A+	A-
ELA	3	617200	3	A-K	2	7377	0.6303	0.1613	0.1411	0.616	0.0588	0.0213	0.0015	0.4841	-0.2117	-0.2391	0.4883	-0.2563	-0.0954	-0.0596	0.0106	0.0201	-9.8991	0.8945	-9.8992	0.8298	A+	A-	A-
ELA	3	617201	3	A-K	3	7348	0.4966	0.1372	0.1681	0.4834	0.1847	0.0204	0.0062	0.4554	-0.1119	-0.2831	0.4633	-0.1649	-0.1068	-0.1023	0.8148	0.0194	-8.5491	0.9384	-5.7291	0.9442	A+	A-	A-
ELA	3	617188	3	A-V	2	7429	0.7078	0.6965	0.1056	0.0669	0.1151	0.0151	0.0008	0.4345	0.4366	-0.2076	-0.2053	-0.2379	-0.0748	-0.022	-0.3206	0.0209	-9.2091	0.9151	-3.9191	0.9397	A-	A+	A-
ELA	3	617191	3	A-V	2	7441	0.5187	0.5113	0.1621	0.0628	0.2494	0.0131	0.0012	0.2335	0.2395	-0.1916	-0.1655	0.0017	-0.0719	-0.0442	0.6376	0.0194	9.9011	1.1477	9.9012	1.1832	A-	A-	A+
ELA	3	617229	3	A-V	2	7409	0.8183	0.0408	0.0964	0.0411	0.8032	0.0171	0.0015	0.483	-0.2673	-0.2734	-0.2315	0.4883	-0.1022	-0.0363	-1.1041	0.0244	-9.8992	0.8287	-9.8993	0.6685	A-	A-	A-
ELA	3	581080	3	D	2	7461	0.3396	0.268	0.1329	0.3357	0.2518	0.011	0.0007	0.3083	-0.2035	-0.0764	0.3087	-0.0577	-0.0423	-0.0101	1.2838	0.0198	5.131	1.0413	7.7011	1.0935	A+	A-	A-
ELA	3	629359	3	D	1	7466	0.7244	0.113	0.0564	0.7164	0.1032	0.0083	0.0026	0.4369	-0.1592	-0.267	0.4409	-0.2573	-0.0646	-0.0502	-0.5295	0.0216	-7.4691	0.924	-4.4191	0.9229	A-	A-	A-
ELA	3	629369	3	D	2	7408	0.9183	0.9012	0.0264	0.0315	0.0223	0.014	0.0046	0.3754	0.346	-0.2071	-0.2047	-0.2144	-0.0441	0.0371	-2.1549	0.034	-3.8791	0.9031	-6.9693	0.7142	A+	A-	B-
ELA	3	622412	4	A-C	2	7321	0.4068	0.2153	0.135	0.3953	0.2262	0.0267	0.0016	0.3367	-0.1489	-0.2757	0.3425	0.0144	-0.1044	-0.0308	1.1496	0.026	3.351	1.0351	4.7711	1.0721	A-	A-	A-
ELA	3	622411	4	A-K	3	7393	0.7047	0.6915	0.0912	0.0692	0.1294	0.017	0.0017	0.3912	0.3989	-0.2556	-0.2736	-0.0821	-0.0944	-0.0355	-0.3372	0.0272	-4.4491	0.9472	-2.7991	0.9453	A+	A-	A-
ELA	3	622415	4	A-K	1	7388	0.8227	0.0516	0.8067	0.0406	0.0816	0.0184	0.0009	0.5265	-0.2678	0.5247	-0.2084	-0.3425	-0.0873	-0.0412	-1.059	0.0312	-9.8992	0.7806	-9.8994	0.5905	B+	A-	A-
ELA	3	622417	4	A-K	2	7379	0.6978	0.1066	0.1167	0.0727	0.6834	0.0192	0.0013	0.4895	-0.256	-0.2217	-0.2474	0.4944	-0.1006	-0.047	-0.2926	0.0271	-9.8991	0.8522	-9.8992	0.768	A+	A-	A-
ELA	3	622418	4	A-K	2	7364	0.6965	0.6808	0.1491	0.0924	0.0552	0.0218	0.0008	0.4314	0.4361	-0.2074	-0.2822	-0.1477	-0.0885	-0.0379	-0.278	0.027	-6.9691	0.9201	-7.8891	0.8564	A+	A+	A+
ELA	3	622419	4	A-K	2	7424	0.6172	0.1379	0.1403	0.6082	0.099	0.0134	0.0012	0.5043	-0.2951	-0.2654	0.5047	-0.146	-0.0614	-0.0521	0.1021	0.026	-9.8991	0.8668	-9.8992	0.8337	A-	A-	A+
ELA	3	622413	4	A-V	3	7390	0.3957	0.1933	0.176	0.2235	0.3881	0.0183	0.0008	0.1906	-0.1343	-0.0535	-0.0236	0.1971	-0.0884	-0.0348	1.1859	0.026	9.9012	1.186	9.9012	1.2324	A+	A-	A-
ELA	3	624149	4	A-V	2	7408	0.75	0.0688	0.7375	0.1261	0.051	0.0162	0.0005	0.5084	-0.2624	0.5087	-0.2645	-0.2673	-0.0794	-0.0366	-0.6025	0.0284	-9.8992	0.8321	-9.8993	0.7323	A+	A-	A-
ELA	3	581081	4	D	2	7414	0.4265	0.2537	0.2063	0.1045	0.4197	0.0151	0.0008	0.3112	-0.1268	-0.1395	-0.1181	0.3113	-0.0438	-0.019	0.6928	0.0255	7.8511	1.078	7.5411	1.0996	A+	A+	A+
ELA	3	629360	4	D	1	7423	0.1278	0.2852	0.1864	0.126	0.3877	0.0141	0.0007	0.0442	0.1997	-0.0477	0.0471	-0.161	-0.0678	-0.0293	2.9056	0.0367	5.7911	1.1468	9.902	1.9704	A+	A+	A-
ELA	3	629368	4	D	1	7353	0.3779	0.1776	0.1781	0.3689	0.2514	0.0231	0.0009	0.2514	-0.102	-0.0568	0.2527	-0.121	-0.0526	-0.0274	1.2845	0.0263	9.9011	1.1177	9.9012	1.2011	A+	A-	A-
ELA	3	624690	5	A-C	2	7450	0.5839	0.2923	0.5754	0.0692	0.0485	0.0138	0.0008	0.2973	-0.05	0.3037	-0.2751	-0.2198	-0.0809	-0.0316	0.2968	0.0256	6.8011	1.0681	6.1811	1.0875	A-	A-	A-
ELA	3	624687	5	A-K	2	7418	0.2146	0.3276	0.2589	0.2106	0.1841	0.0171	0.0017	0.1066	0.0242	-0.0247	0.1114	-0.0876	-0.079	-0.0423	2.2281	0.0303	9.8112	1.1698	9.9015	1.5255	A-	A-	A-
ELA	3	624688	5	A-K	2	7376	0.4616	0.4504	0.0997	0.2114	0.2142	0.0234	0.0009	0.3387	0.3397	-0.2227	-0.1283	-0.0969	-0.0635	-0.0184	0.902	0.0254	3.021	1.0293	2.901	1.0379	A-	A+	A-
ELA	3	624689	5	A-K	2	7371	0.6861	0.1114	0.0668	0.6689	0.1279	0.0241	0.0009	0.4302	-0.2447	-0.2412	0.4303	-0.158	-0.0755	-0.0312	-0.1791	0.0267	-7.2991	0.9194	-6.9291	0.8796	A+	A-	A+

ELA	3	624696	5	A-K	2	7418	0.6139	0.1632	0.1	0.1156	0.6024	0.0176	0.0012	0.3896	-0.1839	-0.1909	-0.1777	0.3906	-0.0542	-0.0574	0.1633	0.0258	-2.899	0.9709	-1.149	0.9831	A+	A+	A-
ELA	3	624691	5	A-V	2	7414	0.3557	0.178	0.0988	0.355	0.3488	0.0183	0.0011	0.3353	-0.1722	-0.2236	-0.0357	0.3373	-0.0766	-0.0248	1.4114	0.0264	0.231	1.0025	4.8811	1.0829	A-	A-	A-
ELA	3	624692	5	A-V	2	7456	0.6127	0.6042	0.227	0.0503	0.1048	0.0135	0.0003	0.4008	0.4046	-0.2225	-0.2612	-0.1259	-0.0748	-0.0242	0.154	0.0258	-3.329	0.9666	-2.549	0.9627	A-	B-	A-
ELA	3	632369	5	A-V	2	7365	0.5122	0.0673	0.4989	0.0664	0.3415	0.0255	0.0003	0.1849	-0.2663	0.1942	-0.2537	0.0995	-0.0892	-0.018	0.6674	0.0253	9.9012	1.1843	9.9012	1.2302	A-	A-	A-
ELA	3	581077	5	D	2	7442	0.7659	0.0571	0.754	0.061	0.1123	0.0155	0.0001	0.4849	-0.2976	0.479	-0.2562	-0.2224	-0.0444	-0.0215	-0.8684	0.03	-3.3891	0.9472	-5.1691	0.8615	A+	A-	A-
ELA	3	629361	5	D	1	7488	0.621	0.0398	0.3173	0.6151	0.0183	0.0086	0.0009	0.3609	-0.2189	-0.218	0.3642	-0.1987	-0.0666	-0.007	0.0996	0.0259	0.391	1.004	0.421	1.0064	A+	A+	A-
ELA	3	629370	5	D	2	7374	0.6595	0.1589	0.6433	0.0848	0.0885	0.0238	0.0008	0.4796	-0.2326	0.4761	-0.256	-0.2161	-0.0591	-0.0471	-0.0443	0.0263	-9.8991	0.8942	-9.7392	0.8465	A+	A-	A+
ELA	3	576335	6	A-C	2	29445	0.5874	0.094	0.0981	0.2084	0.5701	0.0285	0.0008	0.5448	-0.268	-0.3293	-0.1958	0.538	-0.0598	-0.0251	0.3048	0.0128	-9.8992	0.8495	-9.8992	0.8111	A-	A-	A-
ELA	3	576336	6	A-K	2	29403	0.6675	0.157	0.647	0.0832	0.082	0.03	0.0008	0.4232	-0.3418	0.4354	-0.0894	-0.1284	-0.1359	-0.0219	0.0503	0.013	-9.8991	0.9104	-9.8991	0.8751	A+	A+	A-
ELA	3	576337	6	A-K	2	29779	0.4825	0.1222	0.4737	0.0655	0.3202	0.0176	0.0008	0.327	-0.2835	0.3309	-0.2385	-0.0052	-0.0773	-0.0278	0.9681	0.0127	9.9011	1.0599	9.9011	1.0929	A-	A+	A+
ELA	3	576339	6	A-K	2	29611	0.5803	0.1455	0.0964	0.1678	0.5664	0.0194	0.0045	0.2746	-0.113	-0.2252	-0.0515	0.2831	-0.0676	-0.0809	0.5124	0.0127	9.9011	1.0878	9.9011	1.1448	A+	A+	A+
ELA	3	576341	6	A-K	2	29618	0.5312	0.1015	0.5187	0.1548	0.2014	0.0231	0.0006	0.3203	-0.1637	0.3246	-0.1086	-0.1525	-0.0781	-0.0229	0.7722	0.0127	9.9011	1.0609	9.9011	1.0782	A+	A+	A-
ELA	3	576342	6	A-V	2	29974	0.6996	0.6912	0.0699	0.1149	0.112	0.0112	0.0008	0.5024	0.503	-0.2587	-0.2656	-0.2343	-0.0635	-0.041	-0.3958	0.0137	-9.8991	0.8903	-9.8992	0.8092	A-	A-	A-
ELA	3	623012	6	B-C	2	7449	0.6651	0.6512	0.0798	0.11	0.1382	0.0201	0.0007	0.555	0.5556	-0.2477	-0.2357	-0.3192	-0.0913	-0.0369	-0.0625	0.0262	-9.8992	0.8103	-9.8993	0.7399	A+	A+	A+
ELA	3	623100	6	B-C	2	7375	0.4224	0.1843	0.2548	0.1209	0.4095	0.0289	0.0016	0.3525	-0.2409	-0.0199	-0.1769	0.3552	-0.0772	-0.049	1.115	0.0255	-0.569	0.9944	1.011	1.0136	A-	A+	A+
ELA	3	623013	6	B-K	2	7477	0.4728	0.0973	0.4647	0.086	0.335	0.0158	0.0013	0.3835	-0.2902	0.3875	-0.2516	-0.0526	-0.0835	-0.0415	0.8475	0.0252	-3.409	0.9686	-1.569	0.981	A-	A-	A-
ELA	3	623103	6	B-K	2	7485	0.4456	0.2322	0.0857	0.2277	0.4384	0.0155	0.0005	0.328	-0.1418	-0.248	-0.0563	0.3328	-0.0913	-0.0405	0.974	0.0253	2.461	1.0234	2.471	1.0315	A+	A+	A+
ELA	3	623104	6	B-K	2	7520	0.4144	0.1305	0.2044	0.4096	0.244	0.0108	0.0007	0.4247	-0.299	-0.0982	0.4266	-0.1421	-0.073	-0.0341	1.1144	0.0255	-8.0691	0.9232	-3.8691	0.9489	A-	A-	A-
ELA	3	623105	6	B-K	2	7481	0.7253	0.1521	0.0691	0.7133	0.0489	0.0158	0.0008	0.4824	-0.2646	-0.2671	0.4867	-0.2073	-0.0908	-0.0472	-0.3976	0.0274	-9.8991	0.8533	-9.8992	0.7793	A+	A-	A+
ELA	3	623107	6	B-V	2	7449	0.2948	0.2861	0.2887	0.2934	0.1111	0.0201	0.0007	0.0157	0.0739	0.0235	0.0468	-0.1684	-0.083	-0.0307	1.7464	0.0274	9.9013	1.2814	9.9015	1.5425	A+	A+	A+
ELA	3	623108	6	B-V	2	7499	0.6198	0.611	0.0987	0.1765	0.0995	0.0137	0.0005	0.2713	0.2764	-0.1086	-0.1722	-0.0942	-0.0674	-0.0297	0.1415	0.0257	6.9411	1.0712	6.8611	1.1025	A+	A-	A-
ELA	3	408513	6	D	2	7517	0.309	0.2636	0.3054	0.3101	0.1091	0.0101	0.0017	0.3131	-0.1495	0.3144	-0.0597	-0.1428	-0.0511	-0.0416	1.6104	0.0268	0.121	1.0014	3.4611	1.0637	A+	A-	A+
ELA	3	629362	6	D	1	7509	0.6579	0.0703	0.1779	0.0895	0.6494	0.0112	0.0017	0.4354	-0.2246	-0.1728	-0.2723	0.4365	-0.0564	-0.0269	-0.053	0.0261	-6.7791	0.929	-6.8391	0.8926	A+	A-	A-
ELA	3	629371	6	D	1	7477	0.3608	0.3547	0.297	0.1808	0.1505	0.0159	0.0012	0.1832	0.1871	-0.0079	-0.1294	-0.076	-0.0639	-0.028	1.3905	0.0261	9.9012	1.1561	9.9012	1.2337	A-	A+	A+
ELA	3	625452	7	B-C	2	7423	0.518	0.5074	0.1181	0.0734	0.2807	0.0198	0.0007	0.3399	0.345	-0.193	-0.271	-0.0592	-0.0905	-0.0125	0.6083	0.0253	2.841	1.0272	3.171	1.0401	A-	A+	A+
ELA	3	625454	7	B-C	2	7372	0.6194	0.0608	0.0622	0.6025	0.2473	0.0265	0.0007	0.1605	-0.2243	-0.2272	0.1765	0.0929	-0.1067	-0.0333	0.1434	0.0258	9.9012	1.1934	9.9013	1.2939	A-	A-	A-
ELA	3	625450	7	B-K	2	7448	0.4092	0.3621	0.4022	0.0858	0.1328	0.0149	0.0022	0.1642	0.0676	0.1714	-0.2096	-0.1342	-0.0773	-0.0626	1.1211	0.0257	9.9012	1.2004	9.9013	1.2731	A+	A-	A-
ELA	3	625451	7	B-K	2	7498	0.7627	0.1105	0.0691	0.0552	0.7547	0.0102	0.0004	0.526	-0.2675	-0.2972	-0.2588	0.5302	-0.092	-0.0287	-0.6906	0.0288	-9.8992	0.8122	-9.8993	0.6827	A-	A-	A-
ELA	3	625456	7	B-K	2	7419	0.6115	0.152	0.1462	0.0821	0.5987	0.0206	0.0004	0.5529	-0.2485	-0.2497	-0.2863	0.5551	-0.1104	-0.0178	0.1625	0.0257	-9.8992	0.8221	-9.8992	0.7623	A-	A-	A-
ELA	3	625458	7	B-K	2	7456	0.5837	0.132	0.1372	0.5743	0.1404	0.0158	0.0003	0.4845	-0.2209	-0.3022	0.489	-0.1403	-0.1123	-0.0157	0.2833	0.0255	-9.8991	0.8859	-9.8992	0.8458	A+	A-	A-
ELA	3	625457	7	B-V	2	7445	0.2408	0.4534	0.2366	0.1247	0.1677	0.017	0.0005	-0.0717	0.2728	-0.063	-0.2081	-0.072	-0.1006	-0.0179	2.0365	0.0292	9.9013	1.3428	9.9019	1.8525	A+	A+	A-
ELA	3	633104	7	B-V	2	7402	0.4941	0.4826	0.1428	0.0484	0.303	0.0227	0.0005	0.4409	0.4455	-0.2918	-0.2616	-0.1028	-0.1116	-0.0229	0.728	0.0253	-8.1891	0.9239	-6.8391	0.9169	A-	A+	A+
ELA	3	504082	7	D	2	7463	0.5886	0.5797	0.1763	0.1424	0.0864	0.0139	0.0013	0.3376	0.3363	-0.1696	-0.1789	-0.1242	-0.03	-0.0122	0.3696	0.0254	3.461	1.034	2.541	1.0338	A+	A+	A+
ELA	3	629363	7	D	1	7456	0.5038	0.4956	0.156	0.1238	0.2085	0.0144	0.0017	0.3053	0.3101	-0.1374	-0.1216	-0.1348	-0.0785	-0.0248	0.665	0.0253	6.8611	1.0667	5.8911	1.0752	A+	A+	A+
ELA	3	629372	7	D	1	7423	0.4204	0.066	0.1522	0.4119	0.3496	0.0197	0.0008	0.2914	-0.2033	-0.177	0.2938	-0.0446	-0.0634	-0.016	1.0732	0.0257	8.0711	1.0828	8.2011	1.118	A+	A+	A+
ELA	3	623661	8	B-C	2	7450	0.6356	0.1604	0.1176	0.0804	0.6252	0.0153	0.0011	0.4584	-0.2197	-0.1776	-0.2694	0.4633	-0.0991	-0.0303	0.0724	0.026	-9.1791	0.9071	-6.7691	0.8941	A+	A-	A-
ELA	3	623663	8	B-C	2	7370	0.6389	0.1822	0.6217	0.0885	0.0807	0.0264	0.0005	0.4732	-0.2722	0.4742	-0.1833	-0.2122	-0.0907	-0.023	0.09	0.026	-9.8991	0.9	-9.8992	0.8424	A+	A-	A-
ELA	3	623665	8	B-C	3	7428	0.6432	0.1757	0.1254	0.6308	0.0487	0.0182	0.0011	0.3868	-0.1659	-0.1932	0.3936	-0.2285	-0.0961	-0.0236	0.0434	0.0261	-2.859	0.9701	-2.129	0.9652	A+	A-	A+
ELA	3	623667	8	B-C	2	7256	0.5518	0.14	0.2011	0.0883	0.5287	0.0397	0.0022	0.4553	-0.2327	-0.1794	-0.1944	0.4526	-0.0846	-0.0334	0.5504	0.0254	-7.7291	0.9277	-6.5791	0.9158	A-	A-	A-
ELA	3	623660	8	B-K	2	7451	0.7113	0.6998	0.1052	0.1157	0.0631	0.0153	0.0009	0.4784	0.4851	-0.2602	-0.2468	-0.2024	-0.1077	-0.0379	-0.3247	0.0273	-9.8991	0.8635	-9.8992	0.7801	A-	A-	A-
ELA	3	623755	8	B-K	2	7375	0.3745	0.1402	0.1665	0.3647	0.3024	0.0252	0.0011	0.2806	-0.201	-0.1041	0.2878	-0.0229	-0.1177	-0.0316	1.3609	0.0263	5.9811	1.0665	8.6111	1.1442	A-	A-	A-
ELA	3	623666	8	B-V	3	7408	0.6342	0.6203	0.1363	0.1149	0.1067	0.0213	0.0007	0.48	0.4833	-0.3132	-0.1926	-0.1654	-0.0967	-0.0275	0.0974	0.026	-9.8991	0.8819	-9.8992	0.8228	A-	A+	A-
ELA	3	630437	8	B-V	2	7469	0.7704	0.0656	0.7597	0.0436	0.1172	0.0136	0.0003	0.447	-0.2519	0.4527	-0.2432	-0.2178	-0.0951	-0.0194	-0.68	0.029	-8.5891	0.881	-8.8992	0.7858	A-	A-	A-
ELA	3	409150	8	D	2	7456	0.4903	0.1743	0.1755	0.152	0.4827	0.0147	0.0009	0.3427	-0.1276	-0.1746	-0.1371	0.3455	-0.059	-0.0499	0.8968	0.0255	5.021	1.0495	4.8211	1.0645	A+	A-	A-
ELA	3	629364	8	D	2	7501	0.5883	0.1609	0.5827	0.1609	0.0858	0.0077	0.002	0.3578	-0.2056	0.3603	-0.1467	-0.1503	-0.0507	-0.0383	0.286	0.0257	2.971	1.0297	1.241	1.018	A+	A+	B-
ELA	3	629373	8	D	1	7436	0.3117	0.306	0.2619	0.2205	0.1933	0.017	0.0012	0.1528	0.1566	-0.0526	0.0011	-0.1031	-0.0601	-0.0291	1.6766	0.0273	9.9012	1.1814	9.9014	1.3834	A+	A-	A+
ELA	3	624710	9	B-C	2	7330	0.598	0.1032	0.2193	0.5785	0.0664	0.0305	0.0021	0.5196	-0.2406	-0.2481	0.5184	-0.2496	-0.0882	-0.0618	0.3032	0.0257	-9.8991	0.8653	-9.8992	0.8184	A-	A-	A+
ELA	3	624711	9	B-C	2	7432	0.4193	0.1156	0.3571	0.4112	0.0969	0.0186	0.0005	0.5049	-0.1978	-0.2576	0.5073	-0.163	-0.104	-0.0281	1.1233	0.0258	-9.8991	0.8524	-9.8991	0.8607	A-	A-	A-
ELA	3	624715	9	B-C	3	7450	0.4148	0.1596	0.4078	0.229	0.1869	0.015	0.0017	0.4355	-0.145	0.4397	-0.2024	-0.1623	-0.1061	-0.0427	1.1406	0.0258	-7.2891	0.9268	-3.519	0.9503	A-	A+	A+
ELA	3	624707	9	B-K	2	7373	0.4153	0.352	0.1006	0.1164	0.4041	0.0259	0.0011	0.3791	-0.1284	-0.1613	-0.1921	0.3828	-0.0952	-0.0397	1.1592	0.0259	-1.069	0.989	-0.489	0.9929	A-	A-	A-
ELA	3	624709	9	B-K	2	7356	0.5313	0.5158	0.0957	0.0978	0.2616	0.0278	0.0013	0.1501	0.1597	-0.1578	-0.2289	0.1096	-0.0744	-0.037	0.6104	0.0254	9.9012	1.2348	9.9013	1.3118	A-	A-	A-
ELA	3	624716	9	B-K	2	7404	0.4803	0.2516	0.1588	0.0975	0.4693	0.0223	0.0005	0.3635	-0.1476	-0.1083	-0.2174	0.3699	-0.1061	-0.0355	0.8366	0.0255	0.761	1.0074	1.161	1.0152	A-	A-	A-
ELA	3	624714	9	B-V	1	7433	0.7787	0.7639	0.0538	0.0709	0.0924	0.0174	0.0016	0.4134	0.4169	-0.1609	-0.1811	-0.2852	-0.0772	-0.0404	-0.7131	0.0292	-6.5891	0.9065	-3.4991	0.9099	A+	A-	A+
ELA	3	632159	9	B-V	2	7441	0.5479	0.2954	0.5381	0.0831	0.0655	0.0172	0.0008	0.4582	-0.2354	0.4613	-0.1959	-0.2279	-0.0833	-0.0455	0.5017	0.0255	-8.2891	0.9217	-7.5091	0.903	C-	A+	A+
ELA	3	504081	9	D	2	7476	0.4873	0.4808	0.2435	0.1094	0.153	0.012	0.0013	0.3009	0.3027	-0.0391	-0.2226	-0.1636	-0.0402	-0.0483	0.805	0.0255	8.9411	1.0894	8.4411	1.1136	A+	A-	A-
ELA	3	629365	9	D	1	7498	0.7603	0.1842	0.0187	0.7524	0.0342	0.0098	0.0007	0.3967	-0.2645	-0.1707	0.3995	-0.2207	-0.059	-0.0331	-0.6406	0.0288	-4.5091	0.9377	-3.9691	0.9026	A+	A-	A-
ELA	3	629374	9	D	2	7460	0.733	0.1011	0.055	0.1068	0.7217	0.0146	0.0008	0.4333	-0.2095	-0.2027	-0.2499	0.4326	-0.0547	-0.0263	-0.4554	0.0278	-6.9091	0.9136	-5.9891	0.8707	A-	A-	A-
ELA	4	576332	0	A-C	3	65954	0.362	0.2448	0.1798	0.3565	0.2036	0.0133	0.002	0.2368	-0.1075	-0.1237	0.239	-0.0324	-0.0586	-0.0226	1.67	0.0081	9.9013	1.2764	9.9016	1.5745	A-	A+	A+
ELA	4	576317	0	A-K	2	66574	0.7042	0.6999	0.1458	0.0777	0.0705	0.0052	0.0008	0.4368	0.439	-0.1805	-0.266	-0.2393	-0.0565	-0.0326	-0.3553	0.008	-9.899	0.9516	-9.8991	0.9388	A+	A+	A+
ELA	4	576334	0	A-K	2	66433	0.7853	0.7789	0.0751	0.0636	0.0742	0.007	0.0011	0.526	0.5281	-0.2976	-0.2603	-0.2672	-0.0734	-0.0295	-0.7134	0.0085	-9.8992	0.7893	-9.8993	0.6696	A-	A+	A+
ELA	4	576356	0	A-K	2	66607	0.4846	0.135	0.114	0.2635	0.4819	0.0045	0.0011	0.4591	-0.2717	-0.2565	-0.1158	0.4601	-0.0494	-0.0373	0.8889	0.0075	-3.369	0.9905	5.681	1.0225	A-	A+	A+
ELA	4	579416	0	A-K	2	66452	0.5169	0.0716	0.5129	0.2244	0.1832	0.0059	0.002	0.36	-0.2861	0.3641	-0.2304	-0.0096	-0.09	-0.0327	0.9163	0.0075	9.9011	1.1076	9.9012	1.1701	A-	A+	A+
ELA	4	579417	0	A-K	3	66535	0.6297	0.1122	0.1842	0.6255	0.0714	0.0059	0.0007	0.4683	-0.2919	-0.181	0.4723	-0.2269	-0.0893	-0.037	0.055	0.0077	-9.899	0.9536	-9.8991	0.9415	A-	A-	A-
ELA	4	579419	0	A-K	3	66358	0.6209	0.159	0.6151	0.0892	0.1273	0.0081	0.0011	0.4912	-0.1979	0.4946	-0.2728	-0.2438	-0.0896	-0.0357	0.038	0.0077	-9.8991	0.9332	-9.8991	0.8996	A+	A+	A+
ELA	4	579420	0	A-K	2	66363	0.6185	0.2112	0.0824	0.0844	0.6128	0.0075	0.0017	0.439	-0.2559	-0.1339	-0.2351	0.4436	-0.0949	-0.0316	0.1009	0.0077	-7.169	0.978	-9.109	0.9603	A-	A+	A-
ELA	4	576321	0	A-V	2	66551	0.4086	0.406	0.164	0.1289	0.2947	0.0058	0.0006	0.3421	0.3436	-0.2024	-0.2393	-0.0193	-0.054	-0.0311	1.2683	0.0077	9.9011	1.1104	9.9012	1.2171	A-	A+	A+
ELA	4	579390	0	A-V	2	66385	0.4017	0.3981	0.1892	0.0764	0.3274	0.0075	0.0014	0.3469	0.3503	-0.0579	-0.1664	-0.203	-0.092	-0.0369	1.1742	0.0076	9.9011	1.0933	9.9012	1.168	A-	A-	A-
ELA	4	495045	0	B-C	3	66551	0.5544	0.5509	0.1546	0.0899	0.1982	0.0047	0.0017	0.4333	0.4358	-0.2101	-0.2666	-0.1456	-0.0771	-0.0297	0.3275	0.0075	1.471	1.0043	3.331	1.0133	A-	A-	A-
ELA	4	495046	0	B-C	3	66500	0.6011	0.1529	0.1876	0.5967	0.0556	0.0062	0.001	0.5156	-0.2542	-0.2469	0.5186	-0.2558	-0.087	-0.0349	0.149	0.0076	-9.8991	0.9026	-9.8991	0.8581	A+	A-	A-
ELA	4	495048	0	B-C	2	66515	0.6357	0.1805	0.0664	0.6313	0.1148	0.0059	0.0011	0.5027	-0.2612	-0.2755	0.5054	-0.212	-0.0779	-0.038	0.3239	0.0075	-9.8991	0.8966	-9.8991	0.8674	A+	A-	A+
ELA	4	495049	0	B-C	3	66524	0.788	0.7826	0.082	0.0711	0.0575	0.005	0.0018	0.5463	0.5494	-0.2711	-0.3126	-0.2781	-0.0803	-0.0353	-0.7469	0.0086	-9.8992	0.7751	-9.8994	0.6423	A+	A-	A-
ELA	4	579147	0	B-C	2	66427	0.6213	0.6162	0.0935	0.095	0.187	0.007	0.0012	0.3528	0.3596	-0.3073	-0.2845	0.0198	-0.1004	-0.0385	0.1728	0.0076	9.901	1.0429	9.9011	1.133	A+	A+	A+
ELA	4	579151	0	B-C	2	66175	0.67	0.1159	0.0859	0.1242	0.6619	0.0107	0.0013	0.5248	-0.2811	-0.2806	-0.2116	0.529	-0.1013	-0.0393	-0.3383	0.008	-9.899	0.9539	-9.8991	0.895	A-	A-	A+
ELA	4	579155	0	B-K	2	66405	0.5902	0.5852	0.1197	0.1524	0.1341	0.0077	0.0008	0.4847	0.4892	-0.21	-0.2505	-0.2132	-0.1034	-0.0387	-0.0664	0.0078	9.901	1.0333	1.381	1.0067	A-	A+	A+
ELA	4	579156	0	B-K	2	66327	0.3604	0.2101	0.2199	0.2034	0.3569	0.009	0.0007	0.3507	-0.2715	-0.0699	-0.0496	0.3538	-0.0963	-0.0308	1.2382	0.0077	6.971	1.0214	9.9011	1.0938	A+	A+	A+
ELA	4	579159	0	B-K	2	66362	0.4393	0.2158	0.0993	0.2404	0.4353	0.0077	0.0015	0.3998	-0.2519	-0.2046	-0.0571	0.4041	-0.1097	-0.039	1.0952	0.0076	9.901	1.0416	9.9011	1.1094	A+	A-	A-
ELA	4	579161	0	B-K	2	66323	0.4767	0.2594	0.1568	0.4721	0.1019	0.0087	0.0011	0.4908	-0.2275	-0.2093	0.4935	-0.1992	-0.0955	-0.0428	0.6795	0.0075	-9.8991	0.9397	-9.8991	0.9455	A+	A-	A-
ELA	4	495047	0	B-V	2	66453	0.7348	0.0851	0.0834	0.0946	0.7291	0.0068	0.0011	0.4862	-0.2189	-0.26	-0.2629	0.4903	-0.0832	-0.036	-0.4604	0.0082	-9.8991	0.8834	-9.8992	0.84	A-	A+	A-
ELA	4	495053	0	B-V	2	66576	0.4481	0.0747	0.4454	0.0821	0.3918	0.0048	0.0012	0.3431	-0.2939	0.3465	-0.2212	-0.0549	-0.0857	-0.0428	1.2575	0.0077	9.9012	1.1594	9.9013	1.2819	A+	A+	A+
ELA	4	579165	0	B-V	2	66485	0.4907	0.307	0.4871	0.1118	0.0868	0.0065	0.0009	0.3732	-0.0913	0.3781	-0.2272	-0.2329	-0.105	-0.0426	0.7872	0.0075	9.9011	1.065	9.9011	1.0999	A+	A-	A-
ELA	4	254906	0	D	2	66704	0.6606	0.151	0.6579	0.0932	0.0937	0.0026	0.0016	0.3873	-0.1949	0.39	-0.2151	-0.1666	-0.0545	-0.0348	-0.2036	0.0079	9.901	1.0381	8.671	1.0464	A+	A+	A+
ELA	4	255913	0	D	2	66684	0.5162	0.1828	0.5139	0.137	0.1619	0.0026	0.0018	0.3635	-0.15	0.3653	-0.1412	-0.1959	-0.0451	-0.0388	0.4793	0.0075	9.9011	1.0758	9.9011	1.0914	A+	A+	A+
ELA	4	341145	0	D	2	66445	0.5704	0.1657	0.1563	0.1043	0.5658	0.0057	0.0023	0.3317	-0.1218	-0.154	-0.191	0.3354	-0.0656	-0.0365	0.4177	0.0075	9.9011	1.0976	9.9011	1.1159	A+	A+	A-
ELA	4	341147	0	D	2	66451	0.4656	0.129	0.143	0.2582	0.4619	0.0063	0.0016	0.3981	-0.2358	-0.1848	-0.1124	0.4002	-0.0651	-0.0373	0.8379	0.0075	9.901	1.0357	9.9011	1.0602	A+	A-	A-

ELA	4	504065	0	D	3	66750	0.8056	0.0749	0.0459	0.8029	0.0729	0.0022	0.0012	0.461	-0.2446	-0.2245	0.463	-0.2672	-0.0416	-0.0406	-1.0323	0.0091	-9.8991	0.8696	-9.8992	0.7955	A+	A-	A-
ELA	4	504070	0	D	2	66468	0.4874	0.4837	0.2856	0.0536	0.1695	0.0055	0.0022	0.2919	0.2951	-0.1819	-0.1928	-0.0415	-0.0666	-0.0304	0.8484	0.0075	9.9012	1.1565	9.9012	1.2165	A-	A-	A-
ELA	4	581069	0	D	2	66372	0.3818	0.2099	0.3783	0.1944	0.2084	0.0059	0.0031	0.2844	-0.1481	0.2872	-0.0883	-0.0905	-0.0691	-0.0349	1.2142	0.0077	9.9011	1.1234	9.9012	1.215	A+	A-	A+
ELA	4	581070	0	D	2	66658	0.5125	0.1499	0.1739	0.5101	0.1614	0.0032	0.0016	0.3878	-0.1728	-0.2044	0.3896	-0.1398	-0.049	-0.0354	0.7261	0.0075	9.9011	1.054	9.9011	1.0718	A+	A-	A-
ELA	4	581073	0	D	2	66432	0.5435	0.1058	0.1912	0.5391	0.1557	0.0057	0.0024	0.4386	-0.2122	-0.137	0.4412	-0.2584	-0.0712	-0.0339	0.5434	0.0075	-1.969	0.9944	-0.929	0.9965	A-	A+	A-
ELA	4	623021	1	A-C	2	7411	0.7301	0.0807	0.7209	0.0918	0.0939	0.0115	0.0012	0.4851	-0.2459	0.4828	-0.2769	-0.2186	-0.045	-0.0321	-0.3781	0.0187	-9.8991	0.8526	-9.8992	0.7784	A+	A+	A-
ELA	4	623017	1	A-K	2	7450	0.6306	0.1589	0.1206	0.0871	0.6259	0.0043	0.0032	0.4686	-0.201	-0.2075	-0.2829	0.472	-0.0718	-0.0509	0.069	0.018	-9.5991	0.932	-9.6691	0.9036	A+	A-	A+
ELA	4	623019	1	A-K	2	7469	0.6443	0.1543	0.1403	0.6411	0.0594	0.0031	0.0019	0.4884	-0.2727	-0.2138	0.4907	-0.2429	-0.0551	-0.0494	0.0896	0.0179	-9.8991	0.881	-9.8992	0.838	A+	A-	A+
ELA	4	623022	1	A-K	2	7455	0.6353	0.2285	0.0481	0.0857	0.631	0.0055	0.0013	0.4631	-0.2245	-0.2374	-0.2626	0.4655	-0.0653	-0.035	0.0732	0.018	-9.8991	0.9065	-9.8991	0.883	A+	A-	A-
ELA	4	623023	1	A-K	2	7490	0.6653	0.1847	0.057	0.6639	0.0923	0.0017	0.0004	0.4464	-0.2512	-0.2695	0.4472	-0.1706	-0.0291	-0.0358	-0.1219	0.0182	-9.8991	0.9226	-9.7391	0.8931	A+	B-	A-
ELA	4	623024	1	A-K	2	7456	0.6249	0.6207	0.0891	0.1439	0.1396	0.0055	0.0012	0.4582	0.4601	-0.2915	-0.2259	-0.1601	-0.0596	-0.0305	0.0931	0.0179	-9.8991	0.9134	-9.8991	0.8804	A+	A-	A-
ELA	4	623015	1	A-V	2	7476	0.7738	0.0622	0.7707	0.0489	0.1142	0.0036	0.0004	0.4862	-0.2922	0.4873	-0.2311	-0.2549	-0.0467	-0.029	-0.8238	0.02	-9.8991	0.8519	-9.8992	0.7629	A+	A-	A-
ELA	4	629549	1	A-V	2	7401	0.2797	0.2758	0.1913	0.4017	0.1172	0.0127	0.0013	-0.0739	-0.0688	0.0248	0.0895	-0.0505	-0.0453	-0.0439	1.6211	0.0193	9.9015	1.4489	9.9019	1.8827	A-	A-	A-
ELA	4	579148	1	B-C	2	37061	0.401	0.0976	0.2508	0.3986	0.247	0.0041	0.0018	0.3206	-0.235	-0.22	0.3228	0.0292	-0.0608	-0.0378	1.2045	0.0094	9.9011	1.0752	9.9012	1.1833	A+	A+	A-
ELA	4	579152	1	B-C	2	36972	0.5121	0.5078	0.1079	0.0755	0.3006	0.0048	0.0035	0.3882	0.3907	-0.1987	-0.2151	-0.1531	-0.0628	-0.0393	0.8271	0.0093	6.121	1.0215	9.781	1.0474	A-	A-	A-
ELA	4	579154	1	B-K	2	37164	0.7694	0.767	0.0578	0.119	0.0531	0.0025	0.0006	0.3214	0.3242	-0.1966	-0.1951	-0.1113	-0.049	-0.0238	-0.2675	0.0098	-9.8991	0.8968	-9.8991	0.8747	A+	A-	A-
ELA	4	579158	1	B-K	2	37034	0.5534	0.0841	0.1104	0.2492	0.5497	0.006	0.0007	0.4248	-0.2045	-0.2136	-0.1928	0.4261	-0.0517	-0.035	0.5218	0.0092	-9.899	0.9561	-9.899	0.9531	A+	A-	A-
ELA	4	579160	1	B-K	1	37063	0.6955	0.1266	0.6914	0.0961	0.08	0.0043	0.0015	0.426	-0.2583	0.4296	-0.2101	-0.1647	-0.0641	-0.044	-0.1193	0.0096	-9.8991	0.8885	-9.8991	0.861	A-	A-	A-
ELA	4	579166	1	B-V	2	37129	0.7884	0.0664	0.0996	0.7852	0.0447	0.0033	0.0008	0.4042	-0.228	-0.1775	0.408	-0.2572	-0.0586	-0.0392	-0.561	0.0102	-9.8992	0.7993	-9.8993	0.7393	A+	A-	A-
ELA	4	581064	1	D	2	7462	0.5046	0.1905	0.5016	0.1673	0.1347	0.0041	0.0017	0.3839	-0.1825	0.3853	-0.13	-0.2001	-0.0396	-0.0377	0.6524	0.0178	4.451	1.0314	4.801	1.0452	A-	A-	A+
ELA	4	629441	1	D	2	7450	0.9227	0.028	0.0177	0.9158	0.031	0.0072	0.0003	0.2916	-0.1722	-0.1318	0.3011	-0.1771	-0.0841	-0.0011	-2.3172	0.0303	-2.4191	0.9462	-3.7691	0.8522	A+	A-	A-
ELA	4	629450	1	D	1	7458	0.6795	0.2286	0.053	0.0368	0.6752	0.0055	0.0009	0.3829	-0.2085	-0.2744	-0.1456	0.3826	-0.0329	-0.0089	-0.2067	0.0183	-2.459	0.9811	-3.119	0.9631	A-	A-	A-
ELA	4	623029	2	A-C	2	7297	0.5827	0.5758	0.2345	0.0934	0.0844	0.0102	0.0018	0.3992	0.4004	-0.0945	-0.2459	-0.2872	-0.0589	-0.0136	0.2433	0.0193	-4.039	0.9702	-3.619	0.9643	A+	A+	A+
ELA	4	623026	2	A-K	2	7285	0.6121	0.1917	0.1012	0.6038	0.0898	0.0135		0.4524	-0.2338	-0.1831	0.4505	-0.238	-0.0437		0.314	0.0192	-5.479	0.9605	-5.9891	0.9433	A+	A-	A-
ELA	4	623028	2	A-K	2	7315	0.5911	0.5855	0.1531	0.2089	0.0429	0.0076	0.0019	0.2884	0.2897	-0.054	-0.1752	-0.236	-0.0486	-0.0005	0.2104	0.0193	9.9011	1.0945	9.9011	1.1275	A+	A+	A+
ELA	4	623031	2	A-K	3	7352	0.2061	0.2601	0.4255	0.2051	0.1048	0.0034	0.0011	0.1044	-0.1205	0.1564	0.1062	-0.2051	-0.0583	-0.0348	2.3668	0.0235	8.5111	1.1178	9.9016	1.6373	A+	A-	A-
ELA	4	623033	2	A-K	2	7323	0.3667	0.2534	0.2806	0.0941	0.3636	0.0066	0.0018	0.133	-0.1211	0.0961	-0.1721	0.1362	-0.0605	-0.0211	1.3699	0.0196	9.9012	1.2066	9.9013	1.3389	A+	A-	A+
ELA	4	623109	2	A-K	2	7337	0.4559	0.2181	0.1146	0.2079	0.4529	0.0053	0.0012	0.2521	-0.16	-0.1618	-0.0112	0.2545	-0.044	-0.0388	0.8536	0.019	9.9011	1.1082	9.9012	1.1554	A+	A-	A-
ELA	4	623025	2	A-V	2	7368	0.834	0.0819	0.8321	0.0622	0.0215	0.002	0.0003	0.4805	-0.3452	0.4821	-0.2268	-0.196	-0.0448	-0.0187	-1.3769	0.0261	-9.8992	0.8229	-9.8994	0.6198	A+	A-	A-
ELA	4	629571	2	A-V	2	7338	0.5649	0.1206	0.5613	0.1024	0.2093	0.0049	0.0015	0.4374	-0.2378	0.4384	-0.1884	-0.1941	-0.0431	-0.0253	0.2459	0.0193	-7.3891	0.946	-6.6691	0.935	A+	A-	A-
ELA	4	581098	2	D	2	7339	0.694	0.6896	0.0389	0.2309	0.0344	0.003	0.0032	0.378	0.3791	-0.2025	-0.2266	-0.2032	-0.0292	-0.0372	-0.1478	0.0201	-9.8991	0.9101	-9.7991	0.8816	B+	A-	A+
ELA	4	629442	2	D	1	7329	0.9378	0.0211	0.0203	0.0203	0.9307	0.0072	0.0004	0.3441	-0.1982	-0.1941	-0.1853	0.341	-0.047	-0.0314	-2.5156	0.0389	-3.6791	0.8879	-9.8594	0.5745	A+	B-	B-
ELA	4	629451	2	D	2	7347	0.8731	0.0225	0.8687	0.0895	0.0142	0.0046	0.0005	0.2656	-0.1673	0.2663	-0.1578	-0.1498	-0.0227	-0.0356	-1.7376	0.0292	-0.149	0.9968	1.4911	1.0508	A+	A-	A-
ELA	4	623673	3	A-C	2	7479	0.7088	0.705	0.0742	0.0668	0.1487	0.0051	0.0003	0.4838	0.4869	-0.287	-0.28	-0.2005	-0.0721	-0.0297	-0.4667	0.0211	-9.8991	0.8779	-9.8992	0.8152	A+	A-	A-
ELA	4	623669	3	A-K	3	7441	0.5714	0.0866	0.0924	0.5655	0.2451	0.0093	0.0011	0.328	-0.1918	-0.2678	0.3311	-0.0594	-0.0615	-0.0358	0.2634	0.0194	8.2311	1.0647	6.5711	1.0737	A+	A+	A+
ELA	4	623672	3	A-K	2	7449	0.787	0.0698	0.7796	0.0612	0.0801	0.0086	0.0007	0.4451	-0.1826	0.4443	-0.2525	-0.2646	-0.0538	-0.0132	-0.9343	0.0232	-9.0291	0.8898	-7.2892	0.8441	A+	A+	A+
ELA	4	623674	3	A-K	2	7478	0.8242	0.0709	0.0609	0.0431	0.8197	0.0035	0.002	0.43	-0.2257	-0.2365	-0.2325	0.4316	-0.0635	-0.0118	-1.1459	0.0244	-9.0891	0.8763	-9.8992	0.7571	A+	A-	A-
ELA	4	623675	3	A-K	2	7468	0.6429	0.063	0.0678	0.6385	0.2238	0.0049	0.0019	0.3373	-0.2387	-0.2243	0.3415	-0.1043	-0.0691	-0.0322	0.0715	0.0197	6.7111	1.0555	6.7111	1.0836	A+	A+	A+
ELA	4	623766	3	A-K	2	7466	0.5151	0.3185	0.1218	0.5115	0.0411	0.0057	0.0013	0.4102	-0.1916	-0.1896	0.4118	-0.2452	-0.0561	-0.0446	0.5372	0.0192	1.151	1.0084	2.391	1.0241	A+	A-	A-
ELA	4	623671	3	A-V	2	7500	0.6768	0.1382	0.6751	0.144	0.0402	0.0025		0.4742	-0.3013	0.475	-0.2291	-0.183	-0.042		-0.3516	0.0207	-9.8991	0.9007	-9.8992	0.8351	A+	A-	A-
ELA	4	630495	3	B-V	2	7471	0.6157	0.6118	0.1629	0.1009	0.118	0.0049	0.0015	0.3599	0.3643	-0.1694	-0.2669	-0.0855	-0.0716	-0.0508	-0.0429	0.0199	0.901	1.0076	0.401	1.0052	A+	A+	A-
ELA	4	581093	3	D	2	7471	0.5813	0.1285	0.1694	0.1181	0.5776	0.0044	0.002	0.3535	-0.1668	-0.1383	-0.1961	0.3555	-0.0548	-0.0216	0.3833	0.0193	3.521	1.0266	1.751	1.0183	A-	A-	A-
ELA	4	629443	3	D	1	7440	0.5616	0.1289	0.1503	0.5557	0.1547	0.0097	0.0008	0.4079	-0.1734	-0.2077	0.4106	-0.1784	-0.0685	-0.0165	0.3962	0.0193	0.721	1.0054	-1.129	0.9883	A-	A-	A-
ELA	4	629452	3	D	2	7463	0.7035	0.1257	0.096	0.6982	0.0726	0.0072	0.0003	0.441	-0.1889	-0.2394	0.4405	-0.2511	-0.0489	0.0148	-0.4987	0.0212	-7.0291	0.9299	-8.0991	0.8666	A+	A-	A-
ELA	4	622442	4	A-K	2	7358	0.7645	0.1102	0.7567	0.0738	0.0491	0.0085	0.0017	0.4727	-0.2469	0.4729	-0.2534	-0.2439	-0.0621	-0.022	-0.7364	0.0293	-9.4391	0.8674	-9.4092	0.7782	A+	A+	A+
ELA	4	622443	4	A-K	2	7387	0.6141	0.1633	0.078	0.6102	0.1422	0.0048	0.0015	0.3664	-0.2065	-0.2489	0.3686	-0.0921	-0.0459	-0.0348	0.0775	0.0262	1.561	1.0164	0.661	1.0102	A-	A-	A-
ELA	4	622445	4	A-K	2	7378	0.801	0.1225	0.0461	0.795	0.0288	0.0055	0.002	0.4492	-0.3069	-0.2189	0.4523	-0.1769	-0.0653	-0.0365	-0.9917	0.0309	-7.8191	0.8743	-9.8993	0.7277	A+	A-	A-
ELA	4	622446	4	A-K	2	7362	0.3382	0.3549	0.1532	0.1473	0.3349	0.0075	0.0022	0.3512	-0.0647	-0.169	-0.1919	0.3528	-0.0673	-0.0183	1.4451	0.0269	-0.259	0.997	5.7511	1.1069	A-	A+	A-
ELA	4	622448	4	A-K	2	7418	0.7522	0.0623	0.0651	0.1199	0.7506	0.0013	0.0008	0.389	-0.2722	-0.2088	-0.1518	0.3919	-0.0448	-0.0462	-0.6984	0.029	-4.0691	0.9424	-3.5691	0.9133	A+	A-	A-
ELA	4	622450	4	A-K	2	7372	0.4122	0.4088	0.2125	0.1509	0.2194	0.0061	0.0023	0.3184	0.3201	0.037	-0.2411	-0.1945	-0.0392	-0.0558	1.0651	0.026	5.5711	1.0573	8.1911	1.1236	A-	B+	A+
ELA	4	622441	4	A-V	2	7386	0.8114	0.0365	0.8062	0.0733	0.0776	0.0047	0.0017	0.2523	-0.2026	0.2618	-0.1589	-0.0638	-0.0664	-0.0595	-1.0717	0.0315	0.981	1.0172	5.8212	1.1932	A+	A+	A-
ELA	4	622444	4	A-V	2	7397	0.589	0.5861	0.1617	0.1866	0.0607	0.0042	0.0008	0.2488	0.2516	-0.1005	-0.1226	-0.1478	-0.0513	-0.0198	0.1983	0.0259	9.9011	1.1349	9.9012	1.2031	A-	A+	A+
ELA	4	581095	4	D	2	7380	0.6822	0.1122	0.6773	0.1285	0.0748	0.005	0.0023	0.449	-0.2447	0.4484	-0.228	-0.2007	-0.0218	-0.0369	-0.2741	0.0271	-7.0291	0.9188	-7.2491	0.868	A+	A-	A-
ELA	4	629444	4	D	1	7339	0.8052	0.7949	0.1153	0.0398	0.0373	0.0102	0.0026	0.3948	0.3986	-0.2317	-0.1842	-0.2222	-0.0661	-0.0434	-0.9907	0.0309	-4.1891	0.9312	-5.4192	0.8466	A+	A+	A+
ELA	4	629453	4	D	1	7373	0.5566	0.1556	0.136	0.1481	0.5521	0.0071	0.0011	0.2665	-0.1323	-0.1313	-0.1003	0.2699	-0.0507	-0.0408	0.366	0.0257	9.9011	1.1198	9.9012	1.1524	A+	A-	A-
ELA	4	624825	5	A-K	2	7386	0.589	0.1168	0.0584	0.5849	0.233	0.0047	0.0022	0.351	-0.3085	-0.2152	0.3542	-0.0452	-0.0494	-0.0537	0.2303	0.0259	2.191	1.0223	4.2111	1.0602	A-	A-	A+
ELA	4	624826	5	A-K	2	7397	0.6645	0.1037	0.0848	0.1452	0.6609	0.0043	0.0011	0.4826	-0.2719	-0.26	-0.1968	0.4841	-0.0478	-0.0418	-0.1584	0.0268	-9.8991	0.8784	-9.8992	0.8348	A+	A-	A+
ELA	4	624827	5	A-K	2	7354	0.8186	0.0901	0.051	0.0383	0.8095	0.0102	0.0009	0.3746	-0.1706	-0.2192	-0.2276	0.3799	-0.0727	-0.0364	-1.0698	0.0316	-4.4491	0.9224	-3.1691	0.9046	A+	A-	A-
ELA	4	624830	5	A-K	2	7367	0.6848	0.6784	0.1353	0.0614	0.1155	0.0082	0.0012	0.4198	0.4225	-0.2249	-0.2542	-0.1648	-0.0614	-0.0334	-0.2525	0.0271	-5.6091	0.9341	-3.3691	0.9388	A+	A-	A-
ELA	4	624831	5	A-K	2	7385	0.7804	0.055	0.7749	0.0753	0.0878	0.0048	0.0022	0.4856	-0.2499	0.4868	-0.2916	-0.2259	-0.054	-0.0368	-0.8279	0.03	-9.8992	0.8486	-9.8993	0.7348	A+	A+	A+
ELA	4	624832	5	A-K	2	7381	0.4883	0.4846	0.1017	0.0877	0.3185	0.0051	0.0024	0.2287	0.2322	-0.1698	-0.2057	-0.0011	-0.0585	-0.0384	0.7179	0.0255	9.9012	1.1546	9.9012	1.2072	A-	A+	A+
ELA	4	624833	5	A-K	2	7409	0.5715	0.1852	0.1681	0.5693	0.0737	0.003	0.0008	0.3843	-0.1392	-0.2201	0.3853	-0.1969	-0.0341	-0.0398	0.3073	0.0258	-0.609	0.9939	0.111	1.0015	A+	A+	A+
ELA	4	624829	5	A-V	2	7413	0.8716	0.0473	0.8688	0.048	0.0327	0.0024	0.0008	0.4131	-0.2409	0.4174	-0.2184	-0.2198	-0.059	-0.0393	-1.5692	0.0363	-6.3391	0.8576	-9.2193	0.6635	A+	A+	A-
ELA	4	581097	5	D	2	7386	0.4324	0.3698	0.4295	0.0394	0.1545	0.0038	0.0031	0.273	-0.0733	0.2735	-0.1924	-0.1649	-0.0253	-0.0248	1.0636	0.0258	9.9011	1.1076	9.9012	1.1832	A+	A-	A-
ELA	4	629445	5	D	1	7374	0.5369	0.0697	0.5323	0.2599	0.1296	0.0074	0.0011	0.3191	-0.1999	0.3214	-0.072	-0.215	-0.054	-0.032	0.4875	0.0256	6.7111	1.066	6.2511	1.0826	A+	A-	A-
ELA	4	629454	5	D	2	7391	0.4432	0.117	0.224	0.2123	0.4405	0.0055	0.0007	0.3634	-0.2379	-0.1491	-0.0951	0.3631	-0.0235	-0.0387	0.9315	0.0257	1.001	1.0096	3.551	1.0485	A+	A-	A-
ELA	4	579103	6	A-K	2	29616	0.3541	0.5242	0.3531	0.091	0.029	0.0025	0.0003	0.2225	-0.0046	0.2237	-0.2402	-0.1967	-0.0389	-0.0328	1.2413	0.0131	9.9011	1.1115	9.9012	1.2122	A-	A-	A-
ELA	4	579104	6	A-K	2	29525	0.7502	0.1135	0.0651	0.7458	0.0698	0.0043	0.0015	0.417	-0.2528	-0.2342	0.4209	-0.1551	-0.0562	-0.054	-0.2822	0.0136	-9.8992	0.8454	-9.8992	0.7967	A+	A-	A-
ELA	4	579118	6	A-K	2	29501	0.8097	0.0405	0.8043	0.054	0.0945	0.0059	0.0008	0.4529	-0.2335	0.4519	-0.2267	-0.2674	-0.0386	-0.0303	-0.745	0.0147	-9.8992	0.7653	-9.8993	0.6806	A+	A+	A-
ELA	4	579119	6	A-K	2	29491	0.5902	0.1263	0.2024	0.5861	0.0783	0.0045	0.0025	0.4648	-0.2825	-0.247	0.4673	-0.1138	-0.0539	-0.0581	0.4616	0.0128	-9.8991	0.9089	-9.8991	0.8948	A+	A+	A-
ELA	4	579102	6	A-V	2	29145	0.7155	0.092	0.1211	0.7021	0.0661	0.0048	0.0139	0.4011	-0.2506	-0.1527	0.4009	-0.2126	-0.0518	-0.04	-0.5015	0.0141	0.351	1.0023	-2.279	0.9752	A+	A-	A-
ELA	4	581312	6	A-V	2	29543	0.5432	0.5404	0.1594	0.1576	0.1373	0.0038	0.0014	0.3377	0.3397	-0.1633	-0.1018	-0.198	-0.0516	-0.029	0.5471	0.0128	7.921	1.0387	7.8511	1.0514	A+	A-	A-
ELA	4	624722	6	B-C	2	7354	0.4471	0.2052	0.2512	0.4443	0.093	0.0049	0.0015	0.2578	-0.1172	-0.0503	0.2621	-0.1847	-0.0855	-0.0389	0.9567	0.0259	9.9011	1.1361	9.9012	1.2007	A+	A-	A-
ELA	4	624726	6	B-C	3	7351	0.71	0.0807	0.1067	0.7052	0.1007	0.0049	0.0019	0.3885	-0.2707	-0.2879	0.3942	-0.0321	-0.0691	-0.0612	-0.3801	0.028	-1.929	0.975	3.3311	1.0724	A+	A-	A-
ELA	4	624719	6	B-K	2	7360	0.4243	0.2463	0.422	0.0889	0.2373	0.0046	0.0009	0.2758	-0.082	0.2791	-0.2695	-0.0458	-0.0749	-0.0404	1.0674	0.026	9.9011	1.1039	9.9012	1.1856	A-	A+	A+
ELA	4	624721	6	B-K	2	7349	0.6058	0.6015	0.1262	0.1621	0.1031	0.0054	0.0016	0.4423	0.4455	-0.2262	-0.1707	-0.2395	-0.0625	-0.0653	0.1781	0.0263	-4.639	0.9506	-4.6391	0.9305	A+	A-	A-
ELA	4	624723	6	B-K	2	7385	0.6838	0.1093	0.1128	0.0934	0.6823	0.0019	0.0003	0.5435	-0.2841	-0.2762	-0.2582	0.5445	-0.0399	-0.039	-0.2506	0.0275	-9.8992	0.834	-9.8993	0.7474	A-	A-	A-
ELA	4	624727	6	B-K	2	7320	0.722	0.0939	0.7141	0.0763	0.1047	0.0095	0.0015	0.5131	-0.2784	0.5153	-0.2265	-0.2687	-0.0754	-0.0493	-0.432	0.0282	-9.8991	0.8509	-9.8992	0.7696	A+	A+	A-
ELA	4	624718	6	B-V	2	7345	0.676	0.0962	0.0507	0.1747	0.6709	0.0054	0.0022	0.4417	-0.3272	-0.2064	-0.1597	0.4445	-0.0685	-0.0309	-0.1872	0.0273	-5.6291	0.9331	-5.4991	0.8998	A+	A-	A-
ELA	4	632344	6	B-V	2	7350	0.7838	0.7784	0.0757	0.095	0.044	0.0053	0.0016	0.5038	0.5066	-0.2422	-0.3046	-0.2457	-0.0595	-0.0571	-0.8362	0.0304	-9.8992	0.8349	-9.8993	0.7171	A+	A-	A-
ELA	4	581100	6	D	2	7335	0.6202	0.204	0.0939	0.0785	0.6146	0.0065	0.0024	0.4552	-0.215	-0.1926	-0.2747	0.4558	-0.0467	-0.0279	-0.0508	0.0269	-1.629	0.9812	-2.869	0.9509	A+	A-	A-
ELA	4	629446	6	D	1	7333	0.7251	0.0422	0.0735	0.7184	0.1567	0.0084	0.0008	0.4586	-0.2366	-0.2271	0.4599	-0.2571	-0.0619	-0.0326	-0.4574	0.0284	-6.5591	0.914	-6.8491	0.8547	A-	A-	A-
ELA	4	629455	6	D	1	7335	0.6428	0.0716	0.6371	0.0365	0.2459	0.0081	0.0008	0.3902	-0.2148	0.3921	-0.2288	-0.1964	-0.0564	-0.0229	-0.0059	0.0268	0.471	1.0053	-0.199	0.9966	A-	A+	A+
ELA	4	625473	7	B-C	2	7423	0.3047	0.2543	0.2248	0.2114	0.3026	0.0051	0.0017	0.1607	-0.0571	0.0173	-0.1268	0.1633	-0.062	-0.0289	1.6192	0.0274	9.9012	1.1642	9.9014	1.3971	A+	A-	A-

ELA	4	625474	7 B-C	2	7429	0.445	0.4423	0.2238	0.1943	0.1335	0.0054	0.0007	0.3203	0.3234	-0.0766	-0.088	-0.2569	-0.0744	-0.0411	0.8992	0.0257	6.2111	1.0616	7.1811	1.099	A-	A+	A-
ELA	4	625475	7 B-C	2	7453	0.3684	0.3674	0.2482	0.2707	0.1109	0.0024	0.0004	0.2732	0.2746	-0.3332	0.0053	0.0395	-0.0502	-0.0378	1.2734	0.0263	7.2911	1.0792	9.9012	1.198	A-	A-	A-
ELA	4	625469	7 B-K	2	7382	0.6616	0.1313	0.114	0.6535	0.089	0.0095	0.0028	0.5008	-0.2173	-0.2555	0.5011	-0.2687	-0.0617	-0.0262	-0.1452	0.0267	-9.8991	0.8859	-9.8992	0.8121	A-	A-	A-
ELA	4	625470	7 B-K	2	7400	0.4678	0.2249	0.137	0.4632	0.165	0.0087	0.0012	0.2935	-0.1286	-0.1491	0.2957	-0.0982	-0.0566	-0.024	0.7975	0.0256	8.7711	1.0868	9.0311	1.1217	A-	A-	A-
ELA	4	625476	7 B-K	2	7411	0.3174	0.2499	0.3147	0.1651	0.2618	0.0074	0.0011	0.2291	-0.1102	0.232	-0.1544	0.0111	-0.0759	-0.0321	1.5526	0.0272	9.0911	1.1111	9.9013	1.2694	A-	A+	A+
ELA	4	625468	7 B-V	2	7444	0.2774	0.5365	0.0523	0.1309	0.2763	0.0029	0.0011	0.1897	0.0665	-0.2377	-0.1824	0.1914	-0.0515	-0.046	1.7697	0.0281	9.8311	1.1341	9.9014	1.3587	A-	A-	A-
ELA	4	632714	7 B-V	2	7409	0.5671	0.0629	0.5622	0.0646	0.3016	0.0062	0.0025	0.2531	-0.294	0.2581	-0.2756	0.0398	-0.0572	-0.0538	0.3169	0.0257	9.9011	1.1294	9.9012	1.1779	A-	A-	A-
ELA	4	581101	7 D	2	7410	0.796	0.7891	0.0301	0.0182	0.154	0.0048	0.0037	0.2474	0.2538	-0.2199	-0.1716	-0.1021	-0.0559	-0.0374	-0.7708	0.0294	-0.839	0.9875	4.3911	1.1164	A-	A+	A-
ELA	4	629447	7 D	1	7390	0.5222	0.1709	0.5163	0.1747	0.1268	0.0102	0.0011	0.3504	-0.1253	0.355	-0.1459	-0.1962	-0.0883	-0.0208	0.5403	0.0255	3.881	1.0378	3.161	1.0408	A-	A-	A-
ELA	4	629456	7 D	1	7408	0.6893	0.0535	0.6832	0.0749	0.1796	0.0071	0.0017	0.3598	-0.2484	0.3631	-0.2477	-0.1081	-0.0645	-0.0226	-0.3049	0.0272	-0.159	0.998	1.621	1.0309	A+	A-	A-
ELA	4	621479	8 B-K	2	7342	0.3913	0.1392	0.389	0.1591	0.3068	0.0045	0.0014	0.2131	-0.0697	0.2163	-0.1898	-0.0134	-0.0581	-0.0505	1.1677	0.0261	9.9011	1.1439	9.9013	1.2593	A+	A+	A-
ELA	4	621481	8 B-K	2	7359	0.5522	0.1453	0.172	0.5503	0.1289	0.0027	0.0008	0.4273	-0.2981	-0.0797	0.4289	-0.2228	-0.0452	-0.0434	0.384	0.0257	-5.3091	0.9493	-4.3091	0.944	A+	A-	A-
ELA	4	621485	8 B-K	3	7295	0.444	0.4386	0.1171	0.2241	0.208	0.0106	0.0016	0.1617	0.1671	-0.2382	-0.0493	0.0558	-0.0655	-0.042	0.9233	0.0257	9.9012	1.2021	9.9013	1.2733	A-	A+	A+
ELA	4	621487	8 B-K	2	7310	0.6882	0.1713	0.0543	0.083	0.6812	0.0092	0.0009	0.4683	-0.2239	-0.2304	-0.2757	0.4685	-0.0488	-0.0334	-0.2826	0.0273	-8.7391	0.8982	-8.8992	0.8417	A+	A-	A-
ELA	4	621493	8 B-K	2	7335	0.1426	0.1416	0.08	0.1068	0.6647	0.0056	0.0012	0.0431	0.045	-0.2478	-0.188	0.2436	-0.0477	-0.0531	2.7239	0.0352	6.2011	1.1461	9.9019	1.9156	A+	A+	A+
ELA	4	621477	8 B-V	2	7324	0.7056	0.1235	0.1037	0.0647	0.6998	0.0073	0.0009	0.4848	-0.2082	-0.3024	-0.2267	0.488	-0.0666	-0.0497	-0.3853	0.0277	-9.8991	0.8768	-9.8992	0.8071	A+	A+	A-
ELA	4	621490	8 B-V	2	7364	0.7736	0.1571	0.7714	0.0309	0.0378	0.0023	0.0005	0.2966	-0.1987	0.2983	-0.1487	-0.132	-0.0251	-0.0374	-0.818	0.0299	1.231	1.0192	2.1611	1.0581	A+	A-	A-
ELA	4	622653	8 B-V	2	7341	0.8545	0.0483	0.0616	0.8494	0.0347	0.0051	0.0008	0.4062	-0.2647	-0.1843	0.4126	-0.2184	-0.0743	-0.0429	-1.4029	0.0345	-6.0391	0.8758	-7.5293	0.7424	A+	A-	A-
ELA	4	581067	8 D	2	7320	0.4858	0.1771	0.1651	0.4815	0.1675	0.0065	0.0023	0.3821	-0.1422	-0.2064	0.3838	-0.1472	-0.0519	-0.0358	0.6254	0.0256	-0.009	0.9999	0.531	1.0067	A-	A-	A-
ELA	4	629448	8 D	2	7298	0.6895	0.0381	0.2274	0.0414	0.6814	0.0106	0.0012	0.3957	-0.1757	-0.241	-0.2204	0.397	-0.0539	-0.0276	-0.2834	0.0273	-2.649	0.9684	-1.579	0.9705	A+	A-	A-
ELA	4	629457	8 D	2	7327	0.4739	0.1626	0.1614	0.198	0.4701	0.0074	0.0004	0.4341	-0.2412	-0.1802	-0.1429	0.4351	-0.0513	-0.0238	0.7705	0.0256	-6.5291	0.9395	-4.8291	0.9387	A+	A-	A-
ELA	4	625463	9 B-C	2	7408	0.4579	0.2206	0.1882	0.1311	0.456	0.0034	0.0008	0.1299	0.0192	-0.0092	-0.1986	0.132	-0.0373	-0.032	0.853	0.0255	9.9012	1.2354	9.9013	1.2918	A+	A-	A+
ELA	4	625464	9 B-C	2	7330	0.2827	0.2211	0.2785	0.3213	0.1644	0.011	0.0036	0.0575	-0.1652	0.0613	0.1409	-0.047	-0.0626	-0.0134	1.7656	0.0279	9.9012	1.2287	9.9016	1.5747	A-	A-	A-
ELA	4	625466	9 B-C	2	7377	0.6612	0.6557	0.1336	0.1153	0.087	0.0067	0.0016	0.3365	0.3416	-0.1619	-0.1068	-0.2328	-0.0711	-0.0422	-0.1265	0.0266	2.531	1.0289	0.151	1.0024	A+	A-	A-
ELA	4	625459	9 B-K	2	7397	0.6641	0.0622	0.1894	0.6603	0.0824	0.0047	0.0009	0.428	-0.2457	-0.2114	0.4298	-0.2065	-0.0533	-0.0302	-0.1506	0.0267	-5.3791	0.9396	-5.1491	0.9149	A-	A-	A-
ELA	4	625460	9 B-K	2	7392	0.6374	0.6334	0.0952	0.1538	0.1113	0.005	0.0013	0.139	0.1477	-0.059	-0.0473	-0.0919	-0.0823	-0.0573	-0.0109	0.0263	9.9012	1.2093	9.9013	1.2976	A+	A-	A-
ELA	4	625462	9 B-K	2	7343	0.5848	0.0804	0.199	0.5772	0.1305	0.0105	0.0024	0.3986	-0.2703	-0.1219	0.4	-0.2014	-0.0614	-0.027	0.2699	0.0257	-3.029	0.9703	-3.049	0.9595	A+	A-	A-
ELA	4	625467	9 B-K	2	7384	0.4202	0.1885	0.4171	0.1768	0.2102	0.0055	0.0019	0.2152	-0.245	0.2183	-0.1332	0.1104	-0.0582	-0.0392	1.0411	0.0257	9.9011	1.1491	9.9012	1.2215	A-	A-	A+
ELA	4	625465	9 B-V	2	7400	0.8072	0.0874	0.0418	0.0626	0.8029	0.004	0.0012	0.4351	-0.222	-0.2367	-0.2444	0.4386	-0.0634	-0.0336	-1.0123	0.0312	-7.2991	0.8777	-8.1592	0.7777	A+	A-	A-
ELA	4	581094	9 D	2	7381	0.5291	0.1065	0.1049	0.5249	0.2559	0.0044	0.0034	0.3794	-0.2297	-0.253	0.3825	-0.0821	-0.069	-0.0382	0.4893	0.0255	-0.569	0.9946	-0.769	0.9903	A+	A-	A-
ELA	4	629449	9 D	1	7380	0.2772	0.2385	0.275	0.2921	0.1864	0.0073	0.0007	0.1703	-0.0818	0.1733	-0.004	-0.0857	-0.082	-0.0146	1.7858	0.028	8.8911	1.1197	9.9014	1.3581	A+	A+	A+
ELA	4	629458	9 D	2	7379	0.826	0.8193	0.048	0.0567	0.0679	0.0067	0.0013	0.4594	0.4594	-0.2464	-0.2358	-0.2551	-0.0591	-0.015	-1.134	0.0322	-8.3891	0.8512	-9.8093	0.7193	A+	A+	A-
ELA	5	579326	0 A-C	2	64731	0.7204	0.08	0.7145	0.0693	0.128	0.0074	0.0009	0.4662	-0.2244	0.4682	-0.2023	-0.278	-0.0638	-0.0292	-0.4308	0.008	-9.8991	0.8848	-9.8991	0.851	A+	A+	A+
ELA	5	579330	0 A-K	2	64910	0.6565	0.0588	0.04	0.2427	0.6529	0.0043	0.0012	0.3597	-0.2228	-0.2415	-0.1588	0.3629	-0.061	-0.0269	-0.3087	0.0079	9.9011	1.0686	9.9011	1.1236	A+	A+	A-
ELA	5	579331	0 A-K	2	64804	0.5144	0.3189	0.5107	0.083	0.0803	0.0064	0.0008	0.3044	-0.0936	0.3089	-0.218	-0.1576	-0.0911	-0.0206	0.7612	0.0074	9.9011	1.1156	9.9012	1.1617	A-	A+	A+
ELA	5	579332	0 A-K	3	64780	0.4945	0.0625	0.3594	0.4908	0.0798	0.0062	0.0013	0.3752	-0.2313	-0.117	0.3771	-0.2611	-0.058	-0.0298	0.5877	0.0074	9.041	1.0234	9.901	1.042	A+	A+	A+
ELA	5	579333	0 A-K	2	64741	0.459	0.1806	0.4552	0.0788	0.2772	0.0075	0.0006	0.2951	-0.2463	0.2993	-0.2275	0.0347	-0.0939	-0.0193	0.9841	0.0075	9.9011	1.1221	9.9012	1.1885	A-	A+	A+
ELA	5	579334	0 A-K	2	64857	0.7937	0.0758	0.7887	0.07	0.0593	0.0056	0.0008	0.4627	-0.2723	0.4647	-0.2136	-0.2454	-0.0605	-0.0252	-0.9279	0.0088	-9.8991	0.8716	-9.8992	0.8172	A+	A+	A+
ELA	5	579337	0 A-K	2	64953	0.7347	0.1212	0.054	0.7312	0.0888	0.0043	0.0005	0.5277	-0.2887	-0.2427	0.5315	-0.2819	-0.0913	-0.016	-0.6369	0.0083	-9.8991	0.885	-9.8992	0.79	A+	A-	A-
ELA	5	579338	0 A-K	2	64782	0.5519	0.1065	0.5477	0.1463	0.1921	0.0066	0.0008	0.4791	-0.2281	0.4803	-0.2585	-0.1817	-0.0608	-0.029	0.1911	0.0075	-9.899	0.9568	-9.8991	0.935	A+	A+	A+
ELA	5	579339	0 A-K	2	64839	0.5948	0.0968	0.0912	0.5909	0.2146	0.0057	0.0009	0.4093	-0.214	-0.2253	0.4135	-0.1642	-0.093	-0.0255	0.1337	0.0075	-0.409	0.9988	-1.839	0.9927	A-	A+	A-
ELA	5	579301	0 A-V	2	64643	0.6431	0.1717	0.0432	0.1386	0.6369	0.0083	0.0013	0.2992	-0.101	-0.262	-0.1338	0.3069	-0.1021	-0.0198	0.1958	0.0075	9.901	1.0424	9.9011	1.0987	A-	A-	A-
ELA	5	579305	0 A-V	2	64782	0.7049	0.6996	0.0677	0.0714	0.1539	0.0069	0.0006	0.4646	0.4698	-0.2245	-0.2347	-0.2493	-0.0964	-0.0255	-0.4828	0.0081	-9.8991	0.9269	-9.8991	0.8615	A+	A+	A+
ELA	5	409603	0 B-C	2	64975	0.6049	0.0783	0.6022	0.0927	0.2223	0.0038	0.0007	0.5126	-0.2834	0.5149	-0.2955	-0.2033	-0.0769	-0.0351	0.0553	0.0076	-9.8991	0.911	-9.8991	0.8703	A-	A-	A-
ELA	5	409605	0 B-C	3	64862	0.332	0.1937	0.1398	0.33	0.3303	0.0057	0.0006	0.3838	-0.2147	-0.1329	0.385	-0.0936	-0.0726	-0.0266	1.3188	0.0077	-9.899	0.9578	8.761	1.0416	A+	A+	A+
ELA	5	574352	0 B-C	2	64557	0.4072	0.248	0.1726	0.1658	0.4027	0.0088	0.0021	0.3282	0.0049	-0.1748	-0.2401	0.3312	-0.0872	-0.0233	1.0343	0.0075	9.9011	1.0547	9.9011	1.1234	A+	A+	A+
ELA	5	409606	0 B-K	3	64977	0.6672	0.1567	0.1123	0.6642	0.0623	0.0038	0.0007	0.4645	-0.2763	-0.186	0.4675	-0.2323	-0.0767	-0.0301	-0.0292	0.0076	-9.8991	0.9075	-9.8991	0.8703	A-	A+	A+
ELA	5	409608	0 B-K	3	64966	0.6996	0.6964	0.1501	0.1011	0.0478	0.004	0.0007	0.4818	0.4851	-0.2778	-0.2619	-0.183	-0.0813	-0.0274	-0.2386	0.0078	-9.8991	0.8694	-9.8992	0.8356	A-	A+	A+
ELA	5	574355	0 B-K	3	64807	0.6193	0.6149	0.1279	0.1218	0.1283	0.0065	0.0006	0.4565	0.4603	-0.2552	-0.2123	-0.1842	-0.0907	-0.0206	-0.1002	0.0077	-7.629	0.9767	-8.179	0.963	A-	A-	A-
ELA	5	574357	0 B-K	3	64426	0.4527	0.1571	0.4469	0.1128	0.2704	0.0121	0.0009	0.3367	-0.1444	0.3417	-0.238	-0.0683	-0.1014	-0.0219	1.0114	0.0075	9.9011	1.0842	9.9011	1.1304	A-	A+	A+
ELA	5	409609	0 B-V	1	64994	0.5389	0.1796	0.5367	0.1623	0.1172	0.0036	0.0006	0.3971	-0.1765	0.3996	-0.2089	-0.1534	-0.0719	-0.0333	0.473	0.0074	-0.829	0.9978	3.721	1.0131	A-	A+	A-
ELA	5	409611	0 B-V	2	64984	0.8601	0.0252	0.057	0.0571	0.8563	0.0031	0.0012	0.4142	-0.2134	-0.2302	-0.237	0.4196	-0.0806	-0.0244	-1.5094	0.0103	-9.8991	0.922	-9.8992	0.7859	B+	A+	A-
ELA	5	574359	0 B-V	2	64837	0.5891	0.1545	0.1159	0.5852	0.1378	0.0061	0.0006	0.4255	-0.2223	-0.2606	0.4293	-0.1169	-0.0889	-0.0225	0.2783	0.0074	-8.009	0.9786	-3.989	0.9852	A-	A-	A-
ELA	5	574558	0 B-V	2	64841	0.5829	0.5791	0.1322	0.1955	0.0866	0.0058	0.0008	0.4574	0.4613	-0.2657	-0.2052	-0.1713	-0.0934	-0.0379	0.1467	0.0075	-9.899	0.9561	-9.8991	0.9362	B-	A-	A-
ELA	5	574576	0 B-V	1	64739	0.6371	0.1111	0.632	0.1195	0.1294	0.007	0.0011	0.4947	-0.2677	0.4987	-0.2263	-0.2208	-0.0941	-0.0311	-0.1686	0.0077	-9.8991	0.9462	-9.8991	0.9031	A-	A-	A-
ELA	5	411656	0 D	2	64799	0.2508	0.3756	0.1816	0.1866	0.249	0.0056	0.0016	0.3066	-0.1712	0.0124	-0.1231	0.3084	-0.074	-0.0449	1.771	0.0083	-3.999	0.9842	9.9011	1.1019	A+	A-	A+
ELA	5	411657	0 D	1	64958	0.4982	0.4958	0.1497	0.1991	0.1506	0.0021	0.0026	0.1986	0.2011	-0.122	-0.103	-0.0343	-0.0384	-0.0359	0.6368	0.0074	9.9012	1.1994	9.9013	1.2663	A-	A+	A-
ELA	5	411658	0 D	2	64829	0.8076	0.1068	0.0338	0.0506	0.8021	0.0057	0.001	0.4082	-0.2686	-0.2042	-0.1752	0.4126	-0.069	-0.0298	-1.183	0.0094	1.051	1.0058	-4.869	0.9559	A+	A-	A-
ELA	5	411659	0 D	2	64850	0.675	0.6707	0.0927	0.0603	0.1699	0.0053	0.0012	0.3775	0.3818	-0.2184	-0.1325	-0.2089	-0.0666	-0.0382	-0.2092	0.0078	-0.249	0.9992	-6.179	0.9699	A-	A+	A-
ELA	5	411661	0 D	2	64894	0.2809	0.0292	0.36	0.2793	0.3257	0.0021	0.0037	0.319	-0.2318	-0.1571	0.3205	-0.0517	-0.0477	-0.0481	1.7776	0.0083	9.9011	1.0527	9.9012	1.2295	A-	A-	A-
ELA	5	581210	0 D	2	64821	0.5593	0.1019	0.0454	0.5554	0.2903	0.0059	0.001	0.4094	-0.1801	-0.194	0.4123	-0.2284	-0.0692	-0.0313	0.5428	0.0074	-1.099	0.9972	0.231	1.0008	A+	A-	A-
ELA	5	581211	0 D	2	64839	0.4062	0.341	0.134	0.1149	0.4035	0.0055	0.0011	0.4163	-0.1103	-0.1864	-0.2604	0.4181	-0.0682	-0.0361	1.1158	0.0076	-7.229	0.9796	2.041	1.0085	A+	A-	A-
ELA	5	581216	0 D	2	64985	0.4263	0.2213	0.4245	0.2394	0.1105	0.0021	0.0022	0.3688	-0.1442	0.3702	-0.2405	-0.0534	-0.0463	-0.0345	0.6149	0.0074	9.901	1.0301	9.9011	1.0513	A+	A+	A-
ELA	5	581221	0 D	2	64894	0.5749	0.0364	0.5716	0.0377	0.3485	0.002	0.0038	0.3678	-0.2375	0.3703	-0.2241	-0.1919	-0.0455	-0.0425	0.0949	0.0075	9.9011	1.0571	9.9011	1.0595	A+	A-	A-
ELA	5	576322	1 A-C	3	36098	0.6067	0.1463	0.0612	0.6033	0.1837	0.004	0.0016	0.3573	-0.2795	-0.2046	0.3605	-0.06	-0.0622	-0.035	0.1847	0.0092	-4.199	0.9859	-1.929	0.9909	A+	A+	A-
ELA	5	576324	1 A-K	2	36167	0.6397	0.0869	0.2152	0.0569	0.6373	0.0028	0.0009	0.3358	-0.1347	-0.1813	-0.2013	0.3383	-0.053	-0.0253	0.0853	0.0092	-4.609	0.984	-4.629	0.9771	A+	A-	A+
ELA	5	576326	1 A-K	2	36082	0.78	0.0541	0.7753	0.056	0.1085	0.0053	0.0007	0.4642	-0.2713	0.4654	-0.2098	-0.2576	-0.0522	-0.0262	-0.6977	0.0103	-9.8992	0.8106	-9.8993	0.7189	A+	A+	A-
ELA	5	576327	1 A-K	2	36075	0.4824	0.4794	0.1489	0.0758	0.2897	0.0046	0.0016	0.3046	0.3068	-0.159	-0.2836	-0.0371	-0.0523	-0.0324	1.0059	0.0092	9.9011	1.091	9.9011	1.131	A-	A-	A-
ELA	5	576328	1 A-K	2	36231	0.5587	0.3458	0.5577	0.0555	0.0391	0.0016	0.0003	0.3332	-0.2171	0.3343	-0.1253	-0.1658	-0.0355	-0.0275	0.4721	0.0091	5.951	1.019	9.901	1.0463	A+	A+	A+
ELA	5	576331	1 A-V	2	36145	0.5837	0.1204	0.5812	0.0522	0.2419	0.0034	0.0009	0.281	-0.1619	0.2842	-0.1911	-0.0948	-0.0567	-0.0375	0.0897	0.0092	9.9011	1.0757	9.9012	1.1537	A-	A-	A-
ELA	5	621501	1 B-C	2	7267	0.7183	0.0683	0.0612	0.715	0.1508	0.0033	0.0014	0.3082	-0.2648	-0.2348	0.3136	-0.0362	-0.0614	-0.0542	-0.3697	0.0182	-2.389	0.9819	1.501	1.0177	A+	A-	A+
ELA	5	621507	1 B-K	2	7280	0.3324	0.3315	0.1689	0.269	0.2278	0.0025	0.0004	0.1081	0.1085	-0.0515	-0.0454	-0.0254	-0.01	-0.0247	1.3189	0.0183	9.9012	1.2229	9.9014	1.406	A-	A-	A-
ELA	5	621508	1 B-K	2	7232	0.5165	0.2482	0.5116	0.1086	0.1222	0.0089	0.0005	0.2881	-0.0415	0.2914	-0.1804	-0.1974	-0.0672	-0.0265	0.5388	0.0173	9.9011	1.0791	9.9011	1.111	A-	A-	A+
ELA	5	621513	1 B-K	2	7267	0.7421	0.1448	0.0652	0.7387	0.0467	0.0037	0.001	0.4978	-0.2979	-0.2695	0.4993	-0.2078	-0.0495	-0.0377	-0.5042	0.0185	-9.8992	0.8412	-9.8992	0.7554	A+	A-	A-
ELA	5	621515	1 B-K	2	7258	0.7053	0.7011	0.1711	0.0533	0.0686	0.0045	0.0014	0.3066	0.3105	-0.0828	-0.2297	-0.2158	-0.0581	-0.0248	-0.377	0.0182	-4.139	0.9687	0.821	1.0096	A+	A+	A+
ELA	5	621530	1 B-V	1	7277	0.6435	0.2612	0.0322	0.0619	0.6414	0.0026	0.0007	0.4664	-0.2987	-0.1879	-0.2364	0.4672	-0.0385	-0.0284	-0.1317	0.0177	-9.8991	0.8824	-9.8992	0.8482	A-	A-	A-
ELA	5	621532	1 B-V	1	7266	0.6468	0.1872	0.0781	0.0862	0.6437	0.0038	0.001	0.4634	-0.2417	-0.2863	-0.1666	0.4665	-0.0711	-0.0377	-0.0876	0.0176	-9.8991	0.8783	-9.8992	0.8454	A+	A-	A-
ELA	5	623809	1 B-V	1	7266	0.6369	0.1255	0.6339	0.0563	0.1796	0.0042	0.0005	0.4728	-0.2405	0.4756	-0.2478	-0.2259	-0.071	-0.0435	-0.0786	0.0176	-9.8991	0.8828	-9.8992	0.8273	A-	C-	C-
ELA	5	581209	1 D	2	7252	0.7748	0.0816	0.0915	0.7696	0.0505	0.0038	0.0029	0.3835	-0.1972	-0.1793	0.3865	-0.238	-0.0461	-0.038	-0.8012	0.0194	-9.5791	0.9121	-9.2691	0.8617	A+	A-	A-
ELA	5	629634	1 D	1	7228	0.5742	0.149	0.2116	0.5684	0.061	0.0099	0.0001	0.4178	-0.2908	-0.1189	0.4208	-0.2012	-0.0802	-0.0221	0.1874	0.0174	-5.549	0.9653	-6.6191	0.9437	A+	A-	A-
ELA	5	629643	1 D	2	7264	0.8337	0.8295	0.0662	0.0403	0.059	0.0034	0.0016	0.2944	0.2955	-0.0959	-0.1732	-0.2152	-0.0287	-0.0211	-1.2246	0.0213	-3.679	0.9565	4.3011	1.0903	A+	A+	A+
ELA	5	623758	2 B-C	2	7213	0.4945	0.2294	0.4918	0.0866	0.1867	0.0048	0.0007	0.3441	-0.1206	0.3474	-0.2253	-0.1364	-0.0795	-0.0375	0.6349	0.0185	-0.339	0.9979	2.141	1.0182	A-	A-	A+
ELA	5	623760	2 B-K	2	7215	0.6258	0.0593	0.2271	0.0859	0.6225	0.0044	0.0008	0.3877	-0.2488	-0.1586	-0.2141	0.3892	-0.0442	-0.0186	0.0226	0.0191	-7.3491	0.9476	-6.3391	0.9349	A+	A-	A-
ELA	5	623761	2 B-K	3	7185	0.263	0.5613	0.2606	0.1084	0.0604	0.0084	0.001	0.1445	0.0758	0.1471	-0.1434	-0.2156	-0.0559	-0.0366	1.8187	0.021	9.9011	1.1148	9.9014	1.3735	A-	A+	A-

ELA	5	623762	2 B-K	2	7226	0.4791	0.1362	0.2144	0.1683	0.4773	0.003	0.0007	0.359	-0.1705	-0.1323	-0.1682	0.3612	-0.0617	-0.0493	0.8632	0.0186	-1.939	0.9876	0.701	1.0061	A+	A-	A+
ELA	5	623763	2 B-K	2	7238	0.7343	0.7328	0.094	0.0757	0.0954	0.0019	0.0001	0.4342	0.4354	-0.2665	-0.2165	-0.1891	-0.0454	-0.0065	-0.5817	0.0208	-9.8491	0.9045	-7.4891	0.8875	A-	A-	A+
ELA	5	623764	2 B-V	1	7216	0.8276	0.048	0.0448	0.8234	0.0787	0.0045	0.0006	0.4133	-0.2453	-0.2027	0.4168	-0.2219	-0.0569	-0.0407	-1.275	0.0245	-6.8791	0.8997	-8.7392	0.8032	A-	A+	A-
ELA	5	623784	2 B-V	2	7206	0.7026	0.6981	0.1386	0.0472	0.1097	0.0045	0.0019	0.3854	0.3887	-0.2591	-0.2153	-0.1207	-0.0654	-0.0271	-0.4972	0.0205	-6.0291	0.9436	-5.4391	0.9218	A-	A-	A+
ELA	5	630849	2 B-V	2	7134	0.5128	0.5043	0.1015	0.1393	0.2385	0.0124	0.004	0.3795	0.3796	-0.1796	-0.1406	-0.1865	-0.065	-0.0029	0.5518	0.0185	-5.109	0.9683	-3.389	0.9715	A-	A-	A+
ELA	5	581213	2 D	2	7215	0.5059	0.1707	0.161	0.5032	0.1598	0.0033	0.0019	0.3467	-0.1587	-0.1049	0.348	-0.1967	-0.0448	-0.026	0.3659	0.0186	1.251	1.0081	1.621	1.0144	A+	A-	A+
ELA	5	629635	2 D	2	7177	0.718	0.1077	0.118	0.7105	0.0534	0.0095	0.001	0.3767	-0.1972	-0.1768	0.3806	-0.2082	-0.0648	-0.0441	-0.5886	0.0208	-3.889	0.9614	-4.0191	0.9382	A+	A-	A-
ELA	5	629644	2 D	2	7223	0.8672	0.8636	0.0325	0.0387	0.0609	0.0029	0.0012	0.4281	0.4281	-0.2333	-0.2343	-0.2401	-0.0275	-0.0397	-1.7217	0.0281	-7.1291	0.8662	-9.8994	0.6449	A+	B-	A-
ELA	5	623677	3 B-K	2	7202	0.4478	0.3025	0.1594	0.4451	0.0869	0.0055	0.0006	0.1599	0.0038	-0.0996	0.1634	-0.1466	-0.0621	-0.0258	0.9436	0.0188	9.9011	1.1263	9.9012	1.1925	A-	A-	A-
ELA	5	623679	3 B-K	2	7213	0.5952	0.1468	0.1802	0.5925	0.0759	0.0039	0.0007	0.3621	-0.1752	-0.1315	0.3651	-0.2342	-0.0655	-0.0285	0.0683	0.0192	-0.309	0.9977	-0.509	0.9945	A-	A-	A-
ELA	5	623682	3 B-K	2	7195	0.6934	0.1187	0.0513	0.1344	0.6885	0.0052	0.0018	0.431	-0.1582	-0.2267	-0.2748	0.4348	-0.0638	-0.0437	-0.4263	0.0205	-9.8991	0.8877	-9.8991	0.8534	A-	A-	A+
ELA	5	623684	3 B-K	2	7186	0.5582	0.086	0.1187	0.2335	0.5535	0.0075	0.0008	0.4242	-0.2226	-0.3174	-0.0978	0.4255	-0.0581	-0.0043	0.3703	0.0188	-9.8991	0.9303	-9.7391	0.9131	A-	A-	A-
ELA	5	623685	3 B-K	2	7208	0.7497	0.0874	0.7458	0.0795	0.0821	0.0041	0.0011	0.4631	-0.2599	0.4647	-0.245	-0.2135	-0.0522	-0.0225	-0.6751	0.0215	-9.8991	0.8726	-9.8992	0.7869	A+	A+	A-
ELA	5	623681	3 B-V	1	7217	0.3378	0.3365	0.2146	0.253	0.192	0.0028	0.0012	0.2884	0.2893	-0.0428	-0.0579	-0.2307	-0.043	-0.024	1.3343	0.0194	0.161	1.0012	7.3211	1.0857	A-	A-	A+
ELA	5	623683	3 B-V	1	7210	0.7878	0.7839	0.0675	0.0719	0.0718	0.0035	0.0015	0.4244	0.4289	-0.2031	-0.2599	-0.205	-0.0709	-0.0358	-0.926	0.0227	-9.3391	0.8871	-9.6092	0.8153	A+	A-	A-
ELA	5	630800	3 B-V	2	7229	0.8056	0.0464	0.8038	0.1052	0.0424	0.0021	0.0003	0.4574	-0.2479	0.4591	-0.3016	-0.1744	-0.0416	-0.0404	-1.0784	0.0236	-9.8991	0.867	-9.8993	0.743	A-	A-	A-
ELA	5	581219	3 D	2	7209	0.5719	0.0955	0.1649	0.569	0.1655	0.0026	0.0025	0.3157	-0.1757	-0.1328	0.3197	-0.1391	-0.0636	-0.0494	0.376	0.0188	4.191	1.0281	6.2311	1.0582	A+	A-	A-
ELA	5	629636	3 D	2	7182	0.6104	0.0112	0.2705	0.1045	0.605	0.0079	0.001	0.4014	-0.1408	-0.2478	-0.2155	0.4049	-0.0712	-0.0284	0.0397	0.0192	-6.179	0.9546	-6.5591	0.9299	A-	A-	A-
ELA	5	629645	3 D	2	7205	0.67	0.1259	0.1119	0.0904	0.6662	0.0036	0.0021	0.4444	-0.225	-0.2186	-0.2183	0.4456	-0.0452	-0.0281	-0.2217	0.0198	-9.4191	0.9224	-9.8991	0.867	A+	A+	A-
ELA	5	625477	4 B-C	3	7189	0.296	0.0855	0.0325	0.5798	0.2934	0.0083	0.0004	0.0297	-0.2658	-0.2265	0.2114	0.0326	-0.0474	-0.0191	1.6311	0.0279	9.9013	1.2848	9.9015	1.5423	A-	A-	A+
ELA	5	625478	4 B-C	2	7214	0.7917	0.7875	0.0512	0.0803	0.0758	0.0037	0.0015	0.4633	0.4649	-0.2463	-0.206	-0.286	-0.0522	-0.0268	-0.935	0.0307	-9.4291	0.8512	-9.8993	0.7282	A-	A-	A-
ELA	5	625485	4 B-C	2	7212	0.3648	0.0809	0.4291	0.3628	0.1216	0.0051	0.0004	0.309	-0.1923	-0.0851	0.3114	-0.1503	-0.0786	-0.0228	1.2622	0.0266	1.831	1.0194	7.9811	1.1328	A-	A-	A+
ELA	5	625486	4 B-C	2	7236	0.8007	0.0727	0.0776	0.799	0.0485	0.0021	0.0001	0.3901	-0.2804	-0.2082	0.3911	-0.1226	-0.0366	-0.0197	-1.0143	0.0313	-5.3591	0.9096	-5.0691	0.856	A+	A+	A-
ELA	5	625479	4 B-K	2	7207	0.7053	0.0838	0.1445	0.0645	0.7009	0.0043	0.0019	0.5043	-0.2699	-0.238	-0.2747	0.5077	-0.0763	-0.034	-0.4076	0.0278	-9.8992	0.8412	-9.8992	0.7575	A+	A+	A-
ELA	5	625480	4 B-K	1	7224	0.7183	0.7155	0.0807	0.1423	0.0576	0.003	0.0008	0.4247	0.4268	-0.2176	-0.219	-0.2288	-0.048	-0.0291	-0.4898	0.0281	-6.3191	0.9196	-7.0791	0.8559	A-	A-	A-
ELA	5	625481	4 B-K	2	7209	0.4109	0.2944	0.4084	0.1546	0.1367	0.0051	0.0008	0.2788	-0.2046	0.2814	-0.1385	0.0311	-0.0685	-0.028	1.035	0.026	6.5811	1.0652	9.2711	1.1364	A-	A+	A-
ELA	5	625483	4 B-V	1	7210	0.7774	0.1139	0.0717	0.7729	0.0357	0.005	0.0008	0.4429	-0.2503	-0.2426	0.4459	-0.2125	-0.0592	-0.0392	-0.8379	0.0301	-8.6991	0.8691	-8.1992	0.7962	A-	A-	A-
ELA	5	581220	4 D	2	7216	0.4202	0.1408	0.3042	0.132	0.4181	0.0017	0.0033	0.407	-0.2082	-0.1371	-0.184	0.4072	-0.0449	-0.0215	0.8712	0.0258	-5.7591	0.9473	-4.6691	0.9396	A-	A-	A-
ELA	5	629637	4 D	2	7182	0.8552	0.0616	0.0481	0.8469	0.0336	0.0084	0.0012	0.4098	-0.2171	-0.232	0.414	-0.2182	-0.0675	-0.0469	-1.3854	0.0345	-5.9491	0.8774	-8.3893	0.7195	A-	A-	A-
ELA	5	629646	4 D	2	7219	0.8019	0.0454	0.7983	0.0696	0.0822	0.0033	0.0012	0.4555	-0.2214	0.4561	-0.2072	-0.2952	-0.0425	-0.0196	-1.0093	0.0312	-8.2191	0.8641	-9.8993	0.7235	A+	A-	A-
ELA	5	623697	5 B-C	2	7201	0.5834	0.0599	0.5795	0.2364	0.1175	0.0051	0.0015	0.2783	-0.1485	0.2837	-0.0854	-0.1895	-0.0863	-0.0352	0.2346	0.0258	5.5611	1.0534	5.7311	1.0761	A+	A-	A-
ELA	5	623704	5 B-C	2	7199	0.4046	0.4018	0.1697	0.2536	0.168	0.0051	0.0018	0.2868	0.2904	-0.2293	-0.0329	-0.091	-0.0822	-0.05	1.0737	0.0259	4.431	1.0425	5.4111	1.0749	A-	A-	A-
ELA	5	623705	5 B-C	2	7232	0.6934	0.1316	0.0843	0.6918	0.0899	0.0014	0.001	0.3961	-0.2702	-0.2306	0.3995	-0.0876	-0.0619	-0.0546	-0.3319	0.0274	-5.2991	0.9371	-5.6091	0.9	A+	A+	A+
ELA	5	623696	5 B-K	3	7218	0.2231	0.3944	0.0723	0.2221	0.3069	0.0036	0.0007	0.0954	-0.0413	-0.2166	0.0979	0.0892	-0.0777	-0.0354	2.0542	0.03	8.4211	1.1398	9.9015	1.4764	A-	A+	A-
ELA	5	623699	5 B-K	2	7179	0.5841	0.269	0.0607	0.5784	0.0822	0.0077	0.0019	0.3985	-0.1382	-0.2703	0.4032	-0.2331	-0.0942	-0.0222	0.2398	0.0258	-5.8091	0.9462	-5.4791	0.9307	A+	A-	A+
ELA	5	623700	5 B-K	2	7216	0.4802	0.478	0.0665	0.096	0.3549	0.003	0.0015	0.3583	0.361	-0.2656	-0.2261	-0.0874	-0.0657	-0.0545	0.7126	0.0255	-1.949	0.9829	-0.789	0.9906	A+	A+	A+
ELA	5	623703	5 B-K	2	7188	0.5533	0.091	0.2867	0.0653	0.5486	0.0077	0.0007	0.3967	-0.2695	-0.1368	-0.2121	0.399	-0.0703	-0.0245	0.3814	0.0256	-4.819	0.9569	-4.8291	0.9421	A+	A-	A-
ELA	5	623702	5 B-V	2	7218	0.4457	0.3119	0.1773	0.0628	0.4438	0.0028	0.0015	0.3475	-0.1832	-0.1384	-0.1301	0.3492	-0.0554	-0.0336	0.8734	0.0256	-0.699	0.9938	0.611	1.0075	A-	A+	A-
ELA	5	581222	5 D	2	7209	0.6011	0.0715	0.5977	0.0595	0.2658	0.0026	0.0029	0.4106	-0.174	0.4126	-0.2401	-0.2172	-0.06	-0.0309	0.1304	0.026	-5.9091	0.9432	-6.1991	0.9174	A+	A-	A-
ELA	5	629638	5 D	2	7164	0.8582	0.0462	0.0559	0.0381	0.8481	0.0113	0.0004	0.4721	-0.2684	-0.2447	-0.2483	0.4805	-0.1085	-0.0445	-1.3598	0.0345	-8.2092	0.8322	-9.8994	0.6164	A+	A-	A-
ELA	5	629647	5 D	2	7207	0.2366	0.2352	0.3014	0.2542	0.2033	0.0044	0.0014	0.1042	0.1059	-0.0236	-0.0475	-0.0231	-0.0423	-0.0351	1.9704	0.0295	8.9411	1.1411	9.9014	1.421	A-	A+	A+
ELA	5	622457	6 A-C	2	7145	0.6598	0.1589	0.0508	0.1277	0.6542	0.0079	0.0006	0.4341	-0.1882	-0.25	-0.235	0.434	-0.0444	-0.0143	-0.1424	0.0269	-7.5891	0.9168	-5.2291	0.9116	A+	A+	A-
ELA	5	622453	6 A-K	2	7188	0.5479	0.183	0.0983	0.1697	0.5465	0.0024	0.0001	0.3318	-0.1838	-0.158	-0.1223	0.3322	-0.0298	0.0098	0.3909	0.0259	3.681	1.035	5.1511	1.0698	A+	A-	A-
ELA	5	622454	6 A-K	2	7169	0.7259	0.0486	0.0999	0.7222	0.1242	0.0039	0.0012	0.4237	-0.225	-0.2087	0.427	-0.2274	-0.0618	-0.0419	-0.5142	0.0284	-7.1791	0.9061	-5.6291	0.8805	A-	A-	A-
ELA	5	622455	6 A-K	2	7114	0.6396	0.6314	0.0799	0.1504	0.1255	0.0119	0.0008	0.3988	0.4001	-0.2735	-0.2356	-0.0824	-0.0555	-0.0451	-0.0256	0.0266	-4.079	0.9569	-1.959	0.9685	A-	A-	A-
ELA	5	622456	6 A-K	2	7166	0.6933	0.0858	0.6894	0.0429	0.1764	0.0046	0.001	0.4081	-0.2547	0.4126	-0.2223	-0.1788	-0.0739	-0.0458	-0.3302	0.0276	-6.2691	0.9247	-4.2591	0.9187	A+	A-	A-
ELA	5	622460	6 A-K	2	7153	0.5009	0.3203	0.4972	0.0917	0.0834	0.0057	0.0017	0.4093	-0.1461	0.4103	-0.2426	-0.2249	-0.0538	-0.0182	0.6254	0.0257	-5.8691	0.9474	-2.949	0.9627	A+	B-	A-
ELA	5	622458	6 A-V	2	7174	0.7285	0.7252	0.1674	0.0587	0.0443	0.004	0.0004	0.4177	0.421	-0.2116	-0.2302	-0.2441	-0.0587	-0.0445	-0.5319	0.0285	-7.0391	0.9071	-1.429	0.9682	A-	A-	A-
ELA	5	625251	6 A-V	1	7159	0.7919	0.084	0.0543	0.7867	0.0686	0.0056	0.001	0.4438	-0.214	-0.2636	0.4459	-0.2313	-0.0564	-0.0312	-0.9172	0.0308	-7.4891	0.8797	-8.7692	0.7707	A+	A+	A-
ELA	5	580489	6 B-C	2	28851	0.7979	0.0658	0.7946	0.0192	0.1163	0.0029	0.0011	0.4271	-0.2605	0.4302	-0.1783	-0.2512	-0.0505	-0.0436	-0.8156	0.015	-9.8992	0.826	-9.8993	0.7204	A+	A-	A+
ELA	5	580492	6 B-C	1	28910	0.6735	0.0962	0.0953	0.6722	0.1343	0.0017	0.0003	0.3789	-0.1334	-0.2442	0.3794	-0.1925	-0.0264	-0.0179	-0.4106	0.0139	4.081	1.0259	1.421	1.0141	A-	A-	A-
ELA	5	580471	6 B-K	2	28831	0.5099	0.2189	0.5075	0.2318	0.0371	0.0033	0.0014	0.2457	-0.112	0.248	-0.0728	-0.2288	-0.0447	-0.0311	0.7408	0.0128	9.9011	1.1031	9.9011	1.1443	A-	A+	A-
ELA	5	580472	6 B-K	2	28833	0.7212	0.7178	0.0986	0.061	0.118	0.0045	0.0002	0.3774	0.3784	-0.1611	-0.2422	-0.1903	-0.0401	-0.0199	-0.3329	0.0137	-9.8991	0.9103	-9.8991	0.879	A+	A+	A+
ELA	5	580473	6 B-K	2	28864	0.6826	0.0286	0.0431	0.6802	0.2445	0.0027	0.0009	0.157	-0.2363	-0.2266	0.1602	0.0316	-0.0436	-0.0225	-0.4857	0.014	9.9012	1.2269	9.9014	1.446	A+	A-	A-
ELA	5	580474	6 B-K	2	28820	0.5341	0.5314	0.2233	0.122	0.1182	0.0041	0.001	0.3659	0.3674	-0.1403	-0.1626	-0.2104	-0.0427	-0.0323	0.5892	0.0128	-3.579	0.9842	-2.139	0.9872	A+	A+	A+
ELA	5	581223	6 D	2	7186	0.3983	0.164	0.3972	0.4045	0.0315	0.0014	0.0014	0.2459	-0.1155	0.2469	-0.1029	-0.1443	-0.0375	-0.0253	1.1391	0.0263	9.9011	1.105	9.9012	1.1875	A-	A-	A-
ELA	5	629639	6 D	2	7141	0.5251	0.1081	0.141	0.2215	0.5204	0.0086	0.0004	0.3373	-0.117	-0.2168	-0.1256	0.3395	-0.0536	-0.0348	0.5153	0.0258	3.151	1.0293	4.2211	1.0554	A-	A-	A-
ELA	5	629648	6 D	1	7184	0.8939	0.042	0.0296	0.0341	0.8912	0.0022	0.0008	0.42	-0.243	-0.2146	-0.2391	0.4196	-0.0281	-0.0273	-1.8066	0.0396	-5.5791	0.8534	-9.8994	0.5964	A+	A+	A-
ELA	5	623039	7 A-C	2	7231	0.7106	0.1574	0.0747	0.0554	0.7058	0.0063	0.0004	0.4121	-0.2188	-0.2359	-0.1883	0.41	-0.0235	-0.0104	-0.4198	0.0276	-6.6791	0.9189	-5.2791	0.8995	A+	A+	A+
ELA	5	623034	7 A-K	2	7250	0.6724	0.6696	0.1963	0.0529	0.0771	0.003	0.0011	0.3766	0.3779	-0.1168	-0.2513	-0.2706	-0.0271	-0.0445	-0.2261	0.0269	-5.0091	0.9445	-2.279	0.961	A+	A-	A-
ELA	5	623035	7 A-K	2	7212	0.6052	0.1973	0.5996	0.1349	0.0589	0.0092	0.0001	0.3511	-0.2338	0.3491	-0.0527	-0.2456	-0.0197	-0.0279	0.1251	0.0259	-0.979	0.9906	0.511	1.007	A-	A-	A+
ELA	5	623036	7 A-K	2	7249	0.4001	0.0856	0.1501	0.3617	0.3984	0.0029	0.0014	0.2292	-0.2045	-0.2	0.0397	0.2309	-0.0398	-0.0363	1.0776	0.0259	9.8711	1.0972	9.9011	1.1477	A-	A+	A+
ELA	5	623040	7 A-K	2	7250	0.7025	0.1372	0.1157	0.6996	0.0434	0.0034	0.0007	0.3928	-0.2043	-0.2013	0.3931	-0.2117	-0.0338	-0.0165	-0.3858	0.0275	-5.3291	0.936	-4.5991	0.914	A+	A+	A+
ELA	5	623042	7 A-K	2	7266	0.6448	0.1019	0.1408	0.6435	0.1118	0.0018	0.0001	0.3657	-0.2251	-0.098	0.366	-0.2285	-0.0193	-0.024	-0.0922	0.0264	-3.339	0.9651	0.311	1.0048	A+	A-	A-
ELA	5	623041	7 A-V	1	7257	0.6029	0.0353	0.601	0.3207	0.0398	0.0026	0.0005	0.2035	-0.25	0.2057	-0.0209	-0.2162	-0.0399	-0.0223	0.1184	0.0259	9.9011	1.1186	9.9012	1.1864	A+	A-	A-
ELA	5	629586	7 A-V	2	7240	0.4602	0.4577	0.0832	0.0714	0.3821	0.0034	0.0021	0.3523	0.3532	-0.2022	-0.2388	-0.1128	-0.0483	-0.0215	0.7946	0.0255	-0.719	0.9936	0.771	1.0094	A-	A-	A-
ELA	5	581224	7 D	2	7230	0.5138	0.5103	0.1302	0.1262	0.2264	0.0026	0.0043	0.3846	0.3868	-0.1389	-0.1515	-0.2171	-0.0529	-0.0416	0.3569	0.0255	-2.349	0.9791	-2.899	0.9642	A-	A-	A-
ELA	5	629640	7 D	2	7200	0.6564	0.0831	0.0661	0.6492	0.1907	0.0109	0.0001	0.3785	-0.2248	-0.2141	0.3811	-0.1519	-0.0668	-0.0029	-0.1206	0.0265	-3.509	0.9629	-3.5191	0.9443	A+	A+	A+
ELA	5	629649	7 D	2	7248	0.4687	0.0912	0.0963	0.4666	0.3415	0.0032	0.0012	0.2922	-0.2306	-0.2365	0.2937	-0.0148	-0.0321	-0.0438	0.7527	0.0255	5.361	1.0478	5.9211	1.0728	A+	A-	A-
ELA	5	623691	8 A-C	2	7142	0.7746	0.0781	0.7677	0.0819	0.0634	0.008	0.0008	0.4963	-0.2391	0.4967	-0.2705	-0.2687	-0.0579	-0.0269	-0.7804	0.0298	-9.8992	0.8272	-9.8993	0.6966	A+	A-	A+
ELA	5	623689	8 A-K	2	7190	0.3862	0.4296	0.1409	0.3854	0.0419	0.0022		0.1823	-0.0364	-0.096	0.1828	-0.1815	-0.0248		1.1474	0.0261	9.9011	1.1372	9.9012	1.2066	A+	A+	A+
ELA	5	623690	8 A-K	2	7175	0.4229	0.421	0.0702	0.3733	0.1311	0.0037	0.0006	0.1846	0.1863	-0.2362	0.046	-0.1507	-0.0437	-0.013	0.9751	0.0258	9.9011	1.1375	9.9012	1.2067	A-	A-	A+
ELA	5	623692	8 A-K	2	7153	0.7553	0.108	0.7498	0.0676	0.0673	0.0071	0.0003	0.4122	-0.1845	0.4124	-0.2473	-0.2211	-0.0461	-0.0032	-0.6693	0.0291	-7.0591	0.9006	-6.5191	0.8569	A+	A+	A+
ELA	5	623694	8 A-K	2	7180	0.7373	0.1094	0.0513	0.101	0.7347	0.0033	0.0003	0.4831	-0.3018	-0.2516	-0.2033	0.4829	-0.0357	-0.0115	-0.5791	0.0286	-9.8992	0.8483	-9.8992	0.7766	A-	A+	A+
ELA	5	623693	8 A-V	2	7144	0.4001	0.3966	0.4541	0.0519	0.0888	0.0068	0.0018	0.1145	0.1183	0.1133	-0.2299	-0.2016	-0.0471	-0.0487	1.0926	0.026	9.9012	1.19	9.9013	1.2641	A+	A-	A+
ELA	5	623695	8 A-V	2	7160	0.7754	0.0776	0.0501	0.0955	0.7705	0.0042	0.0022	0.5174	-0.2792	-0.2407	-0.2925	0.5169	-0.0596	-0.0084	-0.7981	0.0299	-9.8992	0.8137	-9.8993	0.6751	A-	A-	A-
ELA	5	630912	8 A-V	2	7172	0.3015	0.2655	0.0468	0.3	0.383	0.0031	0.0017	0.2138	-0.2296	-0.249	0.2154	0.1216	-0.04	-0.0404	1.5857	0.0276	6.8811	1.0854	9.9012	1.2275	A+	A-	A-
ELA	5	505542	8 D	2	7170	0.4658	0.2201	0.1676	0.1438	0.4635	0.0024	0.0026	0.2346	-0.0604	-0.097	-0.1507	0.237	-0.0569	-0.0257	0.9373	0.0258	9.9011	1.1161	9.9012	1.1723	A+	A+	A+
ELA	5	629641	8 D	2	7138	0.6065	0.0949	0.1039	0.191	0.6007	0.0086	0.0008	0.4649	-0.2772	-0.261	-0.156	0.4659	-0.0568	-0.0248	0.1259	0.0261	-9.8991	0.8973	-9.8991	0.8602	A+	A-	A-
ELA	5	629650	8 D	2	7174	0.294	0.1087	0.2927	0.1486	0.4456	0.0031	0.0014	0.0477	-0.2237	0.0494	-0.1472	0.2059	-0.0338	-0.025	1.6261	0.0278	9.9012	1.2291	9.9014	1.4337	A+	A-	A+
ELA	5	621495	9 A-K	2	7242	0.3875	0.4563	0.1016	0.3857	0.0518	0.0044	0.0003	0.2834	-0.0377	-0.2496	0.2856	-0.1803	-0.0665	-0.0291	1.1437	0.026	3.711	1.0362	6.5111	1.0946	A+	A-	A+
ELA	5	621496	9 A-K	2	7233	0.6015	0.598	0.1266	0.1785	0.091	0.0041	0.0018	0.3848	0.389	-0.2179	-0.1154	-0.2344	-0.0723	-0.0487	0.1392	0.0259	-4.429	0.9579	-4.2691	0.9429	A-	A+	A-
ELA	5	621503	9 A-K	2	7227	0.739	0.0722	0.0741	0.113	0.7341	0.0059	0.0008	0.4856	-0.2641	-0.2655	-0.2288	0.4859	-0.0532	-0.011	-0.574	0.0284	-9.8992	0.8411	-9.8992	0.7535	A+	A+	A+
ELA	5	621597	9 A-K	2	7236	0.5755	0.5723	0.1618	0.0827	0.1777	0.0043	0.0012	0.3956	0.3985	-0.1727	-0.2687	-0.1413	-0.0672	-0.0319	0.2625	0.0257	-5.7291	0.948	-4.3891	0.9448	A-	A+	A-

ELA	5	621600	9 A-K	2	7244	0.7308	0.0763	0.0995	0.0922	0.7276	0.0029	0.0015	0.4577	-0.2356	-0.2012	-0.2702	0.4585	-0.0424	-0.0232	-0.5365	0.0282	-9.8991	0.8625	-9.8992	0.791	A+	A+	A-
ELA	5	621500	9 A-V	2	7264	0.624	0.204	0.623	0.1042	0.0672	0.0015	0.0001	0.3044	-0.1794	0.3052	-0.1716	-0.0876	-0.0244	-0.0251	0.0169	0.0261	2.871	1.0293	2.401	1.0355	A+	A+	A-
ELA	5	621512	9 A-V	2	7238	0.5647	0.1527	0.5617	0.1882	0.0922	0.0043	0.001	0.3206	-0.1813	0.324	-0.091	-0.1885	-0.0649	-0.0389	0.3127	0.0256	2.711	1.0248	1.791	1.0225	C-	A-	A-
ELA	5	621601	9 A-V	2	7259	0.6661	0.1308	0.0858	0.6645	0.1165	0.0015	0.0008	0.4027	-0.2273	-0.2252	0.4044	-0.1513	-0.0374	-0.0435	-0.1929	0.0268	-5.3191	0.9415	-5.5491	0.9097	A+	A+	A-
ELA	5	581215	9 D	2	7223	0.7429	0.0392	0.094	0.122	0.7375	0.003	0.0043	0.4236	-0.2613	-0.2412	-0.1867	0.4258	-0.039	-0.0464	-0.654	0.0289	-5.3291	0.9251	-5.8391	0.8725	A+	A-	A-
ELA	5	629642	9 D	2	7195	0.4093	0.4048	0.2178	0.1682	0.198	0.0103	0.0008	0.1131	0.1186	-0.0466	-0.0635	-0.0176	-0.08	-0.0068	1.051	0.0258	9.9012	1.195	9.9013	1.2861	A+	A-	A-
ELA	5	629651	9 D	2	7236	0.8378	0.8332	0.0346	0.0238	0.1029	0.0025	0.003	0.379	0.3814	-0.2043	-0.2203	-0.2213	-0.0381	-0.0393	-1.2408	0.0332	-4.6191	0.9094	-5.4492	0.8311	A+	A+	A-
ELA	6	495095	0 A-C	3	60480	0.3626	0.3602	0.1598	0.1863	0.2871	0.0062	0.0005	0.3002	0.3019	-0.1335	-0.1583	-0.064	-0.0632	-0.0216	1.4342	0.0077	9.9011	1.0878	9.9011	1.1495	A+	A+	A+
ELA	6	495096	0 A-C	2	60699	0.5142	0.1656	0.1457	0.1729	0.5127	0.0026	0.0005	0.4815	-0.1766	-0.2049	-0.2639	0.4826	-0.0616	-0.0165	0.5888	0.0075	-9.8991	0.9503	-9.8991	0.938	A+	A+	A+
ELA	6	495098	0 A-C	2	60681	0.604	0.1458	0.602	0.2019	0.047	0.0026	0.0008	0.4567	-0.253	0.4589	-0.2141	-0.2141	-0.0661	-0.0271	0.211	0.0077	-9.899	0.9604	-9.8991	0.95	A+	A+	A+
ELA	6	579306	0 A-C	3	60576	0.7392	0.0627	0.7354	0.1132	0.0837	0.0047	0.0003	0.5169	-0.2796	0.5176	-0.2563	-0.2731	-0.048	-0.0254	-0.5204	0.0086	-9.219	0.9603	-9.8991	0.8658	A+	A+	A+
ELA	6	579307	0 A-C	2	60605	0.4948	0.0709	0.4925	0.2969	0.1351	0.0038	0.0008	0.4697	-0.2225	0.4705	-0.2233	-0.2123	-0.0478	-0.0211	0.9045	0.0075	-9.8991	0.9401	-9.8991	0.9405	A-	A-	A-
ELA	6	579308	0 A-C	3	60452	0.573	0.5689	0.1038	0.1274	0.1928	0.0063	0.0008	0.4183	0.4202	-0.1823	-0.1545	-0.2429	-0.0571	-0.0231	0.5939	0.0075	-4.599	0.9873	-4.909	0.9816	A+	A-	A+
ELA	6	495100	0 A-K	2	60700	0.737	0.0594	0.1479	0.7347	0.0549	0.0024	0.0006	0.5067	-0.2681	-0.2949	0.509	-0.2323	-0.0616	-0.0283	-0.6039	0.0088	-0.809	0.9963	-9.8991	0.9118	A+	A+	A-
ELA	6	579322	0 A-K	3	60606	0.6191	0.6163	0.0909	0.1548	0.1334	0.004	0.0006	0.362	0.3641	-0.1852	-0.1527	-0.1908	-0.051	-0.02	0.4968	0.0076	7.961	1.0226	9.351	1.0371	A-	A-	A+
ELA	6	495103	0 A-V	1	60698	0.7631	0.7607	0.1538	0.0497	0.0327	0.0028	0.0003	0.3128	0.3162	-0.1778	-0.1652	-0.1772	-0.0585	-0.0159	-0.3291	0.0083	-9.8991	0.9479	9.9011	1.073	A-	A-	B-
ELA	6	495104	0 A-V	2	60665	0.4269	0.2269	0.2321	0.112	0.4254	0.0028	0.0008	0.2635	-0.0625	-0.0978	-0.1897	0.2656	-0.0625	-0.0242	1.5241	0.0078	9.9012	1.2045	9.9013	1.3203	A-	A+	A+
ELA	6	579323	0 A-V	2	60711	0.738	0.0616	0.1493	0.7359	0.0504	0.0024	0.0004	0.528	-0.2575	-0.3426	0.5301	-0.2115	-0.0588	-0.0264	-0.2447	0.0082	-9.8992	0.8189	-9.8993	0.7218	A-	A+	A+
ELA	6	497114	0 B-C	3	60733	0.5731	0.5717	0.1274	0.069	0.2294	0.0023	0.0002	0.4541	0.455	-0.2254	-0.2451	-0.2032	-0.0502	-0.0038	0.5112	0.0076	-9.8991	0.944	-9.8991	0.9216	A-	A+	A+
ELA	6	497115	0 B-C	3	60589	0.3164	0.3539	0.3148	0.0967	0.2297	0.0041	0.0008	0.231	0.0266	0.2326	-0.2112	-0.1288	-0.0542	-0.0263	1.8904	0.0082	9.9012	1.2209	9.9014	1.4346	A+	A+	A-
ELA	6	497116	0 B-C	2	60758	0.5664	0.0974	0.2104	0.1249	0.5652	0.0017	0.0004	0.4912	-0.2536	-0.1613	-0.3043	0.4923	-0.0507	-0.0195	0.6014	0.0075	-9.8991	0.917	-9.8991	0.9003	A-	A+	A-
ELA	6	497117	0 B-C	2	60687	0.568	0.0696	0.1356	0.2253	0.5661	0.0027	0.0006	0.3637	-0.2324	-0.1286	-0.1784	0.3657	-0.0597	-0.0178	0.7565	0.0075	9.9011	1.0507	9.9011	1.0617	A-	A+	A+
ELA	6	579313	0 B-C	2	60639	0.6605	0.1125	0.6578	0.0867	0.139	0.0037	0.0003	0.4944	-0.2205	0.4969	-0.275	-0.2428	-0.0705	-0.0233	0.0629	0.0078	-9.8991	0.9167	-9.8991	0.8763	A-	A-	A+
ELA	6	579314	0 B-C	3	60471	0.6239	0.1802	0.1115	0.6196	0.0819	0.0061	0.0007	0.533	-0.3313	-0.1892	0.5351	-0.2424	-0.0732	-0.0267	0.3485	0.0076	-9.8991	0.8806	-9.8992	0.8379	A-	A+	A+
ELA	6	579316	0 B-K	2	60617	0.6254	0.6227	0.0517	0.1066	0.2146	0.0036	0.0008	0.4813	0.4838	-0.1897	-0.1541	-0.3408	-0.0706	-0.0278	0.1347	0.0078	-9.899	0.9618	-9.879	0.9534	A-	A-	A-
ELA	6	579317	0 B-K	2	60628	0.5868	0.5843	0.1047	0.1504	0.1563	0.0037	0.0005	0.5135	0.5153	-0.2755	-0.3016	-0.1569	-0.0698	-0.0236	0.3073	0.0077	-9.8991	0.9266	-9.8991	0.8877	A-	A+	A+
ELA	6	579318	0 B-K	3	60485	0.2913	0.1119	0.2193	0.3729	0.2893	0.006	0.0005	0.27	-0.1992	-0.0734	-0.0501	0.2718	-0.0712	-0.0156	1.8201	0.0081	9.9011	1.0708	9.9012	1.235	A-	A-	A-
ELA	6	497121	0 B-V	2	60736	0.8436	0.0612	0.8415	0.0672	0.0276	0.002	0.0004	0.4645	-0.2671	0.4672	-0.2822	-0.2004	-0.056	-0.0289	-0.9557	0.0095	-9.8992	0.7883	-9.8994	0.6238	A-	A-	A-
ELA	6	497122	0 B-V	2	60663	0.7693	0.0747	0.1009	0.7665	0.0543	0.0032	0.0005	0.415	-0.2395	-0.1946	0.4177	-0.2271	-0.0573	-0.0214	-0.4399	0.0085	-9.8991	0.9215	-9.8991	0.9131	A+	A-	A+
ELA	6	579296	0 B-V	2	60596	0.7946	0.0711	0.0399	0.0934	0.7909	0.0041	0.0006	0.5118	-0.2765	-0.2531	-0.2875	0.5145	-0.071	-0.018	-0.7543	0.0091	-9.8991	0.8717	-9.8993	0.7468	A-	A+	A-
ELA	6	341234	0 D	2	60601	0.331	0.1612	0.3139	0.3295	0.1908	0.004	0.0007	0.3048	-0.2557	-0.0107	0.3062	-0.1043	-0.052	-0.0256	1.4264	0.0077	9.901	1.0466	9.9011	1.0927	A+	A-	A-
ELA	6	412356	0 D	2	60739	0.5623	0.561	0.0743	0.1739	0.1885	0.0013	0.0011	0.3699	0.371	-0.2066	-0.1262	-0.2045	-0.0342	-0.0278	0.6237	0.0075	9.901	1.0438	9.901	1.0435	A+	A+	A-
ELA	6	412402	0 D	2	60711	0.6764	0.0746	0.1095	0.1385	0.6745	0.0017	0.0011	0.4807	-0.2916	-0.133	-0.3042	0.4818	-0.0381	-0.0282	0.1079	0.0078	-9.8991	0.8771	-9.8991	0.9117	B+	A-	A-
ELA	6	503918	0 D	2	60657	0.3297	0.3285	0.1733	0.0652	0.4293	0.003	0.0008	0.2483	0.2499	-0.1848	-0.1562	-0.0102	-0.0575	-0.0245	1.7235	0.008	9.9011	1.1451	9.9013	1.2765	A-	A-	A-
ELA	6	503921	0 D	2	60623	0.396	0.2756	0.1452	0.3943	0.1807	0.0038	0.0005	0.3807	-0.1165	-0.1192	0.3819	-0.2308	-0.0543	-0.0184	1.3135	0.0076	3.311	1.0096	9.9011	1.0567	A+	A-	A+
ELA	6	584199	0 D	2	60774	0.4999	0.0641	0.499	0.3187	0.1164	0.001	0.0008	0.3535	-0.2327	0.3542	-0.1428	-0.1623	-0.0235	-0.027	0.5454	0.0075	9.9011	1.0919	9.9011	1.1224	A-	A-	A-
ELA	6	584203	0 D	2	60735	0.491	0.0978	0.1773	0.4898	0.2327	0.0015	0.001	0.2858	-0.205	-0.1816	0.287	-0.0263	-0.03	-0.0309	1.0967	0.0075	9.9012	1.1546	9.9012	1.2106	A-	A+	A+
ELA	6	584209	0 D	2	60641	0.511	0.0802	0.509	0.1534	0.2533	0.0035	0.0005	0.4142	-0.17	0.4159	-0.2343	-0.1687	-0.0569	-0.0263	1.2122	0.0076	9.9011	1.0653	9.9011	1.1147	A+	A+	A-
ELA	6	584210	0 D	2	60591	0.4619	0.1858	0.1716	0.4597	0.1781	0.0043	0.0005	0.2175	-0.1261	-0.1489	0.2201	-0.0008	-0.0561	-0.0236	1.2184	0.0076	9.9012	1.2193	9.9013	1.304	A-	A+	A+
ELA	6	623710	1 A-C	2	6780	0.6096	0.1102	0.0914	0.1874	0.6073	0.0029	0.0007	0.4533	-0.2094	-0.2697	-0.193	0.4551	-0.0499	-0.0346	0.4731	0.0172	-9.8991	0.9286	-8.9291	0.9191	A-	A-	A-
ELA	6	623712	1 A-C	2	6746	0.6757	0.1176	0.1243	0.6698	0.0796	0.0068	0.0019	0.403	-0.1858	-0.1897	0.4009	-0.2355	-0.0226	-0.0112	0.0704	0.0176	-4.239	0.9697	-1.569	0.9823	A+	A+	A+
ELA	6	623713	1 A-C	2	6794	0.5128	0.512	0.1258	0.1148	0.2458	0.0012	0.0004	0.3253	0.3258	-0.1456	-0.2646	-0.0674	-0.0201	-0.0238	0.7278	0.0171	9.9011	1.0865	9.9011	1.1138	A-	A+	A+
ELA	6	623706	1 A-K	2	6785	0.735	0.0475	0.7328	0.1299	0.0868	0.0024	0.0006	0.5119	-0.2359	0.5128	-0.306	-0.2538	-0.0455	-0.009	-0.2892	0.0183	-9.8992	0.8356	-9.8993	0.7469	A-	A+	A+
ELA	6	623711	1 A-K	2	6744	0.6681	0.0617	0.1706	0.0965	0.6622	0.0082	0.0007	0.2423	-0.2269	-0.1058	-0.0584	0.2442	-0.0367	-0.0191	-0.1374	0.018	9.9011	1.0972	9.9012	1.2303	A+	A-	A+
ELA	6	623715	1 A-K	1	6795	0.699	0.1268	0.698	0.0764	0.0973	0.0013	0.0001	0.4756	-0.3143	0.477	-0.1943	-0.2049	-0.0483	-0.0261	-0.1239	0.018	-9.8991	0.8853	-9.8992	0.8239	A-	A-	A-
ELA	6	623709	1 A-V	1	6782	0.6879	0.0256	0.0719	0.6855	0.2137	0.0026	0.0007	0.419	-0.191	-0.2345	0.4206	-0.2478	-0.0368	-0.0401	0.0587	0.0176	-3.119	0.9776	-4.9391	0.9449	B-	A-	A-
ELA	6	629677	1 A-V	2	6794	0.8746	0.8732	0.037	0.0342	0.0539	0.0016		0.3839	0.3853	-0.2295	-0.1844	-0.2204	-0.0385		-1.254	0.0224	-9.2491	0.881	-9.8993	0.7271	A-	A-	A-
ELA	6	574578	1 B-C	2	33710	0.724	0.7226	0.068	0.1526	0.0549	0.0015	0.0005	0.4329	0.4339	-0.2515	-0.1948	-0.2595	-0.0321	-0.0266	-0.1031	0.0097	-9.8991	0.8928	-9.8991	0.8504	A-	A-	A-
ELA	6	574579	1 B-C	2	33672	0.4718	0.1712	0.093	0.4703	0.2624	0.002	0.0011	0.4166	-0.1228	-0.1815	0.4177	-0.2421	-0.0436	-0.0327	0.9896	0.0091	-8.189	0.9731	-1.399	0.9937	A-	A-	A-
ELA	6	574581	1 B-K	2	33666	0.6646	0.0441	0.0624	0.6625	0.2278	0.0021	0.0012	0.3116	-0.1959	-0.2068	0.3141	-0.1316	-0.0347	-0.045	0.3176	0.0093	-2.259	0.9919	2.441	1.0128	A+	A-	A-
ELA	6	574583	1 B-K	2	33661	0.5369	0.0525	0.1095	0.2995	0.5351	0.0031	0.0003	0.3239	-0.2628	-0.2543	-0.0472	0.3251	-0.0377	-0.0233	1.0434	0.0091	9.9011	1.085	9.9011	1.1123	A+	A+	A+
ELA	6	574584	1 B-V	2	33683	0.637	0.1275	0.6352	0.2039	0.0306	0.0019	0.0009	0.3341	-0.3011	0.3358	-0.0684	-0.181	-0.0328	-0.0372	0.2427	0.0093	6.071	1.0226	6.091	1.0335	A-	A-	A-
ELA	6	574585	1 B-V	2	33737	0.5182	0.0878	0.1236	0.2698	0.5176	0.0011	0.0001	0.5065	-0.2069	-0.2896	-0.2217	0.5068	-0.0274	-0.0061	0.9273	0.0091	-9.8991	0.8802	-9.8991	0.8586	B-	A-	A-
ELA	6	584201	1 D	2	6773	0.4158	0.1662	0.4138	0.3248	0.0905	0.0034	0.0013	0.2926	-0.1601	0.294	-0.0529	-0.199	-0.0371	-0.0314	1.4517	0.0178	9.9011	1.1271	9.9012	1.2296	A+	A+	A-
ELA	6	629732	1 D	2	6751	0.6387	0.1606	0.134	0.0638	0.6337	0.0076	0.0003	0.3346	-0.2897	-0.0257	-0.1699	0.3395	-0.0758	-0.0203	0.1984	0.0174	8.8711	1.063	8.8911	1.0962	A+	A-	A-
ELA	6	629741	1 D	2	6777	0.4053	0.2185	0.1956	0.4037	0.1781	0.0035	0.0006	0.2244	-0.1057	-0.1458	0.2254	-0.0179	-0.0296	-0.0195	1.2589	0.0175	9.9012	1.1555	9.9012	1.2491	A+	A+	A-
ELA	6	623719	2 A-C	2	6717	0.675	0.1242	0.0846	0.6721	0.1147	0.0025	0.0018	0.4049	-0.2574	-0.2175	0.4075	-0.1312	-0.0497	-0.0368	0.0615	0.0195	-6.7591	0.9447	-4.1991	0.9476	A+	A+	A+
ELA	6	623721	2 A-C	2	6725	0.4361	0.2348	0.4348	0.1174	0.2099	0.0024	0.0007	0.201	-0.0878	0.2034	-0.1717	-0.0112	-0.0642	-0.0247	1.2572	0.0186	9.9012	1.1643	9.9012	1.2342	A+	A+	A+
ELA	6	623725	2 A-C	2	6721	0.681	0.117	0.1192	0.0817	0.6785	0.0025	0.0012	0.5046	-0.2511	-0.2787	-0.2254	0.5062	-0.0473	-0.0392	0.089	0.0194	-9.8991	0.8743	-9.8992	0.819	A+	A+	A+
ELA	6	623716	2 A-K	3	6683	0.6499	0.1777	0.6438	0.084	0.0851	0.008	0.0013	0.2817	-0.0279	0.285	-0.226	-0.2061	-0.0469	-0.0392	0.1125	0.0194	9.9011	1.0926	9.9012	1.2046	A+	A+	A+
ELA	6	623717	2 A-K	2	6733	0.6795	0.0802	0.0643	0.1754	0.6782	0.0018	0.0001	0.4522	-0.2407	-0.2517	-0.2178	0.4522	-0.0357	0.0157	-0.0332	0.0198	-9.8991	0.9096	-9.8891	0.8723	A-	A+	A+
ELA	6	623718	2 A-K	2	6715	0.8052	0.8015	0.0488	0.0732	0.0719	0.0037	0.0009	0.4291	0.4328	-0.2527	-0.2566	-0.1804	-0.071	-0.0151	-0.7465	0.0227	-9.8991	0.8771	-9.3192	0.8138	A+	A+	A+
ELA	6	623723	2 A-V	1	6734	0.7761	0.1014	0.0245	0.7747	0.0977	0.0018		0.2466	-0.1836	-0.215	0.2487	-0.0457	-0.0407		-0.508	0.0215	5.5611	1.0634	9.9013	1.2516	A-	A-	A-
ELA	6	629898	2 A-V	2	6727	0.271	0.2702	0.3272	0.2725	0.1273	0.0025	0.0003	0.1981	0.1992	-0.1793	0.0489	-0.0701	-0.0491	-0.0128	2.1509	0.0208	8.7911	1.0921	9.9013	1.3055	A-	A-	A-
ELA	6	584198	2 D	2	6719	0.4706	0.4687	0.0523	0.3999	0.075	0.003	0.001	0.328	0.3294	-0.2468	-0.1413	-0.1414	-0.042	-0.0212	0.9138	0.0185	4.121	1.0272	4.901	1.0435	A+	A-	A-
ELA	6	629733	2 D	2	6704	0.7487	0.744	0.0233	0.0197	0.2068	0.0055	0.0007	0.3749	0.3763	-0.1911	-0.1752	-0.265	-0.0361	-0.0397	-0.3629	0.0209	-3.229	0.967	-5.0191	0.9181	A+	A-	A-
ELA	6	629742	2 D	2	6722	0.4286	0.4271	0.0916	0.3669	0.1109	0.0034	0.0001	0.0737	0.0754	-0.1911	0.1262	-0.1299	-0.0363	-0.0091	1.1358	0.0185	9.9013	1.2572	9.9014	1.3551	A+	A-	A-
ELA	6	621527	3 A-C	3	6696	0.2951	0.2945	0.1487	0.3808	0.1739	0.0015	0.0006	0.1213	0.1217	-0.182	0.0478	-0.0342	-0.0205	-0.0054	1.963	0.0201	9.9012	1.164	9.9013	1.3407	A-	A-	A-
ELA	6	621533	3 A-C	3	6676	0.3249	0.1657	0.1191	0.3869	0.3232	0.0036	0.0015	0.1827	-0.1352	-0.2067	0.0718	0.1845	-0.0493	-0.0292	1.8469	0.0198	9.9011	1.0981	9.9012	1.2062	A+	A-	A+
ELA	6	621536	3 A-C	2	6689	0.549	0.0958	0.5472	0.2931	0.0607	0.0022	0.0009	0.3875	-0.2179	0.389	-0.1681	-0.2101	-0.0351	-0.0383	0.6377	0.0184	-3.769	0.9758	-3.669	0.9685	A-	A-	A+
ELA	6	621518	3 A-K	2	6669	0.4232	0.1818	0.1282	0.2633	0.4206	0.006	0.0001	0.3138	-0.2357	-0.1522	-0.0232	0.3146	-0.0387	-0.0241	1.179	0.0185	2.921	1.0192	4.671	1.0412	A-	A-	A-
ELA	6	621540	3 A-K	2	6681	0.2646	0.1714	0.2635	0.187	0.3738	0.0036	0.0007	0.1142	0.0855	0.1154	-0.0927	-0.0913	-0.0419	-0.0095	2.0403	0.0204	9.9011	1.1194	9.9013	1.3459	A-	A-	A-
ELA	6	621519	3 A-V	2	6676	0.3003	0.4751	0.1131	0.2988	0.1079	0.0033	0.0018	0.1221	0.0544	-0.0655	0.1228	-0.1957	-0.0258	-0.01	1.8458	0.0198	9.9012	1.1832	9.9013	1.3289	A+	A-	A+
ELA	6	621539	3 A-V	2	6685	0.337	0.3358	0.2948	0.0447	0.321	0.0019	0.0018	-0.0728	-0.0697	0.0716	-0.2446	0.1173	-0.0529	-0.0381	1.6069	0.0191	9.9014	1.3722	9.9016	1.555	A+	A+	A+
ELA	6	623654	3 A-V	2	6703	0.546	0.1613	0.2329	0.5455	0.0593	0.0004	0.0006	0.4522	-0.2516	-0.201	0.4526	-0.1989	-0.0059	-0.0315	0.6373	0.0184	-9.3391	0.9408	-8.8591	0.9251	C-	A-	A-
ELA	6	503919	3 D	2	6676	0.575	0.1472	0.1703	0.5721	0.1052	0.0037	0.0013	0.3897	-0.1631	-0.1899	0.3899	-0.1996	-0.0252	-0.0264	0.5085	0.0186	-0.349	0.9976	-0.909	0.9917	A+	A+	A-
ELA	6	629734	3 D	2	6664	0.4274	0.1668	0.4244	0.0999	0.3021	0.0066	0.0003	0.1996	-0.1399	0.2033	-0.195	0.0358	-0.0711	-0.0359	1.0353	0.0184	9.9011	1.134	9.9012	1.1798	A+	A-	A-
ELA	6	629743	3 D	2	6679	0.4203	0.2863	0.1207	0.17	0.4183	0.0037	0.0009	0.2497	-0.1067	-0.0618	-0.1414	0.2502	-0.0212	-0.0206	1.1272	0.0184	8.0811	1.053	7.9511	1.0694	A+	A-	A-
ELA	6	623049	4 A-C	2	6774	0.2477	0.2471	0.4679	0.1567	0.1259	0.0018	0.0006	0.148	0.1485	0.0409	-0.1016	-0.1386	-0.033	-0.0069	2.159	0.0303	8.7811	1.1387	9.9014	1.4278	A-	A+	A+
ELA	6	623050	4 A-C	2	6761	0.8043	0.1068	0.0461	0.042	0.8009	0.0024	0.0019	0.4739	-0.2693	-0.2647	-0.2351	0.477	-0.0481	-0.0531	-0.7822	0.0324	-9.5792	0.8377	-9.8993	0.6823	A+	A-	A-
ELA	6	623044	4 A-K	2	6757	0.6703	0.667	0.0641	0.1075	0.1566	0.0034	0.0015	0.3758	0.3776	-0.2551	-0.227	-0.114	-0.0558	-0.0133	0.0221	0.028	-1.759	0.9792	-0.719	0.9865	A+	A+	A+
ELA	6	623045	4 A-K	2	6764	0.3326	0.0517	0.5751	0.3314	0.038	0.0032	0.0006	0.1199	-0.2313	0.0784	0.1219	-0.2156	-0.05	-0.0339	1.6792	0.028	9.9012	1.2066	9.9014	1.407	A-	A-	A+
ELA	6	623047	4 A-K	2	6740	0.6531	0.1558	0.0766	0.1119	0.6483	0.0059	0.0015	0.3891	-0.1723	-0.1862	-0.2238	0.3886	-0.0254	-0.0276	0.1198	0.0277	-2.819	0.9682	-3.2991	0.9435	A+	A-	A+
ELA	6	623051	4 A-K	2	6767	0.6625	0.0882	0.6602	0.0876	0.1605	0.0025	0.0009	0.4817	-0.2684	0.4829	-0.2677	-0.2012	-0.0324	-0.0469	0.0577	0.0279	-9.8991	0.882	-9.8992	0.8234	A+	A-	A-

ELA	6	623046	4 A-V	1	6745	0.5818	0.039	0.5779	0.0669	0.3096	0.006	0.0006	0.29	-0.2396	0.2945	-0.1637	-0.1122	-0.0708	-0.0333	0.4719	0.0269	7.1011	1.0736	5.4811	1.0805	A+	A-	A+
ELA	6	625444	4 A-V	2	6785	0.9313	0.0264	0.0309	0.9306	0.0113	0.0004	0.0003	0.3174	-0.1999	-0.2216	0.3186	-0.0918	-0.0194	-0.0253	-2.0961	0.0492	-2.9991	0.8882	-5.7293	0.6738	A-	A-	A-
ELA	6	584202	4 D	2	6763	0.7223	0.0613	0.1434	0.7194	0.0719	0.0022	0.0018	0.5064	-0.221	-0.303	0.5069	-0.2549	-0.0168	-0.045	-0.2799	0.0293	-9.8991	0.8573	-9.8992	0.7624	A+	B-	A-
ELA	6	629735	4 D	1	6752	0.5989	0.2155	0.1439	0.5956	0.0395	0.0052	0.0004	0.3627	-0.2081	-0.1538	0.3641	-0.182	-0.0459	-0.0208	0.3853	0.027	0.471	1.0048	-0.309	0.9953	A+	B-	A-
ELA	6	629744	4 D	2	6771	0.6318	0.0586	0.0451	0.63	0.2635	0.0021	0.0007	0.4008	-0.0967	-0.214	0.4013	-0.2839	-0.0163	-0.0299	0.2132	0.0274	-3.149	0.9658	-3.4691	0.9438	A+	A+	A+
ELA	6	622466	5 A-C	3	6709	0.5959	0.0906	0.1703	0.1423	0.5945	0.0015	0.0009	0.4784	-0.2536	-0.2356	-0.2043	0.4797	-0.0447	-0.0376	0.3745	0.0272	-9.8991	0.8892	-9.8992	0.8444	A-	A-	A-
ELA	6	622467	5 A-C	2	6690	0.5238	0.0831	0.1701	0.2205	0.521	0.0048	0.0004	0.3149	-0.1102	-0.2128	-0.1036	0.3182	-0.0738	-0.024	0.7305	0.0268	4.961	1.0494	6.8311	1.0922	A+	A-	A-
ELA	6	622468	5 A-C	2	6696	0.6467	0.1236	0.6439	0.1457	0.0825	0.004	0.0003	0.3837	-0.2255	0.3853	-0.1195	-0.2362	-0.045	-0.017	0.126	0.0278	-2.859	0.9678	-2.419	0.9589	A+	A-	A-
ELA	6	622463	5 A-K	2	6717	0.3778	0.3158	0.3774	0.1558	0.1497	0.0009	0.0003	0.3326	-0.1086	0.3334	-0.231	-0.0716	-0.0458	-0.0249	1.4284	0.0275	1.371	1.0149	4.7511	1.0771	A-	A+	A+
ELA	6	622464	5 A-K	2	6676	0.7671	0.0726	0.0815	0.7615	0.0772	0.007	0.0003	0.4428	-0.2483	-0.2327	0.4438	-0.2107	-0.0529	-0.0232	-0.5372	0.0308	-7.3791	0.8895	-8.7792	0.7855	A+	A-	A+
ELA	6	622470	5 A-K	2	6702	0.5959	0.5939	0.2501	0.0459	0.1066	0.0025	0.0009	0.3199	0.3222	-0.139	-0.2182	-0.1583	-0.0455	-0.0401	0.3775	0.0272	3.521	1.0372	4.0511	1.0614	A+	A-	A-
ELA	6	622465	5 A-V	2	6699	0.7073	0.7045	0.0824	0.0693	0.1399	0.0027	0.0012	0.4873	0.4883	-0.2566	-0.2642	-0.2366	-0.046	-0.0203	-0.1992	0.029	-9.8991	0.8686	-9.8992	0.778	A-	A-	B-
ELA	6	622469	5 A-V	1	6715	0.7151	0.1346	0.0851	0.7141	0.0648	0.0009	0.0006	0.24	-0.0664	-0.2151	0.2413	-0.1015	-0.0299	-0.0196	-0.253	0.0292	6.7911	1.0939	6.7212	1.1548	A+	A+	A-
ELA	6	584204	5 D	1	6697	0.5786	0.5762	0.1338	0.2174	0.0684	0.003	0.0012	0.4187	0.42	-0.2584	-0.1558	-0.2067	-0.0468	-0.0176	0.5537	0.0269	-5.3591	0.9471	-5.8991	0.921	A+	A-	A-
ELA	6	629736	5 D	2	6679	0.6658	0.1442	0.6613	0.1155	0.0721	0.0068		0.4076	-0.2492	0.4103	-0.172	-0.1784	-0.0667		0.0354	0.028	-3.359	0.9608	-4.5591	0.9191	A+	A+	A+
ELA	6	629745	5 D	2	6699	0.5366	0.0888	0.2219	0.5346	0.1509	0.0034	0.0004	0.3947	-0.2002	-0.1822	0.3956	-0.1731	-0.0432	-0.0118	0.6657	0.0268	-1.609	0.9842	-0.749	0.99	A+	A+	A-
ELA	6	579172	6 A-C	2	27007	0.3177	0.3165	0.082	0.3497	0.2481	0.0026	0.0012	0.2534	0.2546	-0.1349	-0.094	-0.0771	-0.0513	-0.0186	1.7128	0.0141	9.8011	1.0598	9.9012	1.1506	A+	A-	A-
ELA	6	579175	6 A-C	2	27071	0.5505	0.1189	0.157	0.1729	0.5497	0.001	0.0004	0.3053	-0.1096	-0.2147	-0.0987	0.3063	-0.0299	-0.0251	0.7298	0.0133	9.9011	1.0509	9.7811	1.0635	A+	A-	A-
ELA	6	579178	6 A-K	2	27008	0.5385	0.1916	0.5365	0.0449	0.2232	0.0026	0.0011	0.1138	-0.0973	0.1167	-0.1895	0.0542	-0.0453	-0.0278	1.1115	0.0133	9.9013	1.2847	9.9014	1.3838	A+	A-	A-
ELA	6	579183	6 A-K	2	27026	0.6613	0.132	0.14	0.0657	0.6592	0.0027	0.0004	0.4016	-0.2152	-0.133	-0.2818	0.4019	-0.0266	-0.0155	0.1917	0.0137	-9.8991	0.9257	-9.8991	0.8979	A+	A-	A-
ELA	6	579190	6 A-K	2	27033	0.6797	0.0804	0.1079	0.6777	0.1311	0.002	0.0008	0.431	-0.2375	-0.2416	0.4327	-0.1774	-0.0435	-0.0298	0.2962	0.0136	-9.8991	0.8794	-9.8992	0.8379	A+	A-	A-
ELA	6	579196	6 A-V	2	27062	0.6318	0.2196	0.0948	0.0532	0.6307	0.0015	0.0003	0.2758	-0.1234	-0.2173	-0.0776	0.277	-0.0359	-0.0115	0.489	0.0134	8.721	1.0438	9.9011	1.0754	A+	A-	A-
ELA	6	624729	6 A-V	2	6744	0.3784	0.207	0.1344	0.2785	0.3774	0.0024	0.0003	0.1375	-0.056	-0.1804	0.0416	0.1382	-0.0213	-0.0237	1.4437	0.0272	9.9012	1.1909	9.9013	1.3077	A+	A-	A+
ELA	6	624733	6 B-C	2	6725	0.786	0.0788	0.0512	0.7817	0.0828	0.0053	0.0001	0.5088	-0.2564	-0.2829	0.507	-0.2732	-0.0341	-0.0205	-0.6274	0.0314	-9.8992	0.8248	-9.8993	0.692	A+	A+	A+
ELA	6	624735	6 B-C	3	6728	0.4591	0.1735	0.0975	0.4568	0.2672	0.0041	0.0009	0.284	-0.1531	-0.1936	0.2859	-0.0525	-0.0458	-0.0292	1.0592	0.0266	6.2811	1.0604	6.6711	1.088	A+	A-	A+
ELA	6	624736	6 B-C	2	6755	0.6731	0.6724	0.159	0.1004	0.0671	0.0003	0.0007	0.2279	0.2276	-0.0549	-0.1318	-0.1881	-0.006	0.0018	0.0112	0.028	8.4911	1.1044	8.0712	1.155	A+	A+	A+
ELA	6	624730	6 B-K	2	6718	0.7441	0.0726	0.088	0.0936	0.7393	0.0059	0.0006	0.4745	-0.2592	-0.2412	-0.238	0.4714	-0.0271	0.001	-0.3615	0.0297	-9.8991	0.861	-9.8992	0.783	A+	A-	A+
ELA	6	624731	6 B-K	2	6729	0.2265	0.2254	0.121	0.3116	0.3372	0.0038	0.001	0.0635	0.0653	-0.2372	-0.0878	0.2002	-0.0533	-0.0197	2.2912	0.0311	9.9012	1.1892	9.9016	1.5683	A-	A+	A+
ELA	6	624732	6 B-K	2	6742	0.7081	0.0586	0.706	0.1365	0.096	0.0018	0.0012	0.4198	-0.2315	0.4208	-0.1521	-0.2814	-0.0522	-0.0013	-0.1704	0.0288	-6.2391	0.9208	-5.3591	0.8933	A-	A+	A-
ELA	6	624734	6 B-V	1	6741	0.4308	0.2865	0.1905	0.4295	0.0905	0.0022	0.0009	0.2349	0.0234	-0.1679	0.2367	-0.2053	-0.0387	-0.0374	1.1897	0.0267	9.9011	1.1121	9.9012	1.1721	A-	A-	A-
ELA	6	503920	6 D	2	6733	0.7101	0.707	0.0899	0.1615	0.0373	0.003	0.0013	0.3972	0.3977	-0.2104	-0.1934	-0.2499	-0.0194	-0.0348	-0.3134	0.0295	-0.869	0.9878	-1.419	0.968	A+	A-	A-
ELA	6	629737	6 D	2	6706	0.1324	0.6692	0.1313	0.0571	0.1341	0.0077	0.0006	0.0897	0.1275	0.0911	-0.1652	-0.1389	-0.0542	-0.0153	3.0228	0.0379	3.2511	1.0838	9.9017	1.6614	A-	A-	A-
ELA	6	629746	6 D	2	6732	0.4554	0.3236	0.1068	0.1118	0.4534	0.0035	0.0009	0.3053	0.0057	-0.2624	-0.2285	0.3056	-0.0179	-0.0236	1.0753	0.0266	4.701	1.0451	5.5611	1.0733	A+	A+	A-
ELA	6	624277	7 A-V	2	6717	0.8382	0.0541	0.0387	0.8316	0.0678	0.0062	0.0016	0.4447	-0.233	-0.2176	0.4419	-0.2669	-0.0425	-0.0067	-0.9962	0.0343	-7.2591	0.8577	-9.7393	0.7044	A-	A-	A+
ELA	6	622617	7 B-C	3	6750	0.3324	0.1532	0.3678	0.3315	0.1446	0.0018	0.0012	0.1162	-0.2151	0.2352	0.1181	-0.251	-0.0443	-0.0396	1.6669	0.0279	9.9012	1.1919	9.9013	1.3354	A-	A-	A-
ELA	6	622655	7 B-C	2	6750	0.5036	0.2533	0.1542	0.5021	0.0874	0.0025	0.0004	0.361	-0.1334	-0.1964	0.3623	-0.1758	-0.0413	-0.0216	0.8359	0.0265	0.221	1.0021	1.111	1.0135	A-	A-	A-
ELA	6	622656	7 B-C	2	6739	0.3894	0.2112	0.3876	0.2539	0.1427	0.0038	0.0007	0.1843	-0.0605	0.1873	-0.0607	-0.1009	-0.0606	-0.0412	1.3827	0.027	9.9011	1.1409	9.9012	1.2355	A-	A+	A-
ELA	6	622610	7 B-K	2	6739	0.4333	0.4548	0.051	0.0583	0.4313	0.0043	0.0003	0.2664	-0.036	-0.2643	-0.2311	0.2672	-0.0262	-0.0227	1.1708	0.0267	8.7211	1.0866	9.6111	1.1313	A-	A-	A+
ELA	6	622612	7 B-K	3	6750	0.4	0.0694	0.1123	0.4165	0.3988	0.0024	0.0006	0.2478	-0.265	-0.2592	0.0608	0.2493	-0.045	-0.0264	1.3277	0.0269	8.0311	1.0831	8.7811	1.1297	A+	A+	A-
ELA	6	622615	7 B-K	2	6754	0.566	0.5647	0.1074	0.1211	0.2044	0.0019	0.0004	0.2379	0.2396	-0.2225	-0.1711	0.0201	-0.0388	-0.0223	0.5393	0.0267	9.9011	1.1057	9.9012	1.1514	A-	A+	A+
ELA	6	622616	7 B-V	2	6762	0.6838	0.0479	0.683	0.1473	0.1207	0.001	0.0001	0.3349	-0.2734	0.3363	-0.1007	-0.1871	-0.0403	-0.0167	-0.054	0.0282	-0.269	0.9967	2.561	1.0479	A-	A+	A-
ELA	6	584206	7 D	1	6745	0.7016	0.1034	0.699	0.0914	0.1025	0.0024	0.0013	0.4612	-0.251	0.4606	-0.2411	-0.2097	-0.0188	-0.0227	0.0269	0.0279	-9.8992	0.849	-9.8992	0.7891	A+	A-	A-
ELA	6	629738	7 D	2	6711	0.577	0.1066	0.1959	0.5719	0.1168	0.0081	0.0006	0.4299	-0.1888	-0.2304	0.4317	-0.1801	-0.0578	-0.0346	0.5046	0.0267	-6.1291	0.9407	-6.7891	0.9131	A-	B-	A-
ELA	6	629747	7 D	2	6735	0.6686	0.1126	0.1486	0.0685	0.6651	0.0043	0.0009	0.4593	-0.2784	-0.1703	-0.2593	0.4577	-0.0145	-0.0331	0.0405	0.0279	-9.3291	0.8946	-8.3991	0.8613	A+	A-	A-
ELA	6	622472	8 B-C	2	6745	0.3124	0.1397	0.2063	0.3389	0.3112	0.0031	0.0007	0.2701	-0.1967	-0.0163	-0.0982	0.2719	-0.064	-0.0362	1.7726	0.0284	4.1711	1.0526	6.8311	1.135	A-	A-	A-
ELA	6	622478	8 B-C	2	6729	0.192	0.4646	0.1499	0.1908	0.1885	0.0056	0.0006	0.1564	-0.0262	-0.0728	0.1574	-0.0481	-0.0458	-0.0248	2.5167	0.0329	3.9711	1.0767	9.9014	1.4215	A-	A+	A-
ELA	6	622473	8 B-K	2	6733	0.269	0.2539	0.2373	0.2357	0.2675	0.0044	0.0012	0.1889	-0.0803	0.0032	-0.1097	0.1905	-0.0415	-0.0404	2.0188	0.0295	7.1911	1.1054	9.9013	1.3007	A-	A-	A-
ELA	6	622474	8 B-K	3	6758	0.4932	0.1994	0.4922	0.2155	0.091	0.0015	0.0004	0.2669	-0.0639	0.2679	-0.1686	-0.1301	-0.0465	0.0038	0.877	0.0265	8.6211	1.0827	8.2811	1.1076	A-	A+	A+
ELA	6	622475	8 B-K	2	6738	0.602	0.1871	0.599	0.1158	0.0932	0.0043	0.0006	0.2789	-0.0061	0.2822	-0.242	-0.1864	-0.0561	-0.0254	0.3681	0.0269	6.1611	1.0637	6.9911	1.1062	A+	A-	A+
ELA	6	622480	8 B-K	3	6733	0.3374	0.2658	0.2344	0.3355	0.1586	0.0046	0.001	0.2867	-0.1389	-0.0233	0.2878	-0.1661	-0.0499	-0.02	1.643	0.0279	3.771	1.0445	6.1811	1.1115	A-	A-	A+
ELA	6	622477	8 B-V	1	6761	0.6089	0.608	0.1232	0.1992	0.0681	0.0012	0.0003	0.2744	0.2757	-0.1375	-0.1072	-0.1788	-0.0404	-0.0109	0.3239	0.027	7.2711	1.0765	7.4511	1.1163	A-	A+	A+
ELA	6	625411	8 B-V	2	6741	0.7454	0.7421	0.1252	0.0826	0.0456	0.0024	0.0021	0.4091	0.4117	-0.2041	-0.2538	-0.1859	-0.0599	-0.022	-0.3919	0.0298	-5.3691	0.9243	-5.6791	0.8702	A+	A+	A+
ELA	6	503917	8 D	2	6746	0.3822	0.3732	0.1374	0.3807	0.105	0.0027	0.001	0.1874	0.0059	-0.1253	0.1877	-0.1622	-0.0073	-0.0228	1.4765	0.0273	9.9012	1.1672	9.9013	1.2575	A+	A+	A+
ELA	6	629739	8 D	2	6737	0.6798	0.0628	0.1472	0.1086	0.6764	0.005		0.444	-0.2235	-0.2583	-0.1883	0.4459	-0.0608		-0.0238	0.0281	-7.9091	0.9086	-8.4392	0.8499	A+	A-	A+
ELA	6	629748	8 D	2	6741	0.6831	0.0854	0.1409	0.0892	0.6801	0.0037	0.0007	0.4149	-0.2284	-0.1893	-0.2164	0.415	-0.0233	-0.0279	-0.0434	0.0281	-5.8191	0.9316	-6.7091	0.8778	A+	A-	A-
ELA	6	625491	9 B-C	2	6793	0.6047	0.062	0.0993	0.6036	0.2332	0.0015	0.0004	0.3476	-0.2673	-0.175	0.3483	-0.1237	-0.0216	-0.022	0.3382	0.0271	2.111	1.0222	0.081	1.0011	A-	A+	A+
ELA	6	625493	9 B-C	2	6764	0.5721	0.5686	0.1612	0.159	0.1051	0.0056	0.0006	0.3307	0.3325	-0.1521	-0.1825	-0.1245	-0.0441	-0.0235	0.5096	0.0268	3.641	1.0369	1.861	1.0264	A+	A+	A-
ELA	6	625495	9 B-C	2	6771	0.8129	0.8087	0.0404	0.0713	0.0745	0.0038	0.0013	0.4998	0.5001	-0.2492	-0.2812	-0.2715	-0.0565	-0.0148	-0.8472	0.0328	-9.8992	0.8168	-9.8994	0.6484	A-	A-	A-
ELA	6	625488	9 B-K	2	6747	0.5395	0.1459	0.2449	0.5348	0.0657	0.0081	0.0006	0.3471	-0.1455	-0.124	0.3484	-0.2591	-0.0455	-0.0335	0.6725	0.0266	2.321	1.0227	2.281	1.0308	A+	A-	A-
ELA	6	625489	9 B-K	2	6788	0.6388	0.1756	0.6371	0.1096	0.0751	0.0024	0.0003	0.5367	-0.3392	0.5363	-0.2242	-0.218	-0.0261	-0.0047	0.1696	0.0275	-9.8992	0.8406	-9.8992	0.7913	A-	A-	A-
ELA	6	625492	9 B-K	2	6789	0.2239	0.2944	0.2354	0.2443	0.2233	0.0021	0.0004	0.1989	-0.215	-0.0355	0.0751	0.1996	-0.0355	-0.0335	2.3062	0.0313	6.1311	1.1046	9.9013	1.3314	A-	A-	A-
ELA	6	625496	9 B-V	1	6781	0.7511	0.0624	0.7483	0.0852	0.1004	0.0028	0.0009	0.4798	-0.2644	0.4805	-0.2547	-0.2354	-0.0419	-0.0163	-0.4458	0.0301	-9.6491	0.8635	-9.8992	0.7623	A-	A+	A-
ELA	6	633154	9 B-V	2	6788	0.3524	0.32	0.2036	0.3515	0.1222	0.0022	0.0004	0.2343	0.0293	-0.1925	0.2348	-0.1427	-0.0282	-0.0083	1.5678	0.0277	8.4911	1.0995	9.9012	1.2235	A-	A-	A-
ELA	6	584208	9 D	2	6778	0.7847	0.0109	0.1547	0.0488	0.7815	0.0024	0.0018	0.37	-0.1343	-0.296	-0.1383	0.3725	-0.0433	-0.0252	-0.7214	0.0319	-1.229	0.9789	-2.7491	0.9198	A+	A-	A-
ELA	6	629740	9 D	2	6777	0.7692	0.0592	0.7659	0.0748	0.0958	0.0038	0.0004	0.415	-0.2251	0.4142	-0.2257	-0.2077	-0.0258	-0.0068	-0.556	0.0307	-5.1291	0.9213	-6.3692	0.8377	A+	A-	A-
ELA	6	629749	9 D	2	6778	0.6192	0.1206	0.1189	0.6167	0.1397	0.0037	0.0004	0.4297	-0.2091	-0.2151	0.4305	-0.1995	-0.033	-0.0191	0.273	0.0272	-5.4191	0.943	-6.1891	0.9045	A+	A-	A-
ELA	7	497095	0 A-C	2	57442	0.5693	0.1203	0.1748	0.1342	0.5674	0.0027	0.0006	0.3409	-0.1607	-0.1722	-0.143	0.343	-0.0602	-0.0156	0.6031	0.0075	9.9011	1.0559	9.9011	1.0701	A-	A+	A+
ELA	7	497097	0 A-C	3	57425	0.4867	0.218	0.485	0.1382	0.1552	0.0032	0.0004	0.3435	-0.0989	0.3449	-0.2181	-0.1463	-0.0491	-0.0237	0.8343	0.0075	9.9011	1.0722	9.9011	1.1037	A+	A+	A+
ELA	7	578096	0 A-C	3	57322	0.6036	0.1033	0.0829	0.2081	0.6004	0.0051	0.0003	0.325	-0.1483	-0.3015	-0.0668	0.3289	-0.0769	-0.0148	0.2836	0.0075	9.901	1.0483	9.9011	1.1191	A-	A+	A+
ELA	7	578100	0 A-C	2	57390	0.5362	0.1687	0.5339	0.2178	0.0755	0.0037	0.0005	0.4195	-0.2397	0.4219	-0.1415	-0.2164	-0.075	-0.0264	0.4449	0.0075	-0.299	0.9992	1.811	1.0064	A+	A+	A+
ELA	7	497100	0 A-K	2	57432	0.7188	0.7163	0.0438	0.1132	0.1232	0.0027	0.0008	0.527	0.5287	-0.2709	-0.3018	-0.2543	-0.0596	-0.0212	-0.1147	0.0078	-9.8992	0.8187	-9.8992	0.7537	A-	A-	A-
ELA	7	578071	0 A-K	3	57400	0.6171	0.0584	0.1073	0.2158	0.6146	0.0033	0.0007	0.3651	-0.2554	-0.3203	-0.0372	0.3688	-0.0745	-0.0339	0.2337	0.0076	4.631	1.0131	9.901	1.0393	A+	A-	A+
ELA	7	578084	0 A-K	3	57426	0.5431	0.5412	0.1774	0.2251	0.0527	0.0031	0.0005	0.447	0.4491	-0.2268	-0.1867	-0.2444	-0.0709	-0.0277	0.3108	0.0075	-3.309	0.9909	-1.679	0.9937	A-	A-	A-
ELA	7	578103	0 A-K	2	57353	0.5356	0.1704	0.058	0.533	0.2338	0.0044	0.0005	0.3993	-0.2604	-0.2485	0.4022	-0.0916	-0.0796	-0.0302	0.3884	0.0075	9.901	1.0362	9.9011	1.0632	A+	A+	A+
ELA	7	497101	0 A-V	2	57374	0.8091	0.0764	0.0556	0.8055	0.058	0.0041	0.0004	0.4998	-0.2584	-0.2876	0.5013	-0.2556	-0.06	-0.0154	-0.9518	0.0091	-9.8991	0.8925	-9.8992	0.771	A-	A-	B-
ELA	7	497102	0 A-V	2	57508	0.8084	0.8067	0.086	0.0679	0.0373	0.0018	0.0004	0.2919	0.2951	-0.0694	-0.2356	-0.1858	-0.0541	-0.0175	-0.8929	0.009	-1.829	0.9911	9.9012	1.1684	A+	A-	A-
ELA	7	578073	0 A-V	1	57385	0.6229	0.0319	0.1677	0.6202	0.1759	0.0037	0.0006	0.4358	-0.2461	-0.1366	0.4392	-0.2974	-0.0794	-0.0347	0.1909	0.0076	-9.899	0.9517	-9.8991	0.9468	A-	A-	A-
ELA	7	578075	0 A-V	2	57428	0.7013	0.1084	0.6988	0.1303	0.059	0.0032	0.0003	0.3723	-0.182	0.3767	-0.1862	-0.2061	-0.0802	-0.0248	-0.2781	0.008	-3.819	0.9867	7.061	1.0385	A+	A+	A+
ELA	7	566576	0 B-C	2	57406	0.6821	0.6794	0.1157	0.1361	0.0648	0.0036	0.0003	0.4865	0.4894	-0.2102	-0.2872	-0.2341	-0.0764	-0.0255	-0.0558	0.0078	-9.8991	0.873	-9.8992	0.8318	B-	A-	A-
ELA	7	566577	0 B-C	2	57277	0.6497	0.195	0.0952	0.0579	0.6457	0.0056	0.0005	0.4224	-0.1612	-0.2301	-0.2822	0.4263	-0.0811	-0.0246	0.113	0.0076	-9.899	0.9621	-7.029	0.9709	A+	A+	A+
ELA	7	566584	0 B-C	3	57419	0.7649	0.0706	0.088	0.762	0.0756	0.0029	0.0007	0.5076	-0.2731	-0.2695	0.5107	-0.2516	-0.0757	-0.0193	-0.7229	0.0086	-9.8991	0.9184	-9.8992	0.8241	A-	A+	A+
ELA	7	579272	0 B-C	2	57522	0.4144	0.1597	0.361	0.4136	0.0638	0.0014	0.0006	0.29	-0.2514	0.0128	0.2911	-0.2256	-0.0441	-0.0286	1.3147	0.0077	9.9011	1.1465	9.9012	1.247	A-	A+	A+
ELA	7	579298	0 B-C	2	57439	0.5165	0.2286	0.1228	0.1305	0.5147	0.0024	0.0009	0.3227	-0.0305	-0.1811	-0.2567	0.3247	-0.0537	-0.03	0.8338	0.0075	9.9011	1.1065	9.9011	1.1418	A+	A+	A+
ELA	7	566579	0 B-K	2	57459	0.485	0.1656	0.4835	0.2246	0.1233	0.0027	0.0003	0.3064	-0.0876	0.3087	-0.1659	-0.1469	-0.0712	-0.0293	0.7413	0.0075	9.9011	1.0959	9.9011	1.1268	A-	A-	A-

ELA	7	625548	6 A-K	2	6318	0.626	0.6246	0.0853	0.2198	0.0681	0.0014	0.0008	0.4978	0.4983	-0.2541	-0.2714	-0.2231	-0.0281	-0.0249	0.1023	0.0282	-9.8991	0.8643	-9.8992	0.8192	A-	A+	A+
ELA	7	625549	6 A-K	2	6313	0.6829	0.1238	0.112	0.6808	0.0804	0.0025	0.0005	0.3594	-0.1258	-0.2195	0.3612	-0.2026	-0.0336	-0.0427	-0.1881	0.0292	-2.079	0.9739	-2.7391	0.9467	A+	A-	A-
ELA	7	625547	6 A-V	1	6325	0.6952	0.1704	0.1036	0.6944	0.0305	0.0009	0.0002	0.3852	-0.2228	-0.1721	0.3861	-0.2354	-0.0337	-0.01	-0.2615	0.0295	-3.549	0.9542	-3.5291	0.9286	A-	A-	A-
ELA	7	625550	6 A-V	1	6316	0.8425	0.8403	0.0592	0.0505	0.0474	0.0019	0.0006	0.4353	0.4369	-0.2708	-0.2069	-0.2273	-0.0387	-0.0313	-1.2148	0.0362	-6.2091	0.8685	-8.0793	0.7255	B-	A-	B-
ELA	7	632526	6 A-V	1	6319	0.7098	0.1066	0.7083	0.1044	0.0786	0.0016	0.0005	0.4408	-0.2015	0.4415	-0.2028	-0.2777	-0.0204	-0.041	-0.3384	0.0298	-6.7891	0.9103	-7.8892	0.8376	A+	A-	A-
ELA	7	584072	6 D	2	6313	0.7331	0.0564	0.1677	0.042	0.7309	0.0022	0.0008	0.3395	-0.2434	-0.1187	-0.2393	0.3433	-0.0568	-0.0388	-0.4138	0.0302	-2.619	0.9633	-1.019	0.9767	B-	A+	A+
ELA	7	630223	6 D	2	6287	0.5314	0.5276	0.2086	0.1042	0.1524	0.0071		0.3327	0.3367	-0.1319	-0.1942	-0.1336	-0.0844		0.5718	0.0274	2.541	1.0251	2.181	1.0291	A-	A-	A-
ELA	7	630232	6 D	2	6318	0.3634	0.3626	0.0725	0.0553	0.5074	0.0021	0.0002	0.2177	0.2183	-0.2454	-0.2363	0.0279	-0.0262	-0.0029	1.367	0.0284	9.1511	1.1062	9.9012	1.2071	A+	A-	A-
ELA	7	623067	7 A-C	2	6408	0.7623	0.7615	0.0614	0.0744	0.1016	0.0008	0.0003	0.4767	0.4756	-0.2202	-0.2874	-0.2459	-0.0042	0.0021	-0.6611	0.0313	-9.4291	0.8564	-9.8992	0.7642	A+	A+	A+
ELA	7	623072	7 A-C	2	6400	0.5753	0.1125	0.1272	0.1839	0.574	0.0017	0.0006	0.4025	-0.2739	-0.1487	-0.1597	0.402	-0.0158	-0.0068	0.3358	0.0274	-5.8291	0.9428	-4.3791	0.9417	A-	A-	A-
ELA	7	623064	7 A-K	2	6377	0.677	0.1049	0.673	0.1107	0.1055	0.0055	0.0005	0.3871	-0.1471	0.3857	-0.2276	-0.2046	-0.0165	-0.0185	-0.1573	0.0287	-4.1791	0.9497	-2.8191	0.9493	A+	A-	A-
ELA	7	623065	7 A-K	2	6344	0.6997	0.0663	0.0505	0.692	0.1802	0.0108	0.0003	0.282	-0.2787	-0.2734	0.2854	0.0092	-0.0549	-0.0266	-0.2587	0.0291	1.891	1.0246	6.4611	1.1316	A+	A-	A-
ELA	7	623071	7 A-K	2	6403	0.6197	0.6186	0.0619	0.2648	0.0528	0.0016	0.0003	0.4227	0.4227	-0.2956	-0.1827	-0.2348	-0.0174	-0.0147	0.1194	0.0278	-6.8491	0.9278	-6.4191	0.9052	A-	A-	A-
ELA	7	623069	7 A-V	1	6395	0.4588	0.0299	0.1788	0.4574	0.3308	0.0025	0.0006	0.3854	-0.2286	-0.2405	0.3856	-0.1256	-0.0266	-0.0222	0.8848	0.0272	-3.799	0.9644	-2.379	0.9699	A-	A-	B-
ELA	7	623073	7 A-V	2	6403	0.3384	0.091	0.4433	0.126	0.3378	0.0012	0.0006	0.0088	-0.1881	0.2103	-0.1612	0.0099	-0.023	-0.0314	1.4686	0.0284	9.9013	1.286	9.9014	1.4146	A+	A-	A-
ELA	7	625814	7 A-V	2	6413	0.709	0.1397	0.7088	0.0737	0.0775	0.0003		0.3982	-0.2191	0.398	-0.195	-0.2016	-0.0018		-0.3511	0.0296	-4.4191	0.9414	-6.1491	0.8773	B-	A-	A-
ELA	7	503933	7 D	2	6398	0.4256	0.4245	0.3691	0.1097	0.094	0.0016	0.0011	0.2953	0.2965	-0.082	-0.168	-0.1777	-0.0339	-0.0384	1.1426	0.0275	5.4211	1.0554	7.9611	1.1181	C-	A-	A-
ELA	7	630224	7 D	2	6377	0.369	0.0781	0.1654	0.3668	0.3838	0.0058	0.0002	0.2897	-0.1742	-0.1535	0.2914	-0.0653	-0.0616	-0.0209	1.3216	0.028	2.451	1.0266	5.6411	1.0923	A+	A-	A-
ELA	7	630233	7 D	2	6400	0.3688	0.3679	0.0624	0.3928	0.1746	0.002	0.0003	0.0611	0.0623	-0.2046	0.1674	-0.1596	-0.0327	-0.0147	1.3162	0.028	9.9012	1.2452	9.9014	1.3626	A+	A+	A-
ELA	7	623729	8 A-C	2	6337	0.7014	0.0805	0.6991	0.103	0.114	0.003	0.0003	0.4027	-0.2576	0.4057	-0.202	-0.1589	-0.0714	-0.0079	-0.2997	0.0295	-5.6091	0.9274	-5.6391	0.8897	A+	A-	A+
ELA	7	623734	8 A-C	2	6349	0.6878	0.6869	0.1269	0.1192	0.0656	0.0014		0.329	0.3305	-0.1394	-0.2071	-0.1534	-0.0483		-0.233	0.0292	-0.009	0.9998	1.681	1.0328	A-	A+	A-
ELA	7	623726	8 A-K	2	6319	0.5127	0.2848	0.1235	0.5096	0.076	0.0058	0.0003	0.3194	0.0259	-0.2803	0.3211	-0.2875	-0.0439	-0.0269	0.6404	0.0273	2.301	1.0222	2.421	1.0308	A+	A+	A+
ELA	7	623730	8 A-K	3	6321	0.5244	0.137	0.1854	0.5214	0.1504	0.005	0.0008	0.4027	-0.2446	-0.2262	0.4041	-0.0711	-0.0511	-0.0289	0.5849	0.0273	-4.909	0.9534	-3.499	0.9562	A-	A-	A-
ELA	7	623732	8 A-K	2	6329	0.7292	0.0694	0.7259	0.0933	0.107	0.0031	0.0014	0.495	-0.2512	0.4985	-0.3068	-0.2065	-0.0699	-0.0426	-0.4501	0.0302	-9.8992	0.8474	-9.8993	0.7397	A-	A-	A-
ELA	7	623733	8 A-K	2	6345	0.6003	0.1925	0.0876	0.1187	0.5991	0.0011	0.0009	0.443	-0.1327	-0.3142	-0.2288	0.4443	-0.049	-0.0321	0.2141	0.0278	-8.3791	0.9141	-7.4391	0.8952	A+	A-	A-
ELA	7	623731	8 A-V	2	6326	0.783	0.779	0.0711	0.081	0.0639	0.0033	0.0017	0.3908	0.3945	-0.1364	-0.2054	-0.277	-0.0719	-0.0172	-0.7764	0.0323	-4.6891	0.9217	-4.9291	0.869	A-	A-	A-
ELA	7	630402	8 A-V	2	6346	0.7301	0.1047	0.0994	0.0653	0.7287	0.0017	0.0002	0.2912	-0.1697	-0.103	-0.1842	0.2927	-0.0428	-0.007	-0.4664	0.0303	1.871	1.0272	6.2411	1.1484	A-	A+	A+
ELA	7	503932	8 D	2	6319	0.5172	0.2671	0.514	0.1096	0.1032	0.0019	0.0042	0.3886	-0.1272	0.3914	-0.2368	-0.1959	-0.0336	-0.0658	0.5843	0.0273	-3.309	0.9685	-3.069	0.9615	A+	A+	A-
ELA	7	630225	8 D	2	6305	0.5394	0.5349	0.1051	0.0763	0.2754	0.0053	0.003	0.3188	0.3237	-0.1694	-0.2007	-0.1076	-0.051	-0.0821	0.5212	0.0273	2.761	1.027	1.811	1.0234	A+	A-	A-
ELA	7	630234	8 D	2	6341	0.5832	0.1571	0.5816	0.1556	0.103	0.0017	0.0009	0.3484	-0.1985	0.3488	-0.1133	-0.1886	-0.0061	-0.0385	0.2987	0.0276	0.671	1.0068	-0.799	0.9889	A+	A-	A+
ELA	7	625513	9 A-C	2	6390	0.5552	0.2231	0.1284	0.0923	0.554	0.0017	0.0005	0.1939	-0.0253	-0.1795	-0.086	0.1951	-0.0267	-0.0174	0.423	0.0271	9.9011	1.1175	9.9012	1.1577	A+	A-	A-
ELA	7	625515	9 A-C	2	6400	0.5634	0.2583	0.0422	0.5631	0.1359	0.0005	0.0002	0.2014	-0.1435	-0.2451	0.2022	0.0369	-0.0335	-0.0124	0.3804	0.0272	9.9011	1.1177	9.9012	1.1586	A-	A-	A-
ELA	7	625516	9 A-C	2	6382	0.2839	0.2358	0.3779	0.2829	0.0999	0.0028	0.0006	-0.0635	0.0614	0.1217	-0.0618	-0.1828	-0.0292	-0.0345	1.7449	0.0296	9.9013	1.3127	9.9016	1.5744	A+	A+	A-
ELA	7	625518	9 A-C	3	6394	0.677	0.676	0.0785	0.1488	0.0951	0.0014	0.0002	0.4461	0.4469	-0.2977	-0.1411	-0.264	-0.0297	-0.0235	-0.1746	0.0286	-9.2491	0.8923	-8.9992	0.8461	A+	A+	A-
ELA	7	625511	9 A-K	3	6355	0.4006	0.3976	0.2566	0.1145	0.2238	0.0066	0.0011	0.1961	0.1965	-0.0251	-0.1806	-0.0615	-0.0301	0.011	1.1559	0.0275	9.9011	1.1159	9.9012	1.1574	A-	A-	A-
ELA	7	625512	9 A-K	2	6377	0.3784	0.0498	0.3768	0.2275	0.3417	0.0039	0.0003	-0.0061	-0.2061	-0.0041	0.1316	-0.0123	-0.0312	-0.0293	1.2568	0.0278	9.9013	1.3035	9.9014	1.4187	A-	A-	A-
ELA	7	625514	9 A-V	1	6390	0.2845	0.2865	0.2839	0.1925	0.2349	0.0014	0.0008	0.1798	-0.0359	0.1806	-0.1409	-0.0185	-0.0288	-0.0245	1.7397	0.0296	5.8911	1.0817	9.9012	1.2341	A-	A-	A+
ELA	7	625519	9 A-V	2	6391	0.2522	0.2189	0.3173	0.21	0.2517	0.0011	0.0009	0.2146	-0.0956	-0.0727	-0.044	0.2154	-0.0412	-0.0275	1.9255	0.0307	1.841	1.028	8.7912	1.2194	A-	A+	A+
ELA	7	503916	9 D	2	6385	0.6097	0.1363	0.1295	0.6079	0.1234	0.0023	0.0006	0.3889	-0.2137	-0.1796	0.3914	-0.1634	-0.0606	-0.0331	0.3101	0.0273	-6.6691	0.9361	-6.5091	0.9158	A+	A-	A-
ELA	7	630226	9 D	1	6368	0.7213	0.0957	0.7172	0.0948	0.0867	0.0052	0.0005	0.4459	-0.2164	0.4471	-0.2344	-0.2327	-0.0462	-0.0142	-0.3973	0.0297	-7.8591	0.8965	-8.9392	0.8233	A+	A-	A-
ELA	7	630235	9 D	2	6383	0.8111	0.8084	0.0445	0.0587	0.0851	0.0028	0.0005	0.4993	0.5011	-0.2575	-0.2635	-0.2829	-0.0469	-0.0351	-0.9682	0.0335	-9.7892	0.8244	-9.8993	0.6672	A+	A-	A-
ELA	8	411875	0 A-C	2	54960	0.4462	0.394	0.0863	0.4456	0.0728	0.0011	0.0002	0.3087	-0.1043	-0.1692	0.3095	-0.2066	-0.0404	-0.0202	1.1562	0.0079	9.9012	1.1955	9.9013	1.327	A+	A+	A+
ELA	8	411877	0 A-C	2	54910	0.7637	0.762	0.1101	0.0705	0.0551	0.0019	0.0003	0.5039	0.5049	-0.3166	-0.2459	-0.2226	-0.0419	-0.0175	-0.5627	0.0083	-9.8992	0.8033	-9.8993	0.7133	A-	A+	A-
ELA	8	411872	0 A-K	2	54955	0.8025	0.0554	0.8014	0.0648	0.077	0.0012	0.0002	0.5455	-0.2665	0.5467	-0.3001	-0.3054	-0.0457	-0.0171	-0.642	0.0084	-9.8993	0.6951	-9.8994	0.5807	A+	A+	A+
ELA	8	411874	0 A-K	3	54937	0.6775	0.0446	0.1007	0.1766	0.6763	0.0014	0.0003	0.4443	-0.2764	-0.2766	-0.1733	0.4456	-0.0447	-0.0203	0.0626	0.0078	-9.8991	0.9065	-9.8991	0.9083	A+	A+	A+
ELA	8	411878	0 A-K	2	54936	0.8056	0.065	0.0819	0.0472	0.8041	0.0013	0.0005	0.4257	-0.3113	-0.1689	-0.2104	0.4273	-0.0397	-0.0215	-0.6884	0.0085	-9.8992	0.7664	-9.8993	0.742	A+	A+	A-
ELA	8	576309	0 A-K	2	54872	0.2965	0.0943	0.4841	0.1231	0.2957	0.0027	0.0003	0.394	-0.2263	-0.1322	-0.135	0.3946	-0.0639	-0.0159	0.8869	0.0078	-9.899	0.9699	-0.219	0.9991	A-	A-	A+
ELA	8	576310	0 A-K	2	54836	0.7349	0.0615	0.1131	0.7323	0.0895	0.0032	0.0004	0.4683	-0.2358	-0.2968	0.471	-0.1883	-0.0643	-0.026	-0.5175	0.0083	-9.8991	0.8822	-9.8992	0.8308	A+	A+	A+
ELA	8	576311	0 A-K	2	54826	0.558	0.5559	0.1448	0.0633	0.2322	0.0029	0.0009	0.4311	0.4334	-0.2708	-0.2557	-0.126	-0.0734	-0.022	0.1766	0.0077	-4.189	0.9881	-5.409	0.9773	B-	A-	A-
ELA	8	576312	0 A-K	2	54743	0.4875	0.2118	0.1636	0.4849	0.1344	0.0049	0.0003	0.2992	-0.0388	-0.1436	0.3025	-0.224	-0.0788	-0.0147	0.5465	0.0077	9.9011	1.1256	9.9012	1.185	A-	A+	A+
ELA	8	411879	0 A-V	2	54942	0.5794	0.5785	0.1132	0.1595	0.1471	0.0014	0.0003	0.3012	0.3026	-0.2052	-0.1779	-0.0488	-0.0441	-0.0206	-0.1069	0.0079	9.9011	1.1443	9.9012	1.2275	A+	A+	A+
ELA	8	576304	0 A-V	2	54875	0.6579	0.656	0.088	0.0849	0.1682	0.0024	0.0005	0.341	0.3439	-0.0868	-0.2673	-0.162	-0.0654	-0.022	-0.0859	0.0079	6.761	1.0209	9.9011	1.0917	A-	A+	A+
ELA	8	576313	0 A-V	1	54904	0.4817	0.3116	0.4806	0.1316	0.0739	0.0019	0.0005	0.4385	-0.206	0.4398	-0.1811	-0.2286	-0.0625	-0.0284	0.4203	0.0077	-0.839	0.9977	-0.749	0.997	A+	A+	A+
ELA	8	496328	0 B-C	3	54751	0.4619	0.1378	0.282	0.4595	0.1156	0.004	0.0011	0.3877	-0.2576	-0.0668	0.3894	-0.2202	-0.0682	-0.0136	0.6838	0.0077	9.901	1.0327	9.9011	1.0694	A-	A-	A-
ELA	8	576296	0 B-C	2	54830	0.815	0.0799	0.0498	0.8119	0.0547	0.0027	0.001	0.4482	-0.2171	-0.2609	0.449	-0.2513	-0.0386	-0.0215	-1.211	0.0095	-9.8991	0.9099	-9.8992	0.8379	A+	A+	A+
ELA	8	576297	0 B-C	2	54817	0.4571	0.4553	0.17	0.164	0.2069	0.0033	0.0006	0.4398	0.4408	-0.2442	-0.1659	-0.1556	-0.0466	-0.0258	0.7363	0.0077	-9.899	0.9622	-5.589	0.9778	A+	A+	A-
ELA	8	576314	0 B-C	2	54879	0.6122	0.1381	0.1799	0.0687	0.6105	0.0023	0.0005	0.5628	-0.2861	-0.2739	-0.2701	0.5634	-0.0446	-0.0168	-0.0401	0.0078	-9.8991	0.8505	-9.8992	0.8043	A-	A-	A-
ELA	8	496333	0 B-K	3	54870	0.7135	0.7114	0.1341	0.1224	0.0291	0.0024	0.0006	0.4417	0.4443	-0.3023	-0.174	-0.2236	-0.0632	-0.0244	-0.5222	0.0083	-9.8991	0.9254	-9.8991	0.9117	A-	A+	A+
ELA	8	496334	0 B-K	3	54864	0.5541	0.0484	0.5524	0.1191	0.277	0.0025	0.0006	0.4445	-0.2661	0.4461	-0.2233	-0.1982	-0.0641	-0.019	0.1665	0.0077	-2.509	0.9928	-2.559	0.9892	A-	A+	A+
ELA	8	576302	0 B-K	2	54876	0.5756	0.5739	0.0561	0.1547	0.2123	0.0025	0.0003	0.3975	0.3987	-0.2411	-0.1945	-0.1682	-0.0443	-0.017	0.4374	0.0077	5.411	1.0149	4.881	1.0193	A-	A+	A+
ELA	8	496329	0 B-V	2	54896	0.5584	0.0353	0.378	0.0272	0.557	0.0019	0.0006	0.2507	-0.2441	-0.0832	-0.2278	0.2533	-0.0645	-0.0236	0.3993	0.0077	9.9012	1.1562	9.9012	1.2106	B-	A+	A+
ELA	8	496336	0 B-V	2	54905	0.7301	0.0897	0.1244	0.7284	0.0552	0.002	0.0004	0.4753	-0.2208	-0.2878	0.4778	-0.2238	-0.0647	-0.0248	-1.0657	0.0092	9.9011	1.0889	-2.259	0.9801	A-	A+	A-
ELA	8	576295	0 B-V	2	54922	0.539	0.0426	0.1198	0.5379	0.2977	0.0017	0.0003	0.4336	-0.231	-0.2269	0.4349	-0.2055	-0.0531	-0.0187	0.2902	0.0077	-1.899	0.9947	-1.979	0.992	A-	A+	A+
ELA	8	576303	0 B-V	2	54813	0.277	0.3953	0.2759	0.1716	0.1531	0.0035	0.0005	0.266	-0.0956	0.2666	-0.0854	-0.1041	-0.0351	-0.0311	1.7419	0.0087	9.9012	1.1581	9.9014	1.4124	A-	A-	A-
ELA	8	341015	0 D	2	54956	0.3647	0.303	0.1782	0.3642	0.1532	0.0009	0.0005	0.2765	-0.0704	-0.0765	0.2773	-0.1948	-0.0326	-0.0294	1.4401	0.0082	9.9012	1.2284	9.9014	1.4131	A+	A-	A-
ELA	8	416449	0 D	2	54892	0.347	0.1446	0.3461	0.3464	0.1603	0.0022	0.0004	0.2214	-0.12	0.2227	0.0144	-0.1848	-0.0507	-0.0207	1.2348	0.008	9.9012	1.1777	9.9013	1.3127	A-	A+	A-
ELA	8	416453	0 D	2	54923	0.8212	0.8195	0.0463	0.0593	0.0729	0.0016	0.0005	0.3743	0.3767	-0.2453	-0.2741	-0.1011	-0.0438	-0.027	-1.0109	0.0091	-9.8992	0.8315	-9.8992	0.7752	A+	A+	A-
ELA	8	416518	0 D	2	54917	0.467	0.466	0.0595	0.3348	0.1376	0.0019	0.0002	0.4666	0.4672	-0.2812	-0.2064	-0.1946	-0.0439	-0.0161	0.7833	0.0077	-9.899	0.9602	-3.869	0.9844	A-	A-	A-
ELA	8	503812	0 D	2	54932	0.5038	0.256	0.094	0.1453	0.5028	0.0012	0.0007	0.269	-0.0759	-0.1743	-0.1396	0.2702	-0.0334	-0.0308	0.4772	0.0077	9.9011	1.1419	9.9012	1.1898	A+	A+	A+
ELA	8	503813	0 D	2	54962	0.5166	0.2064	0.0998	0.1765	0.516	0.0009	0.0005	0.4806	-0.1737	-0.2818	-0.2209	0.4811	-0.0291	-0.0287	0.2926	0.0077	-9.8991	0.9468	-9.8991	0.9342	A-	A+	A+
ELA	8	584077	0 D	2	54886	0.4986	0.0798	0.31	0.4972	0.1103	0.0022	0.0005	0.4151	-0.2082	-0.2311	0.4162	-0.1341	-0.0499	-0.0216	0.6528	0.0077	5.871	1.0164	9.901	1.0408	A+	A-	A-
ELA	8	584078	0 D	2	54915	0.7379	0.0766	0.7363	0.119	0.0659	0.0019	0.0003	0.4747	-0.2645	0.4763	-0.2499	-0.2265	-0.0462	-0.0266	-0.5872	0.0084	-9.8991	0.8749	-9.8992	0.8007	A+	A-	A-
ELA	8	584106	0 D	2	54965	0.6556	0.0634	0.1859	0.6548	0.0947	0.001	0.0003	0.4914	-0.1969	-0.318	0.4921	-0.208	-0.0316	-0.025	-0.1973	0.0079	-9.8991	0.9	-9.8991	0.8558	A+	B-	A-
ELA	8	623088	1 A-C	2	6123	0.3183	0.3183	0.276	0.3725	0.0331		0.0002	-0.034	-0.0337	-0.1489	0.2422	-0.1928		-0.025	1.2722	0.0182	9.9013	1.3483	9.9016	1.6127	A-	A-	A-
ELA	8	626313	1 A-C	2	6111	0.5425	0.5413	0.2417	0.1181	0.0968	0.0015	0.0007	0.4115	0.4122	-0.1603	-0.2379	-0.1969	-0.0218	-0.0365	0.3723	0.0171	-6.019	0.9629	-3.179	0.973	A+	A-	A+
ELA	8	623084	1 A-K	2	6090	0.4883	0.1465	0.1076	0.2547	0.4856	0.0052	0.0003	0.2822	-0.2448	-0.1896	0.0146	0.283	-0.0262	-0.0316	0.6097	0.0172	8.9711	1.0582	9.8211	1.0886	A+	A+	A+
ELA	8	623085	1 A-K	2	6115	0.6289	0.0901	0.628	0.1527	0.1277	0.0013	0.0002	0.4345	-0.1804	0.4357	-0.2453	-0.206	-0.0459	-0.0223	-0.1453	0.0174	-9.8991	0.925	-9.8991	0.887	A-	A-	A-
ELA	8	623087	1 A-K	2	6113	0.7829	0.099	0.0617	0.056	0.7815	0.0011	0.0007	0.4689	-0.2206	-0.2782	-0.2599	0.4694	-0.0222	-0.0243	-0.9034	0.0192	-9.8992	0.8498	-9.8992	0.7572	A+	A+	A-
ELA	8	623092	1 A-K	3	6107	0.6221	0.1906	0.1243	0.6203	0.0621	0.0021	0.0007	0.4456	-0.2216	-0.1992	0.4453	-0.2559	-0.0305	-0.0087	-0.0617	0.0173	-9.0091	0.9419	-8.5091	0.9196	A+	A-	A+
ELA	8	623086	1 A-V	2	6116	0.6526	0.1463	0.1426	0.6517	0.0581	0.0008	0.0005	0.3678	-0.2218	-0.1221	0.369	-0.2273	-0.0415	-0.0168	-0.344	0.0177	1.491	1.0107	1.431	1.0164	A-	A+	A-
ELA	8	623091	1 A-V	2	6122	0.163	0.0836	0.163	0.591	0.1621	0.0003		-0.0064	-0.1999	-0.0062	0.2205	-0.1369	-0.0182		2.2141	0.0221	9.9013	1.2926	9.9021	2.1376	A+	A-	A+
ELA	8	578039	1 B-C	2	30589	0.6945	0.6931	0.0497	0.078	0.1772	0.0012	0.0008	0.3168	0.3187	-0.2399	-0.1825	-0.1147	-0.0354	-0.033	-0.2279	0.0095	-8.619	0.9672	-3.899	0.9761	A+	A+	A+
ELA	8	578040	1 B-C	2	30586	0.6005	0.1258	0.0885	0.1844	0.5992	0.0015	0.0006	0.2892	-0.0657	-0.2272	-0.1395	0.2907	-0.0371	-0.0252	0.3942	0.0091	9.9011	1.0666	9.9011	1.0995	A-	A-	A-
ELA	8	578042	1 B-K	2	30562	0.6395	0.6376	0.052	0.1777	0.1299	0.0021	0.0008	0.4116	0.4131	-0.2035	-0.2828	-0.1268	-0.0418	-0.028	-0.0873	0.0094	-9.8991	0.9196	-9.8991	0.8938	A+	A+	A-

ELA	8	617194	8	B-V	2	6068	0.8743	0.0443	0.0524	0.8737	0.029	0.0002	0.0005	0.468	-0.247	-0.2914	0.469	-0.2335	-0.0171	-0.0297	-1.7236	0.0406	-7.6892	0.8071	-9.8995	0.516	A-	A-	A-
ELA	8	617498	8	B-V	2	6059	0.4324	0.469	0.4315	0.0451	0.0522	0.0013	0.0008	0.3718	-0.1625	0.3727	-0.2487	-0.2217	-0.0466	-0.0299	0.8542	0.0285	0.371	1.0039	1.941	1.0304	A+	A-	A-
ELA	8	503810	8	D	2	6065	0.5026	0.502	0.1471	0.26	0.0898	0.0008	0.0003	0.2901	0.2911	-0.229	-0.0193	-0.1906	-0.0359	-0.0252	0.5955	0.0283	8.4611	1.0896	8.7111	1.1348	A+	A-	A+
ELA	8	630373	8	D	2	6051	0.6382	0.1495	0.1126	0.0983	0.636	0.003	0.0005	0.4026	-0.2191	-0.1689	-0.1998	0.4056	-0.0633	-0.0312	-0.1458	0.0292	-2.629	0.9692	-1.769	0.9662	A+	A-	A-
ELA	8	630382	8	D	1	6062	0.3817	0.1593	0.3811	0.2507	0.2073	0.0012	0.0005	0.0985	-0.0601	0.0993	0.0026	-0.0644	-0.025	-0.0172	1.1051	0.029	9.9013	1.2741	9.9014	1.4227	A+	A-	A-
ELA	8	622493	9	B-C	2	6040	0.6631	0.0454	0.1005	0.661	0.19	0.0026	0.0005	0.3655	-0.2413	-0.2368	0.3678	-0.1259	-0.0565	-0.0188	-0.2686	0.0297	-0.919	0.9884	2.5211	1.0545	A+	A-	A-
ELA	8	622494	9	B-C	2	6047	0.6737	0.0761	0.6724	0.0972	0.1523	0.0018	0.0002	0.3828	-0.1938	0.3848	-0.188	-0.1975	-0.0555	-0.0163	-0.3294	0.0299	-2.499	0.9681	-0.059	0.9985	A+	A+	A+
ELA	8	622496	9	B-C	3	6056	0.6263	0.626	0.1223	0.17	0.0812	0.0005		0.3496	0.3497	-0.1321	-0.1922	-0.196	-0.0101		-0.0867	0.0291	1.601	1.0187	4.1711	1.0819	A-	A+	A+
ELA	8	622492	9	B-K	2	6047	0.5651	0.564	0.235	0.117	0.082	0.0018	0.0002	0.3658	0.3665	-0.1865	-0.167	-0.1718	-0.0385	-0.0122	0.2227	0.0285	0.611	1.0065	1.791	1.0297	A+	A+	A+
ELA	8	622497	9	B-K	2	6030	0.8226	0.0536	0.082	0.0409	0.8186	0.0046	0.0002	0.4802	-0.2689	-0.2686	-0.239	0.4806	-0.0505	-0.0122	-1.2444	0.0356	-9.3292	0.8202	-9.8993	0.653	B+	A-	A+
ELA	8	622499	9	B-K	3	6035	0.7259	0.0756	0.082	0.1154	0.7231	0.0038	0.0002	0.4498	-0.2622	-0.257	-0.1839	0.4516	-0.0601	0.0138	-0.6132	0.0312	-8.0191	0.8866	-5.5791	0.8596	A+	A-	A-
ELA	8	622495	9	B-V	2	6044	0.7651	0.1091	0.0507	0.7632	0.0746	0.0021	0.0003	0.397	-0.2178	-0.1531	0.4005	-0.2486	-0.0673	-0.0212	-0.8583	0.0326	-3.7091	0.9394	-3.4891	0.8963	A-	A-	A-
ELA	8	622498	9	B-V	2	6053	0.7345	0.1025	0.7338	0.1005	0.0622	0.0007	0.0003	0.3745	-0.1576	0.3755	-0.2454	-0.179	-0.0217	-0.0318	-0.6767	0.0315	-3.039	0.9545	3.6211	1.1025	A-	A-	A+
ELA	8	503809	9	D	2	6049	0.5639	0.563	0.2081	0.135	0.0923	0.0012	0.0005	0.2923	0.2931	-0.1461	-0.105	-0.1687	-0.0163	-0.0378	0.0987	0.0287	9.9011	1.1151	9.9012	1.1876	A+	A+	A+
ELA	8	630374	9	D	1	6027	0.959	0.0111	0.0142	0.0155	0.954	0.005	0.0003	0.274	-0.1462	-0.1624	-0.1555	0.2808	-0.0646	-0.0328	-2.8954	0.0628	-1.5891	0.9177	-4.8294	0.6293	A+	A-	B-
ELA	8	630383	9	D	2	6045	0.8379	0.8359	0.0328	0.0383	0.0906	0.0018	0.0005	0.4092	0.4097	-0.2097	-0.2297	-0.2392	-0.0306	-0.014	-1.3814	0.0369	-4.8291	0.8964	-6.7993	0.743	A+	A-	A+
MATH	3	495190	0	A-F	2	66680	0.5009	0.1656	0.1791	0.4903	0.1438	0.0195	0.0017	0.4792	-0.2564	-0.1868	0.4798	-0.1753	-0.0833	0.0031	0.8111	0.0078	8.881	1.0294	9.841	1.0477	A-	A+	A+
MATH	3	495193	0	A-F	1	67034	0.3409	0.3354	0.2368	0.1809	0.2309	0.0154	0.0007	0.4286	0.43	-0.1697	-0.2086	-0.0963	-0.076	-0.0249	1.2718	0.0081	-2.719	0.99	9.9011	1.1043	A-	A-	A-
MATH	3	566159	0	A-F	2	66883	0.4436	0.2221	0.2112	0.4355	0.1129	0.0172	0.0011	0.3718	-0.0498	-0.2706	0.3757	-0.1374	-0.0827	-0.0262	0.8743	0.0078	9.9012	1.1503	9.9012	1.2091	A+	A+	A+
MATH	3	313993	0	A-T	1	66760	0.7953	0.034	0.7793	0.0742	0.0924	0.0199	0.0002	0.51	-0.2018	0.5117	-0.2606	-0.3227	-0.0973	-0.0211	-1.0454	0.0088	-9.8992	0.7978	-9.8993	0.667	A+	A+	A-
MATH	3	408684	0	A-T	1	66761	0.5574	0.2077	0.1026	0.5462	0.1234	0.0196	0.0005	0.4758	-0.2299	-0.2424	0.4783	-0.1783	-0.0874	-0.0264	0.156	0.0077	-5.169	0.9841	-2.229	0.989	A-	A+	A+
MATH	3	408847	0	A-T	2	66859	0.672	0.0811	0.156	0.0847	0.6595	0.0183	0.0004	0.4816	-0.2568	-0.2169	-0.2432	0.4872	-0.1041	-0.0192	-0.4625	0.008	-9.899	0.9563	-9.8991	0.9048	A-	A-	A-
MATH	3	420538	0	A-T	1	66844	0.5706	0.5598	0.0713	0.1532	0.1968	0.0185	0.0004	0.5436	0.5441	-0.2034	-0.2088	-0.3301	-0.0807	-0.0217	-0.155	0.0078	-9.8991	0.9436	-9.8991	0.9161	A+	A-	A-
MATH	3	493221	0	A-T	2	66637	0.3485	0.2032	0.1356	0.2985	0.3408	0.0216	0.0003	0.489	-0.4042	-0.1752	0.0062	0.4889	-0.0807	-0.0157	1.508	0.0083	7.131	1.0288	9.9011	1.1001	A-	A+	A+
MATH	3	493231	0	A-T	1	66948	0.4839	0.1543	0.2849	0.4755	0.0679	0.017	0.0003	0.5709	-0.166	-0.4287	0.5704	-0.085	-0.0752	-0.016	0.746	0.0078	-9.8991	0.9031	-9.8991	0.8749	A-	A+	A+
MATH	3	579686	0	A-T	2	65644	0.4745	0.1879	0.4571	0.1103	0.2082	0.035	0.0015	0.4575	-0.1684	0.4585	-0.1992	-0.202	-0.0934	-0.027	0.9075	0.0078	9.9011	1.0602	9.9011	1.0986	A-	A+	A+
MATH	3	579688	0	A-T	2	66509	0.6155	0.1513	0.6008	0.162	0.0622	0.0236	0.0002	0.5247	-0.195	0.524	-0.3359	-0.2079	-0.0833	-0.0118	0.1319	0.0077	-9.8991	0.9057	-9.8991	0.8689	A-	A+	A+
MATH	3	300096	0	B-O	1	66750	0.6385	0.1206	0.1335	0.6255	0.1001	0.0198	0.0005	0.5193	-0.2627	-0.2538	0.5202	-0.2265	-0.0824	-0.0193	-0.3493	0.0079	-9.8991	0.9359	-9.8991	0.8871	A+	A+	A+
MATH	3	313476	0	B-O	1	66648	0.7159	0.0575	0.1064	0.7003	0.1141	0.0215	0.0002	0.5544	-0.2361	-0.2932	0.5523	-0.3002	-0.082	-0.0223	-0.7206	0.0083	-9.8991	0.8592	-9.8992	0.7654	A+	A+	A+
MATH	3	408687	0	B-O	2	66584	0.5718	0.5588	0.1627	0.1785	0.0772	0.0222	0.0005	0.4853	0.4882	-0.1884	-0.2563	-0.2262	-0.0941	-0.0207	0.1255	0.0077	-9.139	0.9719	-8.999	0.9556	A+	A+	A-
MATH	3	408699	0	B-O	2	67018	0.399	0.1833	0.2164	0.1916	0.3925	0.0157	0.0006	0.4415	-0.171	-0.2432	-0.1007	0.4435	-0.0812	-0.0203	1.0201	0.0079	6.571	1.0228	9.9011	1.0671	A-	A+	A+
MATH	3	408702	0	B-O	2	66911	0.7434	0.0725	0.1148	0.0647	0.7301	0.0171	0.0007	0.5399	-0.3132	-0.2805	-0.233	0.5413	-0.0887	-0.0294	-0.6234	0.0082	-9.8992	0.7858	-9.8993	0.6812	A-	A-	A+
MATH	3	408711	0	B-O	2	66488	0.6766	0.6603	0.0983	0.0912	0.1261	0.0236	0.0005	0.4514	0.4562	-0.2468	-0.2457	-0.1695	-0.0989	-0.0241	-0.48	0.0081	-2.549	0.9912	0.841	1.0057	A+	A+	A+
MATH	3	408845	0	B-O	2	67016	0.3394	0.3109	0.3338	0.2289	0.11	0.0159	0.0004	0.3996	-0.1246	0.4011	-0.1418	-0.1999	-0.0717	-0.0181	1.3471	0.0082	9.9011	1.0672	9.9012	1.1893	A-	A+	A+
MATH	3	495213	0	B-O	2	65473	0.6601	0.6344	0.095	0.1606	0.071	0.038	0.001	0.3148	0.3291	-0.1393	-0.2212	-0.05	-0.1208	-0.0155	-0.2448	0.0079	9.9011	1.1358	9.9012	1.2142	A+	A-	A-
MATH	3	495217	0	B-O	2	66721	0.4004	0.2232	0.163	0.3921	0.201	0.0203	0.0004	0.327	-0.1069	-0.2513	0.3324	-0.0261	-0.1001	-0.0235	1.2816	0.0081	9.9012	1.2303	9.9014	1.3987	A-	A+	A+
MATH	3	579666	0	B-O	2	66083	0.4987	0.2757	0.4837	0.1173	0.0932	0.0295	0.0006	0.4603	-0.2976	0.4643	-0.183	-0.0749	-0.1054	-0.0237	0.4022	0.0077	1.001	1.0031	-0.659	0.9969	A-	A+	A+
MATH	3	579671	0	B-O	2	67170	0.6219	0.1864	0.6131	0.1045	0.0819	0.0134	0.0006	0.5016	-0.3743	0.5032	-0.1571	-0.154	-0.0726	-0.0252	0.2951	0.0077	-9.8991	0.9451	-9.8991	0.9215	A-	A+	A+
MATH	3	299414	0	C-G	1	66811	0.6606	0.1165	0.1102	0.1061	0.6478	0.0187	0.0006	0.5115	-0.2619	-0.2361	-0.2431	0.5129	-0.0839	-0.0306	-0.781	0.0084	9.9011	1.0738	5.151	1.0424	A+	A-	A+
MATH	3	408536	0	C-G	2	66916	0.3369	0.3309	0.2509	0.1989	0.2015	0.0124	0.0054	0.2815	0.285	-0.1378	-0.0823	-0.0766	-0.0708	-0.0404	1.3164	0.0081	9.9012	1.1942	9.9013	1.3415	A+	A+	A+
MATH	3	408537	0	C-G	2	66829	0.4247	0.2251	0.4165	0.1337	0.2056	0.015	0.0041	0.38	-0.2078	0.383	-0.1506	-0.0971	-0.0792	-0.0301	0.8783	0.0078	9.9011	1.1206	9.9012	1.1685	A+	A+	A+
MATH	3	479183	0	C-G	1	66700	0.4906	0.1473	0.4803	0.1068	0.2447	0.0203	0.0007	0.3442	-0.1821	0.3511	-0.1496	-0.1154	-0.1034	-0.0178	0.3938	0.0077	9.9012	1.1546	9.9012	1.205	A+	A+	A+
MATH	3	479184	0	C-G	2	66571	0.4961	0.4847	0.162	0.1637	0.1667	0.0196	0.0033	0.4533	0.4569	-0.16	-0.17	-0.2461	-0.1001	-0.015	0.4755	0.0077	6.691	1.021	6.151	1.0286	A+	A+	A+
MATH	3	497747	0	C-G	1	67356	0.8577	0.0622	0.0256	0.848	0.0529	0.0103	0.0011	0.422	-0.2587	-0.1646	0.4254	-0.2493	-0.0722	-0.0367	-1.9161	0.0109	5.831	1.0421	-9.8992	0.8253	B+	A-	A-
MATH	3	497751	0	C-G	2	65880	0.4394	0.0853	0.4249	0.2227	0.234	0.0322	0.0009	0.3889	-0.1609	0.3918	-0.1474	-0.1675	-0.0912	-0.0129	0.7552	0.0078	9.9011	1.0926	9.9011	1.1277	A+	A+	A+
MATH	3	299422	0	D-M	1	67496	0.6519	0.028	0.1479	0.6458	0.169	0.0086	0.0007	0.4321	-0.1604	-0.3803	0.4351	-0.1061	-0.0655	-0.0305	-0.5995	0.0082	9.9011	1.099	9.9012	1.2428	A-	A-	A-
MATH	3	302218	0	D-M	2	67260	0.4828	0.4426	0.0312	0.0369	0.4766	0.0097	0.003	0.5763	-0.4858	-0.1081	-0.0965	0.5778	-0.0729	-0.0574	0.1635	0.0077	-9.8991	0.9036	-9.8991	0.8972	A+	A-	A-
MATH	3	314246	0	D-M	2	67126	0.7091	0.1246	0.6986	0.0489	0.1131	0.014	0.0007	0.4378	-0.2423	0.4422	-0.2116	-0.2105	-0.0831	-0.0307	-0.7202	0.0083	1.801	1.0068	-6.189	0.9521	A+	A-	A-
MATH	3	315858	0	D-M	2	66569	0.4051	0.1473	0.2708	0.3959	0.1631	0.0176	0.0053	0.5131	-0.1836	-0.1375	0.5134	-0.3028	-0.08	-0.0345	0.8213	0.0078	-9.8991	0.9303	-9.8991	0.9103	A-	A+	A-
MATH	3	408716	0	D-M	2	67174	0.3615	0.3036	0.1563	0.1696	0.3564	0.0138	0.0003	0.305	-0.0562	-0.177	-0.1289	0.3081	-0.075	-0.0182	1.5065	0.0083	9.9013	1.3078	9.9015	1.5233	A+	A-	A+
MATH	3	408720	0	D-M	1	66533	0.4388	0.1973	0.1151	0.2356	0.4285	0.022	0.0014	0.5473	-0.2243	-0.2379	-0.2168	0.5468	-0.0886	-0.0101	0.7202	0.0077	-9.8991	0.895	-9.8991	0.8884	A-	A+	A+
MATH	3	408726	0	D-M	1	66819	0.5652	0.5543	0.0809	0.1567	0.1888	0.0188	0.0004	0.6213	0.6199	-0.1777	-0.2666	-0.386	-0.0834	-0.0162	0.332	0.0077	-9.8992	0.8073	-9.8992	0.7532	A-	A-	A-
MATH	3	408735	0	D-M	1	67186	0.8163	0.0777	0.0703	0.8049	0.0332	0.0137	0.0002	0.3089	-0.1775	-0.1635	0.3153	-0.15	-0.0726	-0.0212	-1.3691	0.0094	9.9011	1.0597	9.9012	1.1981	A+	A-	A-
MATH	3	408736	0	D-M	2	66998	0.4101	0.3435	0.4033	0.1223	0.1143	0.0164	0.0002	0.4176	-0.2152	0.4196	-0.1243	-0.1659	-0.0782	-0.0109	1.069	0.0079	9.9011	1.0739	9.9011	1.1421	A-	A+	A+
MATH	3	479189	0	D-M	1	66797	0.3302	0.3703	0.1307	0.3238	0.1557	0.0192	0.0003	0.366	-0.1742	-0.1948	0.3685	-0.0292	-0.0856	-0.0168	1.2403	0.0081	9.9011	1.0776	9.9012	1.165	A-	A-	A+
MATH	3	493218	0	D-M	1	66614	0.5842	0.2166	0.5712	0.1446	0.0454	0.022	0.0003	0.4825	-0.229	0.4846	-0.2497	-0.2133	-0.0884	-0.0194	0.1453	0.0077	-9.899	0.9661	-9.8991	0.9326	A+	A-	A-
MATH	3	617239	1	A-F	2	7696	0.5321	0.1204	0.2021	0.1378	0.5235	0.0151	0.001	0.4669	-0.301	-0.1807	-0.1539	0.4701	-0.0814	-0.0399	0.0736	0.0182	-6.879	0.9511	-6.4691	0.9273	A+	A-	A+
MATH	3	579689	1	A-T	2	7645	0.2319	0.6246	0.0619	0.0642	0.2267	0.0225	0.0001	0.3331	-0.0556	-0.2331	-0.1884	0.3335	-0.0679	-0.0249	1.8468	0.0214	2.511	1.0291	9.9014	1.3681	A+	A-	A+
MATH	3	579674	1	B-O	2	7546	0.4192	0.2066	0.4044	0.1553	0.1984	0.0353		0.3261	-0.1442	0.3275	-0.1438	-0.0944	-0.0683		0.717	0.0184	9.9011	1.1245	9.9012	1.1682	A-	A+	A+
MATH	3	624847	1	B-O	2	7655	0.3356	0.3886	0.1686	0.3284	0.0929	0.0206	0.0008	0.3537	-0.0832	-0.207	0.3543	-0.1345	-0.0622	-0.0159	1.2331	0.0194	9.9011	1.0938	9.9012	1.2244	A-	A+	A-
MATH	3	497753	1	C-G	2	7610	0.462	0.1842	0.4495	0.1657	0.1735	0.0265	0.0006	0.3613	-0.1932	0.3617	-0.2155	-0.0401	-0.056	-0.0313	0.5811	0.0183	9.9011	1.0794	8.6511	1.0972	A+	A-	A-
MATH	3	622954	1	C-G	2	7628	0.5496	0.1309	0.5359	0.2465	0.0619	0.0244	0.0004	0.4402	-0.2501	0.4413	-0.1569	-0.2311	-0.0776	-0.0225	0.1301	0.0182	-2.149	0.9845	-3.349	0.9626	A-	A-	A-
MATH	3	579659	1	D-M	2	7710	0.3451	0.3402	0.2158	0.2628	0.1668	0.0137	0.0006	0.1774	0.1808	-0.1667	0.0568	-0.0928	-0.0589	-0.0255	1.3064	0.0196	9.9012	1.2165	9.9015	1.4548	A-	A-	A-
MATH	3	621399	1	D-M	2	7616	0.1979	0.4573	0.1927	0.1526	0.1711	0.0258	0.0005	-0.0671	0.3662	-0.0602	-0.2244	-0.1761	-0.0702	-0.023	2.053	0.0223	9.9015	1.4916	9.9021	2.1375	A-	A+	A+
MATH	3	479173	2	A-F	2	7367	0.4682	0.1319	0.2273	0.1607	0.4576	0.0187	0.0038	0.2261	-0.1113	-0.0265	-0.1561	0.2284	-0.0679	0.0245	0.7262	0.0198	9.9012	1.2029	9.9013	1.2572	A+	A-	A-
MATH	3	579683	2	A-F	2	7357	0.5486	0.5355	0.1789	0.1635	0.0983	0.0237	0.0001	0.4061	0.4065	-0.214	-0.1703	-0.1593	-0.066	-0.0224	0.2362	0.0198	4.441	1.0352	2.751	1.0336	A-	A-	A-
MATH	3	621398	2	A-T	2	7358	0.5364	0.5237	0.1355	0.2092	0.1079	0.0235	0.0003	0.4361	0.4349	-0.1396	-0.2069	-0.244	-0.0643	0.0111	0.3329	0.0197	-2.159	0.9833	-1.019	0.9881	A+	A-	A-
MATH	3	495187	2	B-O	2	7338	0.1812	0.5267	0.1855	0.0849	0.1765	0.0261	0.0003	0.2465	0.0174	-0.1271	-0.1472	0.2478	-0.0789	-0.0092	2.3839	0.025	2.681	1.0393	9.9015	1.4526	A-	A+	A+
MATH	3	617234	2	B-O	2	7387	0.4436	0.4348	0.1977	0.1854	0.1623	0.0194	0.0005	0.1122	0.12	-0.0307	-0.0417	-0.0546	-0.0773	-0.012	0.8147	0.0199	9.9014	1.3492	9.9015	1.4581	A+	A-	A-
MATH	3	579643	2	C-G	2	7438	0.363	0.3213	0.1913	0.3582	0.116	0.0129	0.0003	0.1908	0.0244	-0.1668	0.1935	-0.1003	-0.0541	-0.0201	1.2121	0.0204	9.9013	1.2681	9.9014	1.4245	A+	A+	A-
MATH	3	579656	2	D-M	2	7387	0.4446	0.1198	0.3003	0.1243	0.4357	0.0186	0.0013	0.3612	-0.2763	-0.0363	-0.1926	0.3637	-0.0711	-0.0235	0.7285	0.0198	9.7311	1.0797	9.9011	1.1475	A+	A-	A-
MATH	3	579658	2	D-M	2	7204	0.5335	0.2326	0.5099	0.1552	0.0581	0.0438	0.0004	0.298	-0.1749	0.2977	-0.0679	-0.1633	-0.057	-0.0222	0.3306	0.0197	9.9011	1.1321	9.9011	1.1417	A-	A-	A+
MATH	3	495183	3	A-F	2	7384	0.5153	0.151	0.1566	0.5024	0.1649	0.0242	0.0009	0.4367	-0.1984	-0.1904	0.4399	-0.1763	-0.0868	-0.033	0.2568	0.0199	-0.809	0.9935	-2.359	0.9711	A+	A-	A-
MATH	3	617237	3	A-T	1	7392	0.5376	0.2604	0.1142	0.5247	0.0767	0.0235	0.0005	0.6262	-0.4555	-0.176	0.6275	-0.1503	-0.1107	-0.0303	0.2207	0.0199	-9.8992	0.7811	-9.8993	0.7159	B-	A-	A-
MATH	3	497738	3	B-O	2	7386	0.3661	0.3554	0.1418	0.1209	0.357	0.0244	0.0004	0.4764	-0.235	-0.1344	-0.165	0.4777	-0.0973	-0.036	0.8595	0.0201	-9.8991	0.8912	-7.9291	0.906	A+	A-	A-
MATH	3	579667	3	B-O	2	7258	0.2801	0.1973	0.3064	0.2684	0.1862	0.0412	0.0005	0.2386	-0.0952	-0.0491	0.2469	-0.0619	-0.1205	-0.0354	1.7183	0.022	9.9012	1.1545	9.9014	1.407	A+	A-	A+
MATH	3	624777	3	B-O	2	7392	0.2409	0.2619	0.4052	0.2351	0.0737	0.0232	0.0008	0.2183	-0.3331	0.1938	0.225	-0.0954	-0.1207	-0.0351	1.8967	0.0226	9.9011	1.1467	9.9015	1.4929	A-	A-	A+
MATH	3	622965	3	C-G	2	7343	0.1137	0.6848	0.1102	0.054	0.1204	0.0298	0.0007	0.0425	0.1667	0.0474	-0.0799	-0.1797	-0.0864	-0.0405	3.0186	0.0297	9.1212	1.1918	9.9025	2.4601	A-	A+	A+
MATH	3	493239	3	D-M	1	7441	0.5842	0.1592	0.108	0.5739	0.1413	0.0169	0.0007	0.5718	-0.2562	-0.2792	0.5742	-0.2588	-0.096	-0.0392	-0.161	0.0203	-9.8992	0.8493	-9.8992	0.808	A-	A-	A-
MATH	3	621405	3	D-M	2	7459	0.2293	0.1363	0.32	0.2258	0.3027	0.0149	0.0003	0.0544	-0.2231	-0.1771	0.0592	0.3139	-0.0768	-0.0294	1.8931	0.0226	9.9014	1.3683	9.9019	1.8536	A-	A+	A+
MATH	3	579681	4	A-F	2	7307	0.2618	0.2561	0.1591	0.4828	0.08	0.0218	0.0001	0.0918	0.0969	-0.0241	-0.0694	0.0453	-0.0749	-0.015	1.7499	0.0296	9.9014	1.3499	9.9017	1.7332	A-	A-	A-
MATH	3	579684	4	A-F	1	7311	0.2656	0.2591	0.3103	0.2599	0.1492	0.021	0.0004	0.3594	-0.2832	-0.0088	0.3605	-0.0508	-0.0793	-0.0248	1.2911	0.0277	-3.849	0.9517	-2.009	0.9594	A-	A+	A-
MATH	3	621395	4	A-T	1	7346	0.6877	0.1254	0.6762	0.0965	0.0851	0.0166	0.0001	0.477	-0.1969	0.4788	-0.2587	-0.2598	-0.0772	-0.0068	-0.5107	0.0274	-8.4491	0.9034	-7.3492	0.8354	A-	A-	A-
MATH	3	495218	4	B-O	2	7271	0.2815	0.3607	0.1098	0.2288	0.274	0.0264	0.0004	0.3994	-0.2453	-0.162	0.0075	0.4002	-0.0811	-0.0088	1.6353	0.0291	-1.919	0.9724	5.7711	1.1495	A+	A-	A+

MATH	3	624774	4	B-O	2	7320	0.404	0.2515	0.1326	0.3958	0.1998	0.0181	0.0021	0.134	0.0157	-0.1913	0.1451	0.01	-0.1095	-0.0497	0.9414	0.0267	9.9013	1.3252	9.9015	1.4672	A-	A-	A+
MATH	3	579645	4	C-G	2	7258	0.3552	0.2756	0.2281	0.3451	0.1227	0.0225	0.006	0.1764	-0.0953	-0.0028	0.1841	-0.0849	-0.0997	-0.0148	1.2167	0.0274	9.9013	1.2677	9.9015	1.4904	A-	A-	A+
MATH	3	493237	4	D-M	1	7348	0.3121	0.286	0.3069	0.1557	0.2349	0.015	0.0015	0.4016	-0.1316	0.404	-0.1363	-0.1548	-0.0868	-0.0349	1.1379	0.0272	-4.159	0.9505	-0.919	0.9827	A-	A-	A+
MATH	3	622956	4	D-M	1	7291	0.7002	0.0922	0.115	0.0854	0.6833	0.0236	0.0005	0.5439	-0.3534	-0.2084	-0.2518	0.5411	-0.0804	-0.0171	-0.5504	0.0276	-9.8992	0.8225	-9.8992	0.7509	A-	A-	A-
MATH	3	495184	5	A-F	2	7386	0.3164	0.2994	0.2179	0.1522	0.3099	0.0202	0.0004	0.3065	-0.0649	-0.0605	-0.2023	0.3125	-0.1203	-0.0125	1.3919	0.0279	7.0711	1.0962	9.9013	1.2573	A+	A-	A+
MATH	3	617236	5	A-F	2	7399	0.4578	0.2402	0.4491	0.1459	0.146	0.0183	0.0005	0.3591	-0.2751	0.3644	-0.1438	0.001	-0.0938	-0.0316	0.6957	0.0263	7.9611	1.0908	8.0911	1.1362	A+	A+	A+
MATH	3	493220	5	A-T	1	7428	0.5859	0.1402	0.0663	0.5771	0.2014	0.0145	0.0005	0.5974	-0.2542	-0.1884	0.5975	-0.374	-0.0805	-0.0194	-0.0415	0.0264	-9.8992	0.8124	-9.8993	0.742	A-	A-	B-
MATH	3	579668	5	B-O	2	7426	0.1874	0.3976	0.1575	0.2451	0.1846	0.0151	0.0001	0.0843	0.2012	-0.1895	-0.1234	0.0885	-0.087	-0.0038	2.3153	0.0329	9.9013	1.3052	9.902	2.0115	A+	A+	A+
MATH	3	624782	5	B-O	1	7352	0.8285	0.8077	0.0654	0.0573	0.0446	0.0249	0.0001	0.4342	0.437	-0.2479	-0.2581	-0.1717	-0.099	-0.0089	-1.3256	0.0316	-7.1591	0.8827	-7.6793	0.7317	A+	A-	A-
MATH	3	617223	5	C-G	1	7385	0.1699	0.2616	0.4807	0.0705	0.1664	0.0202	0.0005	0.1623	0.0591	-0.0768	-0.1392	0.1663	-0.0944	-0.0275	2.4682	0.0342	7.8012	1.167	9.9019	1.8929	A+	A-	A-
MATH	3	579649	5	D-M	2	7431	0.4709	0.1379	0.179	0.464	0.2045	0.0145	0.0001	0.479	-0.2344	-0.1851	0.4794	-0.1956	-0.0683	-0.0221	0.6188	0.0263	-4.139	0.9553	-3.5591	0.944	A-	A+	A-
MATH	3	622967	5	D-M	1	7400	0.5076	0.1671	0.1863	0.1298	0.4981	0.0186	0.0001	0.39	-0.2226	-0.0994	-0.1868	0.3947	-0.0934	-0.0171	0.4439	0.0262	4.9411	1.0539	4.7911	1.0788	A-	A+	A+
MATH	3	495191	6	A-F	1	7340	0.1496	0.1218	0.5863	0.1463	0.1237	0.0212	0.0008	0.2921	-0.0324	-0.1823	0.2936	0.0318	-0.0892	-0.0345	2.6036	0.0358	-0.699	0.9843	8.5214	1.4133	A-	A+	A-
MATH	3	493229	6	A-T	2	7389	0.6152	0.6057	0.2404	0.0766	0.0618	0.0153	0.0001	0.4666	0.4708	-0.2147	-0.2781	-0.2199	-0.0913	-0.017	-0.1856	0.0266	-4.8391	0.9485	-4.2891	0.9161	A+	A-	A-
MATH	3	624776	6	B-O	2	7382	0.2404	0.2841	0.2169	0.2461	0.2365	0.0159	0.0005	0.2507	0.1402	-0.1238	-0.2522	0.254	-0.0887	-0.018	1.882	0.0304	7.5811	1.1267	9.9015	1.4723	A-	A-	A+
MATH	3	624787	6	B-O	1	7314	0.4676	0.121	0.1407	0.2572	0.4557	0.0253	0.0001	0.4518	-0.1881	-0.0667	-0.2921	0.4535	-0.0857	-0.016	0.6259	0.0263	-1.779	0.9808	-2.039	0.9674	A-	A+	A-
MATH	3	617228	6	C-G	1	7310	0.4706	0.1572	0.1344	0.4584	0.224	0.025	0.0009	0.3503	-0.1778	-0.1495	0.3565	-0.109	-0.1018	-0.018	0.6122	0.0262	8.5111	1.0951	6.2711	1.1039	A+	A+	A+
MATH	3	493252	6	D-M	1	7332	0.4288	0.2121	0.1195	0.4189	0.2264	0.0231		0.3671	-0.2459	-0.1646	0.3699	-0.0378	-0.085		0.6548	0.0263	5.8411	1.0652	6.1711	1.1027	A-	A-	A+
MATH	3	621391	6	D-M	2	7371	0.4385	0.176	0.4306	0.1736	0.2019	0.0177	0.0001	0.4282	-0.2094	0.43	-0.0398	-0.2682	-0.0787	-0.0046	0.7551	0.0264	0.041	1.0004	0.211	1.0034	A-	A+	A-
MATH	3	624778	6	D-M	2	7324	0.3415	0.2274	0.2123	0.3332	0.2029	0.0231	0.0011	0.2759	-0.1529	-0.1419	0.2813	0.0123	-0.0993	-0.0167	1.2818	0.0277	9.9012	1.1535	9.9013	1.3014	A-	A+	A+
MATH	3	621387	7	A-F	2	7368	0.157	0.3247	0.2766	0.1538	0.2246	0.0201	0.0003	0.1378	-0.2677	-0.0518	0.1416	0.2658	-0.0933	-0.0254	2.5128	0.0349	7.1512	1.1609	9.9018	1.7895	A-	A+	A+
MATH	3	566160	7	A-T	1	7313	0.457	0.1264	0.2187	0.1828	0.4444	0.0269	0.0008	0.4551	-0.2666	-0.1537	-0.1503	0.4587	-0.113	0.02	0.6579	0.0261	-3.859	0.9593	-2.539	0.9615	A+	A+	A+
MATH	3	565994	7	B-O	1	7300	0.4108	0.096	0.3988	0.3904	0.0855	0.0293	0.0001	0.2507	-0.2803	0.2534	0.0062	-0.1201	-0.065	0.0005	0.924	0.0265	9.9012	1.1921	9.9013	1.2728	A+	A-	A-
MATH	3	566161	7	B-O	2	7301	0.4693	0.4555	0.32	0.1174	0.0778	0.0281	0.0012	0.1942	0.2041	-0.0015	-0.1538	-0.1308	-0.099	-0.0006	0.6316	0.0261	9.9013	1.257	9.9013	1.3357	A-	A-	A-
MATH	3	579673	7	B-O	1	7159	0.4478	0.1984	0.1697	0.4263	0.1576	0.0476	0.0005	0.4379	-0.1685	-0.1869	0.4443	-0.1434	-0.1404	-0.0108	0.5406	0.026	-2.859	0.9702	-2.379	0.9642	A-	A+	A+
MATH	3	622964	7	C-G	1	7318	0.3583	0.1113	0.1847	0.3284	0.3486	0.0231	0.0039	0.2635	-0.0882	-0.2522	0.0307	0.2705	-0.0925	-0.062	1.1933	0.0272	9.9012	1.1654	9.9013	1.25	A-	A-	A-
MATH	3	493245	7	D-M	2	7285	0.1904	0.5019	0.1844	0.2279	0.0544	0.0312	0.0001	0.0282	0.0114	0.0355	-0.0002	-0.014	-0.0932	-0.0005	2.253	0.0327	9.9013	1.3467	9.9019	1.921	A-	A+	A+
MATH	3	624785	7	D-M	2	7373	0.3914	0.2069	0.2294	0.1604	0.3837	0.0145	0.0052	0.3444	-0.2406	-0.1077	-0.0396	0.3476	-0.0657	-0.0547	1.0034	0.0267	6.3611	1.0753	7.6111	1.1357	A+	A-	A-
MATH	3	621393	8	A-F	1	7391	0.4834	0.4731	0.1341	0.2375	0.1339	0.0213	0.0001	0.3898	0.3942	-0.2112	-0.0639	-0.2473	-0.0929	-0.0082	0.5988	0.0262	5.2811	1.0586	5.8111	1.096	A-	A-	A+
MATH	3	493219	8	A-T	2	7417	0.5926	0.1315	0.5819	0.1297	0.1389	0.0175	0.0005	0.4009	-0.1974	0.4064	-0.2422	-0.1155	-0.0904	-0.0271	0.0395	0.0264	3.191	1.0348	1.061	1.0194	A+	A-	A-
MATH	3	579676	8	B-O	2	7115	0.3386	0.2113	0.2146	0.1971	0.3189	0.033	0.025	0.4173	-0.185	-0.101	-0.1584	0.4054	-0.0958	0.0522	1.4391	0.028	0.291	1.0037	4.7511	1.1062	A-	A+	A-
MATH	3	624788	8	B-O	2	7383	0.4879	0.1255	0.1411	0.4769	0.2339	0.0218	0.0007	0.4614	-0.2505	-0.2486	0.4666	-0.1123	-0.1074	-0.0106	0.579	0.0262	-2.619	0.9717	-1.619	0.9742	A+	A+	A+
MATH	3	497750	8	C-G	2	7448	0.5592	0.5514	0.0772	0.2461	0.1113	0.0114	0.0025	0.4174	0.4208	-0.218	-0.226	-0.1424	-0.0603	-0.0519	-0.3361	0.027	9.9011	1.1497	9.9012	1.2393	A-	A-	A-
MATH	3	622957	8	C-G	1	7390	0.784	0.0424	0.1111	0.0579	0.7671	0.0177	0.0038	0.4261	-0.2277	-0.2477	-0.1915	0.4294	-0.0725	-0.0568	-1.0186	0.0298	-6.2491	0.9106	-4.4791	0.8598	A+	B-	A-
MATH	3	621388	8	D-M	2	7226	0.1506	0.5422	0.1854	0.144	0.0851	0.0429	0.0004	-0.1195	0.3423	-0.1957	-0.1085	-0.1366	-0.0881	-0.0201	2.6971	0.0359	9.9014	1.4169	9.9031	3.0561	A+	A+	A-
MATH	3	622959	8	D-M	1	7398	0.5762	0.1971	0.5644	0.1209	0.097	0.0148	0.0057	0.4561	-0.2128	0.4594	-0.2679	-0.1443	-0.0725	-0.057	0.13	0.0263	-3.119	0.9669	-1.299	0.9771	A-	A-	A-
MATH	3	621406	9	A-F	2	7445	0.5002	0.2649	0.4896	0.0421	0.1822	0.0209	0.0003	0.5039	-0.2108	0.5044	-0.1739	-0.2913	-0.0795	-0.0251	0.5148	0.0261	-6.8691	0.928	-5.5191	0.9129	A+	A-	A-
MATH	3	621403	9	A-T	2	7446	0.1197	0.1454	0.6001	0.1171	0.1164	0.0188	0.0022	0.0913	0.0106	0.0517	0.0948	-0.1452	-0.0884	-0.0214	2.9869	0.0389	6.1112	1.1652	9.9026	2.6019	A-	A+	A+
MATH	3	495186	9	B-O	2	7362	0.4856	0.1759	0.1022	0.2198	0.47	0.0319	0.0001	0.4273	-0.136	-0.192	-0.2095	0.4312	-0.1042	-0.0173	0.6155	0.0261	1.401	1.0153	0.901	1.0146	A+	A-	A+
MATH	3	579669	9	B-O	2	7457	0.5249	0.2711	0.1306	0.5146	0.0642	0.0183	0.0013	0.4339	-0.1691	-0.2348	0.4358	-0.2141	-0.0772	-0.0203	0.1835	0.0261	2.061	1.022	0.801	1.0141	A+	A+	A+
MATH	3	497745	9	C-G	1	7349	0.773	0.0651	0.7469	0.0789	0.0753	0.0337	0.0001	0.3825	-0.2059	0.3846	-0.184	-0.192	-0.0881	-0.0233	-1.0011	0.0296	1.221	1.0179	1.5111	1.0501	A+	A-	A+
MATH	3	497749	9	C-G	1	7407	0.3879	0.1377	0.3777	0.2766	0.1818	0.0259	0.0003	0.3001	-0.1346	0.3031	0.0473	-0.2815	-0.0804	-0.0237	1.1024	0.0269	9.9012	1.1777	9.9012	1.2291	A-	A-	A+
MATH	3	566039	9	D-M	2	7386	0.4138	0.4018	0.1599	0.1862	0.2232	0.0288	0.0001	0.3308	0.3332	-0.2574	-0.0329	-0.1034	-0.0783	-0.0021	0.9725	0.0266	9.9011	1.1323	9.9012	1.2057	A+	A+	A-
MATH	3	579665	9	D-M	2	7488	0.486	0.1622	0.4784	0.1495	0.1943	0.0145	0.0011	0.4439	-0.165	0.4467	-0.2179	-0.188	-0.0758	-0.0359	0.5722	0.0261	-0.329	0.9964	-0.129	0.9977	A-	A-	A+
MATH	4	303498	0	A-F	2	66013	0.4384	0.2362	0.4335	0.1649	0.1543	0.0053	0.0058	0.3149	-0.0569	0.3116	-0.1394	-0.2156	-0.0539	0.0433	0.1885	0.0076	9.9011	1.1437	9.9012	1.1775	A+	A+	A+
MATH	4	313017	0	A-F	2	66212	0.4554	0.1691	0.4517	0.1529	0.2181	0.0061	0.0021	0.5564	-0.2777	0.5579	-0.1616	-0.2625	-0.0657	-0.0412	0	0.0075	-9.8991	0.8682	-9.8992	0.8352	A-	A+	A+
MATH	4	314532	0	A-F	1	66308	0.6448	0.0729	0.1077	0.1722	0.6405	0.005	0.0017	0.5134	-0.2269	-0.2256	-0.2983	0.516	-0.0678	-0.0301	-1.1338	0.008	-5.359	0.9817	-9.8991	0.9123	A+	A-	A+
MATH	4	394385	0	A-F	1	66335	0.358	0.3557	0.1241	0.3538	0.1601	0.0043	0.0021	0.4969	0.4974	-0.1523	-0.2427	-0.1843	-0.0467	-0.0275	0.6277	0.0079	-9.8991	0.93	-7.939	0.9607	A-	A+	A+
MATH	4	408561	0	A-F	2	66395	0.3281	0.3516	0.2192	0.3263	0.0975	0.0037	0.0017	0.5644	-0.3416	-0.1975	0.5649	-0.0522	-0.0493	-0.0383	0.7127	0.008	-9.8992	0.8308	-9.8992	0.829	A-	A+	A-
MATH	4	497767	0	A-F	1	66472	0.623	0.0719	0.24	0.0635	0.6203	0.0034	0.0009	0.3472	-0.2271	-0.1366	-0.2021	0.349	-0.0428	-0.0219	-0.731	0.0077	9.9011	1.06	9.9011	1.1229	A+	A-	A-
MATH	4	497770	0	A-F	1	66462	0.8555	0.0608	0.8517	0.0478	0.0353	0.0037	0.0007	0.3855	-0.2382	0.3872	-0.214	-0.1726	-0.0394	-0.0294	-2.514	0.0113	9.9011	1.1412	-4.9691	0.9266	A+	A-	A-
MATH	4	299449	0	A-T	2	66378	0.3078	0.2421	0.2483	0.3061	0.1979	0.004	0.0017	0.3239	-0.11	-0.0924	0.3248	-0.148	-0.0393	-0.0287	1.0008	0.0083	9.9011	1.1379	9.9013	1.2991	A-	A+	A+
MATH	4	314643	0	A-T	2	66244	0.5815	0.1179	0.577	0.209	0.0884	0.0057	0.002	0.3834	-0.1782	0.3874	-0.1694	-0.2054	-0.0649	-0.0408	-0.4114	0.0076	9.901	1.0287	6.361	1.0301	A+	A+	A+
MATH	4	408555	0	A-T	2	66341	0.3406	0.3385	0.2289	0.2547	0.1717	0.0049	0.0014	0.2686	0.2705	-0.1291	-0.0296	-0.1491	-0.0514	-0.0297	0.9852	0.0083	9.9013	1.2892	9.9015	1.4717	A-	A+	A-
MATH	4	408571	0	A-T	2	66338	0.6365	0.6325	0.1081	0.1588	0.0943	0.0045	0.0018	0.4946	0.4973	-0.2558	-0.2457	-0.2219	-0.06	-0.0396	-0.7365	0.0077	-9.8991	0.8994	-9.8991	0.8554	A+	A-	A+
MATH	4	408572	0	A-T	2	66108	0.4553	0.1582	0.228	0.1532	0.4509	0.0077	0.002	0.49	-0.2645	-0.245	-0.1046	0.4919	-0.0775	-0.0215	0.0855	0.0076	-9.8991	0.9375	-9.8991	0.9375	A+	A+	A+
MATH	4	493271	0	A-T	1	66326	0.4639	0.2166	0.2073	0.1087	0.4609	0.0053	0.0012	0.5031	-0.288	-0.1687	-0.1891	0.5047	-0.0651	-0.0291	-0.1779	0.0075	-9.8991	0.9321	-9.8991	0.91	A+	A+	A-
MATH	4	495201	0	A-T	2	66309	0.3904	0.1405	0.2826	0.3878	0.1824	0.0056	0.0011	0.2918	-0.0574	-0.1633	0.2935	-0.1165	-0.0485	-0.027	0.4033	0.0077	9.9012	1.1539	9.9012	1.2241	A-	A+	A+
MATH	4	495203	0	A-T	1	66386	0.5112	0.3602	0.048	0.078	0.5083	0.0035	0.0021	0.4714	-0.2783	-0.1727	-0.2281	0.4735	-0.0584	-0.035	-0.0458	0.0075	-9.899	0.9617	-9.669	0.9597	A-	A-	A+
MATH	4	495204	0	A-T	1	66467	0.7964	0.0431	0.0574	0.793	0.1021	0.0038	0.0005	0.4278	-0.1859	-0.1742	0.4289	-0.3056	-0.0387	-0.0251	-1.9321	0.0095	4.231	1.0233	-7.3091	0.9206	A+	A-	A-
MATH	4	574159	0	A-T	1	66297	0.5803	0.0917	0.1697	0.1554	0.5763	0.0059	0.001	0.4772	-0.2249	-0.1839	-0.268	0.4799	-0.0669	-0.0312	-0.1389	0.0075	-9.8991	0.949	-9.8991	0.9213	A-	A+	A-
MATH	4	313458	0	B-O	1	66336	0.3392	0.217	0.2436	0.3371	0.1959	0.0041	0.0022	0.5145	-0.313	-0.1448	0.5155	-0.1187	-0.0551	-0.0392	0.8179	0.0081	-9.8991	0.9217	-9.8991	0.9352	A-	A+	A+
MATH	4	313460	0	B-O	2	66353	0.4344	0.1509	0.4318	0.1764	0.2349	0.0048	0.0012	0.4154	-0.1824	0.4172	-0.101	-0.2308	-0.058	-0.0286	0.2091	0.0076	7.551	1.0231	9.501	1.0412	A-	A+	A+
MATH	4	408745	0	B-O	2	66269	0.5917	0.125	0.1015	0.5874	0.1789	0.006	0.0013	0.4666	-0.2828	-0.2605	0.4696	-0.1373	-0.0667	-0.0346	-0.4589	0.0076	-9.8991	0.9332	-9.8991	0.8989	A-	A+	A+
MATH	4	408757	0	B-O	2	66344	0.5674	0.0965	0.1776	0.1559	0.5639	0.0044	0.0018	0.5048	-0.1458	-0.216	-0.3321	0.5065	-0.0599	-0.0269	-0.3263	0.0075	-9.8991	0.9058	-9.8991	0.8784	A+	A+	A+
MATH	4	493275	0	B-O	2	66306	0.4057	0.403	0.3437	0.135	0.1115	0.0051	0.0017	0.4006	0.4024	-0.1442	-0.1737	-0.2034	-0.0585	-0.0333	0.5679	0.0078	9.9011	1.0849	9.9011	1.1416	A-	A+	A+
MATH	4	495226	0	B-O	2	66273	0.4702	0.1344	0.2008	0.4668	0.1908	0.0057	0.0016	0.4021	-0.152	-0.2212	0.4046	-0.1411	-0.0603	-0.0353	0.0709	0.0076	9.901	1.0436	9.901	1.0482	A-	A+	A+
MATH	4	566156	0	B-O	2	66148	0.4508	0.1166	0.4467	0.3136	0.1139	0.0076	0.0015	0.4163	-0.1998	0.4193	-0.188	-0.155	-0.0748	-0.0346	0.2154	0.0076	9.901	1.0325	9.9011	1.057	A-	A+	A+
MATH	4	574162	0	B-O	2	66119	0.5012	0.4964	0.1417	0.2305	0.1218	0.0076	0.0019	0.4162	0.4194	-0.1998	-0.1455	-0.2167	-0.0758	-0.0294	0.0224	0.0076	9.461	1.0277	5.831	1.0247	A-	A+	A+
MATH	4	574166	0	B-O	2	66318	0.5455	0.5419	0.1351	0.1632	0.1532	0.0045	0.0021	0.4472	0.4493	-0.2439	-0.1985	-0.1716	-0.053	-0.0383	0.0745	0.0076	9.901	1.0307	8.191	1.0349	A-	A+	A+
MATH	4	313462	0	C-G	1	66315	0.6067	0.6026	0.1102	0.141	0.1396	0.0047	0.002	0.4659	0.4683	-0.2146	-0.2974	-0.1525	-0.0624	-0.0309	-0.4086	0.0075	-9.8991	0.9302	-9.8991	0.9172	A+	A-	A-
MATH	4	408770	0	C-G	1	66282	0.5088	0.5052	0.1267	0.1338	0.2272	0.0041	0.003	0.3683	0.3712	-0.2119	-0.2129	-0.0878	-0.0624	-0.0333	-0.3628	0.0075	9.9011	1.0798	9.9011	1.1191	A+	A-	A-
MATH	4	479178	0	C-G	2	66326	0.4701	0.3394	0.467	0.0387	0.1484	0.0034	0.003	0.4553	-0.3803	0.4565	-0.1327	-0.0496	-0.0428	-0.0351	-0.1405	0.0075	-7.219	0.9797	-5.739	0.9756	A+	A-	A-
MATH	4	497761	0	C-G	1	66438	0.5687	0.1589	0.1083	0.566	0.162	0.0037	0.001	0.3761	-0.212	-0.2309	0.3773	-0.0943	-0.0361	-0.0247	-0.4533	0.0076	9.901	1.0472	9.9011	1.0752	A+	A-	A-
MATH	4	313463	0	D-M	1	66388	0.6525	0.1945	0.6489	0.0942	0.0568	0.0041	0.0015	0.4758	-0.3351	0.4777	-0.1704	-0.1779	-0.0485	-0.0341	-0.711	0.0077	-9.8991	0.8782	-9.8992	0.8481	A-	A-	A-
MATH	4	314151	0	D-M	1	66082	0.4866	0.1641	0.1607	0.1835	0.4816	0.0074	0.0027	0.4627	-0.215	-0.2238	-0.1618	0.4653	-0.0756	-0.0302	-0.1339	0.0075	-9.899	0.9701	-8.979	0.962	A-	A-	A+
MATH	4	314536	0	D-M	2	66246	0.7774	0.0852	0.0781	0.7715	0.0576	0.0062	0.0014	0.4559	-0.2518	-0.2512	0.4595	-0.2098	-0.064	-0.0353	-2.0121	0.0097	9.9011	1.1313	-3.149	0.9638	A+	B-	A-
MATH	4	408564	0	D-M	2	66352	0.7091	0.1532	0.0798	0.7048	0.0561	0.0052	0.0009	0.3737	-0.2673	-0.1233	0.3775	-0.1619	-0.0611	-0.0282	-1.1337	0.008	-2.509	0.9914	-4.889	0.9659	A+	A-	A+
MATH	4	495227	0	D-M	2	66303	0.694	0.0844	0.0773	0.1423	0.6892	0.0047	0.0021	0.3929	-0.1937	-0.1889	-0.2113	0.3958	-0.0542	-0.0298	-0.8011	0.0077	-9.8991	0.9314	-9.8991	0.9077	A+	A-	A-
MATH	4	495236	0	D-M	2	66270	0.4181	0.0887	0.237	0.4151	0.2519	0.0055	0.0018	0.4056	-0.1992	-0.2825	0.4079	-0.0414	-0.0643	-0.0352	0.2936	0.0077	6.101	1.0192	5.751	1.0253	A-	A+	A+
MATH	4	497757	0	D-M	1	66207	0.343	0.2104	0.2072	0.2338	0.3402	0.0065	0.0018	0.3618	-0.1989	-0.2205	0.0111	0.3639	-0.0641	-0.0359	0.471	0.0078	9.741	1.0326	9.9011	1.0707	A+	A+	A+
MATH	4	497834	0	D-M	2	66118	0.3678	0.3643	0.2525	0.1747	0.199	0.008	0.0016	0.3829	0.385	-0.1419	-0.1082	-0.1882	-0.0702	-0.0294	0.8696	0.0082	9.9011	1.1485	9.9012	1.2398	A-	A+	A+
MATH	4	574173	0	D-M	1	66299	0.4352	0.2073	0.1247	0.4322	0.2289	0.0049	0.002	0.3791	-0.1407	-0.2402	0.3812	-0.1122	-0.055	-0.0329	0.122	0.0076	9.9011	1.0713	9.9011	1.0935	A-	A+	A+
MATH	4	574175	0	D-M	2	66335	0.4257	0.4231	0.1536	0.2661	0.1509	0.0048	0.0015	0.2404	0.2423	-0.1848	-0.0914	-0.0246	-0.0392	-0.03	0.3851	0.0077	9.9013	1.2506	9.9013	1.3221	A-	A+	A+

MATH	5	301854	0 A-T	2	64713	0.524	0.1528	0.1424	0.1782	0.5212	0.0039	0.0015	0.5413	-0.1995	-0.2577	-0.2733	0.5428	-0.0613	-0.0241	-0.0198	0.0075	-9.8991	0.8768	-9.8992	0.8381	A-	A+	A+
MATH	5	313524	0 A-T	1	64821	0.8783	0.0269	0.8751	0.0424	0.052	0.0027	0.001	0.2768	-0.1408	0.2817	-0.167	-0.1497	-0.0502	-0.0284	-1.8598	0.0099	-9.8992	0.7954	-9.8993	0.7357	A-	A-	A-
MATH	5	313896	0 A-T	1	64829	0.5576	0.2444	0.1442	0.5556	0.0523	0.0031	0.0005	0.4737	-0.2748	-0.2276	0.4745	-0.1588	-0.0363	-0.0175	-0.4178	0.0076	-6.899	0.9805	-7.169	0.9626	A+	A-	A+
MATH	5	394398	0 A-T	1	64735	0.7916	0.1285	0.0426	0.0362	0.7877	0.0037	0.0014	0.4707	-0.3533	-0.195	-0.1691	0.4729	-0.0532	-0.0266	-1.4221	0.0088	-9.8992	0.818	-9.8993	0.6559	A-	A-	A-
MATH	5	408578	0 A-T	2	64639	0.403	0.4004	0.1476	0.2965	0.1491	0.0051	0.0014	0.4389	0.4407	-0.2061	-0.1134	-0.2401	-0.0621	-0.0294	0.6031	0.0077	-2.259	0.9927	2.091	1.0095	A+	A+	A+
MATH	5	408600	0 A-T	2	64660	0.4394	0.171	0.1634	0.2227	0.4367	0.0047	0.0015	0.2685	-0.0066	-0.1089	-0.2083	0.2714	-0.0608	-0.0266	0.5051	0.0077	9.9012	1.199	9.9013	1.2609	A+	A+	A+
MATH	5	408606	0 A-T	2	64692	0.4183	0.4159	0.2258	0.2199	0.1328	0.0045	0.0012	0.451	0.4522	-0.2736	-0.1136	-0.1681	-0.0529	-0.0243	0.5784	0.0077	-0.909	0.9971	2.671	1.012	A+	A+	A+
MATH	5	408633	0 A-T	2	64570	0.3284	0.2953	0.1591	0.2121	0.3259	0.0031	0.0045	0.413	-0.1514	-0.1351	-0.1726	0.4141	-0.0425	-0.04	0.9149	0.008	-3.049	0.9889	4.661	1.0245	A+	A+	A+
MATH	5	497776	0 A-T	2	64781	0.3129	0.2155	0.1624	0.3115	0.3062	0.0035	0.0008	0.206	-0.1256	-0.1453	0.2077	0.0274	-0.0496	-0.023	1.1688	0.0083	9.9013	1.2966	9.9015	1.4964	A+	A+	A+
MATH	5	497837	0 A-T	2	64788	0.3087	0.3074	0.3741	0.2457	0.0686	0.0027	0.0015	0.341	0.3419	-0.0407	-0.2066	-0.1823	-0.0423	-0.0219	0.966	0.0081	9.9011	1.0635	9.9012	1.166	A-	A+	A+
MATH	5	574136	0 A-T	1	64715	0.4876	0.1727	0.485	0.0883	0.2486	0.0038	0.0015	0.4241	-0.2298	0.4257	-0.2341	-0.128	-0.0485	-0.0306	0.1396	0.0076	2.641	1.0076	7.771	1.0335	A+	A+	A+
MATH	5	301912	0 B-O	2	64571	0.4796	0.1721	0.476	0.2428	0.1015	0.0035	0.004	0.3575	-0.1599	0.3586	-0.1269	-0.2002	-0.054	-0.0098	0.1601	0.0076	9.9011	1.0806	9.9011	1.1086	A-	A+	A+
MATH	5	314030	0 B-O	1	64826	0.6773	0.0792	0.6748	0.1318	0.1106	0.0031	0.0006	0.4156	-0.2087	0.418	-0.2121	-0.2049	-0.0524	-0.0224	-0.6762	0.0078	-9.8991	0.9262	-8.6491	0.9478	A+	A+	A+
MATH	5	408791	0 B-O	2	64751	0.5149	0.1877	0.1938	0.1013	0.5125	0.0032	0.0016	0.5164	-0.2754	-0.235	-0.1799	0.5177	-0.0506	-0.0309	0.0244	0.0075	-9.8991	0.9061	-9.8991	0.87	A-	A+	A+
MATH	5	497779	0 B-O	1	64834	0.5944	0.1147	0.5923	0.2642	0.0253	0.0026	0.0009	0.2722	-0.3306	0.2748	-0.0049	-0.1546	-0.0474	-0.0294	-0.2971	0.0076	9.9011	1.1427	9.9012	1.2326	A-	A-	A-
MATH	5	313327	0 C-G	2	64789	0.588	0.0621	0.2657	0.5855	0.0825	0.0029	0.0013	0.387	-0.1777	-0.1782	0.3889	-0.2421	-0.0448	-0.0256	-0.1381	0.0076	6.261	1.0175	6.671	1.0311	A+	A+	A+
MATH	5	408813	0 C-G	1	64778	0.568	0.1621	0.1054	0.5656	0.1626	0.0033	0.001	0.3952	-0.1463	-0.16	0.3967	-0.2448	-0.0467	-0.0172	-0.0553	0.0075	9.901	1.0294	7.401	1.0335	A+	A+	A+
MATH	5	479170	0 C-G	2	64687	0.3963	0.2419	0.1632	0.394	0.1952	0.0042	0.0016	0.3693	-0.059	-0.1595	0.3714	-0.232	-0.0643	-0.0287	0.6494	0.0078	9.9011	1.0914	9.9011	1.1337	A-	A+	A+
MATH	5	495260	0 C-G	2	64647	0.3765	0.3741	0.1937	0.1639	0.2619	0.0049	0.0015	0.4217	0.4232	-0.1104	-0.2031	-0.1838	-0.0596	-0.0259	0.8289	0.0079	7.411	1.0265	9.9011	1.0511	A-	A+	A-
MATH	5	314037	0 D-M	2	64769	0.4563	0.2888	0.0814	0.1711	0.4542	0.003	0.0015	0.5729	-0.4159	-0.1673	-0.1267	0.5736	-0.0475	-0.0278	0.3974	0.0076	-9.8991	0.8621	-9.8992	0.8265	A-	A-	A-
MATH	5	314038	0 D-M	2	64711	0.3134	0.3433	0.3117	0.2185	0.1212	0.0043	0.0011	0.4904	-0.3848	0.491	-0.0056	-0.1171	-0.0521	-0.0227	0.9356	0.008	-9.8991	0.9086	-9.8991	0.921	A-	A-	A-
MATH	5	408644	0 D-M	2	64785	0.4006	0.3989	0.0719	0.1376	0.3874	0.0026	0.0016	0.4793	0.4801	-0.1197	-0.32	-0.1859	-0.0469	-0.0239	0.4725	0.0077	-9.8991	0.9477	-9.8991	0.9259	A-	A+	A+
MATH	5	408814	0 D-M	2	64834	0.3711	0.0691	0.3698	0.2212	0.3363	0.0025	0.001	0.3276	-0.1213	0.3286	-0.1486	-0.1344	-0.0396	-0.0221	0.9709	0.0081	9.9012	1.1882	9.9013	1.3395	A-	A+	A+
MATH	5	408817	0 D-M	2	64807	0.4317	0.1692	0.1234	0.2736	0.43	0.0026	0.0013	0.4889	-0.3034	-0.1975	-0.1359	0.49	-0.042	-0.0322	0.4476	0.0077	-9.8991	0.9375	-9.8991	0.9229	A-	A-	A+
MATH	5	408821	0 D-M	2	64742	0.4503	0.1679	0.1683	0.2108	0.448	0.0035	0.0014	0.4228	-0.1786	-0.1801	-0.1788	0.4244	-0.0499	-0.027	0.3622	0.0076	6.191	1.0188	7.211	1.031	A-	A-	A+
MATH	5	408826	0 D-M	1	64813	0.5913	0.131	0.1002	0.589	0.176	0.0029	0.001	0.5183	-0.1369	-0.27	0.5201	-0.3278	-0.055	-0.0277	-0.4	0.0076	-9.8991	0.9002	-9.8991	0.8528	A-	A-	A-
MATH	5	497789	0 D-M	2	64806	0.4515	0.1068	0.3183	0.4498	0.1212	0.0025	0.0014	0.376	-0.1129	-0.2025	0.3778	-0.1687	-0.049	-0.032	0.7183	0.0078	9.9012	1.1642	9.9012	1.2392	A+	A+	A+
MATH	5	497852	0 D-M	1	64775	0.3025	0.3011	0.0832	0.2867	0.3245	0.0028	0.0017	0.4322	0.4331	-0.1977	-0.0034	-0.2961	-0.0491	-0.0326	1.0389	0.0081	-9.249	0.9648	-1.699	0.9905	A-	A-	A-
MATH	5	621361	1 A-F	2	7373	0.2756	0.2621	0.2706	0.294	0.1551	0.0177	0.0005	0.1651	-0.2423	0.1669	0.2006	-0.145	-0.0444	-0.0255	1.1076	0.0192	9.9013	1.2982	9.9015	1.4939	A+	A-	A+
MATH	5	642399	1 A-F	2	7450	0.4961	0.4921	0.2269	0.1783	0.0947	0.0057	0.0023	0.4937	0.4952	-0.2003	-0.2665	-0.1916	-0.0592	-0.0234	0.0176	0.0173	-9.8991	0.9021	-9.8991	0.8694	A-	A-	A-
MATH	5	493284	1 A-T	1	7469	0.5394	0.1338	0.1385	0.1858	0.5365	0.0047	0.0008	0.3939	-0.2016	-0.1948	-0.1482	0.3956	-0.0501	-0.0104	-0.0547	0.0173	-0.489	0.9969	-1.139	0.9887	A+	A-	A-
MATH	5	622923	1 A-T	2	7446	0.3276	0.2463	0.264	0.3248	0.1563	0.0065	0.002	0.1908	-0.0856	-0.1161	0.1934	0.0087	-0.0646	-0.0107	0.8786	0.0186	9.9012	1.247	9.9014	1.3657	A+	A+	A+
MATH	5	495243	1 B-O	2	7457	0.3292	0.2623	0.3269	0.2635	0.1402	0.0057	0.0013	0.3626	-0.02	0.3648	-0.251	-0.1309	-0.0721	-0.0242	0.8906	0.0186	9.3011	1.0842	9.9012	1.1744	A-	A+	A+
MATH	5	621410	1 B-O	2	7469	0.4227	0.1766	0.2457	0.4204	0.1519	0.0031	0.0024	0.3721	-0.1287	-0.1534	0.3741	-0.181	-0.0575	-0.0282	0.3664	0.0176	4.511	1.0327	3.981	1.0399	A+	A+	A+
MATH	5	617242	1 C-G	2	7460	0.4247	0.1971	0.2088	0.1656	0.4218	0.0049	0.0017	0.2597	-0.0473	-0.1358	-0.1355	0.2625	-0.0517	-0.0391	0.3677	0.0176	9.9011	1.1417	9.9012	1.1791	A+	A-	A-
MATH	5	408632	1 D-M	1	7381	0.7381	0.1027	0.0896	0.7254	0.0651	0.0168	0.0004	0.3697	-0.2213	-0.1607	0.3706	-0.1805	-0.0568	-0.026	-1.0119	0.0183	-9.8991	0.8913	-9.8992	0.837	A+	A+	A+
MATH	5	495251	2 A-F	1	7146	0.5078	0.2517	0.1684	0.5039	0.0682	0.0058	0.0019	0.4754	-0.2576	-0.2038	0.4775	-0.178	-0.0564	-0.0348	0.0732	0.0192	-9.8991	0.9163	-9.5591	0.8957	A-	A-	A-
MATH	5	621379	2 A-F	1	7173	0.4304	0.1899	0.202	0.1754	0.4286	0.0029	0.0011	0.436	-0.1883	-0.2926	-0.0569	0.4373	-0.0412	-0.037	0.562	0.0195	-1.739	0.9861	-2.309	0.9742	A+	A-	A-
MATH	5	622932	2 A-F	2	7093	0.4489	0.1836	0.4421	0.214	0.1452	0.0149	0.0003	0.3055	-0.2083	0.3083	-0.0836	-0.0862	-0.0608	-0.0256	0.2995	0.0193	9.9012	1.1574	9.9012	1.2024	A+	A-	A+
MATH	5	622935	2 A-T	2	7105	0.2139	0.4315	0.214	0.13	0.2111	0.0129	0.0006	0.1041	0.0632	0.0281	-0.2355	0.1069	-0.0576	-0.0313	1.8468	0.0237	9.9012	1.2248	9.9017	1.6804	A-	A+	A-
MATH	5	621381	2 B-O	1	7154	0.4606	0.2359	0.1793	0.4575	0.1207	0.0053	0.0014	0.3437	-0.1628	-0.2103	0.3453	-0.0556	-0.0476	-0.02	0.3868	0.0193	9.7111	1.0758	8.0711	1.0908	A+	A-	A+
MATH	5	408809	2 C-G	1	7146	0.6145	0.0632	0.6097	0.1441	0.1752	0.0065	0.0012	0.4441	-0.1965	0.4477	-0.3034	-0.1511	-0.0694	-0.0294	-0.4172	0.0196	-9.8991	0.9135	-7.4591	0.8986	A+	A-	A-
MATH	5	624810	2 C-G	2	7155	0.1454	0.1444	0.5821	0.1212	0.1458	0.0056	0.001	0.3204	0.3213	-0.028	-0.1328	-0.1426	-0.0584	-0.0358	2.223	0.026	-3.2491	0.9484	5.5412	1.1625	B-	A+	A+
MATH	5	497787	2 D-M	2	7137	0.5322	0.119	0.1373	0.5274	0.2073	0.0072	0.0018	0.4254	-0.1946	-0.2181	0.429	-0.1687	-0.0694	-0.0428	0.0638	0.0192	-5.139	0.9634	-5.3591	0.9404	A-	A-	A-
MATH	5	495241	3 A-F	2	7121	0.4784	0.1962	0.4754	0.2269	0.0952	0.0052	0.0013	0.3935	-0.1426	0.3959	-0.2288	-0.1367	-0.0589	-0.0273	0.1407	0.0192	-0.879	0.9936	-1.349	0.9854	A+	A-	A+
MATH	5	621383	3 A-F	1	7135	0.3214	0.3199	0.0575	0.5303	0.0878	0.0033	0.0011	0.4751	0.4758	-0.0752	-0.3437	-0.1043	-0.0385	-0.0345	1.0602	0.0206	-9.0091	0.916	-5.9791	0.9186	A+	A-	A-
MATH	5	575705	3 A-T	1	7110	0.3979	0.2507	0.3947	0.223	0.1236	0.0064	0.0015	0.4127	-0.1308	0.4141	-0.1801	-0.1975	-0.053	-0.0397	0.556	0.0195	-1.389	0.989	0.451	1.005	A+	A+	A+
MATH	5	622929	3 A-T	2	7098	0.2215	0.1446	0.4292	0.2193	0.1973	0.0073	0.0024	0.0919	-0.156	0.0892	0.0951	-0.0536	-0.063	-0.0401	1.6351	0.0227	9.9013	1.2503	9.9017	1.6625	A-	A+	A+
MATH	5	497777	3 B-O	2	7044	0.3028	0.2468	0.2976	0.2594	0.179	0.0163	0.0008	0.1804	-0.1287	0.1846	-0.0371	-0.0081	-0.0746	-0.0037	1.0906	0.0207	9.9012	1.2296	9.9014	1.3664	A+	A-	A-
MATH	5	497783	3 C-G	1	7093	0.3701	0.1691	0.1596	0.2947	0.3663	0.0075	0.0028	0.3234	-0.1881	-0.1265	-0.0725	0.3262	-0.067	-0.0276	0.8227	0.02	9.9011	1.1101	9.9012	1.1519	A+	A-	A-
MATH	5	624813	3 C-G	2	7102	0.5028	0.133	0.2093	0.4983	0.1504	0.0081	0.001	0.3702	-0.1521	-0.2039	0.373	-0.1272	-0.0647	-0.0202	0.1046	0.0192	3.601	1.0261	3.811	1.0423	A+	A-	A-
MATH	5	493302	3 D-M	1	7008	0.6792	0.2089	0.0589	0.0459	0.6642	0.0216	0.0006	0.5002	-0.3733	-0.1724	-0.1612	0.494	-0.0473	-0.0147	-0.8032	0.0203	-9.8992	0.8434	-9.8993	0.7438	A+	A-	A-
MATH	5	575692	4 A-F	2	7124	0.3311	0.3287	0.3453	0.142	0.1767	0.006	0.0014	0.2853	0.2862	-0.1729	-0.0982	-0.0372	-0.033	-0.0326	0.9821	0.028	8.5911	1.1168	9.9012	1.2069	A-	A+	A-
MATH	5	617251	4 A-F	2	7114	0.1392	0.2835	0.1094	0.1379	0.4604	0.0074	0.0014	0.0163	-0.243	-0.1655	0.0186	0.3227	-0.06	-0.0252	2.3104	0.0372	9.9013	1.2562	9.9021	2.1143	A-	A-	A-
MATH	5	493283	4 A-T	1	7144	0.6141	0.1491	0.1244	0.1106	0.6113	0.0029	0.0017	0.4509	-0.2427	-0.2097	-0.1968	0.4518	-0.0331	-0.0262	-0.461	0.0266	-8.9691	0.9134	-6.7791	0.88	A+	B-	A-
MATH	5	497838	4 A-T	1	7114	0.5205	0.1494	0.516	0.177	0.1489	0.0068	0.002	0.377	-0.1953	0.3801	-0.241	-0.0616	-0.0586	-0.0358	0.01	0.0262	1.491	1.0147	0.681	1.0102	A-	A+	A+
MATH	5	624806	4 A-T	2	7115	0.4405	0.2118	0.4367	0.1767	0.1662	0.0072	0.0014	0.4159	-0.1623	0.4168	-0.1593	-0.2008	-0.0488	-0.0196	0.397	0.0265	-1.509	0.9839	-0.589	0.9913	A-	A+	A+
MATH	5	621368	4 B-O	2	7072	0.4762	0.1176	0.2491	0.1494	0.4693	0.0144	0.0003	0.4477	-0.2277	-0.202	-0.1574	0.4477	-0.0564	0.0055	0.2356	0.0263	-5.0191	0.9496	-4.6591	0.9336	A+	A+	A-
MATH	5	497780	4 C-G	2	7112	0.2538	0.3331	0.2515	0.2482	0.1581	0.0085	0.0006	0.0448	0.1207	0.0477	-0.0765	-0.1074	-0.0526	-0.0222	1.4232	0.0301	9.9014	1.3519	9.9017	1.6738	A-	A-	A-
MATH	5	624814	4 D-M	2	7038	0.5745	0.0947	0.2059	0.5633	0.1166	0.0183	0.0011	0.3954	-0.2241	-0.0925	0.394	-0.2685	-0.0384	-0.0313	-0.2237	0.0262	-2.459	0.9764	2.061	1.0339	A-	A-	A-
MATH	5	574177	5 A-F	1	7209	0.3089	0.1263	0.1466	0.4142	0.3072	0.0046	0.0011	0.4612	-0.265	-0.2802	-0.0445	0.4619	-0.0515	-0.016	0.9318	0.0277	-8.7091	0.8931	-6.2691	0.8907	A+	A-	A-
MATH	5	575691	5 A-F	2	7132	0.2475	0.2434	0.1681	0.1981	0.3741	0.0159	0.0004	0.1882	0.19	-0.0752	-0.0758	-0.0347	-0.0504	-0.0068	1.5006	0.0304	9.9012	1.2081	9.9014	1.4014	A-	A+	A+
MATH	5	574138	5 A-T	1	7193	0.6032	0.108	0.5985	0.187	0.0986	0.0066	0.0012	0.4725	-0.2309	0.4752	-0.2198	-0.232	-0.0639	-0.034	-0.2989	0.0262	-9.8991	0.8842	-9.7092	0.8391	A+	A+	A-
MATH	5	622924	5 A-T	1	7218	0.6006	0.1367	0.5979	0.133	0.128	0.0033	0.0011	0.4458	-0.2031	0.4467	-0.201	-0.2348	-0.0268	-0.0309	-0.3702	0.0263	-8.5191	0.9201	-6.5691	0.885	A+	A-	A-
MATH	5	622934	5 A-T	1	7197	0.5971	0.1051	0.5927	0.2051	0.0898	0.0063	0.001	0.3895	-0.204	0.3915	-0.1466	-0.2318	-0.0413	-0.0333	-0.3442	0.0262	-2.369	0.9774	-1.699	0.9697	A+	A-	A-
MATH	5	621370	5 B-O	2	7199	0.3527	0.301	0.3502	0.1943	0.1474	0.0048	0.0022	0.1502	-0.044	0.1534	-0.037	-0.0926	-0.0566	-0.0345	0.867	0.0274	9.9013	1.2685	9.9014	1.3982	A+	A+	A+
MATH	5	624809	5 C-G	2	7191	0.3703	0.1764	0.1717	0.3673	0.2764	0.007	0.0011	0.2832	-0.1419	-0.1747	0.2866	-0.0251	-0.0723	-0.0285	0.7753	0.0272	9.4711	1.1175	9.9012	1.1826	A+	A+	A+
MATH	5	624818	5 D-M	2	7146	0.4061	0.1543	0.1702	0.2608	0.4003	0.0139	0.0004	0.2674	-0.1618	-0.1121	-0.0594	0.2686	-0.0409	-0.0056	0.6036	0.0267	9.9011	1.143	9.9012	1.1951	A-	A-	A-
MATH	5	574135	6 A-F	1	7115	0.6634	0.0735	0.6584	0.1618	0.0988	0.0054	0.0021	0.4495	-0.1842	0.4519	-0.226	-0.26	-0.0584	-0.0254	-0.8626	0.0277	-5.1291	0.942	-5.7791	0.8725	A+	A-	A-
MATH	5	621365	6 A-F	2	7056	0.2299	0.2263	0.2724	0.2519	0.2336	0.0151	0.0007	0.0832	0.0873	-0.0213	-0.049	0.0075	-0.0698	-0.0162	1.5884	0.0311	9.9013	1.2647	9.9016	1.6036	A-	A+	A+
MATH	5	622927	6 A-F	1	7140	0.3817	0.0854	0.3801	0.3949	0.1356	0.0035	0.0006	0.5646	-0.122	0.5654	-0.3576	-0.1808	-0.0509	-0.0292	0.6895	0.027	-9.8992	0.8245	-9.8992	0.7989	A-	A-	A-
MATH	5	566349	6 A-T	1	7123	0.4825	0.1737	0.1957	0.1448	0.4794	0.0042	0.0022	0.4535	-0.236	-0.1733	-0.182	0.4554	-0.0548	-0.0375	0.0836	0.0261	-7.4991	0.9292	-5.3491	0.9245	A+	A-	A+
MATH	5	575699	6 A-T	2	7113	0.301	0.3033	0.2311	0.2986	0.1592	0.0061	0.0017	0.2107	-0.0375	-0.1355	0.2131	-0.0478	-0.0638	-0.0177	1.1339	0.0286	9.9012	1.1692	9.9013	1.333	A-	A-	A-
MATH	5	574145	6 B-O	2	7088	0.1556	0.4472	0.144	0.2437	0.1539	0.0107	0.0006	0.0357	0.1481	-0.1464	-0.068	0.0384	-0.0652	-0.0086	2.153	0.0356	9.6712	1.232	9.902	1.9701	A+	A-	A-
MATH	5	575708	6 C-G	2	7116	0.2872	0.2117	0.2377	0.2851	0.2581	0.006	0.0014	-0.106	-0.0299	0.0314	-0.1019	0.1151	-0.0596	-0.0257	1.2135	0.0289	9.9015	1.5334	9.9018	1.7858	A+	A+	A-
MATH	5	624808	6 D-M	2	7108	0.2923	0.3426	0.2899	0.205	0.154	0.007	0.0015	0.2905	-0.0154	0.2928	-0.1759	-0.1328	-0.0646	-0.0316	1.1854	0.0288	5.3011	1.0766	9.0912	1.2035	A-	A+	A-
MATH	5	575697	7 A-F	1	7044	0.4103	0.3783	0.1234	0.3999	0.0731	0.025	0.0003	0.3026	0.0005	-0.3011	0.3056	-0.1533	-0.0701	-0.0033	0.9292	0.0277	9.9012	1.2029	9.9013	1.3134	A-	A+	A-
MATH	5	622926	7 A-F	2	7139	0.2925	0.3369	0.1564	0.2889	0.2056	0.0116	0.0006	0.3742	-0.1705	-0.0882	0.3749	-0.1265	-0.0534	-0.0178	1.2122	0.0289	0.601	1.0085	4.6311	1.1026	A-	A-	A+
MATH	5	622925	7 A-T	1	7186	0.6297	0.6261	0.1248	0.0959	0.1475	0.004	0.0017	0.4402	0.4416	-0.197	-0.1817	-0.2582	-0.0345	-0.032	-0.52	0.0267	-7.3491	0.9268	-7.0991	0.8697	A+	A-	A-
MATH	5	622936	7 A-T	1	7166	0.3783	0.1587	0.2402	0.2175	0.3751	0.0068	0.0017	0.3787	-0.1546	-0.1626	-0.1265	0.3812	-0.0575	-0.0421	0.7316	0.0271	2.011	1.0238	4.3211	1.0728	A+	A-	A+
MATH	5	617269	7 B-O	2	7138	0.211	0.2575	0.2943	0.2084	0.2275	0.0111	0.0012	-0.0637	-0.1472	0.1892	-0.0582	0.0269	-0.083	-0.023	1.7403	0.0319	9.9015	1.4544	9.9019	1.9396	A+	A+	A-
MATH	5	566346	7 C-G	1	7180	0.5454	0.2011	0.1194	0.5419	0.1312	0.0051	0.0014	0.469	-0.2037	-0.2339	0.4704	-0.2147	-0.041	-0.0398	-0.3428	0.0264	-5.089	0.9506	-4.6391	0.9212	A+	A-	A-
MATH	5	617244	7 C-G	2	7160	0.232	0.2298	0.4093	0.1559	0.1957	0.0077	0.0015	0.106	0.1098	0.1831	-0.1815	-0.1561	-0.0849	-0.0258	1.5887	0.0309	9.9013	1.2609	9.9016	1.6189	A-	A+	A-
MATH	5	624836	7 D-M	2	7168	0.4548	0.2451	0.4511	0.1255	0.1702	0.0072	0.001	0.2754	0.0404	0.2772	-0.172	-0.2501	-0.0451	-0.0169	0.3444	0.0263	9.9011	1.133	9.9012	1.1891	A+	A-	A-

MATH	5	621363	8 A-F	2	7067	0.5937	0.5852	0.1457	0.1139	0.1407	0.0142	0.0001	0.3637	0.3652	-0.193	-0.1789	-0.1397	-0.0533	-0.0079	-0.3038	0.0263	0.331	1.0032	0.891	1.0154	A+	A+	A-
MATH	5	622928	8 A-F	1	7147	0.5488	0.116	0.2283	0.547	0.1054	0.0029	0.0003	0.4527	-0.1939	-0.3162	0.4532	-0.0937	-0.0283	-0.0269	-0.1175	0.0261	-7.3391	0.9319	-7.1691	0.8904	A-	A+	A-
MATH	5	493289	8 A-T	2	7114	0.2033	0.0722	0.1342	0.5841	0.2017	0.0064	0.0014	0.1679	-0.1291	-0.1317	0.0313	0.1695	-0.06	-0.0096	1.7875	0.0324	8.7112	1.1712	9.9016	1.5649	A-	A-	A+
MATH	5	497836	8 A-T	2	7118	0.5028	0.2293	0.4992	0.0985	0.1658	0.0066	0.0007	0.3586	-0.1911	0.3603	-0.2565	-0.0514	-0.0437	-0.0277	0.551	0.0267	9.9011	1.1124	9.2811	1.1473	A-	A+	A-
MATH	5	497778	8 B-O	2	7122	0.3881	0.2151	0.2683	0.1244	0.3855	0.006	0.0007	0.3409	-0.0017	-0.1988	-0.2221	0.3429	-0.0587	-0.0107	0.6879	0.027	5.3811	1.0633	4.9811	1.0813	A+	A-	A+
MATH	5	621366	8 B-O	2	7083	0.3813	0.3778	0.3767	0.1244	0.1089	0.0114	0.0007	0.2746	-0.0568	0.2749	-0.1738	-0.1418	-0.037	-0.0068	0.7248	0.0271	9.9011	1.1297	9.9012	1.1975	A+	A+	A+
MATH	5	624816	8 C-G	2	7121	0.2831	0.1672	0.2969	0.2478	0.2812	0.0054	0.0014	0.2155	-0.1521	-0.1076	0.0289	0.2171	-0.0392	-0.0332	1.2574	0.0291	9.9012	1.1771	9.9013	1.3086	A-	A+	A+
MATH	5	574154	8 D-M	2	7121	0.2209	0.4848	0.1537	0.2194	0.1353	0.0061	0.0007	0.1245	0.0865	-0.1654	0.1256	-0.0946	-0.0312	-0.0297	1.659	0.0315	9.9012	1.2246	9.9016	1.5938	A-	A-	A+
MATH	5	495254	9 A-F	2	7120	0.2201	0.4605	0.2114	0.1004	0.2179	0.0079	0.0018	0.3639	-0.1174	-0.12	-0.1204	0.3651	-0.0667	-0.0268	1.3618	0.0297	-7.1491	0.894	-1.969	0.9544	A-	A+	A-
MATH	5	621373	9 A-F	2	7145	0.3156	0.1833	0.3136	0.3893	0.1075	0.0051	0.0011	0.1798	-0.1219	0.1824	-0.0081	-0.0919	-0.0558	-0.0321	1.0754	0.0283	9.9012	1.2173	9.9014	1.4085	A-	A-	A-
MATH	5	493281	9 A-T	1	7142	0.6722	0.0925	0.6677	0.1371	0.096	0.0047	0.0019	0.3962	-0.234	0.4003	-0.0865	-0.2894	-0.0565	-0.0424	-0.6146	0.0269	-8.1191	0.9182	-3.6691	0.9241	A-	A-	A-
MATH	5	622922	9 A-T	1	7153	0.5894	0.1476	0.1161	0.5864	0.1448	0.0045	0.0007	0.3733	-0.1411	-0.1853	0.3747	-0.205	-0.0314	-0.0352	-0.3105	0.0263	0.301	1.0029	-0.519	0.9907	A+	A-	A-
MATH	5	622933	9 A-T	2	7074	0.2785	0.0844	0.274	0.2851	0.3403	0.0159	0.0003	0.2875	-0.0937	0.2896	-0.1336	-0.0719	-0.0687	-0.0074	1.311	0.0294	5.7511	1.0888	9.5812	1.2331	A-	A+	A+
MATH	5	479168	9 B-O	2	7135	0.3962	0.2108	0.2775	0.3932	0.1108	0.0068	0.0008	0.297	-0.1555	-0.1051	0.3003	-0.0939	-0.0715	-0.0287	0.6443	0.0269	9.3911	1.111	8.6511	1.1449	A-	A-	A+
MATH	5	495266	9 C-G	2	7128	0.3072	0.2065	0.2435	0.2367	0.3046	0.007	0.0017	0.3389	-0.0672	-0.174	-0.1141	0.3411	-0.0669	-0.0246	1.1276	0.0286	3.491	1.0491	7.5012	1.1602	A-	A-	A-
MATH	5	624812	9 D-M	2	7066	0.3506	0.205	0.2102	0.3445	0.2231	0.0168	0.0004	0.3759	-0.2121	-0.1372	0.3769	-0.072	-0.0567	-0.0145	0.9027	0.0277	1.451	1.0184	2.711	1.0493	A-	A+	A-
MATH	6	314895	0 A-N	1	59985	0.3528	0.3183	0.1924	0.1338	0.3514	0.0034	0.0007	0.4739	-0.1496	-0.2404	-0.174	0.4744	-0.0414	-0.0145	0.4674	0.0076	-9.8991	0.9044	-9.8991	0.8938	A+	A+	A+
MATH	6	335224	0 A-N	1	60029	0.394	0.3927	0.1643	0.2154	0.2243	0.0029	0.0004	0.4236	0.4242	-0.1739	-0.2116	-0.1281	-0.0361	-0.0173	0.417	0.0076	-9.899	0.9711	-6.119	0.9753	A+	A+	A+
MATH	6	412892	0 A-N	1	60044	0.8547	0.0454	0.0508	0.8521	0.0488	0.0024	0.0007	0.4019	-0.2052	-0.2149	0.4042	-0.236	-0.0409	-0.0306	-1.5031	0.0093	-9.8993	0.7095	-9.8994	0.5892	A+	A+	A-
MATH	6	413105	0 A-N	2	59962	0.6459	0.0729	0.1661	0.6431	0.1135	0.0036	0.0008	0.5069	-0.1871	-0.3209	0.509	-0.2254	-0.0576	-0.0292	-0.235	0.0076	-9.8992	0.8474	-9.8992	0.8088	A-	A+	A-
MATH	6	479709	0 A-N	1	60033	0.6682	0.0509	0.1579	0.6661	0.1219	0.0028	0.0004	0.3663	-0.1814	-0.1007	0.3681	-0.2885	-0.0403	-0.0242	-0.5289	0.0078	-8.949	0.9736	-0.899	0.9949	A-	A-	A+
MATH	6	567153	0 A-N	1	59982	0.6407	0.0713	0.6381	0.0525	0.2341	0.0031	0.0009	0.3555	-0.1674	0.3583	-0.2125	-0.1838	-0.0552	-0.027	-0.9799	0.0083	9.9012	1.181	9.9014	1.4242	A+	A-	A-
MATH	6	335192	0 A-R	2	60032	0.6811	0.1317	0.0925	0.6788	0.0937	0.0028	0.0005	0.4685	-0.2727	-0.2222	0.47	-0.2056	-0.0473	-0.0216	-0.7518	0.008	-9.8991	0.9298	-9.8991	0.8591	A+	A+	A+
MATH	6	411363	0 A-R	2	60048	0.5278	0.164	0.5263	0.2026	0.1041	0.0021	0.0008	0.4101	-0.1198	0.4114	-0.2969	-0.1281	-0.0394	-0.0258	0.1664	0.0076	1.521	1.0041	-1.819	0.9925	B-	A-	A+
MATH	6	412552	0 A-R	2	59997	0.5799	0.1089	0.5777	0.212	0.0975	0.003	0.0008	0.43	-0.2495	0.4316	-0.1697	-0.2115	-0.0446	-0.0327	0.0709	0.0076	-9.899	0.9726	-9.899	0.9508	A-	A+	A-
MATH	6	412918	0 A-R	1	60068	0.568	0.1169	0.1309	0.1831	0.5665	0.002	0.0006	0.3754	-0.1537	-0.207	-0.1685	0.3767	-0.0401	-0.0201	0.0364	0.0076	9.901	1.0331	5.081	1.0217	A-	A+	A+
MATH	6	416038	0 A-R	2	59899	0.3714	0.3694	0.1656	0.179	0.2805	0.0044	0.0011	0.3209	0.323	-0.1742	-0.1794	-0.0384	-0.0621	-0.0315	0.8511	0.0079	9.9011	1.0903	9.9011	1.1413	A-	A+	A+
MATH	6	491795	0 A-R	1	60042	0.7088	0.094	0.7066	0.0864	0.11	0.0024	0.0007	0.456	-0.2319	0.4576	-0.2539	-0.2131	-0.0427	-0.0241	-0.7981	0.0081	-9.8991	0.866	-9.8992	0.795	A-	A+	A+
MATH	6	496604	0 A-R	2	60036	0.2946	0.1507	0.3272	0.2936	0.2253	0.0023	0.0008	0.4874	-0.1087	-0.1801	0.4877	-0.2304	-0.0358	-0.0242	1.2239	0.0083	-9.8991	0.9077	-9.5991	0.9448	A-	A+	A+
MATH	6	497307	0 A-R	2	60031	0.7438	0.0876	0.121	0.7414	0.0467	0.0028	0.0004	0.4693	-0.2529	-0.2755	0.4711	-0.1987	-0.0497	-0.0159	-0.9436	0.0082	-9.8992	0.8297	-9.8993	0.7333	A-	A+	A-
MATH	6	574783	0 A-R	2	60092	0.79	0.7882	0.0468	0.0514	0.1114	0.0014	0.0008	0.4843	0.4856	-0.1956	-0.265	-0.3067	-0.0379	-0.0241	-0.8693	0.0081	-9.8993	0.702	-9.8994	0.6063	A-	A-	A-
MATH	6	582619	0 A-R	2	60029	0.4146	0.1277	0.1206	0.3351	0.4133	0.0023	0.0009	0.5017	-0.2473	-0.1686	-0.2264	0.5027	-0.0467	-0.0317	0.7189	0.0078	-9.8991	0.9317	-9.8991	0.9386	A-	A-	A-
MATH	6	314873	0 B-E	2	60032	0.4153	0.4139	0.2531	0.1603	0.1695	0.0026	0.0007	0.3462	0.3476	-0.1363	-0.1554	-0.1381	-0.0474	-0.0268	0.547	0.0077	9.9011	1.0641	9.9011	1.0903	A-	A+	A+
MATH	6	319256	0 B-E	2	59962	0.2892	0.1794	0.2879	0.2893	0.2391	0.0033	0.0011	0.2362	-0.0165	0.2378	-0.0819	-0.1413	-0.0511	-0.0303	1.2738	0.0084	9.9012	1.1717	9.9013	1.3021	A+	A+	A+
MATH	6	401319	0 B-E	1	60106	0.8663	0.0654	0.8645	0.0391	0.029	0.0015	0.0005	0.332	-0.1743	0.3348	-0.1958	-0.1871	-0.0424	-0.0225	-1.8713	0.0103	-9.8991	0.8745	-9.8992	0.8364	A+	A-	A-
MATH	6	411362	0 B-E	2	60029	0.334	0.3329	0.2062	0.1344	0.3232	0.0026	0.0007	0.2604	0.2617	-0.1901	-0.1862	0.0428	-0.047	-0.0206	0.8928	0.0079	9.9011	1.1307	9.9012	1.2074	A-	A+	A+
MATH	6	412558	0 B-E	2	60049	0.4043	0.2802	0.4031	0.2194	0.0943	0.0022	0.0007	0.3615	-0.1678	0.3626	-0.1541	-0.1233	-0.0413	-0.0282	0.5987	0.0077	9.9011	1.0584	9.9011	1.095	A+	A+	A-
MATH	6	412559	0 B-E	2	59920	0.4099	0.1121	0.1341	0.3408	0.4078	0.0042	0.0009	0.3715	-0.1893	-0.2017	-0.1058	0.3736	-0.0668	-0.0234	0.8865	0.0079	9.9011	1.098	9.9011	1.1398	A+	A+	A+
MATH	6	412896	0 B-E	1	60020	0.4531	0.1305	0.1998	0.2147	0.4516	0.0027	0.0007	0.4753	-0.127	-0.2771	-0.1955	0.4765	-0.0485	-0.0271	0.6156	0.0077	-9.899	0.9652	-9.059	0.9618	A-	A+	A-
MATH	6	413714	0 B-E	1	59946	0.4609	0.4588	0.1156	0.2105	0.2104	0.0036	0.001	0.4339	0.4356	-0.2077	-0.2251	-0.1337	-0.0592	-0.026	0.255	0.0076	-9.769	0.9733	-4.569	0.9816	A+	A-	A-
MATH	6	478717	0 B-E	1	59928	0.4225	0.4204	0.2477	0.257	0.0699	0.0041	0.0008	0.2987	0.3012	-0.2842	0.0476	-0.1649	-0.0604	-0.0299	0.5723	0.0077	9.9011	1.1151	9.9011	1.1491	A+	A+	A+
MATH	6	478720	0 B-E	2	59969	0.4354	0.3185	0.4335	0.139	0.1047	0.0018	0.0024	0.405	-0.1623	0.4051	-0.2157	-0.1585	-0.0398	-0.0058	0.3785	0.0076	6.761	1.0193	4.101	1.0167	A-	A+	A+
MATH	6	581340	0 B-E	1	59990	0.4647	0.4629	0.1683	0.2451	0.1198	0.003	0.001	0.4367	0.4379	-0.199	-0.1939	-0.1763	-0.0468	-0.0229	0.327	0.0076	-8.769	0.9756	-9.489	0.962	A+	A-	A+
MATH	6	478723	0 C-G	2	60034	0.4605	0.459	0.2147	0.2135	0.1097	0.0026	0.0006	0.4992	0.4999	-0.2692	-0.2306	-0.1326	-0.0431	-0.0168	0.6028	0.0077	-9.899	0.9522	-8.009	0.9663	A-	A-	A-
MATH	6	492763	0 C-G	2	60071	0.2981	0.1847	0.3757	0.1396	0.2973	0.0018	0.0008	0.3761	-0.2292	-0.0301	-0.191	0.3768	-0.0398	-0.0285	1.2668	0.0084	5.221	1.0216	9.9011	1.1014	A+	A-	A+
MATH	6	501398	0 C-G	2	60037	0.4345	0.2469	0.223	0.4331	0.0938	0.0021	0.001	0.388	-0.2632	-0.1182	0.3889	-0.0943	-0.0389	-0.0229	0.2743	0.0076	8.851	1.0247	9.9011	1.0507	A-	A-	A-
MATH	6	574849	0 C-G	1	59962	0.433	0.4311	0.282	0.1772	0.1053	0.0035	0.0009	0.4464	0.4476	-0.229	-0.1684	-0.1648	-0.0513	-0.0248	0.5477	0.0077	-9.899	0.9683	-7.159	0.9704	A+	A+	A+
MATH	6	303087	0 D-S	2	59866	0.33	0.2375	0.2228	0.2056	0.3281	0.003	0.003	0.2436	-0.0725	-0.1446	-0.0507	0.245	-0.0403	-0.0237	1.1763	0.0082	9.9012	1.2163	9.9014	1.3767	A+	A+	A+
MATH	6	399248	0 D-S	2	59986	0.3051	0.2391	0.3039	0.2702	0.1828	0.0031	0.0009	0.2475	-0.0838	0.2491	-0.0401	-0.148	-0.057	-0.0208	1.2055	0.0083	9.9012	1.2116	9.9014	1.3868	A-	A+	A+
MATH	6	413111	0 D-S	2	59948	0.7459	0.0936	0.0905	0.0688	0.7424	0.0032	0.0015	0.4472	-0.1713	-0.2822	-0.2436	0.45	-0.0566	-0.0274	-1.0871	0.0085	-9.8991	0.8846	-9.8991	0.8547	A+	A+	A+
MATH	6	492764	0 D-S	1	60036	0.5744	0.0773	0.5726	0.1891	0.1578	0.0023	0.0008	0.4738	-0.2113	0.4753	-0.2105	-0.2552	-0.0494	-0.0297	-0.3883	0.0077	-9.899	0.9653	-9.8991	0.9365	A+	A-	A-
MATH	6	492765	0 D-S	2	60029	0.6259	0.1008	0.1205	0.1515	0.6239	0.0026	0.0007	0.3914	-0.1983	-0.1709	-0.2009	0.3935	-0.0514	-0.0232	0.0334	0.0076	-1.679	0.9955	-2.849	0.9879	A+	A+	A+
MATH	6	496611	0 D-S	2	60064	0.7118	0.1649	0.058	0.7099	0.0645	0.0019	0.0008	0.4266	-0.2493	-0.2393	0.4287	-0.1761	-0.0468	-0.0283	-0.8824	0.0082	-9.8991	0.9396	-9.8991	0.9042	A+	A-	A+
MATH	6	497315	0 D-S	1	59990	0.2805	0.2794	0.1477	0.103	0.466	0.003	0.001	0.2592	0.2601	-0.1872	-0.0943	-0.0379	-0.0366	-0.0239	1.0732	0.0081	9.9011	1.064	9.9012	1.1782	A+	A+	A+
MATH	6	500419	0 D-S	2	60030	0.6235	0.6215	0.09	0.1212	0.164	0.0025	0.0008	0.4397	0.4414	-0.2546	-0.2516	-0.1515	-0.0481	-0.0214	-0.288	0.0076	-9.8991	0.9311	-9.8991	0.9039	A+	A-	A-
MATH	6	501399	0 D-S	2	60046	0.4135	0.1592	0.1469	0.4123	0.2785	0.0023	0.0007	0.3677	-0.1878	-0.1803	0.3688	-0.103	-0.0437	-0.0272	0.7656	0.0078	9.9011	1.0961	9.9012	1.1528	A+	A+	A+
MATH	6	566982	1 A-N	2	6946	0.4289	0.1924	0.1815	0.1935	0.4261	0.0051	0.0014	0.3808	-0.1731	-0.2007	-0.0967	0.3827	-0.0695	-0.0123	0.4293	0.0171	-4.939	0.9676	-3.869	0.9646	A-	A-	A-
MATH	6	617644	1 A-N	1	6967	0.5347	0.1967	0.5328	0.2001	0.0669	0.0031	0.0004	0.3627	-0.2761	0.3636	-0.0689	-0.1673	-0.0304	-0.0265	-0.155	0.0168	1.451	1.0086	0.291	1.0028	A-	A-	A-
MATH	6	615353	1 A-R	2	6944	0.2807	0.2284	0.253	0.2787	0.233	0.0056	0.0013	0.3185	-0.0748	-0.1657	0.3198	-0.082	-0.0535	-0.0369	1.337	0.0192	3.071	1.0308	9.9012	1.1605	A-	A-	A-
MATH	6	496613	1 B-E	2	6956	0.5283	0.0981	0.5256	0.0993	0.2719	0.0044	0.0007	0.349	-0.2608	0.3513	-0.2411	-0.0479	-0.06	-0.0174	0.0752	0.0168	4.351	1.0264	2.531	1.0233	A-	A+	A+
MATH	6	615361	1 B-E	1	6914	0.6038	0.1251	0.5971	0.0785	0.1881	0.0089	0.0023	0.2572	-0.2381	0.2638	-0.2234	0.0463	-0.0831	-0.0174	-0.3751	0.017	9.9011	1.1078	9.9012	1.2343	A+	A-	A+
MATH	6	624644	1 B-E	1	6921	0.3673	0.2193	0.1672	0.2398	0.3636	0.0096	0.0006	0.1432	0.0122	-0.09	-0.0862	0.1455	-0.048	0.0012	0.7671	0.0176	9.9012	1.243	9.9014	1.3613	A+	A+	A+
MATH	6	575155	1 C-G	2	6948	0.2998	0.4681	0.2979	0.1229	0.1048	0.0051	0.0011	0.222	-0.0995	0.2239	-0.094	-0.0548	-0.0595	-0.0246	1.063	0.0183	9.9012	1.1566	9.9013	1.2718	A+	A-	A+
MATH	6	581403	1 D-S	1	6945	0.4587	0.4557	0.1553	0.1605	0.2218	0.0056	0.0011	0.3469	0.3495	-0.1779	-0.233	-0.0446	-0.0645	-0.0225	0.4425	0.0171	3.141	1.0211	2.561	1.0239	A+	A-	A-
MATH	6	496952	2 A-N	1	6589	0.6657	0.6572	0.1737	0.0754	0.0811	0.0112	0.0015	0.4953	0.4936	-0.2932	-0.2411	-0.197	-0.0573	0.0062	-0.725	0.02	-9.8991	0.8566	-9.8992	0.7768	A+	A-	A+
MATH	6	617309	2 A-N	1	6647	0.7287	0.1199	0.7258	0.0363	0.114	0.0031	0.0009	0.4027	-0.235	0.4036	-0.1641	-0.2224	-0.03	-0.0223	-1.0086	0.021	-7.2891	0.9291	-7.7391	0.8547	A+	A-	A-
MATH	6	575151	2 A-R	1	6641	0.7186	0.0939	0.715	0.1133	0.0728	0.0039	0.001	0.3759	-0.188	0.3806	-0.2135	-0.1692	-0.0656	-0.0377	-1.0548	0.0212	-3.869	0.9609	-4.9991	0.9018	A+	A+	A+
MATH	6	497310	2 B-E	2	6627	0.2635	0.2297	0.2349	0.2667	0.2616	0.0057	0.0013	0.2599	-0.1423	-0.1227	0.002	0.2607	-0.0391	-0.0178	1.5578	0.0215	6.1011	1.07	9.9012	1.2227	A+	A-	A-
MATH	6	500376	2 B-E	2	6609	0.2524	0.2905	0.2499	0.2465	0.2033	0.009	0.0007	0.1394	0.0046	0.1423	-0.0902	-0.0455	-0.0697	0.0017	1.3078	0.0206	9.9012	1.2225	9.9015	1.4492	A-	A+	A+
MATH	6	560219	2 C-G	1	6645	0.5524	0.2087	0.1438	0.55	0.093	0.0039	0.0004	0.4186	-0.2586	-0.2208	0.4203	-0.0789	-0.0578	-0.0001	-0.0741	0.0189	-4.939	0.9668	-5.4191	0.9395	A+	A-	A-
MATH	6	567240	2 C-G	2	6627	0.3042	0.1407	0.3021	0.3073	0.2429	0.006	0.001	0.3348	-0.1502	0.3367	-0.1239	-0.0923	-0.0646	-0.0203	1.0013	0.0197	2.601	1.0226	8.1211	1.1036	A-	A-	A-
MATH	6	615378	2 D-S	2	6632	0.4008	0.3983	0.2207	0.2257	0.1491	0.0054	0.0009	0.2706	0.2722	-0.1972	-0.0656	-0.0564	-0.0474	-0.0164	0.7358	0.0192	9.9011	1.0826	9.9011	1.1148	A-	A+	A-
MATH	6	574777	3 A-N	2	6595	0.3457	0.1177	0.3432	0.3292	0.2026	0.0069	0.0003	0.3448	-0.1397	0.3458	-0.233	-0.0139	-0.0498	0.0026	0.7703	0.0192	3.271	1.0258	3.351	1.0359	A-	A-	A+
MATH	6	617499	3 A-N	1	6613	0.3582	0.1498	0.2543	0.2348	0.3566	0.0039	0.0006	0.4342	-0.1598	-0.1421	-0.2022	0.4351	-0.0575	-0.0087	0.8789	0.0194	-9.8991	0.9146	-7.3291	0.9202	A-	A-	A-
MATH	6	624645	3 A-R	2	6611	0.3379	0.2244	0.3167	0.3363	0.1177	0.0039	0.0009	0.4371	-0.0745	-0.342	0.4389	-0.0374	-0.0655	-0.0334	0.9395	0.0195	-9.8991	0.9173	-5.2991	0.94	A-	A-	A-
MATH	6	500238	3 B-E	2	6611	0.3727	0.255	0.2118	0.3709	0.1575	0.0044	0.0005	0.2495	-0.0002	-0.1775	0.2512	-0.1241	-0.0503	-0.0108	0.8709	0.0194	9.9012	1.1622	9.9012	1.2467	A+	A-	A-
MATH	6	614779	3 B-E	2	6611	0.3298	0.2725	0.1287	0.2658	0.3282	0.0039	0.0009	0.3859	-0.1476	-0.2029	-0.1018	0.3868	-0.0405	-0.0152	1.0385	0.0198	-6.3291	0.945	-2.769	0.9666	A+	A+	A+
MATH	6	582442	3 C-G	1	6615	0.2709	0.1427	0.4376	0.2698	0.1457	0.0032	0.0011	0.4612	-0.1145	-0.3267	0.4616	0.0009	-0.0393	-0.0267	1.2938	0.0206	-9.8991	0.8652	-7.1691	0.9009	A+	A+	A-
MATH	6	478725	3 D-S	2	6617	0.3937	0.1561	0.2181	0.3921	0.2297	0.0038	0.0002	0.1597	-0.1637	-0.0095	0.1617	-0.0292	-0.051	-0.0149	0.9224	0.0195	9.9013	1.2574	9.9014	1.3554	A+	A-	A-
MATH	6	622385	3 D-S	2	6584	0.2962	0.208	0.2362	0.2935	0.2533	0.0087	0.0002	0.084	-0.0217	-0.0687	0.0861	0.0065	-0.0418	-0.0149	1.2054	0.0203	9.9013	1.2862	9.9014	1.4453	A+	A+	A+
MATH	6	479741	4 A-N	1	6603	0.3279	0.3267	0.3342	0.1897	0.1458	0.0032	0.0005	0.226	0.2274	-0.0409	-0.0466	-0.1874	-0.0447	-0.0222	1.0317	0.0288	9.6211	1.1312	9.9012	1.244	A-	A-	A-
MATH	6	624475	4 A-N	2	6559	0.3769	0.2375	0.373	0.1507	0.2285	0.0101	0.0002	0.2054	-0.2342	0.2071	-0.1287	0.1194	-0.0453	-0.0014	0.7869	0.028	9.9012	1.1692	9.9013	1.259	A-	A-	A+
MATH	6	560215	4 A-R	2	6573	0.7814	0.062	0.0809	0.0739	0.775	0.0057	0.0024	0.4371	-0.2471	-0.1934	-0.2502	0.4386	-0.0479	-0.0356	-1.2696	0.0313	-9.3691	0.8575	-9.3493	0.7382	A-	A+	A+
MATH	6	501394	4 B-E	2	6583	0.5677	0.5639	0.1384	0.1366	0.1545	0.0056	0.0011	0.4146	0.4157	-0.2405	-0.2224	-0.1185	-0.0505	-0.0028	0.0898	0.0269	-5.8191	0.9457	-5.5191	0.9219	A-	A-	A-

MATH	6	624476	4 B-E	2	6548	0.4067	0.2767	0.4018	0.1387	0.1708	0.0115	0.0005	0.3354	-0.0838	0.3374	-0.189	-0.1488	-0.0583	-0.0194	0.641	0.0276	2.871	1.0318	3.2411	1.0501	A+	A+	A+
MATH	6	624649	4 B-E	2	6590	0.3313	0.3294	0.2343	0.2552	0.1755	0.0045	0.0011	0.2353	0.237	-0.0361	-0.0957	-0.132	-0.0542	-0.0162	1.0169	0.0287	9.5511	1.1292	9.9012	1.2083	A-	A+	A+
MATH	6	615352	4 C-G	2	6583	0.4424	0.4394	0.2509	0.183	0.12	0.0057	0.0009	0.3482	0.351	-0.1118	-0.1597	-0.1789	-0.0695	-0.0179	0.456	0.0272	1.861	1.0192	1.571	1.0226	A+	A-	A+
MATH	6	497314	4 D-S	1	6584	0.3946	0.0806	0.2046	0.392	0.3163	0.0054	0.0011	0.2749	-0.1299	-0.1613	0.2779	-0.0632	-0.071	-0.0194	0.4758	0.0272	6.8011	1.0718	7.0711	1.1057	A-	A+	A-
MATH	6	582440	5 A-N	1	6606	0.741	0.1702	0.7372	0.0559	0.0316	0.0041	0.0011	0.4162	-0.2557	0.42	-0.216	-0.1954	-0.0655	-0.0248	-1.2351	0.0311	-0.249	0.996	-2.3891	0.9268	A-	A-	A-
MATH	6	617676	5 A-N	1	6616	0.2177	0.217	0.2795	0.283	0.2169	0.0026	0.0011	0.3137	0.0498	-0.1439	-0.1829	0.3145	-0.0438	-0.0295	1.7195	0.0326	0.561	1.0102	5.7112	1.1706	A+	A-	A-
MATH	6	622364	5 A-R	2	6597	0.2128	0.5789	0.1017	0.2114	0.1015	0.0053	0.0012	0.1535	0.1353	-0.206	0.1554	-0.2087	-0.0654	-0.0072	1.7578	0.0329	7.3411	1.1429	9.9015	1.5206	A-	A+	A+
MATH	6	581393	5 B-E	1	6599	0.4081	0.2331	0.2011	0.4056	0.1541	0.0054	0.0008	0.3392	-0.12	-0.2252	0.3412	-0.0608	-0.0555	-0.0174	0.7079	0.0277	3.841	1.0439	4.3811	1.0708	A-	A-	A-
MATH	6	614786	5 B-E	2	6569	0.2885	0.1261	0.2854	0.2917	0.2861	0.0101	0.0006	0.1444	-0.168	0.1451	-0.0146	-0.0007	-0.0245	-0.0131	1.2824	0.0299	9.9012	1.2057	9.9014	1.3975	A+	A+	A+
MATH	6	615357	5 B-E	2	6587	0.4263	0.4229	0.2643	0.1697	0.1351	0.0074	0.0006	0.388	0.3899	-0.081	-0.2242	-0.197	-0.0568	-0.0223	0.5528	0.0273	-1.409	0.9851	0.371	1.0055	A+	A-	A+
MATH	6	622372	5 C-G	2	6600	0.5829	0.5794	0.1902	0.1395	0.0849	0.0056	0.0005	0.5059	0.5071	-0.2213	-0.2696	-0.2372	-0.0457	-0.0263	-0.1993	0.0271	-9.8991	0.8625	-9.8992	0.8062	A+	A+	A-
MATH	6	497742	5 D-S	2	6605	0.3164	0.2482	0.1839	0.2479	0.3148	0.0045	0.0008	0.2864	-0.0922	-0.1551	-0.0684	0.2882	-0.0524	-0.0317	1.1145	0.0291	5.0111	1.0694	7.6112	1.156	A+	A-	A-
MATH	6	617213	6 A-N	1	6639	0.4291	0.2491	0.1676	0.4271	0.1514	0.0037	0.001	0.4483	-0.1846	-0.1948	0.4495	-0.1842	-0.0465	-0.0257	0.5193	0.0274	-5.8491	0.9382	-5.2491	0.923	A+	A-	A-
MATH	6	500417	6 A-R	2	6605	0.302	0.3665	0.2256	0.2991	0.0989	0.0094	0.0004	0.2647	-0.0633	-0.1087	0.2663	-0.1357	-0.0522	-0.0217	1.1967	0.0296	7.0211	1.1041	9.4312	1.2087	A-	A+	A+
MATH	6	560214	6 A-R	2	6627	0.5286	0.1274	0.2013	0.5251	0.1396	0.0055	0.001	0.4857	-0.1858	-0.2267	0.4888	-0.244	-0.0772	-0.0285	0.0415	0.0269	-9.8991	0.8894	-9.5191	0.8606	A-	A-	A-
MATH	6	497309	6 B-E	2	6625	0.3602	0.3175	0.1992	0.1187	0.3577	0.0046	0.0022	0.4004	-0.1003	-0.1661	-0.2283	0.4024	-0.0759	-0.0179	0.8734	0.0283	-1.859	0.977	0.001	0.9998	A-	A+	A+
MATH	6	574784	6 B-E	2	6603	0.3062	0.2019	0.3031	0.2704	0.2144	0.0096	0.0006	0.2543	-0.029	0.2567	-0.1764	-0.0532	-0.057	-0.0232	1.1734	0.0295	8.4311	1.1244	9.1212	1.1985	A-	A+	A-
MATH	6	622369	6 B-E	2	6639	0.48	0.4777	0.1397	0.258	0.1198	0.0037	0.001	0.3103	0.3132	-0.2025	-0.1093	-0.1037	-0.0585	-0.0354	0.2719	0.027	6.9811	1.0715	5.3511	1.0808	A-	A+	A-
MATH	6	496951	6 C-G	1	6633	0.6208	0.1802	0.6173	0.1378	0.0591	0.0054	0.0003	0.4352	-0.2905	0.4375	-0.1566	-0.1797	-0.0622	-0.0065	-0.8572	0.0289	6.6811	1.0841	1.841	1.0465	A+	A-	A-
MATH	6	575157	6 D-S	2	6627	0.4465	0.2148	0.4436	0.2174	0.1177	0.0052	0.0013	0.3774	-0.0551	0.3796	-0.226	-0.2101	-0.0531	-0.0326	0.4381	0.0272	0.701	1.0074	0.811	1.012	A+	A-	A+
MATH	6	617052	7 A-N	1	6629	0.5404	0.1003	0.1445	0.5386	0.2134	0.003	0.0003	0.361	-0.1936	-0.235	0.362	-0.0915	-0.0371	-0.0104	-0.0307	0.027	1.601	1.0155	0.101	1.0015	A-	A+	A-
MATH	6	622365	7 A-N	2	6609	0.3612	0.224	0.3589	0.1761	0.2347	0.0048	0.0015	0.2435	-0.1112	0.2465	-0.1612	-0.0103	-0.0736	-0.0264	0.8575	0.0283	9.9011	1.1406	9.9012	1.2324	A-	A-	A+
MATH	6	501160	7 A-R	2	6601	0.4611	0.1952	0.4577	0.1616	0.178	0.0068	0.0008	0.3414	-0.1613	0.3452	-0.1569	-0.1132	-0.0824	-0.0074	0.3595	0.0272	4.511	1.0471	3.061	1.046	A-	A+	A+
MATH	6	574779	7 A-R	2	6611	0.484	0.3622	0.0776	0.0731	0.4811	0.005	0.0011	0.4111	-0.2016	-0.2238	-0.1707	0.4133	-0.0658	-0.0214	0.1594	0.027	-3.269	0.9681	-1.279	0.9808	A-	A+	A+
MATH	6	575152	7 B-E	2	6601	0.3457	0.1144	0.2747	0.2603	0.3431	0.0066	0.0009	0.1634	-0.1526	0.0277	-0.0829	0.1671	-0.0728	-0.0284	0.9418	0.0286	9.9012	1.2282	9.9013	1.2981	A-	A-	A-
MATH	6	624651	7 C-G	1	6569	0.49	0.484	0.1507	0.137	0.2161	0.012	0.0003	0.419	0.4218	-0.2209	-0.1618	-0.1649	-0.074	-0.0096	0.2319	0.0271	-3.629	0.9642	-3.179	0.9535	A+	A+	A+
MATH	6	560221	7 D-S	2	6596	0.6552	0.1522	0.6498	0.1037	0.086	0.008	0.0003	0.447	-0.2097	0.4521	-0.232	-0.2189	-0.0894	-0.0155	-0.7796	0.0286	-3.679	0.9573	-3.4691	0.9197	A-	A-	A-
MATH	6	581338	7 D-S	2	6575	0.4757	0.4703	0.1694	0.1825	0.1663	0.0113	0.0002	0.359	0.3599	-0.1073	-0.2055	-0.1467	-0.0507	-0.0014	0.2981	0.0271	2.251	1.0229	1.761	1.0261	A+	A-	A-
MATH	6	575149	8 A-N	2	6668	0.4295	0.1352	0.427	0.164	0.2679	0.0043	0.0015	0.3267	-0.1446	0.3295	-0.1634	-0.1076	-0.0677	-0.0242	0.5371	0.0272	5.2111	1.0564	5.1511	1.0779	A+	A-	A-
MATH	6	617600	8 A-N	1	6671	0.344	0.1416	0.3422	0.358	0.1528	0.0042	0.0012	0.405	-0.0778	0.4061	-0.2253	-0.1484	-0.0417	-0.0422	0.9718	0.0284	-2.679	0.966	0.161	1.0028	A-	A-	A-
MATH	6	492755	8 A-R	2	6669	0.4969	0.1407	0.1822	0.1773	0.4941	0.0043	0.0013	0.5028	-0.2961	-0.2036	-0.1717	0.5051	-0.0641	-0.0331	0.1788	0.0268	-9.8991	0.8703	-9.8992	0.8328	A-	A-	A-
MATH	6	622370	8 A-R	1	6666	0.402	0.1865	0.2041	0.2037	0.3996	0.0048	0.0013	0.4595	-0.1044	-0.2062	-0.2425	0.4602	-0.0473	-0.0201	0.6737	0.0275	-7.4091	0.919	-5.3291	0.9201	A-	A-	A-
MATH	6	501163	8 B-E	2	6651	0.3542	0.2132	0.279	0.3513	0.1482	0.0081	0.0003	0.1923	-0.0727	0.0304	0.1961	-0.1982	-0.0736	-0.0282	0.9232	0.0283	9.9012	1.1902	9.9013	1.2597	A-	A-	A+
MATH	6	574298	8 B-E	2	6628	0.564	0.5573	0.204	0.1495	0.0774	0.011	0.0007	0.4348	0.4352	-0.2318	-0.1726	-0.2087	-0.0461	-0.0239	-0.0908	0.0269	-7.0491	0.9347	-6.6291	0.8976	A+	A-	A-
MATH	6	574850	8 C-G	2	6679	0.3716	0.2348	0.3701	0.1925	0.1984	0.003	0.0012	0.2229	-0.1231	0.2253	-0.1516	0.0186	-0.0566	-0.0332	0.8246	0.0279	9.9012	1.16	9.9012	1.2248	A-	A-	A-
MATH	6	500239	8 D-S	2	6666	0.2349	0.1982	0.434	0.2335	0.1282	0.0048	0.0013	0.2669	-0.1727	-0.0174	0.2681	-0.0943	-0.0454	-0.0363	1.3246	0.03	-1.789	0.9732	4.5911	1.1036	A+	A-	A+
MATH	6	478718	9 A-N	1	6570	0.5116	0.5076	0.2315	0.1404	0.1127	0.0077	0.0002	0.4407	0.4426	-0.1663	-0.2176	-0.22	-0.0649	-0.0249	0.0804	0.027	-6.7091	0.9368	-6.2091	0.9084	A+	A+	A-
MATH	6	617502	9 A-N	1	6600	0.3709	0.109	0.3697	0.1965	0.3215	0.0024	0.0009	0.4166	-0.1257	0.4173	-0.1527	-0.2123	-0.0428	-0.0106	0.829	0.0281	-3.169	0.9623	-0.769	0.987	A-	A-	A-
MATH	6	614778	9 A-R	1	6583	0.7922	0.7875	0.0711	0.0677	0.0678	0.0044	0.0015	0.4353	0.4362	-0.2607	-0.274	-0.1537	-0.0422	-0.0297	-1.3378	0.0319	-9.5492	0.8482	-7.1792	0.7781	A+	A-	A-
MATH	6	624653	9 A-R	2	6589	0.3615	0.1641	0.3597	0.2315	0.2397	0.0042	0.0008	0.2414	-0.0445	0.2436	-0.1867	-0.0399	-0.0554	-0.0371	0.8811	0.0283	9.9011	1.1327	9.9012	1.2035	A-	A+	A+
MATH	6	560216	9 B-E	2	6551	0.5318	0.2384	0.1267	0.5261	0.098	0.0101	0.0006	0.4605	-0.198	-0.203	0.4594	-0.2459	-0.0416	-0.0082	0.1711	0.027	-8.5891	0.9188	-7.5891	0.8911	A+	A-	A-
MATH	6	582620	9 B-E	2	6583	0.226	0.2933	0.3558	0.2247	0.1204	0.0045	0.0014	0.1752	-0.1947	0.1827	0.1776	-0.2049	-0.0671	-0.0483	1.6801	0.0323	7.8811	1.148	9.9015	1.4832	A-	A+	A+
MATH	6	615356	9 C-G	2	6592	0.4281	0.1282	0.1628	0.4262	0.2783	0.0036	0.0009	0.4428	-0.1949	-0.2054	0.4445	-0.1648	-0.0672	-0.0311	0.5432	0.0274	-5.7691	0.9393	-4.4391	0.9344	A-	A-	A-
MATH	6	560220	9 D-S	2	6583	0.5133	0.1105	0.2318	0.1415	0.5103	0.005	0.0009	0.2672	-0.0708	-0.1074	-0.1804	0.2697	-0.0536	-0.0221	0.1355	0.027	9.9011	1.1013	9.9012	1.1734	A+	A-	A+
MATH	7	399250	0 A-N	1	56615	0.7366	0.0942	0.7332	0.1012	0.0669	0.0039	0.0007	0.4378	-0.2258	0.4405	-0.2264	-0.2265	-0.0525	-0.0272	-1.4708	0.0085	-9.8991	0.9163	-9.8992	0.8478	A+	A+	A+
MATH	7	477761	0 A-N	1	56647	0.7256	0.7226	0.083	0.0946	0.0957	0.0034	0.0007	0.5078	0.5098	-0.2313	-0.2735	-0.2743	-0.0542	-0.0213	-1.3178	0.0082	-9.8992	0.8386	-9.8993	0.706	A-	A-	A-
MATH	7	489967	0 A-N	1	56681	0.4498	0.073	0.3753	0.4483	0.0999	0.0032	0.0002	0.5875	-0.1308	-0.4826	0.5877	-0.0741	-0.0381	-0.0124	0.0695	0.0077	-9.8992	0.8409	-9.8992	0.8057	A-	A-	A-
MATH	7	490589	0 A-N	1	56623	0.3869	0.1436	0.234	0.2328	0.3851	0.004	0.0005	0.4776	-0.207	-0.1809	-0.1904	0.4783	-0.0428	-0.0183	0.3688	0.0079	-9.8991	0.9502	-9.8991	0.9379	A-	A+	A+
MATH	7	565849	0 A-N	2	56623	0.3999	0.2914	0.1722	0.3981	0.1338	0.0039	0.0006	0.3719	-0.0886	-0.2089	0.3736	-0.1756	-0.0564	-0.02	0.5076	0.008	9.9011	1.1474	9.9012	1.1952	A-	A+	A-
MATH	7	335200	0 A-R	2	56690	0.3854	0.3842	0.2002	0.2772	0.1351	0.0026	0.0007	0.3903	0.3913	-0.1882	-0.1094	-0.1856	-0.0406	-0.0213	0.3094	0.0078	8.021	1.0268	8.181	1.0369	A+	A+	A+
MATH	7	401321	0 A-R	2	56566	0.4957	0.2867	0.1439	0.493	0.0709	0.0044	0.0011	0.4825	-0.269	-0.1682	0.4845	-0.2204	-0.0605	-0.0292	-0.3622	0.0076	-9.899	0.9613	-9.8991	0.9367	A-	A+	A+
MATH	7	416190	0 A-R	2	56614	0.5339	0.2292	0.5314	0.1115	0.1233	0.0035	0.0012	0.4835	-0.2308	0.4854	-0.1663	-0.2699	-0.0516	-0.0321	-0.3537	0.0076	-9.8991	0.9283	-9.8991	0.8967	A-	A-	A-
MATH	7	417800	0 A-R	2	56557	0.4372	0.1335	0.4347	0.1355	0.2906	0.0046	0.001	0.3471	-0.2099	0.3495	-0.2514	-0.024	-0.0583	-0.0302	-0.0946	0.0076	9.9011	1.099	9.9011	1.1319	A+	A+	A+
MATH	7	478163	0 A-R	2	56538	0.4861	0.1043	0.4832	0.2782	0.1283	0.0053	0.0007	0.358	-0.1829	0.3604	-0.1327	-0.1792	-0.0577	-0.0235	-0.44	0.0076	9.9011	1.1092	9.9011	1.138	A+	A-	A+
MATH	7	478164	0 A-R	2	56590	0.4844	0.1585	0.1092	0.482	0.2452	0.0043	0.0007	0.3977	-0.1143	-0.2236	0.3999	-0.195	-0.0578	-0.0253	0.0517	0.0077	9.9011	1.0719	9.9011	1.084	A-	A-	A-
MATH	7	478167	0 A-R	2	56566	0.6711	0.1042	0.6674	0.0994	0.1235	0.0047	0.0008	0.4349	-0.215	0.4378	-0.2052	-0.2264	-0.0576	-0.0274	-1.0203	0.0079	-9.8991	0.9329	-9.8991	0.8852	A+	A-	A+
MATH	7	480344	0 A-R	2	56642	0.4098	0.2489	0.4081	0.1975	0.1414	0.0035	0.0007	0.2893	-0.2424	0.2909	-0.1301	0.0482	-0.0428	-0.024	0.2649	0.0078	9.9012	1.18	9.9012	1.2302	A-	A+	A+
MATH	7	493990	0 A-R	2	56604	0.6367	0.1058	0.1534	0.6337	0.1023	0.0039	0.0009	0.5369	-0.2682	-0.2738	0.5389	-0.2446	-0.0549	-0.03	-0.6749	0.0077	-9.8992	0.8281	-9.8992	0.7571	A-	A+	A-
MATH	7	500378	0 A-R	2	56657	0.2542	0.2819	0.221	0.24	0.2533	0.0031	0.0008	0.3782	-0.216	-0.1079	-0.0458	0.379	-0.0482	-0.021	1.0107	0.0086	-8.119	0.9645	3.121	1.0204	A+	A+	A-
MATH	7	502781	0 A-R	2	56581	0.3278	0.3261	0.3544	0.1401	0.1742	0.0046	0.0007	0.3502	0.3511	-0.1861	-0.1095	-0.0898	-0.0452	-0.0188	0.8506	0.0084	9.9012	1.15	9.9012	1.232	A-	A+	A+
MATH	7	581347	0 A-R	2	56640	0.4987	0.4966	0.2459	0.1379	0.1154	0.0036	0.0006	0.5405	0.5415	-0.2596	-0.2501	-0.2169	-0.0508	-0.0149	-0.1341	0.0076	-9.8991	0.8694	-9.8992	0.8332	A-	A+	A+
MATH	7	412773	0 B-E	1	56681	0.6682	0.0947	0.1445	0.6659	0.0915	0.0027	0.0007	0.4497	-0.2175	-0.2343	0.4516	-0.2215	-0.0463	-0.025	-1.0702	0.008	-9.8991	0.9296	-9.8991	0.8773	A+	A+	A+
MATH	7	412774	0 B-E	2	56632	0.4367	0.1956	0.1548	0.2105	0.4348	0.0034	0.0009	0.4558	-0.2156	-0.1459	-0.2078	0.457	-0.0502	-0.0202	0.1354	0.0077	-3.969	0.9877	-4.029	0.983	A+	A+	A+
MATH	7	413352	0 B-E	1	56708	0.7827	0.0433	0.1158	0.0576	0.7804	0.0024	0.0005	0.372	-0.1941	-0.2042	-0.2042	0.3736	-0.0369	-0.0178	-2.0231	0.0096	9.9012	1.1524	4.8811	1.0568	B+	A+	A-
MATH	7	478169	0 B-E	2	56680	0.515	0.1194	0.1151	0.2488	0.5132	0.0027	0.0008	0.5435	-0.2756	-0.1934	-0.2732	0.5445	-0.0439	-0.0231	-0.1252	0.0076	-9.8991	0.8652	-9.8992	0.829	A-	A+	A+
MATH	7	490977	0 B-E	1	56666	0.3606	0.3592	0.2378	0.2875	0.1117	0.0031	0.0006	0.476	0.4766	-0.1299	-0.2391	-0.1984	-0.041	-0.0147	0.319	0.0078	-9.8991	0.9307	-9.8991	0.9134	A-	A+	A+
MATH	7	502842	0 B-E	2	56659	0.6387	0.2163	0.6362	0.0836	0.06	0.003	0.0008	0.4356	-0.2292	0.4375	-0.2483	-0.186	-0.0438	-0.0274	-0.4346	0.0076	-9.899	0.9546	-9.8991	0.9096	A+	A+	A+
MATH	7	503046	0 B-E	1	56565	0.4938	0.1153	0.2271	0.1611	0.4911	0.0047	0.0008	0.5416	-0.2784	-0.2755	-0.1695	0.5431	-0.0608	-0.0251	-0.3996	0.0076	-9.8991	0.8768	-9.8992	0.8423	A+	A-	A-
MATH	7	565886	0 B-E	2	56630	0.5809	0.128	0.1262	0.1631	0.5783	0.0033	0.001	0.5208	-0.2341	-0.2412	-0.2596	0.522	-0.0461	-0.0286	-0.3028	0.0076	-9.8991	0.8829	-9.8992	0.8342	A+	A+	A+
MATH	7	581346	0 B-E	1	56697	0.381	0.3798	0.2469	0.238	0.1321	0.0025	0.0006	0.3622	0.3629	-0.1062	-0.1879	-0.1424	-0.0301	-0.0236	0.4185	0.0079	9.9011	1.0522	9.9011	1.0644	A-	A-	A-
MATH	7	398632	0 C-G	2	56703	0.3255	0.3245	0.1637	0.1873	0.3215	0.0025	0.0006	0.4959	0.4964	-0.0921	-0.1174	-0.3215	-0.0375	-0.0211	0.6279	0.0081	-9.8991	0.9131	-9.8991	0.9317	A+	A-	A+
MATH	7	404814	0 C-G	2	56633	0.3484	0.2157	0.2389	0.1942	0.3469	0.0034	0.0009	0.3631	-0.1686	-0.1034	-0.1431	0.3643	-0.0452	-0.0246	0.7189	0.0082	9.9011	1.1394	9.9012	1.1964	A+	A+	A+
MATH	7	412665	0 C-G	2	56581	0.3922	0.1361	0.3902	0.3692	0.0993	0.0045	0.0007	0.3937	-0.161	0.3953	-0.1634	-0.182	-0.0554	-0.0238	0.4834	0.008	9.9011	1.1027	9.9011	1.1437	A-	A+	A+
MATH	7	412667	0 C-G	1	56556	0.3955	0.1804	0.225	0.3932	0.1957	0.0048	0.0009	0.2924	-0.0829	-0.0271	0.2944	-0.2425	-0.0544	-0.0222	0.5856	0.0081	9.9012	1.2482	9.9013	1.3189	A-	A-	A+
MATH	7	417807	0 C-G	2	56543	0.4274	0.4248	0.1452	0.2895	0.1346	0.005	0.0009	0.2306	0.2332	-0.1658	-0.0549	-0.0807	-0.0507	-0.028	0.3256	0.0078	9.9013	1.2572	9.9013	1.3216	A-	A+	A+
MATH	7	478170	0 C-G	2	56643	0.5244	0.0928	0.245	0.1359	0.5222	0.0034	0.0007	0.5426	-0.26	-0.2252	-0.2792	0.5439	-0.055	-0.0202	-0.227	0.0076	-9.8991	0.8636	-9.8992	0.8355	A-	A-	A-
MATH	7	500372	0 C-G	2	56542	0.4583	0.4556	0.1991	0.2336	0.1059	0.005	0.0009	0.4744	0.4762	-0.2061	-0.1978	-0.2153	-0.0587	-0.0255	0.0355	0.0077	-9.8991	0.9466	-9.8991	0.9278	A-	A+	A+
MATH	7	574900	0 C-G	1	56679	0.5038	0.2738	0.1475	0.5021	0.0731	0.0026	0.0009	0.3154	-0.1676	-0.1719	0.317	-0.0768	-0.0406	-0.024	-0.2727	0.0076	9.9011	1.1205	9.9012	1.1818	A+	A+	A+
MATH	7	581349	0 C-G	2	56658	0.4095	0.4079	0.211	0.2121	0.1651	0.0033	0.0006	0.3339	0.3356	-0.1958	-0.0721	-0.1406	-0.0513	-0.0175	0.2676	0.0078	9.9011	1.1146	9.9011	1.1368	A+	A+	A+
MATH	7	399242	0 D-S	2	56659	0.3191	0.1998	0.3179	0.2546	0.2239	0.0032	0.0006	0.2747	-0.1387	0.2756	-0.0875	-0.0774	-0.0361	-0.0177	0.7585	0.0083	9.9012	1.1951	9.9013	1.2948	A-	A+	A+
MATH	7	415647	0 D-S	2	56717	0.4495	0.1775	0.2181	0.4482	0.1533	0.0023	0.0006	0.4847	-0.3012	-0.1509	0.4853	-0.1711	-0.0373	-0.0213	-0.0084	0.0077	-9.8991	0.9361	-9.8991	0.9182	A-	A-	A-
MATH	7	416195	0 D-S	2	56637	0.3994	0.3977	0.2821	0.1279	0.188	0.0038	0.0005	0.3331	0.3348	-0.0496	-0.248	-0.1409	-0.0533	-0.019	0.2034	0.0078	9.9011	1.0758	9.9011	1.1078	A-	A-	A-
MATH	7	480351	0 D-S	2	56668	0.4264	0.2271	0.2005	0.1438	0.4249	0.0024	0.0013	0.3558	-0.0254	-0.2131	-0.2217	0.3569	-0.0408	-0.0193	0.3387	0.0078	9.9011	1.1226	9.9011	1.1485	A-	A+	A-
MATH	7	493188	0 D-S	2	56654	0.2933	0.29	0.2192	0.2922	0.1947	0.0033	0.0007	0.3026	-0.1093	-0.2515	0.3038	0.0476	-0.0477	-0.0252	0.8411	0.0084	9.9011	1.1339	9.9013	1.2505	A+	A+	A+

MATH	7	574880	1 A-N	2	6489	0.4592	0.3659	0.4566	0.0843	0.0875	0.0049	0.0009	0.4381	-0.1782	0.4405	-0.2205	-0.2374	-0.0637	-0.0267	-0.1566	0.0169	-2.269	0.9853	-3.569	0.9672	A-	A+	A+
MATH	7	617138	1 A-N	1	6500	0.3377	0.1004	0.3363	0.2857	0.2735	0.0038	0.0003	0.5393	-0.0854	0.5395	-0.3274	-0.1769	-0.0416	0.0074	0.4608	0.0178	-9.8991	0.8714	-9.8991	0.8559	A-	A-	A-
MATH	7	575220	1 A-R	2	6490	0.4399	0.2569	0.4374	0.157	0.1429	0.0047	0.0009	0.3735	-0.1836	0.3752	-0.2098	-0.0723	-0.0453	-0.037	0.0069	0.017	9.9011	1.0809	9.5611	1.0919	A+	A+	A-
MATH	7	617919	1 A-R	2	6479	0.3613	0.3461	0.1321	0.1558	0.3587	0.0058	0.0015	0.3709	-0.1016	-0.2359	-0.1225	0.3736	-0.0697	-0.0326	0.5688	0.018	4.411	1.038	5.0111	1.0593	A-	A+	A-
MATH	7	480242	1 B-E	1	6467	0.3377	0.2562	0.1391	0.2609	0.3346	0.0084	0.0008	0.2237	-0.1287	-0.1599	0.0218	0.2254	-0.044	-0.0142	0.5904	0.0181	9.9012	1.179	9.9012	1.2347	A+	A-	A-
MATH	7	565851	1 B-E	2	6490	0.4849	0.4822	0.1524	0.1572	0.2025	0.0047	0.0009	0.4563	0.4586	-0.2332	-0.2404	-0.1312	-0.064	-0.0213	-0.1968	0.0169	-9.8991	0.9096	-9.8991	0.877	A-	A+	A+
MATH	7	630798	1 C-G	2	6475	0.3146	0.1645	0.3127	0.3121	0.2027	0.006	0.002	0.1971	-0.0003	-0.1321	0.1996	-0.0643	-0.0532	-0.0277	0.7385	0.0185	9.9013	1.2805	9.9014	1.4041	A-	A+	A+
MATH	7	478172	1 D-S	2	6492	0.5779	0.1273	0.5748	0.1232	0.1693	0.0043	0.0011	0.3225	-0.2458	0.3261	-0.2255	-0.0006	-0.0623	-0.0261	-0.6665	0.0169	4.071	1.0246	9.9012	1.1556	A+	A-	A-
MATH	7	490587	2 A-N	1	6300	0.3878	0.1829	0.1369	0.2905	0.3866	0.0025	0.0006	0.3847	-0.249	-0.0975	-0.1238	0.3849	-0.0205	-0.0179	0.4478	0.0188	-1.329	0.9894	0.051	1.0005	A-	A-	A+
MATH	7	581341	2 A-R	2	6274	0.5059	0.2869	0.1076	0.5022	0.096	0.007	0.0003	0.3283	-0.0685	-0.1872	0.3307	-0.2426	-0.0533	-0.0241	-0.3915	0.0182	9.8711	1.0655	9.9011	1.1206	A+	A-	A-
MATH	7	613065	2 A-R	2	6283	0.1534	0.1894	0.4302	0.1525	0.222	0.0054	0.0005	0.0169	-0.0954	-0.051	0.0183	0.1433	-0.0416	-0.0216	1.9043	0.0248	9.9013	1.2631	9.902	1.9991	A-	A+	A+
MATH	7	493993	2 B-E	1	6284	0.3918	0.1339	0.3896	0.3668	0.1041	0.0044	0.0013	0.3658	-0.1705	0.3673	-0.125	-0.1855	-0.0483	-0.027	0.4089	0.0188	8.4811	1.0683	9.2211	1.1006	A+	A-	A-
MATH	7	617923	2 B-E	2	6284	0.2279	0.3921	0.2266	0.2274	0.1483	0.0041	0.0016	0.0048	0.1862	0.0073	-0.1143	-0.117	-0.0434	-0.0433	1.2019	0.0211	9.9014	1.3692	9.9017	1.7255	A-	A-	A+
MATH	7	565888	2 C-G	2	6260	0.4722	0.1351	0.1158	0.4677	0.2718	0.0085	0.0009	0.2467	-0.2084	-0.1625	0.2498	0.0094	-0.0511	-0.0295	-0.1804	0.0182	9.9012	1.1583	9.9012	1.2099	A+	A-	A-
MATH	7	615279	2 C-G	2	6279	0.3856	0.1411	0.3831	0.275	0.1943	0.0049	0.0016	0.2488	-0.0965	0.2522	-0.1259	-0.0674	-0.0643	-0.0399	0.2609	0.0185	9.9012	1.1826	9.9012	1.2287	A+	A+	A-
MATH	7	617913	2 D-S	2	6284	0.5652	0.1283	0.1479	0.562	0.156	0.0046	0.0011	0.5279	-0.2554	-0.2256	0.5305	-0.2535	-0.0649	-0.0395	-0.5932	0.0184	-9.8991	0.8575	-9.8992	0.7843	A-	A-	A+
MATH	7	617834	3 A-N	1	6273	0.3671	0.1653	0.1459	0.3657	0.3192	0.0033	0.0005	0.3351	-0.2187	-0.1122	0.3364	-0.0814	-0.0483	-0.0216	0.3155	0.0187	9.9011	1.0897	9.9011	1.113	A-	A+	A+
MATH	7	629172	3 A-N	1	6261	0.4907	0.4879	0.2704	0.1642	0.0718	0.0049	0.0008	0.4612	0.462	-0.206	-0.2387	-0.1844	-0.0461	-0.0068	-0.1209	0.0183	-9.8991	0.9292	-9.3991	0.9066	A-	A-	A-
MATH	7	567234	3 A-R	1	6257	0.3625	0.2171	0.319	0.3602	0.0973	0.0064		0.3175	-0.2825	0.0562	0.3196	-0.1962	-0.0628		0.4368	0.0189	8.6611	1.0724	9.0411	1.104	A-	A-	A-
MATH	7	613074	3 A-R	2	6257	0.436	0.4332	0.2207	0.2018	0.1378	0.006	0.0003	0.3086	0.3099	-0.1269	-0.1277	-0.1344	-0.0417	-0.0082	0.3525	0.0188	9.3611	1.0758	8.5611	1.095	A+	A-	A-
MATH	7	493997	3 C-G	2	6254	0.2822	0.2274	0.2606	0.2249	0.2803	0.0057	0.0011	0.2696	-0.1383	-0.0357	-0.1061	0.2701	-0.0362	-0.0179	1.239	0.0214	8.0211	1.0954	9.9012	1.2266	A+	A+	A+
MATH	7	632827	3 C-G	2	6251	0.2036	0.1032	0.2022	0.5241	0.1633	0.0062	0.0011	0.2242	-0.1245	0.2263	0.0501	-0.1943	-0.0673	-0.0275	1.6042	0.0232	4.3111	1.0599	9.9013	1.3422	A-	A-	A-
MATH	7	480352	3 D-S	2	6256	0.562	0.1093	0.2293	0.5584	0.0966	0.0054	0.0011	0.4445	-0.2063	-0.2444	0.4468	-0.1682	-0.0563	-0.0289	-0.5485	0.0184	-9.8991	0.9232	-9.8991	0.8715	A-	A-	A-
MATH	7	581343	3 D-S	2	6245	0.2938	0.1698	0.2463	0.2843	0.2914	0.0079	0.0003	0.0783	-0.1076	0.0402	-0.02	0.0809	-0.0521	0.0003	1.028	0.0206	9.9013	1.2758	9.9015	1.4572	A-	A-	A-
MATH	7	480343	4 A-R	2	6185	0.3088	0.3061	0.1348	0.3794	0.171	0.0077	0.001	0.1448	0.1482	-0.0667	0.0233	-0.1336	-0.0692	-0.0141	0.7935	0.0306	9.9013	1.271	9.9014	1.3851	A+	A+	A+
MATH	7	630678	4 A-R	2	6190	0.4633	0.2004	0.4597	0.1641	0.168	0.0072	0.0006	0.4082	-0.1836	0.4098	-0.2229	-0.1153	-0.0588	-0.0023	-0.0139	0.0282	-1.439	0.9842	-1.879	0.9709	A+	A+	A-
MATH	7	567233	4 B-E	1	6196	0.5608	0.1436	0.1391	0.1534	0.557	0.0054	0.0014	0.5063	-0.2604	-0.2226	-0.2172	0.5087	-0.0664	-0.0302	-0.5445	0.0281	-9.8991	0.8693	-9.8992	0.8172	A+	A-	A+
MATH	7	617399	4 B-E	1	6208	0.471	0.4687	0.3249	0.1454	0.0561	0.0045	0.0005	0.3496	0.351	-0.1244	-0.2139	-0.1661	-0.0421	-0.0204	-0.058	0.0281	4.391	1.0483	3.6511	1.058	A+	A-	A-
MATH	7	493192	4 C-G	1	6202	0.2878	0.1063	0.5108	0.0909	0.2861	0.0045	0.0014	0.4922	-0.2039	-0.2185	-0.1604	0.4932	-0.0519	-0.0322	0.9118	0.0312	-7.0691	0.8927	-5.6491	0.8764	A+	A-	A-
MATH	7	560279	4 C-G	2	6184	0.2924	0.2898	0.3065	0.2818	0.1132	0.0075	0.0013	0.0117	0.0163	0.2111	-0.1268	-0.1276	-0.075	-0.0199	0.8897	0.0311	9.9014	1.4153	9.9016	1.6201	A-	A-	A+
MATH	7	576068	4 C-G	2	6199	0.493	0.1773	0.1693	0.4898	0.1572	0.0061	0.0003	0.3566	-0.1334	-0.1839	0.3589	-0.1506	-0.0563	-0.0187	-0.1718	0.028	2.921	1.031	3.1611	1.0506	A+	A+	A+
MATH	7	574909	4 D-S	2	6165	0.1061	0.2682	0.418	0.1971	0.1048	0.0112	0.0006	0.1051	-0.0776	0.0058	0.016	0.107	-0.0651	-0.03	2.3874	0.0447	3.7311	1.1191	9.902	2.0334	A-	A-	A-
MATH	7	490584	5 A-N	1	6298	0.4657	0.4639	0.2553	0.1234	0.1536	0.0036	0.0003	0.3151	0.3154	-0.1058	-0.2117	-0.1109	-0.0211	-0.0156	-0.0099	0.0279	7.0211	1.0764	5.5411	1.0876	A-	A-	A-
MATH	7	565883	5 A-R	2	6284	0.257	0.3837	0.2554	0.1447	0.21	0.0049	0.0013	0.3785	-0.1618	0.3796	-0.1928	-0.0356	-0.0518	-0.0262	1.1229	0.032	-0.319	0.9944	2.7811	1.0708	A-	A-	A+
MATH	7	567231	5 A-R	2	6258	0.3097	0.2024	0.3502	0.3065	0.1306	0.01	0.0003	0.2551	-0.1174	0.017	0.2574	-0.2174	-0.0615	-0.0114	0.8121	0.0304	8.3311	1.1293	9.9012	1.2421	A-	A+	A+
MATH	7	617920	5 A-R	2	6281	0.2672	0.2654	0.3196	0.2186	0.1898	0.0055	0.0011	0.1314	0.1338	0.0387	-0.0675	-0.1128	-0.0569	-0.0245	1.0595	0.0317	9.9013	1.2739	9.9014	1.4254	A-	A+	A+
MATH	7	632835	5 B-E	2	6272	0.313	0.2611	0.2309	0.3105	0.1895	0.0076	0.0005	0.2369	-0.1276	-0.1225	0.2385	0.0038	-0.0483	-0.0001	0.7893	0.0302	9.9012	1.1547	9.9012	1.2452	A+	A-	A-
MATH	7	567235	5 C-G	1	6281	0.428	0.1129	0.1602	0.2951	0.4251	0.0059	0.0008	0.3625	-0.2354	-0.1905	-0.0661	0.3652	-0.0679	-0.0282	0.1235	0.0281	1.961	1.022	1.631	1.0254	A+	A-	A-
MATH	7	567236	5 C-G	1	6279	0.4556	0.1786	0.2587	0.4525	0.1033	0.006	0.0009	0.4241	-0.2115	-0.2061	0.4263	-0.1161	-0.0619	-0.0251	-0.0773	0.0278	-3.829	0.9606	-4.3591	0.9341	A+	A+	A-
MATH	7	503043	5 D-S	2	6282	0.3488	0.1401	0.3527	0.1542	0.3465	0.0052	0.0013	0.2619	-0.0983	-0.057	-0.1655	0.2638	-0.048	-0.0266	0.5884	0.0294	9.7111	1.1367	9.7912	1.1897	A+	A-	A-
MATH	7	477763	6 A-N	2	6276	0.3577	0.1593	0.1329	0.3548	0.3448	0.007	0.0013	0.1409	-0.2569	-0.2446	0.1453	0.2416	-0.0718	-0.0371	0.4571	0.029	9.9013	1.2645	9.9014	1.3493	A-	A+	A+
MATH	7	574884	6 A-R	2	6263	0.5585	0.2058	0.1043	0.5528	0.1269	0.01	0.0003	0.3964	-0.196	-0.2405	0.3991	-0.1187	-0.0595	-0.0139	-0.4503	0.0279	-1.979	0.9802	-1.429	0.9755	A+	A-	A-
MATH	7	632831	6 A-R	2	6280	0.6083	0.6037	0.1637	0.1203	0.1048	0.0068	0.0008	0.4688	0.4694	-0.174	-0.2497	-0.2604	-0.0432	-0.0227	-0.7	0.0281	-9.8991	0.8866	-7.6391	0.8579	A+	A+	A+
MATH	7	490984	6 B-E	2	6314	0.2764	0.2497	0.2306	0.2418	0.2758	0.0021	0.0002	0.0661	-0.0101	0.0208	-0.0761	0.0671	-0.0389	-0.002	0.9939	0.0313	9.9014	1.351	9.9016	1.5899	A-	A+	A+
MATH	7	493996	6 B-E	2	6286	0.5213	0.104	0.5179	0.2209	0.1506	0.0063	0.0003	0.4291	-0.1308	0.4322	-0.2411	-0.1954	-0.0725	-0.0224	-0.3687	0.0278	-4.709	0.953	-3.9991	0.9347	A-	A-	A-
MATH	7	630681	6 B-E	2	6290	0.4677	0.2448	0.1348	0.1495	0.4649	0.0049	0.0011	0.4954	-0.1675	-0.2869	-0.2075	0.4957	-0.0407	-0.0111	-0.0225	0.028	-9.8991	0.8948	-9.1491	0.8642	A+	A-	A+
MATH	7	613069	6 C-G	2	6280	0.3844	0.4145	0.3815	0.1133	0.0831	0.006	0.0016	0.3418	-0.168	0.3439	-0.1754	-0.0839	-0.0669	-0.0085	0.3988	0.0289	5.0611	1.0649	5.1711	1.0907	A-	A-	A-
MATH	7	632830	6 D-S	2	6296	0.405	0.403	0.2369	0.2543	0.1008	0.0041	0.0009	0.4446	0.4461	-0.0561	-0.3025	-0.1946	-0.0596	-0.0285	0.2876	0.0286	-3.349	0.9601	-2.749	0.9555	A-	A+	A-
MATH	7	574879	7 A-N	1	6245	0.3198	0.3163	0.2993	0.1577	0.2157	0.0108	0.0002	0.3931	0.3942	-0.0989	-0.196	-0.1463	-0.0603	-0.0174	0.5027	0.0293	-3.569	0.9535	-1.469	0.9738	A-	A-	A-
MATH	7	617734	7 A-N	1	6282	0.4105	0.4113	0.4085	0.1041	0.0711	0.0041	0.001	0.615	-0.4896	0.6157	-0.0883	-0.1179	-0.0551	-0.0309	0.2571	0.0286	-9.8992	0.7806	-9.8993	0.7365	A-	A-	A-
MATH	7	565884	7 A-R	2	6278	0.2201	0.5971	0.2189	0.125	0.0534	0.0049	0.0008	0.1103	0.1527	0.1125	-0.2302	-0.1791	-0.0616	-0.0266	1.3695	0.0338	9.9013	1.2568	9.9016	1.6327	A-	A+	A+
MATH	7	575219	7 A-R	1	6266	0.3581	0.2496	0.3554	0.1888	0.1986	0.0063	0.0013	0.2126	0.0678	0.2149	-0.1785	-0.1438	-0.0473	-0.0357	0.5354	0.0294	9.9012	1.2141	9.9013	1.2867	A-	A+	A-
MATH	7	503047	7 B-E	1	6266	0.3854	0.3434	0.1391	0.3825	0.1275	0.0062	0.0014	0.3455	-0.1209	-0.1944	0.3469	-0.1186	-0.0444	-0.0236	0.3914	0.0289	4.9411	1.0639	5.0211	1.0881	A+	A-	A-
MATH	7	477767	7 C-G	2	6278	0.3369	0.2092	0.2835	0.1666	0.335	0.0051	0.0006	0.3217	-0.2253	0.0314	-0.1925	0.3223	-0.0392	-0.005	0.6474	0.0298	6.5911	1.0951	6.7711	1.1366	A+	A-	A-
MATH	7	503044	7 C-G	2	6267	0.3582	0.2821	0.3556	0.1516	0.2034	0.0073	0.0002	0.201	0.1175	0.2024	-0.2193	-0.1682	-0.0379	-0.0114	0.7045	0.03	9.9013	1.2821	9.9014	1.3754	A-	A+	A+
MATH	7	503040	7 D-S	2	6274	0.5218	0.1454	0.1815	0.5185	0.1482	0.0057	0.0006	0.4893	-0.2558	-0.2192	0.4911	-0.1845	-0.0606	-0.0258	-0.288	0.0279	-9.8991	0.8945	-9.0191	0.8609	A-	A-	A-
MATH	7	480346	8 A-N	2	6209	0.191	0.4764	0.1798	0.1895	0.1465	0.007	0.0008	0.1021	-0.016	-0.075	0.1041	0.0034	-0.0502	-0.0344	1.5678	0.0355	9.9012	1.2369	9.9016	1.6085	A-	A-	A+
MATH	7	617382	8 A-N	1	6238	0.2546	0.0628	0.6064	0.2538	0.0738	0.003	0.0002	0.3928	-0.1072	-0.27	0.3937	-0.0405	-0.0471	-0.0161	1.1144	0.0322	-0.539	0.9907	0.261	1.0063	A-	A-	A-
MATH	7	496119	8 A-R	2	6203	0.2143	0.3594	0.1219	0.2975	0.2124	0.0075	0.0013	0.2316	-0.1434	-0.2008	0.1022	0.2343	-0.0826	-0.0252	1.3961	0.0341	5.9011	1.1187	9.9014	1.3662	A+	A+	A-
MATH	7	560205	8 A-R	1	6203	0.3742	0.3709	0.1274	0.2001	0.2929	0.008	0.0008	0.3225	0.3257	-0.1771	-0.3216	0.0824	-0.0703	-0.0306	0.6368	0.0298	8.9911	1.1303	9.5612	1.1925	A-	A+	A+
MATH	7	496121	8 B-E	2	6220	0.2547	0.3624	0.2531	0.1916	0.1868	0.0059	0.0002	0.0577	0.1171	0.0603	-0.131	-0.0668	-0.0623	-0.0101	1.1185	0.0322	9.9013	1.3311	9.9016	1.5996	A-	A-	A+
MATH	7	496123	8 C-G	2	6210	0.3942	0.1441	0.1612	0.3912	0.2958	0.0062	0.0014	0.313	-0.0521	-0.2134	0.3165	-0.1111	-0.0744	-0.0303	0.3353	0.0288	6.5811	1.0831	8.0411	1.1379	A-	A+	A+
MATH	7	565848	8 D-S	2	6214	0.4186	0.1301	0.4156	0.1643	0.283	0.0062	0.0008	0.2749	-0.1743	0.2774	-0.2218	0.0201	-0.0534	-0.0258	0.2111	0.0285	9.9011	1.1303	9.9012	1.1802	A+	A+	A-
MATH	7	574904	8 D-S	2	6204	0.3967	0.093	0.3333	0.1718	0.3933	0.0085	0.0002	0.4199	-0.1826	-0.1269	-0.2303	0.4223	-0.0703	-0.0089	0.6274	0.0298	4.6611	1.066	4.6511	1.0904	A-	A-	A-
MATH	7	615280	9 A-N	1	6231	0.4935	0.1921	0.124	0.187	0.4903	0.0056	0.001	0.4703	-0.203	-0.2219	-0.2002	0.4712	-0.0477	-0.0263	-0.1245	0.0279	-8.8991	0.9098	-8.2991	0.8781	A+	A-	A-
MATH	7	617753	9 A-N	1	6251	0.554	0.1527	0.5521	0.2138	0.078	0.003	0.0003	0.3767	-0.2237	0.3777	-0.1202	-0.2089	-0.0329	-0.014	-0.4232	0.0279	-0.029	0.9996	-0.529	0.991	A-	A-	A-
MATH	7	493185	9 A-R	1	6214	0.4546	0.1924	0.147	0.2009	0.4504	0.0081	0.0011	0.2927	-0.1088	-0.1565	-0.1086	0.2945	-0.0529	0.0028	0.0697	0.0281	8.7111	1.0989	6.7311	1.1059	A+	A-	A-
MATH	7	574883	9 A-R	2	6237	0.4247	0.0922	0.3737	0.4224	0.1062	0.0045	0.0011	0.3147	-0.1466	-0.0725	0.3173	-0.2412	-0.06	-0.0279	0.3548	0.0287	9.3611	1.1178	8.9512	1.1533	A+	A+	A+
MATH	7	574887	9 B-E	2	6237	0.511	0.227	0.5081	0.1427	0.1165	0.0048	0.0008	0.485	-0.1743	0.4871	-0.3027	-0.1864	-0.0561	-0.0322	-0.0311	0.028	-8.6291	0.9105	-7.4591	0.8908	A+	A-	A+
MATH	7	632829	9 B-E	2	6230	0.3188	0.2215	0.3166	0.284	0.1712	0.0067		0.1694	-0.0739	0.1706	0.0056	-0.1277	-0.0374		0.766	0.0301	9.9012	1.227	9.9013	1.3365	A+	A+	A+
MATH	7	500374	9 C-G	2	6228	0.3529	0.3504	0.195	0.2618	0.1857	0.0053	0.0018	0.1307	0.1329	-0.0254	-0.1108	-0.0021	-0.0434	-0.0167	0.5801	0.0294	9.9013	1.2774	9.9014	1.3927	A+	A-	A+
MATH	7	615281	9 D-S	2	6224	0.2441	0.2632	0.2828	0.2422	0.2041	0.0059	0.0018	0.0675	-0.0096	-0.0435	0.0696	-0.004	-0.0519	-0.0094	1.218	0.0326	9.9013	1.3077	9.9016	1.5839	A-	A+	A-
MATH	8	312493	0 A-N	2	54591	0.5126	0.511	0.2109	0.1529	0.1221	0.0024	0.0007	0.5137	0.5147	-0.2246	-0.2458	-0.2276	-0.0427	-0.0227	-0.4781	0.0077	-9.8991	0.9084	-9.8991	0.8778	A+	A+	A+
MATH	8	398631	0 A-N	2	54567	0.3945	0.202	0.1558	0.3931	0.2455	0.0029	0.0007	0.3488	-0.1908	-0.211	0.3502	-0.0342	-0.0494	-0.02	0.316	0.0081	9.9011	1.147	9.9012	1.2042	A-	A+	A+
MATH	8	404822	0 A-N	2	54618	0.3819	0.1297	0.3809	0.2865	0.2002	0.0022	0.0004	0.2078	-0.0629	0.2089	-0.0714	-0.115	-0.0332	-0.022	0.4295	0.0082	9.9013	1.3012	9.9014	1.4373	A+	A+	A+
MATH	8	413140	0 A-N	2	54620	0.6442	0.6425	0.2009	0.0986	0.0554	0.0017	0.0009	0.4801	0.4813	-0.2918	-0.2125	-0.2104	-0.0368	-0.0256	-1.1118	0.008	-9.8991	0.9211	-9.8991	0.8776	A+	A-	A+
MATH	8	480711	0 A-N	2	54522	0.3873	0.3856	0.2828	0.1376	0.1896	0.0035	0.0009	0.4876	0.4886	-0.1784	-0.2357	-0.1851	-0.0484	-0.0287	0.1074	0.0079	-9.8991	0.9131	-9.8991	0.9065	A+	A+	A+
MATH	8	489965	0 A-N	1	54609	0.4163	0.1362	0.4151	0.2661	0.1799	0.0025	0.0003	0.2204	-0.0852	0.2214	-0.1503	-0.0302	-0.0338	-0.0105	0.0654	0.0079	9.9012	1.2431	9.9013	1.2982	A-	A+	A+
MATH	8	574931	0 A-N	1	54506	0.6297	0.134	0.6268	0.1292	0.1053	0.0041	0.0006	0.5361	-0.2601	0.5381	-0.287	-0.2312	-0.0599	-0.0231	-1.0405	0.0079	-9.8991	0.8641	-9.8992	0.7758	A+	A+	A+
MATH	8	575467	0 A-N	1	54580	0.4837	0.1146	0.4821	0.1813	0.2187	0.003	0.0003	0.4228	-0.1763	0.4241	-0.1262	-0.2521	-0.0472	-0.0196	-0.3237	0.0077	2.321	1.0066	2.161	1.0094	A+	A-	A+
MATH	8	303001	0 B-E	2	54618	0.4038	0.2358	0.1743	0.4028	0.1845	0.002	0.0006	0.3483	-0.1364	-0.2033	0.349	-0.0882	-0.0301	-0.0227	0.1974	0.008	9.9011	1.1139	9.9011	1.143	A-	A+	A+
MATH	8	314878	0 B-E	2	54614	0.3451	0.1824	0.2538	0.2169	0.3442	0.0022	0.0005	0.4293	-0.0756	-0.231	-0.1758	0.4297	-0.0317	-0.0216	0.3381	0.0081	-7.779	0.9723	-0.529	0.9974	A+	A+	A+
MATH	8	319322	0 B-E	2	54547	0.3556	0.1995	0.2729	0.1695	0.3542	0.0032	0.0008	0.2748	-0.1466	-0.1482	-0.0109	0.2764	-0.0517	-0.0237	0.5798	0.0084	9.9012	1.2469	9.9013	1.3449	A+	A+	A+
MATH	8	335215	0 B-E	2	54593	0.551	0.5493	0.1821	0.1839	0.0816	0.0026	0.0005	0.4332	0.4344	-0.2305	-0.2012	-0.1706	-0.038	-0.026	-0.5581	0.0077	-8.159	0.9779	-7.169	0.9668	A-	A+	A+

MATH	8	412783	0	B-E	2	54486	0.5416	0.0875	0.1613	0.2073	0.5389	0.0043	0.0008	0.3931	-0.1992	-0.1805	-0.1724	0.3958	-0.0607	-0.0283	-0.5651	0.0077	7.231	1.0198	2.911	1.0137	A+	A+	A+
MATH	8	412785	0	B-E	2	54612	0.5202	0.1612	0.1712	0.5187	0.1461	0.0021	0.0006	0.5194	-0.2535	-0.2483	0.5202	-0.2007	-0.0365	-0.0241	-0.434	0.0077	-9.8991	0.9165	-9.8991	0.8717	A-	A+	A+
MATH	8	413594	0	B-E	2	54619	0.5241	0.5228	0.1542	0.2435	0.0769	0.0023	0.0003	0.3887	0.3896	-0.1928	-0.1809	-0.1703	-0.0353	-0.0159	-0.4972	0.0077	9.901	1.0319	4.811	1.0222	A+	A+	A+
MATH	8	413597	0	B-E	2	54612	0.4888	0.2588	0.1186	0.1324	0.4874	0.0021	0.0007	0.4809	-0.1909	-0.2525	-0.216	0.4817	-0.038	-0.0226	-0.2299	0.0077	-9.8991	0.9484	-9.8991	0.9344	A-	A+	A+
MATH	8	416556	0	B-E	1	54605	0.5208	0.5193	0.1948	0.1758	0.1073	0.0023	0.0006	0.4346	0.4355	-0.2039	-0.1926	-0.198	-0.0359	-0.0223	-0.2774	0.0077	-6.489	0.9815	-9.859	0.958	A+	A+	A+
MATH	8	479791	0	B-E	1	54608	0.5472	0.0633	0.0529	0.3353	0.5456	0.0024	0.0005	0.34	-0.2131	-0.1968	-0.1524	0.341	-0.0346	-0.0104	-0.5803	0.0077	9.9011	1.0772	9.9011	1.1076	A+	A+	A+
MATH	8	489553	0	B-E	1	54605	0.309	0.3081	0.3522	0.1417	0.195	0.0024	0.0005	0.4354	0.4357	-0.1097	-0.1634	-0.227	-0.0311	-0.0138	0.3254	0.0081	-9.8991	0.9259	-9.8991	0.919	A-	A+	A-
MATH	8	565869	0	B-E	1	54560	0.6351	0.1122	0.1039	0.6328	0.1474	0.0031	0.0006	0.4899	-0.2298	-0.2511	0.4921	-0.2377	-0.0582	-0.0234	-0.8907	0.0078	-9.8991	0.8833	-9.8992	0.8354	A+	A-	A-
MATH	8	574469	0	B-E	2	54468	0.4794	0.1535	0.4769	0.1634	0.2008	0.0046	0.0008	0.4336	-0.1963	0.4358	-0.2589	-0.1156	-0.0625	-0.0239	-0.1417	0.0078	1.001	1.003	-1.779	0.9924	A+	A+	A+
MATH	8	416553	0	B-F	2	54630	0.5983	0.2067	0.5968	0.1111	0.083	0.0019	0.0005	0.4387	-0.1877	0.4398	-0.2532	-0.2104	-0.0365	-0.0229	-0.8383	0.0078	-9.899	0.9533	-9.8991	0.9298	A-	A-	A+
MATH	8	494636	0	B-F	2	54552	0.4409	0.1852	0.2235	0.1482	0.4392	0.003	0.0009	0.4549	-0.1886	-0.1851	-0.2044	0.4562	-0.0474	-0.0267	0.1197	0.0079	4.131	1.0136	2.301	1.0103	A+	A-	A-
MATH	8	495725	0	B-F	2	54546	0.5628	0.2085	0.5606	0.1187	0.1082	0.0032	0.0007	0.4975	-0.1894	0.499	-0.2979	-0.228	-0.051	-0.0247	-0.6182	0.0077	-9.8991	0.9045	-9.8991	0.8666	A-	A+	A+
MATH	8	502450	0	B-F	2	54536	0.5142	0.1451	0.1593	0.512	0.1794	0.0035	0.0007	0.4248	-0.1787	-0.2233	0.4265	-0.169	-0.0525	-0.0223	-0.2251	0.0077	7.341	1.0215	1.201	1.0051	A+	A+	A+
MATH	8	503514	0	B-F	2	54562	0.4433	0.2	0.4416	0.2207	0.134	0.0031	0.0005	0.4434	-0.1534	0.4444	-0.2184	-0.1932	-0.0429	-0.0219	0.091	0.0079	6.511	1.0213	6.081	1.0273	A-	A+	A+
MATH	8	503515	0	B-F	2	54562	0.7382	0.7355	0.1087	0.09	0.0623	0.0029	0.0008	0.4967	0.4992	-0.249	-0.2852	-0.2373	-0.055	-0.0288	-1.5658	0.0085	-9.8992	0.8436	-9.8993	0.7224	A-	A-	A-
MATH	8	324086	0	C-G	2	54629	0.4614	0.1475	0.1763	0.2134	0.4603	0.0019	0.0006	0.3607	-0.2001	-0.1137	-0.156	0.3617	-0.0374	-0.0206	-0.182	0.0078	9.9011	1.0751	9.9011	1.0991	A-	A-	A+
MATH	8	413599	0	C-G	2	54563	0.4945	0.1956	0.4927	0.2325	0.0756	0.0031	0.0006	0.4384	-0.2342	0.4398	-0.157	-0.2169	-0.0481	-0.0269	-0.4537	0.0077	-0.469	0.9987	-5.399	0.9759	A-	A+	A+
MATH	8	416364	0	C-G	2	54481	0.4983	0.0757	0.1454	0.4957	0.2781	0.0042	0.0009	0.4864	-0.1831	-0.2667	0.4884	-0.2163	-0.0612	-0.0287	-0.6506	0.0077	-9.899	0.9669	-9.8991	0.9194	A-	A+	A-
MATH	8	488686	0	C-G	2	54611	0.4049	0.2175	0.4038	0.1856	0.1903	0.0023	0.0005	0.4499	-0.2343	0.4507	-0.2043	-0.1085	-0.0427	-0.019	0.1266	0.0079	-5.399	0.9823	-3.939	0.9824	A-	A-	A-
MATH	8	502453	0	C-G	2	54466	0.4139	0.2737	0.1722	0.4117	0.1371	0.0048	0.0006	0.3141	-0.0152	-0.2015	0.3166	-0.1976	-0.0638	-0.0235	0.1972	0.008	9.9012	1.1881	9.9012	1.2336	A-	A+	A+
MATH	8	569269	0	C-G	1	54599	0.4892	0.4878	0.1453	0.196	0.168	0.0024	0.0006	0.3645	0.3657	-0.1916	-0.1513	-0.1411	-0.0385	-0.0243	-0.5522	0.0077	9.9011	1.0774	9.9011	1.1229	A+	A+	A+
MATH	8	335870	0	D-S	2	54607	0.4227	0.2137	0.2151	0.4215	0.1468	0.0021	0.0008	0.3605	-0.1631	-0.1552	0.3616	-0.1284	-0.0418	-0.0196	0.2542	0.008	9.9011	1.1278	9.9012	1.1571	A+	A+	A+
MATH	8	335871	0	D-S	2	54564	0.4836	0.2115	0.1836	0.4818	0.1195	0.0029	0.0007	0.4978	-0.2278	-0.2138	0.4989	-0.2171	-0.0477	-0.0189	-0.1979	0.0078	-9.8991	0.9313	-9.8991	0.9127	A-	A-	A-
MATH	8	399393	0	D-S	2	54630	0.6303	0.0768	0.1532	0.1388	0.6287	0.0019	0.0005	0.4193	-0.1152	-0.2203	-0.2631	0.4205	-0.0394	-0.0199	-0.9218	0.0078	-9.8991	0.9449	-0.479	0.9973	A+	A+	A-
MATH	8	416365	0	D-S	2	54556	0.686	0.0665	0.0836	0.6834	0.1627	0.0033	0.0005	0.3771	-0.2393	-0.2158	0.3798	-0.1456	-0.0527	-0.0253	-1.0829	0.008	-9.8991	0.9301	-1.519	0.9906	A-	A-	A-
MATH	8	488719	0	D-S	1	54490	0.4565	0.2308	0.1221	0.188	0.4542	0.0041	0.0009	0.2274	-0.0859	-0.0753	-0.1261	0.2304	-0.0605	-0.0253	-0.4794	0.0077	9.9012	1.2092	9.9015	1.4645	A+	A+	A-
MATH	8	503520	0	D-S	2	54607	0.4778	0.4764	0.128	0.1464	0.2463	0.0023	0.0006	0.4372	0.4378	-0.23	-0.2237	-0.1407	-0.0357	-0.0164	-0.1121	0.0078	1.761	1.0053	0.251	1.0011	A-	A-	A-
MATH	8	574972	0	D-S	2	54641	0.3749	0.191	0.1683	0.374	0.2645	0.0016	0.0006	0.2877	-0.1528	-0.1951	0.2884	-0.0111	-0.0273	-0.019	0.2519	0.008	9.9012	1.1717	9.9012	1.2412	A+	A-	A+
MATH	8	495718	1	A-N	1	6222	0.3947	0.4061	0.3927	0.1092	0.0868	0.0037	0.0014	0.4815	-0.2797	0.4827	-0.279	-0.0249	-0.05	-0.0352	0.026	0.0175	-9.8991	0.875	-9.8991	0.8605	A+	A-	A-
MATH	8	617260	1	A-N	1	6231	0.3775	0.2199	0.3761	0.1612	0.2392	0.0032	0.0005	0.4164	-0.2133	0.4174	-0.1148	-0.1611	-0.0466	-0.0142	0.1814	0.0178	3.431	1.0269	4.271	1.0453	A-	A-	A-
MATH	8	503513	1	B-E	2	6217	0.58	0.1493	0.5766	0.1784	0.0897	0.0051	0.0008	0.417	-0.1339	0.42	-0.2365	-0.2234	-0.0627	-0.0323	-0.6712	0.0171	-9.8991	0.931	-9.3891	0.9036	A-	A-	A-
MATH	8	615384	1	B-E	2	6219	0.3391	0.1517	0.1676	0.3372	0.3379	0.0053	0.0003	0.3396	-0.1096	-0.157	0.3415	-0.1241	-0.0595	-0.0269	0.2324	0.0179	9.9011	1.108	9.9012	1.1533	A-	A+	A+
MATH	8	569261	1	B-F	2	6232	0.7718	0.0435	0.1445	0.7691	0.0393	0.0032	0.0003	0.4259	-0.1665	-0.3076	0.4293	-0.1796	-0.059	-0.0303	-1.8323	0.0195	-9.8991	0.8663	-9.8993	0.7236	A-	A-	A-
MATH	8	574969	1	B-F	1	6214	0.3098	0.1893	0.3078	0.1909	0.3056	0.0061	0.0003	0.2701	0.0075	0.2711	-0.1095	-0.177	-0.0393	-0.0286	0.4268	0.0183	9.9012	1.1531	9.9012	1.2031	A+	A+	A-
MATH	8	618647	1	C-G	2	6217	0.2442	0.2917	0.2427	0.3411	0.1186	0.0056	0.0003	0.0612	-0.0689	0.0626	0.1214	-0.1553	-0.0348	-0.0127	0.8692	0.0197	9.9013	1.3308	9.9016	1.5873	A-	A+	A+
MATH	8	625331	1	D-S	2	6224	0.4687	0.1637	0.18	0.185	0.4664	0.0032	0.0016	0.5023	-0.1866	-0.2534	-0.208	0.5038	-0.0474	-0.037	-0.2188	0.0172	-9.8991	0.8665	-9.8992	0.8367	A-	A-	A-
MATH	8	618000	2	A-N	1	6021	0.468	0.326	0.1337	0.0696	0.4656	0.004	0.0012	0.5405	-0.2262	-0.3361	-0.1794	0.5416	-0.0534	-0.0217	-0.159	0.0185	-9.8991	0.8522	-9.8992	0.8166	A+	A-	A+
MATH	8	415802	2	B-E	1	6027	0.4085	0.3083	0.1725	0.4068	0.1082	0.0033	0.0008	0.4508	-0.1523	-0.2806	0.4514	-0.1364	-0.0407	-0.0243	-0.1575	0.0185	-5.389	0.9631	-4.539	0.9554	A+	A-	A+
MATH	8	479775	2	B-E	1	6034	0.4067	0.2206	0.1611	0.4055	0.2098	0.0026	0.0003	0.4466	-0.1527	-0.146	0.4471	-0.2467	-0.0292	-0.0311	0.2897	0.0191	-5.139	0.959	-5.0591	0.9456	A-	A-	A-
MATH	8	621934	2	B-E	1	6016	0.4192	0.4167	0.2366	0.2393	0.1015	0.0055	0.0005	0.3815	0.3811	-0.1671	-0.1221	-0.2087	-0.0173	-0.02	0.1444	0.0189	1.401	1.0107	0.781	1.0081	A+	A-	A-
MATH	8	487624	2	B-F	2	6014	0.294	0.172	0.3566	0.2921	0.173	0.0059	0.0003	0.0234	-0.0309	0.0469	0.026	-0.0487	-0.0484	-0.026	0.6535	0.02	9.9014	1.375	9.9015	1.5342	A-	A+	A-
MATH	8	574471	2	B-F	2	6029	0.4626	0.2234	0.1692	0.4608	0.1428	0.0026	0.0012	0.3473	-0.1445	-0.2302	0.3486	-0.0705	-0.037	-0.0217	0.065	0.0187	9.9011	1.1093	9.9011	1.124	A-	A-	A-
MATH	8	625330	2	C-G	2	6033	0.4411	0.3483	0.094	0.1148	0.4397	0.0026	0.0005	0.2151	0.0517	-0.2304	-0.1963	0.2165	-0.0437	-0.0005	-0.0331	0.0186	9.9012	1.1616	9.9012	1.2471	A+	A+	A-
MATH	8	503519	2	D-S	2	6027	0.6207	0.0544	0.0691	0.6181	0.2543	0.0031	0.001	0.387	-0.1795	-0.1951	0.3894	-0.2192	-0.0458	-0.0327	-0.9274	0.0189	-3.419	0.9763	1.341	1.0181	A-	A-	A+
MATH	8	480710	3	B-E	2	6063	0.2928	0.3133	0.2515	0.2912	0.1386	0.0046	0.0008	0.1729	0.0661	-0.1904	0.175	-0.067	-0.0509	-0.032	0.5973	0.0199	9.9012	1.2118	9.9013	1.3224	A+	A-	A-
MATH	8	489554	3	B-E	1	6075	0.2351	0.2887	0.2343	0.2856	0.188	0.0026	0.0008	0.0257	-0.0937	0.0273	0.1048	-0.0344	-0.0457	-0.0227	1.0794	0.0217	9.9013	1.3341	9.9016	1.6319	A-	A-	A+
MATH	8	574948	3	B-E	1	6047	0.5302	0.5259	0.1335	0.1946	0.138	0.008		0.4098	0.4119	-0.2148	-0.1543	-0.1924	-0.0587		-0.6988	0.0185	-4.029	0.9742	-2.829	0.9679	A+	A-	A-
MATH	8	488715	3	B-F	2	6049	0.4439	0.1626	0.2113	0.178	0.4405	0.0074	0.0003	0.4564	-0.1271	-0.2425	-0.1968	0.4592	-0.0764	-0.0142	-0.017	0.0186	-9.8991	0.9082	-9.8991	0.9041	A+	A+	A-
MATH	8	503517	3	C-G	2	6055	0.3402	0.2871	0.3379	0.1875	0.1808	0.0056	0.0011	0.3836	-0.1414	0.386	-0.2027	-0.0862	-0.0721	-0.0282	0.3781	0.0193	0.231	1.002	2.861	1.0332	A-	A-	A+
MATH	8	574593	3	C-G	2	6065	0.305	0.198	0.3289	0.3035	0.1645	0.0048	0.0003	0.2328	0.0466	-0.1535	0.2349	-0.134	-0.0641	-0.0211	0.6559	0.0201	9.9011	1.1314	9.9012	1.2407	A-	A-	A-
MATH	8	574473	3	D-S	1	6067	0.5705	0.5677	0.0802	0.0587	0.2885	0.0041	0.0007	0.273	0.2764	-0.231	-0.2183	-0.0409	-0.0555	-0.028	-0.7286	0.0185	6.591	1.0432	9.3211	1.1125	A-	A-	A-
MATH	8	575466	3	D-S	2	6056	0.5196	0.1389	0.5162	0.1503	0.188	0.0059	0.0007	0.3706	-0.1831	0.3734	-0.1711	-0.1449	-0.0634	-0.0262	-0.4714	0.0184	-3.799	0.9756	-4.209	0.957	A-	A-	A+
MATH	8	574393	4	A-N	2	6004	0.5463	0.1425	0.1566	0.543	0.1518	0.0055	0.0005	0.3901	-0.2833	-0.1412	0.3932	-0.1122	-0.0635	-0.0259	-0.552	0.0284	-0.849	0.9914	-1.709	0.9687	A+	A+	A+
MATH	8	617468	4	A-N	1	6017	0.2784	0.2773	0.2619	0.2576	0.1993	0.003	0.0008	0.4605	0.461	-0.1673	-0.1263	-0.1868	-0.0466	-0.0152	0.8398	0.0322	-4.0091	0.9342	-2.1691	0.9485	A-	A-	A-
MATH	8	480709	4	B-E	1	6014	0.4011	0.1586	0.2853	0.3993	0.1525	0.0033	0.001	0.3741	-0.1689	-0.1943	0.3753	-0.0869	-0.0386	-0.0292	0.157	0.0293	2.771	1.0349	2.681	1.047	A-	A-	A-
MATH	8	499243	4	B-E	2	6013	0.4918	0.1093	0.4896	0.1755	0.2212	0.0038	0.0007	0.4565	-0.1873	0.4584	-0.2474	-0.175	-0.0519	-0.0309	0.132	0.0293	1.151	1.0143	1.031	1.0177	A-	A-	A+
MATH	8	621931	4	B-F	2	6004	0.3364	0.1813	0.2811	0.3344	0.1972	0.0053	0.0007	0.2354	-0.1203	-0.0638	0.2373	-0.082	-0.0505	-0.0255	0.5042	0.0305	9.9012	1.1911	9.9013	1.252	A+	A+	A-
MATH	8	625321	4	C-G	2	6005	0.343	0.1276	0.3675	0.1579	0.3411	0.0051	0.0007	0.4242	-0.2354	-0.0961	-0.1985	0.4255	-0.0555	-0.0188	0.4673	0.0304	-1.679	0.9762	-0.129	0.9973	A-	A+	A-
MATH	8	569270	4	D-S	1	5990	0.5002	0.1129	0.1982	0.1846	0.496	0.0081	0.0002	0.5242	-0.2319	-0.2073	-0.2627	0.5228	-0.0361	-0.0157	-0.4693	0.0284	-9.8991	0.8725	-9.6092	0.8375	A+	A+	A+
MATH	8	623656	4	D-S	2	6004	0.2532	0.2848	0.3081	0.1495	0.2517	0.0051	0.0008	0.2381	-0.011	-0.0363	-0.2172	0.2398	-0.0624	-0.0152	1.004	0.0332	9.2512	1.176	9.9013	1.3103	A+	A-	A+
MATH	8	566690	5	A-N	1	5987	0.2242	0.0996	0.2228	0.3811	0.2906	0.0058		0.047	-0.2294	0.0483	0.1985	-0.0991	-0.0364		1.1906	0.0342	9.9013	1.3228	9.9016	1.6458	A+	A+	A-
MATH	8	479784	5	B-E	1	6000	0.5785	0.1699	0.1471	0.5764	0.103	0.003	0.0007	0.3418	-0.1377	-0.1574	0.3435	-0.1961	-0.0373	-0.0243	-0.7004	0.0285	1.631	1.0166	2.281	1.0433	A-	A-	A-
MATH	8	565842	5	B-E	1	5992	0.5185	0.2488	0.1373	0.5159	0.093	0.0045	0.0005	0.4712	-0.1686	-0.2995	0.4723	-0.1949	-0.0422	-0.0272	-0.4682	0.0284	-8.6691	0.9143	-7.4791	0.8782	A+	A+	A-
MATH	8	625325	5	B-E	2	5988	0.2589	0.2786	0.188	0.2703	0.2574	0.0051	0.0005	0.2423	0.0931	-0.2432	-0.1081	0.2443	-0.0706	-0.0209	0.9601	0.0327	7.7811	1.14	9.9013	1.2808	A+	A-	A-
MATH	8	495724	5	B-F	2	5985	0.4759	0.2028	0.1679	0.1503	0.4729	0.0058	0.0003	0.4284	-0.2337	-0.1259	-0.1921	0.4306	-0.0646	-0.0219	-0.2012	0.0285	-3.979	0.9577	-1.859	0.9704	A-	A-	A-
MATH	8	565843	5	B-F	2	5983	0.5263	0.1762	0.5229	0.1217	0.1727	0.0055	0.001	0.4468	-0.1464	0.4502	-0.2503	-0.2134	-0.0817	-0.0165	-0.5896	0.0284	-6.0791	0.94	-5.7191	0.9013	A-	A-	A+
MATH	8	502451	5	C-G	2	5994	0.3617	0.3193	0.1453	0.36	0.1707	0.0043	0.0003	0.2148	0.0346	-0.1981	0.2176	-0.1217	-0.0703	-0.0211	0.3678	0.0298	9.9012	1.1746	9.9012	1.2371	A-	A+	A+
MATH	8	618336	5	D-S	2	5994	0.353	0.1388	0.2263	0.3514	0.2788	0.0037	0.001	0.3855	-0.111	-0.0593	0.3867	-0.2621	-0.0528	-0.023	0.414	0.03	0.541	1.0073	2.161	1.0406	A-	A-	A-
MATH	8	569266	6	B-E	1	6069	0.5022	0.1368	0.4994	0.1388	0.2194	0.0039	0.0016	0.4845	-0.1707	0.4863	-0.2477	-0.2274	-0.0607	-0.0238	-0.5265	0.0283	-9.1291	0.91	-8.0591	0.8666	A-	A+	A+
MATH	8	617858	6	B-E	1	6092	0.314	0.1578	0.0837	0.4432	0.3135	0.0016	0.0002	0.5156	-0.274	-0.1581	-0.1891	0.5159	-0.0387	-0.011	0.6213	0.0308	-8.6491	0.8758	-6.7591	0.8639	A-	A-	A-
MATH	8	625329	6	B-E	2	6053	0.3329	0.1788	0.2841	0.1988	0.3302	0.008	0.0002	0.2179	-0.1686	-0.025	-0.0556	0.2204	-0.0646	0.0168	0.5265	0.0304	9.9012	1.1992	9.9013	1.2992	A+	A+	A-
MATH	8	618004	6	B-F	2	6060	0.5	0.1909	0.1562	0.4965	0.1494	0.0064	0.0007	0.4185	-0.2077	-0.153	0.4185	-0.1934	-0.0345	-0.0148	-0.3265	0.0284	-2.339	0.9755	-2.639	0.9574	A-	A+	A+
MATH	8	621941	6	B-F	2	6067	0.3412	0.2029	0.2974	0.3392	0.1547	0.0054	0.0005	0.2408	-0.1127	0.0015	0.243	-0.181	-0.0626	-0.0184	0.4764	0.0302	9.9012	1.1715	9.9013	1.2573	A-	A+	A+
MATH	8	487627	6	C-G	2	6074	0.268	0.1811	0.3293	0.2181	0.2668	0.0041	0.0007	0.4652	-0.0801	-0.1989	-0.1881	0.4658	-0.0615	-0.0033	0.8009	0.0317	-7.7291	0.8798	-3.0091	0.931	A+	A-	A+
MATH	8	574472	6	C-G	2	6068	0.3853	0.2079	0.2545	0.3831	0.1488	0.0049	0.0008	0.256	-0.134	-0.0688	0.2585	-0.1027	-0.0605	-0.0192	0.2408	0.0294	9.9012	1.1583	9.9012	1.1917	A+	A+	A+
MATH	8	623657	6	D-S	2	6066	0.5589	0.0998	0.2405	0.0981	0.5555	0.0048	0.0013	0.5306	-0.2855	-0.2404	-0.2365	0.5336	-0.0727	-0.0397	-0.6127	0.0284	-9.8992	0.8405	-9.8992	0.7919	A-	A-	A-
MATH	8	575463	7	B-E	1	6059	0.5984	0.1321	0.1169	0.5963	0.1511	0.0033	0.0003	0.5783	-0.3178	-0.2407	0.5797	-0.2679	-0.0571	-0.0154	-0.8241	0.0285	-9.8992	0.7848	-9.8993	0.7007	A+	A-	A-
MATH	8	617867	7	B-E	1	6060	0.1079	0.2945	0.3014	0.293	0.1075	0.003	0.0005	0.073	-0.107	-0.0991	0.162	0.0737	-0.0361	-0.0167	2.207	0.045	5.9912	1.1992	9.902	1.9638	A-	A+	A+
MATH	8	574588	7	B-F	2	6041	0.3597	0.2411	0.3573	0.2309	0.1641	0.0056	0.001	0.2374	-0.0685	0.2399	-0.1043	-0.0993	-0.0602	-0.0162	0.3729	0.0298	9.9012	1.1604	9.9012	1.2173	A-	A-	A-
MATH	8	621937	7	B-F	2	6049	0.4161	0.2412	0.4139	0.1965	0.1431	0.0048	0.0005	0.2653	-0.0339	0.2682	-0.189	-0.1066	-0.0691	-0.0181	0.0619	0.0289	9.9011	1.1323	9.3812	1.1628	A+	A-	A-
MATH	8	618003	7	C-G	2	6050	0.4522	0.1434	0.148	0.2536	0.4499	0.0039	0.0012	0.349	-0.1441	-0.0951	-0.198	0.3512	-0.0596	-0.0154	-0.1168	0.0285	3.341	1.0372	2.091	1.0341	A-	A-	A+
MATH	8	480712	7	D-S	2	6049	0.4399	0.0789	0.3529	0.4376	0.1253	0.0038	0.0015	0.3451	-0.251	-0.083	0.3478	-0.1812	-0.0624	-0.0363	-0.183	0.0284	3.061	1.0332	3.6011	1.0592	A+	A-	A-
MATH	8	615380	7	D-S	2	6043	0.3435	0.1549	0.1082	0.3414	0.3892	0.0056	0.0007	0.3329	-0.1983	-0.2364	0.3342	-0.0189	-0.056	0.0021	0.4405	0.0301	4.3411	1.0615	6.1011	1.1207	A-	A-	A+
MATH	8	625328	7	D-S	2	6039	0.4405	0.1243	0.4374	0.2972	0.1342	0.0069		0.4461	-0.2086	0.4472	-0.2052	-0.161	-0.0527		-0.0552	0.0286	-4.9491	0.9452	-4.1291	0.9345	A-	A+	A-

MATH	8	494637	8 A-N	1	6070	0.558	0.0913	0.2112	0.5541	0.1364	0.0067	0.0003	0.3703	-0.156	-0.1618	0.3715	-0.203	-0.0508	0.0085	-0.4728	0.0282	0.101	1.001	0.971	1.016	A-	A-	A-
MATH	8	617856	8 A-N	1	6095	0.4053	0.1085	0.2655	0.4041	0.219	0.0028	0.0002	0.3775	-0.1856	-0.3312	0.3782	0.0497	-0.0402	-0.0048	0.123	0.0289	1.411	1.0168	0.471	1.0075	A-	A-	A-
MATH	8	569259	8 B-E	2	6076	0.1995	0.1034	0.143	0.5493	0.1983	0.0054	0.0007	-0.0671	-0.2496	-0.2169	0.3667	-0.0643	-0.0568	-0.03	1.3503	0.0353	9.9014	1.429	9.9019	1.9244	A-	A+	A+
MATH	8	618002	8 B-E	2	6074	0.4562	0.4533	0.1217	0.2801	0.1386	0.0047	0.0016	0.3836	0.3863	-0.2273	-0.111	-0.1795	-0.0708	-0.0304	-0.1215	0.0284	0.201	1.0022	-0.489	0.9923	A-	A-	A-
MATH	8	617999	8 B-F	2	6086	0.1806	0.2132	0.1798	0.3046	0.2981	0.0036	0.0008	0.0374	-0.0999	0.0394	0.0472	0.0184	-0.0562	-0.0338	1.4952	0.0366	9.9013	1.2888	9.9018	1.7882	A+	A-	A-
MATH	8	618327	8 B-F	2	6083	0.459	0.4567	0.0635	0.0942	0.3807	0.0039	0.001	0.5033	0.5049	-0.191	-0.1721	-0.3086	-0.068	-0.0182	-0.1383	0.0284	-9.8991	0.8786	-9.8992	0.8497	C-	B-	B-
MATH	8	499248	8 C-G	2	6081	0.297	0.2855	0.3188	0.2954	0.095	0.0046	0.0007	0.1425	-0.0601	0.0073	0.1449	-0.1285	-0.0637	-0.0162	0.7096	0.0311	9.9012	1.2473	9.9014	1.3796	A-	A-	A+
MATH	8	574589	8 C-G	2	6082	0.4443	0.1438	0.2415	0.1677	0.442	0.0041	0.001	0.4292	-0.2224	-0.1601	-0.1681	0.4313	-0.0626	-0.028	-0.2881	0.0282	-4.839	0.9505	-2.899	0.955	A-	A-	A-
MATH	8	574595	9 A-N	1	5962	0.5245	0.1683	0.1278	0.1763	0.521	0.0062	0.0005	0.4445	-0.0868	-0.2263	-0.2927	0.4429	-0.021	-0.0043	-0.6194	0.0285	-5.0991	0.9492	-3.8891	0.9315	A+	A-	A-
MATH	8	574468	9 B-E	1	5971	0.422	0.2529	0.4199	0.1926	0.1295	0.005	0.0002	0.3408	-0.0225	0.3417	-0.2289	-0.196	-0.0394	-0.0013	0.0385	0.029	4.2711	1.0512	4.0711	1.0681	A+	A-	A+
MATH	8	617473	9 B-E	1	5991	0.2714	0.3406	0.2376	0.1491	0.2709	0.0017	0.0002	0.3218	-0.1077	-0.1696	-0.0546	0.3217	-0.0086	0.0061	0.8544	0.0322	3.3311	1.0563	5.8511	1.1489	A-	A+	A-
MATH	8	625322	9 B-E	2	5950	0.3617	0.1891	0.3585	0.1643	0.2794	0.0057	0.003	0.3757	-0.0355	0.3762	-0.2229	-0.1784	-0.0472	-0.0059	0.3545	0.0299	1.241	1.0166	2.641	1.0492	A-	A-	A+
MATH	8	625323	9 B-F	2	5964	0.4743	0.4713	0.2439	0.1696	0.1088	0.0053	0.001	0.4739	0.4752	-0.2149	-0.1868	-0.2264	-0.0473	-0.0266	-0.2153	0.0286	-8.3691	0.9119	-7.7291	0.8805	A-	A-	A-
MATH	8	416554	9 C-G	2	5973	0.34	0.2887	0.1341	0.3384	0.2339	0.0037	0.0012	0.3295	-0.2959	-0.15	0.3303	0.0747	-0.0342	-0.0186	0.1642	0.0293	1.521	1.0189	2.481	1.0426	A-	A-	A-
MATH	8	618007	9 C-G	2	5973	0.177	0.2512	0.1981	0.3697	0.1761	0.0043	0.0005	-0.0251	-0.0569	-0.0734	0.1383	-0.0232	-0.056	-0.0142	1.5244	0.0372	9.9014	1.3699	9.9019	1.9267	A+	A+	A+
MATH	8	618010	9 D-S	1	5976	0.5574	0.1724	0.1949	0.555	0.0733	0.004	0.0003	0.4284	-0.1936	-0.194	0.4286	-0.2328	-0.0337	-0.0087	-0.6192	0.0285	-5.9291	0.941	-4.1491	0.927	A-	A-	A-
SCIENCE	4	408836	0 A	2	65325	0.5448	0.1522	0.0737	0.2253	0.5399	0.0076	0.0014	0.4186	-0.229	-0.2792	-0.1134	0.4218	-0.0725	-0.0375	0.93	0.0074	-9.899	0.9722	-5.949	0.98	A+	A-	A-
SCIENCE	4	411193	0 A	2	65291	0.484	0.1332	0.1005	0.4795	0.2774	0.0081	0.0014	0.3218	-0.2066	-0.2723	0.326	-0.0055	-0.0766	-0.0397	0.8202	0.0074	9.9011	1.0895	9.9011	1.1096	A+	A+	A+
SCIENCE	4	494423	0 A	3	65373	0.7119	0.706	0.1073	0.1141	0.0643	0.0074	0.0008	0.4589	0.4619	-0.2691	-0.2247	-0.1994	-0.0698	-0.0275	0.0259	0.008	-9.8991	0.8859	-9.8992	0.8498	A-	A-	A-
SCIENCE	4	494806	0 A	2	65428	0.6402	0.0672	0.6355	0.0857	0.2042	0.0058	0.0016	0.359	-0.2504	0.3637	-0.1778	-0.1378	-0.0692	-0.0435	0.4912	0.0075	-2.739	0.9921	-3.529	0.9861	A+	A-	A-
SCIENCE	4	494812	0 A	2	65396	0.6759	0.1617	0.0822	0.6706	0.0777	0.0071	0.0008	0.483	-0.1957	-0.2853	0.4861	-0.2654	-0.0742	-0.028	0.185	0.0078	-9.8991	0.885	-9.8992	0.8447	A+	A-	A+
SCIENCE	4	494815	0 A	2	65368	0.3496	0.2491	0.1979	0.3467	0.198	0.007	0.0013	0.2715	-0.185	-0.1566	0.2743	0.0476	-0.0704	-0.0353	1.8688	0.0079	9.9011	1.1271	9.9013	1.2689	A-	A+	A+
SCIENCE	4	494827	0 A	3	64944	0.3572	0.1209	0.1675	0.3449	0.3519	0.0132	0.0016	0.2891	-0.2605	-0.2063	0.0718	0.2939	-0.0944	-0.0444	1.6982	0.0077	9.9011	1.0605	9.9011	1.1183	A+	A+	A+
SCIENCE	4	494830	0 A	2	65027	0.7264	0.0665	0.1061	0.7166	0.0972	0.0121	0.0013	0.4002	-0.2245	-0.2347	0.4085	-0.1474	-0.0965	-0.0445	-0.2261	0.0083	-1.759	0.9929	3.561	1.0228	A+	A+	A+
SCIENCE	4	495282	0 A	2	65330	0.5546	0.5496	0.1262	0.2215	0.0938	0.007	0.0019	0.264	0.2692	-0.0526	-0.0849	-0.2523	-0.0696	-0.0429	0.6751	0.0075	9.9011	1.1206	9.9012	1.1533	A-	A+	A+
SCIENCE	4	495283	0 A	2	65216	0.7634	0.0746	0.7553	0.0715	0.0881	0.0091	0.0015	0.5496	-0.2776	0.5519	-0.2786	-0.2951	-0.0801	-0.0348	-0.4829	0.0088	-9.8991	0.8674	-9.8993	0.7243	A+	A-	A-
SCIENCE	4	566205	0 A	2	65340	0.4369	0.1516	0.2907	0.4331	0.116	0.0078	0.0009	0.3362	-0.2772	-0.0514	0.3395	-0.1186	-0.0743	-0.032	1.3456	0.0075	9.9011	1.0563	9.9011	1.0879	A-	A-	A-
SCIENCE	4	574826	0 A	2	65314	0.4728	0.0595	0.0572	0.4685	0.4056	0.0082	0.0009	0.4641	-0.2435	-0.2235	0.4659	-0.2357	-0.0701	-0.0322	1.1115	0.0074	-9.8991	0.9313	-9.8991	0.9288	A-	A-	A-
SCIENCE	4	574828	0 A	2	65577	0.7409	0.0508	0.1701	0.0369	0.7371	0.0044	0.0007	0.494	-0.219	-0.3419	-0.1964	0.4964	-0.0615	-0.0321	0.1001	0.0079	-9.8992	0.7968	-9.8993	0.7245	A+	A-	A-
SCIENCE	4	574829	0 A	2	65220	0.3841	0.3672	0.1294	0.1128	0.38	0.0089	0.0016	0.3008	0.0416	-0.2267	-0.2608	0.3045	-0.0852	-0.0308	1.5843	0.0076	9.9011	1.0647	9.9011	1.1204	A-	A+	A+
SCIENCE	4	574831	0 A	2	64919	0.6319	0.1228	0.1207	0.1191	0.6223	0.013	0.002	0.5488	-0.2272	-0.2665	-0.2898	0.5513	-0.0931	-0.0328	0.2857	0.0077	-9.8991	0.8684	-9.8992	0.814	A-	A+	A+
SCIENCE	4	574835	0 A	2	65059	0.6989	0.1102	0.6898	0.095	0.092	0.0119	0.0011	0.511	-0.2405	0.5153	-0.2748	-0.2465	-0.0925	-0.0352	0.0196	0.008	-9.8991	0.8614	-9.8992	0.796	A+	A-	A+
SCIENCE	4	574838	0 A	2	65464	0.7162	0.7113	0.0536	0.1564	0.0719	0.0053	0.0015	0.4889	0.4913	-0.2455	-0.3009	-0.2021	-0.0637	-0.0313	0.3157	0.0077	-9.8992	0.8233	-9.8992	0.7663	A+	A+	A-
SCIENCE	4	574878	0 A	2	65485	0.6509	0.1709	0.0903	0.0856	0.6467	0.005	0.0015	0.3948	-0.199	-0.2062	-0.1798	0.3986	-0.0674	-0.0385	0.6259	0.0075	-9.899	0.952	-9.8991	0.9241	A-	A+	A+
SCIENCE	4	576373	0 A	2	65549	0.5636	0.0309	0.5605	0.348	0.0551	0.0043	0.0012	0.1146	-0.2145	0.1194	0.0589	-0.1978	-0.0631	-0.0265	0.5272	0.0075	9.9013	1.2918	9.9014	1.3635	A-	A+	A+
SCIENCE	4	581718	0 A	3	65047	0.2978	0.2984	0.2939	0.2316	0.163	0.0128	0.0003	0.1828	-0.0748	0.1864	-0.0591	-0.0456	-0.0782	-0.0078	2.0762	0.0081	9.9012	1.1813	9.9014	1.3853	A-	A+	A+
SCIENCE	4	411344	0 B	2	65092	0.3931	0.1471	0.1792	0.2731	0.3882	0.0118	0.0007	0.4618	-0.1775	-0.3155	-0.0716	0.4638	-0.0893	-0.0237	1.5995	0.0076	-9.8991	0.9205	-9.8991	0.9437	A-	A+	A+
SCIENCE	4	495291	0 B	2	65349	0.6367	0.0933	0.1425	0.6313	0.1243	0.0077	0.0008	0.4246	-0.2833	-0.1759	0.4285	-0.1672	-0.0771	-0.0327	0.4583	0.0076	-9.8991	0.9316	-9.8991	0.9199	A+	A-	A+
SCIENCE	4	496717	0 B	2	65339	0.3228	0.1772	0.32	0.3261	0.168	0.008	0.0008	0.2421	-0.1967	0.2445	0.0025	-0.0901	-0.0637	-0.027	1.863	0.0079	9.9011	1.0945	9.9012	1.2317	A-	A+	A+
SCIENCE	4	579553	0 B	1	64931	0.5382	0.5302	0.1209	0.1232	0.2108	0.0132	0.0017	0.457	0.4608	-0.1444	-0.1745	-0.2779	-0.0965	-0.029	1.074	0.0074	-9.8991	0.9445	-9.8991	0.9398	A-	A-	A-
SCIENCE	4	496496	0 C	2	65317	0.4446	0.1519	0.4405	0.1301	0.2684	0.0085	0.0006	0.3354	-0.1935	0.3387	-0.1431	-0.0962	-0.0811	-0.0195	1.1133	0.0074	9.901	1.044	9.9011	1.0591	A-	A-	A-
SCIENCE	4	496504	0 C	2	65087	0.6364	0.1108	0.6285	0.1012	0.147	0.0117	0.0008	0.4705	-0.2554	0.4744	-0.2433	-0.1843	-0.0893	-0.0294	0.1664	0.0078	-9.899	0.9606	-9.8991	0.9377	A-	A+	A+
SCIENCE	4	496876	0 C	2	64813	0.54	0.5309	0.1122	0.2279	0.1122	0.0093	0.0074	0.3713	0.3752	-0.2803	-0.0873	-0.1634	-0.0899	-0.0229	0.7681	0.0074	6.421	1.0171	4.001	1.0141	A-	A+	A+
SCIENCE	4	579557	0 C	2	65435	0.7386	0.0553	0.0644	0.7333	0.1398	0.0061	0.0012	0.4769	-0.2013	-0.2399	0.4804	-0.2905	-0.0699	-0.041	0.015	0.008	-9.8992	0.8184	-9.8992	0.7506	A-	A-	A-
SCIENCE	4	579925	0 C	2	65165	0.374	0.2848	0.3697	0.1528	0.1812	0.0099	0.0015	0.3308	-0.0294	0.3342	-0.2341	-0.1395	-0.0925	-0.0255	1.3437	0.0075	3.461	1.0093	9.211	1.0345	A+	A+	A+
SCIENCE	4	580194	0 C	2	65114	0.4519	0.2469	0.4465	0.1671	0.1275	0.0111	0.0011	0.2972	-0.1599	0.3023	-0.0639	-0.1415	-0.0897	-0.0275	1.0917	0.0074	9.9011	1.0785	9.9011	1.1044	A-	A+	A+
SCIENCE	4	479245	0 D	2	65225	0.4101	0.3807	0.4058	0.1174	0.0856	0.009	0.0014	0.2665	0.0347	0.2712	-0.2265	-0.2415	-0.0854	-0.0383	1.4376	0.0075	9.9011	1.1056	9.9012	1.1569	A+	A+	A+
SCIENCE	4	496519	0 D	2	65185	0.6603	0.653	0.0959	0.1217	0.1183	0.0092	0.0019	0.4491	0.4536	-0.1966	-0.297	-0.1596	-0.0825	-0.0343	0.1949	0.0078	-9.8991	0.9436	-9.8991	0.9269	A-	A-	A-
SCIENCE	4	496521	0 D	1	65374	0.3881	0.3849	0.3848	0.157	0.0652	0.0065	0.0017	0.3845	0.3863	-0.1447	-0.1348	-0.2509	-0.0688	-0.0266	1.4666	0.0075	-7.709	0.9787	0.971	1.0038	A-	A-	A-
SCIENCE	4	496522	0 D	3	65181	0.5953	0.5887	0.0835	0.0938	0.2229	0.0092	0.0019	0.4061	0.411	-0.2476	-0.2474	-0.1249	-0.0836	-0.0374	0.4038	0.0076	7.081	1.0212	4.251	1.0179	A-	A+	A-
SCIENCE	4	498458	0 D	2	65510	0.7683	0.0635	0.0437	0.7636	0.1231	0.0052	0.0009	0.4963	-0.3066	-0.238	0.4994	-0.252	-0.0662	-0.0394	-0.3106	0.0084	-9.8992	0.8279	-9.8993	0.7315	A-	A+	A-
SCIENCE	4	566167	0 D	2	65102	0.3822	0.2727	0.1817	0.1558	0.3774	0.0104	0.002	0.2982	-0.1381	-0.1249	-0.0731	0.3023	-0.0862	-0.0362	1.5459	0.0076	9.9011	1.0641	9.9011	1.1119	A+	A+	A+
SCIENCE	4	566169	0 D	2	65187	0.4504	0.0996	0.4454	0.124	0.3199	0.0098	0.0012	0.3503	-0.2007	0.3547	-0.22	-0.0715	-0.0916	-0.0375	1.4427	0.0075	9.9011	1.0627	9.9011	1.1074	A-	A+	A+
SCIENCE	4	579535	0 D	2	65099	0.3602	0.1843	0.2387	0.3557	0.2088	0.0106	0.0017	0.1914	-0.1057	-0.0534	0.1966	-0.0495	-0.085	-0.0366	1.5954	0.0076	9.9012	1.1567	9.9012	1.2311	A-	A+	A+
SCIENCE	4	566170	1 A	2	5601	0.7374	0.094	0.7206	0.096	0.0667	0.0218	0.0009	0.4981	-0.2724	0.4955	-0.2246	-0.26	-0.0718	-0.0445	-0.3089	0.0204	-9.8991	0.8551	-9.8992	0.7656	A+	A-	A-
SCIENCE	4	617348	1 A	2	5657	0.4096	0.1159	0.1939	0.2731	0.4043	0.0113	0.0016	0.2823	-0.227	-0.1041	-0.0385	0.2863	-0.0741	-0.0428	1.3978	0.0185	6.001	1.0424	6.8511	1.0696	A+	A-	A-
SCIENCE	4	620939	1 A	2	5661	0.8055	0.0614	0.0801	0.7957	0.0506	0.0099	0.0023	0.4904	-0.2766	-0.2464	0.4905	-0.2579	-0.056	-0.0502	-0.8724	0.0231	-9.8992	0.8429	-9.8993	0.6633	A+	A-	A-
SCIENCE	4	620950	1 A	2	5665	0.7068	0.0513	0.6987	0.1113	0.1272	0.0092	0.0023	0.5082	-0.2209	0.5117	-0.2341	-0.3083	-0.073	-0.0572	-0.1556	0.0198	-9.8992	0.8373	-9.8992	0.761	A-	A-	A-
SCIENCE	4	618938	1 B	2	5605	0.3625	0.0811	0.1089	0.3546	0.4334	0.0208	0.0012	0.2222	-0.1849	-0.2046	0.2297	0.0414	-0.1051	-0.0342	1.5405	0.0188	9.9011	1.1047	9.9012	1.1785	A+	A-	A-
SCIENCE	4	617338	1 C	2	5616	0.2548	0.1002	0.2497	0.1502	0.4798	0.0183	0.0017	0.0082	-0.2539	0.0169	-0.1369	0.2659	-0.0965	-0.0495	2.1183	0.0204	9.9012	1.232	9.9015	1.5194	A-	A+	A+
SCIENCE	4	579543	1 D	1	5619	0.4001	0.3923	0.1939	0.09	0.3043	0.0183	0.0012	0.2117	0.2168	0.0016	-0.2614	-0.045	-0.0687	-0.0515	1.6207	0.0189	9.9011	1.1464	9.9012	1.224	A-	A-	A+
SCIENCE	4	624055	1 D	2	5610	0.2718	0.0904	0.2738	0.3486	0.2661	0.019	0.0021	0.0908	-0.2229	-0.0368	0.1123	0.0996	-0.1063	-0.0591	2.1262	0.0205	9.9012	1.1597	9.9014	1.3895	A-	A-	A-
SCIENCE	4	566172	2 A	2	5373	0.4603	0.1851	0.4497	0.2319	0.1104	0.0229		0.3427	-0.0413	0.3433	-0.2347	-0.1487	-0.0609		1.124	0.0202	-1.479	0.9898	-1.009	0.991	B-	A-	A-
SCIENCE	4	620940	2 A	2	5413	0.3771	0.1624	0.1795	0.3712	0.2713	0.0155	0.0002	0.164	-0.0884	-0.1498	0.1707	0.0445	-0.0982	-0.0044	1.6302	0.0208	9.9011	1.1247	9.9012	1.1917	A-	A+	A+
SCIENCE	4	622357	2 A	1	5405	0.7761	0.7629	0.1273	0.0567	0.036	0.016	0.0011	0.3085	0.3238	-0.099	-0.225	-0.2002	-0.1128	-0.0361	-0.4988	0.0247	-3.099	0.9579	-3.6391	0.923	A+	A-	A-
SCIENCE	4	622821	2 A	2	5445	0.5164	0.1831	0.1002	0.5114	0.1955	0.0095	0.0004	0.3784	-0.087	-0.2299	0.3822	-0.2021	-0.0845	-0.0051	0.8507	0.0203	-4.979	0.9651	-4.529	0.9586	A+	A-	A-
SCIENCE	4	623819	2 B	2	5424	0.4657	0.1422	0.2922	0.4594	0.0926	0.0124	0.0013	0.3281	-0.2454	-0.097	0.3336	-0.0857	-0.0971	-0.0245	1.1223	0.0202	0.821	1.0056	1.281	1.0115	A-	A+	A-
SCIENCE	4	623817	2 C	2	5436	0.2656	0.3893	0.2626	0.2206	0.116	0.0104	0.0011	0.2312	-0.0368	0.2336	-0.1252	-0.0789	-0.066	-0.0304	2.1063	0.0221	1.301	1.0129	8.5911	1.1365	B-	A+	A+
SCIENCE	4	579541	2 D	2	5398	0.4348	0.1193	0.1971	0.4268	0.2384	0.0184		0.2317	-0.1317	-0.0728	0.2339	-0.0876	-0.0501		1.1325	0.0202	9.9011	1.103	9.9011	1.1281	A-	A+	A+
SCIENCE	4	623212	2 D	2	5396	0.4652	0.1975	0.1769	0.4564	0.1504	0.0162	0.0025	0.3967	-0.1267	-0.1659	0.4041	-0.1965	-0.1143	-0.0576	1.0531	0.0202	-6.749	0.9542	-5.7891	0.9491	A-	A+	A+
SCIENCE	4	566173	3 A	2	5272	0.7572	0.7393	0.0869	0.0746	0.0756	0.0235	0.0002	0.3763	0.3852	-0.1536	-0.2103	-0.2042	-0.1077	-0.0216	-0.2687	0.0235	-7.7991	0.9091	-8.3491	0.8507	B+	A-	B-
SCIENCE	4	621088	3 A	2	5330	0.3278	0.3831	0.113	0.3235	0.1674	0.012	0.0009	0.2205	-0.0326	-0.1406	0.2242	-0.0934	-0.085	-0.0138	1.8255	0.0213	7.2111	1.063	9.9012	1.173	A-	A-	A-
SCIENCE	4	622826	3 A	2	5333	0.4903	0.0607	0.4843	0.3067	0.1359	0.0107	0.0017	0.3216	-0.2426	0.327	-0.0092	-0.262	-0.0858	-0.0639	1.001	0.0204	3.021	1.0215	4.301	1.0402	A-	A-	A-
SCIENCE	4	630324	3 A	2	5335	0.5303	0.1422	0.2193	0.5239	0.1026	0.0102	0.0019	0.394	-0.1875	-0.1856	0.398	-0.1536	-0.0865	-0.0285	0.8499	0.0205	-8.1991	0.9418	-7.2491	0.9326	B+	A-	A-
SCIENCE	4	622351	3 B	1	5323	0.7291	0.0841	0.1063	0.7187	0.0767	0.0143		0.2894	-0.1821	-0.1376	0.2988	-0.1141	-0.0933		-0.2223	0.0233	0.491	1.0057	1.691	1.0311	A+	A-	A-
SCIENCE	4	623831	3 C	2	5307	0.7219	0.075	0.7094	0.1187	0.0796	0.0165	0.0007	0.4088	-0.2213	0.4135	-0.2153	-0.1769	-0.0886	-0.0243	-0.1246	0.0229	-7.4791	0.9193	-7.5191	0.8767	A+	A-	A-
SCIENCE	4	579538	3 D	2	5306	0.7022	0.0894	0.69	0.1324	0.0707	0.0172	0.0002	0.4373	-0.1657	0.4412	-0.2378	-0.2499	-0.0898	-0.0311	-0.0427	0.0225	-9.6391	0.9012	-9.4991	0.8539	A+	A-	A-
SCIENCE	4	623870	3 D	2	5313	0.4581	0.4507	0.172	0.0963	0.2648	0.0156	0.0006	0.24	0.2465	-0.1234	-0.1841	-0.0214	-0.0942	-0.0274	1.2656	0.0204	9.9011	1.0882	9.9011	1.1127	A-	A-	A-
SCIENCE	4	566175	4 A	2	5318	0.4184	0.1492	0.2499	0.1672	0.4074	0.0254	0.0009	0.2451	-0.143	-0.026	-0.1192	0.2531	-0.1038	-0.0441	1.5283	0.0301	7.8811	1.0932	9.5212	1.1651	A+	A+	A+
SCIENCE	4	620951	4 A	3	5384	0.4918	0.1551	0.4848	0.2102	0.1357	0.0134	0.0009	0.4239	-0.2359	0.4276	-0.128	-0.1865	-0.1002	-0.0269	1.067	0.0295	-6.9091	0.9291	-5.3291	0.9277	A+	A-	A-
SCIENCE	4	620956	4 A	2	5387	0.6731	0.1128	0.6639	0.0932	0.1164	0.0112	0.0026	0.3907	-0.1856	0.3977	-0.2228	-0.1633	-0.0773	-0.0763	0.1961	0.031	-4.5491	0.9418	-3.6791	0.9292	A+	C-	C-
SCIENCE	4	620965	4 A	2	5354	0.503	0.493	0.3228	0.0897	0.0747	0.0185	0.0013	0.195	0.2057	0.0033	-0.1989	-0.1214	-0.1076	-0.0315	1.0282	0.0295	9.9011	1.1299	9.9012	1.1671	A-	A-	A+
SCIENCE	4	622360	4 B	1	5373	0.4307	0.1086	0.1102	0.3413	0.4237	0.0143	0.002	0.2559	-0.1384	-0.1587	-0.0511	0.2613	-0.091	-0.0302	1.3579	0.0298	6.2911	1.0702	6.9611	1.1086	A-	A-	A+
SCIENCE	4	623216	4 C	2	5354	0.4923	0.1575	0.2111	0.1291	0.4826	0.0187	0.0011	0.4398	-0.2131	-0.1442	-0.2097	0.444	-0.1031	-0.0346	1.0774	0.0295	-8.5991	0.9123	-8.2591	0.8895	A-	A-	A-

SCIENCE	4	579536	4	D	1	5347	0.799	0.097	0.0438	0.056	0.7821	0.0201	0.0009	0.4548	-0.2846	-0.2189	-0.2004	0.4524	-0.0756	-0.0331	-0.5362	0.0354	-6.2691	0.8847	-7.8392	0.7709	A-	B-	A-
SCIENCE	4	624053	4	D	2	5355	0.6383	0.0961	0.6258	0.1388	0.1197	0.0179	0.0016	0.4303	-0.2243	0.4378	-0.1753	-0.2119	-0.1085	-0.0483	0.3904	0.0304	-7.4791	0.9128	-7.4691	0.8758	A+	A-	A-
SCIENCE	4	565988	5	A	2	5358	0.4567	0.2522	0.0844	0.1939	0.4459	0.0235	0.0002	0.3529	-0.0723	-0.2341	-0.1705	0.3565	-0.0879	-0.0027	1.3416	0.0296	-1.049	0.9888	2.251	1.0341	A+	A-	A-
SCIENCE	4	620952	5	A	2	5416	0.7843	0.0392	0.0829	0.7741	0.0907	0.0122	0.0009	0.453	-0.2285	-0.2125	0.458	-0.2714	-0.0904	-0.0241	-0.4596	0.0345	-7.8691	0.8637	-8.5992	0.7711	A+	A-	A-
SCIENCE	4	621089	5	A	2	5407	0.5112	0.0944	0.2243	0.5036	0.1629	0.0124	0.0024	0.2769	-0.1989	-0.1207	0.2824	-0.0601	-0.0917	-0.0084	0.9476	0.0293	4.8511	1.0503	4.0611	1.0558	A+	A-	A-
SCIENCE	4	622346	5	A	2	5403	0.7601	0.7484	0.1139	0.0681	0.0541	0.0148	0.0007	0.3934	0.4022	-0.174	-0.2341	-0.2084	-0.0989	-0.0444	-0.2991	0.0333	-5.4291	0.9126	-6.3192	0.8441	A+	A-	A-
SCIENCE	4	623820	5	B	2	5398	0.4642	0.1868	0.2327	0.4566	0.1075	0.0151	0.0013	0.2521	-0.0843	-0.0877	0.2577	-0.1506	-0.0852	-0.0407	1.1678	0.0294	6.8311	1.0719	6.0411	1.0869	A+	A-	A-
SCIENCE	4	578731	5	C	2	5407	0.6501	0.0406	0.6405	0.2147	0.0895	0.0146	0.0002	0.3543	-0.2263	0.3585	-0.1673	-0.1716	-0.0807	-0.0011	0.0899	0.0312	2.561	1.0348	1.211	1.0242	A+	B-	A-
SCIENCE	4	623821	5	C	2	5407	0.7784	0.104	0.7669	0.0709	0.0434	0.0142	0.0005	0.4262	-0.2318	0.4305	-0.229	-0.2051	-0.0858	-0.0236	-0.4141	0.0341	-6.5591	0.8882	-8.6692	0.7756	A-	A-	A-
SCIENCE	4	623202	5	D	2	5422	0.4976	0.2066	0.1813	0.1084	0.4916	0.0106	0.0015	0.0392	-0.0157	0.0905	-0.137	0.0489	-0.0918	-0.0247	1.0038	0.0293	9.9013	1.2613	9.9013	1.3269	A+	A-	A+
SCIENCE	4	574833	6	A	2	5339	0.4478	0.0986	0.4375	0.278	0.1629	0.0229	0.0002	0.3944	-0.153	0.3949	-0.1316	-0.2204	-0.0671	0.0052	1.2389	0.0296	-5.0491	0.9476	-3.8691	0.9454	A-	A-	A-
SCIENCE	4	622356	6	A	3	5420	0.6699	0.0931	0.0822	0.1521	0.6644	0.0079	0.0004	0.3669	-0.269	-0.2073	-0.0913	0.372	-0.0837	-0.0193	0.1614	0.031	-3.609	0.954	-1.789	0.9655	A-	B-	A-
SCIENCE	4	622825	6	A	3	5372	0.4012	0.198	0.1338	0.3943	0.2569	0.0159	0.0011	0.343	-0.1233	-0.2432	0.3468	-0.058	-0.087	-0.0417	1.4618	0.03	-1.549	0.9826	-0.309	0.9949	A-	A-	A-
SCIENCE	4	622836	6	A	2	5361	0.3757	0.1956	0.1231	0.2937	0.3685	0.0177	0.0013	0.2288	-0.0268	-0.2191	-0.0407	0.2334	-0.0805	-0.023	1.5893	0.0303	6.3211	1.0766	8.0411	1.145	A-	A-	A-
SCIENCE	4	617430	6	B	2	5406	0.759	0.0704	0.0995	0.7508	0.0684	0.0104	0.0004	0.4589	-0.2598	-0.2754	0.4609	-0.1693	-0.0722	-0.0171	-0.3205	0.0335	-8.8291	0.8601	-9.4692	0.7663	A-	A-	A-
SCIENCE	4	579554	6	C	2	5349	0.6138	0.0666	0.6007	0.2503	0.0611	0.0212		0.3934	-0.2251	0.3968	-0.1607	-0.2342	-0.0866		0.3009	0.0305	-1.319	0.984	-2.009	0.9647	A-	A-	A-
SCIENCE	4	623827	6	C	2	5390	0.3688	0.3638	0.1793	0.2368	0.2064	0.0132	0.0005	0.1238	0.1311	-0.1608	0.0565	-0.034	-0.0997	-0.0128	1.6131	0.0304	9.9012	1.1702	9.9013	1.2792	A+	A-	A-
SCIENCE	4	623206	6	D	2	5404	0.745	0.037	0.1704	0.0448	0.7367	0.0093	0.0018	0.4816	-0.2381	-0.3144	-0.2057	0.4819	-0.0669	-0.0035	-0.2362	0.0329	-9.8992	0.8475	-9.8992	0.753	A+	A-	A-
SCIENCE	4	578198	7	A	2	5325	0.4088	0.2867	0.3991	0.2205	0.0698	0.0235	0.0004	0.2965	-0.0475	0.2989	-0.1007	-0.2778	-0.0787	-0.0232	1.0509	0.0294	3.391	1.0353	3.281	1.045	A-	A-	A+
SCIENCE	4	617352	7	A	2	5361	0.5643	0.5545	0.0973	0.1575	0.1734	0.0156	0.0016	0.2987	0.3079	-0.2471	-0.1306	-0.0447	-0.1089	-0.0442	0.7277	0.0296	2.551	1.0274	4.9111	1.0714	A+	A+	A-
SCIENCE	4	620946	7	A	2	5386	0.7239	0.7148	0.1133	0.1157	0.0436	0.0117	0.0009	0.4968	0.506	-0.2634	-0.2755	-0.2096	-0.1211	-0.0335	-0.0849	0.0322	-9.8992	0.8393	-9.8993	0.7399	A+	A-	A-
SCIENCE	4	630328	7	A	2	5381	0.2923	0.1314	0.2075	0.3591	0.2884	0.0119	0.0016	0.1723	-0.2295	-0.1652	0.1574	0.1773	-0.0965	-0.0203	2.0343	0.0321	6.7811	1.1016	9.9012	1.2475	A-	C-	A-
SCIENCE	4	623200	7	B	2	5377	0.7186	0.079	0.0885	0.1098	0.7083	0.0125	0.0018	0.5097	-0.2444	-0.2889	-0.2352	0.515	-0.1026	-0.0266	-0.049	0.0321	-9.8992	0.8296	-9.8993	0.7382	A-	A+	A+
SCIENCE	4	579926	7	C	2	5361	0.4356	0.1267	0.3364	0.428	0.0917	0.0169	0.0004	0.2843	-0.1959	-0.0111	0.2892	-0.2114	-0.091	0	1.2818	0.0296	3.351	1.0359	4.4711	1.0656	A+	A-	A+
SCIENCE	4	624012	7	C	2	5368	0.5442	0.2372	0.5355	0.0816	0.1298	0.0137	0.0022	0.3268	-0.1055	0.3338	-0.1961	-0.1621	-0.0937	-0.055	0.8177	0.0295	1.241	1.013	1.121	1.0155	A-	A-	A+
SCIENCE	4	624054	7	D	2	5359	0.4255	0.2264	0.1782	0.1599	0.418	0.0167	0.0009	0.3202	-0.1419	-0.1019	-0.134	0.3243	-0.0918	-0.0237	1.3719	0.0298	0.731	1.0079	1.721	1.0259	A-	A-	A-
SCIENCE	4	581582	8	A	2	5382	0.6823	0.0681	0.1298	0.665	0.1117	0.0252	0.0002	0.4158	-0.2379	-0.16	0.4122	-0.2248	-0.0618	-0.0274	-0.1907	0.0325	4.5311	1.0716	2.4311	1.0602	A+	A-	A-
SCIENCE	4	620953	8	A	2	5457	0.7444	0.0623	0.0976	0.7356	0.0927	0.0112	0.0005	0.4138	-0.2687	-0.1692	0.4197	-0.2064	-0.0913	-0.0199	-0.2288	0.0328	-5.9491	0.9089	-6.9092	0.8365	A+	A-	A-
SCIENCE	4	620957	8	A	2	5458	0.3882	0.1755	0.2068	0.2224	0.3837	0.0114	0.0002	0.3072	-0.1501	-0.1419	-0.0594	0.3128	-0.1187	-0.0166	1.5176	0.03	1.521	1.0175	2.701	1.0448	A+	A-	A+
SCIENCE	4	620984	8	A	2	5444	0.6499	0.1016	0.6407	0.0962	0.1474	0.0132	0.0009	0.3978	-0.2069	0.4061	-0.2262	-0.1475	-0.1069	-0.0385	0.285	0.0304	-4.7391	0.943	-5.3391	0.908	A-	A-	A-
SCIENCE	4	623826	8	B	2	5453	0.302	0.3924	0.2983	0.1164	0.1804	0.0107	0.0018	0.1889	0.0319	0.1947	-0.2355	-0.0425	-0.1103	-0.0345	1.9598	0.0316	6.5511	1.0947	9.2012	1.215	A+	A-	A+
SCIENCE	4	566164	8	C	2	5420	0.5199	0.1257	0.5103	0.1072	0.2383	0.0183	0.0002	0.4009	-0.1842	0.4034	-0.2357	-0.1327	-0.0833	-0.0012	0.8409	0.0293	-4.729	0.9515	-4.1291	0.9446	A+	A-	A-
SCIENCE	4	623840	8	C	3	5425	0.5377	0.1739	0.1384	0.5283	0.142	0.0163	0.0013	0.3399	-0.1788	-0.1805	0.3451	-0.0872	-0.0895	-0.0119	0.8298	0.0293	0.201	1.002	0.181	1.0024	A+	A-	A-
SCIENCE	4	623203	8	D	2	5411	0.2602	0.236	0.255	0.3095	0.1795	0.019	0.0011	0.1376	-0.1222	0.1436	0.0606	-0.0639	-0.0923	-0.0489	2.2076	0.033	7.0711	1.1182	9.9013	1.3138	A-	A-	A-
SCIENCE	4	574815	9	A	2	5368	0.7144	0.1091	0.0699	0.0993	0.6963	0.0252	0.0002	0.4609	-0.2319	-0.1977	-0.2503	0.4612	-0.0917	-0.0101	-0.3776	0.0336	2.221	1.0383	-1.779	0.9532	A+	A-	A-
SCIENCE	4	620948	9	A	2	5405	0.4091	0.1674	0.4014	0.2553	0.1572	0.0169	0.0018	0.2881	-0.1744	0.2965	-0.0222	-0.1452	-0.1246	-0.0389	1.4025	0.0297	2.491	1.0272	3.8111	1.0596	A+	A-	A-
SCIENCE	4	622359	9	A	2	5436	0.385	0.38	0.3745	0.1402	0.0922	0.0118	0.0013	0.1749	0.1801	-0.002	-0.0836	-0.1651	-0.085	-0.0133	1.5067	0.03	9.9011	1.1217	9.9012	1.1998	A-	A-	A+
SCIENCE	4	579549	9	B	2	5405	0.6825	0.1089	0.0743	0.1284	0.6698	0.018	0.0007	0.4667	-0.2282	-0.2571	-0.2118	0.4681	-0.0777	-0.0187	0.0702	0.0311	-8.5791	0.8895	-8.4692	0.8422	A+	A-	A-
SCIENCE	4	622352	9	B	2	5428	0.7168	0.057	0.0768	0.7064	0.1452	0.0136	0.0009	0.4417	-0.2448	-0.2545	0.4476	-0.1914	-0.093	-0.0359	-0.0815	0.0318	-8.5791	0.8807	-8.4392	0.8267	A+	A-	A-
SCIENCE	4	623871	9	B	2	5432	0.2754	0.221	0.2667	0.2269	0.2716	0.0127	0.0011	0.0734	0.0024	0.0204	-0.0783	0.0803	-0.1058	-0.0324	2.0758	0.0324	9.9012	1.1779	9.9013	1.3408	A-	A+	A+
SCIENCE	4	617353	9	C	2	5414	0.517	0.5082	0.2306	0.1253	0.1189	0.0156	0.0015	0.2906	0.3003	-0.058	-0.1637	-0.1703	-0.1232	-0.0281	0.8995	0.0292	2.991	1.0305	2.431	1.0324	A+	A-	A-
SCIENCE	4	624013	9	D	2	5409	0.3258	0.2653	0.3199	0.2367	0.1601	0.0171	0.0009	0.0573	0.0656	0.0662	-0.0621	-0.0523	-0.106	-0.0185	1.8112	0.031	9.9012	1.2094	9.9014	1.375	A+	A-	A-
SCIENCE	4	574836	10	A	2	5291	0.7588	0.0774	0.0959	0.7421	0.0625	0.0216	0.0004	0.5091	-0.2569	-0.2788	0.4978	-0.2495	-0.0421	-0.0255	-0.5819	0.0359	1.821	1.0366	-3.6891	0.8866	A+	A-	A-
SCIENCE	4	617341	10	A	2	5332	0.392	0.1591	0.2044	0.3863	0.2357	0.0129	0.0015	0.004	-0.1332	0.1093	0.0096	0.0166	-0.0537	-0.0256	1.5362	0.0301	9.9013	1.2787	9.9014	1.3931	A-	A-	A+
SCIENCE	4	620938	10	A	2	5322	0.3854	0.3791	0.307	0.1479	0.1497	0.0146	0.0017	0.196	0.201	0.0392	-0.1589	-0.1372	-0.0726	-0.0372	1.5715	0.0302	8.7611	1.1035	8.8712	1.1519	A-	A-	A+
SCIENCE	4	620943	10	A	2	5339	0.5531	0.0946	0.2314	0.115	0.5458	0.0111	0.002	0.3703	-0.2416	-0.0648	-0.2423	0.3765	-0.1043	-0.0262	0.7834	0.0296	-3.479	0.9638	-2.809	0.9622	A+	A-	A+
SCIENCE	4	565989	10	B	2	5288	0.4813	0.3872	0.0965	0.4704	0.0233	0.0222	0.0004	0.3808	-0.2069	-0.1821	0.3835	-0.1584	-0.0878	-0.0023	1.2208	0.0296	-3.419	0.9649	-2.249	0.9696	B-	A-	A-
SCIENCE	4	617539	10	B	2	5340	0.6099	0.602	0.1305	0.1155	0.139	0.0111	0.0018	0.3136	0.3191	-0.157	-0.1739	-0.1094	-0.0801	-0.0343	0.5154	0.0301	0.831	1.0094	1.281	1.0198	A-	A-	A+
SCIENCE	4	623854	10	C	2	5340	0.3423	0.2675	0.2505	0.3379	0.1312	0.0116	0.0013	0.2289	-0.0444	-0.0483	0.2334	-0.1753	-0.0863	-0.0386	1.7782	0.0309	4.8611	1.0621	7.6712	1.1503	A-	A-	A-
SCIENCE	4	623839	10	D	2	5322	0.5678	0.1109	0.229	0.0852	0.5586	0.015	0.0013	0.2407	-0.1454	0.0071	-0.2523	0.2465	-0.0686	-0.0256	0.7233	0.0297	7.1011	1.0778	6.8511	1.0982	A+	A-	A-
SCIENCE	4	580123	11	A	2	5410	0.653	0.6446	0.1354	0.0513	0.1558	0.0128	0.0002	0.3711	0.3764	-0.1806	-0.2527	-0.1462	-0.0826	-0.0263	0.2759	0.0305	-3.379	0.9592	-3.3191	0.9414	A+	A-	A-
SCIENCE	4	620949	11	A	2	5405	0.6276	0.6189	0.2016	0.0498	0.1159	0.012	0.0018	0.4283	0.4328	-0.2318	-0.2424	-0.1684	-0.0804	-0.0421	0.4014	0.0301	-7.8591	0.9115	-7.5491	0.8797	A-	B-	A-
SCIENCE	4	620971	11	A	2	5412	0.6131	0.1266	0.6054	0.1808	0.0746	0.0115	0.0011	0.317	-0.1195	0.3224	-0.1443	-0.2024	-0.0794	-0.0209	0.4676	0.0299	0.781	1.0088	0.841	1.0134	A-	A-	A-
SCIENCE	4	622349	11	A	2	5406	0.2976	0.0923	0.4202	0.1803	0.2936	0.0128	0.0009	0.2084	-0.2049	0.0788	-0.1784	0.2107	-0.0622	0.0001	1.9865	0.0319	5.1211	1.0749	7.6312	1.1777	A-	A-	A-
SCIENCE	4	578733	11	B	2	5356	0.6066	0.0912	0.1107	0.5928	0.1824	0.0223	0.0005	0.427	-0.2663	-0.2275	0.424	-0.1363	-0.0463	-0.0329	0.3716	0.0302	-3.919	0.9546	-4.4291	0.9268	A+	A-	A+
SCIENCE	4	617586	11	B	2	5397	0.4239	0.1624	0.1994	0.4174	0.2054	0.0137	0.0016	0.2883	-0.2237	-0.037	0.2912	-0.0934	-0.0565	-0.0507	1.3563	0.0297	3.501	1.0381	4.2511	1.0644	A-	A-	A-
SCIENCE	4	624015	11	C	2	5398	0.5146	0.2666	0.1042	0.1073	0.5068	0.0131	0.002	0.422	-0.1899	-0.1518	-0.2254	0.428	-0.0983	-0.0589	0.9351	0.0293	-7.8591	0.9217	-7.5691	0.9015	A-	A+	A+
SCIENCE	4	623210	11	D	2	5411	0.4199	0.4145	0.2728	0.127	0.173	0.012	0.0007	0.2079	0.2117	0.0407	-0.1396	-0.1809	-0.0648	-0.0173	1.3703	0.0297	9.7011	1.1085	9.9012	1.1561	A-	A+	A-
SCIENCE	4	580124	12	A	2	5367	0.7367	0.073	0.0905	0.0938	0.7198	0.022	0.0009	0.4763	-0.2841	-0.2058	-0.2328	0.475	-0.0788	-0.0325	-0.0253	0.0318	-9.8992	0.8324	-9.8992	0.759	A+	A-	A+
SCIENCE	4	617344	12	A	2	5403	0.6171	0.607	0.1163	0.1225	0.1378	0.0149	0.0015	0.4616	0.4636	-0.2256	-0.2449	-0.1822	-0.078	-0.0399	0.4694	0.03	-9.8091	0.8911	-9.8992	0.8442	A+	A-	A-
SCIENCE	4	617346	12	A	2	5394	0.546	0.1779	0.1334	0.5361	0.1345	0.0164	0.0016	0.4451	-0.169	-0.2283	0.4478	-0.2016	-0.084	-0.0396	0.8096	0.0295	-8.9191	0.9083	-8.6791	0.8839	A+	A-	A-
SCIENCE	4	620973	12	A	2	5407	0.3936	0.1544	0.2765	0.3874	0.166	0.0138	0.0018	0.1122	-0.063	0.0448	0.1215	-0.1139	-0.1025	-0.0509	1.518	0.0301	9.9012	1.2021	9.9013	1.2746	A+	A-	A-
SCIENCE	4	566203	12	B	2	5386	0.663	0.6501	0.1278	0.1143	0.0883	0.0186	0.0009	0.4484	0.4536	-0.1871	-0.2532	-0.2098	-0.0938	-0.0374	0.1292	0.0311	-5.0491	0.9346	-6.1091	0.8822	A+	A+	A+
SCIENCE	4	617585	12	B	2	5412	0.6803	0.6703	0.1258	0.1087	0.0805	0.0137	0.0011	0.4599	0.466	-0.2016	-0.2152	-0.2666	-0.0988	-0.0372	0.1488	0.031	-9.2691	0.8833	-9.5092	0.8231	A+	A-	A+
SCIENCE	4	623136	12	C	2	5376	0.2398	0.2784	0.2356	0.2301	0.2347	0.0202	0.0011	0.1336	-0.0053	-0.044	-0.0491	0.141	-0.1176	-0.0462	2.3525	0.034	5.5611	1.0996	9.9014	1.3642	A-	A-	A-
SCIENCE	4	623219	12	D	3	5420	0.4506	0.2443	0.0892	0.4446	0.2086	0.0127	0.0005	0.4517	-0.1899	-0.179	0.4519	-0.2048	-0.0713	-0.0304	1.2419	0.0295	-9.8291	0.8986	-7.8291	0.8924	A-	A-	A-
SCIENCE	8	401685	0	A	2	53474	0.6828	0.6808	0.0796	0.1185	0.1182	0.0021	0.0008	0.4283	0.43	-0.2189	-0.2503	-0.1781	-0.0465	-0.0257	-0.3505	0.0081	-9.8991	0.9261	-9.8991	0.9337	A+	A+	A+
SCIENCE	8	410886	0	A	2	53413	0.6085	0.1006	0.1936	0.0957	0.6061	0.0032	0.0008	0.5177	-0.2683	-0.2237	-0.274	0.5194	-0.0546	-0.0338	-0.2139	0.008	-9.8991	0.9293	-9.8991	0.882	A+	A+	A+
SCIENCE	8	410888	0	A	1	53421	0.4567	0.2259	0.4549	0.1281	0.1873	0.0033	0.0006	0.4587	-0.1345	0.4597	-0.2107	-0.2529	-0.0523	-0.0268	0.782	0.0078	-7.289	0.9783	-2.909	0.9884	A-	A-	A-
SCIENCE	8	412134	0	A	2	53474	0.3128	0.3119	0.1227	0.2188	0.3437	0.0024	0.0005	0.3236	0.3244	-0.1774	-0.1211	-0.0829	-0.0418	-0.0255	1.339	0.0082	8.131	1.0294	9.9011	1.1254	A-	A-	A+
SCIENCE	8	413674	0	A	2	53514	0.3928	0.392	0.1152	0.3382	0.1525	0.0017	0.0004	0.4327	0.433	-0.1524	-0.2262	-0.1504	-0.0307	-0.0179	0.9745	0.0079	-7.199	0.9775	-2.859	0.9876	A-	A-	A-
SCIENCE	8	493908	0	A	2	53430	0.3593	0.2501	0.2959	0.0923	0.358	0.0032	0.0005	0.4311	-0.1247	-0.175	-0.2408	0.4321	-0.0556	-0.021	1.22	0.0081	-8.929	0.9698	5.401	1.0272	C-	A+	A+
SCIENCE	8	494453	0	A	2	53408	0.6664	0.0955	0.128	0.6636	0.1088	0.0035	0.0006	0.5656	-0.2741	-0.3145	0.5678	-0.2501	-0.0696	-0.0283	-0.2728	0.0081	-9.8992	0.8159	-9.8993	0.7342	A-	A-	A-
SCIENCE	8	494458	0	A	2	53412	0.5292	0.527	0.1205	0.264	0.0844	0.0032	0.0008	0.4651	0.4668	-0.3045	-0.1417	-0.2423	-0.056	-0.032	0.3175	0.0078	-9.8991	0.9496	-9.8991	0.9328	A-	A-	A-
SCIENCE	8	494459	0	A	2	53526	0.5472	0.1317	0.5462	0.1662	0.154	0.0015	0.0004	0.4835	-0.2193	0.4842	-0.1857	-0.2655	-0.0393	-0.0233	0.4232	0.0078	-9.8991	0.9355	-9.8991	0.9212	A-	A+	A-
SCIENCE	8	494524	0	A	2	53373	0.2513	0.1836	0.2127	0.3488	0.2501	0.0043	0.0004	0.1775	-0.1674	-0.0327	0.0108	0.1794	-0.0638	-0.0217	1.4364	0.0083	9.9011	1.0896	9.9012	1.2018	A+	A+	A-
SCIENCE	8	494525	0	A	2	53463	0.496	0.2241	0.1326	0.1457	0.4945	0.0024	0.0007	0.3955	-0.1656	-0.1858	-0.1793	0.397	-0.052	-0.0244	0.5396	0.0078	9.901	1.0311	9.001	1.035	A-	A+	A+
SCIENCE	8	560287	0	A	3	53328	0.5029	0.2061	0.1424	0.5001	0.1458	0.0049	0.0007	0.3645	-0.123	-0.2356	0.3673	-0.1304	-0.0663	-0.0341	0.3054	0.0078	9.9011	1.1022	9.9011	1.1101	A+	A+	A+
SCIENCE	8	560300	0	A	2	53285	0.4329	0.1133	0.205	0.2451	0.4302	0.0055	0.0009	0.4896	-0.2356	-0.2377	-0.1548	0.4911	-0.0679	-0.0305	0.7149	0.0078	-9.8991	0.9311	-9.8991	0.9304	A+	A-	A-
SCIENCE	8	560301	0	A	2	53275	0.6194	0.136	0.1018	0.1403	0.6153	0.0058	0.0008	0.4338	-0.2046	-0.2441	-0.18	0.437	-0.0678	-0.0344	-0.2014	0.008	-6.599	0.979	6.461	1.0332	A+	A+	A+
SCIENCE	8	560310	0	A	2	53324	0.6395	0.1114	0.6359	0.1032	0.1438	0.005	0.0007	0.5263	-0.2552	0.5288	-0.2675	-0.2478	-0.0709	-0.0317	-0.5182	0.0083	-4.179	0.9848	-9.8991	0.9216	A+	A+	A-
SCIENCE	8	575471	0	A	2	53472	0.5113	0.1154	0.1745	0.5098	0.1973	0.0024	0.0005	0.3835	-0.1681	-0.1639	0.3851	-0.1844	-0.054	-0.0247	0.5156	0.0078	9.9011	1.0497	9.9011	1.0581	A-	A-	A-
SCIENCE	8	580789	0	A	2	53476	0.4563	0.2175	0.1021	0.2226	0.455	0.0023	0.0005	0.2587	-0.1939	-0.1846	0.0219	0.2603	-0.049	-0.0204	0.8436	0.0078	9.9012	1.1765	9.9012	1.2136	A-	A+	A+
SCIENCE	8	580790	0	A	2	53507	0.5706	0.0532	0.3007	0.5693	0.0746	0.0019	0.0003	0.3794	-0.2207	-0.1556	0.3806	-0.2489	-0.043	-0.0205	-0.0282	0.0079	9.9011	1.0643	9.9011	1.0955	A+	A-	A-

SCIENCE	8	334787	0	B	2	53487	0.5402	0.1615	0.0657	0.2314	0.5387	0.0022	0.0004	0.446	-0.2409	-0.2675	-0.1548	0.447	-0.0447	-0.0262	0.5184	0.0078	-7.409	0.9787	-6.719	0.9744	A-	A+	A+
SCIENCE	8	410869	0	B	2	53397	0.6891	0.0708	0.6862	0.0874	0.1513	0.0037	0.0006	0.4628	-0.1938	0.465	-0.3057	-0.2109	-0.0569	-0.0275	-0.5392	0.0083	-9.8991	0.9331	-9.8991	0.8966	A-	A-	A-
SCIENCE	8	412458	0	B	3	53527	0.4915	0.1003	0.2262	0.4906	0.181	0.0016	0.0003	0.3353	-0.2376	-0.1401	0.3362	-0.0942	-0.0349	-0.0248	0.5244	0.0078	9.9011	1.0953	9.9011	1.1266	A+	A+	A+
SCIENCE	8	498027	0	B	2	53464	0.5292	0.5275	0.1493	0.1626	0.1575	0.0024	0.0006	0.4126	0.414	-0.2243	-0.1966	-0.1405	-0.0475	-0.028	0.4134	0.0078	-4.539	0.987	-4.109	0.9842	A+	A+	A+
SCIENCE	8	498031	0	B	2	53382	0.6009	0.0569	0.5982	0.2149	0.1255	0.0039	0.0007	0.4021	-0.2461	0.405	-0.1245	-0.2584	-0.0649	-0.0287	0.1509	0.0078	-3.419	0.99	-0.439	0.9982	A+	A+	A+
SCIENCE	8	574873	0	B	2	53389	0.4486	0.4466	0.1111	0.288	0.1499	0.0039	0.0006	0.4242	0.4256	-0.2202	-0.1679	-0.1744	-0.0554	-0.0266	0.6599	0.0078	-5.829	0.983	-2.839	0.989	A-	A+	A+
SCIENCE	8	330224	0	C	2	53459	0.4272	0.22	0.4259	0.2638	0.0871	0.0025	0.0006	0.3709	-0.1191	0.3722	-0.1461	-0.2382	-0.0492	-0.0287	0.8116	0.0078	9.9011	1.0535	9.9011	1.0869	A-	A-	A-
SCIENCE	8	395285	0	C	2	53483	0.4627	0.1708	0.4615	0.1186	0.2465	0.0021	0.0006	0.4015	-0.0962	0.4024	-0.2745	-0.17	-0.0397	-0.0233	0.8196	0.0078	9.901	1.038	9.9011	1.0618	A-	A-	A-
SCIENCE	8	401747	0	C	2	53392	0.7127	0.1355	0.092	0.0585	0.7095	0.0038	0.0006	0.355	-0.1223	-0.2086	-0.2394	0.3589	-0.0632	-0.0282	-0.6577	0.0085	8.771	1.0346	9.9011	1.0821	B+	A+	A+
SCIENCE	8	494464	0	C	2	53417	0.5587	0.2945	0.5565	0.0611	0.084	0.0033	0.0007	0.4841	-0.2859	0.4856	-0.2211	-0.1954	-0.053	-0.0298	0.1273	0.0078	-9.8991	0.93	-9.8991	0.8933	C-	A+	A+
SCIENCE	8	496017	0	C	2	53467	0.4838	0.4824	0.1184	0.284	0.1122	0.0023	0.0007	0.3656	0.367	-0.2533	-0.0442	-0.2489	-0.0512	-0.024	0.3544	0.0078	9.9011	1.0588	9.9011	1.0722	A-	A+	A+
SCIENCE	8	496018	0	C	2	53466	0.5479	0.1417	0.1911	0.5463	0.1179	0.0024	0.0006	0.4662	-0.2813	-0.2424	0.4672	-0.1132	-0.0407	-0.0296	0.021	0.0079	-7.169	0.9785	-7.909	0.9651	A-	A+	A+
SCIENCE	8	496714	0	C	2	53391	0.4407	0.1887	0.1427	0.2255	0.4387	0.0037	0.0007	0.3362	-0.2584	-0.225	0.0392	0.3384	-0.0631	-0.0259	0.8167	0.0078	9.9011	1.0911	9.9011	1.125	A-	A+	A+
SCIENCE	8	498859	0	C	2	53418	0.3209	0.1634	0.129	0.3841	0.3196	0.0032	0.0007	0.2821	-0.2271	-0.2265	0.0648	0.2835	-0.054	-0.0311	1.366	0.0082	9.9011	1.0992	9.9012	1.1821	A+	A-	A+
SCIENCE	8	278461	0	D	2	53466	0.2684	0.1901	0.298	0.2413	0.2676	0.0023	0.0008	0.2065	-0.0268	-0.1344	-0.0393	0.2076	-0.0464	-0.0319	1.6766	0.0086	9.9011	1.1419	9.9013	1.3097	A+	A+	A+
SCIENCE	8	413673	0	D	2	53489	0.4833	0.1439	0.2969	0.0745	0.4821	0.0021	0.0004	0.3522	-0.1596	-0.142	-0.2021	0.3535	-0.0456	-0.0258	0.6117	0.0078	9.9011	1.0674	9.9011	1.078	A-	A+	A+
SCIENCE	8	496021	0	D	2	53526	0.5835	0.1165	0.1475	0.5824	0.1517	0.0015	0.0004	0.3633	-0.1179	-0.1055	0.3645	-0.286	-0.0402	-0.02	0.2908	0.0078	9.901	1.0452	9.9011	1.0587	A-	A+	A+
SCIENCE	8	496022	0	D	2	53505	0.8107	0.0555	0.8088	0.0585	0.0748	0.0018	0.0005	0.4796	-0.2749	0.4813	-0.27	-0.2299	-0.0438	-0.0261	-1.2222	0.0096	-9.8991	0.8532	-9.8993	0.7051	B+	A+	A+
SCIENCE	8	496719	0	D	2	53516	0.5837	0.2939	0.5825	0.0509	0.0707	0.0016	0.0005	0.2988	-0.1451	0.3004	-0.1738	-0.1625	-0.0434	-0.0213	0.3637	0.0078	9.9011	1.1145	9.9011	1.1317	A-	A-	A-
SCIENCE	8	574839	0	D	2	53503	0.8209	0.0636	0.0743	0.819	0.0408	0.0019	0.0004	0.4753	-0.258	-0.2838	0.4766	-0.2218	-0.0384	-0.0269	-0.9984	0.0091	-9.8993	0.7379	-9.8994	0.6079	A+	A-	A-
SCIENCE	8	574819	1	A	2	4731	0.8072	0.0547	0.0547	0.0825	0.804	0.0036	0.0004	0.4332	-0.2408	-0.2403	-0.2181	0.4344	-0.0461	-0.0117	-1.1599	0.0211	-9.8992	0.7871	-9.8993	0.6625	C+	A+	A-
SCIENCE	8	621306	1	A	2	4732	0.653	0.6505	0.1741	0.1225	0.0491	0.0032	0.0006	0.3859	0.3885	-0.1224	-0.2655	-0.2217	-0.0548	-0.0325	-0.0198	0.0182	-9.8991	0.9121	-6.3791	0.9343	A+	A-	A+
SCIENCE	8	621315	1	A	2	4728	0.5036	0.2076	0.1945	0.092	0.5013	0.004	0.0006	0.3456	-0.1842	-0.0474	-0.2645	0.3475	-0.0567	-0.01	0.4392	0.018	8.0411	1.0574	7.0511	1.0674	A+	A+	A-
SCIENCE	8	622832	1	A	2	4722	0.5794	0.1573	0.1552	0.576	0.1057	0.0053	0.0006	0.4224	-0.1671	-0.2174	0.4252	-0.2121	-0.0708	-0.0108	0.0345	0.0181	-5.799	0.9597	-6.6791	0.933	A+	A+	A-
SCIENCE	8	622835	1	A	2	4733	0.5671	0.5651	0.1615	0.1095	0.1604	0.0027	0.0008	0.4284	0.4299	-0.2164	-0.252	-0.1409	-0.046	-0.024	0.1601	0.018	-6.939	0.9523	-4.059	0.9608	A+	A+	A+
SCIENCE	8	577935	1	B	2	4720	0.4496	0.3238	0.0377	0.1855	0.4467	0.0053	0.0011	0.2796	-0.0371	-0.2096	-0.2019	0.2815	-0.0476	-0.0231	0.5129	0.018	9.9011	1.096	9.9011	1.1253	A-	A+	A-
SCIENCE	8	617343	1	B	2	4731	0.5527	0.5505	0.2514	0.1011	0.0931	0.0034	0.0006	0.4399	0.4416	-0.2178	-0.2811	-0.1262	-0.0556	-0.0229	0.2044	0.018	-8.3691	0.9428	-7.9591	0.925	A+	A-	A-
SCIENCE	8	621309	1	C	2	4728	0.4852	0.1438	0.2362	0.4829	0.1324	0.0038	0.0008	0.3256	-0.157	-0.0676	0.3282	-0.2229	-0.0577	-0.0375	0.4843	0.018	9.9011	1.1081	9.9011	1.1464	A+	A-	A+
SCIENCE	8	621312	1	C	2	4727	0.5909	0.0878	0.1735	0.1459	0.588	0.0038	0.0011	0.5164	-0.1965	-0.2996	-0.2292	0.5188	-0.0655	-0.0419	-0.1692	0.0183	-9.8992	0.8442	-9.8992	0.7931	A+	A-	A-
SCIENCE	8	623847	1	C	3	4722	0.3484	0.3655	0.3463	0.1126	0.1697	0.0046	0.0013	0.3749	-0.1086	0.377	-0.2019	-0.1517	-0.0727	-0.0392	1.0948	0.0187	-2.829	0.9774	3.291	1.0391	A-	A-	A+
SCIENCE	8	581705	2	A	2	4432	0.8143	0.0492	0.064	0.811	0.0717	0.004		0.4504	-0.2478	-0.2585	0.4501	-0.2211	-0.0362		-1.33	0.0251	-9.8992	0.8352	-9.8994	0.6398	A+	A+	A+
SCIENCE	8	617345	2	A	2	4427	0.4506	0.4483	0.1384	0.1209	0.2872	0.0045	0.0007	0.3561	0.3589	-0.2548	-0.2827	0.0163	-0.0714	-0.0353	0.674	0.0195	-4.869	0.9652	-4.459	0.9579	A+	A-	A+
SCIENCE	8	622822	2	A	2	4417	0.5606	0.1611	0.5564	0.1629	0.1121	0.0058	0.0016	0.4691	-0.2206	0.4731	-0.2252	-0.1987	-0.0793	-0.0512	0.1396	0.0197	-9.8991	0.8996	-9.8991	0.8559	A+	A+	A+
SCIENCE	8	624424	2	A	2	4438	0.5714	0.1519	0.1647	0.5699	0.1108	0.0022	0.0004	0.3886	-0.1739	-0.1743	0.3907	-0.2011	-0.0552	-0.0307	0.1688	0.0196	-4.399	0.9681	-5.9291	0.9389	A+	A+	A+
SCIENCE	8	624427	2	A	2	4440	0.4845	0.2425	0.0897	0.4834	0.1822	0.0016	0.0007	0.2695	0.0006	-0.2683	0.2711	-0.1469	-0.0368	-0.0362	0.5625	0.0195	9.9011	1.1117	9.9012	1.1539	A+	A-	A+
SCIENCE	8	623859	2	B	2	4423	0.4088	0.2072	0.1966	0.4063	0.1838	0.0054	0.0007	0.3022	-0.1374	-0.023	0.3051	-0.2038	-0.0739	-0.0244	0.8663	0.0197	9.9011	1.0834	9.9011	1.1147	A-	A+	A+
SCIENCE	8	624425	2	B	2	4431	0.4721	0.4701	0.1506	0.198	0.1771	0.0031	0.0011	0.1393	0.1428	-0.0691	-0.065	-0.042	-0.0487	-0.0567	0.5829	0.0195	9.9012	1.2196	9.9013	1.3308	A+	A+	A+
SCIENCE	8	624430	2	B	2	4425	0.4075	0.4052	0.36	0.1591	0.0701	0.0049	0.0007	0.3206	0.3232	-0.06	-0.17	-0.2441	-0.0628	-0.0362	1.0045	0.0199	6.141	1.0485	8.3011	1.0913	A+	A-	A-
SCIENCE	8	566166	2	C	2	4420	0.3219	0.1638	0.3198	0.3778	0.1319	0.0063	0.0004	0.1957	-0.1744	0.1976	0.1046	-0.2177	-0.0504	-0.0318	1.2229	0.0203	9.9011	1.1063	9.9012	1.1923	A-	A-	A+
SCIENCE	8	623843	2	C	2	4424	0.3917	0.2906	0.1445	0.3894	0.1697	0.0049	0.0009	0.276	-0.0091	-0.2237	0.2781	-0.1282	-0.0608	-0.0157	0.9247	0.0197	9.3211	1.0725	9.9011	1.1096	A-	A-	A+
SCIENCE	8	581583	3	A	2	4443	0.5253	0.0721	0.2847	0.5227	0.1156	0.0045	0.0004	0.2839	-0.1867	-0.0169	0.2864	-0.26	-0.0588	-0.0026	0.342	0.0196	9.9011	1.1164	9.9012	1.1547	A-	B-	A-
SCIENCE	8	617342	3	A	2	4446	0.6637	0.6609	0.1933	0.0887	0.0529	0.0036	0.0007	0.5064	0.5089	-0.3034	-0.2569	-0.1929	-0.0744	-0.0194	-0.4066	0.0208	-9.8991	0.859	-9.8992	0.7849	A-	A-	A-
SCIENCE	8	621296	3	A	2	4441	0.6048	0.1272	0.1393	0.6016	0.1265	0.0045	0.0009	0.4307	-0.1797	-0.2192	0.4337	-0.2134	-0.07	-0.0309	-0.0084	0.0199	-9.5291	0.9277	-9.0091	0.8989	A+	A+	A+
SCIENCE	8	621301	3	A	2	4449	0.3801	0.2298	0.3787	0.153	0.2349	0.0031	0.0004	0.3944	-0.1496	0.3955	-0.1933	-0.1328	-0.0473	-0.0191	1.2787	0.0204	-5.129	0.9566	-0.239	0.9969	A-	A-	A-
SCIENCE	8	630322	3	A	2	4445	0.6049	0.1837	0.1037	0.6022	0.1059	0.0038	0.0007	0.3425	-0.0871	-0.2188	0.3462	-0.208	-0.0719	-0.0221	0.0074	0.0199	1.541	1.012	-0.389	0.9954	A+	A+	A+
SCIENCE	8	496028	3	B	2	4438	0.5352	0.1713	0.1595	0.5319	0.1312	0.0054	0.0007	0.4348	-0.1644	-0.2427	0.4381	-0.182	-0.0721	-0.0427	0.3475	0.0196	-7.3291	0.9474	-8.0391	0.9226	A-	A+	A-
SCIENCE	8	617429	3	B	2	4448	0.46	0.3803	0.4582	0.112	0.0457	0.0036	0.0002	0.3272	-0.0779	0.3293	-0.2399	-0.2233	-0.0592	-0.0267	0.627	0.0195	6.081	1.0451	5.8311	1.0569	A-	A-	A+
SCIENCE	8	623146	3	C	2	4453	0.5095	0.2791	0.5082	0.1071	0.103	0.002	0.0007	0.4246	-0.1846	0.4258	-0.2471	-0.1679	-0.0507	-0.0149	0.3394	0.0196	-6.709	0.9517	-7.1591	0.9306	A-	A-	A-
SCIENCE	8	621287	3	D	2	4433	0.2818	0.1075	0.2797	0.3286	0.277	0.0063	0.0009	0.0449	-0.2414	0.0483	0.0718	0.0564	-0.0626	-0.0325	1.8104	0.0221	9.9012	1.2424	9.9015	1.4984	A-	A-	A-
SCIENCE	8	621298	3	D	2	4445	0.2592	0.258	0.254	0.1574	0.3261	0.004	0.0004	0.0978	0.0996	0.0099	-0.0655	-0.0434	-0.0516	-0.0202	2.0537	0.0232	9.9012	1.2063	9.9015	1.5088	A+	A+	A-
SCIENCE	8	566925	4	A	2	4417	0.4182	0.164	0.1325	0.2817	0.4155	0.0054	0.0009	0.3051	-0.2083	-0.1701	-0.0254	0.3071	-0.0595	-0.0249	0.8707	0.0332	3.201	1.041	3.9811	1.069	A-	A+	A-
SCIENCE	8	622819	4	A	2	4434	0.5728	0.5714	0.1161	0.1836	0.1264	0.002	0.0004	0.5132	0.5136	-0.2623	-0.2156	-0.2544	-0.0398	-0.0153	0.1385	0.0331	-9.8991	0.8601	-9.8992	0.8201	A+	A+	A-
SCIENCE	8	624426	4	A	3	4420	0.5699	0.0684	0.2562	0.103	0.5667	0.0045	0.0011	0.451	-0.1962	-0.2349	-0.2215	0.4529	-0.0601	-0.0304	0.1613	0.033	-7.7091	0.9092	-8.3391	0.8644	A+	A+	A+
SCIENCE	8	624463	4	A	2	4425	0.4497	0.1555	0.4477	0.2808	0.1116	0.0036	0.0009	0.3056	-0.203	0.3093	-0.0555	-0.1548	-0.084	-0.0522	0.7289	0.033	3.371	1.0418	2.781	1.0454	A+	A+	A+
SCIENCE	8	630405	4	A	2	4425	0.2353	0.2342	0.1483	0.4002	0.2128	0.0036	0.0009	0.0672	0.0691	-0.1975	0.1837	-0.1099	-0.0583	-0.0209	1.8731	0.0381	9.6612	1.2026	9.9015	1.5386	A-	A-	A-
SCIENCE	8	623138	4	B	2	4424	0.5321	0.2713	0.1015	0.5296	0.0929	0.0038	0.0009	0.3393	-0.1001	-0.2167	0.3436	-0.1892	-0.0906	-0.0345	0.3388	0.0328	1.121	1.0134	0.191	1.0029	A+	A+	A-
SCIENCE	8	624428	4	B	2	4423	0.4099	0.2355	0.1489	0.4079	0.2027	0.0047	0.0002	0.2553	0.0385	-0.1844	0.2581	-0.18	-0.0693	-0.0277	0.9221	0.0333	6.5311	1.0861	6.6711	1.1204	A-	A-	A+
SCIENCE	8	624429	4	B	2	4427	0.3149	0.3136	0.3762	0.2056	0.1006	0.0038	0.0002	0.0356	0.0377	0.1384	-0.0806	-0.1617	-0.0508	-0.0132	1.4065	0.0351	9.9013	1.2873	9.9014	1.4359	A+	A+	A+
SCIENCE	8	577973	4	D	2	4422	0.4851	0.4826	0.1431	0.2403	0.1289	0.0049	0.0002	0.3814	0.3837	-0.1553	-0.1293	-0.2287	-0.0719	-0.0309	0.52	0.0328	-1.989	0.9764	-2.339	0.9638	A+	A+	A+
SCIENCE	8	623848	4	D	2	4423	0.3816	0.1462	0.1395	0.3296	0.3798	0.004	0.0009	0.3081	-0.2165	-0.2665	0.0525	0.3113	-0.0927	-0.0353	1.0617	0.0337	2.721	1.0369	2.8611	1.0545	A+	A-	A-
SCIENCE	8	578781	5	A	2	4434	0.5983	0.1826	0.088	0.5952	0.129	0.0045	0.0007	0.4329	-0.149	-0.2607	0.4343	-0.2343	-0.0504	0.005	-0.1872	0.034	-1.539	0.9793	-2.6691	0.943	A+	A+	A+
SCIENCE	8	621000	5	A	2	4435	0.6525	0.0855	0.1362	0.6493	0.1241	0.004	0.0009	0.4814	-0.2701	-0.2636	0.4843	-0.1822	-0.0632	-0.0368	-0.2374	0.0341	-9.4691	0.8753	-8.8292	0.8148	A+	A+	A+
SCIENCE	8	621310	5	A	3	4434	0.3126	0.1012	0.1048	0.4779	0.311	0.0045	0.0007	0.0265	-0.2059	-0.2147	0.2368	0.0289	-0.0438	-0.033	1.4439	0.0353	9.9013	1.3121	9.9015	1.4839	A+	A-	A-
SCIENCE	8	621313	5	A	3	4436	0.4161	0.1378	0.267	0.4142	0.1764	0.0038	0.0009	0.3006	-0.1765	-0.0889	0.3024	-0.1175	-0.05	-0.0305	0.9093	0.0334	4.5711	1.0602	5.2511	1.0959	A+	A-	A-
SCIENCE	8	622823	5	A	2	4442	0.3787	0.2823	0.3774	0.1999	0.1371	0.0027	0.0007	0.2845	-0.0629	0.2862	-0.178	-0.1041	-0.0502	-0.0312	1.0933	0.0339	5.3211	1.0748	7.0511	1.1432	A+	A+	A-
SCIENCE	8	622830	5	B	2	4446	0.6858	0.6841	0.1371	0.0938	0.0826	0.0018	0.0007	0.4529	0.4548	-0.161	-0.2751	-0.2648	-0.0459	-0.0402	-0.4206	0.0349	-8.1491	0.8835	-5.8091	0.8604	A+	A+	A+
SCIENCE	8	621307	5	C	2	4443	0.44	0.1315	0.4386	0.0949	0.3318	0.0022	0.0009	0.2201	-0.141	0.2216	-0.2009	-0.0019	-0.0287	-0.0399	0.7896	0.0331	9.9011	1.1426	9.9012	1.1853	A+	A-	A+
SCIENCE	8	621311	5	C	3	4431	0.5978	0.0853	0.1149	0.1997	0.5943	0.0045	0.0013	0.339	-0.2058	-0.2378	-0.0748	0.3421	-0.0494	-0.0409	0.039	0.0333	0.801	1.0101	0.771	1.0145	A+	A+	A-
SCIENCE	8	577967	5	D	2	4435	0.3959	0.2282	0.2237	0.394	0.1492	0.0045	0.0004	0.2354	0.0098	-0.0581	0.2373	-0.2592	-0.0417	-0.0343	0.764	0.0331	8.5811	1.1107	8.2811	1.1459	A+	A-	A+
SCIENCE	8	617339	5	D	2	4436	0.2847	0.1122	0.2109	0.3888	0.2834	0.0038	0.0009	0.2125	-0.2302	-0.1972	0.1226	0.2137	-0.0385	-0.0203	1.5999	0.0362	6.6711	1.1185	8.1112	1.2311	A+	A-	A-
SCIENCE	8	580788	6	A	2	4408	0.6919	0.688	0.1076	0.1234	0.0753	0.005	0.0007	0.4477	0.4481	-0.2053	-0.2099	-0.2718	-0.0387	-0.0192	-0.5421	0.0356	-5.0791	0.9216	-3.9491	0.8968	A+	A-	A+
SCIENCE	8	620974	6	A	2	4404	0.7218	0.7171	0.1169	0.0812	0.0783	0.0061	0.0005	0.4862	0.4889	-0.2622	-0.2565	-0.2234	-0.0722	-0.013	-0.6154	0.0361	-9.2091	0.8562	-9.3992	0.7566	A+	A+	A-
SCIENCE	8	620987	6	A	1	4407	0.6943	0.1216	0.6903	0.1293	0.053	0.0052	0.0007	0.4171	-0.2389	0.4199	-0.1653	-0.248	-0.0643	-0.0183	-0.4653	0.0352	-5.5191	0.9178	-4.7691	0.8822	A+	A-	A-
SCIENCE	8	621303	6	A	2	4412	0.5218	0.2348	0.5193	0.1633	0.0778	0.0041	0.0007	0.3214	-0.0134	0.3232	-0.2492	-0.224	-0.05	-0.0201	0.3951	0.033	4.0911	1.051	4.8211	1.0819	A+	A-	A-
SCIENCE	8	621305	6	A	2	4410	0.4558	0.0738	0.0873	0.3803	0.4534	0.0047	0.0005	0.3975	-0.2601	-0.2294	-0.1276	0.3981	-0.0415	-0.0309	0.7124	0.0332	-1.959	0.9755	-1.109	0.9815	A-	A-	A-
SCIENCE	8	623867	6	B	3	4416	0.2156	0.2148	0.1708	0.4476	0.1631	0.0027	0.0011	0.1266	0.1286	-0.1799	0.1168	-0.1041	-0.0611	-0.0471	2.0254	0.0394	6.6411	1.1471	9.9015	1.4665	A-	A-	A-
SCIENCE	8	303678	6	C	2	4406	0.5275	0.5242	0.1611	0.1976	0.111	0.0059	0.0002	0.4015	0.4031	-0.1911	-0.1767	-0.1786	-0.0571	-0.0179	0.282	0.0331	-1.419	0.9825	-0.279	0.9951	A-	A+	A-
SCIENCE	8	621291	6	D	2	4417	0.3661	0.1791	0.139	0.3136	0.3648	0.0025	0.0011	0.2144	-0.1076	-0.2204	0.036	0.2162	-0.0366	-0.0442	1.1534	0.0342	9.1011	1.1337	9.7712	1.212	A-	A-	A-
SCIENCE	8	621294	6	D	2	4412	0.4676	0.1119	0.4654	0.3255	0.0925	0.0041	0.0007	0.2742	-0.2397	0.2761	-0.0244	-0.1624	-0.0426	-0.0392	0.6545	0.0331	7.6511	1.0981	6.5411	1.1121	A-	A+	A-
SCIENCE	8	630327	6	D	3	4412	0.2901	0.18	0.2887	0.3384	0.1881	0.0043	0.0005	0.0881	-0.1989	0.0894	0.1538	-0.0881	-0.0336	-0.0119	1.5648	0.0361	9.9012	1.237	9.9015	1.4774	A-	A+	A-
SCIENCE	8	578782	7	A	2	4408	0.8396	0.0611	0.0586	0.0397	0.8341	0.0061	0.0005	0.4183	-0.2265	-0.2352	-0.2156	0.421	-0.0583	-0.0233	-1.2137	0.0408	-9.8992	0.7883	-9.8994	0.6301	B+	A+	A+
SCIENCE	8	620982	7	A	2	4412	0.4102	0.0753	0.0674	0.4438	0.4079	0.0052	0.0005	0.1501	-0.2088	-0.2067	0.0748	0.154	-0.0721	-0.0366	0.9486	0.0337	9.9012	1.2257	9.9013	1.286	A+	A+	A+
SCIENCE	8	623144	7	A	2	4416	0.5971	0.1251	0.0949	0.5943	0.181	0.0047		0.417	-0.2159	-0.2242	0.4202	-0.1665	-0.0748		0.0374	0.0336	-3.829	0.9509	-4.0091	0.924	A-	A+	A+
SCIENCE	8	624860	7	A	2	4410	0.5222	0.1179	0.2556	0.519	0.1014	0.0047	0.0014	0.3646	-0.228	-0.062	0.3678	-0.2574	-0.0593	-0.0377	0.4057	0.0331	0.501	1.0062	1.631	1.0278	A+	A-	A-

SCIENCE	8	624862	7	A	2	4416	0.5512	0.1886	0.5486	0.1122	0.1458	0.0041	0.0007	0.3978	-0.1438	0.4	-0.2385	-0.179	-0.0535	-0.0358	0.2624	0.0332	-1.929	0.9759	-2.529	0.956	A-	A-	A-
SCIENCE	8	566163	7	B	2	4411	0.5434	0.1956	0.1285	0.5402	0.1298	0.0054	0.0005	0.5297	-0.2417	-0.2339	0.5314	-0.2534	-0.0646	-0.0378	0.1633	0.0334	-9.8991	0.865	-9.8992	0.8124	A-	A+	A-
SCIENCE	8	623868	7	B	2	4412	0.6729	0.0915	0.0829	0.1508	0.6691	0.0047	0.0009	0.5125	-0.2472	-0.2542	-0.2672	0.5149	-0.0641	-0.0289	-0.3469	0.0348	-9.8992	0.8445	-9.8992	0.7675	A+	A-	A-
SCIENCE	8	624856	7	C	2	4411	0.6277	0.6241	0.0879	0.1388	0.1433	0.0043	0.0016	0.4595	0.462	-0.2474	-0.2553	-0.1723	-0.058	-0.0322	-0.1122	0.034	-7.7291	0.899	-7.3491	0.8527	A+	A+	A+
SCIENCE	8	624861	7	C	2	4416	0.4264	0.1578	0.1918	0.2213	0.4244	0.0038	0.0009	0.2615	-0.1366	-0.146	-0.0476	0.2632	-0.0415	-0.0163	0.8667	0.0335	8.5811	1.1163	8.0012	1.1501	A+	A+	A-
SCIENCE	8	623149	7	D	2	4422	0.2944	0.1596	0.2934	0.3205	0.2231	0.0025	0.0009	0.1627	-0.0983	0.1638	-0.0263	-0.057	-0.036	-0.0258	1.5557	0.036	9.9012	1.179	9.9014	1.3572	A-	A-	A-
SCIENCE	8	574821	8	A	2	4405	0.7351	0.0797	0.0747	0.7309	0.109	0.0056		0.5163	-0.2871	-0.2719	0.5131	-0.2472	-0.0171		-0.7278	0.0366	-9.8992	0.8271	-9.8993	0.73	A+	A+	A+
SCIENCE	8	622838	8	A	2	4402	0.6006	0.1686	0.1284	0.5968	0.0998	0.0054	0.0009	0.3619	-0.1754	-0.1428	0.3668	-0.1981	-0.0764	-0.051	-0.0038	0.0335	-0.409	0.9947	1.071	1.0205	A+	A-	A-
SCIENCE	8	629860	8	A	2	4413	0.2465	0.2959	0.3002	0.2456	0.1544	0.0029	0.0009	-0.0246	0.1345	0.019	-0.0225	-0.1577	-0.0443	-0.0336	1.8041	0.0379	9.9013	1.3341	9.9017	1.7129	A-	A-	A+
SCIENCE	8	629862	8	A	2	4412	0.3824	0.1623	0.2749	0.3808	0.1779	0.0036	0.0005	0.2912	-0.1682	-0.1971	0.2925	0.0298	-0.0456	-0.0327	1.0494	0.034	4.8811	1.0688	6.9111	1.1406	A+	A-	A-
SCIENCE	8	630325	8	A	2	4415	0.5343	0.1819	0.1431	0.5325	0.1391	0.0025	0.0009	0.4068	-0.1277	-0.2248	0.4089	-0.2084	-0.0608	-0.0297	0.3092	0.0331	-2.839	0.9658	-3.5091	0.9418	A-	A+	A-
SCIENCE	8	623872	8	C	2	4397	0.4257	0.1463	0.1887	0.235	0.4226	0.007	0.0005	0.3657	-0.0963	-0.1449	-0.2022	0.3667	-0.0463	-0.0405	0.8407	0.0334	0.061	1.0007	0.191	1.0033	A+	A-	A-
SCIENCE	8	629859	8	C	3	4399	0.4708	0.4675	0.233	0.0916	0.2009	0.0059	0.0011	0.2116	0.2152	-0.1943	-0.1732	0.0763	-0.0599	-0.0379	0.6219	0.0331	9.9012	1.1559	9.9012	1.1945	A+	A+	A+
SCIENCE	8	629861	8	C	2	4413	0.2935	0.1652	0.1571	0.3815	0.2923	0.0029	0.0009	0.3273	-0.212	-0.0915	-0.0705	0.328	-0.0386	-0.0281	1.5238	0.036	0.111	1.0018	2.9811	1.0796	A+	A-	A-
SCIENCE	8	566168	8	D	2	4401	0.4722	0.1786	0.2124	0.4691	0.1334	0.0054	0.0011	0.4105	-0.2334	-0.1058	0.4102	-0.2026	-0.0267	-0.0365	0.4365	0.033	-2.479	0.97	-2.299	0.9624	A+	A-	A-
SCIENCE	8	623150	8	D	2	4412	0.5315	0.1223	0.121	0.2233	0.5293	0.0034	0.0007	0.4064	-0.2359	-0.1901	-0.1451	0.4085	-0.0511	-0.0469	0.3244	0.0331	-3.169	0.9618	-3.2491	0.9462	A+	A-	A-
SCIENCE	8	579567	9	A	2	4412	0.6725	0.1398	0.6679	0.1389	0.0466	0.0065	0.0002	0.3684	-0.0904	0.3713	-0.2609	-0.2308	-0.0545	-0.0163	-0.3527	0.0346	-2.009	0.9715	-0.399	0.9906	A-	A-	A-
SCIENCE	8	620981	9	A	2	4418	0.4819	0.0925	0.1128	0.31	0.4793	0.0047	0.0007	0.376	-0.2504	-0.199	-0.106	0.3772	-0.0475	-0.0246	0.5777	0.033	-0.499	0.9939	-0.249	0.9959	A+	A+	A+
SCIENCE	8	623139	9	A	2	4421	0.6162	0.0991	0.6132	0.1308	0.1522	0.0036	0.0011	0.5014	-0.2599	0.503	-0.269	-0.2016	-0.0491	-0.0379	-0.0698	0.0336	-9.8991	0.8587	-9.8992	0.7992	A+	A-	A-
SCIENCE	8	624855	9	A	2	4427	0.412	0.19	0.1673	0.4106	0.2287	0.0032	0.0002	0.3158	-0.1609	-0.2231	0.3168	-0.0165	-0.0467	0.0059	0.9109	0.0334	3.501	1.0463	4.5511	1.082	A-	A+	A+
SCIENCE	8	624857	9	A	3	4421	0.4295	0.1812	0.201	0.4275	0.1855	0.0038	0.0009	0.1737	-0.1979	-0.0541	0.1752	0.0361	-0.0335	-0.0231	0.8279	0.0333	9.9012	1.199	9.9013	1.2675	A+	A+	A-
SCIENCE	8	303325	9	C	2	4418	0.3083	0.2375	0.1995	0.251	0.3066	0.0047	0.0007	0.2445	-0.15	-0.1363	0.019	0.2454	-0.0437	-0.0035	1.1791	0.0343	2.111	1.0304	4.5011	1.0942	A-	A-	A+
SCIENCE	8	623135	9	C	2	4418	0.5287	0.1646	0.1869	0.5259	0.1173	0.0045	0.0009	0.3865	-0.1996	-0.1695	0.3886	-0.1536	-0.0561	-0.0255	0.3547	0.0329	-1.529	0.9816	-2.409	0.9612	A+	A-	A-
SCIENCE	8	624858	9	C	2	4415	0.4607	0.2701	0.1499	0.4579	0.1159	0.0047	0.0014	0.392	-0.1273	-0.18	0.3933	-0.2208	-0.0475	-0.0322	0.6805	0.033	-2.079	0.9745	-1.569	0.9747	A-	A+	A+
SCIENCE	8	624859	9	C	2	4416	0.3204	0.3116	0.2008	0.1632	0.3186	0.0047	0.0011	0.3065	-0.0466	-0.1779	-0.1217	0.3087	-0.067	-0.0407	1.3859	0.0351	1.491	1.0234	4.1611	1.0994	A-	A-	A+
SCIENCE	8	623855	9	D	2	4411	0.3945	0.2049	0.3917	0.183	0.2134	0.0061	0.0009	0.1528	-0.0841	0.1566	-0.1331	0.0366	-0.063	-0.0374	1.0049	0.0337	9.9012	1.2059	9.9013	1.27	A+	A-	A-
SCIENCE	8	579568	10	A	2	4415	0.7017	0.0661	0.1333	0.6985	0.0976	0.0045		0.2219	-0.1728	-0.0315	0.225	-0.1567	-0.0465		-0.1803	0.0339	2.271	1.0303	2.4511	1.0521	A+	A-	A-
SCIENCE	8	617355	10	A	3	4403	0.3732	0.1842	0.1939	0.2442	0.3705	0.007	0.0002	0.3443	-0.1522	-0.2231	-0.0304	0.3477	-0.0897	-0.0131	1.1168	0.0339	0.241	1.0033	1.631	1.0316	A+	A+	A+
SCIENCE	8	620988	10	A	2	4412	0.439	0.26	0.1515	0.1466	0.4368	0.0045	0.0007	0.3132	-0.0182	-0.222	-0.1797	0.3163	-0.0804	-0.0135	0.7892	0.0331	3.661	1.0462	4.2311	1.0712	A+	A-	A-
SCIENCE	8	630668	10	A	3	4422	0.4724	0.1003	0.471	0.1504	0.2753	0.0025	0.0005	0.3867	-0.1944	0.3879	-0.2004	-0.1364	-0.0434	-0.0263	0.6248	0.0329	-2.269	0.9729	-1.589	0.9748	A+	A-	A+
SCIENCE	8	630673	10	A	2	4417	0.3138	0.1258	0.2113	0.3125	0.3463	0.0038	0.0002	0.1173	-0.2227	-0.0737	0.1203	0.1122	-0.0792	-0.0225	1.4215	0.0352	9.9012	1.2093	9.9013	1.3369	A-	A-	A-
SCIENCE	8	412459	10	B	2	4398	0.4359	0.4322	0.2415	0.1209	0.1971	0.0081	0.0002	0.3031	0.3053	-0.0851	-0.2297	-0.0869	-0.0562	-0.0209	0.7505	0.0331	3.651	1.0456	3.8311	1.0635	A-	A-	A+
SCIENCE	8	618936	10	B	2	4414	0.6851	0.6818	0.1003	0.1621	0.051	0.0041	0.0007	0.4561	0.46	-0.2228	-0.2488	-0.2269	-0.0842	-0.0135	-0.4092	0.0348	-8.3391	0.8828	-7.5392	0.8274	A+	A-	A-
SCIENCE	8	623869	10	C	2	4403	0.4352	0.2782	0.166	0.432	0.1166	0.0063	0.0009	0.1246	0.0201	-0.0962	0.1294	-0.096	-0.0753	-0.0174	0.8121	0.0332	9.9012	1.2216	9.9013	1.2748	A+	A+	A+
SCIENCE	8	630667	10	D	2	4420	0.3946	0.094	0.2442	0.2652	0.3932	0.0034		0.3117	-0.164	-0.1523	-0.0819	0.3134	-0.0625		1.0023	0.0336	3.061	1.041	3.5211	1.0649	A+	A+	A-
SCIENCE	8	630671	10	D	3	4410	0.258	0.2144	0.3382	0.2566	0.1851	0.0054	0.0002	0.0708	-0.1399	0.0613	0.0725	0.0002	-0.0389	-0.0304	1.7436	0.0372	9.9012	1.2186	9.9015	1.4876	A-	A-	A-
SCIENCE	8	574820	11	A	2	4375	0.5534	0.0954	0.1774	0.5499	0.171	0.0061	0.0002	0.4518	-0.2408	-0.1883	0.4541	-0.2079	-0.0608	-0.0129	0.0867	0.0334	-4.6691	0.9424	-4.9491	0.9123	A-	A+	A+
SCIENCE	8	622831	11	A	2	4371	0.3267	0.2516	0.2203	0.1965	0.3243	0.0059	0.0014	0.2608	-0.046	-0.0887	-0.1525	0.263	-0.0607	-0.0305	1.3643	0.0352	4.8611	1.0774	6.9912	1.1693	A+	A-	A+
SCIENCE	8	629857	11	A	2	4383	0.4091	0.4072	0.1985	0.1862	0.2035	0.0034	0.0011	0.3544	0.3562	-0.1176	-0.2359	-0.0793	-0.0587	-0.0283	0.9361	0.0337	0.731	1.0098	1.441	1.0259	A-	A-	A-
SCIENCE	8	629858	11	A	2	4387	0.1393	0.1762	0.2637	0.1388	0.4177	0.0027	0.0009	-0.144	-0.1946	0.0592	-0.142	0.2046	-0.0589	-0.0228	2.6259	0.0462	9.0213	1.2915	9.9023	2.3409	A-	A-	A-
SCIENCE	8	617347	11	C	2	4381	0.5811	0.1192	0.1935	0.5782	0.104	0.0045	0.0005	0.4953	-0.2504	-0.204	0.4975	-0.2599	-0.0591	-0.0282	0.1081	0.0334	-9.8991	0.875	-9.4092	0.8395	A-	A-	A-
SCIENCE	8	629856	11	C	2	4377	0.4085	0.3566	0.1304	0.4061	0.1011	0.0052	0.0007	0.1268	0.1597	-0.2037	0.1312	-0.2189	-0.0801	-0.0206	0.9417	0.0337	9.9012	1.2341	9.9013	1.2959	A+	A-	A-
SCIENCE	8	629863	11	C	3	4384	0.5461	0.5437	0.1224	0.127	0.2026	0.0032	0.0011	0.4232	0.4256	-0.2332	-0.1832	-0.1743	-0.0498	-0.0506	0.2754	0.0332	-4.3691	0.9473	-4.5191	0.9257	A-	A+	A+
SCIENCE	8	577686	11	D	2	4381	0.43	0.4279	0.1163	0.1285	0.3223	0.0048	0.0002	0.2259	0.2291	-0.2472	-0.2112	0.0894	-0.071	-0.0192	0.9363	0.0337	9.9012	1.1551	9.9012	1.2087	A-	A+	A+
SCIENCE	8	617349	11	D	2	4376	0.4886	0.4856	0.1115	0.198	0.1987	0.0059	0.0002	0.3999	0.4017	-0.2182	-0.2029	-0.1162	-0.0656	0.012	0.5546	0.0331	-2.049	0.9749	-1.939	0.9689	A-	A-	A+
SCIENCE	8	623141	11	D	2	4386	0.4375	0.4358	0.3311	0.1272	0.102	0.0036	0.0002	0.1551	0.1567	0.073	-0.2632	-0.0717	-0.039	-0.0207	0.7952	0.0334	9.9012	1.223	9.9013	1.2866	A+	A+	A-
SCIENCE	8	578780	12	A	3	4456	0.3041	0.2437	0.3024	0.152	0.2964	0.0051	0.0004	0.2018	-0.0393	0.2035	-0.1772	-0.0197	-0.0561	0.0013	1.3946	0.0349	5.1711	1.0813	9.1212	1.2249	A-	A+	A-
SCIENCE	8	630323	12	A	2	4461	0.2972	0.2578	0.2959	0.2029	0.239	0.004	0.0004	0.0875	0.0843	0.0906	-0.145	-0.0341	-0.0766	-0.024	1.5169	0.0355	9.9012	1.2229	9.9014	1.4085	A-	A+	A-
SCIENCE	8	630666	12	A	2	4467	0.4403	0.1598	0.2337	0.439	0.1645	0.0029	0.0002	0.2303	-0.1806	0.0404	0.2325	-0.1697	-0.0615	-0.0068	0.7818	0.0329	9.2511	1.1183	9.0612	1.1571	A+	A+	A-
SCIENCE	8	630669	12	A	3	4467	0.3929	0.177	0.3917	0.2863	0.1419	0.0027	0.0004	0.2183	-0.1323	0.2205	-0.0453	-0.0945	-0.0585	-0.0317	1.0136	0.0334	8.6111	1.1174	9.2112	1.178	A+	A+	A+
SCIENCE	8	630326	12	B	2	4454	0.3561	0.2026	0.3539	0.2865	0.1509	0.0054	0.0007	0.182	-0.0707	0.1837	-0.0106	-0.1418	-0.0406	-0.0362	1.2049	0.0341	9.9012	1.1539	9.9012	1.2362	A-	A+	A-
SCIENCE	8	271415	12	C	1	4461	0.5766	0.2301	0.1422	0.574	0.0493	0.004	0.0004	0.3222	-0.0746	-0.2489	0.3227	-0.1803	-0.0239	-0.0328	-0.0162	0.0333	4.4911	1.058	4.0911	1.0794	A-	A+	A+
SCIENCE	8	623866	12	C	2	4462	0.6006	0.1817	0.1234	0.5981	0.0926	0.0031	0.0011	0.5176	-0.2483	-0.2603	0.5201	-0.2379	-0.0603	-0.0397	0.018	0.0332	-9.8991	0.8529	-9.8992	0.804	A-	A-	A+
SCIENCE	8	623844	12	D	2	4458	0.4928	0.4903	0.2265	0.1263	0.1518	0.0049	0.0002	0.3499	0.3516	-0.1442	-0.1998	-0.1257	-0.0539	-0.0084	0.5359	0.0327	0.941	1.0112	0.921	1.0145	A-	A+	A-
SCIENCE	8	630670	12	D	2	4461	0.2278	0.2504	0.3129	0.2267	0.2055	0.0036	0.0009	0.1973	-0.1183	0.0517	0.1993	-0.1266	-0.07	-0.0285	1.9351	0.0384	3.6711	1.076	8.2713	1.2952	A-	A-	A-
SCIENCE	8	630672	12	D	2	4456	0.3559	0.2154	0.1533	0.2718	0.3539	0.0051	0.0004	0.2827	0.0087	-0.1807	-0.157	0.2849	-0.0567	-0.0384	1.2049	0.0341	3.5211	1.0504	4.9711	1.1049	A-	A+	A-

ContArea	FormGrad	PubID	FormNuml	Standard1	Depth	N	PValue	Proportior	Proportior	Proportior	Proportior	Proportior	PtBiserial	Correlatio	Correlatio	Correlatio	Correlatio	CorrelationOMITS
ELA	3	574375	0	A-C	2	18423	0.6084	0.1593	0.6076	0.1425	0.0893	0.0014	0.5572	-0.2407	0.5569	-0.2943	-0.2818	-0.017
ELA	3	578131	0	A-C	2	18402	0.5055	0.3166	0.1181	0.5043	0.0585	0.0025	0.5043	-0.2487	-0.2613	0.504	-0.2165	-0.0235
ELA	3	574376	0	A-K	3	18390	0.4192	0.1976	0.2063	0.4179	0.1751	0.0031	0.4259	-0.2172	-0.1756	0.426	-0.1345	-0.0255
ELA	3	574380	0	A-K	2	18416	0.3682	0.3675	0.2275	0.3121	0.0912	0.0017	0.324	0.3239	-0.131	-0.045	-0.2779	-0.0094
ELA	3	578133	0	A-K	2	18403	0.686	0.1048	0.6843	0.1345	0.0739	0.0024	0.5073	-0.3109	0.5078	-0.2504	-0.2047	-0.0371
ELA	3	578135	0	A-K	3	18398	0.3129	0.2441	0.3065	0.3121	0.1346	0.0027	0.3012	-0.0562	-0.0597	0.3021	-0.2514	-0.0475
ELA	3	578136	0	A-K	2	18421	0.488	0.3949	0.0622	0.0541	0.4873	0.0015	0.3669	-0.1394	-0.2531	-0.2342	0.3675	-0.0376
ELA	3	574381	0	A-V	2	18414	0.5861	0.1291	0.1331	0.585	0.151	0.0018	0.4568	-0.2661	-0.2961	0.4568	-0.096	-0.0199
ELA	3	574383	0	A-V	2	18418	0.6857	0.0716	0.1703	0.0719	0.6846	0.0016	0.4964	-0.2857	-0.2204	-0.2831	0.4965	-0.0261
ELA	3	578139	0	A-V	2	18414	0.8009	0.0689	0.7994	0.0769	0.0529	0.0018	0.4906	-0.3045	0.4904	-0.2773	-0.1976	-0.0261
ELA	3	271995	0	B-C	3	18417	0.408	0.2005	0.1771	0.4074	0.2134	0.0017	0.4574	-0.2638	-0.1469	0.4576	-0.1509	-0.0333
ELA	3	271996	0	B-C	2	18418	0.6289	0.6279	0.096	0.194	0.0805	0.0016	0.5742	0.5747	-0.2765	-0.3056	-0.2722	-0.0357
ELA	3	278410	0	B-C	3	18412	0.5172	0.2711	0.5162	0.0974	0.1134	0.002	0.5302	-0.2013	0.5303	-0.3247	-0.246	-0.0285
ELA	3	579139	0	B-C	3	18424	0.4763	0.4757	0.2205	0.175	0.1275	0.0013	0.431	0.4306	-0.222	-0.1144	-0.2377	-0.0069
ELA	3	579140	0	B-C	3	18419	0.6232	0.6222	0.1552	0.1243	0.0967	0.0016	0.4609	0.4614	-0.1378	-0.274	-0.2783	-0.0295
ELA	3	271993	0	B-K	2	18425	0.7271	0.1096	0.1037	0.0594	0.7261	0.0012	0.5663	-0.3712	-0.2676	-0.2294	0.5661	-0.0201
ELA	3	579131	0	B-K	2	18415	0.5686	0.2855	0.0824	0.5675	0.0628	0.0018	0.4632	-0.2565	-0.2363	0.4632	-0.1968	-0.0209
ELA	3	579145	0	B-K	3	18408	0.4778	0.1477	0.1739	0.1994	0.4768	0.0022	0.3149	-0.1157	-0.2128	-0.0866	0.3151	-0.0225
ELA	3	340677	0	B-V	2	18408	0.6952	0.6937	0.0711	0.1244	0.1086	0.0022	0.478	0.4775	-0.2785	-0.2294	-0.2309	-0.0207
ELA	3	581150	0	B-V	2	18414	0.606	0.1372	0.6048	0.0508	0.2053	0.0018	0.3247	-0.1211	0.3255	-0.2725	-0.1393	-0.0317
ELA	3	252790	0	D	2	18421	0.4936	0.1364	0.1626	0.4928	0.2067	0.0015	0.4097	-0.1884	-0.1983	0.4096	-0.1642	-0.0115
ELA	3	255078	0	D	2	18415	0.4754	0.4746	0.2507	0.0977	0.1752	0.0018	0.3703	0.3706	-0.0727	-0.2527	-0.2037	-0.0257
ELA	3	255382	0	D	2	18424	0.3282	0.131	0.3278	0.327	0.2129	0.0013	0.302	-0.1149	0.302	-0.1129	-0.1211	-0.0129
ELA	3	408509	0	D	2	18429	0.4187	0.3149	0.1254	0.1404	0.4183	0.001	0.3322	-0.0951	-0.1579	-0.1918	0.3327	-0.031
ELA	3	504073	0	D	3	18422	0.411	0.4104	0.1069	0.1322	0.3491	0.0014	0.2823	0.2828	-0.1823	-0.2072	-0.0242	-0.0283
ELA	3	504077	0	D	2	18424	0.5376	0.1693	0.1076	0.5369	0.1849	0.0013	0.384	-0.1591	-0.2229	0.3844	-0.1596	-0.0259
ELA	3	581079	0	D	2	18416	0.345	0.2224	0.1307	0.3008	0.3444	0.0017	0.3659	-0.2064	-0.257	-0.0011	0.366	-0.0234
ELA	3	581086	0	D	2	18424	0.7647	0.1266	0.0542	0.7637	0.0543	0.0013	0.52	-0.3328	-0.2513	0.5199	-0.2318	-0.022
ELA	3	581087	0	D	2	18426	0.639	0.1391	0.6382	0.1442	0.0773	0.0012	0.4217	-0.2205	0.4215	-0.2349	-0.1622	-0.0119
ELA	3	622433	1	A-C	2	7479	0.6235	0.6228	0.1639	0.1288	0.0835	0.0011	0.4679	0.4684	-0.1171	-0.3078	-0.2878	-0.0298
ELA	3	622431	1	A-K	1	7482	0.722	0.1134	0.7215	0.0805	0.0839	0.0007	0.4999	-0.2424	0.5001	-0.2929	-0.2421	-0.0199
ELA	3	622432	1	A-K	2	7473	0.6252	0.624	0.1398	0.0975	0.1368	0.0019	0.4318	0.4316	-0.2242	-0.1826	-0.2226	-0.015
ELA	3	622440	1	A-K	2	7481	0.6234	0.0833	0.0995	0.6229	0.1934	0.0008	0.465	-0.219	-0.2863	0.4648	-0.1995	-0.0064
ELA	3	624032	1	A-K	3	7470	0.4873	0.1662	0.2185	0.1269	0.4862	0.0023	0.1807	-0.0242	-0.1019	-0.1157	0.1813	-0.0209
ELA	3	622434	1	A-V	2	7470	0.6252	0.1374	0.6237	0.1195	0.117	0.0023	0.5094	-0.2545	0.51	-0.249	-0.2399	-0.0327
ELA	3	622435	1	A-V	2	7472	0.7246	0.1207	0.0832	0.7231	0.0709	0.002	0.5108	-0.2967	-0.2545	0.5103	-0.2355	-0.0203
ELA	3	622438	1	A-V	2	7477	0.6721	0.1314	0.1087	0.0874	0.6712	0.0013	0.5334	-0.2547	-0.2796	-0.2716	0.5337	-0.0262
ELA	3	576345	1	B-C	2	18407	0.6668	0.0627	0.1542	0.1156	0.6653	0.0022	0.4902	-0.2677	-0.2147	-0.2744	0.4899	-0.0217
ELA	3	576346	1	B-C	2	18417	0.4607	0.1462	0.2638	0.4599	0.1284	0.0017	0.3681	-0.2505	-0.0176	0.3679	-0.2593	-0.0083
ELA	3	576347	1	B-C	3	18361	0.5739	0.1519	0.1291	0.1431	0.5712	0.0047	0.4391	-0.2417	-0.2273	-0.1447	0.4415	-0.0708
ELA	3	576350	1	B-K	3	18388	0.4855	0.2859	0.1126	0.1144	0.4839	0.0033	0.3624	-0.0766	-0.216	-0.2421	0.3627	-0.0234
ELA	3	576352	1	B-K	3	18409	0.5964	0.1912	0.5952	0.0955	0.1161	0.0021	0.4831	-0.2658	0.4825	-0.2014	-0.2266	-0.013
ELA	3	576354	1	B-V	3	18438	0.656	0.2458	0.6556	0.071	0.027	0.0005	0.254	-0.1505	0.2539	-0.1046	-0.1784	-0.0028
ELA	3	581075	1	D	2	7465	0.4746	0.1671	0.2559	0.4732	0.1008	0.0029	0.2608	-0.235	0.0388	0.2616	-0.1939	-0.0278
ELA	3	629357	1	D	2	7476	0.3256	0.154	0.3251	0.3099	0.2096	0.0015	0.2414	-0.0597	0.2416	-0.0511	-0.1659	-0.0114
ELA	3	629366	1	D	1	7464	0.6712	0.1239	0.1145	0.6692	0.0894	0.0031	0.4624	-0.2595	-0.2135	0.462	-0.2195	-0.0225
ELA	3	622423	2	A-C	2	5474	0.4583	0.1828	0.1574	0.4582	0.2012	0.0004	0.3267	-0.1578	-0.2342	0.3269	-0.0406	-0.0168
ELA	3	622426	2	A-K	2	5463	0.711	0.1512	0.0519	0.0853	0.7093	0.0024	0.4592	-0.2005	-0.2551	-0.2832	0.4591	-0.0206
ELA	3	622428	2	A-K	2	5465	0.6445	0.6432	0.0707	0.0992	0.185	0.002	0.3753	0.3754	-0.2567	-0.255	-0.0953	-0.0186
ELA	3	622429	2	A-K	2	5468	0.5468	0.546	0.0833	0.2575	0.1118	0.0015	0.1083	0.1089	-0.165	0.1024	-0.1669	-0.0225

ELA	3	622430	2 A-K	2	5467	0.4604	0.2544	0.4596	0.1567	0.1276	0.0016	0.2632	-0.0416	0.2636	-0.2693	-0.0431	-0.0236
ELA	3	622424	2 A-V	2	5464	0.5031	0.2787	0.502	0.1161	0.101	0.0022	0.3917	-0.1601	0.3923	-0.1573	-0.2393	-0.0399
ELA	3	622425	2 A-V	2	5472	0.6491	0.0641	0.1342	0.6486	0.1523	0.0007	0.4208	-0.1858	-0.1995	0.421	-0.2422	-0.0167
ELA	3	625180	2 A-V	2	5472	0.3644	0.2319	0.1284	0.2748	0.3641	0.0007	0.4222	-0.1044	-0.3395	-0.1016	0.4221	-0.0041
ELA	3	581089	2 D	2	5455	0.8343	0.0261	0.1034	0.8311	0.0356	0.0038	0.3093	-0.1772	-0.1871	0.3101	-0.1561	-0.0333
ELA	3	629358	2 D	1	5460	0.5984	0.2936	0.0504	0.5966	0.0564	0.0029	0.4087	-0.2609	-0.1809	0.4084	-0.1767	-0.022
ELA	3	629367	2 D	1	5455	0.5375	0.1534	0.5354	0.1465	0.1609	0.0038	0.3744	-0.1782	0.375	-0.148	-0.1859	-0.035
ELA	3	617190	3 A-C	2	5478	0.6794	0.1088	0.6786	0.144	0.0673	0.0013	0.4569	-0.264	0.4577	-0.1808	-0.2666	-0.0353
ELA	3	617184	3 A-K	2	5476	0.5924	0.103	0.1843	0.1196	0.5914	0.0016	0.3597	-0.2726	-0.0799	-0.1922	0.3596	-0.0146
ELA	3	617197	3 A-K	2	5479	0.4442	0.4563	0.4438	0.0687	0.0301	0.0011	0.325	-0.1248	0.3252	-0.2413	-0.2214	-0.0169
ELA	3	617200	3 A-K	2	5481	0.6732	0.1435	0.1251	0.6727	0.058	0.0007	0.4567	-0.2188	-0.2291	0.4576	-0.2615	-0.0422
ELA	3	617201	3 A-K	3	5479	0.4705	0.1541	0.1805	0.47	0.1943	0.0011	0.3946	-0.0859	-0.272	0.3945	-0.1542	-0.0085
ELA	3	617188	3 A-V	2	5478	0.7081	0.7072	0.0992	0.0649	0.1274	0.0013	0.43	0.4304	-0.1756	-0.1778	-0.2958	-0.0257
ELA	3	617191	3 A-V	2	5475	0.5191	0.5181	0.1708	0.0554	0.2538	0.0018	0.2436	0.2442	-0.1974	-0.1657	-0.0202	-0.0233
ELA	3	617229	3 A-V	2	5482	0.8473	0.0257	0.0875	0.0394	0.8469	0.0005	0.4546	-0.2389	-0.2618	-0.2656	0.4531	0.0113
ELA	3	581080	3 D	2	5460	0.4101	0.2213	0.1418	0.4082	0.2241	0.0046	0.3234	-0.2209	-0.1017	0.3236	-0.0714	-0.0309
ELA	3	629359	3 D	1	5464	0.7678	0.1087	0.054	0.7648	0.0687	0.0038	0.3927	-0.138	-0.2785	0.3922	-0.2329	-0.0246
ELA	3	629369	3 D	2	5471	0.9552	0.9528	0.0171	0.0199	0.0077	0.0026	0.2926	0.2859	-0.1801	-0.1806	-0.1353	-0.0051
ELA	4	576332	0 A-C	3	19873	0.3973	0.2149	0.1801	0.3962	0.206	0.0029	0.2804	-0.1355	-0.1423	0.2806	-0.064	-0.0189
ELA	4	576317	0 A-K	2	19908	0.6902	0.6894	0.1468	0.085	0.0777	0.0011	0.4702	0.47	-0.2082	-0.2864	-0.2373	-0.0127
ELA	4	576334	0 A-K	2	19915	0.7495	0.749	0.0869	0.0817	0.0817	0.0008	0.57	0.5702	-0.3115	-0.3031	-0.2766	-0.0249
ELA	4	576356	0 A-K	2	19888	0.4487	0.1354	0.1116	0.3032	0.4477	0.0021	0.4219	-0.2205	-0.2451	-0.1224	0.4219	-0.0205
ELA	4	579416	0 A-K	2	19872	0.5029	0.0666	0.5014	0.2414	0.1877	0.0029	0.3809	-0.2614	0.3815	-0.2524	-0.0398	-0.0385
ELA	4	579417	0 A-K	3	19851	0.642	0.0912	0.201	0.6394	0.0644	0.004	0.4442	-0.2471	-0.2002	0.4462	-0.2412	-0.0587
ELA	4	579419	0 A-K	3	19831	0.6346	0.1583	0.6315	0.0885	0.1168	0.005	0.502	-0.204	0.5028	-0.3013	-0.2454	-0.0527
ELA	4	579420	0 A-K	2	19836	0.6349	0.2009	0.0745	0.0881	0.6319	0.0047	0.4621	-0.2731	-0.1327	-0.2659	0.464	-0.061
ELA	4	576321	0 A-V	2	19886	0.3713	0.3705	0.2135	0.1397	0.2741	0.0022	0.3186	0.3184	-0.1892	-0.2402	0.0172	-0.0129
ELA	4	579390	0 A-V	2	19870	0.4004	0.3992	0.2094	0.0837	0.3047	0.003	0.3122	0.3129	-0.0357	-0.1977	-0.178	-0.0369
ELA	4	495045	0 B-C	3	19828	0.5543	0.5514	0.162	0.0846	0.1968	0.0051	0.4513	0.4524	-0.2287	-0.2761	-0.1514	-0.0524
ELA	4	495046	0 B-C	3	19870	0.6416	0.1431	0.1626	0.6396	0.0516	0.003	0.5271	-0.2612	-0.2822	0.527	-0.2521	-0.0297
ELA	4	495048	0 B-C	2	19773	0.6262	0.1725	0.0761	0.6213	0.1223	0.0079	0.505	-0.2375	-0.2763	0.5052	-0.2362	-0.0535
ELA	4	495049	0 B-C	3	19900	0.758	0.7568	0.0923	0.0835	0.0658	0.0015	0.591	0.5916	-0.2948	-0.3305	-0.3042	-0.0414
ELA	4	579147	0 B-C	2	19861	0.606	0.6039	0.0907	0.1055	0.1965	0.0035	0.3893	0.3899	-0.2957	-0.3156	-0.0169	-0.0364
ELA	4	579151	0 B-C	2	19867	0.64	0.1248	0.0971	0.137	0.6379	0.0032	0.5127	-0.2605	-0.289	-0.2108	0.5135	-0.0465
ELA	4	579155	0 B-K	2	19828	0.5341	0.5314	0.1377	0.1824	0.1434	0.0051	0.4852	0.4864	-0.2117	-0.2548	-0.1919	-0.0579
ELA	4	579156	0 B-K	2	19834	0.3596	0.2156	0.2269	0.1948	0.3579	0.0048	0.3978	-0.2544	-0.1369	-0.0646	0.3987	-0.0517
ELA	4	579159	0 B-K	2	19871	0.4387	0.2156	0.0992	0.2449	0.4374	0.003	0.3973	-0.2245	-0.197	-0.1016	0.3981	-0.0471
ELA	4	579161	0 B-K	2	19879	0.45	0.2759	0.1622	0.4489	0.1105	0.0026	0.4573	-0.1801	-0.2032	0.4577	-0.2237	-0.0424
ELA	4	495047	0 B-V	2	19871	0.7041	0.0868	0.096	0.1122	0.7021	0.003	0.51	-0.2169	-0.2643	-0.2932	0.51	-0.0323
ELA	4	495053	0 B-V	2	19799	0.4544	0.0703	0.4514	0.0833	0.3884	0.0066	0.3437	-0.2858	0.3453	-0.2393	-0.0578	-0.055
ELA	4	579165	0 B-V	2	19863	0.4915	0.2756	0.4899	0.135	0.0961	0.0034	0.3642	-0.0505	0.3654	-0.2536	-0.2393	-0.0498
ELA	4	254906	0 D	2	19909	0.6685	0.1551	0.6678	0.0842	0.0918	0.0011	0.3693	-0.1803	0.3696	-0.2157	-0.1671	-0.02
ELA	4	255913	0 D	2	19902	0.5499	0.1769	0.5492	0.1373	0.1352	0.0014	0.3386	-0.1574	0.3388	-0.1216	-0.1933	-0.0146
ELA	4	341145	0 D	2	19906	0.6054	0.167	0.1386	0.0885	0.6047	0.0012	0.3214	-0.1332	-0.1617	-0.1796	0.3219	-0.0252
ELA	4	341147	0 D	2	19912	0.4675	0.1278	0.1485	0.2557	0.467	0.0009	0.3822	-0.1933	-0.2128	-0.1143	0.3825	-0.0246
ELA	4	504065	0 D	3	19908	0.8268	0.0646	0.0489	0.8259	0.0596	0.0011	0.4289	-0.2152	-0.2299	0.4295	-0.2514	-0.0272
ELA	4	504070	0 D	2	19913	0.4749	0.4745	0.3193	0.0479	0.1575	0.0009	0.2696	0.27	-0.188	-0.1756	-0.0244	-0.026
ELA	4	581069	0 D	2	19895	0.3604	0.1685	0.3598	0.2178	0.2522	0.0018	0.2756	-0.1523	0.2761	-0.1005	-0.0754	-0.0308
ELA	4	581070	0 D	2	19888	0.4955	0.1463	0.1935	0.4944	0.1637	0.0021	0.3649	-0.1582	-0.1969	0.3651	-0.1295	-0.0203
ELA	4	581073	0 D	2	19896	0.5564	0.106	0.1741	0.5554	0.1628	0.0017	0.4295	-0.2133	-0.1293	0.43	-0.2648	-0.0291
ELA	4	623021	1 A-C	2	8214	0.6305	0.0992	0.629	0.129	0.1404	0.0024	0.5361	-0.2207	0.5355	-0.3083	-0.2548	-0.0166

ELA	4	623017	1 A-K	2	8225	0.5527	0.178	0.1372	0.1315	0.5521	0.0011	0.4423	-0.1462	-0.1652	-0.316	0.4417	-0.0027
ELA	4	623019	1 A-K	2	8231	0.5307	0.213	0.1963	0.5305	0.0599	0.0004	0.5011	-0.2766	-0.2308	0.5012	-0.1897	-0.0118
ELA	4	623022	1 A-K	2	8222	0.5467	0.2629	0.0685	0.1212	0.5459	0.0015	0.4874	-0.1973	-0.2214	-0.3041	0.4869	-0.0108
ELA	4	623023	1 A-K	2	8225	0.5895	0.2137	0.0908	0.5889	0.1054	0.0011	0.4629	-0.2155	-0.295	0.4626	-0.1761	-0.0115
ELA	4	623024	1 A-K	2	8216	0.5489	0.5477	0.1262	0.1829	0.141	0.0022	0.4777	0.4778	-0.2705	-0.2309	-0.1655	-0.0249
ELA	4	623015	1 A-V	2	8226	0.7307	0.0702	0.73	0.0698	0.129	0.001	0.4963	-0.2585	0.4964	-0.2882	-0.2394	-0.0193
ELA	4	629549	1 A-V	2	8224	0.2943	0.2939	0.1952	0.3954	0.1143	0.0012	-0.0751	-0.0749	-0.0021	0.1082	-0.0555	-0.0084
ELA	4	579148	1 B-C	2	19877	0.4503	0.1082	0.2192	0.4491	0.2208	0.0027	0.3344	-0.2326	-0.2324	0.3347	0.0079	-0.0259
ELA	4	579152	1 B-C	2	19870	0.5711	0.5693	0.1109	0.0795	0.2372	0.003	0.3975	0.3971	-0.1926	-0.2467	-0.1611	-0.0161
ELA	4	579154	1 B-K	2	19923	0.7399	0.7396	0.0737	0.1288	0.0576	0.0004	0.374	0.3744	-0.2236	-0.2235	-0.1315	-0.0192
ELA	4	579158	1 B-K	2	19896	0.5323	0.0687	0.1333	0.265	0.5314	0.0017	0.4269	-0.2032	-0.2354	-0.1839	0.4262	-0.0031
ELA	4	579160	1 B-K	1	19882	0.6959	0.1231	0.6942	0.0975	0.0828	0.0024	0.4371	-0.2326	0.4363	-0.2367	-0.1951	-0.0135
ELA	4	579166	1 B-V	2	19908	0.7979	0.0721	0.0886	0.797	0.0413	0.0011	0.429	-0.2533	-0.2043	0.4279	-0.2436	-0.0033
ELA	4	581064	1 D	2	8213	0.4794	0.1857	0.4781	0.2015	0.1321	0.0026	0.3792	-0.192	0.3789	-0.1307	-0.1819	-0.0116
ELA	4	629441	1 D	2	8213	0.9246	0.0262	0.0206	0.9223	0.0283	0.0026	0.2641	-0.1465	-0.1357	0.2597	-0.1618	0.0004
ELA	4	629450	1 D	1	8216	0.6109	0.2631	0.0698	0.0554	0.6095	0.0022	0.4281	-0.216	-0.2601	-0.2044	0.4271	-0.0043
ELA	4	623029	2 A-C	2	5843	0.6122	0.6106	0.2171	0.0835	0.0862	0.0026	0.3947	0.3946	-0.0887	-0.2653	-0.2898	-0.0223
ELA	4	623026	2 A-K	2	5848	0.5434	0.2549	0.1374	0.5425	0.0635	0.0017	0.3605	-0.2365	-0.118	0.3591	-0.1471	0.0148
ELA	4	623028	2 A-K	2	5848	0.6146	0.6135	0.1649	0.1922	0.0277	0.0017	0.206	0.2066	-0.0399	-0.1376	-0.1877	-0.0191
ELA	4	623031	2 A-K	3	5845	0.167	0.2668	0.4396	0.1666	0.1248	0.0022	0.066	-0.0916	0.1222	0.0664	-0.1321	-0.0256
ELA	4	623033	2 A-K	2	5843	0.3505	0.2808	0.2928	0.0743	0.3496	0.0026	0.0879	-0.0974	0.0859	-0.1383	0.0888	-0.0278
ELA	4	623109	2 A-K	2	5838	0.4782	0.2209	0.1094	0.1897	0.4766	0.0034	0.219	-0.1168	-0.1673	-0.02	0.2191	-0.0152
ELA	4	623025	2 A-V	2	5844	0.8854	0.049	0.8832	0.049	0.0164	0.0024	0.4465	-0.2775	0.4462	-0.2581	-0.2055	-0.0321
ELA	4	629571	2 A-V	2	5848	0.6288	0.1057	0.6277	0.0901	0.1748	0.0017	0.3936	-0.2059	0.3935	-0.2085	-0.1755	-0.0137
ELA	4	581098	2 D	2	5842	0.7687	0.7666	0.03	0.1745	0.0261	0.0027	0.3258	0.326	-0.1826	-0.2055	-0.1724	-0.0235
ELA	4	629442	2 D	1	5842	0.9637	0.0121	0.014	0.0101	0.9611	0.0027	0.2873	-0.1634	-0.1732	-0.1529	0.2841	-0.0278
ELA	4	629451	2 D	2	5847	0.9206	0.0084	0.9189	0.0666	0.0043	0.0019	0.1746	-0.1087	0.1759	-0.1203	-0.1097	-0.0227
ELA	4	623673	3 A-C	2	5826	0.7525	0.7509	0.0666	0.0574	0.123	0.0021	0.4672	0.4674	-0.2829	-0.2862	-0.1938	-0.0301
ELA	4	623669	3 A-K	3	5824	0.6212	0.0702	0.0971	0.6197	0.2105	0.0024	0.3014	-0.1415	-0.2785	0.3016	-0.0659	-0.0182
ELA	4	623672	3 A-K	2	5833	0.8212	0.0594	0.8205	0.0502	0.069	0.0009	0.3884	-0.1299	0.3881	-0.2581	-0.2427	-0.0113
ELA	4	623674	3 A-K	2	5821	0.8359	0.0624	0.061	0.0403	0.8335	0.0029	0.412	-0.2331	-0.1966	-0.2476	0.41	-0.0128
ELA	4	623675	3 A-K	2	5829	0.6131	0.061	0.0596	0.6122	0.2657	0.0015	0.3066	-0.2181	-0.2117	0.3072	-0.105	-0.0262
ELA	4	623766	3 A-K	2	5830	0.5631	0.2749	0.1199	0.5624	0.0415	0.0014	0.3306	-0.1305	-0.1716	0.3314	-0.2457	-0.0377
ELA	4	623671	3 A-V	2	5830	0.7453	0.1024	0.7443	0.1213	0.0307	0.0014	0.442	-0.2714	0.4424	-0.2365	-0.1893	-0.0241
ELA	4	630495	3 B-V	2	5833	0.6974	0.6968	0.1127	0.0617	0.128	0.0009	0.3636	0.3636	-0.1867	-0.2566	-0.1378	-0.0113
ELA	4	581093	3 D	2	5816	0.6145	0.1096	0.1655	0.1089	0.6122	0.0038	0.3457	-0.1779	-0.1424	-0.1879	0.3452	-0.019
ELA	4	629443	3 D	1	5818	0.5732	0.1144	0.1593	0.5713	0.1516	0.0034	0.371	-0.1268	-0.2285	0.371	-0.162	-0.0255
ELA	4	629452	3 D	2	5825	0.7737	0.1007	0.0733	0.772	0.0517	0.0022	0.4039	-0.1824	-0.2402	0.4031	-0.2302	-0.0132
ELA	5	579326	0 A-C	2	21218	0.72	0.0572	0.7194	0.0721	0.1505	0.0008	0.4756	-0.2149	0.476	-0.2249	-0.2937	-0.0274
ELA	5	579330	0 A-K	2	21201	0.6296	0.0663	0.057	0.2465	0.6286	0.0016	0.3747	-0.2348	-0.2481	-0.149	0.3751	-0.0267
ELA	5	579331	0 A-K	2	21199	0.5393	0.2772	0.5384	0.0926	0.0901	0.0017	0.279	-0.0575	0.2795	-0.2391	-0.151	-0.0261
ELA	5	579332	0 A-K	3	21220	0.4561	0.0646	0.3789	0.4558	0.1	0.0007	0.3768	-0.2151	-0.1078	0.3768	-0.2739	-0.0127
ELA	5	579333	0 A-K	2	21159	0.434	0.1879	0.4324	0.0947	0.2814	0.0036	0.2786	-0.2277	0.2798	-0.2451	0.0554	-0.0482
ELA	5	579334	0 A-K	2	21218	0.7783	0.0692	0.7776	0.0791	0.0733	0.0008	0.4946	-0.2358	0.4945	-0.2693	-0.2785	-0.0188
ELA	5	579337	0 A-K	2	21201	0.7157	0.1065	0.0618	0.7146	0.1155	0.0016	0.5111	-0.2446	-0.2545	0.5118	-0.2905	-0.0383
ELA	5	579338	0 A-K	2	21214	0.5346	0.1082	0.5341	0.1616	0.1951	0.001	0.4657	-0.2176	0.4659	-0.2655	-0.1669	-0.0307
ELA	5	579339	0 A-K	2	21181	0.566	0.0846	0.0925	0.5646	0.2558	0.0025	0.4036	-0.1809	-0.2319	0.4047	-0.1851	-0.0469
ELA	5	579301	0 A-V	2	21178	0.6556	0.1696	0.0446	0.1293	0.6538	0.0027	0.3219	-0.1299	-0.2722	-0.1382	0.3244	-0.058
ELA	5	579305	0 A-V	2	21203	0.7276	0.7265	0.0604	0.0804	0.1312	0.0015	0.4893	0.4892	-0.2315	-0.2775	-0.2564	-0.0236
ELA	5	409603	0 B-C	2	21197	0.5849	0.0728	0.5838	0.1067	0.2348	0.0018	0.4905	-0.2529	0.4908	-0.3163	-0.1823	-0.0304
ELA	5	409605	0 B-C	3	21200	0.3395	0.179	0.1133	0.339	0.3671	0.0016	0.3829	-0.2311	-0.1546	0.383	-0.0882	-0.0296

ELA	5	574352	0 B-C	2	21177	0.3715	0.2609	0.1613	0.2045	0.3705	0.0027	0.2795	0.046	-0.1469	-0.2481	0.2795	-0.0202
ELA	5	409606	0 B-K	3	21134	0.6425	0.1668	0.1344	0.6395	0.0546	0.0048	0.4369	-0.2611	-0.1799	0.4375	-0.2134	-0.0416
ELA	5	409608	0 B-K	3	21199	0.6633	0.6622	0.1596	0.1117	0.0648	0.0017	0.5043	0.5045	-0.2706	-0.2813	-0.2018	-0.0304
ELA	5	574355	0 B-K	3	21182	0.5735	0.572	0.1263	0.1509	0.1483	0.0025	0.4948	0.4956	-0.2248	-0.2283	-0.2433	-0.0474
ELA	5	574357	0 B-K	3	21164	0.4628	0.1363	0.4612	0.1465	0.2526	0.0033	0.3502	-0.1063	0.351	-0.281	-0.0846	-0.0415
ELA	5	409609	0 B-V	1	21155	0.535	0.1742	0.5329	0.1641	0.1249	0.0038	0.4132	-0.1739	0.4144	-0.2122	-0.1787	-0.0512
ELA	5	409611	0 B-V	2	21175	0.8477	0.0256	0.0674	0.0589	0.8453	0.0028	0.4574	-0.2296	-0.2673	-0.2558	0.4581	-0.0407
ELA	5	574359	0 B-V	2	21194	0.5508	0.1646	0.136	0.5497	0.1477	0.0019	0.386	-0.1853	-0.2585	0.3865	-0.0944	-0.0339
ELA	5	574558	0 B-V	2	21202	0.5737	0.5728	0.1199	0.217	0.0888	0.0016	0.467	0.4678	-0.2529	-0.228	-0.1883	-0.0424
ELA	5	574576	0 B-V	1	21207	0.6158	0.1255	0.615	0.1335	0.1247	0.0013	0.4619	-0.262	0.4629	-0.2157	-0.1916	-0.05
ELA	5	411656	0 D	2	21215	0.2498	0.4041	0.173	0.1724	0.2495	0.0009	0.3273	-0.1856	-0.0183	-0.1144	0.3274	-0.0158
ELA	5	411657	0 D	1	21210	0.4777	0.4772	0.1587	0.2093	0.1536	0.0012	0.1719	0.1721	-0.1034	-0.1012	-0.0182	-0.0116
ELA	5	411658	0 D	2	21221	0.8055	0.1153	0.0289	0.0502	0.805	0.0007	0.3859	-0.263	-0.1941	-0.1649	0.3862	-0.0209
ELA	5	411659	0 D	2	21223	0.7024	0.702	0.0784	0.0476	0.1715	0.0006	0.3599	0.3597	-0.1968	-0.1392	-0.2172	-0.0049
ELA	5	411661	0 D	2	21209	0.2726	0.0251	0.3686	0.2723	0.3328	0.0012	0.3082	-0.2132	-0.1641	0.3083	-0.0511	-0.0184
ELA	5	581210	0 D	2	21218	0.5553	0.1112	0.0391	0.5549	0.294	0.0008	0.3811	-0.1538	-0.1755	0.3813	-0.234	-0.0186
ELA	5	581211	0 D	2	21196	0.3922	0.3665	0.1248	0.1153	0.3915	0.0018	0.429	-0.1252	-0.1894	-0.2678	0.429	-0.0216
ELA	5	581216	0 D	2	21198	0.4323	0.2183	0.4315	0.2479	0.1006	0.0017	0.3525	-0.1178	0.3527	-0.2385	-0.0736	-0.0215
ELA	5	581221	0 D	2	21205	0.5796	0.0333	0.5788	0.0359	0.3506	0.0014	0.3703	-0.2221	0.3708	-0.2186	-0.2127	-0.0268
ELA	5	576322	1 A-C	3	21176	0.5547	0.1538	0.0858	0.5532	0.2044	0.0028	0.3498	-0.2642	-0.2366	0.3503	-0.0275	-0.027
ELA	5	576324	1 A-K	2	21192	0.5889	0.1106	0.2474	0.0523	0.5877	0.002	0.3519	-0.1376	-0.1963	-0.1996	0.3523	-0.0246
ELA	5	576326	1 A-K	2	21210	0.7589	0.0516	0.758	0.0644	0.1248	0.0012	0.4498	-0.2566	0.4493	-0.2376	-0.233	-0.0089
ELA	5	576327	1 A-K	2	21195	0.4655	0.4646	0.1524	0.0828	0.2983	0.0019	0.3068	0.3067	-0.1554	-0.2843	-0.04	-0.011
ELA	5	576328	1 A-K	2	21225	0.5596	0.3435	0.5593	0.0549	0.0418	0.0005	0.3033	-0.1836	0.3034	-0.1409	-0.1552	-0.0133
ELA	5	576331	1 A-V	2	21205	0.5795	0.1264	0.5787	0.0519	0.2415	0.0014	0.2734	-0.1689	0.2737	-0.1945	-0.0821	-0.0193
ELA	5	621501	1 B-C	2	8665	0.6246	0.0953	0.1127	0.6232	0.1665	0.0022	0.3553	-0.2347	-0.2677	0.3555	-0.0477	-0.0189
ELA	5	621507	1 B-K	2	8673	0.3134	0.313	0.1878	0.2355	0.2624	0.0013	0.0854	0.0858	-0.1147	-0.0027	0.0155	-0.0195
ELA	5	621508	1 B-K	2	8679	0.4517	0.2601	0.4514	0.1457	0.1422	0.0006	0.2644	-0.0133	0.2649	-0.1973	-0.1593	-0.0311
ELA	5	621513	1 B-K	2	8675	0.6504	0.1886	0.1047	0.6497	0.056	0.001	0.5013	-0.23	-0.3222	0.5014	-0.2178	-0.0171
ELA	5	621515	1 B-K	2	8673	0.6382	0.6374	0.1755	0.0917	0.0942	0.0013	0.3916	0.392	-0.1033	-0.2934	-0.218	-0.0244
ELA	5	621530	1 B-V	1	8680	0.5994	0.2801	0.0482	0.0721	0.5991	0.0005	0.4849	-0.2842	-0.2221	-0.2399	0.4852	-0.0244
ELA	5	621532	1 B-V	1	8668	0.5819	0.2102	0.1011	0.1061	0.5808	0.0018	0.4868	-0.2327	-0.3064	-0.169	0.4872	-0.0274
ELA	5	623809	1 B-V	1	8675	0.5864	0.1438	0.5858	0.0649	0.2044	0.001	0.494	-0.256	0.4943	-0.259	-0.2209	-0.0222
ELA	5	581209	1 D	2	8668	0.734	0.1016	0.1038	0.7326	0.0602	0.0018	0.3852	-0.1902	-0.1666	0.386	-0.2579	-0.0285
ELA	5	629634	1 D	1	8670	0.5407	0.1682	0.2166	0.5398	0.0737	0.0016	0.388	-0.297	-0.0852	0.388	-0.1776	-0.0194
ELA	5	629643	1 D	2	8677	0.7892	0.7886	0.089	0.059	0.0626	0.0008	0.3206	0.3218	-0.1092	-0.1999	-0.2153	-0.0361
ELA	5	623758	2 B-C	2	6311	0.4912	0.2103	0.4905	0.0832	0.2146	0.0014	0.3284	-0.0859	0.3285	-0.2375	-0.1538	-0.0124
ELA	5	623760	2 B-K	2	6311	0.62	0.0426	0.2462	0.0907	0.6191	0.0014	0.3907	-0.1965	-0.2058	-0.2122	0.3904	-0.0084
ELA	5	623761	2 B-K	3	6308	0.2514	0.5924	0.2509	0.1119	0.0429	0.0019	0.115	0.0647	0.1153	-0.1501	-0.1669	-0.0148
ELA	5	623762	2 B-K	2	6309	0.4026	0.154	0.2498	0.1926	0.4019	0.0017	0.3198	-0.1132	-0.1298	-0.149	0.3205	-0.0324
ELA	5	623763	2 B-K	2	6312	0.7391	0.7381	0.1038	0.0688	0.088	0.0013	0.3861	0.3862	-0.2854	-0.1736	-0.1348	-0.0177
ELA	5	623764	2 B-V	1	6312	0.8557	0.0345	0.028	0.8546	0.0816	0.0013	0.3279	-0.1729	-0.1843	0.327	-0.1941	-0.005
ELA	5	623784	2 B-V	2	6313	0.7472	0.7464	0.1147	0.0408	0.097	0.0011	0.3555	0.3567	-0.247	-0.197	-0.1224	-0.0373
ELA	5	630849	2 B-V	2	6315	0.515	0.5146	0.0968	0.146	0.2418	0.0008	0.3766	0.3769	-0.1927	-0.1437	-0.187	-0.0188
ELA	5	581213	2 D	2	6309	0.5315	0.1636	0.1684	0.5305	0.1358	0.0017	0.3452	-0.1672	-0.1349	0.3458	-0.1721	-0.0319
ELA	5	629635	2 D	2	6310	0.7675	0.0954	0.1006	0.7663	0.0361	0.0016	0.3124	-0.1757	-0.1676	0.313	-0.1582	-0.0219
ELA	5	629644	2 D	2	6316	0.9129	0.9123	0.0242	0.025	0.0378	0.0006	0.3562	0.3559	-0.2215	-0.2152	-0.1711	-0.0148
ELA	5	623677	3 B-K	2	6221	0.4244	0.3073	0.1672	0.4237	0.1001	0.0016	0.2348	-0.0675	-0.1122	0.2346	-0.1422	-0.0057
ELA	5	623679	3 B-K	2	6224	0.6523	0.1286	0.1573	0.6516	0.0615	0.0011	0.319	-0.1864	-0.1001	0.3198	-0.2185	-0.0323
ELA	5	623682	3 B-K	2	6223	0.7455	0.0881	0.0539	0.1122	0.7445	0.0013	0.4544	-0.1816	-0.2109	-0.312	0.4539	-0.0107
ELA	5	623684	3 B-K	2	6227	0.5617	0.0772	0.1456	0.2152	0.5614	0.0006	0.415	-0.2035	-0.3275	-0.0869	0.4153	-0.022

ELA	5	623685	3 B-K	2	6221	0.7708	0.0979	0.7695	0.07	0.061	0.0016	0.4325	-0.22	0.4324	-0.2641	-0.2028	-0.0212
ELA	5	623681	3 B-V	1	6224	0.3772	0.3768	0.1695	0.208	0.2446	0.0011	0.3357	0.3361	-0.0691	-0.1127	-0.2099	-0.03
ELA	5	623683	3 B-V	1	6224	0.8096	0.8087	0.0575	0.0749	0.0578	0.0011	0.4083	0.4088	-0.2045	-0.2819	-0.1634	-0.025
ELA	5	630800	3 B-V	2	6226	0.8323	0.0319	0.8316	0.0992	0.0364	0.0008	0.4145	-0.1862	0.4144	-0.2997	-0.1726	-0.0144
ELA	5	581219	3 D	2	6225	0.6011	0.0735	0.1892	0.6005	0.1358	0.001	0.2823	-0.1652	-0.1198	0.2833	-0.1384	-0.0416
ELA	5	629636	3 D	2	6227	0.6499	0.0032	0.2605	0.0862	0.6495	0.0006	0.3955	-0.1042	-0.2833	-0.2069	0.396	-0.0258
ELA	5	629645	3 D	2	6224	0.6899	0.1101	0.1058	0.0939	0.6891	0.0011	0.4142	-0.2098	-0.2008	-0.2194	0.4136	0.0003
ELA	6	495095	0 A-C	3	24335	0.4002	0.3991	0.1722	0.1584	0.2676	0.0027	0.324	0.3248	-0.1743	-0.1881	-0.0507	-0.0403
ELA	6	495096	0 A-C	2	24351	0.5364	0.1314	0.1392	0.192	0.5353	0.002	0.4944	-0.1586	-0.2193	-0.2941	0.4945	-0.0281
ELA	6	495098	0 A-C	2	24382	0.6462	0.134	0.6457	0.1674	0.0522	0.0008	0.4847	-0.242	0.4848	-0.2517	-0.247	-0.02
ELA	6	579306	0 A-C	3	24360	0.6803	0.0703	0.6792	0.146	0.1028	0.0017	0.5699	-0.238	0.5701	-0.3222	-0.2973	-0.0307
ELA	6	579307	0 A-C	2	24366	0.4925	0.0668	0.4918	0.2956	0.1443	0.0014	0.4965	-0.1877	0.4965	-0.2702	-0.22	-0.02
ELA	6	579308	0 A-C	3	24369	0.561	0.5603	0.1191	0.1338	0.1854	0.0013	0.4156	0.4155	-0.2214	-0.1304	-0.2302	-0.0174
ELA	6	495100	0 A-K	2	24383	0.736	0.0552	0.1622	0.7355	0.0464	0.0007	0.4679	-0.2499	-0.2869	0.468	-0.205	-0.0181
ELA	6	579322	0 A-K	3	24368	0.5423	0.5415	0.1202	0.1933	0.1436	0.0014	0.3995	0.3997	-0.1963	-0.1663	-0.1964	-0.0214
ELA	6	495103	0 A-V	1	24356	0.7705	0.7691	0.1407	0.0533	0.0351	0.0018	0.3502	0.3512	-0.1793	-0.2192	-0.1903	-0.0332
ELA	6	495104	0 A-V	2	24348	0.3946	0.2261	0.255	0.123	0.3937	0.0022	0.2713	-0.0394	-0.1132	-0.1994	0.2718	-0.0324
ELA	6	579323	0 A-V	2	24363	0.742	0.0602	0.1514	0.7409	0.0459	0.0016	0.5205	-0.2445	-0.3504	0.5203	-0.2069	-0.0223
ELA	6	497114	0 B-C	3	24335	0.6202	0.6185	0.1032	0.0859	0.1897	0.0027	0.4924	0.4931	-0.25	-0.2904	-0.204	-0.0406
ELA	6	497115	0 B-C	3	24369	0.3392	0.3181	0.3387	0.1111	0.2308	0.0013	0.1847	0.0789	0.1854	-0.2472	-0.1078	-0.0397
ELA	6	497116	0 B-C	2	24353	0.5524	0.1083	0.2116	0.1268	0.5513	0.002	0.4995	-0.2521	-0.1786	-0.2871	0.5002	-0.0448
ELA	6	497117	0 B-C	2	24317	0.5401	0.0679	0.1456	0.2448	0.5382	0.0034	0.35	-0.2175	-0.1217	-0.1738	0.3509	-0.0433
ELA	6	579313	0 B-C	2	24365	0.6481	0.1193	0.6472	0.0982	0.1339	0.0015	0.5008	-0.2231	0.5012	-0.3109	-0.2161	-0.0279
ELA	6	579314	0 B-C	3	24339	0.5933	0.1964	0.1181	0.5918	0.0912	0.0025	0.5251	-0.2798	-0.2449	0.5254	-0.2301	-0.036
ELA	6	579316	0 B-K	2	24348	0.5924	0.5911	0.0548	0.1126	0.2393	0.0022	0.4881	0.4883	-0.1816	-0.1365	-0.3612	-0.0316
ELA	6	579317	0 B-K	2	24368	0.5598	0.5591	0.0988	0.1942	0.1466	0.0014	0.5469	0.5468	-0.2756	-0.3011	-0.196	-0.0222
ELA	6	579318	0 B-K	3	24370	0.2772	0.1301	0.224	0.3678	0.2769	0.0013	0.2055	-0.1387	-0.0352	-0.063	0.2055	-0.0072
ELA	6	497121	0 B-V	2	24324	0.8434	0.0543	0.8408	0.0738	0.0279	0.0032	0.4857	-0.2669	0.486	-0.3113	-0.2033	-0.0436
ELA	6	497122	0 B-V	2	24361	0.7267	0.0831	0.1234	0.7255	0.0663	0.0016	0.4442	-0.2398	-0.218	0.4446	-0.2385	-0.0284
ELA	6	579296	0 B-V	2	24355	0.7758	0.0736	0.0507	0.0995	0.7744	0.0019	0.5394	-0.2651	-0.2888	-0.306	0.5394	-0.0304
ELA	6	341234	0 D	2	24376	0.3464	0.141	0.3077	0.346	0.2043	0.001	0.2855	-0.2351	-0.0065	0.2858	-0.125	-0.022
ELA	6	412356	0 D	2	24355	0.5396	0.5386	0.064	0.1995	0.1961	0.0019	0.3578	0.358	-0.2213	-0.1111	-0.199	-0.021
ELA	6	412402	0 D	2	24339	0.6781	0.0728	0.1086	0.1397	0.6764	0.0025	0.4858	-0.2941	-0.1194	-0.3238	0.4862	-0.0333
ELA	6	503918	0 D	2	24381	0.3297	0.3295	0.1789	0.0623	0.4286	0.0008	0.2397	0.2399	-0.1941	-0.1567	0.0001	-0.0194
ELA	6	503921	0 D	2	24383	0.4149	0.2506	0.1438	0.4146	0.1902	0.0007	0.3981	-0.1274	-0.1101	0.3982	-0.2598	-0.0127
ELA	6	584199	0 D	2	24378	0.5177	0.0559	0.5172	0.3192	0.1068	0.0009	0.3456	-0.216	0.3455	-0.1622	-0.1528	-0.0061
ELA	6	584203	0 D	2	24384	0.558	0.0868	0.1462	0.5576	0.2087	0.0007	0.3143	-0.1977	-0.2189	0.3144	-0.0562	-0.0127
ELA	6	584209	0 D	2	24377	0.5284	0.0819	0.5279	0.1493	0.2399	0.001	0.3957	-0.1812	0.3958	-0.2151	-0.1656	-0.0173
ELA	6	584210	0 D	2	24375	0.4327	0.201	0.1833	0.4323	0.1823	0.0011	0.1792	-0.1043	-0.1409	0.1796	0.0207	-0.0188
ELA	6	623710	1 A-C	2	9929	0.5091	0.1428	0.1343	0.2127	0.508	0.0022	0.453	-0.1818	-0.2661	-0.1737	0.4533	-0.0253
ELA	6	623712	1 A-C	2	9943	0.6009	0.1547	0.1481	0.6004	0.096	0.0008	0.4053	-0.1566	-0.1809	0.4056	-0.262	-0.0209
ELA	6	623713	1 A-C	2	9939	0.4861	0.4855	0.1279	0.1474	0.238	0.0012	0.3086	0.3087	-0.1652	-0.2718	-0.0056	-0.0111
ELA	6	623706	1 A-K	2	9943	0.6708	0.0559	0.6703	0.1503	0.1227	0.0008	0.533	-0.2317	0.5328	-0.2944	-0.2791	-0.0164
ELA	6	623711	1 A-K	2	9932	0.6734	0.0746	0.1441	0.1073	0.6721	0.0019	0.2818	-0.1958	-0.104	-0.1411	0.2824	-0.0217
ELA	6	623715	1 A-K	1	9943	0.6439	0.1292	0.6434	0.1068	0.1198	0.0008	0.4879	-0.2369	0.4886	-0.2523	-0.233	-0.0341
ELA	6	623709	1 A-V	1	9937	0.5943	0.0492	0.1025	0.5935	0.2533	0.0014	0.394	-0.2295	-0.2593	0.3948	-0.1481	-0.0331
ELA	6	629677	1 A-V	2	9942	0.8192	0.8184	0.0471	0.0568	0.0768	0.0009	0.4269	0.4278	-0.244	-0.2243	-0.2267	-0.0319
ELA	6	574578	1 B-C	2	24358	0.6825	0.6813	0.0738	0.1903	0.0528	0.0018	0.4297	0.4299	-0.2689	-0.193	-0.2379	-0.0247
ELA	6	574579	1 B-C	2	24354	0.4738	0.1732	0.0959	0.4729	0.2561	0.0019	0.3793	-0.1099	-0.1884	0.3794	-0.2095	-0.0209
ELA	6	574581	1 B-K	2	24343	0.6562	0.0551	0.0759	0.6546	0.212	0.0024	0.3351	-0.2216	-0.2273	0.3357	-0.1164	-0.0257
ELA	6	574583	1 B-K	2	24353	0.5362	0.0401	0.088	0.3348	0.5351	0.002	0.3119	-0.2348	-0.2176	-0.0995	0.3123	-0.0245

ELA	6	574584	1 B-V	2	24355	0.5941	0.1641	0.593	0.2043	0.0368	0.0019	0.3542	-0.2867	0.3547	-0.0714	-0.2027	-0.0271
ELA	6	574585	1 B-V	2	24398	0.514	0.083	0.136	0.267	0.5139	0.0001	0.5172	-0.1812	-0.3184	-0.2245	0.5172	-0.0049
ELA	6	584201	1 D	2	9937	0.4006	0.1676	0.4001	0.3162	0.1147	0.0014	0.3521	-0.154	0.3524	-0.0989	-0.2145	-0.02
ELA	6	629732	1 D	2	9930	0.5842	0.1721	0.1581	0.0847	0.583	0.0021	0.3249	-0.2729	-0.0272	-0.1659	0.3256	-0.0308
ELA	6	629741	1 D	2	9942	0.3795	0.2269	0.2043	0.3792	0.1887	0.0009	0.2415	-0.0448	-0.1838	0.242	-0.0604	-0.0293
ELA	6	623719	2 A-C	2	7223	0.6699	0.132	0.0961	0.6694	0.1017	0.0008	0.4005	-0.2376	-0.2838	0.4014	-0.0781	-0.0394
ELA	6	623721	2 A-C	2	7226	0.4157	0.222	0.4155	0.0989	0.2631	0.0004	0.1492	-0.0589	0.1493	-0.1524	-0.0077	-0.0122
ELA	6	623725	2 A-C	2	7222	0.654	0.1317	0.123	0.091	0.6533	0.001	0.4815	-0.2251	-0.2706	-0.221	0.4815	-0.0186
ELA	6	623716	2 A-K	3	7220	0.6778	0.195	0.677	0.0668	0.0599	0.0012	0.195	0.0196	0.1955	-0.2341	-0.169	-0.0171
ELA	6	623717	2 A-K	2	7207	0.7	0.0696	0.0665	0.163	0.6979	0.003	0.4368	-0.1851	-0.2843	-0.2204	0.4359	-0.0153
ELA	6	623718	2 A-K	2	7217	0.8086	0.8073	0.0274	0.075	0.0887	0.0017	0.4197	0.4204	-0.2067	-0.2743	-0.2057	-0.033
ELA	6	623723	2 A-V	1	7218	0.7654	0.1132	0.0154	0.7643	0.1057	0.0015	0.2054	-0.1652	-0.1988	0.2052	-0.0327	-0.0058
ELA	6	629898	2 A-V	2	7218	0.2416	0.2413	0.364	0.2244	0.1689	0.0015	0.1847	0.1851	-0.1446	0.0272	-0.0524	-0.034
ELA	6	584198	2 D	2	7222	0.5152	0.5147	0.0411	0.3941	0.0491	0.001	0.3369	0.3373	-0.2645	-0.1674	-0.1545	-0.0283
ELA	6	629733	2 D	2	7224	0.7485	0.748	0.0216	0.0187	0.2111	0.0007	0.365	0.3652	-0.224	-0.1875	-0.2455	-0.0165
ELA	6	629742	2 D	2	7223	0.4721	0.4717	0.0645	0.3705	0.0925	0.0008	0.0877	0.0881	-0.1716	0.0479	-0.0846	-0.0168
ELA	6	621527	3 A-C	3	7210	0.2727	0.2723	0.136	0.4405	0.1497	0.0015	0.084	0.0843	-0.218	0.1017	-0.0355	-0.0168
ELA	6	621533	3 A-C	3	7207	0.2867	0.154	0.1425	0.4155	0.2861	0.0019	0.2171	-0.1141	-0.212	0.036	0.2173	-0.0141
ELA	6	621536	3 A-C	2	7212	0.5599	0.0854	0.5592	0.3052	0.0489	0.0012	0.3661	-0.1837	0.3666	-0.2141	-0.1445	-0.0263
ELA	6	621518	3 A-K	2	7215	0.4541	0.1505	0.1259	0.2691	0.4537	0.0008	0.3096	-0.226	-0.1205	-0.0744	0.3097	-0.0147
ELA	6	621540	3 A-K	2	7203	0.2756	0.18	0.2749	0.1896	0.353	0.0025	0.1302	0.1058	0.1307	-0.076	-0.1422	-0.0255
ELA	6	621519	3 A-V	2	7215	0.3095	0.4692	0.1124	0.3092	0.1083	0.0008	0.0794	0.0719	-0.0388	0.0795	-0.1937	-0.0066
ELA	6	621539	3 A-V	2	7210	0.3635	0.363	0.3095	0.0348	0.2912	0.0015	-0.1122	-0.1113	0.079	-0.1869	0.1148	-0.025
ELA	6	623654	3 A-V	2	7218	0.5612	0.1677	0.2307	0.561	0.0402	0.0004	0.3963	-0.1802	-0.217	0.3962	-0.1924	-0.0061
ELA	6	503919	3 D	2	7212	0.5717	0.1522	0.1702	0.571	0.1054	0.0012	0.3292	-0.1384	-0.1678	0.3302	-0.1603	-0.0411
ELA	6	629734	3 D	2	7213	0.5096	0.162	0.5091	0.0842	0.2436	0.0011	0.1848	-0.0969	0.1855	-0.2177	0.01	-0.026
ELA	6	629743	3 D	2	7214	0.4774	0.2436	0.1161	0.1624	0.4769	0.001	0.3139	-0.1214	-0.1019	-0.195	0.3136	0.0017
ELA	7	497095	0 A-C	2	27371	0.5574	0.1091	0.1856	0.146	0.5549	0.0044	0.3452	-0.1267	-0.1782	-0.1717	0.3463	-0.0405
ELA	7	497097	0 A-C	3	27342	0.4397	0.2396	0.4373	0.1613	0.1563	0.0055	0.2755	-0.0365	0.2765	-0.2245	-0.0997	-0.0376
ELA	7	578096	0 A-C	3	27422	0.623	0.089	0.0867	0.2003	0.6214	0.0026	0.3361	-0.1288	-0.2566	-0.1317	0.3374	-0.04
ELA	7	578100	0 A-C	2	27452	0.4897	0.1798	0.489	0.2453	0.0845	0.0015	0.405	-0.2052	0.4055	-0.1379	-0.2276	-0.0336
ELA	7	497100	0 A-K	2	27427	0.6416	0.6401	0.0455	0.1822	0.1299	0.0024	0.5526	0.5529	-0.2442	-0.324	-0.2608	-0.0353
ELA	7	578071	0 A-K	3	27457	0.617	0.056	0.126	0.2005	0.6162	0.0013	0.3738	-0.2281	-0.2964	-0.0748	0.3748	-0.0411
ELA	7	578084	0 A-K	3	27449	0.4854	0.4847	0.184	0.2644	0.0654	0.0016	0.4449	0.4453	-0.2414	-0.1719	-0.2102	-0.0313
ELA	7	578103	0 A-K	2	27461	0.448	0.1971	0.0834	0.4475	0.2709	0.0012	0.3784	-0.1928	-0.2366	0.379	-0.1014	-0.0375
ELA	7	497101	0 A-V	2	27424	0.761	0.089	0.067	0.7591	0.0825	0.0025	0.5218	-0.2425	-0.2787	0.5226	-0.3006	-0.0424
ELA	7	497102	0 A-V	2	27409	0.7708	0.7685	0.0862	0.0945	0.0477	0.0031	0.362	0.3632	-0.0751	-0.282	-0.2228	-0.0383
ELA	7	578073	0 A-V	1	27458	0.6247	0.0276	0.1769	0.6239	0.1703	0.0013	0.4147	-0.2173	-0.1735	0.4155	-0.261	-0.0383
ELA	7	578075	0 A-V	2	27458	0.697	0.1102	0.6961	0.1382	0.0543	0.0013	0.3837	-0.1996	0.3848	-0.2053	-0.1867	-0.0383
ELA	7	566576	0 B-C	2	27435	0.6365	0.6351	0.1282	0.1518	0.0827	0.0021	0.5401	0.5403	-0.2155	-0.3144	-0.2678	-0.0321
ELA	7	566577	0 B-C	2	27443	0.6073	0.2019	0.1132	0.0769	0.6062	0.0018	0.4045	-0.1204	-0.1937	-0.326	0.4052	-0.0336
ELA	7	566584	0 B-C	3	27434	0.728	0.0713	0.1052	0.7264	0.095	0.0021	0.4948	-0.2238	-0.2679	0.4952	-0.2712	-0.0322
ELA	7	579272	0 B-C	2	27447	0.3969	0.1669	0.3603	0.3962	0.0749	0.0017	0.2661	-0.2191	0.0392	0.2664	-0.2531	-0.0202
ELA	7	579298	0 B-C	2	27473	0.5201	0.2279	0.116	0.1357	0.5197	0.0007	0.2818	0.0078	-0.1706	-0.2599	0.2822	-0.0242
ELA	7	566579	0 B-K	2	27443	0.4881	0.1643	0.4872	0.2157	0.1309	0.0018	0.2857	-0.0712	0.2861	-0.176	-0.1278	-0.026
ELA	7	579275	0 B-K	2	27461	0.6254	0.6247	0.1279	0.1862	0.0601	0.0012	0.4366	0.4371	-0.265	-0.1766	-0.2247	-0.0295
ELA	7	579276	0 B-K	3	27431	0.4913	0.1886	0.1552	0.4902	0.1638	0.0023	0.3456	-0.1325	-0.1917	0.3462	-0.136	-0.0311
ELA	7	566582	0 B-V	2	27458	0.5628	0.5621	0.0956	0.1014	0.2397	0.0013	0.4768	0.4771	-0.2749	-0.2448	-0.1896	-0.0299
ELA	7	566583	0 B-V	2	27424	0.4707	0.4695	0.1897	0.1821	0.1562	0.0025	0.4474	0.4476	-0.199	-0.2797	-0.099	-0.0297
ELA	7	579271	0 B-V	2	27468	0.7029	0.7023	0.1113	0.1229	0.0626	0.0009	0.2667	0.2672	-0.0518	-0.1863	-0.1818	-0.0219
ELA	7	341161	0 D	2	27478	0.5699	0.0999	0.5696	0.2231	0.1069	0.0005	0.345	-0.166	0.3452	-0.1664	-0.1666	-0.0172

ELA	7	341167	0 D	2	27456	0.2732	0.2729	0.3816	0.2734	0.0709	0.0013	0.3118	0.3119	-0.0678	-0.098	-0.2396	-0.0225
ELA	7	413189	0 D	3	27476	0.6946	0.6942	0.0658	0.093	0.1464	0.0006	0.4581	0.4586	-0.2838	-0.2391	-0.2002	-0.0293
ELA	7	413196	0 D	2	27459	0.5473	0.5466	0.2098	0.1207	0.1216	0.0012	0.2938	0.2943	-0.0331	-0.2806	-0.1246	-0.0255
ELA	7	584046	0 D	2	27470	0.5835	0.0956	0.1658	0.583	0.1548	0.0008	0.4488	-0.2138	-0.2313	0.4491	-0.1988	-0.0237
ELA	7	584049	0 D	2	27473	0.6426	0.146	0.1036	0.6421	0.1076	0.0007	0.3644	-0.2149	-0.228	0.3644	-0.0938	-0.0113
ELA	7	584050	0 D	2	27459	0.3599	0.2839	0.1494	0.3595	0.2059	0.0012	0.2118	0.0209	-0.2039	0.212	-0.0937	-0.0164
ELA	7	584070	0 D	2	27467	0.3348	0.1607	0.3344	0.2478	0.2561	0.0009	0.3294	-0.074	0.3295	-0.1177	-0.1762	-0.0178
ELA	7	584132	0 D	2	27447	0.4114	0.2396	0.1387	0.2094	0.4107	0.0017	0.2608	-0.059	-0.1516	-0.1229	0.2611	-0.0219
ELA	7	625503	1 A-C	2	10741	0.4226	0.1372	0.4222	0.3085	0.1313	0.0008	0.2988	-0.1313	0.2993	-0.1384	-0.1118	-0.0332
ELA	7	625505	1 A-C	2	10724	0.7296	0.7278	0.0823	0.1196	0.0678	0.0024	0.514	0.513	-0.2625	-0.3095	-0.2183	-0.0175
ELA	7	625499	1 A-K	2	10714	0.4553	0.2091	0.1216	0.2122	0.4538	0.0033	0.3865	-0.2099	-0.1543	-0.1358	0.3864	-0.0189
ELA	7	625502	1 A-K	2	10729	0.5151	0.12	0.5141	0.3063	0.0576	0.002	0.211	-0.1562	0.2112	-0.0116	-0.2102	-0.0114
ELA	7	625506	1 A-K	3	10739	0.6781	0.1043	0.1313	0.086	0.6774	0.001	0.5023	-0.2555	-0.267	-0.236	0.5019	-0.005
ELA	7	625507	1 A-V	1	10737	0.5493	0.1166	0.5487	0.2468	0.0868	0.0012	0.4212	-0.1675	0.4213	-0.2607	-0.1526	-0.0154
ELA	7	625509	1 A-V	1	10733	0.5855	0.1099	0.5846	0.1699	0.1341	0.0016	0.2957	-0.2335	0.2961	-0.2038	0.0129	-0.0198
ELA	7	633214	1 A-V	2	10738	0.553	0.066	0.2823	0.0981	0.5524	0.0011	0.4705	-0.2556	-0.2068	-0.2584	0.4704	-0.014
ELA	7	574338	1 B-C	3	10727	0.5476	0.1994	0.0964	0.1556	0.5464	0.0021	0.3819	-0.0982	-0.2135	-0.2379	0.3833	-0.0508
ELA	7	574332	1 B-K	2	10743	0.5645	0.1927	0.5641	0.1344	0.1081	0.0007	0.3617	-0.1914	0.3613	-0.1934	-0.1217	0.0043
ELA	7	574333	1 B-K	2	10727	0.6893	0.0757	0.086	0.6878	0.1483	0.0021	0.3963	-0.2661	-0.14	0.3975	-0.2045	-0.0402
ELA	7	574334	1 B-K	2	10724	0.8177	0.0505	0.8157	0.0845	0.0469	0.0024	0.4546	-0.2397	0.4543	-0.2712	-0.2219	-0.0269
ELA	7	574335	1 B-V	2	10726	0.6605	0.0783	0.198	0.6591	0.0624	0.0022	0.3772	-0.1732	-0.2366	0.3784	-0.1518	-0.0388
ELA	7	574341	1 B-V	1	10726	0.4261	0.4251	0.3542	0.0828	0.1356	0.0022	0.3965	0.3966	-0.0937	-0.2206	-0.2607	-0.025
ELA	7	584069	1 D	2	10729	0.511	0.1039	0.51	0.208	0.1761	0.002	0.43	-0.1572	0.4302	-0.2846	-0.1324	-0.0251
ELA	7	630219	1 D	2	10735	0.7139	0.7129	0.0953	0.1173	0.0731	0.0014	0.4309	0.4311	-0.2644	-0.1944	-0.2078	-0.0209
ELA	7	630227	1 D	2	10741	0.3714	0.1711	0.247	0.3711	0.21	0.0008	0.24	-0.0778	-0.1008	0.2404	-0.1043	-0.0311
ELA	7	576315	2 A-C	2	16700	0.7385	0.7366	0.0466	0.0833	0.1309	0.0026	0.4481	0.4485	-0.2513	-0.3218	-0.1598	-0.0335
ELA	7	576289	2 A-K	3	16718	0.788	0.0762	0.0722	0.7868	0.0634	0.0015	0.4051	-0.2301	-0.1886	0.405	-0.2269	-0.0195
ELA	7	576290	2 A-K	2	16709	0.7088	0.7074	0.213	0.0269	0.0506	0.002	0.3401	0.3416	-0.1602	-0.2183	-0.2398	-0.0427
ELA	7	576292	2 A-K	3	16702	0.4476	0.2633	0.2425	0.0452	0.4465	0.0024	0.333	-0.0494	-0.2069	-0.2597	0.3332	-0.0255
ELA	7	576286	2 A-V	2	16699	0.4928	0.1829	0.2247	0.0983	0.4915	0.0026	0.3486	-0.154	-0.1296	-0.1989	0.3493	-0.0343
ELA	7	576293	2 A-V	1	16738	0.371	0.3709	0.0575	0.0863	0.485	0.0003	0.3271	0.3272	-0.2604	-0.1941	-0.0855	-0.0128
ELA	7	623054	2 B-C	2	8391	0.2721	0.2719	0.3019	0.3306	0.0949	0.0008	0.266	0.2661	-0.1839	0.0686	-0.2238	-0.0223
ELA	7	623055	2 B-C	2	8384	0.529	0.0739	0.1634	0.5281	0.2329	0.0017	0.2622	-0.1559	-0.2106	0.2626	-0.0271	-0.0235
ELA	7	623059	2 B-C	2	8394	0.8137	0.0897	0.8133	0.0498	0.0468	0.0005	0.4671	-0.2354	0.4672	-0.2814	-0.2523	-0.0147
ELA	7	623060	2 B-C	2	8389	0.8059	0.0567	0.0724	0.0648	0.8051	0.0011	0.4844	-0.2084	-0.2811	-0.2843	0.4849	-0.033
ELA	7	623056	2 B-K	3	8380	0.7228	0.0611	0.105	0.1105	0.7212	0.0021	0.4511	-0.2223	-0.2257	-0.2509	0.4514	-0.0282
ELA	7	623061	2 B-K	2	8389	0.5742	0.1394	0.5736	0.1885	0.0974	0.0011	0.3241	-0.1044	0.3248	-0.1715	-0.1903	-0.0297
ELA	7	623062	2 B-V	1	8385	0.7647	0.0781	0.0706	0.7635	0.0862	0.0015	0.3524	-0.1523	-0.219	0.3528	-0.1856	-0.022
ELA	7	623063	2 B-V	2	8379	0.6926	0.691	0.2002	0.0539	0.0526	0.0023	0.3619	0.363	-0.1836	-0.163	-0.2498	-0.0356
ELA	7	503931	2 D	2	8387	0.5545	0.3434	0.062	0.0394	0.5538	0.0013	0.167	0.0407	-0.2395	-0.2262	0.168	-0.0294
ELA	7	630218	2 D	2	8394	0.8698	0.0282	0.8694	0.0363	0.0656	0.0005	0.3641	-0.1955	0.3641	-0.2554	-0.1706	-0.0134
ELA	7	630228	2 D	2	8386	0.5565	0.103	0.2715	0.0683	0.5557	0.0014	0.2591	-0.1509	-0.0377	-0.2586	0.2601	-0.0353
ELA	7	625558	3 B-C	2	8337	0.4169	0.2671	0.0675	0.2479	0.4165	0.001	0.2614	-0.1036	-0.2558	-0.0416	0.262	-0.0391
ELA	7	625565	3 B-C	2	8329	0.5098	0.1706	0.5088	0.0859	0.2327	0.0019	0.3316	-0.0983	0.3318	-0.2245	-0.1543	-0.0181
ELA	7	625561	3 B-K	2	8339	0.3656	0.127	0.1336	0.3733	0.3654	0.0007	0.1543	-0.0825	-0.108	-0.0203	0.1544	-0.0113
ELA	7	625562	3 B-K	3	8336	0.1635	0.5826	0.1104	0.1633	0.1426	0.0011	-0.1489	0.4585	-0.2565	-0.1486	-0.2581	-0.0157
ELA	7	625568	3 B-K	2	8332	0.5911	0.1245	0.1206	0.5902	0.1632	0.0016	0.2476	-0.1841	-0.2211	0.2487	0.032	-0.036
ELA	7	625560	3 B-V	1	8331	0.8624	0.861	0.093	0.0277	0.0167	0.0017	0.3548	0.355	-0.2257	-0.2081	-0.173	-0.0247
ELA	7	625567	3 B-V	1	8339	0.7004	0.1167	0.6999	0.1081	0.0745	0.0007	0.3887	-0.2408	0.3895	-0.1676	-0.1835	-0.0341
ELA	7	632443	3 B-V	2	8326	0.8418	0.8399	0.0314	0.053	0.0735	0.0023	0.4931	0.49	-0.2248	-0.2701	-0.3059	-0.0042
ELA	7	584073	3 D	2	8338	0.4788	0.0963	0.2077	0.4784	0.2168	0.0008	0.3253	-0.2309	-0.2202	0.3258	-0.0105	-0.0339

ELA	7	630220	3 D	2	8327	0.6336	0.0276	0.1158	0.2223	0.6322	0.0022	0.2657	-0.19	-0.1719	-0.0976	0.2678	-0.0521
ELA	7	630229	3 D	1	8336	0.7636	0.1279	0.7627	0.0538	0.0545	0.0011	0.3775	-0.1792	0.3782	-0.2289	-0.2138	-0.0265
ELA	8	411875	0 A-C	2	26757	0.4042	0.4274	0.0935	0.4033	0.0738	0.002	0.2698	-0.0502	-0.1999	0.2707	-0.1834	-0.0415
ELA	8	411877	0 A-C	2	26757	0.7205	0.719	0.1167	0.09	0.0722	0.002	0.5302	0.5305	-0.3041	-0.2738	-0.235	-0.0355
ELA	8	411872	0 A-K	2	26737	0.7591	0.0631	0.757	0.0746	0.1024	0.0028	0.5789	-0.2609	0.5789	-0.3132	-0.3316	-0.038
ELA	8	411874	0 A-K	3	26728	0.6125	0.0581	0.1237	0.2045	0.6106	0.0031	0.4815	-0.2813	-0.3055	-0.1647	0.4822	-0.0419
ELA	8	411878	0 A-K	2	26750	0.7855	0.0755	0.0855	0.053	0.7837	0.0023	0.4828	-0.3122	-0.2053	-0.2556	0.4841	-0.0457
ELA	8	576309	0 A-K	2	26723	0.2951	0.0932	0.4148	0.1947	0.2941	0.0033	0.3081	-0.166	-0.0367	-0.1822	0.3086	-0.037
ELA	8	576310	0 A-K	2	26769	0.6904	0.0561	0.1462	0.6893	0.1067	0.0016	0.491	-0.2101	-0.3105	0.4917	-0.2198	-0.0399
ELA	8	576311	0 A-K	2	26735	0.5717	0.5701	0.1607	0.0794	0.1869	0.0028	0.4587	0.4592	-0.2811	-0.2885	-0.1132	-0.0366
ELA	8	576312	0 A-K	2	26758	0.501	0.191	0.1652	0.5	0.1418	0.002	0.293	-0.0271	-0.149	0.2936	-0.2281	-0.0283
ELA	8	411879	0 A-V	2	26743	0.5788	0.5774	0.1123	0.1582	0.1496	0.0025	0.3294	0.331	-0.2051	-0.1899	-0.0757	-0.0483
ELA	8	576304	0 A-V	2	26791	0.6282	0.6278	0.0889	0.1107	0.1719	0.0007	0.3674	0.3677	-0.0972	-0.2957	-0.1502	-0.0224
ELA	8	576313	0 A-V	1	26769	0.4384	0.3415	0.4377	0.1442	0.0751	0.0016	0.4048	-0.1653	0.4052	-0.1851	-0.2135	-0.0338
ELA	8	496328	0 B-C	3	26752	0.499	0.1297	0.2593	0.4979	0.1109	0.0022	0.3931	-0.2085	-0.0947	0.394	-0.2653	-0.0445
ELA	8	576296	0 B-C	2	26772	0.7847	0.0835	0.0619	0.7835	0.0696	0.0015	0.4652	-0.2039	-0.2667	0.4657	-0.2748	-0.0316
ELA	8	576297	0 B-C	2	26782	0.4471	0.4466	0.1719	0.1518	0.2285	0.0011	0.4723	0.4724	-0.2219	-0.223	-0.1673	-0.0276
ELA	8	576314	0 B-C	2	26783	0.6131	0.1378	0.1731	0.0756	0.6124	0.001	0.564	-0.2602	-0.2837	-0.2924	0.5637	-0.0085
ELA	8	496333	0 B-K	3	26772	0.6905	0.6895	0.1383	0.1388	0.032	0.0015	0.4852	0.4854	-0.3239	-0.2068	-0.2288	-0.0269
ELA	8	496334	0 B-K	3	26754	0.5085	0.0426	0.5074	0.1509	0.2969	0.0021	0.4438	-0.2314	0.4446	-0.259	-0.1771	-0.0417
ELA	8	576302	0 B-K	2	26769	0.4989	0.4981	0.0517	0.2123	0.2363	0.0016	0.4118	0.412	-0.2232	-0.2359	-0.1393	-0.024
ELA	8	496329	0 B-V	2	26779	0.5429	0.0509	0.3624	0.0433	0.5422	0.0012	0.3102	-0.2808	-0.0705	-0.286	0.3108	-0.0288
ELA	8	496336	0 B-V	2	26794	0.7505	0.0697	0.1167	0.75	0.0629	0.0006	0.48	-0.2042	-0.2918	0.4807	-0.2539	-0.0339
ELA	8	576295	0 B-V	2	26771	0.5141	0.0526	0.1496	0.5134	0.283	0.0015	0.4356	-0.2356	-0.2315	0.436	-0.1812	-0.0311
ELA	8	576303	0 B-V	2	26775	0.2765	0.3796	0.2761	0.1885	0.1545	0.0013	0.2345	-0.0644	0.2348	-0.1016	-0.0914	-0.0265
ELA	8	341015	0 D	2	26772	0.3712	0.2891	0.1684	0.3707	0.1704	0.0015	0.2684	-0.0594	-0.097	0.2687	-0.1744	-0.0251
ELA	8	416449	0 D	2	26791	0.3424	0.1527	0.3421	0.3602	0.1442	0.0007	0.1964	-0.1224	0.1966	0.0314	-0.1819	-0.0162
ELA	8	416453	0 D	2	26782	0.8254	0.8245	0.0487	0.0623	0.0634	0.0011	0.4005	0.4014	-0.2631	-0.2904	-0.1019	-0.0309
ELA	8	416518	0 D	2	26788	0.4466	0.4462	0.0685	0.3401	0.1443	0.0009	0.4616	0.4614	-0.2901	-0.1857	-0.1932	-0.0071
ELA	8	503812	0 D	2	26775	0.5059	0.2575	0.0973	0.1387	0.5052	0.0013	0.2874	-0.0676	-0.1966	-0.1593	0.2882	-0.0324
ELA	8	503813	0 D	2	26768	0.5133	0.1964	0.1068	0.1828	0.5124	0.0016	0.4921	-0.1675	-0.2911	-0.2288	0.4924	-0.0319
ELA	8	584077	0 D	2	26795	0.4909	0.0721	0.3257	0.4906	0.111	0.0006	0.394	-0.2043	-0.2458	0.3942	-0.091	-0.0194
ELA	8	584078	0 D	2	26780	0.723	0.0684	0.7222	0.1478	0.0604	0.0012	0.4633	-0.2471	0.4637	-0.2705	-0.203	-0.0275
ELA	8	584106	0 D	2	26777	0.6395	0.0616	0.1954	0.6387	0.103	0.0013	0.4907	-0.1738	-0.3306	0.4911	-0.2036	-0.0325
ELA	8	623088	1 A-C	2	10392	0.3172	0.3169	0.264	0.3654	0.0528	0.0009	0.0225	0.0231	-0.1068	0.1779	-0.2165	-0.0317
ELA	8	626313	1 A-C	2	10377	0.4728	0.4717	0.2636	0.1461	0.1162	0.0023	0.4116	0.4122	-0.1306	-0.24	-0.1929	-0.0342
ELA	8	623084	1 A-K	2	10388	0.4265	0.1526	0.1571	0.2631	0.4259	0.0012	0.3427	-0.2059	-0.2791	0.0157	0.3431	-0.0278
ELA	8	623085	1 A-K	2	10387	0.5913	0.1056	0.5905	0.1551	0.1475	0.0013	0.4474	-0.2308	0.448	-0.2281	-0.1853	-0.03
ELA	8	623087	1 A-K	2	10369	0.7255	0.1073	0.0979	0.0685	0.7233	0.0031	0.4823	-0.1666	-0.3214	-0.2655	0.4818	-0.0263
ELA	8	623092	1 A-K	3	10384	0.569	0.1721	0.1668	0.5681	0.0913	0.0016	0.4229	-0.1791	-0.1524	0.4233	-0.2925	-0.0246
ELA	8	623086	1 A-V	2	10390	0.6397	0.1481	0.1486	0.6391	0.0632	0.0011	0.3422	-0.2041	-0.0893	0.3415	-0.2464	0.0049
ELA	8	623091	1 A-V	2	10379	0.1759	0.1021	0.1756	0.5701	0.1501	0.0021	-0.0984	-0.203	-0.0977	0.3106	-0.151	-0.0262
ELA	8	578039	1 B-C	2	26737	0.6807	0.6788	0.0649	0.087	0.1665	0.0028	0.341	0.3412	-0.2617	-0.2072	-0.0946	-0.0224
ELA	8	578040	1 B-C	2	26763	0.5393	0.1472	0.1047	0.208	0.5384	0.0018	0.3078	-0.046	-0.2417	-0.1534	0.3084	-0.0288
ELA	8	578042	1 B-K	2	26743	0.6405	0.6389	0.0614	0.1583	0.1389	0.0025	0.4381	0.4383	-0.2201	-0.2668	-0.1706	-0.026
ELA	8	578044	1 B-K	3	26744	0.5927	0.1456	0.5912	0.0937	0.167	0.0025	0.316	-0.1223	0.3157	-0.1869	-0.1526	-0.0142
ELA	8	578038	1 B-V	2	26763	0.8131	0.0608	0.8117	0.099	0.0267	0.0018	0.4404	-0.2143	0.4405	-0.2805	-0.2237	-0.0267
ELA	8	578046	1 B-V	2	26796	0.3724	0.1875	0.3722	0.3441	0.0956	0.0006	0.2361	-0.1468	0.2362	-0.1502	0.0503	-0.0123
ELA	8	584083	1 D	2	10382	0.572	0.1542	0.1494	0.1235	0.571	0.0018	0.4039	-0.0974	-0.278	-0.1969	0.4044	-0.0257
ELA	8	630366	1 D	2	10386	0.2366	0.0984	0.2362	0.4917	0.1723	0.0014	0.1014	-0.2143	0.1018	0.0592	-0.0214	-0.0245
ELA	8	630375	1 D	2	10397	0.7036	0.0479	0.0673	0.7033	0.1811	0.0004	0.4275	-0.2337	-0.2856	0.4271	-0.1914	0.0043

ELA	8	624738	2 A-C	2	8191	0.7408	0.0746	0.7398	0.1195	0.0647	0.0013	0.4146	-0.2428	0.4149	-0.2054	-0.2053	-0.0306
ELA	8	624743	2 A-C	2	8190	0.7083	0.7073	0.0869	0.1619	0.0424	0.0015	0.4207	0.4218	-0.183	-0.2536	-0.225	-0.0417
ELA	8	624741	2 A-K	2	8190	0.2608	0.1822	0.3583	0.2604	0.1976	0.0015	0.1567	-0.1955	0.0295	0.157	-0.017	-0.0213
ELA	8	624742	2 A-K	3	8191	0.4765	0.07	0.0546	0.3982	0.4759	0.0013	0.1588	-0.1277	-0.2333	0.0144	0.1598	-0.0341
ELA	8	624745	2 A-K	3	8194	0.7789	0.0439	0.7781	0.1116	0.0655	0.001	0.4545	-0.2222	0.454	-0.2662	-0.2386	-0.0103
ELA	8	624739	2 A-V	2	8196	0.9385	0.9378	0.0232	0.0251	0.0132	0.0007	0.3447	0.3458	-0.2065	-0.2174	-0.1546	-0.0302
ELA	8	624746	2 A-V	2	8184	0.833	0.0521	0.0438	0.0708	0.8311	0.0022	0.5009	-0.2661	-0.2457	-0.2996	0.5006	-0.0276
ELA	8	631614	2 A-V	2	8188	0.6325	0.6314	0.1175	0.1564	0.0929	0.0017	0.2745	0.2745	-0.1872	-0.108	-0.1112	-0.015
ELA	8	584081	2 D	2	8191	0.7192	0.0725	0.0367	0.7182	0.1712	0.0013	0.3065	-0.1708	-0.2279	0.3083	-0.1322	-0.0476
ELA	8	630367	2 D	2	8194	0.4719	0.4715	0.1573	0.203	0.1673	0.001	0.2561	0.2559	-0.1558	-0.147	-0.0316	-0.0045
ELA	8	630376	2 D	2	8196	0.5715	0.1515	0.1418	0.5711	0.1348	0.0007	0.2218	-0.1607	-0.0324	0.2225	-0.1183	-0.0306
ELA	8	624748	3 A-C	2	8203	0.4729	0.0419	0.4726	0.2096	0.2753	0.0006	0.2202	-0.2249	0.2204	-0.2164	0.0524	-0.0124
ELA	8	624749	3 A-C	2	8193	0.5046	0.5037	0.2243	0.2075	0.0627	0.0018	0.3776	0.3781	-0.2562	-0.1269	-0.1207	-0.0336
ELA	8	624756	3 A-C	2	8196	0.6907	0.1354	0.0831	0.0904	0.6897	0.0015	0.5255	-0.2856	-0.2983	-0.2167	0.5257	-0.0265
ELA	8	624751	3 A-K	2	8198	0.5106	0.2552	0.51	0.0978	0.1357	0.0012	0.3889	-0.2228	0.3894	-0.2503	-0.0644	-0.0323
ELA	8	624755	3 A-K	3	8190	0.6158	0.6144	0.2223	0.0826	0.0785	0.0022	0.4671	0.4668	-0.2603	-0.2579	-0.1751	-0.0192
ELA	8	631562	3 A-K	2	8196	0.8488	0.0327	0.0517	0.0666	0.8476	0.0015	0.422	-0.2194	-0.2546	-0.2218	0.4228	-0.0343
ELA	8	624750	3 A-V	2	8202	0.8975	0.0579	0.029	0.8968	0.0156	0.0007	0.3499	-0.1976	-0.2136	0.3503	-0.1941	-0.0192
ELA	8	624754	3 A-V	2	8198	0.579	0.0816	0.2859	0.5783	0.0529	0.0012	0.223	-0.2031	-0.0226	0.2234	-0.1957	-0.0201
ELA	8	503835	3 D	2	8196	0.6124	0.0871	0.2065	0.6115	0.0934	0.0015	0.3139	-0.1213	-0.2226	0.315	-0.0953	-0.038
ELA	8	630368	3 D	1	8203	0.87	0.0471	0.8695	0.0758	0.0069	0.0006	0.3001	-0.1698	0.3003	-0.2042	-0.1298	-0.0134
ELA	8	630377	3 D	2	8199	0.7424	0.1268	0.0948	0.7416	0.0357	0.0011	0.3487	-0.1631	-0.2152	0.3498	-0.1869	-0.0343
MATH	3	495190	0 A-F	2	18441	0.5017	0.1749	0.1947	0.5001	0.1271	0.0031	0.4949	-0.2973	-0.2085	0.4943	-0.1517	-0.0204
MATH	3	495193	0 A-F	1	18410	0.3269	0.3254	0.2288	0.1932	0.2479	0.0048	0.4654	0.4659	-0.166	-0.2337	-0.1219	-0.0523
MATH	3	566159	0 A-F	2	18453	0.5105	0.1758	0.1829	0.5092	0.1296	0.0025	0.3259	0.01	-0.2608	0.3268	-0.1925	-0.0341
MATH	3	313993	0 A-T	1	18459	0.8058	0.0295	0.8041	0.0712	0.0931	0.0022	0.5148	-0.19	0.5153	-0.2752	-0.3438	-0.0369
MATH	3	408684	0 A-T	1	18432	0.5595	0.2022	0.1087	0.5574	0.1281	0.0036	0.4641	-0.2175	-0.2559	0.4655	-0.1821	-0.0559
MATH	3	408847	0 A-T	2	18470	0.6663	0.0753	0.1683	0.0896	0.6653	0.0016	0.4749	-0.2475	-0.2278	-0.2546	0.4747	-0.0197
MATH	3	420538	0 A-T	1	18467	0.5854	0.5844	0.074	0.1543	0.1856	0.0017	0.5394	0.5398	-0.2092	-0.2162	-0.3389	-0.0329
MATH	3	493221	0 A-T	2	18400	0.3341	0.1916	0.1218	0.3489	0.3323	0.0054	0.4803	-0.4153	-0.1915	0.0068	0.4806	-0.0486
MATH	3	493231	0 A-T	1	18460	0.4925	0.1583	0.2799	0.4915	0.0682	0.0021	0.556	-0.1595	-0.44	0.5556	-0.0842	-0.0162
MATH	3	579686	0 A-T	2	18376	0.4816	0.1788	0.4784	0.1196	0.2167	0.0066	0.4454	-0.1726	0.4459	-0.2048	-0.2108	-0.0412
MATH	3	579688	0 A-T	2	18467	0.6153	0.164	0.6142	0.1616	0.0585	0.0017	0.5207	-0.2032	0.5202	-0.3522	-0.2034	-0.014
MATH	3	300096	0 B-O	1	18421	0.6509	0.114	0.1402	0.6481	0.0935	0.0042	0.5101	-0.2735	-0.2716	0.5109	-0.2049	-0.0484
MATH	3	313476	0 B-O	1	18415	0.7302	0.0563	0.11	0.7269	0.1023	0.0045	0.5346	-0.2328	-0.3088	0.5363	-0.2788	-0.0619
MATH	3	408687	0 B-O	2	18424	0.588	0.5857	0.1758	0.1656	0.0689	0.0041	0.4673	0.4675	-0.2043	-0.2628	-0.2079	-0.0343
MATH	3	408699	0 B-O	2	18434	0.379	0.1996	0.2202	0.199	0.3776	0.0035	0.4471	-0.1828	-0.2654	-0.0786	0.4473	-0.0404
MATH	3	408702	0 B-O	2	18451	0.7531	0.0633	0.1109	0.0721	0.7511	0.0026	0.5422	-0.3013	-0.2931	-0.2606	0.5416	-0.0268
MATH	3	408711	0 B-O	2	18441	0.669	0.6669	0.111	0.0937	0.1253	0.0031	0.4472	0.4476	-0.2616	-0.262	-0.1528	-0.0335
MATH	3	408845	0 B-O	2	18464	0.3479	0.3212	0.3473	0.2355	0.0941	0.0019	0.3715	-0.1613	0.3716	-0.1203	-0.1701	-0.0208
MATH	3	495213	0 B-O	2	18462	0.6306	0.6293	0.1072	0.1818	0.0796	0.002	0.3096	0.3103	-0.1305	-0.2476	-0.0468	-0.0291
MATH	3	495217	0 B-O	2	18447	0.3953	0.2722	0.1408	0.3942	0.19	0.0028	0.33	-0.1514	-0.2133	0.33	-0.0477	-0.0185
MATH	3	579666	0 B-O	2	18424	0.5138	0.2749	0.5117	0.1242	0.0851	0.0041	0.4635	-0.3067	0.4644	-0.2214	-0.069	-0.0458
MATH	3	579671	0 B-O	2	18455	0.6366	0.1803	0.6351	0.1075	0.0748	0.0024	0.4942	-0.3825	0.494	-0.1733	-0.1365	-0.0247
MATH	3	299414	0 C-G	1	18410	0.6463	0.1314	0.1174	0.1031	0.6432	0.0048	0.5316	-0.2944	-0.2473	-0.2374	0.5331	-0.059
MATH	3	408536	0 C-G	2	18465	0.3017	0.3011	0.2742	0.2021	0.2208	0.0018	0.2736	0.2737	-0.1241	-0.0813	-0.0885	-0.0194
MATH	3	408537	0 C-G	2	18463	0.4459	0.2187	0.4451	0.1252	0.2091	0.0019	0.342	-0.2179	0.3419	-0.1308	-0.0884	-0.0132
MATH	3	479183	0 C-G	1	18380	0.5125	0.1471	0.5092	0.0971	0.2401	0.0064	0.3103	-0.1937	0.3128	-0.1343	-0.1014	-0.0585
MATH	3	479184	0 C-G	2	18446	0.4874	0.486	0.1799	0.1652	0.1661	0.0029	0.437	0.4373	-0.1515	-0.1915	-0.2351	-0.0332
MATH	3	497747	0 C-G	1	18483	0.8711	0.0525	0.0291	0.8704	0.0471	0.0009	0.4058	-0.2377	-0.1833	0.4052	-0.2452	-0.0095
MATH	3	497751	0 C-G	2	18448	0.4447	0.0775	0.4435	0.2382	0.2381	0.0028	0.3775	-0.129	0.3781	-0.17	-0.1853	-0.0379

MATH	3	299422	0	D-M	1	18478	0.5988	0.0288	0.1517	0.5981	0.2202	0.0011	0.4075	-0.1654	-0.3741	0.4078	-0.0901	-0.0216
MATH	3	302218	0	D-M	2	18462	0.495	0.4265	0.028	0.0495	0.494	0.002	0.5633	-0.4764	-0.1056	-0.127	0.5628	-0.0182
MATH	3	314246	0	D-M	2	18406	0.6917	0.1196	0.6882	0.0728	0.1144	0.005	0.4836	-0.2356	0.485	-0.2682	-0.2353	-0.0512
MATH	3	315858	0	D-M	2	18461	0.3953	0.1284	0.2935	0.3945	0.1815	0.0021	0.5016	-0.1653	-0.135	0.5015	-0.33	-0.0243
MATH	3	408716	0	D-M	2	18455	0.3787	0.2924	0.1395	0.1879	0.3778	0.0024	0.2883	-0.0172	-0.1649	-0.1892	0.2886	-0.0214
MATH	3	408720	0	D-M	1	18444	0.4428	0.2066	0.1178	0.2311	0.4415	0.003	0.5473	-0.2287	-0.2455	-0.2324	0.5477	-0.0416
MATH	3	408726	0	D-M	1	18445	0.5758	0.5741	0.0855	0.158	0.1795	0.0029	0.6253	0.6261	-0.1853	-0.2877	-0.3911	-0.0512
MATH	3	408735	0	D-M	1	18478	0.8059	0.0762	0.077	0.805	0.0407	0.0011	0.3371	-0.1736	-0.201	0.338	-0.1687	-0.0281
MATH	3	408736	0	D-M	2	18462	0.4005	0.3197	0.3997	0.154	0.1245	0.002	0.4213	-0.1756	0.4213	-0.1521	-0.2077	-0.0222
MATH	3	479189	0	D-M	1	18397	0.3228	0.4011	0.1456	0.321	0.1268	0.0055	0.3243	-0.1089	-0.2124	0.325	-0.0605	-0.0451
MATH	3	493218	0	D-M	1	18429	0.6021	0.2031	0.5999	0.1491	0.0442	0.0038	0.4817	-0.2303	0.4821	-0.2719	-0.2162	-0.0373
MATH	3	617239	1	A-F	2	7628	0.5691	0.0888	0.1678	0.1737	0.5683	0.0014	0.4733	-0.2261	-0.2142	-0.2352	0.4738	-0.0314
MATH	3	579689	1	A-T	2	7625	0.2281	0.6143	0.0797	0.0764	0.2276	0.0018	0.3299	-0.0418	-0.24	-0.1965	0.33	-0.0184
MATH	3	579674	1	B-O	2	7617	0.4191	0.1918	0.4179	0.1697	0.2178	0.0029	0.3118	-0.127	0.3122	-0.1783	-0.0864	-0.026
MATH	3	624847	1	B-O	2	7547	0.3244	0.3885	0.1825	0.3205	0.0965	0.012	0.2947	-0.0273	-0.202	0.2957	-0.14	-0.0489
MATH	3	497753	1	C-G	2	7625	0.441	0.2043	0.4402	0.1933	0.1602	0.0018	0.3705	-0.1814	0.3704	-0.2363	-0.046	-0.0124
MATH	3	622954	1	C-G	2	7619	0.5343	0.1291	0.5329	0.2642	0.0712	0.0026	0.4426	-0.2139	0.4425	-0.2021	-0.2292	-0.0198
MATH	3	579659	1	D-M	2	7614	0.2838	0.2829	0.2037	0.3131	0.197	0.0033	0.2539	0.2538	-0.1271	-0.0094	-0.1457	-0.0145
MATH	3	621399	1	D-M	2	7560	0.2077	0.438	0.2055	0.16	0.1862	0.0103	-0.0681	0.4072	-0.0648	-0.2265	-0.2244	-0.054
MATH	3	479173	2	A-F	2	5412	0.4625	0.1328	0.2324	0.1705	0.4609	0.0035	0.2532	-0.1218	-0.064	-0.1518	0.2528	-0.0094
MATH	3	579683	2	A-F	2	5414	0.5846	0.5828	0.1705	0.1574	0.0862	0.0031	0.3438	0.344	-0.2284	-0.1529	-0.0954	-0.0223
MATH	3	621398	2	A-T	2	5416	0.5583	0.5568	0.144	0.2138	0.0827	0.0028	0.4256	0.4265	-0.1427	-0.2312	-0.2357	-0.0401
MATH	3	495187	2	B-O	2	5413	0.1866	0.5496	0.1753	0.0858	0.186	0.0033	0.2994	-0.0507	-0.1269	-0.1477	0.2995	-0.0286
MATH	3	617234	2	B-O	2	5372	0.4557	0.4507	0.1979	0.1858	0.1547	0.0109	0.0993	0.1024	-0.0319	-0.0411	-0.0488	-0.0449
MATH	3	579643	2	C-G	2	5417	0.3757	0.3092	0.1828	0.3747	0.1307	0.0026	0.1314	0.0975	-0.1508	0.1329	-0.1448	-0.045
MATH	3	579656	2	D-M	2	5396	0.4692	0.088	0.3224	0.1169	0.4662	0.0064	0.3308	-0.2588	-0.0573	-0.1891	0.334	-0.0717
MATH	3	579658	2	D-M	2	5426	0.5776	0.2274	0.5771	0.1506	0.044	0.0009	0.2992	-0.2137	0.2995	-0.081	-0.1408	-0.017
MATH	3	495183	3	A-F	2	5416	0.6097	0.1149	0.1437	0.6082	0.1308	0.0024	0.4213	-0.1892	-0.2281	0.4215	-0.1897	-0.03
MATH	3	617237	3	A-T	1	5402	0.597	0.2185	0.1109	0.594	0.0717	0.005	0.5935	-0.4574	-0.1914	0.5948	-0.1496	-0.0628
MATH	3	497738	3	B-O	2	5417	0.3847	0.3588	0.1463	0.1089	0.3839	0.0022	0.5107	-0.2994	-0.1539	-0.1558	0.5108	-0.0397
MATH	3	579667	3	B-O	2	5416	0.2845	0.2056	0.3198	0.2838	0.1884	0.0024	0.2347	-0.0952	-0.1292	0.235	-0.0156	-0.0223
MATH	3	624777	3	B-O	2	5418	0.2641	0.2315	0.4458	0.2636	0.0571	0.002	0.2376	-0.3518	0.1289	0.238	-0.0816	-0.0348
MATH	3	622965	3	C-G	2	5418	0.1176	0.725	0.1173	0.0538	0.1019	0.002	0.0405	0.124	0.0411	-0.0148	-0.2092	-0.0446
MATH	3	493239	3	D-M	1	5405	0.6503	0.112	0.1011	0.6474	0.135	0.0044	0.5398	-0.2306	-0.2989	0.5414	-0.2686	-0.061
MATH	3	621405	3	D-M	2	5416	0.2786	0.0869	0.3043	0.278	0.3284	0.0024	0.0113	-0.1453	-0.1947	0.0118	0.2685	-0.0182
MATH	4	303498	0	A-F	2	19968	0.4536	0.2368	0.451	0.1686	0.1379	0.0056	0.2914	-0.0479	0.2925	-0.1373	-0.2056	-0.0385
MATH	4	313017	0	A-F	2	20005	0.4851	0.1694	0.4832	0.1518	0.1918	0.0038	0.5515	-0.325	0.5521	-0.1483	-0.2489	-0.0455
MATH	4	314532	0	A-F	1	20042	0.6464	0.0689	0.0984	0.1855	0.6452	0.0019	0.5298	-0.2376	-0.2154	-0.3291	0.53	-0.0293
MATH	4	394385	0	A-F	1	20046	0.3657	0.3651	0.1213	0.3757	0.1362	0.0017	0.4776	0.4779	-0.1719	-0.2447	-0.1582	-0.0284
MATH	4	408561	0	A-F	2	20031	0.3498	0.3374	0.2289	0.3489	0.0823	0.0025	0.5855	-0.3611	-0.2415	0.5853	-0.02	-0.0248
MATH	4	497767	0	A-F	1	19948	0.6211	0.0658	0.2546	0.056	0.617	0.0066	0.3298	-0.2341	-0.1127	-0.2179	0.3321	-0.0514
MATH	4	497770	0	A-F	1	19992	0.8803	0.0512	0.8764	0.0394	0.0286	0.0044	0.3874	-0.2404	0.389	-0.2174	-0.1769	-0.0494
MATH	4	299449	0	A-T	2	20037	0.307	0.2732	0.2408	0.3063	0.1775	0.0022	0.3092	-0.1148	-0.0914	0.3092	-0.1345	-0.0193
MATH	4	314643	0	A-T	2	20032	0.6163	0.0991	0.6148	0.214	0.0696	0.0024	0.3769	-0.1644	0.3772	-0.2017	-0.1985	-0.0239
MATH	4	408555	0	A-T	2	19954	0.3441	0.3419	0.2409	0.2743	0.1365	0.0063	0.216	0.2176	-0.1833	0.0229	-0.0913	-0.0468
MATH	4	408571	0	A-T	2	20023	0.6358	0.634	0.1203	0.1593	0.0836	0.0029	0.4914	0.4919	-0.2866	-0.2244	-0.2161	-0.0335
MATH	4	408572	0	A-T	2	19996	0.4315	0.1677	0.2554	0.143	0.4297	0.0042	0.496	-0.2695	-0.2521	-0.0939	0.4958	-0.0301
MATH	4	493271	0	A-T	1	20027	0.4811	0.2112	0.2026	0.1038	0.4798	0.0027	0.5127	-0.2858	-0.1755	-0.2204	0.513	-0.0362
MATH	4	495201	0	A-T	2	20037	0.3896	0.1426	0.31	0.3888	0.1564	0.0022	0.2699	-0.0186	-0.183	0.2702	-0.1089	-0.0227
MATH	4	495203	0	A-T	1	20040	0.5097	0.3765	0.0423	0.0705	0.5087	0.002	0.4739	-0.2858	-0.1696	-0.2466	0.4741	-0.0279
MATH	4	495204	0	A-T	1	19932	0.8096	0.0368	0.0556	0.8035	0.0966	0.0074	0.421	-0.1649	-0.1812	0.4221	-0.3065	-0.0537

MATH	4	574159	0 A-T	1	20038	0.6048	0.076	0.1634	0.1549	0.6035	0.0021	0.4827	-0.2105	-0.2084	-0.2824	0.4826	-0.0225
MATH	4	313458	0 B-O	1	20033	0.3282	0.2699	0.2457	0.3274	0.1547	0.0024	0.5295	-0.3353	-0.1236	0.5296	-0.1244	-0.0299
MATH	4	313460	0 B-O	2	20015	0.4386	0.139	0.4371	0.1881	0.2325	0.0033	0.412	-0.1638	0.4123	-0.12	-0.2346	-0.0327
MATH	4	408745	0 B-O	2	20034	0.6326	0.1131	0.0915	0.6311	0.1618	0.0023	0.4747	-0.2812	-0.2812	0.4753	-0.1561	-0.0342
MATH	4	408757	0 B-O	2	20022	0.5728	0.0962	0.1729	0.1568	0.5711	0.0029	0.5086	-0.1266	-0.2242	-0.3518	0.5088	-0.0331
MATH	4	493275	0 B-O	2	19964	0.4185	0.416	0.3508	0.1328	0.0945	0.0058	0.4069	0.4083	-0.1685	-0.169	-0.203	-0.0539
MATH	4	495226	0 B-O	2	20019	0.5091	0.113	0.1926	0.5075	0.1838	0.0031	0.3918	-0.1272	-0.2405	0.3929	-0.1519	-0.0444
MATH	4	566156	0 B-O	2	19963	0.4774	0.0998	0.4746	0.3232	0.0965	0.0059	0.4132	-0.1727	0.4136	-0.2453	-0.1258	-0.0376
MATH	4	574162	0 B-O	2	20014	0.5251	0.5234	0.1288	0.2293	0.1151	0.0033	0.42	0.4209	-0.2108	-0.1698	-0.2067	-0.0388
MATH	4	574166	0 B-O	2	19967	0.5931	0.5897	0.1416	0.1376	0.1254	0.0057	0.4182	0.4198	-0.2831	-0.174	-0.1337	-0.0481
MATH	4	313462	0 C-G	1	20035	0.6345	0.633	0.0971	0.1348	0.1328	0.0023	0.4498	0.4495	-0.2193	-0.3276	-0.1148	-0.019
MATH	4	408770	0 C-G	1	19987	0.5497	0.5471	0.129	0.1293	0.1899	0.0047	0.3653	0.3662	-0.2211	-0.2033	-0.0949	-0.0395
MATH	4	479178	0 C-G	2	20062	0.504	0.3299	0.5036	0.0334	0.1322	0.0009	0.4589	-0.3825	0.4588	-0.1283	-0.0773	-0.0101
MATH	4	497761	0 C-G	1	20039	0.5848	0.1589	0.1054	0.5835	0.1501	0.0021	0.3734	-0.225	-0.2339	0.3738	-0.0813	-0.0257
MATH	4	313463	0 D-M	1	20051	0.6987	0.182	0.6976	0.075	0.0439	0.0015	0.4926	-0.3682	0.493	-0.1819	-0.1726	-0.0288
MATH	4	314151	0 D-M	1	20054	0.4731	0.1461	0.1815	0.1986	0.4725	0.0013	0.4632	-0.2094	-0.2317	-0.1676	0.4638	-0.0378
MATH	4	314536	0 D-M	2	20053	0.8195	0.0732	0.0643	0.8183	0.0428	0.0014	0.4253	-0.2368	-0.2478	0.426	-0.2008	-0.0306
MATH	4	408564	0 D-M	2	20045	0.7305	0.1573	0.0716	0.7292	0.0402	0.0018	0.3481	-0.2864	-0.0951	0.3492	-0.1271	-0.034
MATH	4	495227	0 D-M	2	20032	0.7205	0.0869	0.0759	0.1159	0.7188	0.0024	0.3964	-0.1959	-0.1963	-0.2182	0.3965	-0.0245
MATH	4	495236	0 D-M	2	20041	0.3834	0.0753	0.2379	0.3826	0.3022	0.002	0.4386	-0.1791	-0.3177	0.4388	-0.0643	-0.0275
MATH	4	497757	0 D-M	1	19985	0.283	0.2304	0.2371	0.2461	0.2817	0.0048	0.3319	-0.1551	-0.2168	0.0253	0.3326	-0.0437
MATH	4	497834	0 D-M	2	19981	0.3821	0.3802	0.2708	0.1729	0.1712	0.005	0.4109	0.4108	-0.1883	-0.135	-0.1662	-0.0301
MATH	4	574173	0 D-M	1	20039	0.487	0.1667	0.1333	0.486	0.2119	0.0021	0.3366	-0.0849	-0.2458	0.3371	-0.1274	-0.0279
MATH	4	574175	0 D-M	2	20033	0.4508	0.4497	0.1593	0.2741	0.1146	0.0024	0.2256	0.2265	-0.198	-0.0981	0.0159	-0.0313
MATH	4	574184	1 A-F	2	8505	0.2676	0.0433	0.5096	0.2672	0.1783	0.0015	0.5249	-0.1585	-0.3482	0.5247	-0.066	-0.0144
MATH	4	617226	1 A-F	1	8435	0.6448	0.0954	0.2182	0.6385	0.038	0.0097	0.3244	-0.2597	-0.0994	0.3269	-0.1805	-0.0529
MATH	4	574158	1 A-T	2	8496	0.1709	0.1705	0.3831	0.1539	0.29	0.0026	0.178	0.1786	-0.0709	-0.1132	0.0224	-0.0392
MATH	4	495199	1 B-O	2	8498	0.308	0.3072	0.2549	0.186	0.2496	0.0023	0.1449	0.1455	-0.0504	-0.1326	0.0178	-0.0262
MATH	4	624800	1 B-O	1	8501	0.5343	0.2803	0.1322	0.5332	0.0522	0.002	0.5893	-0.3956	-0.2221	0.5894	-0.1792	-0.0282
MATH	4	408775	1 C-G	1	8500	0.3521	0.3514	0.1344	0.2994	0.2127	0.0021	0.1906	0.1917	-0.1578	-0.0232	-0.0615	-0.0424
MATH	4	574171	1 D-M	2	8506	0.3392	0.3387	0.2444	0.186	0.2295	0.0014	0.3887	0.3887	-0.105	-0.1692	-0.1725	-0.0123
MATH	4	623011	1 D-M	2	8492	0.5012	0.1114	0.4996	0.1368	0.2491	0.0031	0.3562	-0.1927	0.3573	-0.0733	-0.2097	-0.0393
MATH	4	493265	2 A-F	2	5804	0.1618	0.2766	0.4558	0.1615	0.1044	0.0017	0.2328	0.019	-0.1656	0.2333	-0.0337	-0.0374
MATH	4	622942	2 A-F	1	5768	0.8571	0.0098	0.0101	0.1218	0.8504	0.0079	0.4236	-0.1422	-0.1349	-0.3635	0.4192	-0.0354
MATH	4	495200	2 A-T	1	5807	0.6518	0.1622	0.651	0.1278	0.0578	0.0012	0.4049	-0.176	0.4052	-0.2765	-0.1513	-0.0183
MATH	4	624798	2 A-T	1	5799	0.434	0.1348	0.1821	0.2475	0.4329	0.0026	0.4216	-0.2439	-0.175	-0.1312	0.4222	-0.034
MATH	4	495208	2 B-O	2	5804	0.4967	0.1386	0.2817	0.4959	0.082	0.0017	0.4038	-0.3096	-0.0937	0.4043	-0.1887	-0.0289
MATH	4	617227	2 B-O	2	5807	0.3661	0.3607	0.1591	0.1133	0.3657	0.0012	0.3195	-0.148	-0.1541	-0.0837	0.3191	0.0072
MATH	4	621382	2 C-G	2	5808	0.2812	0.2262	0.2809	0.2078	0.2841	0.001	0.2116	0.0532	0.2118	-0.0122	-0.2483	-0.016
MATH	4	621369	2 D-M	2	5803	0.3788	0.2429	0.3781	0.1292	0.248	0.0019	0.0711	-0.2207	0.0719	-0.1079	0.2249	-0.0266
MATH	4	493255	3 A-F	2	5740	0.1605	0.2228	0.2566	0.1602	0.3588	0.0016	0.0017	-0.1878	0.0806	0.0022	0.0904	-0.0316
MATH	4	622946	3 A-F	1	5700	0.9274	0.0209	0.9195	0.0365	0.0146	0.0085	0.2857	-0.1731	0.2899	-0.1643	-0.1455	-0.0637
MATH	4	493259	3 A-T	2	5739	0.3309	0.1232	0.1233	0.3303	0.4215	0.0017	0.1834	-0.0318	-0.0626	0.1834	-0.1109	-0.0115
MATH	4	575718	3 B-O	2	5740	0.3625	0.362	0.1291	0.2073	0.3001	0.0016	0.2975	0.2982	-0.1708	-0.2849	0.0679	-0.0424
MATH	4	624801	3 B-O	2	5731	0.1371	0.1282	0.5773	0.1546	0.1367	0.0031	-0.1437	-0.1981	0.3723	-0.1874	-0.1431	-0.0135
MATH	4	621401	3 C-G	2	5736	0.575	0.5737	0.1519	0.196	0.0762	0.0023	0.3316	0.3325	-0.2143	-0.1257	-0.1357	-0.034
MATH	4	617224	3 D-M	2	5741	0.4621	0.3501	0.1068	0.4615	0.0802	0.0014	0.4033	-0.2591	-0.181	0.4034	-0.077	-0.0178
MATH	4	617225	3 D-M	2	5722	0.2898	0.3545	0.2051	0.2884	0.1473	0.0047	0.1591	0.0448	-0.2069	0.1605	-0.021	-0.0462
MATH	5	313764	0 A-F	1	21259	0.6794	0.1189	0.1559	0.0453	0.6785	0.0013	0.5456	-0.2276	-0.4083	-0.1556	0.5451	-0.0121
MATH	5	314398	0 A-F	1	21233	0.6847	0.0719	0.0585	0.683	0.1841	0.0025	0.2901	-0.2645	-0.26	0.2916	-0.0116	-0.036
MATH	5	314764	0 A-F	1	21213	0.6194	0.1714	0.1088	0.6173	0.0991	0.0035	0.4661	-0.2091	-0.2518	0.4664	-0.2261	-0.0327

MATH	5	408576	0 A-F	2	21238	0.6221	0.0968	0.6207	0.2188	0.0615	0.0023	0.4594	-0.1583	0.4593	-0.2919	-0.2262	-0.0215
MATH	5	408577	0 A-F	1	21255	0.6995	0.0851	0.0962	0.1188	0.6985	0.0015	0.5156	-0.2652	-0.2507	-0.2714	0.5159	-0.0272
MATH	5	408597	0 A-F	1	21239	0.4835	0.4824	0.1098	0.3204	0.0852	0.0023	0.4418	0.442	-0.3011	-0.2327	-0.0613	-0.0211
MATH	5	495248	0 A-F	2	21230	0.3965	0.3955	0.344	0.2035	0.0544	0.0027	0.3659	0.3664	-0.248	-0.0547	-0.1664	-0.0304
MATH	5	495250	0 A-F	1	21172	0.3509	0.1093	0.349	0.4517	0.0845	0.0054	0.5266	-0.0182	0.5267	-0.4068	-0.1435	-0.0408
MATH	5	495253	0 A-F	2	21222	0.6428	0.0686	0.1385	0.149	0.6409	0.0031	0.5672	-0.1905	-0.3101	-0.3236	0.5666	-0.0247
MATH	5	495258	0 A-F	2	21198	0.4436	0.2821	0.1938	0.4418	0.0782	0.0042	0.5318	-0.2979	-0.2372	0.5318	-0.1271	-0.0342
MATH	5	495259	0 A-F	1	21139	0.406	0.2139	0.3135	0.0624	0.4032	0.007	0.4528	-0.0913	-0.3083	-0.1557	0.4537	-0.0535
MATH	5	300469	0 A-T	2	21232	0.3756	0.2981	0.3746	0.2179	0.1068	0.0026	0.3003	-0.0376	0.3007	-0.2244	-0.1115	-0.0245
MATH	5	301854	0 A-T	2	21199	0.4973	0.1533	0.1433	0.204	0.4953	0.0041	0.5522	-0.1843	-0.2526	-0.2944	0.5527	-0.0435
MATH	5	313524	0 A-T	1	21246	0.9082	0.02	0.9064	0.032	0.0396	0.0019	0.2411	-0.1256	0.2437	-0.1537	-0.1265	-0.0372
MATH	5	313896	0 A-T	1	21142	0.5706	0.2367	0.1416	0.5667	0.0482	0.0068	0.4509	-0.2768	-0.2023	0.4525	-0.1476	-0.0539
MATH	5	394398	0 A-T	1	21261	0.8145	0.1164	0.0362	0.0327	0.8135	0.0012	0.4648	-0.3606	-0.1843	-0.1696	0.4658	-0.0345
MATH	5	408578	0 A-T	2	21236	0.4073	0.4063	0.15	0.2968	0.1445	0.0024	0.4819	0.4821	-0.2178	-0.1614	-0.2386	-0.0281
MATH	5	408600	0 A-T	2	21202	0.4079	0.1578	0.1888	0.2432	0.4063	0.004	0.2692	0.0413	-0.1199	-0.231	0.2696	-0.0232
MATH	5	408606	0 A-T	2	21221	0.4086	0.4073	0.2325	0.2088	0.1483	0.0031	0.4479	0.4479	-0.2737	-0.1146	-0.1591	-0.0239
MATH	5	408633	0 A-T	2	21226	0.3174	0.2901	0.1634	0.2271	0.3165	0.0029	0.4392	-0.1581	-0.1499	-0.1804	0.4394	-0.0304
MATH	5	497776	0 A-T	2	21238	0.337	0.2003	0.2013	0.3362	0.2599	0.0023	0.1752	-0.0893	-0.1696	0.1757	0.0499	-0.0243
MATH	5	497837	0 A-T	2	21229	0.3066	0.3058	0.4061	0.226	0.0594	0.0027	0.3038	0.3041	-0.0622	-0.1738	-0.1507	-0.0247
MATH	5	574136	0 A-T	1	21221	0.4906	0.1745	0.4891	0.0832	0.2501	0.0031	0.425	-0.2617	0.4256	-0.2346	-0.1075	-0.0376
MATH	5	301912	0 B-O	2	21253	0.5079	0.1544	0.5071	0.2448	0.0921	0.0016	0.3612	-0.1479	0.3615	-0.1565	-0.2043	-0.0236
MATH	5	314030	0 B-O	1	21245	0.7066	0.0612	0.7052	0.1276	0.104	0.002	0.393	-0.1893	0.3925	-0.2321	-0.1818	-0.0147
MATH	5	408791	0 B-O	2	21202	0.5279	0.1746	0.1943	0.1013	0.5258	0.004	0.5268	-0.2752	-0.254	-0.1869	0.526	-0.0204
MATH	5	497779	0 B-O	1	21258	0.6012	0.1076	0.6004	0.2743	0.0164	0.0014	0.2347	-0.3231	0.2351	0.0062	-0.1351	-0.0172
MATH	5	313327	0 C-G	2	21245	0.5901	0.0584	0.2847	0.589	0.066	0.002	0.3928	-0.1615	-0.219	0.3937	-0.2235	-0.0339
MATH	5	408813	0 C-G	1	21241	0.6019	0.1463	0.091	0.6006	0.1599	0.0022	0.3633	-0.1213	-0.1611	0.3638	-0.2392	-0.0277
MATH	5	479170	0 C-G	2	21242	0.4086	0.2338	0.1663	0.4078	0.1901	0.0021	0.3444	-0.029	-0.1585	0.3454	-0.2457	-0.0436
MATH	5	495260	0 C-G	2	21232	0.3328	0.3319	0.2193	0.1935	0.2526	0.0026	0.4373	0.4375	-0.0645	-0.2284	-0.2019	-0.0269
MATH	5	314037	0 D-M	2	21222	0.4714	0.2907	0.0712	0.165	0.47	0.0031	0.5817	-0.423	-0.1475	-0.1564	0.5824	-0.0475
MATH	5	314038	0 D-M	2	21250	0.3342	0.3449	0.3336	0.2105	0.1093	0.0017	0.487	-0.4195	0.487	-0.0079	-0.0834	-0.0232
MATH	5	408644	0 D-M	2	21223	0.4289	0.4276	0.0745	0.1391	0.3558	0.003	0.4803	0.4801	-0.1179	-0.3351	-0.1859	-0.0299
MATH	5	408814	0 D-M	2	21270	0.3908	0.0571	0.3905	0.2229	0.3288	0.0008	0.3237	-0.0763	0.3239	-0.1855	-0.1333	-0.0181
MATH	5	408817	0 D-M	2	21242	0.4564	0.1566	0.1291	0.2567	0.4554	0.0021	0.5362	-0.3147	-0.2219	-0.1766	0.5361	-0.0232
MATH	5	408821	0 D-M	2	21217	0.4649	0.1292	0.1695	0.2346	0.4633	0.0033	0.4309	-0.1309	-0.1838	-0.2357	0.4319	-0.0455
MATH	5	408826	0 D-M	1	21256	0.6225	0.1187	0.1009	0.6216	0.1574	0.0015	0.4727	-0.0937	-0.2832	0.4728	-0.3099	-0.0223
MATH	5	497789	0 D-M	2	21257	0.4525	0.1028	0.3291	0.4518	0.1149	0.0014	0.3519	-0.08	-0.2132	0.3519	-0.1572	-0.015
MATH	5	497852	0 D-M	1	21223	0.2863	0.2854	0.0989	0.3002	0.3125	0.003	0.4284	0.4284	-0.2084	0.0133	-0.2934	-0.0252
MATH	5	621361	1 A-F	2	8880	0.2964	0.2668	0.2957	0.3023	0.1328	0.0024	0.0653	-0.2205	0.0659	0.219	-0.0944	-0.0221
MATH	5	642399	1 A-F	2	8884	0.4917	0.4907	0.2253	0.1936	0.0885	0.0019	0.4853	0.4858	-0.1972	-0.2769	-0.1747	-0.0339
MATH	5	493284	1 A-T	1	8790	0.4869	0.1364	0.1589	0.2114	0.4808	0.0125	0.3844	-0.1756	-0.1906	-0.1376	0.3875	-0.0676
MATH	5	622923	1 A-T	2	8874	0.3236	0.2413	0.2982	0.3227	0.1348	0.003	0.1344	-0.0484	-0.1064	0.135	0.0222	-0.0242
MATH	5	495243	1 B-O	2	8875	0.3526	0.2937	0.3515	0.2388	0.113	0.0029	0.3263	-0.0139	0.3264	-0.2481	-0.1343	-0.0216
MATH	5	621410	1 B-O	2	8882	0.4218	0.171	0.2648	0.4209	0.1412	0.0021	0.3655	-0.1254	-0.1905	0.3664	-0.1373	-0.0381
MATH	5	617242	1 C-G	2	8877	0.4203	0.1804	0.2053	0.1925	0.4192	0.0027	0.2673	-0.0317	-0.1495	-0.1476	0.2679	-0.0269
MATH	5	408632	1 D-M	1	8883	0.7236	0.1097	0.113	0.7222	0.0531	0.002	0.3824	-0.2166	-0.211	0.3829	-0.1595	-0.0277
MATH	5	495251	2 A-F	1	6170	0.5394	0.2423	0.1767	0.5386	0.0409	0.0015	0.4687	-0.2722	-0.2363	0.4683	-0.1331	-0.0086
MATH	5	621379	2 A-F	1	6132	0.4157	0.1989	0.2007	0.1803	0.4125	0.0076	0.4133	-0.1708	-0.2901	-0.0388	0.4148	-0.0563
MATH	5	622932	2 A-F	2	6159	0.5124	0.1547	0.5108	0.2313	0.1	0.0032	0.1912	-0.1898	0.1916	-0.0427	-0.0269	-0.0195
MATH	5	622935	2 A-T	2	6170	0.1953	0.4549	0.2207	0.1279	0.195	0.0015	0.147	0.0055	0.0687	-0.2671	0.147	-0.0073
MATH	5	621381	2 B-O	1	6169	0.4553	0.2481	0.1717	0.4546	0.124	0.0016	0.3247	-0.1727	-0.2143	0.3248	-0.0176	-0.0122
MATH	5	408809	2 C-G	1	6176	0.6711	0.0424	0.6708	0.1149	0.1714	0.0005	0.401	-0.1947	0.4013	-0.2871	-0.1522	-0.0188

MATH	5	624810	2 C-G	2	6172	0.1729	0.1727	0.5333	0.157	0.1359	0.0011	0.4124	0.4123	-0.0923	-0.1556	-0.1538	-0.0133
MATH	5	497787	2 D-M	2	6172	0.5885	0.0939	0.1345	0.5878	0.1827	0.0011	0.4168	-0.1597	-0.2665	0.4169	-0.1738	-0.017
MATH	5	495241	3 A-F	2	6197	0.5333	0.1756	0.5325	0.2117	0.0786	0.0016	0.4105	-0.1814	0.4108	-0.2561	-0.1131	-0.0225
MATH	5	621383	3 A-F	1	6152	0.3285	0.3256	0.0507	0.5413	0.0735	0.0089	0.4704	0.4698	-0.0421	-0.3751	-0.0786	-0.0373
MATH	5	575705	3 A-T	1	6194	0.4374	0.2259	0.4364	0.2325	0.1031	0.0021	0.399	-0.1271	0.3991	-0.224	-0.163	-0.0131
MATH	5	622929	3 A-T	2	6195	0.2408	0.1245	0.448	0.2404	0.1851	0.0019	0.1017	-0.1509	0.012	0.1014	0.0006	0.0055
MATH	5	497777	3 B-O	2	6198	0.3403	0.2409	0.3398	0.2562	0.1618	0.0014	0.1534	-0.1108	0.1535	-0.1118	0.0648	-0.0089
MATH	5	497783	3 C-G	1	6201	0.3945	0.1432	0.16	0.3018	0.3941	0.001	0.2995	-0.1267	-0.1237	-0.1228	0.2996	-0.0098
MATH	5	624813	3 C-G	2	6193	0.5232	0.1149	0.2202	0.522	0.1406	0.0023	0.3573	-0.1511	-0.2373	0.3574	-0.0899	-0.0147
MATH	5	493302	3 D-M	1	6196	0.7195	0.1772	0.0583	0.0445	0.7182	0.0018	0.497	-0.3909	-0.1829	-0.1489	0.4956	-0.0025
MATH	6	314895	0 A-N	1	24142	0.3261	0.3095	0.206	0.1544	0.3242	0.006	0.4781	-0.1008	-0.2596	-0.1907	0.4786	-0.0454
MATH	6	335224	0 A-N	1	24136	0.4145	0.4119	0.1709	0.2091	0.2018	0.0063	0.4259	0.4269	-0.1939	-0.2008	-0.1286	-0.048
MATH	6	412892	0 A-N	1	24205	0.883	0.0275	0.0442	0.88	0.0449	0.0034	0.3705	-0.1492	-0.2068	0.3724	-0.2482	-0.0465
MATH	6	413105	0 A-N	2	24230	0.6459	0.07	0.1688	0.6444	0.1144	0.0024	0.5131	-0.1686	-0.355	0.5136	-0.2142	-0.0346
MATH	6	479709	0 A-N	1	24157	0.6821	0.0455	0.1562	0.6784	0.1145	0.0054	0.3704	-0.1668	-0.1196	0.3734	-0.2888	-0.0584
MATH	6	567153	0 A-N	1	24236	0.6685	0.0603	0.667	0.0428	0.2277	0.0021	0.3577	-0.1549	0.3592	-0.2219	-0.204	-0.0416
MATH	6	335192	0 A-R	2	24248	0.6876	0.1363	0.0945	0.6865	0.081	0.0016	0.4317	-0.2571	-0.2264	0.4317	-0.1652	-0.0183
MATH	6	411363	0 A-R	2	24248	0.5571	0.1463	0.5562	0.1997	0.0962	0.0016	0.4171	-0.109	0.4171	-0.3029	-0.1592	-0.0158
MATH	6	412552	0 A-R	2	24231	0.6077	0.0875	0.6062	0.2126	0.0914	0.0023	0.4252	-0.2158	0.4259	-0.2178	-0.1959	-0.0322
MATH	6	412918	0 A-R	1	24258	0.6031	0.0962	0.1123	0.188	0.6024	0.0012	0.3455	-0.1693	-0.2097	-0.1344	0.3455	-0.0134
MATH	6	416038	0 A-R	2	24210	0.3571	0.356	0.1502	0.2238	0.2668	0.0032	0.3585	0.3585	-0.2026	-0.2215	-0.013	-0.0214
MATH	6	491795	0 A-R	1	24234	0.7405	0.0735	0.7388	0.0937	0.0918	0.0022	0.4684	-0.2075	0.4694	-0.3018	-0.2157	-0.0391
MATH	6	496604	0 A-R	2	24260	0.3109	0.1391	0.3456	0.3105	0.2037	0.0012	0.4963	-0.0978	-0.2265	0.4963	-0.2166	-0.0248
MATH	6	497307	0 A-R	2	24245	0.7632	0.0783	0.1219	0.7619	0.0361	0.0018	0.4656	-0.2498	-0.2944	0.4667	-0.1808	-0.0383
MATH	6	574783	0 A-R	2	24254	0.8004	0.7992	0.0435	0.0557	0.1001	0.0014	0.5017	0.5022	-0.2029	-0.2926	-0.3047	-0.0319
MATH	6	582619	0 A-R	2	24256	0.434	0.0931	0.1275	0.3447	0.4334	0.0013	0.5342	-0.2093	-0.1894	-0.2946	0.5342	-0.0201
MATH	6	314873	0 B-E	2	24241	0.419	0.4182	0.2236	0.1938	0.1625	0.0019	0.3682	0.3687	-0.1168	-0.2138	-0.1281	-0.0331
MATH	6	319256	0 B-E	2	24225	0.2874	0.1521	0.2866	0.309	0.2497	0.0026	0.2411	0.0465	0.2418	-0.1388	-0.139	-0.034
MATH	6	401319	0 B-E	1	24248	0.8712	0.0572	0.8697	0.0442	0.0272	0.0016	0.3537	-0.1675	0.3544	-0.2406	-0.1831	-0.028
MATH	6	411362	0 B-E	2	24234	0.3425	0.3417	0.2142	0.1334	0.3085	0.0022	0.248	0.2486	-0.2087	-0.1909	0.0737	-0.0293
MATH	6	412558	0 B-E	2	24207	0.4086	0.2885	0.4072	0.2276	0.0733	0.0033	0.3481	-0.1684	0.3489	-0.16	-0.0989	-0.0394
MATH	6	412559	0 B-E	2	24190	0.3561	0.1113	0.1161	0.4139	0.3547	0.004	0.3819	-0.1656	-0.2061	-0.1271	0.3824	-0.0348
MATH	6	412896	0 B-E	1	24218	0.44	0.1099	0.2082	0.2403	0.4387	0.0029	0.508	-0.0947	-0.3007	-0.2313	0.5083	-0.0319
MATH	6	413714	0 B-E	1	24218	0.4557	0.4544	0.12	0.2193	0.2034	0.0029	0.456	0.4567	-0.2328	-0.2384	-0.1267	-0.0391
MATH	6	478717	0 B-E	1	24232	0.413	0.4121	0.2535	0.2825	0.0496	0.0023	0.3374	0.338	-0.3342	0.0202	-0.1316	-0.0307
MATH	6	478720	0 B-E	2	24275	0.4685	0.3006	0.4683	0.1396	0.091	0.0005	0.3824	-0.1574	0.3824	-0.2293	-0.1354	-0.0084
MATH	6	581340	0 B-E	1	24241	0.4749	0.4739	0.1621	0.2546	0.1074	0.0019	0.4585	0.4591	-0.1979	-0.2365	-0.1671	-0.0343
MATH	6	478723	0 C-G	2	24258	0.4833	0.4827	0.2119	0.2182	0.0859	0.0012	0.5167	0.5172	-0.2963	-0.2442	-0.1262	-0.0319
MATH	6	492763	0 C-G	2	24226	0.2792	0.1971	0.3783	0.1436	0.2785	0.0026	0.4079	-0.2217	-0.033	-0.2203	0.4081	-0.029
MATH	6	501398	0 C-G	2	24239	0.4659	0.2304	0.2178	0.465	0.0848	0.002	0.3967	-0.2717	-0.1403	0.3967	-0.0886	-0.0195
MATH	6	574849	0 C-G	1	24221	0.4245	0.4234	0.3119	0.1612	0.1007	0.0028	0.4629	0.4633	-0.2409	-0.1815	-0.1625	-0.0318
MATH	6	303087	0 D-S	2	24185	0.3198	0.2398	0.2556	0.1819	0.3184	0.0042	0.2102	-0.0624	-0.1583	-0.0027	0.2105	-0.0201
MATH	6	399248	0 D-S	2	24216	0.3436	0.2365	0.3426	0.2493	0.1687	0.003	0.1826	-0.0581	0.1836	-0.0646	-0.0867	-0.0375
MATH	6	413111	0 D-S	2	24240	0.7671	0.0784	0.1083	0.0457	0.7656	0.002	0.4284	-0.1669	-0.2997	-0.2028	0.4287	-0.0277
MATH	6	492764	0 D-S	1	24217	0.565	0.0723	0.5634	0.2118	0.1496	0.0029	0.4888	-0.2156	0.4894	-0.2458	-0.2365	-0.039
MATH	6	492765	0 D-S	2	24243	0.6441	0.0852	0.1038	0.1663	0.643	0.0019	0.4011	-0.1783	-0.1747	-0.2367	0.4017	-0.03
MATH	6	496611	0 D-S	2	24234	0.7043	0.1819	0.0572	0.7028	0.0558	0.0022	0.4177	-0.2544	-0.2469	0.4183	-0.1494	-0.0289
MATH	6	497315	0 D-S	1	24250	0.2661	0.2657	0.1617	0.0911	0.4799	0.0016	0.2556	0.2561	-0.2212	-0.1098	0.0023	-0.0321
MATH	6	500419	0 D-S	2	24251	0.6121	0.6111	0.0887	0.1142	0.1845	0.0015	0.4591	0.4593	-0.2633	-0.2303	-0.1932	-0.0217
MATH	6	501399	0 D-S	2	24237	0.4116	0.1474	0.1719	0.4107	0.2678	0.0021	0.3294	-0.1775	-0.209	0.3301	-0.0431	-0.0332
MATH	6	566982	1 A-N	2	10038	0.3904	0.2145	0.1882	0.2056	0.3896	0.0021	0.4149	-0.1937	-0.2124	-0.0955	0.4152	-0.0303

MATH	6	617644	1 A-N	1	9950	0.5661	0.1918	0.56	0.181	0.0564	0.0108	0.3509	-0.2589	0.3552	-0.0806	-0.1565	-0.0702
MATH	6	615353	1 A-R	2	10040	0.2474	0.2138	0.3103	0.2469	0.2271	0.0019	0.3148	-0.0751	-0.1938	0.3152	-0.0338	-0.0295
MATH	6	496613	1 B-E	2	10036	0.544	0.0858	0.5428	0.1213	0.2478	0.0023	0.3466	-0.2246	0.3472	-0.2988	-0.026	-0.0271
MATH	6	615361	1 B-E	1	10048	0.5933	0.1284	0.5926	0.0856	0.1923	0.0011	0.2011	-0.2331	0.2018	-0.2644	0.1361	-0.0256
MATH	6	624644	1 B-E	1	10048	0.3589	0.2114	0.1804	0.2486	0.3585	0.0011	0.1358	0.0321	-0.0538	-0.1322	0.1361	-0.0165
MATH	6	575155	1 C-G	2	10036	0.3126	0.4697	0.3119	0.1394	0.0767	0.0023	0.2049	-0.1107	0.2057	-0.0963	-0.0189	-0.0336
MATH	6	581403	1 D-S	1	10043	0.4038	0.4031	0.1993	0.1808	0.2151	0.0016	0.3662	0.3664	-0.166	-0.251	-0.039	-0.0201
MATH	6	496952	2 A-N	1	7094	0.7085	0.7076	0.1678	0.0666	0.0567	0.0013	0.5102	0.51	-0.3364	-0.2744	-0.1606	-0.0203
MATH	6	617309	2 A-N	1	7059	0.7687	0.1014	0.7639	0.0244	0.1042	0.0062	0.3714	-0.2156	0.3717	-0.1686	-0.209	-0.038
MATH	6	575151	2 A-R	1	7089	0.7904	0.0669	0.7888	0.0973	0.0451	0.002	0.322	-0.1503	0.3215	-0.2219	-0.1323	-0.0113
MATH	6	497310	2 B-E	2	7093	0.246	0.2226	0.2195	0.3109	0.2457	0.0014	0.302	-0.1483	-0.1791	0.0146	0.3022	-0.0274
MATH	6	500376	2 B-E	2	7086	0.3376	0.2731	0.3368	0.2521	0.1356	0.0024	0.1211	0.0174	0.1219	-0.1401	-0.0089	-0.0299
MATH	6	560219	2 C-G	1	7097	0.5853	0.1988	0.1364	0.5848	0.0791	0.0008	0.3916	-0.2352	-0.2445	0.3919	-0.0546	-0.0185
MATH	6	567240	2 C-G	2	7082	0.3849	0.0897	0.3838	0.3239	0.1996	0.003	0.3354	-0.1004	0.3357	-0.1785	-0.1244	-0.0235
MATH	6	615378	2 D-S	2	7092	0.405	0.4043	0.2319	0.2222	0.1401	0.0015	0.3283	0.3285	-0.2332	-0.1104	-0.0464	-0.0214
MATH	6	574777	3 A-N	2	7108	0.4353	0.0905	0.4342	0.2927	0.18	0.0025	0.3372	-0.1269	0.3383	-0.2714	-0.0142	-0.0469
MATH	6	617499	3 A-N	1	7074	0.3832	0.1337	0.2468	0.2317	0.3804	0.0073	0.4722	-0.1637	-0.1897	-0.2068	0.4735	-0.0605
MATH	6	624645	3 A-R	2	7114	0.3774	0.2304	0.2868	0.3768	0.1043	0.0017	0.4494	-0.0928	-0.4005	0.4497	0.0114	-0.0287
MATH	6	500238	3 B-E	2	7110	0.4226	0.2272	0.2068	0.4217	0.142	0.0022	0.2135	0.0602	-0.2168	0.2147	-0.119	-0.0397
MATH	6	614779	3 B-E	2	7117	0.3486	0.2714	0.1357	0.2435	0.3482	0.0013	0.4415	-0.1372	-0.2206	-0.1711	0.4414	-0.0088
MATH	6	582442	3 C-G	1	7110	0.3143	0.1276	0.434	0.3136	0.1225	0.0022	0.4913	-0.102	-0.4082	0.4915	0.0295	-0.0286
MATH	6	478725	3 D-S	2	7108	0.3872	0.1422	0.2536	0.3862	0.2155	0.0025	0.1245	-0.1656	-0.0307	0.126	0.0296	-0.0469
MATH	6	622385	3 D-S	2	7119	0.3218	0.2067	0.2548	0.3215	0.216	0.001	0.0803	0.0011	-0.1319	0.0804	0.048	-0.0081
MATH	7	399250	0 A-N	1	27277	0.7558	0.0823	0.7547	0.1034	0.0581	0.0015	0.4322	-0.2043	0.4322	-0.2507	-0.2253	-0.0204
MATH	7	477761	0 A-N	1	27278	0.7041	0.703	0.0865	0.1186	0.0904	0.0015	0.549	0.5488	-0.2427	-0.3203	-0.2729	-0.0199
MATH	7	489967	0 A-N	1	27218	0.4616	0.071	0.3586	0.4599	0.1068	0.0037	0.5705	-0.1192	-0.478	0.5708	-0.0718	-0.0399
MATH	7	490589	0 A-N	1	27164	0.372	0.127	0.2638	0.2336	0.3699	0.0057	0.4791	-0.1869	-0.2165	-0.1669	0.4796	-0.0435
MATH	7	565849	0 A-N	2	27248	0.4411	0.2584	0.1766	0.44	0.1224	0.0026	0.351	-0.0684	-0.236	0.3512	-0.1624	-0.0234
MATH	7	335200	0 A-R	2	27267	0.3845	0.3837	0.218	0.2847	0.1116	0.0019	0.4249	0.425	-0.2332	-0.1402	-0.1466	-0.0231
MATH	7	401321	0 A-R	2	27231	0.5182	0.2835	0.1446	0.5165	0.0523	0.0032	0.4424	-0.2649	-0.1632	0.443	-0.1916	-0.035
MATH	7	416190	0 A-R	2	27204	0.5528	0.2339	0.5505	0.0925	0.1189	0.0042	0.4816	-0.2533	0.4814	-0.1437	-0.2744	-0.0281
MATH	7	417800	0 A-R	2	27251	0.4739	0.1135	0.4727	0.145	0.2663	0.0025	0.3063	-0.1993	0.3073	-0.278	0.0215	-0.0368
MATH	7	478163	0 A-R	2	27219	0.4932	0.092	0.4914	0.2936	0.1194	0.0037	0.3147	-0.1423	0.3157	-0.1404	-0.156	-0.0363
MATH	7	478164	0 A-R	2	27274	0.5013	0.1401	0.1101	0.5005	0.2477	0.0016	0.3509	-0.0744	-0.1971	0.3514	-0.202	-0.0243
MATH	7	478167	0 A-R	2	27264	0.6794	0.0744	0.678	0.1063	0.1393	0.002	0.4318	-0.1538	0.4323	-0.2308	-0.2578	-0.0273
MATH	7	480344	0 A-R	2	27213	0.4235	0.2665	0.4218	0.1909	0.1169	0.0039	0.2467	-0.2679	0.2474	-0.1142	0.1337	-0.0294
MATH	7	493990	0 A-R	2	27240	0.6372	0.0952	0.1734	0.6353	0.0932	0.0029	0.532	-0.2603	-0.3022	0.5326	-0.2184	-0.0389
MATH	7	500378	0 A-R	2	27270	0.2378	0.2727	0.2431	0.2451	0.2374	0.0018	0.4345	-0.1971	-0.1661	-0.0574	0.4347	-0.0296
MATH	7	502781	0 A-R	2	27252	0.3479	0.3471	0.3914	0.113	0.146	0.0025	0.3698	0.3704	-0.2614	-0.0837	-0.0585	-0.0315
MATH	7	581347	0 A-R	2	27257	0.4619	0.4609	0.2939	0.1455	0.0974	0.0023	0.5787	0.5789	-0.2917	-0.2706	-0.1979	-0.0333
MATH	7	412773	0 B-E	1	27266	0.6876	0.0876	0.1478	0.6862	0.0764	0.0019	0.4299	-0.1984	-0.2528	0.4306	-0.198	-0.0316
MATH	7	412774	0 B-E	2	27253	0.4506	0.1883	0.1578	0.2019	0.4495	0.0024	0.4371	-0.1988	-0.1401	-0.2176	0.4374	-0.0283
MATH	7	413352	0 B-E	1	27280	0.7831	0.0353	0.1236	0.0578	0.7819	0.0014	0.3944	-0.1846	-0.2417	-0.2078	0.3949	-0.0264
MATH	7	478169	0 B-E	2	27292	0.5118	0.1137	0.1127	0.2613	0.5113	0.001	0.584	-0.2825	-0.2247	-0.2972	0.5841	-0.022
MATH	7	490977	0 B-E	1	27205	0.3855	0.3839	0.267	0.2548	0.0902	0.0042	0.4812	0.482	-0.175	-0.2509	-0.1562	-0.0456
MATH	7	502842	0 B-E	2	27268	0.6663	0.1982	0.665	0.0808	0.0541	0.0019	0.4031	-0.1929	0.4037	-0.2634	-0.1798	-0.0274
MATH	7	503046	0 B-E	1	27267	0.5292	0.0901	0.2051	0.1747	0.5282	0.0019	0.5551	-0.2438	-0.2757	-0.2492	0.5556	-0.036
MATH	7	565886	0 B-E	2	27210	0.5835	0.0978	0.1196	0.1974	0.5812	0.004	0.5247	-0.185	-0.236	-0.3148	0.5245	-0.0305
MATH	7	581346	0 B-E	1	27254	0.317	0.3162	0.2476	0.2735	0.1603	0.0024	0.3999	0.4004	-0.069	-0.2058	-0.1716	-0.0356
MATH	7	398632	0 C-G	2	27264	0.3109	0.3103	0.1903	0.1948	0.3026	0.002	0.4629	0.4631	-0.1369	-0.0789	-0.2787	-0.0261
MATH	7	404814	0 C-G	2	27252	0.3533	0.1942	0.2208	0.2301	0.3524	0.0025	0.3379	-0.0933	-0.096	-0.1992	0.3379	-0.017

MATH	7	412665	0 C-G	2	27226	0.4236	0.1159	0.4222	0.3891	0.0694	0.0034	0.3554	-0.1354	0.3564	-0.1826	-0.1631	-0.0383
MATH	7	412667	0 C-G	1	27239	0.3826	0.1872	0.2611	0.3815	0.1672	0.0029	0.2479	-0.1022	-0.0042	0.2487	-0.2075	-0.0313
MATH	7	417807	0 C-G	2	27237	0.4116	0.4103	0.1538	0.3287	0.1041	0.003	0.2215	0.2229	-0.1769	-0.0617	-0.0473	-0.043
MATH	7	478170	0 C-G	2	27279	0.5311	0.0836	0.2474	0.1371	0.5304	0.0015	0.5614	-0.256	-0.2464	-0.2972	0.5615	-0.0213
MATH	7	500372	0 C-G	2	27229	0.4403	0.4389	0.241	0.2337	0.0831	0.0033	0.5022	0.5021	-0.2406	-0.2232	-0.1828	-0.0234
MATH	7	574900	0 C-G	1	27255	0.498	0.2668	0.1686	0.4969	0.0654	0.0023	0.301	-0.1449	-0.1819	0.3011	-0.0711	-0.0164
MATH	7	581349	0 C-G	2	27251	0.3729	0.3719	0.2388	0.2384	0.1484	0.0025	0.3049	0.3056	-0.1933	-0.0779	-0.0856	-0.0323
MATH	7	399242	0 D-S	2	27245	0.3224	0.1726	0.3215	0.3049	0.1983	0.0027	0.2229	-0.1428	0.2233	-0.0782	-0.0327	-0.0249
MATH	7	415647	0 D-S	2	27284	0.4638	0.1506	0.2241	0.4632	0.1607	0.0013	0.5044	-0.2866	-0.2122	0.5047	-0.1627	-0.0249
MATH	7	416195	0 D-S	2	27260	0.3606	0.3598	0.312	0.1494	0.1767	0.0022	0.3786	0.3789	-0.0665	-0.2991	-0.1133	-0.0272
MATH	7	480351	0 D-S	2	27296	0.4223	0.2159	0.2279	0.1335	0.4219	0.0008	0.3552	0.0234	-0.2581	-0.2247	0.3553	-0.0129
MATH	7	493188	0 D-S	2	27209	0.3083	0.2832	0.2381	0.3071	0.1675	0.004	0.2743	-0.0759	-0.2912	0.2749	0.0896	-0.0327
MATH	7	574880	1 A-N	2	10715	0.4821	0.3734	0.4811	0.096	0.0473	0.0022	0.3932	-0.1762	0.3936	-0.2497	-0.1727	-0.0256
MATH	7	617138	1 A-N	1	10652	0.3623	0.0894	0.3593	0.2962	0.247	0.0081	0.5193	-0.0735	0.519	-0.3445	-0.1563	-0.0377
MATH	7	575220	1 A-R	2	10712	0.4815	0.233	0.4803	0.1617	0.1225	0.0025	0.3114	-0.1679	0.3113	-0.2096	-0.0205	-0.0135
MATH	7	617919	1 A-R	2	10717	0.3147	0.3287	0.1381	0.2171	0.3141	0.002	0.3565	-0.0481	-0.2166	-0.1628	0.3569	-0.0266
MATH	7	480242	1 B-E	1	10724	0.3229	0.2281	0.1644	0.2835	0.3225	0.0014	0.2482	-0.0828	-0.1651	-0.0424	0.2488	-0.0333
MATH	7	565851	1 B-E	2	10716	0.4543	0.4533	0.1801	0.1715	0.1929	0.0021	0.4906	0.4904	-0.2224	-0.2643	-0.1476	-0.0169
MATH	7	630798	1 C-G	2	10720	0.2951	0.1345	0.3574	0.2945	0.2118	0.0018	0.107	0.0367	-0.0823	0.1076	-0.0515	-0.0265
MATH	7	478172	1 D-S	2	10711	0.5798	0.1153	0.5783	0.1352	0.1686	0.0026	0.3271	-0.2254	0.3275	-0.2534	-0.0054	-0.022
MATH	7	490587	2 A-N	1	8219	0.3823	0.1653	0.1384	0.3093	0.3793	0.0077	0.4109	-0.2312	-0.1623	-0.1165	0.4115	-0.0445
MATH	7	581341	2 A-R	2	8273	0.5223	0.291	0.0984	0.5217	0.0878	0.0012	0.309	-0.0419	-0.2174	0.3097	-0.2471	-0.0284
MATH	7	613065	2 A-R	2	8269	0.1582	0.1382	0.4952	0.1579	0.2069	0.0017	-0.0046	-0.0549	-0.0894	-0.0042	0.1635	-0.0254
MATH	7	493993	2 B-E	1	8266	0.4598	0.1076	0.4589	0.3633	0.0682	0.0021	0.3421	-0.1387	0.3427	-0.1855	-0.1477	-0.0304
MATH	7	617923	2 B-E	2	8270	0.2674	0.3566	0.2669	0.265	0.1099	0.0016	-0.0303	0.2215	-0.0293	-0.1388	-0.097	-0.039
MATH	7	565888	2 C-G	2	8270	0.5434	0.116	0.1152	0.5426	0.2247	0.0016	0.1884	-0.1844	-0.2179	0.1886	0.0841	-0.0117
MATH	7	615279	2 C-G	2	8271	0.4478	0.1146	0.4472	0.2929	0.1439	0.0014	0.1751	-0.0762	0.176	-0.1187	-0.0227	-0.0324
MATH	7	617913	2 D-S	2	8274	0.6222	0.0819	0.1566	0.6215	0.139	0.0011	0.4876	-0.2078	-0.2383	0.488	-0.267	-0.0222
MATH	7	617834	3 A-N	1	8247	0.4366	0.1198	0.1811	0.434	0.259	0.006	0.2876	-0.1511	-0.1926	0.2893	-0.0376	-0.0478
MATH	7	629172	3 A-N	1	8288	0.4973	0.4968	0.2883	0.1637	0.0501	0.0011	0.4533	0.453	-0.2316	-0.2436	-0.1429	-0.0077
MATH	7	567234	3 A-R	1	8287	0.3865	0.1845	0.3527	0.386	0.0756	0.0012	0.3212	-0.3031	0.018	0.3215	-0.177	-0.0218
MATH	7	613074	3 A-R	2	8283	0.3706	0.37	0.2067	0.3177	0.1039	0.0017	0.3403	0.3408	-0.1071	-0.1722	-0.1298	-0.034
MATH	7	493997	3 C-G	2	8279	0.2136	0.1733	0.2817	0.3298	0.2131	0.0022	0.2815	-0.1296	-0.0546	-0.0864	0.2818	-0.0249
MATH	7	632827	3 C-G	2	8270	0.1832	0.0706	0.1826	0.6093	0.1343	0.0033	0.2952	-0.0894	0.2957	-0.0232	-0.2287	-0.0362
MATH	7	480352	3 D-S	2	8271	0.6166	0.0846	0.2232	0.6147	0.0744	0.0031	0.4314	-0.187	-0.2843	0.4326	-0.144	-0.0416
MATH	7	581343	3 D-S	2	8279	0.2636	0.1521	0.2928	0.29	0.263	0.0022	0.1568	-0.0745	-0.0368	-0.0544	0.1571	-0.0211
MATH	8	312493	0 A-N	2	26601	0.4709	0.4696	0.2519	0.1695	0.1061	0.0029	0.5185	0.5187	-0.2616	-0.2363	-0.1781	-0.034
MATH	8	398631	0 A-N	2	26597	0.4312	0.1839	0.1554	0.4299	0.2277	0.003	0.3216	-0.1595	-0.1934	0.3225	-0.0613	-0.0378
MATH	8	404822	0 A-N	2	26596	0.389	0.0886	0.3878	0.3229	0.1976	0.0031	0.1806	-0.0506	0.1814	-0.0671	-0.1029	-0.0293
MATH	8	413140	0 A-N	2	26635	0.6316	0.6306	0.2152	0.0996	0.053	0.0016	0.4793	0.4801	-0.292	-0.2106	-0.2108	-0.0353
MATH	8	480711	0 A-N	2	26610	0.3663	0.3654	0.3027	0.1556	0.1738	0.0025	0.5099	0.5099	-0.2028	-0.2336	-0.1751	-0.0267
MATH	8	489965	0 A-N	1	26591	0.3475	0.2098	0.3464	0.2845	0.156	0.0033	0.113	-0.0427	0.1143	-0.0978	0.0255	-0.0373
MATH	8	574931	0 A-N	1	26609	0.636	0.0992	0.6344	0.1633	0.1005	0.0026	0.531	-0.2261	0.5317	-0.3166	-0.2316	-0.0355
MATH	8	575467	0 A-N	1	26606	0.4858	0.1057	0.4845	0.2019	0.2052	0.0027	0.3991	-0.1492	0.3996	-0.1329	-0.245	-0.0297
MATH	8	303001	0 B-E	2	26655	0.4157	0.23	0.1892	0.4153	0.1647	0.0009	0.3263	-0.1273	-0.2323	0.3267	-0.0422	-0.0256
MATH	8	314878	0 B-E	2	26641	0.3217	0.1632	0.2445	0.2696	0.3213	0.0014	0.4132	0.0092	-0.2177	-0.2298	0.4135	-0.0264
MATH	8	319322	0 B-E	2	26609	0.3649	0.162	0.3009	0.1706	0.364	0.0026	0.2621	-0.0969	-0.1622	-0.0388	0.2628	-0.0345
MATH	8	335215	0 B-E	2	26602	0.5358	0.5343	0.204	0.1904	0.0684	0.0028	0.4317	0.4321	-0.2595	-0.1818	-0.15	-0.0316
MATH	8	412783	0 B-E	2	26606	0.5516	0.0563	0.1679	0.2229	0.5502	0.0027	0.3909	-0.1806	-0.1939	-0.1905	0.3907	-0.0187
MATH	8	412785	0 B-E	2	26623	0.5587	0.1336	0.1457	0.5575	0.1611	0.0021	0.4539	-0.2008	-0.2149	0.4544	-0.2181	-0.0305
MATH	8	413594	0 B-E	2	26635	0.5339	0.533	0.1608	0.2405	0.064	0.0016	0.386	0.3862	-0.2002	-0.1863	-0.1578	-0.0226

MATH	8	413597	0 B-E	2	26629	0.4654	0.268	0.127	0.1386	0.4645	0.0018	0.4635	-0.1467	-0.2686	-0.2191	0.4639	-0.0288
MATH	8	416556	0 B-E	1	26644	0.4891	0.4885	0.233	0.1828	0.0944	0.0013	0.4756	0.4759	-0.2605	-0.1979	-0.1725	-0.0242
MATH	8	479791	0 B-E	1	26582	0.5315	0.06	0.0569	0.3499	0.5296	0.0036	0.33	-0.2064	-0.2089	-0.1367	0.3318	-0.0496
MATH	8	489553	0 B-E	1	26601	0.325	0.324	0.359	0.1483	0.1658	0.0029	0.4683	0.4687	-0.1614	-0.1804	-0.2038	-0.0378
MATH	8	565869	0 B-E	1	26610	0.6516	0.1072	0.0996	0.6499	0.1408	0.0025	0.4559	-0.182	-0.2561	0.4572	-0.2385	-0.0426
MATH	8	574469	0 B-E	2	26598	0.4973	0.1238	0.4958	0.1853	0.1921	0.003	0.4346	-0.2061	0.435	-0.2685	-0.1105	-0.0318
MATH	8	416553	0 B-F	2	26652	0.6034	0.1618	0.6029	0.1449	0.0894	0.001	0.448	-0.1242	0.4485	-0.3052	-0.2292	-0.0284
MATH	8	494636	0 B-F	2	26595	0.4528	0.1742	0.2037	0.1676	0.4514	0.0031	0.4449	-0.1583	-0.1804	-0.2332	0.4451	-0.0299
MATH	8	495725	0 B-F	2	26618	0.5842	0.189	0.5829	0.1288	0.0971	0.0022	0.4875	-0.1792	0.4875	-0.3252	-0.2038	-0.0202
MATH	8	502450	0 B-F	2	26596	0.5174	0.1303	0.1773	0.5158	0.1735	0.0031	0.3911	-0.1627	-0.2076	0.3916	-0.1584	-0.0306
MATH	8	503514	0 B-F	2	26577	0.4695	0.1824	0.4677	0.2329	0.1133	0.0038	0.4313	-0.145	0.4315	-0.2333	-0.1856	-0.0309
MATH	8	503515	0 B-F	2	26615	0.7298	0.7281	0.0928	0.1162	0.0605	0.0024	0.5269	0.5274	-0.2376	-0.333	-0.24	-0.0367
MATH	8	324086	0 C-G	2	26604	0.4648	0.107	0.176	0.2507	0.4635	0.0028	0.343	-0.146	-0.0938	-0.2047	0.3437	-0.0348
MATH	8	413599	0 C-G	2	26637	0.4964	0.2307	0.4957	0.222	0.0501	0.0015	0.4078	-0.2413	0.4086	-0.1484	-0.1809	-0.0395
MATH	8	416364	0 C-G	2	26622	0.5243	0.0505	0.1598	0.5232	0.2645	0.0021	0.4658	-0.1551	-0.2841	0.4662	-0.2119	-0.0295
MATH	8	488686	0 C-G	2	26632	0.404	0.2251	0.4033	0.1983	0.1716	0.0017	0.4431	-0.2153	0.4434	-0.2445	-0.0766	-0.0293
MATH	8	502453	0 C-G	2	26630	0.4597	0.2212	0.1704	0.4588	0.1478	0.0018	0.2573	0.0364	-0.1676	0.2578	-0.2241	-0.0244
MATH	8	569269	0 C-G	1	26629	0.4684	0.4676	0.1633	0.2016	0.1657	0.0018	0.3534	0.3542	-0.1932	-0.1488	-0.1186	-0.0363
MATH	8	335870	0 D-S	2	26624	0.4244	0.2162	0.2308	0.4236	0.1273	0.002	0.364	-0.1404	-0.2034	0.3644	-0.1061	-0.027
MATH	8	335871	0 D-S	2	26609	0.4985	0.2005	0.2116	0.4972	0.0881	0.0026	0.4903	-0.2268	-0.2407	0.4903	-0.1933	-0.0249
MATH	8	399393	0 D-S	2	26630	0.6179	0.0842	0.1602	0.1371	0.6168	0.0018	0.4408	-0.1218	-0.2273	-0.2792	0.4415	-0.0338
MATH	8	416365	0 D-S	2	26623	0.7138	0.0422	0.0777	0.7123	0.1656	0.0021	0.3613	-0.1771	-0.2142	0.3626	-0.187	-0.0367
MATH	8	488719	0 D-S	1	26597	0.4447	0.2431	0.1137	0.1968	0.4434	0.003	0.2115	-0.1036	-0.0554	-0.1039	0.2131	-0.046
MATH	8	503520	0 D-S	2	26598	0.492	0.4905	0.1285	0.1442	0.2338	0.003	0.432	0.433	-0.2435	-0.2306	-0.1217	-0.0452
MATH	8	574972	0 D-S	2	26632	0.3696	0.1725	0.1844	0.369	0.2724	0.0017	0.2271	-0.1197	-0.2129	0.2273	0.0422	-0.0168
MATH	8	495718	1 A-N	1	10367	0.3525	0.4512	0.3516	0.1156	0.0792	0.0025	0.4961	-0.2786	0.4967	-0.2944	-0.0089	-0.0409
MATH	8	617260	1 A-N	1	10333	0.3763	0.2341	0.3741	0.1641	0.2219	0.0058	0.3359	-0.1484	0.3374	-0.1005	-0.1432	-0.0487
MATH	8	503513	1 B-E	2	10376	0.5752	0.1209	0.5742	0.2035	0.0998	0.0016	0.4251	-0.1031	0.4249	-0.2605	-0.2372	-0.013
MATH	8	615384	1 B-E	2	10374	0.3826	0.1489	0.1887	0.3819	0.2786	0.0018	0.2629	-0.1222	-0.1931	0.2637	-0.017	-0.0347
MATH	8	569261	1 B-F	2	10372	0.7706	0.0466	0.1533	0.7691	0.0291	0.002	0.4226	-0.172	-0.318	0.4229	-0.1553	-0.0289
MATH	8	574969	1 B-F	1	10376	0.3426	0.133	0.3421	0.2159	0.3074	0.0016	0.2464	0.0467	0.247	-0.1511	-0.151	-0.0288
MATH	8	618647	1 C-G	2	10382	0.2625	0.283	0.2622	0.328	0.1258	0.0011	0.0646	-0.0937	0.0649	0.1144	-0.1189	-0.0179
MATH	8	625331	1 D-S	2	10372	0.448	0.1438	0.2227	0.1843	0.4471	0.002	0.5299	-0.1808	-0.2768	-0.2162	0.5302	-0.0252
MATH	8	618000	2 A-N	1	8139	0.4797	0.3411	0.1231	0.0556	0.4792	0.001	0.5235	-0.2503	-0.3138	-0.1696	0.524	-0.0367
MATH	8	415802	2 B-E	1	8132	0.4595	0.2974	0.148	0.4587	0.094	0.0018	0.3915	-0.1294	-0.2768	0.3917	-0.1255	-0.0251
MATH	8	479775	2 B-E	1	8106	0.368	0.2095	0.1626	0.3661	0.2567	0.005	0.419	-0.0771	-0.1829	0.4196	-0.2287	-0.0477
MATH	8	621934	2 B-E	1	8134	0.4084	0.4078	0.2276	0.2876	0.0755	0.0016	0.3777	0.3783	-0.1676	-0.1578	-0.1619	-0.0352
MATH	8	487624	2 B-F	2	8136	0.3325	0.1536	0.3499	0.332	0.1631	0.0014	0.0212	0.0155	-0.0055	0.0216	-0.0341	-0.0144
MATH	8	574471	2 B-F	2	8139	0.5163	0.1578	0.1614	0.5158	0.164	0.001	0.3008	-0.0905	-0.2391	0.3014	-0.0777	-0.0294
MATH	8	625330	2 C-G	2	8135	0.454	0.3401	0.0884	0.1167	0.4533	0.0015	0.2347	-0.0093	-0.2191	-0.1541	0.2354	-0.0288
MATH	8	503519	2 D-S	2	8142	0.6426	0.0458	0.0631	0.6422	0.2483	0.0006	0.3369	-0.1655	-0.1873	0.3371	-0.1877	-0.0151
MATH	8	480710	3 B-E	2	8125	0.3353	0.2528	0.2649	0.3347	0.146	0.0016	0.1493	0.0928	-0.1642	0.1498	-0.1069	-0.0206
MATH	8	489554	3 B-E	1	8097	0.2395	0.259	0.2383	0.3184	0.1793	0.005	0.0161	-0.0567	0.0174	0.0381	0.0053	-0.0338
MATH	8	574948	3 B-E	1	8124	0.5279	0.527	0.164	0.1951	0.1121	0.0017	0.4316	0.4319	-0.2607	-0.1697	-0.1611	-0.0258
MATH	8	488715	3 B-F	2	8131	0.4305	0.1745	0.2117	0.1828	0.4301	0.0009	0.4889	-0.1278	-0.2648	-0.2195	0.4891	-0.0215
MATH	8	503517	3 C-G	2	8124	0.371	0.2525	0.3704	0.2064	0.169	0.0017	0.3613	-0.1298	0.3616	-0.226	-0.069	-0.022
MATH	8	574593	3 C-G	2	8129	0.3077	0.2238	0.3315	0.3073	0.1363	0.0011	0.2468	0.0681	-0.2049	0.2473	-0.1308	-0.0356
MATH	8	574473	3 D-S	1	8124	0.6068	0.6058	0.0646	0.0566	0.2712	0.0017	0.3074	0.3083	-0.2223	-0.2018	-0.1082	-0.0298
MATH	8	575466	3 D-S	2	8125	0.5396	0.0986	0.5387	0.1607	0.2004	0.0016	0.4078	-0.123	0.4084	-0.2346	-0.1987	-0.0305
SCIENCE	4	408836	0 A	2	20389	0.5505	0.1452	0.0719	0.232	0.5498	0.0012	0.4169	-0.2406	-0.3059	-0.1018	0.4171	-0.0238
SCIENCE	4	411193	0 A	2	20380	0.4844	0.1324	0.0951	0.4836	0.2873	0.0016	0.2902	-0.1871	-0.2753	0.2909	0.0001	-0.031

SCIENCE	4	494423	0 A	3	20367	0.7187	0.7171	0.1066	0.1253	0.0487	0.0023	0.4717	0.4726	-0.2995	-0.2467	-0.1711	-0.0408
SCIENCE	4	494806	0 A	2	20354	0.652	0.0617	0.6501	0.0841	0.2012	0.0029	0.3611	-0.243	0.3633	-0.2074	-0.1352	-0.0569
SCIENCE	4	494812	0 A	2	20379	0.6906	0.1667	0.0859	0.6895	0.0563	0.0017	0.4816	-0.2175	-0.3034	0.4822	-0.2412	-0.0349
SCIENCE	4	494815	0 A	2	20328	0.3717	0.2421	0.2013	0.3702	0.1823	0.0042	0.2681	-0.1683	-0.1872	0.2689	0.0508	-0.0359
SCIENCE	4	494827	0 A	3	20363	0.3442	0.1066	0.1741	0.3735	0.3434	0.0024	0.3148	-0.2436	-0.2199	0.0224	0.3154	-0.0409
SCIENCE	4	494830	0 A	2	20345	0.739	0.0615	0.1165	0.7365	0.0822	0.0033	0.3767	-0.2354	-0.2576	0.3792	-0.0902	-0.0542
SCIENCE	4	495282	0 A	2	20347	0.5581	0.5563	0.1284	0.2266	0.0854	0.0032	0.2816	0.2837	-0.0571	-0.1177	-0.2487	-0.0537
SCIENCE	4	495283	0 A	2	20374	0.7871	0.0571	0.7856	0.0723	0.0831	0.0019	0.5603	-0.2629	0.5604	-0.3139	-0.3123	-0.0338
SCIENCE	4	566205	0 A	2	20367	0.4772	0.1274	0.2942	0.4762	0.0999	0.0023	0.334	-0.292	-0.0777	0.3346	-0.1095	-0.0311
SCIENCE	4	574826	0 A	2	20371	0.5002	0.0527	0.0533	0.4992	0.3928	0.0021	0.4564	-0.2481	-0.2327	0.4569	-0.2439	-0.036
SCIENCE	4	574828	0 A	2	20396	0.7417	0.0447	0.1791	0.0343	0.741	0.0008	0.5027	-0.2024	-0.3666	-0.2043	0.503	-0.0263
SCIENCE	4	574829	0 A	2	20323	0.3591	0.3915	0.1245	0.1221	0.3575	0.0044	0.3032	0.0563	-0.2231	-0.2942	0.3044	-0.0508
SCIENCE	4	574831	0 A	2	20367	0.6405	0.108	0.1218	0.1289	0.6391	0.0023	0.5514	-0.1993	-0.2823	-0.3253	0.5519	-0.04
SCIENCE	4	574835	0 A	2	20370	0.7333	0.0908	0.7317	0.0944	0.081	0.0021	0.5053	-0.241	0.5057	-0.3079	-0.2318	-0.0335
SCIENCE	4	574838	0 A	2	20382	0.7137	0.7126	0.0476	0.172	0.0662	0.0015	0.4726	0.4731	-0.2569	-0.2995	-0.1815	-0.0318
SCIENCE	4	574878	0 A	2	20381	0.6663	0.165	0.0899	0.0782	0.6652	0.0016	0.3994	-0.1923	-0.2238	-0.1938	0.4004	-0.037
SCIENCE	4	576373	0 A	2	20391	0.5765	0.0244	0.5759	0.349	0.0497	0.0011	0.0796	-0.2041	0.0805	0.0701	-0.1881	-0.0256
SCIENCE	4	581718	0 A	3	20350	0.3187	0.2848	0.3177	0.2537	0.1407	0.0031	0.1611	-0.0619	0.1618	-0.0912	-0.0172	-0.032
SCIENCE	4	411344	0 B	2	20375	0.3792	0.1328	0.1856	0.3013	0.3785	0.0019	0.493	-0.1576	-0.343	-0.1113	0.4932	-0.0297
SCIENCE	4	495291	0 B	2	20378	0.6847	0.069	0.1383	0.6835	0.1074	0.0017	0.4131	-0.2494	-0.2102	0.4133	-0.1793	-0.0216
SCIENCE	4	496717	0 B	2	20396	0.3232	0.1742	0.323	0.3523	0.1498	0.0008	0.2376	-0.1984	0.2378	-0.0138	-0.0808	-0.0164
SCIENCE	4	579553	0 B	1	20363	0.5756	0.5742	0.1071	0.1123	0.2039	0.0024	0.4753	0.4764	-0.1578	-0.1987	-0.3018	-0.0494
SCIENCE	4	496496	0 C	2	20346	0.48	0.1528	0.4784	0.1329	0.2326	0.0033	0.3332	-0.1546	0.3338	-0.1912	-0.1053	-0.0302
SCIENCE	4	496504	0 C	2	20371	0.6604	0.0976	0.659	0.1056	0.1358	0.0021	0.4805	-0.2248	0.4811	-0.299	-0.198	-0.0362
SCIENCE	4	496876	0 C	2	20388	0.564	0.5633	0.1004	0.2358	0.0993	0.0012	0.3864	0.3869	-0.2927	-0.1095	-0.1889	-0.026
SCIENCE	4	579557	0 C	2	20394	0.7703	0.0474	0.0522	0.7696	0.1299	0.0009	0.4719	-0.2056	-0.2546	0.4721	-0.291	-0.0224
SCIENCE	4	579925	0 C	2	20344	0.3805	0.29	0.3792	0.16	0.1673	0.0034	0.3386	-0.0084	0.3395	-0.2833	-0.1457	-0.0459
SCIENCE	4	580194	0 C	2	20365	0.4503	0.2397	0.4492	0.1765	0.1322	0.0024	0.3006	-0.1542	0.3016	-0.0892	-0.1423	-0.0404
SCIENCE	4	479245	0 D	2	20377	0.4226	0.3877	0.4219	0.1144	0.0742	0.0018	0.2719	0.0469	0.2724	-0.2766	-0.2599	-0.0289
SCIENCE	4	496519	0 D	2	20366	0.6722	0.6707	0.0958	0.1204	0.1109	0.0023	0.4336	0.4337	-0.197	-0.3161	-0.1329	-0.0266
SCIENCE	4	496521	0 D	1	20359	0.3717	0.3707	0.4231	0.1499	0.0537	0.0026	0.3734	0.3742	-0.1601	-0.1338	-0.2279	-0.0492
SCIENCE	4	496522	0 D	3	20366	0.6007	0.5993	0.0887	0.0962	0.2134	0.0023	0.3682	0.3688	-0.274	-0.2499	-0.0675	-0.0304
SCIENCE	4	498458	0 D	2	20388	0.7838	0.0505	0.0441	0.7828	0.1214	0.0012	0.4895	-0.2839	-0.257	0.4899	-0.2636	-0.029
SCIENCE	4	566167	0 D	2	20343	0.3699	0.2654	0.1955	0.1671	0.3686	0.0034	0.2939	-0.1151	-0.1219	-0.109	0.2947	-0.0401
SCIENCE	4	566169	0 D	2	20376	0.453	0.0898	0.4522	0.1242	0.3319	0.0018	0.3357	-0.2099	0.3361	-0.2235	-0.0689	-0.0258
SCIENCE	4	579535	0 D	2	20321	0.4239	0.1659	0.2099	0.422	0.1978	0.0045	0.2268	-0.1082	-0.0942	0.2283	-0.0778	-0.047
SCIENCE	4	566170	1 A	2	8600	0.752	0.0829	0.7515	0.1149	0.0501	0.0006	0.4551	-0.2636	0.4558	-0.2355	-0.2222	-0.0299
SCIENCE	4	617348	1 A	2	8589	0.3867	0.1064	0.2213	0.2845	0.3859	0.0019	0.2939	-0.1883	-0.1008	-0.0941	0.2942	-0.0188
SCIENCE	4	620939	1 A	2	8567	0.8421	0.0535	0.0603	0.8383	0.0435	0.0044	0.4378	-0.2528	-0.2043	0.4412	-0.2579	-0.0652
SCIENCE	4	620950	1 A	2	8588	0.7182	0.0382	0.7168	0.1311	0.1119	0.002	0.5006	-0.186	0.5002	-0.2725	-0.3072	-0.0206
SCIENCE	4	618938	1 B	2	8592	0.3716	0.0635	0.0966	0.3711	0.4674	0.0015	0.2028	-0.1593	-0.221	0.2032	0.0138	-0.0253
SCIENCE	4	617338	1 C	2	8588	0.2634	0.0946	0.2629	0.172	0.4686	0.002	0.0205	-0.2034	0.021	-0.1863	0.2435	-0.0218
SCIENCE	4	579543	1 D	1	8590	0.3709	0.3702	0.2124	0.1078	0.3077	0.0017	0.2115	0.212	-0.0112	-0.2979	-0.0094	-0.0251
SCIENCE	4	624055	1 D	2	8591	0.2501	0.0891	0.265	0.3945	0.2497	0.0016	0.1041	-0.2264	-0.0657	0.1001	0.1042	-0.0136
SCIENCE	4	566172	2 A	2	5878	0.5048	0.1769	0.5033	0.2431	0.0738	0.0029	0.3252	-0.0605	0.3258	-0.2687	-0.0874	-0.0315
SCIENCE	4	620940	2 A	2	5879	0.3914	0.1796	0.1761	0.3903	0.2512	0.0027	0.1496	-0.0962	-0.1566	0.1505	0.0572	-0.0314
SCIENCE	4	622357	2 A	1	5887	0.8315	0.8304	0.1096	0.04	0.0187	0.0014	0.3242	0.3257	-0.1446	-0.2537	-0.1917	-0.0371
SCIENCE	4	622821	2 A	2	5886	0.5814	0.1746	0.0809	0.5805	0.1625	0.0015	0.3572	-0.0718	-0.2211	0.3573	-0.2385	-0.02
SCIENCE	4	623819	2 B	2	5882	0.5172	0.1125	0.3033	0.516	0.066	0.0022	0.3014	-0.227	-0.1385	0.3012	-0.0585	-0.0138
SCIENCE	4	623817	2 C	2	5885	0.3135	0.3725	0.313	0.2202	0.0926	0.0017	0.2578	-0.0714	0.2578	-0.1738	-0.0425	-0.0162
SCIENCE	4	579541	2 D	2	5884	0.4932	0.1067	0.2088	0.4923	0.1903	0.0019	0.1733	-0.1251	-0.0686	0.1735	-0.0503	-0.0105

SCIENCE	4	623212	2 D	2	5868	0.5501	0.1595	0.1608	0.5476	0.1276	0.0046	0.345	-0.0795	-0.2028	0.3468	-0.1964	-0.0515
SCIENCE	4	566173	3 A	2	5907	0.7948	0.794	0.0849	0.0668	0.0533	0.001	0.3654	0.3667	-0.1804	-0.2221	-0.1841	-0.0384
SCIENCE	4	621088	3 A	2	5895	0.3586	0.3917	0.0971	0.3575	0.1507	0.003	0.2286	-0.0575	-0.1495	0.2293	-0.0997	-0.034
SCIENCE	4	622826	3 A	2	5900	0.541	0.0438	0.5398	0.3132	0.101	0.0022	0.2908	-0.2137	0.2914	-0.0604	-0.2395	-0.0285
SCIENCE	4	630324	3 A	2	5892	0.5674	0.1323	0.2221	0.5654	0.0768	0.0036	0.4061	-0.2203	-0.2182	0.4075	-0.1261	-0.0522
SCIENCE	4	622351	3 B	1	5907	0.784	0.0671	0.0852	0.7832	0.0634	0.001	0.2617	-0.1595	-0.1412	0.2624	-0.1152	-0.0217
SCIENCE	4	623831	3 C	2	5905	0.7614	0.0717	0.7604	0.103	0.0636	0.0014	0.3764	-0.2576	0.3772	-0.2231	-0.1045	-0.0344
SCIENCE	4	579538	3 D	2	5904	0.739	0.0802	0.7379	0.1258	0.0546	0.0015	0.4426	-0.1427	0.4429	-0.3018	-0.2418	-0.0259
SCIENCE	4	623870	3 D	2	5902	0.4629	0.462	0.1838	0.0866	0.2657	0.0019	0.2194	0.2199	-0.1359	-0.1897	-0.0057	-0.0272
SCIENCE	8	401685	0 A	2	26875	0.6789	0.6778	0.0925	0.128	0.1001	0.0016	0.4529	0.4539	-0.248	-0.2727	-0.1583	-0.0416
SCIENCE	8	410886	0 A	2	26842	0.6324	0.0737	0.1718	0.121	0.6306	0.0029	0.4834	-0.211	-0.2035	-0.3057	0.4843	-0.0405
SCIENCE	8	410888	0 A	1	26879	0.4646	0.2058	0.4639	0.1404	0.1884	0.0015	0.4348	-0.1304	0.4352	-0.221	-0.2206	-0.0329
SCIENCE	8	412134	0 A	2	26888	0.3126	0.3122	0.1369	0.2156	0.3341	0.0012	0.3245	0.3248	-0.2249	-0.1266	-0.043	-0.0251
SCIENCE	8	413674	0 A	2	26894	0.4101	0.4097	0.1367	0.3285	0.1242	0.0009	0.4394	0.4395	-0.1549	-0.2353	-0.1571	-0.0209
SCIENCE	8	493908	0 A	2	26887	0.3696	0.2448	0.3018	0.083	0.3692	0.0012	0.4434	-0.1084	-0.2029	-0.2664	0.4435	-0.0224
SCIENCE	8	494453	0 A	2	26889	0.673	0.0946	0.1341	0.6722	0.098	0.0011	0.5655	-0.2871	-0.3238	0.5659	-0.2361	-0.0329
SCIENCE	8	494458	0 A	2	26860	0.4879	0.4868	0.1321	0.3018	0.077	0.0022	0.4918	0.4925	-0.3089	-0.1769	-0.2189	-0.0422
SCIENCE	8	494459	0 A	2	26879	0.5568	0.1168	0.556	0.1916	0.1341	0.0015	0.4755	-0.2068	0.4755	-0.2215	-0.2401	-0.022
SCIENCE	8	494524	0 A	2	26864	0.2571	0.1472	0.2066	0.3876	0.2566	0.002	0.1955	-0.156	-0.013	-0.0483	0.196	-0.0345
SCIENCE	8	494525	0 A	2	26887	0.504	0.2104	0.1301	0.1549	0.5034	0.0012	0.3794	-0.133	-0.1918	-0.1937	0.3798	-0.0307
SCIENCE	8	560287	0 A	3	26858	0.5226	0.1601	0.1338	0.5215	0.1823	0.0023	0.2562	-0.0077	-0.1621	0.2571	-0.1786	-0.0303
SCIENCE	8	560300	0 A	2	26844	0.4086	0.1069	0.2236	0.2593	0.4074	0.0028	0.4339	-0.2378	-0.1834	-0.1404	0.4344	-0.0387
SCIENCE	8	560301	0 A	2	26875	0.6196	0.1247	0.1103	0.1447	0.6186	0.0016	0.4407	-0.1554	-0.2501	-0.237	0.4412	-0.03
SCIENCE	8	560310	0 A	2	26831	0.6353	0.0895	0.6332	0.1128	0.1613	0.0033	0.5305	-0.2169	0.5298	-0.2924	-0.2705	-0.0258
SCIENCE	8	575471	0 A	2	26884	0.4984	0.1293	0.1813	0.4978	0.1903	0.0013	0.356	-0.1535	-0.1616	0.3566	-0.1613	-0.0336
SCIENCE	8	580789	0 A	2	26875	0.4454	0.2121	0.1058	0.2358	0.4447	0.0016	0.2881	-0.1743	-0.2031	-0.0205	0.2884	-0.0228
SCIENCE	8	580790	0 A	2	26883	0.5752	0.0458	0.3142	0.5745	0.0642	0.0013	0.369	-0.1843	-0.1862	0.3697	-0.2309	-0.0336
SCIENCE	8	334787	0 B	2	26836	0.5199	0.1515	0.0783	0.2488	0.5183	0.0031	0.446	-0.2019	-0.2786	-0.1695	0.4472	-0.0536
SCIENCE	8	410869	0 B	2	26891	0.7132	0.0639	0.7125	0.0882	0.1344	0.001	0.458	-0.1868	0.4585	-0.3323	-0.1955	-0.029
SCIENCE	8	412458	0 B	3	26874	0.5051	0.0823	0.2463	0.5043	0.1654	0.0017	0.3096	-0.1894	-0.1343	0.3098	-0.1189	-0.0195
SCIENCE	8	498027	0 B	2	26874	0.4932	0.4924	0.148	0.1955	0.1625	0.0017	0.4644	0.4645	-0.2286	-0.2514	-0.1366	-0.0238
SCIENCE	8	498031	0 B	2	26884	0.5882	0.0379	0.5874	0.2415	0.1319	0.0013	0.4088	-0.219	0.4091	-0.1478	-0.2821	-0.0242
SCIENCE	8	574873	0 B	2	26863	0.4346	0.4337	0.1184	0.292	0.1538	0.0021	0.4408	0.4411	-0.2286	-0.183	-0.1673	-0.0259
SCIENCE	8	330224	0 C	2	26882	0.4416	0.2107	0.441	0.2709	0.0761	0.0014	0.3408	-0.0963	0.3412	-0.1665	-0.2081	-0.0258
SCIENCE	8	395285	0 C	2	26892	0.4785	0.1416	0.4781	0.151	0.2283	0.001	0.404	-0.0575	0.4042	-0.3325	-0.1479	-0.0238
SCIENCE	8	401747	0 C	2	26892	0.7113	0.1283	0.109	0.0512	0.7106	0.001	0.3601	-0.1425	-0.223	-0.2068	0.3608	-0.0295
SCIENCE	8	494464	0 C	2	26871	0.5807	0.2634	0.5796	0.0706	0.0845	0.0018	0.507	-0.277	0.5073	-0.274	-0.2044	-0.0313
SCIENCE	8	496017	0 C	2	26860	0.4889	0.4878	0.1199	0.294	0.0962	0.0022	0.3786	0.3786	-0.2697	-0.0772	-0.2223	-0.0191
SCIENCE	8	496018	0 C	2	26878	0.6193	0.0924	0.187	0.6183	0.1008	0.0015	0.4309	-0.2437	-0.2692	0.4315	-0.1091	-0.0318
SCIENCE	8	496714	0 C	2	26858	0.4544	0.1617	0.1361	0.2465	0.4534	0.0023	0.3362	-0.2407	-0.2377	0.0091	0.3368	-0.0312
SCIENCE	8	498859	0 C	2	26855	0.3241	0.1194	0.1099	0.445	0.3233	0.0024	0.3116	-0.2377	-0.2668	0.0321	0.3118	-0.0267
SCIENCE	8	278461	0 D	2	26893	0.2608	0.1614	0.3081	0.2689	0.2606	0.001	0.2408	-0.011	-0.1567	-0.0647	0.2411	-0.0232
SCIENCE	8	413673	0 D	2	26899	0.4763	0.1335	0.3177	0.0721	0.4759	0.0007	0.3678	-0.1382	-0.1806	-0.2018	0.3679	-0.0158
SCIENCE	8	496021	0 D	2	26876	0.6065	0.1094	0.1464	0.6055	0.137	0.0016	0.3477	-0.108	-0.1078	0.3484	-0.283	-0.0283
SCIENCE	8	496022	0 D	2	26854	0.8156	0.0555	0.8137	0.0702	0.0582	0.0024	0.4841	-0.2716	0.4845	-0.3009	-0.2043	-0.0353
SCIENCE	8	496719	0 D	2	26880	0.5826	0.2931	0.5817	0.0574	0.0663	0.0014	0.2988	-0.1262	0.2995	-0.2029	-0.1691	-0.0277
SCIENCE	8	574839	0 D	2	26872	0.8308	0.0517	0.0716	0.8293	0.0455	0.0017	0.4588	-0.228	-0.2775	0.4598	-0.2368	-0.0378
SCIENCE	8	574819	1 A	2	10472	0.8122	0.0373	0.0556	0.0947	0.8112	0.0012	0.439	-0.1995	-0.2344	-0.2717	0.4394	-0.0255
SCIENCE	8	621306	1 A	2	10454	0.5512	0.5495	0.1944	0.1701	0.083	0.003	0.49	0.4905	-0.1136	-0.3198	-0.2786	-0.0381
SCIENCE	8	621315	1 A	2	10464	0.4828	0.2106	0.1942	0.1114	0.4818	0.002	0.3359	-0.1109	-0.0778	-0.289	0.3364	-0.0264
SCIENCE	8	622832	1 A	2	10461	0.5688	0.1448	0.1728	0.5675	0.1126	0.0023	0.4293	-0.1722	-0.2107	0.4296	-0.2256	-0.0256

SCIENCE	8	622835	1 A	2	10465	0.5366	0.5355	0.1889	0.1311	0.1425	0.0019	0.4353	0.4356	-0.235	-0.2715	-0.0931	-0.0247
SCIENCE	8	577935	1 B	2	10472	0.4629	0.3051	0.0341	0.1972	0.4623	0.0012	0.3116	-0.0468	-0.2112	-0.2377	0.3122	-0.0341
SCIENCE	8	617343	1 B	2	10473	0.5296	0.529	0.2537	0.1089	0.1072	0.0011	0.4467	0.4474	-0.2193	-0.2748	-0.1326	-0.0383
SCIENCE	8	621309	1 C	2	10471	0.4774	0.1523	0.233	0.4768	0.1366	0.0013	0.276	-0.1449	-0.0125	0.2765	-0.2324	-0.026
SCIENCE	8	621312	1 C	2	10474	0.6216	0.0724	0.1519	0.1536	0.621	0.001	0.532	-0.1434	-0.3234	-0.2881	0.5326	-0.0387
SCIENCE	8	623847	1 C	3	10465	0.3642	0.294	0.3635	0.1165	0.2241	0.0019	0.4095	-0.1071	0.4098	-0.2594	-0.1535	-0.0252
SCIENCE	8	581705	2 A	2	8214	0.8498	0.0439	0.0562	0.8493	0.05	0.0006	0.4451	-0.2492	-0.2724	0.4454	-0.2067	-0.0215
SCIENCE	8	617345	2 A	2	8204	0.4817	0.4808	0.1487	0.1213	0.2474	0.0018	0.4281	0.4285	-0.314	-0.3232	0.0105	-0.0336
SCIENCE	8	622822	2 A	2	8209	0.5946	0.1217	0.5939	0.1781	0.1051	0.0012	0.4652	-0.2029	0.4648	-0.2874	-0.1689	-0.0037
SCIENCE	8	624424	2 A	2	8193	0.5792	0.1533	0.1398	0.5773	0.1264	0.0032	0.4013	-0.1633	-0.1872	0.4005	-0.2219	-0.0064
SCIENCE	8	624427	2 A	2	8188	0.4996	0.1869	0.0616	0.4977	0.25	0.0038	0.2392	0.067	-0.228	0.241	-0.205	-0.0495
SCIENCE	8	623859	2 B	2	8213	0.4426	0.1553	0.2059	0.4423	0.1959	0.0007	0.2581	-0.1416	-0.0019	0.2584	-0.191	-0.0191
SCIENCE	8	624425	2 B	2	8208	0.499	0.4984	0.1349	0.1999	0.1655	0.0013	0.1501	0.1508	-0.0392	-0.0849	-0.073	-0.0244
SCIENCE	8	624430	2 B	2	8197	0.4006	0.3996	0.3107	0.1986	0.0885	0.0027	0.2988	0.2996	-0.032	-0.1427	-0.2574	-0.0367
SCIENCE	8	566166	2 C	2	8208	0.3568	0.1443	0.3564	0.3853	0.1127	0.0013	0.2177	-0.2016	0.2183	0.0661	-0.2047	-0.0307
SCIENCE	8	623843	2 C	2	8213	0.4333	0.289	0.123	0.433	0.1543	0.0007	0.2849	0.006	-0.2525	0.2848	-0.1681	-0.0052
SCIENCE	8	581583	3 A	2	8214	0.5503	0.0674	0.2949	0.5502	0.0873	0.0001	0.2332	-0.1817	-0.0277	0.2334	-0.2043	-0.0235
SCIENCE	8	617342	3 A	2	8207	0.7037	0.703	0.1624	0.0869	0.0467	0.001	0.4871	0.4867	-0.2826	-0.2804	-0.1844	-0.0081
SCIENCE	8	621296	3 A	2	8184	0.6194	0.1083	0.1526	0.617	0.1182	0.0038	0.4367	-0.1933	-0.2356	0.4345	-0.2059	0.0015
SCIENCE	8	621301	3 A	2	8191	0.3349	0.1799	0.3339	0.1973	0.2859	0.0029	0.3931	-0.0679	0.3934	-0.2538	-0.1259	-0.0291
SCIENCE	8	630322	3 A	2	8197	0.6132	0.2088	0.1008	0.6118	0.0764	0.0022	0.3573	-0.1265	-0.2636	0.3577	-0.16	-0.0216
SCIENCE	8	496028	3 B	2	8202	0.5524	0.1727	0.1607	0.5516	0.1135	0.0016	0.4219	-0.1815	-0.2593	0.423	-0.1408	-0.0461
SCIENCE	8	617429	3 B	2	8209	0.4935	0.3652	0.4931	0.1058	0.0352	0.0007	0.3261	-0.0619	0.3266	-0.3004	-0.2186	-0.0313
SCIENCE	8	623146	3 C	2	8210	0.5586	0.2475	0.5582	0.1148	0.0789	0.0006	0.4176	-0.1964	0.4175	-0.2569	-0.1501	-0.0091
SCIENCE	8	621287	3 D	2	8190	0.2426	0.0823	0.2419	0.3875	0.2853	0.003	0.0938	-0.2465	0.0939	0.0228	0.0377	-0.0109
SCIENCE	8	621298	3 D	2	8209	0.1955	0.1954	0.2774	0.1733	0.3531	0.0007	0.0741	0.0744	0.0654	-0.0692	-0.0669	-0.0241

ContArea	FormGrad	PubID	FormNum	Standard1	Depth	N	Mean	Proportior	Proportior	Proportior	Proportior	Proportior	PtBiserial	Correlatio	Correlatio	Correlatio	Correlatio	Correlatio	FinalB	FinalBErr	Infit	InfitMnSq	Outfit	OutfitMnS	BiasCodeW	BiasCodeV	BiasCodeW	HITEHISPANIC
ELA	3	574379	0	A-K	3	67443	1.4241	0.1773	0.3591	0.3116	0.143	0.009	0.4645	-0.2426	-0.234	0.1842	0.3698	-0.1045	0.715	0.0103	9.9013	1.3448	9.9014	1.3523	A-	A-	A+	
ELA	3	579575	0	A-K	3	67428	1.4357	0.1443	0.2705	0.576		0.0092	0.6274	-0.4203	-0.3483	0.6279		-0.0827	-0.1548	0.0099	-9.8992	0.8076	-9.8992	0.7611	A+	A-	A-	
ELA	3	580248	0	B-C	3	67185	0.9668	0.3711	0.2778	0.3383		0.0128	0.5844	-0.4351	-0.1253	0.5846		-0.0914	0.9405	0.0081	9.9011	1.055	9.9011	1.0762	A-	A+	A+	
ELA	3	271992	0	B-K	3	66992	1.6456	0.1688	0.2662	0.2946	0.2549	0.0156	0.5255	-0.2281	-0.3177	0.0496	0.5042	-0.1329	0.2551	0.0108	9.9013	1.3443	9.9014	1.4312	A-	A-	A-	
ELA	3	622436	1	A-K	3	7546	2.0379	0.0981	0.1465	0.3675	0.3804	0.0075	0.6018	-0.3039	-0.4241	0.0104	0.4998	-0.0848	-0.009	0.0277	-6.6191	0.9302	-7.6691	0.914	A+	A-	A-	
ELA	3	622439	1	A-K	3	7537	1.324	0.2392	0.1916	0.5604		0.0087	0.595	-0.3967	-0.379	0.6565		-0.0802	0.0409	0.0217	-6.4191	0.9342	-7.4891	0.8851	A+	A-	A-	
ELA	3	622422	2	A-K	2	7378	1.1504	0.3205	0.1975	0.469		0.013	0.4479	-0.2749	-0.3087	0.5253		-0.0968	0.3966	0.0223	9.9012	1.1527	9.9013	1.2522	A+	A+	A-	
ELA	3	622427	2	A-K	3	7406	1.4249	0.1342	0.3625	0.4329	0.0611	0.0092	0.4516	-0.3267	-0.2009	0.3661	0.1403	-0.0736	0.9777	0.0287	8.5411	1.1025	8.3611	1.1022	A+	A-	A-	
ELA	3	617199	3	A-K	3	7486	1.1737	0.2712	0.2771	0.4434		0.0083	0.6053	-0.4438	-0.2144	0.6067		-0.0894	0.3248	0.023	-9.8991	0.87	-9.8992	0.8471	A+	A-	A-	
ELA	3	617202	3	A-K	3	7487	1.6016	0.1296	0.3346	0.3291	0.1986	0.0082	0.5126	-0.223	-0.3451	0.1695	0.4149	-0.082	0.5191	0.0286	9.2911	1.1079	8.6911	1.1018	A-	A-	A-	
ELA	3	622416	4	A-K	3	7436	0.8449	0.421	0.298	0.268		0.013	0.3769	-0.2135	-0.1821	0.4466		-0.0801	0.9964	0.0272	9.9012	1.2083	9.9013	1.2689	A+	A-	A+	
ELA	3	622420	4	A-K	3	7474	1.4173	0.1797	0.3641	0.3028	0.1455	0.008	0.4949	-0.2747	-0.2323	0.1841	0.3928	-0.0654	0.7814	0.0331	6.0811	1.0924	6.8011	1.1049	A+	A+	A+	
ELA	3	624693	5	A-K	3	7490	1.4728	0.2017	0.3233	0.2614	0.2044	0.0093	0.4344	-0.2044	-0.2219	0.0491	0.4261	-0.0794	0.6993	0.0321	9.9013	1.272	9.9013	1.3012	A+	A-	A-	
ELA	3	624695	5	A-K	3	7491	0.9877	0.2962	0.4107	0.284		0.0091	0.4615	-0.3537	-0.0487	0.4177		-0.0303	0.7134	0.0283	2.791	1.0381	3.311	1.0488	A+	A-	A-	
ELA	3	623102	6	B-C	3	7544	0.645	0.5214	0.301	0.1693		0.0083	0.1198	-0.0091	-0.1567	0.2207		-0.0703	1.4927	0.0262	9.9015	1.5188	9.9017	1.7207	A-	A-	A+	
ELA	3	623106	6	B-K	3	7529	1.4218	0.2245	0.2907	0.3071	0.1675	0.0103	0.4089	-0.1425	-0.3087	0.1342	0.3925	-0.0878	0.8446	0.031	9.9013	1.2516	9.9013	1.2693	A+	A-	A-	
ELA	3	625449	7	B-K	3	7465	1.4206	0.1397	0.4071	0.3224	0.1159	0.0149	0.3888	-0.1415	-0.2463	0.1549	0.3378	-0.0862	0.8068	0.0349	9.9012	1.2065	9.9012	1.2025	A+	A-	A-	
ELA	3	625453	7	B-K	3	7497	1.3737	0.2155	0.1886	0.5852		0.0107	0.5754	-0.3972	-0.3375	0.6176		-0.0873	-0.0864	0.0321	-8.0591	0.8832	-6.0291	0.855	A-	A+	A+	
ELA	3	623659	8	B-C	3	7495	1.3464	0.1619	0.3867	0.3773	0.0636	0.0104	0.3893	-0.2707	-0.1377	0.2727	0.1809	-0.0942	1.1413	0.0337	9.9012	1.1869	9.9012	1.187	A-	A-	A-	
ELA	3	630320	8	B-K	2	7447	0.9825	0.4189	0.1625	0.4018		0.0168	0.3886	-0.2269	-0.2958	0.479		-0.1071	0.7493	0.0282	9.9013	1.3037	9.9014	1.4133	A+	A-	A-	
ELA	3	624712	9	B-C	3	7483	0.4806	0.5691	0.3624	0.0561		0.0124	0.2036	-0.1793	0.1446	0.1208		-0.0765	2.2752	0.0261	9.9013	1.2542	9.9015	1.4698	A-	A-	A-	
ELA	3	624713	9	B-C	3	7498	1.3035	0.223	0.371	0.2677	0.1279	0.0104	0.3459	-0.0959	-0.2666	0.1472	0.3368	-0.088	1.0284	0.0308	9.9014	1.3799	9.9014	1.3857	A+	A-	A-	
ELA	4	576333	0	A-C	3	66645	1.5168	0.1416	0.3383	0.3744	0.1407	0.005	0.5425	-0.3271	-0.2905	0.2832	0.3426	-0.0661	0.8071	0.0102	9.9012	1.1697	9.9012	1.1748	A-	A+	A+	
ELA	4	576318	0	A-K	3	66818	0.8298	0.4436	0.2802	0.2738		0.0024	0.4337	-0.2736	-0.1862	0.4989		-0.0594	1.1661	0.0079	9.9013	1.2797	9.9015	1.4784	A+	A+	A+	
ELA	4	579415	0	A-K	3	66736	2.1728	0.0492	0.1313	0.4141	0.4018	0.0036	0.5467	-0.2614	-0.4	-0.0222	0.4241	-0.0891	-0.6306	0.0174	9.9011	1.0549	9.9012	1.1808	A-	A-	A-	
ELA	4	579149	0	B-C	3	66597	1.4342	0.2005	0.1615	0.6323		0.0057	0.6054	-0.4537	-0.3134	0.6312		-0.0978	-0.3266	0.0102	3.251	1.0161	3.661	1.0339	A+	A-	A+	
ELA	4	495050	0	B-K	3	66791	1.0708	0.3624	0.2017	0.433		0.0028	0.4181	-0.2367	-0.3463	0.5181		-0.0742	0.6063	0.0084	9.9014	1.4205	9.9017	1.6563	A-	A+	A+	
ELA	4	495051	0	B-K	3	66795	1.6099	0.1198	0.3223	0.3823	0.1729	0.0028	0.5851	-0.368	-0.2959	0.2311	0.3956	-0.0788	0.2363	0.0127	9.9011	1.0796	9.9011	1.0855	A-	A+	A+	
ELA	4	623016	1	A-K	3	7442	0.9643	0.4018	0.2233	0.3664		0.0085	0.4046	-0.2645	-0.2203	0.4633		-0.0192	0.733	0.0193	9.9012	1.2288	9.9014	1.3552	A+	A-	A-	
ELA	4	623020	1	A-K	3	7490	1.2167	0.2847	0.3359	0.2537	0.1236	0.0021	0.3437	-0.1518	-0.2038	0.1434	0.319	-0.056	1.022	0.0204	9.9015	1.4769	9.9015	1.5263	A+	A-	A-	
ELA	4	623030	2	A-K	3	7365	1.4117	0.1701	0.3898	0.2941	0.1433	0.0027	0.2313	-0.1357	-0.0593	-0.0032	0.2374	-0.0352	0.8357	0.0254	9.9015	1.5003	9.9015	1.5341	A+	A-	A-	
ELA	4	623032	2	A-K	3	7323	0.4714	0.6253	0.2651	0.1012		0.0084	0.0688	0.0338	-0.1658	0.2002		-0.0383	1.9561	0.0203	9.9014	1.4254	9.902	2.0136	A+	A+	A+	
ELA	4	623670	3	A-K	3	7501	1.4722	0.1914	0.1438	0.6625		0.0024	0.5192	-0.3692	-0.3401	0.5656		-0.0594	-0.2551	0.0259	-0.769	0.9903	7.1412	1.1855	A+	A-	A-	
ELA	4	623676	3	A-K	3	7474	1.4946	0.1677	0.3496	0.2939	0.1827	0.006	0.506	-0.2258	-0.3312	0.1809	0.4215	-0.0388	0.6895	0.0259	9.9012	1.158	9.9012	1.1627	A-	A-	A-	
ELA	4	622449	4	A-K	3	7388	0.4258	0.5955	0.3734	0.0249		0.0062	0.1222	-0.1554	0.1946	-0.0846		-0.0604	2.66	0.0262	9.9013	1.2933	9.9016	1.6377	A+	A+	A+	
ELA	4	625022	4	A-K	3	7422	1.3584	0.1793	0.3375	0.426	0.0556	0.0016	0.359	-0.1891	-0.2524	0.3211	0.1505	-0.034	1.1045	0.034	9.9013	1.2783	9.9013	1.2987	A+	A-	A-	
ELA	4	624828	5	A-C	3	7402	1.3138	0.1749	0.4475	0.2584	0.1144	0.0047	0.3083	-0.2294	-0.0319	0.052	0.258	-0.0273	0.9121	0.0336	9.9014	1.38	9.9014	1.4147	A-	A-	A-	
ELA	4	624834	5	A-C	3	7414	1.0314	0.3518	0.2621	0.3831		0.0031	0.4335	-0.3201	-0.1407	0.4477		-0.0521	0.5895	0.0286	9.9012	1.1729	9.9012	1.2263	A+	A+	A+	
ELA	4	624724	6	B-C	3	7367	1.3468	0.1956	0.3748	0.309	0.1159	0.0046	0.4304	-0.2509	-0.1924	0.2011	0.3182	-0.0313	0.965	0.0331	9.9012	1.2349	9.9013	1.2543	A+	A-	A-	
ELA	4	624720	6	B-K	3	7382	0.531	0.6738	0.1176	0.2061		0.0026	0.27	-0.1365	-0.2663	0.3787		-0.068	1.6322	0.0296	9.9013	1.347	9.9023	2.3164	A-	A-	A-	
ELA	4	625471	7	B-C	3	7454	1.6401	0.1013	0.316	0.4204	0.1596	0.0027	0.5518	-0.3011	-0.3758	0.2982	0.3286	-0.0388	0.3844	0.0415	-1.699	0.9745	-2.059	0.9692	A+	A-	A+	
ELA	4	625472	7	B-K	2	7412	1.0472	0.2752	0.3944	0.322		0.0083	0.4591	-0.3658	-0.0456	0.4046		-0.0371	0.5281	0.0293	5.8711	1.0822	6.4611	1.0994	A-	A-	A+	
ELA	4	621488	8	B-C	3	7374	0.6652	0.5954	0.142	0.2611		0.0015	0.1426	-0.0215	-0.2867	0.2547		-0.0319	1.2706	0.0283	9.9017	1.6749	9.9023	2.3271	A+	A+	A+	
ELA	4	621472	8	B-K	3	7344	1.4895	0.206	0.2873	0.3095	0.1916	0.0056	0.4479	-0.1336	-0.3902	0.1373	0.4314	-0.0358	0.6694	0.0329	9.9013	1.2509	9.9013	1.2895	A+	A-	A-	
ELA	4	625461	9	B-C	3	7418	1.3752	0.1776	0.3799	0.3277	0.112	0.0028	0.4335	-0.2677	-0.1768	0.2012	0.3075	-0.0618	0.873	0.0338	9.9012	1.157	9.9012	1.1745	A-	A-	A-	
ELA	4	625504	9	B-C	2	7396	0.7124	0.4455	0.3892	0.1596		0.0058	0.1693	-0.1	-0.035	0.1938		-0.0558	1.3586	0.0264	9.9014	1.4078	9.9016	1.5576	A+	A+	A+	
ELA	5	579327	0	A-C	3	65048	1.142	0.334	0.1871	0.4755		0.0034	0.4099	-0.2679	-0.2701	0.4739		-0.0862	0.3056	0.0085	9.9014	1.3601	9.9015	1.5413	A-	A+	A+	
ELA	5	579329	0	A-K	3	65061	1.304	0.2932	0.242	0.3271	0.1345	0.0032	0.2862	-0.1405	-0.1467	0.0666	0.2936	-0.083	0.6301	0.0094	9.9017	1.7123	9.9019	1.8611	A-	A-	A+	
ELA	5	579336	0	A-K	3	65174	2.192	0.0635	0.1268	0.3627	0.4456	0.0015	0.6092	-0.3299	-0.4102	-0.051	0.4895	-0.0493	-0.4675	0.0154	-9.8991	0.926	-9.8991	0.9243	A+	A-	A+	
ELA	5	409607	0	B-K	3	65127	1.1602	0.2149	0.4082	0.3747		0.0022	0.5625	-0.4103	-0.1665	0.523		-0.0593	0.3898	0.0088	-9.899	0.9576	-9.659	0.9597	A-	A+	A+	
ELA	5	574356	0	B-K	3	64964	1.242	0.2054	0.4412	0.2512	0.0975	0.0047	0.5317	-0.2864	-0.2353	0.2818	0.3923	-0.0888	0.6852	0.0102	9.9011	1.0619	9.9011	1.0565	A+	A-	A+	
ELA	5	577504	0	B-K	3	64964	1.0734	0.2927	0.3369	0.3658		0.0047	0.4317	-0.3087	-0.1277	0.4294		-0.0878	0.4182	0.0085	9.9012	1.203	9.9013	1.2715	A+	A+	A+	
ELA	5	621510	1	B-C	3	7261	0.7558	0.4736	0.2901	0.2308		0.0055	0.3105	-0.2082	-0.0807	0.3414		-0.0442	1.0655	0.018	9.9013	1.2501	9.9014	1.4062	A-	A-	A-	
ELA	5	621511	1	B-K	3	7290	1.4916	0.119	0.3554	0.4382	0.0859	0.0015	0.4143	-0.2828	-0.2098	0.2842	0.1856	-0.0248	0.678	0.0255	9.9011	1.1179	9.9011	1.1172	A-	A-	A-	
ELA	5	623759	2	B-C	3	7229	1.6897	0.1423	0.2584	0.3623	0.2337	0.0033	0.5169	-0.2464	-0.3188	0.0758	0.4562	-0.0671	0.3141	0.0279	3.071	1.0335	4.4811	1.0511	A-	A-	A+	
ELA	5	623757	2	B-K	3	7237	0.6912	0.5132	0.2796	0.205		0.0022	0.1772	-0.0951	-0.0933	0.2264		-0.0425	1.1752	0.0194	9.9014	1.3916	9.9016	1.6159	A-	A+	A+	
ELA	5	623678	3	B-C	3	7202	1.019	0.3889	0.1972	0.4078		0.0061	0.3589	-0.2382	-0.2097	0.4129		-0.0435	0.6936	0.0204	9.9012	1.2485	9.9015	1.4649	A-	A-	A+	
ELA	5	623686	3	B-K	3	7237	1.4326	0.1791	0.3714	0.2853	0.163	0.0012	0.4993	-0.3037	-0.2172	0.1756	0.3866	-0.0192	0.721	0.025	3.241	1.0356	3.871	1.0436	A+	A-	A-	
ELA	5	625482	4	B-C	3	7196	1.1951	0.271	0.2568	0.4646		0.0077	0.5322	-0.3874	-0.2134	0.5424		-0.0582	0.2239	0.0303	-3.019	0.9584	-2.569	0.951	A-	A-	A-	
ELA	5	630682	4	B-C	3	7236	1.4906	0.1393	0.3918	0.3047	0.162	0.0022	0.4715	-0.242	-0.262	0.1679	0.3722	-0.0586	0.5587	0.037	5.4011	1.0831	5.4011	1.0847	A+	A-	A-	
ELA	5	623698	5	B-C	3	7234	1.2982	0.2225	0.3723	0.2861	0.117	0.0021	0.269	-0.1373	-0.1191	0.0857	0.2456	-0.0661	0.9349	0.0315	9.9014	1.3985	9.9014	1.4482	A+	A-	A+	
ELA	5	623701	5	B-K	3	7212	0.5491	0.6135	0.2166	0.1649		0.0051	0.1426	-0.0031	-0.2399	0.2813		-0.0568	1.5393	0.0274	9.9014	1.3843	9.9018	1.7916	A+	A+	A-	
ELA	5	622451	6	A-K	3	7147	0.992	0.2638	0.4721	0.2559		0.0082	0.3365	-0.3374	0.1262	0.211		-0.0709	0.6525	0.0295	9.9012	1.1643	9.9012	1.2227	A+	A-	A+	
ELA	5	622452	6	A-K	3	7187	1.7251	0.1556	0.2157	0.3736	0.2526	0.0026	0.5055	-0.2473	-0.3331	0.081	0.4385	-0.0599	0.328	0.0371	6.2411	1.0985	6.8411	1.1156	A+	B-	A-	
ELA	5	623037	7	A-K	3	7251	1.318	0.1648	0.3496	0.4816		0.004	0.3349	-0.2687	-0.0963	0.2951		-0.0296	-0.1159	0.0345	9.2911	1.1395	9.9013	1.2789	A+	A-	A+	
ELA	5	623038	7	A-K	3	7269	1.9507	0.1309	0.1912	0.2725	0.4038	0.0015	0.5471	-0.2626	-0.3818	-0.0241	0.5096	-0.0136	-0.0054	0.0393	0.721	1.0112	0.731	1.0139	A+	A-	A-	
ELA	5	623687	8	A-K	3	7179	1.51	0.0942	0.4238	0.3541	0.1241	0.0037	0.5405	-0.2775	-0.3287	0.2578	0.3677	-0.0165	0.5183	0.0424	-5.2191	0.9219	-5.3591	0.9195	A+	A-	A-	
ELA	5	623756	8	A-K	3	7193	1.0475	0.2953	0.3601	0.3428		0.0018	0.2763	-0.2127	-0.0525	0.259		-0.0167	0.5061	0.0291	9.9013	1.2712	9.9013	1.3239	A+	A+	A+	
ELA	5	621502	9	A-C	3	7250	0.9193	0.4289	0.2857	0.215	0.0668	0.0036	0.0047	0.1573	-0.2476	-0.0267	0.1866	-0.027	1.5286	0.0271	9.9019	1.8526	9.9022	2.2108	A+	A-	A-	
ELA	5	621499	9	A-K	3	7265	1.148	0.2954	0.26	0.4431		0.0015	0.4678	-0.3042	-0.2653	0.5171		-0.0433	0.3202	0.0295	1.401	1.0188	2.9811	1.0546	A+	A-	A+	
ELA	6	495101	0	A-K	3	60795	1.5399	0.2573	0.1899	0.3063	0.2451	0.0015	0.5601	-0.3158	-0.3359	0.1198	0.504	-0.0572	0.6347	0.0097	9.9012	1.2231	9.9013	1.2779	A-	A-	A+	
ELA	6	579321	0	A-K	3	60754	1.0197	0.297	0.3843	0.3166		0.0022	0.5591	-0.4266	-0.0929	0.5204		-0.0416	0.9811	0.0082	5.721	1.0229	6.051	1.0268	A-	A+	A+	
ELA	6	581448	0	A-K	3	60767	1.8655	0.1034	0.2294	0.3634	0.3019	0.0019	0.6614	-0.3015	-0.4796	0.094	0.5448	-0.0424	0.1738	0.0126	-9.8991	0.8796	-9.8991	0.8696	A+	A-	A-	
ELA	6	579311	0	B-C	3	60742	1.6654	0.1267	0.2953	0.3608	0.2148	0.0023	0.6074	-0.3472	-0.3172	0.1339	0.4851	-0.0693	0.3415	0.0118	1.161	1.0051	6.281	1.0301	A-	A-	A-	
ELA	6	579312	0	B-C	3	60715	1.0087	0.3104	0.3676	0.3191		0.0028	0.5439	-0.4435	-0.034	0.4827		-0.065	0.7711	0.0085	3.781	1.015	5.901	1.0264	A+	A+	A+	
ELA	6	497118	0	B-K	3	60814	1.2764	0.2713	0.18	0.5475		0.0012	0.4359	-0.3007	-0.2772	0.4859		-0.0474	0.4529	0.0088	9.9012	1.2392	9.9015	1.5364	A-	A+	A+	

ELA	6	623707	1	A-K	2	6798	1.2107	0.3262	0.1361	0.5367		0.001	0.4887	-0.4002	-0.192	0.5101		-0.0284	0.5004	0.0196	9.9012	1.165	9.9012	1.2393	A-	A-	A-
ELA	6	623708	1	A-K	2	6799	1.8938	0.0767	0.2285	0.4181	0.2758	0.0009	0.635	-0.3273	-0.4285	0.1099	0.4775	-0.0196	0.2618	0.0278	-9.8991	0.8649	-9.8991	0.8559	A-	A-	A-
ELA	6	623720	2	A-K	2	6724	1.1835	0.1737	0.5006	0.2882	0.0342	0.0033	0.3526	-0.2148	-0.1413	0.2779	0.1585	-0.046	1.67	0.0245	9.9012	1.177	9.9012	1.1791	A-	A-	A-
ELA	6	623722	2	A-K	2	6735	0.5179	0.6359	0.2078	0.1546		0.0016	0.1416	-0.0469	-0.1447	0.2282		-0.0308	1.9606	0.02	9.9014	1.3863	9.902	1.9906	A-	A+	A-
ELA	6	621521	3	A-K	3	6689	1.0552	0.2669	0.439	0.2599	0.031	0.0031	0.1762	-0.0806	-0.095	0.1445	0.1226	-0.0328	1.8914	0.0209	9.9014	1.383	9.9014	1.4242	A+	A-	A+
ELA	6	621598	3	A-K	3	6706	0.4569	0.6379	0.2665	0.0951		0.0006	0.2214	-0.1489	-0.0066	0.2548		-0.011	2.0443	0.0195	9.9012	1.1766	9.9015	1.5068	A+	A+	A-
ELA	6	623048	4	A-K	2	6786	1.6505	0.1479	0.2807	0.3437	0.2271	0.0006	0.4899	-0.2665	-0.2656	0.0821	0.4186	-0.0188	0.6169	0.0383	7.9411	1.1277	8.4811	1.1419	A+	A-	A-
ELA	6	623053	4	A-K	2	6782	0.7032	0.4599	0.3754	0.1635		0.0012	0.2579	-0.1706	-0.0346	0.2787		-0.0369	1.5661	0.0275	9.9013	1.2844	9.9014	1.4039	A+	A-	A-
ELA	6	622461	5	A-C	3	6718	1.2553	0.2535	0.2369	0.5086		0.001	0.5337	-0.3889	-0.2477	0.5524		-0.0509	0.315	0.0325	-1.799	0.9731	-1.279	0.9723	A+	A-	A-
ELA	6	624274	5	A-C	3	6699	1.3012	0.1927	0.4092	0.2956	0.0986	0.0039	0.2137	-0.1219	-0.0507	0.0191	0.2238	-0.0385	1.1875	0.0341	9.9016	1.5551	9.9016	1.5827	A+	A-	A+
ELA	6	624728	6	B-K	2	6755	1.7119	0.1059	0.2604	0.4482	0.1844	0.001	0.5566	-0.3302	-0.3368	0.2199	0.3644	-0.04	0.5513	0.0432	-3.3491	0.9473	-3.7591	0.9405	A+	A-	A-
ELA	6	624737	6	B-K	3	6750	0.9895	0.4303	0.148	0.4198		0.0018	0.3331	-0.1885	-0.3338	0.4321		-0.0331	0.8784	0.0293	9.9013	1.3361	9.9015	1.5459	A+	A+	A+
ELA	6	622611	7	B-C	3	6752	1.4613	0.1238	0.3962	0.3709	0.1065	0.0027	0.4134	-0.271	-0.1889	0.2242	0.2443	-0.0396	0.9245	0.0397	7.8111	1.1285	8.2011	1.1347	A+	A-	A-
ELA	6	622613	7	B-K	2	6760	0.9987	0.2716	0.4566	0.2703		0.0015	0.3314	-0.3259	0.0957	0.2223		-0.038	0.8522	0.0303	9.9012	1.1756	9.9012	1.2069	A-	A-	A+
ELA	6	622476	8	B-C	2	6741	0.7478	0.4095	0.4276	0.1585		0.0044	0.2561	-0.2183	0.0767	0.1999		-0.0541	1.4849	0.0275	9.9013	1.2523	9.9013	1.3258	A-	A-	A+
ELA	6	622471	8	B-K	2	6761	1.6043	0.1328	0.3416	0.3121	0.2121	0.0015	0.4951	-0.2246	-0.3009	0.0843	0.4427	-0.0288	0.6332	0.0391	4.9211	1.0771	4.4311	1.0715	A-	A-	A-
ELA	6	625497	9	B-C	2	6797	1.9004	0.1083	0.1975	0.3783	0.3146	0.0013	0.4912	-0.2448	-0.3003	-0.0132	0.4368	-0.0219	0.2516	0.0434	7.5011	1.1256	9.6912	1.1762	A+	A-	A-
ELA	6	625494	9	B-K	3	6799	0.8444	0.3526	0.4492	0.1972		0.001	0.4021	-0.2723	-0.0608	0.4047		-0.0194	1.2381	0.0284	6.2211	1.0928	6.8711	1.1081	A-	A-	A+
ELA	7	497093	0	A-C	3	57589	1.7327	0.072	0.3302	0.3901	0.207	0.0007	0.5318	-0.3199	-0.2955	0.1352	0.3867	-0.0355	0.1665	0.0137	9.291	1.041	9.901	1.0493	A-	A+	A+
ELA	7	497098	0	A-K	3	57579	0.9959	0.2702	0.4627	0.2662		0.0009	0.3075	-0.1998	-0.092	0.3079		-0.0489	0.7896	0.0083	9.9013	1.3114	9.9014	1.3549	A+	A+	A+
ELA	7	578081	0	A-K	3	57469	1.3456	0.1899	0.2727	0.5345		0.0028	0.6432	-0.4836	-0.261	0.6218		-0.0786	-0.1838	0.0102	-9.8991	0.9155	-9.8991	0.8802	A-	A+	A+
ELA	7	566578	0	B-C	3	57554	1.8338	0.0996	0.2018	0.4623	0.235	0.0014	0.6404	-0.3645	-0.4243	0.1932	0.4371	-0.0595	0.1429	0.0122	-9.8991	0.876	-9.8991	0.8807	A+	A-	A+
ELA	7	579273	0	B-C	3	57581	1.6738	0.0964	0.29	0.4556	0.157	0.0009	0.5275	-0.3369	-0.2652	0.1839	0.3557	-0.041	0.4794	0.012	7.751	1.0354	7.921	1.0365	A-	A-	A-
ELA	7	566575	0	B-K	3	57529	1.2501	0.2248	0.2989	0.4744		0.0018	0.509	-0.4323	-0.0919	0.4512		-0.0662	0.2902	0.0089	9.9011	1.0559	9.9011	1.062	A-	A+	A+
ELA	7	625501	1	A-C	2	6462	0.7315	0.3681	0.5294	0.1002		0.0023	0.3288	-0.337	0.2435	0.1442		-0.0485	1.5314	0.0171	9.9011	1.1086	9.9011	1.1444	A+	A+	A+
ELA	7	625500	1	A-K	2	6451	1.5306	0.1456	0.3494	0.3279	0.1731	0.004	0.3939	-0.2087	-0.2078	0.1159	0.321	-0.0497	0.5316	0.0236	9.9012	1.2448	9.9013	1.2684	A+	A-	A-
ELA	7	623057	2	B-K	2	6422	1.0612	0.3157	0.3067	0.3769		0.0006	0.3549	-0.2547	-0.123	0.363		-0.0336	0.6265	0.0199	9.9012	1.1954	9.9013	1.2569	A+	A-	A-
ELA	7	625091	2	B-K	3	6424	1.8495	0.0724	0.2863	0.3604	0.2806	0.0003	0.5691	-0.3165	-0.3298	0.0525	0.459	-0.0182	0.0161	0.0356	-4.519	0.9539	-4.259	0.9551	A+	A-	A-
ELA	7	625564	3	B-K	2	6386	1.4179	0.1547	0.3903	0.3357	0.1183	0.0009	0.5052	-0.3054	-0.2494	0.2691	0.3269	-0.0174	0.8271	0.0247	-3.389	0.9646	-2.559	0.9732	A-	B-	A-
ELA	7	625566	3	B-K	2	6383	0.7658	0.5009	0.2306	0.2671		0.0014	0.2818	-0.1728	-0.1533	0.3422		-0.0119	1.1501	0.0189	9.9013	1.2652	9.9015	1.4582	B-	A-	A-
ELA	7	623742	4	B-C	3	6451	1.3395	0.2253	0.3252	0.3325	0.116	0.0011	0.392	-0.2171	-0.2372	0.2603	0.2497	-0.0243	0.9892	0.0336	9.9012	1.2369	9.9012	1.2469	A-	A-	A+
ELA	7	623745	4	B-K	3	6448	0.9761	0.3743	0.2738	0.3504		0.0015	0.4338	-0.3114	-0.1448	0.456		-0.0574	0.7269	0.0297	6.6211	1.0972	7.2611	1.1383	A-	A-	A-
ELA	7	622651	5	B-K	3	6362	1.2006	0.3383	0.1218	0.5386		0.0013	0.3084	-0.2114	-0.247	0.3651		-0.0347	0.3703	0.0316	9.9014	1.3575	9.9016	1.5534	A-	A-	B-
ELA	7	622652	5	B-K	3	6349	1.8565	0.0973	0.2071	0.4336	0.2587	0.0033	0.5574	-0.2661	-0.3778	0.0778	0.4484	-0.0521	0.2067	0.0458	-4.0591	0.9341	-3.3591	0.9435	A-	A-	A-
ELA	7	625544	6	A-C	2	6325	1.2667	0.2776	0.1772	0.5441		0.0011	0.5583	-0.4505	-0.2065	0.5655		-0.0318	0.2047	0.033	-4.4391	0.9318	-4.1991	0.8976	A+	A-	A-
ELA	7	625543	6	A-K	2	6326	1.9703	0.1105	0.1908	0.3155	0.3822	0.0009	0.4128	-0.122	-0.3041	-0.1307	0.4515	-0.0297	0.0309	0.0448	9.9013	1.2688	9.9014	1.3844	A-	A-	A-
ELA	7	623066	7	A-K	3	6400	1.1567	0.1699	0.5015	0.3263		0.0023	0.4306	-0.4183	0.0393	0.2949		-0.017	0.2687	0.0359	0.451	1.0067	0.861	1.0132	A+	A+	A-
ELA	7	623070	7	A-K	2	6411	1.7734	0.099	0.2407	0.4475	0.2122	0.0006	0.5352	-0.2911	-0.3351	0.1395	0.3932	0.0023	0.2779	0.0457	-2.329	0.9621	-2.939	0.9518	A+	A-	A+
ELA	7	623728	8	A-K	2	6354	1.2394	0.1629	0.4343	0.4022		0.0006	0.5109	-0.4261	-0.097	0.4214		-0.0465	0.0854	0.0371	-6.6291	0.9031	-6.1291	0.9041	A+	A-	A-
ELA	7	623735	8	A-V	2	6349	0.8943	0.3613	0.4129	0.1931	0.0313	0.0014	0.144	-0.0919	-0.0134	0.077	0.1232	-0.029	1.845	0.0293	9.9015	1.4726	9.9016	1.6193	A+	A-	A-
ELA	7	625517	9	A-K	2	6382	0.9864	0.3929	0.2244	0.3793		0.0034	0.4344	-0.3118	-0.1785	0.4708		-0.0292	0.7071	0.0295	5.8311	1.0833	6.6211	1.1313	A-	A-	A+
ELA	7	625569	9	A-K	2	6399	1.463	0.2539	0.2577	0.2587	0.2289	0.0008	0.446	-0.1552	-0.3719	0.0851	0.4599	-0.0102	0.7291	0.033	9.9012	1.1807	9.9012	1.1833	A-	A-	A-
ELA	8	576305	0	A-C	3	54936	1.2732	0.2711	0.3408	0.229	0.1574	0.0018	0.4888	-0.2279	-0.2568	0.1211	0.4795	-0.0588	0.5637	0.0096	9.9013	1.3347	9.9014	1.3684	A-	A-	A+
ELA	8	411881	0	A-K	3	54998	1.4792	0.1747	0.1709	0.6537		0.0007	0.568	-0.4626	-0.2319	0.5547		-0.0372	-0.2316	0.0097	-9.8991	0.9044	-9.8991	0.8809	A+	A+	A+
ELA	8	576308	0	A-K	3	54926	0.5078	0.6535	0.1824	0.1622		0.002	0.418	-0.3208	-0.0166	0.4388		-0.0607	1.1476	0.0081	9.9011	1.1042	9.9013	1.3047	A-	A-	A+
ELA	8	496330	0	B-C	3	54958	1.9996	0.0683	0.205	0.3841	0.3412	0.0014	0.6996	-0.3627	-0.4447	0.0076	0.5683	-0.0579	-0.4871	0.0154	-9.8992	0.809	-9.8992	0.8211	A+	A-	A+
ELA	8	576298	0	B-C	2	54980	1.0853	0.3478	0.2183	0.433		0.001	0.3666	-0.2466	-0.2091	0.4133		-0.0301	0.3045	0.0087	9.9014	1.4088	9.9017	1.7101	A+	A+	A+
ELA	8	576300	0	B-K	3	54979	1.996	0.1171	0.1633	0.3251	0.3935	0.001	0.5631	-0.2627	-0.3841	-0.0667	0.5297	-0.0334	-0.2111	0.012	9.9011	1.1233	9.9014	1.3598	A+	A-	A-
ELA	8	623090	1	A-K	2	6122	1.6906	0.0802	0.256	0.5563	0.1071	0.0003	0.5197	-0.2744	-0.3909	0.3355	0.2546	-0.0134	0.2776	0.0282	-3.649	0.9618	-4.339	0.9533	A+	B-	A-
ELA	8	623093	1	A-K	2	6110	0.6556	0.5926	0.1561	0.249		0.0023	0.2165	-0.1123	-0.1974	0.2963		-0.0274	1.014	0.0187	9.9015	1.4998	9.9021	2.0665	A+	A+	A-
ELA	8	624740	2	A-K	2	6086	1.9778	0.0851	0.1974	0.3717	0.3454	0.0005	0.5824	-0.3294	-0.3593	0.0305	0.4631	-0.0017	-0.2028	0.0334	-4.6691	0.9489	-3.399	0.9601	A+	A-	A-
ELA	8	624821	2	A-K	2	6086	1.1842	0.1619	0.4915	0.346		0.0005	0.3965	-0.4105	0.0597	0.2559		-0.0149	0.0502	0.0244	4.371	1.0451	7.3611	1.0796	A+	A-	A+
ELA	8	624747	3	A-K	2	6119	1.6006	0.1	0.3889	0.3209	0.1896	0.0007	0.4055	-0.2228	-0.1666	-0.0053	0.3864	-0.0366	0.2408	0.0307	9.9013	1.268	9.9013	1.3189	A-	A-	A-
ELA	8	624753	3	A-K	3	6114	1.059	0.3165	0.3065	0.3755		0.0015	0.4501	-0.3316	-0.1364	0.4516		-0.0406	0.4342	0.0205	9.9011	1.1083	9.9012	1.1628	A+	A-	A+
ELA	8	624765	4	A-K	3	6200	1.8402	0.0548	0.2337	0.5272	0.1836	0.0006	0.3824	-0.2083	-0.2636	0.1339	0.2387	-0.013	-0.0682	0.059	8.0412	1.1494	8.6212	1.1611	A+	A-	A-
ELA	8	626315	4	A-K	3	6194	0.9935	0.4175	0.1699	0.411		0.0016	0.36	-0.2453	-0.2246	0.4196		-0.0294	0.5453	0.0307	9.9013	1.2869	9.9015	1.4934	A+	A+	A+
ELA	8	625573	5	A-C	2	6108	1.2518	0.2316	0.2848	0.4833		0.0003	0.4568	-0.348	-0.1658	0.444		-0.0139	-0.0158	0.0346	3.5911	1.0564	4.3811	1.0958	A-	A+	A-
ELA	8	625572	5	A-K	3	6100	1.7469	0.0753	0.3028	0.4196	0.2007	0.0016	0.4965	-0.2916	-0.2891	0.1449	0.3486	-0.0337	0.0508	0.0516	1.791	1.03	3.0211	1.0514	A+	A-	A-
ELA	8	622483	6	B-C	3	6135	1.3195	0.2029	0.363	0.3443	0.0889	0.0008	0.3082	-0.1897	-0.1286	0.1644	0.2132	-0.0243	0.8913	0.0353	9.9013	1.3235	9.9013	1.3429	A-	A-	A-
ELA	8	622488	6	B-K	3	6135	0.5614	0.6536	0.1303	0.2153		0.0008	0.1452	-0.0121	-0.3183	0.2758		-0.0164	1.3332	0.0314	9.9015	1.5469	9.9024	2.3849	A-	A-	A+
ELA	8	621557	7	B-K	3	6099	1.0672	0.2102	0.5102	0.2773		0.0023	0.4338	-0.3692	0.0021	0.3362		-0.0233	0.3557	0.0342	1.221	1.0189	1.531	1.0242	A+	A-	A+
ELA	8	622521	7	B-K	3	6108	1.4103	0.228	0.2483	0.4077	0.1152	0.0008	0.36	-0.1546	-0.2964	0.2153	0.2763	-0.0378	0.8109	0.035	9.9013	1.3191	9.9014	1.3583	A-	A-	A-
ELA	8	617187	8	B-C	3	6058	1.5155	0.2903	0.1706	0.2688	0.268	0.0023	0.363	-0.0898	-0.3727	-0.0418	0.4539	-0.0318	0.5427	0.0343	9.9015	1.5352	9.9018	1.7969	C+	A-	A-
ELA	8	617196	8	B-K	3	6069	1.3015	0.1607	0.3766	0.4621		0.0005	0.4446	-0.373	-0.1024	0.3757		-0.032	-0.2152	0.0387	1.851	1.0296	3.6311	1.0716	A+	A+	A+
ELA	8	622500	9	B-K	3	6053	1.3374	0.1461	0.3699	0.4831		0.001	0.5058	-0.3661	-0.2135	0.4678		-0.0439	-0.3034	0.0401	-2.749	0.9561	-2.019	0.9598	A-	A-	A+
ELA	8	624167	9	B-K	3	6052	1.8586	0.1669	0.1924	0.2547	0.3849	0.0012	0.536	-0.2405	-0.3628	-0.0823	0.5545	-0.037	0.045	0.0403	8.3011	1.1499	9.0212	1.2135	A+	A-	A-

ContArea	FormGrad	PubID	FormNuml	Standard1	Depth	N	Mean	Proportior	Proportior	Proportior	Proportior	Proportior	PtBiserial	Correlatio	Correlatio	Correlatio	Correlatio	CorrelationINV
ELA	3	574379	0	A-K	3	18439	1.2636	0.2181	0.3888	0.3036	0.089	0.0005	0.4214	-0.2367	-0.1939	0.2274	0.3099	-0.025
ELA	3	579575	0	A-K	3	18443	1.4128	0.1517	0.2836	0.5645		0.0003	0.6158	-0.4118	-0.3527	0.6195		-0.0279
ELA	3	580248	0	B-C	3	18442	1.041	0.3398	0.2791	0.3808		0.0003	0.6224	-0.4947	-0.1304	0.6039		-0.0254
ELA	3	271992	0	B-K	3	18439	1.4957	0.2025	0.2819	0.3324	0.1827	0.0005	0.4833	-0.2033	-0.3508	0.1559	0.4309	-0.0187
ELA	3	622436	1	A-K	3	7484	1.7115	0.1447	0.2228	0.4084	0.2237	0.0004	0.5654	-0.267	-0.4367	0.1966	0.4299	-0.0078
ELA	3	622439	1	A-K	3	7485	1.1514	0.3023	0.2439	0.4536		0.0003	0.5528	-0.3449	-0.3635	0.6324		-0.0202
ELA	3	622422	2	A-K	2	5475	1.1653	0.3146	0.2053	0.4799		0.0002	0.4191	-0.2629	-0.3036	0.4904		-0.0214
ELA	3	622427	2	A-K	3	5475	1.4703	0.107	0.3771	0.4542	0.0615	0.0002	0.365	-0.252	-0.1973	0.2923	0.1167	-0.0072
ELA	3	617199	3	A-K	3	5484	1.1975	0.2596	0.2831	0.4571		0.0002	0.58	-0.4534	-0.1766	0.5593		-0.0187
ELA	3	617202	3	A-K	3	5483	1.6217	0.1269	0.3067	0.3838	0.1823	0.0004	0.4518	-0.1811	-0.3528	0.1846	0.3465	-0.031
ELA	4	576333	0	A-C	3	19920	1.4758	0.164	0.3357	0.3601	0.1397	0.0005	0.5442	-0.3329	-0.2819	0.2771	0.3567	-0.0135
ELA	4	576318	0	A-K	3	19923	0.8433	0.4292	0.2979	0.2726		0.0004	0.4437	-0.2803	-0.1906	0.5081		-0.0178
ELA	4	579415	0	A-K	3	19921	2.137	0.0594	0.1255	0.4333	0.3813	0.0005	0.5389	-0.2725	-0.3859	-0.0185	0.4163	-0.0354
ELA	4	579149	0	B-C	3	19906	1.3536	0.2291	0.1874	0.5823		0.0012	0.6181	-0.4432	-0.3534	0.6604		-0.0438
ELA	4	495050	0	B-K	3	19921	1.042	0.3762	0.2051	0.4182		0.0005	0.3959	-0.226	-0.3283	0.4922		-0.0342
ELA	4	495051	0	B-K	3	19922	1.6931	0.1022	0.2806	0.4387	0.1781	0.0004	0.5968	-0.3675	-0.3445	0.2413	0.384	-0.0293
ELA	4	623016	1	A-K	3	8232	0.8299	0.4607	0.2485	0.2906		0.0002	0.4459	-0.2865	-0.2153	0.5199		-0.0138
ELA	4	623020	1	A-K	3	8233	1.159	0.2892	0.3691	0.2351	0.1065	0.0001	0.3308	-0.0807	-0.2839	0.1556	0.3494	-0.0141
ELA	4	623030	2	A-K	3	5856	1.3607	0.185	0.389	0.3056	0.12	0.0003	0.2067	-0.1139	-0.0668	0.02	0.2094	-0.0271
ELA	4	623032	2	A-K	3	5856	0.4278	0.6745	0.2228	0.1024		0.0003	0.0709	-0.0056	-0.1002	0.1474		-0.019
ELA	4	623670	3	A-K	3	5836	1.4654	0.1982	0.1381	0.6634		0.0003	0.5015	-0.376	-0.2987	0.5353		-0.0017
ELA	4	623676	3	A-K	3	5837	1.516	0.1725	0.3135	0.3393	0.1745	0.0002	0.455	-0.2248	-0.2777	0.1496	0.3772	-0.0204
ELA	5	579327	0	A-C	3	21226	1.0388	0.3861	0.1887	0.4248		0.0004	0.4121	-0.2775	-0.2544	0.4762		-0.0378
ELA	5	579329	0	A-K	3	21216	1.2361	0.3017	0.2644	0.3284	0.1046	0.0009	0.2503	-0.0805	-0.201	0.0876	0.2799	-0.0422
ELA	5	579336	0	A-K	3	21234	2.0827	0.0914	0.1314	0.3802	0.3969	0	0.6261	-0.3749	-0.3926	0	0.4923	-0.0212
ELA	5	409607	0	B-K	3	21218	1.1357	0.2158	0.432	0.3514		0.0008	0.5557	-0.3988	-0.1661	0.5181		-0.0353
ELA	5	574356	0	B-K	3	21215	1.2128	0.2187	0.4367	0.2559	0.0877	0.0009	0.5094	-0.2784	-0.2285	0.285	0.3716	-0.035
ELA	5	577504	0	B-K	3	21212	0.9771	0.3356	0.3506	0.3127		0.0011	0.4228	-0.2993	-0.1176	0.4281		-0.0316
ELA	5	621510	1	B-C	3	8681	0.6823	0.4925	0.3322	0.1749		0.0003	0.2728	-0.1644	-0.0861	0.3238		-0.0128
ELA	5	621511	1	B-K	3	8684	1.3753	0.1392	0.4087	0.3897	0.0624		0.3959	-0.2389	-0.2155	0.2947	0.1855	
ELA	5	623759	2	B-C	3	6316	1.6962	0.1215	0.2929	0.3527	0.2323	0.0006	0.4732	-0.1654	-0.3611	0.0798	0.4282	-0.023
ELA	5	623757	2	B-K	3	6317	0.7462	0.4785	0.2962	0.2248		0.0005	0.1507	-0.0501	-0.1531	0.2283		-0.0184
ELA	5	623678	3	B-C	3	6231	0.9215	0.4357	0.207	0.3572			0.3114	-0.1858	-0.2271	0.3843		
ELA	5	623686	3	B-K	3	6230	1.4197	0.1745	0.3804	0.2959	0.1491	0.0002	0.4792	-0.2708	-0.2309	0.1773	0.3769	-0.0236
ELA	6	495101	0	A-K	3	24393	1.6521	0.2109	0.2051	0.3047	0.279	0.0003	0.5672	-0.2899	-0.3832	0.0906	0.5163	-0.0162
ELA	6	579321	0	A-K	3	24395	0.9552	0.3514	0.3417	0.3066		0.0002	0.5861	-0.4757	-0.0424	0.5368		-0.0211
ELA	6	581448	0	A-K	3	24394	1.7661	0.1212	0.2591	0.3517	0.2677	0.0003	0.6678	-0.3138	-0.4653	0.1307	0.5516	-0.0193
ELA	6	579311	0	B-C	3	24391	1.6361	0.1398	0.3061	0.3316	0.222	0.0004	0.6296	-0.365	-0.3333	0.1543	0.5006	-0.0253
ELA	6	579312	0	B-C	3	24394	1.0435	0.2749	0.4064	0.3184		0.0003	0.5662	-0.4595	-0.0501	0.4939		-0.0195
ELA	6	497118	0	B-K	3	24387	1.236	0.2699	0.2237	0.5058		0.0006	0.4534	-0.2962	-0.2908	0.5063		-0.0195
ELA	6	623707	1	A-K	2	9948	1.0371	0.3904	0.1818	0.4275		0.0003	0.4716	-0.3286	-0.273	0.5372		-0.0099
ELA	6	623708	1	A-K	2	9946	1.6811	0.1212	0.287	0.3807	0.2106	0.0005	0.6299	-0.3574	-0.3752	0.203	0.461	-0.0078
ELA	6	623720	2	A-K	2	7227	1.1781	0.163	0.5226	0.2873	0.0268	0.0003	0.3149	-0.2096	-0.1124	0.2591	0.1041	-0.0303
ELA	6	623722	2	A-K	2	7227	0.4904	0.6455	0.2183	0.136		0.0003	0.1804	-0.0707	-0.1504	0.2809		-0.0198
ELA	6	621521	3	A-K	3	7219	1.0202	0.2921	0.4249	0.2533	0.0295	0.0003	0.1959	-0.1179	-0.0671	0.1566	0.1115	-0.0108
ELA	6	621598	3	A-K	3	7221	0.5222	0.6084	0.261	0.1306			0.2132	-0.1576	0.0034	0.2238		
ELA	7	497093	0	A-C	3	27489	1.6951	0.0849	0.3396	0.371	0.2045	0.0001	0.5544	-0.354	-0.2938	0.1687	0.3879	-0.0124
ELA	7	497098	0	A-K	3	27487	1.0374	0.2595	0.4434	0.2969		0.0002	0.2801	-0.2052	-0.0573	0.2598		-0.0192
ELA	7	578081	0	A-K	3	27467	1.2398	0.2138	0.3318	0.4534		0.0009	0.6608	-0.4907	-0.2382	0.6319		-0.0398
ELA	7	566578	0	B-C	3	27474	1.755	0.1179	0.2324	0.4257	0.2233	0.0007	0.6172	-0.3505	-0.3983	0.2073	0.4316	-0.037

ELA	7	579273	0	B-C	3	27489	1.6652	0.0873	0.3072	0.4582	0.1472	0.0001	0.536	-0.307	-0.3223	0.2245	0.3489	-0.0101
ELA	7	566575	0	B-K	3	27480	1.1597	0.262	0.316	0.4216		0.0005	0.5293	-0.4439	-0.0826	0.474		-0.0231
ELA	7	625501	1	A-C	2	10747	0.6537	0.4211	0.5037	0.0749		0.0003	0.3124	-0.3356	0.2807	0.0977		-0.0212
ELA	7	625500	1	A-K	2	10748	1.474	0.146	0.3721	0.3433	0.1383	0.0002	0.3733	-0.1925	-0.1887	0.1031	0.3197	-0.0121
ELA	7	623057	2	B-K	2	8396	1.0018	0.3404	0.3171	0.3422		0.0002	0.3459	-0.2354	-0.1342	0.3672		-0.0158
ELA	7	625091	2	B-K	3	8396	1.8328	0.0572	0.3153	0.3648	0.2624	0.0002	0.5068	-0.2562	-0.3215	0.0631	0.4062	-0.0149
ELA	7	625564	3	B-K	2	8342	1.4091	0.1593	0.3916	0.3293	0.1195	0.0004	0.5046	-0.2994	-0.2439	0.2488	0.3462	-0.0313
ELA	7	625566	3	B-K	2	8342	0.7534	0.5061	0.234	0.2596		0.0004	0.2752	-0.1453	-0.2009	0.3608		-0.0234
ELA	8	576305	0	A-C	3	26800	1.2014	0.2958	0.3547	0.2009	0.1481	0.0004	0.4732	-0.2295	-0.2254	0.1154	0.4693	-0.0186
ELA	8	411881	0	A-K	3	26808	1.3542	0.223	0.1998	0.5772		0.0001	0.5947	-0.472	-0.2384	0.5911		-0.0189
ELA	8	576308	0	A-K	3	26805	0.5069	0.6457	0.2014	0.1527		0.0002	0.4434	-0.3341	-0.0255	0.4737		-0.0236
ELA	8	496330	0	B-C	3	26801	1.8868	0.082	0.2478	0.3712	0.2986	0.0004	0.7037	-0.3582	-0.4578	0.0785	0.565	-0.0274
ELA	8	576298	0	B-C	2	26810	1.0355	0.3701	0.2243	0.4056		0	0.3787	-0.2515	-0.2166	0.4314		-0.0092
ELA	8	576300	0	B-K	3	26810	1.871	0.1424	0.1927	0.3162	0.3486	0	0.5517	-0.2482	-0.3886	-0.0219	0.5253	-0.0111
ELA	8	623090	1	A-K	2	10399	1.5774	0.111	0.3022	0.4849	0.1017	0.0002	0.5282	-0.2748	-0.3751	0.3436	0.2882	-0.0192
ELA	8	623093	1	A-K	2	10400	0.6688	0.576	0.179	0.2449		0.0001	0.2173	-0.0833	-0.2628	0.3303		-0.0141
ELA	8	624740	2	A-K	2	8201	1.9228	0.0808	0.221	0.3925	0.3055	0.0001	0.5499	-0.2829	-0.3588	0.0495	0.4385	-0.0135
ELA	8	624821	2	A-K	2	8202	1.1597	0.1722	0.496	0.3319			0.4171	-0.4062	0.0365	0.287		
ELA	8	624747	3	A-K	2	8207	1.6038	0.0903	0.3925	0.3402	0.1769	0.0001	0.3371	-0.198	-0.1154	-0.0286	0.3318	0.0029
ELA	8	624753	3	A-K	3	8207	1.0227	0.3236	0.33	0.3462		0.0001	0.4244	-0.2978	-0.146	0.437		0.0029

ContArea	FormGrade	PubID	FormNumt	Standard1	Depth	N	Mean	Proportion	Proportion	Proportion	Proportion	Proportion	Proportion	PtBiserial	Correlation	Correlation	Correlation	Correlation	Correlation	Correlation	FinalB	FinalBErr	Infit	InfitMnSq	Outfit	OutfitMnSq	BiasCodeM	BiasCodeW	BiasCodeWHITEHISPANIC
ELA	3	574411	0	A-K	3	62336	1.7346	0.1096	0.2242	0.382	0.2002		0.0841	0.7082	-0.3874	-0.2639	0.2758	0.4965		-0.3661	0.4212	0.0104	-9.8992	0.7926	-9.8992	0.8032	A+	A-	A+
ELA	3	278411	0	B-C	3	65625	1.4915	0.0954	0.3954	0.3777	0.0958		0.0357	0.5871	-0.3511	-0.2322	0.327	0.351		-0.2435	0.9355	0.0104	-9.8991	0.946	-9.8991	0.9476	A+	A-	A-
MATH	3	415943	0	A-F	2	64981	1.2769	0.3175	0.2855	0.1796	0.1116	0.0596	0.0462	0.767	-0.5789	-0.0827	0.2631	0.4036	0.3763	-0.0494	1.2853	0.0087	-9.8991	0.9121	-9.8991	0.8659	A+	A-	A-
MATH	3	499220	0	B-O	2	67324	1.6621	0.2394	0.251	0.2106	0.1788	0.1085	0.0118	0.7854	-0.5511	-0.2466	0.1526	0.3922	0.4574	-0.1173	0.8248	0.0094	-9.8991	0.8529	-9.8992	0.8388	A-	A-	A+
MATH	3	565864	0	D-M	3	67204	1.7058	0.0652	0.3699	0.3563	0.1798	0.0151	0.0136	0.6828	-0.316	-0.4408	0.219	0.468	0.1822	-0.1385	1.2003	0.0118	-9.8991	0.8747	-9.8991	0.8712	A+	A-	A-
MATH	4	392317	0	A-F	2	65298	1.211	0.3606	0.27	0.1772	0.1214	0.049	0.0219	0.7855	-0.6172	-0.012	0.2584	0.4427	0.3749	-0.1536	1.0074	0.0083	-9.8992	0.8201	-9.8992	0.7673	A+	A-	A-
MATH	4	499221	0	B-O	2	62236	1.1524	0.2759	0.3634	0.1856	0.0895	0.0178	0.0677	0.7526	-0.5271	-0.0494	0.3513	0.4257	0.2536	-0.1285	1.1382	0.0084	-9.8992	0.8136	-9.8992	0.7861	A+	A-	A-
MATH	4	392313	0	C-G	2	65023	1.6914	0.1698	0.3026	0.2432	0.1754	0.0831	0.026	0.6926	-0.3862	-0.2757	0.0853	0.378	0.4261	-0.1656	0.3276	0.0099	7.291	1.0335	4.401	1.0204	A+	A-	A-
MATH	5	313526	0	A-F	3	64072	1.2864	0.2104	0.4924	0.0868	0.1799	0.0153	0.0152	0.7377	-0.4855	-0.1692	0.2184	0.5383	0.2398	-0.1242	1.2073	0.0088	-9.8991	0.8775	-9.8991	0.8676	A+	A-	A-
MATH	5	574284	0	B-O	2	61388	1.0723	0.361	0.3168	0.1464	0.0752	0.0441	0.0565	0.7121	-0.5171	0.0058	0.3101	0.3457	0.3597	-0.1255	1.3346	0.0081	-3.989	0.9793	-9.8991	0.9108	A+	A-	A-
MATH	5	410775	0	C-G	2	63653	1.1667	0.3438	0.3303	0.1547	0.0965	0.053	0.0217	0.791	-0.5776	-0.057	0.2841	0.4168	0.4201	-0.1295	1.0509	0.0084	-9.8992	0.8017	-9.8992	0.7711	A-	A-	A-
MATH	6	480017	0	A-N	2	59327	1.8721	0.2204	0.2204	0.2093	0.1344	0.2005	0.0149	0.7755	-0.5398	-0.2396	0.0539	0.2703	0.5616	-0.1305	0.2304	0.0094	-9.8992	0.7774	-9.8992	0.8015	A+	A-	A-
MATH	6	566984	0	B-E	3	55867	1.1066	0.1393	0.5897	0.1624	0.0331	0.0032	0.0724	0.6657	-0.4254	-0.0709	0.4144	0.3173	0.1283	-0.134	1.6449	0.0093	-9.8992	0.8211	-9.8992	0.8327	A+	A-	A-
MATH	6	313164	0	C-G	2	58849	1.0195	0.4683	0.227	0.1321	0.0938	0.0559	0.0229	0.7751	-0.6134	0.0454	0.2706	0.4054	0.4278	-0.1407	1.1362	0.0082	-9.8992	0.7938	-9.8993	0.7265	A+	A-	A-
MATH	7	493894	0	A-N	3	55692	0.966	0.3808	0.333	0.1969	0.0546	0.0138	0.0209	0.773	-0.5942	0.0276	0.4343	0.4022	0.2534	-0.1265	1.4311	0.0082	-9.8993	0.7392	-9.8993	0.7177	A+	A-	A-
MATH	7	313527	0	B-E	2	55521	1.0994	0.431	0.2307	0.1433	0.1287	0.0424	0.0239	0.7913	-0.6294	-0.0018	0.2842	0.4829	0.3513	-0.1288	0.9009	0.0083	-9.8992	0.7928	-9.8993	0.7326	A+	A-	A-
MATH	7	399600	0	D-S	2	51958	0.7866	0.4106	0.3488	0.1019	0.0429	0.0093	0.0865	0.7236	-0.5101	0.16	0.3943	0.3814	0.2077	-0.149	1.7537	0.0079	-9.8991	0.8504	-9.8992	0.8091	A+	A-	A-
MATH	8	409544	0	B-E	2	53318	1.0443	0.2349	0.5235	0.165	0.0377	0.0125	0.0264	0.6923	-0.4666	-0.0245	0.3811	0.3494	0.2479	-0.1598	1.4388	0.0084	-9.8991	0.8705	-9.8991	0.8569	A-	B-	A-
MATH	8	313537	0	B-F	2	52839	1.5639	0.263	0.2831	0.1512	0.1469	0.1207	0.0351	0.8051	-0.5036	-0.2237	0.1121	0.363	0.5652	-0.1646	0.0994	0.009	-9.8992	0.7751	-9.8992	0.7522	A+	A-	A-
MATH	8	409545	0	C-G	3	50516	0.9229	0.4097	0.3138	0.09	0.0782	0.0308	0.0776	0.7919	-0.559	0.1125	0.323	0.4488	0.3501	-0.1893	1.086	0.0081	-9.8993	0.7478	-9.8993	0.6789	A+	A-	A-
SCIENCE	4	400513	0	A	2	63486	1.1996	0.1988	0.3733	0.3911			0.0368	0.5828	-0.4184	-0.1045	0.5286			-0.2145	0.5598	0.0091	-9.8991	0.887	-9.8991	0.8935	A+	A-	A-
SCIENCE	4	565586	0	A	3	64577	0.4164	0.6622	0.227	0.0905			0.0203	0.5039	-0.437	0.3116	0.3463			-0.1645	2.1346	0.0079	-9.8992	0.8471	-9.8992	0.7592	A+	A-	A-
SCIENCE	4	492604	0	B	3	64225	0.5541	0.5902	0.2284	0.1558			0.0256	0.4583	-0.3936	0.2469	0.3386			-0.208	1.854	0.0078	9.431	1.0421	8.3611	1.0549	A-	A-	A+
SCIENCE	4	566533	0	B	3	64655	1.3747	0.1219	0.3695	0.4894			0.0191	0.4731	-0.4193	-0.0575	0.3817			-0.1888	-0.0454	0.0116	9.9011	1.0645	9.9011	1.0967	B+	A-	A-
SCIENCE	4	566539	0	C	3	64550	1.0058	0.1558	0.662	0.1615			0.0207	0.5009	-0.3146	-0.0453	0.4392			-0.1835	1.0968	0.0089	-9.8992	0.7591	-9.8992	0.7616	A+	A-	A-
SCIENCE	8	413201	0	A	3	51027	0.7439	0.4621	0.2708	0.2185			0.0485	0.6367	-0.5196	0.2234	0.5074			-0.2322	1.1398	0.0082	-9.8991	0.8826	-9.8992	0.8114	B+	A-	A-
SCIENCE	8	492606	0	A	2	51331	0.7709	0.3619	0.4527	0.1426			0.0428	0.6608	-0.556	0.3083	0.4422			-0.202	1.2401	0.008	-9.8991	0.8521	-9.8992	0.8279	A-	A-	A-
SCIENCE	8	566536	0	A	3	52536	1.273	0.1856	0.341	0.453			0.0204	0.4919	-0.3917	-0.0866	0.4364			-0.1693	-0.1734	0.01	9.9011	1.0654	9.9011	1.1466	B+	A-	A-
SCIENCE	8	566537	0	B	2	52572	1.2303	0.1713	0.4119	0.3971			0.0197	0.596	-0.4406	-0.1425	0.5312			-0.1711	0.2929	0.0093	-9.539	0.9605	-9.8991	0.9418	A+	A-	A-
SCIENCE	8	565582	0	D	3	52367	0.5762	0.5145	0.3612	0.1007			0.0235	0.5136	-0.4357	0.2931	0.3458			-0.1791	1.5167	0.008	-9.619	0.9566	-9.8991	0.9167	A+	A-	A-

ContArea	FormGrad	PubID	FormNuml	Standard1	Depth	N	Mean	Proportior	Proportior	Proportior	Proportior	Proportior	Proportior	Pt Biserial	Correlatio	Correlatio	Correlatio	Correlatio	Correlatio	CorrelationINV
ELA	3	574411	0	A-K	3	17447	1.6399	0.119	0.2789	0.3714	0.1764		0.0543	0.7074	-0.4111	-0.2934	0.3089	0.4734		-0.287
ELA	3	278411	0	B-C	3	17852	1.2784	0.1214	0.5098	0.2823	0.0543		0.0323	0.5349	-0.3593	-0.1082	0.3365	0.2745		-0.2387
MATH	3	415943	0	A-F	2	18278	1.4138	0.2626	0.3272	0.204	0.1154	0.0789	0.0119	0.771	-0.566	-0.1541	0.2522	0.3769	0.4192	-0.1261
MATH	3	499220	0	B-O	2	18403	1.5484	0.2895	0.2294	0.2063	0.18	0.0896	0.0052	0.786	-0.6254	-0.1533	0.1951	0.4122	0.4096	-0.086
MATH	3	565864	0	D-M	3	18083	1.7001	0.0986	0.3289	0.3387	0.1895	0.0217	0.0225	0.6856	-0.3816	-0.3606	0.2228	0.4537	0.1964	-0.1935
MATH	4	392317	0	A-F	2	19471	1.0584	0.4025	0.2824	0.1466	0.1017	0.0364	0.0304	0.7656	-0.6202	0.0877	0.3015	0.4191	0.3308	-0.1783
MATH	4	499221	0	B-O	2	19643	1.0941	0.3307	0.3571	0.1797	0.0892	0.0216	0.0218	0.7581	-0.5729	-0.0062	0.3589	0.4227	0.272	-0.1729
MATH	4	392313	0	C-G	2	19696	1.6981	0.1713	0.3031	0.2409	0.1815	0.084	0.0192	0.6854	-0.3999	-0.2735	0.1047	0.3686	0.4074	-0.1715
MATH	5	313526	0	A-F	3	20832	1.3091	0.2305	0.4479	0.0926	0.1822	0.0253	0.0214	0.7527	-0.5123	-0.1469	0.2278	0.5114	0.2953	-0.1454
MATH	5	574284	0	B-O	2	20855	0.8469	0.4537	0.3268	0.1211	0.0518	0.0263	0.0203	0.6832	-0.5435	0.1183	0.3429	0.3213	0.3054	-0.1197
MATH	5	410775	0	C-G	2	21087	1.058	0.4056	0.3105	0.1368	0.0867	0.051	0.0094	0.7873	-0.6247	0.0181	0.2975	0.4078	0.4091	-0.0891
MATH	6	480017	0	A-N	2	23756	1.8166	0.2376	0.233	0.1822	0.1216	0.2037	0.0219	0.8055	-0.5643	-0.2256	0.0844	0.2688	0.5928	-0.1615
MATH	6	566984	0	B-E	3	23705	1.1317	0.1511	0.6042	0.1693	0.0438	0.0076	0.024	0.6736	-0.4613	-0.0837	0.392	0.3331	0.1715	-0.1557
MATH	6	313164	0	C-G	2	23770	0.9499	0.4867	0.2383	0.1182	0.0868	0.0486	0.0213	0.777	-0.6337	0.0927	0.2963	0.4141	0.3969	-0.1409
MATH	7	493894	0	A-N	3	26528	0.922	0.3931	0.3402	0.1736	0.0489	0.0153	0.029	0.7757	-0.6076	0.0947	0.4352	0.375	0.2635	-0.1562
MATH	7	313527	0	B-E	2	26664	1.1062	0.4438	0.2123	0.1379	0.1365	0.0455	0.024	0.8054	-0.6518	0.0147	0.2799	0.4911	0.3627	-0.1497
MATH	7	399600	0	D-S	2	26315	0.7716	0.4349	0.3729	0.106	0.0393	0.0101	0.0368	0.7159	-0.5469	0.1832	0.3971	0.357	0.2152	-0.1627
MATH	8	409544	0	B-E	2	25494	1.0212	0.2337	0.5182	0.1623	0.0328	0.0087	0.0444	0.6738	-0.453	0.024	0.3959	0.3246	0.2062	-0.21
MATH	8	313537	0	B-F	2	25669	1.5399	0.2727	0.2771	0.1489	0.1471	0.1164	0.0378	0.8063	-0.5156	-0.2055	0.1374	0.3741	0.5482	-0.1866
MATH	8	409545	0	C-G	3	25768	0.8231	0.4787	0.3043	0.086	0.0686	0.0282	0.0341	0.7821	-0.6072	0.1622	0.3448	0.4295	0.3367	-0.178
SCIENCE	4	400513	0	A	2	19590	1.2178	0.1877	0.3753	0.3967			0.0403	0.5952	-0.4176	-0.0882	0.5388			-0.2939
SCIENCE	4	565586	0	A	3	19851	0.4419	0.6345	0.2461	0.0919			0.0275	0.4987	-0.409	0.3184	0.3341			-0.2241
SCIENCE	4	492604	0	B	3	19605	0.6043	0.5529	0.2347	0.1728			0.0396	0.4438	-0.3391	0.2209	0.3431			-0.2807
SCIENCE	4	566533	0	B	3	19698	1.3967	0.121	0.3401	0.5038			0.035	0.4906	-0.4138	-0.0493	0.4149			-0.2671
SCIENCE	4	566539	0	C	3	19816	1.0376	0.1316	0.6709	0.1682			0.0292	0.4877	-0.2941	-0.0381	0.4244			-0.2456
SCIENCE	8	413201	0	A	3	24831	0.7228	0.4535	0.271	0.1979			0.0776	0.6303	-0.4608	0.2671	0.491			-0.3174
SCIENCE	8	492606	0	A	2	25203	0.8134	0.3481	0.4147	0.1734			0.0637	0.672	-0.5343	0.2849	0.4742			-0.2675
SCIENCE	8	566536	0	A	3	25849	1.2147	0.2125	0.3292	0.4186			0.0397	0.5181	-0.4053	-0.0249	0.459			-0.2506
SCIENCE	8	566537	0	B	2	25748	1.2646	0.1541	0.3953	0.4071			0.0435	0.6039	-0.4134	-0.142	0.5534			-0.2608
SCIENCE	8	565582	0	D	3	25778	0.6031	0.4927	0.3523	0.1126			0.0424	0.5398	-0.4237	0.3064	0.3701			-0.2558

ContArea	FormGrad	PubID	FormNum	Standard	Depth	N		Mean	Proportior	Proportior	Proportior	Proportior	Proportior	PtBiserial	Correlatior	Correlatior	Correlatior	Correlatior	Correlatior	FinalB	FinalBErr	Infit	InfitMnSq	Outfit	OutfitMnS	BiasCodeV	BiasCodeV	BiasCodeV	WHITEHISPANIC
ELA	4	579083	0	E		3	61765	1.9342	0.2397	0.5174	0.1511	0.0139	0.0779	0.6134	-0.4235	0.2455	0.401	0.1604	-0.3893	0.8397	0.0082	-9.8992	0.7521	-9.8993	0.7383	A+	A-	A-	
ELA	5	582589	0	E		3	62186	1.9717	0.1914	0.612	0.1342	0.0151	0.0472	0.591	-0.4373	0.1954	0.3678	0.1773	-0.3308	1.1414	0.0075	-9.8994	0.5826	-9.8994	0.5804	B+	A-	A-	
ELA	6	582631	0	E		3	58077	1.9947	0.2537	0.4783	0.1952	0.0267	0.0461	0.5952	-0.4441	0.1323	0.3976	0.2081	-0.305	0.9342	0.009	-9.8993	0.7051	-9.8993	0.7061	C+	A-	A-	
ELA	7	582723	0	E		3	55195	1.8928	0.3199	0.4423	0.174	0.0216	0.0423	0.5961	-0.4563	0.188	0.3886	0.2023	-0.2848	0.8894	0.0077	-9.8993	0.6655	-9.8993	0.67	C+	A-	A-	
ELA	8	579826	0	E		3	52387	2.0543	0.2238	0.4795	0.2217	0.0269	0.0481	0.6216	-0.4352	0.0601	0.4327	0.2319	-0.3078	0.7964	0.0091	-9.8992	0.7782	-9.8992	0.7845	B+	A-	A-	

ContArea	FormGrad	PubID	FormNum	Standard	Depth	N	Mean	Proportior	Proportior	Proportior	Proportior	PtBiserial	Correlatio	Correlatio	Correlatio	Correlatio	CorrelationINV
ELA	4	579083	0	E		3	18150	1.852	0.2814	0.5004	0.1111	0.0178	0.0893	0.6223	-0.4319	0.3571	0.3482	0.1863	-0.415
ELA	5	582589	0	E		3	20134	1.8985	0.2238	0.6064	0.1084	0.0096	0.0518	0.589	-0.4492	0.2939	0.3418	0.1428	-0.3453
ELA	6	582631	0	E		3	23064	1.972	0.2663	0.4713	0.1753	0.0323	0.0548	0.6107	-0.4538	0.1792	0.3826	0.2326	-0.3316
ELA	7	582723	0	E		3	25869	1.8039	0.3501	0.4406	0.1351	0.0152	0.0591	0.5822	-0.4347	0.2878	0.359	0.1642	-0.3323
ELA	8	579826	0	E		3	25047	1.9907	0.27	0.4369	0.1933	0.034	0.0658	0.6287	-0.4423	0.1513	0.4099	0.2499	-0.3463

Multiple-Choice Computer-Based Item Statistics

Column Heading	Definition
ContArea	Content
FormGrade	Grade
PubID	Form ID
FormNumber	Form
Standard1	Standard
Depth	Depth of Knowledge
N	N
PValue	*P*-Value
ProportionA	Proportion A
ProportionB	Proportion B
ProportionC	Proportion C
ProportionD	Proportion D
ProportionOMITS	Proportion Omits
PtBiserial	Point Biserial
CorrelationA	Correlation A
CorrelationB	Correlation B
CorrelationC	Correlation C
CorrelationD	Correlation D
CorrelationOMITS	Correlation Omits

ContArea	FormGrad	PubID	FormNuml	Standard1	Depth	N	PValue	Proportior	Proportior	Proportior	Proportior	Proportior	PtBiserial	Correlatio	Correlatio	Correlatio	Correlatio	CorrelationOMITS
ELA	3	574375	0	A-C	2	18423	0.6084	0.1593	0.6076	0.1425	0.0893	0.0014	0.5572	-0.2407	0.5569	-0.2943	-0.2818	-0.017
ELA	3	578131	0	A-C	2	18402	0.5055	0.3166	0.1181	0.5043	0.0585	0.0025	0.5043	-0.2487	-0.2613	0.504	-0.2165	-0.0235
ELA	3	574376	0	A-K	3	18390	0.4192	0.1976	0.2063	0.4179	0.1751	0.0031	0.4259	-0.2172	-0.1756	0.426	-0.1345	-0.0255
ELA	3	574380	0	A-K	2	18416	0.3682	0.3675	0.2275	0.3121	0.0912	0.0017	0.324	0.3239	-0.131	-0.045	-0.2779	-0.0094
ELA	3	578133	0	A-K	2	18403	0.686	0.1048	0.6843	0.1345	0.0739	0.0024	0.5073	-0.3109	0.5078	-0.2504	-0.2047	-0.0371
ELA	3	578135	0	A-K	3	18398	0.3129	0.2441	0.3065	0.3121	0.1346	0.0027	0.3012	-0.0562	-0.0597	0.3021	-0.2514	-0.0475
ELA	3	578136	0	A-K	2	18421	0.488	0.3949	0.0622	0.0541	0.4873	0.0015	0.3669	-0.1394	-0.2531	-0.2342	0.3675	-0.0376
ELA	3	574381	0	A-V	2	18414	0.5861	0.1291	0.1331	0.585	0.151	0.0018	0.4568	-0.2661	-0.2961	0.4568	-0.096	-0.0199
ELA	3	574383	0	A-V	2	18418	0.6857	0.0716	0.1703	0.0719	0.6846	0.0016	0.4964	-0.2857	-0.2204	-0.2831	0.4965	-0.0261
ELA	3	578139	0	A-V	2	18414	0.8009	0.0689	0.7994	0.0769	0.0529	0.0018	0.4906	-0.3045	0.4904	-0.2773	-0.1976	-0.0261
ELA	3	271995	0	B-C	3	18417	0.408	0.2005	0.1771	0.4074	0.2134	0.0017	0.4574	-0.2638	-0.1469	0.4576	-0.1509	-0.0333
ELA	3	271996	0	B-C	2	18418	0.6289	0.6279	0.096	0.194	0.0805	0.0016	0.5742	0.5747	-0.2765	-0.3056	-0.2722	-0.0357
ELA	3	278410	0	B-C	3	18412	0.5172	0.2711	0.5162	0.0974	0.1134	0.002	0.5302	-0.2013	0.5303	-0.3247	-0.246	-0.0285
ELA	3	579139	0	B-C	3	18424	0.4763	0.4757	0.2205	0.175	0.1275	0.0013	0.431	0.4306	-0.222	-0.1144	-0.2377	-0.0069
ELA	3	579140	0	B-C	3	18419	0.6232	0.6222	0.1552	0.1243	0.0967	0.0016	0.4609	0.4614	-0.1378	-0.274	-0.2783	-0.0295
ELA	3	271993	0	B-K	2	18425	0.7271	0.1096	0.1037	0.0594	0.7261	0.0012	0.5663	-0.3712	-0.2676	-0.2294	0.5661	-0.0201
ELA	3	579131	0	B-K	2	18415	0.5686	0.2855	0.0824	0.5675	0.0628	0.0018	0.4632	-0.2565	-0.2363	0.4632	-0.1968	-0.0209
ELA	3	579145	0	B-K	3	18408	0.4778	0.1477	0.1739	0.1994	0.4768	0.0022	0.3149	-0.1157	-0.2128	-0.0866	0.3151	-0.0225
ELA	3	340677	0	B-V	2	18408	0.6952	0.6937	0.0711	0.1244	0.1086	0.0022	0.478	0.4775	-0.2785	-0.2294	-0.2309	-0.0207
ELA	3	581150	0	B-V	2	18414	0.606	0.1372	0.6048	0.0508	0.2053	0.0018	0.3247	-0.1211	0.3255	-0.2725	-0.1393	-0.0317
ELA	3	252790	0	D	2	18421	0.4936	0.1364	0.1626	0.4928	0.2067	0.0015	0.4097	-0.1884	-0.1983	0.4096	-0.1642	-0.0115
ELA	3	255078	0	D	2	18415	0.4754	0.4746	0.2507	0.0977	0.1752	0.0018	0.3703	0.3706	-0.0727	-0.2527	-0.2037	-0.0257
ELA	3	255382	0	D	2	18424	0.3282	0.131	0.3278	0.327	0.2129	0.0013	0.302	-0.1149	0.302	-0.1129	-0.1211	-0.0129
ELA	3	408509	0	D	2	18429	0.4187	0.3149	0.1254	0.1404	0.4183	0.001	0.3322	-0.0951	-0.1579	-0.1918	0.3327	-0.031
ELA	3	504073	0	D	3	18422	0.411	0.4104	0.1069	0.1322	0.3491	0.0014	0.2823	0.2828	-0.1823	-0.2072	-0.0242	-0.0283
ELA	3	504077	0	D	2	18424	0.5376	0.1693	0.1076	0.5369	0.1849	0.0013	0.384	-0.1591	-0.2229	0.3844	-0.1596	-0.0259
ELA	3	581079	0	D	2	18416	0.345	0.2224	0.1307	0.3008	0.3444	0.0017	0.3659	-0.2064	-0.257	-0.0011	0.366	-0.0234
ELA	3	581086	0	D	2	18424	0.7647	0.1266	0.0542	0.7637	0.0543	0.0013	0.52	-0.3328	-0.2513	0.5199	-0.2318	-0.022
ELA	3	581087	0	D	2	18426	0.639	0.1391	0.6382	0.1442	0.0773	0.0012	0.4217	-0.2205	0.4215	-0.2349	-0.1622	-0.0119
ELA	3	622433	1	A-C	2	7479	0.6235	0.6228	0.1639	0.1288	0.0835	0.0011	0.4679	0.4684	-0.1171	-0.3078	-0.2878	-0.0298
ELA	3	622431	1	A-K	1	7482	0.722	0.1134	0.7215	0.0805	0.0839	0.0007	0.4999	-0.2424	0.5001	-0.2929	-0.2421	-0.0199
ELA	3	622432	1	A-K	2	7473	0.6252	0.624	0.1398	0.0975	0.1368	0.0019	0.4318	0.4316	-0.2242	-0.1826	-0.2226	-0.015
ELA	3	622440	1	A-K	2	7481	0.6234	0.0833	0.0995	0.6229	0.1934	0.0008	0.465	-0.219	-0.2863	0.4648	-0.1995	-0.0064
ELA	3	624032	1	A-K	3	7470	0.4873	0.1662	0.2185	0.1269	0.4862	0.0023	0.1807	-0.0242	-0.1019	-0.1157	0.1813	-0.0209
ELA	3	622434	1	A-V	2	7470	0.6252	0.1374	0.6237	0.1195	0.117	0.0023	0.5094	-0.2545	0.51	-0.249	-0.2399	-0.0327
ELA	3	622435	1	A-V	2	7472	0.7246	0.1207	0.0832	0.7231	0.0709	0.002	0.5108	-0.2967	-0.2545	0.5103	-0.2355	-0.0203
ELA	3	622438	1	A-V	2	7477	0.6721	0.1314	0.1087	0.0874	0.6712	0.0013	0.5334	-0.2547	-0.2796	-0.2716	0.5337	-0.0262
ELA	3	576345	1	B-C	2	18407	0.6668	0.0627	0.1542	0.1156	0.6653	0.0022	0.4902	-0.2677	-0.2147	-0.2744	0.4899	-0.0217
ELA	3	576346	1	B-C	2	18417	0.4607	0.1462	0.2638	0.4599	0.1284	0.0017	0.3681	-0.2505	-0.0176	0.3679	-0.2593	-0.0083
ELA	3	576347	1	B-C	3	18361	0.5739	0.1519	0.1291	0.1431	0.5712	0.0047	0.4391	-0.2417	-0.2273	-0.1447	0.4415	-0.0708
ELA	3	576350	1	B-K	3	18388	0.4855	0.2859	0.1126	0.1144	0.4839	0.0033	0.3624	-0.0766	-0.216	-0.2421	0.3627	-0.0234
ELA	3	576352	1	B-K	3	18409	0.5964	0.1912	0.5952	0.0955	0.1161	0.0021	0.4831	-0.2658	0.4825	-0.2014	-0.2266	-0.013
ELA	3	576354	1	B-V	3	18438	0.656	0.2458	0.6556	0.071	0.027	0.0005	0.254	-0.1505	0.2539	-0.1046	-0.1784	-0.0028
ELA	3	581075	1	D	2	7465	0.4746	0.1671	0.2559	0.4732	0.1008	0.0029	0.2608	-0.235	0.0388	0.2616	-0.1939	-0.0278
ELA	3	629357	1	D	2	7476	0.3256	0.154	0.3251	0.3099	0.2096	0.0015	0.2414	-0.0597	0.2416	-0.0511	-0.1659	-0.0114
ELA	3	629366	1	D	1	7464	0.6712	0.1239	0.1145	0.6692	0.0894	0.0031	0.4624	-0.2595	-0.2135	0.462	-0.2195	-0.0225
ELA	3	622423	2	A-C	2	5474	0.4583	0.1828	0.1574	0.4582	0.2012	0.0004	0.3267	-0.1578	-0.2342	0.3269	-0.0406	-0.0168
ELA	3	622426	2	A-K	2	5463	0.711	0.1512	0.0519	0.0853	0.7093	0.0024	0.4592	-0.2005	-0.2551	-0.2832	0.4591	-0.0206
ELA	3	622428	2	A-K	2	5465	0.6445	0.6432	0.0707	0.0992	0.185	0.002	0.3753	0.3754	-0.2567	-0.255	-0.0953	-0.0186
ELA	3	622429	2	A-K	2	5468	0.5468	0.546	0.0833	0.2575	0.1118	0.0015	0.1083	0.1089	-0.165	0.1024	-0.1669	-0.0225

ELA	3	622430	2 A-K	2	5467	0.4604	0.2544	0.4596	0.1567	0.1276	0.0016	0.2632	-0.0416	0.2636	-0.2693	-0.0431	-0.0236
ELA	3	622424	2 A-V	2	5464	0.5031	0.2787	0.502	0.1161	0.101	0.0022	0.3917	-0.1601	0.3923	-0.1573	-0.2393	-0.0399
ELA	3	622425	2 A-V	2	5472	0.6491	0.0641	0.1342	0.6486	0.1523	0.0007	0.4208	-0.1858	-0.1995	0.421	-0.2422	-0.0167
ELA	3	625180	2 A-V	2	5472	0.3644	0.2319	0.1284	0.2748	0.3641	0.0007	0.4222	-0.1044	-0.3395	-0.1016	0.4221	-0.0041
ELA	3	581089	2 D	2	5455	0.8343	0.0261	0.1034	0.8311	0.0356	0.0038	0.3093	-0.1772	-0.1871	0.3101	-0.1561	-0.0333
ELA	3	629358	2 D	1	5460	0.5984	0.2936	0.0504	0.5966	0.0564	0.0029	0.4087	-0.2609	-0.1809	0.4084	-0.1767	-0.022
ELA	3	629367	2 D	1	5455	0.5375	0.1534	0.5354	0.1465	0.1609	0.0038	0.3744	-0.1782	0.375	-0.148	-0.1859	-0.035
ELA	3	617190	3 A-C	2	5478	0.6794	0.1088	0.6786	0.144	0.0673	0.0013	0.4569	-0.264	0.4577	-0.1808	-0.2666	-0.0353
ELA	3	617184	3 A-K	2	5476	0.5924	0.103	0.1843	0.1196	0.5914	0.0016	0.3597	-0.2726	-0.0799	-0.1922	0.3596	-0.0146
ELA	3	617197	3 A-K	2	5479	0.4442	0.4563	0.4438	0.0687	0.0301	0.0011	0.325	-0.1248	0.3252	-0.2413	-0.2214	-0.0169
ELA	3	617200	3 A-K	2	5481	0.6732	0.1435	0.1251	0.6727	0.058	0.0007	0.4567	-0.2188	-0.2291	0.4576	-0.2615	-0.0422
ELA	3	617201	3 A-K	3	5479	0.4705	0.1541	0.1805	0.47	0.1943	0.0011	0.3946	-0.0859	-0.272	0.3945	-0.1542	-0.0085
ELA	3	617188	3 A-V	2	5478	0.7081	0.7072	0.0992	0.0649	0.1274	0.0013	0.43	0.4304	-0.1756	-0.1778	-0.2958	-0.0257
ELA	3	617191	3 A-V	2	5475	0.5191	0.5181	0.1708	0.0554	0.2538	0.0018	0.2436	0.2442	-0.1974	-0.1657	-0.0202	-0.0233
ELA	3	617229	3 A-V	2	5482	0.8473	0.0257	0.0875	0.0394	0.8469	0.0005	0.4546	-0.2389	-0.2618	-0.2656	0.4531	0.0113
ELA	3	581080	3 D	2	5460	0.4101	0.2213	0.1418	0.4082	0.2241	0.0046	0.3234	-0.2209	-0.1017	0.3236	-0.0714	-0.0309
ELA	3	629359	3 D	1	5464	0.7678	0.1087	0.054	0.7648	0.0687	0.0038	0.3927	-0.138	-0.2785	0.3922	-0.2329	-0.0246
ELA	3	629369	3 D	2	5471	0.9552	0.9528	0.0171	0.0199	0.0077	0.0026	0.2926	0.2859	-0.1801	-0.1806	-0.1353	-0.0051
ELA	4	576332	0 A-C	3	19873	0.3973	0.2149	0.1801	0.3962	0.206	0.0029	0.2804	-0.1355	-0.1423	0.2806	-0.064	-0.0189
ELA	4	576317	0 A-K	2	19908	0.6902	0.6894	0.1468	0.085	0.0777	0.0011	0.4702	0.47	-0.2082	-0.2864	-0.2373	-0.0127
ELA	4	576334	0 A-K	2	19915	0.7495	0.749	0.0869	0.0817	0.0817	0.0008	0.57	0.5702	-0.3115	-0.3031	-0.2766	-0.0249
ELA	4	576356	0 A-K	2	19888	0.4487	0.1354	0.1116	0.3032	0.4477	0.0021	0.4219	-0.2205	-0.2451	-0.1224	0.4219	-0.0205
ELA	4	579416	0 A-K	2	19872	0.5029	0.0666	0.5014	0.2414	0.1877	0.0029	0.3809	-0.2614	0.3815	-0.2524	-0.0398	-0.0385
ELA	4	579417	0 A-K	3	19851	0.642	0.0912	0.201	0.6394	0.0644	0.004	0.4442	-0.2471	-0.2002	0.4462	-0.2412	-0.0587
ELA	4	579419	0 A-K	3	19831	0.6346	0.1583	0.6315	0.0885	0.1168	0.005	0.502	-0.204	0.5028	-0.3013	-0.2454	-0.0527
ELA	4	579420	0 A-K	2	19836	0.6349	0.2009	0.0745	0.0881	0.6319	0.0047	0.4621	-0.2731	-0.1327	-0.2659	0.464	-0.061
ELA	4	576321	0 A-V	2	19886	0.3713	0.3705	0.2135	0.1397	0.2741	0.0022	0.3186	0.3184	-0.1892	-0.2402	0.0172	-0.0129
ELA	4	579390	0 A-V	2	19870	0.4004	0.3992	0.2094	0.0837	0.3047	0.003	0.3122	0.3129	-0.0357	-0.1977	-0.178	-0.0369
ELA	4	495045	0 B-C	3	19828	0.5543	0.5514	0.162	0.0846	0.1968	0.0051	0.4513	0.4524	-0.2287	-0.2761	-0.1514	-0.0524
ELA	4	495046	0 B-C	3	19870	0.6416	0.1431	0.1626	0.6396	0.0516	0.003	0.5271	-0.2612	-0.2822	0.527	-0.2521	-0.0297
ELA	4	495048	0 B-C	2	19773	0.6262	0.1725	0.0761	0.6213	0.1223	0.0079	0.505	-0.2375	-0.2763	0.5052	-0.2362	-0.0535
ELA	4	495049	0 B-C	3	19900	0.758	0.7568	0.0923	0.0835	0.0658	0.0015	0.591	0.5916	-0.2948	-0.3305	-0.3042	-0.0414
ELA	4	579147	0 B-C	2	19861	0.606	0.6039	0.0907	0.1055	0.1965	0.0035	0.3893	0.3899	-0.2957	-0.3156	-0.0169	-0.0364
ELA	4	579151	0 B-C	2	19867	0.64	0.1248	0.0971	0.137	0.6379	0.0032	0.5127	-0.2605	-0.289	-0.2108	0.5135	-0.0465
ELA	4	579155	0 B-K	2	19828	0.5341	0.5314	0.1377	0.1824	0.1434	0.0051	0.4852	0.4864	-0.2117	-0.2548	-0.1919	-0.0579
ELA	4	579156	0 B-K	2	19834	0.3596	0.2156	0.2269	0.1948	0.3579	0.0048	0.3978	-0.2544	-0.1369	-0.0646	0.3987	-0.0517
ELA	4	579159	0 B-K	2	19871	0.4387	0.2156	0.0992	0.2449	0.4374	0.003	0.3973	-0.2245	-0.197	-0.1016	0.3981	-0.0471
ELA	4	579161	0 B-K	2	19879	0.45	0.2759	0.1622	0.4489	0.1105	0.0026	0.4573	-0.1801	-0.2032	0.4577	-0.2237	-0.0424
ELA	4	495047	0 B-V	2	19871	0.7041	0.0868	0.096	0.1122	0.7021	0.003	0.51	-0.2169	-0.2643	-0.2932	0.51	-0.0323
ELA	4	495053	0 B-V	2	19799	0.4544	0.0703	0.4514	0.0833	0.3884	0.0066	0.3437	-0.2858	0.3453	-0.2393	-0.0578	-0.055
ELA	4	579165	0 B-V	2	19863	0.4915	0.2756	0.4899	0.135	0.0961	0.0034	0.3642	-0.0505	0.3654	-0.2536	-0.2393	-0.0498
ELA	4	254906	0 D	2	19909	0.6685	0.1551	0.6678	0.0842	0.0918	0.0011	0.3693	-0.1803	0.3696	-0.2157	-0.1671	-0.02
ELA	4	255913	0 D	2	19902	0.5499	0.1769	0.5492	0.1373	0.1352	0.0014	0.3386	-0.1574	0.3388	-0.1216	-0.1933	-0.0146
ELA	4	341145	0 D	2	19906	0.6054	0.167	0.1386	0.0885	0.6047	0.0012	0.3214	-0.1332	-0.1617	-0.1796	0.3219	-0.0252
ELA	4	341147	0 D	2	19912	0.4675	0.1278	0.1485	0.2557	0.467	0.0009	0.3822	-0.1933	-0.2128	-0.1143	0.3825	-0.0246
ELA	4	504065	0 D	3	19908	0.8268	0.0646	0.0489	0.8259	0.0596	0.0011	0.4289	-0.2152	-0.2299	0.4295	-0.2514	-0.0272
ELA	4	504070	0 D	2	19913	0.4749	0.4745	0.3193	0.0479	0.1575	0.0009	0.2696	0.27	-0.188	-0.1756	-0.0244	-0.026
ELA	4	581069	0 D	2	19895	0.3604	0.1685	0.3598	0.2178	0.2522	0.0018	0.2756	-0.1523	0.2761	-0.1005	-0.0754	-0.0308
ELA	4	581070	0 D	2	19888	0.4955	0.1463	0.1935	0.4944	0.1637	0.0021	0.3649	-0.1582	-0.1969	0.3651	-0.1295	-0.0203
ELA	4	581073	0 D	2	19896	0.5564	0.106	0.1741	0.5554	0.1628	0.0017	0.4295	-0.2133	-0.1293	0.43	-0.2648	-0.0291
ELA	4	623021	1 A-C	2	8214	0.6305	0.0992	0.629	0.129	0.1404	0.0024	0.5361	-0.2207	0.5355	-0.3083	-0.2548	-0.0166

ELA	4	623017	1 A-K	2	8225	0.5527	0.178	0.1372	0.1315	0.5521	0.0011	0.4423	-0.1462	-0.1652	-0.316	0.4417	-0.0027
ELA	4	623019	1 A-K	2	8231	0.5307	0.213	0.1963	0.5305	0.0599	0.0004	0.5011	-0.2766	-0.2308	0.5012	-0.1897	-0.0118
ELA	4	623022	1 A-K	2	8222	0.5467	0.2629	0.0685	0.1212	0.5459	0.0015	0.4874	-0.1973	-0.2214	-0.3041	0.4869	-0.0108
ELA	4	623023	1 A-K	2	8225	0.5895	0.2137	0.0908	0.5889	0.1054	0.0011	0.4629	-0.2155	-0.295	0.4626	-0.1761	-0.0115
ELA	4	623024	1 A-K	2	8216	0.5489	0.5477	0.1262	0.1829	0.141	0.0022	0.4777	0.4778	-0.2705	-0.2309	-0.1655	-0.0249
ELA	4	623015	1 A-V	2	8226	0.7307	0.0702	0.73	0.0698	0.129	0.001	0.4963	-0.2585	0.4964	-0.2882	-0.2394	-0.0193
ELA	4	629549	1 A-V	2	8224	0.2943	0.2939	0.1952	0.3954	0.1143	0.0012	-0.0751	-0.0749	-0.0021	0.1082	-0.0555	-0.0084
ELA	4	579148	1 B-C	2	19877	0.4503	0.1082	0.2192	0.4491	0.2208	0.0027	0.3344	-0.2326	-0.2324	0.3347	0.0079	-0.0259
ELA	4	579152	1 B-C	2	19870	0.5711	0.5693	0.1109	0.0795	0.2372	0.003	0.3975	0.3971	-0.1926	-0.2467	-0.1611	-0.0161
ELA	4	579154	1 B-K	2	19923	0.7399	0.7396	0.0737	0.1288	0.0576	0.0004	0.374	0.3744	-0.2236	-0.2235	-0.1315	-0.0192
ELA	4	579158	1 B-K	2	19896	0.5323	0.0687	0.1333	0.265	0.5314	0.0017	0.4269	-0.2032	-0.2354	-0.1839	0.4262	-0.0031
ELA	4	579160	1 B-K	1	19882	0.6959	0.1231	0.6942	0.0975	0.0828	0.0024	0.4371	-0.2326	0.4363	-0.2367	-0.1951	-0.0135
ELA	4	579166	1 B-V	2	19908	0.7979	0.0721	0.0886	0.797	0.0413	0.0011	0.429	-0.2533	-0.2043	0.4279	-0.2436	-0.0033
ELA	4	581064	1 D	2	8213	0.4794	0.1857	0.4781	0.2015	0.1321	0.0026	0.3792	-0.192	0.3789	-0.1307	-0.1819	-0.0116
ELA	4	629441	1 D	2	8213	0.9246	0.0262	0.0206	0.9223	0.0283	0.0026	0.2641	-0.1465	-0.1357	0.2597	-0.1618	0.0004
ELA	4	629450	1 D	1	8216	0.6109	0.2631	0.0698	0.0554	0.6095	0.0022	0.4281	-0.216	-0.2601	-0.2044	0.4271	-0.0043
ELA	4	623029	2 A-C	2	5843	0.6122	0.6106	0.2171	0.0835	0.0862	0.0026	0.3947	0.3946	-0.0887	-0.2653	-0.2898	-0.0223
ELA	4	623026	2 A-K	2	5848	0.5434	0.2549	0.1374	0.5425	0.0635	0.0017	0.3605	-0.2365	-0.118	0.3591	-0.1471	0.0148
ELA	4	623028	2 A-K	2	5848	0.6146	0.6135	0.1649	0.1922	0.0277	0.0017	0.206	0.2066	-0.0399	-0.1376	-0.1877	-0.0191
ELA	4	623031	2 A-K	3	5845	0.167	0.2668	0.4396	0.1666	0.1248	0.0022	0.066	-0.0916	0.1222	0.0664	-0.1321	-0.0256
ELA	4	623033	2 A-K	2	5843	0.3505	0.2808	0.2928	0.0743	0.3496	0.0026	0.0879	-0.0974	0.0859	-0.1383	0.0888	-0.0278
ELA	4	623109	2 A-K	2	5838	0.4782	0.2209	0.1094	0.1897	0.4766	0.0034	0.219	-0.1168	-0.1673	-0.02	0.2191	-0.0152
ELA	4	623025	2 A-V	2	5844	0.8854	0.049	0.8832	0.049	0.0164	0.0024	0.4465	-0.2775	0.4462	-0.2581	-0.2055	-0.0321
ELA	4	629571	2 A-V	2	5848	0.6288	0.1057	0.6277	0.0901	0.1748	0.0017	0.3936	-0.2059	0.3935	-0.2085	-0.1755	-0.0137
ELA	4	581098	2 D	2	5842	0.7687	0.7666	0.03	0.1745	0.0261	0.0027	0.3258	0.326	-0.1826	-0.2055	-0.1724	-0.0235
ELA	4	629442	2 D	1	5842	0.9637	0.0121	0.014	0.0101	0.9611	0.0027	0.2873	-0.1634	-0.1732	-0.1529	0.2841	-0.0278
ELA	4	629451	2 D	2	5847	0.9206	0.0084	0.9189	0.0666	0.0043	0.0019	0.1746	-0.1087	0.1759	-0.1203	-0.1097	-0.0227
ELA	4	623673	3 A-C	2	5826	0.7525	0.7509	0.0666	0.0574	0.123	0.0021	0.4672	0.4674	-0.2829	-0.2862	-0.1938	-0.0301
ELA	4	623669	3 A-K	3	5824	0.6212	0.0702	0.0971	0.6197	0.2105	0.0024	0.3014	-0.1415	-0.2785	0.3016	-0.0659	-0.0182
ELA	4	623672	3 A-K	2	5833	0.8212	0.0594	0.8205	0.0502	0.069	0.0009	0.3884	-0.1299	0.3881	-0.2581	-0.2427	-0.0113
ELA	4	623674	3 A-K	2	5821	0.8359	0.0624	0.061	0.0403	0.8335	0.0029	0.412	-0.2331	-0.1966	-0.2476	0.41	-0.0128
ELA	4	623675	3 A-K	2	5829	0.6131	0.061	0.0596	0.6122	0.2657	0.0015	0.3066	-0.2181	-0.2117	0.3072	-0.105	-0.0262
ELA	4	623766	3 A-K	2	5830	0.5631	0.2749	0.1199	0.5624	0.0415	0.0014	0.3306	-0.1305	-0.1716	0.3314	-0.2457	-0.0377
ELA	4	623671	3 A-V	2	5830	0.7453	0.1024	0.7443	0.1213	0.0307	0.0014	0.442	-0.2714	0.4424	-0.2365	-0.1893	-0.0241
ELA	4	630495	3 B-V	2	5833	0.6974	0.6968	0.1127	0.0617	0.128	0.0009	0.3636	0.3636	-0.1867	-0.2566	-0.1378	-0.0113
ELA	4	581093	3 D	2	5816	0.6145	0.1096	0.1655	0.1089	0.6122	0.0038	0.3457	-0.1779	-0.1424	-0.1879	0.3452	-0.019
ELA	4	629443	3 D	1	5818	0.5732	0.1144	0.1593	0.5713	0.1516	0.0034	0.371	-0.1268	-0.2285	0.371	-0.162	-0.0255
ELA	4	629452	3 D	2	5825	0.7737	0.1007	0.0733	0.772	0.0517	0.0022	0.4039	-0.1824	-0.2402	0.4031	-0.2302	-0.0132
ELA	5	579326	0 A-C	2	21218	0.72	0.0572	0.7194	0.0721	0.1505	0.0008	0.4756	-0.2149	0.476	-0.2249	-0.2937	-0.0274
ELA	5	579330	0 A-K	2	21201	0.6296	0.0663	0.057	0.2465	0.6286	0.0016	0.3747	-0.2348	-0.2481	-0.149	0.3751	-0.0267
ELA	5	579331	0 A-K	2	21199	0.5393	0.2772	0.5384	0.0926	0.0901	0.0017	0.279	-0.0575	0.2795	-0.2391	-0.151	-0.0261
ELA	5	579332	0 A-K	3	21220	0.4561	0.0646	0.3789	0.4558	0.1	0.0007	0.3768	-0.2151	-0.1078	0.3768	-0.2739	-0.0127
ELA	5	579333	0 A-K	2	21159	0.434	0.1879	0.4324	0.0947	0.2814	0.0036	0.2786	-0.2277	0.2798	-0.2451	0.0554	-0.0482
ELA	5	579334	0 A-K	2	21218	0.7783	0.0692	0.7776	0.0791	0.0733	0.0008	0.4946	-0.2358	0.4945	-0.2693	-0.2785	-0.0188
ELA	5	579337	0 A-K	2	21201	0.7157	0.1065	0.0618	0.7146	0.1155	0.0016	0.5111	-0.2446	-0.2545	0.5118	-0.2905	-0.0383
ELA	5	579338	0 A-K	2	21214	0.5346	0.1082	0.5341	0.1616	0.1951	0.001	0.4657	-0.2176	0.4659	-0.2655	-0.1669	-0.0307
ELA	5	579339	0 A-K	2	21181	0.566	0.0846	0.0925	0.5646	0.2558	0.0025	0.4036	-0.1809	-0.2319	0.4047	-0.1851	-0.0469
ELA	5	579301	0 A-V	2	21178	0.6556	0.1696	0.0446	0.1293	0.6538	0.0027	0.3219	-0.1299	-0.2722	-0.1382	0.3244	-0.058
ELA	5	579305	0 A-V	2	21203	0.7276	0.7265	0.0604	0.0804	0.1312	0.0015	0.4893	0.4892	-0.2315	-0.2775	-0.2564	-0.0236
ELA	5	409603	0 B-C	2	21197	0.5849	0.0728	0.5838	0.1067	0.2348	0.0018	0.4905	-0.2529	0.4908	-0.3163	-0.1823	-0.0304
ELA	5	409605	0 B-C	3	21200	0.3395	0.179	0.1133	0.339	0.3671	0.0016	0.3829	-0.2311	-0.1546	0.383	-0.0882	-0.0296

ELA	5	574352	0 B-C	2	21177	0.3715	0.2609	0.1613	0.2045	0.3705	0.0027	0.2795	0.046	-0.1469	-0.2481	0.2795	-0.0202
ELA	5	409606	0 B-K	3	21134	0.6425	0.1668	0.1344	0.6395	0.0546	0.0048	0.4369	-0.2611	-0.1799	0.4375	-0.2134	-0.0416
ELA	5	409608	0 B-K	3	21199	0.6633	0.6622	0.1596	0.1117	0.0648	0.0017	0.5043	0.5045	-0.2706	-0.2813	-0.2018	-0.0304
ELA	5	574355	0 B-K	3	21182	0.5735	0.572	0.1263	0.1509	0.1483	0.0025	0.4948	0.4956	-0.2248	-0.2283	-0.2433	-0.0474
ELA	5	574357	0 B-K	3	21164	0.4628	0.1363	0.4612	0.1465	0.2526	0.0033	0.3502	-0.1063	0.351	-0.281	-0.0846	-0.0415
ELA	5	409609	0 B-V	1	21155	0.535	0.1742	0.5329	0.1641	0.1249	0.0038	0.4132	-0.1739	0.4144	-0.2122	-0.1787	-0.0512
ELA	5	409611	0 B-V	2	21175	0.8477	0.0256	0.0674	0.0589	0.8453	0.0028	0.4574	-0.2296	-0.2673	-0.2558	0.4581	-0.0407
ELA	5	574359	0 B-V	2	21194	0.5508	0.1646	0.136	0.5497	0.1477	0.0019	0.386	-0.1853	-0.2585	0.3865	-0.0944	-0.0339
ELA	5	574558	0 B-V	2	21202	0.5737	0.5728	0.1199	0.217	0.0888	0.0016	0.467	0.4678	-0.2529	-0.228	-0.1883	-0.0424
ELA	5	574576	0 B-V	1	21207	0.6158	0.1255	0.615	0.1335	0.1247	0.0013	0.4619	-0.262	0.4629	-0.2157	-0.1916	-0.05
ELA	5	411656	0 D	2	21215	0.2498	0.4041	0.173	0.1724	0.2495	0.0009	0.3273	-0.1856	-0.0183	-0.1144	0.3274	-0.0158
ELA	5	411657	0 D	1	21210	0.4777	0.4772	0.1587	0.2093	0.1536	0.0012	0.1719	0.1721	-0.1034	-0.1012	-0.0182	-0.0116
ELA	5	411658	0 D	2	21221	0.8055	0.1153	0.0289	0.0502	0.805	0.0007	0.3859	-0.263	-0.1941	-0.1649	0.3862	-0.0209
ELA	5	411659	0 D	2	21223	0.7024	0.702	0.0784	0.0476	0.1715	0.0006	0.3599	0.3597	-0.1968	-0.1392	-0.2172	-0.0049
ELA	5	411661	0 D	2	21209	0.2726	0.0251	0.3686	0.2723	0.3328	0.0012	0.3082	-0.2132	-0.1641	0.3083	-0.0511	-0.0184
ELA	5	581210	0 D	2	21218	0.5553	0.1112	0.0391	0.5549	0.294	0.0008	0.3811	-0.1538	-0.1755	0.3813	-0.234	-0.0186
ELA	5	581211	0 D	2	21196	0.3922	0.3665	0.1248	0.1153	0.3915	0.0018	0.429	-0.1252	-0.1894	-0.2678	0.429	-0.0216
ELA	5	581216	0 D	2	21198	0.4323	0.2183	0.4315	0.2479	0.1006	0.0017	0.3525	-0.1178	0.3527	-0.2385	-0.0736	-0.0215
ELA	5	581221	0 D	2	21205	0.5796	0.0333	0.5788	0.0359	0.3506	0.0014	0.3703	-0.2221	0.3708	-0.2186	-0.2127	-0.0268
ELA	5	576322	1 A-C	3	21176	0.5547	0.1538	0.0858	0.5532	0.2044	0.0028	0.3498	-0.2642	-0.2366	0.3503	-0.0275	-0.027
ELA	5	576324	1 A-K	2	21192	0.5889	0.1106	0.2474	0.0523	0.5877	0.002	0.3519	-0.1376	-0.1963	-0.1996	0.3523	-0.0246
ELA	5	576326	1 A-K	2	21210	0.7589	0.0516	0.758	0.0644	0.1248	0.0012	0.4498	-0.2566	0.4493	-0.2376	-0.233	-0.0089
ELA	5	576327	1 A-K	2	21195	0.4655	0.4646	0.1524	0.0828	0.2983	0.0019	0.3068	0.3067	-0.1554	-0.2843	-0.04	-0.011
ELA	5	576328	1 A-K	2	21225	0.5596	0.3435	0.5593	0.0549	0.0418	0.0005	0.3033	-0.1836	0.3034	-0.1409	-0.1552	-0.0133
ELA	5	576331	1 A-V	2	21205	0.5795	0.1264	0.5787	0.0519	0.2415	0.0014	0.2734	-0.1689	0.2737	-0.1945	-0.0821	-0.0193
ELA	5	621501	1 B-C	2	8665	0.6246	0.0953	0.1127	0.6232	0.1665	0.0022	0.3553	-0.2347	-0.2677	0.3555	-0.0477	-0.0189
ELA	5	621507	1 B-K	2	8673	0.3134	0.313	0.1878	0.2355	0.2624	0.0013	0.0854	0.0858	-0.1147	-0.0027	0.0155	-0.0195
ELA	5	621508	1 B-K	2	8679	0.4517	0.2601	0.4514	0.1457	0.1422	0.0006	0.2644	-0.0133	0.2649	-0.1973	-0.1593	-0.0311
ELA	5	621513	1 B-K	2	8675	0.6504	0.1886	0.1047	0.6497	0.056	0.001	0.5013	-0.23	-0.3222	0.5014	-0.2178	-0.0171
ELA	5	621515	1 B-K	2	8673	0.6382	0.6374	0.1755	0.0917	0.0942	0.0013	0.3916	0.392	-0.1033	-0.2934	-0.218	-0.0244
ELA	5	621530	1 B-V	1	8680	0.5994	0.2801	0.0482	0.0721	0.5991	0.0005	0.4849	-0.2842	-0.2221	-0.2399	0.4852	-0.0244
ELA	5	621532	1 B-V	1	8668	0.5819	0.2102	0.1011	0.1061	0.5808	0.0018	0.4868	-0.2327	-0.3064	-0.169	0.4872	-0.0274
ELA	5	623809	1 B-V	1	8675	0.5864	0.1438	0.5858	0.0649	0.2044	0.001	0.494	-0.256	0.4943	-0.259	-0.2209	-0.0222
ELA	5	581209	1 D	2	8668	0.734	0.1016	0.1038	0.7326	0.0602	0.0018	0.3852	-0.1902	-0.1666	0.386	-0.2579	-0.0285
ELA	5	629634	1 D	1	8670	0.5407	0.1682	0.2166	0.5398	0.0737	0.0016	0.388	-0.297	-0.0852	0.388	-0.1776	-0.0194
ELA	5	629643	1 D	2	8677	0.7892	0.7886	0.089	0.059	0.0626	0.0008	0.3206	0.3218	-0.1092	-0.1999	-0.2153	-0.0361
ELA	5	623758	2 B-C	2	6311	0.4912	0.2103	0.4905	0.0832	0.2146	0.0014	0.3284	-0.0859	0.3285	-0.2375	-0.1538	-0.0124
ELA	5	623760	2 B-K	2	6311	0.62	0.0426	0.2462	0.0907	0.6191	0.0014	0.3907	-0.1965	-0.2058	-0.2122	0.3904	-0.0084
ELA	5	623761	2 B-K	3	6308	0.2514	0.5924	0.2509	0.1119	0.0429	0.0019	0.115	0.0647	0.1153	-0.1501	-0.1669	-0.0148
ELA	5	623762	2 B-K	2	6309	0.4026	0.154	0.2498	0.1926	0.4019	0.0017	0.3198	-0.1132	-0.1298	-0.149	0.3205	-0.0324
ELA	5	623763	2 B-K	2	6312	0.7391	0.7381	0.1038	0.0688	0.088	0.0013	0.3861	0.3862	-0.2854	-0.1736	-0.1348	-0.0177
ELA	5	623764	2 B-V	1	6312	0.8557	0.0345	0.028	0.8546	0.0816	0.0013	0.3279	-0.1729	-0.1843	0.327	-0.1941	-0.005
ELA	5	623784	2 B-V	2	6313	0.7472	0.7464	0.1147	0.0408	0.097	0.0011	0.3555	0.3567	-0.247	-0.197	-0.1224	-0.0373
ELA	5	630849	2 B-V	2	6315	0.515	0.5146	0.0968	0.146	0.2418	0.0008	0.3766	0.3769	-0.1927	-0.1437	-0.187	-0.0188
ELA	5	581213	2 D	2	6309	0.5315	0.1636	0.1684	0.5305	0.1358	0.0017	0.3452	-0.1672	-0.1349	0.3458	-0.1721	-0.0319
ELA	5	629635	2 D	2	6310	0.7675	0.0954	0.1006	0.7663	0.0361	0.0016	0.3124	-0.1757	-0.1676	0.313	-0.1582	-0.0219
ELA	5	629644	2 D	2	6316	0.9129	0.9123	0.0242	0.025	0.0378	0.0006	0.3562	0.3559	-0.2215	-0.2152	-0.1711	-0.0148
ELA	5	623677	3 B-K	2	6221	0.4244	0.3073	0.1672	0.4237	0.1001	0.0016	0.2348	-0.0675	-0.1122	0.2346	-0.1422	-0.0057
ELA	5	623679	3 B-K	2	6224	0.6523	0.1286	0.1573	0.6516	0.0615	0.0011	0.319	-0.1864	-0.1001	0.3198	-0.2185	-0.0323
ELA	5	623682	3 B-K	2	6223	0.7455	0.0881	0.0539	0.1122	0.7445	0.0013	0.4544	-0.1816	-0.2109	-0.312	0.4539	-0.0107
ELA	5	623684	3 B-K	2	6227	0.5617	0.0772	0.1456	0.2152	0.5614	0.0006	0.415	-0.2035	-0.3275	-0.0869	0.4153	-0.022

ELA	5	623685	3 B-K	2	6221	0.7708	0.0979	0.7695	0.07	0.061	0.0016	0.4325	-0.22	0.4324	-0.2641	-0.2028	-0.0212
ELA	5	623681	3 B-V	1	6224	0.3772	0.3768	0.1695	0.208	0.2446	0.0011	0.3357	0.3361	-0.0691	-0.1127	-0.2099	-0.03
ELA	5	623683	3 B-V	1	6224	0.8096	0.8087	0.0575	0.0749	0.0578	0.0011	0.4083	0.4088	-0.2045	-0.2819	-0.1634	-0.025
ELA	5	630800	3 B-V	2	6226	0.8323	0.0319	0.8316	0.0992	0.0364	0.0008	0.4145	-0.1862	0.4144	-0.2997	-0.1726	-0.0144
ELA	5	581219	3 D	2	6225	0.6011	0.0735	0.1892	0.6005	0.1358	0.001	0.2823	-0.1652	-0.1198	0.2833	-0.1384	-0.0416
ELA	5	629636	3 D	2	6227	0.6499	0.0032	0.2605	0.0862	0.6495	0.0006	0.3955	-0.1042	-0.2833	-0.2069	0.396	-0.0258
ELA	5	629645	3 D	2	6224	0.6899	0.1101	0.1058	0.0939	0.6891	0.0011	0.4142	-0.2098	-0.2008	-0.2194	0.4136	0.0003
ELA	6	495095	0 A-C	3	24335	0.4002	0.3991	0.1722	0.1584	0.2676	0.0027	0.324	0.3248	-0.1743	-0.1881	-0.0507	-0.0403
ELA	6	495096	0 A-C	2	24351	0.5364	0.1314	0.1392	0.192	0.5353	0.002	0.4944	-0.1586	-0.2193	-0.2941	0.4945	-0.0281
ELA	6	495098	0 A-C	2	24382	0.6462	0.134	0.6457	0.1674	0.0522	0.0008	0.4847	-0.242	0.4848	-0.2517	-0.247	-0.02
ELA	6	579306	0 A-C	3	24360	0.6803	0.0703	0.6792	0.146	0.1028	0.0017	0.5699	-0.238	0.5701	-0.3222	-0.2973	-0.0307
ELA	6	579307	0 A-C	2	24366	0.4925	0.0668	0.4918	0.2956	0.1443	0.0014	0.4965	-0.1877	0.4965	-0.2702	-0.22	-0.02
ELA	6	579308	0 A-C	3	24369	0.561	0.5603	0.1191	0.1338	0.1854	0.0013	0.4156	0.4155	-0.2214	-0.1304	-0.2302	-0.0174
ELA	6	495100	0 A-K	2	24383	0.736	0.0552	0.1622	0.7355	0.0464	0.0007	0.4679	-0.2499	-0.2869	0.468	-0.205	-0.0181
ELA	6	579322	0 A-K	3	24368	0.5423	0.5415	0.1202	0.1933	0.1436	0.0014	0.3995	0.3997	-0.1963	-0.1663	-0.1964	-0.0214
ELA	6	495103	0 A-V	1	24356	0.7705	0.7691	0.1407	0.0533	0.0351	0.0018	0.3502	0.3512	-0.1793	-0.2192	-0.1903	-0.0332
ELA	6	495104	0 A-V	2	24348	0.3946	0.2261	0.255	0.123	0.3937	0.0022	0.2713	-0.0394	-0.1132	-0.1994	0.2718	-0.0324
ELA	6	579323	0 A-V	2	24363	0.742	0.0602	0.1514	0.7409	0.0459	0.0016	0.5205	-0.2445	-0.3504	0.5203	-0.2069	-0.0223
ELA	6	497114	0 B-C	3	24335	0.6202	0.6185	0.1032	0.0859	0.1897	0.0027	0.4924	0.4931	-0.25	-0.2904	-0.204	-0.0406
ELA	6	497115	0 B-C	3	24369	0.3392	0.3181	0.3387	0.1111	0.2308	0.0013	0.1847	0.0789	0.1854	-0.2472	-0.1078	-0.0397
ELA	6	497116	0 B-C	2	24353	0.5524	0.1083	0.2116	0.1268	0.5513	0.002	0.4995	-0.2521	-0.1786	-0.2871	0.5002	-0.0448
ELA	6	497117	0 B-C	2	24317	0.5401	0.0679	0.1456	0.2448	0.5382	0.0034	0.35	-0.2175	-0.1217	-0.1738	0.3509	-0.0433
ELA	6	579313	0 B-C	2	24365	0.6481	0.1193	0.6472	0.0982	0.1339	0.0015	0.5008	-0.2231	0.5012	-0.3109	-0.2161	-0.0279
ELA	6	579314	0 B-C	3	24339	0.5933	0.1964	0.1181	0.5918	0.0912	0.0025	0.5251	-0.2798	-0.2449	0.5254	-0.2301	-0.036
ELA	6	579316	0 B-K	2	24348	0.5924	0.5911	0.0548	0.1126	0.2393	0.0022	0.4881	0.4883	-0.1816	-0.1365	-0.3612	-0.0316
ELA	6	579317	0 B-K	2	24368	0.5598	0.5591	0.0988	0.1942	0.1466	0.0014	0.5469	0.5468	-0.2756	-0.3011	-0.196	-0.0222
ELA	6	579318	0 B-K	3	24370	0.2772	0.1301	0.224	0.3678	0.2769	0.0013	0.2055	-0.1387	-0.0352	-0.063	0.2055	-0.0072
ELA	6	497121	0 B-V	2	24324	0.8434	0.0543	0.8408	0.0738	0.0279	0.0032	0.4857	-0.2669	0.486	-0.3113	-0.2033	-0.0436
ELA	6	497122	0 B-V	2	24361	0.7267	0.0831	0.1234	0.7255	0.0663	0.0016	0.4442	-0.2398	-0.218	0.4446	-0.2385	-0.0284
ELA	6	579296	0 B-V	2	24355	0.7758	0.0736	0.0507	0.0995	0.7744	0.0019	0.5394	-0.2651	-0.2888	-0.306	0.5394	-0.0304
ELA	6	341234	0 D	2	24376	0.3464	0.141	0.3077	0.346	0.2043	0.001	0.2855	-0.2351	-0.0065	0.2858	-0.125	-0.022
ELA	6	412356	0 D	2	24355	0.5396	0.5386	0.064	0.1995	0.1961	0.0019	0.3578	0.358	-0.2213	-0.1111	-0.199	-0.021
ELA	6	412402	0 D	2	24339	0.6781	0.0728	0.1086	0.1397	0.6764	0.0025	0.4858	-0.2941	-0.1194	-0.3238	0.4862	-0.0333
ELA	6	503918	0 D	2	24381	0.3297	0.3295	0.1789	0.0623	0.4286	0.0008	0.2397	0.2399	-0.1941	-0.1567	0.0001	-0.0194
ELA	6	503921	0 D	2	24383	0.4149	0.2506	0.1438	0.4146	0.1902	0.0007	0.3981	-0.1274	-0.1101	0.3982	-0.2598	-0.0127
ELA	6	584199	0 D	2	24378	0.5177	0.0559	0.5172	0.3192	0.1068	0.0009	0.3456	-0.216	0.3455	-0.1622	-0.1528	-0.0061
ELA	6	584203	0 D	2	24384	0.558	0.0868	0.1462	0.5576	0.2087	0.0007	0.3143	-0.1977	-0.2189	0.3144	-0.0562	-0.0127
ELA	6	584209	0 D	2	24377	0.5284	0.0819	0.5279	0.1493	0.2399	0.001	0.3957	-0.1812	0.3958	-0.2151	-0.1656	-0.0173
ELA	6	584210	0 D	2	24375	0.4327	0.201	0.1833	0.4323	0.1823	0.0011	0.1792	-0.1043	-0.1409	0.1796	0.0207	-0.0188
ELA	6	623710	1 A-C	2	9929	0.5091	0.1428	0.1343	0.2127	0.508	0.0022	0.453	-0.1818	-0.2661	-0.1737	0.4533	-0.0253
ELA	6	623712	1 A-C	2	9943	0.6009	0.1547	0.1481	0.6004	0.096	0.0008	0.4053	-0.1566	-0.1809	0.4056	-0.262	-0.0209
ELA	6	623713	1 A-C	2	9939	0.4861	0.4855	0.1279	0.1474	0.238	0.0012	0.3086	0.3087	-0.1652	-0.2718	-0.0056	-0.0111
ELA	6	623706	1 A-K	2	9943	0.6708	0.0559	0.6703	0.1503	0.1227	0.0008	0.533	-0.2317	0.5328	-0.2944	-0.2791	-0.0164
ELA	6	623711	1 A-K	2	9932	0.6734	0.0746	0.1441	0.1073	0.6721	0.0019	0.2818	-0.1958	-0.104	-0.1411	0.2824	-0.0217
ELA	6	623715	1 A-K	1	9943	0.6439	0.1292	0.6434	0.1068	0.1198	0.0008	0.4879	-0.2369	0.4886	-0.2523	-0.233	-0.0341
ELA	6	623709	1 A-V	1	9937	0.5943	0.0492	0.1025	0.5935	0.2533	0.0014	0.394	-0.2295	-0.2593	0.3948	-0.1481	-0.0331
ELA	6	629677	1 A-V	2	9942	0.8192	0.8184	0.0471	0.0568	0.0768	0.0009	0.4269	0.4278	-0.244	-0.2243	-0.2267	-0.0319
ELA	6	574578	1 B-C	2	24358	0.6825	0.6813	0.0738	0.1903	0.0528	0.0018	0.4297	0.4299	-0.2689	-0.193	-0.2379	-0.0247
ELA	6	574579	1 B-C	2	24354	0.4738	0.1732	0.0959	0.4729	0.2561	0.0019	0.3793	-0.1099	-0.1884	0.3794	-0.2095	-0.0209
ELA	6	574581	1 B-K	2	24343	0.6562	0.0551	0.0759	0.6546	0.212	0.0024	0.3351	-0.2216	-0.2273	0.3357	-0.1164	-0.0257
ELA	6	574583	1 B-K	2	24353	0.5362	0.0401	0.088	0.3348	0.5351	0.002	0.3119	-0.2348	-0.2176	-0.0995	0.3123	-0.0245

ELA	6	574584	1 B-V	2	24355	0.5941	0.1641	0.593	0.2043	0.0368	0.0019	0.3542	-0.2867	0.3547	-0.0714	-0.2027	-0.0271
ELA	6	574585	1 B-V	2	24398	0.514	0.083	0.136	0.267	0.5139	0.0001	0.5172	-0.1812	-0.3184	-0.2245	0.5172	-0.0049
ELA	6	584201	1 D	2	9937	0.4006	0.1676	0.4001	0.3162	0.1147	0.0014	0.3521	-0.154	0.3524	-0.0989	-0.2145	-0.02
ELA	6	629732	1 D	2	9930	0.5842	0.1721	0.1581	0.0847	0.583	0.0021	0.3249	-0.2729	-0.0272	-0.1659	0.3256	-0.0308
ELA	6	629741	1 D	2	9942	0.3795	0.2269	0.2043	0.3792	0.1887	0.0009	0.2415	-0.0448	-0.1838	0.242	-0.0604	-0.0293
ELA	6	623719	2 A-C	2	7223	0.6699	0.132	0.0961	0.6694	0.1017	0.0008	0.4005	-0.2376	-0.2838	0.4014	-0.0781	-0.0394
ELA	6	623721	2 A-C	2	7226	0.4157	0.222	0.4155	0.0989	0.2631	0.0004	0.1492	-0.0589	0.1493	-0.1524	-0.0077	-0.0122
ELA	6	623725	2 A-C	2	7222	0.654	0.1317	0.123	0.091	0.6533	0.001	0.4815	-0.2251	-0.2706	-0.221	0.4815	-0.0186
ELA	6	623716	2 A-K	3	7220	0.6778	0.195	0.677	0.0668	0.0599	0.0012	0.195	0.0196	0.1955	-0.2341	-0.169	-0.0171
ELA	6	623717	2 A-K	2	7207	0.7	0.0696	0.0665	0.163	0.6979	0.003	0.4368	-0.1851	-0.2843	-0.2204	0.4359	-0.0153
ELA	6	623718	2 A-K	2	7217	0.8086	0.8073	0.0274	0.075	0.0887	0.0017	0.4197	0.4204	-0.2067	-0.2743	-0.2057	-0.033
ELA	6	623723	2 A-V	1	7218	0.7654	0.1132	0.0154	0.7643	0.1057	0.0015	0.2054	-0.1652	-0.1988	0.2052	-0.0327	-0.0058
ELA	6	629898	2 A-V	2	7218	0.2416	0.2413	0.364	0.2244	0.1689	0.0015	0.1847	0.1851	-0.1446	0.0272	-0.0524	-0.034
ELA	6	584198	2 D	2	7222	0.5152	0.5147	0.0411	0.3941	0.0491	0.001	0.3369	0.3373	-0.2645	-0.1674	-0.1545	-0.0283
ELA	6	629733	2 D	2	7224	0.7485	0.748	0.0216	0.0187	0.2111	0.0007	0.365	0.3652	-0.224	-0.1875	-0.2455	-0.0165
ELA	6	629742	2 D	2	7223	0.4721	0.4717	0.0645	0.3705	0.0925	0.0008	0.0877	0.0881	-0.1716	0.0479	-0.0846	-0.0168
ELA	6	621527	3 A-C	3	7210	0.2727	0.2723	0.136	0.4405	0.1497	0.0015	0.084	0.0843	-0.218	0.1017	-0.0355	-0.0168
ELA	6	621533	3 A-C	3	7207	0.2867	0.154	0.1425	0.4155	0.2861	0.0019	0.2171	-0.1141	-0.212	0.036	0.2173	-0.0141
ELA	6	621536	3 A-C	2	7212	0.5599	0.0854	0.5592	0.3052	0.0489	0.0012	0.3661	-0.1837	0.3666	-0.2141	-0.1445	-0.0263
ELA	6	621518	3 A-K	2	7215	0.4541	0.1505	0.1259	0.2691	0.4537	0.0008	0.3096	-0.226	-0.1205	-0.0744	0.3097	-0.0147
ELA	6	621540	3 A-K	2	7203	0.2756	0.18	0.2749	0.1896	0.353	0.0025	0.1302	0.1058	0.1307	-0.076	-0.1422	-0.0255
ELA	6	621519	3 A-V	2	7215	0.3095	0.4692	0.1124	0.3092	0.1083	0.0008	0.0794	0.0719	-0.0388	0.0795	-0.1937	-0.0066
ELA	6	621539	3 A-V	2	7210	0.3635	0.363	0.3095	0.0348	0.2912	0.0015	-0.1122	-0.1113	0.079	-0.1869	0.1148	-0.025
ELA	6	623654	3 A-V	2	7218	0.5612	0.1677	0.2307	0.561	0.0402	0.0004	0.3963	-0.1802	-0.217	0.3962	-0.1924	-0.0061
ELA	6	503919	3 D	2	7212	0.5717	0.1522	0.1702	0.571	0.1054	0.0012	0.3292	-0.1384	-0.1678	0.3302	-0.1603	-0.0411
ELA	6	629734	3 D	2	7213	0.5096	0.162	0.5091	0.0842	0.2436	0.0011	0.1848	-0.0969	0.1855	-0.2177	0.01	-0.026
ELA	6	629743	3 D	2	7214	0.4774	0.2436	0.1161	0.1624	0.4769	0.001	0.3139	-0.1214	-0.1019	-0.195	0.3136	0.0017
ELA	7	497095	0 A-C	2	27371	0.5574	0.1091	0.1856	0.146	0.5549	0.0044	0.3452	-0.1267	-0.1782	-0.1717	0.3463	-0.0405
ELA	7	497097	0 A-C	3	27342	0.4397	0.2396	0.4373	0.1613	0.1563	0.0055	0.2755	-0.0365	0.2765	-0.2245	-0.0997	-0.0376
ELA	7	578096	0 A-C	3	27422	0.623	0.089	0.0867	0.2003	0.6214	0.0026	0.3361	-0.1288	-0.2566	-0.1317	0.3374	-0.04
ELA	7	578100	0 A-C	2	27452	0.4897	0.1798	0.489	0.2453	0.0845	0.0015	0.405	-0.2052	0.4055	-0.1379	-0.2276	-0.0336
ELA	7	497100	0 A-K	2	27427	0.6416	0.6401	0.0455	0.1822	0.1299	0.0024	0.5526	0.5529	-0.2442	-0.324	-0.2608	-0.0353
ELA	7	578071	0 A-K	3	27457	0.617	0.056	0.126	0.2005	0.6162	0.0013	0.3738	-0.2281	-0.2964	-0.0748	0.3748	-0.0411
ELA	7	578084	0 A-K	3	27449	0.4854	0.4847	0.184	0.2644	0.0654	0.0016	0.4449	0.4453	-0.2414	-0.1719	-0.2102	-0.0313
ELA	7	578103	0 A-K	2	27461	0.448	0.1971	0.0834	0.4475	0.2709	0.0012	0.3784	-0.1928	-0.2366	0.379	-0.1014	-0.0375
ELA	7	497101	0 A-V	2	27424	0.761	0.089	0.067	0.7591	0.0825	0.0025	0.5218	-0.2425	-0.2787	0.5226	-0.3006	-0.0424
ELA	7	497102	0 A-V	2	27409	0.7708	0.7685	0.0862	0.0945	0.0477	0.0031	0.362	0.3632	-0.0751	-0.282	-0.2228	-0.0383
ELA	7	578073	0 A-V	1	27458	0.6247	0.0276	0.1769	0.6239	0.1703	0.0013	0.4147	-0.2173	-0.1735	0.4155	-0.261	-0.0383
ELA	7	578075	0 A-V	2	27458	0.697	0.1102	0.6961	0.1382	0.0543	0.0013	0.3837	-0.1996	0.3848	-0.2053	-0.1867	-0.0383
ELA	7	566576	0 B-C	2	27435	0.6365	0.6351	0.1282	0.1518	0.0827	0.0021	0.5401	0.5403	-0.2155	-0.3144	-0.2678	-0.0321
ELA	7	566577	0 B-C	2	27443	0.6073	0.2019	0.1132	0.0769	0.6062	0.0018	0.4045	-0.1204	-0.1937	-0.326	0.4052	-0.0336
ELA	7	566584	0 B-C	3	27434	0.728	0.0713	0.1052	0.7264	0.095	0.0021	0.4948	-0.2238	-0.2679	0.4952	-0.2712	-0.0322
ELA	7	579272	0 B-C	2	27447	0.3969	0.1669	0.3603	0.3962	0.0749	0.0017	0.2661	-0.2191	0.0392	0.2664	-0.2531	-0.0202
ELA	7	579298	0 B-C	2	27473	0.5201	0.2279	0.116	0.1357	0.5197	0.0007	0.2818	0.0078	-0.1706	-0.2599	0.2822	-0.0242
ELA	7	566579	0 B-K	2	27443	0.4881	0.1643	0.4872	0.2157	0.1309	0.0018	0.2857	-0.0712	0.2861	-0.176	-0.1278	-0.026
ELA	7	579275	0 B-K	2	27461	0.6254	0.6247	0.1279	0.1862	0.0601	0.0012	0.4366	0.4371	-0.265	-0.1766	-0.2247	-0.0295
ELA	7	579276	0 B-K	3	27431	0.4913	0.1886	0.1552	0.4902	0.1638	0.0023	0.3456	-0.1325	-0.1917	0.3462	-0.136	-0.0311
ELA	7	566582	0 B-V	2	27458	0.5628	0.5621	0.0956	0.1014	0.2397	0.0013	0.4768	0.4771	-0.2749	-0.2448	-0.1896	-0.0299
ELA	7	566583	0 B-V	2	27424	0.4707	0.4695	0.1897	0.1821	0.1562	0.0025	0.4474	0.4476	-0.199	-0.2797	-0.099	-0.0297
ELA	7	579271	0 B-V	2	27468	0.7029	0.7023	0.1113	0.1229	0.0626	0.0009	0.2667	0.2672	-0.0518	-0.1863	-0.1818	-0.0219
ELA	7	341161	0 D	2	27478	0.5699	0.0999	0.5696	0.2231	0.1069	0.0005	0.345	-0.166	0.3452	-0.1664	-0.1666	-0.0172

ELA	7	341167	0 D	2	27456	0.2732	0.2729	0.3816	0.2734	0.0709	0.0013	0.3118	0.3119	-0.0678	-0.098	-0.2396	-0.0225
ELA	7	413189	0 D	3	27476	0.6946	0.6942	0.0658	0.093	0.1464	0.0006	0.4581	0.4586	-0.2838	-0.2391	-0.2002	-0.0293
ELA	7	413196	0 D	2	27459	0.5473	0.5466	0.2098	0.1207	0.1216	0.0012	0.2938	0.2943	-0.0331	-0.2806	-0.1246	-0.0255
ELA	7	584046	0 D	2	27470	0.5835	0.0956	0.1658	0.583	0.1548	0.0008	0.4488	-0.2138	-0.2313	0.4491	-0.1988	-0.0237
ELA	7	584049	0 D	2	27473	0.6426	0.146	0.1036	0.6421	0.1076	0.0007	0.3644	-0.2149	-0.228	0.3644	-0.0938	-0.0113
ELA	7	584050	0 D	2	27459	0.3599	0.2839	0.1494	0.3595	0.2059	0.0012	0.2118	0.0209	-0.2039	0.212	-0.0937	-0.0164
ELA	7	584070	0 D	2	27467	0.3348	0.1607	0.3344	0.2478	0.2561	0.0009	0.3294	-0.074	0.3295	-0.1177	-0.1762	-0.0178
ELA	7	584132	0 D	2	27447	0.4114	0.2396	0.1387	0.2094	0.4107	0.0017	0.2608	-0.059	-0.1516	-0.1229	0.2611	-0.0219
ELA	7	625503	1 A-C	2	10741	0.4226	0.1372	0.4222	0.3085	0.1313	0.0008	0.2988	-0.1313	0.2993	-0.1384	-0.1118	-0.0332
ELA	7	625505	1 A-C	2	10724	0.7296	0.7278	0.0823	0.1196	0.0678	0.0024	0.514	0.513	-0.2625	-0.3095	-0.2183	-0.0175
ELA	7	625499	1 A-K	2	10714	0.4553	0.2091	0.1216	0.2122	0.4538	0.0033	0.3865	-0.2099	-0.1543	-0.1358	0.3864	-0.0189
ELA	7	625502	1 A-K	2	10729	0.5151	0.12	0.5141	0.3063	0.0576	0.002	0.211	-0.1562	0.2112	-0.0116	-0.2102	-0.0114
ELA	7	625506	1 A-K	3	10739	0.6781	0.1043	0.1313	0.086	0.6774	0.001	0.5023	-0.2555	-0.267	-0.236	0.5019	-0.005
ELA	7	625507	1 A-V	1	10737	0.5493	0.1166	0.5487	0.2468	0.0868	0.0012	0.4212	-0.1675	0.4213	-0.2607	-0.1526	-0.0154
ELA	7	625509	1 A-V	1	10733	0.5855	0.1099	0.5846	0.1699	0.1341	0.0016	0.2957	-0.2335	0.2961	-0.2038	0.0129	-0.0198
ELA	7	633214	1 A-V	2	10738	0.553	0.066	0.2823	0.0981	0.5524	0.0011	0.4705	-0.2556	-0.2068	-0.2584	0.4704	-0.014
ELA	7	574338	1 B-C	3	10727	0.5476	0.1994	0.0964	0.1556	0.5464	0.0021	0.3819	-0.0982	-0.2135	-0.2379	0.3833	-0.0508
ELA	7	574332	1 B-K	2	10743	0.5645	0.1927	0.5641	0.1344	0.1081	0.0007	0.3617	-0.1914	0.3613	-0.1934	-0.1217	0.0043
ELA	7	574333	1 B-K	2	10727	0.6893	0.0757	0.086	0.6878	0.1483	0.0021	0.3963	-0.2661	-0.14	0.3975	-0.2045	-0.0402
ELA	7	574334	1 B-K	2	10724	0.8177	0.0505	0.8157	0.0845	0.0469	0.0024	0.4546	-0.2397	0.4543	-0.2712	-0.2219	-0.0269
ELA	7	574335	1 B-V	2	10726	0.6605	0.0783	0.198	0.6591	0.0624	0.0022	0.3772	-0.1732	-0.2366	0.3784	-0.1518	-0.0388
ELA	7	574341	1 B-V	1	10726	0.4261	0.4251	0.3542	0.0828	0.1356	0.0022	0.3965	0.3966	-0.0937	-0.2206	-0.2607	-0.025
ELA	7	584069	1 D	2	10729	0.511	0.1039	0.51	0.208	0.1761	0.002	0.43	-0.1572	0.4302	-0.2846	-0.1324	-0.0251
ELA	7	630219	1 D	2	10735	0.7139	0.7129	0.0953	0.1173	0.0731	0.0014	0.4309	0.4311	-0.2644	-0.1944	-0.2078	-0.0209
ELA	7	630227	1 D	2	10741	0.3714	0.1711	0.247	0.3711	0.21	0.0008	0.24	-0.0778	-0.1008	0.2404	-0.1043	-0.0311
ELA	7	576315	2 A-C	2	16700	0.7385	0.7366	0.0466	0.0833	0.1309	0.0026	0.4481	0.4485	-0.2513	-0.3218	-0.1598	-0.0335
ELA	7	576289	2 A-K	3	16718	0.788	0.0762	0.0722	0.7868	0.0634	0.0015	0.4051	-0.2301	-0.1886	0.405	-0.2269	-0.0195
ELA	7	576290	2 A-K	2	16709	0.7088	0.7074	0.213	0.0269	0.0506	0.002	0.3401	0.3416	-0.1602	-0.2183	-0.2398	-0.0427
ELA	7	576292	2 A-K	3	16702	0.4476	0.2633	0.2425	0.0452	0.4465	0.0024	0.333	-0.0494	-0.2069	-0.2597	0.3332	-0.0255
ELA	7	576286	2 A-V	2	16699	0.4928	0.1829	0.2247	0.0983	0.4915	0.0026	0.3486	-0.154	-0.1296	-0.1989	0.3493	-0.0343
ELA	7	576293	2 A-V	1	16738	0.371	0.3709	0.0575	0.0863	0.485	0.0003	0.3271	0.3272	-0.2604	-0.1941	-0.0855	-0.0128
ELA	7	623054	2 B-C	2	8391	0.2721	0.2719	0.3019	0.3306	0.0949	0.0008	0.266	0.2661	-0.1839	0.0686	-0.2238	-0.0223
ELA	7	623055	2 B-C	2	8384	0.529	0.0739	0.1634	0.5281	0.2329	0.0017	0.2622	-0.1559	-0.2106	0.2626	-0.0271	-0.0235
ELA	7	623059	2 B-C	2	8394	0.8137	0.0897	0.8133	0.0498	0.0468	0.0005	0.4671	-0.2354	0.4672	-0.2814	-0.2523	-0.0147
ELA	7	623060	2 B-C	2	8389	0.8059	0.0567	0.0724	0.0648	0.8051	0.0011	0.4844	-0.2084	-0.2811	-0.2843	0.4849	-0.033
ELA	7	623056	2 B-K	3	8380	0.7228	0.0611	0.105	0.1105	0.7212	0.0021	0.4511	-0.2223	-0.2257	-0.2509	0.4514	-0.0282
ELA	7	623061	2 B-K	2	8389	0.5742	0.1394	0.5736	0.1885	0.0974	0.0011	0.3241	-0.1044	0.3248	-0.1715	-0.1903	-0.0297
ELA	7	623062	2 B-V	1	8385	0.7647	0.0781	0.0706	0.7635	0.0862	0.0015	0.3524	-0.1523	-0.219	0.3528	-0.1856	-0.022
ELA	7	623063	2 B-V	2	8379	0.6926	0.691	0.2002	0.0539	0.0526	0.0023	0.3619	0.363	-0.1836	-0.163	-0.2498	-0.0356
ELA	7	503931	2 D	2	8387	0.5545	0.3434	0.062	0.0394	0.5538	0.0013	0.167	0.0407	-0.2395	-0.2262	0.168	-0.0294
ELA	7	630218	2 D	2	8394	0.8698	0.0282	0.8694	0.0363	0.0656	0.0005	0.3641	-0.1955	0.3641	-0.2554	-0.1706	-0.0134
ELA	7	630228	2 D	2	8386	0.5565	0.103	0.2715	0.0683	0.5557	0.0014	0.2591	-0.1509	-0.0377	-0.2586	0.2601	-0.0353
ELA	7	625558	3 B-C	2	8337	0.4169	0.2671	0.0675	0.2479	0.4165	0.001	0.2614	-0.1036	-0.2558	-0.0416	0.262	-0.0391
ELA	7	625565	3 B-C	2	8329	0.5098	0.1706	0.5088	0.0859	0.2327	0.0019	0.3316	-0.0983	0.3318	-0.2245	-0.1543	-0.0181
ELA	7	625561	3 B-K	2	8339	0.3656	0.127	0.1336	0.3733	0.3654	0.0007	0.1543	-0.0825	-0.108	-0.0203	0.1544	-0.0113
ELA	7	625562	3 B-K	3	8336	0.1635	0.5826	0.1104	0.1633	0.1426	0.0011	-0.1489	0.4585	-0.2565	-0.1486	-0.2581	-0.0157
ELA	7	625568	3 B-K	2	8332	0.5911	0.1245	0.1206	0.5902	0.1632	0.0016	0.2476	-0.1841	-0.2211	0.2487	0.032	-0.036
ELA	7	625560	3 B-V	1	8331	0.8624	0.861	0.093	0.0277	0.0167	0.0017	0.3548	0.355	-0.2257	-0.2081	-0.173	-0.0247
ELA	7	625567	3 B-V	1	8339	0.7004	0.1167	0.6999	0.1081	0.0745	0.0007	0.3887	-0.2408	0.3895	-0.1676	-0.1835	-0.0341
ELA	7	632443	3 B-V	2	8326	0.8418	0.8399	0.0314	0.053	0.0735	0.0023	0.4931	0.49	-0.2248	-0.2701	-0.3059	-0.0042
ELA	7	584073	3 D	2	8338	0.4788	0.0963	0.2077	0.4784	0.2168	0.0008	0.3253	-0.2309	-0.2202	0.3258	-0.0105	-0.0339

ELA	7	630220	3 D	2	8327	0.6336	0.0276	0.1158	0.2223	0.6322	0.0022	0.2657	-0.19	-0.1719	-0.0976	0.2678	-0.0521
ELA	7	630229	3 D	1	8336	0.7636	0.1279	0.7627	0.0538	0.0545	0.0011	0.3775	-0.1792	0.3782	-0.2289	-0.2138	-0.0265
ELA	8	411875	0 A-C	2	26757	0.4042	0.4274	0.0935	0.4033	0.0738	0.002	0.2698	-0.0502	-0.1999	0.2707	-0.1834	-0.0415
ELA	8	411877	0 A-C	2	26757	0.7205	0.719	0.1167	0.09	0.0722	0.002	0.5302	0.5305	-0.3041	-0.2738	-0.235	-0.0355
ELA	8	411872	0 A-K	2	26737	0.7591	0.0631	0.757	0.0746	0.1024	0.0028	0.5789	-0.2609	0.5789	-0.3132	-0.3316	-0.038
ELA	8	411874	0 A-K	3	26728	0.6125	0.0581	0.1237	0.2045	0.6106	0.0031	0.4815	-0.2813	-0.3055	-0.1647	0.4822	-0.0419
ELA	8	411878	0 A-K	2	26750	0.7855	0.0755	0.0855	0.053	0.7837	0.0023	0.4828	-0.3122	-0.2053	-0.2556	0.4841	-0.0457
ELA	8	576309	0 A-K	2	26723	0.2951	0.0932	0.4148	0.1947	0.2941	0.0033	0.3081	-0.166	-0.0367	-0.1822	0.3086	-0.037
ELA	8	576310	0 A-K	2	26769	0.6904	0.0561	0.1462	0.6893	0.1067	0.0016	0.491	-0.2101	-0.3105	0.4917	-0.2198	-0.0399
ELA	8	576311	0 A-K	2	26735	0.5717	0.5701	0.1607	0.0794	0.1869	0.0028	0.4587	0.4592	-0.2811	-0.2885	-0.1132	-0.0366
ELA	8	576312	0 A-K	2	26758	0.501	0.191	0.1652	0.5	0.1418	0.002	0.293	-0.0271	-0.149	0.2936	-0.2281	-0.0283
ELA	8	411879	0 A-V	2	26743	0.5788	0.5774	0.1123	0.1582	0.1496	0.0025	0.3294	0.331	-0.2051	-0.1899	-0.0757	-0.0483
ELA	8	576304	0 A-V	2	26791	0.6282	0.6278	0.0889	0.1107	0.1719	0.0007	0.3674	0.3677	-0.0972	-0.2957	-0.1502	-0.0224
ELA	8	576313	0 A-V	1	26769	0.4384	0.3415	0.4377	0.1442	0.0751	0.0016	0.4048	-0.1653	0.4052	-0.1851	-0.2135	-0.0338
ELA	8	496328	0 B-C	3	26752	0.499	0.1297	0.2593	0.4979	0.1109	0.0022	0.3931	-0.2085	-0.0947	0.394	-0.2653	-0.0445
ELA	8	576296	0 B-C	2	26772	0.7847	0.0835	0.0619	0.7835	0.0696	0.0015	0.4652	-0.2039	-0.2667	0.4657	-0.2748	-0.0316
ELA	8	576297	0 B-C	2	26782	0.4471	0.4466	0.1719	0.1518	0.2285	0.0011	0.4723	0.4724	-0.2219	-0.223	-0.1673	-0.0276
ELA	8	576314	0 B-C	2	26783	0.6131	0.1378	0.1731	0.0756	0.6124	0.001	0.564	-0.2602	-0.2837	-0.2924	0.5637	-0.0085
ELA	8	496333	0 B-K	3	26772	0.6905	0.6895	0.1383	0.1388	0.032	0.0015	0.4852	0.4854	-0.3239	-0.2068	-0.2288	-0.0269
ELA	8	496334	0 B-K	3	26754	0.5085	0.0426	0.5074	0.1509	0.2969	0.0021	0.4438	-0.2314	0.4446	-0.259	-0.1771	-0.0417
ELA	8	576302	0 B-K	2	26769	0.4989	0.4981	0.0517	0.2123	0.2363	0.0016	0.4118	0.412	-0.2232	-0.2359	-0.1393	-0.024
ELA	8	496329	0 B-V	2	26779	0.5429	0.0509	0.3624	0.0433	0.5422	0.0012	0.3102	-0.2808	-0.0705	-0.286	0.3108	-0.0288
ELA	8	496336	0 B-V	2	26794	0.7505	0.0697	0.1167	0.75	0.0629	0.0006	0.48	-0.2042	-0.2918	0.4807	-0.2539	-0.0339
ELA	8	576295	0 B-V	2	26771	0.5141	0.0526	0.1496	0.5134	0.283	0.0015	0.4356	-0.2356	-0.2315	0.436	-0.1812	-0.0311
ELA	8	576303	0 B-V	2	26775	0.2765	0.3796	0.2761	0.1885	0.1545	0.0013	0.2345	-0.0644	0.2348	-0.1016	-0.0914	-0.0265
ELA	8	341015	0 D	2	26772	0.3712	0.2891	0.1684	0.3707	0.1704	0.0015	0.2684	-0.0594	-0.097	0.2687	-0.1744	-0.0251
ELA	8	416449	0 D	2	26791	0.3424	0.1527	0.3421	0.3602	0.1442	0.0007	0.1964	-0.1224	0.1966	0.0314	-0.1819	-0.0162
ELA	8	416453	0 D	2	26782	0.8254	0.8245	0.0487	0.0623	0.0634	0.0011	0.4005	0.4014	-0.2631	-0.2904	-0.1019	-0.0309
ELA	8	416518	0 D	2	26788	0.4466	0.4462	0.0685	0.3401	0.1443	0.0009	0.4616	0.4614	-0.2901	-0.1857	-0.1932	-0.0071
ELA	8	503812	0 D	2	26775	0.5059	0.2575	0.0973	0.1387	0.5052	0.0013	0.2874	-0.0676	-0.1966	-0.1593	0.2882	-0.0324
ELA	8	503813	0 D	2	26768	0.5133	0.1964	0.1068	0.1828	0.5124	0.0016	0.4921	-0.1675	-0.2911	-0.2288	0.4924	-0.0319
ELA	8	584077	0 D	2	26795	0.4909	0.0721	0.3257	0.4906	0.111	0.0006	0.394	-0.2043	-0.2458	0.3942	-0.091	-0.0194
ELA	8	584078	0 D	2	26780	0.723	0.0684	0.7222	0.1478	0.0604	0.0012	0.4633	-0.2471	0.4637	-0.2705	-0.203	-0.0275
ELA	8	584106	0 D	2	26777	0.6395	0.0616	0.1954	0.6387	0.103	0.0013	0.4907	-0.1738	-0.3306	0.4911	-0.2036	-0.0325
ELA	8	623088	1 A-C	2	10392	0.3172	0.3169	0.264	0.3654	0.0528	0.0009	0.0225	0.0231	-0.1068	0.1779	-0.2165	-0.0317
ELA	8	626313	1 A-C	2	10377	0.4728	0.4717	0.2636	0.1461	0.1162	0.0023	0.4116	0.4122	-0.1306	-0.24	-0.1929	-0.0342
ELA	8	623084	1 A-K	2	10388	0.4265	0.1526	0.1571	0.2631	0.4259	0.0012	0.3427	-0.2059	-0.2791	0.0157	0.3431	-0.0278
ELA	8	623085	1 A-K	2	10387	0.5913	0.1056	0.5905	0.1551	0.1475	0.0013	0.4474	-0.2308	0.448	-0.2281	-0.1853	-0.03
ELA	8	623087	1 A-K	2	10369	0.7255	0.1073	0.0979	0.0685	0.7233	0.0031	0.4823	-0.1666	-0.3214	-0.2655	0.4818	-0.0263
ELA	8	623092	1 A-K	3	10384	0.569	0.1721	0.1668	0.5681	0.0913	0.0016	0.4229	-0.1791	-0.1524	0.4233	-0.2925	-0.0246
ELA	8	623086	1 A-V	2	10390	0.6397	0.1481	0.1486	0.6391	0.0632	0.0011	0.3422	-0.2041	-0.0893	0.3415	-0.2464	0.0049
ELA	8	623091	1 A-V	2	10379	0.1759	0.1021	0.1756	0.5701	0.1501	0.0021	-0.0984	-0.203	-0.0977	0.3106	-0.151	-0.0262
ELA	8	578039	1 B-C	2	26737	0.6807	0.6788	0.0649	0.087	0.1665	0.0028	0.341	0.3412	-0.2617	-0.2072	-0.0946	-0.0224
ELA	8	578040	1 B-C	2	26763	0.5393	0.1472	0.1047	0.208	0.5384	0.0018	0.3078	-0.046	-0.2417	-0.1534	0.3084	-0.0288
ELA	8	578042	1 B-K	2	26743	0.6405	0.6389	0.0614	0.1583	0.1389	0.0025	0.4381	0.4383	-0.2201	-0.2668	-0.1706	-0.026
ELA	8	578044	1 B-K	3	26744	0.5927	0.1456	0.5912	0.0937	0.167	0.0025	0.316	-0.1223	0.3157	-0.1869	-0.1526	-0.0142
ELA	8	578038	1 B-V	2	26763	0.8131	0.0608	0.8117	0.099	0.0267	0.0018	0.4404	-0.2143	0.4405	-0.2805	-0.2237	-0.0267
ELA	8	578046	1 B-V	2	26796	0.3724	0.1875	0.3722	0.3441	0.0956	0.0006	0.2361	-0.1468	0.2362	-0.1502	0.0503	-0.0123
ELA	8	584083	1 D	2	10382	0.572	0.1542	0.1494	0.1235	0.571	0.0018	0.4039	-0.0974	-0.278	-0.1969	0.4044	-0.0257
ELA	8	630366	1 D	2	10386	0.2366	0.0984	0.2362	0.4917	0.1723	0.0014	0.1014	-0.2143	0.1018	0.0592	-0.0214	-0.0245
ELA	8	630375	1 D	2	10397	0.7036	0.0479	0.0673	0.7033	0.1811	0.0004	0.4275	-0.2337	-0.2856	0.4271	-0.1914	0.0043

ELA	8	624738	2 A-C	2	8191	0.7408	0.0746	0.7398	0.1195	0.0647	0.0013	0.4146	-0.2428	0.4149	-0.2054	-0.2053	-0.0306
ELA	8	624743	2 A-C	2	8190	0.7083	0.7073	0.0869	0.1619	0.0424	0.0015	0.4207	0.4218	-0.183	-0.2536	-0.225	-0.0417
ELA	8	624741	2 A-K	2	8190	0.2608	0.1822	0.3583	0.2604	0.1976	0.0015	0.1567	-0.1955	0.0295	0.157	-0.017	-0.0213
ELA	8	624742	2 A-K	3	8191	0.4765	0.07	0.0546	0.3982	0.4759	0.0013	0.1588	-0.1277	-0.2333	0.0144	0.1598	-0.0341
ELA	8	624745	2 A-K	3	8194	0.7789	0.0439	0.7781	0.1116	0.0655	0.001	0.4545	-0.2222	0.454	-0.2662	-0.2386	-0.0103
ELA	8	624739	2 A-V	2	8196	0.9385	0.9378	0.0232	0.0251	0.0132	0.0007	0.3447	0.3458	-0.2065	-0.2174	-0.1546	-0.0302
ELA	8	624746	2 A-V	2	8184	0.833	0.0521	0.0438	0.0708	0.8311	0.0022	0.5009	-0.2661	-0.2457	-0.2996	0.5006	-0.0276
ELA	8	631614	2 A-V	2	8188	0.6325	0.6314	0.1175	0.1564	0.0929	0.0017	0.2745	0.2745	-0.1872	-0.108	-0.1112	-0.015
ELA	8	584081	2 D	2	8191	0.7192	0.0725	0.0367	0.7182	0.1712	0.0013	0.3065	-0.1708	-0.2279	0.3083	-0.1322	-0.0476
ELA	8	630367	2 D	2	8194	0.4719	0.4715	0.1573	0.203	0.1673	0.001	0.2561	0.2559	-0.1558	-0.147	-0.0316	-0.0045
ELA	8	630376	2 D	2	8196	0.5715	0.1515	0.1418	0.5711	0.1348	0.0007	0.2218	-0.1607	-0.0324	0.2225	-0.1183	-0.0306
ELA	8	624748	3 A-C	2	8203	0.4729	0.0419	0.4726	0.2096	0.2753	0.0006	0.2202	-0.2249	0.2204	-0.2164	0.0524	-0.0124
ELA	8	624749	3 A-C	2	8193	0.5046	0.5037	0.2243	0.2075	0.0627	0.0018	0.3776	0.3781	-0.2562	-0.1269	-0.1207	-0.0336
ELA	8	624756	3 A-C	2	8196	0.6907	0.1354	0.0831	0.0904	0.6897	0.0015	0.5255	-0.2856	-0.2983	-0.2167	0.5257	-0.0265
ELA	8	624751	3 A-K	2	8198	0.5106	0.2552	0.51	0.0978	0.1357	0.0012	0.3889	-0.2228	0.3894	-0.2503	-0.0644	-0.0323
ELA	8	624755	3 A-K	3	8190	0.6158	0.6144	0.2223	0.0826	0.0785	0.0022	0.4671	0.4668	-0.2603	-0.2579	-0.1751	-0.0192
ELA	8	631562	3 A-K	2	8196	0.8488	0.0327	0.0517	0.0666	0.8476	0.0015	0.422	-0.2194	-0.2546	-0.2218	0.4228	-0.0343
ELA	8	624750	3 A-V	2	8202	0.8975	0.0579	0.029	0.8968	0.0156	0.0007	0.3499	-0.1976	-0.2136	0.3503	-0.1941	-0.0192
ELA	8	624754	3 A-V	2	8198	0.579	0.0816	0.2859	0.5783	0.0529	0.0012	0.223	-0.2031	-0.0226	0.2234	-0.1957	-0.0201
ELA	8	503835	3 D	2	8196	0.6124	0.0871	0.2065	0.6115	0.0934	0.0015	0.3139	-0.1213	-0.2226	0.315	-0.0953	-0.038
ELA	8	630368	3 D	1	8203	0.87	0.0471	0.8695	0.0758	0.0069	0.0006	0.3001	-0.1698	0.3003	-0.2042	-0.1298	-0.0134
ELA	8	630377	3 D	2	8199	0.7424	0.1268	0.0948	0.7416	0.0357	0.0011	0.3487	-0.1631	-0.2152	0.3498	-0.1869	-0.0343
MATH	3	495190	0 A-F	2	18441	0.5017	0.1749	0.1947	0.5001	0.1271	0.0031	0.4949	-0.2973	-0.2085	0.4943	-0.1517	-0.0204
MATH	3	495193	0 A-F	1	18410	0.3269	0.3254	0.2288	0.1932	0.2479	0.0048	0.4654	0.4659	-0.166	-0.2337	-0.1219	-0.0523
MATH	3	566159	0 A-F	2	18453	0.5105	0.1758	0.1829	0.5092	0.1296	0.0025	0.3259	0.01	-0.2608	0.3268	-0.1925	-0.0341
MATH	3	313993	0 A-T	1	18459	0.8058	0.0295	0.8041	0.0712	0.0931	0.0022	0.5148	-0.19	0.5153	-0.2752	-0.3438	-0.0369
MATH	3	408684	0 A-T	1	18432	0.5595	0.2022	0.1087	0.5574	0.1281	0.0036	0.4641	-0.2175	-0.2559	0.4655	-0.1821	-0.0559
MATH	3	408847	0 A-T	2	18470	0.6663	0.0753	0.1683	0.0896	0.6653	0.0016	0.4749	-0.2475	-0.2278	-0.2546	0.4747	-0.0197
MATH	3	420538	0 A-T	1	18467	0.5854	0.5844	0.074	0.1543	0.1856	0.0017	0.5394	0.5398	-0.2092	-0.2162	-0.3389	-0.0329
MATH	3	493221	0 A-T	2	18400	0.3341	0.1916	0.1218	0.3489	0.3323	0.0054	0.4803	-0.4153	-0.1915	0.0068	0.4806	-0.0486
MATH	3	493231	0 A-T	1	18460	0.4925	0.1583	0.2799	0.4915	0.0682	0.0021	0.556	-0.1595	-0.44	0.5556	-0.0842	-0.0162
MATH	3	579686	0 A-T	2	18376	0.4816	0.1788	0.4784	0.1196	0.2167	0.0066	0.4454	-0.1726	0.4459	-0.2048	-0.2108	-0.0412
MATH	3	579688	0 A-T	2	18467	0.6153	0.164	0.6142	0.1616	0.0585	0.0017	0.5207	-0.2032	0.5202	-0.3522	-0.2034	-0.014
MATH	3	300096	0 B-O	1	18421	0.6509	0.114	0.1402	0.6481	0.0935	0.0042	0.5101	-0.2735	-0.2716	0.5109	-0.2049	-0.0484
MATH	3	313476	0 B-O	1	18415	0.7302	0.0563	0.11	0.7269	0.1023	0.0045	0.5346	-0.2328	-0.3088	0.5363	-0.2788	-0.0619
MATH	3	408687	0 B-O	2	18424	0.588	0.5857	0.1758	0.1656	0.0689	0.0041	0.4673	0.4675	-0.2043	-0.2628	-0.2079	-0.0343
MATH	3	408699	0 B-O	2	18434	0.379	0.1996	0.2202	0.199	0.3776	0.0035	0.4471	-0.1828	-0.2654	-0.0786	0.4473	-0.0404
MATH	3	408702	0 B-O	2	18451	0.7531	0.0633	0.1109	0.0721	0.7511	0.0026	0.5422	-0.3013	-0.2931	-0.2606	0.5416	-0.0268
MATH	3	408711	0 B-O	2	18441	0.669	0.6669	0.111	0.0937	0.1253	0.0031	0.4472	0.4476	-0.2616	-0.262	-0.1528	-0.0335
MATH	3	408845	0 B-O	2	18464	0.3479	0.3212	0.3473	0.2355	0.0941	0.0019	0.3715	-0.1613	0.3716	-0.1203	-0.1701	-0.0208
MATH	3	495213	0 B-O	2	18462	0.6306	0.6293	0.1072	0.1818	0.0796	0.002	0.3096	0.3103	-0.1305	-0.2476	-0.0468	-0.0291
MATH	3	495217	0 B-O	2	18447	0.3953	0.2722	0.1408	0.3942	0.19	0.0028	0.33	-0.1514	-0.2133	0.33	-0.0477	-0.0185
MATH	3	579666	0 B-O	2	18424	0.5138	0.2749	0.5117	0.1242	0.0851	0.0041	0.4635	-0.3067	0.4644	-0.2214	-0.069	-0.0458
MATH	3	579671	0 B-O	2	18455	0.6366	0.1803	0.6351	0.1075	0.0748	0.0024	0.4942	-0.3825	0.494	-0.1733	-0.1365	-0.0247
MATH	3	299414	0 C-G	1	18410	0.6463	0.1314	0.1174	0.1031	0.6432	0.0048	0.5316	-0.2944	-0.2473	-0.2374	0.5331	-0.059
MATH	3	408536	0 C-G	2	18465	0.3017	0.3011	0.2742	0.2021	0.2208	0.0018	0.2736	0.2737	-0.1241	-0.0813	-0.0885	-0.0194
MATH	3	408537	0 C-G	2	18463	0.4459	0.2187	0.4451	0.1252	0.2091	0.0019	0.342	-0.2179	0.3419	-0.1308	-0.0884	-0.0132
MATH	3	479183	0 C-G	1	18380	0.5125	0.1471	0.5092	0.0971	0.2401	0.0064	0.3103	-0.1937	0.3128	-0.1343	-0.1014	-0.0585
MATH	3	479184	0 C-G	2	18446	0.4874	0.486	0.1799	0.1652	0.1661	0.0029	0.437	0.4373	-0.1515	-0.1915	-0.2351	-0.0332
MATH	3	497747	0 C-G	1	18483	0.8711	0.0525	0.0291	0.8704	0.0471	0.0009	0.4058	-0.2377	-0.1833	0.4052	-0.2452	-0.0095
MATH	3	497751	0 C-G	2	18448	0.4447	0.0775	0.4435	0.2382	0.2381	0.0028	0.3775	-0.129	0.3781	-0.17	-0.1853	-0.0379

MATH	3	299422	0	D-M	1	18478	0.5988	0.0288	0.1517	0.5981	0.2202	0.0011	0.4075	-0.1654	-0.3741	0.4078	-0.0901	-0.0216
MATH	3	302218	0	D-M	2	18462	0.495	0.4265	0.028	0.0495	0.494	0.002	0.5633	-0.4764	-0.1056	-0.127	0.5628	-0.0182
MATH	3	314246	0	D-M	2	18406	0.6917	0.1196	0.6882	0.0728	0.1144	0.005	0.4836	-0.2356	0.485	-0.2682	-0.2353	-0.0512
MATH	3	315858	0	D-M	2	18461	0.3953	0.1284	0.2935	0.3945	0.1815	0.0021	0.5016	-0.1653	-0.135	0.5015	-0.33	-0.0243
MATH	3	408716	0	D-M	2	18455	0.3787	0.2924	0.1395	0.1879	0.3778	0.0024	0.2883	-0.0172	-0.1649	-0.1892	0.2886	-0.0214
MATH	3	408720	0	D-M	1	18444	0.4428	0.2066	0.1178	0.2311	0.4415	0.003	0.5473	-0.2287	-0.2455	-0.2324	0.5477	-0.0416
MATH	3	408726	0	D-M	1	18445	0.5758	0.5741	0.0855	0.158	0.1795	0.0029	0.6253	0.6261	-0.1853	-0.2877	-0.3911	-0.0512
MATH	3	408735	0	D-M	1	18478	0.8059	0.0762	0.077	0.805	0.0407	0.0011	0.3371	-0.1736	-0.201	0.338	-0.1687	-0.0281
MATH	3	408736	0	D-M	2	18462	0.4005	0.3197	0.3997	0.154	0.1245	0.002	0.4213	-0.1756	0.4213	-0.1521	-0.2077	-0.0222
MATH	3	479189	0	D-M	1	18397	0.3228	0.4011	0.1456	0.321	0.1268	0.0055	0.3243	-0.1089	-0.2124	0.325	-0.0605	-0.0451
MATH	3	493218	0	D-M	1	18429	0.6021	0.2031	0.5999	0.1491	0.0442	0.0038	0.4817	-0.2303	0.4821	-0.2719	-0.2162	-0.0373
MATH	3	617239	1	A-F	2	7628	0.5691	0.0888	0.1678	0.1737	0.5683	0.0014	0.4733	-0.2261	-0.2142	-0.2352	0.4738	-0.0314
MATH	3	579689	1	A-T	2	7625	0.2281	0.6143	0.0797	0.0764	0.2276	0.0018	0.3299	-0.0418	-0.24	-0.1965	0.33	-0.0184
MATH	3	579674	1	B-O	2	7617	0.4191	0.1918	0.4179	0.1697	0.2178	0.0029	0.3118	-0.127	0.3122	-0.1783	-0.0864	-0.026
MATH	3	624847	1	B-O	2	7547	0.3244	0.3885	0.1825	0.3205	0.0965	0.012	0.2947	-0.0273	-0.202	0.2957	-0.14	-0.0489
MATH	3	497753	1	C-G	2	7625	0.441	0.2043	0.4402	0.1933	0.1602	0.0018	0.3705	-0.1814	0.3704	-0.2363	-0.046	-0.0124
MATH	3	622954	1	C-G	2	7619	0.5343	0.1291	0.5329	0.2642	0.0712	0.0026	0.4426	-0.2139	0.4425	-0.2021	-0.2292	-0.0198
MATH	3	579659	1	D-M	2	7614	0.2838	0.2829	0.2037	0.3131	0.197	0.0033	0.2539	0.2538	-0.1271	-0.0094	-0.1457	-0.0145
MATH	3	621399	1	D-M	2	7560	0.2077	0.438	0.2055	0.16	0.1862	0.0103	-0.0681	0.4072	-0.0648	-0.2265	-0.2244	-0.054
MATH	3	479173	2	A-F	2	5412	0.4625	0.1328	0.2324	0.1705	0.4609	0.0035	0.2532	-0.1218	-0.064	-0.1518	0.2528	-0.0094
MATH	3	579683	2	A-F	2	5414	0.5846	0.5828	0.1705	0.1574	0.0862	0.0031	0.3438	0.344	-0.2284	-0.1529	-0.0954	-0.0223
MATH	3	621398	2	A-T	2	5416	0.5583	0.5568	0.144	0.2138	0.0827	0.0028	0.4256	0.4265	-0.1427	-0.2312	-0.2357	-0.0401
MATH	3	495187	2	B-O	2	5413	0.1866	0.5496	0.1753	0.0858	0.186	0.0033	0.2994	-0.0507	-0.1269	-0.1477	0.2995	-0.0286
MATH	3	617234	2	B-O	2	5372	0.4557	0.4507	0.1979	0.1858	0.1547	0.0109	0.0993	0.1024	-0.0319	-0.0411	-0.0488	-0.0449
MATH	3	579643	2	C-G	2	5417	0.3757	0.3092	0.1828	0.3747	0.1307	0.0026	0.1314	0.0975	-0.1508	0.1329	-0.1448	-0.045
MATH	3	579656	2	D-M	2	5396	0.4692	0.088	0.3224	0.1169	0.4662	0.0064	0.3308	-0.2588	-0.0573	-0.1891	0.334	-0.0717
MATH	3	579658	2	D-M	2	5426	0.5776	0.2274	0.5771	0.1506	0.044	0.0009	0.2992	-0.2137	0.2995	-0.081	-0.1408	-0.017
MATH	3	495183	3	A-F	2	5416	0.6097	0.1149	0.1437	0.6082	0.1308	0.0024	0.4213	-0.1892	-0.2281	0.4215	-0.1897	-0.03
MATH	3	617237	3	A-T	1	5402	0.597	0.2185	0.1109	0.594	0.0717	0.005	0.5935	-0.4574	-0.1914	0.5948	-0.1496	-0.0628
MATH	3	497738	3	B-O	2	5417	0.3847	0.3588	0.1463	0.1089	0.3839	0.0022	0.5107	-0.2994	-0.1539	-0.1558	0.5108	-0.0397
MATH	3	579667	3	B-O	2	5416	0.2845	0.2056	0.3198	0.2838	0.1884	0.0024	0.2347	-0.0952	-0.1292	0.235	-0.0156	-0.0223
MATH	3	624777	3	B-O	2	5418	0.2641	0.2315	0.4458	0.2636	0.0571	0.002	0.2376	-0.3518	0.1289	0.238	-0.0816	-0.0348
MATH	3	622965	3	C-G	2	5418	0.1176	0.725	0.1173	0.0538	0.1019	0.002	0.0405	0.124	0.0411	-0.0148	-0.2092	-0.0446
MATH	3	493239	3	D-M	1	5405	0.6503	0.112	0.1011	0.6474	0.135	0.0044	0.5398	-0.2306	-0.2989	0.5414	-0.2686	-0.061
MATH	3	621405	3	D-M	2	5416	0.2786	0.0869	0.3043	0.278	0.3284	0.0024	0.0113	-0.1453	-0.1947	0.0118	0.2685	-0.0182
MATH	4	303498	0	A-F	2	19968	0.4536	0.2368	0.451	0.1686	0.1379	0.0056	0.2914	-0.0479	0.2925	-0.1373	-0.2056	-0.0385
MATH	4	313017	0	A-F	2	20005	0.4851	0.1694	0.4832	0.1518	0.1918	0.0038	0.5515	-0.325	0.5521	-0.1483	-0.2489	-0.0455
MATH	4	314532	0	A-F	1	20042	0.6464	0.0689	0.0984	0.1855	0.6452	0.0019	0.5298	-0.2376	-0.2154	-0.3291	0.53	-0.0293
MATH	4	394385	0	A-F	1	20046	0.3657	0.3651	0.1213	0.3757	0.1362	0.0017	0.4776	0.4779	-0.1719	-0.2447	-0.1582	-0.0284
MATH	4	408561	0	A-F	2	20031	0.3498	0.3374	0.2289	0.3489	0.0823	0.0025	0.5855	-0.3611	-0.2415	0.5853	-0.02	-0.0248
MATH	4	497767	0	A-F	1	19948	0.6211	0.0658	0.2546	0.056	0.617	0.0066	0.3298	-0.2341	-0.1127	-0.2179	0.3321	-0.0514
MATH	4	497770	0	A-F	1	19992	0.8803	0.0512	0.8764	0.0394	0.0286	0.0044	0.3874	-0.2404	0.389	-0.2174	-0.1769	-0.0494
MATH	4	299449	0	A-T	2	20037	0.307	0.2732	0.2408	0.3063	0.1775	0.0022	0.3092	-0.1148	-0.0914	0.3092	-0.1345	-0.0193
MATH	4	314643	0	A-T	2	20032	0.6163	0.0991	0.6148	0.214	0.0696	0.0024	0.3769	-0.1644	0.3772	-0.2017	-0.1985	-0.0239
MATH	4	408555	0	A-T	2	19954	0.3441	0.3419	0.2409	0.2743	0.1365	0.0063	0.216	0.2176	-0.1833	0.0229	-0.0913	-0.0468
MATH	4	408571	0	A-T	2	20023	0.6358	0.634	0.1203	0.1593	0.0836	0.0029	0.4914	0.4919	-0.2866	-0.2244	-0.2161	-0.0335
MATH	4	408572	0	A-T	2	19996	0.4315	0.1677	0.2554	0.143	0.4297	0.0042	0.496	-0.2695	-0.2521	-0.0939	0.4958	-0.0301
MATH	4	493271	0	A-T	1	20027	0.4811	0.2112	0.2026	0.1038	0.4798	0.0027	0.5127	-0.2858	-0.1755	-0.2204	0.513	-0.0362
MATH	4	495201	0	A-T	2	20037	0.3896	0.1426	0.31	0.3888	0.1564	0.0022	0.2699	-0.0186	-0.183	0.2702	-0.1089	-0.0227
MATH	4	495203	0	A-T	1	20040	0.5097	0.3765	0.0423	0.0705	0.5087	0.002	0.4739	-0.2858	-0.1696	-0.2466	0.4741	-0.0279
MATH	4	495204	0	A-T	1	19932	0.8096	0.0368	0.0556	0.8035	0.0966	0.0074	0.421	-0.1649	-0.1812	0.4221	-0.3065	-0.0537

MATH	4	574159	0 A-T	1	20038	0.6048	0.076	0.1634	0.1549	0.6035	0.0021	0.4827	-0.2105	-0.2084	-0.2824	0.4826	-0.0225
MATH	4	313458	0 B-O	1	20033	0.3282	0.2699	0.2457	0.3274	0.1547	0.0024	0.5295	-0.3353	-0.1236	0.5296	-0.1244	-0.0299
MATH	4	313460	0 B-O	2	20015	0.4386	0.139	0.4371	0.1881	0.2325	0.0033	0.412	-0.1638	0.4123	-0.12	-0.2346	-0.0327
MATH	4	408745	0 B-O	2	20034	0.6326	0.1131	0.0915	0.6311	0.1618	0.0023	0.4747	-0.2812	-0.2812	0.4753	-0.1561	-0.0342
MATH	4	408757	0 B-O	2	20022	0.5728	0.0962	0.1729	0.1568	0.5711	0.0029	0.5086	-0.1266	-0.2242	-0.3518	0.5088	-0.0331
MATH	4	493275	0 B-O	2	19964	0.4185	0.416	0.3508	0.1328	0.0945	0.0058	0.4069	0.4083	-0.1685	-0.169	-0.203	-0.0539
MATH	4	495226	0 B-O	2	20019	0.5091	0.113	0.1926	0.5075	0.1838	0.0031	0.3918	-0.1272	-0.2405	0.3929	-0.1519	-0.0444
MATH	4	566156	0 B-O	2	19963	0.4774	0.0998	0.4746	0.3232	0.0965	0.0059	0.4132	-0.1727	0.4136	-0.2453	-0.1258	-0.0376
MATH	4	574162	0 B-O	2	20014	0.5251	0.5234	0.1288	0.2293	0.1151	0.0033	0.42	0.4209	-0.2108	-0.1698	-0.2067	-0.0388
MATH	4	574166	0 B-O	2	19967	0.5931	0.5897	0.1416	0.1376	0.1254	0.0057	0.4182	0.4198	-0.2831	-0.174	-0.1337	-0.0481
MATH	4	313462	0 C-G	1	20035	0.6345	0.633	0.0971	0.1348	0.1328	0.0023	0.4498	0.4495	-0.2193	-0.3276	-0.1148	-0.019
MATH	4	408770	0 C-G	1	19987	0.5497	0.5471	0.129	0.1293	0.1899	0.0047	0.3653	0.3662	-0.2211	-0.2033	-0.0949	-0.0395
MATH	4	479178	0 C-G	2	20062	0.504	0.3299	0.5036	0.0334	0.1322	0.0009	0.4589	-0.3825	0.4588	-0.1283	-0.0773	-0.0101
MATH	4	497761	0 C-G	1	20039	0.5848	0.1589	0.1054	0.5835	0.1501	0.0021	0.3734	-0.225	-0.2339	0.3738	-0.0813	-0.0257
MATH	4	313463	0 D-M	1	20051	0.6987	0.182	0.6976	0.075	0.0439	0.0015	0.4926	-0.3682	0.493	-0.1819	-0.1726	-0.0288
MATH	4	314151	0 D-M	1	20054	0.4731	0.1461	0.1815	0.1986	0.4725	0.0013	0.4632	-0.2094	-0.2317	-0.1676	0.4638	-0.0378
MATH	4	314536	0 D-M	2	20053	0.8195	0.0732	0.0643	0.8183	0.0428	0.0014	0.4253	-0.2368	-0.2478	0.426	-0.2008	-0.0306
MATH	4	408564	0 D-M	2	20045	0.7305	0.1573	0.0716	0.7292	0.0402	0.0018	0.3481	-0.2864	-0.0951	0.3492	-0.1271	-0.034
MATH	4	495227	0 D-M	2	20032	0.7205	0.0869	0.0759	0.1159	0.7188	0.0024	0.3964	-0.1959	-0.1963	-0.2182	0.3965	-0.0245
MATH	4	495236	0 D-M	2	20041	0.3834	0.0753	0.2379	0.3826	0.3022	0.002	0.4386	-0.1791	-0.3177	0.4388	-0.0643	-0.0275
MATH	4	497757	0 D-M	1	19985	0.283	0.2304	0.2371	0.2461	0.2817	0.0048	0.3319	-0.1551	-0.2168	0.0253	0.3326	-0.0437
MATH	4	497834	0 D-M	2	19981	0.3821	0.3802	0.2708	0.1729	0.1712	0.005	0.4109	0.4108	-0.1883	-0.135	-0.1662	-0.0301
MATH	4	574173	0 D-M	1	20039	0.487	0.1667	0.1333	0.486	0.2119	0.0021	0.3366	-0.0849	-0.2458	0.3371	-0.1274	-0.0279
MATH	4	574175	0 D-M	2	20033	0.4508	0.4497	0.1593	0.2741	0.1146	0.0024	0.2256	0.2265	-0.198	-0.0981	0.0159	-0.0313
MATH	4	574184	1 A-F	2	8505	0.2676	0.0433	0.5096	0.2672	0.1783	0.0015	0.5249	-0.1585	-0.3482	0.5247	-0.066	-0.0144
MATH	4	617226	1 A-F	1	8435	0.6448	0.0954	0.2182	0.6385	0.038	0.0097	0.3244	-0.2597	-0.0994	0.3269	-0.1805	-0.0529
MATH	4	574158	1 A-T	2	8496	0.1709	0.1705	0.3831	0.1539	0.29	0.0026	0.178	0.1786	-0.0709	-0.1132	0.0224	-0.0392
MATH	4	495199	1 B-O	2	8498	0.308	0.3072	0.2549	0.186	0.2496	0.0023	0.1449	0.1455	-0.0504	-0.1326	0.0178	-0.0262
MATH	4	624800	1 B-O	1	8501	0.5343	0.2803	0.1322	0.5332	0.0522	0.002	0.5893	-0.3956	-0.2221	0.5894	-0.1792	-0.0282
MATH	4	408775	1 C-G	1	8500	0.3521	0.3514	0.1344	0.2994	0.2127	0.0021	0.1906	0.1917	-0.1578	-0.0232	-0.0615	-0.0424
MATH	4	574171	1 D-M	2	8506	0.3392	0.3387	0.2444	0.186	0.2295	0.0014	0.3887	0.3887	-0.105	-0.1692	-0.1725	-0.0123
MATH	4	623011	1 D-M	2	8492	0.5012	0.1114	0.4996	0.1368	0.2491	0.0031	0.3562	-0.1927	0.3573	-0.0733	-0.2097	-0.0393
MATH	4	493265	2 A-F	2	5804	0.1618	0.2766	0.4558	0.1615	0.1044	0.0017	0.2328	0.019	-0.1656	0.2333	-0.0337	-0.0374
MATH	4	622942	2 A-F	1	5768	0.8571	0.0098	0.0101	0.1218	0.8504	0.0079	0.4236	-0.1422	-0.1349	-0.3635	0.4192	-0.0354
MATH	4	495200	2 A-T	1	5807	0.6518	0.1622	0.651	0.1278	0.0578	0.0012	0.4049	-0.176	0.4052	-0.2765	-0.1513	-0.0183
MATH	4	624798	2 A-T	1	5799	0.434	0.1348	0.1821	0.2475	0.4329	0.0026	0.4216	-0.2439	-0.175	-0.1312	0.4222	-0.034
MATH	4	495208	2 B-O	2	5804	0.4967	0.1386	0.2817	0.4959	0.082	0.0017	0.4038	-0.3096	-0.0937	0.4043	-0.1887	-0.0289
MATH	4	617227	2 B-O	2	5807	0.3661	0.3607	0.1591	0.1133	0.3657	0.0012	0.3195	-0.148	-0.1541	-0.0837	0.3191	0.0072
MATH	4	621382	2 C-G	2	5808	0.2812	0.2262	0.2809	0.2078	0.2841	0.001	0.2116	0.0532	0.2118	-0.0122	-0.2483	-0.016
MATH	4	621369	2 D-M	2	5803	0.3788	0.2429	0.3781	0.1292	0.248	0.0019	0.0711	-0.2207	0.0719	-0.1079	0.2249	-0.0266
MATH	4	493255	3 A-F	2	5740	0.1605	0.2228	0.2566	0.1602	0.3588	0.0016	0.0017	-0.1878	0.0806	0.0022	0.0904	-0.0316
MATH	4	622946	3 A-F	1	5700	0.9274	0.0209	0.9195	0.0365	0.0146	0.0085	0.2857	-0.1731	0.2899	-0.1643	-0.1455	-0.0637
MATH	4	493259	3 A-T	2	5739	0.3309	0.1232	0.1233	0.3303	0.4215	0.0017	0.1834	-0.0318	-0.0626	0.1834	-0.1109	-0.0115
MATH	4	575718	3 B-O	2	5740	0.3625	0.362	0.1291	0.2073	0.3001	0.0016	0.2975	0.2982	-0.1708	-0.2849	0.0679	-0.0424
MATH	4	624801	3 B-O	2	5731	0.1371	0.1282	0.5773	0.1546	0.1367	0.0031	-0.1437	-0.1981	0.3723	-0.1874	-0.1431	-0.0135
MATH	4	621401	3 C-G	2	5736	0.575	0.5737	0.1519	0.196	0.0762	0.0023	0.3316	0.3325	-0.2143	-0.1257	-0.1357	-0.034
MATH	4	617224	3 D-M	2	5741	0.4621	0.3501	0.1068	0.4615	0.0802	0.0014	0.4033	-0.2591	-0.181	0.4034	-0.077	-0.0178
MATH	4	617225	3 D-M	2	5722	0.2898	0.3545	0.2051	0.2884	0.1473	0.0047	0.1591	0.0448	-0.2069	0.1605	-0.021	-0.0462
MATH	5	313764	0 A-F	1	21259	0.6794	0.1189	0.1559	0.0453	0.6785	0.0013	0.5456	-0.2276	-0.4083	-0.1556	0.5451	-0.0121
MATH	5	314398	0 A-F	1	21233	0.6847	0.0719	0.0585	0.683	0.1841	0.0025	0.2901	-0.2645	-0.26	0.2916	-0.0116	-0.036
MATH	5	314764	0 A-F	1	21213	0.6194	0.1714	0.1088	0.6173	0.0991	0.0035	0.4661	-0.2091	-0.2518	0.4664	-0.2261	-0.0327

MATH	5	408576	0 A-F	2	21238	0.6221	0.0968	0.6207	0.2188	0.0615	0.0023	0.4594	-0.1583	0.4593	-0.2919	-0.2262	-0.0215
MATH	5	408577	0 A-F	1	21255	0.6995	0.0851	0.0962	0.1188	0.6985	0.0015	0.5156	-0.2652	-0.2507	-0.2714	0.5159	-0.0272
MATH	5	408597	0 A-F	1	21239	0.4835	0.4824	0.1098	0.3204	0.0852	0.0023	0.4418	0.442	-0.3011	-0.2327	-0.0613	-0.0211
MATH	5	495248	0 A-F	2	21230	0.3965	0.3955	0.344	0.2035	0.0544	0.0027	0.3659	0.3664	-0.248	-0.0547	-0.1664	-0.0304
MATH	5	495250	0 A-F	1	21172	0.3509	0.1093	0.349	0.4517	0.0845	0.0054	0.5266	-0.0182	0.5267	-0.4068	-0.1435	-0.0408
MATH	5	495253	0 A-F	2	21222	0.6428	0.0686	0.1385	0.149	0.6409	0.0031	0.5672	-0.1905	-0.3101	-0.3236	0.5666	-0.0247
MATH	5	495258	0 A-F	2	21198	0.4436	0.2821	0.1938	0.4418	0.0782	0.0042	0.5318	-0.2979	-0.2372	0.5318	-0.1271	-0.0342
MATH	5	495259	0 A-F	1	21139	0.406	0.2139	0.3135	0.0624	0.4032	0.007	0.4528	-0.0913	-0.3083	-0.1557	0.4537	-0.0535
MATH	5	300469	0 A-T	2	21232	0.3756	0.2981	0.3746	0.2179	0.1068	0.0026	0.3003	-0.0376	0.3007	-0.2244	-0.1115	-0.0245
MATH	5	301854	0 A-T	2	21199	0.4973	0.1533	0.1433	0.204	0.4953	0.0041	0.5522	-0.1843	-0.2526	-0.2944	0.5527	-0.0435
MATH	5	313524	0 A-T	1	21246	0.9082	0.02	0.9064	0.032	0.0396	0.0019	0.2411	-0.1256	0.2437	-0.1537	-0.1265	-0.0372
MATH	5	313896	0 A-T	1	21142	0.5706	0.2367	0.1416	0.5667	0.0482	0.0068	0.4509	-0.2768	-0.2023	0.4525	-0.1476	-0.0539
MATH	5	394398	0 A-T	1	21261	0.8145	0.1164	0.0362	0.0327	0.8135	0.0012	0.4648	-0.3606	-0.1843	-0.1696	0.4658	-0.0345
MATH	5	408578	0 A-T	2	21236	0.4073	0.4063	0.15	0.2968	0.1445	0.0024	0.4819	0.4821	-0.2178	-0.1614	-0.2386	-0.0281
MATH	5	408600	0 A-T	2	21202	0.4079	0.1578	0.1888	0.2432	0.4063	0.004	0.2692	0.0413	-0.1199	-0.231	0.2696	-0.0232
MATH	5	408606	0 A-T	2	21221	0.4086	0.4073	0.2325	0.2088	0.1483	0.0031	0.4479	0.4479	-0.2737	-0.1146	-0.1591	-0.0239
MATH	5	408633	0 A-T	2	21226	0.3174	0.2901	0.1634	0.2271	0.3165	0.0029	0.4392	-0.1581	-0.1499	-0.1804	0.4394	-0.0304
MATH	5	497776	0 A-T	2	21238	0.337	0.2003	0.2013	0.3362	0.2599	0.0023	0.1752	-0.0893	-0.1696	0.1757	0.0499	-0.0243
MATH	5	497837	0 A-T	2	21229	0.3066	0.3058	0.4061	0.226	0.0594	0.0027	0.3038	0.3041	-0.0622	-0.1738	-0.1507	-0.0247
MATH	5	574136	0 A-T	1	21221	0.4906	0.1745	0.4891	0.0832	0.2501	0.0031	0.425	-0.2617	0.4256	-0.2346	-0.1075	-0.0376
MATH	5	301912	0 B-O	2	21253	0.5079	0.1544	0.5071	0.2448	0.0921	0.0016	0.3612	-0.1479	0.3615	-0.1565	-0.2043	-0.0236
MATH	5	314030	0 B-O	1	21245	0.7066	0.0612	0.7052	0.1276	0.104	0.002	0.393	-0.1893	0.3925	-0.2321	-0.1818	-0.0147
MATH	5	408791	0 B-O	2	21202	0.5279	0.1746	0.1943	0.1013	0.5258	0.004	0.5268	-0.2752	-0.254	-0.1869	0.526	-0.0204
MATH	5	497779	0 B-O	1	21258	0.6012	0.1076	0.6004	0.2743	0.0164	0.0014	0.2347	-0.3231	0.2351	0.0062	-0.1351	-0.0172
MATH	5	313327	0 C-G	2	21245	0.5901	0.0584	0.2847	0.589	0.066	0.002	0.3928	-0.1615	-0.219	0.3937	-0.2235	-0.0339
MATH	5	408813	0 C-G	1	21241	0.6019	0.1463	0.091	0.6006	0.1599	0.0022	0.3633	-0.1213	-0.1611	0.3638	-0.2392	-0.0277
MATH	5	479170	0 C-G	2	21242	0.4086	0.2338	0.1663	0.4078	0.1901	0.0021	0.3444	-0.029	-0.1585	0.3454	-0.2457	-0.0436
MATH	5	495260	0 C-G	2	21232	0.3328	0.3319	0.2193	0.1935	0.2526	0.0026	0.4373	0.4375	-0.0645	-0.2284	-0.2019	-0.0269
MATH	5	314037	0 D-M	2	21222	0.4714	0.2907	0.0712	0.165	0.47	0.0031	0.5817	-0.423	-0.1475	-0.1564	0.5824	-0.0475
MATH	5	314038	0 D-M	2	21250	0.3342	0.3449	0.3336	0.2105	0.1093	0.0017	0.487	-0.4195	0.487	-0.0079	-0.0834	-0.0232
MATH	5	408644	0 D-M	2	21223	0.4289	0.4276	0.0745	0.1391	0.3558	0.003	0.4803	0.4801	-0.1179	-0.3351	-0.1859	-0.0299
MATH	5	408814	0 D-M	2	21270	0.3908	0.0571	0.3905	0.2229	0.3288	0.0008	0.3237	-0.0763	0.3239	-0.1855	-0.1333	-0.0181
MATH	5	408817	0 D-M	2	21242	0.4564	0.1566	0.1291	0.2567	0.4554	0.0021	0.5362	-0.3147	-0.2219	-0.1766	0.5361	-0.0232
MATH	5	408821	0 D-M	2	21217	0.4649	0.1292	0.1695	0.2346	0.4633	0.0033	0.4309	-0.1309	-0.1838	-0.2357	0.4319	-0.0455
MATH	5	408826	0 D-M	1	21256	0.6225	0.1187	0.1009	0.6216	0.1574	0.0015	0.4727	-0.0937	-0.2832	0.4728	-0.3099	-0.0223
MATH	5	497789	0 D-M	2	21257	0.4525	0.1028	0.3291	0.4518	0.1149	0.0014	0.3519	-0.08	-0.2132	0.3519	-0.1572	-0.015
MATH	5	497852	0 D-M	1	21223	0.2863	0.2854	0.0989	0.3002	0.3125	0.003	0.4284	0.4284	-0.2084	0.0133	-0.2934	-0.0252
MATH	5	621361	1 A-F	2	8880	0.2964	0.2668	0.2957	0.3023	0.1328	0.0024	0.0653	-0.2205	0.0659	0.219	-0.0944	-0.0221
MATH	5	642399	1 A-F	2	8884	0.4917	0.4907	0.2253	0.1936	0.0885	0.0019	0.4853	0.4858	-0.1972	-0.2769	-0.1747	-0.0339
MATH	5	493284	1 A-T	1	8790	0.4869	0.1364	0.1589	0.2114	0.4808	0.0125	0.3844	-0.1756	-0.1906	-0.1376	0.3875	-0.0676
MATH	5	622923	1 A-T	2	8874	0.3236	0.2413	0.2982	0.3227	0.1348	0.003	0.1344	-0.0484	-0.1064	0.135	0.0222	-0.0242
MATH	5	495243	1 B-O	2	8875	0.3526	0.2937	0.3515	0.2388	0.113	0.0029	0.3263	-0.0139	0.3264	-0.2481	-0.1343	-0.0216
MATH	5	621410	1 B-O	2	8882	0.4218	0.171	0.2648	0.4209	0.1412	0.0021	0.3655	-0.1254	-0.1905	0.3664	-0.1373	-0.0381
MATH	5	617242	1 C-G	2	8877	0.4203	0.1804	0.2053	0.1925	0.4192	0.0027	0.2673	-0.0317	-0.1495	-0.1476	0.2679	-0.0269
MATH	5	408632	1 D-M	1	8883	0.7236	0.1097	0.113	0.7222	0.0531	0.002	0.3824	-0.2166	-0.211	0.3829	-0.1595	-0.0277
MATH	5	495251	2 A-F	1	6170	0.5394	0.2423	0.1767	0.5386	0.0409	0.0015	0.4687	-0.2722	-0.2363	0.4683	-0.1331	-0.0086
MATH	5	621379	2 A-F	1	6132	0.4157	0.1989	0.2007	0.1803	0.4125	0.0076	0.4133	-0.1708	-0.2901	-0.0388	0.4148	-0.0563
MATH	5	622932	2 A-F	2	6159	0.5124	0.1547	0.5108	0.2313	0.1	0.0032	0.1912	-0.1898	0.1916	-0.0427	-0.0269	-0.0195
MATH	5	622935	2 A-T	2	6170	0.1953	0.4549	0.2207	0.1279	0.195	0.0015	0.147	0.0055	0.0687	-0.2671	0.147	-0.0073
MATH	5	621381	2 B-O	1	6169	0.4553	0.2481	0.1717	0.4546	0.124	0.0016	0.3247	-0.1727	-0.2143	0.3248	-0.0176	-0.0122
MATH	5	408809	2 C-G	1	6176	0.6711	0.0424	0.6708	0.1149	0.1714	0.0005	0.401	-0.1947	0.4013	-0.2871	-0.1522	-0.0188

MATH	5	624810	2 C-G	2	6172	0.1729	0.1727	0.5333	0.157	0.1359	0.0011	0.4124	0.4123	-0.0923	-0.1556	-0.1538	-0.0133
MATH	5	497787	2 D-M	2	6172	0.5885	0.0939	0.1345	0.5878	0.1827	0.0011	0.4168	-0.1597	-0.2665	0.4169	-0.1738	-0.017
MATH	5	495241	3 A-F	2	6197	0.5333	0.1756	0.5325	0.2117	0.0786	0.0016	0.4105	-0.1814	0.4108	-0.2561	-0.1131	-0.0225
MATH	5	621383	3 A-F	1	6152	0.3285	0.3256	0.0507	0.5413	0.0735	0.0089	0.4704	0.4698	-0.0421	-0.3751	-0.0786	-0.0373
MATH	5	575705	3 A-T	1	6194	0.4374	0.2259	0.4364	0.2325	0.1031	0.0021	0.399	-0.1271	0.3991	-0.224	-0.163	-0.0131
MATH	5	622929	3 A-T	2	6195	0.2408	0.1245	0.448	0.2404	0.1851	0.0019	0.1017	-0.1509	0.012	0.1014	0.0006	0.0055
MATH	5	497777	3 B-O	2	6198	0.3403	0.2409	0.3398	0.2562	0.1618	0.0014	0.1534	-0.1108	0.1535	-0.1118	0.0648	-0.0089
MATH	5	497783	3 C-G	1	6201	0.3945	0.1432	0.16	0.3018	0.3941	0.001	0.2995	-0.1267	-0.1237	-0.1228	0.2996	-0.0098
MATH	5	624813	3 C-G	2	6193	0.5232	0.1149	0.2202	0.522	0.1406	0.0023	0.3573	-0.1511	-0.2373	0.3574	-0.0899	-0.0147
MATH	5	493302	3 D-M	1	6196	0.7195	0.1772	0.0583	0.0445	0.7182	0.0018	0.497	-0.3909	-0.1829	-0.1489	0.4956	-0.0025
MATH	6	314895	0 A-N	1	24142	0.3261	0.3095	0.206	0.1544	0.3242	0.006	0.4781	-0.1008	-0.2596	-0.1907	0.4786	-0.0454
MATH	6	335224	0 A-N	1	24136	0.4145	0.4119	0.1709	0.2091	0.2018	0.0063	0.4259	0.4269	-0.1939	-0.2008	-0.1286	-0.048
MATH	6	412892	0 A-N	1	24205	0.883	0.0275	0.0442	0.88	0.0449	0.0034	0.3705	-0.1492	-0.2068	0.3724	-0.2482	-0.0465
MATH	6	413105	0 A-N	2	24230	0.6459	0.07	0.1688	0.6444	0.1144	0.0024	0.5131	-0.1686	-0.355	0.5136	-0.2142	-0.0346
MATH	6	479709	0 A-N	1	24157	0.6821	0.0455	0.1562	0.6784	0.1145	0.0054	0.3704	-0.1668	-0.1196	0.3734	-0.2888	-0.0584
MATH	6	567153	0 A-N	1	24236	0.6685	0.0603	0.667	0.0428	0.2277	0.0021	0.3577	-0.1549	0.3592	-0.2219	-0.204	-0.0416
MATH	6	335192	0 A-R	2	24248	0.6876	0.1363	0.0945	0.6865	0.081	0.0016	0.4317	-0.2571	-0.2264	0.4317	-0.1652	-0.0183
MATH	6	411363	0 A-R	2	24248	0.5571	0.1463	0.5562	0.1997	0.0962	0.0016	0.4171	-0.109	0.4171	-0.3029	-0.1592	-0.0158
MATH	6	412552	0 A-R	2	24231	0.6077	0.0875	0.6062	0.2126	0.0914	0.0023	0.4252	-0.2158	0.4259	-0.2178	-0.1959	-0.0322
MATH	6	412918	0 A-R	1	24258	0.6031	0.0962	0.1123	0.188	0.6024	0.0012	0.3455	-0.1693	-0.2097	-0.1344	0.3455	-0.0134
MATH	6	416038	0 A-R	2	24210	0.3571	0.356	0.1502	0.2238	0.2668	0.0032	0.3585	0.3585	-0.2026	-0.2215	-0.013	-0.0214
MATH	6	491795	0 A-R	1	24234	0.7405	0.0735	0.7388	0.0937	0.0918	0.0022	0.4684	-0.2075	0.4694	-0.3018	-0.2157	-0.0391
MATH	6	496604	0 A-R	2	24260	0.3109	0.1391	0.3456	0.3105	0.2037	0.0012	0.4963	-0.0978	-0.2265	0.4963	-0.2166	-0.0248
MATH	6	497307	0 A-R	2	24245	0.7632	0.0783	0.1219	0.7619	0.0361	0.0018	0.4656	-0.2498	-0.2944	0.4667	-0.1808	-0.0383
MATH	6	574783	0 A-R	2	24254	0.8004	0.7992	0.0435	0.0557	0.1001	0.0014	0.5017	0.5022	-0.2029	-0.2926	-0.3047	-0.0319
MATH	6	582619	0 A-R	2	24256	0.434	0.0931	0.1275	0.3447	0.4334	0.0013	0.5342	-0.2093	-0.1894	-0.2946	0.5342	-0.0201
MATH	6	314873	0 B-E	2	24241	0.419	0.4182	0.2236	0.1938	0.1625	0.0019	0.3682	0.3687	-0.1168	-0.2138	-0.1281	-0.0331
MATH	6	319256	0 B-E	2	24225	0.2874	0.1521	0.2866	0.309	0.2497	0.0026	0.2411	0.0465	0.2418	-0.1388	-0.139	-0.034
MATH	6	401319	0 B-E	1	24248	0.8712	0.0572	0.8697	0.0442	0.0272	0.0016	0.3537	-0.1675	0.3544	-0.2406	-0.1831	-0.028
MATH	6	411362	0 B-E	2	24234	0.3425	0.3417	0.2142	0.1334	0.3085	0.0022	0.248	0.2486	-0.2087	-0.1909	0.0737	-0.0293
MATH	6	412558	0 B-E	2	24207	0.4086	0.2885	0.4072	0.2276	0.0733	0.0033	0.3481	-0.1684	0.3489	-0.16	-0.0989	-0.0394
MATH	6	412559	0 B-E	2	24190	0.3561	0.1113	0.1161	0.4139	0.3547	0.004	0.3819	-0.1656	-0.2061	-0.1271	0.3824	-0.0348
MATH	6	412896	0 B-E	1	24218	0.44	0.1099	0.2082	0.2403	0.4387	0.0029	0.508	-0.0947	-0.3007	-0.2313	0.5083	-0.0319
MATH	6	413714	0 B-E	1	24218	0.4557	0.4544	0.12	0.2193	0.2034	0.0029	0.456	0.4567	-0.2328	-0.2384	-0.1267	-0.0391
MATH	6	478717	0 B-E	1	24232	0.413	0.4121	0.2535	0.2825	0.0496	0.0023	0.3374	0.338	-0.3342	0.0202	-0.1316	-0.0307
MATH	6	478720	0 B-E	2	24275	0.4685	0.3006	0.4683	0.1396	0.091	0.0005	0.3824	-0.1574	0.3824	-0.2293	-0.1354	-0.0084
MATH	6	581340	0 B-E	1	24241	0.4749	0.4739	0.1621	0.2546	0.1074	0.0019	0.4585	0.4591	-0.1979	-0.2365	-0.1671	-0.0343
MATH	6	478723	0 C-G	2	24258	0.4833	0.4827	0.2119	0.2182	0.0859	0.0012	0.5167	0.5172	-0.2963	-0.2442	-0.1262	-0.0319
MATH	6	492763	0 C-G	2	24226	0.2792	0.1971	0.3783	0.1436	0.2785	0.0026	0.4079	-0.2217	-0.033	-0.2203	0.4081	-0.029
MATH	6	501398	0 C-G	2	24239	0.4659	0.2304	0.2178	0.465	0.0848	0.002	0.3967	-0.2717	-0.1403	0.3967	-0.0886	-0.0195
MATH	6	574849	0 C-G	1	24221	0.4245	0.4234	0.3119	0.1612	0.1007	0.0028	0.4629	0.4633	-0.2409	-0.1815	-0.1625	-0.0318
MATH	6	303087	0 D-S	2	24185	0.3198	0.2398	0.2556	0.1819	0.3184	0.0042	0.2102	-0.0624	-0.1583	-0.0027	0.2105	-0.0201
MATH	6	399248	0 D-S	2	24216	0.3436	0.2365	0.3426	0.2493	0.1687	0.003	0.1826	-0.0581	0.1836	-0.0646	-0.0867	-0.0375
MATH	6	413111	0 D-S	2	24240	0.7671	0.0784	0.1083	0.0457	0.7656	0.002	0.4284	-0.1669	-0.2997	-0.2028	0.4287	-0.0277
MATH	6	492764	0 D-S	1	24217	0.565	0.0723	0.5634	0.2118	0.1496	0.0029	0.4888	-0.2156	0.4894	-0.2458	-0.2365	-0.039
MATH	6	492765	0 D-S	2	24243	0.6441	0.0852	0.1038	0.1663	0.643	0.0019	0.4011	-0.1783	-0.1747	-0.2367	0.4017	-0.03
MATH	6	496611	0 D-S	2	24234	0.7043	0.1819	0.0572	0.7028	0.0558	0.0022	0.4177	-0.2544	-0.2469	0.4183	-0.1494	-0.0289
MATH	6	497315	0 D-S	1	24250	0.2661	0.2657	0.1617	0.0911	0.4799	0.0016	0.2556	0.2561	-0.2212	-0.1098	0.0023	-0.0321
MATH	6	500419	0 D-S	2	24251	0.6121	0.6111	0.0887	0.1142	0.1845	0.0015	0.4591	0.4593	-0.2633	-0.2303	-0.1932	-0.0217
MATH	6	501399	0 D-S	2	24237	0.4116	0.1474	0.1719	0.4107	0.2678	0.0021	0.3294	-0.1775	-0.209	0.3301	-0.0431	-0.0332
MATH	6	566982	1 A-N	2	10038	0.3904	0.2145	0.1882	0.2056	0.3896	0.0021	0.4149	-0.1937	-0.2124	-0.0955	0.4152	-0.0303

MATH	6	617644	1 A-N	1	9950	0.5661	0.1918	0.56	0.181	0.0564	0.0108	0.3509	-0.2589	0.3552	-0.0806	-0.1565	-0.0702
MATH	6	615353	1 A-R	2	10040	0.2474	0.2138	0.3103	0.2469	0.2271	0.0019	0.3148	-0.0751	-0.1938	0.3152	-0.0338	-0.0295
MATH	6	496613	1 B-E	2	10036	0.544	0.0858	0.5428	0.1213	0.2478	0.0023	0.3466	-0.2246	0.3472	-0.2988	-0.026	-0.0271
MATH	6	615361	1 B-E	1	10048	0.5933	0.1284	0.5926	0.0856	0.1923	0.0011	0.2011	-0.2331	0.2018	-0.2644	0.1361	-0.0256
MATH	6	624644	1 B-E	1	10048	0.3589	0.2114	0.1804	0.2486	0.3585	0.0011	0.1358	0.0321	-0.0538	-0.1322	0.1361	-0.0165
MATH	6	575155	1 C-G	2	10036	0.3126	0.4697	0.3119	0.1394	0.0767	0.0023	0.2049	-0.1107	0.2057	-0.0963	-0.0189	-0.0336
MATH	6	581403	1 D-S	1	10043	0.4038	0.4031	0.1993	0.1808	0.2151	0.0016	0.3662	0.3664	-0.166	-0.251	-0.039	-0.0201
MATH	6	496952	2 A-N	1	7094	0.7085	0.7076	0.1678	0.0666	0.0567	0.0013	0.5102	0.51	-0.3364	-0.2744	-0.1606	-0.0203
MATH	6	617309	2 A-N	1	7059	0.7687	0.1014	0.7639	0.0244	0.1042	0.0062	0.3714	-0.2156	0.3717	-0.1686	-0.209	-0.038
MATH	6	575151	2 A-R	1	7089	0.7904	0.0669	0.7888	0.0973	0.0451	0.002	0.322	-0.1503	0.3215	-0.2219	-0.1323	-0.0113
MATH	6	497310	2 B-E	2	7093	0.246	0.2226	0.2195	0.3109	0.2457	0.0014	0.302	-0.1483	-0.1791	0.0146	0.3022	-0.0274
MATH	6	500376	2 B-E	2	7086	0.3376	0.2731	0.3368	0.2521	0.1356	0.0024	0.1211	0.0174	0.1219	-0.1401	-0.0089	-0.0299
MATH	6	560219	2 C-G	1	7097	0.5853	0.1988	0.1364	0.5848	0.0791	0.0008	0.3916	-0.2352	-0.2445	0.3919	-0.0546	-0.0185
MATH	6	567240	2 C-G	2	7082	0.3849	0.0897	0.3838	0.3239	0.1996	0.003	0.3354	-0.1004	0.3357	-0.1785	-0.1244	-0.0235
MATH	6	615378	2 D-S	2	7092	0.405	0.4043	0.2319	0.2222	0.1401	0.0015	0.3283	0.3285	-0.2332	-0.1104	-0.0464	-0.0214
MATH	6	574777	3 A-N	2	7108	0.4353	0.0905	0.4342	0.2927	0.18	0.0025	0.3372	-0.1269	0.3383	-0.2714	-0.0142	-0.0469
MATH	6	617499	3 A-N	1	7074	0.3832	0.1337	0.2468	0.2317	0.3804	0.0073	0.4722	-0.1637	-0.1897	-0.2068	0.4735	-0.0605
MATH	6	624645	3 A-R	2	7114	0.3774	0.2304	0.2868	0.3768	0.1043	0.0017	0.4494	-0.0928	-0.4005	0.4497	0.0114	-0.0287
MATH	6	500238	3 B-E	2	7110	0.4226	0.2272	0.2068	0.4217	0.142	0.0022	0.2135	0.0602	-0.2168	0.2147	-0.119	-0.0397
MATH	6	614779	3 B-E	2	7117	0.3486	0.2714	0.1357	0.2435	0.3482	0.0013	0.4415	-0.1372	-0.2206	-0.1711	0.4414	-0.0088
MATH	6	582442	3 C-G	1	7110	0.3143	0.1276	0.434	0.3136	0.1225	0.0022	0.4913	-0.102	-0.4082	0.4915	0.0295	-0.0286
MATH	6	478725	3 D-S	2	7108	0.3872	0.1422	0.2536	0.3862	0.2155	0.0025	0.1245	-0.1656	-0.0307	0.126	0.0296	-0.0469
MATH	6	622385	3 D-S	2	7119	0.3218	0.2067	0.2548	0.3215	0.216	0.001	0.0803	0.0011	-0.1319	0.0804	0.048	-0.0081
MATH	7	399250	0 A-N	1	27277	0.7558	0.0823	0.7547	0.1034	0.0581	0.0015	0.4322	-0.2043	0.4322	-0.2507	-0.2253	-0.0204
MATH	7	477761	0 A-N	1	27278	0.7041	0.703	0.0865	0.1186	0.0904	0.0015	0.549	0.5488	-0.2427	-0.3203	-0.2729	-0.0199
MATH	7	489967	0 A-N	1	27218	0.4616	0.071	0.3586	0.4599	0.1068	0.0037	0.5705	-0.1192	-0.478	0.5708	-0.0718	-0.0399
MATH	7	490589	0 A-N	1	27164	0.372	0.127	0.2638	0.2336	0.3699	0.0057	0.4791	-0.1869	-0.2165	-0.1669	0.4796	-0.0435
MATH	7	565849	0 A-N	2	27248	0.4411	0.2584	0.1766	0.44	0.1224	0.0026	0.351	-0.0684	-0.236	0.3512	-0.1624	-0.0234
MATH	7	335200	0 A-R	2	27267	0.3845	0.3837	0.218	0.2847	0.1116	0.0019	0.4249	0.425	-0.2332	-0.1402	-0.1466	-0.0231
MATH	7	401321	0 A-R	2	27231	0.5182	0.2835	0.1446	0.5165	0.0523	0.0032	0.4424	-0.2649	-0.1632	0.443	-0.1916	-0.035
MATH	7	416190	0 A-R	2	27204	0.5528	0.2339	0.5505	0.0925	0.1189	0.0042	0.4816	-0.2533	0.4814	-0.1437	-0.2744	-0.0281
MATH	7	417800	0 A-R	2	27251	0.4739	0.1135	0.4727	0.145	0.2663	0.0025	0.3063	-0.1993	0.3073	-0.278	0.0215	-0.0368
MATH	7	478163	0 A-R	2	27219	0.4932	0.092	0.4914	0.2936	0.1194	0.0037	0.3147	-0.1423	0.3157	-0.1404	-0.156	-0.0363
MATH	7	478164	0 A-R	2	27274	0.5013	0.1401	0.1101	0.5005	0.2477	0.0016	0.3509	-0.0744	-0.1971	0.3514	-0.202	-0.0243
MATH	7	478167	0 A-R	2	27264	0.6794	0.0744	0.678	0.1063	0.1393	0.002	0.4318	-0.1538	0.4323	-0.2308	-0.2578	-0.0273
MATH	7	480344	0 A-R	2	27213	0.4235	0.2665	0.4218	0.1909	0.1169	0.0039	0.2467	-0.2679	0.2474	-0.1142	0.1337	-0.0294
MATH	7	493990	0 A-R	2	27240	0.6372	0.0952	0.1734	0.6353	0.0932	0.0029	0.532	-0.2603	-0.3022	0.5326	-0.2184	-0.0389
MATH	7	500378	0 A-R	2	27270	0.2378	0.2727	0.2431	0.2451	0.2374	0.0018	0.4345	-0.1971	-0.1661	-0.0574	0.4347	-0.0296
MATH	7	502781	0 A-R	2	27252	0.3479	0.3471	0.3914	0.113	0.146	0.0025	0.3698	0.3704	-0.2614	-0.0837	-0.0585	-0.0315
MATH	7	581347	0 A-R	2	27257	0.4619	0.4609	0.2939	0.1455	0.0974	0.0023	0.5787	0.5789	-0.2917	-0.2706	-0.1979	-0.0333
MATH	7	412773	0 B-E	1	27266	0.6876	0.0876	0.1478	0.6862	0.0764	0.0019	0.4299	-0.1984	-0.2528	0.4306	-0.198	-0.0316
MATH	7	412774	0 B-E	2	27253	0.4506	0.1883	0.1578	0.2019	0.4495	0.0024	0.4371	-0.1988	-0.1401	-0.2176	0.4374	-0.0283
MATH	7	413352	0 B-E	1	27280	0.7831	0.0353	0.1236	0.0578	0.7819	0.0014	0.3944	-0.1846	-0.2417	-0.2078	0.3949	-0.0264
MATH	7	478169	0 B-E	2	27292	0.5118	0.1137	0.1127	0.2613	0.5113	0.001	0.584	-0.2825	-0.2247	-0.2972	0.5841	-0.022
MATH	7	490977	0 B-E	1	27205	0.3855	0.3839	0.267	0.2548	0.0902	0.0042	0.4812	0.482	-0.175	-0.2509	-0.1562	-0.0456
MATH	7	502842	0 B-E	2	27268	0.6663	0.1982	0.665	0.0808	0.0541	0.0019	0.4031	-0.1929	0.4037	-0.2634	-0.1798	-0.0274
MATH	7	503046	0 B-E	1	27267	0.5292	0.0901	0.2051	0.1747	0.5282	0.0019	0.5551	-0.2438	-0.2757	-0.2492	0.5556	-0.036
MATH	7	565886	0 B-E	2	27210	0.5835	0.0978	0.1196	0.1974	0.5812	0.004	0.5247	-0.185	-0.236	-0.3148	0.5245	-0.0305
MATH	7	581346	0 B-E	1	27254	0.317	0.3162	0.2476	0.2735	0.1603	0.0024	0.3999	0.4004	-0.069	-0.2058	-0.1716	-0.0356
MATH	7	398632	0 C-G	2	27264	0.3109	0.3103	0.1903	0.1948	0.3026	0.002	0.4629	0.4631	-0.1369	-0.0789	-0.2787	-0.0261
MATH	7	404814	0 C-G	2	27252	0.3533	0.1942	0.2208	0.2301	0.3524	0.0025	0.3379	-0.0933	-0.096	-0.1992	0.3379	-0.017

MATH	7	412665	0 C-G	2	27226	0.4236	0.1159	0.4222	0.3891	0.0694	0.0034	0.3554	-0.1354	0.3564	-0.1826	-0.1631	-0.0383
MATH	7	412667	0 C-G	1	27239	0.3826	0.1872	0.2611	0.3815	0.1672	0.0029	0.2479	-0.1022	-0.0042	0.2487	-0.2075	-0.0313
MATH	7	417807	0 C-G	2	27237	0.4116	0.4103	0.1538	0.3287	0.1041	0.003	0.2215	0.2229	-0.1769	-0.0617	-0.0473	-0.043
MATH	7	478170	0 C-G	2	27279	0.5311	0.0836	0.2474	0.1371	0.5304	0.0015	0.5614	-0.256	-0.2464	-0.2972	0.5615	-0.0213
MATH	7	500372	0 C-G	2	27229	0.4403	0.4389	0.241	0.2337	0.0831	0.0033	0.5022	0.5021	-0.2406	-0.2232	-0.1828	-0.0234
MATH	7	574900	0 C-G	1	27255	0.498	0.2668	0.1686	0.4969	0.0654	0.0023	0.301	-0.1449	-0.1819	0.3011	-0.0711	-0.0164
MATH	7	581349	0 C-G	2	27251	0.3729	0.3719	0.2388	0.2384	0.1484	0.0025	0.3049	0.3056	-0.1933	-0.0779	-0.0856	-0.0323
MATH	7	399242	0 D-S	2	27245	0.3224	0.1726	0.3215	0.3049	0.1983	0.0027	0.2229	-0.1428	0.2233	-0.0782	-0.0327	-0.0249
MATH	7	415647	0 D-S	2	27284	0.4638	0.1506	0.2241	0.4632	0.1607	0.0013	0.5044	-0.2866	-0.2122	0.5047	-0.1627	-0.0249
MATH	7	416195	0 D-S	2	27260	0.3606	0.3598	0.312	0.1494	0.1767	0.0022	0.3786	0.3789	-0.0665	-0.2991	-0.1133	-0.0272
MATH	7	480351	0 D-S	2	27296	0.4223	0.2159	0.2279	0.1335	0.4219	0.0008	0.3552	0.0234	-0.2581	-0.2247	0.3553	-0.0129
MATH	7	493188	0 D-S	2	27209	0.3083	0.2832	0.2381	0.3071	0.1675	0.004	0.2743	-0.0759	-0.2912	0.2749	0.0896	-0.0327
MATH	7	574880	1 A-N	2	10715	0.4821	0.3734	0.4811	0.096	0.0473	0.0022	0.3932	-0.1762	0.3936	-0.2497	-0.1727	-0.0256
MATH	7	617138	1 A-N	1	10652	0.3623	0.0894	0.3593	0.2962	0.247	0.0081	0.5193	-0.0735	0.519	-0.3445	-0.1563	-0.0377
MATH	7	575220	1 A-R	2	10712	0.4815	0.233	0.4803	0.1617	0.1225	0.0025	0.3114	-0.1679	0.3113	-0.2096	-0.0205	-0.0135
MATH	7	617919	1 A-R	2	10717	0.3147	0.3287	0.1381	0.2171	0.3141	0.002	0.3565	-0.0481	-0.2166	-0.1628	0.3569	-0.0266
MATH	7	480242	1 B-E	1	10724	0.3229	0.2281	0.1644	0.2835	0.3225	0.0014	0.2482	-0.0828	-0.1651	-0.0424	0.2488	-0.0333
MATH	7	565851	1 B-E	2	10716	0.4543	0.4533	0.1801	0.1715	0.1929	0.0021	0.4906	0.4904	-0.2224	-0.2643	-0.1476	-0.0169
MATH	7	630798	1 C-G	2	10720	0.2951	0.1345	0.3574	0.2945	0.2118	0.0018	0.107	0.0367	-0.0823	0.1076	-0.0515	-0.0265
MATH	7	478172	1 D-S	2	10711	0.5798	0.1153	0.5783	0.1352	0.1686	0.0026	0.3271	-0.2254	0.3275	-0.2534	-0.0054	-0.022
MATH	7	490587	2 A-N	1	8219	0.3823	0.1653	0.1384	0.3093	0.3793	0.0077	0.4109	-0.2312	-0.1623	-0.1165	0.4115	-0.0445
MATH	7	581341	2 A-R	2	8273	0.5223	0.291	0.0984	0.5217	0.0878	0.0012	0.309	-0.0419	-0.2174	0.3097	-0.2471	-0.0284
MATH	7	613065	2 A-R	2	8269	0.1582	0.1382	0.4952	0.1579	0.2069	0.0017	-0.0046	-0.0549	-0.0894	-0.0042	0.1635	-0.0254
MATH	7	493993	2 B-E	1	8266	0.4598	0.1076	0.4589	0.3633	0.0682	0.0021	0.3421	-0.1387	0.3427	-0.1855	-0.1477	-0.0304
MATH	7	617923	2 B-E	2	8270	0.2674	0.3566	0.2669	0.265	0.1099	0.0016	-0.0303	0.2215	-0.0293	-0.1388	-0.097	-0.039
MATH	7	565888	2 C-G	2	8270	0.5434	0.116	0.1152	0.5426	0.2247	0.0016	0.1884	-0.1844	-0.2179	0.1886	0.0841	-0.0117
MATH	7	615279	2 C-G	2	8271	0.4478	0.1146	0.4472	0.2929	0.1439	0.0014	0.1751	-0.0762	0.176	-0.1187	-0.0227	-0.0324
MATH	7	617913	2 D-S	2	8274	0.6222	0.0819	0.1566	0.6215	0.139	0.0011	0.4876	-0.2078	-0.2383	0.488	-0.267	-0.0222
MATH	7	617834	3 A-N	1	8247	0.4366	0.1198	0.1811	0.434	0.259	0.006	0.2876	-0.1511	-0.1926	0.2893	-0.0376	-0.0478
MATH	7	629172	3 A-N	1	8288	0.4973	0.4968	0.2883	0.1637	0.0501	0.0011	0.4533	0.453	-0.2316	-0.2436	-0.1429	-0.0077
MATH	7	567234	3 A-R	1	8287	0.3865	0.1845	0.3527	0.386	0.0756	0.0012	0.3212	-0.3031	0.018	0.3215	-0.177	-0.0218
MATH	7	613074	3 A-R	2	8283	0.3706	0.37	0.2067	0.3177	0.1039	0.0017	0.3403	0.3408	-0.1071	-0.1722	-0.1298	-0.034
MATH	7	493997	3 C-G	2	8279	0.2136	0.1733	0.2817	0.3298	0.2131	0.0022	0.2815	-0.1296	-0.0546	-0.0864	0.2818	-0.0249
MATH	7	632827	3 C-G	2	8270	0.1832	0.0706	0.1826	0.6093	0.1343	0.0033	0.2952	-0.0894	0.2957	-0.0232	-0.2287	-0.0362
MATH	7	480352	3 D-S	2	8271	0.6166	0.0846	0.2232	0.6147	0.0744	0.0031	0.4314	-0.187	-0.2843	0.4326	-0.144	-0.0416
MATH	7	581343	3 D-S	2	8279	0.2636	0.1521	0.2928	0.29	0.263	0.0022	0.1568	-0.0745	-0.0368	-0.0544	0.1571	-0.0211
MATH	8	312493	0 A-N	2	26601	0.4709	0.4696	0.2519	0.1695	0.1061	0.0029	0.5185	0.5187	-0.2616	-0.2363	-0.1781	-0.034
MATH	8	398631	0 A-N	2	26597	0.4312	0.1839	0.1554	0.4299	0.2277	0.003	0.3216	-0.1595	-0.1934	0.3225	-0.0613	-0.0378
MATH	8	404822	0 A-N	2	26596	0.389	0.0886	0.3878	0.3229	0.1976	0.0031	0.1806	-0.0506	0.1814	-0.0671	-0.1029	-0.0293
MATH	8	413140	0 A-N	2	26635	0.6316	0.6306	0.2152	0.0996	0.053	0.0016	0.4793	0.4801	-0.292	-0.2106	-0.2108	-0.0353
MATH	8	480711	0 A-N	2	26610	0.3663	0.3654	0.3027	0.1556	0.1738	0.0025	0.5099	0.5099	-0.2028	-0.2336	-0.1751	-0.0267
MATH	8	489965	0 A-N	1	26591	0.3475	0.2098	0.3464	0.2845	0.156	0.0033	0.113	-0.0427	0.1143	-0.0978	0.0255	-0.0373
MATH	8	574931	0 A-N	1	26609	0.636	0.0992	0.6344	0.1633	0.1005	0.0026	0.531	-0.2261	0.5317	-0.3166	-0.2316	-0.0355
MATH	8	575467	0 A-N	1	26606	0.4858	0.1057	0.4845	0.2019	0.2052	0.0027	0.3991	-0.1492	0.3996	-0.1329	-0.245	-0.0297
MATH	8	303001	0 B-E	2	26655	0.4157	0.23	0.1892	0.4153	0.1647	0.0009	0.3263	-0.1273	-0.2323	0.3267	-0.0422	-0.0256
MATH	8	314878	0 B-E	2	26641	0.3217	0.1632	0.2445	0.2696	0.3213	0.0014	0.4132	0.0092	-0.2177	-0.2298	0.4135	-0.0264
MATH	8	319322	0 B-E	2	26609	0.3649	0.162	0.3009	0.1706	0.364	0.0026	0.2621	-0.0969	-0.1622	-0.0388	0.2628	-0.0345
MATH	8	335215	0 B-E	2	26602	0.5358	0.5343	0.204	0.1904	0.0684	0.0028	0.4317	0.4321	-0.2595	-0.1818	-0.15	-0.0316
MATH	8	412783	0 B-E	2	26606	0.5516	0.0563	0.1679	0.2229	0.5502	0.0027	0.3909	-0.1806	-0.1939	-0.1905	0.3907	-0.0187
MATH	8	412785	0 B-E	2	26623	0.5587	0.1336	0.1457	0.5575	0.1611	0.0021	0.4539	-0.2008	-0.2149	0.4544	-0.2181	-0.0305
MATH	8	413594	0 B-E	2	26635	0.5339	0.533	0.1608	0.2405	0.064	0.0016	0.386	0.3862	-0.2002	-0.1863	-0.1578	-0.0226

MATH	8	413597	0 B-E	2	26629	0.4654	0.268	0.127	0.1386	0.4645	0.0018	0.4635	-0.1467	-0.2686	-0.2191	0.4639	-0.0288
MATH	8	416556	0 B-E	1	26644	0.4891	0.4885	0.233	0.1828	0.0944	0.0013	0.4756	0.4759	-0.2605	-0.1979	-0.1725	-0.0242
MATH	8	479791	0 B-E	1	26582	0.5315	0.06	0.0569	0.3499	0.5296	0.0036	0.33	-0.2064	-0.2089	-0.1367	0.3318	-0.0496
MATH	8	489553	0 B-E	1	26601	0.325	0.324	0.359	0.1483	0.1658	0.0029	0.4683	0.4687	-0.1614	-0.1804	-0.2038	-0.0378
MATH	8	565869	0 B-E	1	26610	0.6516	0.1072	0.0996	0.6499	0.1408	0.0025	0.4559	-0.182	-0.2561	0.4572	-0.2385	-0.0426
MATH	8	574469	0 B-E	2	26598	0.4973	0.1238	0.4958	0.1853	0.1921	0.003	0.4346	-0.2061	0.435	-0.2685	-0.1105	-0.0318
MATH	8	416553	0 B-F	2	26652	0.6034	0.1618	0.6029	0.1449	0.0894	0.001	0.448	-0.1242	0.4485	-0.3052	-0.2292	-0.0284
MATH	8	494636	0 B-F	2	26595	0.4528	0.1742	0.2037	0.1676	0.4514	0.0031	0.4449	-0.1583	-0.1804	-0.2332	0.4451	-0.0299
MATH	8	495725	0 B-F	2	26618	0.5842	0.189	0.5829	0.1288	0.0971	0.0022	0.4875	-0.1792	0.4875	-0.3252	-0.2038	-0.0202
MATH	8	502450	0 B-F	2	26596	0.5174	0.1303	0.1773	0.5158	0.1735	0.0031	0.3911	-0.1627	-0.2076	0.3916	-0.1584	-0.0306
MATH	8	503514	0 B-F	2	26577	0.4695	0.1824	0.4677	0.2329	0.1133	0.0038	0.4313	-0.145	0.4315	-0.2333	-0.1856	-0.0309
MATH	8	503515	0 B-F	2	26615	0.7298	0.7281	0.0928	0.1162	0.0605	0.0024	0.5269	0.5274	-0.2376	-0.333	-0.24	-0.0367
MATH	8	324086	0 C-G	2	26604	0.4648	0.107	0.176	0.2507	0.4635	0.0028	0.343	-0.146	-0.0938	-0.2047	0.3437	-0.0348
MATH	8	413599	0 C-G	2	26637	0.4964	0.2307	0.4957	0.222	0.0501	0.0015	0.4078	-0.2413	0.4086	-0.1484	-0.1809	-0.0395
MATH	8	416364	0 C-G	2	26622	0.5243	0.0505	0.1598	0.5232	0.2645	0.0021	0.4658	-0.1551	-0.2841	0.4662	-0.2119	-0.0295
MATH	8	488686	0 C-G	2	26632	0.404	0.2251	0.4033	0.1983	0.1716	0.0017	0.4431	-0.2153	0.4434	-0.2445	-0.0766	-0.0293
MATH	8	502453	0 C-G	2	26630	0.4597	0.2212	0.1704	0.4588	0.1478	0.0018	0.2573	0.0364	-0.1676	0.2578	-0.2241	-0.0244
MATH	8	569269	0 C-G	1	26629	0.4684	0.4676	0.1633	0.2016	0.1657	0.0018	0.3534	0.3542	-0.1932	-0.1488	-0.1186	-0.0363
MATH	8	335870	0 D-S	2	26624	0.4244	0.2162	0.2308	0.4236	0.1273	0.002	0.364	-0.1404	-0.2034	0.3644	-0.1061	-0.027
MATH	8	335871	0 D-S	2	26609	0.4985	0.2005	0.2116	0.4972	0.0881	0.0026	0.4903	-0.2268	-0.2407	0.4903	-0.1933	-0.0249
MATH	8	399393	0 D-S	2	26630	0.6179	0.0842	0.1602	0.1371	0.6168	0.0018	0.4408	-0.1218	-0.2273	-0.2792	0.4415	-0.0338
MATH	8	416365	0 D-S	2	26623	0.7138	0.0422	0.0777	0.7123	0.1656	0.0021	0.3613	-0.1771	-0.2142	0.3626	-0.187	-0.0367
MATH	8	488719	0 D-S	1	26597	0.4447	0.2431	0.1137	0.1968	0.4434	0.003	0.2115	-0.1036	-0.0554	-0.1039	0.2131	-0.046
MATH	8	503520	0 D-S	2	26598	0.492	0.4905	0.1285	0.1442	0.2338	0.003	0.432	0.433	-0.2435	-0.2306	-0.1217	-0.0452
MATH	8	574972	0 D-S	2	26632	0.3696	0.1725	0.1844	0.369	0.2724	0.0017	0.2271	-0.1197	-0.2129	0.2273	0.0422	-0.0168
MATH	8	495718	1 A-N	1	10367	0.3525	0.4512	0.3516	0.1156	0.0792	0.0025	0.4961	-0.2786	0.4967	-0.2944	-0.0089	-0.0409
MATH	8	617260	1 A-N	1	10333	0.3763	0.2341	0.3741	0.1641	0.2219	0.0058	0.3359	-0.1484	0.3374	-0.1005	-0.1432	-0.0487
MATH	8	503513	1 B-E	2	10376	0.5752	0.1209	0.5742	0.2035	0.0998	0.0016	0.4251	-0.1031	0.4249	-0.2605	-0.2372	-0.013
MATH	8	615384	1 B-E	2	10374	0.3826	0.1489	0.1887	0.3819	0.2786	0.0018	0.2629	-0.1222	-0.1931	0.2637	-0.017	-0.0347
MATH	8	569261	1 B-F	2	10372	0.7706	0.0466	0.1533	0.7691	0.0291	0.002	0.4226	-0.172	-0.318	0.4229	-0.1553	-0.0289
MATH	8	574969	1 B-F	1	10376	0.3426	0.133	0.3421	0.2159	0.3074	0.0016	0.2464	0.0467	0.247	-0.1511	-0.151	-0.0288
MATH	8	618647	1 C-G	2	10382	0.2625	0.283	0.2622	0.328	0.1258	0.0011	0.0646	-0.0937	0.0649	0.1144	-0.1189	-0.0179
MATH	8	625331	1 D-S	2	10372	0.448	0.1438	0.2227	0.1843	0.4471	0.002	0.5299	-0.1808	-0.2768	-0.2162	0.5302	-0.0252
MATH	8	618000	2 A-N	1	8139	0.4797	0.3411	0.1231	0.0556	0.4792	0.001	0.5235	-0.2503	-0.3138	-0.1696	0.524	-0.0367
MATH	8	415802	2 B-E	1	8132	0.4595	0.2974	0.148	0.4587	0.094	0.0018	0.3915	-0.1294	-0.2768	0.3917	-0.1255	-0.0251
MATH	8	479775	2 B-E	1	8106	0.368	0.2095	0.1626	0.3661	0.2567	0.005	0.419	-0.0771	-0.1829	0.4196	-0.2287	-0.0477
MATH	8	621934	2 B-E	1	8134	0.4084	0.4078	0.2276	0.2876	0.0755	0.0016	0.3777	0.3783	-0.1676	-0.1578	-0.1619	-0.0352
MATH	8	487624	2 B-F	2	8136	0.3325	0.1536	0.3499	0.332	0.1631	0.0014	0.0212	0.0155	-0.0055	0.0216	-0.0341	-0.0144
MATH	8	574471	2 B-F	2	8139	0.5163	0.1578	0.1614	0.5158	0.164	0.001	0.3008	-0.0905	-0.2391	0.3014	-0.0777	-0.0294
MATH	8	625330	2 C-G	2	8135	0.454	0.3401	0.0884	0.1167	0.4533	0.0015	0.2347	-0.0093	-0.2191	-0.1541	0.2354	-0.0288
MATH	8	503519	2 D-S	2	8142	0.6426	0.0458	0.0631	0.6422	0.2483	0.0006	0.3369	-0.1655	-0.1873	0.3371	-0.1877	-0.0151
MATH	8	480710	3 B-E	2	8125	0.3353	0.2528	0.2649	0.3347	0.146	0.0016	0.1493	0.0928	-0.1642	0.1498	-0.1069	-0.0206
MATH	8	489554	3 B-E	1	8097	0.2395	0.259	0.2383	0.3184	0.1793	0.005	0.0161	-0.0567	0.0174	0.0381	0.0053	-0.0338
MATH	8	574948	3 B-E	1	8124	0.5279	0.527	0.164	0.1951	0.1121	0.0017	0.4316	0.4319	-0.2607	-0.1697	-0.1611	-0.0258
MATH	8	488715	3 B-F	2	8131	0.4305	0.1745	0.2117	0.1828	0.4301	0.0009	0.4889	-0.1278	-0.2648	-0.2195	0.4891	-0.0215
MATH	8	503517	3 C-G	2	8124	0.371	0.2525	0.3704	0.2064	0.169	0.0017	0.3613	-0.1298	0.3616	-0.226	-0.069	-0.022
MATH	8	574593	3 C-G	2	8129	0.3077	0.2238	0.3315	0.3073	0.1363	0.0011	0.2468	0.0681	-0.2049	0.2473	-0.1308	-0.0356
MATH	8	574473	3 D-S	1	8124	0.6068	0.6058	0.0646	0.0566	0.2712	0.0017	0.3074	0.3083	-0.2223	-0.2018	-0.1082	-0.0298
MATH	8	575466	3 D-S	2	8125	0.5396	0.0986	0.5387	0.1607	0.2004	0.0016	0.4078	-0.123	0.4084	-0.2346	-0.1987	-0.0305
SCIENCE	4	408836	0 A	2	20389	0.5505	0.1452	0.0719	0.232	0.5498	0.0012	0.4169	-0.2406	-0.3059	-0.1018	0.4171	-0.0238
SCIENCE	4	411193	0 A	2	20380	0.4844	0.1324	0.0951	0.4836	0.2873	0.0016	0.2902	-0.1871	-0.2753	0.2909	0.0001	-0.031

SCIENCE	4	494423	0 A	3	20367	0.7187	0.7171	0.1066	0.1253	0.0487	0.0023	0.4717	0.4726	-0.2995	-0.2467	-0.1711	-0.0408
SCIENCE	4	494806	0 A	2	20354	0.652	0.0617	0.6501	0.0841	0.2012	0.0029	0.3611	-0.243	0.3633	-0.2074	-0.1352	-0.0569
SCIENCE	4	494812	0 A	2	20379	0.6906	0.1667	0.0859	0.6895	0.0563	0.0017	0.4816	-0.2175	-0.3034	0.4822	-0.2412	-0.0349
SCIENCE	4	494815	0 A	2	20328	0.3717	0.2421	0.2013	0.3702	0.1823	0.0042	0.2681	-0.1683	-0.1872	0.2689	0.0508	-0.0359
SCIENCE	4	494827	0 A	3	20363	0.3442	0.1066	0.1741	0.3735	0.3434	0.0024	0.3148	-0.2436	-0.2199	0.0224	0.3154	-0.0409
SCIENCE	4	494830	0 A	2	20345	0.739	0.0615	0.1165	0.7365	0.0822	0.0033	0.3767	-0.2354	-0.2576	0.3792	-0.0902	-0.0542
SCIENCE	4	495282	0 A	2	20347	0.5581	0.5563	0.1284	0.2266	0.0854	0.0032	0.2816	0.2837	-0.0571	-0.1177	-0.2487	-0.0537
SCIENCE	4	495283	0 A	2	20374	0.7871	0.0571	0.7856	0.0723	0.0831	0.0019	0.5603	-0.2629	0.5604	-0.3139	-0.3123	-0.0338
SCIENCE	4	566205	0 A	2	20367	0.4772	0.1274	0.2942	0.4762	0.0999	0.0023	0.334	-0.292	-0.0777	0.3346	-0.1095	-0.0311
SCIENCE	4	574826	0 A	2	20371	0.5002	0.0527	0.0533	0.4992	0.3928	0.0021	0.4564	-0.2481	-0.2327	0.4569	-0.2439	-0.036
SCIENCE	4	574828	0 A	2	20396	0.7417	0.0447	0.1791	0.0343	0.741	0.0008	0.5027	-0.2024	-0.3666	-0.2043	0.503	-0.0263
SCIENCE	4	574829	0 A	2	20323	0.3591	0.3915	0.1245	0.1221	0.3575	0.0044	0.3032	0.0563	-0.2231	-0.2942	0.3044	-0.0508
SCIENCE	4	574831	0 A	2	20367	0.6405	0.108	0.1218	0.1289	0.6391	0.0023	0.5514	-0.1993	-0.2823	-0.3253	0.5519	-0.04
SCIENCE	4	574835	0 A	2	20370	0.7333	0.0908	0.7317	0.0944	0.081	0.0021	0.5053	-0.241	0.5057	-0.3079	-0.2318	-0.0335
SCIENCE	4	574838	0 A	2	20382	0.7137	0.7126	0.0476	0.172	0.0662	0.0015	0.4726	0.4731	-0.2569	-0.2995	-0.1815	-0.0318
SCIENCE	4	574878	0 A	2	20381	0.6663	0.165	0.0899	0.0782	0.6652	0.0016	0.3994	-0.1923	-0.2238	-0.1938	0.4004	-0.037
SCIENCE	4	576373	0 A	2	20391	0.5765	0.0244	0.5759	0.349	0.0497	0.0011	0.0796	-0.2041	0.0805	0.0701	-0.1881	-0.0256
SCIENCE	4	581718	0 A	3	20350	0.3187	0.2848	0.3177	0.2537	0.1407	0.0031	0.1611	-0.0619	0.1618	-0.0912	-0.0172	-0.032
SCIENCE	4	411344	0 B	2	20375	0.3792	0.1328	0.1856	0.3013	0.3785	0.0019	0.493	-0.1576	-0.343	-0.1113	0.4932	-0.0297
SCIENCE	4	495291	0 B	2	20378	0.6847	0.069	0.1383	0.6835	0.1074	0.0017	0.4131	-0.2494	-0.2102	0.4133	-0.1793	-0.0216
SCIENCE	4	496717	0 B	2	20396	0.3232	0.1742	0.323	0.3523	0.1498	0.0008	0.2376	-0.1984	0.2378	-0.0138	-0.0808	-0.0164
SCIENCE	4	579553	0 B	1	20363	0.5756	0.5742	0.1071	0.1123	0.2039	0.0024	0.4753	0.4764	-0.1578	-0.1987	-0.3018	-0.0494
SCIENCE	4	496496	0 C	2	20346	0.48	0.1528	0.4784	0.1329	0.2326	0.0033	0.3332	-0.1546	0.3338	-0.1912	-0.1053	-0.0302
SCIENCE	4	496504	0 C	2	20371	0.6604	0.0976	0.659	0.1056	0.1358	0.0021	0.4805	-0.2248	0.4811	-0.299	-0.198	-0.0362
SCIENCE	4	496876	0 C	2	20388	0.564	0.5633	0.1004	0.2358	0.0993	0.0012	0.3864	0.3869	-0.2927	-0.1095	-0.1889	-0.026
SCIENCE	4	579557	0 C	2	20394	0.7703	0.0474	0.0522	0.7696	0.1299	0.0009	0.4719	-0.2056	-0.2546	0.4721	-0.291	-0.0224
SCIENCE	4	579925	0 C	2	20344	0.3805	0.29	0.3792	0.16	0.1673	0.0034	0.3386	-0.0084	0.3395	-0.2833	-0.1457	-0.0459
SCIENCE	4	580194	0 C	2	20365	0.4503	0.2397	0.4492	0.1765	0.1322	0.0024	0.3006	-0.1542	0.3016	-0.0892	-0.1423	-0.0404
SCIENCE	4	479245	0 D	2	20377	0.4226	0.3877	0.4219	0.1144	0.0742	0.0018	0.2719	0.0469	0.2724	-0.2766	-0.2599	-0.0289
SCIENCE	4	496519	0 D	2	20366	0.6722	0.6707	0.0958	0.1204	0.1109	0.0023	0.4336	0.4337	-0.197	-0.3161	-0.1329	-0.0266
SCIENCE	4	496521	0 D	1	20359	0.3717	0.3707	0.4231	0.1499	0.0537	0.0026	0.3734	0.3742	-0.1601	-0.1338	-0.2279	-0.0492
SCIENCE	4	496522	0 D	3	20366	0.6007	0.5993	0.0887	0.0962	0.2134	0.0023	0.3682	0.3688	-0.274	-0.2499	-0.0675	-0.0304
SCIENCE	4	498458	0 D	2	20388	0.7838	0.0505	0.0441	0.7828	0.1214	0.0012	0.4895	-0.2839	-0.257	0.4899	-0.2636	-0.029
SCIENCE	4	566167	0 D	2	20343	0.3699	0.2654	0.1955	0.1671	0.3686	0.0034	0.2939	-0.1151	-0.1219	-0.109	0.2947	-0.0401
SCIENCE	4	566169	0 D	2	20376	0.453	0.0898	0.4522	0.1242	0.3319	0.0018	0.3357	-0.2099	0.3361	-0.2235	-0.0689	-0.0258
SCIENCE	4	579535	0 D	2	20321	0.4239	0.1659	0.2099	0.422	0.1978	0.0045	0.2268	-0.1082	-0.0942	0.2283	-0.0778	-0.047
SCIENCE	4	566170	1 A	2	8600	0.752	0.0829	0.7515	0.1149	0.0501	0.0006	0.4551	-0.2636	0.4558	-0.2355	-0.2222	-0.0299
SCIENCE	4	617348	1 A	2	8589	0.3867	0.1064	0.2213	0.2845	0.3859	0.0019	0.2939	-0.1883	-0.1008	-0.0941	0.2942	-0.0188
SCIENCE	4	620939	1 A	2	8567	0.8421	0.0535	0.0603	0.8383	0.0435	0.0044	0.4378	-0.2528	-0.2043	0.4412	-0.2579	-0.0652
SCIENCE	4	620950	1 A	2	8588	0.7182	0.0382	0.7168	0.1311	0.1119	0.002	0.5006	-0.186	0.5002	-0.2725	-0.3072	-0.0206
SCIENCE	4	618938	1 B	2	8592	0.3716	0.0635	0.0966	0.3711	0.4674	0.0015	0.2028	-0.1593	-0.221	0.2032	0.0138	-0.0253
SCIENCE	4	617338	1 C	2	8588	0.2634	0.0946	0.2629	0.172	0.4686	0.002	0.0205	-0.2034	0.021	-0.1863	0.2435	-0.0218
SCIENCE	4	579543	1 D	1	8590	0.3709	0.3702	0.2124	0.1078	0.3077	0.0017	0.2115	0.212	-0.0112	-0.2979	-0.0094	-0.0251
SCIENCE	4	624055	1 D	2	8591	0.2501	0.0891	0.265	0.3945	0.2497	0.0016	0.1041	-0.2264	-0.0657	0.1001	0.1042	-0.0136
SCIENCE	4	566172	2 A	2	5878	0.5048	0.1769	0.5033	0.2431	0.0738	0.0029	0.3252	-0.0605	0.3258	-0.2687	-0.0874	-0.0315
SCIENCE	4	620940	2 A	2	5879	0.3914	0.1796	0.1761	0.3903	0.2512	0.0027	0.1496	-0.0962	-0.1566	0.1505	0.0572	-0.0314
SCIENCE	4	622357	2 A	1	5887	0.8315	0.8304	0.1096	0.04	0.0187	0.0014	0.3242	0.3257	-0.1446	-0.2537	-0.1917	-0.0371
SCIENCE	4	622821	2 A	2	5886	0.5814	0.1746	0.0809	0.5805	0.1625	0.0015	0.3572	-0.0718	-0.2211	0.3573	-0.2385	-0.02
SCIENCE	4	623819	2 B	2	5882	0.5172	0.1125	0.3033	0.516	0.066	0.0022	0.3014	-0.227	-0.1385	0.3012	-0.0585	-0.0138
SCIENCE	4	623817	2 C	2	5885	0.3135	0.3725	0.313	0.2202	0.0926	0.0017	0.2578	-0.0714	0.2578	-0.1738	-0.0425	-0.0162
SCIENCE	4	579541	2 D	2	5884	0.4932	0.1067	0.2088	0.4923	0.1903	0.0019	0.1733	-0.1251	-0.0686	0.1735	-0.0503	-0.0105

SCIENCE	4	623212	2 D	2	5868	0.5501	0.1595	0.1608	0.5476	0.1276	0.0046	0.345	-0.0795	-0.2028	0.3468	-0.1964	-0.0515
SCIENCE	4	566173	3 A	2	5907	0.7948	0.794	0.0849	0.0668	0.0533	0.001	0.3654	0.3667	-0.1804	-0.2221	-0.1841	-0.0384
SCIENCE	4	621088	3 A	2	5895	0.3586	0.3917	0.0971	0.3575	0.1507	0.003	0.2286	-0.0575	-0.1495	0.2293	-0.0997	-0.034
SCIENCE	4	622826	3 A	2	5900	0.541	0.0438	0.5398	0.3132	0.101	0.0022	0.2908	-0.2137	0.2914	-0.0604	-0.2395	-0.0285
SCIENCE	4	630324	3 A	2	5892	0.5674	0.1323	0.2221	0.5654	0.0768	0.0036	0.4061	-0.2203	-0.2182	0.4075	-0.1261	-0.0522
SCIENCE	4	622351	3 B	1	5907	0.784	0.0671	0.0852	0.7832	0.0634	0.001	0.2617	-0.1595	-0.1412	0.2624	-0.1152	-0.0217
SCIENCE	4	623831	3 C	2	5905	0.7614	0.0717	0.7604	0.103	0.0636	0.0014	0.3764	-0.2576	0.3772	-0.2231	-0.1045	-0.0344
SCIENCE	4	579538	3 D	2	5904	0.739	0.0802	0.7379	0.1258	0.0546	0.0015	0.4426	-0.1427	0.4429	-0.3018	-0.2418	-0.0259
SCIENCE	4	623870	3 D	2	5902	0.4629	0.462	0.1838	0.0866	0.2657	0.0019	0.2194	0.2199	-0.1359	-0.1897	-0.0057	-0.0272
SCIENCE	8	401685	0 A	2	26875	0.6789	0.6778	0.0925	0.128	0.1001	0.0016	0.4529	0.4539	-0.248	-0.2727	-0.1583	-0.0416
SCIENCE	8	410886	0 A	2	26842	0.6324	0.0737	0.1718	0.121	0.6306	0.0029	0.4834	-0.211	-0.2035	-0.3057	0.4843	-0.0405
SCIENCE	8	410888	0 A	1	26879	0.4646	0.2058	0.4639	0.1404	0.1884	0.0015	0.4348	-0.1304	0.4352	-0.221	-0.2206	-0.0329
SCIENCE	8	412134	0 A	2	26888	0.3126	0.3122	0.1369	0.2156	0.3341	0.0012	0.3245	0.3248	-0.2249	-0.1266	-0.043	-0.0251
SCIENCE	8	413674	0 A	2	26894	0.4101	0.4097	0.1367	0.3285	0.1242	0.0009	0.4394	0.4395	-0.1549	-0.2353	-0.1571	-0.0209
SCIENCE	8	493908	0 A	2	26887	0.3696	0.2448	0.3018	0.083	0.3692	0.0012	0.4434	-0.1084	-0.2029	-0.2664	0.4435	-0.0224
SCIENCE	8	494453	0 A	2	26889	0.673	0.0946	0.1341	0.6722	0.098	0.0011	0.5655	-0.2871	-0.3238	0.5659	-0.2361	-0.0329
SCIENCE	8	494458	0 A	2	26860	0.4879	0.4868	0.1321	0.3018	0.077	0.0022	0.4918	0.4925	-0.3089	-0.1769	-0.2189	-0.0422
SCIENCE	8	494459	0 A	2	26879	0.5568	0.1168	0.556	0.1916	0.1341	0.0015	0.4755	-0.2068	0.4755	-0.2215	-0.2401	-0.022
SCIENCE	8	494524	0 A	2	26864	0.2571	0.1472	0.2066	0.3876	0.2566	0.002	0.1955	-0.156	-0.013	-0.0483	0.196	-0.0345
SCIENCE	8	494525	0 A	2	26887	0.504	0.2104	0.1301	0.1549	0.5034	0.0012	0.3794	-0.133	-0.1918	-0.1937	0.3798	-0.0307
SCIENCE	8	560287	0 A	3	26858	0.5226	0.1601	0.1338	0.5215	0.1823	0.0023	0.2562	-0.0077	-0.1621	0.2571	-0.1786	-0.0303
SCIENCE	8	560300	0 A	2	26844	0.4086	0.1069	0.2236	0.2593	0.4074	0.0028	0.4339	-0.2378	-0.1834	-0.1404	0.4344	-0.0387
SCIENCE	8	560301	0 A	2	26875	0.6196	0.1247	0.1103	0.1447	0.6186	0.0016	0.4407	-0.1554	-0.2501	-0.237	0.4412	-0.03
SCIENCE	8	560310	0 A	2	26831	0.6353	0.0895	0.6332	0.1128	0.1613	0.0033	0.5305	-0.2169	0.5298	-0.2924	-0.2705	-0.0258
SCIENCE	8	575471	0 A	2	26884	0.4984	0.1293	0.1813	0.4978	0.1903	0.0013	0.356	-0.1535	-0.1616	0.3566	-0.1613	-0.0336
SCIENCE	8	580789	0 A	2	26875	0.4454	0.2121	0.1058	0.2358	0.4447	0.0016	0.2881	-0.1743	-0.2031	-0.0205	0.2884	-0.0228
SCIENCE	8	580790	0 A	2	26883	0.5752	0.0458	0.3142	0.5745	0.0642	0.0013	0.369	-0.1843	-0.1862	0.3697	-0.2309	-0.0336
SCIENCE	8	334787	0 B	2	26836	0.5199	0.1515	0.0783	0.2488	0.5183	0.0031	0.446	-0.2019	-0.2786	-0.1695	0.4472	-0.0536
SCIENCE	8	410869	0 B	2	26891	0.7132	0.0639	0.7125	0.0882	0.1344	0.001	0.458	-0.1868	0.4585	-0.3323	-0.1955	-0.029
SCIENCE	8	412458	0 B	3	26874	0.5051	0.0823	0.2463	0.5043	0.1654	0.0017	0.3096	-0.1894	-0.1343	0.3098	-0.1189	-0.0195
SCIENCE	8	498027	0 B	2	26874	0.4932	0.4924	0.148	0.1955	0.1625	0.0017	0.4644	0.4645	-0.2286	-0.2514	-0.1366	-0.0238
SCIENCE	8	498031	0 B	2	26884	0.5882	0.0379	0.5874	0.2415	0.1319	0.0013	0.4088	-0.219	0.4091	-0.1478	-0.2821	-0.0242
SCIENCE	8	574873	0 B	2	26863	0.4346	0.4337	0.1184	0.292	0.1538	0.0021	0.4408	0.4411	-0.2286	-0.183	-0.1673	-0.0259
SCIENCE	8	330224	0 C	2	26882	0.4416	0.2107	0.441	0.2709	0.0761	0.0014	0.3408	-0.0963	0.3412	-0.1665	-0.2081	-0.0258
SCIENCE	8	395285	0 C	2	26892	0.4785	0.1416	0.4781	0.151	0.2283	0.001	0.404	-0.0575	0.4042	-0.3325	-0.1479	-0.0238
SCIENCE	8	401747	0 C	2	26892	0.7113	0.1283	0.109	0.0512	0.7106	0.001	0.3601	-0.1425	-0.223	-0.2068	0.3608	-0.0295
SCIENCE	8	494464	0 C	2	26871	0.5807	0.2634	0.5796	0.0706	0.0845	0.0018	0.507	-0.277	0.5073	-0.274	-0.2044	-0.0313
SCIENCE	8	496017	0 C	2	26860	0.4889	0.4878	0.1199	0.294	0.0962	0.0022	0.3786	0.3786	-0.2697	-0.0772	-0.2223	-0.0191
SCIENCE	8	496018	0 C	2	26878	0.6193	0.0924	0.187	0.6183	0.1008	0.0015	0.4309	-0.2437	-0.2692	0.4315	-0.1091	-0.0318
SCIENCE	8	496714	0 C	2	26858	0.4544	0.1617	0.1361	0.2465	0.4534	0.0023	0.3362	-0.2407	-0.2377	0.0091	0.3368	-0.0312
SCIENCE	8	498859	0 C	2	26855	0.3241	0.1194	0.1099	0.445	0.3233	0.0024	0.3116	-0.2377	-0.2668	0.0321	0.3118	-0.0267
SCIENCE	8	278461	0 D	2	26893	0.2608	0.1614	0.3081	0.2689	0.2606	0.001	0.2408	-0.011	-0.1567	-0.0647	0.2411	-0.0232
SCIENCE	8	413673	0 D	2	26899	0.4763	0.1335	0.3177	0.0721	0.4759	0.0007	0.3678	-0.1382	-0.1806	-0.2018	0.3679	-0.0158
SCIENCE	8	496021	0 D	2	26876	0.6065	0.1094	0.1464	0.6055	0.137	0.0016	0.3477	-0.108	-0.1078	0.3484	-0.283	-0.0283
SCIENCE	8	496022	0 D	2	26854	0.8156	0.0555	0.8137	0.0702	0.0582	0.0024	0.4841	-0.2716	0.4845	-0.3009	-0.2043	-0.0353
SCIENCE	8	496719	0 D	2	26880	0.5826	0.2931	0.5817	0.0574	0.0663	0.0014	0.2988	-0.1262	0.2995	-0.2029	-0.1691	-0.0277
SCIENCE	8	574839	0 D	2	26872	0.8308	0.0517	0.0716	0.8293	0.0455	0.0017	0.4588	-0.228	-0.2775	0.4598	-0.2368	-0.0378
SCIENCE	8	574819	1 A	2	10472	0.8122	0.0373	0.0556	0.0947	0.8112	0.0012	0.439	-0.1995	-0.2344	-0.2717	0.4394	-0.0255
SCIENCE	8	621306	1 A	2	10454	0.5512	0.5495	0.1944	0.1701	0.083	0.003	0.49	0.4905	-0.1136	-0.3198	-0.2786	-0.0381
SCIENCE	8	621315	1 A	2	10464	0.4828	0.2106	0.1942	0.1114	0.4818	0.002	0.3359	-0.1109	-0.0778	-0.289	0.3364	-0.0264
SCIENCE	8	622832	1 A	2	10461	0.5688	0.1448	0.1728	0.5675	0.1126	0.0023	0.4293	-0.1722	-0.2107	0.4296	-0.2256	-0.0256

SCIENCE	8	622835	1 A	2	10465	0.5366	0.5355	0.1889	0.1311	0.1425	0.0019	0.4353	0.4356	-0.235	-0.2715	-0.0931	-0.0247
SCIENCE	8	577935	1 B	2	10472	0.4629	0.3051	0.0341	0.1972	0.4623	0.0012	0.3116	-0.0468	-0.2112	-0.2377	0.3122	-0.0341
SCIENCE	8	617343	1 B	2	10473	0.5296	0.529	0.2537	0.1089	0.1072	0.0011	0.4467	0.4474	-0.2193	-0.2748	-0.1326	-0.0383
SCIENCE	8	621309	1 C	2	10471	0.4774	0.1523	0.233	0.4768	0.1366	0.0013	0.276	-0.1449	-0.0125	0.2765	-0.2324	-0.026
SCIENCE	8	621312	1 C	2	10474	0.6216	0.0724	0.1519	0.1536	0.621	0.001	0.532	-0.1434	-0.3234	-0.2881	0.5326	-0.0387
SCIENCE	8	623847	1 C	3	10465	0.3642	0.294	0.3635	0.1165	0.2241	0.0019	0.4095	-0.1071	0.4098	-0.2594	-0.1535	-0.0252
SCIENCE	8	581705	2 A	2	8214	0.8498	0.0439	0.0562	0.8493	0.05	0.0006	0.4451	-0.2492	-0.2724	0.4454	-0.2067	-0.0215
SCIENCE	8	617345	2 A	2	8204	0.4817	0.4808	0.1487	0.1213	0.2474	0.0018	0.4281	0.4285	-0.314	-0.3232	0.0105	-0.0336
SCIENCE	8	622822	2 A	2	8209	0.5946	0.1217	0.5939	0.1781	0.1051	0.0012	0.4652	-0.2029	0.4648	-0.2874	-0.1689	-0.0037
SCIENCE	8	624424	2 A	2	8193	0.5792	0.1533	0.1398	0.5773	0.1264	0.0032	0.4013	-0.1633	-0.1872	0.4005	-0.2219	-0.0064
SCIENCE	8	624427	2 A	2	8188	0.4996	0.1869	0.0616	0.4977	0.25	0.0038	0.2392	0.067	-0.228	0.241	-0.205	-0.0495
SCIENCE	8	623859	2 B	2	8213	0.4426	0.1553	0.2059	0.4423	0.1959	0.0007	0.2581	-0.1416	-0.0019	0.2584	-0.191	-0.0191
SCIENCE	8	624425	2 B	2	8208	0.499	0.4984	0.1349	0.1999	0.1655	0.0013	0.1501	0.1508	-0.0392	-0.0849	-0.073	-0.0244
SCIENCE	8	624430	2 B	2	8197	0.4006	0.3996	0.3107	0.1986	0.0885	0.0027	0.2988	0.2996	-0.032	-0.1427	-0.2574	-0.0367
SCIENCE	8	566166	2 C	2	8208	0.3568	0.1443	0.3564	0.3853	0.1127	0.0013	0.2177	-0.2016	0.2183	0.0661	-0.2047	-0.0307
SCIENCE	8	623843	2 C	2	8213	0.4333	0.289	0.123	0.433	0.1543	0.0007	0.2849	0.006	-0.2525	0.2848	-0.1681	-0.0052
SCIENCE	8	581583	3 A	2	8214	0.5503	0.0674	0.2949	0.5502	0.0873	0.0001	0.2332	-0.1817	-0.0277	0.2334	-0.2043	-0.0235
SCIENCE	8	617342	3 A	2	8207	0.7037	0.703	0.1624	0.0869	0.0467	0.001	0.4871	0.4867	-0.2826	-0.2804	-0.1844	-0.0081
SCIENCE	8	621296	3 A	2	8184	0.6194	0.1083	0.1526	0.617	0.1182	0.0038	0.4367	-0.1933	-0.2356	0.4345	-0.2059	0.0015
SCIENCE	8	621301	3 A	2	8191	0.3349	0.1799	0.3339	0.1973	0.2859	0.0029	0.3931	-0.0679	0.3934	-0.2538	-0.1259	-0.0291
SCIENCE	8	630322	3 A	2	8197	0.6132	0.2088	0.1008	0.6118	0.0764	0.0022	0.3573	-0.1265	-0.2636	0.3577	-0.16	-0.0216
SCIENCE	8	496028	3 B	2	8202	0.5524	0.1727	0.1607	0.5516	0.1135	0.0016	0.4219	-0.1815	-0.2593	0.423	-0.1408	-0.0461
SCIENCE	8	617429	3 B	2	8209	0.4935	0.3652	0.4931	0.1058	0.0352	0.0007	0.3261	-0.0619	0.3266	-0.3004	-0.2186	-0.0313
SCIENCE	8	623146	3 C	2	8210	0.5586	0.2475	0.5582	0.1148	0.0789	0.0006	0.4176	-0.1964	0.4175	-0.2569	-0.1501	-0.0091
SCIENCE	8	621287	3 D	2	8190	0.2426	0.0823	0.2419	0.3875	0.2853	0.003	0.0938	-0.2465	0.0939	0.0228	0.0377	-0.0109
SCIENCE	8	621298	3 D	2	8209	0.1955	0.1954	0.2774	0.1733	0.3531	0.0007	0.0741	0.0744	0.0654	-0.0692	-0.0669	-0.0241

Evidence-Based Selected-Response Paper/Pencil Item Statistics

Column Heading	Definition
ContArea	Content
FormGrade	Grade
PubID	Form ID
FormNumber	Form
Standard1	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
Proportion0	Proportion 0 Points
Proportion1	Proportion 1 Point
Proportion2	Proportion 2 Points
Proportion3	Proportion 3 Points
ProportionINV	Proportion Invalid Responses
PtBiserial	Point Biserial
Correlation0	Correlation 0 Points
Correlation1	Correlation 1 Point
Correlation2	Correlation 2 Points
Correlation3	Correlation 3 Points
CorrelationINV	Correlation Invalid Responses
FinalB	IRT Difficulty Estimate
FinalBErr	IRT Difficulty Error
Infit	Infit Standardized
InfitMnSq	Infit Mean Square
Outfit	Outfit Standardized
OutfitMnSq	Outfit Mean Square
BiasCodeMALEFEMALE	Male/Female DIF Code
BiasCodeWHITEBLACK	White/Black DIF Code
BiasCodeWHITEHISPANIC	White/Hispanic DIF Code

ContArea	FormGrad	PubID	FormNum	Standard1	Depth	N	Mean	Proportior	Proportior	Proportior	Proportior	Proportior	PtBiserial	Correlatio	Correlatio	Correlatio	Correlatio	Correlatio	FinalB	FinalBErr	Infit	InfitMnSq	Outfit	OutfitMnS	BiasCodeW	BiasCodeV	BiasCodeW	HITEHISPANIC
ELA	3	574379	0	A-K	3	67443	1.4241	0.1773	0.3591	0.3116	0.143	0.009	0.4645	-0.2426	-0.234	0.1842	0.3698	-0.1045	0.715	0.0103	9.9013	1.3448	9.9014	1.3523	A-	A-	A+	
ELA	3	579575	0	A-K	3	67428	1.4357	0.1443	0.2705	0.576		0.0092	0.6274	-0.4203	-0.3483	0.6279		-0.0827	-0.1548	0.0099	-9.8992	0.8076	-9.8992	0.7611	A+	A-	A-	
ELA	3	580248	0	B-C	3	67185	0.9668	0.3711	0.2778	0.3383		0.0128	0.5844	-0.4351	-0.1253	0.5846		-0.0914	0.9405	0.0081	9.9011	1.055	9.9011	1.0762	A-	A+	A+	
ELA	3	271992	0	B-K	3	66992	1.6456	0.1688	0.2662	0.2946	0.2549	0.0156	0.5255	-0.2281	-0.3177	0.0496	0.5042	-0.1329	0.2551	0.0108	9.9013	1.3443	9.9014	1.4312	A-	A-	A-	
ELA	3	622436	1	A-K	3	7546	2.0379	0.0981	0.1465	0.3675	0.3804	0.0075	0.6018	-0.3039	-0.4241	0.0104	0.4998	-0.0848	-0.009	0.0277	-6.6191	0.9302	-7.6691	0.914	A+	A-	A-	
ELA	3	622439	1	A-K	3	7537	1.324	0.2392	0.1916	0.5604		0.0087	0.595	-0.3967	-0.379	0.6565		-0.0802	0.0409	0.0217	-6.4191	0.9342	-7.4891	0.8851	A+	A-	A-	
ELA	3	622422	2	A-K	2	7378	1.1504	0.3205	0.1975	0.469		0.013	0.4479	-0.2749	-0.3087	0.5253		-0.0968	0.3966	0.0223	9.9012	1.1527	9.9013	1.2522	A+	A+	A-	
ELA	3	622427	2	A-K	3	7406	1.4249	0.1342	0.3625	0.4329	0.0611	0.0092	0.4516	-0.3267	-0.2009	0.3661	0.1403	-0.0736	0.9777	0.0287	8.5411	1.1025	8.3611	1.1022	A+	A-	A-	
ELA	3	617199	3	A-K	3	7486	1.1737	0.2712	0.2771	0.4434		0.0083	0.6053	-0.4438	-0.2144	0.6067		-0.0894	0.3248	0.023	-9.8991	0.87	-9.8992	0.8471	A+	A-	A-	
ELA	3	617202	3	A-K	3	7487	1.6016	0.1296	0.3346	0.3291	0.1986	0.0082	0.5126	-0.223	-0.3451	0.1695	0.4149	-0.082	0.5191	0.0286	9.2911	1.1079	8.6911	1.1018	A-	A-	A-	
ELA	3	622416	4	A-K	3	7436	0.8449	0.421	0.298	0.268		0.013	0.3769	-0.2135	-0.1821	0.4466		-0.0801	0.9964	0.0272	9.9012	1.2083	9.9013	1.2689	A+	A-	A+	
ELA	3	622420	4	A-K	3	7474	1.4173	0.1797	0.3641	0.3028	0.1455	0.008	0.4949	-0.2747	-0.2323	0.1841	0.3928	-0.0654	0.7814	0.0331	6.0811	1.0924	6.8011	1.1049	A+	A+	A+	
ELA	3	624693	5	A-K	3	7490	1.4728	0.2017	0.3233	0.2614	0.2044	0.0093	0.4344	-0.2044	-0.2219	0.0491	0.4261	-0.0794	0.6993	0.0321	9.9013	1.272	9.9013	1.3012	A+	A-	A-	
ELA	3	624695	5	A-K	3	7491	0.9877	0.2962	0.4107	0.284		0.0091	0.4615	-0.3537	-0.0487	0.4177		-0.0303	0.7134	0.0283	2.791	1.0381	3.311	1.0488	A+	A-	A-	
ELA	3	623102	6	B-C	3	7544	0.645	0.5214	0.301	0.1693		0.0083	0.1198	-0.0091	-0.1567	0.2207		-0.0703	1.4927	0.0262	9.9015	1.5188	9.9017	1.7207	A-	A-	A+	
ELA	3	623106	6	B-K	3	7529	1.4218	0.2245	0.2907	0.3071	0.1675	0.0103	0.4089	-0.1425	-0.3087	0.1342	0.3925	-0.0878	0.8446	0.031	9.9013	1.2516	9.9013	1.2693	A+	A-	A-	
ELA	3	625449	7	B-K	3	7465	1.4206	0.1397	0.4071	0.3224	0.1159	0.0149	0.3888	-0.1415	-0.2463	0.1549	0.3378	-0.0862	0.8068	0.0349	9.9012	1.2065	9.9012	1.2025	A+	A-	A-	
ELA	3	625453	7	B-K	3	7497	1.3737	0.2155	0.1886	0.5852		0.0107	0.5754	-0.3972	-0.3375	0.6176		-0.0873	-0.0864	0.0321	-8.0591	0.8832	-6.0291	0.855	A-	A+	A+	
ELA	3	623659	8	B-C	3	7495	1.3464	0.1619	0.3867	0.3773	0.0636	0.0104	0.3893	-0.2707	-0.1377	0.2727	0.1809	-0.0942	1.1413	0.0337	9.9012	1.1869	9.9012	1.187	A-	A-	A-	
ELA	3	630320	8	B-K	2	7447	0.9825	0.4189	0.1625	0.4018		0.0168	0.3886	-0.2269	-0.2958	0.479		-0.1071	0.7493	0.0282	9.9013	1.3037	9.9014	1.4133	A+	A-	A-	
ELA	3	624712	9	B-C	3	7483	0.4806	0.5691	0.3624	0.0561		0.0124	0.2036	-0.1793	0.1446	0.1208		-0.0765	2.2752	0.0261	9.9013	1.2542	9.9015	1.4698	A-	A-	A-	
ELA	3	624713	9	B-C	3	7498	1.3035	0.223	0.371	0.2677	0.1279	0.0104	0.3459	-0.0959	-0.2666	0.1472	0.3368	-0.088	1.0284	0.0308	9.9014	1.3799	9.9014	1.3857	A+	A-	A-	
ELA	4	576333	0	A-C	3	66645	1.5168	0.1416	0.3383	0.3744	0.1407	0.005	0.5425	-0.3271	-0.2905	0.2832	0.3426	-0.0661	0.8071	0.0102	9.9012	1.1697	9.9012	1.1748	A-	A+	A+	
ELA	4	576318	0	A-K	3	66818	0.8298	0.4436	0.2802	0.2738		0.0024	0.4337	-0.2736	-0.1862	0.4989		-0.0594	1.1661	0.0079	9.9013	1.2797	9.9015	1.4784	A+	A+	A+	
ELA	4	579415	0	A-K	3	66736	2.1728	0.0492	0.1313	0.4141	0.4018	0.0036	0.5467	-0.2614	-0.4	-0.0222	0.4241	-0.0891	-0.6306	0.0174	9.9011	1.0549	9.9012	1.1808	A-	A-	A-	
ELA	4	579149	0	B-C	3	66597	1.4342	0.2005	0.1615	0.6323		0.0057	0.6054	-0.4537	-0.3134	0.6312		-0.0978	-0.3266	0.0102	3.251	1.0161	3.661	1.0339	A+	A-	A+	
ELA	4	495050	0	B-K	3	66791	1.0708	0.3624	0.2017	0.433		0.0028	0.4181	-0.2367	-0.3463	0.5181		-0.0742	0.6063	0.0084	9.9014	1.4205	9.9017	1.6563	A-	A+	A+	
ELA	4	495051	0	B-K	3	66795	1.6099	0.1198	0.3223	0.3823	0.1729	0.0028	0.5851	-0.368	-0.2959	0.2311	0.3956	-0.0788	0.2363	0.0127	9.9011	1.0796	9.9011	1.0855	A-	A+	A+	
ELA	4	623016	1	A-K	3	7442	0.9643	0.4018	0.2233	0.3664		0.0085	0.4046	-0.2645	-0.2203	0.4633		-0.0192	0.733	0.0193	9.9012	1.2288	9.9014	1.3552	A+	A-	A-	
ELA	4	623020	1	A-K	3	7490	1.2167	0.2847	0.3359	0.2537	0.1236	0.0021	0.3437	-0.1518	-0.2038	0.1434	0.319	-0.056	1.022	0.0204	9.9015	1.4769	9.9015	1.5263	A+	A-	A-	
ELA	4	623030	2	A-K	3	7365	1.4117	0.1701	0.3898	0.2941	0.1433	0.0027	0.2313	-0.1357	-0.0593	-0.0032	0.2374	-0.0352	0.8357	0.0254	9.9015	1.5003	9.9015	1.5341	A+	A-	A-	
ELA	4	623032	2	A-K	3	7323	0.4714	0.6253	0.2651	0.1012		0.0084	0.0688	0.0338	-0.1658	0.2002		-0.0383	1.9561	0.0203	9.9014	1.4254	9.902	2.0136	A+	A+	A+	
ELA	4	623670	3	A-K	3	7501	1.4722	0.1914	0.1438	0.6625		0.0024	0.5192	-0.3692	-0.3401	0.5656		-0.0594	-0.2551	0.0259	-0.769	0.9903	7.1412	1.1855	A+	A-	A-	
ELA	4	623676	3	A-K	3	7474	1.4946	0.1677	0.3496	0.2939	0.1827	0.006	0.506	-0.2258	-0.3312	0.1809	0.4215	-0.0388	0.6895	0.0259	9.9012	1.158	9.9012	1.1627	A-	A-	A-	
ELA	4	622449	4	A-K	3	7388	0.4258	0.5955	0.3734	0.0249		0.0062	0.1222	-0.1554	0.1946	-0.0846		-0.0604	2.66	0.0262	9.9013	1.2933	9.9016	1.6377	A+	A+	A+	
ELA	4	625022	4	A-K	3	7422	1.3584	0.1793	0.3375	0.426	0.0556	0.0016	0.359	-0.1891	-0.2524	0.3211	0.1505	-0.034	1.1045	0.034	9.9013	1.2783	9.9013	1.2987	A+	A-	A-	
ELA	4	624828	5	A-C	3	7402	1.3138	0.1749	0.4475	0.2584	0.1144	0.0047	0.3083	-0.2294	-0.0319	0.052	0.258	-0.0273	0.9121	0.0336	9.9014	1.38	9.9014	1.4147	A-	A-	A-	
ELA	4	624834	5	A-C	3	7414	1.0314	0.3518	0.2621	0.3831		0.0031	0.4335	-0.3201	-0.1407	0.4477		-0.0521	0.5895	0.0286	9.9012	1.1729	9.9012	1.2263	A+	A+	A+	
ELA	4	624724	6	B-C	3	7367	1.3468	0.1956	0.3748	0.309	0.1159	0.0046	0.4304	-0.2509	-0.1924	0.2011	0.3182	-0.0313	0.965	0.0331	9.9012	1.2349	9.9013	1.2543	A+	A-	A-	
ELA	4	624720	6	B-K	3	7382	0.531	0.6738	0.1176	0.2061		0.0026	0.27	-0.1365	-0.2663	0.3787		-0.068	1.6322	0.0296	9.9013	1.347	9.9023	2.3164	A-	A-	A-	
ELA	4	625471	7	B-C	3	7454	1.6401	0.1013	0.316	0.4204	0.1596	0.0027	0.5518	-0.3011	-0.3758	0.2982	0.3286	-0.0388	0.3844	0.0415	-1.699	0.9745	-2.059	0.9692	A+	A-	A+	
ELA	4	625472	7	B-K	2	7412	1.0472	0.2752	0.3944	0.322		0.0083	0.4591	-0.3658	-0.0456	0.4046		-0.0371	0.5281	0.0293	5.8711	1.0822	6.4611	1.0994	A-	A-	A+	
ELA	4	621488	8	B-C	3	7374	0.6652	0.5954	0.142	0.2611		0.0015	0.1426	-0.0215	-0.2867	0.2547		-0.0319	1.2706	0.0283	9.9017	1.6749	9.9023	2.3271	A+	A+	A+	
ELA	4	621472	8	B-K	3	7344	1.4895	0.206	0.2873	0.3095	0.1916	0.0056	0.4479	-0.1336	-0.3902	0.1373	0.4314	-0.0358	0.6694	0.0329	9.9013	1.2509	9.9013	1.2895	A+	A-	A-	
ELA	4	625461	9	B-C	3	7418	1.3752	0.1776	0.3799	0.3277	0.112	0.0028	0.4335	-0.2677	-0.1768	0.2012	0.3075	-0.0618	0.873	0.0338	9.9012	1.157	9.9012	1.1745	A-	A-	A-	
ELA	4	625504	9	B-C	2	7396	0.7124	0.4455	0.3892	0.1596		0.0058	0.1693	-0.1	-0.035	0.1938		-0.0558	1.3586	0.0264	9.9014	1.4078	9.9016	1.5576	A+	A+	A+	
ELA	5	579327	0	A-C	3	65048	1.142	0.334	0.1871	0.4755		0.0034	0.4099	-0.2679	-0.2701	0.4739		-0.0862	0.3056	0.0085	9.9014	1.3601	9.9015	1.5413	A-	A+	A+	
ELA	5	579329	0	A-K	3	65061	1.304	0.2932	0.242	0.3271	0.1345	0.0032	0.2862	-0.1405	-0.1467	0.0666	0.2936	-0.083	0.6301	0.0094	9.9017	1.7123	9.9019	1.8611	A-	A-	A+	
ELA	5	579336	0	A-K	3	65174	2.192	0.0635	0.1268	0.3627	0.4456	0.0015	0.6092	-0.3299	-0.4102	-0.051	0.4895	-0.0493	-0.4675	0.0154	-9.8991	0.926	-9.8991	0.9243	A+	A-	A+	
ELA	5	409607	0	B-K	3	65127	1.1602	0.2149	0.4082	0.3747		0.0022	0.5625	-0.4103	-0.1665	0.523		-0.0593	0.3898	0.0088	-9.899	0.9576	-9.659	0.9597	A-	A+	A+	
ELA	5	574356	0	B-K	3	64964	1.242	0.2054	0.4412	0.2512	0.0975	0.0047	0.5317	-0.2864	-0.2353	0.2818	0.3923	-0.0888	0.6852	0.0102	9.9011	1.0619	9.9011	1.0565	A+	A-	A+	
ELA	5	577504	0	B-K	3	64964	1.0734	0.2927	0.3369	0.3658		0.0047	0.4317	-0.3087	-0.1277	0.4294		-0.0878	0.4182	0.0085	9.9012	1.203	9.9013	1.2715	A+	A+	A+	
ELA	5	621510	1	B-C	3	7261	0.7558	0.4736	0.2901	0.2308		0.0055	0.3105	-0.2082	-0.0807	0.3414		-0.0442	1.0655	0.018	9.9013	1.2501	9.9014	1.4062	A-	A-	A-	
ELA	5	621511	1	B-K	3	7290	1.4916	0.119	0.3554	0.4382	0.0859	0.0015	0.4143	-0.2828	-0.2098	0.2842	0.1856	-0.0248	0.678	0.0255	9.9011	1.1179	9.9011	1.1172	A-	A-	A-	
ELA	5	623759	2	B-C	3	7229	1.6897	0.1423	0.2584	0.3623	0.2337	0.0033	0.5169	-0.2464	-0.3188	0.0758	0.4562	-0.0671	0.3141	0.0279	3.071	1.0335	4.4811	1.0511	A-	A-	A+	
ELA	5	623757	2	B-K	3	7237	0.6912	0.5132	0.2796	0.205		0.0022	0.1772	-0.0951	-0.0933	0.2264		-0.0425	1.1752	0.0194	9.9014	1.3916	9.9016	1.6159	A-	A+	A+	
ELA	5	623678	3	B-C	3	7202	1.019	0.3889	0.1972	0.4078		0.0061	0.3589	-0.2382	-0.2097	0.4129		-0.0435	0.6936	0.0204	9.9012	1.2485	9.9015	1.4649	A-	A-	A+	
ELA	5	623686	3	B-K	3	7237	1.4326	0.1791	0.3714	0.2853	0.163	0.0012	0.4993	-0.3037	-0.2172	0.1756	0.3866	-0.0192	0.721	0.025	3.241	1.0356	3.871	1.0436	A+	A-	A-	
ELA	5	625482	4	B-C	3	7196	1.1951	0.271	0.2568	0.4646		0.0077	0.5322	-0.3874	-0.2134	0.5424		-0.0582	0.2239	0.0303	-3.019	0.9584	-2.569	0.951	A-	A-	A-	
ELA	5	630682	4	B-C	3	7236	1.4906	0.1393	0.3918	0.3047	0.162	0.0022	0.4715	-0.242	-0.262	0.1679	0.3722	-0.0586	0.5587	0.037	5.4011	1.0831	5.4011	1.0847	A+	A-	A-	
ELA	5	623698	5	B-C	3	7234	1.2982	0.2225	0.3723	0.2861	0.117	0.0021	0.269	-0.1373	-0.1191	0.0857	0.2456	-0.0661	0.9349	0.0315	9.9014	1.3985	9.9014	1.4482	A+	A-	A+	
ELA	5	623701	5	B-K	3	7212	0.5491	0.6135	0.2166	0.1649		0.0051	0.1426	-0.0031	-0.2399	0.2813		-0.0568	1.5393	0.0274	9.9014	1.3843	9.9018	1.7916	A+	A+	A-	
ELA	5	622451	6	A-K	3	7147	0.992	0.2638	0.4721	0.2559		0.0082	0.3365	-0.3374	0.1262	0.211		-0.0709	0.6525	0.0295	9.9012	1.1643	9.9012	1.2227	A+	A-	A+	
ELA	5	622452	6	A-K	3	7187	1.7251	0.1556	0.2157	0.3736	0.2526	0.0026	0.5055	-0.2473	-0.3331	0.081	0.4385	-0.0599	0.328	0.0371	6.2411	1.0985	6.8411	1.1156	A+	B-	A-	
ELA	5	623037	7	A-K	3	7251	1.318	0.1648	0.3496	0.4816		0.004	0.3349	-0.2687	-0.0963	0.2951		-0.0296	-0.1159	0.0345	9.2911	1.1395	9.9013	1.2789	A+	A-	A+	
ELA	5	623038	7	A-K	3	7269	1.9507	0.1309	0.1912	0.2725	0.4038	0.0015	0.5471	-0.2626	-0.3818	-0.0241	0.5096	-0.0136	-0.0054	0.0393	0.721	1.0112	0.731	1.0139	A+	A-	A-	
ELA	5	623687	8	A-K	3	7179	1.51	0.0942	0.4238	0.3541	0.1241	0.0037	0.5405	-0.2775	-0.3287	0.2578	0.3677	-0.0165	0.5183	0.0424	-5.2191	0.9219	-5.3591	0.9195	A+	A-	A-	
ELA	5	623756	8	A-K	3	7193	1.0475	0.2953	0.3601	0.3428		0.0018	0.2763	-0.2127	-0.0525	0.259		-0.0167	0.5061	0.0291	9.9013	1.2712	9.9013	1.3239	A+	A+	A+	
ELA	5	621502	9	A-C	3	7250	0.9193	0.4289	0.2857	0.215	0.0668	0.0036	0.0047	0.1573	-0.2476	-0.0267	0.1866	-0.027	1.5286	0.0271	9.9019	1.8526	9.9022	2.2108	A+	A-	A-	
ELA	5	621499	9	A-K	3	7265	1.148	0.2954	0.26	0.4431		0.0015	0.4678	-0.3042	-0.2653	0.5171		-0.0433	0.3202	0.0295	1.401	1.0188	2.9811	1.0546	A+	A-	A+	
ELA	6	495101	0	A-K	3	60795	1.5399	0.2573	0.1899	0.3063	0.2451	0.0015	0.5601	-0.3158	-0.3359	0.1198	0.504	-0.0572	0.6347	0.0097	9.9012	1.2231	9.9013	1.2779	A-	A-	A+	
ELA	6	579321	0	A-K	3	60754	1.0197	0.297	0.3843	0.3166		0.0022	0.5591	-0.4266	-0.0929	0.5204		-0.0416	0.9811	0.0082	5.721	1.0229	6.051	1.0268	A-	A+	A+	
ELA	6	581448	0	A-K	3	60767	1.8655	0.1034	0.2294	0.3634	0.3019	0.0019	0.6614	-0.3015	-0.4796	0.094	0.5448	-0.0424	0.1738	0.0126	-9.8991	0.8796	-9.8991	0.8696	A+	A-	A-	
ELA	6	579311	0	B-C	3	60742	1.6654	0.1267	0.2953	0.3608	0.2148	0.0023	0.6074	-0.3472	-0.3172	0.1339	0.4851	-0.0693	0.3415	0.0118	1.161	1.0051	6.281	1.0301	A-	A-	A-	
ELA	6	579312	0	B-C	3	60715	1.0087	0.3104	0.3676	0.3191		0.0028	0.5439	-0.4435	-0.034	0.4827		-0.065	0.7711	0.0085	3.781	1.015	5.901	1.0264	A+	A+	A+	
ELA	6	497118	0	B-K	3	60814	1.2764	0.2713	0.18	0.5475		0.0012	0.4359	-0.3007	-0.2772	0.4859		-0.0474	0.4529	0.0088	9.9012	1.2392	9.9015	1.5364	A-	A+	A+	

ELA	6	623707	1	A-K	2	6798	1.2107	0.3262	0.1361	0.5367		0.001	0.4887	-0.4002	-0.192	0.5101		-0.0284	0.5004	0.0196	9.9012	1.165	9.9012	1.2393	A-	A-	A-
ELA	6	623708	1	A-K	2	6799	1.8938	0.0767	0.2285	0.4181	0.2758	0.0009	0.635	-0.3273	-0.4285	0.1099	0.4775	-0.0196	0.2618	0.0278	-9.8991	0.8649	-9.8991	0.8559	A-	A-	A-
ELA	6	623720	2	A-K	2	6724	1.1835	0.1737	0.5006	0.2882	0.0342	0.0033	0.3526	-0.2148	-0.1413	0.2779	0.1585	-0.046	1.67	0.0245	9.9012	1.177	9.9012	1.1791	A-	A-	A-
ELA	6	623722	2	A-K	2	6735	0.5179	0.6359	0.2078	0.1546		0.0016	0.1416	-0.0469	-0.1447	0.2282		-0.0308	1.9606	0.02	9.9014	1.3863	9.902	1.9906	A-	A+	A-
ELA	6	621521	3	A-K	3	6689	1.0552	0.2669	0.439	0.2599	0.031	0.0031	0.1762	-0.0806	-0.095	0.1445	0.1226	-0.0328	1.8914	0.0209	9.9014	1.383	9.9014	1.4242	A+	A-	A+
ELA	6	621598	3	A-K	3	6706	0.4569	0.6379	0.2665	0.0951		0.0006	0.2214	-0.1489	-0.0066	0.2548		-0.011	2.0443	0.0195	9.9012	1.1766	9.9015	1.5068	A+	A+	A-
ELA	6	623048	4	A-K	2	6786	1.6505	0.1479	0.2807	0.3437	0.2271	0.0006	0.4899	-0.2665	-0.2656	0.0821	0.4186	-0.0188	0.6169	0.0383	7.9411	1.1277	8.4811	1.1419	A+	A-	A-
ELA	6	623053	4	A-K	2	6782	0.7032	0.4599	0.3754	0.1635		0.0012	0.2579	-0.1706	-0.0346	0.2787		-0.0369	1.5661	0.0275	9.9013	1.2844	9.9014	1.4039	A+	A-	A-
ELA	6	622461	5	A-C	3	6718	1.2553	0.2535	0.2369	0.5086		0.001	0.5337	-0.3889	-0.2477	0.5524		-0.0509	0.315	0.0325	-1.799	0.9731	-1.279	0.9723	A+	A-	A-
ELA	6	624274	5	A-C	3	6699	1.3012	0.1927	0.4092	0.2956	0.0986	0.0039	0.2137	-0.1219	-0.0507	0.0191	0.2238	-0.0385	1.1875	0.0341	9.9016	1.5551	9.9016	1.5827	A+	A-	A+
ELA	6	624728	6	B-K	2	6755	1.7119	0.1059	0.2604	0.4482	0.1844	0.001	0.5566	-0.3302	-0.3368	0.2199	0.3644	-0.04	0.5513	0.0432	-3.3491	0.9473	-3.7591	0.9405	A+	A-	A-
ELA	6	624737	6	B-K	3	6750	0.9895	0.4303	0.148	0.4198		0.0018	0.3331	-0.1885	-0.3338	0.4321		-0.0331	0.8784	0.0293	9.9013	1.3361	9.9015	1.5459	A+	A+	A+
ELA	6	622611	7	B-C	3	6752	1.4613	0.1238	0.3962	0.3709	0.1065	0.0027	0.4134	-0.271	-0.1889	0.2242	0.2443	-0.0396	0.9245	0.0397	7.8111	1.1285	8.2011	1.1347	A+	A-	A-
ELA	6	622613	7	B-K	2	6760	0.9987	0.2716	0.4566	0.2703		0.0015	0.3314	-0.3259	0.0957	0.2223		-0.038	0.8522	0.0303	9.9012	1.1756	9.9012	1.2069	A-	A-	A+
ELA	6	622476	8	B-C	2	6741	0.7478	0.4095	0.4276	0.1585		0.0044	0.2561	-0.2183	0.0767	0.1999		-0.0541	1.4849	0.0275	9.9013	1.2523	9.9013	1.3258	A-	A-	A+
ELA	6	622471	8	B-K	2	6761	1.6043	0.1328	0.3416	0.3121	0.2121	0.0015	0.4951	-0.2246	-0.3009	0.0843	0.4427	-0.0288	0.6332	0.0391	4.9211	1.0771	4.4311	1.0715	A-	A-	A-
ELA	6	625497	9	B-C	2	6797	1.9004	0.1083	0.1975	0.3783	0.3146	0.0013	0.4912	-0.2448	-0.3003	-0.0132	0.4368	-0.0219	0.2516	0.0434	7.5011	1.1256	9.6912	1.1762	A+	A-	A-
ELA	6	625494	9	B-K	3	6799	0.8444	0.3526	0.4492	0.1972		0.001	0.4021	-0.2723	-0.0608	0.4047		-0.0194	1.2381	0.0284	6.2211	1.0928	6.8711	1.1081	A-	A-	A+
ELA	7	497093	0	A-C	3	57589	1.7327	0.072	0.3302	0.3901	0.207	0.0007	0.5318	-0.3199	-0.2955	0.1352	0.3867	-0.0355	0.1665	0.0137	9.291	1.041	9.901	1.0493	A-	A+	A+
ELA	7	497098	0	A-K	3	57579	0.9959	0.2702	0.4627	0.2662		0.0009	0.3075	-0.1998	-0.092	0.3079		-0.0489	0.7896	0.0083	9.9013	1.3114	9.9014	1.3549	A+	A+	A+
ELA	7	578081	0	A-K	3	57469	1.3456	0.1899	0.2727	0.5345		0.0028	0.6432	-0.4836	-0.261	0.6218		-0.0786	-0.1838	0.0102	-9.8991	0.9155	-9.8991	0.8802	A-	A+	A+
ELA	7	566578	0	B-C	3	57554	1.8338	0.0996	0.2018	0.4623	0.235	0.0014	0.6404	-0.3645	-0.4243	0.1932	0.4371	-0.0595	0.1429	0.0122	-9.8991	0.876	-9.8991	0.8807	A+	A-	A+
ELA	7	579273	0	B-C	3	57581	1.6738	0.0964	0.29	0.4556	0.157	0.0009	0.5275	-0.3369	-0.2652	0.1839	0.3557	-0.041	0.4794	0.012	7.751	1.0354	7.921	1.0365	A-	A-	A-
ELA	7	566575	0	B-K	3	57529	1.2501	0.2248	0.2989	0.4744		0.0018	0.509	-0.4323	-0.0919	0.4512		-0.0662	0.2902	0.0089	9.9011	1.0559	9.9011	1.062	A-	A+	A+
ELA	7	625501	1	A-C	2	6462	0.7315	0.3681	0.5294	0.1002		0.0023	0.3288	-0.337	0.2435	0.1442		-0.0485	1.5314	0.0171	9.9011	1.1086	9.9011	1.1444	A+	A+	A+
ELA	7	625500	1	A-K	2	6451	1.5306	0.1456	0.3494	0.3279	0.1731	0.004	0.3939	-0.2087	-0.2078	0.1159	0.321	-0.0497	0.5316	0.0236	9.9012	1.2448	9.9013	1.2684	A+	A-	A-
ELA	7	623057	2	B-K	2	6422	1.0612	0.3157	0.3067	0.3769		0.0006	0.3549	-0.2547	-0.123	0.363		-0.0336	0.6265	0.0199	9.9012	1.1954	9.9013	1.2569	A+	A-	A-
ELA	7	625091	2	B-K	3	6424	1.8495	0.0724	0.2863	0.3604	0.2806	0.0003	0.5691	-0.3165	-0.3298	0.0525	0.459	-0.0182	0.0161	0.0356	-4.519	0.9539	-4.259	0.9551	A+	A-	A-
ELA	7	625564	3	B-K	2	6386	1.4179	0.1547	0.3903	0.3357	0.1183	0.0009	0.5052	-0.3054	-0.2494	0.2691	0.3269	-0.0174	0.8271	0.0247	-3.389	0.9646	-2.559	0.9732	A-	B-	A-
ELA	7	625566	3	B-K	2	6383	0.7658	0.5009	0.2306	0.2671		0.0014	0.2818	-0.1728	-0.1533	0.3422		-0.0119	1.1501	0.0189	9.9013	1.2652	9.9015	1.4582	B-	A-	A-
ELA	7	623742	4	B-C	3	6451	1.3395	0.2253	0.3252	0.3325	0.116	0.0011	0.392	-0.2171	-0.2372	0.2603	0.2497	-0.0243	0.9892	0.0336	9.9012	1.2369	9.9012	1.2469	A-	A-	A+
ELA	7	623745	4	B-K	3	6448	0.9761	0.3743	0.2738	0.3504		0.0015	0.4338	-0.3114	-0.1448	0.456		-0.0574	0.7269	0.0297	6.6211	1.0972	7.2611	1.1383	A-	A-	A-
ELA	7	622651	5	B-K	3	6362	1.2006	0.3383	0.1218	0.5386		0.0013	0.3084	-0.2114	-0.247	0.3651		-0.0347	0.3703	0.0316	9.9014	1.3575	9.9016	1.5534	A-	A-	B-
ELA	7	622652	5	B-K	3	6349	1.8565	0.0973	0.2071	0.4336	0.2587	0.0033	0.5574	-0.2661	-0.3778	0.0778	0.4484	-0.0521	0.2067	0.0458	-4.0591	0.9341	-3.3591	0.9435	A-	A-	A-
ELA	7	625544	6	A-C	2	6325	1.2667	0.2776	0.1772	0.5441		0.0011	0.5583	-0.4505	-0.2065	0.5655		-0.0318	0.2047	0.033	-4.4391	0.9318	-4.1991	0.8976	A+	A-	A-
ELA	7	625543	6	A-K	2	6326	1.9703	0.1105	0.1908	0.3155	0.3822	0.0009	0.4128	-0.122	-0.3041	-0.1307	0.4515	-0.0297	0.0309	0.0448	9.9013	1.2688	9.9014	1.3844	A-	A-	A-
ELA	7	623066	7	A-K	3	6400	1.1567	0.1699	0.5015	0.3263		0.0023	0.4306	-0.4183	0.0393	0.2949		-0.017	0.2687	0.0359	0.451	1.0067	0.861	1.0132	A+	A+	A-
ELA	7	623070	7	A-K	2	6411	1.7734	0.099	0.2407	0.4475	0.2122	0.0006	0.5352	-0.2911	-0.3351	0.1395	0.3932	0.0023	0.2779	0.0457	-2.329	0.9621	-2.939	0.9518	A+	A-	A+
ELA	7	623728	8	A-K	2	6354	1.2394	0.1629	0.4343	0.4022		0.0006	0.5109	-0.4261	-0.097	0.4214		-0.0465	0.0854	0.0371	-6.6291	0.9031	-6.1291	0.9041	A+	A-	A-
ELA	7	623735	8	A-V	2	6349	0.8943	0.3613	0.4129	0.1931	0.0313	0.0014	0.144	-0.0919	-0.0134	0.077	0.1232	-0.029	1.845	0.0293	9.9015	1.4726	9.9016	1.6193	A+	A-	A-
ELA	7	625517	9	A-K	2	6382	0.9864	0.3929	0.2244	0.3793		0.0034	0.4344	-0.3118	-0.1785	0.4708		-0.0292	0.7071	0.0295	5.8311	1.0833	6.6211	1.1313	A-	A-	A+
ELA	7	625569	9	A-K	2	6399	1.463	0.2539	0.2577	0.2587	0.2289	0.0008	0.446	-0.1552	-0.3719	0.0851	0.4599	-0.0102	0.7291	0.033	9.9012	1.1807	9.9012	1.1833	A-	A-	A-
ELA	8	576305	0	A-C	3	54936	1.2732	0.2711	0.3408	0.229	0.1574	0.0018	0.4888	-0.2279	-0.2568	0.1211	0.4795	-0.0588	0.5637	0.0096	9.9013	1.3347	9.9014	1.3684	A-	A-	A+
ELA	8	411881	0	A-K	3	54998	1.4792	0.1747	0.1709	0.6537		0.0007	0.568	-0.4626	-0.2319	0.5547		-0.0372	-0.2316	0.0097	-9.8991	0.9044	-9.8991	0.8809	A+	A+	A+
ELA	8	576308	0	A-K	3	54926	0.5078	0.6535	0.1824	0.1622		0.002	0.418	-0.3208	-0.0166	0.4388		-0.0607	1.1476	0.0081	9.9011	1.1042	9.9013	1.3047	A-	A-	A+
ELA	8	496330	0	B-C	3	54958	1.9996	0.0683	0.205	0.3841	0.3412	0.0014	0.6996	-0.3627	-0.4447	0.0076	0.5683	-0.0579	-0.4871	0.0154	-9.8992	0.809	-9.8992	0.8211	A+	A-	A+
ELA	8	576298	0	B-C	2	54980	1.0853	0.3478	0.2183	0.433		0.001	0.3666	-0.2466	-0.2091	0.4133		-0.0301	0.3045	0.0087	9.9014	1.4088	9.9017	1.7101	A+	A+	A+
ELA	8	576300	0	B-K	3	54979	1.996	0.1171	0.1633	0.3251	0.3935	0.001	0.5631	-0.2627	-0.3841	-0.0667	0.5297	-0.0334	-0.2111	0.012	9.9011	1.1233	9.9014	1.3598	A+	A-	A-
ELA	8	623090	1	A-K	2	6122	1.6906	0.0802	0.256	0.5563	0.1071	0.0003	0.5197	-0.2744	-0.3909	0.3355	0.2546	-0.0134	0.2776	0.0282	-3.649	0.9618	-4.339	0.9533	A+	B-	A-
ELA	8	623093	1	A-K	2	6110	0.6556	0.5926	0.1561	0.249		0.0023	0.2165	-0.1123	-0.1974	0.2963		-0.0274	1.014	0.0187	9.9015	1.4998	9.9021	2.0665	A+	A+	A-
ELA	8	624740	2	A-K	2	6086	1.9778	0.0851	0.1974	0.3717	0.3454	0.0005	0.5824	-0.3294	-0.3593	0.0305	0.4631	-0.0017	-0.2028	0.0334	-4.6691	0.9489	-3.399	0.9601	A+	A-	A-
ELA	8	624821	2	A-K	2	6086	1.1842	0.1619	0.4915	0.346		0.0005	0.3965	-0.4105	0.0597	0.2559		-0.0149	0.0502	0.0244	4.371	1.0451	7.3611	1.0796	A+	A-	A+
ELA	8	624747	3	A-K	2	6119	1.6006	0.1	0.3889	0.3209	0.1896	0.0007	0.4055	-0.2228	-0.1666	-0.0053	0.3864	-0.0366	0.2408	0.0307	9.9013	1.268	9.9013	1.3189	A-	A-	A-
ELA	8	624753	3	A-K	3	6114	1.059	0.3165	0.3065	0.3755		0.0015	0.4501	-0.3316	-0.1364	0.4516		-0.0406	0.4342	0.0205	9.9011	1.1083	9.9012	1.1628	A+	A-	A+
ELA	8	624765	4	A-K	3	6200	1.8402	0.0548	0.2337	0.5272	0.1836	0.0006	0.3824	-0.2083	-0.2636	0.1339	0.2387	-0.013	-0.0682	0.059	8.0412	1.1494	8.6212	1.1611	A+	A-	A-
ELA	8	626315	4	A-K	3	6194	0.9935	0.4175	0.1699	0.411		0.0016	0.36	-0.2453	-0.2246	0.4196		-0.0294	0.5453	0.0307	9.9013	1.2869	9.9015	1.4934	A+	A+	A+
ELA	8	625573	5	A-C	2	6108	1.2518	0.2316	0.2848	0.4833		0.0003	0.4568	-0.348	-0.1658	0.444		-0.0139	-0.0158	0.0346	3.5911	1.0564	4.3811	1.0958	A-	A+	A-
ELA	8	625572	5	A-K	3	6100	1.7469	0.0753	0.3028	0.4196	0.2007	0.0016	0.4965	-0.2916	-0.2891	0.1449	0.3486	-0.0337	0.0508	0.0516	1.791	1.03	3.0211	1.0514	A+	A-	A-
ELA	8	622483	6	B-C	3	6135	1.3195	0.2029	0.363	0.3443	0.0889	0.0008	0.3082	-0.1897	-0.1286	0.1644	0.2132	-0.0243	0.8913	0.0353	9.9013	1.3235	9.9013	1.3429	A-	A-	A-
ELA	8	622488	6	B-K	3	6135	0.5614	0.6536	0.1303	0.2153		0.0008	0.1452	-0.0121	-0.3183	0.2758		-0.0164	1.3332	0.0314	9.9015	1.5469	9.9024	2.3849	A-	A-	A+
ELA	8	621557	7	B-K	3	6099	1.0672	0.2102	0.5102	0.2773		0.0023	0.4338	-0.3692	0.0021	0.3362		-0.0233	0.3557	0.0342	1.221	1.0189	1.531	1.0242	A+	A-	A+
ELA	8	622521	7	B-K	3	6108	1.4103	0.228	0.2483	0.4077	0.1152	0.0008	0.36	-0.1546	-0.2964	0.2153	0.2763	-0.0378	0.8109	0.035	9.9013	1.3191	9.9014	1.3583	A-	A-	A-
ELA	8	617187	8	B-C	3	6058	1.5155	0.2903	0.1706	0.2688	0.268	0.0023	0.363	-0.0898	-0.3727	-0.0418	0.4539	-0.0318	0.5427	0.0343	9.9015	1.5352	9.9018	1.7969	C+	A-	A-
ELA	8	617196	8	B-K	3	6069	1.3015	0.1607	0.3766	0.4621		0.0005	0.4446	-0.373	-0.1024	0.3757		-0.032	-0.2152	0.0387	1.851	1.0296	3.6311	1.0716	A+	A+	A+
ELA	8	622500	9	B-K	3	6053	1.3374	0.1461	0.3699	0.4831		0.001	0.5058	-0.3661	-0.2135	0.4678		-0.0439	-0.3034	0.0401	-2.749	0.9561	-2.019	0.9598	A-	A-	A+
ELA	8	624167	9	B-K	3	6052	1.8586	0.1669	0.1924	0.2547	0.3849	0.0012	0.536	-0.2405	-0.3628	-0.0823	0.5545	-0.037	0.045	0.0403	8.3011	1.1499	9.0212	1.2135	A+	A-	A-

Evidence-Based Selected-Response Computer-Based Item Statistics

Column Heading	Definition
ContArea	Content
FormGrade	Grade
PubID	Form ID
FormNumber	Form
Standard1	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
Proportion0	Proportion 0 Points
Proportion1	Proportion 1 Point
Proportion2	Proportion 2 Points
Proportion3	Proportion 3 Points
ProportionINV	Proportion Invalid Responses
PtBiserial	Point Biserial
Correlation0	Correlation 0 Points
Correlation1	Correlation 1 Point
Correlation2	Correlation 2 Points
Correlation3	Correlation 3 Points
CorrelationINV	Correlation Invalid Responses

ContArea	FormGrad	PubID	FormNuml	Standard1	Depth	N	Mean	Proportior	Proportior	Proportior	Proportior	Proportior	PtBiserial	Correlatio	Correlatio	Correlatio	Correlatio	CorrelationINV
ELA	3	574379	0	A-K	3	18439	1.2636	0.2181	0.3888	0.3036	0.089	0.0005	0.4214	-0.2367	-0.1939	0.2274	0.3099	-0.025
ELA	3	579575	0	A-K	3	18443	1.4128	0.1517	0.2836	0.5645		0.0003	0.6158	-0.4118	-0.3527	0.6195		-0.0279
ELA	3	580248	0	B-C	3	18442	1.041	0.3398	0.2791	0.3808		0.0003	0.6224	-0.4947	-0.1304	0.6039		-0.0254
ELA	3	271992	0	B-K	3	18439	1.4957	0.2025	0.2819	0.3324	0.1827	0.0005	0.4833	-0.2033	-0.3508	0.1559	0.4309	-0.0187
ELA	3	622436	1	A-K	3	7484	1.7115	0.1447	0.2228	0.4084	0.2237	0.0004	0.5654	-0.267	-0.4367	0.1966	0.4299	-0.0078
ELA	3	622439	1	A-K	3	7485	1.1514	0.3023	0.2439	0.4536		0.0003	0.5528	-0.3449	-0.3635	0.6324		-0.0202
ELA	3	622422	2	A-K	2	5475	1.1653	0.3146	0.2053	0.4799		0.0002	0.4191	-0.2629	-0.3036	0.4904		-0.0214
ELA	3	622427	2	A-K	3	5475	1.4703	0.107	0.3771	0.4542	0.0615	0.0002	0.365	-0.252	-0.1973	0.2923	0.1167	-0.0072
ELA	3	617199	3	A-K	3	5484	1.1975	0.2596	0.2831	0.4571		0.0002	0.58	-0.4534	-0.1766	0.5593		-0.0187
ELA	3	617202	3	A-K	3	5483	1.6217	0.1269	0.3067	0.3838	0.1823	0.0004	0.4518	-0.1811	-0.3528	0.1846	0.3465	-0.031
ELA	4	576333	0	A-C	3	19920	1.4758	0.164	0.3357	0.3601	0.1397	0.0005	0.5442	-0.3329	-0.2819	0.2771	0.3567	-0.0135
ELA	4	576318	0	A-K	3	19923	0.8433	0.4292	0.2979	0.2726		0.0004	0.4437	-0.2803	-0.1906	0.5081		-0.0178
ELA	4	579415	0	A-K	3	19921	2.137	0.0594	0.1255	0.4333	0.3813	0.0005	0.5389	-0.2725	-0.3859	-0.0185	0.4163	-0.0354
ELA	4	579149	0	B-C	3	19906	1.3536	0.2291	0.1874	0.5823		0.0012	0.6181	-0.4432	-0.3534	0.6604		-0.0438
ELA	4	495050	0	B-K	3	19921	1.042	0.3762	0.2051	0.4182		0.0005	0.3959	-0.226	-0.3283	0.4922		-0.0342
ELA	4	495051	0	B-K	3	19922	1.6931	0.1022	0.2806	0.4387	0.1781	0.0004	0.5968	-0.3675	-0.3445	0.2413	0.384	-0.0293
ELA	4	623016	1	A-K	3	8232	0.8299	0.4607	0.2485	0.2906		0.0002	0.4459	-0.2865	-0.2153	0.5199		-0.0138
ELA	4	623020	1	A-K	3	8233	1.159	0.2892	0.3691	0.2351	0.1065	0.0001	0.3308	-0.0807	-0.2839	0.1556	0.3494	-0.0141
ELA	4	623030	2	A-K	3	5856	1.3607	0.185	0.389	0.3056	0.12	0.0003	0.2067	-0.1139	-0.0668	0.02	0.2094	-0.0271
ELA	4	623032	2	A-K	3	5856	0.4278	0.6745	0.2228	0.1024		0.0003	0.0709	-0.0056	-0.1002	0.1474		-0.019
ELA	4	623670	3	A-K	3	5836	1.4654	0.1982	0.1381	0.6634		0.0003	0.5015	-0.376	-0.2987	0.5353		-0.0017
ELA	4	623676	3	A-K	3	5837	1.516	0.1725	0.3135	0.3393	0.1745	0.0002	0.455	-0.2248	-0.2777	0.1496	0.3772	-0.0204
ELA	5	579327	0	A-C	3	21226	1.0388	0.3861	0.1887	0.4248		0.0004	0.4121	-0.2775	-0.2544	0.4762		-0.0378
ELA	5	579329	0	A-K	3	21216	1.2361	0.3017	0.2644	0.3284	0.1046	0.0009	0.2503	-0.0805	-0.201	0.0876	0.2799	-0.0422
ELA	5	579336	0	A-K	3	21234	2.0827	0.0914	0.1314	0.3802	0.3969	0	0.6261	-0.3749	-0.3926	0	0.4923	-0.0212
ELA	5	409607	0	B-K	3	21218	1.1357	0.2158	0.432	0.3514		0.0008	0.5557	-0.3988	-0.1661	0.5181		-0.0353
ELA	5	574356	0	B-K	3	21215	1.2128	0.2187	0.4367	0.2559	0.0877	0.0009	0.5094	-0.2784	-0.2285	0.285	0.3716	-0.035
ELA	5	577504	0	B-K	3	21212	0.9771	0.3356	0.3506	0.3127		0.0011	0.4228	-0.2993	-0.1176	0.4281		-0.0316
ELA	5	621510	1	B-C	3	8681	0.6823	0.4925	0.3322	0.1749		0.0003	0.2728	-0.1644	-0.0861	0.3238		-0.0128
ELA	5	621511	1	B-K	3	8684	1.3753	0.1392	0.4087	0.3897	0.0624		0.3959	-0.2389	-0.2155	0.2947	0.1855	
ELA	5	623759	2	B-C	3	6316	1.6962	0.1215	0.2929	0.3527	0.2323	0.0006	0.4732	-0.1654	-0.3611	0.0798	0.4282	-0.023
ELA	5	623757	2	B-K	3	6317	0.7462	0.4785	0.2962	0.2248		0.0005	0.1507	-0.0501	-0.1531	0.2283		-0.0184
ELA	5	623678	3	B-C	3	6231	0.9215	0.4357	0.207	0.3572			0.3114	-0.1858	-0.2271	0.3843		
ELA	5	623686	3	B-K	3	6230	1.4197	0.1745	0.3804	0.2959	0.1491	0.0002	0.4792	-0.2708	-0.2309	0.1773	0.3769	-0.0236
ELA	6	495101	0	A-K	3	24393	1.6521	0.2109	0.2051	0.3047	0.279	0.0003	0.5672	-0.2899	-0.3832	0.0906	0.5163	-0.0162
ELA	6	579321	0	A-K	3	24395	0.9552	0.3514	0.3417	0.3066		0.0002	0.5861	-0.4757	-0.0424	0.5368		-0.0211
ELA	6	581448	0	A-K	3	24394	1.7661	0.1212	0.2591	0.3517	0.2677	0.0003	0.6678	-0.3138	-0.4653	0.1307	0.5516	-0.0193
ELA	6	579311	0	B-C	3	24391	1.6361	0.1398	0.3061	0.3316	0.222	0.0004	0.6296	-0.365	-0.3333	0.1543	0.5006	-0.0253
ELA	6	579312	0	B-C	3	24394	1.0435	0.2749	0.4064	0.3184		0.0003	0.5662	-0.4595	-0.0501	0.4939		-0.0195
ELA	6	497118	0	B-K	3	24387	1.236	0.2699	0.2237	0.5058		0.0006	0.4534	-0.2962	-0.2908	0.5063		-0.0195
ELA	6	623707	1	A-K	2	9948	1.0371	0.3904	0.1818	0.4275		0.0003	0.4716	-0.3286	-0.273	0.5372		-0.0099
ELA	6	623708	1	A-K	2	9946	1.6811	0.1212	0.287	0.3807	0.2106	0.0005	0.6299	-0.3574	-0.3752	0.203	0.461	-0.0078
ELA	6	623720	2	A-K	2	7227	1.1781	0.163	0.5226	0.2873	0.0268	0.0003	0.3149	-0.2096	-0.1124	0.2591	0.1041	-0.0303
ELA	6	623722	2	A-K	2	7227	0.4904	0.6455	0.2183	0.136		0.0003	0.1804	-0.0707	-0.1504	0.2809		-0.0198
ELA	6	621521	3	A-K	3	7219	1.0202	0.2921	0.4249	0.2533	0.0295	0.0003	0.1959	-0.1179	-0.0671	0.1566	0.1115	-0.0108
ELA	6	621598	3	A-K	3	7221	0.5222	0.6084	0.261	0.1306			0.2132	-0.1576	0.0034	0.2238		
ELA	7	497093	0	A-C	3	27489	1.6951	0.0849	0.3396	0.371	0.2045	0.0001	0.5544	-0.354	-0.2938	0.1687	0.3879	-0.0124
ELA	7	497098	0	A-K	3	27487	1.0374	0.2595	0.4434	0.2969		0.0002	0.2801	-0.2052	-0.0573	0.2598		-0.0192
ELA	7	578081	0	A-K	3	27467	1.2398	0.2138	0.3318	0.4534		0.0009	0.6608	-0.4907	-0.2382	0.6319		-0.0398
ELA	7	566578	0	B-C	3	27474	1.755	0.1179	0.2324	0.4257	0.2233	0.0007	0.6172	-0.3505	-0.3983	0.2073	0.4316	-0.037

ELA	7	579273	0	B-C	3	27489	1.6652	0.0873	0.3072	0.4582	0.1472	0.0001	0.536	-0.307	-0.3223	0.2245	0.3489	-0.0101
ELA	7	566575	0	B-K	3	27480	1.1597	0.262	0.316	0.4216		0.0005	0.5293	-0.4439	-0.0826	0.474		-0.0231
ELA	7	625501	1	A-C	2	10747	0.6537	0.4211	0.5037	0.0749		0.0003	0.3124	-0.3356	0.2807	0.0977		-0.0212
ELA	7	625500	1	A-K	2	10748	1.474	0.146	0.3721	0.3433	0.1383	0.0002	0.3733	-0.1925	-0.1887	0.1031	0.3197	-0.0121
ELA	7	623057	2	B-K	2	8396	1.0018	0.3404	0.3171	0.3422		0.0002	0.3459	-0.2354	-0.1342	0.3672		-0.0158
ELA	7	625091	2	B-K	3	8396	1.8328	0.0572	0.3153	0.3648	0.2624	0.0002	0.5068	-0.2562	-0.3215	0.0631	0.4062	-0.0149
ELA	7	625564	3	B-K	2	8342	1.4091	0.1593	0.3916	0.3293	0.1195	0.0004	0.5046	-0.2994	-0.2439	0.2488	0.3462	-0.0313
ELA	7	625566	3	B-K	2	8342	0.7534	0.5061	0.234	0.2596		0.0004	0.2752	-0.1453	-0.2009	0.3608		-0.0234
ELA	8	576305	0	A-C	3	26800	1.2014	0.2958	0.3547	0.2009	0.1481	0.0004	0.4732	-0.2295	-0.2254	0.1154	0.4693	-0.0186
ELA	8	411881	0	A-K	3	26808	1.3542	0.223	0.1998	0.5772		0.0001	0.5947	-0.472	-0.2384	0.5911		-0.0189
ELA	8	576308	0	A-K	3	26805	0.5069	0.6457	0.2014	0.1527		0.0002	0.4434	-0.3341	-0.0255	0.4737		-0.0236
ELA	8	496330	0	B-C	3	26801	1.8868	0.082	0.2478	0.3712	0.2986	0.0004	0.7037	-0.3582	-0.4578	0.0785	0.565	-0.0274
ELA	8	576298	0	B-C	2	26810	1.0355	0.3701	0.2243	0.4056		0	0.3787	-0.2515	-0.2166	0.4314		-0.0092
ELA	8	576300	0	B-K	3	26810	1.871	0.1424	0.1927	0.3162	0.3486	0	0.5517	-0.2482	-0.3886	-0.0219	0.5253	-0.0111
ELA	8	623090	1	A-K	2	10399	1.5774	0.111	0.3022	0.4849	0.1017	0.0002	0.5282	-0.2748	-0.3751	0.3436	0.2882	-0.0192
ELA	8	623093	1	A-K	2	10400	0.6688	0.576	0.179	0.2449		0.0001	0.2173	-0.0833	-0.2628	0.3303		-0.0141
ELA	8	624740	2	A-K	2	8201	1.9228	0.0808	0.221	0.3925	0.3055	0.0001	0.5499	-0.2829	-0.3588	0.0495	0.4385	-0.0135
ELA	8	624821	2	A-K	2	8202	1.1597	0.1722	0.496	0.3319			0.4171	-0.4062	0.0365	0.287		
ELA	8	624747	3	A-K	2	8207	1.6038	0.0903	0.3925	0.3402	0.1769	0.0001	0.3371	-0.198	-0.1154	-0.0286	0.3318	0.0029
ELA	8	624753	3	A-K	3	8207	1.0227	0.3236	0.33	0.3462		0.0001	0.4244	-0.2978	-0.146	0.437		0.0029

Open-Ended Paper/Pencil Item Statistics

Column Heading	Definition
ContArea	Content
FormGrade	Grade
PubID	Form ID
FormNumber	Form
Standard1	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
Proportion0	Proportion 0 Points
Proportion1	Proportion 1 Point
Proportion2	Proportion 2 Points
Proportion3	Proportion 3 Points
Proportion4	Proportion 4 Points
ProportionINV	Proportion Invalid Responses
PtBiserial	Point Biserial
Correlation0	Correlation 0 Points
Correlation1	Correlation 1 Point
Correlation2	Correlation 2 Points
Correlation3	Correlation 3 Points
Correlation4	Correlation 4 Points
CorrelationINV	Correlation Invalid Responses
FinalB	IRT Difficulty Estimate
FinalBErr	IRT Difficulty Error
Infit	Infit Standardized
InfitMnSq	Infit Mean Square
Outfit	Outfit Standardized
OutfitMnSq	Outfit Mean Square
BiasCodeMALEFEMALE	Male/Female DIF Code
BiasCodeWHITEBLACK	White/Black DIF Code
BiasCodeWHITEHISPANIC	White/Hispanic DIF Code

ContArea	FormGrade	PubID	FormNumt	Standard1	Depth	N	Mean	Proportion	Proportion	Proportion	Proportion	Proportion	Proportion	PtBiserial	Correlation	Correlation	Correlation	Correlation	Correlation	Correlation	FinalB	FinalBErr	Infit	InfitMnSq	Outfit	OutfitMnSq	BiasCodeM	BiasCodeW	BiasCodeWHITEHISPANIC
ELA	3	574411	0	A-K	3	62336	1.7346	0.1096	0.2242	0.382	0.2002		0.0841	0.7082	-0.3874	-0.2639	0.2758	0.4965		-0.3661	0.4212	0.0104	-9.8992	0.7926	-9.8992	0.8032	A+	A-	A+
ELA	3	278411	0	B-C	3	65625	1.4915	0.0954	0.3954	0.3777	0.0958		0.0357	0.5871	-0.3511	-0.2322	0.327	0.351		-0.2435	0.9355	0.0104	-9.8991	0.946	-9.8991	0.9476	A+	A-	A-
MATH	3	415943	0	A-F	2	64981	1.2769	0.3175	0.2855	0.1796	0.1116	0.0596	0.0462	0.767	-0.5789	-0.0827	0.2631	0.4036	0.3763	-0.0494	1.2853	0.0087	-9.8991	0.9121	-9.8991	0.8659	A+	A-	A-
MATH	3	499220	0	B-O	2	67324	1.6621	0.2394	0.251	0.2106	0.1788	0.1085	0.0118	0.7854	-0.5511	-0.2466	0.1526	0.3922	0.4574	-0.1173	0.8248	0.0094	-9.8991	0.8529	-9.8992	0.8388	A-	A-	A+
MATH	3	565864	0	D-M	3	67204	1.7058	0.0652	0.3699	0.3563	0.1798	0.0151	0.0136	0.6828	-0.316	-0.4408	0.219	0.468	0.1822	-0.1385	1.2003	0.0118	-9.8991	0.8747	-9.8991	0.8712	A+	A-	A-
MATH	4	392317	0	A-F	2	65298	1.211	0.3606	0.27	0.1772	0.1214	0.049	0.0219	0.7855	-0.6172	-0.012	0.2584	0.4427	0.3749	-0.1536	1.0074	0.0083	-9.8992	0.8201	-9.8992	0.7673	A+	A-	A-
MATH	4	499221	0	B-O	2	62236	1.1524	0.2759	0.3634	0.1856	0.0895	0.0178	0.0677	0.7526	-0.5271	-0.0494	0.3513	0.4257	0.2536	-0.1285	1.1382	0.0084	-9.8992	0.8136	-9.8992	0.7861	A+	A-	A-
MATH	4	392313	0	C-G	2	65023	1.6914	0.1698	0.3026	0.2432	0.1754	0.0831	0.026	0.6926	-0.3862	-0.2757	0.0853	0.378	0.4261	-0.1656	0.3276	0.0099	7.291	1.0335	4.401	1.0204	A+	A-	A-
MATH	5	313526	0	A-F	3	64072	1.2864	0.2104	0.4924	0.0868	0.1799	0.0153	0.0152	0.7377	-0.4855	-0.1692	0.2184	0.5383	0.2398	-0.1242	1.2073	0.0088	-9.8991	0.8775	-9.8991	0.8676	A+	A-	A-
MATH	5	574284	0	B-O	2	61388	1.0723	0.361	0.3168	0.1464	0.0752	0.0441	0.0565	0.7121	-0.5171	0.0058	0.3101	0.3457	0.3597	-0.1255	1.3346	0.0081	-3.989	0.9793	-9.8991	0.9108	A+	A-	A-
MATH	5	410775	0	C-G	2	63653	1.1667	0.3438	0.3303	0.1547	0.0965	0.053	0.0217	0.791	-0.5776	-0.057	0.2841	0.4168	0.4201	-0.1295	1.0509	0.0084	-9.8992	0.8017	-9.8992	0.7711	A-	A-	A-
MATH	6	480017	0	A-N	2	59327	1.8721	0.2204	0.2204	0.2093	0.1344	0.2005	0.0149	0.7755	-0.5398	-0.2396	0.0539	0.2703	0.5616	-0.1305	0.2304	0.0094	-9.8992	0.7774	-9.8992	0.8015	A+	A-	A-
MATH	6	566984	0	B-E	3	55867	1.1066	0.1393	0.5897	0.1624	0.0331	0.0032	0.0724	0.6657	-0.4254	-0.0709	0.4144	0.3173	0.1283	-0.134	1.6449	0.0093	-9.8992	0.8211	-9.8992	0.8327	A+	A-	A-
MATH	6	313164	0	C-G	2	58849	1.0195	0.4683	0.227	0.1321	0.0938	0.0559	0.0229	0.7751	-0.6134	0.0454	0.2706	0.4054	0.4278	-0.1407	1.1362	0.0082	-9.8992	0.7938	-9.8993	0.7265	A+	A-	A-
MATH	7	493894	0	A-N	3	55692	0.966	0.3808	0.333	0.1969	0.0546	0.0138	0.0209	0.773	-0.5942	0.0276	0.4343	0.4022	0.2534	-0.1265	1.4311	0.0082	-9.8993	0.7392	-9.8993	0.7177	A+	A-	A-
MATH	7	313527	0	B-E	2	55521	1.0994	0.431	0.2307	0.1433	0.1287	0.0424	0.0239	0.7913	-0.6294	-0.0018	0.2842	0.4829	0.3513	-0.1288	0.9009	0.0083	-9.8992	0.7928	-9.8993	0.7326	A+	A-	A-
MATH	7	399600	0	D-S	2	51958	0.7866	0.4106	0.3488	0.1019	0.0429	0.0093	0.0865	0.7236	-0.5101	0.16	0.3943	0.3814	0.2077	-0.149	1.7537	0.0079	-9.8991	0.8504	-9.8992	0.8091	A+	A-	A-
MATH	8	409544	0	B-E	2	53318	1.0443	0.2349	0.5235	0.165	0.0377	0.0125	0.0264	0.6923	-0.4666	-0.0245	0.3811	0.3494	0.2479	-0.1598	1.4388	0.0084	-9.8991	0.8705	-9.8991	0.8569	A-	B-	A-
MATH	8	313537	0	B-F	2	52839	1.5639	0.263	0.2831	0.1512	0.1469	0.1207	0.0351	0.8051	-0.5036	-0.2237	0.1121	0.363	0.5652	-0.1646	0.0994	0.009	-9.8992	0.7751	-9.8992	0.7522	A+	A-	A-
MATH	8	409545	0	C-G	3	50516	0.9229	0.4097	0.3138	0.09	0.0782	0.0308	0.0776	0.7919	-0.559	0.1125	0.323	0.4488	0.3501	-0.1893	1.086	0.0081	-9.8993	0.7478	-9.8993	0.6789	A+	A-	A-
SCIENCE	4	400513	0	A	2	63486	1.1996	0.1988	0.3733	0.3911			0.0368	0.5828	-0.4184	-0.1045	0.5286			-0.2145	0.5598	0.0091	-9.8991	0.887	-9.8991	0.8935	A+	A-	A-
SCIENCE	4	565586	0	A	3	64577	0.4164	0.6622	0.227	0.0905			0.0203	0.5039	-0.437	0.3116	0.3463			-0.1645	2.1346	0.0079	-9.8992	0.8471	-9.8992	0.7592	A+	A-	A-
SCIENCE	4	492604	0	B	3	64225	0.5541	0.5902	0.2284	0.1558			0.0256	0.4583	-0.3936	0.2469	0.3386			-0.208	1.854	0.0078	9.431	1.0421	8.3611	1.0549	A-	A-	A+
SCIENCE	4	566533	0	B	3	64655	1.3747	0.1219	0.3695	0.4894			0.0191	0.4731	-0.4193	-0.0575	0.3817			-0.1888	-0.0454	0.0116	9.9011	1.0645	9.9011	1.0967	B+	A-	A-
SCIENCE	4	566539	0	C	3	64550	1.0058	0.1558	0.662	0.1615			0.0207	0.5009	-0.3146	-0.0453	0.4392			-0.1835	1.0968	0.0089	-9.8992	0.7591	-9.8992	0.7616	A+	A-	A-
SCIENCE	8	413201	0	A	3	51027	0.7439	0.4621	0.2708	0.2185			0.0485	0.6367	-0.5196	0.2234	0.5074			-0.2322	1.1398	0.0082	-9.8991	0.8826	-9.8992	0.8114	B+	A-	A-
SCIENCE	8	492606	0	A	2	51331	0.7709	0.3619	0.4527	0.1426			0.0428	0.6608	-0.556	0.3083	0.4422			-0.202	1.2401	0.008	-9.8991	0.8521	-9.8992	0.8279	A-	A-	A-
SCIENCE	8	566536	0	A	3	52536	1.273	0.1856	0.341	0.453			0.0204	0.4919	-0.3917	-0.0866	0.4364			-0.1693	-0.1734	0.01	9.9011	1.0654	9.9011	1.1466	B+	A-	A-
SCIENCE	8	566537	0	B	2	52572	1.2303	0.1713	0.4119	0.3971			0.0197	0.596	-0.4406	-0.1425	0.5312			-0.1711	0.2929	0.0093	-9.539	0.9605	-9.8991	0.9418	A+	A-	A-
SCIENCE	8	565582	0	D	3	52367	0.5762	0.5145	0.3612	0.1007			0.0235	0.5136	-0.4357	0.2931	0.3458			-0.1791	1.5167	0.008	-9.619	0.9566	-9.8991	0.9167	A+	A-	A-

Open-Ended Computer-Based Item Statistics

Column Heading	Definition
ContArea	Content
FormGrade	Grade
PubID	Form ID
FormNumber	Form
Standard1	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
Proportion0	Proportion 0 Points
Proportion1	Proportion 1 Point
Proportion2	Proportion 2 Points
Proportion3	Proportion 3 Points
Proportion4	Proportion 4 Points
ProportionINV	Proportion Invalid Responses
PtBiserial	Point Biserial
Correlation0	Correlation 0 Points
Correlation1	Correlation 1 Point
Correlation2	Correlation 2 Points
Correlation3	Correlation 3 Points
Correlation4	Correlation 4 Points
CorrelationINV	Correlation Invalid Responses

ContArea	FormGrad	PubID	FormNuml	Standard1	Depth	N	Mean	Proportior	Proportior	Proportior	Proportior	Proportior	Proportior	PtBiserial	Correlatio	Correlatio	Correlatio	Correlatio	Correlatio	CorrelationINV
ELA	3	574411	0	A-K	3	17447	1.6399	0.119	0.2789	0.3714	0.1764		0.0543	0.7074	-0.4111	-0.2934	0.3089	0.4734		-0.287
ELA	3	278411	0	B-C	3	17852	1.2784	0.1214	0.5098	0.2823	0.0543		0.0323	0.5349	-0.3593	-0.1082	0.3365	0.2745		-0.2387
MATH	3	415943	0	A-F	2	18278	1.4138	0.2626	0.3272	0.204	0.1154	0.0789	0.0119	0.771	-0.566	-0.1541	0.2522	0.3769	0.4192	-0.1261
MATH	3	499220	0	B-O	2	18403	1.5484	0.2895	0.2294	0.2063	0.18	0.0896	0.0052	0.786	-0.6254	-0.1533	0.1951	0.4122	0.4096	-0.086
MATH	3	565864	0	D-M	3	18083	1.7001	0.0986	0.3289	0.3387	0.1895	0.0217	0.0225	0.6856	-0.3816	-0.3606	0.2228	0.4537	0.1964	-0.1935
MATH	4	392317	0	A-F	2	19471	1.0584	0.4025	0.2824	0.1466	0.1017	0.0364	0.0304	0.7656	-0.6202	0.0877	0.3015	0.4191	0.3308	-0.1783
MATH	4	499221	0	B-O	2	19643	1.0941	0.3307	0.3571	0.1797	0.0892	0.0216	0.0218	0.7581	-0.5729	-0.0062	0.3589	0.4227	0.272	-0.1729
MATH	4	392313	0	C-G	2	19696	1.6981	0.1713	0.3031	0.2409	0.1815	0.084	0.0192	0.6854	-0.3999	-0.2735	0.1047	0.3686	0.4074	-0.1715
MATH	5	313526	0	A-F	3	20832	1.3091	0.2305	0.4479	0.0926	0.1822	0.0253	0.0214	0.7527	-0.5123	-0.1469	0.2278	0.5114	0.2953	-0.1454
MATH	5	574284	0	B-O	2	20855	0.8469	0.4537	0.3268	0.1211	0.0518	0.0263	0.0203	0.6832	-0.5435	0.1183	0.3429	0.3213	0.3054	-0.1197
MATH	5	410775	0	C-G	2	21087	1.058	0.4056	0.3105	0.1368	0.0867	0.051	0.0094	0.7873	-0.6247	0.0181	0.2975	0.4078	0.4091	-0.0891
MATH	6	480017	0	A-N	2	23756	1.8166	0.2376	0.233	0.1822	0.1216	0.2037	0.0219	0.8055	-0.5643	-0.2256	0.0844	0.2688	0.5928	-0.1615
MATH	6	566984	0	B-E	3	23705	1.1317	0.1511	0.6042	0.1693	0.0438	0.0076	0.024	0.6736	-0.4613	-0.0837	0.392	0.3331	0.1715	-0.1557
MATH	6	313164	0	C-G	2	23770	0.9499	0.4867	0.2383	0.1182	0.0868	0.0486	0.0213	0.777	-0.6337	0.0927	0.2963	0.4141	0.3969	-0.1409
MATH	7	493894	0	A-N	3	26528	0.922	0.3931	0.3402	0.1736	0.0489	0.0153	0.029	0.7757	-0.6076	0.0947	0.4352	0.375	0.2635	-0.1562
MATH	7	313527	0	B-E	2	26664	1.1062	0.4438	0.2123	0.1379	0.1365	0.0455	0.024	0.8054	-0.6518	0.0147	0.2799	0.4911	0.3627	-0.1497
MATH	7	399600	0	D-S	2	26315	0.7716	0.4349	0.3729	0.106	0.0393	0.0101	0.0368	0.7159	-0.5469	0.1832	0.3971	0.357	0.2152	-0.1627
MATH	8	409544	0	B-E	2	25494	1.0212	0.2337	0.5182	0.1623	0.0328	0.0087	0.0444	0.6738	-0.453	0.024	0.3959	0.3246	0.2062	-0.21
MATH	8	313537	0	B-F	2	25669	1.5399	0.2727	0.2771	0.1489	0.1471	0.1164	0.0378	0.8063	-0.5156	-0.2055	0.1374	0.3741	0.5482	-0.1866
MATH	8	409545	0	C-G	3	25768	0.8231	0.4787	0.3043	0.086	0.0686	0.0282	0.0341	0.7821	-0.6072	0.1622	0.3448	0.4295	0.3367	-0.178
SCIENCE	4	400513	0	A	2	19590	1.2178	0.1877	0.3753	0.3967			0.0403	0.5952	-0.4176	-0.0882	0.5388			-0.2939
SCIENCE	4	565586	0	A	3	19851	0.4419	0.6345	0.2461	0.0919			0.0275	0.4987	-0.409	0.3184	0.3341			-0.2241
SCIENCE	4	492604	0	B	3	19605	0.6043	0.5529	0.2347	0.1728			0.0396	0.4438	-0.3391	0.2209	0.3431			-0.2807
SCIENCE	4	566533	0	B	3	19698	1.3967	0.121	0.3401	0.5038			0.035	0.4906	-0.4138	-0.0493	0.4149			-0.2671
SCIENCE	4	566539	0	C	3	19816	1.0376	0.1316	0.6709	0.1682			0.0292	0.4877	-0.2941	-0.0381	0.4244			-0.2456
SCIENCE	8	413201	0	A	3	24831	0.7228	0.4535	0.271	0.1979			0.0776	0.6303	-0.4608	0.2671	0.491			-0.3174
SCIENCE	8	492606	0	A	2	25203	0.8134	0.3481	0.4147	0.1734			0.0637	0.672	-0.5343	0.2849	0.4742			-0.2675
SCIENCE	8	566536	0	A	3	25849	1.2147	0.2125	0.3292	0.4186			0.0397	0.5181	-0.4053	-0.0249	0.459			-0.2506
SCIENCE	8	566537	0	B	2	25748	1.2646	0.1541	0.3953	0.4071			0.0435	0.6039	-0.4134	-0.142	0.5534			-0.2608
SCIENCE	8	565582	0	D	3	25778	0.6031	0.4927	0.3523	0.1126			0.0424	0.5398	-0.4237	0.3064	0.3701			-0.2558

Text-Dependent Analysis Paper/Pencil Item Statistics

Column Heading	Definition
ContArea	Content
FormGrade	Grade
PubID	Form ID
FormNumber	Form
Standard1	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
Proportion1	Proportion 1 Point
Proportion2	Proportion 2 Points
Proportion3	Proportion 3 Points
Proportion4	Proportion 4 Points
ProportionINV	Proportion Invalid Responses
PtBiserial	Point Biserial
Correlation1	Correlation 1 Point
Correlation2	Correlation 2 Points
Correlation3	Correlation 3 Points
Correlation4	Correlation 4 Points
CorrelationINV	Correlation Invalid Responses
FinalB	IRT Difficulty Estimate
FinalBErr	IRT Difficulty Error
Infit	Infit Standardized
InfitMnSq	Infit Mean Square
Outfit	Outfit Standardized
OutfitMnSq	Outfit Mean Square
BiasCodeMALEFEMALE	Male/Female DIF Code
BiasCodeWHITEBLACK	White/Black DIF Code
BiasCodeWHITEHISPANIC	White/Hispanic DIF Code

ContArea	FormGrad	PubID	FormNum	Standard	Depth	N	Mean	Proportion	Proportion	Proportion	Proportion	Proportion	PtBiserial	Correlation	Correlation	Correlation	Correlation	Correlation	FinalB	FinalBErr	Infit	InfitMnSq	Outfit	Outfit	OutfitMnS	BiasCodeV	BiasCodeV	BiasCodeV	WHITEHISPANIC
ELA	4	579083	0	E		3	61765	1.9342	0.2397	0.5174	0.1511	0.0139	0.0779	0.6134	-0.4235	0.2455	0.401	0.1604	-0.3893	0.8397	0.0082	-9.8992	0.7521	-9.8993	0.7383	A+	A-	A-	
ELA	5	582589	0	E		3	62186	1.9717	0.1914	0.612	0.1342	0.0151	0.0472	0.591	-0.4373	0.1954	0.3678	0.1773	-0.3308	1.1414	0.0075	-9.8994	0.5826	-9.8994	0.5804	B+	A-	A-	
ELA	6	582631	0	E		3	58077	1.9947	0.2537	0.4783	0.1952	0.0267	0.0461	0.5952	-0.4441	0.1323	0.3976	0.2081	-0.305	0.9342	0.009	-9.8993	0.7051	-9.8993	0.7061	C+	A-	A-	
ELA	7	582723	0	E		3	55195	1.8928	0.3199	0.4423	0.174	0.0216	0.0423	0.5961	-0.4563	0.188	0.3886	0.2023	-0.2848	0.8894	0.0077	-9.8993	0.6655	-9.8993	0.67	C+	A-	A-	
ELA	8	579826	0	E		3	52387	2.0543	0.2238	0.4795	0.2217	0.0269	0.0481	0.6216	-0.4352	0.0601	0.4327	0.2319	-0.3078	0.7964	0.0091	-9.8992	0.7782	-9.8992	0.7845	B+	A-	A-	

Text-Dependent Analysis Computer-Based Item Statistics

Column Heading	Definition
ContArea	Content
FormGrade	Grade
PubID	Form ID
FormNumber	Form
Standard1	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
Proportion1	Proportion 1 Point
Proportion2	Proportion 2 Points
Proportion3	Proportion 3 Points
Proportion4	Proportion 4 Points
ProportionINV	Proportion Invalid Responses
PtBiserial	Point Biserial
Correlation1	Correlation 1 Point
Correlation2	Correlation 2 Points
Correlation3	Correlation 3 Points
Correlation4	Correlation 4 Points
CorrelationINV	Correlation Invalid Responses

ContArea	FormGrad	PubID	FormNum	Standard	Depth	N	Mean	Proportior	Proportior	Proportior	Proportior	PtBiserial	Correlatio	Correlatio	Correlatio	Correlatio	CorrelationINV
ELA	4	579083	0	E		3	18150	1.852	0.2814	0.5004	0.1111	0.0178	0.0893	0.6223	-0.4319	0.3571	0.3482	0.1863	-0.415
ELA	5	582589	0	E		3	20134	1.8985	0.2238	0.6064	0.1084	0.0096	0.0518	0.589	-0.4492	0.2939	0.3418	0.1428	-0.3453
ELA	6	582631	0	E		3	23064	1.972	0.2663	0.4713	0.1753	0.0323	0.0548	0.6107	-0.4538	0.1792	0.3826	0.2326	-0.3316
ELA	7	582723	0	E		3	25869	1.8039	0.3501	0.4406	0.1351	0.0152	0.0591	0.5822	-0.4347	0.2878	0.359	0.1642	-0.3323
ELA	8	579826	0	E		3	25047	1.9907	0.27	0.4369	0.1933	0.034	0.0658	0.6287	-0.4423	0.1513	0.4099	0.2499	-0.3463

APPENDIX G: 2021 TEST BOOK SECTION LAYOUT PLANS

ENGLISH LANGUAGE ARTS TEST/ANSWER BOOKLET SECTION LAYOUT FOR GRADES 4, 5, 6, 7, AND 8

English Language Arts Core

Core/common standalone MC items	9
Core/common passage-based MC items	23
3 core 2 pt EBSR items	6
3 core 3 pt EBSR items	9
1 core 4 pt TDA	16 (weighted x 4)
Total	63 points

The estimated testing time for English language arts is approximately 225–246 minutes (including placeholder items and embedded field-test items). [Timing assumes 30 min per TDA; 3 to 5 min per EBSR; 1½ to 2 min per MC, and 7 min per reading passage set.]

Section	Content	Number of MC/EBSR	MC/EBSR Item Breakdown	Number of TDA	TDA Item Breakdown	Estimated Number of Passages	Section Time (in minutes)
1	Conventions of Standard English (Writing) and Reading	21–24 MC 4–5 EBSR	4–5 core MC language items, 0–1 (EB) MC language item, 1 FT MC language item, 15–18 core MC reading items, 2–3 2pt EBSR reading items, 2–3 3pt EBSR reading items	0	N/A	3	67–78
2	Reading and Text-Dependent Analysis (Reading/ Writing)	14 MC 2 EBSR	6 MC (EB) reading items, 8 FT MC reading items, 2 EBSR FT reading items	1	1–field-test TDA	2	88
3	Conventions of Standard English (Writing), Reading and Text-Dependent Analysis (Reading/ Writing)	11–14 MC	6–placeholder items, 10–field-test items	1	1–field-test TDA	2	70–80

Note. 1) There were nine forms per grade.

English Language Arts Test/Answer Booklet Section Layout for Grade 3

English Language Arts Core	
Core/common standalone MC items	9
Core/common passage-based MC items	20
2 core 2 pt EBSR items	4
2 core 3 pt EBSR items	6
2 core 3 pt SA items	6
Total	45 points

The estimated testing time for reading is approximately 134–166 minutes (including equating block items and embedded field-test items). [Timing assumes 5 to 10 min per SA, 3 to 5 min per EBSR, 1½ to 2 min per MC, and 7 min per reading passage set.]

Section	Content	Nbr of MC/EBSR	MC/EBSR Item Breakdown	Nbr of SA	SA Item Breakdown	Estimated Nbr of Passages	Section Time (in min)
1	Conventions of Standard English (Writing) and Reading	14–18 MC 1–3 EBSR	4–5 core MC language items, 0–1 (EB) MC language item, 1 FT MC language item, 8–12 core MC reading items, 0–2 2pt EBSR reading items, 0–2 3pt EBSR reading items	1	1 core	2	43–59
2	Reading	14 MC 2 EBSR	12 (EB) MC reading items, 8 MC FT reading items, 2 EBSR FT reading items	1	1 field-test	2	48
3	Conventions of Standard English (Writing) and Reading	14–18 MC 1–3 EBSR	4–5 core MC language items, 0–1 (EB) MC language item, 1 FT MC language item, 8–12 core MC reading items, 0–2 2pt EBSR reading items, 0–2 3pt EBSR reading items	1	1 core	2	43–59

Note. 1) There were nine forms per grade.

MATHEMATICS TEST/ANSWER BOOK SECTION LAYOUT FOR GRADES 3, 4, 5, 6, 7, AND 8

Mathematics Core	
Core/common MC items	40
3 core 4 pt OE items	12
Total	52 points

The estimated testing time for mathematics is approximately 156 minutes. [Timing assumes 5 to 10 min per OE and 1½ to 2 min per MC.]

Section	Content	Number of MC	MC Item Breakdown	Number of OE	OE Item Breakdown	Section Time (in minutes)
1	Mathematics	24	20–common (core) items (includes 3 non–calc in Grades 4–8), 1 psychometric use/placeholder, 3–embedded field-test items	2	2–common (core) items	78
2	Mathematics	24	20–common (core) items, 1–psychometric use/placeholder, 3–embedded field-test items	2	2–common (core) item, 1–embedded field-test item	78

Notes. 1) There were nine forms per grade. 2) The ruler items in Grade 3 and the protractor items in Grade 4 may fall in Section 1, 2, or 3. 3) Calculators are not allowed on the Grade 3 test. In Grades 4–8, a portion of section 1 is considered "non-calc."

SCIENCE TEST/ANSWER BOOK SECTION LAYOUT

General Information (see grade level page for specifics)

- Timing Key: MC = 1 to 1½ min; 2 pt OE = 5 min; 4 pt OE = 10 min; G8 Scenario stimulus = 3 min
- There are 12 forms per grade.
- Within a section at Grade 4, MC *most likely* will precede OE items.
- Within a section at Grade 8, non-scenario MC items *most likely* will precede scenario-based MC items which will precede OE items.
- Grade 4 and 8 will have both Test Booklets and scannable Answer Booklets.
- *Generally*, core items will precede equating block items, which will precede field-test items.

Science: Grade 4

Core/common MC items	38 (16 core linking)
5 core 2 pt OE items	5 (2 core linking)
Total	48 points

The estimated Grade 4 testing time for science is approximately 76 minutes. [Timing assumes 5 min per 2 pt OE and 1 min per MC.]

Grade	Section	Number of MC	Estimated MC Item Breakdown	Number of OE	Estimated OE Item Breakdown	Testing Time
4	1	23	19–core items, 1–equating block item, 3–embedded field-test items	3	3-common (core) items	38
4	2	23	29-common (core) items, 1-equating block item, 4-embedded field-test items	3	2-common (core) items, 1-embedded field-test item	38

Science: Grade 8

Core/common MC items	38 (16 core linking)
5 core 2 pt OE items	10 (2 core linking)
Total	48 points

The estimated grade 8 testing time is 90 minutes per grade for science. [Timing assumes 5 min per 2 pt OE, 1 min per MC, and 3 min per grade 8 scenario.]

Grade	Section	Number of MC	Estimated MC Item Breakdown	Number of OE	Estimated OE Item Breakdown	Testing Time
8	1	24	17–core items, 4–embedded field-test scenario-based items, 1–equating block item, 2–embedded field-test items	3	3-common (core) items	45
8	2	24	17–core items, 4–core scenario-based items, 1–equating block item, 2–embedded field-test items	3	2-common (core) items, 1-embedded field-test item	45

APPENDIX H: MEAN SCALED SCORES BY FORM

The tables provide the mode (All, paper-pencil, or CBT), form number (Form), the number of students (N), the minimum scaled score (Min), the maximum scaled score (Max), the mean scaled score (Mean), the median scaled score (Med), and the standard deviation (STD) of the scaled score. A value of 00 for form represents all forms.

Mathematics Grade 3 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	91693	600	1577	986	997.87	121.17
All	01	16479	600	1577	977	984.66	121.49
All	02	13843	600	1577	1004	1004.95	119.84
All	03	13881	600	1577	995	1002.86	119.94
All	04	7876	600	1577	986	997.17	121.74
All	05	7918	600	1577	995	999.62	121.87
All	06	7860	600	1577	986	996.27	119.66
All	07	7917	600	1448	986	996.11	120.88
All	08	7918	640	1448	995	1002.16	121.42
All	09	8001	600	1577	995	1002.23	122.93
Paper	00	71527	600	1577	986	997.89	121.43
Paper	01	8171	600	1577	986	992.11	122.02
Paper	02	7935	600	1577	995	999.52	120.51
Paper	03	7931	600	1577	986	995.92	121.43
Paper	04	7876	600	1577	986	997.17	121.74
Paper	05	7918	600	1577	995	999.62	121.87
Paper	06	7860	600	1577	986	996.27	119.66
Paper	07	7917	600	1448	986	996.11	120.88
Paper	08	7918	640	1448	995	1002.16	121.42
Paper	09	8001	600	1577	995	1002.23	122.93
CBT	00	20166	640	1577	995	997.83	120.22
CBT	01	8308	685	1448	959	977.34	120.52
CBT	02	5908	640	1577	1004	1012.25	118.54
CBT	03	5950	718	1577	1004	1012.12	117.27

Mathematics Grade 4 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	92387	600	1553	953	970.30	111.98
All	01	17256	600	1553	944	958.65	111.58
All	02	14139	627	1553	962	977.02	110.79
All	03	14094	600	1553	962	975.58	110.22
All	04	7825	627	1553	953	970.11	113.05
All	05	7912	673	1553	962	971.69	112.40
All	06	7780	673	1553	953	971.58	113.72
All	07	7808	600	1553	962	969.99	111.67
All	08	7759	600	1553	962	971.41	111.42
All	09	7814	627	1553	953	971.03	113.85
Paper	00	70684	600	1553	953	969.92	112.66
Paper	01	8076	600	1553	953	964.32	112.59
Paper	02	7863	627	1427	953	970.10	112.44
Paper	03	7847	600	1553	953	969.25	112.55
Paper	04	7825	627	1553	953	970.11	113.05
Paper	05	7912	673	1553	962	971.69	112.40
Paper	06	7780	673	1553	953	971.58	113.72
Paper	07	7808	600	1553	962	969.99	111.67
Paper	08	7759	600	1553	962	971.41	111.42
Paper	09	7814	627	1553	953	971.03	113.85
CBT	00	21703	627	1553	962	971.52	109.76
CBT	01	9180	627	1553	935	953.66	110.44
CBT	02	6276	673	1553	980	985.70	108.07
CBT	03	6247	706	1553	971	983.53	106.69

Mathematics Grade 5 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	90866	600	1556	959	971.14	110.74
All	01	17172	600	1556	940	959.49	109.70
All	02	14072	600	1556	969	977.64	110.34
All	03	14092	644	1556	959	975.97	109.64
All	04	7588	644	1556	959	970.22	110.88
All	05	7636	644	1556	959	973.32	110.63
All	06	7519	600	1556	959	972.06	111.18
All	07	7612	689	1556	959	971.70	112.47
All	08	7558	689	1556	959	971.84	110.76
All	09	7617	644	1556	959	973.04	111.60
Paper	00	68516	600	1556	959	970.95	111.27
Paper	01	7863	600	1556	950	966.61	111.56
Paper	02	7566	600	1556	959	971.26	112.09
Paper	03	7557	644	1556	950	968.59	110.03
Paper	04	7588	644	1556	959	970.22	110.88
Paper	05	7636	644	1556	959	973.32	110.63
Paper	06	7519	600	1556	959	972.06	111.18
Paper	07	7612	689	1556	959	971.70	112.47
Paper	08	7558	689	1556	959	971.84	110.76
Paper	09	7617	644	1556	959	973.04	111.60
CBT	00	22350	644	1556	959	971.74	109.09
CBT	01	9309	689	1556	931	953.48	107.74
CBT	02	6506	644	1556	978	985.06	107.79
CBT	03	6535	689	1556	969	984.50	108.56

Mathematics Grade 6 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	90563	600	1513	933	948.46	104.18
All	01	18293	600	1513	924	938.09	105.35
All	02	14831	653	1513	942	954.97	104.39
All	03	14846	600	1513	942	952.69	102.23
All	04	7088	653	1513	933	947.86	104.03
All	05	7080	600	1513	942	949.47	103.42
All	06	7142	608	1513	933	949.11	104.15
All	07	7092	600	1390	933	947.72	105.36
All	08	7118	653	1513	942	951.05	103.26
All	09	7073	608	1390	942	949.75	103.41
Paper	00	64317	600	1513	933	948.56	103.89
Paper	01	7476	600	1513	933	945.92	104.93
Paper	02	7143	653	1513	942	949.90	104.63
Paper	03	7105	600	1390	933	946.40	101.62
Paper	04	7088	653	1513	933	947.86	104.03
Paper	05	7080	600	1513	942	949.47	103.42
Paper	06	7142	608	1513	933	949.11	104.15
Paper	07	7092	600	1390	933	947.72	105.36
Paper	08	7118	653	1513	942	951.05	103.26
Paper	09	7073	608	1390	942	949.75	103.41
CBT	00	26246	608	1513	933	948.19	104.87
CBT	01	10817	608	1513	915	932.67	105.30
CBT	02	7688	653	1513	951	959.69	103.93
CBT	03	7741	686	1513	951	958.47	102.44

Mathematics Grade 7 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	90812	600	1546	920	936.22	108.50
All	01	18531	600	1422	901	926.91	107.31
All	02	15723	600	1546	929	941.56	107.46
All	03	15730	628	1422	920	939.55	108.25
All	04	6785	628	1422	920	936.38	109.68
All	05	6831	673	1546	920	938.65	109.17
All	06	6827	673	1546	920	937.67	108.86
All	07	6833	628	1546	920	936.22	110.12
All	08	6764	673	1546	911	935.71	109.64
All	09	6788	673	1422	920	938.05	108.08
Paper	00	61550	600	1546	920	936.28	108.96
Paper	01	7044	600	1422	911	932.21	107.41
Paper	02	6841	600	1422	920	938.00	108.77
Paper	03	6837	628	1422	911	933.77	108.80
Paper	04	6785	628	1422	920	936.38	109.68
Paper	05	6831	673	1546	920	938.65	109.17
Paper	06	6827	673	1546	920	937.67	108.86
Paper	07	6833	628	1546	920	936.22	110.12
Paper	08	6764	673	1546	911	935.71	109.64
Paper	09	6788	673	1422	920	938.05	108.08
CBT	00	29262	600	1546	920	936.11	107.51
CBT	01	11487	628	1422	901	923.66	107.11
CBT	02	8882	600	1546	929	944.30	106.36
CBT	03	8893	673	1422	929	944.00	107.62

Mathematics Grade 8 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	85253	600	1495	896	919.00	106.95
All	01	17283	605	1495	887	910.92	105.97
All	02	14823	648	1495	905	924.44	105.37
All	03	14859	600	1495	905	920.63	105.37
All	04	6367	648	1495	896	920.27	109.83
All	05	6325	600	1495	905	921.32	108.06
All	06	6445	605	1495	905	920.01	108.30
All	07	6398	605	1495	896	918.31	107.38
All	08	6442	605	1495	905	919.65	109.17
All	09	6311	648	1374	905	919.94	107.62
Paper	00	57634	600	1495	896	919.36	108.54
Paper	01	6531	605	1495	896	916.39	110.01
Paper	02	6379	648	1495	905	922.05	108.73
Paper	03	6436	605	1495	896	916.40	107.54
Paper	04	6367	648	1495	896	920.27	109.83
Paper	05	6325	600	1495	905	921.32	108.06
Paper	06	6445	605	1495	905	920.01	108.30
Paper	07	6398	605	1495	896	918.31	107.38
Paper	08	6442	605	1495	905	919.65	109.17
Paper	09	6311	648	1374	905	919.94	107.62
CBT	00	27619	600	1495	896	918.26	103.55
CBT	01	10752	605	1495	887	907.60	103.29
CBT	02	8444	648	1495	913	926.25	102.72
CBT	03	8423	600	1495	905	923.86	103.56

ELA Grade 3 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	90980	600	1536	1024	1024.61	104.18
All	01	15845	686	1412	1014	1012.53	105.02
All	02	13668	613	1536	1024	1027.26	102.51
All	03	13788	686	1536	1033	1027.78	102.20
All	04	7922	686	1536	1024	1023.38	104.52
All	05	7907	686	1536	1024	1026.40	104.93
All	06	7978	600	1536	1033	1029.38	103.35
All	07	7968	686	1536	1024	1024.16	104.11
All	08	7951	686	1536	1024	1029.35	104.60
All	09	7953	613	1412	1024	1029.05	106.27
Paper	00	71456	600	1536	1024	1026.14	104.99
Paper	01	7994	686	1412	1024	1022.92	105.46
Paper	02	7842	613	1536	1024	1025.59	106.09
Paper	03	7941	686	1412	1024	1025.05	105.32
Paper	04	7922	686	1536	1024	1023.38	104.52
Paper	05	7907	686	1536	1024	1026.40	104.93
Paper	06	7978	600	1536	1033	1029.38	103.35
Paper	07	7968	686	1536	1024	1024.16	104.11
Paper	08	7951	686	1536	1024	1029.35	104.60
Paper	09	7953	613	1412	1024	1029.05	106.27
CBT	00	19524	686	1536	1024	1019.01	100.98
CBT	01	7851	686	1412	995	1001.96	103.52
CBT	02	5826	730	1412	1033	1029.50	97.45
CBT	03	5847	730	1536	1033	1031.47	97.69

ELA Grade 4 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	91862	600	1621	1019	1015.07	105.70
All	01	16553	600	1621	1003	1001.75	108.30
All	02	13993	621	1497	1028	1018.30	102.90
All	03	14105	600	1421	1028	1020.68	103.69
All	04	7837	695	1497	1019	1015.33	105.91
All	05	7892	664	1375	1019	1016.48	103.66
All	06	7854	621	1621	1028	1021.22	107.27
All	07	7910	600	1421	1019	1015.16	106.19
All	08	7841	664	1497	1019	1016.22	106.10
All	09	7877	621	1497	1019	1018.22	105.58
Paper	00	70889	600	1621	1019	1016.35	105.57
Paper	01	7916	600	1621	1019	1015.70	106.34
Paper	02	7805	621	1375	1019	1012.14	103.30
Paper	03	7957	600	1421	1019	1016.62	105.50
Paper	04	7837	695	1497	1019	1015.33	105.91
Paper	05	7892	664	1375	1019	1016.48	103.66
Paper	06	7854	621	1621	1028	1021.22	107.27
Paper	07	7910	600	1421	1019	1015.16	106.19
Paper	08	7841	664	1497	1019	1016.22	106.10
Paper	09	7877	621	1497	1019	1018.22	105.58
CBT	00	20973	621	1497	1011	1010.75	106.00
CBT	01	8637	621	1421	987	988.96	108.50
CBT	02	6188	720	1497	1028	1026.09	101.85
CBT	03	6148	720	1421	1028	1025.93	101.07

ELA Grade 5 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	91028	600	1660	1015	1013.21	96.39
All	01	16770	600	1532	999	999.62	97.22
All	02	14271	619	1532	1015	1014.50	92.40
All	03	14232	662	1532	1023	1018.44	94.36
All	04	7636	619	1532	1015	1014.51	97.60
All	05	7643	600	1451	1015	1016.05	98.51
All	06	7591	619	1532	1015	1016.67	99.31
All	07	7656	662	1660	1015	1016.23	95.09
All	08	7585	693	1532	1015	1016.20	96.91
All	09	7644	693	1532	1015	1017.32	97.38
Paper	00	68677	600	1660	1015	1015.53	97.05
Paper	01	7673	662	1532	1015	1013.01	96.06
Paper	02	7621	619	1532	1015	1012.87	95.51
Paper	03	7628	662	1532	1023	1016.89	96.91
Paper	04	7636	619	1532	1015	1014.51	97.60
Paper	05	7643	600	1451	1015	1016.05	98.51
Paper	06	7591	619	1532	1015	1016.67	99.31
Paper	07	7656	662	1660	1015	1016.23	95.09
Paper	08	7585	693	1532	1015	1016.20	96.91
Paper	09	7644	693	1532	1015	1017.32	97.38
CBT	00	22351	600	1532	1007	1006.10	93.97
CBT	01	9097	600	1451	991	988.33	96.75
CBT	02	6650	739	1532	1015	1016.36	88.66
CBT	03	6604	693	1451	1023	1020.23	91.30

ELA Grade 6 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	90232	615	1614	1020	1020.17	102.25
All	01	17729	615	1488	1005	1007.04	105.30
All	02	14772	692	1488	1028	1026.99	102.04
All	03	14760	719	1614	1028	1026.21	101.26
All	04	7159	692	1488	1020	1022.11	99.45
All	05	7135	660	1488	1020	1019.52	101.12
All	06	7167	660	1488	1020	1021.74	101.51
All	07	7168	692	1488	1020	1021.01	100.09
All	08	7161	660	1614	1020	1021.65	102.31
All	09	7181	660	1488	1020	1020.98	100.78
Paper	00	64360	660	1614	1020	1021.32	101.31
Paper	01	7193	660	1488	1020	1019.69	102.23
Paper	02	7097	719	1488	1020	1022.17	102.51
Paper	03	7099	719	1488	1020	1023.02	101.69
Paper	04	7159	692	1488	1020	1022.11	99.45
Paper	05	7135	660	1488	1020	1019.52	101.12
Paper	06	7167	660	1488	1020	1021.74	101.51
Paper	07	7168	692	1488	1020	1021.01	100.09
Paper	08	7161	660	1614	1020	1021.65	102.31
Paper	09	7181	660	1488	1020	1020.98	100.78
CBT	00	25872	615	1614	1020	1017.31	104.51
CBT	01	10536	615	1488	998	998.40	106.48
CBT	02	7675	692	1488	1035	1031.45	101.40
CBT	03	7661	719	1614	1028	1029.16	100.77

ELA Grade 7 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	90515	617	1616	1015	1009.38	93.71
All	01	18193	660	1490	999	998.14	95.79
All	02	15703	691	1412	1015	1011.86	91.14
All	03	15628	617	1616	1015	1011.69	93.13
All	04	6921	617	1490	1015	1010.52	93.87
All	05	6801	716	1490	1015	1013.77	93.11
All	06	6756	737	1412	1015	1014.47	93.92
All	07	6853	691	1616	1015	1012.17	93.45
All	08	6808	716	1412	1015	1012.35	93.08
All	09	6852	737	1616	1015	1012.06	94.02
Paper	00	61620	617	1616	1015	1013.13	93.83
Paper	01	6923	716	1412	1015	1013.99	94.36
Paper	02	6863	691	1412	1015	1014.92	93.82
Paper	03	6843	617	1616	1015	1013.94	94.72
Paper	04	6921	617	1490	1015	1010.52	93.87
Paper	05	6801	716	1490	1015	1013.77	93.11
Paper	06	6756	737	1412	1015	1014.47	93.92
Paper	07	6853	691	1616	1015	1012.17	93.45
Paper	08	6808	716	1412	1015	1012.35	93.08
Paper	09	6852	737	1616	1015	1012.06	94.02
CBT	00	28895	660	1490	1007	1001.40	92.94
CBT	01	11270	660	1490	984	988.40	95.36
CBT	02	8840	691	1412	1015	1009.49	88.93
CBT	03	8785	691	1412	1015	1009.93	91.83

ELA Grade 8 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	85686	600	1654	1002	1007.74	105.02
All	01	17215	678	1654	995	994.50	107.91
All	02	14913	600	1654	1010	1009.82	105.22
All	03	14971	601	1654	1010	1009.91	103.71
All	04	6520	601	1440	1010	1012.70	104.94
All	05	6463	726	1654	1010	1009.90	101.33
All	06	6449	704	1654	1010	1010.63	103.81
All	07	6415	704	1524	1010	1013.56	103.30
All	08	6374	645	1524	1010	1012.15	104.87
All	09	6366	601	1524	1010	1013.13	103.63
Paper	00	57874	600	1654	1010	1011.76	103.79
Paper	01	6440	704	1654	1002	1009.41	104.02
Paper	02	6404	600	1654	1010	1011.49	104.72
Paper	03	6443	678	1654	1010	1012.86	103.39
Paper	04	6520	601	1440	1010	1012.70	104.94
Paper	05	6463	726	1654	1010	1009.90	101.33
Paper	06	6449	704	1654	1010	1010.63	103.81
Paper	07	6415	704	1524	1010	1013.56	103.30
Paper	08	6374	645	1524	1010	1012.15	104.87
Paper	09	6366	601	1524	1010	1013.13	103.63
CBT	00	27812	601	1654	995	999.39	107.05
CBT	01	10775	678	1654	980	985.58	109.20
CBT	02	8509	678	1654	1002	1008.57	105.57
CBT	03	8528	601	1654	1002	1007.68	103.89

Science Grade 4 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	91071	1050	2313	1401	1395.72	161.83
All	01	14978	1050	2098	1384	1378.86	165.57
All	02	12038	1050	2313	1417	1409.99	158.73
All	03	11924	1050	2313	1417	1407.93	159.65
All	04	5766	1050	2098	1401	1397.30	163.54
All	05	5794	1050	1970	1401	1393.19	160.66
All	06	5784	1050	1970	1401	1391.62	161.35
All	07	5797	1050	1970	1401	1397.34	161.84
All	08	5841	1050	2098	1401	1392.98	161.96
All	09	5824	1050	2098	1401	1389.37	160.92
All	10	5719	1050	2098	1401	1398.26	162.63
All	11	5797	1050	2098	1401	1394.23	160.29
All	12	5809	1050	2098	1401	1396.03	159.45
Paper	00	69678	1050	2098	1401	1392.77	161.90
Paper	01	5992	1050	2098	1384	1379.00	166.58
Paper	02	5834	1050	2098	1401	1392.71	161.55
Paper	03	5721	1050	2098	1401	1391.81	160.87
Paper	04	5766	1050	2098	1401	1397.30	163.54
Paper	05	5794	1050	1970	1401	1393.19	160.66
Paper	06	5784	1050	1970	1401	1391.62	161.35
Paper	07	5797	1050	1970	1401	1397.34	161.84
Paper	08	5841	1050	2098	1401	1392.98	161.96
Paper	09	5824	1050	2098	1401	1389.37	160.92
Paper	10	5719	1050	2098	1401	1398.26	162.63
Paper	11	5797	1050	2098	1401	1394.23	160.29
Paper	12	5809	1050	2098	1401	1396.03	159.45
CBT	00	21393	1050	2313	1417	1405.30	161.21
CBT	01	8986	1050	2098	1384	1378.76	164.89
CBT	02	6204	1050	2313	1434	1426.25	154.28
CBT	03	6203	1050	2313	1434	1422.79	157.06

Science Grade 8 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	84244	925	2299	1285	1287.61	193.95
All	01	15813	925	2299	1267	1269.09	196.88
All	02	13168	925	2299	1285	1296.79	191.66
All	03	13232	925	2299	1285	1296.66	193.15
All	04	4667	925	2064	1285	1286.33	188.40
All	05	4693	925	2299	1285	1292.43	195.86
All	06	4669	925	2299	1285	1287.83	193.79
All	07	4680	925	2064	1285	1290.45	193.31
All	08	4659	925	2299	1285	1285.69	193.78
All	09	4670	925	2299	1285	1288.16	191.81
All	10	4652	925	2299	1285	1288.33	193.92
All	11	4642	925	2064	1285	1288.92	195.95
All	12	4699	925	2064	1285	1291.54	192.97
Paper	00	56375	925	2299	1285	1287.23	193.60
Paper	01	4969	925	2064	1267	1274.41	194.79
Paper	02	4665	925	2064	1285	1287.09	192.11
Paper	03	4710	925	2064	1285	1286.36	195.61
Paper	04	4667	925	2064	1285	1286.33	188.40
Paper	05	4693	925	2299	1285	1292.43	195.86
Paper	06	4669	925	2299	1285	1287.83	193.79
Paper	07	4680	925	2064	1285	1290.45	193.31
Paper	08	4659	925	2299	1285	1285.69	193.78
Paper	09	4670	925	2299	1285	1288.16	191.81
Paper	10	4652	925	2299	1285	1288.33	193.92
Paper	11	4642	925	2064	1285	1288.92	195.95
Paper	12	4699	925	2064	1285	1291.54	192.97
CBT	00	27869	925	2299	1285	1288.39	194.66
CBT	01	10844	925	2299	1249	1266.66	197.78
CBT	02	8503	925	2299	1302	1302.10	191.20
CBT	03	8522	925	2299	1302	1302.36	191.54

APPENDIX I: DEMOGRAPHIC CHARACTERISTICS OF STUDENTS

Demographic Characteristics of Students Taking the 2021 PSSA: English Language Arts

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Female (Number)	35,215	9,590	44,805	34,842	10,216	45,058	33,728	10,815	44,543	31,427	12,518	43,945	29,995	13,748	43,743	27,890	13,102	40,992
Female (Percent)	49.3	49.1	49.2	49.2	48.7	49	49.1	48.4	48.9	48.8	48.4	48.7	48.7	47.6	48.3	48.2	47.1	47.8
Male (Number)	36,241	9,934	46,175	36,047	10,757	46,804	34,949	11,536	46,485	32,933	13,354	46,287	31,625	15,147	46,772	29,984	14,710	44,694
Male (Percent)	50.7	50.9	50.8	50.8	51.3	51	50.9	51.6	51.1	51.2	51.6	51.3	51.3	52.4	51.7	51.8	52.9	52.2
American Indian/Alaskan Native (not Hispanic) (Number)	87	24	111	82	36	118	85	41	126	90	37	127	72	40	112	83	43	126
American Indian/Alaskan Native (not Hispanic) (Percent)	.1	.1	.1	.1	.2	.1	.1	.2	.1	.1	.1	.1	.1	.1	.1	.1	.2	.1
Asian (not Hispanic) (Number)	2,889	1,104	3,993	2,821	1,127	3,948	2,690	1,157	3,847	2,569	1,307	3,876	2,362	1,285	3,647	2,224	1,212	3,436
Asian (not Hispanic) (Percent)	4	5.7	4.4	4	5.4	4.3	3.9	5.2	4.2	4	5.1	4.3	3.8	4.4	4	3.8	4.4	4
Black or African American (not Hispanic) (Number)	7,762	1,777	9,539	7,776	1,989	9,765	7,565	2,022	9,587	7,093	2,332	9,425	6,917	2,532	9,449	6,237	2,424	8,661
Black or African American (not Hispanic) (Percent)	10.9	9.1	10.5	11	9.5	10.6	11	9	10.5	11	9	10.4	11.2	8.8	10.4	10.8	8.7	10.1
Hispanic (any race) (Number)	7,285	2,233	9,518	7,118	2,331	9,449	6,789	2,478	9,267	6,255	3,055	9,310	5,847	3,156	9,003	5,348	2,989	8,337
Hispanic (any race) (Percent)	10.2	11.4	10.5	10	11.1	10.3	9.9	11.1	10.2	9.7	11.8	10.3	9.5	10.9	9.9	9.2	10.7	9.7
Multi-Racial (not Hispanic) (Number)	3,629	1,015	4,644	3,531	1,042	4,573	3,354	1,094	4,448	2,925	1,200	4,125	2,635	1,274	3,909	2,269	1,140	3,409
Multi-Racial (not Hispanic) (Percent)	5.1	5.2	5.1	5	5	5	4.9	4.9	4.9	4.5	4.6	4.6	4.3	4.4	4.3	3.9	4.1	4
White (not Hispanic) (Number)	49,746	13,343	63,089	49,502	14,437	63,939	48,129	15,541	63,670	45,390	17,918	63,308	43,731	20,587	64,318	41,665	19,971	61,636
White (not Hispanic) (Percent)	69.6	68.3	69.3	69.8	68.8	69.6	70.1	69.5	69.9	70.5	69.3	70.2	71	71.2	71.1	72	71.8	71.9
Native Hawaiian or Other Pacific Islander (not Hispanic) (Number)	58	28	86	59	11	70	65	18	83	38	23	61	56	21	77	48	33	81
Native Hawaiian or Other Pacific Islander (not Hispanic) (Percent)	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
IEP (not gifted) (Number)	12,179	3,523	15,702	12,700	3,937	16,637	12,395	4,329	16,724	11,118	4,914	16,032	10,518	5,379	15,897	9,750	5,073	14,823
IEP (not gifted) (Percent)	17	18	17.3	17.9	18.8	18.1	18	19.4	18.4	17.3	19	17.8	17.1	18.6	17.6	16.8	18.2	17.3

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Student exited IEP in last 2 years (Number)	1,559	408	1,967	1,729	499	2,228	1,842	568	2,410	1,724	665	2,389	1,412	632	2,044	1,351	599	1,950
Student exited IEP in last 2 years (Percent)	2.2	2.1	2.2	2.4	2.4	2.4	2.7	2.5	2.6	2.7	2.6	2.6	2.3	2.2	2.3	2.3	2.2	2.3
Title I (Number)	36,141	9,243	45,384	35,628	9,261	44,889	31,160	9,033	40,193	22,045	8,132	30,177	15,498	6,008	21,506	12,767	5,253	18,020
Title I (Percent)	50.6	47.3	49.9	50.3	44.2	48.9	45.4	40.4	44.2	34.3	31.4	33.4	25.2	20.8	23.8	22.1	18.9	21
Title III served (Number)	2,777	791	3,568	2,569	791	3,360	2,131	653	2,784	1,737	660	2,397	1,702	603	2,305	1,392	597	1,989
Title III served (Percent)	3.9	4.1	3.9	3.6	3.8	3.7	3.1	2.9	3.1	2.7	2.6	2.7	2.8	2.1	2.5	2.4	2.1	2.3
Title III not served (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Title III not served (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Migrant student (Number)	118	34	152	93	36	129	92	30	122	63	45	108	56	37	93	53	38	91
Migrant student (Percent)	.2	.2	.2	.1	.2	.1	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1	.1	.1
EL enrolled first year (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EL enrolled first year (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EL enrolled not first year (Number)	3,006	836	3,842	2,764	823	3,587	2,279	690	2,969	1,893	699	2,592	1,818	647	2,465	1,483	615	2,098
EL enrolled not first year (Percent)	4.2	4.3	4.2	3.9	3.9	3.9	3.3	3.1	3.3	2.9	2.7	2.9	3	2.2	2.7	2.6	2.2	2.4
Exited ESL/bilingual program and in first year of monitoring (Number)	204	65	269	251	98	349	547	242	789	404	222	626	106	62	168	120	46	166
Exited ESL/bilingual program and in first year of monitoring (Percent)	.3	.3	.3	.4	.5	.4	.8	1.1	.9	.6	.9	.7	.2	.2	.2	.2	.2	.2
Exited ESL/bilingual program and in 2nd year of monitoring (Number)	118	45	163	135	55	190	247	98	345	412	203	615	334	199	533	112	66	178
Exited ESL/bilingual program and in 2nd year of monitoring (Percent)	.2	.2	.2	.2	.3	.2	.4	.4	.4	.6	.8	.7	.5	.7	.6	.2	.2	.2
Former EL no longer monitored (Number)	2	1	3	4	2	6	64	47	111	211	176	387	445	292	737	751	469	1,220
Former EL no longer monitored (Percent)	0	0	0	0	0	0	.1	.2	.1	.3	.7	.4	.7	1	.8	1.3	1.7	1.4
LIFE first year (Number)	1	0	1	2	0	2	2	1	3	5	0	5	1	0	1	0	0	0
LIFE first year (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIFE not first year (Number)	11	3	14	15	16	31	12	8	20	15	12	27	20	19	39	14	26	40
LIFE not first year (Percent)	0	0	0	0	.1	0	0	0	0	0	0	0	0	.1	0	0	.1	0

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Former EL exited and in 3rd year of monitoring (Number)	49	24	73	90	56	146	113	63	176	206	119	325	314	185	499	230	133	363
Former EL exited and in 3rd year of monitoring (Percent)	.1	.1	.1	.1	.3	.2	.2	.3	.2	.3	.5	.4	.5	.6	.6	.4	.5	.4
Former EL exited and in 4th year of monitoring (Number)	5	3	8	30	20	50	63	35	98	36	27	63	73	26	99	108	57	165
Former EL exited and in 4th year of monitoring (Percent)	0	0	0	0	.1	.1	.1	.2	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2
Economically disadvantaged (Number)	31,849	7,353	39,202	31,288	7,818	39,106	29,733	8,425	38,158	28,057	9,733	37,790	26,084	10,983	37,067	23,576	10,278	33,854
Economically disadvantaged (Percent)	44.6	37.7	43.1	44.1	37.3	42.6	43.3	37.7	41.9	43.6	37.6	41.9	42.3	38	41	40.7	37	39.5
Historically Underperforming Subgroup (Number)	37,757	9,380	47,137	37,357	9,959	47,316	35,457	10,679	46,136	32,952	12,163	45,115	30,813	13,537	44,350	27,929	12,720	40,649
Historically Underperforming Subgroup (Percent)	52.8	48	51.8	52.7	47.5	51.5	51.6	47.8	50.7	51.2	47	50	50	46.8	49	48.3	45.7	47.4
Enrollment in school of residence after Oct 1 (Number)	1,607	502	2,109	1,432	491	1,923	1,324	454	1,778	1,052	493	1,545	1,000	482	1,482	902	453	1,355
Enrollment in school of residence after Oct 1 (Percent)	2.2	2.6	2.3	2	2.3	2.1	1.9	2	2	1.6	1.9	1.7	1.6	1.7	1.6	1.6	1.6	1.6
Enrollment in district of residence after Oct 1 (Number)	1,040	292	1,332	912	268	1,180	852	272	1,124	801	326	1,127	724	330	1,054	671	307	978
Enrollment in district of residence after Oct 1 (Percent)	1.5	1.5	1.5	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.3	1.2	1.2	1.1	1.2	1.2	1.1	1.1
Enrollment as PA resident after Oct 1 (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enrollment as PA resident after Oct 1 (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Number)	16,030	7,321	23,351	17,201	7,301	24,502	18,535	8,653	27,188	22,675	10,964	33,639	17,779	13,390	31,169	10,012	7,179	17,191
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Percent)	22.4	37.5	25.7	24.3	34.8	26.7	27	38.7	29.9	35.2	42.4	37.3	28.9	46.3	34.4	17.3	25.8	20.1

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Number)	9,677	3,934	13,611	9,276	3,738	13,014	9,040	3,774	12,814	8,636	4,092	12,728	7,718	4,367	12,085	6,590	3,895	10,485
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Percent)	13.5	20.1	15	13.1	17.8	14.2	13.2	16.9	14.1	13.4	15.8	14.1	12.5	15.1	13.4	11.4	14	12.2
Court/agency placed (Number)	16	2	18	11	1	12	19	3	22	29	13	42	38	6	44	80	31	111
Court/agency placed (Percent)	0	0	0	0	0	0	0	0	0	0	.1	0	.1	0	0	.1	.1	.1
Military family (Number)	405	134	539	385	109	494	363	112	475	353	106	459	387	145	532	283	145	428
Military family (Percent)	.6	.7	.6	.5	.5	.5	.5	.5	.5	.5	.4	.5	.6	.5	.6	.5	.5	.5
Homeless (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Homeless (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Foster (Number)	299	71	370	319	77	396	275	61	336	251	91	342	240	102	342	263	102	365
Foster (Percent)	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4
Students with scores used in state summaries (Number)	71,456	19,524	90,980	70,889	20,973	91,862	68,677	22,351	91,028	64,360	25,872	90,232	61,620	28,895	90,515	57,874	27,812	85,686

Demographic Characteristics of Students Taking the 2021 PSSA: Mathematics

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Female (Number)	35,211	9,892	45,103	34,738	10,539	45,277	33,619	10,802	44,421	31,349	12,671	44,020	29,856	13,927	43,783	27,730	12,955	40,685
Female (Percent)	49.2	49.1	49.2	49.1	48.6	49	49.1	48.3	48.9	48.7	48.3	48.6	48.5	47.6	48.2	48.1	46.9	47.7
Male (Number)	36,316	10,274	46,590	35,946	11,164	47,110	34,897	11,548	46,445	32,968	13,575	46,543	31,694	15,335	47,029	29,904	14,664	44,568
Male (Percent)	50.8	50.9	50.8	50.9	51.4	51	50.9	51.7	51.1	51.3	51.7	51.4	51.5	52.4	51.8	51.9	53.1	52.3
American Indian/Alaskan Native (not Hispanic) (Number)	89	26	115	80	35	115	86	40	126	93	37	130	75	43	118	85	44	129
American Indian/Alaskan Native (not Hispanic) (Percent)	.1	.1	.1	.1	.2	.1	.1	.2	.1	.1	.1	.1	.1	.1	.1	.1	.2	.2
Asian (not Hispanic) (Number)	2,908	1,102	4,010	2,830	1,135	3,965	2,689	1,154	3,843	2,573	1,303	3,876	2,370	1,292	3,662	2,227	1,209	3,436
Asian (not Hispanic) (Percent)	4.1	5.5	4.4	4	5.2	4.3	3.9	5.2	4.2	4	5	4.3	3.9	4.4	4	3.9	4.4	4
Black or African American (not Hispanic) (Number)	7,794	1,861	9,655	7,678	2,067	9,745	7,522	2,028	9,550	7,092	2,403	9,495	6,948	2,601	9,549	6,257	2,434	8,691
Black or African American (not Hispanic) (Percent)	10.9	9.2	10.5	10.9	9.5	10.5	11	9.1	10.5	11	9.2	10.5	11.3	8.9	10.5	10.9	8.8	10.2
Hispanic (any race) (Number)	7,349	2,711	10,060	7,229	2,807	10,036	6,811	2,444	9,255	6,420	3,374	9,794	5,940	3,508	9,448	5,392	2,916	8,308
Hispanic (any race) (Percent)	10.3	13.4	11	10.2	12.9	10.9	9.9	10.9	10.2	10	12.9	10.8	9.7	12	10.4	9.4	10.6	9.7
Multi-Racial (not Hispanic) (Number)	3,609	1,040	4,649	3,514	1,069	4,583	3,326	1,096	4,422	2,930	1,211	4,141	2,619	1,314	3,933	2,264	1,131	3,395
Multi-Racial (not Hispanic) (Percent)	5	5.2	5.1	5	4.9	5	4.9	4.9	4.9	4.6	4.6	4.6	4.3	4.5	4.3	3.9	4.1	4
White (not Hispanic) (Number)	49,718	13,398	63,116	49,293	14,578	63,871	48,016	15,569	63,585	45,171	17,896	63,067	43,543	20,482	64,025	41,361	19,853	61,214
White (not Hispanic) (Percent)	69.5	66.4	68.8	69.7	67.2	69.1	70.1	69.7	70	70.2	68.2	69.6	70.7	70	70.5	71.8	71.9	71.8
Native Hawaiian or Other Pacific Islander (not Hispanic) (Number)	60	28	88	60	12	72	66	19	85	38	22	60	55	22	77	48	32	80
Native Hawaiian or Other Pacific Islander (not Hispanic) (Percent)	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
IEP (not gifted) (Number)	12,192	3,617	15,809	12,629	4,069	16,698	12,393	4,324	16,717	11,085	4,986	16,071	10,580	5,385	15,965	9,703	5,030	14,733
IEP (not gifted) (Percent)	17	17.9	17.2	17.9	18.7	18.1	18.1	19.3	18.4	17.2	19	17.7	17.2	18.4	17.6	16.8	18.2	17.3
Student exited IEP in last 2 years (Number)	1,559	415	1,974	1,730	509	2,239	1,842	564	2,406	1,734	672	2,406	1,410	642	2,052	1,342	603	1,945
Student exited IEP in last 2 years (Percent)	2.2	2.1	2.2	2.4	2.3	2.4	2.7	2.5	2.6	2.7	2.6	2.7	2.3	2.2	2.3	2.3	2.2	2.3

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Title I (Number)	36,312	9,825	46,137	35,584	9,904	45,488	31,169	8,932	40,101	22,286	8,472	30,758	15,591	6,528	22,119	12,762	5,293	18,055
Title I (Percent)	50.8	48.7	50.3	50.3	45.6	49.2	45.5	40	44.1	34.7	32.3	34	25.3	22.3	24.4	22.1	19.2	21.2
Title III served (Number)	2,823	915	3,738	2,630	900	3,530	2,188	620	2,808	1,835	693	2,528	1,770	669	2,439	1,445	556	2,001
Title III served (Percent)	3.9	4.5	4.1	3.7	4.1	3.8	3.2	2.8	3.1	2.9	2.6	2.8	2.9	2.3	2.7	2.5	2	2.3
Title III not served (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Title III not served (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Migrant student (Number)	125	26	151	99	34	133	97	25	122	78	40	118	66	38	104	60	32	92
Migrant student (Percent)	.2	.1	.2	.1	.2	.1	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1	.1	.1
EL enrolled first year (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EL enrolled first year (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EL enrolled not first year (Number)	3,053	959	4,012	2,819	937	3,756	2,337	657	2,994	1,993	740	2,733	1,882	714	2,596	1,537	575	2,112
EL enrolled not first year (Percent)	4.3	4.8	4.4	4	4.3	4.1	3.4	2.9	3.3	3.1	2.8	3	3.1	2.4	2.9	2.7	2.1	2.5
Exited ESL/bilingual program and in first year of monitoring (Number)	204	65	269	255	103	358	544	242	786	405	228	633	104	71	175	121	45	166
Exited ESL/bilingual program and in first year of monitoring (Percent)	.3	.3	.3	.4	.5	.4	.8	1.1	.9	.6	.9	.7	.2	.2	.2	.2	.2	.2
Exited ESL/bilingual program and in 2nd year of monitoring (Number)	118	43	161	137	56	193	247	98	345	407	204	611	333	206	539	105	66	171
Exited ESL/bilingual program and in 2nd year of monitoring (Percent)	.2	.2	.2	.2	.3	.2	.4	.4	.4	.6	.8	.7	.5	.7	.6	.2	.2	.2
Former EL no longer monitored (Number)	2	1	3	4	2	6	64	47	111	211	174	385	443	307	750	753	472	1,225
Former EL no longer monitored (Percent)	0	0	0	0	0	0	.1	.2	.1	.3	.7	.4	.7	1	.8	1.3	1.7	1.4
LIFE first year (Number)	1	0	1	3	0	3	3	0	3	6	0	6	3	0	3	3	0	3
LIFE first year (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIFE not first year (Number)	13	3	16	21	14	35	12	8	20	17	10	27	26	14	40	17	24	41
LIFE not first year (Percent)	0	0	0	0	.1	0	0	0	0	0	0	0	0	0	0	0	.1	0
Former EL exited and in 3rd year of monitoring (Number)	50	24	74	91	56	147	114	63	177	215	118	333	310	194	504	225	133	358
Former EL exited and in 3rd year of monitoring (Percent)	.1	.1	.1	.1	.3	.2	.2	.3	.2	.3	.4	.4	.5	.7	.6	.4	.5	.4

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Former EL exited and in 4th year of monitoring (Number)	5	4	9	31	18	49	61	35	96	35	26	61	71	30	101	109	55	164
Former EL exited and in 4th year of monitoring (Percent)	0	0	0	0	.1	.1	.1	.2	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2
Economically disadvantaged (Number)	31,912	7,888	39,800	31,117	8,400	39,517	29,695	8,408	38,103	28,036	10,082	38,118	26,117	11,316	37,433	23,505	10,201	33,706
Economically disadvantaged (Percent)	44.6	39.1	43.4	44	38.7	42.8	43.3	37.6	41.9	43.6	38.4	42.1	42.4	38.7	41.2	40.8	36.9	39.5
Historically Underperforming Subgroup (Number)	37,851	9,935	47,786	37,199	10,578	47,777	35,418	10,655	46,073	32,958	12,523	45,481	30,880	13,856	44,736	27,848	12,614	40,462
Historically Underperforming Subgroup (Percent)	52.9	49.3	52.1	52.6	48.7	51.7	51.7	47.7	50.7	51.2	47.7	50.2	50.2	47.4	49.3	48.3	45.7	47.5
Enrollment in school of residence after Oct 1 (Number)	1,607	533	2,140	1,459	514	1,973	1,331	453	1,784	1,061	482	1,543	990	480	1,470	904	454	1,358
Enrollment in school of residence after Oct 1 (Percent)	2.2	2.6	2.3	2.1	2.4	2.1	1.9	2	2	1.6	1.8	1.7	1.6	1.6	1.6	1.6	1.6	1.6
Enrollment in district of residence after Oct 1 (Number)	1,047	313	1,360	932	282	1,214	861	271	1,132	822	315	1,137	718	319	1,037	678	308	986
Enrollment in district of residence after Oct 1 (Percent)	1.5	1.6	1.5	1.3	1.3	1.3	1.3	1.2	1.2	1.3	1.2	1.3	1.2	1.1	1.1	1.2	1.1	1.2
Enrollment as PA resident after Oct 1 (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enrollment as PA resident after Oct 1 (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Number)	15,955	7,605	23,560	17,088	7,491	24,579	18,523	8,602	27,125	22,532	11,657	34,189	17,802	13,305	31,107	9,997	7,144	17,141
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Percent)	22.3	37.7	25.7	24.2	34.5	26.6	27	38.5	29.9	35	44.4	37.8	28.9	45.5	34.3	17.3	25.9	20.1
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Number)	9,719	3,987	13,706	9,248	3,789	13,037	9,056	3,743	12,799	8,643	4,098	12,741	7,685	4,376	12,061	6,583	3,857	10,440

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Percent)	13.6	19.8	14.9	13.1	17.5	14.1	13.2	16.7	14.1	13.4	15.6	14.1	12.5	15	13.3	11.4	14	12.2
Court/agency placed (Number)	14	2	16	11	1	12	16	3	19	28	11	39	47	6	53	78	31	109
Court/agency placed (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	.1	0	.1	.1	.1	.1
Military family (Number)	403	135	538	381	112	493	361	114	475	345	109	454	379	154	533	271	157	428
Military family (Percent)	.6	.7	.6	.5	.5	.5	.5	.5	.5	.5	.4	.5	.6	.5	.6	.5	.6	.5
Homeless (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Homeless (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Foster (Number)	310	75	385	322	76	398	273	63	336	243	96	339	246	105	351	265	99	364
Foster (Percent)	.4	.4	.4	.5	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4
Students with scores used in state summaries (Number)	71,527	20,166	91,693	70,684	21,703	92,387	68,516	22,350	90,866	64,317	26,246	90,563	61,550	29,262	90,812	57,634	27,619	85,253

Demographic Characteristics of Students Taking the 2021 PSSA: Science

Demographic or Educational Characteristic	Gr 4 PPT	Gr 4 CBT	Gr 4 Total	Gr 8 PPT	Gr 8 CBT	Gr 8 Total
Female (Number)	34,236	10,393	44,629	27,117	13,094	40,211
Female (Percent)	49.1	48.6	49	48.1	47	47.7
Male (Number)	35,442	11,000	46,442	29,258	14,775	44,033
Male (Percent)	50.9	51.4	51	51.9	53	52.3
American Indian/Alaskan Native (not Hispanic) (Number)	81	36	117	87	43	130
American Indian/Alaskan Native (not Hispanic) (Percent)	.1	.2	.1	.2	.2	.2
Asian (not Hispanic) (Number)	2,804	1,131	3,935	2,192	1,214	3,406
Asian (not Hispanic) (Percent)	4	5.3	4.3	3.9	4.4	4
Black or African American (not Hispanic) (Number)	7,510	1,966	9,476	6,058	2,393	8,451
Black or African American (not Hispanic) (Percent)	10.8	9.2	10.4	10.7	8.6	10
Hispanic (any race) (Number)	7,019	2,292	9,311	5,254	2,922	8,176
Hispanic (any race) (Percent)	10.1	10.7	10.2	9.3	10.5	9.7
Multi-Racial (not Hispanic) (Number)	3,449	1,057	4,506	2,202	1,130	3,332
Multi-Racial (not Hispanic) (Percent)	4.9	4.9	4.9	3.9	4.1	4
White (not Hispanic) (Number)	48,756	14,898	63,654	40,536	20,136	60,672
White (not Hispanic) (Percent)	70	69.6	69.9	71.9	72.3	72
Native Hawaiian or Other Pacific Islander (not Hispanic) (Number)	59	13	72	46	31	77
Native Hawaiian or Other Pacific Islander (not Hispanic) (Percent)	.1	.1	.1	.1	.1	.1
IEP (not gifted) (Number)	12,462	4,019	16,481	9,491	5,028	14,519
IEP (not gifted) (Percent)	17.9	18.8	18.1	16.8	18	17.2
Student exited IEP in last 2 years (Number)	1,699	521	2,220	1,333	601	1,934
Student exited IEP in last 2 years (Percent)	2.4	2.4	2.4	2.4	2.2	2.3
Title I (Number)	34,961	9,408	44,369	12,472	5,236	17,708
Title I (Percent)	50.2	44	48.7	22.1	18.8	21
Title III served (Number)	2,574	759	3,333	1,417	562	1,979
Title III served (Percent)	3.7	3.5	3.7	2.5	2	2.3
Title III not served (Number)	0	0	0	0	0	0
Title III not served (Percent)	0	0	0	0	0	0

Demographic or Educational Characteristic	Gr 4 PPT	Gr 4 CBT	Gr 4 Total	Gr 8 PPT	Gr 8 CBT	Gr 8 Total
Migrant student (Number)	101	27	128	58	28	86
Migrant student (Percent)	.1	.1	.1	.1	.1	.1
EL enrolled first year (Number)	0	0	0	0	0	0
EL enrolled first year (Percent)	0	0	0	0	0	0
EL enrolled not first year (Number)	2,760	799	3,559	1,505	577	2,082
EL enrolled not first year (Percent)	4	3.7	3.9	2.7	2.1	2.5
Exited ESL/bilingual program and in first year of monitoring (Number)	249	97	346	117	44	161
Exited ESL/bilingual program and in first year of monitoring (Percent)	.4	.5	.4	.2	.2	.2
Exited ESL/bilingual program and in 2nd year of monitoring (Number)	135	56	191	101	68	169
Exited ESL/bilingual program and in 2nd year of monitoring (Percent)	.2	.3	.2	.2	.2	.2
Former EL no longer monitored (Number)	4	2	6	739	466	1,205
Former EL no longer monitored (Percent)	0	0	0	1.3	1.7	1.4
LIFE first year (Number)	3	0	3	3	0	3
LIFE first year (Percent)	0	0	0	0	0	0
LIFE not first year (Number)	21	11	32	18	22	40
LIFE not first year (Percent)	0	.1	0	0	.1	0
Former EL exited and in 3rd year of monitoring (Number)	90	56	146	222	134	356
Former EL exited and in 3rd year of monitoring (Percent)	.1	.3	.2	.4	.5	.4
Former EL exited and in 4th year of monitoring (Number)	29	19	48	107	58	165
Former EL exited and in 4th year of monitoring (Percent)	0	.1	.1	.2	.2	.2
Economically disadvantaged (Number)	30,543	7,936	38,479	22,866	10,283	33,149
Economically disadvantaged (Percent)	43.8	37.1	42.3	40.6	36.9	39.3
Historically Underperforming Subgroup (Number)	36,549	10,120	46,669	27,135	12,707	39,842
Historically Underperforming Subgroup (Percent)	52.5	47.3	51.2	48.1	45.6	47.3
Enrollment in school of residence after Oct 1 (Number)	1,446	484	1,930	877	452	1,329
Enrollment in school of residence after Oct 1 (Percent)	2.1	2.3	2.1	1.6	1.6	1.6
Enrollment in district of residence after Oct 1 (Number)	922	267	1,189	650	311	961
Enrollment in district of residence after Oct 1 (Percent)	1.3	1.2	1.3	1.2	1.1	1.1
Enrollment as PA resident after Oct 1 (Number)	0	0	0	0	0	0
Enrollment as PA resident after Oct 1 (Percent)	0	0	0	0	0	0

Demographic or Educational Characteristic	Gr 4 PPT	Gr 4 CBT	Gr 4 Total	Gr 8 PPT	Gr 8 CBT	Gr 8 Total
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Number)	16,916	7,278	24,194	9,691	7,127	16,818
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Percent)	24.3	34	26.6	17.2	25.6	20
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Number)	9,153	3,740	12,893	6,458	3,839	10,297
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Percent)	13.1	17.5	14.2	11.5	13.8	12.2
Court/agency placed (Number)	10	1	11	69	29	98
Court/agency placed (Percent)	0	0	0	.1	.1	.1
Military family (Number)	381	111	492	270	155	425
Military family (Percent)	.5	.5	.5	.5	.6	.5
Homeless (Number)	0	0	0	0	0	0
Homeless (Percent)	0	0	0	0	0	0
Foster (Number)	314	78	392	249	101	350
Foster (Percent)	.5	.4	.4	.4	.4	.4
Students with scores used in state summaries (Number)	69,678	21,393	91,071	56,375	27,869	84,244

APPENDIX J: INCIDENCE OF ACCOMMODATIONS RECEIVED

Incidence of Presentation Accommodations Received on the 2021 PSSA: English Language Arts

Type of Presentation Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Braille format (Number)	10	N/A	10	4	N/A	4	7	N/A	7	6	N/A	6	1	N/A	1	3	N/A	3
Braille format (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Large print format (Number)	68	N/A	68	51	N/A	51	61	N/A	61	55	N/A	55	47	N/A	47	33	N/A	33
Large print format (Percent)	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1	.1	N/A	0
Computer Assistive Technology (Number)	6	N/A	6	6	N/A	6	6	N/A	6	6	N/A	6	8	N/A	8	5	N/A	5
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Some conventions questions/text-dependent analysis prompts read aloud (Number)	2,073	298	2,371	2,864	683	3,547	2,249	586	2,835	1,343	714	2,057	746	590	1,336	607	576	1,183
Some conventions questions/text-dependent analysis prompts read aloud (Percent)	2.9	1.5	2.6	4	3.3	3.9	3.3	2.6	3.1	2.1	2.8	2.3	1.2	2	1.5	1	2.1	1.4
All conventions questions/text-dependent analysis prompts read aloud (Number)	2,526	600	3,126	2,453	1,096	3,549	1,837	948	2,785	1,135	851	1,986	682	582	1,264	638	526	1,164
All conventions questions/text-dependent analysis prompts read aloud (Percent)	3.5	3.1	3.4	3.5	5.2	3.9	2.7	4.2	3.1	1.8	3.3	2.2	1.1	2	1.4	1.1	1.9	1.4
Conventions questions/text-dependent analysis prompts signed (Number)	0	3	3	8	21	29	4	30	34	6	25	31	4	12	16	3	29	32
Conventions questions/text-dependent analysis prompts signed (Percent)	0	0	0	0	.1	0	0	.1	0	0	.1	0	0	0	0	0	.1	0
Conventions questions/text-dependent analysis prompts interpreted for EL student (Number)	0	2	2	29	16	45	23	27	50	24	23	47	14	13	27	19	23	42
Conventions questions/text-dependent analysis prompts interpreted for EL student (Percent)	0	0	0	0	.1	0	0	.1	.1	0	.1	.1	0	0	0	0	.1	0
Amplification device (Number)	45	20	65	39	13	52	30	14	44	13	25	38	14	22	36	18	17	35
Amplification device (Percent)	.1	.1	.1	.1	.1	.1	0	.1	0	0	.1	0	0	.1	0	0	.1	0
Magnification device (Number)	9	7	16	8	15	23	5	8	13	3	10	13	7	13	20	5	9	14
Magnification device (Percent)	0	0	0	0	.1	0	0	0	0	0	0	0	0	0	0	0	0	0
Color overlay (Number)	61	N/A	61	64	N/A	64	40	N/A	40	7	N/A	7	4	N/A	4	3	N/A	3
Color overlay (Percent)	.1	N/A	.1	.1	N/A	.1	.1	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0

Type of Presentation Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Other (per Accommodations Guidelines) (Number)	225	94	319	206	172	378	171	142	313	68	110	178	40	59	99	59	62	121
Other (per Accommodations Guidelines) (Percent)	.3	.5	.4	.3	.8	.4	.2	.6	.3	.1	.4	.2	.1	.2	.1	.1	.2	.1
Audio (Number)	N/A	2,063	2,063	N/A	2,512	2,512	N/A	2,487	2,487	N/A	2,940	2,940	N/A	2,464	2,464	N/A	2,222	2,222
Audio (Percent)	N/A	10.6	2.3	N/A	12	2.7	N/A	11.1	2.7	N/A	11.4	3.3	N/A	8.5	2.7	N/A	8	2.6
Color Chooser (Number)	N/A	16	16	N/A	19	19	N/A	24	24	N/A	29	29	N/A	48	48	N/A	44	44
Color Chooser (Percent)	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.2	.1	N/A	.2	.1
Contrasting Text Chooser (Number)	N/A	16	16	N/A	17	17	N/A	20	20	N/A	29	29	N/A	35	35	N/A	32	32
Contrasting Text Chooser (Percent)	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0
Reverse Contrast (Number)	N/A	6	6	N/A	3	3	N/A	0	0	N/A	7	7	N/A	5	5	N/A	2	2
Reverse Contrast (Percent)	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0
Refreshable Braille (Number)	N/A	1	1	N/A	0	0	N/A	0	0	N/A	7	7	N/A	4	4	N/A	2	2
Refreshable Braille (Percent)	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0

Incidence of Presentation Accommodations Received on the 2021 PSSA: Mathematics

Type of Presentation Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Braille format (Number)	8	N/A	8	9	N/A	9	7	N/A	7	5	N/A	5	8	N/A	8	7	N/A	7
Braille format (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Large print format (Number)	60	N/A	60	56	N/A	56	57	N/A	57	57	N/A	57	57	N/A	57	46	N/A	46
Large print format (Percent)	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1
Computer Assistive Technology (Number)	3	N/A	3	6	N/A	6	5	N/A	5	8	N/A	8	15	N/A	15	13	N/A	13
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Some test items/questions read aloud (Number)	4,430	684	5,114	3,863	873	4,736	2,983	853	3,836	1,619	815	2,434	872	699	1,571	693	658	1,351
Some test items/questions read aloud (Percent)	6.2	3.4	5.6	5.5	4	5.1	4.4	3.8	4.2	2.5	3.1	2.7	1.4	2.4	1.7	1.2	2.4	1.6
All test items/questions read aloud (Number)	3,587	1,040	4,627	3,302	1,369	4,671	2,467	1,240	3,707	1,380	1,133	2,513	812	963	1,775	646	778	1,424
All test items/questions read aloud (Percent)	5	5.2	5	4.7	6.3	5.1	3.6	5.5	4.1	2.1	4.3	2.8	1.3	3.3	2	1.1	2.8	1.7
Test items/questions signed (Number)	10	7	17	18	5	23	12	5	17	13	10	23	9	2	11	11	11	22
Test items/questions signed (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Test items/questions interpreted for EL student (Number)	53	4	57	51	4	55	28	2	30	27	0	27	18	4	22	22	3	25
Test items/questions interpreted for EL student (Percent)	.1	0	.1	.1	0	.1	0	0	0	0	0	0	0	0	0	0	0	0
Amplification device (Number)	37	25	62	28	17	45	20	24	44	16	33	49	18	19	37	19	18	37
Amplification device (Percent)	.1	.1	.1	0	.1	0	0	.1	0	0	.1	.1	0	.1	0	0	.1	0
Magnification device (Number)	5	6	11	7	15	22	2	7	9	4	10	14	6	11	17	6	10	16
Magnification device (Percent)	0	0	0	0	.1	0	0	0	0	0	0	0	0	0	0	0	0	0
Color overlay (Number)	8	N/A	8	22	N/A	22	25	N/A	25	3	N/A	3	8	N/A	8	7	N/A	7
Color overlay (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Other (per Accommodations Guidelines) (Number)	112	107	219	138	185	323	143	152	295	65	123	188	58	60	118	53	55	108
Other (per Accommodations Guidelines) (Percent)	.2	.5	.2	.2	.9	.3	.2	.7	.3	.1	.5	.2	.1	.2	.1	.1	.2	.1
Spanish version (Number)	177	N/A	177	202	N/A	202	222	N/A	222	273	N/A	273	238	N/A	238	219	N/A	219
Spanish version (Percent)	.2	N/A	.2	.3	N/A	.2	.3	N/A	.2	.4	N/A	.3	.4	N/A	.3	.4	N/A	.3
Audio (Number)	N/A	2,406	2,406	N/A	2,945	2,945	N/A	2,781	2,781	N/A	3,147	3,147	N/A	2,614	2,614	N/A	2,316	2,316
Audio (Percent)	N/A	11.9	2.6	N/A	13.6	3.2	N/A	12.4	3.1	N/A	12	3.5	N/A	8.9	2.9	N/A	8.4	2.7

Type of Presentation Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Video sign language (Number)	N/A	19	19	N/A	10	10	N/A	10	10	N/A	19	19	N/A	14	14	N/A	25	25
Video sign language (Percent)	N/A	.1	0	N/A	0	0	N/A	0	0	N/A	.1	0	N/A	0	0	N/A	.1	0
Color Chooser (Number)	N/A	16	16	N/A	21	21	N/A	24	24	N/A	22	22	N/A	32	32	N/A	34	34
Color Chooser (Percent)	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0
Contrasting Text Chooser (Number)	N/A	16	16	N/A	19	19	N/A	20	20	N/A	22	22	N/A	19	19	N/A	22	22
Contrasting Text Chooser (Percent)	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0
Reverse Contrast (Number)	N/A	6	6	N/A	3	3	N/A	1	1	N/A	0	0	N/A	1	1	N/A	0	0
Reverse Contrast (Percent)	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0
Refreshable Braille (Number)	N/A	1	1	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0
Refreshable Braille (Percent)	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0

Incidence of Presentation Accommodations Received on the 2021 PSSA: Science

Type of Presentation Accommodation	Gr 4 PPT	Gr 4 CBT	Gr 4 Total	Gr 8 PPT	Gr 8 CBT	Gr 8 Total
Braille format (Number)	5	N/A	5	1	N/A	1
Braille format (Percent)	0	N/A	0	0	N/A	0
Large print format (Number)	47	N/A	47	31	N/A	31
Large print format (Percent)	.1	N/A	.1	.1	N/A	0
Computer Assistive Technology (Number)	1	N/A	1	0	N/A	0
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0
Some test items/questions read aloud (Number)	3,661	817	4,478	510	636	1,146
Some test items/questions read aloud (Percent)	5.3	3.8	4.9	.9	2.3	1.4
All test items/questions read aloud (Number)	3,410	1,322	4,732	691	752	1,443
All test items/questions read aloud (Percent)	4.9	6.2	5.2	1.2	2.7	1.7
Test items/questions signed (Number)	12	4	16	3	10	13
Test items/questions signed (Percent)	0	0	0	0	0	0
Test items/questions interpreted for EL student (Number)	46	4	50	12	2	14
Test items/questions interpreted for EL student (Percent)	.1	0	.1	0	0	0
Amplification device (Number)	27	18	45	16	16	32
Amplification device (Percent)	0	.1	0	0	.1	0
Magnification device (Number)	8	14	22	6	10	16
Magnification device (Percent)	0	.1	0	0	0	0
Color overlay (Number)	13	N/A	13	2	N/A	2
Color overlay (Percent)	0	N/A	0	0	N/A	0
Other (per Accommodations Guidelines) (Number)	125	159	284	44	59	103
Other (per Accommodations Guidelines) (Percent)	.2	.7	.3	.1	.2	.1
Spanish version (Number)	182	N/A	182	210	N/A	210
Spanish version (Percent)	.3	N/A	.2	.4	N/A	.2
Audio (Number)	N/A	2,805	2,805	N/A	2,291	2,291
Audio (Percent)	N/A	13.1	3.1	N/A	8.2	2.7
Video sign language (Number)	N/A	12	12	N/A	26	26
Video sign language (Percent)	N/A	.1	0	N/A	.1	0

Type of Presentation Accommodation	Gr 4 PPT	Gr 4 CBT	Gr 4 Total	Gr 8 PPT	Gr 8 CBT	Gr 8 Total
Color Chooser (Number)	N/A	23	23	N/A	34	34
Color Chooser (Percent)	N/A	.1	0	N/A	.1	0
Contrasting Text Chooser (Number)	N/A	19	19	N/A	22	22
Contrasting Text Chooser (Percent)	N/A	.1	0	N/A	.1	0
Reverse Contrast (Number)	N/A	5	5	N/A	0	0
Reverse Contrast (Percent)	N/A	0	0	N/A	0	0
Refreshable Braille (Number)	N/A	0	0	N/A	0	0
Refreshable Braille (Percent)	N/A	0	0	N/A	0	0

Incidence of Response Accommodations Received on the 2021 PSSA: English Language Arts

Type of Response Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Assessment Coordinator marked multiple-choice responses at student's direction (Number)	67	3	70	126	1	127	98	1	99	81	1	82	40	0	40	24	2	26
Assessment Coordinator marked multiple-choice responses at student's direction (Percent)	.1	0	.1	.2	0	.1	.1	0	.1	.1	0	.1	.1	0	0	0	0	0
Assessment Coordinator transcribed student responses (Number)	148	9	157	242	29	271	239	14	253	180	13	193	156	22	178	153	15	168
Assessment Coordinator transcribed student responses (Percent)	.2	0	.2	.3	.1	.3	.3	.1	.3	.3	.1	.2	.3	.1	.2	.3	.1	.2
Keyboard, word processor, or computer (Number)	19	N/A	19	72	N/A	72	106	N/A	106	98	N/A	98	102	N/A	102	105	N/A	105
Keyboard, word processor, or computer (Percent)	0	N/A	0	.1	N/A	.1	.2	N/A	.1	.2	N/A	.1	.2	N/A	.1	.2	N/A	.1
Brailler/Notetaker (Number)	3	N/A	3	3	N/A	3	6	N/A	6	2	N/A	2	3	N/A	3	1	N/A	1
Brailler/Notetaker (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Augmentative communication device (Number)	3	N/A	3	2	N/A	2	2	N/A	2	4	N/A	4	1	N/A	1	0	N/A	0
Augmentative communication device (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Computer Assistive Technology (Number)	4	N/A	4	5	N/A	5	9	N/A	9	2	N/A	2	3	N/A	3	1	N/A	1
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Other (per Accommodations Guidelines) (Number)	27	29	56	42	25	67	79	30	109	13	39	52	12	32	44	13	24	37
Other (per Accommodations Guidelines) (Percent)	0	.1	.1	.1	.1	.1	.1	.1	.1	0	.2	.1	0	.1	0	0	.1	0
Mixed-Mode (Number)	N/A	19	19	N/A	17	17	N/A	23	23	N/A	22	22	N/A	21	21	N/A	16	16
Mixed-Mode (Percent)	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0

Incidence of Response Accommodations Received on the 2021 PSSA: Mathematics

Type of Response Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Assessment Coordinator marked multiple-choice responses at student's direction (Number)	57	7	64	126	4	130	109	7	116	86	5	91	54	0	54	35	2	37
Assessment Coordinator marked multiple-choice responses at student's direction (Percent)	.1	0	.1	.2	0	.1	.2	0	.1	.1	0	.1	.1	0	.1	.1	0	0
Assessment Coordinator scribed open-ended responses at student's direction (Number)	126	21	147	133	24	157	96	19	115	67	23	90	39	16	55	46	8	54
Assessment Coordinator scribed open-ended responses at student's direction (Percent)	.2	.1	.2	.2	.1	.2	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	0	.1
Assessment Coordinator transcribed student responses (Number)	100	10	110	173	27	200	150	13	163	99	15	114	86	21	107	62	14	76
Assessment Coordinator transcribed student responses (Percent)	.1	0	.1	.2	.1	.2	.2	.1	.2	.2	.1	.1	.1	.1	.1	.1	.1	.1
Qualified interpreter translated, transcribed, and/or scribed student's signed responses (Number)	7	0	7	8	0	8	9	0	9	9	0	9	3	1	4	12	0	12
Qualified interpreter translated, transcribed, and/or scribed student's signed responses (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Qualified interpreter translated, transcribed, and/or scribed EL student responses (Number)	9	1	10	9	1	10	2	1	3	7	0	7	2	1	3	6	2	8
Qualified interpreter translated, transcribed, and/or scribed EL student responses (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Keyboard, word processor, or computer (Number)	12	N/A	12	25	N/A	25	35	N/A	35	36	N/A	36	29	N/A	29	44	N/A	44
Keyboard, word processor, or computer (Percent)	0	N/A	0	0	N/A	0	.1	N/A	0	.1	N/A	0	0	N/A	0	.1	N/A	.1
Brailler/Notetaker (Number)	6	N/A	6	2	N/A	2	4	N/A	4	5	N/A	5	9	N/A	9	3	N/A	3
Brailler/Notetaker (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Augmentative communication device (Number)	2	N/A	2	4	N/A	4	2	N/A	2	5	N/A	5	1	N/A	1	2	N/A	2
Augmentative communication device (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Computer Assistive Technology (Number)	2	N/A	2	4	N/A	4	10	N/A	10	3	N/A	3	2	N/A	2	1	N/A	1
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Translation dictionary for EL student (Number)	9	10	19	18	8	26	15	11	26	27	10	37	19	9	28	21	11	32
Translation dictionary for EL student (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Type of Response Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Other (per Accommodations Guidelines) (Number)	62	39	101	58	49	107	92	42	134	30	42	72	22	24	46	15	26	41
Other (per Accommodations Guidelines) (Percent)	.1	.2	.1	.1	.2	.1	.1	.2	.1	0	.2	.1	0	.1	.1	0	.1	0
Mixed-Mode (Number)	N/A	21	21	N/A	19	19	N/A	24	24	N/A	21	21	N/A	22	22	N/A	18	18
Mixed-Mode (Percent)	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0

Incidence of Response Accommodations Received on the 2021 PSSA: Science

Type of Response Accommodation	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Assessment Coordinator marked multiple-choice responses at student's direction (Number)	130	5	135	26	2	28
Assessment Coordinator marked multiple-choice responses at student's direction (Percent)	.2	0	.1	0	0	0
Assessment Coordinator scribed open-ended responses at student's direction (Number)	150	23	173	39	8	47
Assessment Coordinator scribed open-ended responses at student's direction (Percent)	.2	.1	.2	.1	0	.1
Assessment Coordinator transcribed student responses (Number)	167	27	194	63	12	75
Assessment Coordinator transcribed student responses (Percent)	.2	.1	.2	.1	0	.1
Qualified interpreter translated, transcribed, and/or scribed student's signed responses (Number)	6	1	7	4	0	4
Qualified interpreter translated, transcribed, and/or scribed student's signed responses (Percent)	0	0	0	0	0	0
Qualified interpreter translated, transcribed, and/or scribed EL student responses (Number)	6	1	7	1	2	3
Qualified interpreter translated, transcribed, and/or scribed EL student responses (Percent)	0	0	0	0	0	0
Keyboard, word processor, or computer (Number)	38	N/A	38	33	N/A	33
Keyboard, word processor, or computer (Percent)	.1	N/A	0	.1	N/A	0
Brailler/Notetaker (Number)	2	N/A	2	0	N/A	0
Brailler/Notetaker (Percent)	0	N/A	0	0	N/A	0
Augmentative communication device (Number)	2	N/A	2	1	N/A	1
Augmentative communication device (Percent)	0	N/A	0	0	N/A	0
Computer Assistive Technology (Number)	2	N/A	2	1	N/A	1
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0
Translation dictionary for EL student (Number)	15	6	21	16	11	27
Translation dictionary for EL student (Percent)	0	0	0	0	0	0
Other (per Accommodations Guidelines) (Number)	33	35	68	7	21	28
Other (per Accommodations Guidelines) (Percent)	0	.2	.1	0	.1	0
Mixed-Mode (Number)	N/A	17	17	N/A	16	16
Mixed-Mode (Percent)	N/A	.1	0	N/A	.1	0

Incidence of Setting Accommodations Received on the 2021 PSSA: English Language Arts

Type of Setting Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Hospital/home setting (Number)	5	1	6	1	1	2	9	0	9	16	0	16	6	1	7	5	0	5
Hospital/home setting (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
One-on-one setting (Number)	366	65	431	387	59	446	306	62	368	212	46	258	145	40	185	130	32	162
One-on-one setting (Percent)	.5	.3	.5	.5	.3	.5	.4	.3	.4	.3	.2	.3	.2	.1	.2	.2	.1	.2
Small group setting (Number)	8,963	2,191	11,154	9,551	2,700	12,251	8,695	3,043	11,738	7,223	3,250	10,473	6,731	3,499	10,230	6,237	3,288	9,525
Small group setting (Percent)	12.5	11.2	12.3	13.5	12.9	13.3	12.7	13.6	12.9	11.2	12.6	11.6	10.9	12.1	11.3	10.8	11.8	11.1
Other (per Accommodations Guidelines) (Number)	53	31	84	63	13	76	105	48	153	154	43	197	67	75	142	68	69	137
Other (per Accommodations Guidelines) (Percent)	.1	.2	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.1	.3	.2	.1	.2	.2

Incidence of Setting Accommodations Received on the 2021PSSA: Mathematics

Type of Setting Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Hospital/home setting (Number)	3	1	4	5	2	7	10	0	10	20	1	21	26	0	26	17	0	17
Hospital/home setting (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
One-on-one setting (Number)	370	62	432	382	46	428	309	52	361	206	47	253	123	40	163	145	34	179
One-on-one setting (Percent)	.5	.3	.5	.5	.2	.5	.5	.2	.4	.3	.2	.3	.2	.1	.2	.3	.1	.2
Small group setting (Number)	9,021	2,170	11,191	9,201	2,737	11,938	8,799	3,035	11,834	7,222	3,332	10,554	6,569	3,490	10,059	6,043	3,266	9,309
Small group setting (Percent)	12.6	10.8	12.2	13	12.6	12.9	12.8	13.6	13	11.2	12.7	11.7	10.7	11.9	11.1	10.5	11.8	10.9
Other (per Accommodations Guidelines) (Number)	64	40	104	53	22	75	94	47	141	110	43	153	94	53	147	62	50	112
Other (per Accommodations Guidelines) (Percent)	.1	.2	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.1	.2	.1

Incidence of Setting Accommodations Received on the 2021 PSSA: Science

Type of Setting Accommodation	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Hospital/home setting (Number)	1	2	3	2	0	2
Hospital/home setting (Percent)	0	0	0	0	0	0
One-on-one setting (Number)	370	45	415	127	33	160
One-on-one setting (Percent)	.5	.2	.5	.2	.1	.2
Small group setting (Number)	9,089	2,678	11,767	5,512	3,183	8,695
Small group setting (Percent)	13	12.5	12.9	9.8	11.4	10.3
Other (per Accommodations Guidelines) (Number)	46	16	62	32	47	79
Other (per Accommodations Guidelines) (Percent)	.1	.1	.1	.1	.2	.1

Incidence of Timing Accommodations Received on the 2021 PSSA: English Language Arts

Type of Timing Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Extended time (Number)	3,482	1,596	5,078	5,918	2,124	8,042	4,945	2,080	7,025	3,782	1,992	5,774	3,312	1,826	5,138	2,837	1,739	4,576
Extended time (Percent)	4.9	8.2	5.6	8.3	10.1	8.8	7.2	9.3	7.7	5.9	7.7	6.4	5.4	6.3	5.7	4.9	6.3	5.3
Frequent breaks (Number)	2,046	1,217	3,263	2,303	1,568	3,871	2,112	1,581	3,693	1,223	1,495	2,718	873	1,255	2,128	738	1,116	1,854
Frequent breaks (Percent)	2.9	6.2	3.6	3.2	7.5	4.2	3.1	7.1	4.1	1.9	5.8	3	1.4	4.3	2.4	1.3	4	2.2
Changed test schedule (Number)	272	23	295	282	39	321	243	53	296	196	56	252	194	71	265	149	53	202
Changed test schedule (Percent)	.4	.1	.3	.4	.2	.3	.4	.2	.3	.3	.2	.3	.3	.2	.3	.3	.2	.2
Other (per Accommodations Guidelines) (Number)	68	44	112	81	30	111	50	22	72	49	8	57	12	38	50	6	50	56
Other (per Accommodations Guidelines) (Percent)	.1	.2	.1	.1	.1	.1	.1	.1	.1	.1	0	.1	0	.1	.1	0	.2	.1

Incidence of Timing Accommodations Received on the 2021 PSSA: Mathematics

Type of Timing Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Extended time (Number)	3,312	1,660	4,972	4,384	2,009	6,393	4,052	2,057	6,109	3,390	2,212	5,602	2,721	1,965	4,686	2,149	1,766	3,915
Extended time (Percent)	4.6	8.2	5.4	6.2	9.3	6.9	5.9	9.2	6.7	5.3	8.4	6.2	4.4	6.7	5.2	3.7	6.4	4.6
Frequent breaks (Number)	1,910	1,233	3,143	2,178	1,561	3,739	2,007	1,572	3,579	1,082	1,491	2,573	855	1,271	2,126	712	1,099	1,811
Frequent breaks (Percent)	2.7	6.1	3.4	3.1	7.2	4	2.9	7	3.9	1.7	5.7	2.8	1.4	4.3	2.3	1.2	4	2.1
Changed test schedule (Number)	267	21	288	231	34	265	255	41	296	246	43	289	169	50	219	144	63	207
Changed test schedule (Percent)	.4	.1	.3	.3	.2	.3	.4	.2	.3	.4	.2	.3	.3	.2	.2	.2	.2	.2
Other (per Accommodations Guidelines) (Number)	52	43	95	49	28	77	38	22	60	55	10	65	28	39	67	21	52	73
Other (per Accommodations Guidelines) (Percent)	.1	.2	.1	.1	.1	.1	.1	.1	.1	.1	0	.1	0	.1	.1	0	.2	.1

Incidence of Timing Accommodations Received on the 2021 PSSA: Science

Type of Timing Accommodation	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Extended time (Number)	2,195	1,748	3,943	886	1,541	2,427
Extended time (Percent)	3.2	8.2	4.3	1.6	5.5	2.9
Frequent breaks (Number)	2,132	1,522	3,654	609	1,066	1,675
Frequent breaks (Percent)	3.1	7.1	4	1.1	3.8	2
Changed test schedule (Number)	245	21	266	127	87	214
Changed test schedule (Percent)	.4	.1	.3	.2	.3	.3
Other (per Accommodations Guidelines) (Number)	36	21	57	5	49	54
Other (per Accommodations Guidelines) (Percent)	.1	.1	.1	0	.2	.1

APPENDIX K: ACCOMMODATION RATE FOR NON-IEP AND IEP STUDENTS

Accommodation Rate for Non-IEP and IEP Students on the 2021 PSSA: English Language Arts

Student Subgroup	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Non-IEP Students (Number)	59,277	16,001	75,278	58,189	17,036	75,225	56,282	18,022	74,304	53,242	20,958	74,200	51,102	23,516	74,618	48,124	22,739	70,863
Non-Accommodated (Number)	53,998	14,996	68,994	51,167	15,817	66,984	51,094	17,063	68,157	49,484	20,058	69,542	47,752	22,687	70,439	45,355	21,930	67,285
Non-Accommodated (Percent)	91.1	93.7	91.7	87.9	92.8	89	90.8	94.7	91.7	92.9	95.7	93.7	93.4	96.5	94.4	94.2	96.4	95
Accommodated (Number)	5,279	1,005	6,284	7,022	1,219	8,241	5,188	959	6,147	3,758	900	4,658	3,350	829	4,179	2,769	809	3,578
Accommodated (Percent)	8.9	6.3	8.3	12.1	7.2	11	9.2	5.3	8.3	7.1	4.3	6.3	6.6	3.5	5.6	5.8	3.6	5
IEP Students (Number)	12,179	3,523	15,702	12,700	3,937	16,637	12,395	4,329	16,724	11,118	4,914	16,032	10,518	5,379	15,897	9,750	5,073	14,823
Non-Accommodated (Number)	5,130	1,195	6,325	4,514	1,033	5,547	4,473	1,022	5,495	4,338	1,105	5,443	4,292	1,544	5,836	3,932	1,549	5,481
Non-Accommodated (Percent)	42.1	33.9	40.3	35.5	26.2	33.3	36.1	23.6	32.9	39	22.5	34	40.8	28.7	36.7	40.3	30.5	37
Accommodated (Number)	7,049	2,328	9,377	8,186	2,904	11,090	7,922	3,307	11,229	6,780	3,809	10,589	6,226	3,835	10,061	5,818	3,524	9,342
Accommodated (Percent)	57.9	66.1	59.7	64.5	73.8	66.7	63.9	76.4	67.1	61	77.5	66	59.2	71.3	63.3	59.7	69.5	63

Accommodation Rate for Non-IEP and IEP Students on the 2021 PSSA: Mathematics

Student Subgroup	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Non-IEP Students (Number)	59,335	16,549	75,884	58,055	17,634	75,689	56,123	18,026	74,149	53,232	21,260	74,492	50,970	23,877	74,847	47,931	22,589	70,520
Non-Accommodated (Number)	52,772	15,262	68,034	52,026	16,362	68,388	51,337	16,986	68,323	49,612	20,198	69,810	48,021	22,967	70,988	45,712	21,726	67,438
Non-Accommodated (Percent)	88.9	92.2	89.7	89.6	92.8	90.4	91.5	94.2	92.1	93.2	95	93.7	94.2	96.2	94.8	95.4	96.2	95.6
Accommodated (Number)	6,563	1,287	7,850	6,029	1,272	7,301	4,786	1,040	5,826	3,620	1,062	4,682	2,949	910	3,859	2,219	863	3,082
Accommodated (Percent)	11.1	7.8	10.3	10.4	7.2	9.6	8.5	5.8	7.9	6.8	5	6.3	5.8	3.8	5.2	4.6	3.8	4.4
IEP Students (Number)	12,192	3,617	15,809	12,629	4,069	16,698	12,393	4,324	16,717	11,085	4,986	16,071	10,580	5,385	15,965	9,703	5,030	14,733
Non-Accommodated (Number)	4,972	1,200	6,172	4,676	1,042	5,718	4,484	982	5,466	4,371	1,072	5,443	4,528	1,483	6,011	4,085	1,483	5,568
Non-Accommodated (Percent)	40.8	33.2	39	37	25.6	34.2	36.2	22.7	32.7	39.4	21.5	33.9	42.8	27.5	37.7	42.1	29.5	37.8
Accommodated (Number)	7,220	2,417	9,637	7,953	3,027	10,980	7,909	3,342	11,251	6,714	3,914	10,628	6,052	3,902	9,954	5,618	3,547	9,165
Accommodated (Percent)	59.2	66.8	61	63	74.4	65.8	63.8	77.3	67.3	60.6	78.5	66.1	57.2	72.5	62.3	57.9	70.5	62.2

Accommodation Rate for Non-IEP and IEP Students on the 2021 PSSA: Science

Student Subgroup	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Non-IEP Students (Number)	57,216	17,374	74,590	46,884	22,841	69,725
Non-Accommodated (Number)	52,951	16,385	69,336	45,854	22,206	68,060
Non-Accommodated (Percent)	92.5	94.3	93	97.8	97.2	97.6
Accommodated (Number)	4,265	989	5,254	1,030	635	1,665
Accommodated (Percent)	7.5	5.7	7	2.2	2.8	2.4
IEP Students (Number)	12,462	4,019	16,481	9,491	5,028	14,519
Non-Accommodated (Number)	4,687	1,078	5,765	4,370	1,568	5,938
Non-Accommodated (Percent)	37.6	26.8	35	46	31.2	40.9
Accommodated (Number)	7,775	2,941	10,716	5,121	3,460	8,581
Accommodated (Percent)	62.4	73.2	65	54	68.8	59.1

APPENDIX L: INCIDENCE OF ACCOMMODATIONS RECEIVED BY IEP AND EL STUDENTS

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: English Language Arts Grade 3

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	685	1,178	151	59
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.2	10.1	6	12.2
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	261	2,127	74	64
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.5	18.2	2.9	13.3
PPT - Small group setting (Number)	1,804	6,216	665	278
PPT - Small group setting (Percent)	3.2	53.1	26.4	57.6
PPT - Extended time (Number)	2,171	1,188	81	42
PPT - Extended time (Percent)	3.8	10.2	3.2	8.7
PPT - Frequent breaks (Number)	215	1,723	42	66
PPT - Frequent breaks (Percent)	.4	14.7	1.7	13.7
PPT - Number assessed (Number)	56,754	11,696	2,523	483
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	90	193	11	4
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.6	5.7	1.6	2.8
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	155	423	13	9
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	1	12.5	1.9	6.3
CBT - Small group setting (Number)	227	1,783	112	69
CBT - Small group setting (Percent)	1.5	52.8	16.2	48.3
CBT - Extended time (Number)	455	1,044	57	40
CBT - Extended time (Percent)	3	30.9	8.2	28
CBT - Frequent breaks (Number)	130	1,045	9	33
CBT - Frequent breaks (Percent)	.8	30.9	1.3	23.1
CBT - Number assessed (Number)	15,308	3,380	693	143
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	775	1,371	162	63
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.1	9.1	5	10.1
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	416	2,550	87	73

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.6	16.9	2.7	11.7
Total - Small group setting (Number)	2,031	7,999	777	347
Total - Small group setting (Percent)	2.8	53.1	24.2	55.4
Total - Extended time (Number)	2,626	2,232	138	82
Total - Extended time (Percent)	3.6	14.8	4.3	13.1
Total - Frequent breaks (Number)	345	2,768	51	99
Total - Frequent breaks (Percent)	.5	18.4	1.6	15.8
Total - Number assessed (Number)	72,062	15,076	3,216	626

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: English Language Arts Grade 4

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	844	1,783	163	74
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.5	14.6	7.1	15.7
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	205	2,117	65	66
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.4	17.3	2.8	14
PPT - Small group setting (Number)	1,570	7,110	566	305
PPT - Small group setting (Percent)	2.8	58.1	24.7	64.8
PPT - Extended time (Number)	4,137	1,578	145	58
PPT - Extended time (Percent)	7.4	12.9	6.3	12.3
PPT - Frequent breaks (Number)	218	1,984	33	68
PPT - Frequent breaks (Percent)	.4	16.2	1.4	14.4
PPT - Number assessed (Number)	55,896	12,229	2,293	471
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	224	436	13	10
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.4	11.6	2	6
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	185	849	29	33
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.1	22.5	4.4	19.9
CBT - Small group setting (Number)	211	2,288	104	97
CBT - Small group setting (Percent)	1.3	60.7	15.8	58.4
CBT - Extended time (Number)	660	1,356	52	56
CBT - Extended time (Percent)	4	36	7.9	33.7
CBT - Frequent breaks (Number)	171	1,337	14	46
CBT - Frequent breaks (Percent)	1	35.5	2.1	27.7
CBT - Number assessed (Number)	16,379	3,771	657	166
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	1,068	2,219	176	84
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.5	13.9	6	13.2
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	390	2,966	94	99
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.5	18.5	3.2	15.5
Total - Small group setting (Number)	1,781	9,398	670	402

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - Small group setting (Percent)	2.5	58.7	22.7	63.1
Total - Extended time (Number)	4,797	2,934	197	114
Total - Extended time (Percent)	6.6	18.3	6.7	17.9
Total - Frequent breaks (Number)	389	3,321	47	114
Total - Frequent breaks (Percent)	.5	20.8	1.6	17.9
Total - Number assessed (Number)	72,275	16,000	2,950	637

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: English Language Arts Grade 5

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	374	1,703	92	80
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.7	14.3	5.1	17.1
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	97	1,664	28	48
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.2	14	1.5	10.2
PPT - Small group setting (Number)	1,107	6,949	369	270
PPT - Small group setting (Percent)	2	58.3	20.4	57.6
PPT - Extended time (Number)	3,267	1,532	95	51
PPT - Extended time (Percent)	6	12.8	5.2	10.9
PPT - Frequent breaks (Number)	167	1,855	25	65
PPT - Frequent breaks (Percent)	.3	15.6	1.4	13.9
PPT - Number assessed (Number)	54,472	11,926	1,810	469
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	60	494	15	17
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.3	11.9	2.9	10.2
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	97	791	23	37
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.6	19	4.4	22.3
CBT - Small group setting (Number)	215	2,619	95	114
CBT - Small group setting (Percent)	1.2	62.9	18.1	68.7
CBT - Extended time (Number)	458	1,516	42	64
CBT - Extended time (Percent)	2.6	36.4	8	38.6
CBT - Frequent breaks (Number)	119	1,399	17	46
CBT - Frequent breaks (Percent)	.7	33.6	3.2	27.7
CBT - Number assessed (Number)	17,498	4,163	524	166
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	434	2,197	107	97
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.6	13.7	4.6	15.3
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	194	2,455	51	85
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.3	15.3	2.2	13.4
Total - Small group setting (Number)	1,322	9,568	464	384

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - Small group setting (Percent)	1.8	59.5	19.9	60.5
Total - Extended time (Number)	3,725	3,048	137	115
Total - Extended time (Percent)	5.2	18.9	5.9	18.1
Total - Frequent breaks (Number)	286	3,254	42	111
Total - Frequent breaks (Percent)	.4	20.2	1.8	17.5
Total - Number assessed (Number)	71,970	16,089	2,334	635

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: English Language Arts Grade 6

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	115	1,150	45	33
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.2	10.8	3.1	7.4
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	38	1,047	17	33
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	9.8	1.2	7.4
PPT - Small group setting (Number)	756	5,995	250	222
PPT - Small group setting (Percent)	1.5	56.2	17.3	49.7
PPT - Extended time (Number)	2,599	1,080	65	38
PPT - Extended time (Percent)	5	10.1	4.5	8.5
PPT - Frequent breaks (Number)	78	1,093	12	40
PPT - Frequent breaks (Percent)	.2	10.2	.8	8.9
PPT - Number assessed (Number)	51,796	10,671	1,446	447
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	41	637	16	20
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.2	13.5	3.2	9.8
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	38	774	8	31
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.2	16.4	1.6	15.1
CBT - Small group setting (Number)	211	2,865	63	111
CBT - Small group setting (Percent)	1	60.8	12.8	54.1
CBT - Extended time (Number)	391	1,515	33	53
CBT - Extended time (Percent)	1.9	32.2	6.7	25.9
CBT - Frequent breaks (Number)	97	1,349	9	40
CBT - Frequent breaks (Percent)	.5	28.6	1.8	19.5
CBT - Number assessed (Number)	20,464	4,709	494	205
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	156	1,787	61	53
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.2	11.6	3.1	8.1
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	76	1,821	25	64
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	11.8	1.3	9.8
Total - Small group setting (Number)	967	8,860	313	333

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - Small group setting (Percent)	1.3	57.6	16.1	51.1
Total - Extended time (Number)	2,990	2,595	98	91
Total - Extended time (Percent)	4.1	16.9	5.1	14
Total - Frequent breaks (Number)	175	2,442	21	80
Total - Frequent breaks (Percent)	.2	15.9	1.1	12.3
Total - Number assessed (Number)	72,260	15,380	1,940	652

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: English Language Arts Grade 7

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	38	656	32	20
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	6.5	2.2	5.3
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	10	618	20	34
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	0	6.1	1.4	9
PPT - Small group setting (Number)	668	5,649	224	190
PPT - Small group setting (Percent)	1.3	55.7	15.5	50.4
PPT - Extended time (Number)	2,255	929	99	29
PPT - Extended time (Percent)	4.5	9.2	6.9	7.7
PPT - Frequent breaks (Number)	59	782	11	21
PPT - Frequent breaks (Percent)	.1	7.7	.8	5.6
PPT - Number assessed (Number)	49,661	10,141	1,441	377
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	23	547	4	16
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	10.5	.8	9.8
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	13	539	6	24
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	10.3	1.2	14.7
CBT - Small group setting (Number)	201	3,148	54	96
CBT - Small group setting (Percent)	.9	60.4	11.2	58.9
CBT - Extended time (Number)	327	1,420	27	52
CBT - Extended time (Percent)	1.4	27.2	5.6	31.9
CBT - Frequent breaks (Number)	77	1,143	8	27
CBT - Frequent breaks (Percent)	.3	21.9	1.7	16.6
CBT - Number assessed (Number)	23,032	5,216	484	163
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	61	1,203	36	36
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	7.8	1.9	6.7
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	23	1,157	26	58
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	0	7.5	1.4	10.7
Total - Small group setting (Number)	869	8,797	278	286

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - Small group setting (Percent)	1.2	57.3	14.4	53
Total - Extended time (Number)	2,582	2,349	126	81
Total - Extended time (Percent)	3.6	15.3	6.5	15
Total - Frequent breaks (Number)	136	1,925	19	48
Total - Frequent breaks (Percent)	.2	12.5	1	8.9
Total - Number assessed (Number)	72,693	15,357	1,925	540

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: English Language Arts Grade 8

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	32	525	30	20
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	5.5	2.5	7.2
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	22	594	3	19
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	0	6.3	.2	6.9
PPT - Small group setting (Number)	613	5,348	155	121
PPT - Small group setting (Percent)	1.3	56.4	12.8	43.8
PPT - Extended time (Number)	1,893	878	48	18
PPT - Extended time (Percent)	4	9.3	4	6.5
PPT - Frequent breaks (Number)	50	672	4	12
PPT - Frequent breaks (Percent)	.1	7.1	.3	4.3
PPT - Number assessed (Number)	46,917	9,474	1,207	276
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	33	513	16	14
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	10.4	3.3	10.9
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	27	480	5	14
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	9.7	1	10.9
CBT - Small group setting (Number)	192	2,965	48	83
CBT - Small group setting (Percent)	.9	60	9.9	64.3
CBT - Extended time (Number)	327	1,352	29	31
CBT - Extended time (Percent)	1.5	27.3	6	24
CBT - Frequent breaks (Number)	73	1,008	7	28
CBT - Frequent breaks (Percent)	.3	20.4	1.4	21.7
CBT - Number assessed (Number)	22,253	4,944	486	129
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	65	1,038	46	34
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	7.2	2.7	8.4
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	49	1,074	8	33
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	7.4	.5	8.1
Total - Small group setting (Number)	805	8,313	203	204

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - Small group setting (Percent)	1.2	57.7	12	50.4
Total - Extended time (Number)	2,220	2,230	77	49
Total - Extended time (Percent)	3.2	15.5	4.5	12.1
Total - Frequent breaks (Number)	123	1,680	11	40
Total - Frequent breaks (Percent)	.2	11.7	.6	9.9
Total - Number assessed (Number)	69,170	14,418	1,693	405

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: Mathematics Grade 3

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	2,216	1,762	352	100
PPT - Some test items/questions read aloud (Percent)	3.9	15.1	13.7	20.6
PPT - All test items/questions read aloud (Number)	407	2,943	139	98
PPT - All test items/questions read aloud (Percent)	.7	25.1	5.4	20.2
PPT - Small group setting (Number)	1,823	6,229	676	293
PPT - Small group setting (Percent)	3.2	53.2	26.3	60.4
PPT - Extended time (Number)	2,134	1,050	85	43
PPT - Extended time (Percent)	3.8	9	3.3	8.9
PPT - Frequent breaks (Number)	214	1,606	28	62
PPT - Frequent breaks (Percent)	.4	13.7	1.1	12.8
PPT - Number assessed (Number)	56,767	11,707	2,568	485
CBT - Some test items/questions read aloud (Number)	253	352	58	21
CBT - Some test items/questions read aloud (Percent)	1.6	10.2	7.3	12.7
CBT - All test items/questions read aloud (Number)	142	828	37	33
CBT - All test items/questions read aloud (Percent)	.9	24	4.7	20
CBT - Small group setting (Number)	222	1,762	115	71
CBT - Small group setting (Percent)	1.4	51	14.5	43
CBT - Extended time (Number)	491	1,065	62	42
CBT - Extended time (Percent)	3.1	30.9	7.8	25.5
CBT - Frequent breaks (Number)	128	1,059	10	36
CBT - Frequent breaks (Percent)	.8	30.7	1.3	21.8
CBT - Number assessed (Number)	15,755	3,452	794	165
Total - Some test items/questions read aloud (Number)	2,469	2,114	410	121
Total - Some test items/questions read aloud (Percent)	3.4	13.9	12.2	18.6
Total - All test items/questions read aloud (Number)	549	3,771	176	131
Total - All test items/questions read aloud (Percent)	.8	24.9	5.2	20.2
Total - Small group setting (Number)	2,045	7,991	791	364
Total - Small group setting (Percent)	2.8	52.7	23.5	56
Total - Extended time (Number)	2,625	2,115	147	85
Total - Extended time (Percent)	3.6	14	4.4	13.1
Total - Frequent breaks (Number)	342	2,665	38	98
Total - Frequent breaks (Percent)	.5	17.6	1.1	15.1
Total - Number assessed (Number)	72,522	15,159	3,362	650

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: Mathematics Grade 4

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	1,396	2,132	232	103
PPT - Some test items/questions read aloud (Percent)	2.5	17.6	9.9	21.4
PPT - All test items/questions read aloud (Number)	264	2,842	95	101
PPT - All test items/questions read aloud (Percent)	.5	23.4	4.1	21
PPT - Small group setting (Number)	1,478	6,892	536	295
PPT - Small group setting (Percent)	2.7	56.7	22.9	61.3
PPT - Extended time (Number)	2,782	1,432	131	39
PPT - Extended time (Percent)	5	11.8	5.6	8.1
PPT - Frequent breaks (Number)	203	1,889	29	57
PPT - Frequent breaks (Percent)	.4	15.5	1.2	11.9
PPT - Number assessed (Number)	55,717	12,148	2,338	481
CBT - Some test items/questions read aloud (Number)	279	530	40	24
CBT - Some test items/questions read aloud (Percent)	1.7	13.6	5.3	13.3
CBT - All test items/questions read aloud (Number)	142	1,137	43	47
CBT - All test items/questions read aloud (Percent)	.8	29.2	5.7	26.1
CBT - Small group setting (Number)	223	2,304	113	97
CBT - Small group setting (Percent)	1.3	59.2	14.9	53.9
CBT - Extended time (Number)	557	1,346	50	56
CBT - Extended time (Percent)	3.3	34.6	6.6	31.1
CBT - Frequent breaks (Number)	165	1,336	14	46
CBT - Frequent breaks (Percent)	1	34.4	1.8	25.6
CBT - Number assessed (Number)	16,877	3,889	757	180
Total - Some test items/questions read aloud (Number)	1,675	2,662	272	127
Total - Some test items/questions read aloud (Percent)	2.3	16.6	8.8	19.2
Total - All test items/questions read aloud (Number)	406	3,979	138	148
Total - All test items/questions read aloud (Percent)	.6	24.8	4.5	22.4
Total - Small group setting (Number)	1,701	9,196	649	392
Total - Small group setting (Percent)	2.3	57.3	21	59.3
Total - Extended time (Number)	3,339	2,778	181	95
Total - Extended time (Percent)	4.6	17.3	5.8	14.4
Total - Frequent breaks (Number)	368	3,225	43	103
Total - Frequent breaks (Percent)	.5	20.1	1.4	15.6
Total - Number assessed (Number)	72,594	16,037	3,095	661

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: Mathematics Grade 5

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	640	2,107	131	105
PPT - Some test items/questions read aloud (Percent)	1.2	17.7	7.1	21.8
PPT - All test items/questions read aloud (Number)	145	2,213	45	64
PPT - All test items/questions read aloud (Percent)	.3	18.6	2.4	13.3
PPT - Small group setting (Number)	1,133	6,996	401	269
PPT - Small group setting (Percent)	2.1	58.7	21.6	55.9
PPT - Extended time (Number)	2,600	1,316	104	32
PPT - Extended time (Percent)	4.8	11	5.6	6.7
PPT - Frequent breaks (Number)	159	1,775	17	56
PPT - Frequent breaks (Percent)	.3	14.9	.9	11.6
PPT - Number assessed (Number)	54,267	11,912	1,856	481
CBT - Some test items/questions read aloud (Number)	139	652	27	35
CBT - Some test items/questions read aloud (Percent)	.8	15.7	5.5	21.3
CBT - All test items/questions read aloud (Number)	93	1,059	36	52
CBT - All test items/questions read aloud (Percent)	.5	25.5	7.3	31.7
CBT - Small group setting (Number)	225	2,604	93	113
CBT - Small group setting (Percent)	1.3	62.6	18.9	68.9
CBT - Extended time (Number)	468	1,485	40	64
CBT - Extended time (Percent)	2.7	35.7	8.1	39
CBT - Frequent breaks (Number)	119	1,393	15	45
CBT - Frequent breaks (Percent)	.7	33.5	3	27.4
CBT - Number assessed (Number)	17,533	4,160	493	164
Total - Some test items/questions read aloud (Number)	779	2,759	158	140
Total - Some test items/questions read aloud (Percent)	1.1	17.2	6.7	21.7
Total - All test items/questions read aloud (Number)	238	3,272	81	116
Total - All test items/questions read aloud (Percent)	.3	20.4	3.4	18
Total - Small group setting (Number)	1,358	9,600	494	382
Total - Small group setting (Percent)	1.9	59.7	21	59.2
Total - Extended time (Number)	3,068	2,801	144	96
Total - Extended time (Percent)	4.3	17.4	6.1	14.9
Total - Frequent breaks (Number)	278	3,168	32	101
Total - Frequent breaks (Percent)	.4	19.7	1.4	15.7
Total - Number assessed (Number)	71,800	16,072	2,349	645

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: Mathematics Grade 6

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	166	1,362	47	44
PPT - Some test items/questions read aloud (Percent)	.3	12.8	3	9.9
PPT - All test items/questions read aloud (Number)	59	1,266	20	35
PPT - All test items/questions read aloud (Percent)	.1	11.9	1.3	7.9
PPT - Small group setting (Number)	761	5,986	264	211
PPT - Small group setting (Percent)	1.5	56.2	17	47.6
PPT - Extended time (Number)	2,323	950	86	31
PPT - Extended time (Percent)	4.5	8.9	5.5	7
PPT - Frequent breaks (Number)	80	957	10	35
PPT - Frequent breaks (Percent)	.2	9	.6	7.9
PPT - Number assessed (Number)	51,682	10,642	1,550	443
CBT - Some test items/questions read aloud (Number)	52	722	16	25
CBT - Some test items/questions read aloud (Percent)	.3	15.2	3.1	11.2
CBT - All test items/questions read aloud (Number)	32	1,048	17	36
CBT - All test items/questions read aloud (Percent)	.2	22	3.3	16.1
CBT - Small group setting (Number)	219	2,939	58	116
CBT - Small group setting (Percent)	1.1	61.7	11.2	52
CBT - Extended time (Number)	559	1,576	22	55
CBT - Extended time (Percent)	2.7	33.1	4.3	24.7
CBT - Frequent breaks (Number)	98	1,346	6	41
CBT - Frequent breaks (Percent)	.5	28.3	1.2	18.4
CBT - Number assessed (Number)	20,743	4,763	517	223
Total - Some test items/questions read aloud (Number)	218	2,084	63	69
Total - Some test items/questions read aloud (Percent)	.3	13.5	3	10.4
Total - All test items/questions read aloud (Number)	91	2,314	37	71
Total - All test items/questions read aloud (Percent)	.1	15	1.8	10.7
Total - Small group setting (Number)	980	8,925	322	327
Total - Small group setting (Percent)	1.4	57.9	15.6	49.1
Total - Extended time (Number)	2,882	2,526	108	86
Total - Extended time (Percent)	4	16.4	5.2	12.9
Total - Frequent breaks (Number)	178	2,303	16	76
Total - Frequent breaks (Percent)	.2	14.9	.8	11.4
Total - Number assessed (Number)	72,425	15,405	2,067	666

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: Mathematics Grade 7

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	53	753	38	28
PPT - Some test items/questions read aloud (Percent)	.1	7.4	2.5	7.4
PPT - All test items/questions read aloud (Number)	18	751	15	28
PPT - All test items/questions read aloud (Percent)	0	7.4	1	7.4
PPT - Small group setting (Number)	664	5,493	233	179
PPT - Small group setting (Percent)	1.3	53.8	15.5	47.4
PPT - Extended time (Number)	1,830	773	98	20
PPT - Extended time (Percent)	3.7	7.6	6.5	5.3
PPT - Frequent breaks (Number)	73	758	6	18
PPT - Frequent breaks (Percent)	.1	7.4	.4	4.8
PPT - Number assessed (Number)	49,466	10,202	1,504	378
CBT - Some test items/questions read aloud (Number)	26	647	4	22
CBT - Some test items/questions read aloud (Percent)	.1	12.4	.7	12.7
CBT - All test items/questions read aloud (Number)	6	894	22	41
CBT - All test items/questions read aloud (Percent)	0	17.2	4.1	23.7
CBT - Small group setting (Number)	198	3,135	53	104
CBT - Small group setting (Percent)	.8	60.1	9.8	60.1
CBT - Extended time (Number)	422	1,451	35	57
CBT - Extended time (Percent)	1.8	27.8	6.5	32.9
CBT - Frequent breaks (Number)	75	1,157	8	31
CBT - Frequent breaks (Percent)	.3	22.2	1.5	17.9
CBT - Number assessed (Number)	23,336	5,212	541	173
Total - Some test items/questions read aloud (Number)	79	1,400	42	50
Total - Some test items/questions read aloud (Percent)	.1	9.1	2.1	9.1
Total - All test items/questions read aloud (Number)	24	1,645	37	69
Total - All test items/questions read aloud (Percent)	0	10.7	1.8	12.5
Total - Small group setting (Number)	862	8,628	286	283
Total - Small group setting (Percent)	1.2	56	14	51.4
Total - Extended time (Number)	2,252	2,224	133	77
Total - Extended time (Percent)	3.1	14.4	6.5	14
Total - Frequent breaks (Number)	148	1,915	14	49
Total - Frequent breaks (Percent)	.2	12.4	.7	8.9
Total - Number assessed (Number)	72,802	15,414	2,045	551

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: Mathematics Grade 8

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	30	607	33	23
PPT - Some test items/questions read aloud (Percent)	.1	6.4	2.6	8.1
PPT - All test items/questions read aloud (Number)	19	599	2	26
PPT - All test items/questions read aloud (Percent)	0	6.4	.2	9.2
PPT - Small group setting (Number)	595	5,143	180	125
PPT - Small group setting (Percent)	1.3	54.6	14.4	44.2
PPT - Extended time (Number)	1,310	770	54	15
PPT - Extended time (Percent)	2.8	8.2	4.3	5.3
PPT - Frequent breaks (Number)	64	636	1	11
PPT - Frequent breaks (Percent)	.1	6.8	.1	3.9
PPT - Number assessed (Number)	46,677	9,420	1,254	283
CBT - Some test items/questions read aloud (Number)	41	585	16	16
CBT - Some test items/questions read aloud (Percent)	.2	11.9	3.6	12.5
CBT - All test items/questions read aloud (Number)	9	734	8	27
CBT - All test items/questions read aloud (Percent)	0	15	1.8	21.1
CBT - Small group setting (Number)	189	2,951	46	80
CBT - Small group setting (Percent)	.9	60.2	10.3	62.5
CBT - Extended time (Number)	374	1,327	33	32
CBT - Extended time (Percent)	1.7	27.1	7.4	25
CBT - Frequent breaks (Number)	75	991	5	28
CBT - Frequent breaks (Percent)	.3	20.2	1.1	21.9
CBT - Number assessed (Number)	22,142	4,902	447	128
Total - Some test items/questions read aloud (Number)	71	1,192	49	39
Total - Some test items/questions read aloud (Percent)	.1	8.3	2.9	9.5
Total - All test items/questions read aloud (Number)	28	1,333	10	53
Total - All test items/questions read aloud (Percent)	0	9.3	.6	12.9
Total - Small group setting (Number)	784	8,094	226	205
Total - Small group setting (Percent)	1.1	56.5	13.3	49.9
Total - Extended time (Number)	1,684	2,097	87	47
Total - Extended time (Percent)	2.4	14.6	5.1	11.4
Total - Frequent breaks (Number)	139	1,627	6	39
Total - Frequent breaks (Percent)	.2	11.4	.4	9.5
Total - Number assessed (Number)	68,819	14,322	1,701	411

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: Science Grade 4

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	1,408	1,964	210	79
PPT - Some test items/questions read aloud (Percent)	2.6	16.4	9.2	16.8
PPT - All test items/questions read aloud (Number)	280	2,902	122	106
PPT - All test items/questions read aloud (Percent)	.5	24.2	5.3	22.6
PPT - Small group setting (Number)	1,390	6,859	549	291
PPT - Small group setting (Percent)	2.5	57.2	24	61.9
PPT - Extended time (Number)	1,027	1,069	67	32
PPT - Extended time (Percent)	1.9	8.9	2.9	6.8
PPT - Frequent breaks (Number)	200	1,837	34	61
PPT - Frequent breaks (Percent)	.4	15.3	1.5	13
PPT - Number assessed (Number)	54,926	11,992	2,290	470
CBT - Some test items/questions read aloud (Number)	253	503	40	21
CBT - Some test items/questions read aloud (Percent)	1.5	13.1	6.3	12.7
CBT - All test items/questions read aloud (Number)	132	1,103	44	43
CBT - All test items/questions read aloud (Percent)	.8	28.6	6.9	26.1
CBT - Small group setting (Number)	205	2,276	100	97
CBT - Small group setting (Percent)	1.2	59.1	15.8	58.8
CBT - Extended time (Number)	354	1,291	47	56
CBT - Extended time (Percent)	2.1	33.5	7.4	33.9
CBT - Frequent breaks (Number)	155	1,307	14	46
CBT - Frequent breaks (Percent)	.9	33.9	2.2	27.9
CBT - Number assessed (Number)	16,740	3,854	634	165
Total - Some test items/questions read aloud (Number)	1,661	2,467	250	100
Total - Some test items/questions read aloud (Percent)	2.3	15.6	8.5	15.7
Total - All test items/questions read aloud (Number)	412	4,005	166	149
Total - All test items/questions read aloud (Percent)	.6	25.3	5.7	23.5
Total - Small group setting (Number)	1,595	9,135	649	388
Total - Small group setting (Percent)	2.2	57.6	22.2	61.1
Total - Extended time (Number)	1,381	2,360	114	88
Total - Extended time (Percent)	1.9	14.9	3.9	13.9
Total - Frequent breaks (Number)	355	3,144	48	107
Total - Frequent breaks (Percent)	.5	19.8	1.6	16.9
Total - Number assessed (Number)	71,666	15,846	2,924	635

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2021 PSSA: Science Grade 8

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	20	457	18	15
PPT - Some test items/questions read aloud (Percent)	0	5	1.5	5.3
PPT - All test items/questions read aloud (Number)	14	649	5	23
PPT - All test items/questions read aloud (Percent)	0	7	.4	8.1
PPT - Small group setting (Number)	520	4,753	135	104
PPT - Small group setting (Percent)	1.1	51.6	11	36.7
PPT - Extended time (Number)	281	565	29	11
PPT - Extended time (Percent)	.6	6.1	2.4	3.9
PPT - Frequent breaks (Number)	43	558	1	7
PPT - Frequent breaks (Percent)	.1	6.1	.1	2.5
PPT - Number assessed (Number)	45,662	9,208	1,222	283
CBT - Some test items/questions read aloud (Number)	37	571	15	13
CBT - Some test items/questions read aloud (Percent)	.2	11.7	3.3	10.2
CBT - All test items/questions read aloud (Number)	10	708	7	27
CBT - All test items/questions read aloud (Percent)	0	14.4	1.6	21.1
CBT - Small group setting (Number)	181	2,876	45	81
CBT - Small group setting (Percent)	.8	58.7	10	63.3
CBT - Extended time (Number)	165	1,318	25	33
CBT - Extended time (Percent)	.7	26.9	5.6	25.8
CBT - Frequent breaks (Number)	72	962	5	27
CBT - Frequent breaks (Percent)	.3	19.6	1.1	21.1
CBT - Number assessed (Number)	22,392	4,900	449	128
Total - Some test items/questions read aloud (Number)	57	1,028	33	28
Total - Some test items/questions read aloud (Percent)	.1	7.3	2	6.8
Total - All test items/questions read aloud (Number)	24	1,357	12	50
Total - All test items/questions read aloud (Percent)	0	9.6	.7	12.2
Total - Small group setting (Number)	701	7,629	180	185
Total - Small group setting (Percent)	1	54.1	10.8	45
Total - Extended time (Number)	446	1,883	54	44
Total - Extended time (Percent)	.7	13.3	3.2	10.7
Total - Frequent breaks (Number)	115	1,520	6	34
Total - Frequent breaks (Percent)	.2	10.8	.4	8.3
Total - Number assessed (Number)	68,054	14,108	1,671	411

APPENDIX M: CUT SCORES AND SCALE TRANSFORMATIONS

Subject	Grade	Scaling Intercept	Scaling Slope	Lowest Observed Scaled Score	Scaled Score Cut: Bel. Basic/Basic	Scaled Score Cut: Basic/ Prof.	Scaled Score Cut: Prof./ Adv.
Mathematics	3	956.31	100	600	923	1000	1110
Mathematics	4	981.92	100	600	908	1000	1107
Mathematics	5	961.69	100	600	901	1000	1113
Mathematics	6	931.41	100	600	897	1000	1105
Mathematics	7	956.16	100	600	904	1000	1109
Mathematics	8	951.76	100	600	906	1000	1108
ELA	3	962.47	100	600	905	1000	1143
ELA	4	957.49	100	600	887	1000	1107
ELA	5	958.32	100	600	893	1000	1139
ELA	6	940.78	100	600	875	1000	1115
ELA	7	947.65	100	600	845	1000	1130
ELA	8	961.11	100	600	886	1000	1130
Science	4	1225.65	176.75	1050	1150	1275	1483
Science	8	1196.64	191.54	925	1150	1275	1464

APPENDIX N: RAW-TO-SCALED SCORE CONVERSION TABLES

The raw-to-scaled score conversion tables are presented for each subject and grade level. For each raw score point, the IRT difficulty estimates, standard errors (SE), frequencies, percent, cumulative frequencies, cumulative percent and percentiles were estimated using WINSTEPS (Linacre, 2019). Percentiles were calculated as the cumulative percent for the score below added to half the frequency percent for the current score (half-rounded) and then constrained to the range 1–99 for non-zero frequencies (Linacre, 2009).

Grade 3 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.1377	1.8385	600	184	3	0.0	3	0.0	1
1	-3.9013	1.0227	600	102	9	0.0	12	0.0	1
2	-3.1625	0.7384	640	74	16	0.0	28	0.0	1
3	-2.7121	0.6148	685	61	62	0.1	90	0.1	1
4	-2.3800	0.5423	718	54	153	0.2	243	0.3	1
5	-2.1130	0.4937	745	49	344	0.4	587	0.6	1
6	-1.8871	0.4583	768	46	617	0.7	1204	1.3	1
7	-1.6897	0.4313	787	43	1019	1.1	2223	2.4	2
8	-1.5131	0.4099	805	41	1533	1.7	3756	4.1	3
9	-1.3523	0.3925	821	39	2056	2.2	5812	6.3	5
10	-1.2041	0.3780	836	38	2474	2.7	8286	9.0	8
11	-1.0658	0.3658	850	37	2686	2.9	10972	12.0	11
12	-0.9359	0.3555	863	36	2933	3.2	13905	15.2	14
13	-0.8127	0.3465	875	35	3023	3.3	16928	18.5	17
14	-0.6954	0.3388	887	34	2948	3.2	19876	21.7	20
15	-0.5828	0.3321	898	33	2961	3.2	22837	24.9	23
16	-0.4745	0.3263	909	33	2795	3.0	25632	28.0	26
17	-0.3697	0.3212	919	32	2761	3.0	28393	31.0	29
18	-0.2680	0.3168	930	32	2656	2.9	31049	33.9	32
19	-0.1688	0.3130	939	31	2560	2.8	33609	36.7	35
20	-0.0719	0.3097	949	31	2572	2.8	36181	39.5	38
21	0.0232	0.3070	959	31	2477	2.7	38658	42.2	41
22	0.1167	0.3047	968	30	2456	2.7	41114	44.8	43
23	0.2089	0.3028	977	30	2421	2.6	43535	47.5	46
24	0.3002	0.3014	986	30	2413	2.6	45948	50.1	49
25	0.3907	0.3004	995	30	2385	2.6	48333	52.7	51
26	0.4808	0.2999	1004	30	2354	2.6	50687	55.3	54
27	0.5707	0.2997	1013	30	2366	2.6	53053	57.9	57
28	0.6605	0.3000	1022	30	2354	2.6	55407	60.4	59
29	0.7507	0.3007	1031	30	2322	2.5	57729	63.0	62

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
30	0.8415	0.3018	1040	30	2366	2.6	60095	65.5	64
31	0.9330	0.3034	1050	30	2316	2.5	62411	68.1	67
32	1.0257	0.3056	1059	31	2229	2.4	64640	70.5	69
33	1.1199	0.3082	1068	31	2282	2.5	66922	73.0	72
34	1.2159	0.3115	1078	31	2174	2.4	69096	75.4	74
35	1.3141	0.3154	1088	32	2214	2.4	71310	77.8	77
36	1.4150	0.3200	1098	32	2065	2.3	73375	80.0	79
37	1.5191	0.3255	1108	33	1973	2.2	75348	82.2	81
38	1.6271	0.3320	1119	33	1999	2.2	77347	84.4	83
39	1.7399	0.3397	1130	34	1918	2.1	79265	86.4	85
40	1.8582	0.3487	1142	35	1803	2.0	81068	88.4	87
41	1.9835	0.3594	1155	36	1763	1.9	82831	90.3	89
42	2.1172	0.3722	1168	37	1550	1.7	84381	92.0	91
43	2.2614	0.3877	1182	39	1412	1.5	85793	93.6	93
44	2.4189	0.4066	1198	41	1323	1.4	87116	95.0	94
45	2.5936	0.4302	1216	43	1158	1.3	88274	96.3	96
46	2.7913	0.4602	1235	46	952	1.0	89226	97.3	97
47	3.0208	0.4996	1258	50	952	1.0	90178	98.3	98
48	3.2967	0.5537	1286	55	676	0.7	90854	99.1	99
49	3.6462	0.6333	1321	63	464	0.5	91318	99.6	99
50	4.1277	0.7653	1369	77	249	0.3	91567	99.9	99
51	4.9195	1.0552	1448	106	106	0.1	91673	100.0	99
52	6.2116	1.8634	1577	186	20	0.0	91693	100.0	99

Grade 4 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.5331	1.8407	600	184	2	0.0	2	0.0	1
1	-4.2913	1.0262	600	103	3	0.0	5	0.0	1
2	-3.5463	0.7421	627	74	6	0.0	11	0.0	1
3	-3.0912	0.6181	673	62	41	0.0	52	0.1	1
4	-2.7557	0.5449	706	54	89	0.1	141	0.2	1
5	-2.4864	0.4955	733	50	226	0.2	367	0.4	1
6	-2.2591	0.4593	756	46	453	0.5	820	0.9	1
7	-2.0612	0.4315	776	43	848	0.9	1668	1.8	1
8	-1.8847	0.4093	793	41	1329	1.4	2997	3.2	3
9	-1.7247	0.3912	809	39	1983	2.1	4980	5.4	4
10	-1.5776	0.3762	824	38	2520	2.7	7500	8.1	7
11	-1.4410	0.3634	838	36	2968	3.2	10468	11.3	10
12	-1.3129	0.3526	851	35	3352	3.6	13820	15.0	13
13	-1.1919	0.3433	863	34	3566	3.9	17386	18.8	17
14	-1.0769	0.3352	874	34	3600	3.9	20986	22.7	21
15	-0.9669	0.3283	885	33	3461	3.7	24447	26.5	25
16	-0.8611	0.3222	896	32	3440	3.7	27887	30.2	28
17	-0.7590	0.3170	906	32	3421	3.7	31308	33.9	32
18	-0.6600	0.3124	916	31	3271	3.5	34579	37.4	36
19	-0.5636	0.3085	926	31	3097	3.4	37676	40.8	39
20	-0.4695	0.3052	935	31	3116	3.4	40792	44.2	42
21	-0.3772	0.3025	944	30	2944	3.2	43736	47.3	46
22	-0.2864	0.3002	953	30	2801	3.0	46537	50.4	49
23	-0.1969	0.2984	962	30	2727	3.0	49264	53.3	52
24	-0.1083	0.2970	971	30	2719	2.9	51983	56.3	55
25	-0.0203	0.2962	980	30	2639	2.9	54622	59.1	58
26	0.0672	0.2957	989	30	2494	2.7	57116	61.8	60
27	0.1546	0.2957	997	30	2421	2.6	59537	64.4	63
28	0.2422	0.2961	1006	30	2315	2.5	61852	66.9	66
29	0.3301	0.2971	1015	30	2300	2.5	64152	69.4	68
30	0.4188	0.2984	1024	30	2164	2.3	66316	71.8	71
31	0.5084	0.3003	1033	30	2227	2.4	68543	74.2	73
32	0.5993	0.3028	1042	30	2022	2.2	70565	76.4	75
33	0.6919	0.3058	1051	31	1959	2.1	72524	78.5	77
34	0.7865	0.3095	1061	31	1851	2.0	74375	80.5	80
35	0.8835	0.3138	1070	31	1782	1.9	76157	82.4	81
36	0.9836	0.3190	1080	32	1803	2.0	77960	84.4	83

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.0872	0.3250	1091	33	1631	1.8	79591	86.1	85
38	1.1951	0.3320	1101	33	1610	1.7	81201	87.9	87
39	1.3080	0.3402	1113	34	1493	1.6	82694	89.5	89
40	1.4270	0.3498	1125	35	1441	1.6	84135	91.1	90
41	1.5532	0.3611	1137	36	1320	1.4	85455	92.5	92
42	1.6884	0.3744	1151	37	1227	1.3	86682	93.8	93
43	1.8344	0.3902	1165	39	1161	1.3	87843	95.1	94
44	1.9940	0.4093	1181	41	1061	1.1	88904	96.2	96
45	2.1710	0.4327	1199	43	902	1.0	89806	97.2	97
46	2.3707	0.4621	1219	46	787	0.9	90593	98.1	98
47	2.6014	0.5000	1242	50	591	0.6	91184	98.7	98
48	2.8765	0.5515	1270	55	489	0.5	91673	99.2	99
49	3.2208	0.6266	1304	63	327	0.4	92000	99.6	99
50	3.6886	0.7521	1351	75	217	0.2	92217	99.8	99
51	4.4511	1.0360	1427	104	128	0.1	92345	100.0	99
52	5.7084	1.8473	1553	185	42	0.0	92387	100.0	99

Grade 5 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.1459	1.8375	600	184	0	0.0	0	0.0	0
1	-3.9120	1.0210	600	102	3	0.0	3	0.0	1
2	-3.1766	0.7362	644	74	12	0.0	15	0.0	1
3	-2.7294	0.6123	689	61	48	0.1	63	0.1	1
4	-2.4003	0.5397	722	54	121	0.1	184	0.2	1
5	-2.1359	0.4910	748	49	314	0.3	498	0.5	1
6	-1.9126	0.4556	770	46	636	0.7	1134	1.2	1
7	-1.7176	0.4287	790	43	1104	1.2	2238	2.5	2
8	-1.5431	0.4073	807	41	1787	2.0	4025	4.4	3
9	-1.3844	0.3900	823	39	2557	2.8	6582	7.2	6
10	-1.2380	0.3757	838	38	3091	3.4	9673	10.6	9
11	-1.1014	0.3637	852	36	3597	4.0	13270	14.6	13
12	-0.9729	0.3534	864	35	3873	4.3	17143	18.9	17
13	-0.8512	0.3446	877	34	3864	4.3	21007	23.1	21
14	-0.7351	0.3371	888	34	3847	4.2	24854	27.4	25
15	-0.6237	0.3305	899	33	3591	4.0	28445	31.3	29
16	-0.5164	0.3247	910	32	3614	4.0	32059	35.3	33
17	-0.4126	0.3197	920	32	3382	3.7	35441	39.0	37
18	-0.3118	0.3153	931	32	3349	3.7	38790	42.7	41
19	-0.2136	0.3115	940	31	3075	3.4	41865	46.1	44
20	-0.1176	0.3082	950	31	3019	3.3	44884	49.4	48
21	-0.0235	0.3053	959	31	2883	3.2	47767	52.6	51
22	0.0689	0.3028	969	30	2697	3.0	50464	55.5	54
23	0.1600	0.3008	978	30	2612	2.9	53076	58.4	57
24	0.2499	0.2990	987	30	2488	2.7	55564	61.1	60
25	0.3389	0.2977	996	30	2510	2.8	58074	63.9	63
26	0.4272	0.2967	1004	30	2315	2.5	60389	66.5	65
27	0.5150	0.2960	1013	30	2228	2.5	62617	68.9	68
28	0.6025	0.2957	1022	30	2069	2.3	64686	71.2	70
29	0.6899	0.2958	1031	30	2007	2.2	66693	73.4	72
30	0.7775	0.2963	1039	30	1971	2.2	68664	75.6	74
31	0.8656	0.2973	1048	30	1867	2.1	70531	77.6	77
32	0.9543	0.2987	1057	30	1785	2.0	72316	79.6	79
33	1.0442	0.3007	1066	30	1688	1.9	74004	81.4	81
34	1.1353	0.3034	1075	30	1598	1.8	75602	83.2	82
35	1.2283	0.3067	1085	31	1562	1.7	77164	84.9	84
36	1.3236	0.3108	1094	31	1514	1.7	78678	86.6	86

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.4218	0.3158	1104	32	1433	1.6	80111	88.2	87
38	1.5234	0.3219	1114	32	1281	1.4	81392	89.6	89
39	1.6293	0.3293	1125	33	1282	1.4	82674	91.0	90
40	1.7406	0.3381	1136	34	1186	1.3	83860	92.3	92
41	1.8584	0.3486	1148	35	1100	1.2	84960	93.5	93
42	1.9842	0.3613	1160	36	1070	1.2	86030	94.7	94
43	2.1203	0.3768	1174	38	919	1.0	86949	95.7	95
44	2.2692	0.3957	1189	40	853	0.9	87802	96.6	96
45	2.4349	0.4192	1205	42	814	0.9	88616	97.5	97
46	2.6229	0.4491	1224	45	660	0.7	89276	98.3	98
47	2.8419	0.4883	1246	49	523	0.6	89799	98.8	99
48	3.1059	0.5420	1272	54	412	0.5	90211	99.3	99
49	3.4413	0.6208	1306	62	321	0.4	90532	99.6	99
50	3.9047	0.7516	1352	75	191	0.2	90723	99.8	99
51	4.6718	1.0413	1429	104	106	0.1	90829	100.0	99
52	5.9408	1.8535	1556	185	37	0.0	90866	100.0	99

Grade 6 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.2060	1.8379	600	184	0	0.0	0	0.0	0
1	-3.9711	1.0218	600	102	4	0.0	4	0.0	1
2	-3.2341	0.7374	608	74	6	0.0	10	0.0	1
3	-2.7851	0.6138	653	61	22	0.0	32	0.0	1
4	-2.4541	0.5414	686	54	87	0.1	119	0.1	1
5	-2.1880	0.4928	713	49	179	0.2	298	0.3	1
6	-1.9629	0.4575	735	46	373	0.4	671	0.7	1
7	-1.7662	0.4305	755	43	712	0.8	1383	1.5	1
8	-1.5903	0.4090	772	41	1171	1.3	2554	2.8	2
9	-1.4302	0.3915	788	39	1644	1.8	4198	4.6	4
10	-1.2828	0.3769	803	38	2039	2.3	6237	6.9	6
11	-1.1454	0.3645	817	36	2506	2.8	8743	9.7	8
12	-1.0165	0.3539	830	35	2822	3.1	11565	12.8	11
13	-0.8945	0.3447	842	34	3092	3.4	14657	16.2	14
14	-0.7785	0.3366	854	34	3328	3.7	17985	19.9	18
15	-0.6676	0.3296	865	33	3271	3.6	21256	23.5	22
16	-0.5611	0.3234	875	32	3455	3.8	24711	27.3	25
17	-0.4583	0.3179	886	32	3509	3.9	28220	31.2	29
18	-0.3588	0.3131	896	31	3596	4.0	31816	35.1	33
19	-0.2621	0.3089	905	31	3469	3.8	35285	39.0	37
20	-0.1678	0.3053	915	31	3466	3.8	38751	42.8	41
21	-0.0756	0.3022	924	30	3409	3.8	42160	46.6	45
22	0.0149	0.2996	933	30	3298	3.6	45458	50.2	48
23	0.1041	0.2976	942	30	3190	3.5	48648	53.7	52
24	0.1922	0.2961	951	30	3131	3.5	51779	57.2	55
25	0.2795	0.2950	959	30	2875	3.2	54654	60.3	59
26	0.3664	0.2945	968	29	2851	3.1	57505	63.5	62
27	0.4531	0.2945	977	29	2613	2.9	60118	66.4	65
28	0.5399	0.2950	985	30	2542	2.8	62660	69.2	68
29	0.6272	0.2960	994	30	2340	2.6	65000	71.8	70
30	0.7152	0.2975	1003	30	2121	2.3	67121	74.1	73
31	0.8043	0.2996	1012	30	2130	2.4	69251	76.5	75
32	0.8949	0.3023	1021	30	1914	2.1	71165	78.6	78
33	0.9872	0.3055	1030	31	1864	2.1	73029	80.6	80
34	1.0817	0.3094	1040	31	1832	2.0	74861	82.7	82
35	1.1787	0.3139	1049	31	1673	1.8	76534	84.5	84
36	1.2789	0.3191	1059	32	1563	1.7	78097	86.2	85

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.3826	0.3252	1070	33	1507	1.7	79604	87.9	87
38	1.4906	0.3321	1080	33	1442	1.6	81046	89.5	89
39	1.6035	0.3401	1092	34	1316	1.5	82362	90.9	90
40	1.7223	0.3492	1104	35	1285	1.4	83647	92.4	92
41	1.8478	0.3597	1116	36	1186	1.3	84833	93.7	93
42	1.9815	0.3718	1130	37	1074	1.2	85907	94.9	94
43	2.1250	0.3861	1144	39	935	1.0	86842	95.9	95
44	2.2804	0.4030	1159	40	848	0.9	87690	96.8	96
45	2.4510	0.4237	1177	42	766	0.8	88456	97.7	97
46	2.6414	0.4497	1196	45	709	0.8	89165	98.5	98
47	2.8586	0.4839	1217	48	521	0.6	89686	99.0	99
48	3.1150	0.5314	1243	53	347	0.4	90033	99.4	99
49	3.4342	0.6032	1275	60	260	0.3	90293	99.7	99
50	3.8692	0.7272	1318	73	164	0.2	90457	99.9	99
51	4.5906	1.0139	1390	101	87	0.1	90544	100.0	99
52	5.8144	1.8336	1513	183	19	0.0	90563	100.0	99

Grade 7 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.2452	1.8374	600	184	1	0.0	1	0.0	1
1	-4.0116	1.0207	600	102	3	0.0	4	0.0	1
2	-3.2771	0.7354	628	74	8	0.0	12	0.0	1
3	-2.8312	0.6111	673	61	75	0.1	87	0.1	1
4	-2.5038	0.5380	706	54	176	0.2	263	0.3	1
5	-2.2415	0.4888	732	49	369	0.4	632	0.7	1
6	-2.0204	0.4530	754	45	878	1.0	1510	1.7	1
7	-1.8278	0.4256	773	43	1602	1.8	3112	3.4	3
8	-1.6561	0.4039	791	40	2415	2.7	5527	6.1	5
9	-1.5002	0.3862	806	39	3318	3.7	8845	9.7	8
10	-1.3568	0.3716	820	37	3876	4.3	12721	14.0	12
11	-1.2233	0.3593	834	36	4551	5.0	17272	19.0	17
12	-1.0980	0.3489	846	35	4680	5.2	21952	24.2	22
13	-0.9795	0.3399	858	34	4561	5.0	26513	29.2	27
14	-0.8666	0.3323	870	33	4333	4.8	30846	34.0	32
15	-0.7584	0.3256	880	33	3909	4.3	34755	38.3	36
16	-0.6543	0.3199	891	32	3659	4.0	38414	42.3	40
17	-0.5536	0.3150	901	32	3421	3.8	41835	46.1	44
18	-0.4557	0.3108	911	31	3118	3.4	44953	49.5	48
19	-0.3603	0.3072	920	31	2831	3.1	47784	52.6	51
20	-0.2668	0.3042	929	30	2713	3.0	50497	55.6	54
21	-0.1751	0.3018	939	30	2586	2.8	53083	58.5	57
22	-0.0846	0.2998	948	30	2442	2.7	55525	61.1	60
23	0.0048	0.2984	957	30	2313	2.5	57838	63.7	62
24	0.0936	0.2975	966	30	2249	2.5	60087	66.2	65
25	0.1819	0.2970	974	30	2238	2.5	62325	68.6	67
26	0.2701	0.2970	983	30	2054	2.3	64379	70.9	70
27	0.3584	0.2975	992	30	2024	2.2	66403	73.1	72
28	0.4471	0.2984	1001	30	1906	2.1	68309	75.2	74
29	0.5366	0.2999	1010	30	1834	2.0	70143	77.2	76
30	0.6271	0.3018	1019	30	1769	1.9	71912	79.2	78
31	0.7189	0.3043	1028	30	1699	1.9	73611	81.1	80
32	0.8124	0.3074	1037	31	1697	1.9	75308	82.9	82
33	0.9080	0.3110	1047	31	1593	1.8	76901	84.7	84
34	1.0060	0.3153	1057	32	1484	1.6	78385	86.3	85
35	1.1069	0.3202	1067	32	1392	1.5	79777	87.8	87
36	1.2112	0.3258	1077	33	1317	1.5	81094	89.3	89

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.3194	0.3321	1088	33	1227	1.4	82321	90.6	90
38	1.4321	0.3394	1099	34	1165	1.3	83486	91.9	91
39	1.5500	0.3476	1111	35	1100	1.2	84586	93.1	93
40	1.6740	0.3569	1124	36	1085	1.2	85671	94.3	94
41	1.8052	0.3677	1137	37	949	1.0	86620	95.4	95
42	1.9448	0.3801	1151	38	872	1.0	87492	96.3	96
43	2.0948	0.3947	1166	39	750	0.8	88242	97.2	97
44	2.2574	0.4123	1182	41	627	0.7	88869	97.9	98
45	2.4360	0.4337	1200	43	540	0.6	89409	98.5	98
46	2.6357	0.4608	1220	46	449	0.5	89858	98.9	99
47	2.8638	0.4961	1243	50	360	0.4	90218	99.3	99
48	3.1334	0.5446	1270	54	276	0.3	90494	99.6	99
49	3.4679	0.6168	1303	62	183	0.2	90677	99.9	99
50	3.9206	0.7398	1348	74	84	0.1	90761	99.9	99
51	4.6611	1.0234	1422	102	46	0.1	90807	100.0	99
52	5.8980	1.8386	1546	184	5	0.0	90812	100.0	99

Grade 8 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.4160	1.8336	600	183	0	0.0	0	0.0	0
1	-4.1918	1.0144	600	101	2	0.0	2	0.0	1
2	-3.4695	0.7276	605	73	12	0.0	14	0.0	1
3	-3.0345	0.6025	648	60	28	0.0	42	0.0	1
4	-2.7170	0.5292	680	53	96	0.1	138	0.2	1
5	-2.4636	0.4801	705	48	223	0.3	361	0.4	1
6	-2.2506	0.4445	727	44	454	0.5	815	1.0	1
7	-2.0654	0.4173	745	42	857	1.0	1672	2.0	1
8	-1.9003	0.3959	762	40	1342	1.6	3014	3.5	3
9	-1.7505	0.3786	777	38	2030	2.4	5044	5.9	5
10	-1.6126	0.3644	791	36	2710	3.2	7754	9.1	8
11	-1.4843	0.3525	803	35	3213	3.8	10967	12.9	11
12	-1.3636	0.3424	815	34	3562	4.2	14529	17.0	15
13	-1.2494	0.3338	827	33	3820	4.5	18349	21.5	19
14	-1.1405	0.3264	838	33	3908	4.6	22257	26.1	24
15	-1.0361	0.3201	848	32	3904	4.6	26161	30.7	28
16	-0.9354	0.3146	858	31	3757	4.4	29918	35.1	33
17	-0.8380	0.3099	868	31	3408	4.0	33326	39.1	37
18	-0.7432	0.3059	877	31	3299	3.9	36625	43.0	41
19	-0.6507	0.3025	887	30	3144	3.7	39769	46.6	45
20	-0.5601	0.2996	896	30	2958	3.5	42727	50.1	48
21	-0.4710	0.2973	905	30	2842	3.3	45569	53.5	52
22	-0.3832	0.2955	913	30	2587	3.0	48156	56.5	55
23	-0.2963	0.2941	922	29	2430	2.9	50586	59.3	58
24	-0.2102	0.2931	931	29	2321	2.7	52907	62.1	61
25	-0.1244	0.2926	939	29	2227	2.6	55134	64.7	63
26	-0.0388	0.2925	948	29	2133	2.5	57267	67.2	66
27	0.0468	0.2929	956	29	2028	2.4	59295	69.6	68
28	0.1328	0.2937	965	29	1876	2.2	61171	71.8	71
29	0.2194	0.2950	974	30	1865	2.2	63036	73.9	73
30	0.3069	0.2967	982	30	1712	2.0	64748	75.9	75
31	0.3956	0.2989	991	30	1671	2.0	66419	77.9	77
32	0.4857	0.3016	1000	30	1646	1.9	68065	79.8	79
33	0.5776	0.3048	1010	30	1565	1.8	69630	81.7	81
34	0.6717	0.3087	1019	31	1519	1.8	71149	83.5	83
35	0.7683	0.3131	1029	31	1526	1.8	72675	85.2	84
36	0.8679	0.3183	1039	32	1440	1.7	74115	86.9	86

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	0.9711	0.3243	1049	32	1229	1.4	75344	88.4	88
38	1.0785	0.3312	1060	33	1273	1.5	76617	89.9	89
39	1.1908	0.3392	1071	34	1148	1.3	77765	91.2	91
40	1.3090	0.3486	1083	35	1069	1.3	78834	92.5	92
41	1.4343	0.3596	1095	36	1044	1.2	79878	93.7	93
42	1.5681	0.3726	1109	37	919	1.1	80797	94.8	94
43	1.7126	0.3880	1123	39	871	1.0	81668	95.8	95
44	1.8703	0.4066	1139	41	772	0.9	82440	96.7	96
45	2.0445	0.4291	1156	43	704	0.8	83144	97.5	97
46	2.2404	0.4569	1176	46	583	0.7	83727	98.2	98
47	2.4649	0.4923	1198	49	511	0.6	84238	98.8	99
48	2.7301	0.5398	1225	54	382	0.4	84620	99.3	99
49	3.0578	0.6096	1258	61	292	0.3	84912	99.6	99
50	3.4986	0.7292	1302	73	200	0.2	85112	99.8	99
51	4.2183	1.0100	1374	101	91	0.1	85203	99.9	99
52	5.4323	1.8279	1495	183	50	0.1	85253	100.0	99

Grade 3 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-4.7221	1.8354	600	184	1	0.0	1	0.0	1
1	-3.4935	1.0174	613	102	3	0.0	4	0.0	1
2	-2.7654	0.7313	686	73	19	0.0	23	0.0	1
3	-2.3252	0.6066	730	61	58	0.1	81	0.1	1
4	-2.0029	0.5335	762	53	140	0.2	221	0.2	1
5	-1.7451	0.4844	788	48	321	0.4	542	0.6	1
6	-1.5281	0.4488	810	45	593	0.7	1135	1.2	1
7	-1.3391	0.4217	829	42	973	1.1	2108	2.3	2
8	-1.1705	0.4003	845	40	1440	1.6	3548	3.9	3
9	-1.0173	0.3831	861	38	1825	2.0	5373	5.9	5
10	-0.8760	0.3691	875	37	2235	2.5	7608	8.4	7
11	-0.7441	0.3574	888	36	2506	2.8	10114	11.1	10
12	-0.6199	0.3477	900	35	2628	2.9	12742	14.0	13
13	-0.5019	0.3396	912	34	2680	2.9	15422	17.0	15
14	-0.3889	0.3328	924	33	2693	3.0	18115	19.9	18
15	-0.2800	0.3272	934	33	2679	2.9	20794	22.9	21
16	-0.1745	0.3226	945	32	2682	2.9	23476	25.8	24
17	-0.0718	0.3188	955	32	2946	3.2	26422	29.0	27
18	0.0289	0.3158	965	32	2808	3.1	29230	32.1	31
19	0.1278	0.3135	975	31	2808	3.1	32038	35.2	34
20	0.2256	0.3119	985	31	2874	3.2	34912	38.4	37
21	0.3225	0.3109	995	31	3071	3.4	37983	41.7	40
22	0.4190	0.3105	1004	31	3022	3.3	41005	45.1	43
23	0.5154	0.3107	1014	31	3037	3.3	44042	48.4	47
24	0.6121	0.3114	1024	31	3090	3.4	47132	51.8	50
25	0.7095	0.3128	1033	31	3110	3.4	50242	55.2	54
26	0.8079	0.3148	1043	31	3122	3.4	53364	58.7	57
27	0.9078	0.3174	1053	32	3107	3.4	56471	62.1	60
28	1.0096	0.3208	1063	32	3266	3.6	59737	65.7	64
29	1.1138	0.3249	1074	32	3254	3.6	62991	69.2	67
30	1.2210	0.3299	1085	33	3150	3.5	66141	72.7	71
31	1.3318	0.3359	1096	34	3123	3.4	69264	76.1	74
32	1.4469	0.3430	1107	34	3127	3.4	72391	79.6	78
33	1.5674	0.3514	1119	35	2953	3.2	75344	82.8	81
34	1.6943	0.3614	1132	36	2732	3.0	78076	85.8	84
35	1.8291	0.3733	1145	37	2622	2.9	80698	88.7	87
36	1.9737	0.3876	1160	39	2325	2.6	83023	91.3	90

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	2.1305	0.4051	1176	41	2112	2.3	85135	93.6	92
38	2.3032	0.4267	1193	43	1811	2.0	86946	95.6	95
39	2.4967	0.4541	1212	45	1463	1.6	88409	97.2	96
40	2.7187	0.4900	1234	49	1071	1.2	89480	98.4	98
41	2.9824	0.5394	1261	54	700	0.8	90180	99.1	99
42	3.3116	0.6128	1294	61	478	0.5	90658	99.6	99
43	3.7600	0.7375	1338	74	213	0.2	90871	99.9	99
44	4.4983	1.0229	1412	102	95	0.1	90966	100.0	99
45	5.7354	1.8390	1536	184	14	0.0	90980	100.0	99

Grade 4 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.2940	1.8309	600	183	1	0.0	1	0.0	1
1	-4.0764	1.0099	600	101	3	0.0	4	0.0	1
2	-3.3629	0.7218	621	72	5	0.0	9	0.0	1
3	-2.9359	0.5962	664	60	12	0.0	21	0.0	1
4	-2.6256	0.5227	695	52	22	0.0	43	0.0	1
5	-2.3787	0.4735	720	47	48	0.1	91	0.1	1
6	-2.1717	0.4380	740	44	100	0.1	191	0.2	1
7	-1.9918	0.4111	758	41	183	0.2	374	0.4	1
8	-1.8316	0.3900	774	39	300	0.3	674	0.7	1
9	-1.6863	0.3730	789	37	437	0.5	1111	1.2	1
10	-1.5524	0.3591	802	36	610	0.7	1721	1.9	2
11	-1.4278	0.3474	815	35	865	0.9	2586	2.8	2
12	-1.3105	0.3376	826	34	946	1.0	3532	3.8	3
13	-1.1994	0.3292	838	33	1207	1.3	4739	5.2	5
14	-1.0935	0.3220	848	32	1356	1.5	6095	6.6	6
15	-0.9918	0.3158	858	32	1537	1.7	7632	8.3	7
16	-0.8938	0.3105	868	31	1590	1.7	9222	10.0	9
17	-0.7988	0.3058	878	31	1715	1.9	10937	11.9	11
18	-0.7065	0.3018	887	30	1821	2.0	12758	13.9	13
19	-0.6165	0.2983	896	30	1848	2.0	14606	15.9	15
20	-0.5285	0.2953	905	30	1858	2.0	16464	17.9	17
21	-0.4421	0.2927	913	29	1864	2.0	18328	20.0	19
22	-0.3571	0.2904	922	29	1924	2.1	20252	22.0	21
23	-0.2733	0.2886	930	29	1900	2.1	22152	24.1	23
24	-0.1905	0.2870	938	29	1988	2.2	24140	26.3	25
25	-0.1085	0.2858	947	29	2016	2.2	26156	28.5	27
26	-0.0271	0.2848	955	28	2161	2.4	28317	30.8	30
27	0.0538	0.2841	963	28	2188	2.4	30505	33.2	32
28	0.1343	0.2836	971	28	2319	2.5	32824	35.7	34
29	0.2147	0.2834	979	28	2253	2.5	35077	38.2	37
30	0.2950	0.2834	987	28	2374	2.6	37451	40.8	39
31	0.3753	0.2837	995	28	2380	2.6	39831	43.4	42
32	0.4559	0.2842	1003	28	2542	2.8	42373	46.1	45
33	0.5369	0.2849	1011	28	2511	2.7	44884	48.9	47
34	0.6184	0.2860	1019	29	2512	2.7	47396	51.6	50
35	0.7005	0.2872	1028	29	2656	2.9	50052	54.5	53
36	0.7835	0.2888	1036	29	2726	3.0	52778	57.5	56

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	0.8674	0.2907	1044	29	2761	3.0	55539	60.5	59
38	0.9525	0.2929	1053	29	2764	3.0	58303	63.5	62
39	1.0390	0.2954	1061	30	2857	3.1	61160	66.6	65
40	1.1271	0.2982	1070	30	2806	3.1	63966	69.6	68
41	1.2170	0.3015	1079	30	2819	3.1	66785	72.7	71
42	1.3089	0.3051	1088	31	2729	3.0	69514	75.7	74
43	1.4033	0.3093	1098	31	2655	2.9	72169	78.6	77
44	1.5003	0.3139	1108	31	2557	2.8	74726	81.3	80
45	1.6004	0.3190	1118	32	2514	2.7	77240	84.1	83
46	1.7040	0.3248	1128	32	2434	2.6	79674	86.7	85
47	1.8116	0.3312	1139	33	2255	2.5	81929	89.2	88
48	1.9236	0.3383	1150	34	1959	2.1	83888	91.3	90
49	2.0407	0.3463	1162	35	1738	1.9	85626	93.2	92
50	2.1637	0.3553	1174	36	1448	1.6	87074	94.8	94
51	2.2935	0.3655	1187	37	1221	1.3	88295	96.1	95
52	2.4313	0.3770	1201	38	1006	1.1	89301	97.2	97
53	2.5783	0.3902	1215	39	756	0.8	90057	98.0	98
54	2.7365	0.4055	1231	41	625	0.7	90682	98.7	98
55	2.9082	0.4236	1248	42	430	0.5	91112	99.2	99
56	3.0967	0.4455	1267	45	301	0.3	91413	99.5	99
57	3.3070	0.4726	1288	47	178	0.2	91591	99.7	99
58	3.5466	0.5077	1312	51	122	0.1	91713	99.8	99
59	3.8279	0.5556	1340	56	63	0.1	91776	99.9	99
60	4.1747	0.6267	1375	63	60	0.1	91836	100.0	99
61	4.6400	0.7484	1421	75	18	0.0	91854	100.0	99
62	5.3934	1.0298	1497	103	6	0.0	91860	100.0	99
63	6.6398	1.8423	1621	184	2	0.0	91862	100.0	99

Grade 5 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.3390	1.8327	600	183	1	0.0	1	0.0	1
1	-4.1172	1.0127	600	101	1	0.0	2	0.0	1
2	-3.3982	0.7252	619	73	5	0.0	7	0.0	1
3	-2.9667	0.5996	662	60	8	0.0	15	0.0	1
4	-2.6527	0.5259	693	53	16	0.0	31	0.0	1
5	-2.4028	0.4764	718	48	30	0.0	61	0.1	1
6	-2.1933	0.4404	739	44	57	0.1	118	0.1	1
7	-2.0117	0.4130	757	41	115	0.1	233	0.3	1
8	-1.8502	0.3914	773	39	175	0.2	408	0.4	1
9	-1.7040	0.3739	788	37	305	0.3	713	0.8	1
10	-1.5697	0.3594	801	36	451	0.5	1164	1.3	1
11	-1.4449	0.3473	814	35	545	0.6	1709	1.9	2
12	-1.3279	0.3370	826	34	653	0.7	2362	2.6	2
13	-1.2173	0.3283	837	33	843	0.9	3205	3.5	3
14	-1.1121	0.3207	847	32	979	1.1	4184	4.6	4
15	-1.0114	0.3142	857	31	1199	1.3	5383	5.9	5
16	-0.9145	0.3085	867	31	1298	1.4	6681	7.3	7
17	-0.8208	0.3036	876	30	1473	1.6	8154	9.0	8
18	-0.7300	0.2992	885	30	1503	1.7	9657	10.6	10
19	-0.6416	0.2955	894	30	1552	1.7	11209	12.3	11
20	-0.5553	0.2922	903	29	1654	1.8	12863	14.1	13
21	-0.4707	0.2894	911	29	1795	2.0	14658	16.1	15
22	-0.3877	0.2870	920	29	1789	2.0	16447	18.1	17
23	-0.3059	0.2850	928	29	1875	2.1	18322	20.1	19
24	-0.2252	0.2833	936	28	2045	2.2	20367	22.4	21
25	-0.1454	0.2819	944	28	2095	2.3	22462	24.7	24
26	-0.0663	0.2808	952	28	2244	2.5	24706	27.1	26
27	0.0124	0.2800	960	28	2413	2.7	27119	29.8	28
28	0.0907	0.2796	967	28	2511	2.8	29630	32.6	31
29	0.1688	0.2794	975	28	2696	3.0	32326	35.5	34
30	0.2468	0.2795	983	28	2777	3.1	35103	38.6	37
31	0.3251	0.2799	991	28	2977	3.3	38080	41.8	40
32	0.4036	0.2806	999	28	2892	3.2	40972	45.0	43
33	0.4826	0.2816	1007	28	3159	3.5	44131	48.5	47
34	0.5623	0.2829	1015	28	3127	3.4	47258	51.9	50
35	0.6428	0.2846	1023	28	3251	3.6	50509	55.5	54
36	0.7243	0.2866	1031	29	3230	3.5	53739	59.0	57

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	0.8071	0.2889	1039	29	3254	3.6	56993	62.6	61
38	0.8913	0.2916	1047	29	3163	3.5	60156	66.1	64
39	0.9772	0.2946	1056	29	3047	3.3	63203	69.4	68
40	1.0650	0.2981	1065	30	3079	3.4	66282	72.8	71
41	1.1551	0.3021	1074	30	2877	3.2	69159	76.0	74
42	1.2477	0.3065	1083	31	2818	3.1	71977	79.1	78
43	1.3431	0.3115	1093	31	2626	2.9	74603	82.0	81
44	1.4418	0.3170	1103	32	2420	2.7	77023	84.6	83
45	1.5443	0.3232	1113	32	2239	2.5	79262	87.1	86
46	1.6510	0.3302	1123	33	2122	2.3	81384	89.4	88
47	1.7626	0.3380	1135	34	1835	2.0	83219	91.4	90
48	1.8797	0.3467	1146	35	1588	1.7	84807	93.2	92
49	2.0032	0.3565	1159	36	1335	1.5	86142	94.6	94
50	2.1342	0.3675	1172	37	1120	1.2	87262	95.9	95
51	2.2738	0.3801	1186	38	922	1.0	88184	96.9	96
52	2.4237	0.3944	1201	39	745	0.8	88929	97.7	97
53	2.5856	0.4107	1217	41	571	0.6	89500	98.3	98
54	2.7619	0.4296	1235	43	488	0.5	89988	98.9	99
55	2.9558	0.4515	1254	45	331	0.4	90319	99.2	99
56	3.1712	0.4773	1275	48	244	0.3	90563	99.5	99
57	3.4135	0.5082	1300	51	170	0.2	90733	99.7	99
58	3.6909	0.5463	1327	55	107	0.1	90840	99.8	99
59	4.0158	0.5957	1360	60	77	0.1	90917	99.9	99
60	4.4111	0.6660	1399	67	57	0.1	90974	99.9	99
61	4.9286	0.7832	1451	78	35	0.0	91009	100.0	99
62	5.7359	1.0556	1532	106	18	0.0	91027	100.0	99
63	7.0196	1.8565	1660	186	1	0.0	91028	100.0	99

Grade 6 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.2189	1.8367	600	184	0	0.0	0	0.0	0
1	-3.9870	1.0197	600	102	0	0.0	0	0.0	0
2	-3.2543	0.7345	615	73	1	0.0	1	0.0	1
3	-2.8095	0.6103	660	61	5	0.0	6	0.0	1
4	-2.4829	0.5374	692	54	18	0.0	24	0.0	1
5	-2.2212	0.4883	719	49	41	0.0	65	0.1	1
6	-2.0006	0.4525	741	45	72	0.1	137	0.2	1
7	-1.8086	0.4250	760	43	145	0.2	282	0.3	1
8	-1.6375	0.4030	777	40	238	0.3	520	0.6	1
9	-1.4824	0.3850	793	39	330	0.4	850	0.9	1
10	-1.3401	0.3699	807	37	483	0.5	1333	1.5	1
11	-1.2081	0.3571	820	36	640	0.7	1973	2.2	2
12	-1.0846	0.3460	832	35	829	0.9	2802	3.1	3
13	-0.9683	0.3363	844	34	1016	1.1	3818	4.2	4
14	-0.8580	0.3278	855	33	1229	1.4	5047	5.6	5
15	-0.7531	0.3203	865	32	1377	1.5	6424	7.1	6
16	-0.6527	0.3136	876	31	1601	1.8	8025	8.9	8
17	-0.5562	0.3076	885	31	1668	1.8	9693	10.7	10
18	-0.4633	0.3022	894	30	1715	1.9	11408	12.6	12
19	-0.3734	0.2974	903	30	1837	2.0	13245	14.7	14
20	-0.2862	0.2932	912	29	1964	2.2	15209	16.9	16
21	-0.2014	0.2893	921	29	1889	2.1	17098	18.9	18
22	-0.1187	0.2860	929	29	2006	2.2	19104	21.2	20
23	-0.0378	0.2830	937	28	1927	2.1	21031	23.3	22
24	0.0415	0.2804	945	28	1981	2.2	23012	25.5	24
25	0.1195	0.2782	953	28	2064	2.3	25076	27.8	27
26	0.1963	0.2763	960	28	2053	2.3	27129	30.1	29
27	0.2722	0.2748	968	27	2135	2.4	29264	32.4	31
28	0.3474	0.2736	976	27	2202	2.4	31466	34.9	34
29	0.4220	0.2727	983	27	2304	2.6	33770	37.4	36
30	0.4962	0.2722	990	27	2365	2.6	36135	40.0	39
31	0.5702	0.2720	998	27	2397	2.7	38532	42.7	41
32	0.6442	0.2722	1005	27	2440	2.7	40972	45.4	44
33	0.7184	0.2726	1013	27	2535	2.8	43507	48.2	47
34	0.7929	0.2734	1020	27	2548	2.8	46055	51.0	50
35	0.8680	0.2746	1028	27	2661	2.9	48716	54.0	53
36	0.9438	0.2761	1035	28	2606	2.9	51322	56.9	55

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.0206	0.2780	1043	28	2604	2.9	53926	59.8	58
38	1.0985	0.2803	1051	28	2635	2.9	56561	62.7	61
39	1.1778	0.2829	1059	28	2647	2.9	59208	65.6	64
40	1.2587	0.2860	1067	29	2642	2.9	61850	68.5	67
41	1.3415	0.2895	1075	29	2624	2.9	64474	71.5	70
42	1.4264	0.2935	1083	29	2664	3.0	67138	74.4	73
43	1.5139	0.2979	1092	30	2580	2.9	69718	77.3	76
44	1.6041	0.3029	1101	30	2428	2.7	72146	80.0	79
45	1.6976	0.3085	1111	31	2338	2.6	74484	82.5	81
46	1.7946	0.3148	1120	31	2211	2.5	76695	85.0	84
47	1.8959	0.3217	1130	32	2119	2.3	78814	87.3	86
48	2.0018	0.3295	1141	33	1902	2.1	80716	89.5	88
49	2.1132	0.3381	1152	34	1797	2.0	82513	91.4	90
50	2.2308	0.3479	1164	35	1517	1.7	84030	93.1	92
51	2.3556	0.3589	1176	36	1340	1.5	85370	94.6	94
52	2.4889	0.3715	1190	37	1161	1.3	86531	95.9	95
53	2.6322	0.3859	1204	39	984	1.1	87515	97.0	96
54	2.7874	0.4025	1220	40	787	0.9	88302	97.9	97
55	2.9573	0.4221	1237	42	646	0.7	88948	98.6	98
56	3.1452	0.4456	1255	45	423	0.5	89371	99.0	99
57	3.3565	0.4745	1276	47	304	0.3	89675	99.4	99
58	3.5987	0.5112	1301	51	223	0.2	89898	99.6	99
59	3.8847	0.5607	1329	56	158	0.2	90056	99.8	99
60	4.2382	0.6329	1365	63	89	0.1	90145	99.9	99
61	4.7122	0.7549	1412	75	60	0.1	90205	100.0	99
62	5.4764	1.0354	1488	104	25	0.0	90230	100.0	99
63	6.7313	1.8457	1614	185	2	0.0	90232	100.0	99

Grade 7 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.2488	1.8326	600	183	0	0.0	0	0.0	0
1	-4.0272	1.0126	600	101	0	0.0	0	0.0	0
2	-3.3086	0.7249	617	72	2	0.0	2	0.0	1
3	-2.8776	0.5992	660	60	2	0.0	4	0.0	1
4	-2.5641	0.5253	691	53	5	0.0	9	0.0	1
5	-2.3149	0.4756	716	48	16	0.0	25	0.0	1
6	-2.1062	0.4395	737	44	32	0.0	57	0.1	1
7	-1.9255	0.4119	755	41	80	0.1	137	0.2	1
8	-1.7650	0.3900	771	39	125	0.1	262	0.3	1
9	-1.6200	0.3722	786	37	242	0.3	504	0.6	1
10	-1.4870	0.3575	799	36	306	0.3	810	0.9	1
11	-1.3637	0.3451	811	35	425	0.5	1235	1.4	1
12	-1.2483	0.3346	823	33	613	0.7	1848	2.0	2
13	-1.1394	0.3256	834	33	789	0.9	2637	2.9	2
14	-1.0360	0.3178	844	32	901	1.0	3538	3.9	3
15	-0.9372	0.3110	854	31	1159	1.3	4697	5.2	5
16	-0.8423	0.3051	863	31	1315	1.5	6012	6.6	6
17	-0.7508	0.3000	873	30	1557	1.7	7569	8.4	8
18	-0.6622	0.2956	881	30	1651	1.8	9220	10.2	9
19	-0.5759	0.2917	890	29	1703	1.9	10923	12.1	11
20	-0.4918	0.2884	898	29	1762	1.9	12685	14.0	13
21	-0.4095	0.2855	907	29	1792	2.0	14477	16.0	15
22	-0.3287	0.2831	915	28	1897	2.1	16374	18.1	17
23	-0.2492	0.2810	923	28	1895	2.1	18269	20.2	19
24	-0.1707	0.2793	931	28	2031	2.2	20300	22.4	21
25	-0.0931	0.2780	938	28	2107	2.3	22407	24.8	24
26	-0.0161	0.2769	946	28	2213	2.4	24620	27.2	26
27	0.0604	0.2762	954	28	2275	2.5	26895	29.7	28
28	0.1365	0.2758	961	28	2343	2.6	29238	32.3	31
29	0.2125	0.2756	969	28	2411	2.7	31649	35.0	34
30	0.2885	0.2758	977	28	2493	2.8	34142	37.7	36
31	0.3647	0.2761	984	28	2538	2.8	36680	40.5	39
32	0.4411	0.2768	992	28	2737	3.0	39417	43.5	42
33	0.5179	0.2777	999	28	2862	3.2	42279	46.7	45
34	0.5954	0.2789	1007	28	2944	3.3	45223	50.0	48
35	0.6736	0.2804	1015	28	2996	3.3	48219	53.3	52
36	0.7527	0.2822	1023	28	2951	3.3	51170	56.5	55

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	0.8329	0.2842	1031	28	3079	3.4	54249	59.9	58
38	0.9143	0.2866	1039	29	3077	3.4	57326	63.3	62
39	0.9972	0.2893	1047	29	2969	3.3	60295	66.6	65
40	1.0818	0.2924	1056	29	3097	3.4	63392	70.0	68
41	1.1683	0.2958	1064	30	3063	3.4	66455	73.4	72
42	1.2569	0.2997	1073	30	2917	3.2	69372	76.6	75
43	1.3481	0.3041	1082	30	2855	3.2	72227	79.8	78
44	1.4420	0.3089	1092	31	2584	2.9	74811	82.7	81
45	1.5390	0.3143	1102	31	2476	2.7	77287	85.4	84
46	1.6397	0.3204	1112	32	2326	2.6	79613	88.0	87
47	1.7446	0.3272	1122	33	2008	2.2	81621	90.2	89
48	1.8541	0.3349	1133	33	1742	1.9	83363	92.1	91
49	1.9691	0.3435	1145	34	1581	1.7	84944	93.8	93
50	2.0904	0.3533	1157	35	1316	1.5	86260	95.3	95
51	2.2191	0.3644	1170	36	1104	1.2	87364	96.5	96
52	2.3564	0.3771	1183	38	866	1.0	88230	97.5	97
53	2.5041	0.3918	1198	39	685	0.8	88915	98.2	98
54	2.6642	0.4088	1214	41	487	0.5	89402	98.8	99
55	2.8394	0.4289	1232	43	374	0.4	89776	99.2	99
56	3.0336	0.4530	1251	45	274	0.3	90050	99.5	99
57	3.2519	0.4824	1273	48	175	0.2	90225	99.7	99
58	3.5022	0.5196	1298	52	110	0.1	90335	99.8	99
59	3.7974	0.5693	1327	57	91	0.1	90426	99.9	99
60	4.1612	0.6414	1364	64	51	0.1	90477	100.0	99
61	4.6464	0.7625	1412	76	28	0.0	90505	100.0	99
62	5.4223	1.0411	1490	104	7	0.0	90512	100.0	99
63	6.6854	1.8489	1616	185	3	0.0	90515	100.0	99

Grade 8 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.5611	1.8362	600	184	0	0.0	0	0.0	0
1	-4.3304	1.0189	600	102	1	0.0	1	0.0	1
2	-3.5994	0.7333	601	73	3	0.0	4	0.0	1
3	-3.1564	0.6087	645	61	3	0.0	7	0.0	1
4	-2.8318	0.5355	678	54	8	0.0	15	0.0	1
5	-2.5720	0.4862	704	49	24	0.0	39	0.0	1
6	-2.3536	0.4501	726	45	55	0.1	94	0.1	1
7	-2.1637	0.4224	745	42	115	0.1	209	0.2	1
8	-1.9948	0.4002	762	40	201	0.2	410	0.5	1
9	-1.8421	0.3820	777	38	310	0.4	720	0.8	1
10	-1.7020	0.3667	791	37	460	0.5	1180	1.4	1
11	-1.5724	0.3538	804	35	543	0.6	1723	2.0	2
12	-1.4512	0.3426	816	34	685	0.8	2408	2.8	2
13	-1.3373	0.3328	827	33	922	1.1	3330	3.9	3
14	-1.2293	0.3243	838	32	1027	1.2	4357	5.1	4
15	-1.1266	0.3168	848	32	1131	1.3	5488	6.4	6
16	-1.0284	0.3102	858	31	1340	1.6	6828	8.0	7
17	-0.9340	0.3044	868	30	1402	1.6	8230	9.6	9
18	-0.8429	0.2992	877	30	1515	1.8	9745	11.4	10
19	-0.7548	0.2947	886	29	1569	1.8	11314	13.2	12
20	-0.6691	0.2907	894	29	1673	2.0	12987	15.2	14
21	-0.5857	0.2872	903	29	1687	2.0	14674	17.1	16
22	-0.5040	0.2842	911	28	1711	2.0	16385	19.1	18
23	-0.4240	0.2817	919	28	1747	2.0	18132	21.2	20
24	-0.3453	0.2795	927	28	1851	2.2	19983	23.3	22
25	-0.2677	0.2777	934	28	1949	2.3	21932	25.6	24
26	-0.1909	0.2763	942	28	2039	2.4	23971	28.0	27
27	-0.1149	0.2753	950	28	2171	2.5	26142	30.5	29
28	-0.0393	0.2746	957	27	2139	2.5	28281	33.0	32
29	0.0359	0.2742	965	27	2264	2.6	30545	35.6	34
30	0.1110	0.2741	972	27	2434	2.8	32979	38.5	37
31	0.1862	0.2743	980	27	2433	2.8	35412	41.3	40
32	0.2615	0.2748	987	27	2562	3.0	37974	44.3	43
33	0.3372	0.2756	995	28	2616	3.1	40590	47.4	46
34	0.4135	0.2767	1002	28	2653	3.1	43243	50.5	49
35	0.4904	0.2781	1010	28	2690	3.1	45933	53.6	52
36	0.5682	0.2798	1018	28	2622	3.1	48555	56.7	55

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	0.6470	0.2818	1026	28	2646	3.1	51201	59.8	58
38	0.7271	0.2842	1034	28	2652	3.1	53853	62.8	61
39	0.8086	0.2870	1042	29	2605	3.0	56458	65.9	64
40	0.8919	0.2902	1050	29	2587	3.0	59045	68.9	67
41	0.9771	0.2938	1059	29	2489	2.9	61534	71.8	70
42	1.0646	0.2979	1068	30	2446	2.9	63980	74.7	73
43	1.1547	0.3025	1077	30	2320	2.7	66300	77.4	76
44	1.2477	0.3078	1086	31	2297	2.7	68597	80.1	79
45	1.3443	0.3137	1096	31	2278	2.7	70875	82.7	81
46	1.4448	0.3205	1106	32	1981	2.3	72856	85.0	84
47	1.5500	0.3282	1116	33	1855	2.2	74711	87.2	86
48	1.6606	0.3371	1127	34	1615	1.9	76326	89.1	88
49	1.7775	0.3472	1139	35	1542	1.8	77868	90.9	90
50	1.9021	0.3588	1151	36	1430	1.7	79298	92.5	92
51	2.0355	0.3722	1165	37	1271	1.5	80569	94.0	93
52	2.1799	0.3879	1179	39	1112	1.3	81681	95.3	95
53	2.3373	0.4061	1195	41	915	1.1	82596	96.4	96
54	2.5109	0.4276	1212	43	788	0.9	83384	97.3	97
55	2.7045	0.4531	1232	45	655	0.8	84039	98.1	98
56	2.9234	0.4833	1253	48	534	0.6	84573	98.7	98
57	3.1743	0.5194	1279	52	364	0.4	84937	99.1	99
58	3.4666	0.5629	1308	56	265	0.3	85202	99.4	99
59	3.8135	0.6168	1342	62	196	0.2	85398	99.7	99
60	4.2373	0.6888	1385	69	134	0.2	85532	99.8	99
61	4.7870	0.8040	1440	80	92	0.1	85624	99.9	99
62	5.6267	1.0703	1524	107	46	0.1	85670	100.0	99
63	6.9315	1.8642	1654	186	16	0.0	85686	100.0	99

Grade 4 Science

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-4.4352	1.8343	1050	324	2	0.0	2	0.0	1
1	-3.2090	1.0158	1050	180	6	0.0	8	0.0	1
2	-2.4838	0.7296	1050	129	18	0.0	26	0.0	1
3	-2.0458	0.6051	1050	107	26	0.0	52	0.1	1
4	-1.7250	0.5324	1050	94	72	0.1	124	0.1	1
5	-1.4682	0.4837	1050	85	179	0.2	303	0.3	1
6	-1.2516	0.4486	1050	79	322	0.4	625	0.7	1
7	-1.0625	0.4220	1050	75	559	0.6	1184	1.3	1
8	-0.8934	0.4011	1068	71	907	1.0	2091	2.3	2
9	-0.7394	0.3843	1095	68	1293	1.4	3384	3.7	3
10	-0.5971	0.3706	1120	66	1704	1.9	5088	5.6	5
11	-0.4640	0.3592	1144	63	1842	2.0	6930	7.6	7
12	-0.3385	0.3496	1166	62	2133	2.3	9063	10.0	9
13	-0.2192	0.3416	1187	60	2413	2.6	11476	12.6	11
14	-0.1049	0.3348	1207	59	2557	2.8	14033	15.4	14
15	0.0052	0.3290	1227	58	2633	2.9	16666	18.3	17
16	0.1118	0.3241	1245	57	2626	2.9	19292	21.2	20
17	0.2155	0.3200	1264	57	2734	3.0	22026	24.2	23
18	0.3168	0.3166	1282	56	2851	3.1	24877	27.3	26
19	0.4161	0.3138	1299	55	2903	3.2	27780	30.5	29
20	0.5138	0.3116	1316	55	2977	3.3	30757	33.8	32
21	0.6103	0.3098	1334	55	3001	3.3	33758	37.1	35
22	0.7059	0.3086	1350	55	3177	3.5	36935	40.6	39
23	0.8009	0.3078	1367	54	3249	3.6	40184	44.1	42
24	0.8955	0.3075	1384	54	3367	3.7	43551	47.8	46
25	0.9900	0.3075	1401	54	3510	3.9	47061	51.7	50
26	1.0848	0.3081	1417	54	3710	4.1	50771	55.7	54
27	1.1799	0.3090	1434	55	3713	4.1	54484	59.8	58
28	1.2759	0.3105	1451	55	3566	3.9	58050	63.7	62
29	1.3728	0.3124	1468	55	3573	3.9	61623	67.7	66
30	1.4711	0.3148	1486	56	3527	3.9	65150	71.5	70
31	1.5712	0.3179	1503	56	3477	3.8	68627	75.4	73
32	1.6734	0.3216	1521	57	3378	3.7	72005	79.1	77
33	1.7783	0.3261	1540	58	3163	3.5	75168	82.5	81
34	1.8863	0.3315	1559	59	2898	3.2	78066	85.7	84
35	1.9982	0.3379	1579	60	2561	2.8	80627	88.5	87
36	2.1149	0.3455	1599	61	2327	2.6	82954	91.1	90

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	2.2374	0.3547	1621	63	1945	2.1	84899	93.2	92
38	2.3670	0.3657	1644	65	1710	1.9	86609	95.1	94
39	2.5056	0.3792	1669	67	1281	1.4	87890	96.5	96
40	2.6555	0.3957	1695	70	1095	1.2	88985	97.7	97
41	2.8201	0.4164	1724	74	776	0.9	89761	98.6	98
42	3.0042	0.4429	1757	78	556	0.6	90317	99.2	99
43	3.2156	0.4781	1794	85	378	0.4	90695	99.6	99
44	3.4669	0.5270	1838	93	209	0.2	90904	99.8	99
45	3.7818	0.6002	1894	106	108	0.1	91012	99.9	99
46	4.2138	0.7253	1970	128	46	0.1	91058	100.0	99
47	4.9327	1.0127	2098	179	11	0.0	91069	100.0	99
48	6.1544	1.8326	2313	324	2	0.0	91071	100.0	99

Grade 8 Science

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-4.8428	1.8348	925	351	1	0.0	1	0.0	1
1	-3.6156	1.0165	925	195	5	0.0	6	0.0	1
2	-2.8891	0.7303	925	140	11	0.0	17	0.0	1
3	-2.4502	0.6057	925	116	37	0.0	54	0.1	1
4	-2.1289	0.5326	925	102	107	0.1	161	0.2	1
5	-1.8719	0.4837	925	93	240	0.3	401	0.5	1
6	-1.6555	0.4483	925	86	450	0.5	851	1.0	1
7	-1.4669	0.4213	925	81	746	0.9	1597	1.9	1
8	-1.2986	0.4001	948	77	1194	1.4	2791	3.3	3
9	-1.1455	0.3829	977	73	1668	2.0	4459	5.3	4
10	-1.0044	0.3688	1004	71	2026	2.4	6485	7.7	6
11	-0.8727	0.3571	1029	68	2416	2.9	8901	10.6	9
12	-0.7488	0.3473	1053	67	2579	3.1	11480	13.6	12
13	-0.6311	0.3390	1076	65	2747	3.3	14227	16.9	15
14	-0.5187	0.3319	1097	64	2796	3.3	17023	20.2	19
15	-0.4106	0.3259	1118	62	2700	3.2	19723	23.4	22
16	-0.3060	0.3208	1138	61	2741	3.3	22464	26.7	25
17	-0.2045	0.3165	1157	61	2655	3.2	25119	29.8	28
18	-0.1055	0.3130	1176	60	2832	3.4	27951	33.2	31
19	-0.0085	0.3101	1195	59	2713	3.2	30664	36.4	35
20	0.0869	0.3077	1213	59	2561	3.0	33225	39.4	38
21	0.1811	0.3060	1231	59	2652	3.1	35877	42.6	41
22	0.2743	0.3047	1249	58	2806	3.3	38683	45.9	44
23	0.3669	0.3039	1267	58	2737	3.2	41420	49.2	48
24	0.4591	0.3036	1285	58	2689	3.2	44109	52.4	51
25	0.5514	0.3038	1302	58	2634	3.1	46743	55.5	54
26	0.6439	0.3045	1320	58	2647	3.1	49390	58.6	57
27	0.7369	0.3057	1338	59	2661	3.2	52051	61.8	60
28	0.8309	0.3074	1356	59	2737	3.2	54788	65.0	63
29	0.9261	0.3097	1374	59	2704	3.2	57492	68.2	67
30	1.0228	0.3125	1393	60	2713	3.2	60205	71.5	70
31	1.1216	0.3160	1411	61	2579	3.1	62784	74.5	73
32	1.2227	0.3203	1431	61	2525	3.0	65309	77.5	76
33	1.3269	0.3253	1451	62	2400	2.8	67709	80.4	79
34	1.4346	0.3313	1471	63	2310	2.7	70019	83.1	82
35	1.5466	0.3383	1493	65	2250	2.7	72269	85.8	84
36	1.6638	0.3467	1515	66	2087	2.5	74356	88.3	87

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.7874	0.3565	1539	68	1897	2.3	76253	90.5	89
38	1.9186	0.3683	1564	71	1769	2.1	78022	92.6	92
39	2.0593	0.3824	1591	73	1539	1.8	79561	94.4	94
40	2.2120	0.3997	1620	77	1358	1.6	80919	96.1	95
41	2.3801	0.4210	1653	81	1118	1.3	82037	97.4	97
42	2.5685	0.4481	1689	86	816	1.0	82853	98.3	98
43	2.7848	0.4836	1730	93	600	0.7	83453	99.1	99
44	3.0418	0.5327	1779	102	404	0.5	83857	99.5	99
45	3.3632	0.6058	1841	116	238	0.3	84095	99.8	99
46	3.8023	0.7306	1925	140	104	0.1	84199	99.9	99
47	4.5293	1.0168	2064	195	34	0.0	84233	100.0	99
48	5.7570	1.8350	2299	351	11	0.0	84244	100.0	99

APPENDIX O: OPERATIONAL ITEM STATISTICS

Due to the transition to pre-equating rather than post-equating, the Item Statistics are provided for all operational (OP) items. Item statistics include previous and current item sequence, previous and current *p*-value, and previous and current IRT difficulty estimates. Note that in 2021, IRT difficulty estimates were not updated for operational items; therefore previous and current IRT difficulty estimates shown are the same.

Mathematics Grade 3

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
497747	MC	0	1	6	21	2018	0.89	0.86	-1.9161	-1.9161
495217	MC	0	2	9	50	2019	0.38	0.40	1.2816	1.2816
302218	MC	0	3	0	3	2019	0.59	0.48	0.1635	0.1635
408716	MC	0	4	4	41	2017	0.34	0.36	1.5065	1.5065
579671	MC	0	5	6	47	2019	0.57	0.62	0.2951	0.2951
299422	MC	0	6	0	6	2019	0.73	0.65	-0.5995	-0.5995
579688	MC	0	7	1	24	2019	0.58	0.62	0.1319	0.1319
408711	MC	0	8	5	48	2017	0.70	0.68	-0.4800	-0.4800
314246	MC	0	9	0	9	2019	0.75	0.71	-0.7202	-0.7202
493221	MC	0	10	6	22	2018	0.34	0.35	1.5080	1.5080
479184	MC	0	11	2	22	2019	0.53	0.50	0.4755	0.4755
579686	MC	0	12	6	24	2019	0.45	0.47	0.9075	0.9075
495190	MC	0	13	8	21	2019	0.47	0.50	0.8111	0.8111
479189	MC	0	14	0	14	2019	0.39	0.33	1.2403	1.2403
495213	MC	0	15	1	23	2019	0.66	0.66	-0.2448	-0.2448
408537	MC	0	16	0	16	2019	0.45	0.42	0.8783	0.8783
408684	MC	0	17	0	17	2019	0.60	0.56	0.1560	0.1560
408687	MC	0	18	0	18	2019	0.61	0.57	0.1255	0.1255
408720	MC	0	19	0	19	2019	0.48	0.44	0.7202	0.7202
479183	MC	0	20	0	20	2019	0.54	0.49	0.3938	0.3938
499220	OE	0	25	0	25	2019	0.47	0.42	0.8248	0.8248
415943	OE	0	26	0	26	2019	0.37	0.32	1.2853	1.2853
408735	MC	0	27	5	49	2017	0.82	0.82	-1.3691	-1.3691
408847	MC	0	28	0	28	2019	0.71	0.67	-0.4625	-0.4625
408536	MC	0	29	6	24	2018	0.37	0.34	1.3164	1.3164
493231	MC	0	30	6	49	2019	0.48	0.48	0.7460	0.7460
408845	MC	0	31	0	31	2019	0.38	0.34	1.3471	1.3471
420538	MC	0	32	4	44	2017	0.64	0.57	-0.1550	-0.1550
315858	MC	0	33	0	33	2019	0.46	0.41	0.8213	0.8213
495193	MC	0	34	6	48	2019	0.38	0.34	1.2718	1.2718

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
408702	MC	0	35	5	41	2017	0.72	0.74	-0.6234	-0.6234
493218	MC	0	36	8	50	2019	0.60	0.58	0.1453	0.1453
300096	MC	0	37	0	37	2019	0.68	0.64	-0.3493	-0.3493
313476	MC	0	38	4	48	2018	0.74	0.72	-0.7206	-0.7206
408736	MC	0	39	9	46	2017	0.41	0.41	1.0690	1.0690
313993	MC	0	40	0	40	2019	0.79	0.80	-1.0454	-1.0454
408699	MC	0	41	7	42	2017	0.43	0.40	1.0201	1.0201
497751	MC	0	42	8	24	2019	0.48	0.44	0.7552	0.7552
579666	MC	0	43	4	21	2019	0.55	0.50	0.4022	0.4022
566159	MC	0	44	5	24	2019	0.46	0.44	0.8743	0.8743
408726	MC	0	45	0	45	2019	0.57	0.57	0.3320	0.3320
299414	MC	0	46	0	46	2019	0.76	0.66	-0.7810	-0.7810
565864	OE	0	51	4	52	2019	0.44	0.43	1.2003	1.2003

Mathematics Grade 4

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
497770	MC	0	1	0	1	2019	0.89	0.86	-2.5140	-2.5140
495204	MC	0	2	7	4	2018	0.83	0.80	-1.9321	-1.9321
497767	MC	0	3	5	4	2018	0.65	0.62	-0.7310	-0.7310
495203	MC	0	5	0	4	2019	0.53	0.51	-0.0458	-0.0458
574166	MC	0	6	8	50	2019	0.50	0.55	0.0745	0.0745
408757	MC	0	7	8	43	2017	0.58	0.57	-0.3263	-0.3263
408571	MC	0	8	0	7	2019	0.65	0.64	-0.7365	-0.7365
408561	MC	0	9	0	8	2019	0.37	0.33	0.7127	0.7127
408770	MC	0	10	8	49	2018	0.58	0.51	-0.3628	-0.3628
314532	MC	0	11	0	10	2019	0.71	0.64	-1.1338	-1.1338
574159	MC	0	12	7	22	2019	0.54	0.58	-0.1389	-0.1389
408564	MC	0	13	0	12	2019	0.73	0.71	-1.1337	-1.1337
493271	MC	0	14	8	47	2019	0.55	0.46	-0.1779	-0.1779
313462	MC	0	15	5	42	2017	0.60	0.61	-0.4086	-0.4086
495236	MC	0	16	0	15	2019	0.46	0.42	0.2936	0.2936
574162	MC	0	17	5	48	2019	0.51	0.50	0.0224	0.0224
408572	MC	0	18	2	22	2018	0.49	0.46	0.0855	0.0855
566156	MC	0	19	1	23	2019	0.45	0.45	0.2154	0.2154
497834	MC	0	20	9	24	2019	0.35	0.37	0.8696	0.8696
314151	MC	0	21	0	20	2019	0.55	0.49	-0.1339	-0.1339
392313	OE	0	25	0	25	2019	0.45	0.42	0.3276	0.3276
499221	OE	0	26	0	26	2019	0.33	0.29	1.1382	1.1382
497761	MC	0	27	7	48	2019	0.60	0.57	-0.4533	-0.4533
574175	MC	0	28	1	49	2019	0.41	0.43	0.3851	0.3851
299449	MC	0	29	0	29	2019	0.33	0.31	1.0008	1.0008
394385	MC	0	30	7	42	2017	0.40	0.36	0.6277	0.6277
479178	MC	0	31	1	24	2019	0.52	0.47	-0.1405	-0.1405
313463	MC	0	32	0	32	2019	0.65	0.65	-0.7110	-0.7110
313458	MC	0	33	0	33	2019	0.35	0.34	0.8179	0.8179
493275	MC	0	34	8	21	2019	0.40	0.41	0.5679	0.5679
574173	MC	0	35	8	24	2019	0.49	0.44	0.1220	0.1220
408555	MC	0	36	9	22	2019	0.33	0.34	0.9852	0.9852
313460	MC	0	37	0	37	2019	0.47	0.43	0.2091	0.2091
303498	MC	0	38	0	38	2019	0.49	0.44	0.1885	0.1885
495201	MC	0	39	8	23	2019	0.43	0.39	0.4033	0.4033
495227	MC	0	40	3	24	2019	0.66	0.69	-0.8011	-0.8011

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
314536	MC	0	41	0	41	2019	0.84	0.78	-2.0121	-2.0121
497757	MC	0	42	8	50	2018	0.42	0.34	0.4710	0.4710
495226	MC	0	43	5	22	2019	0.50	0.47	0.0709	0.0709
314643	MC	0	44	0	44	2019	0.61	0.58	-0.4114	-0.4114
408745	MC	0	45	7	23	2018	0.60	0.59	-0.4589	-0.4589
313017	MC	0	46	0	46	2019	0.52	0.46	0.0000	0.0000
392317	OE	0	51	1	52	2019	0.34	0.30	1.0074	1.0074

Mathematics Grade 5

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
495259	MC	0	1	7	4	2018	0.50	0.43	0.2608	0.2608
495250	MC	0	2	1	4	2018	0.41	0.34	0.6686	0.6686
313896	MC	0	3	0	3	2019	0.64	0.56	-0.4178	-0.4178
497789	MC	0	5	2	49	2019	0.41	0.45	0.7183	0.7183
497779	MC	0	6	0	5	2019	0.61	0.59	-0.2971	-0.2971
408576	MC	0	7	2	42	2017	0.63	0.61	-0.4044	-0.4044
497852	MC	0	8	0	7	2019	0.34	0.30	1.0389	1.0389
301854	MC	0	9	0	8	2019	0.58	0.52	-0.0198	-0.0198
408644	MC	0	10	1	43	2017	0.45	0.40	0.4725	0.4725
314030	MC	0	11	0	10	2019	0.68	0.68	-0.6762	-0.6762
313524	MC	0	12	9	50	2017	0.85	0.88	-1.8598	-1.8598
497776	MC	0	13	0	12	2019	0.32	0.31	1.1688	1.1688
408826	MC	0	14	6	24	2018	0.63	0.59	-0.4000	-0.4000
301912	MC	0	15	0	14	2019	0.51	0.48	0.1601	0.1601
408578	MC	0	16	3	45	2017	0.44	0.40	0.6031	0.6031
479170	MC	0	17	2	23	2019	0.42	0.40	0.6494	0.6494
495248	MC	0	18	5	48	2019	0.37	0.38	0.9214	0.9214
495260	MC	0	19	6	47	2019	0.39	0.38	0.8289	0.8289
408600	MC	0	20	7	41	2017	0.45	0.44	0.5051	0.5051
314764	MC	0	21	0	20	2019	0.71	0.61	-0.7865	-0.7865
410775	OE	0	25	0	25	2019	0.34	0.29	1.0509	1.0509
574284	OE	0	26	6	52	2019	0.28	0.27	1.3346	1.3346
313764	MC	0	27	7	48	2017	0.73	0.70	-0.9940	-0.9940
313327	MC	0	28	3	46	2017	0.58	0.59	-0.1381	-0.1381
497837	MC	0	29	5	23	2019	0.36	0.31	0.9660	0.9660
408814	MC	0	30	0	30	2019	0.36	0.37	0.9709	0.9709
408817	MC	0	31	7	47	2018	0.47	0.43	0.4476	0.4476
408577	MC	0	32	0	32	2019	0.74	0.69	-0.9781	-0.9781
408633	MC	0	33	0	33	2019	0.39	0.33	0.9149	0.9149
300469	MC	0	34	0	34	2019	0.39	0.35	0.8082	0.8082
408791	MC	0	35	0	35	2019	0.54	0.51	0.0244	0.0244
408821	MC	0	36	0	36	2019	0.48	0.45	0.3622	0.3622
408813	MC	0	37	7	42	2017	0.56	0.57	-0.0553	-0.0553
408597	MC	0	38	5	49	2018	0.48	0.47	0.4022	0.4022
495258	MC	0	39	4	24	2019	0.47	0.44	0.4019	0.4019
314398	MC	0	40	3	41	2017	0.66	0.66	-0.5499	-0.5499

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
314037	MC	0	41	0	41	2019	0.46	0.46	0.3974	0.3974
574136	MC	0	42	6	22	2019	0.53	0.49	0.1396	0.1396
314038	MC	0	43	0	43	2019	0.36	0.31	0.9356	0.9356
394398	MC	0	44	8	22	2018	0.80	0.79	-1.4221	-1.4221
408606	MC	0	45	2	49	2018	0.44	0.42	0.5784	0.5784
495253	MC	0	46	1	50	2019	0.63	0.63	-0.3942	-0.3942
313526	OE	0	51	0	51	2019	0.34	0.32	1.2073	1.2073

Mathematics Grade 6

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
479709	MC	0	1	9	4	2018	0.68	0.67	-0.5289	-0.5289
314895	MC	0	2	0	2	2019	0.48	0.35	0.4674	0.4674
335224	MC	0	3	5	4	2018	0.50	0.39	0.4170	0.4170
496604	MC	0	5	0	4	2019	0.35	0.29	1.2239	1.2239
501398	MC	0	6	5	47	2019	0.53	0.43	0.2743	0.2743
497315	MC	0	7	0	6	2019	0.36	0.28	1.0732	1.0732
412558	MC	0	8	0	7	2019	0.45	0.40	0.5987	0.5987
411363	MC	0	9	0	8	2019	0.54	0.53	0.1664	0.1664
303087	MC	0	10	0	9	2019	0.34	0.33	1.1763	1.1763
478723	MC	0	11	8	50	2019	0.46	0.46	0.6028	0.6028
335192	MC	0	12	0	11	2019	0.71	0.68	-0.7518	-0.7518
500419	MC	0	13	1	49	2019	0.63	0.62	-0.2880	-0.2880
411362	MC	0	14	0	13	2019	0.39	0.33	0.8928	0.8928
492765	MC	0	15	3	49	2019	0.58	0.63	0.0334	0.0334
497307	MC	0	16	2	24	2019	0.75	0.74	-0.9436	-0.9436
478717	MC	0	17	5	22	2019	0.47	0.42	0.5723	0.5723
413714	MC	0	18	0	17	2019	0.53	0.46	0.2550	0.2550
412559	MC	0	19	0	18	2019	0.42	0.41	0.8865	0.8865
413105	MC	0	20	6	50	2017	0.62	0.65	-0.2350	-0.2350
416038	MC	0	21	4	50	2019	0.41	0.37	0.8511	0.8511
313164	OE	0	25	0	25	2019	0.34	0.25	1.1362	1.1362
566984	OE	0	26	7	52	2019	0.29	0.28	1.6449	1.6449
412918	MC	0	27	8	47	2018	0.58	0.57	0.0364	0.0364
478720	MC	0	28	1	22	2019	0.49	0.44	0.3785	0.3785
496611	MC	0	29	0	29	2019	0.73	0.71	-0.8824	-0.8824
492763	MC	0	30	9	24	2019	0.34	0.30	1.2668	1.2668
574783	MC	0	31	1	21	2019	0.74	0.79	-0.8693	-0.8693
401319	MC	0	32	0	32	2019	0.89	0.87	-1.8713	-1.8713
582619	MC	0	33	2	49	2019	0.44	0.41	0.7189	0.7189
501399	MC	0	34	1	47	2018	0.42	0.41	0.7656	0.7656
412896	MC	0	35	1	43	2017	0.45	0.45	0.6156	0.6156
412892	MC	0	36	1	48	2018	0.82	0.85	-1.5031	-1.5031
492764	MC	0	37	2	21	2019	0.65	0.57	-0.3883	-0.3883
491795	MC	0	38	4	23	2019	0.73	0.71	-0.7981	-0.7981
314873	MC	0	39	0	39	2019	0.47	0.42	0.5470	0.5470
399248	MC	0	40	9	23	2018	0.35	0.31	1.2055	1.2055

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
581340	MC	0	41	4	47	2019	0.51	0.46	0.3270	0.3270
412552	MC	0	42	0	42	2019	0.58	0.58	0.0709	0.0709
567153	MC	0	43	8	24	2019	0.75	0.64	-0.9799	-0.9799
413111	MC	0	44	0	44	2019	0.78	0.75	-1.0871	-1.0871
574849	MC	0	45	9	48	2019	0.47	0.43	0.5477	0.5477
319256	MC	0	46	0	46	2019	0.33	0.29	1.2738	1.2738
480017	OE	0	51	0	51	2019	0.53	0.47	0.2304	0.2304

Mathematics Grade 7

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
490977	MC	0	1	6	4	2018	0.45	0.36	0.3190	0.3190
490589	MC	0	2	5	4	2018	0.45	0.39	0.3688	0.3688
489967	MC	0	3	0	3	2019	0.49	0.45	0.0695	0.0695
574900	MC	0	5	3	50	2019	0.55	0.50	-0.2727	-0.2727
399242	MC	0	6	0	5	2019	0.36	0.32	0.7585	0.7585
478169	MC	0	7	2	24	2019	0.52	0.51	-0.1252	-0.1252
480344	MC	0	8	0	7	2019	0.44	0.41	0.2649	0.2649
493188	MC	0	9	0	8	2019	0.33	0.29	0.8411	0.8411
412773	MC	0	10	0	9	2019	0.71	0.67	-1.0702	-1.0702
581349	MC	0	11	9	47	2019	0.45	0.41	0.2676	0.2676
502781	MC	0	12	8	23	2019	0.34	0.33	0.8506	0.8506
416195	MC	0	13	0	12	2019	0.44	0.40	0.2034	0.2034
500378	MC	0	14	6	50	2018	0.33	0.25	1.0107	1.0107
477761	MC	0	15	2	21	2019	0.75	0.73	-1.3178	-1.3178
478170	MC	0	16	4	49	2019	0.54	0.52	-0.2270	-0.2270
503046	MC	0	17	3	22	2019	0.58	0.49	-0.3996	-0.3996
500372	MC	0	18	1	48	2019	0.48	0.46	0.0355	0.0355
478163	MC	0	19	6	48	2018	0.60	0.49	-0.4400	-0.4400
412667	MC	0	20	0	19	2019	0.40	0.40	0.5856	0.5856
478167	MC	0	21	0	20	2019	0.70	0.67	-1.0203	-1.0203
313527	OE	0	25	0	25	2019	0.32	0.27	0.9009	0.9009
399600	OE	0	26	7	52	2018	0.23	0.20	1.7537	1.7537
413352	MC	0	27	0	27	2019	0.83	0.78	-2.0231	-2.0231
398632	MC	0	28	0	28	2019	0.38	0.33	0.6279	0.6279
502842	MC	0	29	4	48	2019	0.58	0.64	-0.4346	-0.4346
415647	MC	0	30	0	30	2019	0.49	0.45	-0.0084	-0.0084
581346	MC	0	31	4	21	2019	0.42	0.38	0.4185	0.4185
335200	MC	0	32	0	32	2019	0.43	0.39	0.3094	0.3094
480351	MC	0	33	6	24	2019	0.43	0.43	0.3387	0.3387
416190	MC	0	34	0	34	2019	0.56	0.53	-0.3537	-0.3537
493990	MC	0	35	4	49	2018	0.64	0.64	-0.6749	-0.6749
404814	MC	0	36	0	36	2019	0.35	0.35	0.7189	0.7189
581347	MC	0	37	3	48	2019	0.53	0.50	-0.1341	-0.1341
565886	MC	0	38	1	47	2019	0.54	0.58	-0.3028	-0.3028
565849	MC	0	39	3	21	2019	0.39	0.40	0.5076	0.5076
412774	MC	0	40	9	50	2019	0.47	0.44	0.1354	0.1354

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
412665	MC	0	41	7	40	2017	0.42	0.39	0.4834	0.4834
417807	MC	0	42	0	42	2019	0.43	0.43	0.3256	0.3256
401321	MC	0	43	3	47	2017	0.58	0.50	-0.3622	-0.3622
478164	MC	0	44	7	24	2019	0.49	0.48	0.0517	0.0517
399250	MC	0	45	3	47	2018	0.77	0.74	-1.4708	-1.4708
417800	MC	0	46	0	46	2019	0.53	0.44	-0.0946	-0.0946
493894	OE	0	51	0	51	2019	0.28	0.24	1.4311	1.4311

Mathematics Grade 8

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
479791	MC	0	1	1	4	2018	0.58	0.55	-0.5803	-0.5803
489965	MC	0	2	0	2	2019	0.46	0.42	0.0654	0.0654
489553	MC	0	3	3	4	2018	0.42	0.31	0.3254	0.3254
416553	MC	0	5	0	4	2019	0.64	0.60	-0.8383	-0.8383
303001	MC	0	6	0	5	2019	0.44	0.40	0.1974	0.1974
324086	MC	0	7	0	6	2019	0.50	0.46	-0.1820	-0.1820
574972	MC	0	8	2	50	2019	0.44	0.37	0.2519	0.2519
404822	MC	0	9	1	45	2017	0.40	0.38	0.4295	0.4295
312493	MC	0	10	0	9	2019	0.58	0.51	-0.4781	-0.4781
413597	MC	0	11	0	10	2019	0.52	0.49	-0.2299	-0.2299
569269	MC	0	12	1	48	2019	0.57	0.49	-0.5522	-0.5522
503520	MC	0	13	8	24	2018	0.51	0.48	-0.1121	-0.1121
412785	MC	0	14	0	13	2019	0.56	0.52	-0.4340	-0.4340
335215	MC	0	15	0	14	2019	0.60	0.55	-0.5581	-0.5581
413599	MC	0	16	7	42	2017	0.58	0.49	-0.4537	-0.4537
503515	MC	0	17	0	16	2019	0.76	0.74	-1.5658	-1.5658
565869	MC	0	18	5	23	2019	0.65	0.64	-0.8907	-0.8907
494636	MC	0	19	1	22	2018	0.45	0.44	0.1197	0.1197
480711	MC	0	20	9	49	2018	0.47	0.39	0.1074	0.1074
416365	MC	0	21	5	24	2018	0.69	0.69	-1.0829	-1.0829
313537	OE	0	25	0	25	2019	0.45	0.39	0.0994	0.0994
409545	OE	0	26	0	26	2019	0.26	0.23	1.0860	1.0860
413594	MC	0	27	0	27	2019	0.55	0.52	-0.4972	-0.4972
399393	MC	0	28	0	28	2019	0.65	0.63	-0.9218	-0.9218
314878	MC	0	29	3	45	2017	0.43	0.35	0.3381	0.3381
488686	MC	0	30	7	49	2019	0.45	0.40	0.1266	0.1266
413140	MC	0	31	5	40	2017	0.71	0.64	-1.1118	-1.1118
335870	MC	0	32	0	32	2019	0.42	0.42	0.2542	0.2542
416556	MC	0	33	4	40	2017	0.55	0.52	-0.2774	-0.2774
503514	MC	0	34	5	21	2019	0.46	0.44	0.0910	0.0910
335871	MC	0	35	0	35	2019	0.51	0.48	-0.1979	-0.1979
398631	MC	0	36	0	36	2019	0.41	0.39	0.3160	0.3160
319322	MC	0	37	0	37	2019	0.37	0.36	0.5798	0.5798
495725	MC	0	38	3	49	2019	0.60	0.56	-0.6182	-0.6182
575467	MC	0	39	4	22	2019	0.54	0.48	-0.3237	-0.3237
502450	MC	0	40	1	22	2019	0.50	0.51	-0.2251	-0.2251

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
488719	MC	0	41	1	50	2019	0.56	0.46	-0.4794	-0.4794
412783	MC	0	42	0	42	2019	0.59	0.54	-0.5651	-0.5651
416364	MC	0	43	8	39	2017	0.63	0.50	-0.6506	-0.6506
574931	MC	0	44	8	24	2019	0.68	0.63	-1.0405	-1.0405
574469	MC	0	45	9	22	2019	0.50	0.48	-0.1417	-0.1417
502453	MC	0	46	6	48	2018	0.45	0.41	0.1972	0.1972
409544	OE	0	51	2	52	2018	0.27	0.26	1.4388	1.4388

ELA Grade 3

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
408509	MC	0	1	0	3	2019	0.42	0.41	1.1355	1.1355
255382	MC	0	2	0	4	2019	0.36	0.36	1.4706	1.4706
504077	MC	0	3	2	41	2019	0.48	0.52	0.8064	0.8064
581086	MC	0	4	3	42	2019	0.76	0.76	-0.6765	-0.6765
255078	MC	0	5	0	5	2019	0.50	0.45	0.7913	0.7913
579575	ESR	0	7	7	34	2019	0.69	0.72	-0.1548	-0.1548
578136	MC	0	8	7	35	2019	0.52	0.52	0.6392	0.6392
578133	MC	0	9	7	27	2019	0.65	0.68	-0.0127	-0.0127
578135	MC	0	10	7	28	2019	0.36	0.36	1.4536	1.4536
578139	MC	0	11	7	31	2019	0.81	0.82	-0.9784	-0.9784
578131	MC	0	12	7	33	2019	0.52	0.52	0.6067	0.6067
271996	MC	0	13	0	13	2019	0.67	0.63	-0.1422	-0.1422
340677	MC	0	14	0	14	2019	0.70	0.71	-0.2380	-0.2380
271993	MC	0	15	0	15	2019	0.83	0.82	-1.1425	-1.1425
278410	MC	0	16	0	16	2019	0.54	0.51	0.4323	0.4323
271992	ESR	0	17	0	17	2019	0.60	0.55	0.2551	0.2551
271995	MC	0	18	0	18	2019	0.48	0.44	0.8619	0.8619
278411	OE	0	19	0	19	2019	0.47	0.50	0.9355	0.9355
504073	MC	0	37	7	41	2019	0.39	0.37	1.2632	1.2632
581079	MC	0	38	5	6	2019	0.36	0.31	1.4640	1.4640
581087	MC	0	39	2	42	2019	0.60	0.64	0.2342	0.2342
252790	MC	0	40	0	38	2019	0.51	0.49	0.6986	0.6986
579131	MC	0	43	5	27	2019	0.62	0.60	0.1814	0.1814
579140	MC	0	44	5	28	2019	0.65	0.62	-0.0175	-0.0175
580248	ESR	0	45	5	31	2019	0.46	0.48	0.9405	0.9405
579145	MC	0	46	5	32	2019	0.44	0.46	1.0515	1.0515
581150	MC	0	47	5	34	2019	0.57	0.60	0.4301	0.4301
579139	MC	0	48	5	35	2019	0.50	0.49	0.7592	0.7592
574381	MC	0	49	9	26	2019	0.63	0.61	0.1046	0.1046
574383	MC	0	50	9	30	2019	0.71	0.71	-0.3676	-0.3676
574376	MC	0	51	9	28	2019	0.49	0.48	0.7959	0.7959
574380	MC	0	52	9	31	2019	0.41	0.41	1.1782	1.1782
574379	ESR	0	53	9	32	2019	0.49	0.47	0.7150	0.7150
574375	MC	0	54	9	34	2019	0.61	0.61	0.1939	0.1939
574411	OE	0	55	9	36	2019	0.58	0.58	0.4212	0.4212

ELA Grade 4

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
341147	MC	0	1	0	3	2019	0.49	0.47	0.8379	0.8379
341145	MC	0	2	0	4	2019	0.58	0.57	0.4177	0.4177
581073	MC	0	3	8	6	2019	0.55	0.54	0.5434	0.5434
581069	MC	0	4	6	6	2019	0.42	0.38	1.2142	1.2142
504070	MC	0	5	2	51	2019	0.49	0.49	0.8484	0.8484
495045	MC	0	7	0	7	2019	0.57	0.55	0.3275	0.3275
495047	MC	0	8	0	8	2019	0.72	0.73	-0.4604	-0.4604
495048	MC	0	9	0	9	2019	0.60	0.64	0.3239	0.3239
495053	MC	0	10	0	11	2019	0.41	0.45	1.2575	1.2575
495046	MC	0	11	0	12	2019	0.62	0.60	0.1490	0.1490
495051	ESR	0	12	0	14	2019	0.60	0.54	0.2363	0.2363
495049	MC	0	13	0	13	2019	0.79	0.79	-0.7469	-0.7469
495050	ESR	0	14	0	15	2019	0.54	0.54	0.6063	0.6063
579417	MC	0	15	3	37	2019	0.64	0.63	0.0550	0.0550
579415	ESR	0	16	3	39	2019	0.77	0.72	-0.6306	-0.6306
579416	MC	0	17	3	41	2019	0.47	0.52	0.9163	0.9163
579420	MC	0	18	3	42	2019	0.63	0.62	0.1009	0.1009
579390	MC	0	19	3	44	2019	0.42	0.40	1.1742	1.1742
579419	MC	0	20	3	45	2019	0.64	0.62	0.0380	0.0380
579155	MC	0	21	7	36	2019	0.66	0.59	-0.0664	-0.0664
579149	ESR	0	22	7	38	2019	0.75	0.72	-0.3266	-0.3266
579165	MC	0	23	7	39	2019	0.50	0.49	0.7872	0.7872
579159	MC	0	24	7	40	2019	0.44	0.44	1.0952	1.0952
579161	MC	0	25	7	42	2019	0.52	0.48	0.6795	0.6795
579151	MC	0	26	7	43	2019	0.71	0.67	-0.3383	-0.3383
579147	MC	0	27	7	44	2019	0.62	0.62	0.1728	0.1728
579156	MC	0	28	7	45	2019	0.41	0.36	1.2382	1.2382
504065	MC	0	46	8	51	2019	0.82	0.81	-1.0323	-1.0323
581070	MC	0	47	7	6	2019	0.51	0.51	0.7261	0.7261
254906	MC	0	48	0	47	2019	0.68	0.66	-0.2036	-0.2036
255913	MC	0	49	0	48	2019	0.57	0.52	0.4793	0.4793
576317	MC	0	52	5	36	2019	0.72	0.70	-0.3553	-0.3553
576321	MC	0	53	5	37	2019	0.40	0.41	1.2683	1.2683
576318	ESR	0	54	5	39	2019	0.41	0.41	1.1661	1.1661
576356	MC	0	55	5	40	2019	0.47	0.48	0.8889	0.8889
576334	MC	0	56	5	42	2019	0.77	0.79	-0.7134	-0.7134

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
576332	MC	0	57	5	44	2019	0.32	0.36	1.6700	1.6700
576333	ESR	0	58	5	45	2019	0.49	0.51	0.8071	0.8071
579083	TDA	0	59	5	46	2019	0.50	0.48	0.8397	0.8397

ELA Grade 5

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
411659	MC	0	1	0	3	2019	0.69	0.68	-0.2092	-0.2092
411656	MC	0	2	0	4	2019	0.27	0.25	1.7710	1.7710
581210	MC	0	3	3	6	2019	0.53	0.56	0.5428	0.5428
581211	MC	0	4	4	6	2019	0.41	0.41	1.1158	1.1158
411658	MC	0	5	0	5	2019	0.84	0.81	-1.1830	-1.1830
409603	MC	0	7	0	11	2019	0.63	0.60	0.0553	0.0553
409606	MC	0	8	0	12	2019	0.65	0.67	-0.0292	-0.0292
409607	ESR	0	9	0	13	2019	0.55	0.58	0.3898	0.3898
409609	MC	0	10	0	7	2019	0.54	0.54	0.4730	0.4730
409611	MC	0	11	0	8	2019	0.87	0.86	-1.5094	-1.5094
409608	MC	0	12	0	9	2019	0.68	0.70	-0.2386	-0.2386
409605	MC	0	13	0	10	2019	0.37	0.33	1.3188	1.3188
579305	MC	0	14	5	36	2019	0.72	0.70	-0.4828	-0.4828
579329	ESR	0	15	5	37	2019	0.51	0.43	0.6301	0.6301
579327	ESR	0	16	5	40	2019	0.59	0.57	0.3056	0.3056
579337	MC	0	17	5	41	2019	0.75	0.73	-0.6369	-0.6369
579301	MC	0	18	5	42	2019	0.60	0.64	0.1958	0.1958
579331	MC	0	19	5	43	2019	0.48	0.51	0.7612	0.7612
579339	MC	0	20	5	44	2019	0.61	0.59	0.1337	0.1337
579333	MC	0	21	5	45	2019	0.44	0.46	0.9841	0.9841
574359	MC	0	22	7	36	2019	0.58	0.59	0.2783	0.2783
574558	MC	0	23	7	38	2019	0.60	0.58	0.1467	0.1467
574576	MC	0	24	7	39	2019	0.66	0.64	-0.1686	-0.1686
574357	MC	0	25	7	42	2019	0.43	0.45	1.0114	1.0114
577504	ESR	0	26	7	40	2019	0.55	0.54	0.4182	0.4182
574355	MC	0	27	7	43	2019	0.65	0.62	-0.1002	-0.1002
574356	ESR	0	28	7	44	2019	0.48	0.41	0.6852	0.6852
574352	MC	0	29	7	45	2019	0.42	0.41	1.0343	1.0343
581221	MC	0	47	5	52	2019	0.62	0.57	0.0949	0.0949
411661	MC	0	48	0	47	2019	0.29	0.28	1.7776	1.7776
581216	MC	0	49	9	6	2019	0.51	0.43	0.6149	0.6149
411657	MC	0	50	0	48	2019	0.49	0.50	0.6368	0.6368
579330	MC	0	53	3	39	2019	0.69	0.66	-0.3087	-0.3087
579336	ESR	0	54	3	41	2019	0.74	0.73	-0.4675	-0.4675
579332	MC	0	55	3	42	2019	0.52	0.49	0.5877	0.5877
579338	MC	0	56	3	43	2019	0.60	0.55	0.1911	0.1911

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
579326	MC	0	57	3	44	2019	0.70	0.72	-0.4308	-0.4308
579334	MC	0	58	3	45	2019	0.78	0.79	-0.9279	-0.9279
582589	TDA	0	59	3	46	2019	0.46	0.49	1.1414	1.1414

ELA Grade 6

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
341234	MC	0	1	0	3	2019	0.40	0.33	1.4264	1.4264
503921	MC	0	2	0	5	2019	0.43	0.40	1.3135	1.3135
584209	MC	0	3	7	52	2019	0.45	0.51	1.2122	1.2122
503918	MC	0	4	2	51	2019	0.35	0.33	1.7235	1.7235
584210	MC	0	5	8	52	2019	0.45	0.46	1.2184	1.2184
497114	MC	0	7	0	11	2019	0.60	0.57	0.5112	0.5112
497118	ESR	0	8	0	12	2019	0.63	0.64	0.4529	0.4529
497116	MC	0	9	0	13	2019	0.58	0.57	0.6014	0.6014
497117	MC	0	10	0	7	2019	0.55	0.57	0.7565	0.7565
497121	MC	0	11	0	8	2019	0.83	0.84	-0.9557	-0.9557
497115	MC	0	12	0	9	2019	0.32	0.32	1.8904	1.8904
497122	MC	0	13	0	10	2019	0.76	0.77	-0.4399	-0.4399
495103	MC	0	14	3	44	2018	0.75	0.76	-0.3291	-0.3291
495096	MC	0	15	3	43	2018	0.58	0.51	0.5888	0.5888
495100	MC	0	16	3	39	2018	0.79	0.74	-0.6039	-0.6039
495098	MC	0	17	3	36	2018	0.66	0.60	0.2110	0.2110
495104	MC	0	18	3	41	2018	0.40	0.43	1.5241	1.5241
495095	MC	0	19	3	45	2018	0.41	0.36	1.4342	1.4342
495101	ESR	0	20	3	38	2018	0.58	0.51	0.6347	0.6347
579296	MC	0	21	1	36	2019	0.82	0.79	-0.7543	-0.7543
579313	MC	0	22	1	37	2019	0.68	0.66	0.0629	0.0629
579314	MC	0	23	1	38	2019	0.63	0.62	0.3485	0.3485
579312	ESR	0	24	1	40	2019	0.54	0.50	0.7711	0.7711
579311	ESR	0	25	1	42	2019	0.63	0.56	0.3415	0.3415
579317	MC	0	26	1	43	2019	0.64	0.59	0.3073	0.3073
579318	MC	0	27	1	44	2019	0.33	0.29	1.8201	1.8201
579316	MC	0	28	1	45	2019	0.67	0.63	0.1347	0.1347
584203	MC	0	46	1	52	2019	0.45	0.49	1.0967	1.0967
584199	MC	0	47	6	6	2019	0.59	0.50	0.5454	0.5454
412402	MC	0	48	0	47	2019	0.67	0.68	0.1079	0.1079
412356	MC	0	49	0	48	2019	0.57	0.56	0.6237	0.6237
579323	MC	0	52	8	36	2019	0.74	0.74	-0.2447	-0.2447
579308	MC	0	53	8	37	2019	0.58	0.57	0.5939	0.5939
579322	MC	0	54	8	38	2019	0.60	0.62	0.4968	0.4968
581448	ESR	0	55	8	42	2019	0.66	0.62	0.1738	0.1738
579307	MC	0	56	8	43	2019	0.51	0.49	0.9045	0.9045

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
579321	ESR	0	57	8	44	2019	0.50	0.51	0.9811	0.9811
579306	MC	0	58	8	45	2019	0.78	0.74	-0.5204	-0.5204
582631	TDA	0	59	8	46	2019	0.51	0.50	0.9342	0.9342

ELA Grade 7

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
413189	MC	0	1	0	3	2019	0.73	0.71	-0.3600	-0.3600
341161	MC	0	2	0	5	2019	0.59	0.58	0.4429	0.4429
584046	MC	0	3	2	6	2019	0.60	0.58	0.3832	0.3832
413196	MC	0	4	0	4	2019	0.50	0.53	0.8562	0.8562
584070	MC	0	5	8	6	2019	0.39	0.35	1.3654	1.3654
497093	ESR	0	7	0	11	2019	0.62	0.58	0.1665	0.1665
497100	MC	0	8	0	12	2019	0.69	0.72	-0.1147	-0.1147
497097	MC	0	9	0	13	2019	0.50	0.49	0.8343	0.8343
497095	MC	0	10	0	7	2019	0.55	0.57	0.6031	0.6031
497102	MC	0	11	0	8	2019	0.82	0.81	-0.8929	-0.8929
497101	MC	0	12	0	9	2019	0.83	0.81	-0.9518	-0.9518
497098	ESR	0	13	0	10	2019	0.51	0.50	0.7896	0.7896
566576	MC	0	14	7	36	2019	0.68	0.68	-0.0558	-0.0558
566582	MC	0	15	7	37	2019	0.60	0.56	0.3631	0.3631
566577	MC	0	16	7	38	2019	0.65	0.65	0.1130	0.1130
566579	MC	0	17	7	39	2019	0.52	0.48	0.7413	0.7413
566583	MC	0	18	7	40	2019	0.48	0.47	0.9302	0.9302
566575	ESR	0	19	7	41	2019	0.63	0.63	0.2902	0.2902
566584	MC	0	20	7	42	2019	0.79	0.76	-0.7229	-0.7229
566578	ESR	0	21	7	43	2019	0.65	0.61	0.1429	0.1429
578073	MC	0	22	1	36	2019	0.64	0.62	0.1909	0.1909
578084	MC	0	23	1	37	2019	0.62	0.54	0.3108	0.3108
578100	MC	0	24	1	38	2019	0.59	0.54	0.4449	0.4449
578075	MC	0	25	1	39	2019	0.72	0.70	-0.2781	-0.2781
578071	MC	0	26	1	40	2019	0.62	0.62	0.2337	0.2337
578103	MC	0	27	1	41	2019	0.61	0.54	0.3884	0.3884
578081	ESR	0	28	1	42	2019	0.74	0.67	-0.1838	-0.1838
578096	MC	0	29	1	43	2019	0.61	0.60	0.2836	0.2836
584049	MC	0	47	5	6	2019	0.68	0.66	-0.0410	-0.0410
584050	MC	0	48	6	6	2019	0.41	0.34	1.2773	1.2773
341167	MC	0	49	0	47	2019	0.31	0.29	1.8282	1.8282
584132	MC	0	50	9	51	2019	0.46	0.43	1.0476	1.0476
579272	MC	0	53	6	36	2019	0.40	0.41	1.3147	1.3147
579298	MC	0	54	6	37	2019	0.51	0.52	0.8338	0.8338
579276	MC	0	55	6	39	2019	0.49	0.51	0.9283	0.9283
579271	MC	0	56	6	40	2019	0.75	0.73	-0.3904	-0.3904

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
579273	ESR	0	57	6	42	2019	0.58	0.56	0.4794	0.4794
579275	MC	0	58	6	43	2019	0.59	0.62	0.4353	0.4353
582723	TDA	0	59	6	45	2019	0.52	0.47	0.8894	0.8894

ELA Grade 8

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
416453	MC	0	1	0	3	2019	0.81	0.82	-1.0109	-1.0109
416449	MC	0	2	0	4	2019	0.39	0.35	1.2348	1.2348
584078	MC	0	3	3	6	2019	0.74	0.74	-0.5872	-0.5872
416518	MC	0	4	0	5	2019	0.48	0.47	0.7833	0.7833
584077	MC	0	5	2	6	2019	0.50	0.50	0.6528	0.6528
411875	MC	0	7	0	19	2019	0.43	0.45	1.1562	1.1562
411872	MC	0	8	0	20	2019	0.75	0.80	-0.6420	-0.6420
411874	MC	0	9	0	21	2019	0.63	0.68	0.0626	0.0626
411878	MC	0	10	0	15	2019	0.75	0.81	-0.6884	-0.6884
411879	MC	0	11	0	16	2019	0.59	0.58	-0.1069	-0.1069
411877	MC	0	12	0	17	2019	0.73	0.76	-0.5627	-0.5627
411881	ESR	0	13	0	18	2019	0.71	0.74	-0.2316	-0.2316
496329	MC	0	14	6	29	2019	0.56	0.56	0.3993	0.3993
496336	MC	0	15	6	30	2019	0.81	0.73	-1.0657	-1.0657
496333	MC	0	16	6	32	2019	0.73	0.71	-0.5222	-0.5222
496334	MC	0	17	6	31	2019	0.60	0.55	0.1665	0.1665
496330	ESR	0	18	8	39	2018	0.73	0.67	-0.4871	-0.4871
496328	MC	0	19	6	34	2019	0.50	0.46	0.6838	0.6838
576313	MC	0	20	6	36	2019	0.56	0.48	0.4203	0.4203
576304	MC	0	21	6	38	2019	0.65	0.66	-0.0859	-0.0859
576311	MC	0	22	6	35	2019	0.60	0.56	0.1766	0.1766
576312	MC	0	23	6	39	2019	0.53	0.49	0.5465	0.5465
576305	ESR	0	24	6	40	2019	0.52	0.42	0.5637	0.5637
576308	ESR	0	25	6	42	2019	0.39	0.25	1.1476	1.1476
576309	MC	0	26	6	43	2019	0.46	0.30	0.8869	0.8869
576310	MC	0	27	6	44	2019	0.73	0.73	-0.5175	-0.5175
503812	MC	0	45	6	50	2019	0.54	0.50	0.4772	0.4772
584106	MC	0	46	9	51	2019	0.67	0.66	-0.1973	-0.1973
503813	MC	0	47	4	50	2019	0.58	0.52	0.2926	0.2926
341015	MC	0	48	0	46	2019	0.35	0.36	1.4401	1.4401
576295	MC	0	51	5	36	2019	0.58	0.54	0.2902	0.2902
576314	MC	0	52	5	35	2019	0.64	0.61	-0.0401	-0.0401
576303	MC	0	53	5	37	2019	0.29	0.28	1.7419	1.7419
576297	MC	0	54	5	38	2019	0.49	0.46	0.7363	0.7363
576298	ESR	0	55	5	39	2019	0.59	0.54	0.3045	0.3045
576302	MC	0	56	5	41	2019	0.55	0.58	0.4374	0.4374

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
576300	ESR	0	57	5	42	2019	0.70	0.67	-0.2111	-0.2111
576296	MC	0	58	5	43	2019	0.83	0.81	-1.2110	-1.2110
579826	TDA	0	59	5	45	2019	0.51	0.51	0.7964	0.7964

Science Grade 4

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
574838	MC	0	1	12	21	2019	0.64	0.72	0.3157	0.3157
574828	MC	0	2	9	20	2019	0.69	0.74	0.1001	0.1001
498458	MC	0	3	0	4	2019	0.76	0.77	-0.3106	-0.3106
576373	MC	0	4	3	22	2019	0.60	0.56	0.5272	0.5272
574878	MC	0	5	1	22	2019	0.56	0.65	0.6259	0.6259
496521	MC	0	6	9	49	2019	0.41	0.39	1.4666	1.4666
579557	MC	0	7	12	47	2019	0.70	0.74	0.0150	0.0150
494815	MC	0	8	0	8	2019	0.32	0.35	1.8688	1.8688
495282	MC	0	9	0	6	2019	0.56	0.55	0.6751	0.6751
494806	MC	0	10	0	13	2019	0.61	0.64	0.4912	0.4912
494423	MC	0	11	0	14	2019	0.70	0.71	0.0259	0.0259
496496	MC	0	12	0	12	2019	0.49	0.44	1.1133	1.1133
495291	MC	0	13	3	49	2019	0.62	0.64	0.4583	0.4583
494812	MC	0	14	0	17	2019	0.67	0.68	0.1850	0.1850
479245	MC	0	15	10	49	2019	0.42	0.41	1.4376	1.4376
574829	MC	0	16	11	20	2019	0.38	0.38	1.5843	1.5843
496876	MC	0	17	0	16	2019	0.56	0.54	0.7681	0.7681
579925	MC	0	18	4	47	2019	0.44	0.37	1.3437	1.3437
566169	MC	0	19	11	48	2019	0.41	0.45	1.4427	1.4427
565586	SCR	0	24	12	52	2019	0.26	0.21	2.1346	2.1346
492604	SCR	0	25	0	26	2019	0.31	0.28	1.8540	1.8540
400513	SCR	0	26	0	24	2019	0.60	0.60	0.5598	0.5598
574826	MC	0	27	6	20	2019	0.48	0.47	1.1115	1.1115
496717	MC	0	28	0	32	2019	0.31	0.32	1.8630	1.8630
408836	MC	0	29	3	23	2019	0.52	0.54	0.9300	0.9300
411193	MC	0	30	0	29	2019	0.54	0.48	0.8202	0.8202
566205	MC	0	31	5	20	2019	0.43	0.44	1.3456	1.3456
579535	MC	0	32	2	48	2019	0.38	0.36	1.5954	1.5954
496522	MC	0	33	0	38	2019	0.61	0.60	0.4038	0.4038
495283	MC	0	34	0	34	2019	0.79	0.76	-0.4829	-0.4829
496519	MC	0	35	0	33	2019	0.67	0.66	0.1949	0.1949
566167	MC	0	36	3	48	2019	0.40	0.38	1.5459	1.5459
580194	MC	0	37	9	47	2019	0.49	0.45	1.0917	1.0917
496504	MC	0	38	0	39	2019	0.67	0.64	0.1664	0.1664
581718	MC	0	39	8	22	2019	0.29	0.30	2.0762	2.0762
411344	MC	0	40	0	42	2019	0.39	0.39	1.5995	1.5995

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
574831	MC	0	41	1	21	2019	0.63	0.63	0.2857	0.2857
574835	MC	0	42	6	47	2019	0.70	0.70	0.0196	0.0196
579553	MC	0	43	12	46	2019	0.49	0.54	1.0740	1.0740
494830	MC	0	44	5	23	2019	0.74	0.73	-0.2261	-0.2261
494827	MC	0	45	0	40	2019	0.36	0.36	1.6982	1.6982
566539	SCR	0	50	9	52	2019	0.50	0.50	1.0968	1.0968
566533	SCR	0	51	7	52	2019	0.72	0.69	-0.0454	-0.0454

Science Grade 8

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
496021	MC	0	1	4	51	2019	0.55	0.58	0.2908	0.2908
494459	MC	0	2	5	24	2019	0.52	0.55	0.4232	0.4232
413674	MC	0	3	3	24	2019	0.40	0.39	0.9745	0.9745
496719	MC	0	4	1	51	2019	0.51	0.58	0.3637	0.3637
412458	MC	0	5	0	4	2019	0.52	0.49	0.5244	0.5244
401685	MC	0	6	0	10	2019	0.68	0.68	-0.3505	-0.3505
575471	MC	0	7	9	49	2019	0.51	0.51	0.5156	0.5156
496022	MC	0	8	0	6	2019	0.82	0.81	-1.2222	-1.2222
334787	MC	0	9	0	13	2018	0.51	0.54	0.5184	0.5184
580789	MC	0	10	11	49	2019	0.44	0.46	0.8436	0.8436
498027	MC	0	11	0	15	2019	0.54	0.53	0.4134	0.4134
496017	MC	0	12	0	13	2019	0.55	0.48	0.3544	0.3544
580790	MC	0	13	2	50	2019	0.61	0.57	-0.0282	-0.0282
330224	MC	0	14	9	70	2017	0.44	0.43	0.8116	0.8116
493908	MC	0	15	4	24	2019	0.36	0.36	1.2200	1.2200
412134	MC	0	16	1	32	2017	0.33	0.31	1.3390	1.3390
494525	MC	0	17	10	24	2019	0.50	0.50	0.5396	0.5396
566536	SCR	0	25	7	54	2019	0.67	0.64	-0.1734	-0.1734
566537	SCR	0	26	6	54	2019	0.56	0.62	0.2929	0.2929
492606	SCR	0	27	0	25	2019	0.37	0.39	1.2401	1.2401
496018	MC	0	28	7	51	2019	0.61	0.55	0.0210	0.0210
395285	MC	0	29	8	51	2019	0.44	0.46	0.8196	0.8196
413673	MC	0	30	0	31	2019	0.49	0.48	0.6117	0.6117
278461	MC	0	31	0	34	2019	0.27	0.27	1.6766	1.6766
574839	MC	0	32	4	23	2019	0.79	0.82	-0.9984	-0.9984
410888	MC	0	33	0	36	2019	0.45	0.46	0.7820	0.7820
494458	MC	0	34	0	37	2019	0.56	0.53	0.3175	0.3175
410886	MC	0	35	0	35	2019	0.65	0.61	-0.2139	-0.2139
498859	MC	0	36	11	22	2018	0.33	0.32	1.3660	1.3660
494464	MC	0	37	0	32	2019	0.59	0.56	0.1273	0.1273
574873	MC	0	38	10	50	2019	0.48	0.45	0.6599	0.6599
496714	MC	0	39	0	38	2019	0.44	0.44	0.8167	0.8167
494524	MC	0	40	0	44	2019	0.29	0.25	1.4364	1.4364
410869	MC	0	41	0	43	2019	0.72	0.69	-0.5392	-0.5392
494453	MC	0	42	0	41	2019	0.67	0.67	-0.2728	-0.2728
401747	MC	0	43	0	39	2019	0.73	0.71	-0.6577	-0.6577

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
498031	MC	0	44	11	51	2019	0.59	0.60	0.1509	0.1509
560287	MC	0	45	5	18	2019	0.55	0.50	0.3054	0.3054
560310	MC	0	46	6	18	2019	0.71	0.64	-0.5182	-0.5182
560300	MC	0	47	5	19	2019	0.46	0.43	0.7149	0.7149
560301	MC	0	48	6	19	2019	0.65	0.62	-0.2014	-0.2014
565582	SCR	0	52	2	54	2019	0.33	0.29	1.5167	1.5167
413201	SCR	0	53	0	52	2019	0.36	0.37	1.1398	1.1398

APPENDIX P: RELIABILITIES

Each table in this appendix provides the number of items (N items), number of students (N), mean score (Mean), standard deviation of raw score (SD), reliability (r), standard error of measurement (SEM), overall (indicated as "All"), and disaggregated by reporting category code (see Chapter Two). Reliability of scores is calculated based on weighted raw scores (ELA only). For each subject and grade level, tables present reliabilities disaggregated by gender, Ethnicity, whether students had an individualized educational plan (IEP), whether students were considered an English Learner (EL), and whether students had a low-income background (Low Income).

Grade 3 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	91693	25.28	11.32	0.92	3.25	MC*OE
A	All	15	12	91693	6.84	3.75	0.78	1.77	MC*OE
B	All	15	12	91693	7.65	3.72	0.75	1.85	MC*OE
C	All	7	7	91693	3.58	1.76	0.57	1.15	MC
D	All	15	12	91693	7.21	3.36	0.76	1.63	MC*OE

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	45103	24.85	11.11	0.91	3.25	MC*OE
Total	Male	52	43	46590	25.69	11.52	0.92	3.24	MC*OE
A	Female	15	12	45103	6.68	3.69	0.77	1.77	MC*OE
A	Male	15	12	46590	7.00	3.79	0.78	1.77	MC*OE
B	Female	15	12	45103	7.45	3.67	0.75	1.85	MC*OE
B	Male	15	12	46590	7.83	3.77	0.76	1.84	MC*OE
C	Female	7	7	45103	3.60	1.73	0.56	1.14	MC
C	Male	7	7	46590	3.57	1.78	0.58	1.15	MC
D	Female	15	12	45103	7.12	3.30	0.75	1.64	MC*OE
D	Male	15	12	46590	7.29	3.41	0.77	1.63	MC*OE

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	115	26.01	11.36	0.92	3.24	MC*OE
Total	African American	52	43	9655	16.15	8.28	0.86	3.07	MC*OE
Total	Hispanic	52	43	10060	18.57	9.43	0.89	3.15	MC*OE
Total	White	52	43	63116	27.44	10.77	0.91	3.24	MC*OE
Total	Multiple Ethnicities	52	43	4649	23.30	11.21	0.92	3.23	MC*OE
Total	Asian	52	43	4010	32.36	11.17	0.92	3.17	MC*OE
Total	Pacific Islander	52	43	88	24.23	11.03	0.91	3.25	MC*OE
A	American Indian	15	12	115	7.08	3.48	0.72	1.83	MC*OE
A	African American	15	12	9655	4.10	2.72	0.66	1.59	MC*OE
A	Hispanic	15	12	10060	4.82	3.11	0.72	1.66	MC*OE
A	White	15	12	63116	7.48	3.63	0.76	1.78	MC*OE
A	Multiple Ethnicities	15	12	4649	6.23	3.67	0.77	1.74	MC*OE
A	Asian	15	12	4010	9.11	3.82	0.78	1.79	MC*OE
A	Pacific Islander	15	12	88	6.40	3.66	0.77	1.74	MC*OE
B	American Indian	15	12	115	7.75	3.85	0.78	1.80	MC*OE
B	African American	15	12	9655	4.91	2.99	0.67	1.73	MC*OE
B	Hispanic	15	12	10060	5.65	3.28	0.70	1.80	MC*OE
B	White	15	12	63116	8.28	3.56	0.73	1.84	MC*OE
B	Multiple Ethnicities	15	12	4649	7.11	3.75	0.76	1.84	MC*OE
B	Asian	15	12	4010	9.87	3.50	0.75	1.76	MC*OE
B	Pacific Islander	15	12	88	7.38	3.80	0.76	1.87	MC*OE
C	American Indian	7	7	115	3.77	1.82	0.62	1.13	MC
C	African American	7	7	9655	2.52	1.53	0.41	1.17	MC
C	Hispanic	7	7	10060	2.84	1.60	0.46	1.18	MC
C	White	7	7	63116	3.83	1.71	0.55	1.14	MC
C	Multiple Ethnicities	7	7	4649	3.36	1.74	0.56	1.16	MC
C	Asian	7	7	4010	4.48	1.77	0.63	1.08	MC
C	Pacific Islander	7	7	88	3.41	1.57	0.42	1.20	MC
D	American Indian	15	12	115	7.42	3.53	0.79	1.60	MC*OE
D	African American	15	12	9655	4.62	2.56	0.61	1.59	MC*OE
D	Hispanic	15	12	10060	5.25	2.86	0.68	1.61	MC*OE
D	White	15	12	63116	7.85	3.21	0.74	1.63	MC*OE
D	Multiple Ethnicities	15	12	4649	6.61	3.32	0.76	1.63	MC*OE
D	Asian	15	12	4010	8.90	3.30	0.77	1.60	MC*OE
D	Pacific Islander	15	12	88	7.05	3.18	0.74	1.61	MC*OE

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	15809	18.45	9.90	0.90	3.15	MC*OE
A	Y	15	12	15809	4.79	3.26	0.74	1.66	MC*OE
B	Y	15	12	15809	5.53	3.36	0.72	1.78	MC*OE
C	Y	7	7	15809	2.78	1.61	0.47	1.17	MC
D	Y	15	12	15809	5.35	3.01	0.71	1.62	MC*OE

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	4012	17.27	8.83	0.88	3.10	MC*OE
A	Y	15	12	4012	4.43	2.97	0.70	1.62	MC*OE
B	Y	15	12	4012	5.28	3.08	0.68	1.74	MC*OE
C	Y	7	7	4012	2.66	1.57	0.44	1.17	MC
D	Y	15	12	4012	4.89	2.68	0.64	1.60	MC*OE

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	39800	19.97	9.78	0.89	3.18	MC*OE
A	Y	15	12	39800	5.22	3.23	0.73	1.69	MC*OE
B	Y	15	12	39800	6.05	3.37	0.71	1.81	MC*OE
C	Y	7	7	39800	2.98	1.63	0.48	1.17	MC
D	Y	15	12	39800	5.73	2.97	0.70	1.63	MC*OE

Grade 4 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	92387	23.97	10.70	0.91	3.29	MC*OE
A	All	21	18	92387	9.71	4.68	0.80	2.07	MC*OE
B	All	13	10	92387	5.31	3.04	0.72	1.60	MC*OE
C	All	8	5	92387	3.74	2.10	0.55	1.40	MC*OE
D	All	10	10	92387	5.21	2.26	0.62	1.39	MC

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	45277	23.45	10.39	0.90	3.29	MC*OE
Total	Male	52	43	47110	24.47	10.96	0.91	3.28	MC*OE
A	Female	21	18	45277	9.51	4.58	0.80	2.07	MC*OE
A	Male	21	18	47110	9.90	4.76	0.81	2.06	MC*OE
B	Female	13	10	45277	5.08	2.93	0.70	1.60	MC*OE
B	Male	13	10	47110	5.53	3.13	0.74	1.59	MC*OE
C	Female	8	5	45277	3.76	2.08	0.55	1.40	MC*OE
C	Male	8	5	47110	3.73	2.11	0.55	1.41	MC*OE
D	Female	10	10	45277	5.11	2.21	0.60	1.40	MC
D	Male	10	10	47110	5.31	2.30	0.64	1.39	MC

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	115	21.10	10.27	0.90	3.28	MC*OE
Total	African American	52	43	9745	15.71	7.27	0.82	3.10	MC*OE
Total	Hispanic	52	43	10036	17.75	8.36	0.86	3.17	MC*OE
Total	White	52	43	63871	25.91	10.32	0.90	3.29	MC*OE
Total	Multiple Ethnicities	52	43	4583	22.14	10.47	0.90	3.26	MC*OE
Total	Asian	52	43	3965	31.07	11.45	0.92	3.26	MC*OE
Total	Pacific Islander	52	43	72	23.43	10.21	0.89	3.33	MC*OE
A	American Indian	21	18	115	8.37	4.69	0.81	2.05	MC*OE
A	African American	21	18	9745	6.28	3.36	0.67	1.93	MC*OE
A	Hispanic	21	18	10036	7.19	3.77	0.72	1.98	MC*OE
A	White	21	18	63871	10.50	4.54	0.79	2.07	MC*OE
A	Multiple Ethnicities	21	18	4583	8.95	4.56	0.80	2.06	MC*OE
A	Asian	21	18	3965	12.74	4.90	0.83	2.05	MC*OE
A	Pacific Islander	21	18	72	9.76	4.56	0.80	2.03	MC*OE
B	American Indian	13	10	115	4.73	2.77	0.67	1.58	MC*OE
B	African American	13	10	9745	3.46	2.18	0.53	1.50	MC*OE
B	Hispanic	13	10	10036	3.80	2.43	0.61	1.52	MC*OE
B	White	13	10	63871	5.74	3.02	0.72	1.61	MC*OE
B	Multiple Ethnicities	13	10	4583	4.92	2.98	0.72	1.59	MC*OE
B	Asian	13	10	3965	7.27	3.29	0.76	1.62	MC*OE
B	Pacific Islander	13	10	72	5.18	2.96	0.69	1.64	MC*OE
C	American Indian	8	5	115	3.23	2.04	0.52	1.42	MC*OE
C	African American	8	5	9745	2.32	1.61	0.40	1.25	MC*OE
C	Hispanic	8	5	10036	2.67	1.80	0.47	1.31	MC*OE
C	White	8	5	63871	4.09	2.04	0.53	1.40	MC*OE
C	Multiple Ethnicities	8	5	4583	3.43	2.04	0.54	1.38	MC*OE
C	Asian	8	5	3965	4.78	2.16	0.57	1.42	MC*OE
C	Pacific Islander	8	5	72	3.39	2.17	0.53	1.48	MC*OE
D	American Indian	10	10	115	4.77	2.08	0.52	1.45	MC
D	African American	10	10	9745	3.65	1.85	0.41	1.43	MC
D	Hispanic	10	10	10036	4.10	1.98	0.48	1.43	MC
D	White	10	10	63871	5.58	2.17	0.60	1.38	MC
D	Multiple Ethnicities	10	10	4583	4.84	2.27	0.62	1.40	MC
D	Asian	10	10	3965	6.28	2.35	0.68	1.32	MC
D	Pacific Islander	10	10	72	5.10	1.97	0.48	1.42	MC

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	16698	17.29	8.76	0.87	3.15	MC*OE
A	Y	21	18	16698	6.98	3.89	0.74	1.98	MC*OE
B	Y	13	10	16698	3.63	2.48	0.63	1.50	MC*OE
C	Y	8	5	16698	2.63	1.85	0.49	1.32	MC*OE
D	Y	10	10	16698	4.05	2.07	0.53	1.42	MC

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	3756	16.19	7.34	0.82	3.12	MC*OE
A	Y	21	18	3756	6.66	3.39	0.67	1.96	MC*OE
B	Y	13	10	3756	3.38	2.15	0.52	1.49	MC*OE
C	Y	8	5	3756	2.31	1.66	0.42	1.27	MC*OE
D	Y	10	10	3756	3.84	1.87	0.41	1.44	MC

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	39517	19.04	8.85	0.87	3.20	MC*OE
A	Y	21	18	39517	7.70	3.98	0.74	2.01	MC*OE
B	Y	13	10	39517	4.10	2.54	0.63	1.54	MC*OE
C	Y	8	5	39517	2.92	1.86	0.49	1.34	MC*OE
D	Y	10	10	39517	4.32	2.05	0.51	1.43	MC

Grade 5 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	90866	22.70	10.67	0.91	3.24	MC*OE
A	All	27	24	90866	12.79	5.69	0.84	2.28	MC*OE
B	All	8	5	90866	3.20	1.89	0.50	1.34	MC*OE
C	All	8	5	90866	2.98	2.02	0.54	1.37	MC*OE
D	All	9	9	90866	3.73	2.35	0.69	1.30	MC

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	44421	22.45	10.37	0.90	3.25	MC*OE
Total	Male	52	43	46445	22.94	10.94	0.91	3.23	MC*OE
A	Female	27	24	44421	12.75	5.54	0.83	2.29	MC*OE
A	Male	27	24	46445	12.82	5.83	0.85	2.27	MC*OE
B	Female	8	5	44421	3.19	1.87	0.48	1.35	MC*OE
B	Male	8	5	46445	3.20	1.92	0.52	1.33	MC*OE
C	Female	8	5	44421	2.93	1.99	0.53	1.37	MC*OE
C	Male	8	5	46445	3.04	2.04	0.55	1.37	MC*OE
D	Female	9	9	44421	3.58	2.29	0.68	1.30	MC
D	Male	9	9	46445	3.88	2.39	0.70	1.30	MC

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	126	21.32	10.56	0.91	3.25	MC*OE
Total	African American	52	43	9550	14.56	6.78	0.80	3.00	MC*OE
Total	Hispanic	52	43	9255	17.11	8.48	0.87	3.10	MC*OE
Total	White	52	43	63585	24.38	10.40	0.90	3.26	MC*OE
Total	Multiple Ethnicities	52	43	4422	20.97	10.24	0.90	3.22	MC*OE
Total	Asian	52	43	3843	30.57	11.68	0.92	3.25	MC*OE
Total	Pacific Islander	52	43	85	23.65	9.81	0.89	3.22	MC*OE
A	American Indian	27	24	126	12.13	5.57	0.83	2.31	MC*OE
A	African American	27	24	9550	8.53	3.98	0.69	2.21	MC*OE
A	Hispanic	27	24	9255	9.93	4.74	0.77	2.26	MC*OE
A	White	27	24	63585	13.66	5.53	0.83	2.27	MC*OE
A	Multiple Ethnicities	27	24	4422	11.86	5.51	0.83	2.28	MC*OE
A	Asian	27	24	3843	16.92	5.96	0.87	2.19	MC*OE
A	Pacific Islander	27	24	85	13.39	5.36	0.82	2.30	MC*OE
B	American Indian	8	5	126	2.90	1.85	0.49	1.31	MC*OE
B	African American	8	5	9550	2.00	1.47	0.41	1.13	MC*OE
B	Hispanic	8	5	9255	2.35	1.63	0.47	1.18	MC*OE
B	White	8	5	63585	3.45	1.86	0.46	1.37	MC*OE
B	Multiple Ethnicities	8	5	4422	2.96	1.85	0.50	1.31	MC*OE
B	Asian	8	5	3843	4.28	2.00	0.47	1.45	MC*OE
B	Pacific Islander	8	5	85	3.39	1.69	0.42	1.28	MC*OE
C	American Indian	8	5	126	2.71	2.02	0.54	1.37	MC*OE
C	African American	8	5	9550	1.75	1.40	0.35	1.13	MC*OE
C	Hispanic	8	5	9255	2.10	1.65	0.46	1.21	MC*OE
C	White	8	5	63585	3.24	2.01	0.53	1.38	MC*OE
C	Multiple Ethnicities	8	5	4422	2.74	1.94	0.52	1.34	MC*OE
C	Asian	8	5	3843	4.24	2.26	0.57	1.49	MC*OE
C	Pacific Islander	8	5	85	3.08	1.95	0.56	1.29	MC*OE
D	American Indian	9	9	126	3.57	2.28	0.66	1.32	MC
D	African American	9	9	9550	2.28	1.59	0.39	1.25	MC
D	Hispanic	9	9	9255	2.74	1.90	0.55	1.28	MC
D	White	9	9	63585	4.03	2.35	0.69	1.32	MC
D	Multiple Ethnicities	9	9	4422	3.41	2.25	0.66	1.30	MC
D	Asian	9	9	3843	5.12	2.61	0.77	1.25	MC
D	Pacific Islander	9	9	85	3.79	2.28	0.66	1.32	MC

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	16717	15.71	8.17	0.86	3.05	MC*OE
A	Y	27	24	16717	9.11	4.58	0.76	2.24	MC*OE
B	Y	8	5	16717	2.09	1.57	0.46	1.15	MC*OE
C	Y	8	5	16717	1.89	1.60	0.47	1.16	MC*OE
D	Y	9	9	16717	2.62	1.86	0.53	1.27	MC

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	2994	14.28	6.34	0.78	2.96	MC*OE
A	Y	27	24	2994	8.57	3.87	0.67	2.22	MC*OE
B	Y	8	5	2994	1.81	1.32	0.37	1.05	MC*OE
C	Y	8	5	2994	1.62	1.29	0.27	1.10	MC*OE
D	Y	9	9	2994	2.29	1.53	0.33	1.25	MC

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	38103	17.92	8.63	0.87	3.13	MC*OE
A	Y	27	24	38103	10.30	4.80	0.78	2.27	MC*OE
B	Y	8	5	38103	2.50	1.67	0.46	1.22	MC*OE
C	Y	8	5	38103	2.24	1.69	0.47	1.23	MC*OE
D	Y	9	9	38103	2.88	1.94	0.56	1.29	MC

Grade 6 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	90563	23.87	10.11	0.89	3.30	MC*OE
A	All	20	17	90563	10.92	4.70	0.79	2.14	MC*OE
B	All	15	12	90563	5.89	2.78	0.66	1.62	MC*OE
C	All	8	5	90563	2.54	2.14	0.60	1.35	MC*OE
D	All	9	9	90563	4.53	1.99	0.56	1.32	MC

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	44020	24.11	9.95	0.89	3.32	MC*OE
Total	Male	52	43	46543	23.65	10.26	0.90	3.28	MC*OE
A	Female	20	17	44020	10.91	4.59	0.78	2.16	MC*OE
A	Male	20	17	46543	10.93	4.80	0.81	2.11	MC*OE
B	Female	15	12	44020	6.01	2.76	0.65	1.62	MC*OE
B	Male	15	12	46543	5.78	2.79	0.66	1.62	MC*OE
C	Female	8	5	44020	2.57	2.14	0.59	1.37	MC*OE
C	Male	8	5	46543	2.51	2.14	0.61	1.34	MC*OE
D	Female	9	9	44020	4.63	1.96	0.54	1.32	MC
D	Male	9	9	46543	4.44	2.02	0.57	1.32	MC

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	130	21.58	9.25	0.88	3.24	MC*OE
Total	African American	52	43	9495	16.58	7.03	0.80	3.12	MC*OE
Total	Hispanic	52	43	9794	18.26	8.05	0.84	3.19	MC*OE
Total	White	52	43	63067	25.47	9.81	0.89	3.30	MC*OE
Total	Multiple Ethnicities	52	43	4141	22.23	9.74	0.89	3.28	MC*OE
Total	Asian	52	43	3876	31.76	10.78	0.91	3.22	MC*OE
Total	Pacific Islander	52	43	60	22.98	9.63	0.89	3.23	MC*OE
A	American Indian	20	17	130	9.99	4.04	0.72	2.13	MC*OE
A	African American	20	17	9495	7.55	3.75	0.70	2.06	MC*OE
A	Hispanic	20	17	9794	8.30	4.12	0.74	2.10	MC*OE
A	White	20	17	63067	11.67	4.49	0.78	2.11	MC*OE
A	Multiple Ethnicities	20	17	4141	10.19	4.63	0.79	2.13	MC*OE
A	Asian	20	17	3876	14.30	4.49	0.81	1.95	MC*OE
A	Pacific Islander	20	17	60	10.27	4.32	0.77	2.09	MC*OE
B	American Indian	15	12	130	5.39	2.89	0.69	1.60	MC*OE
B	African American	15	12	9495	4.28	2.10	0.44	1.57	MC*OE
B	Hispanic	15	12	9794	4.61	2.29	0.53	1.58	MC*OE
B	White	15	12	63067	6.24	2.73	0.65	1.63	MC*OE
B	Multiple Ethnicities	15	12	4141	5.53	2.68	0.64	1.61	MC*OE
B	Asian	15	12	3876	7.86	3.15	0.73	1.62	MC*OE
B	Pacific Islander	15	12	60	6.10	2.59	0.62	1.60	MC*OE
C	American Indian	8	5	130	2.08	1.93	0.59	1.24	MC*OE
C	African American	8	5	9495	1.28	1.31	0.39	1.02	MC*OE
C	Hispanic	8	5	9794	1.62	1.60	0.49	1.14	MC*OE
C	White	8	5	63067	2.80	2.17	0.59	1.39	MC*OE
C	Multiple Ethnicities	8	5	4141	2.22	2.02	0.59	1.29	MC*OE
C	Asian	8	5	3876	4.04	2.50	0.65	1.48	MC*OE
C	Pacific Islander	8	5	60	2.38	2.08	0.60	1.30	MC*OE
D	American Indian	9	9	130	4.11	1.89	0.49	1.36	MC
D	African American	9	9	9495	3.47	1.72	0.36	1.38	MC
D	Hispanic	9	9	9794	3.73	1.76	0.38	1.38	MC
D	White	9	9	63067	4.77	1.97	0.56	1.30	MC
D	Multiple Ethnicities	9	9	4141	4.28	1.96	0.53	1.34	MC
D	Asian	9	9	3876	5.57	2.02	0.62	1.24	MC
D	Pacific Islander	9	9	60	4.23	2.17	0.65	1.28	MC

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	16071	16.26	7.53	0.83	3.13	MC*OE
A	Y	20	17	16071	7.24	3.90	0.72	2.06	MC*OE
B	Y	15	12	16071	4.13	2.15	0.48	1.56	MC*OE
C	Y	8	5	16071	1.51	1.46	0.45	1.09	MC*OE
D	Y	9	9	16071	3.38	1.75	0.38	1.38	MC

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	2733	14.86	6.05	0.75	3.05	MC*OE
A	Y	20	17	2733	6.54	3.34	0.65	1.99	MC*OE
B	Y	15	12	2733	3.87	1.91	0.36	1.53	MC*OE
C	Y	8	5	2733	1.23	1.21	0.32	1.00	MC*OE
D	Y	9	9	2733	3.22	1.59	0.23	1.39	MC

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	38118	19.39	8.37	0.85	3.22	MC*OE
A	Y	20	17	38118	8.89	4.23	0.75	2.12	MC*OE
B	Y	15	12	38118	4.86	2.35	0.54	1.59	MC*OE
C	Y	8	5	38118	1.75	1.66	0.50	1.18	MC*OE
D	Y	9	9	38118	3.88	1.83	0.44	1.37	MC

Grade 7 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	90812	21.14	10.40	0.91	3.20	MC*OE
A	All	21	18	90812	9.09	4.55	0.81	1.99	MC*OE
B	All	13	10	90812	5.81	3.28	0.74	1.66	MC*OE
C	All	9	9	90812	3.69	2.09	0.57	1.37	MC
D	All	9	6	90812	2.55	1.86	0.54	1.26	MC*OE

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	43783	21.15	10.19	0.90	3.21	MC*OE
Total	Male	52	43	47029	21.14	10.60	0.91	3.19	MC*OE
A	Female	21	18	43783	9.04	4.47	0.80	1.99	MC*OE
A	Male	21	18	47029	9.13	4.62	0.82	1.98	MC*OE
B	Female	13	10	43783	5.90	3.21	0.73	1.67	MC*OE
B	Male	13	10	47029	5.74	3.35	0.75	1.66	MC*OE
C	Female	9	9	43783	3.66	2.06	0.56	1.37	MC
C	Male	9	9	47029	3.72	2.11	0.58	1.36	MC
D	Female	8	8	61413	3.99	2.00	0.61	1.25	MC
D	Male	8	8	64395	3.94	2.03	0.62	1.24	MC

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	118	19.52	10.10	0.90	3.13	MC*OE
Total	African American	52	43	9549	14.29	6.80	0.81	2.98	MC*OE
Total	Hispanic	52	43	9448	15.90	7.97	0.85	3.06	MC*OE
Total	White	52	43	64025	22.54	10.26	0.90	3.22	MC*OE
Total	Multiple Ethnicities	52	43	3933	19.43	10.08	0.90	3.18	MC*OE
Total	Asian	52	43	3662	30.14	11.60	0.93	3.16	MC*OE
Total	Pacific Islander	52	43	77	19.90	10.84	0.91	3.21	MC*OE
A	American Indian	21	18	118	8.30	4.34	0.80	1.95	MC*OE
A	African American	21	18	9549	6.19	3.27	0.66	1.92	MC*OE
A	Hispanic	21	18	9448	6.87	3.68	0.72	1.95	MC*OE
A	White	21	18	64025	9.68	4.47	0.80	1.99	MC*OE
A	Multiple Ethnicities	21	18	3933	8.34	4.42	0.80	1.99	MC*OE
A	Asian	21	18	3662	12.88	4.86	0.85	1.90	MC*OE
A	Pacific Islander	21	18	77	8.61	4.68	0.82	2.00	MC*OE
B	American Indian	13	10	118	5.36	3.27	0.75	1.64	MC*OE
B	African American	13	10	9549	3.81	2.43	0.63	1.49	MC*OE
B	Hispanic	13	10	9448	4.30	2.75	0.68	1.55	MC*OE
B	White	13	10	64025	6.22	3.24	0.73	1.68	MC*OE
B	Multiple Ethnicities	13	10	3933	5.32	3.25	0.74	1.65	MC*OE
B	Asian	13	10	3662	8.43	3.32	0.75	1.65	MC*OE
B	Pacific Islander	13	10	77	5.31	3.33	0.75	1.66	MC*OE
C	American Indian	9	9	118	3.57	2.18	0.62	1.34	MC
C	African American	9	9	9549	2.62	1.57	0.30	1.32	MC
C	Hispanic	9	9	9448	2.90	1.71	0.38	1.35	MC
C	White	9	9	64025	3.90	2.09	0.57	1.38	MC
C	Multiple Ethnicities	9	9	3933	3.41	2.05	0.57	1.35	MC
C	Asian	9	9	3662	5.08	2.34	0.68	1.32	MC
C	Pacific Islander	9	9	77	3.42	2.22	0.65	1.32	MC
D	American Indian	9	6	118	2.30	1.81	0.59	1.16	MC*OE
D	African American	9	6	9549	1.66	1.30	0.28	1.10	MC*OE
D	Hispanic	9	6	9448	1.83	1.44	0.37	1.14	MC*OE
D	White	9	6	64025	2.74	1.88	0.54	1.28	MC*OE
D	Multiple Ethnicities	9	6	3933	2.36	1.77	0.51	1.24	MC*OE
D	Asian	9	6	3662	3.76	2.28	0.64	1.37	MC*OE
D	Pacific Islander	9	6	77	2.56	1.96	0.54	1.33	MC*OE

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	15965	13.56	6.61	0.80	2.96	MC*OE
A	Y	21	18	15965	5.89	3.14	0.63	1.92	MC*OE
B	Y	13	10	15965	3.44	2.31	0.61	1.45	MC*OE
C	Y	9	9	15965	2.61	1.61	0.33	1.32	MC
D	Y	9	6	15965	1.62	1.31	0.31	1.09	MC*OE

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	2596	12.85	5.61	0.73	2.90	MC*OE
A	Y	21	18	2596	5.64	2.81	0.55	1.89	MC*OE
B	Y	13	10	2596	3.37	2.14	0.56	1.42	MC*OE
C	Y	9	9	2596	2.45	1.49	0.24	1.30	MC
D	Y	9	6	2596	1.39	1.14	0.18	1.03	MC*OE

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	37433	16.66	8.25	0.86	3.09	MC*OE
A	Y	21	18	37433	7.22	3.78	0.73	1.96	MC*OE
B	Y	13	10	37433	4.49	2.80	0.68	1.57	MC*OE
C	Y	9	9	37433	3.00	1.77	0.42	1.35	MC
D	Y	9	6	37433	1.95	1.50	0.39	1.16	MC*OE

Grade 8 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	85253	22.70	10.49	0.90	3.31	MC*OE
A	All	8	8	85253	3.77	1.99	0.59	1.28	MC
B	All	27	21	85253	11.88	5.89	0.84	2.39	MC*OE
C	All	10	7	85253	3.55	2.36	0.62	1.45	MC*OE
D	All	7	7	85253	3.50	1.70	0.49	1.21	MC

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	40685	23.26	10.15	0.89	3.33	MC*OE
Total	Male	52	43	44568	22.19	10.76	0.91	3.29	MC*OE
A	Female	8	8	40685	3.91	1.95	0.57	1.28	MC
A	Male	8	8	44568	3.65	2.01	0.60	1.27	MC
B	Female	27	21	40685	12.16	5.71	0.82	2.40	MC*OE
B	Male	27	21	44568	11.62	6.04	0.85	2.38	MC*OE
C	Female	10	7	40685	3.64	2.34	0.61	1.46	MC*OE
C	Male	10	7	44568	3.47	2.37	0.63	1.44	MC*OE
D	Female	7	7	59849	3.83	1.77	0.59	1.13	MC
D	Male	7	7	63337	3.61	1.83	0.61	1.14	MC

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	129	21.48	10.53	0.90	3.27	MC*OE
Total	African American	52	43	8691	15.97	7.17	0.81	3.13	MC*OE
Total	Hispanic	52	43	8308	17.60	8.21	0.85	3.20	MC*OE
Total	White	52	43	61214	23.94	10.31	0.90	3.32	MC*OE
Total	Multiple Ethnicities	52	43	3395	20.73	10.23	0.90	3.29	MC*OE
Total	Asian	52	43	3436	31.97	11.76	0.92	3.26	MC*OE
Total	Pacific Islander	52	43	80	24.34	10.94	0.91	3.30	MC*OE
A	American Indian	8	8	129	3.71	2.04	0.61	1.28	MC
A	African American	8	8	8691	2.85	1.60	0.34	1.30	MC
A	Hispanic	8	8	8308	3.12	1.73	0.43	1.30	MC
A	White	8	8	61214	3.93	1.98	0.59	1.27	MC
A	Multiple Ethnicities	8	8	3395	3.50	1.96	0.57	1.28	MC
A	Asian	8	8	3436	5.19	2.11	0.70	1.15	MC
A	Pacific Islander	8	8	80	4.14	1.99	0.61	1.24	MC
B	American Indian	27	21	129	11.09	5.99	0.84	2.38	MC*OE
B	African American	27	21	8691	8.18	4.28	0.73	2.23	MC*OE
B	Hispanic	27	21	8308	9.08	4.80	0.77	2.30	MC*OE
B	White	27	21	61214	12.56	5.77	0.83	2.39	MC*OE
B	Multiple Ethnicities	27	21	3395	10.77	5.73	0.83	2.38	MC*OE
B	Asian	27	21	3436	16.98	6.41	0.87	2.31	MC*OE
B	Pacific Islander	27	21	80	12.48	6.03	0.84	2.40	MC*OE
C	American Indian	10	7	129	3.38	2.29	0.64	1.36	MC*OE
C	African American	10	7	8691	2.30	1.63	0.41	1.25	MC*OE
C	Hispanic	10	7	8308	2.61	1.84	0.49	1.32	MC*OE
C	White	10	7	61214	3.77	2.36	0.62	1.46	MC*OE
C	Multiple Ethnicities	10	7	3395	3.21	2.29	0.62	1.41	MC*OE
C	Asian	10	7	3436	5.40	2.81	0.68	1.59	MC*OE
C	Pacific Islander	10	7	80	3.98	2.56	0.69	1.42	MC*OE
D	American Indian	7	7	129	3.29	1.80	0.57	1.18	MC
D	African American	7	7	8691	2.64	1.49	0.32	1.22	MC
D	Hispanic	7	7	8308	2.80	1.54	0.36	1.23	MC
D	White	7	7	61214	3.68	1.67	0.47	1.21	MC
D	Multiple Ethnicities	7	7	3395	3.26	1.70	0.49	1.22	MC
D	Asian	7	7	3436	4.39	1.70	0.54	1.15	MC
D	Pacific Islander	7	7	80	3.75	1.77	0.53	1.22	MC

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	14733	14.76	6.71	0.79	3.07	MC*OE
A	Y	8	8	14733	2.71	1.56	0.31	1.29	MC
B	Y	27	21	14733	7.40	3.99	0.70	2.18	MC*OE
C	Y	10	7	14733	2.19	1.59	0.41	1.21	MC*OE
D	Y	7	7	14733	2.46	1.43	0.27	1.22	MC

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	2112	14.49	6.14	0.76	3.03	MC*OE
A	Y	8	8	2112	2.85	1.55	0.29	1.31	MC
B	Y	27	21	2112	7.26	3.72	0.67	2.14	MC*OE
C	Y	10	7	2112	2.12	1.48	0.35	1.19	MC*OE
D	Y	7	7	2112	2.26	1.36	0.21	1.21	MC

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	33706	18.29	8.58	0.86	3.22	MC*OE
A	Y	8	8	33706	3.17	1.77	0.46	1.30	MC
B	Y	27	21	33706	9.43	4.94	0.78	2.31	MC*OE
C	Y	10	7	33706	2.75	1.93	0.53	1.33	MC*OE
D	Y	7	7	33706	2.94	1.58	0.39	1.23	MC

Grade 3 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	45	35	90980	23.74	9.19	0.89	3.09	ESR*MC*OE
A	All	18	13	90980	9.86	4.10	0.78	1.93	ESR*MC*OE
B	All	18	13	90980	9.62	4.04	0.76	1.97	ESR*MC*OE
D	All	9	9	90980	4.26	2.09	0.59	1.34	MC

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	45	35	44805	24.37	9.08	0.88	3.09	ESR*MC*OE
Total	Male	45	35	46175	23.12	9.26	0.89	3.08	ESR*MC*OE
A	Female	18	13	44805	10.17	4.04	0.77	1.93	ESR*MC*OE
A	Male	18	13	46175	9.56	4.14	0.78	1.93	ESR*MC*OE
B	Female	18	13	44805	9.80	4.00	0.76	1.98	ESR*MC*OE
B	Male	18	13	46175	9.44	4.07	0.77	1.96	ESR*MC*OE
D	Female	9	9	44805	4.40	2.08	0.59	1.34	MC
D	Male	9	9	46175	4.12	2.08	0.58	1.34	MC

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	45	35	111	23.44	9.44	0.89	3.11	ESR*MC*OE
Total	African American	45	35	9539	17.24	7.81	0.85	3.05	ESR*MC*OE
Total	Hispanic	45	35	9518	18.97	8.41	0.87	3.08	ESR*MC*OE
Total	White	45	35	63089	25.25	8.78	0.88	3.08	ESR*MC*OE
Total	Multiple Ethnicities	45	35	4644	22.45	9.27	0.89	3.10	ESR*MC*OE
Total	Asian	45	35	3993	28.24	8.60	0.88	3.00	ESR*MC*OE
Total	Pacific Islander	45	35	86	24.13	8.62	0.87	3.07	ESR*MC*OE
A	American Indian	18	13	111	9.40	4.22	0.78	1.98	ESR*MC*OE
A	African American	18	13	9539	7.13	3.75	0.74	1.93	ESR*MC*OE
A	Hispanic	18	13	9518	7.91	3.94	0.76	1.95	ESR*MC*OE
A	White	18	13	63089	10.51	3.91	0.76	1.92	ESR*MC*OE
A	Multiple Ethnicities	18	13	4644	9.34	4.16	0.78	1.94	ESR*MC*OE
A	Asian	18	13	3993	11.52	3.69	0.74	1.88	ESR*MC*OE
A	Pacific Islander	18	13	86	10.01	3.66	0.72	1.94	ESR*MC*OE
B	American Indian	18	13	111	9.67	3.93	0.74	1.99	ESR*MC*OE
B	African American	18	13	9539	6.96	3.46	0.69	1.93	ESR*MC*OE
B	Hispanic	18	13	9518	7.68	3.70	0.72	1.95	ESR*MC*OE
B	White	18	13	63089	10.23	3.90	0.74	1.97	ESR*MC*OE
B	Multiple Ethnicities	18	13	4644	9.06	4.06	0.76	1.97	ESR*MC*OE
B	Asian	18	13	3993	11.50	3.84	0.75	1.93	ESR*MC*OE
B	Pacific Islander	18	13	86	9.84	4.01	0.77	1.94	ESR*MC*OE
D	American Indian	9	9	111	4.38	2.22	0.64	1.33	MC
D	African American	9	9	9539	3.15	1.78	0.44	1.33	MC
D	Hispanic	9	9	9518	3.38	1.87	0.49	1.34	MC
D	White	9	9	63089	4.51	2.05	0.57	1.34	MC
D	Multiple Ethnicities	9	9	4644	4.06	2.10	0.59	1.34	MC
D	Asian	9	9	3993	5.21	2.12	0.62	1.30	MC
D	Pacific Islander	9	9	86	4.28	1.94	0.50	1.37	MC

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	45	35	15702	16.96	8.32	0.87	3.04	ESR*MC*OE
A	Y	18	13	15702	6.96	3.88	0.75	1.92	ESR*MC*OE
B	Y	18	13	15702	6.89	3.70	0.73	1.91	ESR*MC*OE
D	Y	9	9	15702	3.12	1.85	0.48	1.34	MC

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	45	35	3842	16.62	7.39	0.83	3.06	ESR*MC*OE
A	Y	18	13	3842	6.86	3.55	0.70	1.96	ESR*MC*OE
B	Y	18	13	3842	6.77	3.27	0.65	1.92	ESR*MC*OE
D	Y	9	9	3842	3.00	1.75	0.42	1.33	MC

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	45	35	39202	19.74	8.46	0.87	3.09	ESR*MC*OE
A	Y	18	13	39202	8.24	3.95	0.76	1.95	ESR*MC*OE
B	Y	18	13	39202	7.95	3.72	0.72	1.97	ESR*MC*OE
D	Y	9	9	39202	3.55	1.91	0.50	1.35	MC

Grade 4 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	63	39	91862	33.02	11.66	0.85	4.55	ESR*MC*TDA
A	All	18	13	91862	9.88	3.69	0.72	1.95	ESR*MC
B	All	20	16	91862	11.32	4.55	0.79	2.07	ESR*MC
D	All	9	9	91862	4.88	2.08	0.58	1.35	MC
E	All	16	1	91862	6.93	3.42			TDA

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	63	39	45058	33.79	11.61	0.85	4.56	ESR*MC*TDA
Total	Male	63	39	46804	32.27	11.66	0.85	4.51	ESR*MC*TDA
A	Female	18	13	45058	9.92	3.66	0.72	1.95	ESR*MC
A	Male	18	13	46804	9.85	3.72	0.72	1.95	ESR*MC
B	Female	20	16	45058	11.55	4.53	0.79	2.06	ESR*MC
B	Male	20	16	46804	11.09	4.56	0.79	2.08	ESR*MC
D	Female	9	9	45058	5.00	2.07	0.58	1.35	MC
D	Male	9	9	46804	4.77	2.08	0.57	1.36	MC
E	Female	16	1	45058	7.32	3.44			TDA
E	Male	16	1	46804	6.56	3.35			TDA

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	63	39	118	30.85	11.71	0.84	4.68	ESR*MC*TDA
Total	African American	63	39	9765	24.60	10.53	0.82	4.50	ESR*MC*TDA
Total	Hispanic	63	39	9449	26.89	11.00	0.83	4.58	ESR*MC*TDA
Total	White	63	39	63939	34.91	10.99	0.84	4.43	ESR*MC*TDA
Total	Multiple Ethnicities	63	39	4573	31.89	11.76	0.85	4.57	ESR*MC*TDA
Total	Asian	63	39	3948	39.13	10.82	0.84	4.35	ESR*MC*TDA
Total	Pacific Islander	63	39	70	32.13	10.50	0.84	4.18	ESR*MC*TDA
A	American Indian	18	13	118	9.57	3.81	0.75	1.92	ESR*MC
A	African American	18	13	9765	7.61	3.42	0.67	1.96	ESR*MC
A	Hispanic	18	13	9449	8.26	3.52	0.69	1.97	ESR*MC
A	White	18	13	63939	10.39	3.53	0.70	1.94	ESR*MC
A	Multiple Ethnicities	18	13	4573	9.62	3.78	0.73	1.95	ESR*MC
A	Asian	18	13	3948	11.60	3.50	0.71	1.88	ESR*MC
A	Pacific Islander	18	13	70	9.60	3.78	0.73	1.95	ESR*MC
B	American Indian	20	16	118	10.75	4.56	0.79	2.11	ESR*MC
B	African American	20	16	9765	8.38	4.11	0.74	2.09	ESR*MC
B	Hispanic	20	16	9449	9.16	4.27	0.76	2.10	ESR*MC
B	White	20	16	63939	12.00	4.37	0.78	2.06	ESR*MC
B	Multiple Ethnicities	20	16	4573	10.88	4.56	0.79	2.08	ESR*MC
B	Asian	20	16	3948	13.27	4.18	0.77	1.98	ESR*MC
B	Pacific Islander	20	16	70	10.71	4.38	0.78	2.07	ESR*MC
D	American Indian	9	9	118	4.77	2.15	0.61	1.34	MC
D	African American	9	9	9765	3.73	1.92	0.49	1.37	MC
D	Hispanic	9	9	9449	3.98	1.95	0.50	1.38	MC
D	White	9	9	63939	5.15	2.02	0.55	1.35	MC
D	Multiple Ethnicities	9	9	4573	4.72	2.06	0.56	1.36	MC
D	Asian	9	9	3948	5.81	2.02	0.59	1.29	MC
D	Pacific Islander	9	9	70	4.96	2.03	0.55	1.36	MC
E	American Indian	16	1	118	5.76	3.57			TDA
E	African American	16	1	9765	4.89	3.30			TDA
E	Hispanic	16	1	9449	5.49	3.41			TDA
E	White	16	1	63939	7.39	3.25			TDA
E	Multiple Ethnicities	16	1	4573	6.67	3.43			TDA
E	Asian	16	1	3948	8.45	3.25			TDA
E	Pacific Islander	16	1	70	6.86	2.82			TDA

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	16637	23.59	10.77	0.82	4.52	ESR*MC*TDA
A	Y	18	13	16637	7.41	3.46	0.68	1.97	ESR*MC
B	Y	20	16	16637	8.10	4.15	0.75	2.08	ESR*MC
D	Y	9	9	16637	3.59	1.94	0.50	1.37	MC
E	Y	16	1	16637	4.49	3.34			TDA

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	3587	23.20	9.68	0.78	4.57	ESR*MC*TDA
A	Y	18	13	3587	7.24	3.12	0.60	1.98	ESR*MC
B	Y	20	16	3587	7.69	3.62	0.67	2.09	ESR*MC
D	Y	9	9	3587	3.48	1.81	0.42	1.38	MC
E	Y	16	1	3587	4.78	3.38			TDA

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	39106	27.96	11.07	0.83	4.54	ESR*MC*TDA
A	Y	18	13	39106	8.55	3.57	0.69	1.97	ESR*MC
B	Y	20	16	39106	9.52	4.35	0.77	2.10	ESR*MC
D	Y	9	9	39106	4.17	1.98	0.52	1.38	MC
E	Y	16	1	39106	5.72	3.34			TDA

Grade 5 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	63	39	91028	33.25	10.67	0.84	4.31	ESR*MC*TDA
A	All	19	14	91028	11.26	3.77	0.68	2.12	ESR*MC
B	All	19	15	91028	10.22	4.07	0.76	1.98	ESR*MC
D	All	9	9	91028	4.41	2.01	0.57	1.32	MC
E	All	16	1	91028	7.35	3.02			TDA

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	63	39	44543	34.54	10.46	0.83	4.26	ESR*MC*TDA
Total	Male	63	39	46485	32.01	10.72	0.84	4.31	ESR*MC*TDA
A	Female	19	14	44543	11.59	3.65	0.67	2.09	ESR*MC
A	Male	19	14	46485	10.95	3.84	0.69	2.13	ESR*MC
B	Female	19	15	44543	10.48	4.03	0.76	1.97	ESR*MC
B	Male	19	15	46485	9.98	4.09	0.77	1.98	ESR*MC
D	Female	9	9	44543	4.60	2.02	0.58	1.31	MC
D	Male	9	9	46485	4.23	1.98	0.55	1.32	MC
E	Female	16	1	44543	7.86	2.96			TDA
E	Male	16	1	46485	6.86	3.00			TDA

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	63	39	126	31.82	9.88	0.82	4.15	ESR*MC*TDA
Total	African American	63	39	9587	25.40	9.46	0.79	4.37	ESR*MC*TDA
Total	Hispanic	63	39	9267	27.80	10.20	0.81	4.41	ESR*MC*TDA
Total	White	63	39	63670	34.96	10.08	0.83	4.21	ESR*MC*TDA
Total	Multiple Ethnicities	63	39	4448	32.26	10.61	0.83	4.35	ESR*MC*TDA
Total	Asian	63	39	3847	38.73	10.02	0.83	4.19	ESR*MC*TDA
Total	Pacific Islander	63	39	83	36.53	10.52	0.84	4.18	ESR*MC*TDA
A	American Indian	19	14	126	10.86	3.66	0.65	2.16	ESR*MC
A	African American	19	14	9587	8.88	3.60	0.65	2.14	ESR*MC
A	Hispanic	19	14	9267	9.57	3.75	0.67	2.14	ESR*MC
A	White	19	14	63670	11.81	3.59	0.66	2.10	ESR*MC
A	Multiple Ethnicities	19	14	4448	10.96	3.74	0.68	2.12	ESR*MC
A	Asian	19	14	3847	12.51	3.33	0.62	2.06	ESR*MC
A	Pacific Islander	19	14	83	12.23	3.64	0.66	2.11	ESR*MC
B	American Indian	19	15	126	9.88	4.18	0.77	2.01	ESR*MC
B	African American	19	15	9587	7.61	3.50	0.68	1.97	ESR*MC
B	Hispanic	19	15	9267	8.44	3.78	0.72	1.98	ESR*MC
B	White	19	15	63670	10.78	3.95	0.75	1.97	ESR*MC
B	Multiple Ethnicities	19	15	4448	9.87	4.02	0.75	1.99	ESR*MC
B	Asian	19	15	3847	12.19	3.91	0.75	1.94	ESR*MC
B	Pacific Islander	19	15	83	11.23	4.21	0.79	1.94	ESR*MC
D	American Indian	9	9	126	4.19	1.87	0.48	1.35	MC
D	African American	9	9	9587	3.24	1.70	0.40	1.32	MC
D	Hispanic	9	9	9267	3.54	1.83	0.47	1.33	MC
D	White	9	9	63670	4.67	1.96	0.55	1.32	MC
D	Multiple Ethnicities	9	9	4448	4.27	1.98	0.55	1.32	MC
D	Asian	9	9	3847	5.32	2.08	0.61	1.29	MC
D	Pacific Islander	9	9	83	4.88	1.95	0.54	1.32	MC
E	American Indian	16	1	126	6.89	2.66			TDA
E	African American	16	1	9587	5.67	3.07			TDA
E	Hispanic	16	1	9267	6.26	3.13			TDA
E	White	16	1	63670	7.69	2.86			TDA
E	Multiple Ethnicities	16	1	4448	7.16	3.07			TDA
E	Asian	16	1	3847	8.70	2.91			TDA
E	Pacific Islander	16	1	83	8.19	2.86			TDA

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	16724	24.16	9.81	0.80	4.40	ESR*MC*TDA
A	Y	19	14	16724	8.48	3.75	0.68	2.12	ESR*MC
B	Y	19	15	16724	7.30	3.54	0.69	1.96	ESR*MC
D	Y	9	9	16724	3.29	1.73	0.41	1.33	MC
E	Y	16	1	16724	5.10	3.13			TDA

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	2969	22.15	8.15	0.70	4.48	ESR*MC*TDA
A	Y	19	14	2969	7.74	3.19	0.55	2.13	ESR*MC
B	Y	19	15	2969	6.59	2.83	0.52	1.96	ESR*MC
D	Y	9	9	2969	2.93	1.53	0.24	1.33	MC
E	Y	16	1	2969	4.90	3.21			TDA

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	38158	28.58	10.05	0.81	4.36	ESR*MC*TDA
A	Y	19	14	38158	9.87	3.73	0.67	2.15	ESR*MC
B	Y	19	15	38158	8.64	3.76	0.72	1.99	ESR*MC
D	Y	9	9	38158	3.73	1.84	0.48	1.33	MC
E	Y	16	1	38158	6.34	3.04			TDA

Grade 6 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	63	39	90232	33.50	11.75	0.84	4.63	ESR*MC*TDA
A	All	19	14	90232	10.83	4.27	0.76	2.08	ESR*MC
B	All	19	15	90232	10.98	4.20	0.77	2.00	ESR*MC
D	All	9	9	90232	4.23	2.00	0.52	1.38	MC
E	All	16	1	90232	7.46	3.48			TDA

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	63	39	43945	35.10	11.60	0.84	4.60	ESR*MC*TDA
Total	Male	63	39	46287	31.99	11.69	0.85	4.57	ESR*MC*TDA
A	Female	19	14	43945	11.26	4.21	0.76	2.06	ESR*MC
A	Male	19	14	46287	10.42	4.29	0.76	2.08	ESR*MC
B	Female	19	15	43945	11.22	4.13	0.77	2.00	ESR*MC
B	Male	19	15	46287	10.76	4.25	0.78	1.99	ESR*MC
D	Female	9	9	43945	4.46	2.02	0.54	1.38	MC
D	Male	9	9	46287	4.01	1.97	0.50	1.39	MC
E	Female	16	1	43945	8.15	3.45			TDA
E	Male	16	1	46287	6.81	3.38			TDA

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	63	39	127	30.46	11.87	0.84	4.81	ESR*MC*TDA
Total	African American	63	39	9425	25.72	10.30	0.81	4.48	ESR*MC*TDA
Total	Hispanic	63	39	9310	27.34	11.11	0.83	4.57	ESR*MC*TDA
Total	White	63	39	63308	35.24	11.18	0.83	4.56	ESR*MC*TDA
Total	Multiple Ethnicities	63	39	4125	32.06	11.73	0.84	4.66	ESR*MC*TDA
Total	Asian	63	39	3876	40.44	11.25	0.84	4.48	ESR*MC*TDA
Total	Pacific Islander	63	39	61	33.34	10.80	0.82	4.56	ESR*MC*TDA
A	American Indian	19	14	127	9.96	4.10	0.72	2.16	ESR*MC
A	African American	19	14	9425	8.31	3.78	0.70	2.06	ESR*MC
A	Hispanic	19	14	9310	8.80	4.06	0.74	2.07	ESR*MC
A	White	19	14	63308	11.40	4.13	0.75	2.07	ESR*MC
A	Multiple Ethnicities	19	14	4125	10.34	4.25	0.76	2.08	ESR*MC
A	Asian	19	14	3876	13.03	4.07	0.77	1.96	ESR*MC
A	Pacific Islander	19	14	61	10.79	4.12	0.74	2.10	ESR*MC
B	American Indian	19	15	127	9.95	4.34	0.79	2.00	ESR*MC
B	African American	19	15	9425	8.56	3.91	0.73	2.02	ESR*MC
B	Hispanic	19	15	9310	9.05	4.07	0.75	2.02	ESR*MC
B	White	19	15	63308	11.52	4.03	0.76	1.99	ESR*MC
B	Multiple Ethnicities	19	15	4125	10.61	4.21	0.77	2.01	ESR*MC
B	Asian	19	15	3876	13.15	3.89	0.77	1.85	ESR*MC
B	Pacific Islander	19	15	61	10.84	4.34	0.79	1.97	ESR*MC
D	American Indian	9	9	127	3.87	1.89	0.45	1.40	MC
D	African American	9	9	9425	3.20	1.75	0.39	1.37	MC
D	Hispanic	9	9	9310	3.46	1.87	0.46	1.37	MC
D	White	9	9	63308	4.45	1.97	0.51	1.39	MC
D	Multiple Ethnicities	9	9	4125	4.05	1.98	0.51	1.38	MC
D	Asian	9	9	3876	5.15	1.99	0.53	1.36	MC
D	Pacific Islander	9	9	61	4.25	2.15	0.59	1.37	MC
E	American Indian	16	1	127	6.68	3.67			TDA
E	African American	16	1	9425	5.65	3.24			TDA
E	Hispanic	16	1	9310	6.04	3.37			TDA
E	White	16	1	63308	7.87	3.37			TDA
E	Multiple Ethnicities	16	1	4125	7.07	3.51			TDA
E	Asian	16	1	3876	9.12	3.43			TDA
E	Pacific Islander	16	1	61	7.48	3.30			TDA

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	16032	22.84	9.80	0.80	4.37	ESR*MC*TDA
A	Y	19	14	16032	7.46	3.65	0.69	2.02	ESR*MC
B	Y	19	15	16032	7.62	3.75	0.71	2.02	ESR*MC
D	Y	9	9	16032	2.99	1.73	0.39	1.35	MC
E	Y	16	1	16032	4.77	3.11			TDA

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	2592	19.95	7.93	0.70	4.35	ESR*MC*TDA
A	Y	19	14	2592	6.38	2.93	0.55	1.96	ESR*MC
B	Y	19	15	2592	6.54	3.02	0.56	2.00	ESR*MC
D	Y	9	9	2592	2.54	1.52	0.25	1.31	MC
E	Y	16	1	2592	4.49	3.11			TDA

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	37790	28.42	10.96	0.83	4.56	ESR*MC*TDA
A	Y	19	14	37790	9.18	4.03	0.73	2.09	ESR*MC
B	Y	19	15	37790	9.41	4.07	0.75	2.03	ESR*MC
D	Y	9	9	37790	3.58	1.87	0.46	1.38	MC
E	Y	16	1	37790	6.25	3.33			TDA

Grade 7 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	63	39	90515	33.71	10.80	0.82	4.53	ESR*MC*TDA
A	All	19	15	90515	11.35	3.86	0.74	1.98	ESR*MC
B	All	19	14	90515	10.93	3.85	0.73	2.00	ESR*MC
D	All	9	9	90515	4.41	1.96	0.52	1.36	MC
E	All	16	1	90515	7.02	3.38			TDA

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	63	39	43743	35.87	10.48	0.82	4.49	ESR*MC*TDA
Total	Male	63	39	46772	31.69	10.71	0.83	4.45	ESR*MC*TDA
A	Female	19	15	43743	11.95	3.73	0.72	1.96	ESR*MC
A	Male	19	15	46772	10.78	3.90	0.74	2.00	ESR*MC
B	Female	19	14	43743	11.46	3.73	0.71	1.99	ESR*MC
B	Male	19	14	46772	10.44	3.89	0.73	2.01	ESR*MC
D	Female	9	9	43743	4.68	1.98	0.53	1.36	MC
D	Male	9	9	46772	4.17	1.92	0.50	1.36	MC
E	Female	16	1	43743	7.79	3.34			TDA
E	Male	16	1	46772	6.30	3.26			TDA

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	63	39	112	32.25	10.62	0.81	4.62	ESR*MC*TDA
Total	African American	63	39	9449	27.24	9.92	0.80	4.38	ESR*MC*TDA
Total	Hispanic	63	39	9003	28.65	10.36	0.81	4.47	ESR*MC*TDA
Total	White	63	39	64318	35.05	10.34	0.81	4.46	ESR*MC*TDA
Total	Multiple Ethnicities	63	39	3909	32.32	11.05	0.83	4.54	ESR*MC*TDA
Total	Asian	63	39	3647	40.88	9.90	0.80	4.40	ESR*MC*TDA
Total	Pacific Islander	63	39	77	33.40	11.46	0.83	4.71	ESR*MC*TDA
A	American Indian	19	15	112	10.86	3.85	0.72	2.04	ESR*MC
A	African American	19	15	9449	9.42	3.82	0.72	2.02	ESR*MC
A	Hispanic	19	15	9003	9.78	3.91	0.73	2.02	ESR*MC
A	White	19	15	64318	11.76	3.71	0.72	1.97	ESR*MC
A	Multiple Ethnicities	19	15	3909	10.95	3.96	0.75	1.99	ESR*MC
A	Asian	19	15	3647	13.35	3.40	0.69	1.88	ESR*MC
A	Pacific Islander	19	15	77	11.38	3.67	0.72	1.95	ESR*MC
B	American Indian	19	14	112	10.46	3.82	0.72	2.03	ESR*MC
B	African American	19	14	9449	8.86	3.62	0.68	2.05	ESR*MC
B	Hispanic	19	14	9003	9.45	3.71	0.70	2.04	ESR*MC
B	White	19	14	64318	11.34	3.73	0.72	1.99	ESR*MC
B	Multiple Ethnicities	19	14	3909	10.49	3.94	0.74	2.02	ESR*MC
B	Asian	19	14	3647	13.17	3.35	0.69	1.85	ESR*MC
B	Pacific Islander	19	14	77	10.56	4.31	0.78	2.01	ESR*MC
D	American Indian	9	9	112	4.26	1.75	0.37	1.39	MC
D	African American	9	9	9449	3.58	1.76	0.39	1.37	MC
D	Hispanic	9	9	9003	3.74	1.83	0.43	1.37	MC
D	White	9	9	64318	4.58	1.94	0.51	1.36	MC
D	Multiple Ethnicities	9	9	3909	4.23	2.00	0.54	1.35	MC
D	Asian	9	9	3647	5.45	2.02	0.58	1.31	MC
D	Pacific Islander	9	9	77	4.40	1.90	0.48	1.37	MC
E	American Indian	16	1	112	6.68	3.45			TDA
E	African American	16	1	9449	5.38	3.10			TDA
E	Hispanic	16	1	9003	5.69	3.23			TDA
E	White	16	1	64318	7.36	3.30			TDA
E	Multiple Ethnicities	16	1	3909	6.64	3.40			TDA
E	Asian	16	1	3647	8.92	3.37			TDA
E	Pacific Islander	16	1	77	7.06	3.66			TDA

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	15897	23.56	8.92	0.78	4.19	ESR*MC*TDA
A	Y	19	15	15897	8.17	3.58	0.68	2.01	ESR*MC
B	Y	19	14	15897	7.80	3.39	0.64	2.04	ESR*MC
D	Y	9	9	15897	3.15	1.70	0.36	1.36	MC
E	Y	16	1	15897	4.44	2.80			TDA

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	2465	22.38	8.18	0.72	4.33	ESR*MC*TDA
A	Y	19	15	2465	7.46	3.16	0.59	2.02	ESR*MC
B	Y	19	14	2465	7.57	3.03	0.55	2.04	ESR*MC
D	Y	9	9	2465	2.93	1.53	0.21	1.36	MC
E	Y	16	1	2465	4.42	3.01			TDA

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	37067	29.25	10.19	0.81	4.45	ESR*MC*TDA
A	Y	19	15	37067	10.02	3.85	0.73	2.02	ESR*MC
B	Y	19	14	37067	9.51	3.73	0.70	2.05	ESR*MC
D	Y	9	9	37067	3.81	1.82	0.42	1.38	MC
E	Y	16	1	37067	5.92	3.19			TDA

Grade 8 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	63	39	85686	33.87	11.57	0.84	4.68	ESR*MC*TDA
A	All	19	15	85686	10.30	3.96	0.74	2.03	ESR*MC
B	All	19	14	85686	11.12	4.10	0.75	2.07	ESR*MC
D	All	9	9	85686	4.85	2.08	0.60	1.32	MC
E	All	16	1	85686	7.60	3.57			TDA

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	63	39	40992	35.71	11.11	0.83	4.59	ESR*MC*TDA
Total	Male	63	39	44694	32.18	11.73	0.84	4.68	ESR*MC*TDA
A	Female	19	15	40992	10.71	3.77	0.72	2.01	ESR*MC
A	Male	19	15	44694	9.92	4.09	0.75	2.04	ESR*MC
B	Female	19	14	40992	11.54	4.00	0.74	2.05	ESR*MC
B	Male	19	14	44694	10.73	4.16	0.75	2.08	ESR*MC
D	Female	9	9	40992	5.14	2.05	0.60	1.30	MC
D	Male	9	9	44694	4.59	2.07	0.58	1.34	MC
E	Female	16	1	40992	8.32	3.45			TDA
E	Male	16	1	44694	6.95	3.54			TDA

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	63	39	126	33.07	11.73	0.84	4.66	ESR*MC*TDA
Total	African American	63	39	8661	26.73	10.42	0.81	4.57	ESR*MC*TDA
Total	Hispanic	63	39	8337	28.24	11.03	0.82	4.67	ESR*MC*TDA
Total	White	63	39	61636	35.30	11.07	0.83	4.59	ESR*MC*TDA
Total	Multiple Ethnicities	63	39	3409	32.39	11.72	0.84	4.69	ESR*MC*TDA
Total	Asian	63	39	3436	41.41	11.18	0.83	4.58	ESR*MC*TDA
Total	Pacific Islander	63	39	81	34.95	11.66	0.83	4.77	ESR*MC*TDA
A	American Indian	19	15	126	10.17	4.06	0.75	2.03	ESR*MC
A	African American	19	15	8661	8.36	3.60	0.68	2.02	ESR*MC
A	Hispanic	19	15	8337	8.79	3.76	0.71	2.03	ESR*MC
A	White	19	15	61636	10.67	3.88	0.73	2.02	ESR*MC
A	Multiple Ethnicities	19	15	3409	9.95	4.09	0.76	2.02	ESR*MC
A	Asian	19	15	3436	12.44	3.85	0.73	2.01	ESR*MC
A	Pacific Islander	19	15	81	10.51	4.11	0.75	2.07	ESR*MC
B	American Indian	19	14	126	11.02	4.18	0.76	2.05	ESR*MC
B	African American	19	14	8661	8.85	3.79	0.70	2.09	ESR*MC
B	Hispanic	19	14	8337	9.33	3.94	0.72	2.09	ESR*MC
B	White	19	14	61636	11.59	3.98	0.73	2.06	ESR*MC
B	Multiple Ethnicities	19	14	3409	10.62	4.14	0.75	2.07	ESR*MC
B	Asian	19	14	3436	13.24	3.76	0.74	1.93	ESR*MC
B	Pacific Islander	19	14	81	11.25	4.12	0.75	2.07	ESR*MC
D	American Indian	9	9	126	4.78	2.00	0.54	1.35	MC
D	African American	9	9	8661	3.79	1.90	0.50	1.35	MC
D	Hispanic	9	9	8337	4.01	1.99	0.55	1.34	MC
D	White	9	9	61636	5.06	2.02	0.58	1.32	MC
D	Multiple Ethnicities	9	9	3409	4.71	2.12	0.61	1.32	MC
D	Asian	9	9	3436	6.00	2.00	0.64	1.21	MC
D	Pacific Islander	9	9	81	4.95	1.79	0.42	1.36	MC
E	American Indian	16	1	126	7.11	3.54			TDA
E	African American	16	1	8661	5.73	3.38			TDA
E	Hispanic	16	1	8337	6.11	3.51			TDA
E	White	16	1	61636	7.98	3.43			TDA
E	Multiple Ethnicities	16	1	3409	7.12	3.58			TDA
E	Asian	16	1	3436	9.74	3.56			TDA
E	Pacific Islander	16	1	81	8.25	3.65			TDA

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	14823	23.21	9.45	0.79	4.36	ESR*MC*TDA
A	Y	19	15	14823	7.35	3.45	0.66	2.02	ESR*MC
B	Y	19	14	14823	7.86	3.60	0.67	2.07	ESR*MC
D	Y	9	9	14823	3.31	1.79	0.43	1.35	MC
E	Y	16	1	14823	4.69	3.05			TDA

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	2098	20.92	8.27	0.70	4.52	ESR*MC*TDA
A	Y	19	15	2098	6.69	2.85	0.50	2.01	ESR*MC
B	Y	19	14	2098	7.04	2.97	0.52	2.05	ESR*MC
D	Y	9	9	2098	2.95	1.54	0.25	1.34	MC
E	Y	16	1	2098	4.24	3.31			TDA

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	33854	29.09	10.88	0.82	4.63	ESR*MC*TDA
A	Y	19	15	33854	8.99	3.77	0.71	2.03	ESR*MC
B	Y	19	14	33854	9.60	3.96	0.72	2.10	ESR*MC
D	Y	9	9	33854	4.15	1.99	0.54	1.35	MC
E	Y	16	1	33854	6.34	3.44			TDA

Grade 4 Science

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	48	43	91071	24.63	8.76	0.87	3.10	MC*SCR
A	All	24	22	91071	12.80	4.73	0.79	2.18	MC*SCR
B	All	8	6	91071	3.74	1.90	0.53	1.31	MC*SCR
C	All	8	7	91071	4.13	1.81	0.54	1.22	MC*SCR
D	All	8	8	91071	3.96	1.79	0.49	1.28	MC

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	48	43	44629	24.26	8.45	0.87	3.10	MC*SCR
Total	Male	48	43	46442	25.00	9.03	0.88	3.09	MC*SCR
A	Female	24	22	44629	12.64	4.59	0.77	2.19	MC*SCR
A	Male	24	22	46442	12.96	4.84	0.80	2.17	MC*SCR
B	Female	8	6	44629	3.71	1.85	0.51	1.30	MC*SCR
B	Male	8	6	46442	3.78	1.95	0.55	1.31	MC*SCR
C	Female	8	7	44629	4.03	1.75	0.52	1.21	MC*SCR
C	Male	8	7	46442	4.22	1.85	0.56	1.23	MC*SCR
D	Female	8	8	44629	3.87	1.76	0.46	1.29	MC
D	Male	8	8	46442	4.04	1.82	0.51	1.28	MC

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	48	43	117	23.13	8.59	0.87	3.13	MC*SCR
Total	African American	48	43	9476	17.75	7.49	0.83	3.10	MC*SCR
Total	Hispanic	48	43	9311	19.87	8.02	0.85	3.12	MC*SCR
Total	White	48	43	63654	26.19	8.25	0.86	3.08	MC*SCR
Total	Multiple Ethnicities	48	43	4506	23.44	8.72	0.87	3.12	MC*SCR
Total	Asian	48	43	3935	28.78	8.50	0.87	3.01	MC*SCR
Total	Pacific Islander	48	43	72	23.81	8.07	0.85	3.14	MC*SCR
A	American Indian	24	22	117	12.10	4.57	0.77	2.21	MC*SCR
A	African American	24	22	9476	9.26	4.19	0.73	2.19	MC*SCR
A	Hispanic	24	22	9311	10.36	4.42	0.75	2.20	MC*SCR
A	White	24	22	63654	13.61	4.47	0.76	2.17	MC*SCR
A	Multiple Ethnicities	24	22	4506	12.18	4.73	0.79	2.19	MC*SCR
A	Asian	24	22	3935	14.90	4.40	0.77	2.11	MC*SCR
A	Pacific Islander	24	22	72	12.21	4.11	0.71	2.22	MC*SCR
B	American Indian	8	6	117	3.57	1.94	0.52	1.35	MC*SCR
B	African American	8	6	9476	2.57	1.73	0.45	1.28	MC*SCR
B	Hispanic	8	6	9311	3.01	1.80	0.47	1.31	MC*SCR
B	White	8	6	63654	3.99	1.84	0.50	1.30	MC*SCR
B	Multiple Ethnicities	8	6	4506	3.58	1.93	0.54	1.31	MC*SCR
B	Asian	8	6	3935	4.53	1.94	0.57	1.27	MC*SCR
B	Pacific Islander	8	6	72	3.74	1.80	0.41	1.38	MC*SCR
C	American Indian	8	7	117	3.71	1.94	0.63	1.18	MC*SCR
C	African American	8	7	9476	2.99	1.61	0.41	1.23	MC*SCR
C	Hispanic	8	7	9311	3.30	1.70	0.48	1.22	MC*SCR
C	White	8	7	63654	4.39	1.74	0.51	1.22	MC*SCR
C	Multiple Ethnicities	8	7	4506	3.93	1.81	0.54	1.23	MC*SCR
C	Asian	8	7	3935	4.77	1.80	0.56	1.19	MC*SCR
C	Pacific Islander	8	7	72	3.88	2.00	0.64	1.19	MC*SCR
D	American Indian	8	8	117	3.74	1.75	0.47	1.28	MC
D	African American	8	8	9476	2.93	1.61	0.36	1.29	MC
D	Hispanic	8	8	9311	3.20	1.68	0.40	1.29	MC
D	White	8	8	63654	4.20	1.75	0.46	1.28	MC
D	Multiple Ethnicities	8	8	4506	3.74	1.74	0.45	1.29	MC
D	Asian	8	8	3935	4.58	1.79	0.51	1.25	MC
D	Pacific Islander	8	8	72	3.99	1.83	0.53	1.26	MC

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	16481	18.98	8.30	0.86	3.10	MC*SCR
A	Y	24	22	16481	9.90	4.53	0.77	2.19	MC*SCR
B	Y	8	6	16481	2.80	1.84	0.51	1.29	MC*SCR
C	Y	8	7	16481	3.17	1.76	0.51	1.23	MC*SCR
D	Y	8	8	16481	3.12	1.69	0.42	1.29	MC

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	3559	17.45	7.05	0.81	3.11	MC*SCR
A	Y	24	22	3559	9.11	3.97	0.69	2.20	MC*SCR
B	Y	8	6	3559	2.57	1.66	0.40	1.29	MC*SCR
C	Y	8	7	3559	2.86	1.56	0.39	1.22	MC*SCR
D	Y	8	8	3559	2.91	1.58	0.33	1.30	MC

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	38479	20.85	8.21	0.86	3.12	MC*SCR
A	Y	24	22	38479	10.85	4.50	0.76	2.21	MC*SCR
B	Y	8	6	38479	3.11	1.83	0.49	1.31	MC*SCR
C	Y	8	7	38479	3.50	1.73	0.49	1.23	MC*SCR
D	Y	8	8	38479	3.39	1.72	0.43	1.29	MC

Grade 8 Science

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	48	43	84244	24.02	9.62	0.90	3.11	MC*SCR
A	All	24	21	84244	11.54	5.29	0.83	2.21	MC*SCR
B	All	8	7	84244	4.44	2.05	0.61	1.28	MC*SCR
C	All	8	8	84244	3.96	1.93	0.56	1.28	MC
D	All	8	7	84244	4.08	1.73	0.51	1.21	MC*SCR

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	48	43	40211	23.99	9.09	0.88	3.12	MC*SCR
Total	Male	48	43	44033	24.05	10.08	0.91	3.09	MC*SCR
A	Female	24	21	40211	11.60	5.05	0.81	2.21	MC*SCR
A	Male	24	21	44033	11.49	5.51	0.84	2.20	MC*SCR
B	Female	8	7	40211	4.49	2.01	0.60	1.28	MC*SCR
B	Male	8	7	44033	4.39	2.09	0.62	1.28	MC*SCR
C	Female	8	8	40211	3.78	1.82	0.50	1.29	MC
C	Male	8	8	44033	4.12	2.01	0.60	1.27	MC
D	Female	8	7	40211	4.13	1.68	0.47	1.23	MC*SCR
D	Male	8	7	44033	4.04	1.78	0.54	1.20	MC*SCR

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	48	43	130	23.60	9.80	0.90	3.10	MC*SCR
Total	African American	48	43	8451	17.10	7.62	0.84	3.08	MC*SCR
Total	Hispanic	48	43	8176	18.99	8.45	0.86	3.12	MC*SCR
Total	White	48	43	60672	25.42	9.28	0.89	3.11	MC*SCR
Total	Multiple Ethnicities	48	43	3332	22.31	9.73	0.90	3.11	MC*SCR
Total	Asian	48	43	3406	30.01	9.47	0.90	2.99	MC*SCR
Total	Pacific Islander	48	43	77	24.79	9.24	0.89	3.11	MC*SCR
A	American Indian	24	21	130	11.23	5.46	0.84	2.21	MC*SCR
A	African American	24	21	8451	7.86	4.19	0.74	2.16	MC*SCR
A	Hispanic	24	21	8176	8.84	4.60	0.77	2.20	MC*SCR
A	White	24	21	60672	12.29	5.13	0.81	2.22	MC*SCR
A	Multiple Ethnicities	24	21	3332	10.59	5.31	0.83	2.20	MC*SCR
A	Asian	24	21	3406	14.78	5.26	0.84	2.13	MC*SCR
A	Pacific Islander	24	21	77	11.84	5.11	0.81	2.23	MC*SCR
B	American Indian	8	7	130	4.42	2.04	0.60	1.29	MC*SCR
B	African American	8	7	8451	3.24	1.91	0.54	1.30	MC*SCR
B	Hispanic	8	7	8176	3.56	1.97	0.56	1.31	MC*SCR
B	White	8	7	60672	4.68	1.98	0.59	1.27	MC*SCR
B	Multiple Ethnicities	8	7	3332	4.19	2.12	0.63	1.28	MC*SCR
B	Asian	8	7	3406	5.41	1.92	0.61	1.20	MC*SCR
B	Pacific Islander	8	7	77	4.90	1.80	0.50	1.28	MC*SCR
C	American Indian	8	8	130	3.92	1.95	0.56	1.29	MC
C	African American	8	8	8451	2.97	1.60	0.35	1.29	MC
C	Hispanic	8	8	8176	3.25	1.72	0.43	1.30	MC
C	White	8	8	60672	4.14	1.92	0.55	1.28	MC
C	Multiple Ethnicities	8	8	3332	3.75	1.94	0.56	1.28	MC
C	Asian	8	8	3406	4.99	1.93	0.60	1.22	MC
C	Pacific Islander	8	8	77	4.00	2.12	0.65	1.26	MC
D	American Indian	8	7	130	4.03	1.79	0.58	1.17	MC*SCR
D	African American	8	7	8451	3.03	1.57	0.41	1.20	MC*SCR
D	Hispanic	8	7	8176	3.33	1.66	0.46	1.22	MC*SCR
D	White	8	7	60672	4.30	1.67	0.48	1.21	MC*SCR
D	Multiple Ethnicities	8	7	3332	3.79	1.74	0.51	1.22	MC*SCR
D	Asian	8	7	3406	4.82	1.66	0.47	1.21	MC*SCR
D	Pacific Islander	8	7	77	4.05	1.58	0.39	1.23	MC*SCR

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	14519	16.22	7.76	0.85	3.05	MC*SCR
A	Y	24	21	14519	7.38	4.14	0.74	2.13	MC*SCR
B	Y	8	7	14519	2.99	1.86	0.51	1.30	MC*SCR
C	Y	8	8	14519	2.94	1.69	0.42	1.29	MC
D	Y	8	7	14519	2.91	1.62	0.45	1.20	MC*SCR

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	2082	13.96	5.86	0.74	2.99	MC*SCR
A	Y	24	21	2082	6.32	3.27	0.60	2.07	MC*SCR
B	Y	8	7	2082	2.48	1.59	0.37	1.27	MC*SCR
C	Y	8	8	2082	2.58	1.44	0.21	1.28	MC
D	Y	8	7	2082	2.58	1.42	0.30	1.19	MC*SCR

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	33149	19.91	8.71	0.87	3.12	MC*SCR
A	Y	24	21	33149	9.34	4.74	0.78	2.20	MC*SCR
B	Y	8	7	33149	3.72	2.00	0.57	1.31	MC*SCR
C	Y	8	8	33149	3.36	1.78	0.47	1.29	MC
D	Y	8	7	33149	3.50	1.68	0.48	1.22	MC*SCR

APPENDIX Q: HISTORICAL STATISTICS

The tables included in this appendix present the historical statistics for number of examinees (N Count), the mean, standard deviation (SD), and maximum (Max) for raw scores and scaled scores, in addition to the percentage of students by performance level (Below Basic, Basic, Proficient, Advanced) and the percentage of students earning either proficient or advanced scores. Scaled scores remain on the same scale of measurement, and therefore, can be compared across years. Raw scores, on the other hand, cannot be compared across tests or administrations because the difficulty of the items on a test can vary across years and also due to the reduction is test length in 2018.The asterisk (*) indicates that the maximum raw score varies between 2017 and 2018 administration years due to the reduction in test length, and also indicates that the maximum earned scaled score may vary across all administrations. Due to the Covid-19 pandemic, the PSSA was not administered in Spring 2020.

Mathematics Grade 3

	2015	2016	2017	2018	2019	2021
N Count	125309	125420	125205	122563	120604	91693
Raw Score Mean	39.1	45.8	42.4	27.0	28.5	25.3
Raw Score SD	14.6	14.7	15.9	11.7	11.7	11.3
Raw Score Max*	72	72	72	52	52	52
Scaled Score Mean	1008.1	1018.1	1019.9	1017.4	1026.4	997.9
Scaled Score SD	120.5	131.5	129.7	123.1	124.9	121.2
Scaled Score Max*	1594	1564	1561	1545	1530	1577
Percentage Bel. Basic	28.0	24.6	25.9	24.5	22.4	31.0
Percentage Basic	23.5	21.0	19.7	21.4	21.6	21.7
Percentage Proficient	28.5	28.1	28.4	31.4	29.3	29.5
Percentage Advanced	20.0	26.3	26.0	22.7	26.7	17.8
Percentage Prof. + Adv.	48.5	54.4	54.5	54.1	56.0	47.3

Mathematics Grade 4

	2015	2016	2017	2018	2019	2021
N Count	124201	123940	125575	126481	123286	92387
Raw Score Mean	34.6	42.9	40.5	25.8	26.7	24.0
Raw Score SD	14.3	15.6	15.1	11.7	11.3	10.7
Raw Score Max*	72	72	72	52	52	52
Scaled Score Mean	995.5	994.1	993.6	987.9	994.2	970.3
Scaled Score SD	108.8	127.7	118.7	120.5	124.1	112.0
Scaled Score Max*	1627	1518	1529	1514	1532	1553
Percentage Bel. Basic	24.8	27.6	26.1	29.8	26.1	33.9
Percentage Basic	30.8	25.9	27.3	26.7	27.7	30.6
Percentage Proficient	27.5	26.7	28.5	25.8	27.2	23.4
Percentage Advanced	16.9	19.8	18.1	17.8	19.0	12.1
Percentage Prof. + Adv.	44.5	46.5	46.6	43.5	46.2	35.6

Mathematics Grade 5

	2015	2016	2017	2018	2019	2021
N Count	126683	122983	124405	126868	127592	90866
Raw Score Mean	35.7	38.2	37.7	26.5	24.4	22.7
Raw Score SD	15.0	16.1	15.3	11.8	11.2	10.7
Raw Score Max*	72	72	72	52	52	52
Scaled Score Mean	987.2	993.3	991.8	991.8	991.8	971.1
Scaled Score SD	119.9	124.5	119.7	126.1	117.5	110.7
Scaled Score Max*	1594	1548	1550	1515	1601	1556
Percentage Bel. Basic	25.9	28.0	24.8	28.7	23.3	31.3
Percentage Basic	31.3	27.6	31.4	26.1	33.7	32.6
Percentage Proficient	27.4	25.9	27.5	27.4	27.2	24.3
Percentage Advanced	15.4	18.5	16.2	17.8	15.8	11.8
Percentage Prof. + Adv.	42.8	44.4	43.8	45.2	43.1	36.1

Mathematics Grade 6

	2015	2016	2017	2018	2019	2021
N Count	126413	125305	123112	125385	127496	90563
Raw Score Mean	38.5	42.0	36.7	26.6	25.9	23.9
Raw Score SD	13.7	15.9	15.2	11.3	11.5	10.1
Raw Score Max*	72	72	72	52	52	52
Scaled Score Mean	976.1	977.8	976.3	976.3	979.6	948.5
Scaled Score SD	104.7	129.9	115.6	117.6	119.4	104.2
Scaled Score Max*	1531	1515	1534	1490	1500	1513
Percentage Bel. Basic	25.2	30.1	29.1	29.7	25.9	35.1
Percentage Basic	35.1	28.8	30.6	30.8	35.1	36.6
Percentage Proficient	28.4	24.1	26.1	24.8	23.2	20.6
Percentage Advanced	11.3	16.9	14.1	14.7	15.8	7.6
Percentage Prof. + Adv.	39.7	41.0	40.3	39.6	39.0	28.2

Mathematics Grade 7

	2015	2016	2017	2018	2019	2021
N Count	126299	124959	125584	124225	125808	90812
Raw Score Mean	35.2	36.9	36.2	26.4	24.2	21.1
Raw Score SD	14.3	15.8	16.0	11.9	11.2	10.4
Raw Score Max*	72	72	72	52	52	52
Scaled Score Mean	961.5	968.1	968.6	967.3	965.6	936.2
Scaled Score SD	104.0	120.4	126.7	134.2	120.1	108.5
Scaled Score Max*	1536	1541	1551	1522	1536	1546
Percentage Bel. Basic	33.5	34.9	37.0	37.8	35.8	46.1
Percentage Basic	33.4	28.1	25.2	23.3	26.0	27.1
Percentage Proficient	23.4	23.7	22.1	22.8	24.3	18.8
Percentage Advanced	9.6	13.3	15.7	16.2	13.9	8.1
Percentage Prof. + Adv.	33.1	37.0	37.8	38.9	38.2	26.9

Mathematics Grade 8

	2015	2016	2017	2018	2019	2021
N Count	128859	123175	123271	124780	123186	85253
Raw Score Mean	33.2	37.8	35.9	26.7	25.6	22.7
Raw Score SD	13.4	14.9	15.2	11.5	11.5	10.5
Raw Score Max*	72	72	72	52	52	52
Scaled Score Mean	950.5	949.1	953.5	948.4	950.3	919.0
Scaled Score SD	101.2	123.0	118.3	123.4	116.5	107.0
Scaled Score Max*	1558	1662	1618	1638	1470	1495
Percentage Bel. Basic	37.7	40.2	39.7	41.1	39.6	53.5
Percentage Basic	32.6	28.6	27.8	27.9	28.2	24.5
Percentage Proficient	21.8	20.7	21.9	20.2	22.3	15.8
Percentage Advanced	8.0	10.5	10.6	10.8	9.9	6.3
Percentage Prof. + Adv.	29.8	31.2	32.5	31.1	32.2	22.1

English Language Arts Grade 3

	2015	2016	2017	2018	2019	2021
N Count	125160	125284	124923	122397	120564	90980
Raw Score Mean	36.2	36.1	35.7	24.8	24.6	23.7
Raw Score SD	10.9	11.5	11.4	8.9	9.1	9.2
Raw Score Max*	62	62	62	45	45	45
Scaled Score Mean	1026.7	1031.5	1039.3	1042.1	1039	1024.6
Scaled Score SD	102.6	111.5	111.2	108.3	108.9	104.2
Scaled Score Max*	1586	1628	1680	1551	1544	1536
Percentage Bel. Basic	13.4	13.6	12.1	10.4	11.4	14.0
Percentage Basic	24.6	25.5	23.3	26.1	26.6	27.7
Percentage Proficient	49.0	45.7	47.6	44.4	45.4	44.1
Percentage Advanced	13.0	15.2	17.1	19.1	16.5	14.2
Percentage Prof. + Adv.	62.0	60.9	64.6	63.5	61.9	58.3

English Language Arts Grade 4

	2015	2016	2017	2018	2019	2021
N Count	123986	123597	125200	126223	123172	91862
Raw Score Mean	46.6	48.1	48.4	34.2	35.4	33.0
Raw Score SD	14.8	14.6	14.8	11.7	12.3	11.7
Raw Score Max*	84	84	84	63	63	63
Scaled Score Mean	1021.1	1025.3	1030.5	1029.6	1035	1015.1
Scaled Score SD	112.5	116.8	112.7	109.9	112.8	105.7
Scaled Score Max*	1724	1798	1714	1652	1636	1621
Percentage Bel. Basic	12.9	12.2	10.9	9.7	10.3	11.9
Percentage Basic	28.5	29.1	28.2	30.6	26.1	31.5
Percentage Proficient	37.0	34.0	35.3	34.7	36.3	35.2
Percentage Advanced	21.6	24.6	25.7	25.1	27.3	21.4
Percentage Prof. + Adv.	58.6	58.7	60.9	59.8	63.6	56.6

English Language Arts Grade 5

	2015	2016	2017	2018	2019	2021
N Count	126501	122868	124183	126761	127550	91028
Raw Score Mean	48.7	48.1	46.8	32.5	33.2	33.2
Raw Score SD	14.4	14.9	15.0	11.3	11.4	10.7
Raw Score Max*	84	84	84	63	63	63
Scaled Score Mean	1029.8	1028.9	1029.6	1029.2	1027.2	1013.2
Scaled Score SD	117.5	116.5	112.3	104.5	107.2	96.4
Scaled Score Max*	1730	1728	1723	1685	1647	1660
Percentage Bel. Basic	13.4	14.1	11.5	8.9	9.6	10.6
Percentage Basic	24.8	24.5	28.9	31.7	31.8	34.4
Percentage Proficient	44.1	45.3	43.2	45.4	42.7	46.4
Percentage Advanced	17.8	16.2	16.4	14.0	15.8	8.6
Percentage Prof. + Adv.	61.8	61.5	59.6	59.4	58.5	55

English Language Arts Grade 6

	2015	2016	2017	2018	2019	2021
N Count	126331	125263	123170	125341	127560	90232
Raw Score Mean	50.6	50.4	48.0	34.5	33.9	33.5
Raw Score SD	14.6	14.6	14.5	11.6	11.6	11.8
Raw Score Max*	84	84	84	63	63	63
Scaled Score Mean	1028.0	1031.1	1035.1	1041.4	1034.4	1020.2
Scaled Score SD	116.5	113.6	106.2	110.5	106.8	102.3
Scaled Score Max*	1699	1721	1737	1754	1692	1614
Percentage Bel. Basic	10.0	8.6	6.9	5.3	5.7	7.1
Percentage Basic	29.4	29.8	29.5	32.2	31.3	35.6
Percentage Proficient	39.4	38.9	41.4	36.3	42.2	39.8
Percentage Advanced	21.3	22.7	22.2	26.2	20.8	17.5
Percentage Prof. + Adv.	60.7	61.6	63.6	62.5	63.0	57.3

English Language Arts Grade 7

	2015	2016	2017	2018	2019	2021
N Count	126228	124961	125744	124226	125998	90515
Raw Score Mean	50.5	49.0	47.1	35.0	34.0	33.7
Raw Score SD	14.1	13.9	15.0	11.5	10.6	10.8
Raw Score Max*	84	84	84	63	63	63
Scaled Score Mean	1023.4	1028.7	1031.7	1032.5	1026.3	1009.4
Scaled Score SD	112.6	110.4	113.5	105.8	96.9	93.7
Scaled Score Max*	1652	1720	1724	1641	1639	1616
Percentage Bel. Basic	6.4	5.0	3.6	2.5	2.6	3.9
Percentage Basic	34.9	33.5	36.9	35.5	36.9	42.8
Percentage Proficient	41.7	43.3	40.1	44.3	45.6	43.5
Percentage Advanced	16.9	18.1	19.3	17.7	14.9	9.8
Percentage Prof. + Adv.	58.7	61.5	59.5	61.9	60.4	53.3

English Language Arts Grade 8

	2015	2016	2017	2018	2019	2021
N Count	128889	123275	123653	124907	123503	85686
Raw Score Mean	51.2	52.2	49.0	35.6	36.7	33.9
Raw Score SD	14.2	14.5	14.6	11.6	12.3	11.6
Raw Score Max*	84	84	84	63	63	63
Scaled Score Mean	1020.2	1026.0	1025.0	1027.5	1024.2	1007.7
Scaled Score SD	107.3	116.2	108.9	101.4	115.8	105.0
Scaled Score Max*	1636	1677	1677	1640	1699	1654
Percentage Bel. Basic	10.9	11.3	10.5	7.8	11.9	11.4
Percentage Basic	31.1	30.4	30.6	30.6	30.2	36.0
Percentage Proficient	43.5	40.9	42.9	47.1	41.9	41.7
Percentage Advanced	14.5	17.5	15.9	14.4	16.0	10.9
Percentage Prof. + Adv.	58.0	58.3	58.9	61.5	57.9	52.6

Science Grade 4

	2015	2016	2017	2018	2019	2021
N Count	124309	123818	125488	126353	123093	91071
Raw Score Mean	46.6	47.8	37.2	25.2	25.9	24.6
Raw Score SD	13.2	13.4	13.3	9.4	9.4	8.8
Raw Score Max*	68	68	68	48	48	48
Scaled Score Mean	1426.7	1424.6	1406.1	1412.6	1424.2	1395.7
Scaled Score SD	198.9	206.3	170.9	173.6	174.2	161.8
Scaled Score Max*	2247	2208	2344	2321	2309	2313
Percentage Bel. Basic	10.5	11.7	5.3	5.4	5.0	7.6
Percentage Basic	12.2	12.2	20.2	19.1	17.2	16.6
Percentage Proficient	36.1	36.7	41.6	39.7	39.0	43.5
Percentage Advanced	41.2	39.5	33.0	35.8	38.8	32.3
Percentage Prof. + Adv.	77.3	76.2	74.5	75.5	77.8	75.8

Science Grade 8

	2015	2016	2017	2018	2019	2021
N Count	128733	122955	122716	124417	122654	84244
Raw Score Mean	45.1	44.5	34.9	23.9	25.1	24.0
Raw Score SD	13.6	14.1	13.3	9.2	8.8	9.6
Raw Score Max*	68	68	68	48	48	48
Scaled Score Mean	1317.1	1310.4	1299.3	1305.2	1314.9	1287.6
Scaled Score SD	207.6	219.2	184.0	180.9	184.2	193.9
Scaled Score Max*	2230	2278	2416	2337	2406	2299
Percentage Bel. Basic	23.2	25.6	25.0	22.2	20.0	26.7
Percentage Basic	18.1	16.8	22.4	23.9	21.9	22.5
Percentage Proficient	31.8	30.3	31.5	33.5	35.1	31.2
Percentage Advanced	27.0	27.3	21.2	20.4	23.1	19.6
Percentage Prof. + Adv.	58.8	57.6	52.7	53.9	58.2	50.8

APPENDIX R: PSSA SCORE REPORT DEVELOPMENT

PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT (PSSA)

BACKGROUND

An important aspect of the PSSA transition to the Pennsylvania Core Standard (PCS) is the need to produce revised score reports to support the newly-aligned assessments, specifically the introduction of an English Language Arts assessment with dual reporting of the reading scores and a desire to provide greater detail for the new score reporting categories. PDE also determined that the transition represented an opportunity to reevaluate the score reports as a whole. To that end, PDE and DRC developed a plan to utilize parent and educator focus groups to guide the development of revised PSSA individual student score reports.

This document provides a high-level summary of the focus-group approach that was followed, the feedback that DRC and PDE received, and the direction in which the reports were developed as an output of the process.

THE FOCUS GROUP APPROACH

DRC facilitated seven focus groups at four different locations across the Commonwealth, chosen to provide an opportunity for "geographically-representative" participation.

- A total of 56 educators and 22 parents participated in the seven focus groups.

Prior to the focus groups, DRC collaborated with PDE to select the number and design of the score-report mock-ups that were presented at the focus group meetings.

- Two mock-up designs were selected to give participants an opportunity to visualize key differences ("Sample Student #1" and "Sample Student #2"):
    - Use of the Strength Profile versus a Just-Proficient Mean
    - Reading "Text Types" reported between Reading and Writing versus after Writing
    - ELA dual reporting footnote versions

Focus groups were scheduled for 90 minutes (with the exception of a 120-minute session with the Harrisburg educator group).

- PDE opened each focus group with an overview of the purpose.
- DRC facilitated each session using a survey-question approach (see attached).
    - Participants used the survey to record their individual feedback on particular elements of the report and were also encouraged to share their feedback during the subsequent group discussions.
    - The survey approach ultimately allowed participants to compare and contrast all elements of the two mock-up designs.
    - All written survey feedback was collected and all verbal feedback was recorded by DRC staff.

Some of the main themes of the feedback included (see table on page 4 for additional detail):

- Favorable opinion of the first page with some requests to make information easier to read (larger font, more white space)
    - There were recurring comments against the use of "superior," "satisfactory," "marginal," and "inadequate" in the Performance Level descriptors.

- Consistent input that the information became "overwhelming" with the reporting category definitions appearing within the Score reporting tables
    - There were multiple requests to rewrite the descriptions or move them away from the student's score.
- Majority of the participants preferred the Strength Profile to the Just Proficient Mean
    - Those who preferred the Just Proficient Mean were often still misinterpreting its meaning.
- Majority of the participants preferred to have the Reading Text Types reported after Writing
    - This location was perceived to provide better delineation that the text type score is additional information rather than a direct element of the total ELA score.

After the focus groups were completed, DRC compiled the feedback for PDE to review and make recommendations. A summary of the feedback is found in the table below.

Focus Group	Strength Profile	Just Proficient Mean	Other, Both, or NR	Text Types Table Placed Directly After the Reading Table	Text Types Table Placed After the Entire ELA Reporting Table	Neither, Other, or NR	ELA Dual Reporting Footnote – Version 1	ELA Dual Reporting Footnote – Version 2	Neither, Other, or NR
IU #4 – Educators (13)	11	2	0	1	8	4	2	9	2
IU #4 – Parents (4)	1	3	0	0	4	0	0	4	0
IU #10 – Educators (12)	9	2	1	1	8	3	1	8	3
IU #10 – Parents (10)	8	2	0	2	8	0	2	7	1
Philadelphia – Educators (8)	4	4	0	3	5	0	3	5	0
Philadelphia – Parents (8)	3	2	3	0	5	3	0	4	4
Harrisburg – Educators (23)	17	4	2	0	22	1	0	21	2
Total	53	19	6	7	60	11	8	58	12

A single, revised mock-up was produced to reflect the following PDE recommendations ("Sample Student 3"):

- Minor changes to Page 1 (re-arrangement, spacing, font size)
- Just Proficient Mean eliminated
- Reading Text Types reported after Writing
- All subjects reported on pages 2 and 3 with Reporting Category definitions moved to page 4

The educator focus group participants were invited to a WebEx to view the revised mock-up, provide input, and respond to a survey question about removing the Strength Profile altogether.

- DRC highlighted the changes on the revised mock up and reviewed an alternate design with the Strength Profile removed.
    - All final changes were viewed favorably by the WebEx attendees (especially the new placement of the Reporting Category definitions on page 4).
    - All-but one attendee voted to retain the Strength Profile.

The final mock-up reviewed at the WebEx was used as a basis for the development and production of the 2015 student reports. The following materials are found on the next several pages of this appendix.

- The Focus Group Survey (Parent version – Educator differed only in the “Participant Information”)
- Student 1 Score Report (reviewed at the focus groups)
- Student 2 Score Report (reviewed at the focus groups)
- Student 3 Score Report (reviewed with the educators at the follow-up WebEx)

SURVEY QUESTIONS FROM PARENT FOCUS GROUP

PARTICIPANT INFORMATION

Name of student's school _____

Is this school ____ rural _____ urban ____ suburban?

Grade(s) of your student(s) _____

STUDENT REPORT VERSION 1–PAGE 1

After reviewing page 1 of the PSSA Student Report version 1, please respond to questions 1–2. A group discussion will follow.

1. How easy/difficult is it to determine how the sample student performed on the PSSA for Mathematics, English Language Arts (ELA), and Science?

   _____ very difficult
   _____ somewhat difficult
   _____ somewhat easy
   _____ very easy

   Please briefly explain why you rated this item as you did.
   _____
   _____
   _____

2. How would you rate the **readability** of page 1 of the PSSA report (e.g., font size, placement of student information, performance level definitions)?

   _____ not readable
   _____ somewhat readable
   _____ mostly readable
   _____ very readable

   Please briefly explain why you rated this item as you did.
   _____
   _____
   _____

REPORTING TABLES VERSION 1–PAGES 2, 3, AND 4

After reviewing pages 2–4 of the PSSA Student Report version 1, please respond to questions 3–7. A group discussion will follow.

3. Overall, how easy/difficult is it to understand the information in the tables (e.g., descriptions of reporting categories, the student's points, total points possible, strength profile)?

   _____ very difficult
   _____ somewhat difficult
   _____ somewhat easy
   _____ very easy

   Please briefly explain why you rated this item as you did.
   _____

   _____

   _____

4. How well did you understand the Strength Profile (high, medium, or low) ratings and the footnote information for the Strength Profile?

   _____ not understandable
   _____ somewhat understandable
   _____ mostly understandable
   _____ very understandable

   Please briefly explain why you rated this item as you did.
   _____

   _____

   _____

5. In the ELA table on page 3, points are reported for both the Reading Reporting Categories and the Reading Text Types Reporting Categories. How clear is this section of dual reporting?

   _____ not clear
   _____ somewhat clear
   _____ mostly clear
   _____ very clear

   Please briefly explain why you rated this item as you did.
   _____

   _____

OVERALL REPORT FEEDBACK VERSION 1

6. How easy/difficult was it to read and move through the report, find the next section, and find supporting material to understand the student-score information?

   _____ very difficult
   _____ somewhat difficult
   _____ somewhat easy
   _____ very easy

   Please briefly explain why you rated this item as you did.

   _____

   _____

   _____

7. How well did you understand the contents of the report (e.g., performance levels, footnotes, graphics)?

   _____ not understandable
   _____ somewhat understandable
   _____ mostly understandable
   _____ very understandable

   Please briefly explain why you rated this item as you did.

   _____

   _____

   _____

STUDENT REPORT VERSION 2–PAGES 2, 3, AND 4

After reviewing the PSSA Student Report version 2, please respond to questions 1–5. A group discussion will follow.

1. How well did you understand the Just Proficient Mean results on pages 2–4 and the footnote information for the Just Proficient Mean?

   _____ not understandable
   _____ somewhat understandable
   _____ mostly understandable
   _____ very understandable

   Please briefly explain why you rated this item as you did.

   _____

   _____

   _____

2. The reporting tables on pages 2–4 include a Just Proficient Mean for each reporting category. Now look at pages 2–4 of version 1. The reporting tables include a Strength Profile (high, medium, or low) for each reporting category. Which version of the information do you prefer and why?

   _____ version 1
   _____ version 2

   Please explain.

   _____

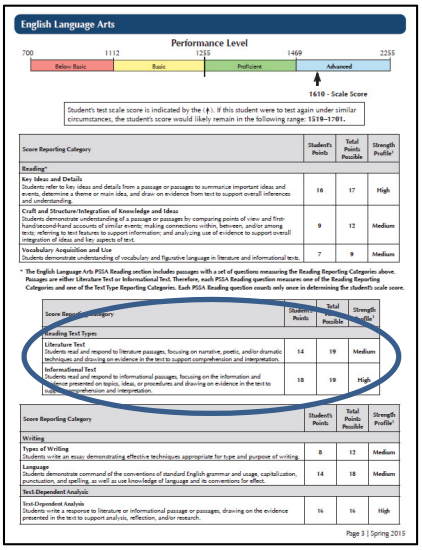
   _____

   _____

ELA REPORT TABLE–PAGE 3 OF VERSION 1 OR VERSION 2?

3. Look at version 1. The Text Types Reporting Category information follows the Reading Reporting Category information. Now look at version 2. The Text Types Reporting Category information is placed at the end of the ELA table. Which version of the order of information do you prefer and why?

_____ version 1 _____ version 2


English Language Arts

Performance Level

700 1112 1258 1469 2255

Below Basic | Basic | Proficient | Advanced

1610 - Scale Score

Student's test scale score is indicated by the (↓). If this student were to test again under similar circumstances, the student's score would likely remain in the following range: 1519–1701.

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Reading*			
Key Ideas and Details Students refer to key ideas and details from a passage or passages to summarize important ideas and events, determine a theme or main idea, and draw on evidence from text to support overall inferences and understanding.	16	17	High
Craft and Structure/Integration of Knowledge and Ideas Students demonstrate understanding of a passage or passages by: comparing points of view; and first-hand/second-hand accounts of similar events; making connections within, between, and/or among texts; referring to text features to support information; and analyzing use of evidence to support overall integration of ideas and key aspects of text.	9	12	Medium
Vocabulary Acquisition and Use Students demonstrate understanding of vocabulary and figurative language in literature and informational texts.	7	9	Medium

* The English Language Arts PSSA Reading section includes passages with a set of questions measuring the Reading Reporting Categories above. Passages are either Literature Text or Informational Text. Therefore, each PSSA Reading question measures one of the Reading Reporting Categories and one of the Text Type Reporting Categories. Each PSSA Reading question counts only once in determining the student's scale score.

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Reading Text Types			
Literature Text Students read and respond to literature passages, focusing on narrative, poetic, and/or dramatic techniques and drawing on evidence in the text to support comprehension and interpretation.	14	19	Medium
Informational Text Students read and respond to informational passages, focusing on the information and evidence presented on topics, ideas, or procedures and drawing on evidence in the text to support comprehension and interpretation.	18	19	High

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Writing			
Types of Writing Students write an essay demonstrating effective techniques appropriate for type and purpose of writing.	8	12	Medium
Language Students demonstrate command of the conventions of standard English grammar and usage, capitalization, punctuation, and spelling, as well as use knowledge of language and its conventions for effect.	14	18	Medium
Text-Dependent Analysis			
Text-Dependent Analysis Students write a response to literature or informational passage or passages, drawing on the evidence presented in the text to support analysis, reflection, and/or research.	14	16	High

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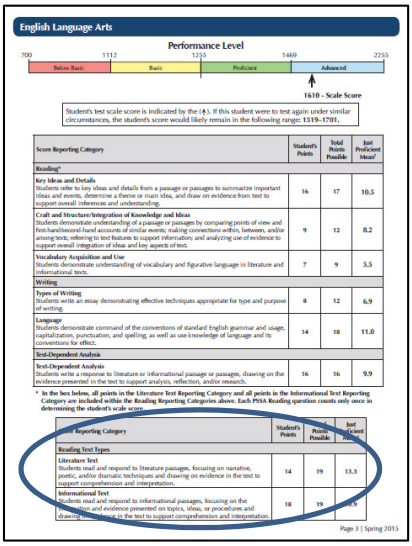
English Language Arts

Performance Level

700 1112 1258 1469 2255

Below Basic | Basic | Proficient | Advanced

1610 - Scale Score

Student's test scale score is indicated by the (↓). If this student were to test again under similar circumstances, the student's score would likely remain in the following range: 1519–1701.

Score Reporting Category	Student's Points	Total Points Possible	Just Proficient Mean*
Reading*			
Key Ideas and Details Students refer to key ideas and details from a passage or passages to summarize important ideas and events, determine a theme or main idea, and draw on evidence from text to support overall inferences and understanding.	16	17	10.5
Craft and Structure/Integration of Knowledge and Ideas Students demonstrate understanding of a passage or passages by comparing points of view and first-hand/second-hand accounts of similar events; making connections within, between, and/or among texts; referring to text features to support information; and analyzing use of evidence to support overall integration of ideas and key aspects of text.	9	12	8.2
Vocabulary Acquisition and Use Students demonstrate understanding of vocabulary and figurative language in literature and informational texts.	7	9	5.5
Writing			
Types of Writing Students write an essay demonstrating effective techniques appropriate for type and purpose of writing.	8	12	6.9
Language Students demonstrate command of the conventions of standard English grammar and usage, capitalization, punctuation, and spelling, as well as use knowledge of language and its conventions for effect.	14	18	11.0
Text-Dependent Analysis			
Text-Dependent Analysis Students write a response to literature or informational passage or passages, drawing on the evidence presented in the text to support analysis, reflection, and/or research.	16	16	9.9

* In the box below, all points in the Literature Text Reporting Category and all points in the Informational Text Reporting Category are included within the Reading Reporting Categories above. Each PSSA Reading question counts only once in determining the student's scale score.

Score Reporting Category	Student's Points	Total Points Possible	Just Proficient Mean*
Reading Text Types			
Literature Text Students read and respond to literature passages, focusing on narrative, poetic, and/or dramatic techniques and drawing on evidence in the text to support comprehension and interpretation.	14	19	13.3
Informational Text Students read and respond to informational passages, focusing on the information and evidence presented on topics, ideas, or procedures and drawing on evidence in the text to support comprehension and interpretation.	18	19	12.9

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Please explain.

_____

_____

_____

_____

_____

_____

_____

_____

_____

4. Which version of the ELA dual reporting footnote do you prefer and why?

_____ version 1

The English Language Arts PSSA Reading section includes passages with a set of questions measuring the Reading Reporting Categories above. Passages are either Literature Text or Informational Text. Therefore, each PSSA Reading question measures one of the Reading Reporting Categories and one of the Text Type Reporting Categories. Each PSSA Reading question counts only once in determining the student's scale score.

_____ version 2

In the box below, all points in the Literature Text Reporting Category and all points in the Informational Text Reporting Category are included within the Reading Reporting Categories above. Each PSSA Reading question counts only once in determining the student's scale score.

Please explain.

_____

_____

_____

REPORT OPTIONS–VERSION 1 OR VERSION 2?

5. Now that you have reviewed the two reports, please select the preferred option from each group below.

_____ Strength Profile information
_____ Just Proficient Mean information

_____ Reading Text Type table placement directly after the Reading score reporting table
_____ Reading Text Type table placement directly after the entire ELA score reporting table

_____ ELA dual reporting footnote – version 1
_____ ELA dual reporting footnote – version 2

Additional Comments and Recommendations

_____

_____

_____

_____

_____

APPENDIX S: INVESTIGATION OF PERSON FIT BY MODE AND SUBGROUP

The PSSA is administered as both a paper-pencil test (PPT) and a computer-based test (CBT). In the Standards for Educational and Psychological Testing, comparability of scores across testing conditions is emphasized to support fairness in testing, stating that, "Comparability of scores enables test users to make comparable inferences based on the scores for all test takers" (AERA et al., 2014, p. 59). Whether students are administered a PPT or CBT, test users must be able to make the same interpretations about student knowledge and skills based on students' scores. Therefore, in any testing program it is important to examine the degree to which mode may influence results.

Although there are several ways to examine the relationship between mode and student scores, sample size undoubtedly impacts the robustness of the results. In 2021, there was a much higher proportion of CBT administrations than in previous years. Specifically, between 3% and 7% of all administrations were CBTs in 2019 whereas between 21% and 33% of all administrations were CBTs in 2021. Three of the paper-pencil (PPT) forms are offered in a computer-based format. Furthermore, most accommodated forms are administered as CBTs, thus providing additional limitations in the results of a formal mode study. For these reasons, traditional approaches to mode studies may not be feasible or appropriate. The count and proportion of PPT and CBT are shown in Table S–1. Chapter Ten provides additional information of PSSA administrations by mode, accommodations, and student characteristics.

Table S–1. Final N-Counts and Proportion by Mode, 2021

Subject	Grade	Count Paper	Proportion Paper (%)	Count CBT	Proportion CBT (%)
Mathematics	3	71527	78.01	20166	21.99
Mathematics	4	70684	76.51	21703	23.49
Mathematics	5	68516	75.40	22350	24.60
Mathematics	6	64317	71.02	26246	28.98
Mathematics	7	61550	67.78	29262	32.22
Mathematics	8	57634	67.60	27619	32.40
ELA	3	71456	78.54	19524	21.46
ELA	4	70889	77.17	20973	22.83
ELA	5	68677	75.45	22351	24.55
ELA	6	64360	71.33	25872	28.67
ELA	7	61620	68.08	28895	31.92
ELA	8	57874	67.54	27812	32.46
Science	4	69678	76.51	21393	23.49
Science	8	56375	66.92	27869	33.08

Until online participation reaches sufficiently large sample sizes, any true population differences between scores on the paper- and computer-based modes may be difficult to distinguish from differences that are attributable to sampling and random error. However, in the interim, an analysis of person fit statistics was conducted to gain insight into whether evidence of mode or student subgroup effects exist.

METHOD

Engelhard (2009) provided a framework and methods for defining measurement quality in terms of measurement invariance across conditions and subpopulations as measured by model fit (by item—differential item function and by person—differential person functioning). The method employed used residual analysis to explore differences between observed and expected responses by individuals and groups, under different conditions, and given a specified item response theory (IRT) model. Although they are not exact tests of fit, these methods allow for insight into the invariance properties of an assessment through these types of fit analyses. In this study, the preliminary focus is to examine person fit on the test level.

The IRT model used for the PSSA is based on the work of Georg Rasch. The Rasch partial credit model (RPCM; Wright and Masters, 1982) was used to calibrate PSSA items because both multiple-choice (MC) and open-ended (OE) items were part of the assessment. The RPCM extends the Rasch model (Rasch, 1960) for dichotomous (0, 1) items so that it accommodates the polytomous OE item data. Under the RPCM, for a given item i with score categories, the probability of person n scoring x (x = 0, 1, 2..., m_i) is given by:

$$P_{ni}(X = x) = \frac{\exp \sum_{j=0}^{x} (\theta_n - D_{ij})}{\sum_{k=0}^{m_i} \exp \sum_{j=0}^{k} (\theta_n - D_{ij})},$$

where θ_n represents a student's proficiency (ability) level, and D_{ij} is the step difficulty of step j on item i. For dichotomous MC items, the RPCM reduces to the standard Rasch model and the single step difficulty is referred to as the item's difficulty. The Rasch model predicts the probability of person n getting item i correct as follows:

$$P_{ni}(X = 1) = \frac{\exp(\theta_n - D_{ij})}{1 + \exp(\theta_n - D_{ij})}.$$

The Rasch model places both student ability and item difficulty (estimated in terms of log-odds or logits) on the same continuum. When the model assumptions are met, the Rasch model provides estimates of a person's ability which are independent of the items employed in the assessment, and conversely, estimates item difficulty independently of the sample of examinees. Item calibration was implemented via WINSTEPS 3.81.00 computer program (Wright and Linacre, 2014), which employs unconditional (UCON), joint-maximum-likelihood estimation (JMLE).

To produce person fit values, residuals of IRT model (essentially the differences between observed and expected responses) are summarized to create the mean square error statistics (MSE) of Infit and Outfit for items and persons. In this study, we use the unstandardized measures of Infit and Outfit, which are essentially MSE residuals and have expected values of 1.0 and a standard deviation of about 0.2 (Bond, & Fox, 2007). Such values represent adequate fit, whereas values greater than 2.0 represent more variability than expected, and less than 1.0 can mean students did not independently respond to items. In this study, person infit and outfit statistics were produced in WINSTEPS.

To assess the relationship between testing mode (i.e., computer-based or paper-pencil based) and PSSA performance, we examined differences in person infit and outfit with respect to student characteristics (e.g., whether students have an individualized educational plan (IEP)) and test characteristics (e.g., whether forms were administered as CBT or PPT). The dependent variables were person infit and person outfit, and the independent (predictor) variables included mode, whether students had an IEP, whether students were ELs, and the interaction of mode and EL, and mode and IEP.

RESULTS

Means and standard deviations were computed for infit and outfit for each independent variable. Tables S–2M, S–2E, and S–2S display a summary of person fit means, standard deviations by Mode and group (EL and IEP) for mathematics, ELA, and science, respectively. As the table shows, there are minimal differences in the means and standard deviations for each group by mode, and person fit statistics are within acceptable ranges.

Table S–2M. Person Infit and Outfit Descriptive Statistics by Mathematics Grade, Mode, and Group

Mode	Grade	Group	N	Infit Mean	Infit SD	Outfit Mean	Outfit SD
CBT	3	EL (non-EL)	959 (19207)	1.07 (1.00)	0.18 (0.20)	1.20 (1.05)	0.33 (0.29)
PPT	3	EL (non-EL)	3053 (68474)	1.05 (1.00)	0.18 (0.20)	1.18 (1.04)	0.35 (0.30)
CBT	3	IEP (non-IEP)	3617 (16549)	1.07 (0.99)	0.19 (0.20)	1.20 (1.03)	0.35 (0.27)
PPT	3	IEP (non-IEP)	12192 (59335)	1.04 (0.99)	0.19 (0.20)	1.16 (1.02)	0.34 (0.29)
CBT	4	EL (non-EL)	937 (20766)	1.06 (1.00)	0.17 (0.19)	1.15 (1.02)	0.26 (0.24)
PPT	4	EL (non-EL)	2819 (67865)	1.07 (1.01)	0.18 (0.19)	1.15 (1.04)	0.26 (0.26)
CBT	4	IEP (non-IEP)	4069 (17634)	1.06 (0.99)	0.18 (0.19)	1.14 (1.00)	0.27 (0.23)
PPT	4	IEP (non-IEP)	12629 (58055)	1.07 (1.00)	0.19 (0.19)	1.15 (1.02)	0.28 (0.25)
CBT	5	EL (non-EL)	657 (21693)	1.04 (0.99)	0.16 (0.19)	1.12 (1.01)	0.25 (0.23)
PPT	5	EL (non-EL)	2337 (66179)	1.05 (0.99)	0.16 (0.20)	1.15 (1.02)	0.26 (0.23)
CBT	5	IEP (non-IEP)	4324 (18026)	1.05 (0.97)	0.16 (0.19)	1.14 (0.98)	0.26 (0.22)
PPT	5	IEP (non-IEP)	12393 (56123)	1.06 (0.98)	0.17 (0.20)	1.15 (0.99)	0.26 (0.22)
CBT	6	EL (non-EL)	740 (25506)	1.07 (0.95)	0.19 (0.19)	1.21 (1.00)	0.32 (0.27)
PPT	6	EL (non-EL)	1993 (62324)	1.06 (0.96)	0.18 (0.20)	1.2 (1.01)	0.31 (0.28)
CBT	6	IEP (non-IEP)	4986 (21260)	1.05 (0.93)	0.19 (0.19)	1.18 (0.96)	0.31 (0.25)
PPT	6	IEP (non-IEP)	11085 (53232)	1.06 (0.95)	0.20 (0.19)	1.18 (0.98)	0.32 (0.26)
CBT	7	EL (non-EL)	714 (28548)	1.06 (0.99)	0.12 (0.17)	1.14 (1.02)	0.2 (0.20)
PPT	7	EL (non-EL)	1882 (59668)	1.04 (0.99)	0.13 (0.17)	1.12 (1.02)	0.2 (0.21)
CBT	7	IEP (non-IEP)	5385 (23877)	1.05 (0.98)	0.14 (0.17)	1.14 (1.00)	0.2 (0.20)
PPT	7	IEP (non-IEP)	10580 (50970)	1.06 (0.98)	0.14 (0.17)	1.14 (1.00)	0.21 (0.20)
CBT	8	EL (non-EL)	575 (27044)	1.04 (0.99)	0.11 (0.16)	1.12 (1.03)	0.17 (0.18)
PPT	8	EL (non-EL)	1537 (56097)	1.04 (0.99)	0.11 (0.17)	1.11 (1.02)	0.15 (0.18)
CBT	8	IEP (non-IEP)	5030 (22589)	1.04 (0.97)	0.11 (0.17)	1.11 (1.01)	0.16 (0.17)
PPT	8	IEP (non-IEP)	9703 (47931)	1.03 (0.98)	0.12 (0.18)	1.1 (1.01)	0.16 (0.18)

Table S–2E. Person Infit and Outfit Descriptive Statistics by ELA Grade, Mode, and Group

Mode	Grade	Group	N	Infit Mean	Infit SD	Outfit Mean	Outfit SD
CBT	3	EL (non-EL)	836 (18688)	1.02 (1.01)	0.21 (0.23)	1.08 (1.00)	0.25 (0.22)
PPT	3	EL (non-EL)	3006 (68450)	1.03 (1.02)	0.20 (0.23)	1.10 (1.00)	0.26 (0.23)
CBT	3	IEP (non-IEP)	3523 (16001)	1.04 (1.01)	0.20 (0.23)	1.12 (0.98)	0.26 (0.21)
PPT	3	IEP (non-IEP)	12179 (59277)	1.04 (1.01)	0.21 (0.23)	1.11 (0.98)	0.27 (0.21)
CBT	4	EL (non-EL)	823 (20150)	1.08 (1.02)	0.33 (0.31)	1.24 (1.07)	0.44 (0.36)
PPT	4	EL (non-EL)	2764 (68125)	1.06 (1.01)	0.31 (0.30)	1.21 (1.05)	0.42 (0.33)
CBT	4	IEP (non-IEP)	3937 (17036)	1.12 (1.00)	0.35 (0.30)	1.29 (1.02)	0.46 (0.31)
PPT	4	IEP (non-IEP)	12700 (58189)	1.08 (0.99)	0.32 (0.29)	1.23 (1.01)	0.42 (0.30)
CBT	5	EL (non-EL)	690 (21661)	1.02 (1.00)	0.28 (0.31)	1.16 (1.00)	0.36 (0.30)
PPT	5	EL (non-EL)	2279 (66398)	1.03 (1.01)	0.28 (0.33)	1.16 (1.01)	0.36 (0.34)
CBT	5	IEP (non-IEP)	4329 (18022)	1.02 (0.99)	0.27 (0.32)	1.13 (0.97)	0.37 (0.28)
PPT	5	IEP (non-IEP)	12395 (56282)	1.01 (1.01)	0.28 (0.34)	1.11 (0.99)	0.35 (0.33)
CBT	6	EL (non-EL)	699 (25173)	1.04 (0.98)	0.31 (0.31)	1.24 (1.04)	0.39 (0.35)
PPT	6	EL (non-EL)	1893 (62467)	1.06 (0.97)	0.32 (0.30)	1.23 (1.01)	0.42 (0.33)
CBT	6	IEP (non-IEP)	4914 (20958)	1.05 (0.97)	0.32 (0.31)	1.21 (1.00)	0.40 (0.33)
PPT	6	IEP (non-IEP)	11118 (53242)	1.03 (0.96)	0.31 (0.30)	1.17 (0.99)	0.38 (0.31)
CBT	7	EL (non-EL)	647 (28248)	1.00 (0.95)	0.26 (0.26)	1.14 (1.02)	0.30 (0.27)
PPT	7	EL (non-EL)	1818 (59802)	1.00 (0.94)	0.25 (0.26)	1.14 (1.00)	0.33 (0.28)
CBT	7	IEP (non-IEP)	5379 (23516)	1.00 (0.94)	0.26 (0.26)	1.13 (0.99)	0.29 (0.25)
PPT	7	IEP (non-IEP)	10518 (51102)	0.97 (0.93)	0.26 (0.26)	1.09 (0.98)	0.29 (0.28)
CBT	8	EL (non-EL)	615 (27197)	1.09 (1.04)	0.34 (0.40)	1.28 (1.06)	0.46 (0.41)
PPT	8	EL (non-EL)	1483 (56391)	1.07 (1.01)	0.34 (0.37)	1.23 (1.03)	0.47 (0.40)
CBT	8	IEP (non-IEP)	5073 (22739)	1.05 (1.04)	0.33 (0.41)	1.21 (1.03)	0.43 (0.40)
PPT	8	IEP (non-IEP)	9750 (48124)	1.03 (1.00)	0.31 (0.38)	1.15 (1.01)	0.40 (0.40)

Table S–2S. Person Infit and Outfit Descriptive Statistics by Science Grade, Mode, and Group

Mode	Grade	Group	N	Infit Mean	Infit SD	Outfit Mean	Outfit SD
CBT	4	EL (non-EL)	799 (20594)	1.05 (0.99)	0.16 (0.15)	1.12 (0.99)	0.25 (0.21)
PPT	4	EL (non-EL)	2760 (66918)	1.06 (0.99)	0.16 (0.15)	1.14 (1.00)	0.27 (0.21)
CBT	4	IEP (non-IEP)	4019 (17374)	1.05 (0.98)	0.16 (0.15)	1.11 (0.97)	0.25 (0.19)
PPT	4	IEP (non-IEP)	12462 (57216)	1.05 (0.98)	0.16 (0.15)	1.11 (0.98)	0.25 (0.20)
CBT	8	EL (non-EL)	577 (27292)	1.06 (1.01)	0.12 (0.14)	1.13 (1.02)	0.22 (0.19)
PPT	8	EL (non-EL)	1505 (54870)	1.06 (1.00)	0.12 (0.14)	1.14 (1.01)	0.23 (0.19)
CBT	8	IEP (non-IEP)	5028 (22841)	1.05 (1.00)	0.13 (0.14)	1.11 (1.00)	0.22 (0.18)
PPT	8	IEP (non-IEP)	9491 (46884)	1.05 (0.99)	0.13 (0.14)	1.12 (1.00)	0.23 (0.18)

To further analyze differences in person fit, we conducted multivariate analyses in SAS to examine the main effect of mode, IEP and EL status, and interaction effects of mode and IEP, and mode and EL status. For multivariate analyses, we included forms that are offered both as PPT and CBT (forms 1, 2 and 3 for each subject and grade level). Table S–3 summarizes the overall results from the generalized linear model using mean-square infit and mean-square outfit as the dependent variables. Statistics reported include the F Value, the associated significance value (Sig.), and the amount of variance explained by the model (R^2) or effect size. Although all significance values are less than .05, indicating statistical significance of the models, the R-square values indicate that the model explains very little variation in person fit (min = .001, max = .108). Meaning, mode, EL and IEP explain very little of person infit and outfit and therefore person fit cannot be reliably predicted by mode. After analyzing individual results, mode is a significant predictor in 13 of the 28 models, split across infit and outfit models, often occurring within the same subject and grade level. For example, mode was a significant predictor of person infit and outfit for mathematics grade 5 ($p = .003$, and $p < .001$, respectively). Furthermore, although mode for mathematics and science tended to be a stronger predictor for person fit than ELA, mode explains very little variance in person fit. R-squared values provide an indication of effect size of significant findings, effect sizes less than .1 are very small.

Table S–3. Multivariate Regression Model Results by Subject and Grade Level.

Subject	Grade	Person Fit	F Value	Sig.	R-Square
Mathematics	3	Infit	173.99	<.0001	0.019
Mathematics	3	Outfit	483.20	<.0001	0.052
Mathematics	4	Infit	243.43	<.0001	0.026
Mathematics	4	Outfit	554.94	<.0001	0.057
Mathematics	5	Infit	281.64	<.0001	0.030
Mathematics	5	Outfit	793.05	<.0001	0.080
Mathematics	6	Infit	663.77	<.0001	0.065
Mathematics	6	Outfit	1159.01	<.0001	0.108
Mathematics	7	Infit	364.32	<.0001	0.035
Mathematics	7	Outfit	818.36	<.0001	0.076
Mathematics	8	Infit	209.25	<.0001	0.022
Mathematics	8	Outfit	522.46	<.0001	0.053
ELA	3	Infit	17.45	<.0001	0.002
ELA	3	Outfit	558.85	<.0001	0.061
ELA	4	Infit	158.57	<.0001	0.017
ELA	4	Outfit	809.92	<.0001	0.083
ELA	5	Infit	6.95	<.0001	0.001
ELA	5	Outfit	324.09	<.0001	0.035
ELA	6	Infit	105.41	<.0001	0.011
ELA	6	Outfit	591.86	<.0001	0.059
ELA	7	Infit	72.81	<.0001	0.007
ELA	7	Outfit	369.78	<.0001	0.036
ELA	8	Infit	28.92	<.0001	0.003
ELA	8	Outfit	314.38	<.0001	0.032
Science	4	Infit	349.47	<.0001	0.043
Science	4	Outfit	661.18	<.0001	0.078
Science	8	Infit	234.72	<.0001	0.021
Science	8	Outfit	552.31	<.0001	0.061

CONCLUSION AND FUTURE DIRECTIONS

Until the volume of CBT administrations increases, traditional mode analyses may not be feasible or appropriate. The analyses conducted here provide preliminary evidence that there is little influence of mode on person infit and outfit, suggesting that the data fit the model regardless of mode, EL, and IEP status. Although the results show statistical significance, there is very little practical significance in the results of the study. In nearly all the models analyzed, less than 10% of the variance in infit and outfit was explained by the predictors.

APPENDIX T: PRE-EQUATING VERIFICATION RESULTS

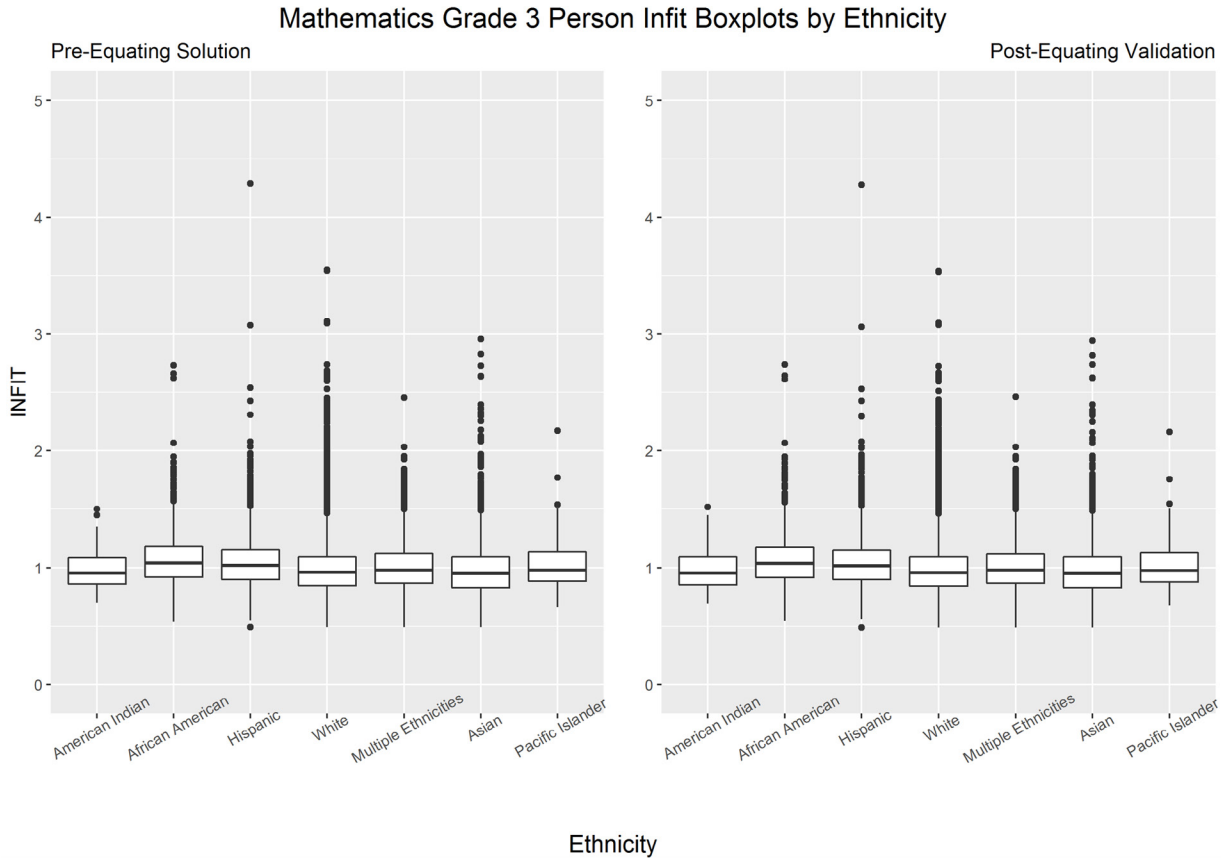
PRE-EQUATING VERIFICATION RESULTS

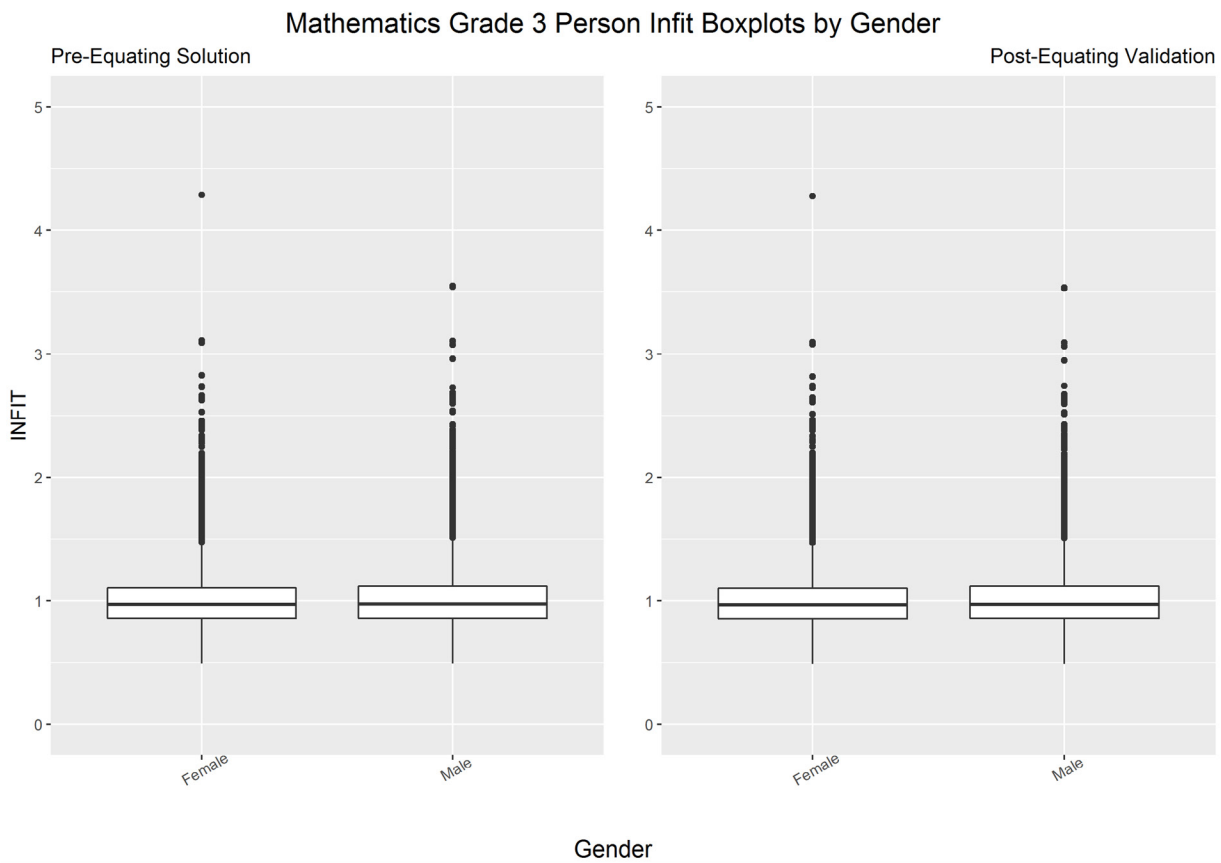
Appendix T contains information and results based on the data used for the pre-equating verification. Results are presented for the fully-anchored pre-equating solution (hereinafter "pre-equating") and the partially anchored pre-equating solution when misfitting items were freely calibrated (hereinafter "post-equating"). The results presented in this appendix provide support for utilizing the pre-equated solution for all student reporting. A complete description of the pre-equating verification process is discussed in Chapter Fifteen.

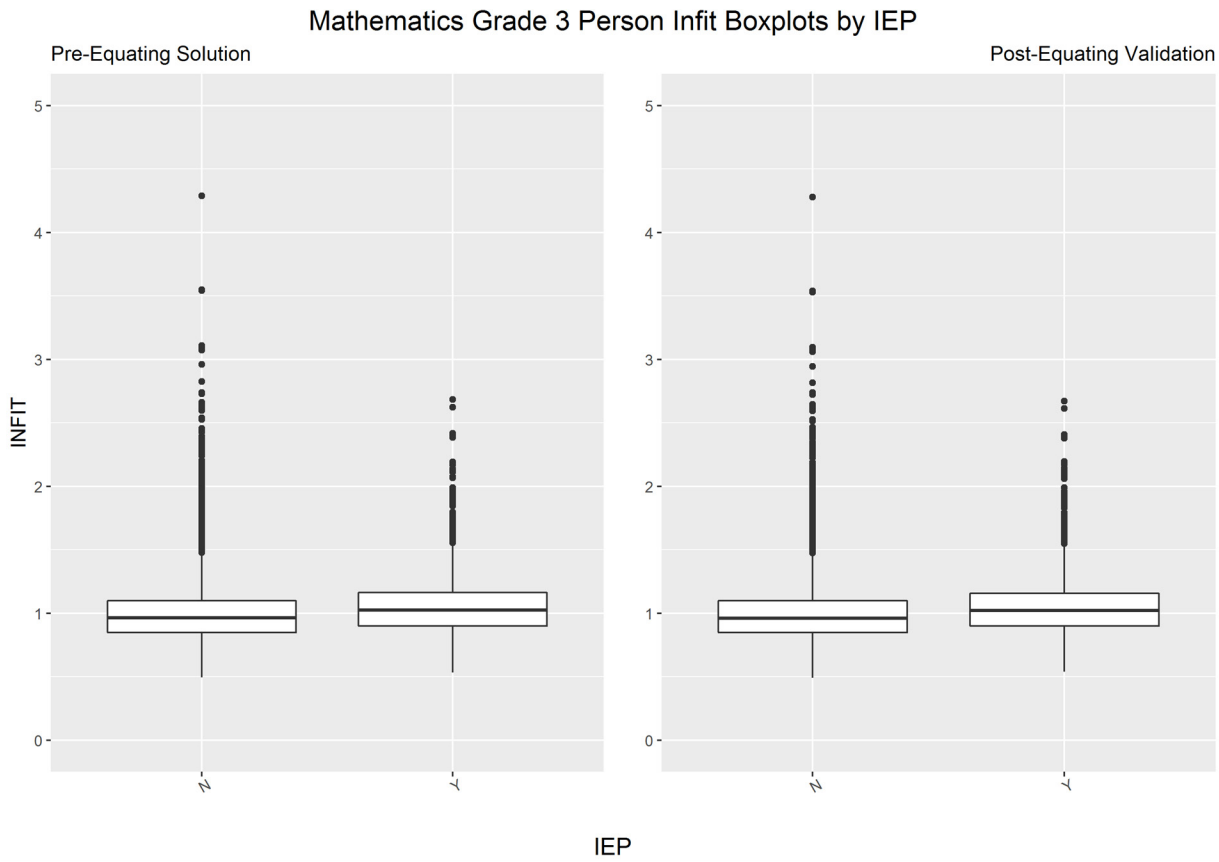
Figure T–1 shows person infit boxplots for pre-equated (left) and post-equated (right) solutions by subject and grade.

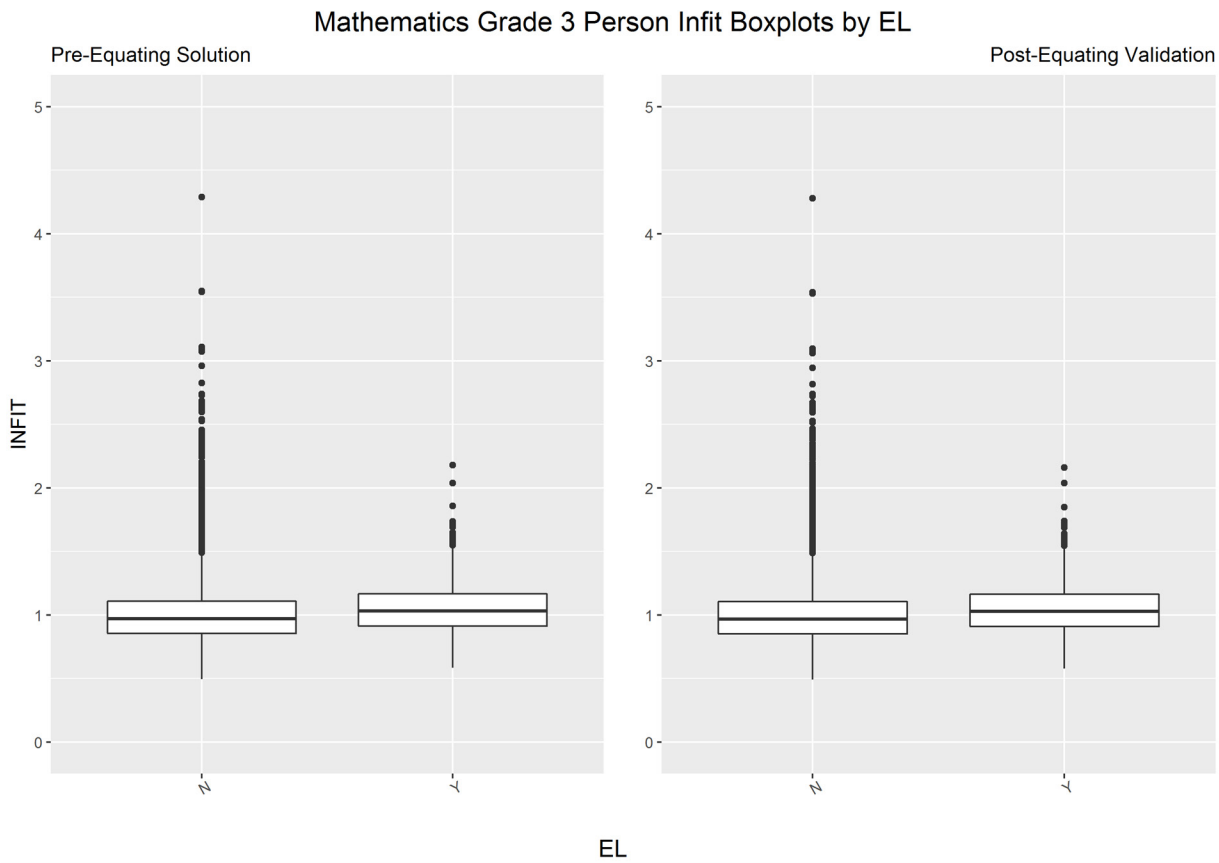
Figure T–1. Person Infit Boxplots by Subject and Grade for Pre- and Post-Equated Solutions

Mathematics Grade 3

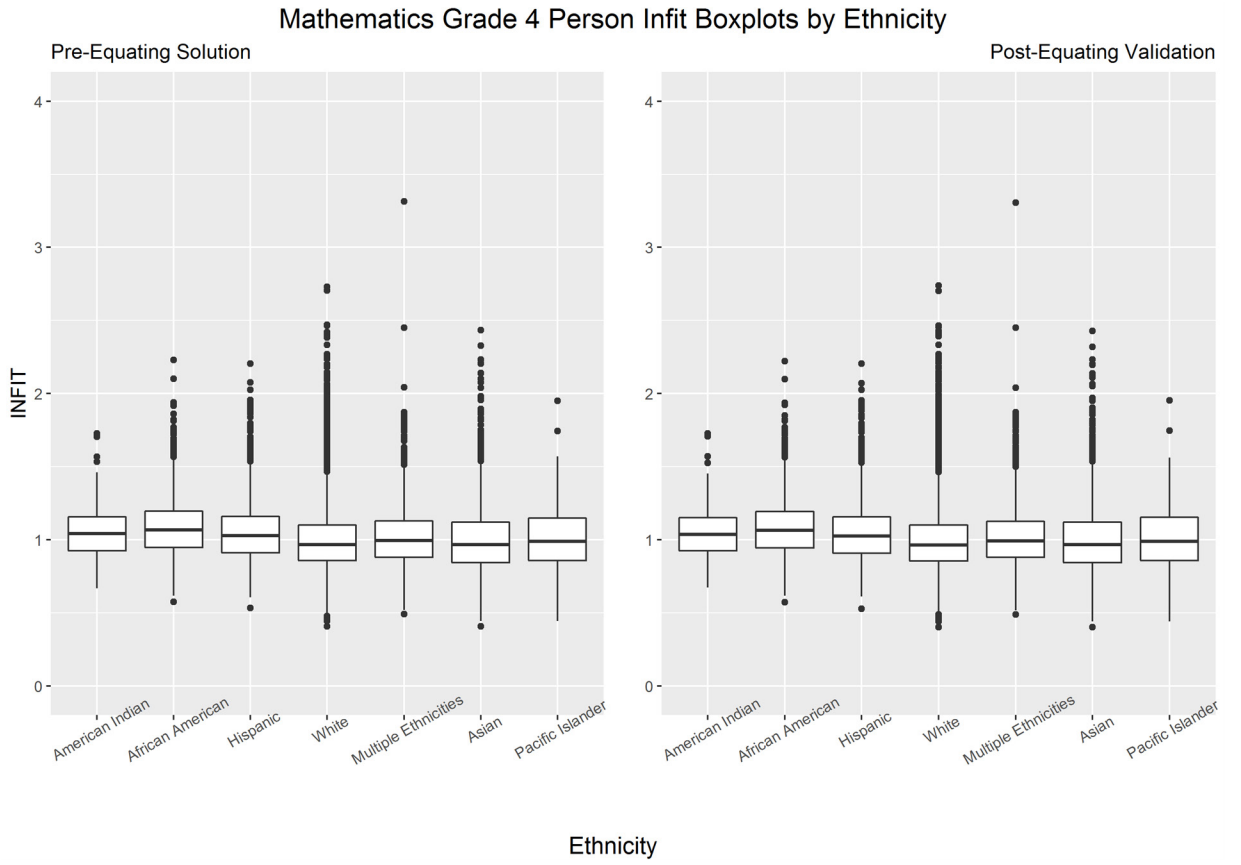


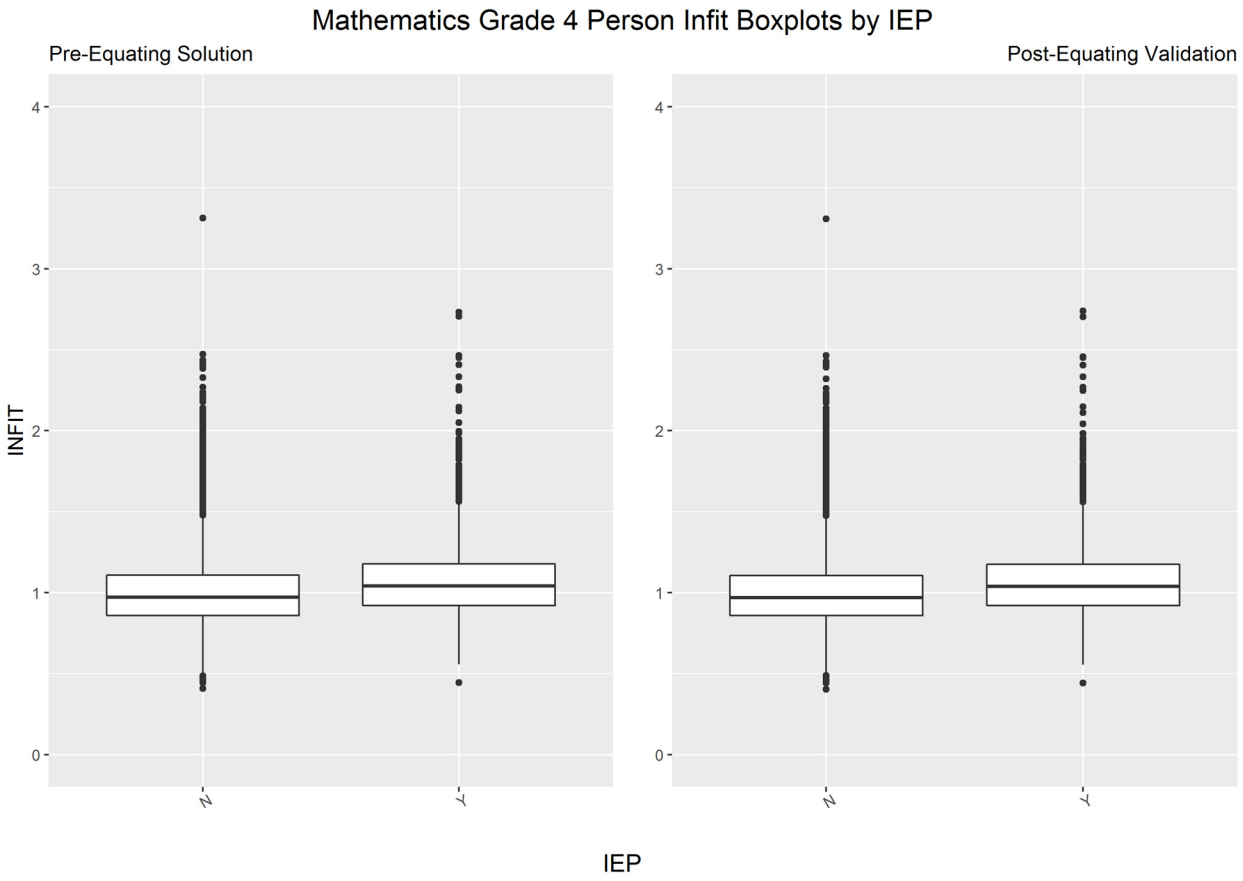


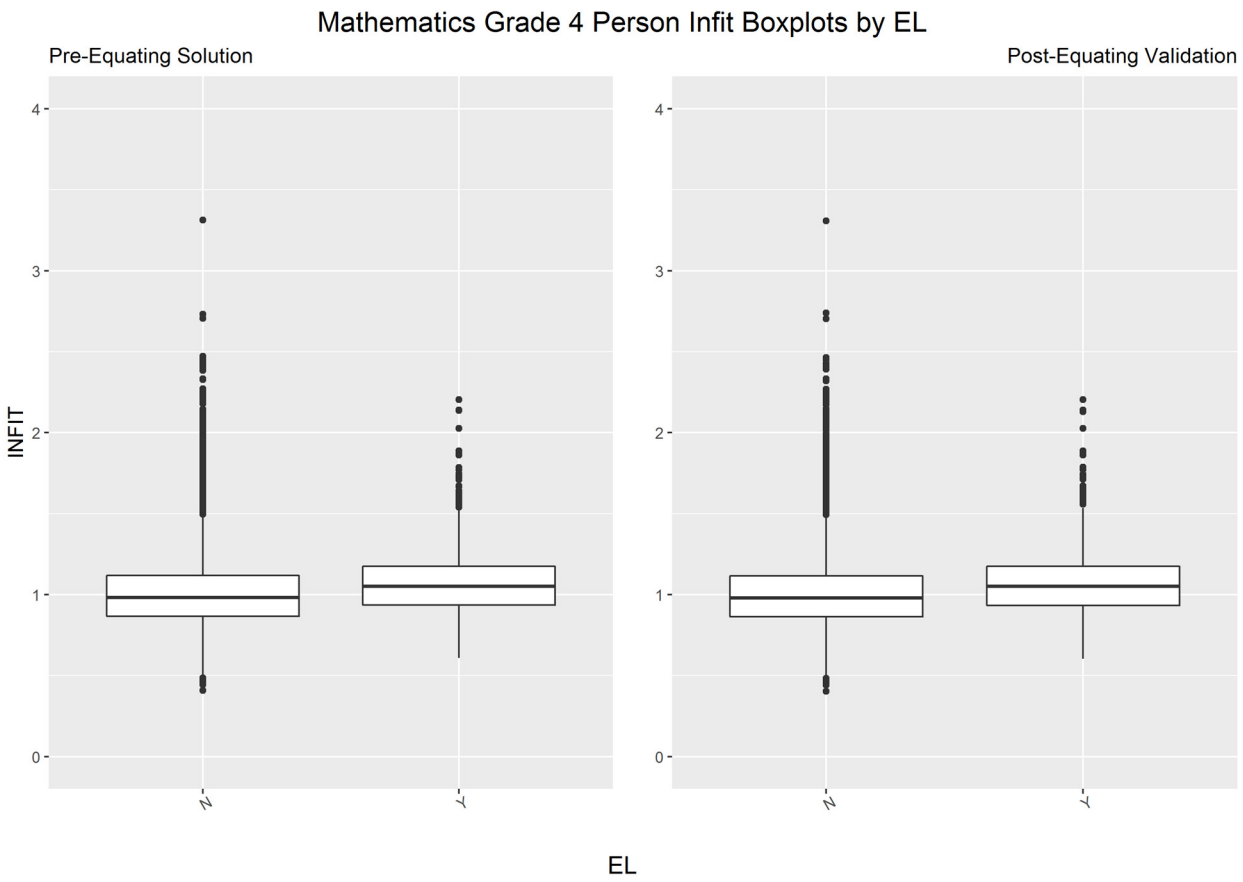

Mathematics Grade 3 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
5
N
Y
IEP


Mathematics Grade 3 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
5
N
Y
EL

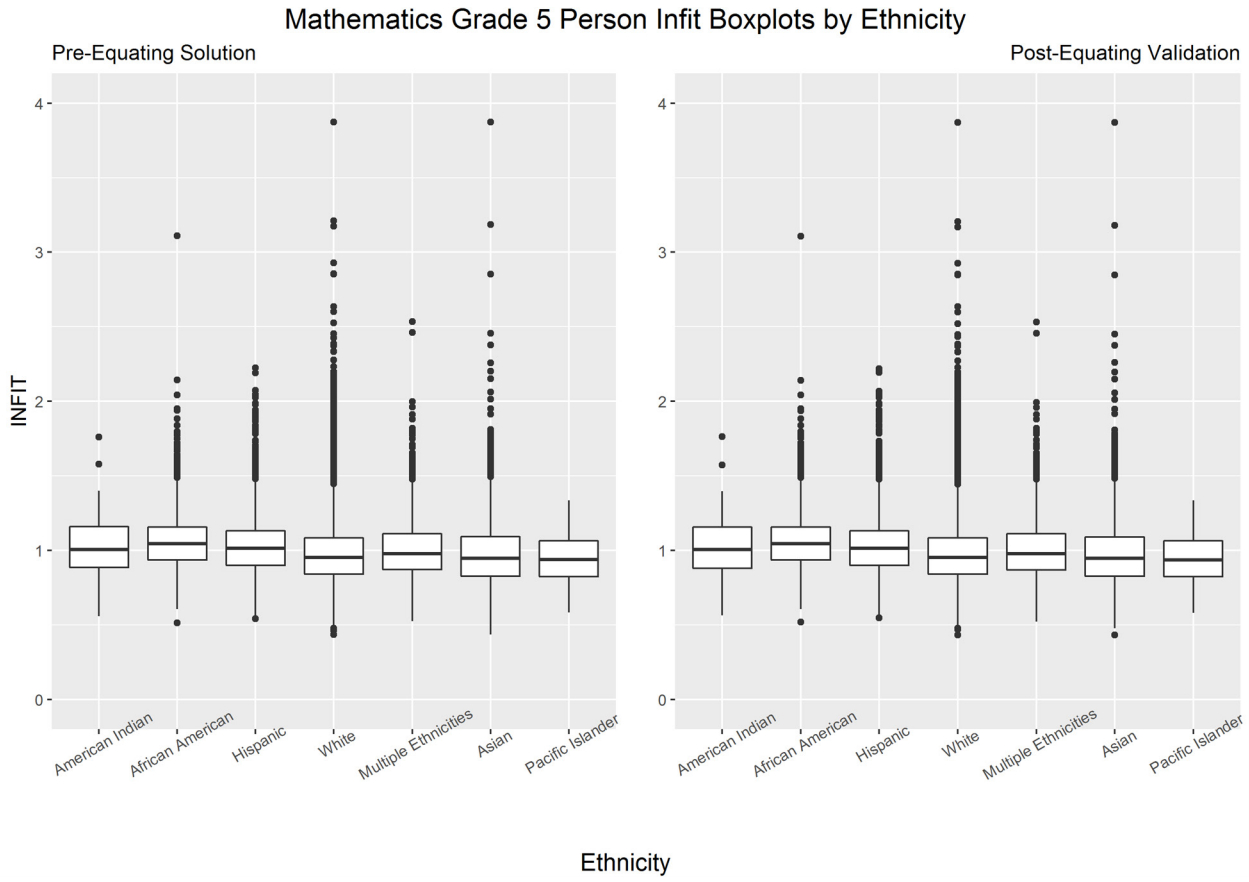
Mathematics Grade 4

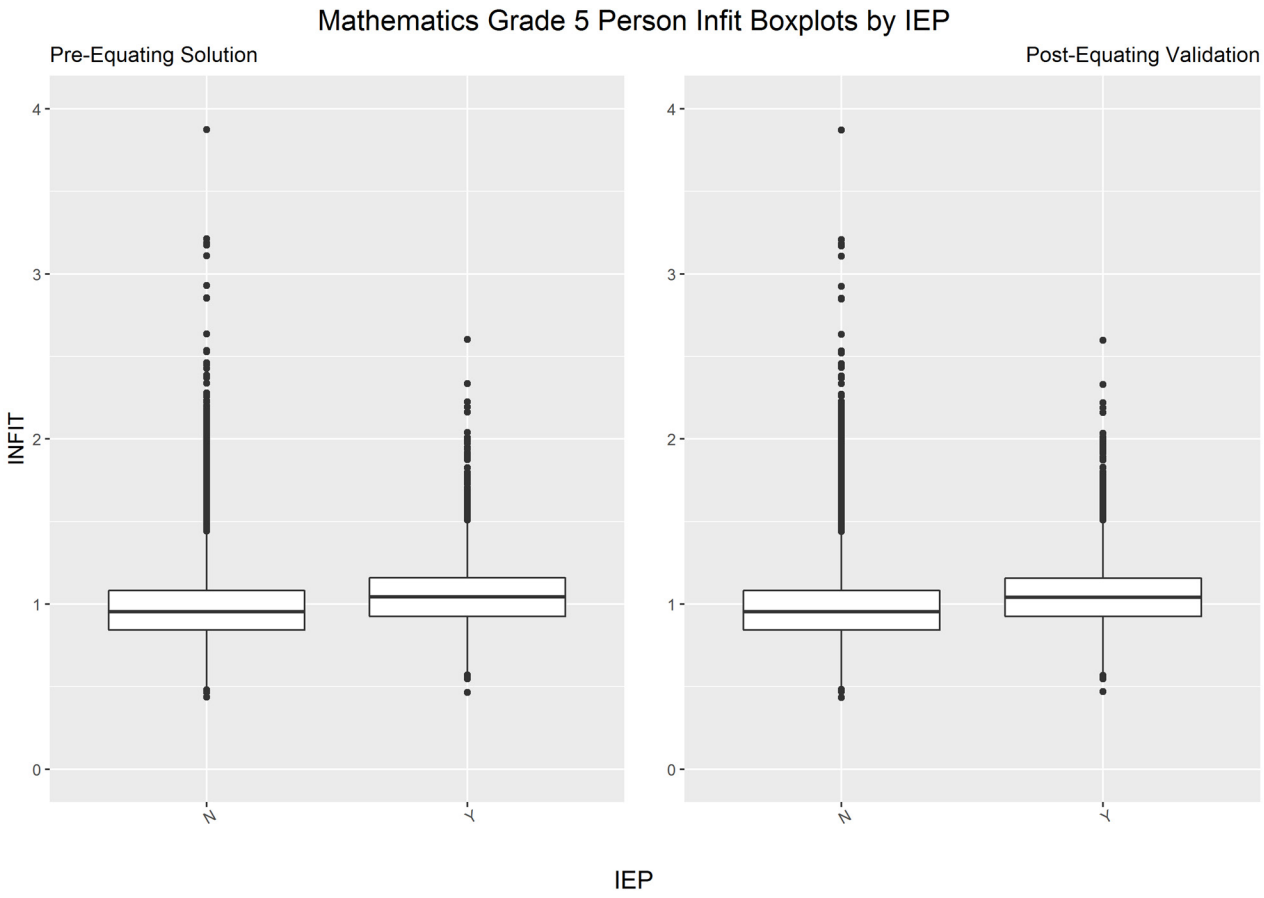


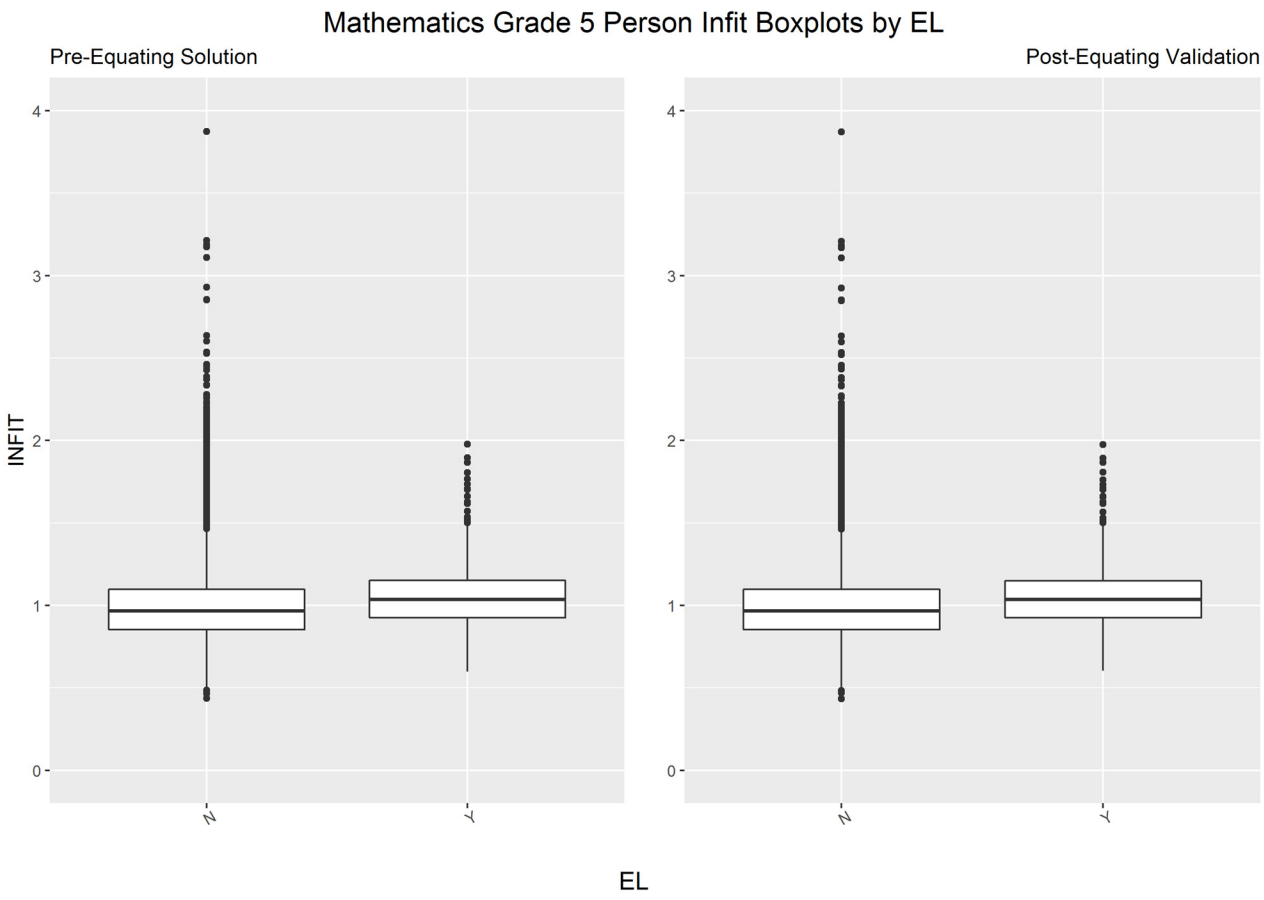

Mathematics Grade 4 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP


Mathematics Grade 4 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

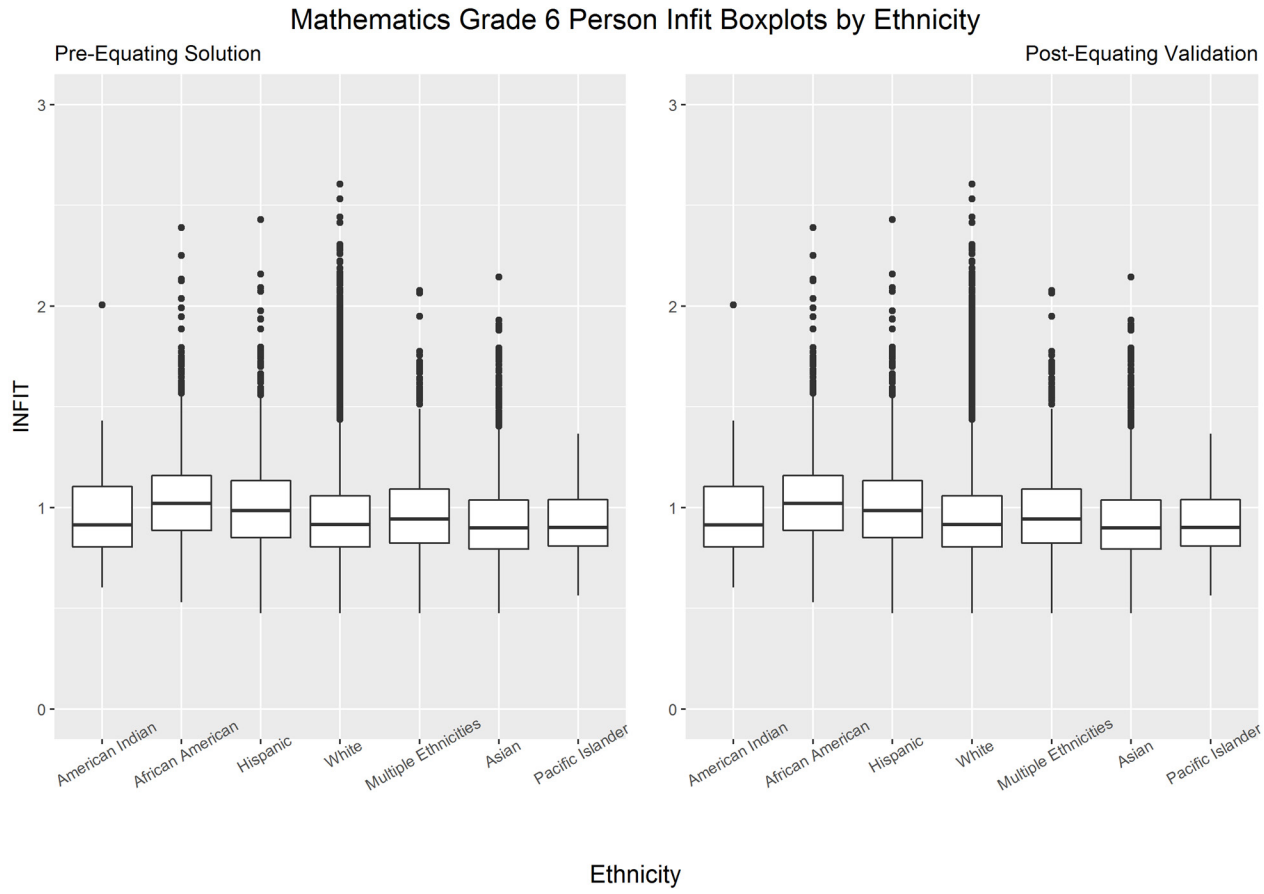
Mathematics Grade 5

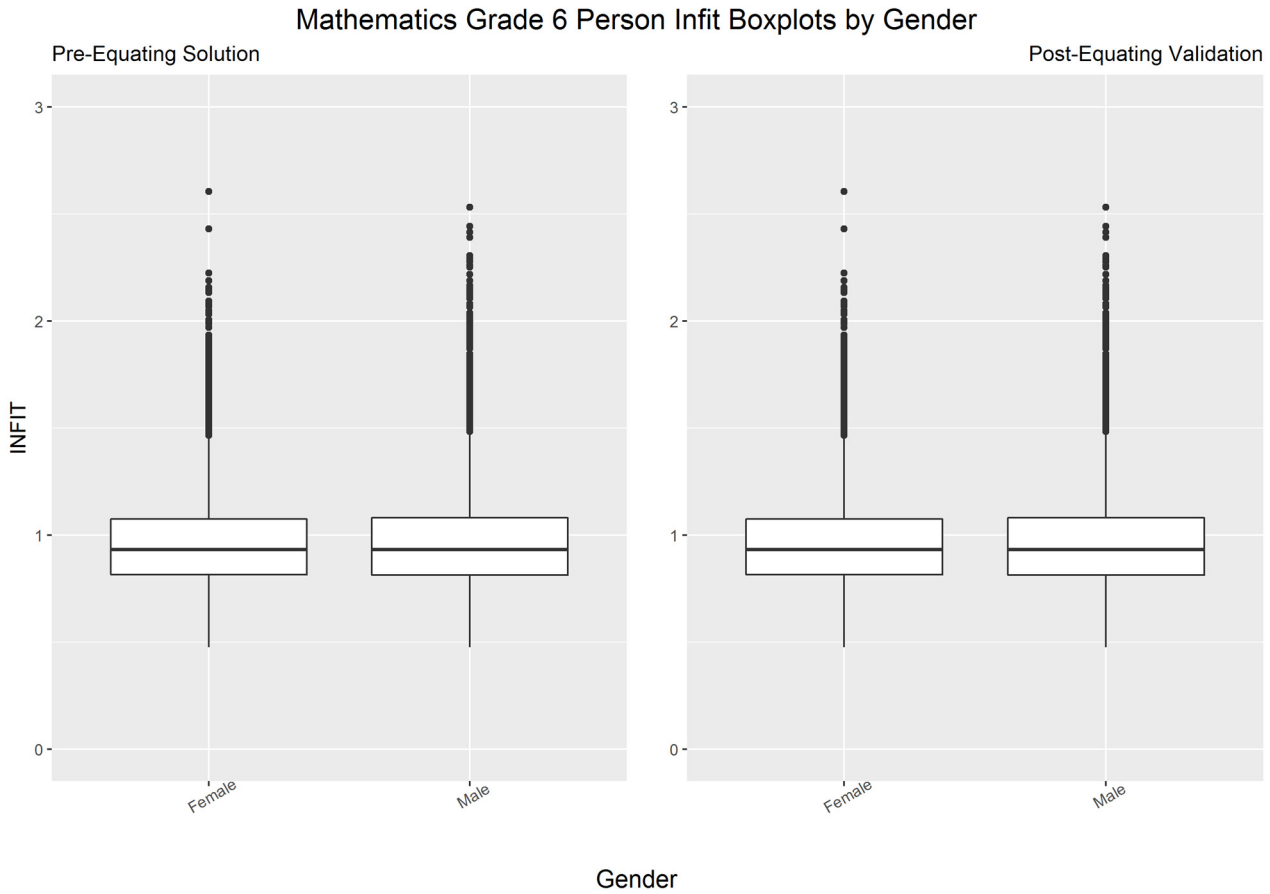


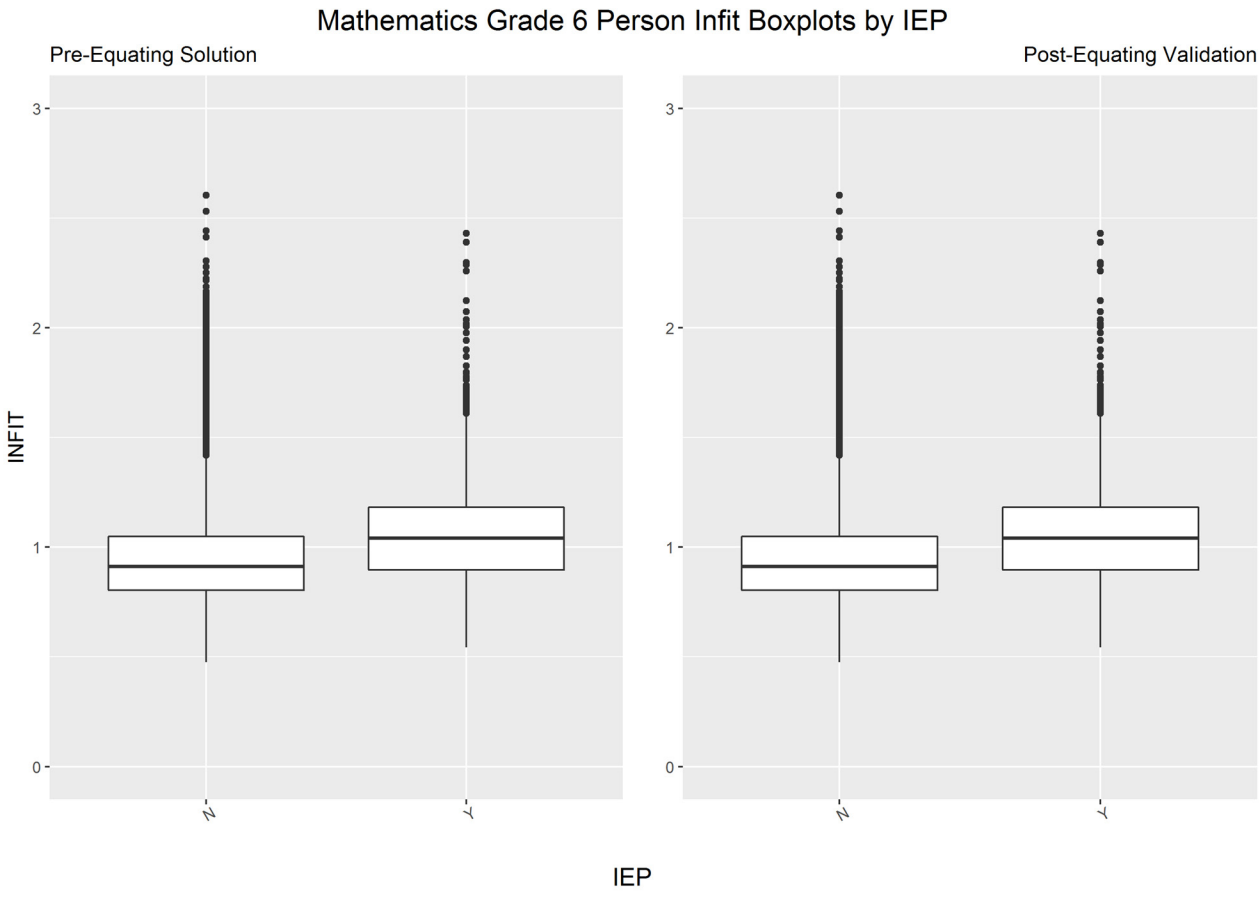

Mathematics Grade 5 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP

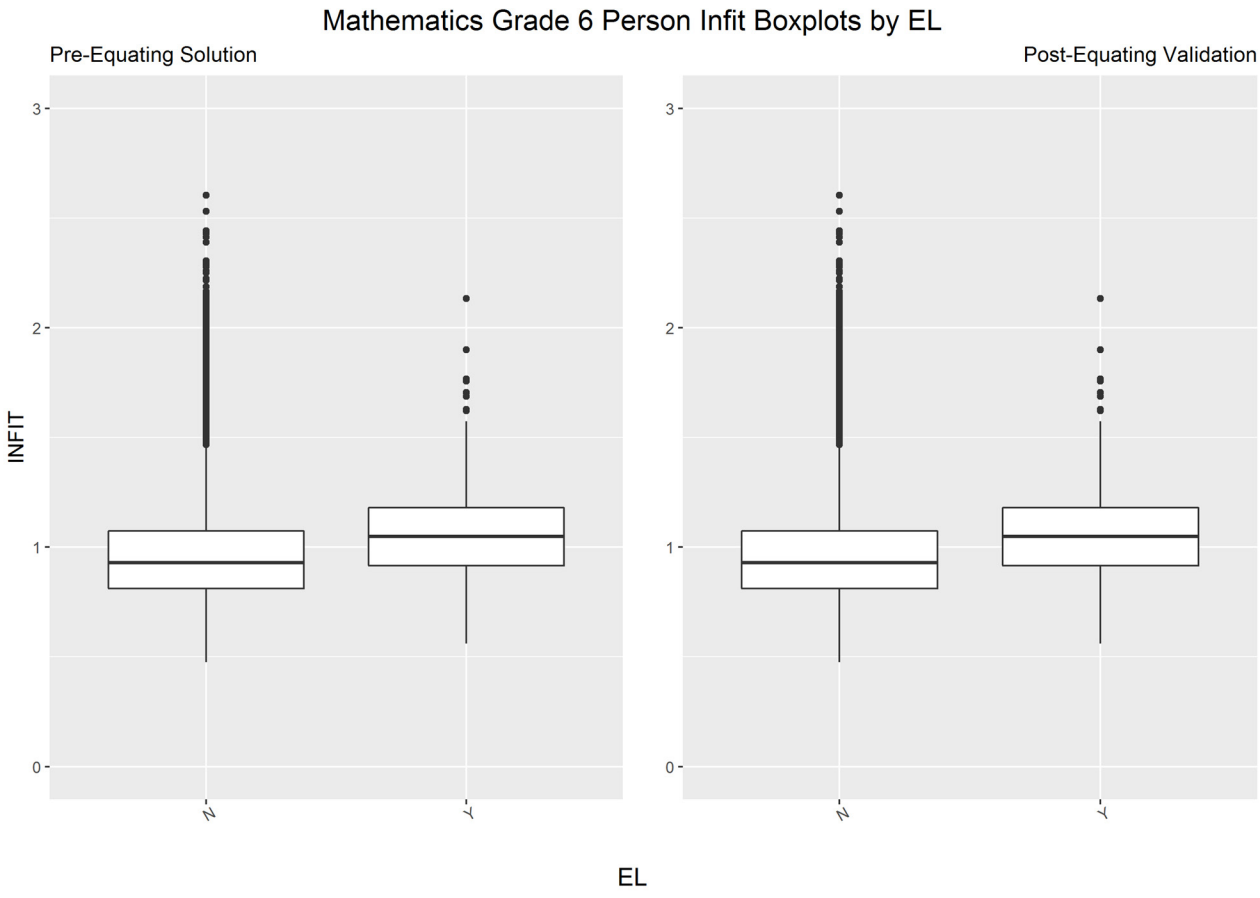

Mathematics Grade 5 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

Mathematics Grade 6

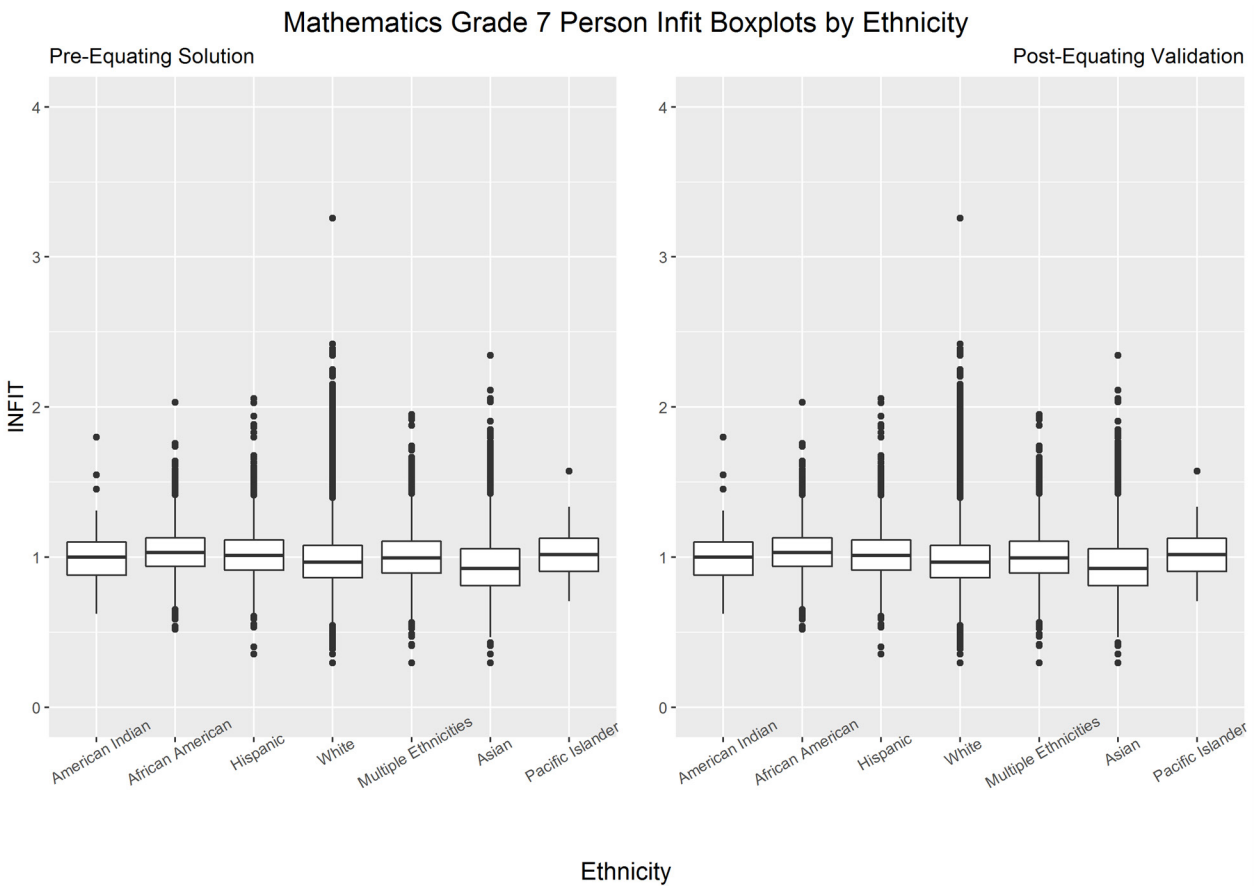


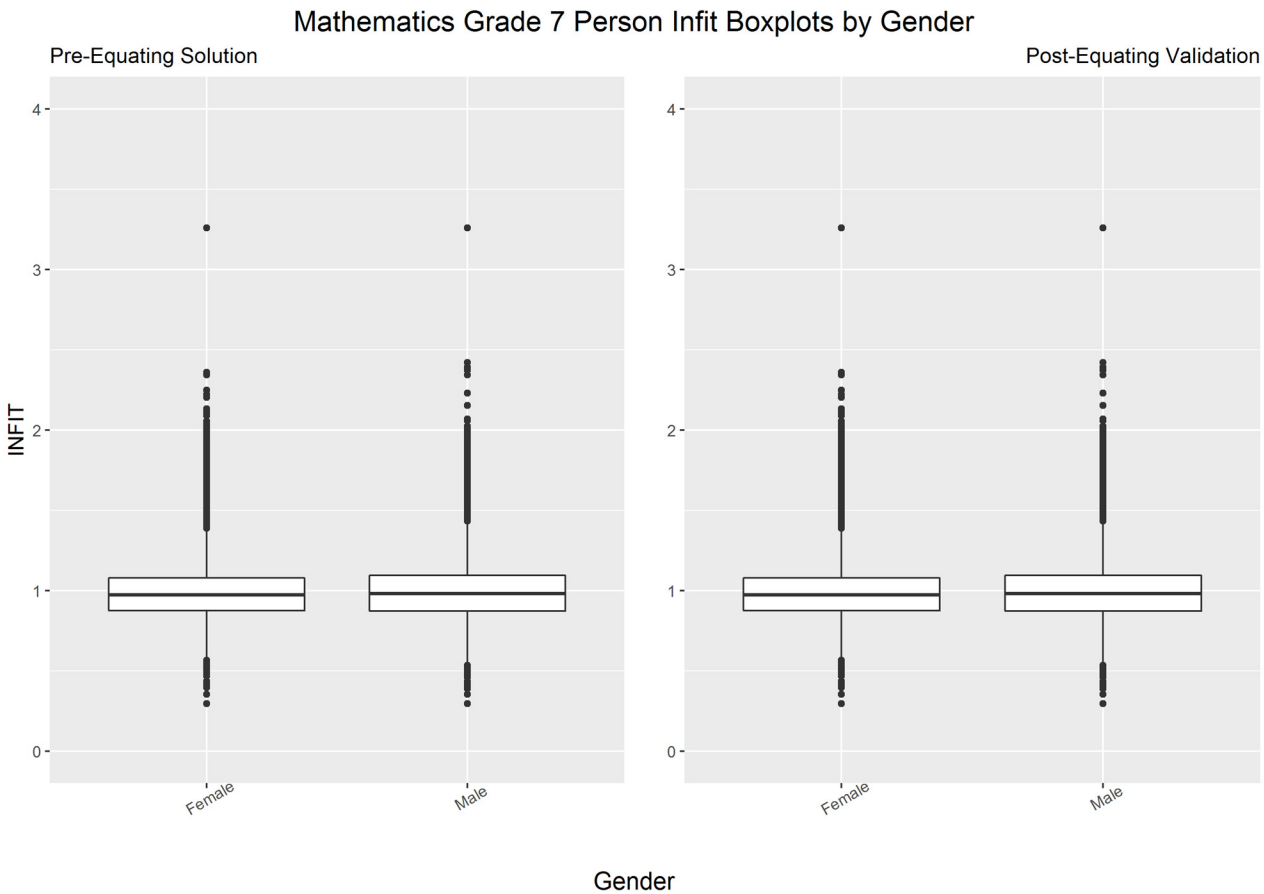


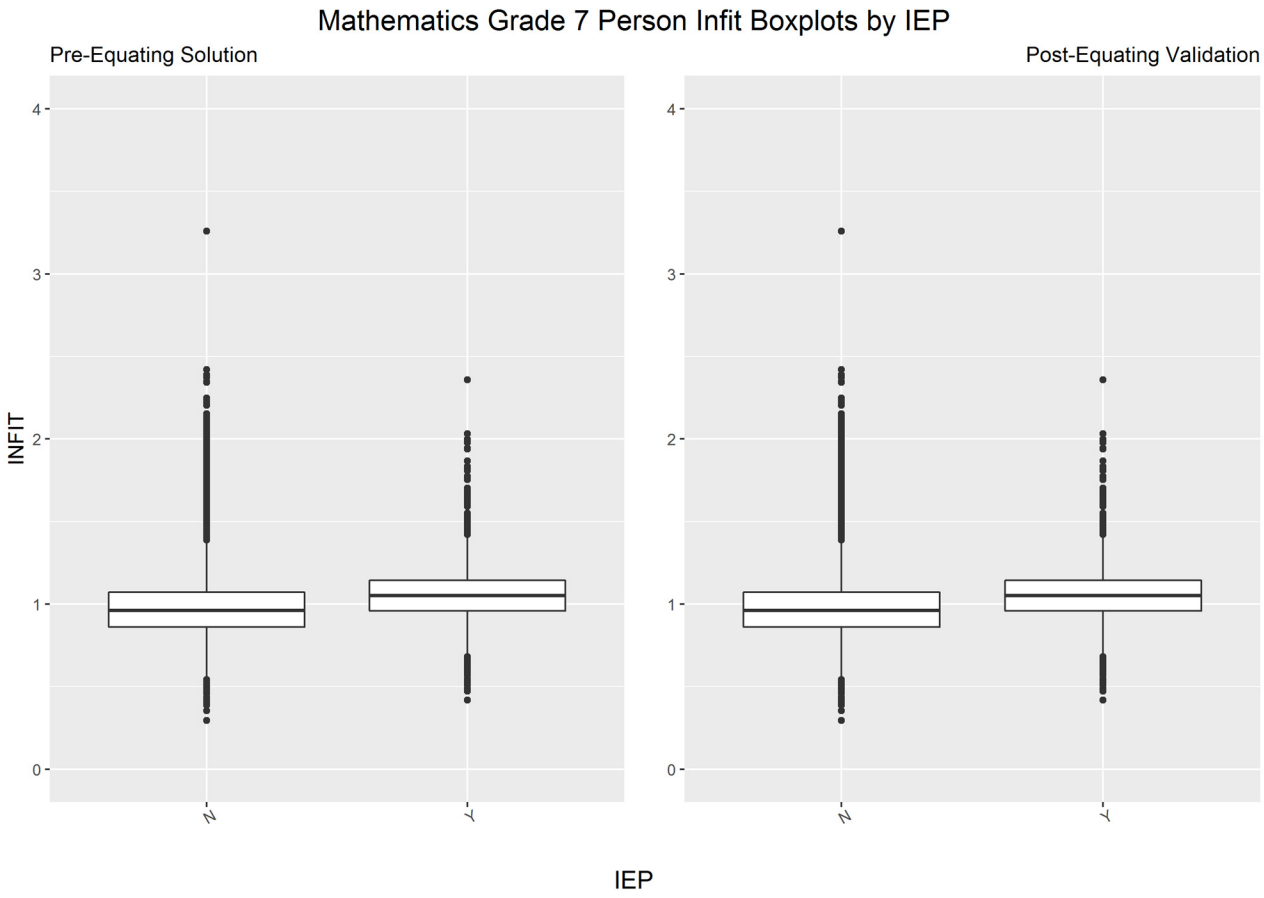

Mathematics Grade 6 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
IEP

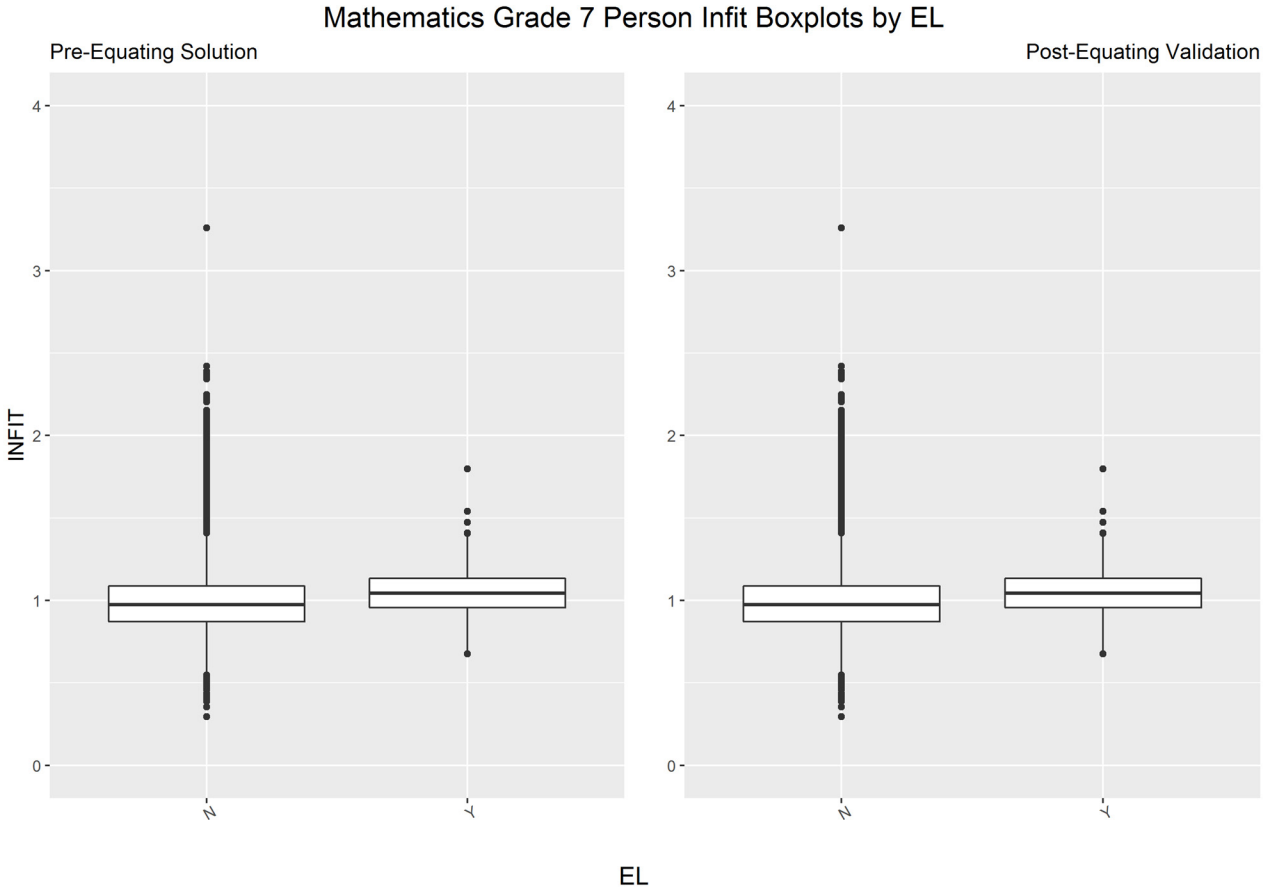

Mathematics Grade 6 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
EL

Mathematics Grade 7






Mathematics Grade 7 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP


Mathematics Grade 7 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
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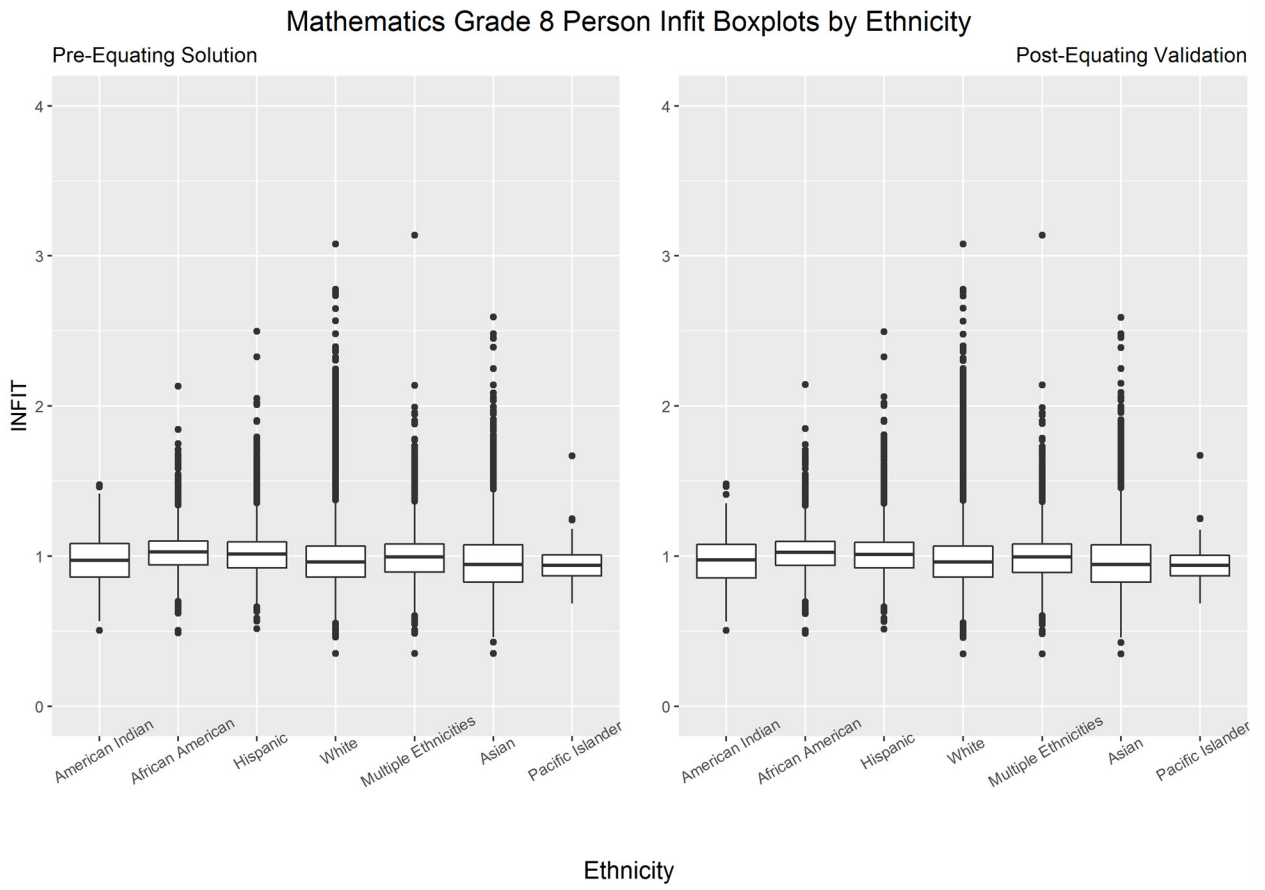
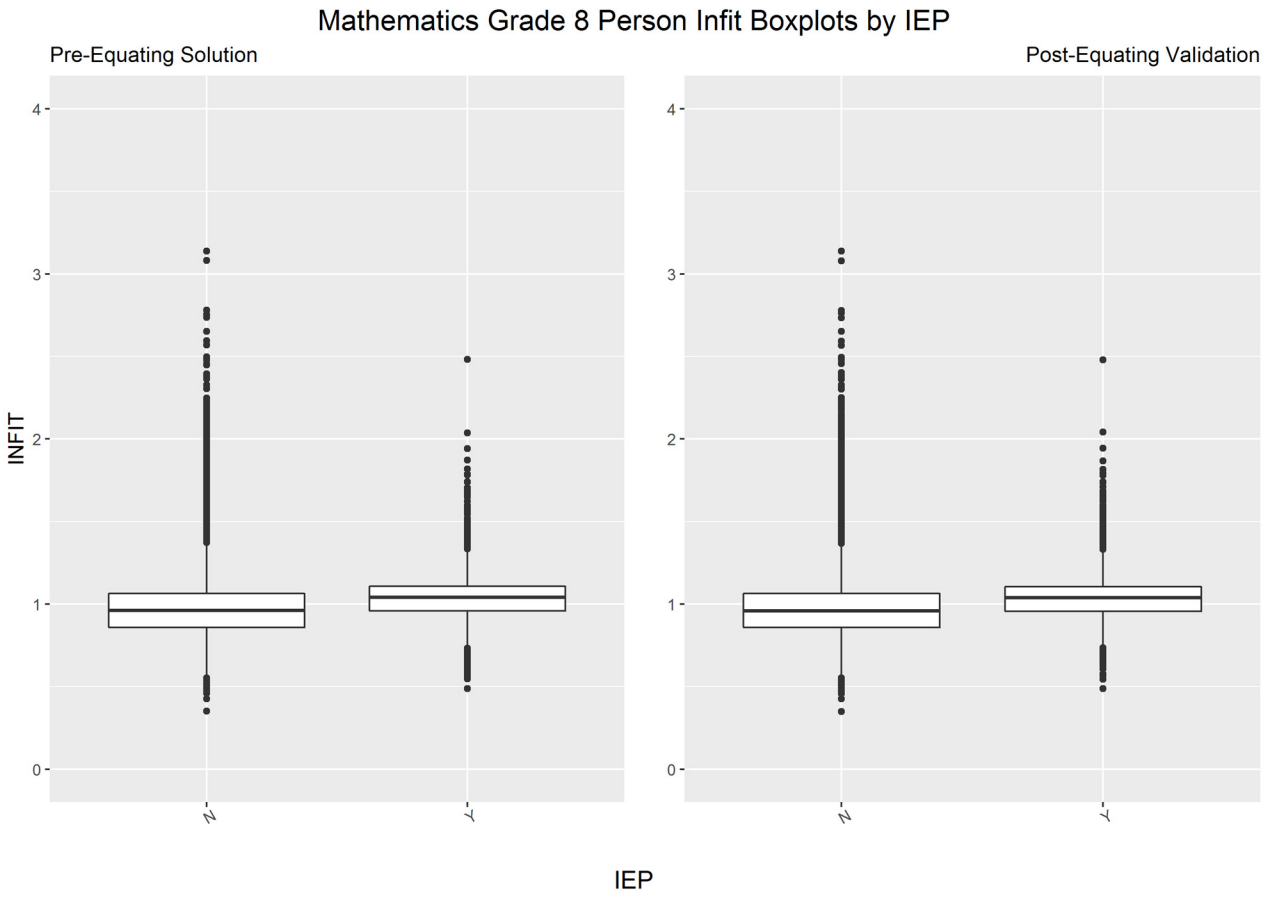
1
2
3
4
N
Y
EL

Mathematics Grade 8




Mathematics Grade 8 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
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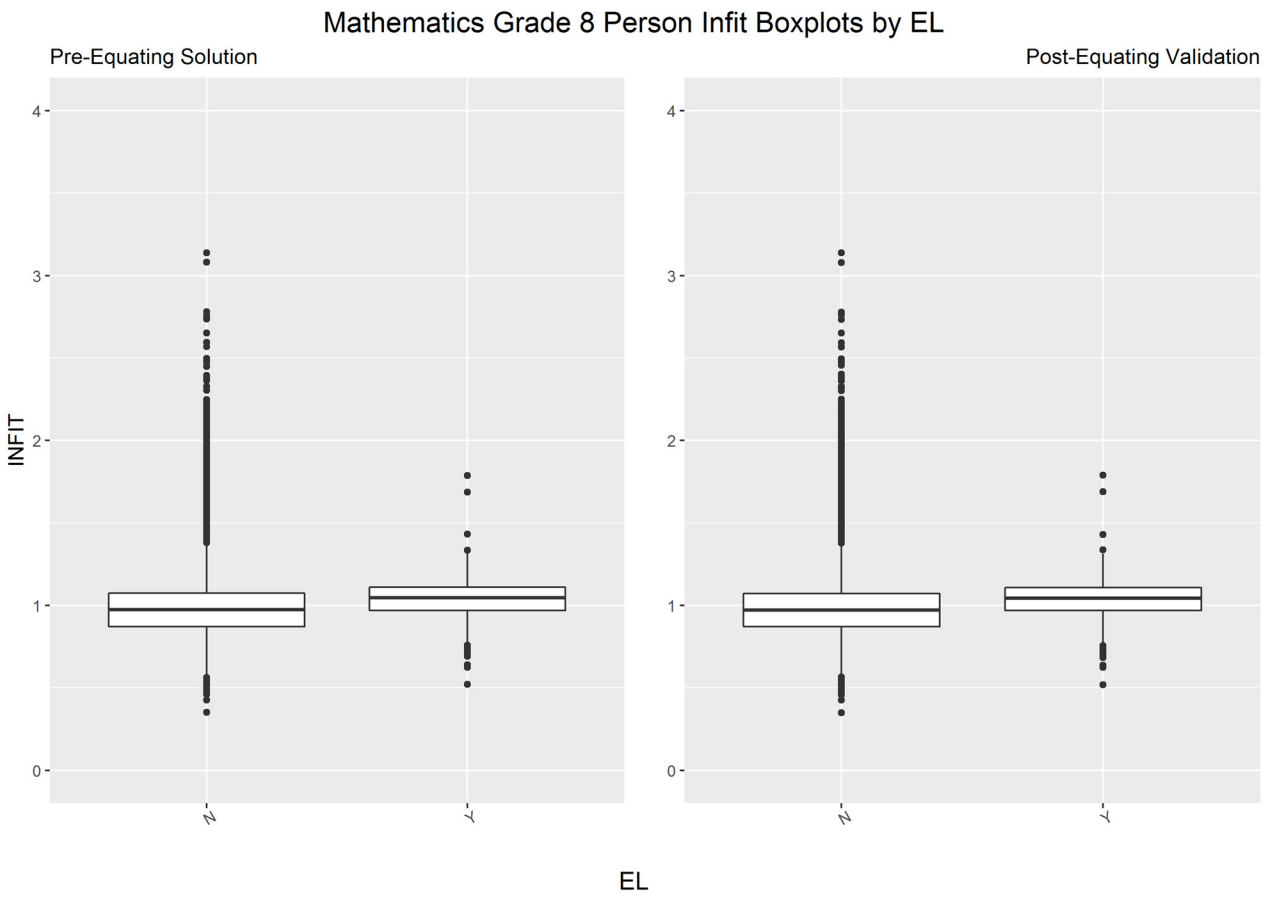
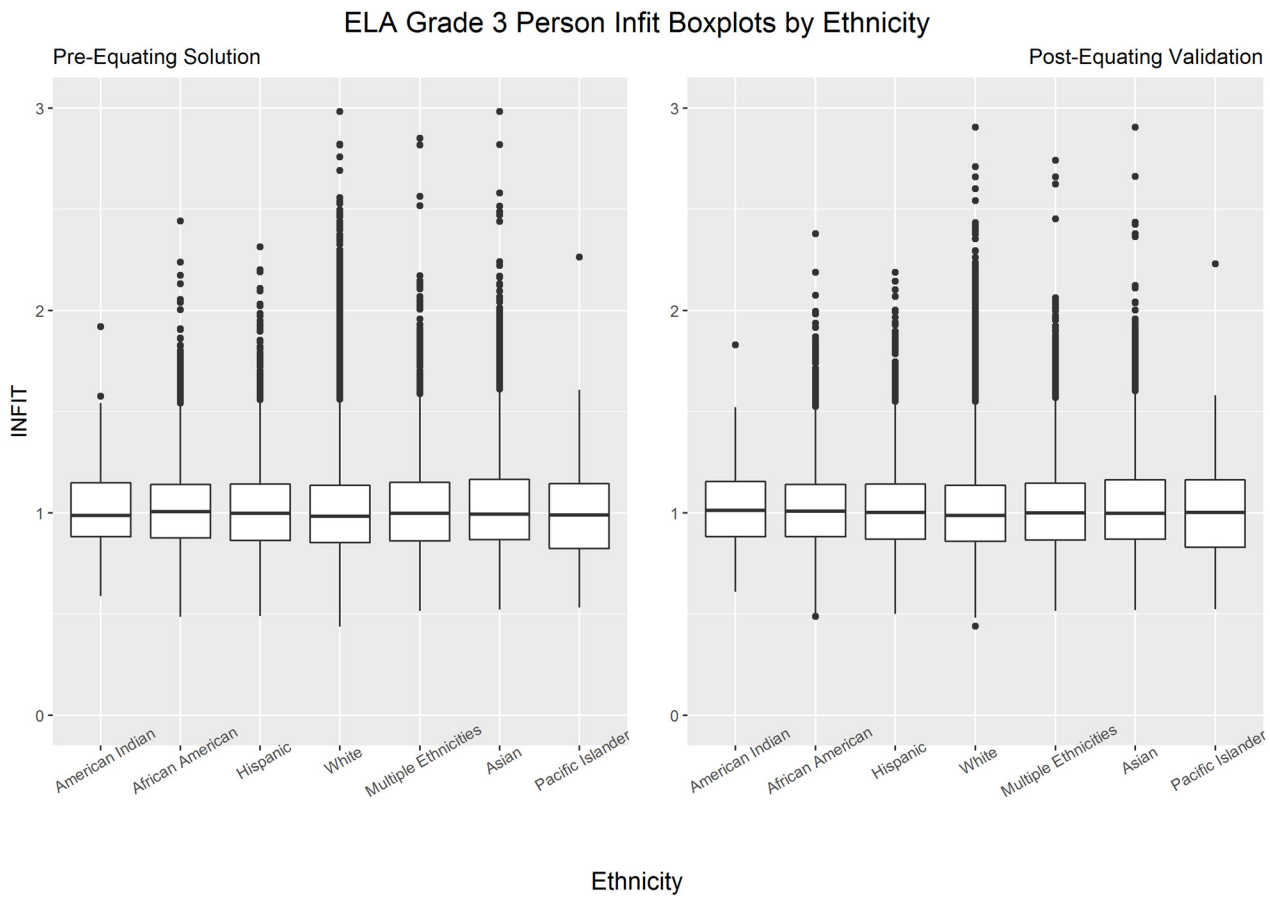
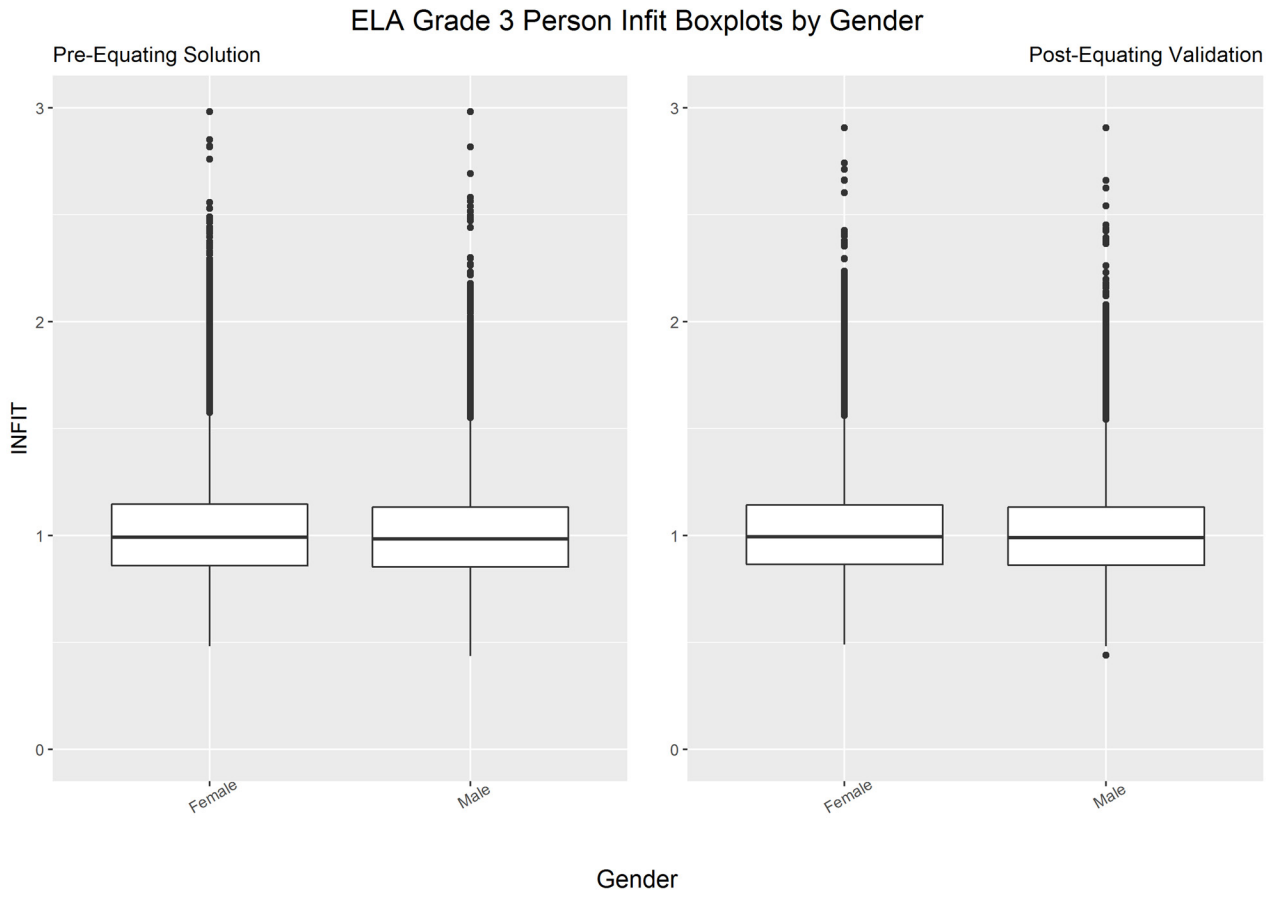
1
2
3
4
N
Y
IEP


Mathematics Grade 8 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

ELA Grade 3


ELA Grade 3 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity


ELA Grade 3 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
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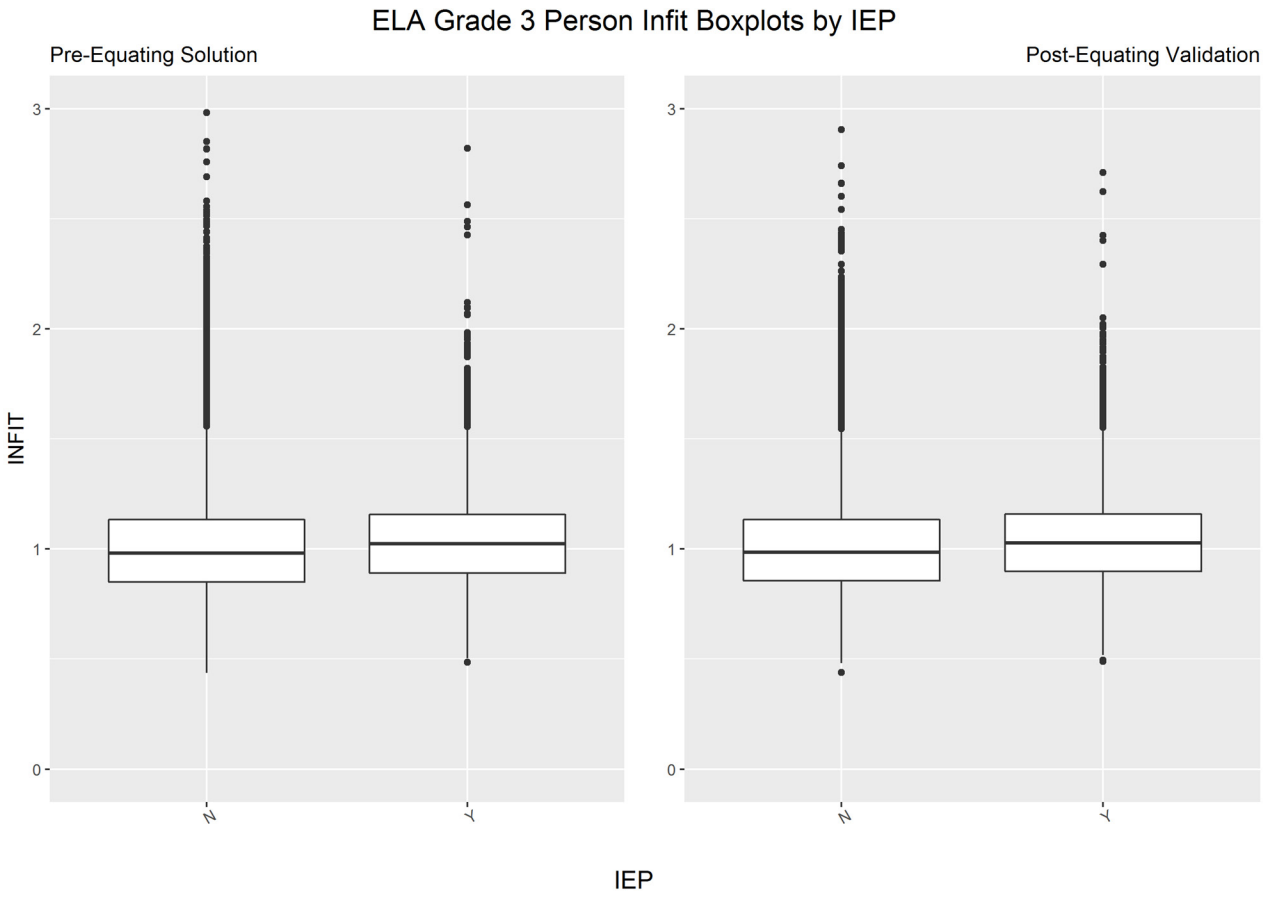
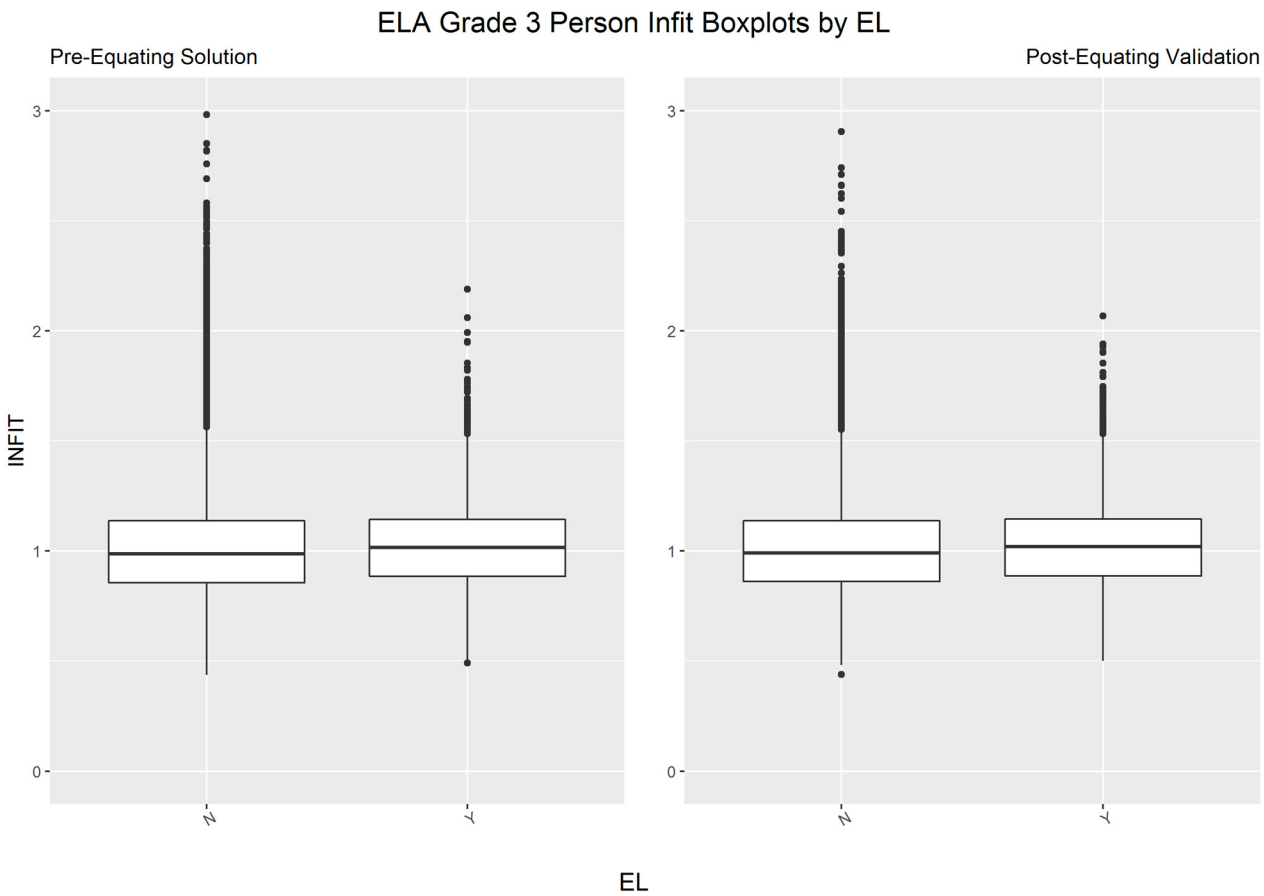
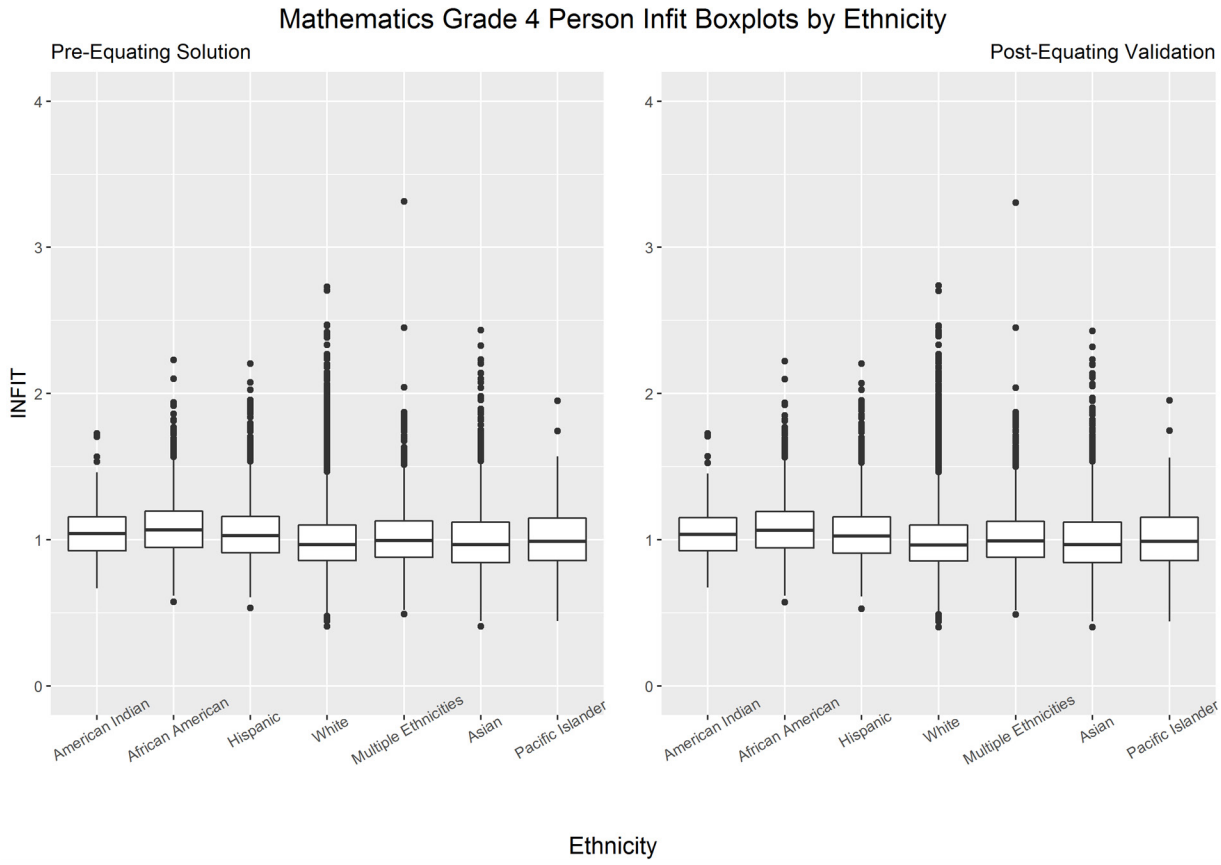
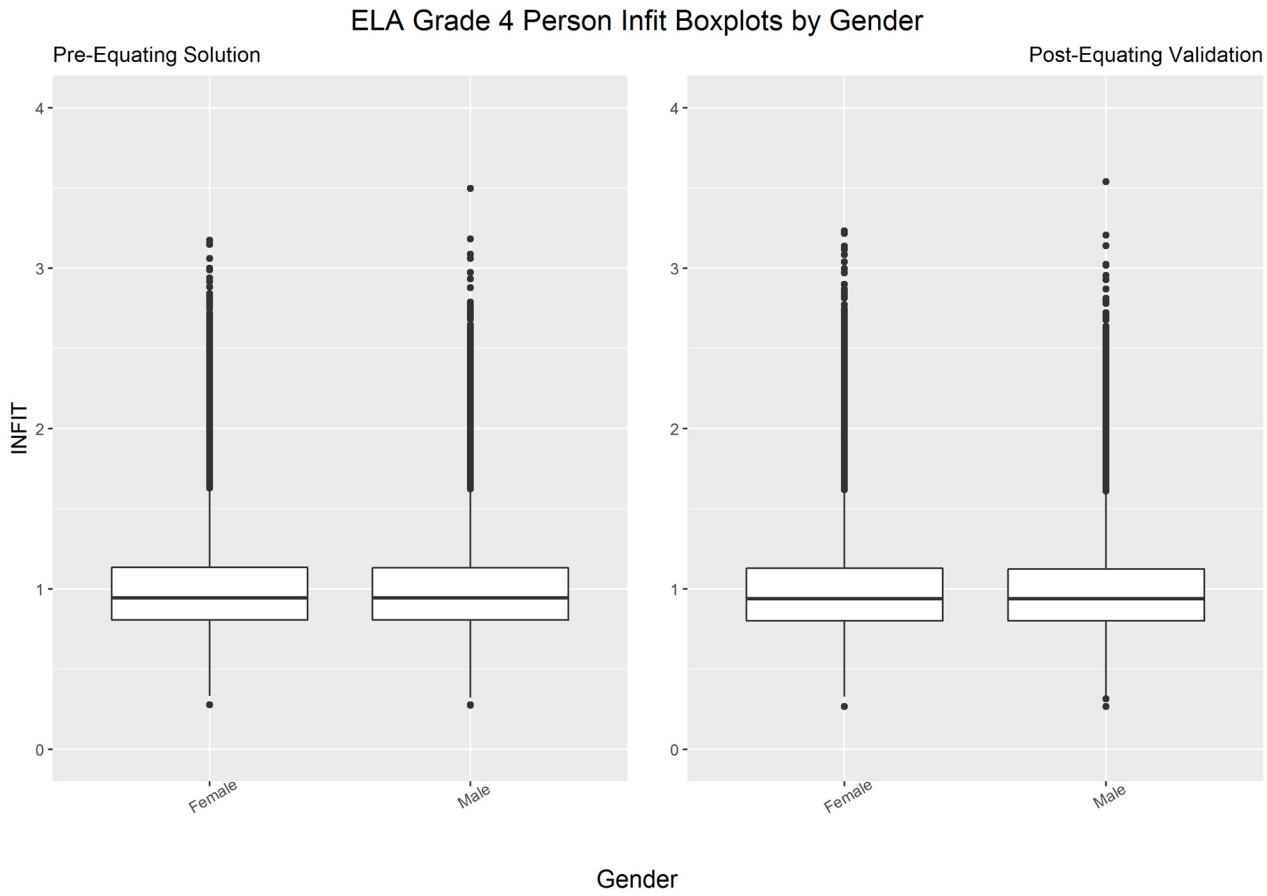
1
2
3
Female
Male
Gender

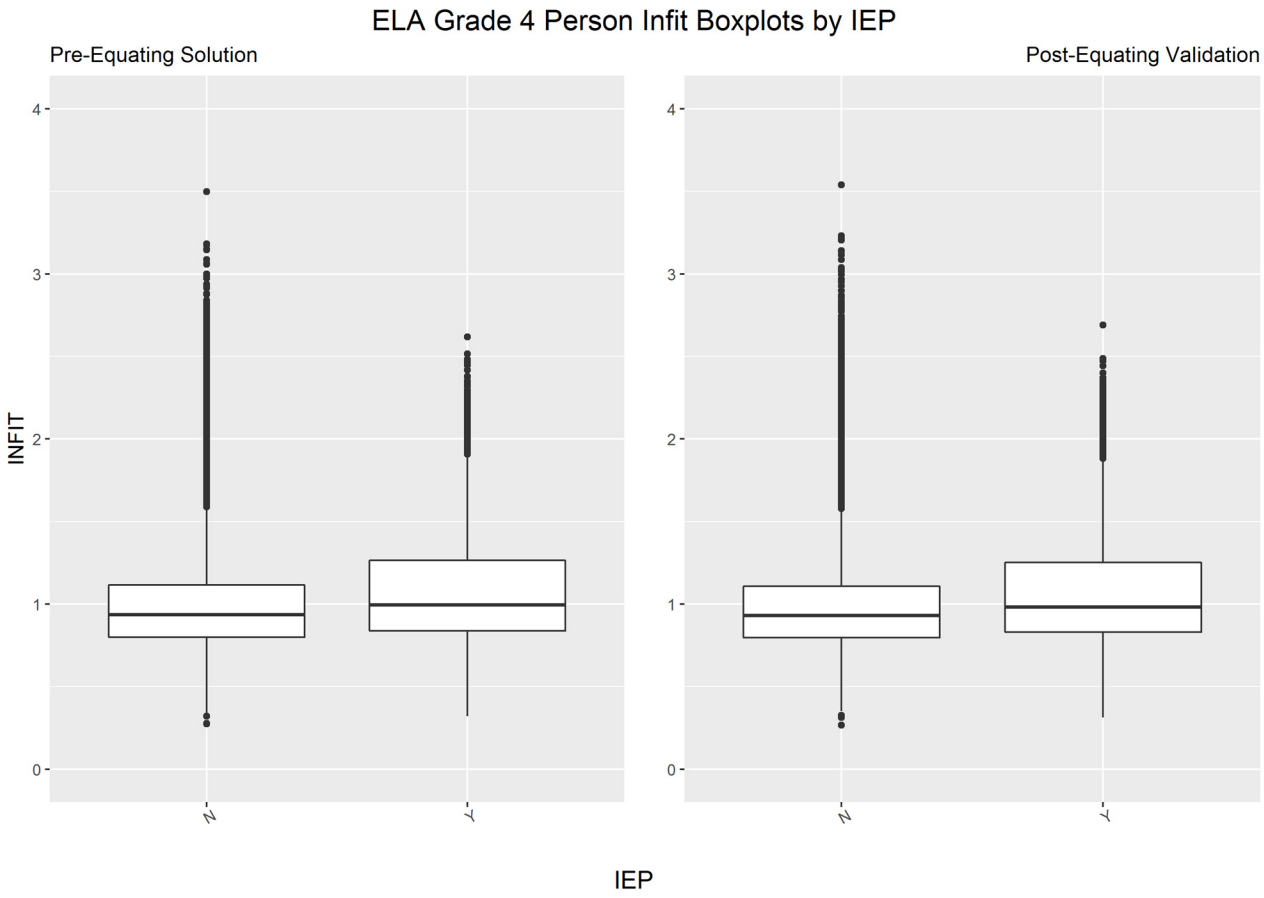

ELA Grade 3 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
IEP

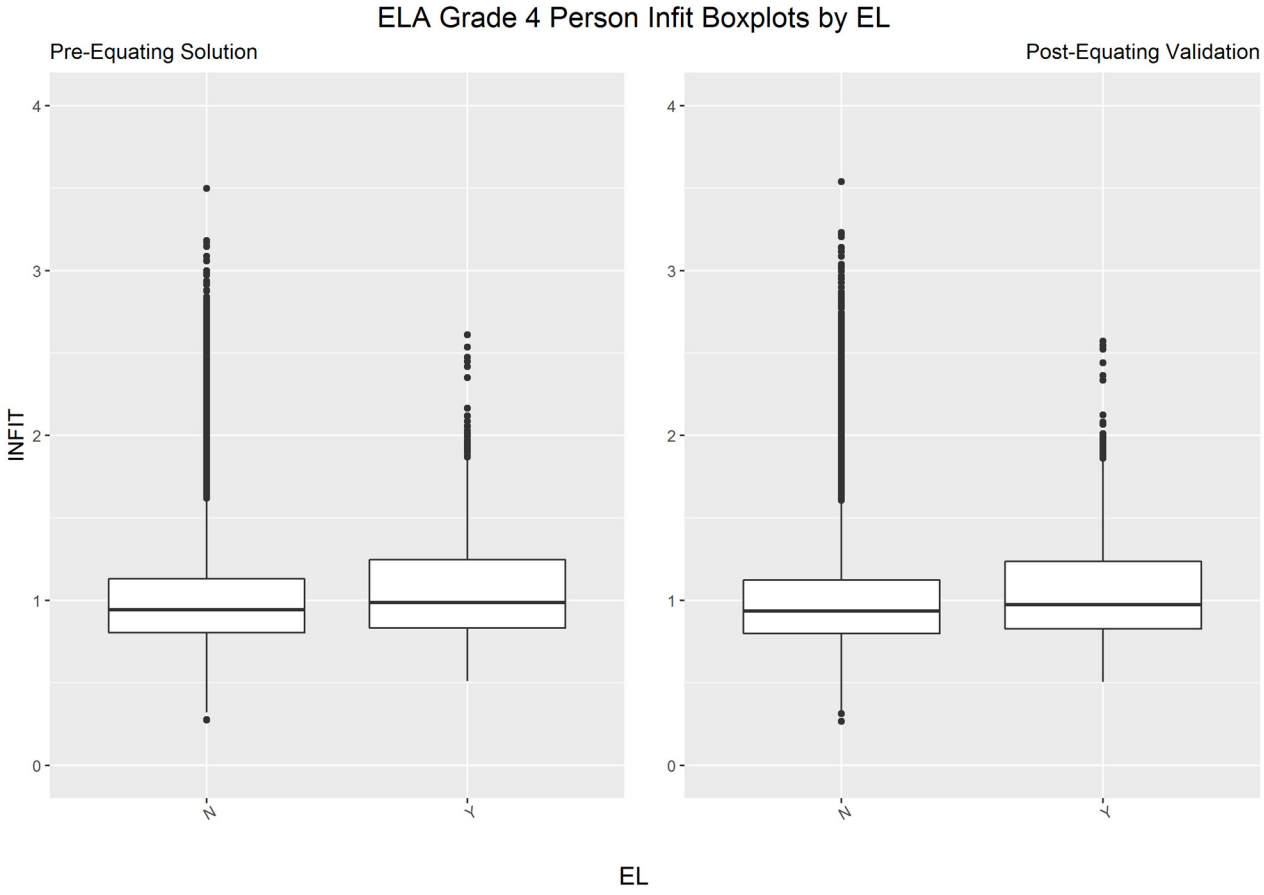

ELA Grade 3 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
EL

ELA Grade 4

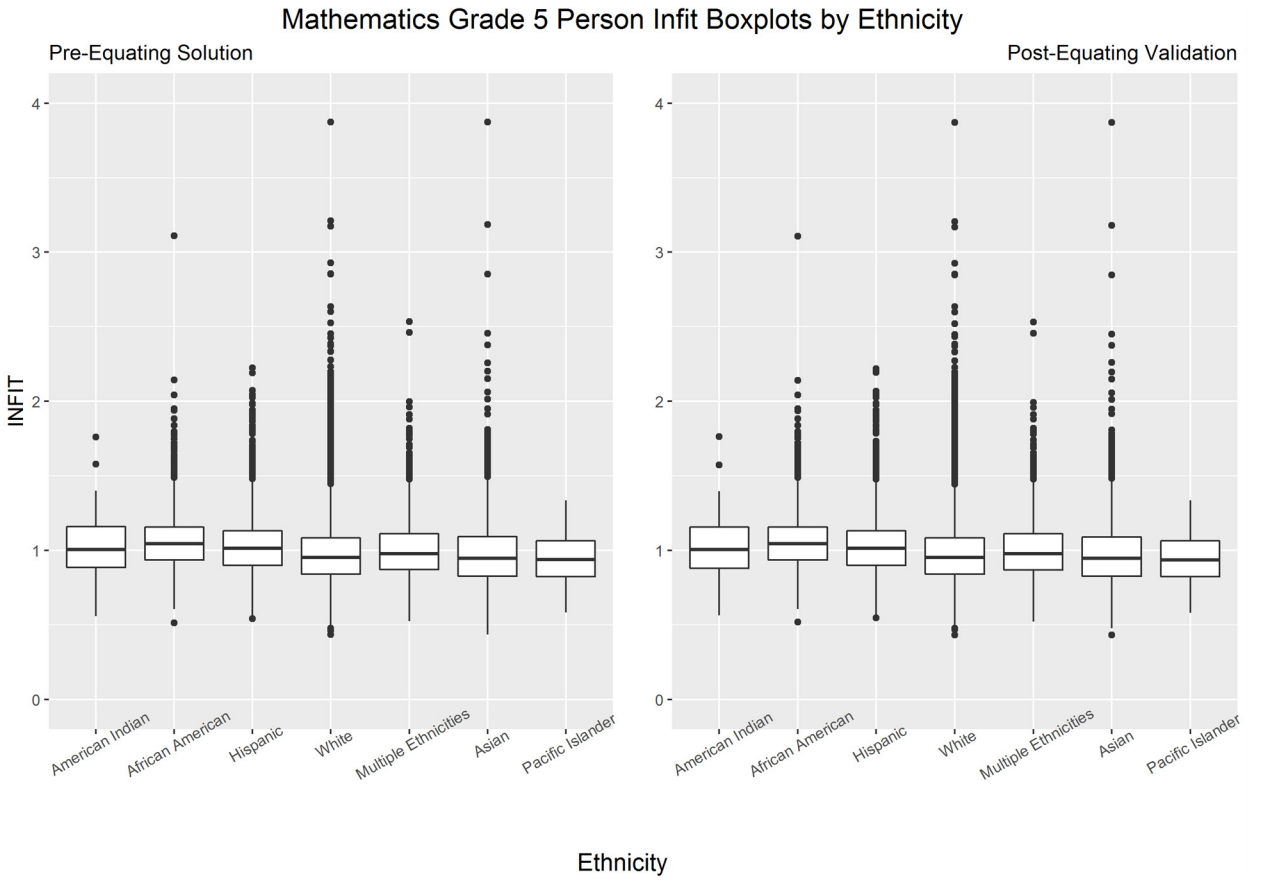

Mathematics Grade 4 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity

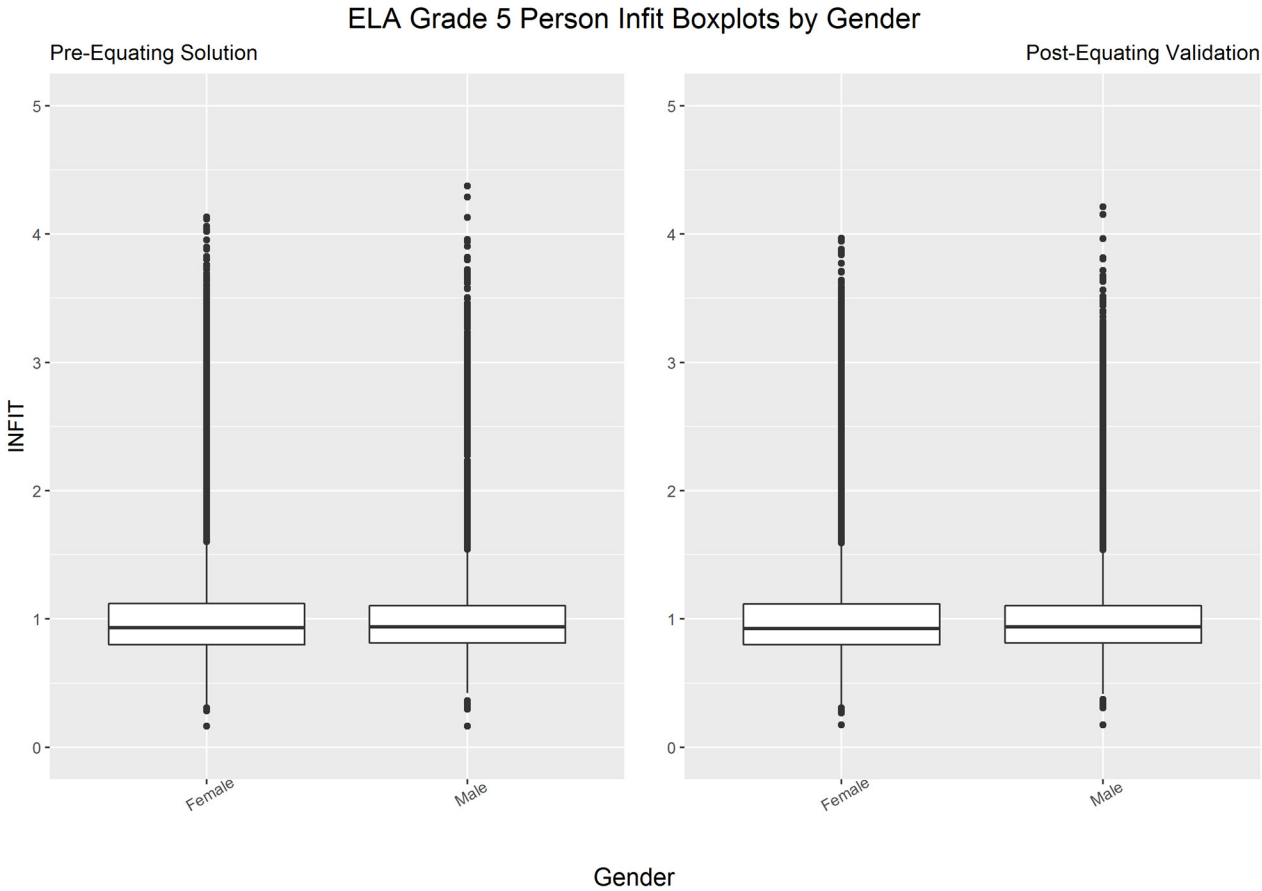

ELA Grade 4 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
Female
Male
Gender

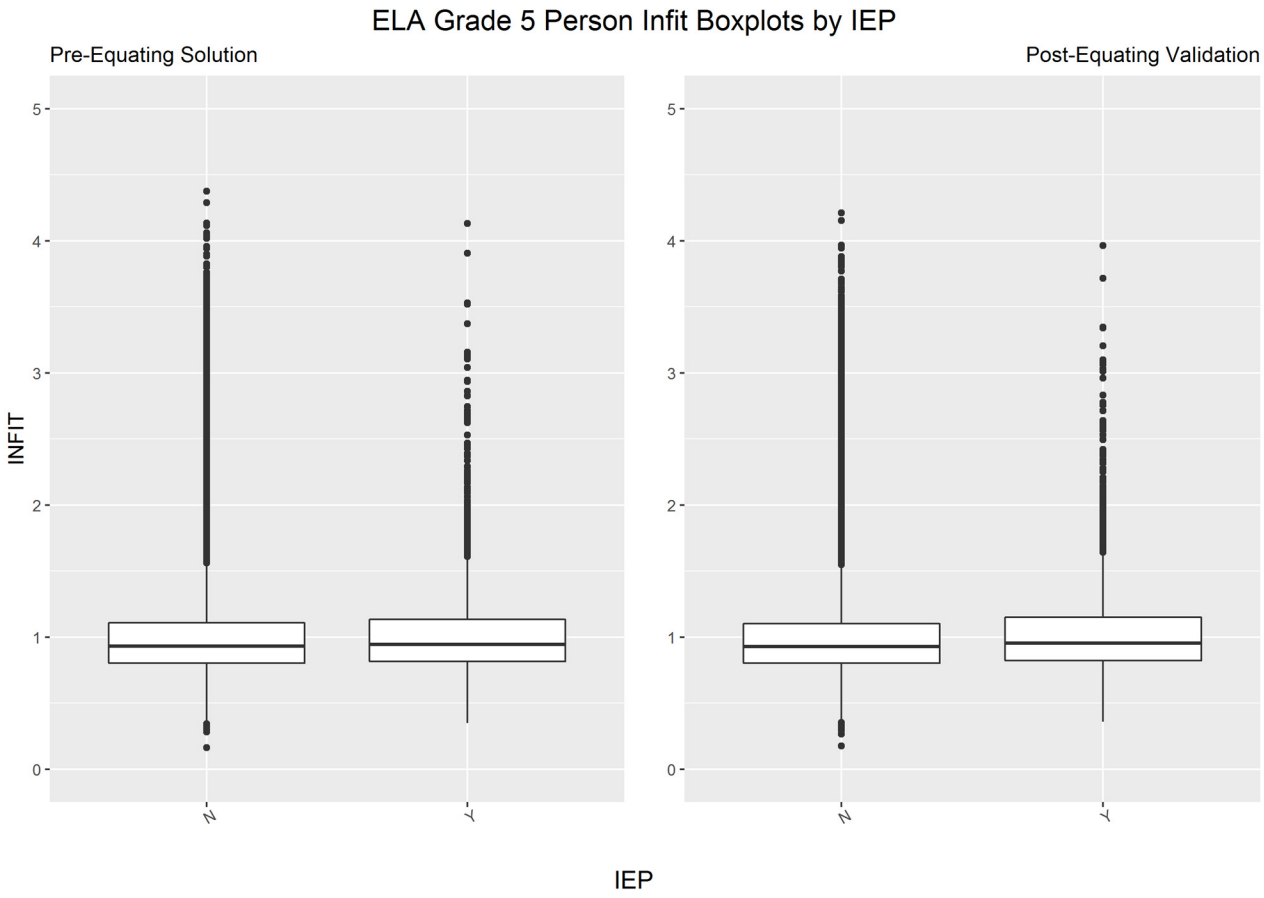

ELA Grade 4 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP

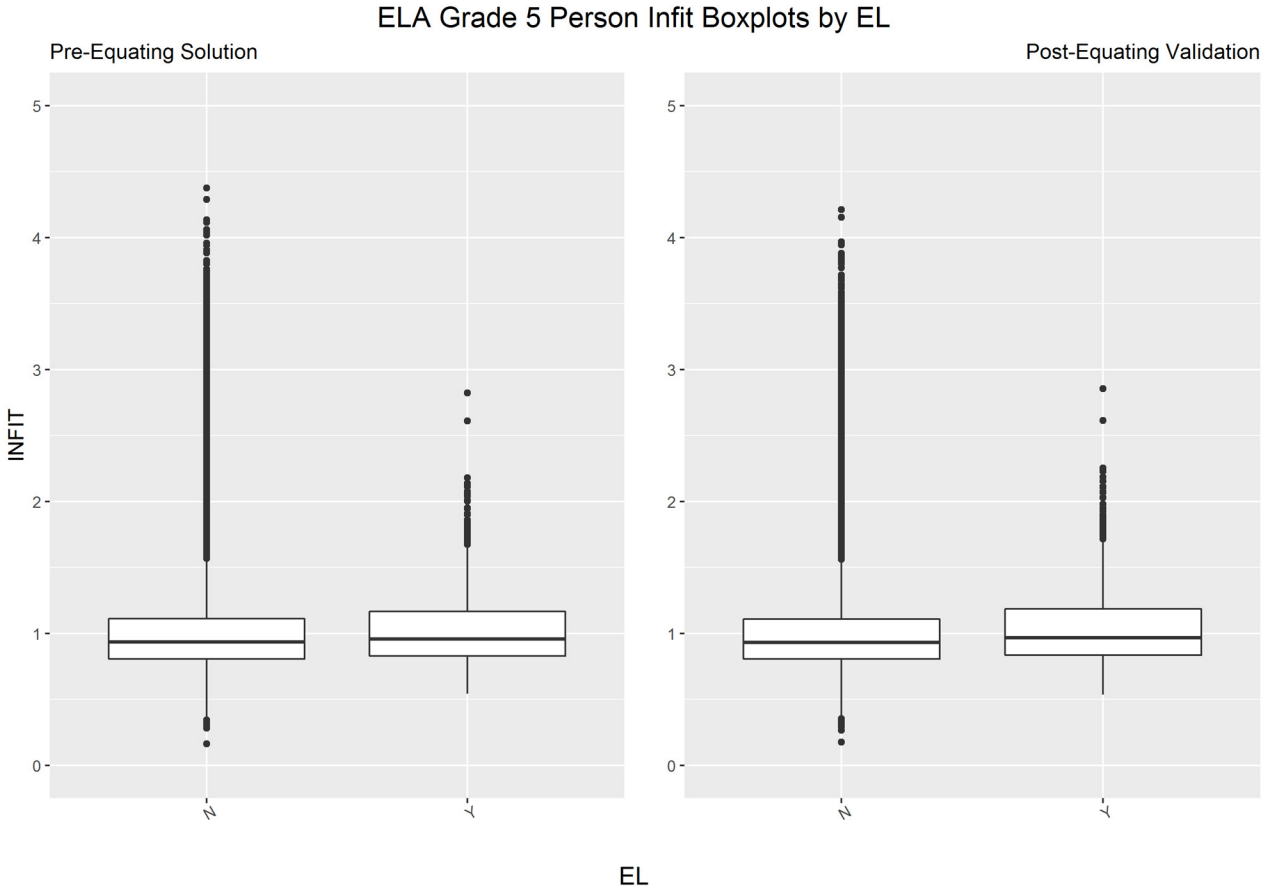

ELA Grade 4 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

ELA Grade 5

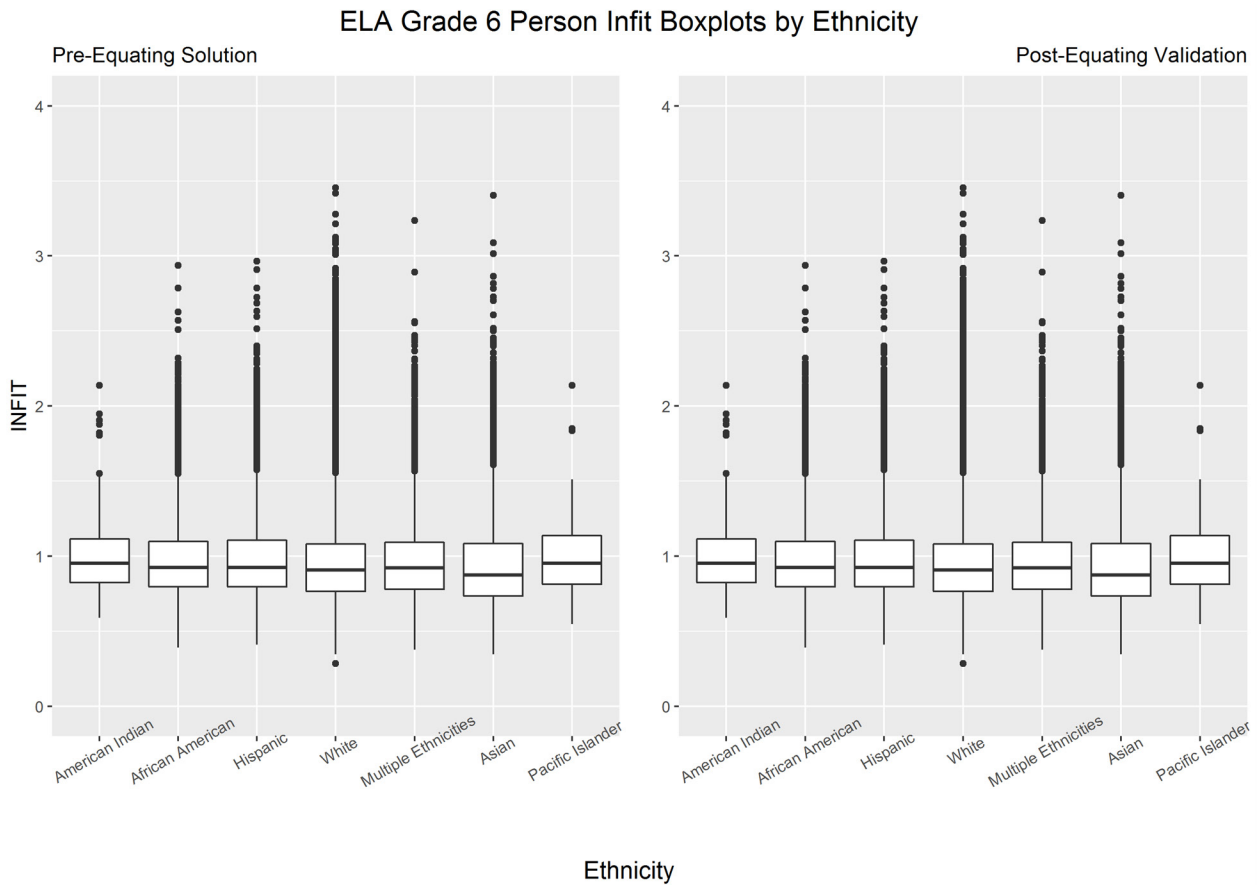

Mathematics Grade 5 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity

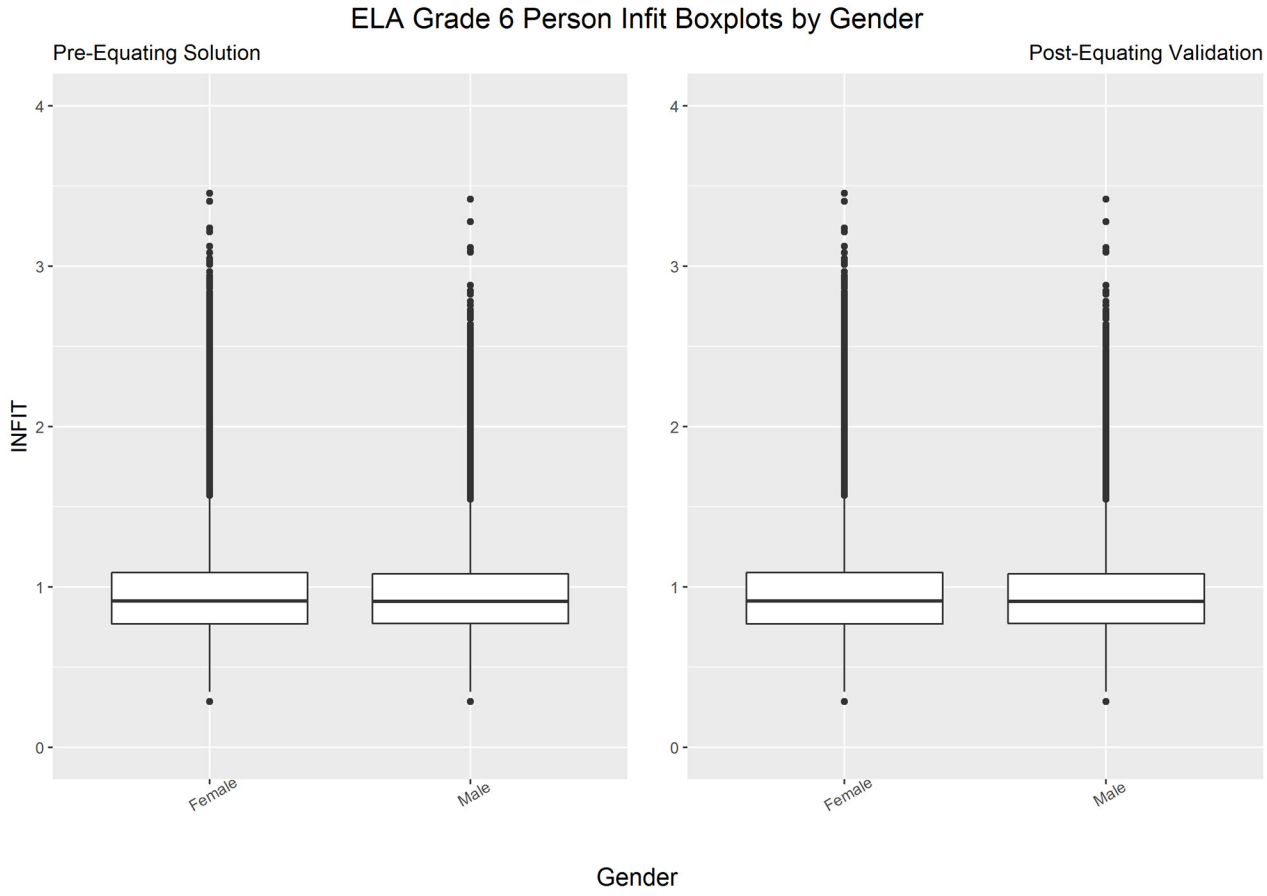

ELA Grade 5 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
5
Female
Male
Gender

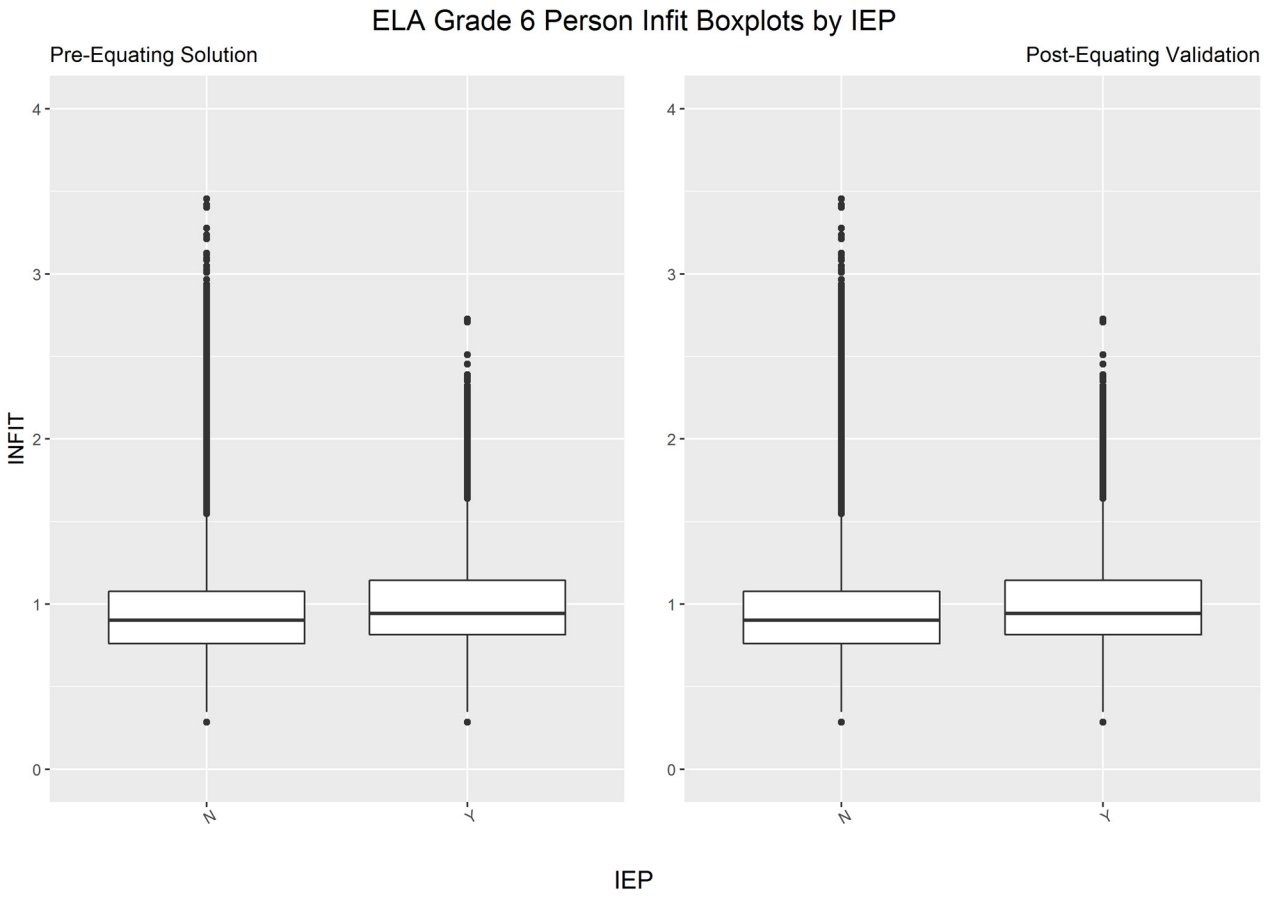

ELA Grade 5 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
5
N
Y
IEP

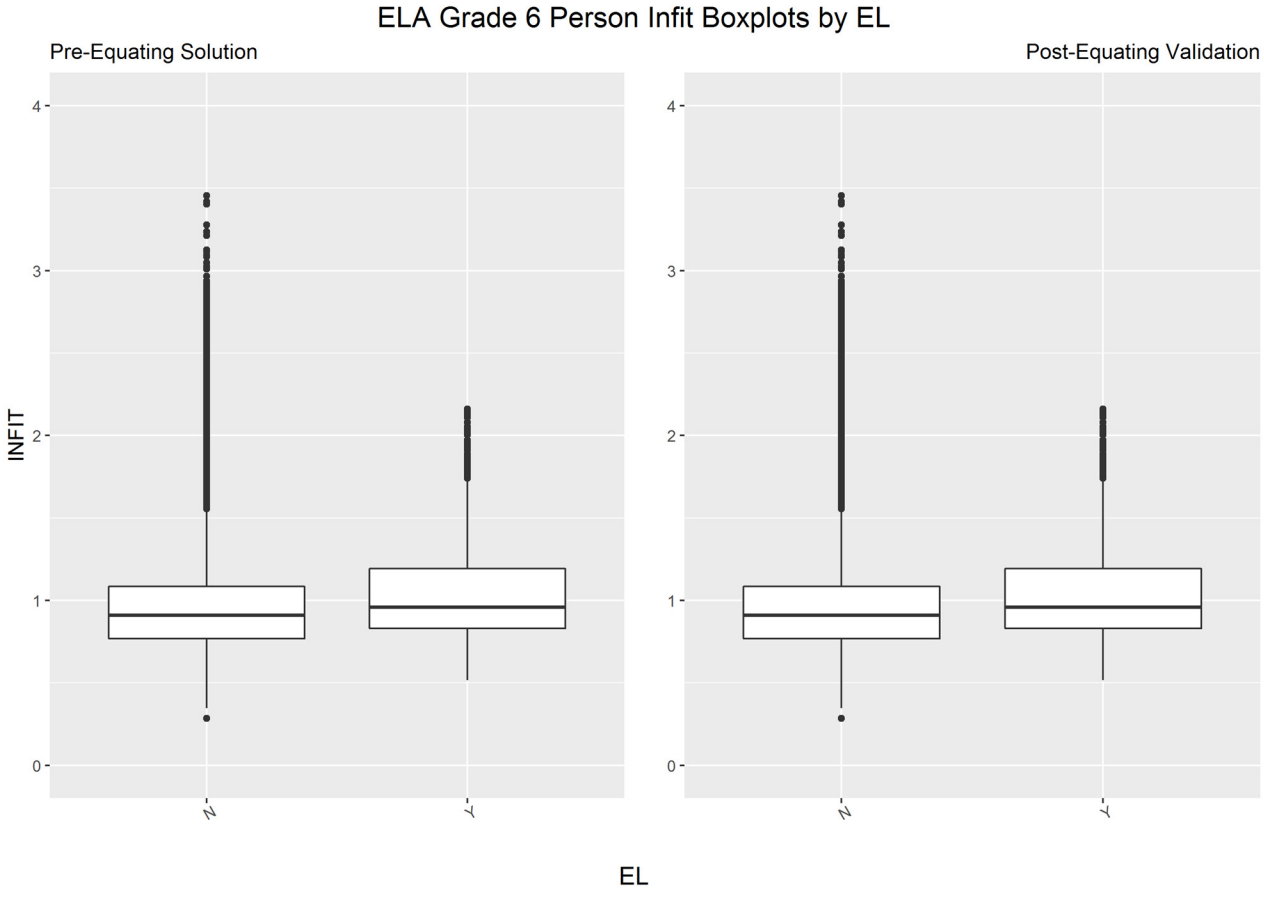

ELA Grade 5 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
5
N
Y
EL

ELA Grade 6

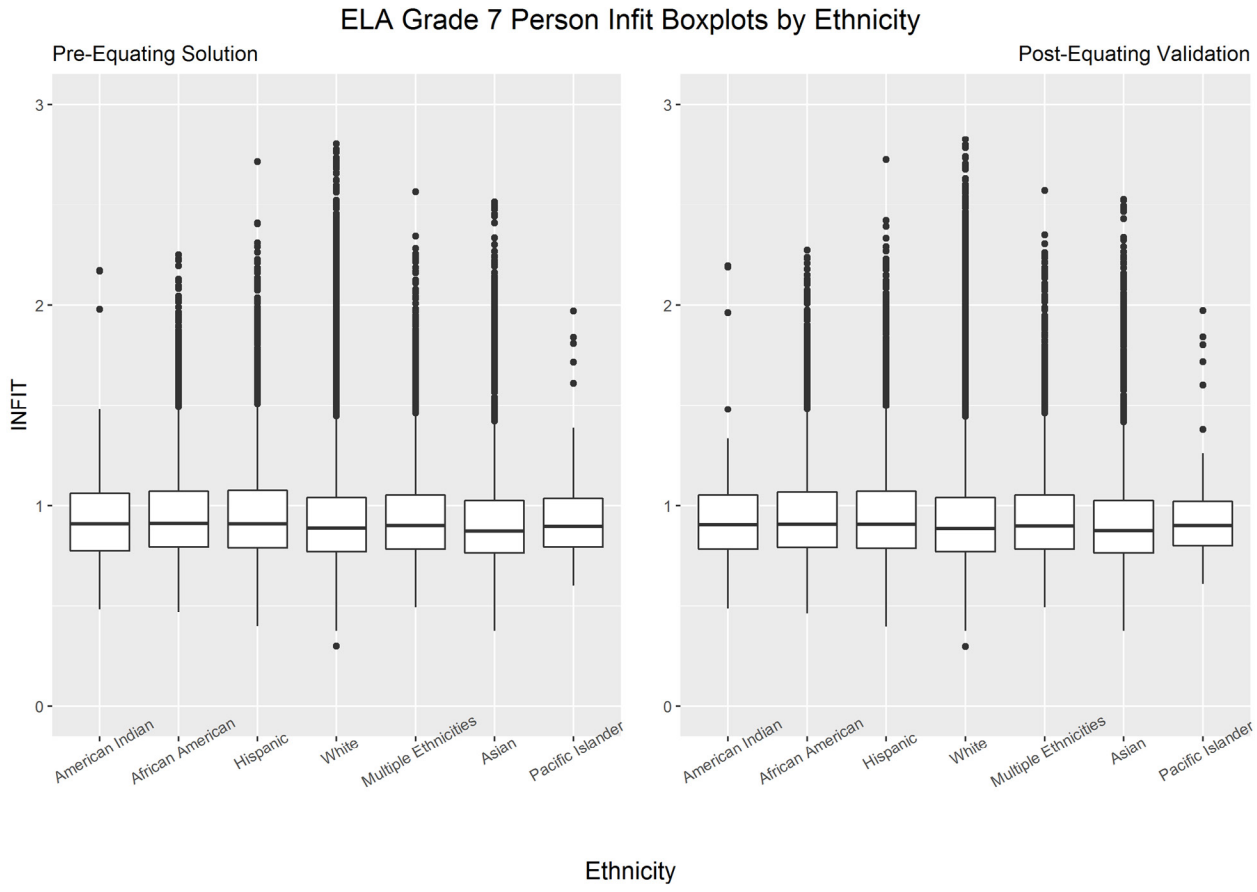

ELA Grade 6 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity

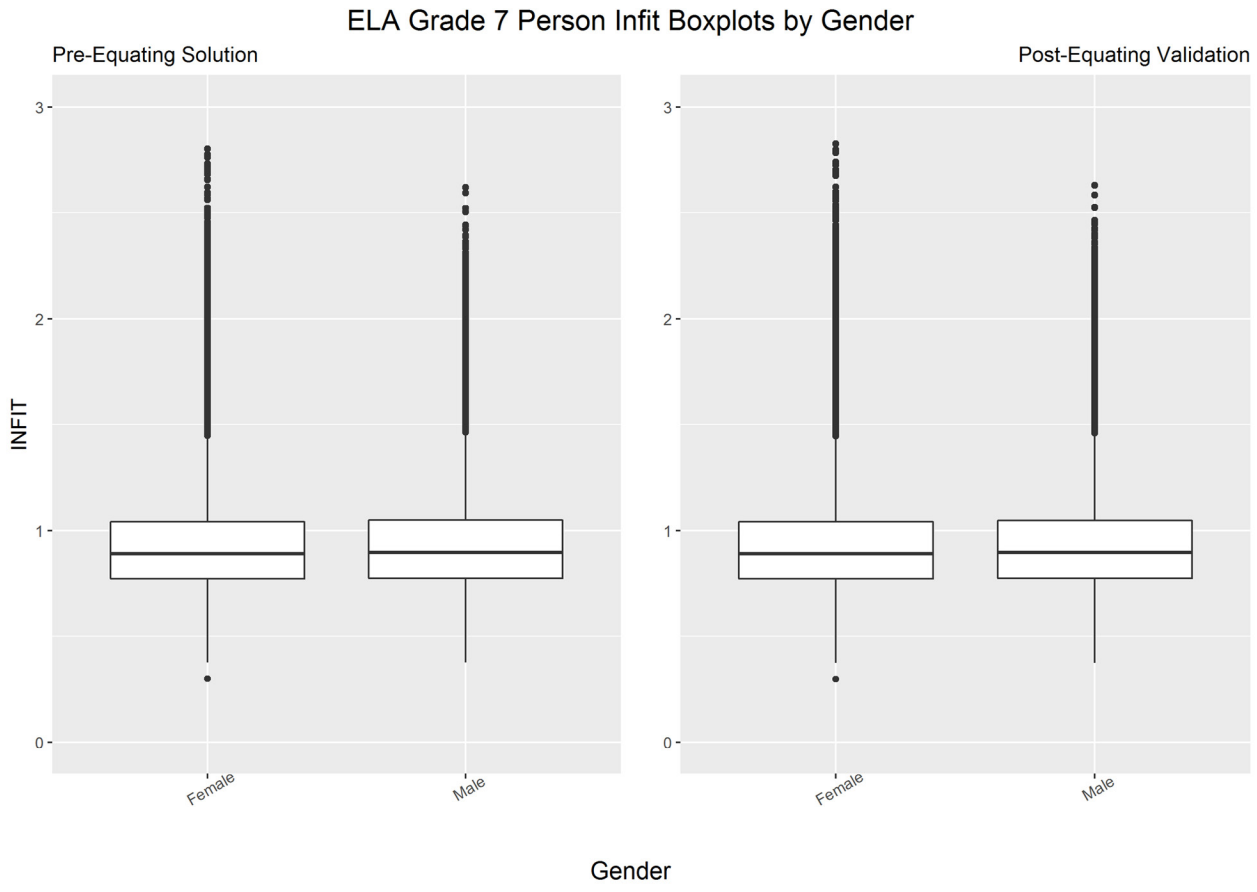

ELA Grade 6 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
Female
Male
Gender

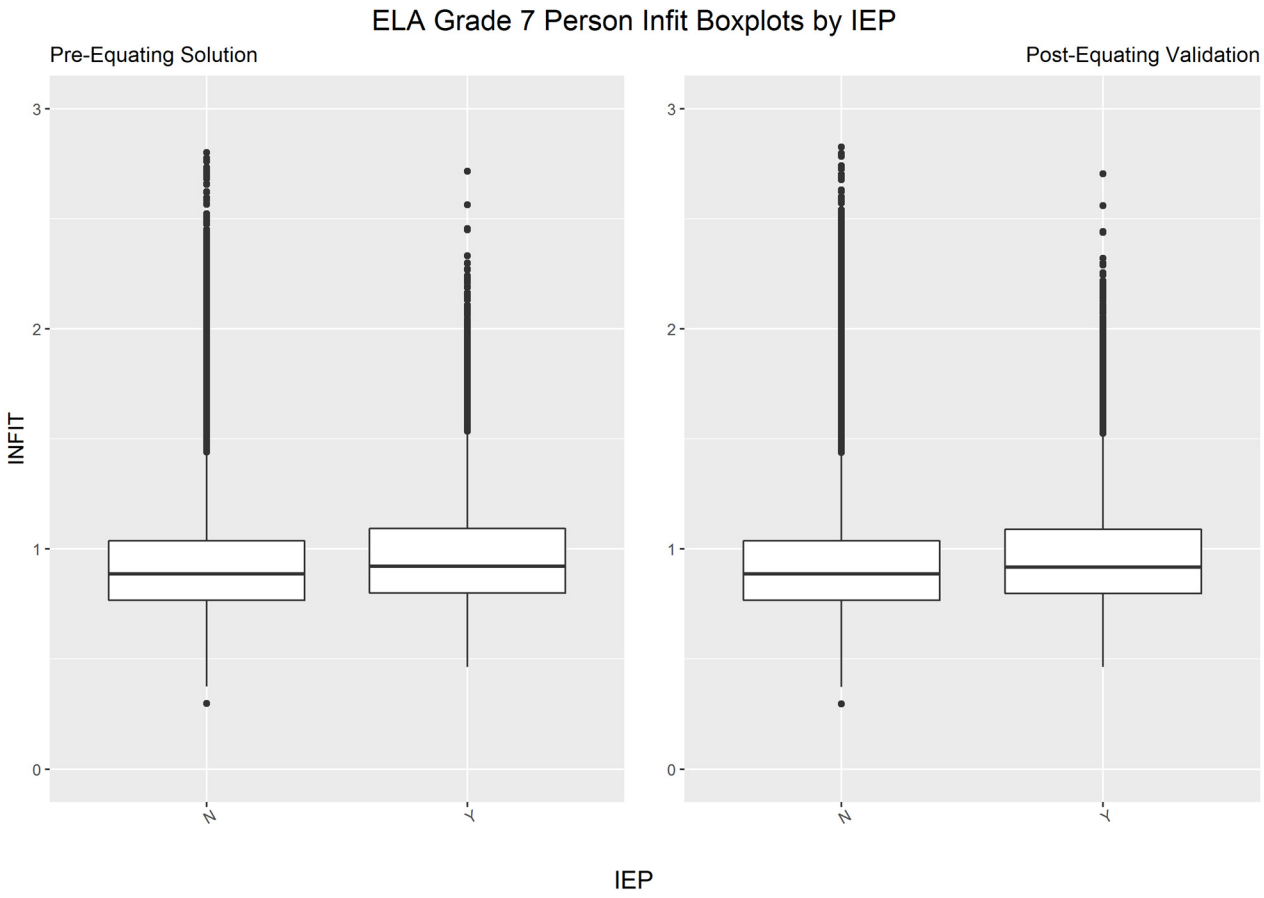

ELA Grade 6 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP

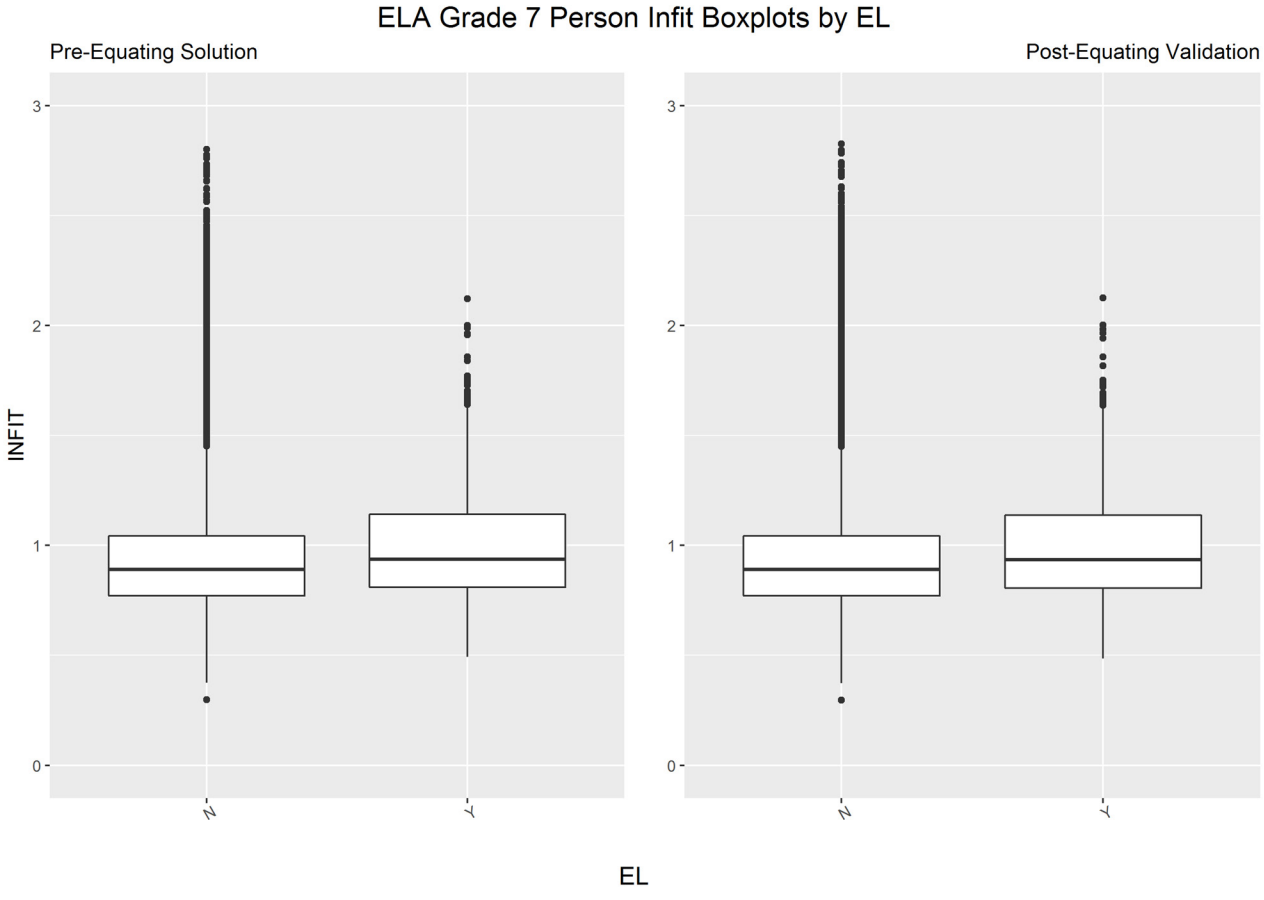

ELA Grade 6 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

ELA Grade 7

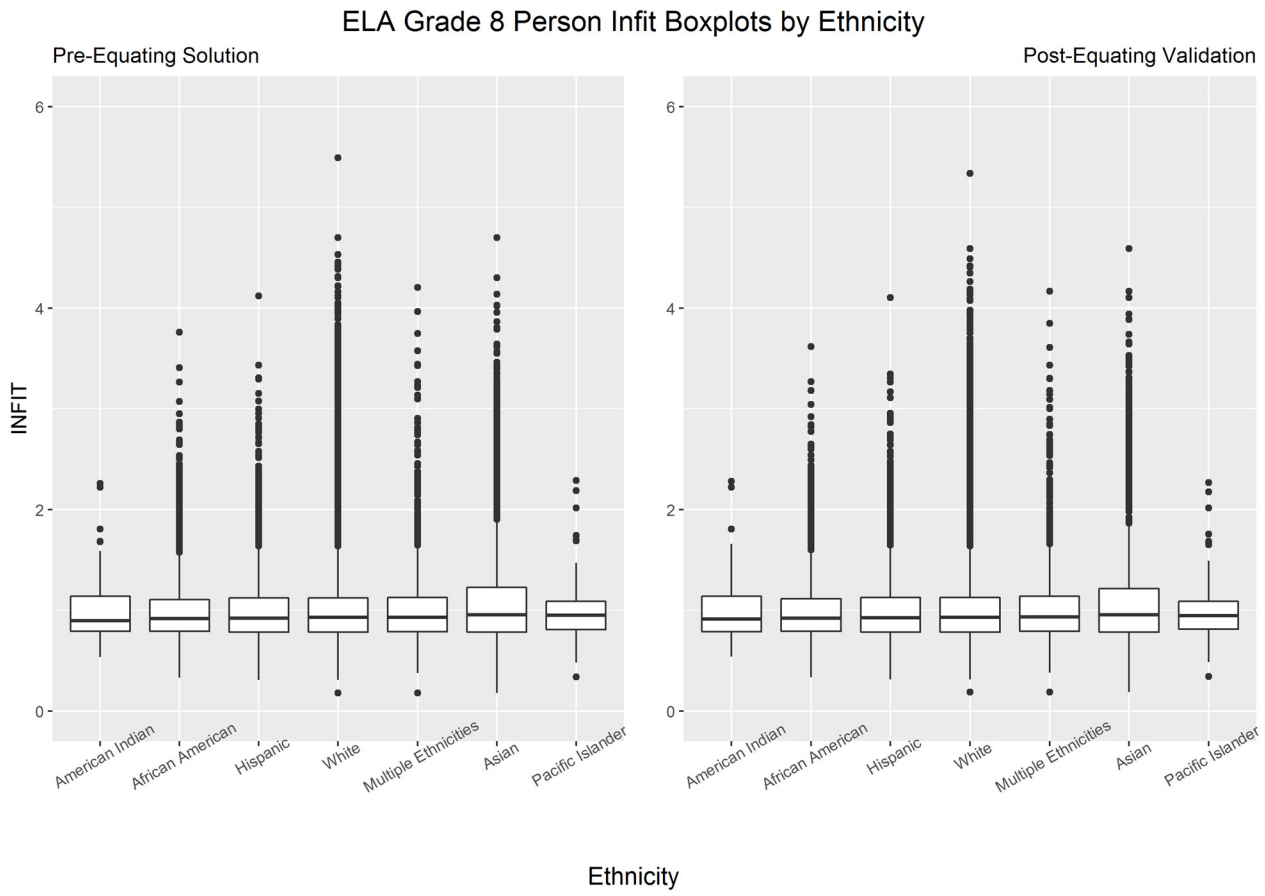

ELA Grade 7 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity

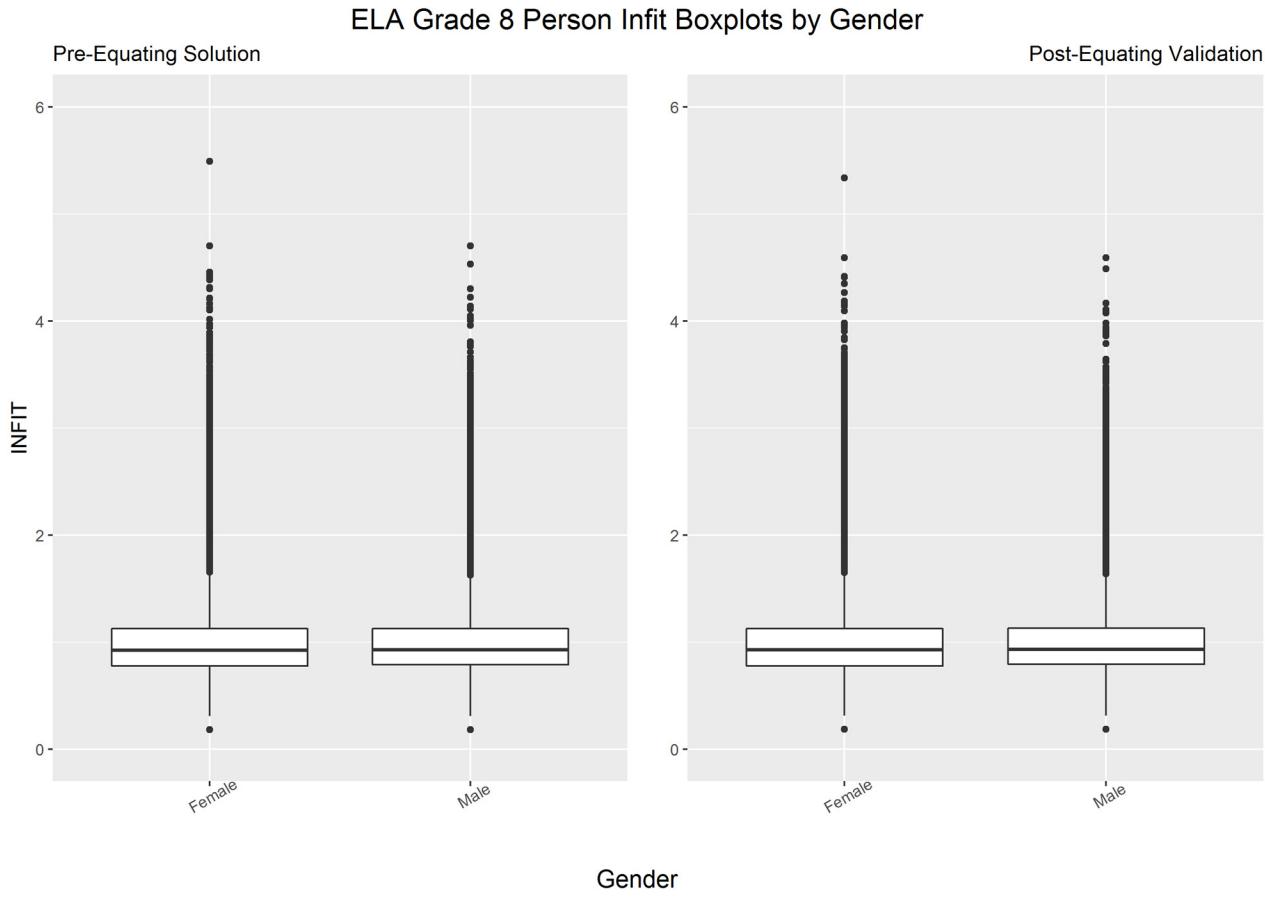

ELA Grade 7 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
Female
Male
Gender

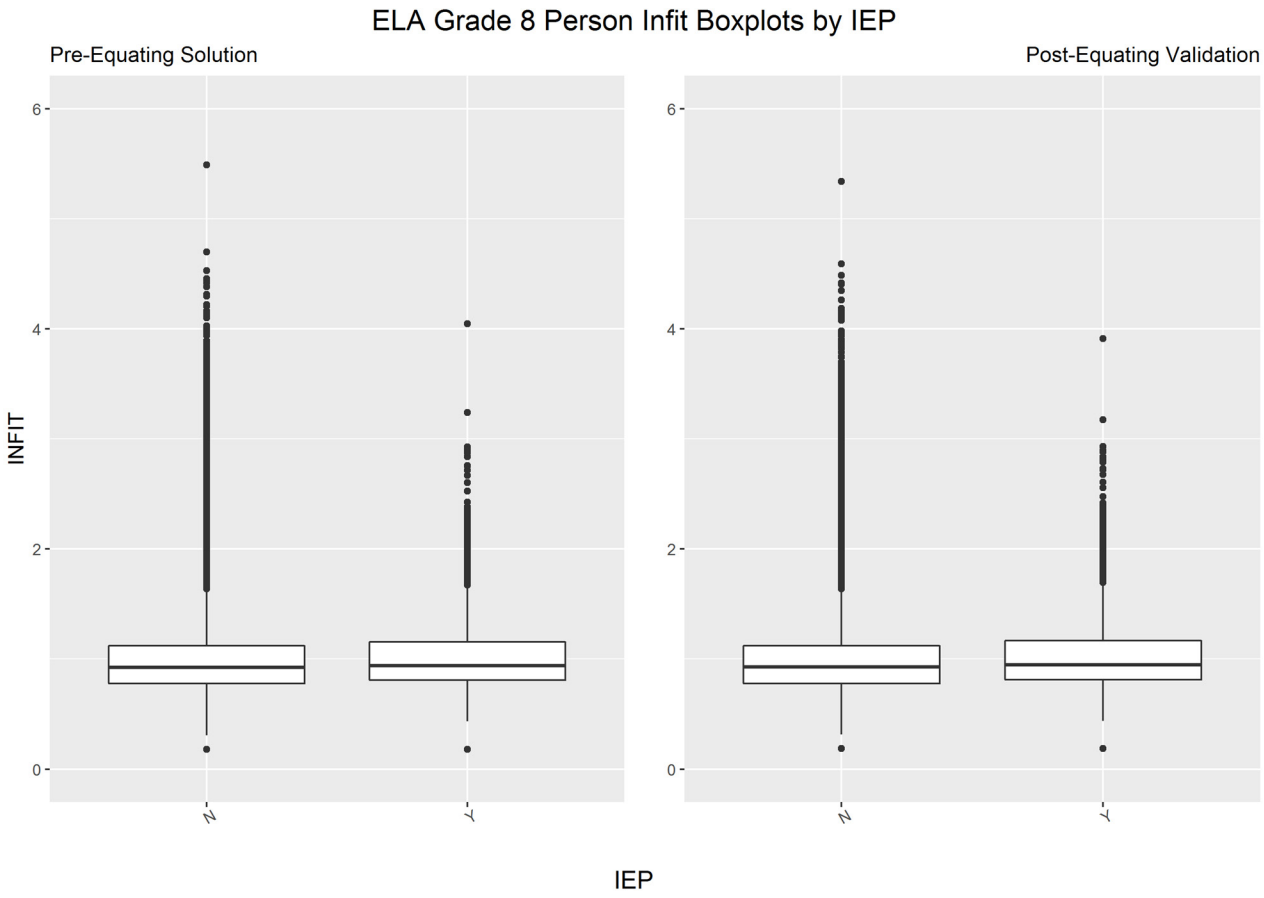

ELA Grade 7 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
IEP

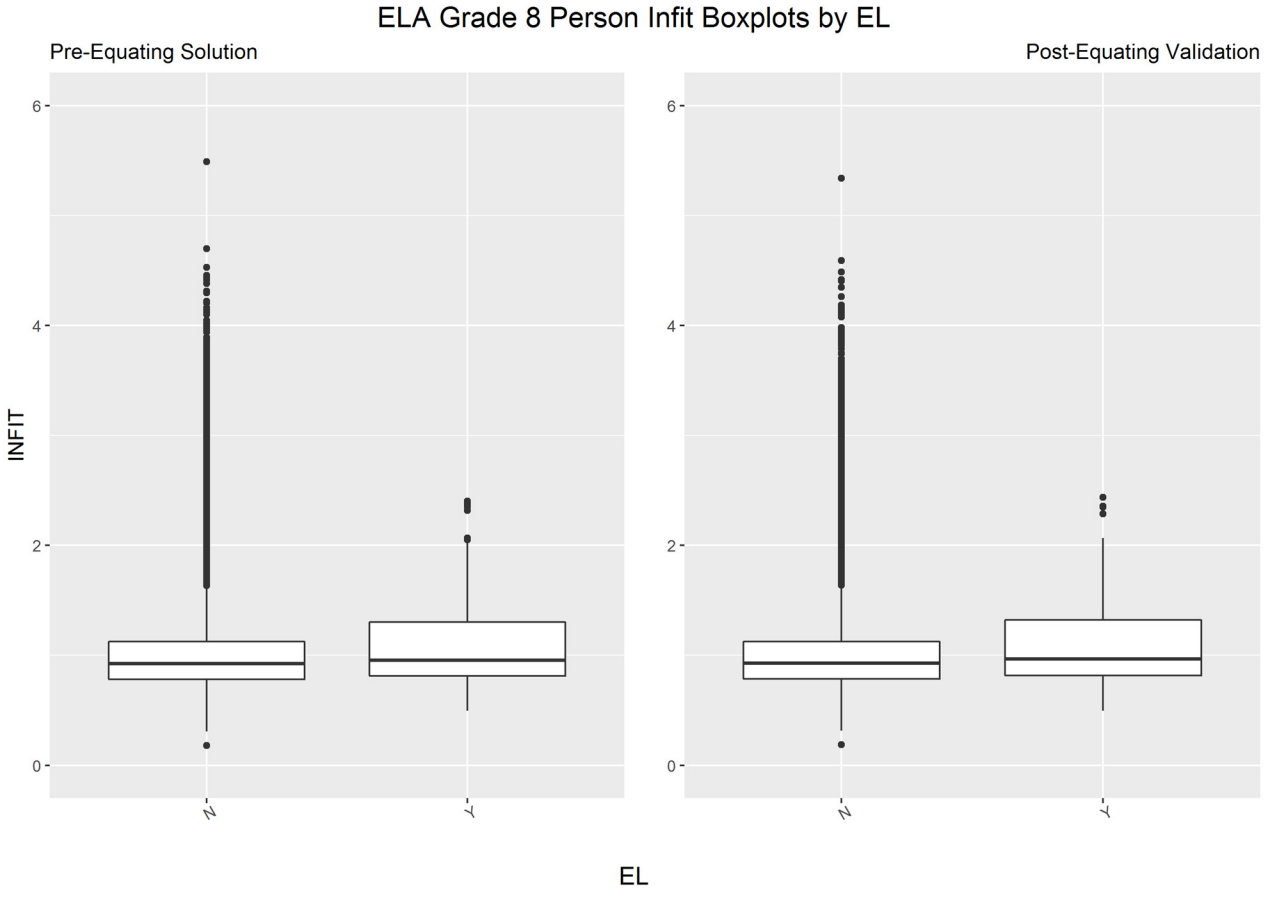

ELA Grade 7 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
EL

ELA Grade 8

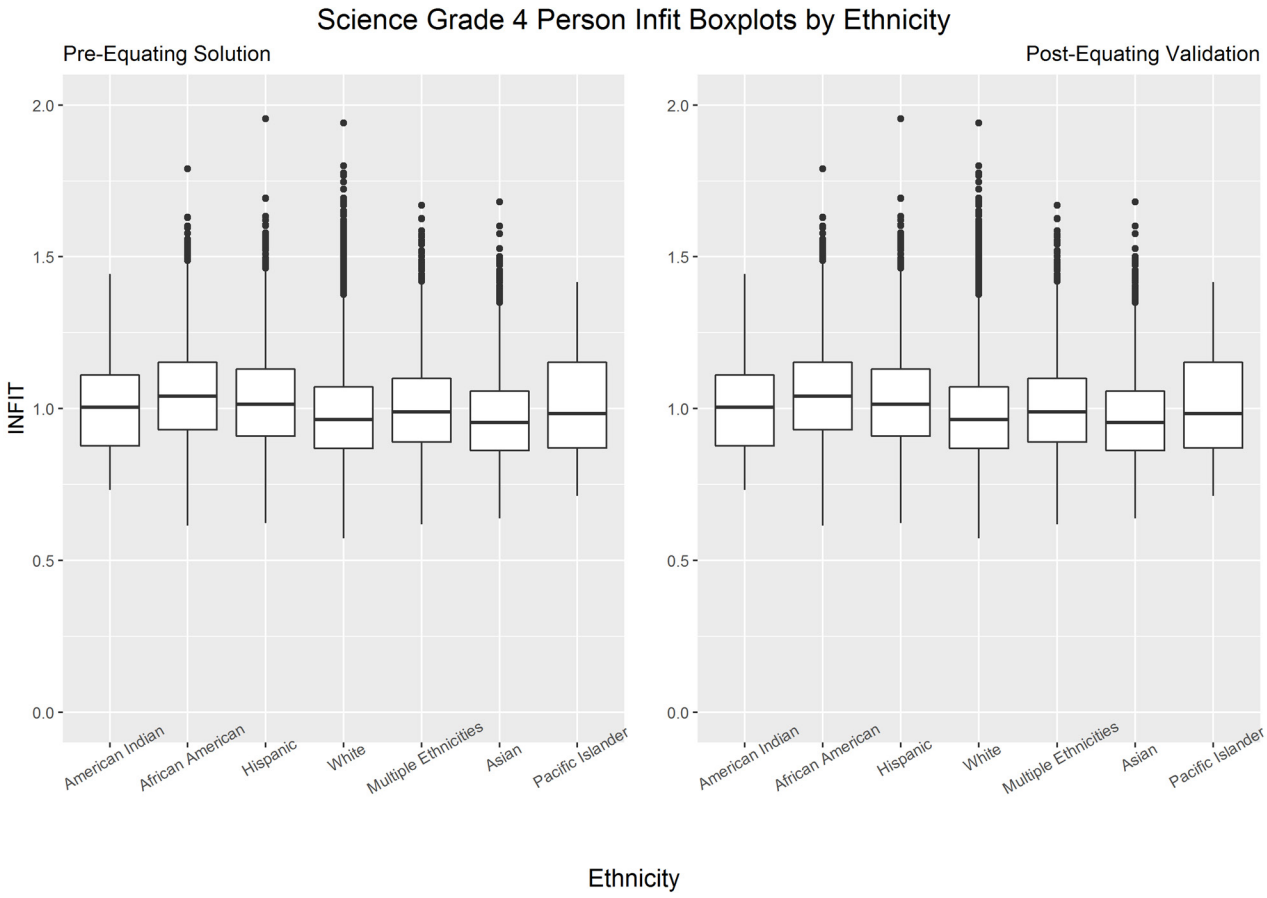

ELA Grade 8 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
0
2
4
6
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity

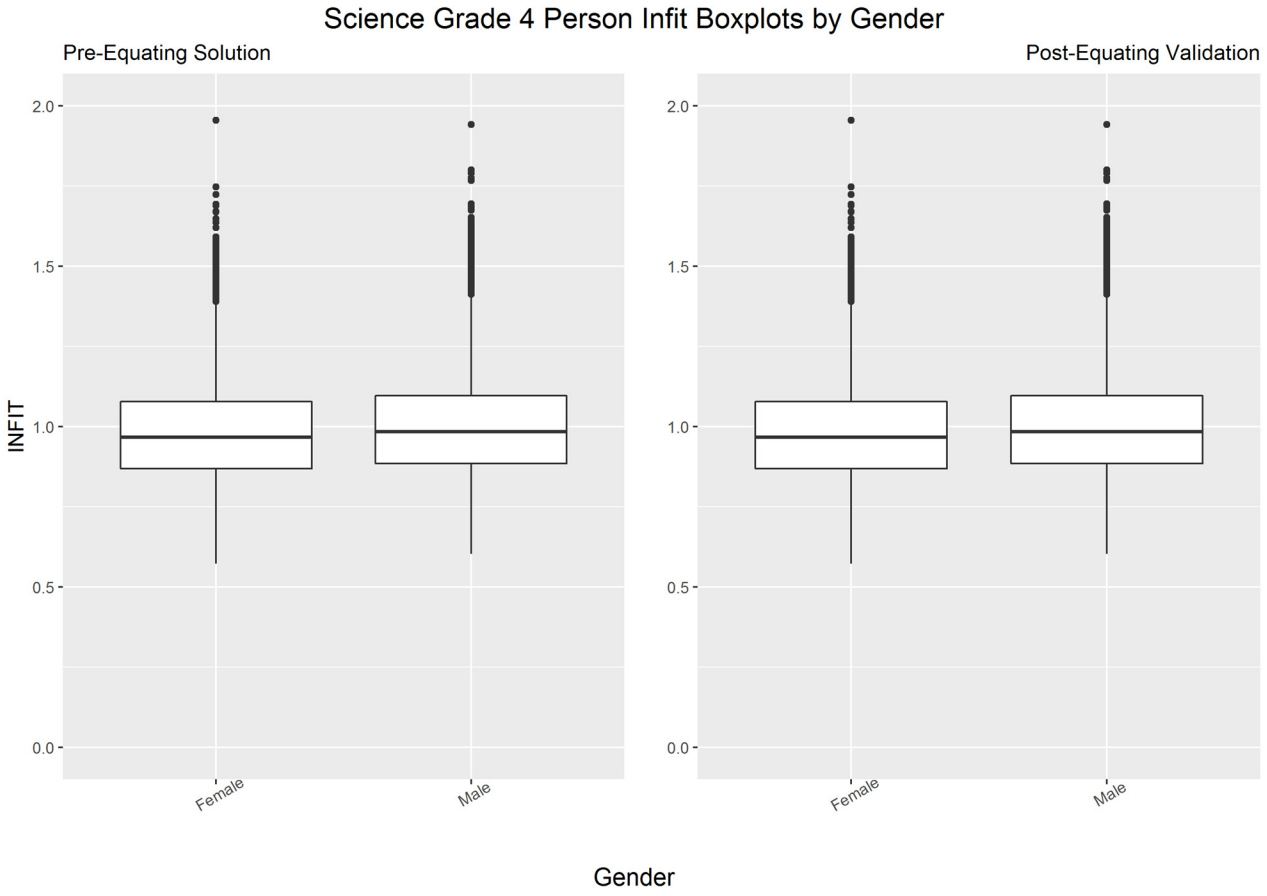

ELA Grade 8 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
0
2
4
6
Female
Male
Gender

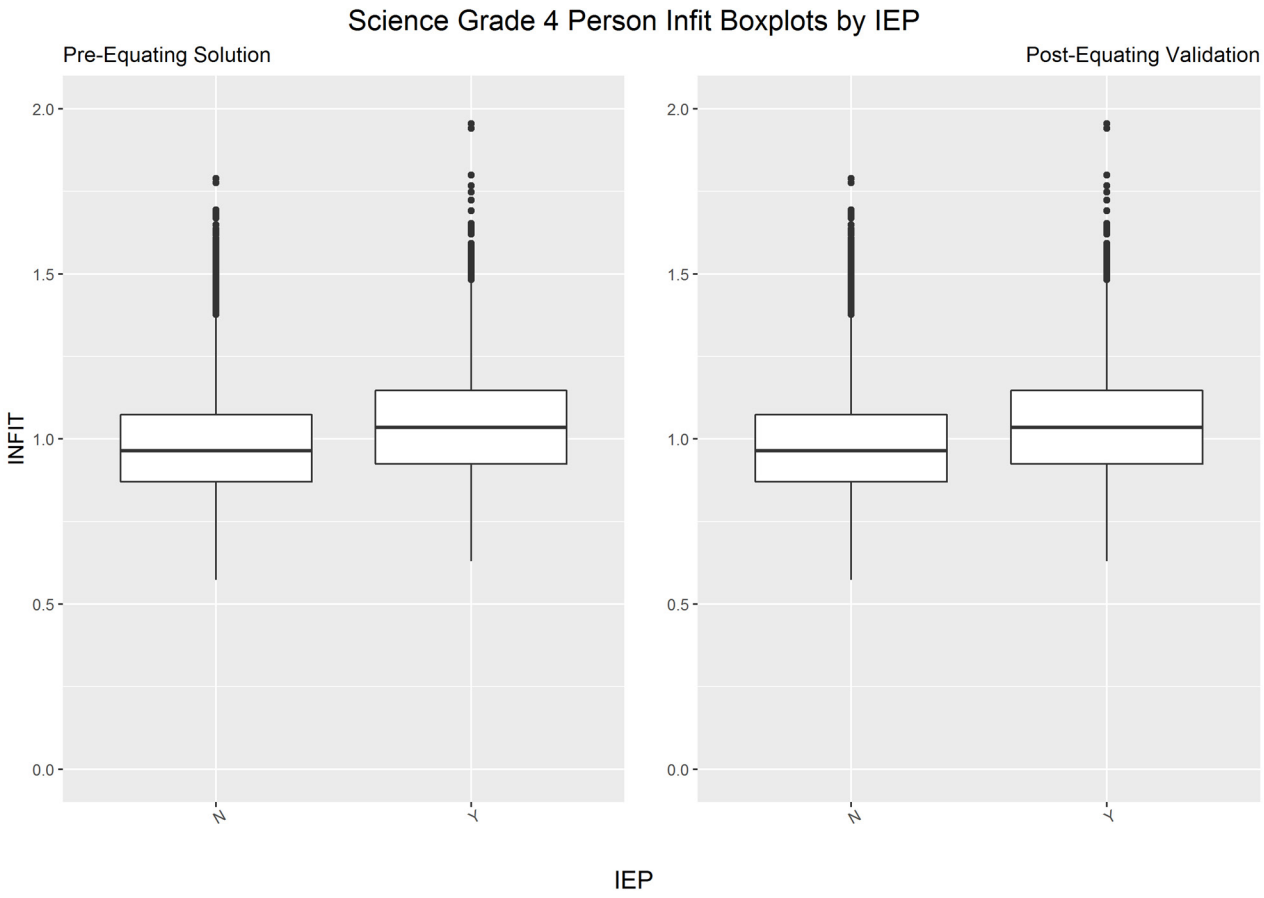

ELA Grade 8 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
6
4
2
0
N
Y
IEP

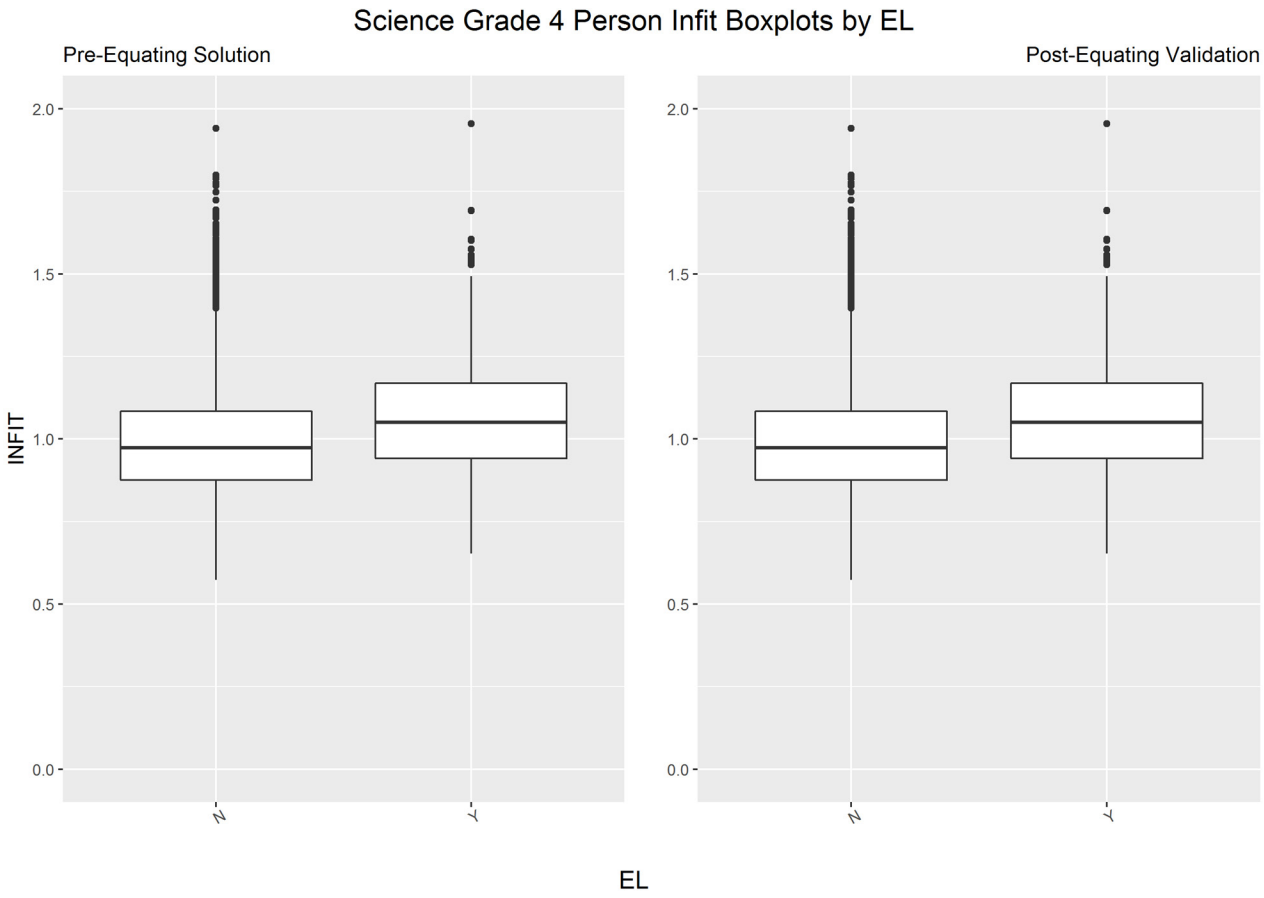

ELA Grade 8 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
6
4
2
0
N
Y
EL

Science Grade 4

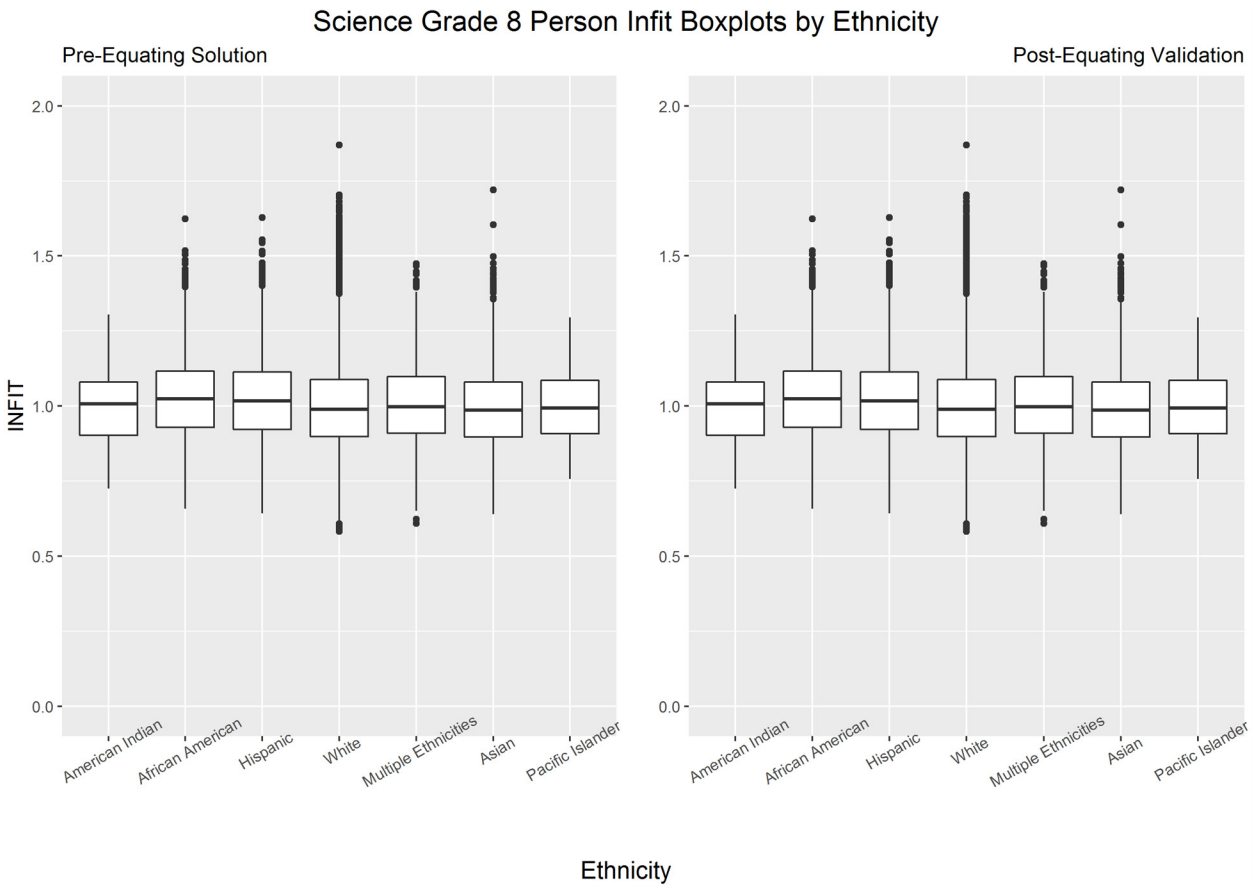


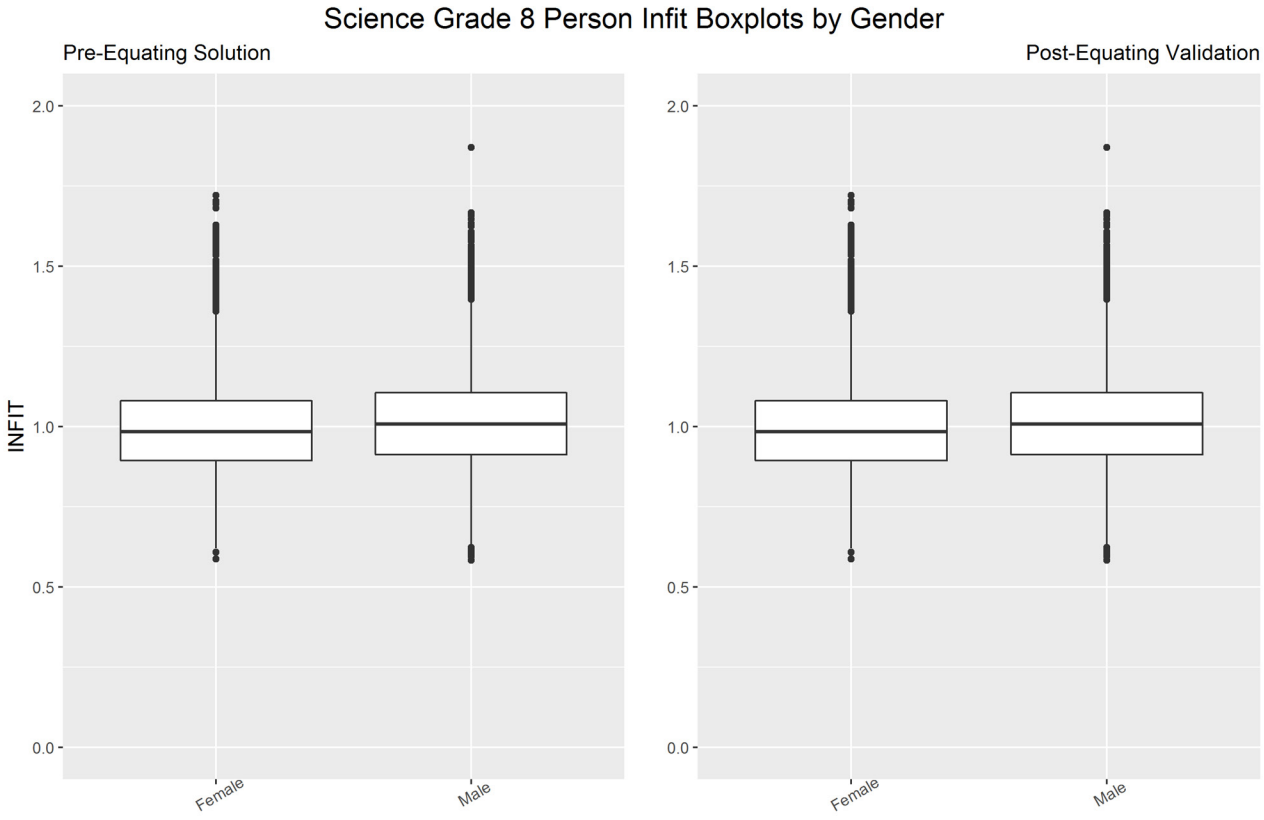


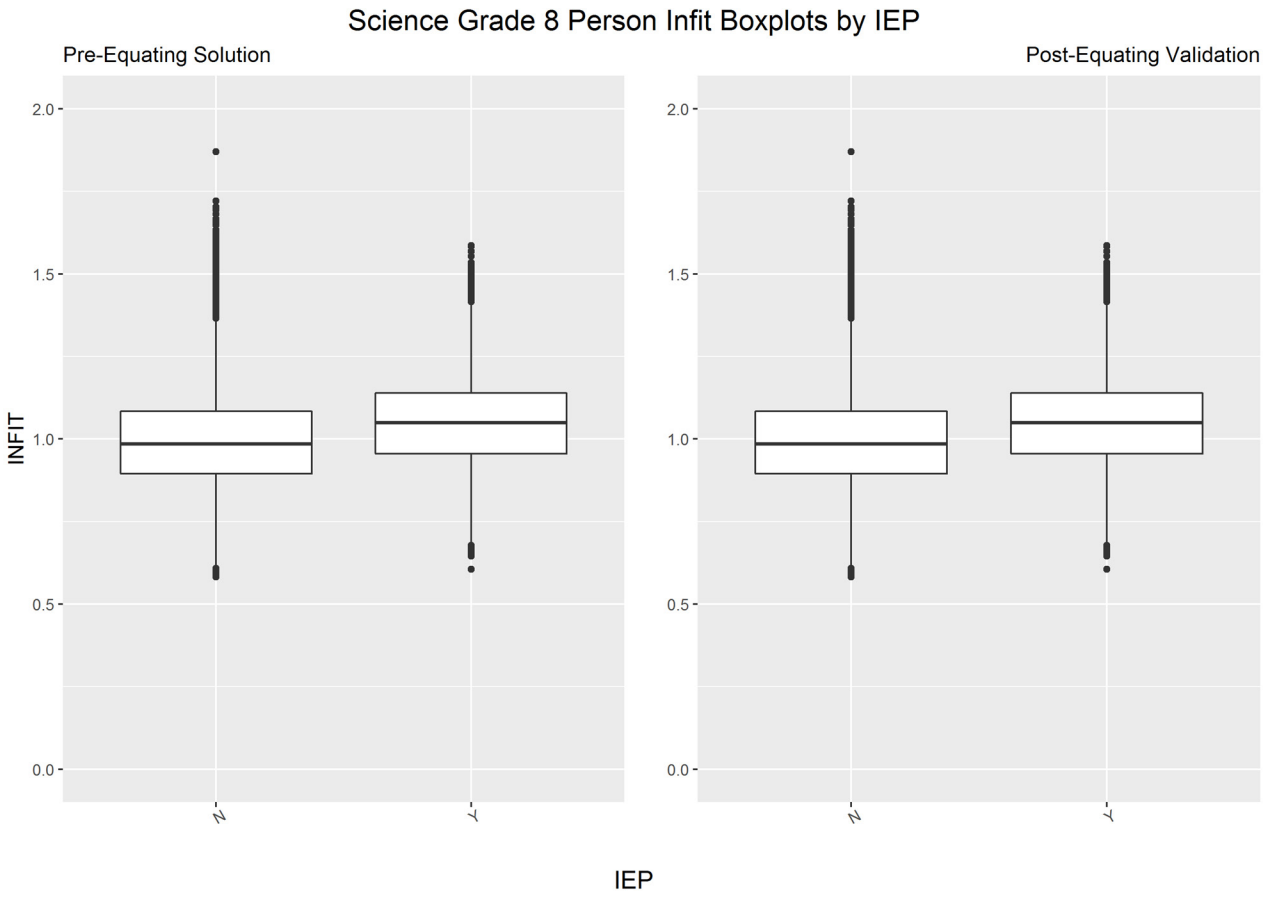

Science Grade 4 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
2.0
1.5
1.0
0.5
0.0
N
Y
IEP


Science Grade 4 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
2.0
1.5
1.0
0.5
0.0
N
Y
EL

Science Grade 8






Science Grade 8 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
2.0
1.5
1.0
0.5
0.0
N
Y
IEP

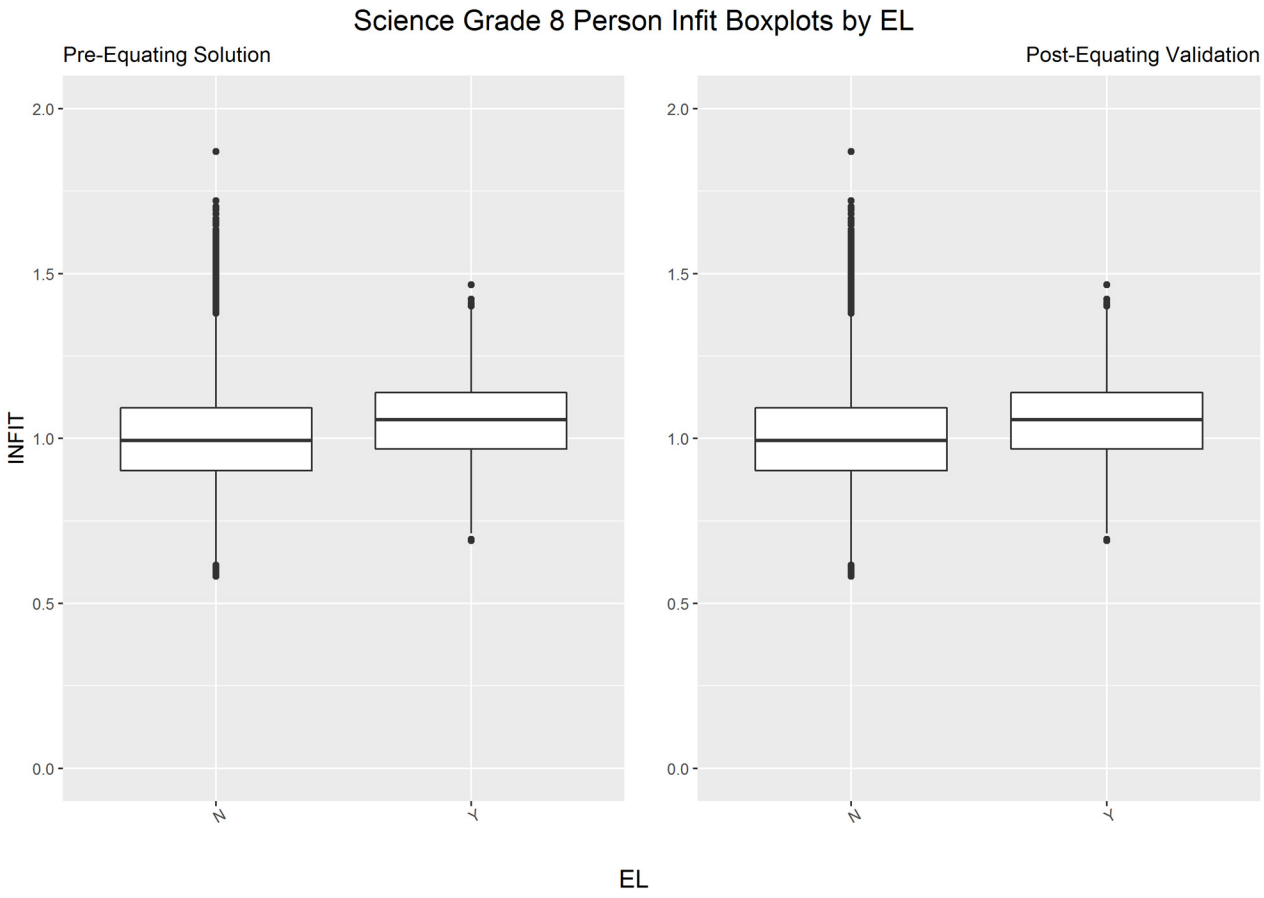
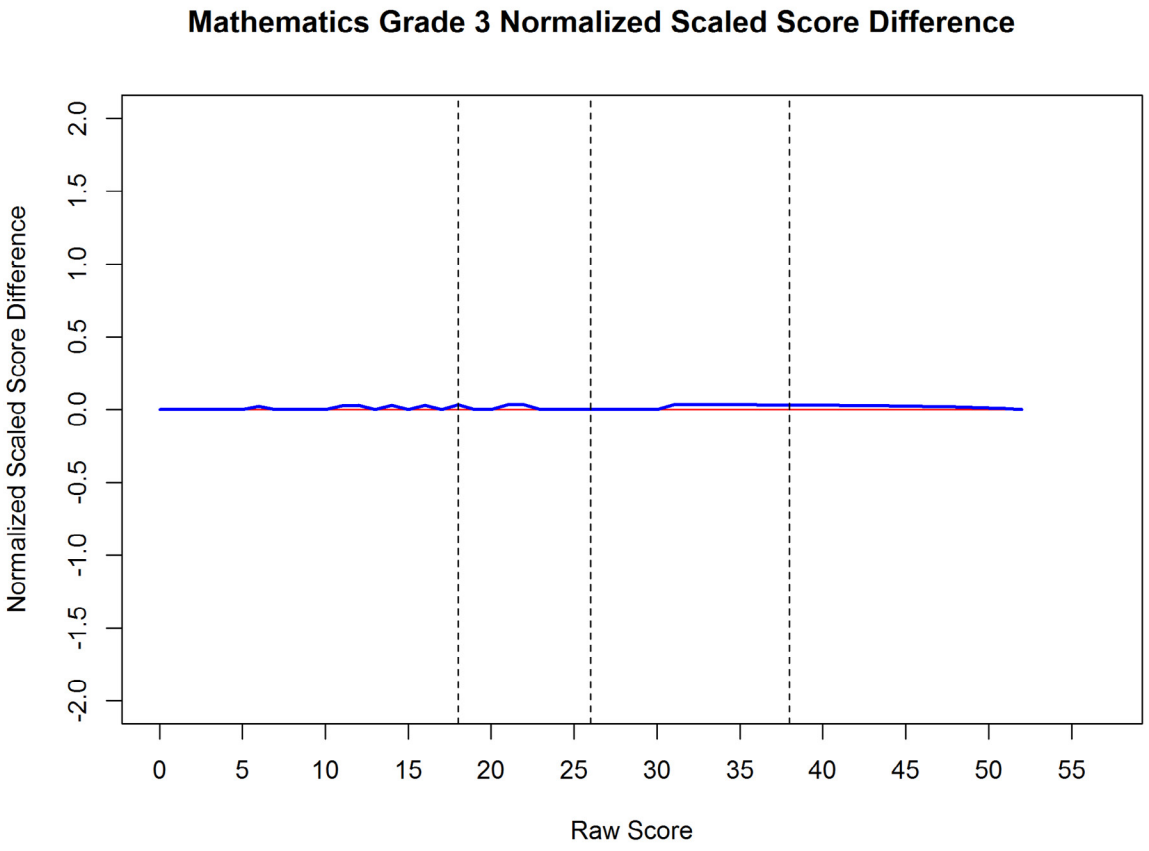
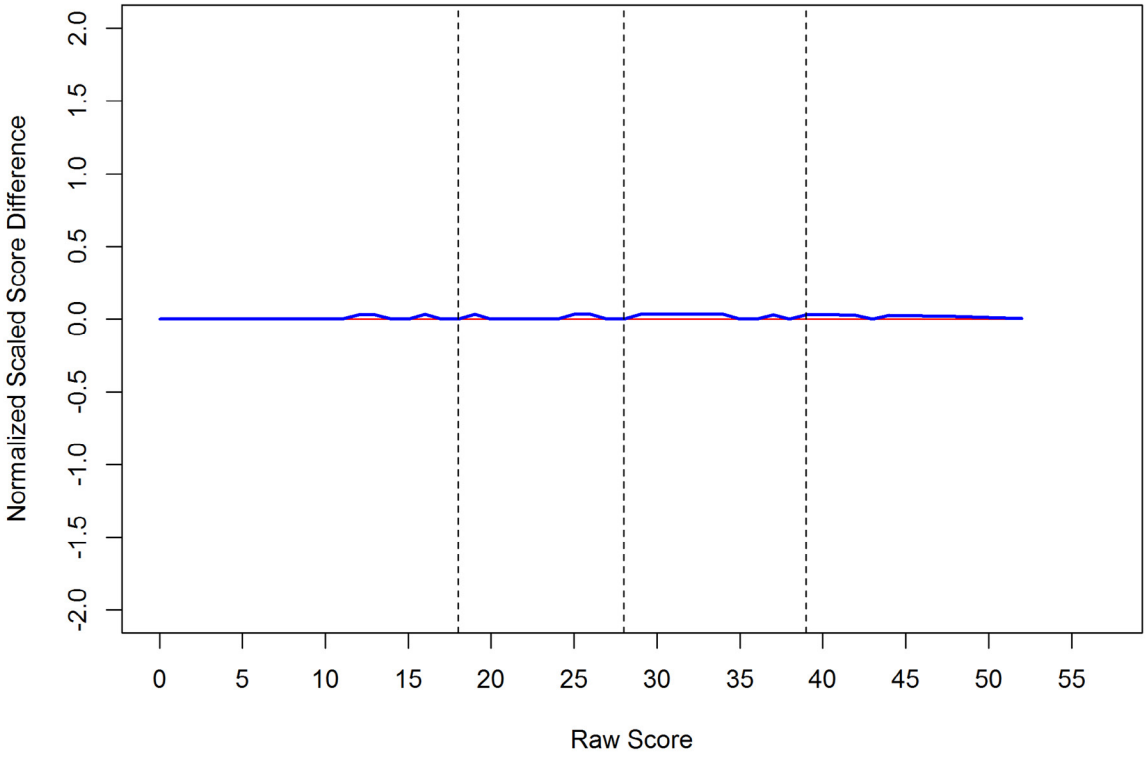

Science Grade 8 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
2.0
1.5
1.0
0.5
0.0
N
Y
EL

Figure T–2 displays the normalized scale score distributions by subject and grade across raw score points. The blue line represents the normalized scaled score difference between pre- and post-equated solutions at each raw score point. The red line represents no change between the solutions and the black dotted vertical lines represent the original raw cut-scores for each performance level classification (Basic, Proficient, and Advanced).

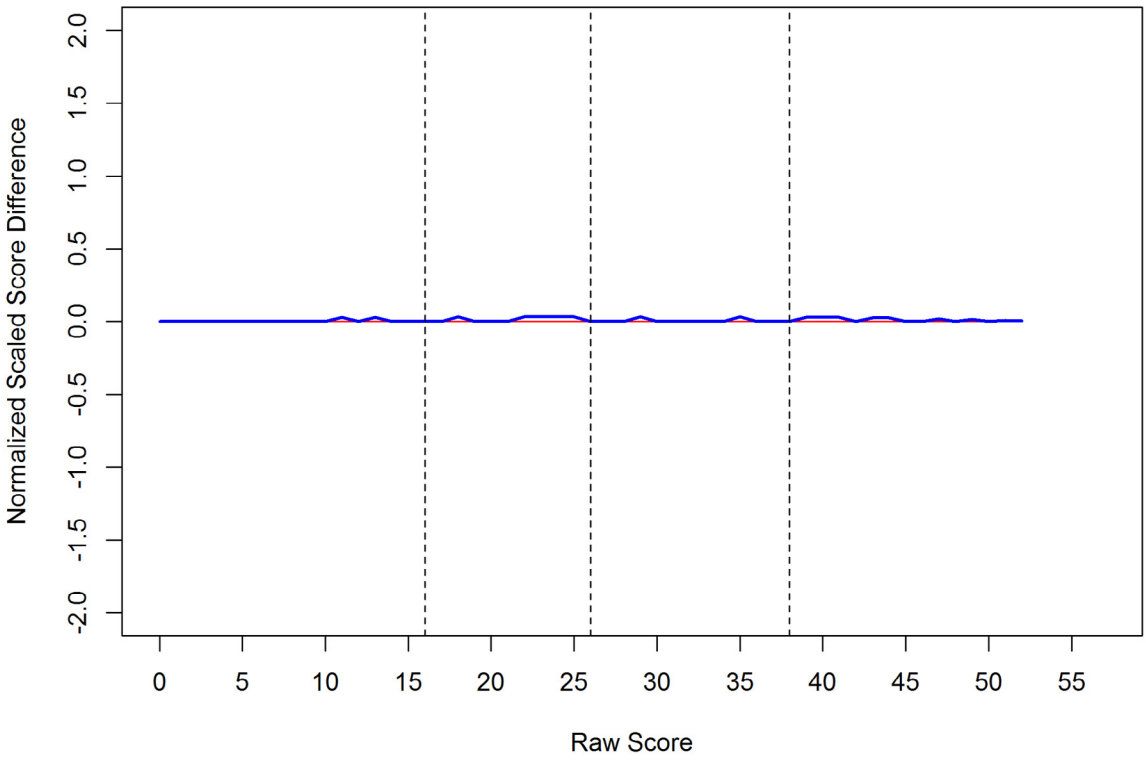
Figure T–2. Normalized Scale Score Distributions by Subject and Grade



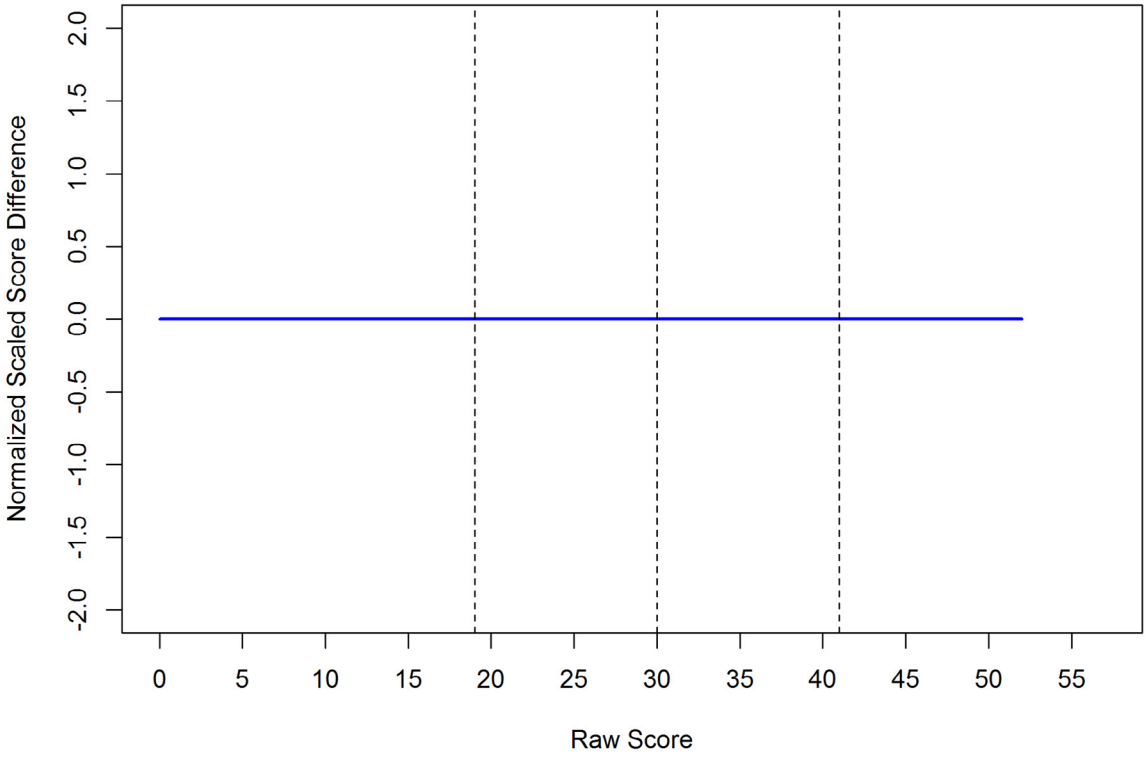
Mathematics Grade 4 Normalized Scaled Score Difference



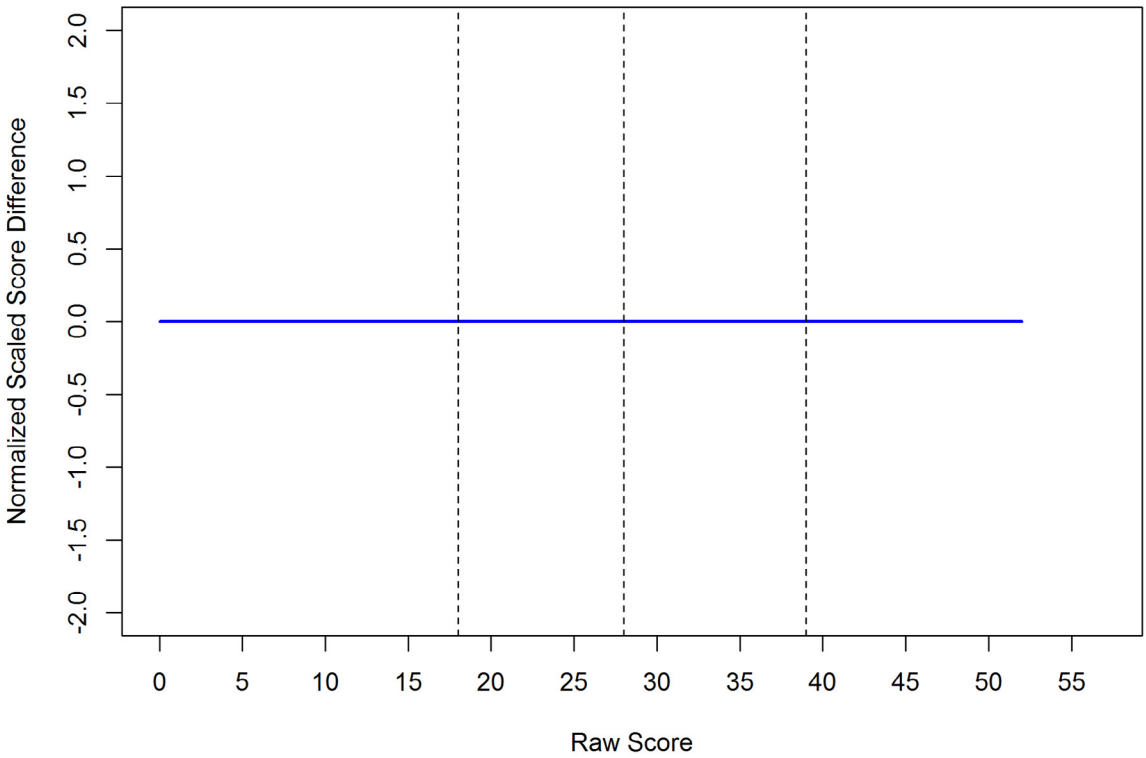
Mathematics Grade 5 Normalized Scaled Score Difference



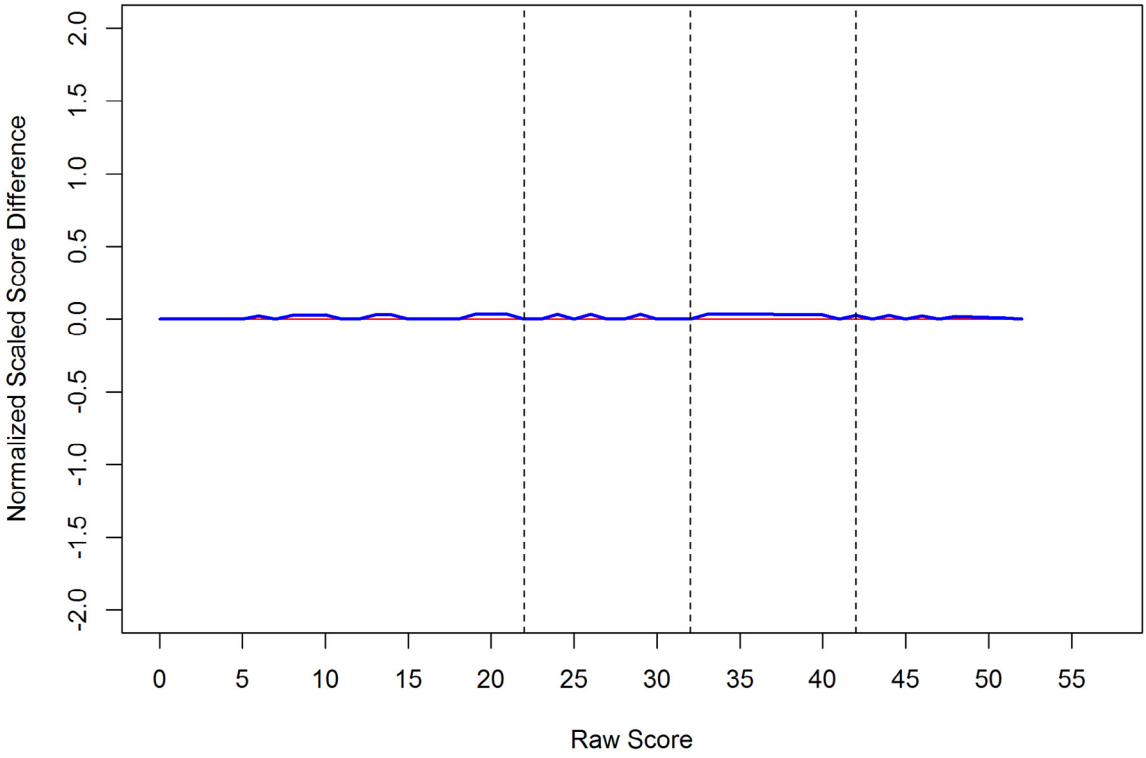
Mathematics Grade 6 Normalized Scaled Score Difference



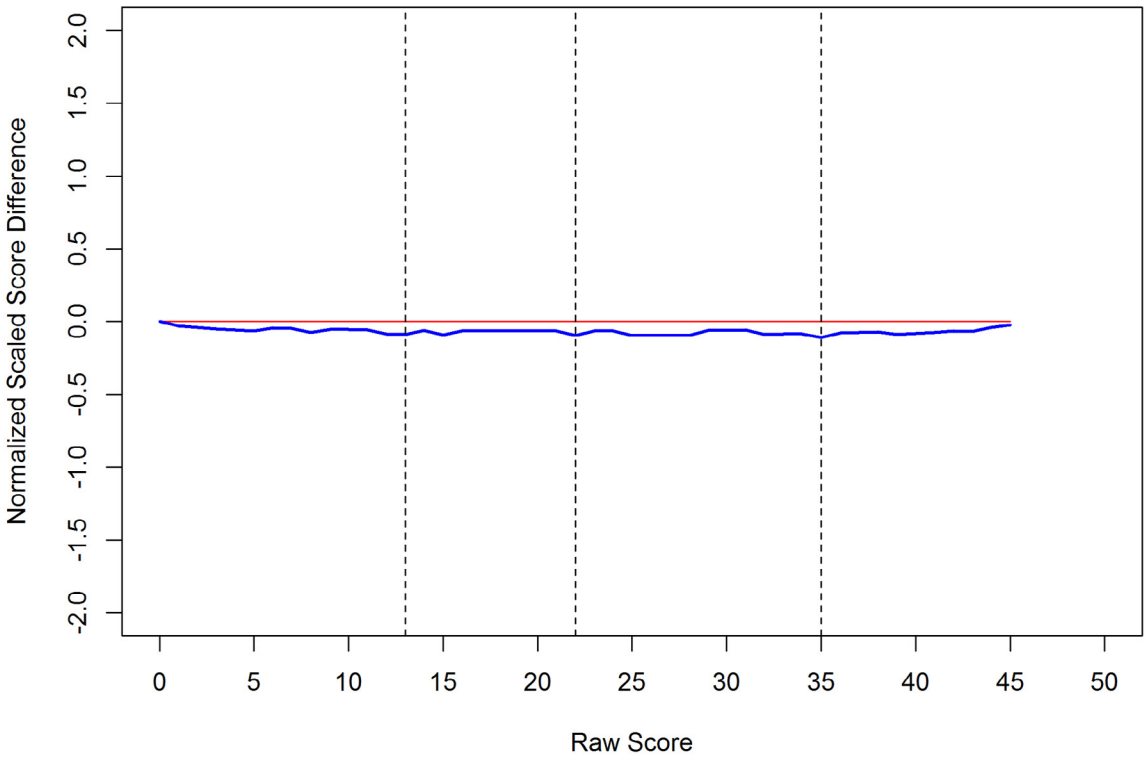
Mathematics Grade 7 Normalized Scaled Score Difference

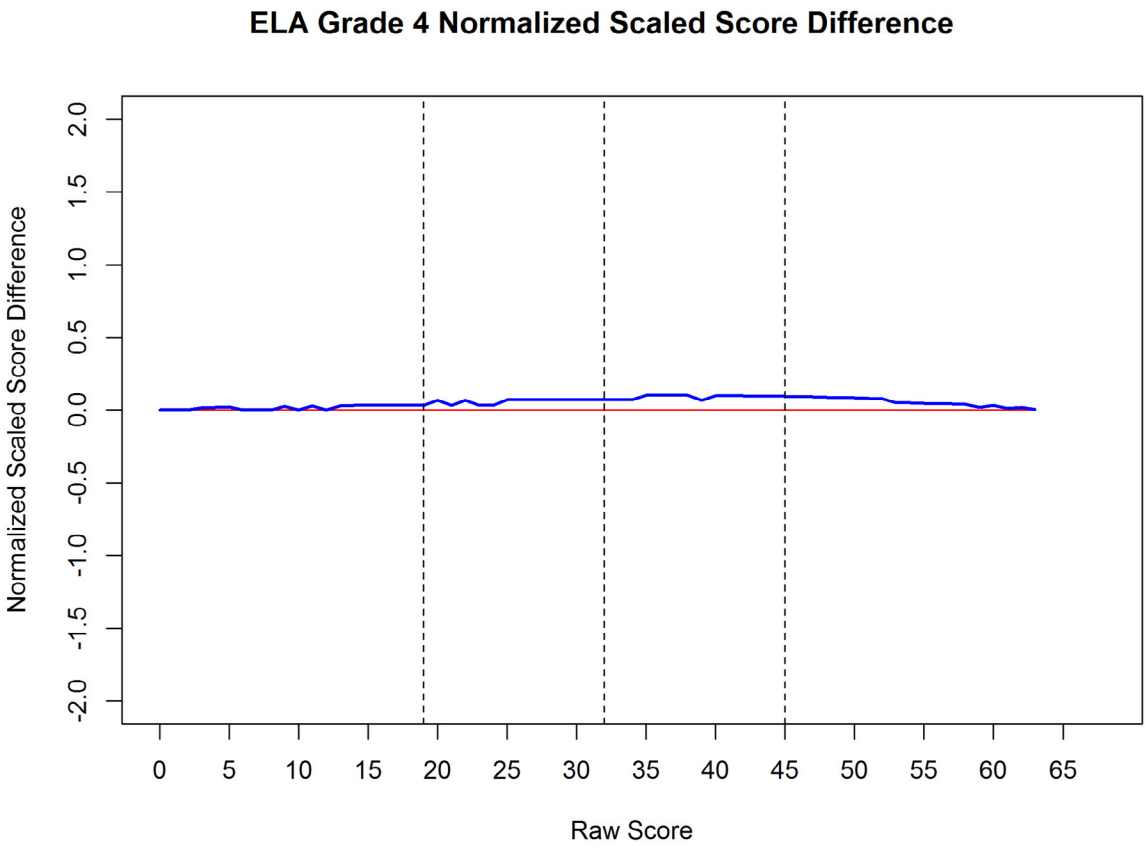


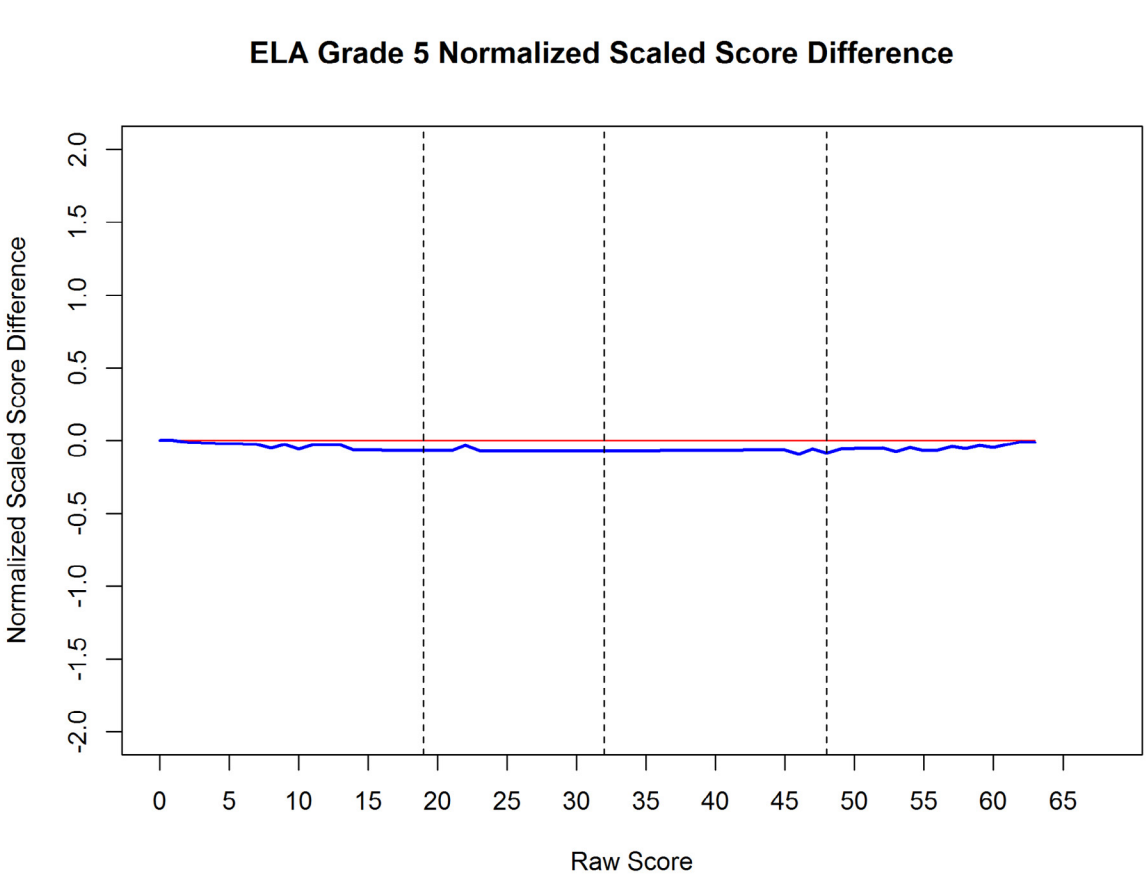
Mathematics Grade 8 Normalized Scaled Score Difference



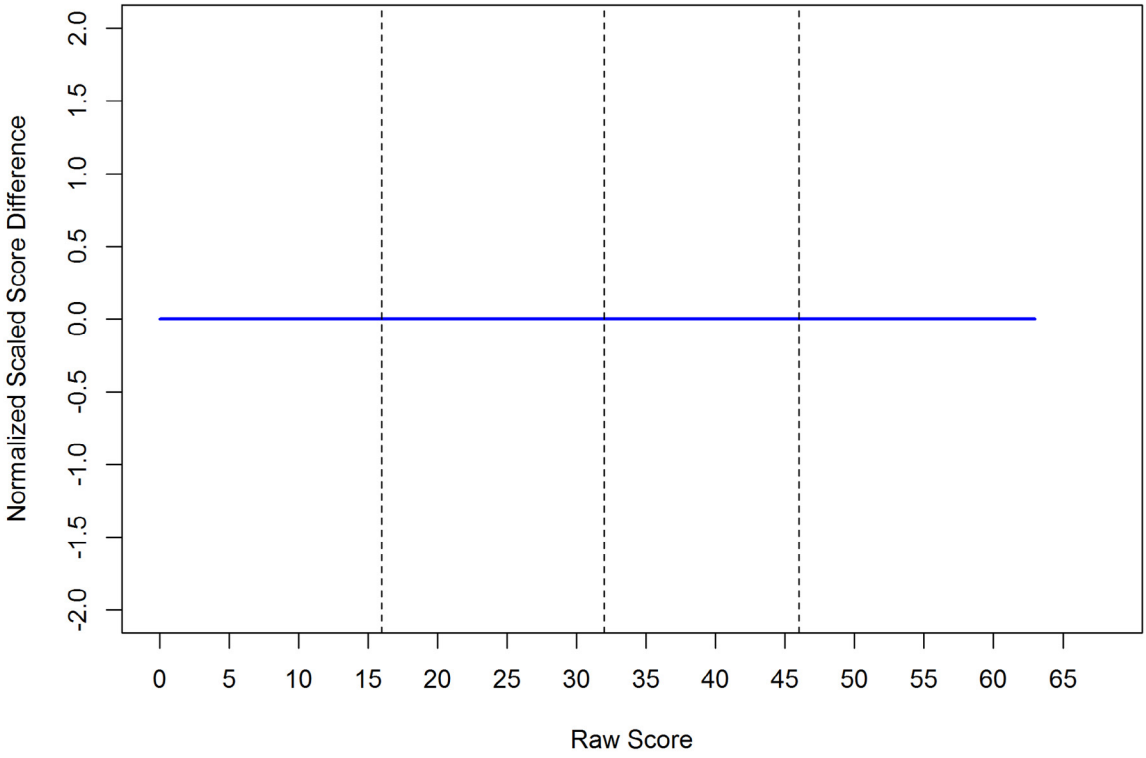
ELA Grade 3 Normalized Scaled Score Difference



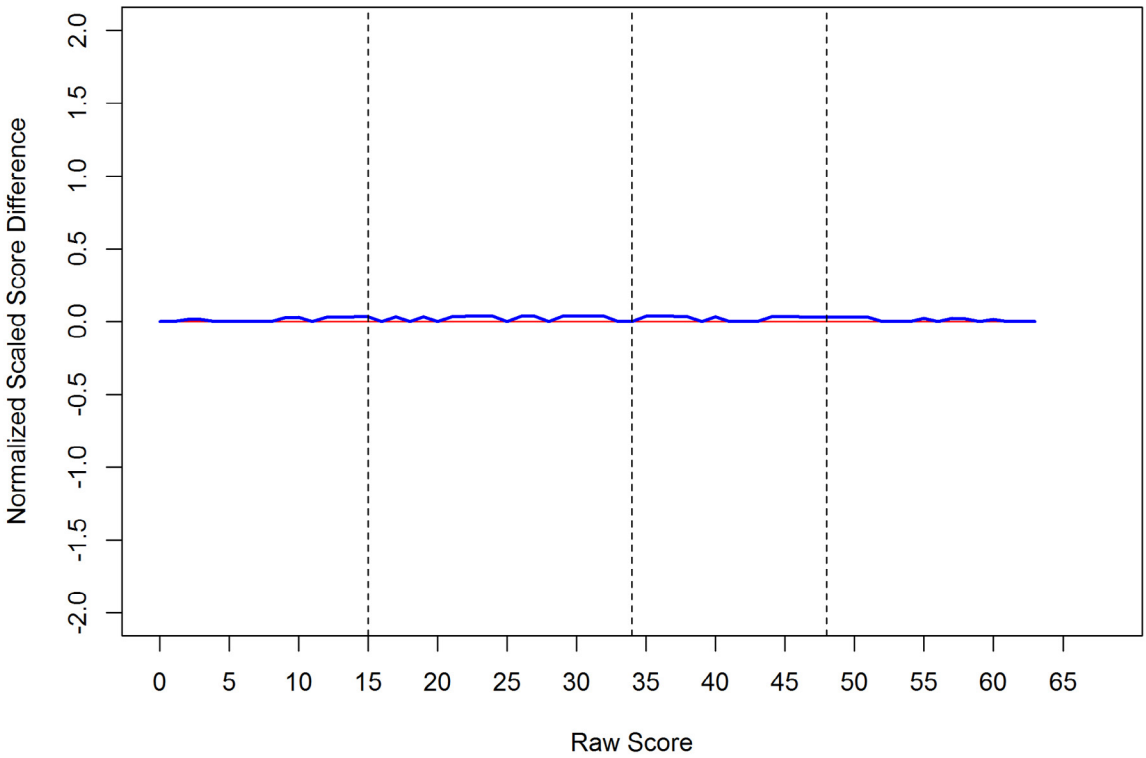

ELA Grade 4 Normalized Scaled Score Difference
Normalized Scaled Score Difference
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
0
5
10
15
20
25
30
35
40
45
50
55
60
65
Raw Score


ELA Grade 5 Normalized Scaled Score Difference
Normalized Scaled Score Difference
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
0
5
10
15
20
25
30
35
40
45
50
55
60
65
Raw Score

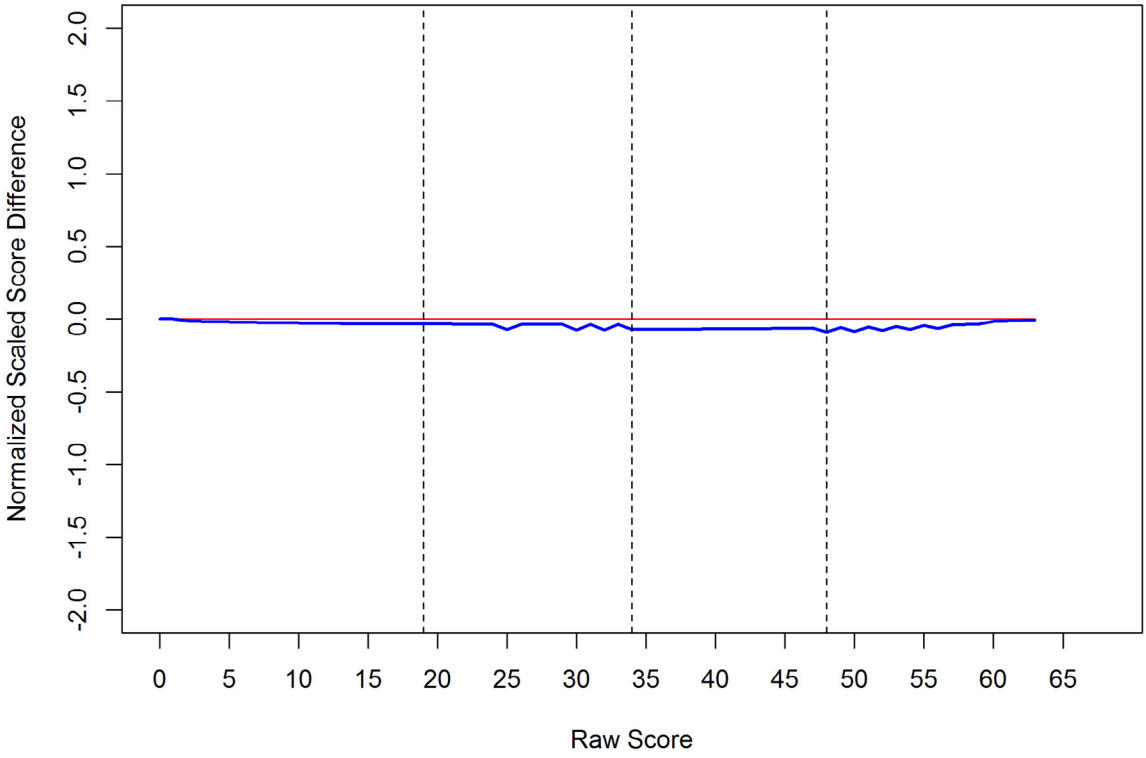
ELA Grade 6 Normalized Scaled Score Difference



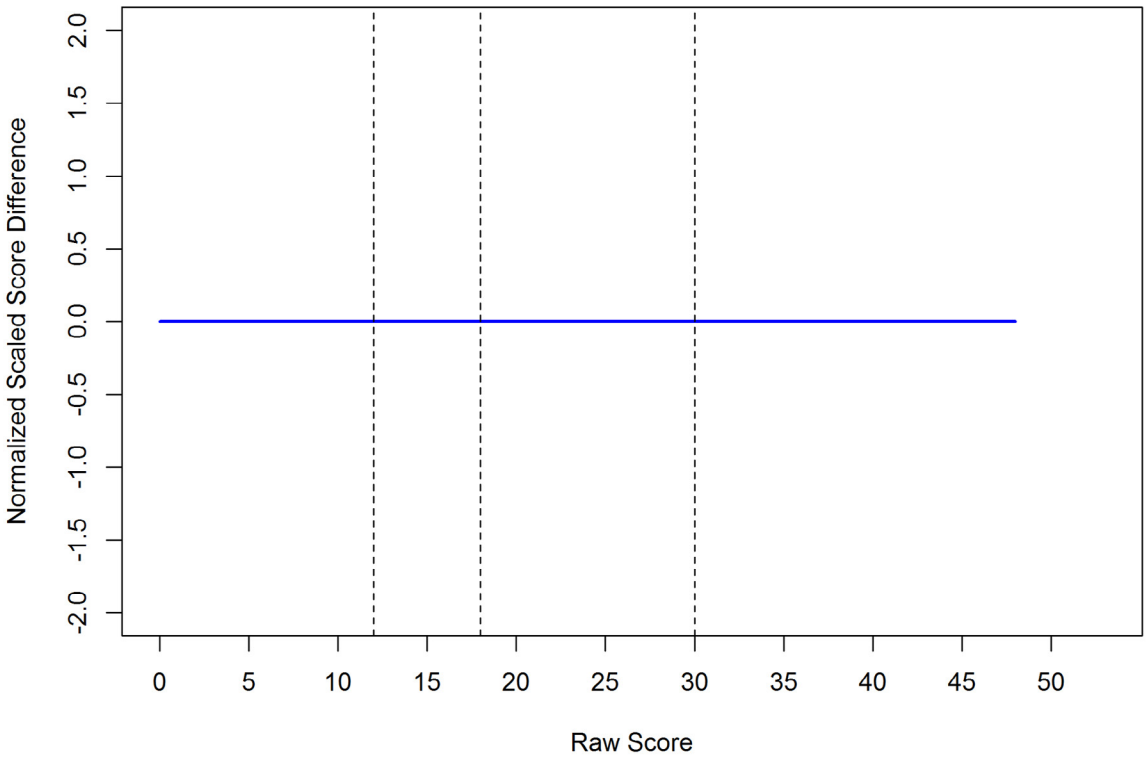
ELA Grade 7 Normalized Scaled Score Difference



ELA Grade 8 Normalized Scaled Score Difference



Science Grade 4 Normalized Scaled Score Difference



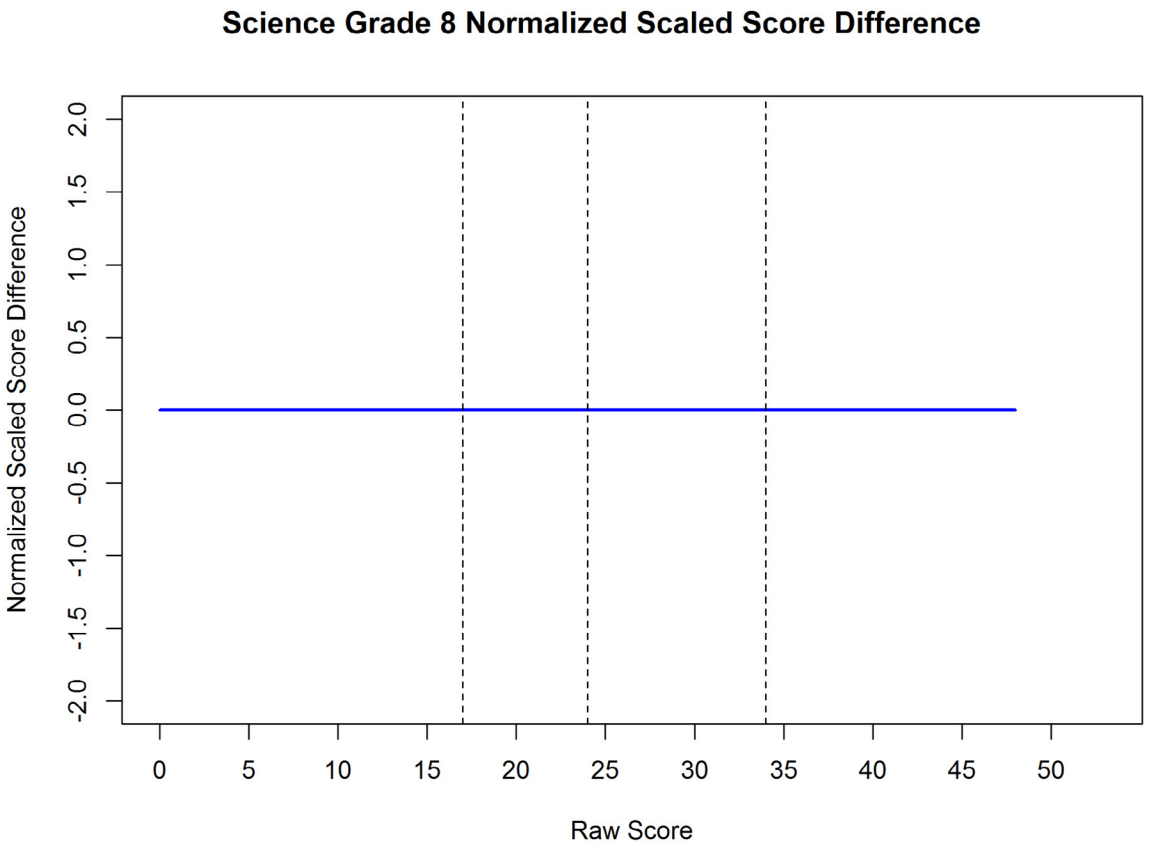


Table T–1 shows both the pre-equated and post-equated raw-to-scaled score conversion tables. Tables provide details for both pre-equated (Pre) and post-equated (Post) solutions with respect to the scaled score (SS), standard error of measurement (SEM), performance level (PL), overall proportion of students earning each raw score, and whether there were differences in the performance level classification for pre- and post-equated solutions (Same PL). All student reporting is based on the tables in Appendix N, which use the pre-equated solutions.

Table T–1. Pre- and Post-Equated Conversion Tables by Subject and Grade

Mathematics Grade 3 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	640	640	74	74	BB	BB	0.0	True
3	685	685	61	61	BB	BB	0.1	True
4	718	718	54	54	BB	BB	0.1	True
5	745	745	49	49	BB	BB	0.3	True
6	768	767	46	46	BB	BB	0.6	True
7	787	787	43	43	BB	BB	1.0	True
8	805	805	41	41	BB	BB	1.5	True
9	821	821	39	39	BB	BB	2.0	True
10	836	836	38	38	BB	BB	2.5	True
11	850	849	37	37	BB	BB	2.7	True
12	863	862	36	36	BB	BB	3.0	True
13	875	875	35	35	BB	BB	3.1	True
14	887	886	34	34	BB	BB	3.1	True
15	898	898	33	33	BB	BB	3.1	True
16	909	908	33	33	BB	BB	3.0	True
17	919	919	32	32	BB	BB	3.0	True
18	930	929	32	32	B	B	2.9	True
19	939	939	31	31	B	B	2.8	True
20	949	949	31	31	B	B	2.8	True
21	959	958	31	31	B	B	2.7	True
22	968	967	30	30	B	B	2.7	True
23	977	977	30	30	B	B	2.7	True
24	986	986	30	30	B	B	2.7	True
25	995	995	30	30	B	B	2.7	True
26	1004	1004	30	30	P	P	2.6	True
27	1013	1013	30	30	P	P	2.7	True
28	1022	1022	30	30	P	P	2.6	True
29	1031	1031	30	30	P	P	2.6	True
30	1040	1040	30	30	P	P	2.7	True
31	1050	1049	30	30	P	P	2.6	True
32	1059	1058	31	31	P	P	2.5	True
33	1068	1067	31	31	P	P	2.6	True
34	1078	1077	31	31	P	P	2.4	True
35	1088	1087	32	32	P	P	2.5	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
36	1098	1097	32	32	P	P	2.4	True
37	1108	1107	33	33	P	P	2.2	True
38	1119	1118	33	33	A	A	2.3	True
39	1130	1129	34	34	A	A	2.2	True
40	1142	1141	35	35	A	A	2.0	True
41	1155	1154	36	36	A	A	2.0	True
42	1168	1167	37	37	A	A	1.8	True
43	1182	1181	39	39	A	A	1.6	True
44	1198	1197	41	41	A	A	1.5	True
45	1216	1215	43	43	A	A	1.3	True
46	1235	1234	46	46	A	A	1.1	True
47	1258	1257	50	50	A	A	1.1	True
48	1286	1285	55	55	A	A	0.8	True
49	1321	1320	63	63	A	A	0.5	True
50	1369	1368	77	77	A	A	0.3	True
51	1448	1447	106	106	A	A	0.1	True
52	1577	1577	186	186	A	A	0.0	True

Mathematics Grade 4 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	600	600	103	103	BB	BB	0.0	True
2	627	627	74	74	BB	BB	0.0	True
3	673	673	62	62	BB	BB	0.0	True
4	706	706	54	54	BB	BB	0.1	True
5	733	733	50	50	BB	BB	0.2	True
6	756	756	46	46	BB	BB	0.4	True
7	776	776	43	43	BB	BB	0.8	True
8	793	793	41	41	BB	BB	1.3	True
9	809	809	39	39	BB	BB	1.9	True
10	824	824	38	38	BB	BB	2.5	True
11	838	838	36	36	BB	BB	3.0	True
12	851	850	35	35	BB	BB	3.4	True
13	863	862	34	34	BB	BB	3.6	True
14	874	874	34	34	BB	BB	3.7	True
15	885	885	33	33	BB	BB	3.7	True
16	896	895	32	32	BB	BB	3.6	True
17	906	906	32	32	BB	BB	3.6	True
18	916	916	31	31	B	B	3.5	True
19	926	925	31	31	B	B	3.4	True
20	935	935	31	31	B	B	3.4	True
21	944	944	30	30	B	B	3.2	True
22	953	953	30	30	B	B	3.1	True
23	962	962	30	30	B	B	3.0	True
24	971	971	30	30	B	B	3.0	True
25	980	979	30	30	B	B	2.9	True
26	989	988	30	30	B	B	2.8	True
27	997	997	30	30	B	B	2.7	True
28	1006	1006	30	30	P	P	2.6	True
29	1015	1014	30	30	P	P	2.6	True
30	1024	1023	30	30	P	P	2.4	True
31	1033	1032	30	30	P	P	2.5	True
32	1042	1041	30	30	P	P	2.3	True
33	1051	1050	31	31	P	P	2.2	True
34	1061	1060	31	31	P	P	2.1	True
35	1070	1070	31	31	P	P	2.0	True
36	1080	1080	32	32	P	P	2.0	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1091	1090	33	32	P	P	1.8	True
38	1101	1101	33	33	P	P	1.8	True
39	1113	1112	34	34	A	A	1.7	True
40	1125	1124	35	35	A	A	1.6	True
41	1137	1136	36	36	A	A	1.5	True
42	1151	1150	37	37	A	A	1.4	True
43	1165	1165	39	39	A	A	1.3	True
44	1181	1180	41	41	A	A	1.2	True
45	1199	1198	43	43	A	A	1.0	True
46	1219	1218	46	46	A	A	0.9	True
47	1242	1241	50	50	A	A	0.7	True
48	1270	1269	55	55	A	A	0.6	True
49	1304	1303	63	63	A	A	0.4	True
50	1351	1350	75	75	A	A	0.2	True
51	1427	1426	104	104	A	A	0.1	True
52	1553	1552	185	185	A	A	0.0	True

Mathematics Grade 5 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	644	644	74	74	BB	BB	0.0	True
3	689	689	61	61	BB	BB	0.0	True
4	722	722	54	54	BB	BB	0.1	True
5	748	748	49	49	BB	BB	0.3	True
6	770	770	46	46	BB	BB	0.6	True
7	790	790	43	43	BB	BB	1.1	True
8	807	807	41	41	BB	BB	1.8	True
9	823	823	39	39	BB	BB	2.6	True
10	838	838	38	38	BB	BB	3.1	True
11	852	851	36	36	BB	BB	3.7	True
12	864	864	35	35	BB	BB	4.1	True
13	877	876	34	34	BB	BB	4.1	True
14	888	888	34	34	BB	BB	4.2	True
15	899	899	33	33	BB	BB	3.9	True
16	910	910	32	32	B	B	4.0	True
17	920	920	32	32	B	B	3.7	True
18	931	930	32	32	B	B	3.7	True
19	940	940	31	31	B	B	3.4	True
20	950	950	31	31	B	B	3.4	True
21	959	959	31	31	B	B	3.3	True
22	969	968	30	30	B	B	3.0	True
23	978	977	30	30	B	B	2.9	True
24	987	986	30	30	B	B	2.8	True
25	996	995	30	30	B	B	2.8	True
26	1004	1004	30	30	P	P	2.6	True
27	1013	1013	30	30	P	P	2.5	True
28	1022	1022	30	30	P	P	2.4	True
29	1031	1030	30	30	P	P	2.3	True
30	1039	1039	30	30	P	P	2.2	True
31	1048	1048	30	30	P	P	2.1	True
32	1057	1057	30	30	P	P	2.0	True
33	1066	1066	30	30	P	P	1.9	True
34	1075	1075	30	30	P	P	1.8	True
35	1085	1084	31	31	P	P	1.8	True
36	1094	1094	31	31	P	P	1.7	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1104	1104	32	32	P	P	1.6	True
38	1114	1114	32	32	A	A	1.5	True
39	1125	1124	33	33	A	A	1.5	True
40	1136	1135	34	34	A	A	1.4	True
41	1148	1147	35	35	A	A	1.3	True
42	1160	1160	36	36	A	A	1.2	True
43	1174	1173	38	38	A	A	1.0	True
44	1189	1188	40	40	A	A	1.0	True
45	1205	1205	42	42	A	A	0.9	True
46	1224	1224	45	45	A	A	0.8	True
47	1246	1245	49	49	A	A	0.6	True
48	1272	1272	54	54	A	A	0.5	True
49	1306	1305	62	62	A	A	0.4	True
50	1352	1352	75	75	A	A	0.2	True
51	1429	1428	104	104	A	A	0.1	True
52	1556	1555	185	185	A	A	0.0	True

Mathematics Grade 6 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	608	608	74	74	BB	BB	0.0	True
3	653	653	61	61	BB	BB	0.0	True
4	686	686	54	54	BB	BB	0.1	True
5	713	713	49	49	BB	BB	0.2	True
6	735	735	46	46	BB	BB	0.4	True
7	755	755	43	43	BB	BB	0.7	True
8	772	772	41	41	BB	BB	1.2	True
9	788	788	39	39	BB	BB	1.6	True
10	803	803	38	38	BB	BB	2.1	True
11	817	817	36	36	BB	BB	2.5	True
12	830	830	35	35	BB	BB	2.9	True
13	842	842	34	34	BB	BB	3.2	True
14	854	854	34	34	BB	BB	3.5	True
15	865	865	33	33	BB	BB	3.5	True
16	875	875	32	32	BB	BB	3.7	True
17	886	886	32	32	BB	BB	3.8	True
18	896	896	31	31	BB	BB	3.9	True
19	905	905	31	31	B	B	3.8	True
20	915	915	31	31	B	B	3.8	True
21	924	924	30	30	B	B	3.8	True
22	933	933	30	30	B	B	3.7	True
23	942	942	30	30	B	B	3.6	True
24	951	951	30	30	B	B	3.5	True
25	959	959	30	30	B	B	3.3	True
26	968	968	29	29	B	B	3.2	True
27	977	977	29	29	B	B	3.0	True
28	985	985	30	30	B	B	2.9	True
29	994	994	30	30	B	B	2.7	True
30	1003	1003	30	30	P	P	2.4	True
31	1012	1012	30	30	P	P	2.5	True
32	1021	1021	30	30	P	P	2.2	True
33	1030	1030	31	31	P	P	2.1	True
34	1040	1040	31	31	P	P	2.1	True
35	1049	1049	31	31	P	P	1.9	True
36	1059	1059	32	32	P	P	1.8	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1070	1070	33	33	P	P	1.7	True
38	1080	1080	33	33	P	P	1.7	True
39	1092	1092	34	34	P	P	1.5	True
40	1104	1104	35	35	P	P	1.5	True
41	1116	1116	36	36	A	A	1.4	True
42	1130	1130	37	37	A	A	1.2	True
43	1144	1144	39	39	A	A	1.1	True
44	1159	1159	40	40	A	A	1.0	True
45	1177	1177	42	42	A	A	0.9	True
46	1196	1196	45	45	A	A	0.8	True
47	1217	1217	48	48	A	A	0.6	True
48	1243	1243	53	53	A	A	0.4	True
49	1275	1275	60	60	A	A	0.3	True
50	1318	1318	73	73	A	A	0.2	True
51	1390	1390	101	101	A	A	0.1	True
52	1513	1513	183	183	A	A	0.0	True

Mathematics Grade 7 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	628	628	74	74	BB	BB	0.0	True
3	673	673	61	61	BB	BB	0.1	True
4	706	706	54	54	BB	BB	0.2	True
5	732	732	49	49	BB	BB	0.4	True
6	754	754	45	45	BB	BB	0.9	True
7	773	773	43	43	BB	BB	1.6	True
8	791	791	40	40	BB	BB	2.4	True
9	806	806	39	39	BB	BB	3.4	True
10	820	820	37	37	BB	BB	4.0	True
11	834	834	36	36	BB	BB	4.8	True
12	846	846	35	35	BB	BB	4.9	True
13	858	858	34	34	BB	BB	4.9	True
14	870	870	33	33	BB	BB	4.6	True
15	880	880	33	33	BB	BB	4.2	True
16	891	891	32	32	BB	BB	4.0	True
17	901	901	32	32	BB	BB	3.8	True
18	911	911	31	31	B	B	3.5	True
19	920	920	31	31	B	B	3.2	True
20	929	929	30	30	B	B	3.0	True
21	939	939	30	30	B	B	2.9	True
22	948	948	30	30	B	B	2.7	True
23	957	957	30	30	B	B	2.6	True
24	966	966	30	30	B	B	2.6	True
25	974	974	30	30	B	B	2.5	True
26	983	983	30	30	B	B	2.4	True
27	992	992	30	30	B	B	2.3	True
28	1001	1001	30	30	P	P	2.2	True
29	1010	1010	30	30	P	P	2.1	True
30	1019	1019	30	30	P	P	2.0	True
31	1028	1028	30	30	P	P	1.9	True
32	1037	1037	31	31	P	P	1.9	True
33	1047	1047	31	31	P	P	1.8	True
34	1057	1057	32	32	P	P	1.7	True
35	1067	1067	32	32	P	P	1.6	True
36	1077	1077	33	33	P	P	1.5	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1088	1088	33	33	P	P	1.4	True
38	1099	1099	34	34	P	P	1.4	True
39	1111	1111	35	35	A	A	1.3	True
40	1124	1124	36	36	A	A	1.3	True
41	1137	1137	37	37	A	A	1.1	True
42	1151	1151	38	38	A	A	1.0	True
43	1166	1166	39	39	A	A	0.9	True
44	1182	1182	41	41	A	A	0.7	True
45	1200	1200	43	43	A	A	0.6	True
46	1220	1220	46	46	A	A	0.5	True
47	1243	1243	50	50	A	A	0.4	True
48	1270	1270	54	54	A	A	0.3	True
49	1303	1303	62	62	A	A	0.2	True
50	1348	1348	74	74	A	A	0.1	True
51	1422	1422	102	102	A	A	0.1	True
52	1546	1546	184	184	A	A	0.0	True

Mathematics Grade 8 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	183	183	BB	BB	0.0	True
1	600	600	101	101	BB	BB	0.0	True
2	605	605	73	73	BB	BB	0.0	True
3	648	648	60	60	BB	BB	0.0	True
4	680	680	53	53	BB	BB	0.1	True
5	705	705	48	48	BB	BB	0.2	True
6	727	726	44	44	BB	BB	0.5	True
7	745	745	42	42	BB	BB	0.9	True
8	762	761	40	40	BB	BB	1.5	True
9	777	776	38	38	BB	BB	2.2	True
10	791	790	36	36	BB	BB	3.0	True
11	803	803	35	35	BB	BB	3.6	True
12	815	815	34	34	BB	BB	4.0	True
13	827	826	33	33	BB	BB	4.4	True
14	838	837	33	33	BB	BB	4.5	True
15	848	848	32	32	BB	BB	4.5	True
16	858	858	31	31	BB	BB	4.4	True
17	868	868	31	31	BB	BB	4.0	True
18	877	877	31	31	BB	BB	3.9	True
19	887	886	30	30	BB	BB	3.7	True
20	896	895	30	30	BB	BB	3.5	True
21	905	904	30	30	BB	BB	3.4	True
22	913	913	30	30	B	B	3.1	True
23	922	922	29	29	B	B	2.9	True
24	931	930	29	29	B	B	2.8	True
25	939	939	29	29	B	B	2.7	True
26	948	947	29	29	B	B	2.5	True
27	956	956	29	29	B	B	2.4	True
28	965	965	29	29	B	B	2.3	True
29	974	973	30	29	B	B	2.2	True
30	982	982	30	30	B	B	2.1	True
31	991	991	30	30	B	B	2.0	True
32	1000	1000	30	30	P	P	2.0	True
33	1010	1009	30	30	P	P	1.9	True
34	1019	1018	31	31	P	P	1.8	True
35	1029	1028	31	31	P	P	1.8	True
36	1039	1038	32	32	P	P	1.7	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1049	1048	32	32	P	P	1.5	True
38	1060	1059	33	33	P	P	1.5	True
39	1071	1070	34	34	P	P	1.4	True
40	1083	1082	35	35	P	P	1.3	True
41	1095	1095	36	36	P	P	1.3	True
42	1109	1108	37	37	A	A	1.1	True
43	1123	1123	39	39	A	A	1.0	True
44	1139	1138	41	41	A	A	0.9	True
45	1156	1156	43	43	A	A	0.9	True
46	1176	1175	46	46	A	A	0.7	True
47	1198	1198	49	49	A	A	0.6	True
48	1225	1224	54	54	A	A	0.5	True
49	1258	1257	61	61	A	A	0.4	True
50	1302	1301	73	73	A	A	0.2	True
51	1374	1373	101	101	A	A	0.1	True
52	1495	1495	183	183	A	A	0.1	True

ELA Grade 3 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	613	616	102	102	BB	BB	0.0	True
2	686	689	73	73	BB	BB	0.0	True
3	730	733	61	61	BB	BB	0.1	True
4	762	765	53	53	BB	BB	0.1	True
5	788	791	48	48	BB	BB	0.3	True
6	810	812	45	45	BB	BB	0.6	True
7	829	831	42	42	BB	BB	1.0	True
8	845	848	40	40	BB	BB	1.5	True
9	861	863	38	38	BB	BB	1.9	True
10	875	877	37	37	BB	BB	2.4	True
11	888	890	36	36	BB	BB	2.7	True
12	900	903	35	35	BB	BB	2.8	True
13	912	915	34	34	B	B	2.9	True
14	924	926	33	33	B	B	2.9	True
15	934	937	33	33	B	B	2.9	True
16	945	947	32	32	B	B	2.9	True
17	955	957	32	32	B	B	3.1	True
18	965	967	32	32	B	B	3.1	True
19	975	977	31	31	B	B	3.1	True
20	985	987	31	31	B	B	3.1	True
21	995	997	31	31	B	B	3.4	True
22	1004	1007	31	31	P	P	3.4	True
23	1014	1016	31	31	P	P	3.4	True
24	1024	1026	31	31	P	P	3.4	True
25	1033	1036	31	31	P	P	3.5	True
26	1043	1046	31	32	P	P	3.5	True
27	1053	1056	32	32	P	P	3.5	True
28	1063	1066	32	32	P	P	3.7	True
29	1074	1076	32	33	P	P	3.6	True
30	1085	1087	33	33	P	P	3.5	True
31	1096	1098	34	34	P	P	3.5	True
32	1107	1110	34	34	P	P	3.5	True
33	1119	1122	35	35	P	P	3.3	True
34	1132	1135	36	36	P	P	3.1	True
35	1145	1149	37	37	A	A	2.9	True
36	1160	1163	39	39	A	A	2.6	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1176	1179	41	41	A	A	2.4	True
38	1193	1196	43	43	A	A	2.0	True
39	1212	1216	45	46	A	A	1.7	True
40	1234	1238	49	49	A	A	1.2	True
41	1261	1265	54	54	A	A	0.8	True
42	1294	1298	61	61	A	A	0.5	True
43	1338	1343	74	74	A	A	0.2	True
44	1412	1416	102	102	A	A	0.1	True
45	1536	1540	184	184	A	A	0.0	True

ELA Grade 4 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	183	183	BB	BB	0.0	True
1	600	600	101	101	BB	BB	0.0	True
2	621	621	72	72	BB	BB	0.0	True
3	664	663	60	60	BB	BB	0.0	True
4	695	694	52	52	BB	BB	0.0	True
5	720	719	47	47	BB	BB	0.0	True
6	740	740	44	44	BB	BB	0.1	True
7	758	758	41	41	BB	BB	0.2	True
8	774	774	39	39	BB	BB	0.3	True
9	789	788	37	37	BB	BB	0.4	True
10	802	802	36	36	BB	BB	0.6	True
11	815	814	35	35	BB	BB	0.9	True
12	826	826	34	34	BB	BB	0.9	True
13	838	837	33	33	BB	BB	1.2	True
14	848	847	32	32	BB	BB	1.4	True
15	858	857	32	31	BB	BB	1.6	True
16	868	867	31	31	BB	BB	1.7	True
17	878	877	31	30	BB	BB	1.8	True
18	887	886	30	30	B	BB	1.9	False
19	896	895	30	30	B	B	1.9	True
20	905	903	30	29	B	B	2.0	True
21	913	912	29	29	B	B	2.0	True
22	922	920	29	29	B	B	2.1	True
23	930	929	29	29	B	B	2.0	True
24	938	937	29	29	B	B	2.1	True
25	947	945	29	28	B	B	2.2	True
26	955	953	28	28	B	B	2.3	True
27	963	961	28	28	B	B	2.4	True
28	971	969	28	28	B	B	2.5	True
29	979	977	28	28	B	B	2.4	True
30	987	985	28	28	B	B	2.6	True
31	995	993	28	28	B	B	2.6	True
32	1003	1001	28	28	P	P	2.8	True
33	1011	1009	28	28	P	P	2.7	True
34	1019	1017	29	28	P	P	2.8	True
35	1028	1025	29	29	P	P	2.9	True
36	1036	1033	29	29	P	P	3.0	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1044	1041	29	29	P	P	3.1	True
38	1053	1050	29	29	P	P	3.1	True
39	1061	1059	30	29	P	P	3.1	True
40	1070	1067	30	30	P	P	3.1	True
41	1079	1076	30	30	P	P	3.1	True
42	1088	1085	31	30	P	P	3.0	True
43	1098	1095	31	31	P	P	3.0	True
44	1108	1105	31	31	A	P	2.8	False
45	1118	1115	32	32	A	A	2.8	True
46	1128	1125	32	33	A	A	2.7	True
47	1139	1136	33	33	A	A	2.5	True
48	1150	1147	34	34	A	A	2.2	True
49	1162	1159	35	35	A	A	1.9	True
50	1174	1171	36	36	A	A	1.6	True
51	1187	1184	37	37	A	A	1.4	True
52	1201	1198	38	38	A	A	1.1	True
53	1215	1213	39	39	A	A	0.9	True
54	1231	1229	41	41	A	A	0.7	True
55	1248	1246	42	43	A	A	0.5	True
56	1267	1265	45	45	A	A	0.3	True
57	1288	1286	47	47	A	A	0.2	True
58	1312	1310	51	51	A	A	0.1	True
59	1340	1339	56	56	A	A	0.1	True
60	1375	1373	63	63	A	A	0.1	True
61	1421	1420	75	75	A	A	0.0	True
62	1497	1495	103	103	A	A	0.0	True
63	1621	1620	184	184	A	A	0.0	True

ELA Grade 5 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	183	183	BB	BB	0.0	True
1	600	600	101	101	BB	BB	0.0	True
2	619	620	73	73	BB	BB	0.0	True
3	662	663	60	60	BB	BB	0.0	True
4	693	694	53	53	BB	BB	0.0	True
5	718	719	48	48	BB	BB	0.0	True
6	739	740	44	44	BB	BB	0.1	True
7	757	758	41	41	BB	BB	0.1	True
8	773	775	39	39	BB	BB	0.2	True
9	788	789	37	37	BB	BB	0.3	True
10	801	803	36	36	BB	BB	0.4	True
11	814	815	35	35	BB	BB	0.5	True
12	826	827	34	34	BB	BB	0.7	True
13	837	838	33	33	BB	BB	0.9	True
14	847	849	32	32	BB	BB	1.0	True
15	857	859	31	31	BB	BB	1.2	True
16	867	869	31	31	BB	BB	1.3	True
17	876	878	30	30	BB	BB	1.5	True
18	885	887	30	30	BB	BB	1.6	True
19	894	896	30	30	B	B	1.7	True
20	903	905	29	29	B	B	1.8	True
21	911	913	29	29	B	B	1.9	True
22	920	921	29	29	B	B	1.9	True
23	928	930	29	29	B	B	2.0	True
24	936	938	28	28	B	B	2.2	True
25	944	946	28	28	B	B	2.3	True
26	952	954	28	28	B	B	2.4	True
27	960	962	28	28	B	B	2.6	True
28	967	969	28	28	B	B	2.7	True
29	975	977	28	28	B	B	2.9	True
30	983	985	28	28	B	B	3.0	True
31	991	993	28	28	B	B	3.3	True
32	999	1001	28	28	B	P	3.2	False
33	1007	1009	28	28	P	P	3.5	True
34	1015	1017	28	28	P	P	3.5	True
35	1023	1025	28	28	P	P	3.6	True
36	1031	1033	29	29	P	P	3.6	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1039	1041	29	29	P	P	3.6	True
38	1047	1049	29	29	P	P	3.5	True
39	1056	1058	29	30	P	P	3.4	True
40	1065	1067	30	30	P	P	3.5	True
41	1074	1076	30	30	P	P	3.3	True
42	1083	1085	31	31	P	P	3.2	True
43	1093	1095	31	31	P	P	2.9	True
44	1103	1105	32	32	P	P	2.7	True
45	1113	1115	32	32	P	P	2.5	True
46	1123	1126	33	33	P	P	2.4	True
47	1135	1137	34	34	P	P	2.1	True
48	1146	1149	35	35	A	A	1.8	True
49	1159	1161	36	36	A	A	1.5	True
50	1172	1174	37	37	A	A	1.3	True
51	1186	1188	38	38	A	A	1.1	True
52	1201	1203	39	40	A	A	0.8	True
53	1217	1220	41	41	A	A	0.7	True
54	1235	1237	43	43	A	A	0.6	True
55	1254	1257	45	45	A	A	0.4	True
56	1275	1278	48	48	A	A	0.3	True
57	1300	1302	51	51	A	A	0.2	True
58	1327	1330	55	54	A	A	0.1	True
59	1360	1362	60	59	A	A	0.1	True
60	1399	1402	67	66	A	A	0.1	True
61	1451	1453	78	78	A	A	0.0	True
62	1532	1533	106	105	A	A	0.0	True
63	1660	1662	186	186	A	A	0.0	True

ELA Grade 6 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	615	615	73	73	BB	BB	0.0	True
3	660	660	61	61	BB	BB	0.0	True
4	692	692	54	54	BB	BB	0.0	True
5	719	719	49	49	BB	BB	0.0	True
6	741	741	45	45	BB	BB	0.1	True
7	760	760	43	43	BB	BB	0.1	True
8	777	777	40	40	BB	BB	0.2	True
9	793	793	39	39	BB	BB	0.3	True
10	807	807	37	37	BB	BB	0.5	True
11	820	820	36	36	BB	BB	0.6	True
12	832	832	35	35	BB	BB	0.8	True
13	844	844	34	34	BB	BB	1.0	True
14	855	855	33	33	BB	BB	1.3	True
15	865	865	32	32	BB	BB	1.4	True
16	876	876	31	31	B	B	1.7	True
17	885	885	31	31	B	B	1.8	True
18	894	894	30	30	B	B	1.8	True
19	903	903	30	30	B	B	1.9	True
20	912	912	29	29	B	B	2.1	True
21	921	921	29	29	B	B	2.0	True
22	929	929	29	29	B	B	2.2	True
23	937	937	28	28	B	B	2.1	True
24	945	945	28	28	B	B	2.2	True
25	953	953	28	28	B	B	2.3	True
26	960	960	28	28	B	B	2.3	True
27	968	968	27	27	B	B	2.4	True
28	976	976	27	27	B	B	2.4	True
29	983	983	27	27	B	B	2.5	True
30	990	990	27	27	B	B	2.6	True
31	998	998	27	27	B	B	2.7	True
32	1005	1005	27	27	P	P	2.7	True
33	1013	1013	27	27	P	P	2.8	True
34	1020	1020	27	27	P	P	2.9	True
35	1028	1028	27	27	P	P	3.0	True
36	1035	1035	28	28	P	P	2.9	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1043	1043	28	28	P	P	2.9	True
38	1051	1051	28	28	P	P	3.0	True
39	1059	1059	28	28	P	P	3.0	True
40	1067	1067	29	29	P	P	3.0	True
41	1075	1075	29	29	P	P	3.0	True
42	1083	1083	29	29	P	P	3.0	True
43	1092	1092	30	30	P	P	2.9	True
44	1101	1101	30	30	P	P	2.8	True
45	1111	1111	31	31	P	P	2.7	True
46	1120	1120	31	31	A	A	2.5	True
47	1130	1130	32	32	A	A	2.4	True
48	1141	1141	33	33	A	A	2.2	True
49	1152	1152	34	34	A	A	2.0	True
50	1164	1164	35	35	A	A	1.7	True
51	1176	1176	36	36	A	A	1.5	True
52	1190	1190	37	37	A	A	1.3	True
53	1204	1204	39	39	A	A	1.1	True
54	1220	1220	40	40	A	A	0.9	True
55	1237	1237	42	42	A	A	0.7	True
56	1255	1255	45	45	A	A	0.5	True
57	1276	1276	47	47	A	A	0.3	True
58	1301	1301	51	51	A	A	0.3	True
59	1329	1329	56	56	A	A	0.2	True
60	1365	1365	63	63	A	A	0.1	True
61	1412	1412	75	75	A	A	0.1	True
62	1488	1488	104	104	A	A	0.0	True
63	1614	1614	185	185	A	A	0.0	True

ELA Grade 7 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	183	183	BB	BB	0.0	True
1	600	600	101	101	BB	BB	0.0	True
2	617	616	72	72	BB	BB	0.0	True
3	660	659	60	60	BB	BB	0.0	True
4	691	691	53	53	BB	BB	0.0	True
5	716	716	48	48	BB	BB	0.0	True
6	737	737	44	44	BB	BB	0.0	True
7	755	755	41	41	BB	BB	0.1	True
8	771	771	39	39	BB	BB	0.1	True
9	786	785	37	37	BB	BB	0.2	True
10	799	798	36	36	BB	BB	0.3	True
11	811	811	35	35	BB	BB	0.4	True
12	823	822	33	33	BB	BB	0.6	True
13	834	833	33	33	BB	BB	0.8	True
14	844	843	32	32	BB	BB	0.9	True
15	854	853	31	31	B	B	1.2	True
16	863	863	31	31	B	B	1.4	True
17	873	872	30	30	B	B	1.6	True
18	881	881	30	30	B	B	1.7	True
19	890	889	29	29	B	B	1.8	True
20	898	898	29	29	B	B	1.9	True
21	907	906	29	29	B	B	1.9	True
22	915	914	28	28	B	B	2.0	True
23	923	922	28	28	B	B	2.0	True
24	931	930	28	28	B	B	2.2	True
25	938	938	28	28	B	B	2.3	True
26	946	945	28	28	B	B	2.4	True
27	954	953	28	28	B	B	2.5	True
28	961	961	28	28	B	B	2.6	True
29	969	968	28	28	B	B	2.6	True
30	977	976	28	28	B	B	2.8	True
31	984	983	28	28	B	B	2.8	True
32	992	991	28	28	B	B	3.0	True
33	999	999	28	28	B	B	3.2	True
34	1007	1007	28	28	P	P	3.3	True
35	1015	1014	28	28	P	P	3.3	True
36	1023	1022	28	28	P	P	3.3	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1031	1030	28	28	P	P	3.4	True
38	1039	1038	29	29	P	P	3.4	True
39	1047	1047	29	29	P	P	3.3	True
40	1056	1055	29	29	P	P	3.5	True
41	1064	1064	30	30	P	P	3.4	True
42	1073	1073	30	30	P	P	3.3	True
43	1082	1082	30	30	P	P	3.2	True
44	1092	1091	31	31	P	P	2.9	True
45	1102	1101	31	31	P	P	2.8	True
46	1112	1111	32	32	P	P	2.6	True
47	1122	1121	33	33	P	P	2.3	True
48	1133	1132	33	34	A	A	2.0	True
49	1145	1144	34	34	A	A	1.8	True
50	1157	1156	35	35	A	A	1.5	True
51	1170	1169	36	36	A	A	1.3	True
52	1183	1183	38	38	A	A	1.0	True
53	1198	1198	39	39	A	A	0.8	True
54	1214	1214	41	41	A	A	0.6	True
55	1232	1231	43	43	A	A	0.4	True
56	1251	1251	45	45	A	A	0.3	True
57	1273	1272	48	48	A	A	0.2	True
58	1298	1297	52	52	A	A	0.1	True
59	1327	1327	57	57	A	A	0.1	True
60	1364	1363	64	64	A	A	0.1	True
61	1412	1412	76	76	A	A	0.0	True
62	1490	1490	104	104	A	A	0.0	True
63	1616	1616	185	185	A	A	0.0	True

ELA Grade 8 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	601	602	73	73	BB	BB	0.0	True
3	645	646	61	61	BB	BB	0.0	True
4	678	679	54	54	BB	BB	0.0	True
5	704	705	49	49	BB	BB	0.0	True
6	726	727	45	45	BB	BB	0.1	True
7	745	746	42	42	BB	BB	0.1	True
8	762	763	40	40	BB	BB	0.2	True
9	777	778	38	38	BB	BB	0.3	True
10	791	792	37	37	BB	BB	0.5	True
11	804	805	35	35	BB	BB	0.6	True
12	816	817	34	34	BB	BB	0.7	True
13	827	828	33	33	BB	BB	1.0	True
14	838	839	32	32	BB	BB	1.1	True
15	848	849	32	32	BB	BB	1.2	True
16	858	859	31	31	BB	BB	1.5	True
17	868	869	30	30	BB	BB	1.6	True
18	877	878	30	30	BB	BB	1.7	True
19	886	887	29	30	B	B	1.8	True
20	894	895	29	29	B	B	1.9	True
21	903	904	29	29	B	B	1.9	True
22	911	912	28	28	B	B	1.9	True
23	919	920	28	28	B	B	2.0	True
24	927	928	28	28	B	B	2.1	True
25	934	936	28	28	B	B	2.3	True
26	942	943	28	28	B	B	2.3	True
27	950	951	28	28	B	B	2.5	True
28	957	958	27	28	B	B	2.5	True
29	965	966	27	27	B	B	2.7	True
30	972	974	27	27	B	B	2.8	True
31	980	981	27	28	B	B	2.8	True
32	987	989	27	28	B	B	3.0	True
33	995	996	28	28	B	B	3.1	True
34	1002	1004	28	28	P	P	3.1	True
35	1010	1012	28	28	P	P	3.2	True
36	1018	1020	28	28	P	P	3.1	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1026	1028	28	28	P	P	3.2	True
38	1034	1036	28	29	P	P	3.2	True
39	1042	1044	29	29	P	P	3.1	True
40	1050	1052	29	29	P	P	3.1	True
41	1059	1061	29	29	P	P	3.0	True
42	1068	1070	30	30	P	P	2.9	True
43	1077	1079	30	30	P	P	2.8	True
44	1086	1088	31	31	P	P	2.7	True
45	1096	1098	31	31	P	P	2.7	True
46	1106	1108	32	32	P	P	2.4	True
47	1116	1118	33	33	P	P	2.2	True
48	1127	1130	34	34	P	A	1.9	False
49	1139	1141	35	35	A	A	1.8	True
50	1151	1154	36	36	A	A	1.7	True
51	1165	1167	37	37	A	A	1.5	True
52	1179	1182	39	39	A	A	1.3	True
53	1195	1197	41	41	A	A	1.1	True
54	1212	1215	43	43	A	A	0.9	True
55	1232	1234	45	45	A	A	0.8	True
56	1253	1256	48	48	A	A	0.6	True
57	1279	1281	52	52	A	A	0.4	True
58	1308	1310	56	56	A	A	0.3	True
59	1342	1344	62	61	A	A	0.2	True
60	1385	1386	69	69	A	A	0.2	True
61	1440	1441	80	80	A	A	0.1	True
62	1524	1525	107	107	A	A	0.1	True
63	1654	1655	186	186	A	A	0.0	True

Science Grade 4 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	1050	1050	324	324	BB	BB	0.0	True
1	1050	1050	180	180	BB	BB	0.0	True
2	1050	1050	129	129	BB	BB	0.0	True
3	1050	1050	107	107	BB	BB	0.0	True
4	1050	1050	94	94	BB	BB	0.1	True
5	1050	1050	85	85	BB	BB	0.2	True
6	1050	1050	79	79	BB	BB	0.3	True
7	1050	1050	75	75	BB	BB	0.5	True
8	1068	1068	71	71	BB	BB	0.9	True
9	1095	1095	68	68	BB	BB	1.3	True
10	1120	1120	66	66	BB	BB	1.7	True
11	1144	1144	63	63	BB	BB	1.9	True
12	1166	1166	62	62	B	B	2.2	True
13	1187	1187	60	60	B	B	2.5	True
14	1207	1207	59	59	B	B	2.7	True
15	1227	1227	58	58	B	B	2.8	True
16	1245	1245	57	57	B	B	2.8	True
17	1264	1264	57	57	B	B	2.9	True
18	1282	1282	56	56	P	P	3.1	True
19	1299	1299	55	55	P	P	3.2	True
20	1316	1316	55	55	P	P	3.3	True
21	1334	1334	55	55	P	P	3.3	True
22	1350	1350	55	55	P	P	3.5	True
23	1367	1367	54	54	P	P	3.6	True
24	1384	1384	54	54	P	P	3.8	True
25	1401	1401	54	54	P	P	3.9	True
26	1417	1417	54	54	P	P	4.1	True
27	1434	1434	55	55	P	P	4.1	True
28	1451	1451	55	55	P	P	4.0	True
29	1468	1468	55	55	P	P	4.0	True
30	1486	1486	56	56	A	A	4.0	True
31	1503	1503	56	56	A	A	3.9	True
32	1521	1521	57	57	A	A	3.8	True
33	1540	1540	58	58	A	A	3.6	True
34	1559	1559	59	59	A	A	3.3	True
35	1579	1579	60	60	A	A	2.9	True
36	1599	1599	61	61	A	A	2.6	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1621	1621	63	63	A	A	2.2	True
38	1644	1644	65	65	A	A	2.0	True
39	1669	1669	67	67	A	A	1.4	True
40	1695	1695	70	70	A	A	1.2	True
41	1724	1724	74	74	A	A	0.9	True
42	1757	1757	78	78	A	A	0.6	True
43	1794	1794	85	85	A	A	0.4	True
44	1838	1838	93	93	A	A	0.2	True
45	1894	1894	106	106	A	A	0.1	True
46	1970	1970	128	128	A	A	0.0	True
47	2098	2098	179	179	A	A	0.0	True
48	2313	2313	324	324	A	A	0.0	True

Science Grade 8 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	925	925	351	351	BB	BB	0.0	True
1	925	925	195	195	BB	BB	0.0	True
2	925	925	140	140	BB	BB	0.0	True
3	925	925	116	116	BB	BB	0.0	True
4	925	925	102	102	BB	BB	0.1	True
5	925	925	93	93	BB	BB	0.3	True
6	925	925	86	86	BB	BB	0.5	True
7	925	925	81	81	BB	BB	0.8	True
8	948	948	77	77	BB	BB	1.3	True
9	977	977	73	73	BB	BB	1.8	True
10	1004	1004	71	71	BB	BB	2.3	True
11	1029	1029	68	68	BB	BB	2.7	True
12	1053	1053	67	67	BB	BB	2.9	True
13	1076	1076	65	65	BB	BB	3.2	True
14	1097	1097	64	64	BB	BB	3.2	True
15	1118	1118	62	62	BB	BB	3.2	True
16	1138	1138	61	61	BB	BB	3.2	True
17	1157	1157	61	61	B	B	3.1	True
18	1176	1176	60	60	B	B	3.4	True
19	1195	1195	59	59	B	B	3.2	True
20	1213	1213	59	59	B	B	3.1	True
21	1231	1231	59	59	B	B	3.2	True
22	1249	1249	58	58	B	B	3.3	True
23	1267	1267	58	58	B	B	3.3	True
24	1285	1285	58	58	P	P	3.2	True
25	1302	1302	58	58	P	P	3.2	True
26	1320	1320	58	58	P	P	3.2	True
27	1338	1338	59	59	P	P	3.2	True
28	1356	1356	59	59	P	P	3.3	True
29	1374	1374	59	59	P	P	3.3	True
30	1393	1393	60	60	P	P	3.3	True
31	1411	1411	61	61	P	P	3.1	True
32	1431	1431	61	61	P	P	3.1	True
33	1451	1451	62	62	P	P	2.9	True
34	1471	1471	63	63	A	A	2.8	True
35	1493	1493	65	65	A	A	2.8	True
36	1515	1515	66	66	A	A	2.5	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1539	1539	68	68	A	A	2.3	True
38	1564	1564	71	71	A	A	2.1	True
39	1591	1591	73	73	A	A	1.9	True
40	1620	1620	77	77	A	A	1.6	True
41	1653	1653	81	81	A	A	1.4	True
42	1689	1689	86	86	A	A	1.0	True
43	1730	1730	93	93	A	A	0.7	True
44	1779	1779	102	102	A	A	0.5	True
45	1841	1841	116	116	A	A	0.3	True
46	1925	1925	140	140	A	A	0.1	True
47	2064	2064	195	195	A	A	0.0	True
48	2299	2299	351	351	A	A	0.0	True

APPENDIX U: OPPORTUNITY TO LEARN SURVEY

During the PSSA Spring administration, students responded to a survey aimed to collect information regarding their opportunity to learn (OTL) during the 2020–2021 school year. Students in grades 4 through 8 took the survey as a part of the PSSA mathematics tests. Results from surveys processed during the first reporting window (before July 14) are presented in this Appendix. Data is only reported for test-takers who responded to at least one of the survey questions. The total count of responses and complete responses are shown in Table U–1.

Table U–1. Survey Response Rate

Subject/ Grade	Total	Complete Survey	% Complete
Math Grade 4	86,854	68,972	79.4
Math Grade 5	86,362	69,055	80.0
Lower Math Total	**173,216**	**138,027**	**79.7**
Math Grade 6	84,526	67,604	80.0
Math Grade 7	84,201	67,197	79.8
Math Grade 8	81,448	65,597	80.5
Middle Math Total	**250,175**	**200,398**	**80.1**
Total	**423,391**	**338,425**	**79.9**

SUMMARY

For each survey question, a table reports the frequencies (counts) and percentage of responses for each option for lower math grade levels (grades 4 and 5) and middle math grade levels (grades 6, 7 and 8).

- The response rates were higher for online administrations (97.1%) than paper-based administrations (73.2%). Online response rates may be higher due to the survey placement at the beginning of the test. The response rates were consistent across grade levels.
- Students taking the paper-based survey tended to have lower rates of attending school in-person than students taking the online survey. Therefore, results are presented separately for grade levels and mode of administration.
- The majority of students responded that they attended school in-person 4 to 5 days per week. Between 10–12% of students responded that they have not attended school in-person at all. Survey results are reported by instructional mode.
- 41 to 44% of elementary students responded that they use the internet 0 or 1 day per week, whereas 22% of middle school students responded that they use the internet 0 or 1 day per week.
- 10% of elementary online test-takers responded that they do not use a device at all when they are not in a school building. The majority of these respondents were students who have attended school in-person.

RESULTS BY GRADE LEVEL AND MODE

Table U–2. Survey Results for Question 1 by Grade Level and Mode

Question: In the past month, how many days have you attended school in a school building?

Option Text	Lower Math Online	Lower Math Paper	Middle Math Online	Middle Math Paper
I usually attended school in a school building every day (5 days per week)	27545 (68.2%)	58068 (59.5%)	46666 (61.6%)	61927 (49.7%)
I usually attended school in a school building 4 days per week	6304 (15.6%)	20167 (20.7%)	12391 (16.3%)	28925 (23.2%)
I usually attended school in a school building 3 days per week	681 (1.7%)	909 (0.9%)	1997 (2.6%)	3560 (2.9%)
I usually attended school in a school building 2 days per week	1148 (2.8%)	4657 (4.8%)	4660 (6.1%)	8623 (6.9%)
I usually attended school in a school building 1 day per week	317 (0.8%)	583 (0.6%)	829 (1.1%)	1148 (0.9%)
I have not attended school in a school building at all	4296 (10.6%)	9931 (10.2%)	9171 (12.1%)	16029 (12.9%)
Blank	96 (0.2%)	3325 (3.4%)	79 (0.1%)	4393 (3.5%)

Table U–3. Survey Results for Question 2 by Grade Level and Mode

Question: In the past month, how many days have you used the Internet for schoolwork outside of a school building?

Option Text	Lower Math Online	Lower Math Paper	Middle Math Online	Middle Math Paper
I have used the Internet every day (7 days per week)	4835 (12.0%)	8014 (8.2%)	13630 (18.0%)	20445 (16.4%)
I have used the Internet 4–6 days per week	11753 (29.1%)	22921 (23.5%)	29146 (38.5%)	40358 (32.4%)
I have used the Internet 2–3 days per week	7113 (17.6%)	20010 (20.5%)	16261 (21.5%)	31268 (25.1%)
I have used the Internet 0–1 days per week	16487 (40.8%)	42821 (43.9%)	16522 (21.8%)	27685 (22.2%)
Blank	199 (0.5%)	3874 (4.0%)	234 (0.3%)	4849 (3.9%)

Table U–4. Survey Results for Question 3 by Grade Level and Mode

Question: When you are not in a school building, what device do you use most often to complete your schoolwork?

Option Text	Lower Math Online	Lower Math Paper	Middle Math Online	Middle Math Paper
I use a personal computer (PC), Laptop, Chromebook, iPad, or other tablet	32814 (81.2%)	85420 (87.5%)	63935 (84.4%)	108346 (87.0%)
I use a smartphone (cell phone)	1830 (4.5%)	3929 (4.0%)	7102 (9.4%)	10375 (8.3%)
I am not sure what kind of device I use	1453 (3.6%)	1619 (1.7%)	1590 (2.1%)	1607 (1.3%)
I do not use a device when I am not in a school building	4020 (10.0%)	5739 (5.9%)	2860 (3.8%)	3391 (2.7%)
Blank	270 (0.7%)	933 (1.0%)	306 (0.4%)	886 (0.7%)

Table U–5. Survey Results for Question 4 by Grade Level and Mode

Question: In the past month, where have you completed most of your schoolwork?

Option Text	Lower Math Online	Lower Math Paper	Middle Math Online	Middle Math Paper
in my own home	10670 (26.4%)	22225 (22.8%)	27222 (35.9%)	42578 (34.2%)
at the home of a friend, neighbor, or relative	484 (1.2%)	1844 (1.9%)	756 (1.0%)	2338 (1.9%)
at the place where my parent/guardian works	305 (0.8%)	974 (1.0%)	354 (0.5%)	1279 (1.0%)
at a library, store, restaurant, or other public building	216 (0.5%)	2614 (2.7%)	257 (0.3%)	1728 (1.4%)
in a school building	28474 (70.5%)	69193 (70.9%)	46939 (61.9%)	75992 (61.0%)
Blank	238 (0.6%)	790 (0.8%)	265 (0.3%)	690 (0.6%)

Table U–6. Survey Results for Question 5 by Grade Level and Mode

Question: Which statement best describes how comfortable you are with using online tools for schoolwork (such as Zoom, Schoology, Google Meet, or Teams)?

Option Text	Lower Math Online	Lower Math Paper	Middle Math Online	Middle Math Paper
I feel very comfortable using online tools for schoolwork	20300 (50.3%)	47314 (48.5%)	34830 (46.0%)	54321 (43.6%)
I feel somewhat comfortable using online tools for schoolwork	16861 (41.7%)	40304 (41.3%)	34187 (45.1%)	56779 (45.6%)
I do not feel comfortable using online tools for schoolwork	2198 (5.4%)	7887 (8.1%)	5495 (7.3%)	11267 (9.0%)
I have not used online tools for schoolwork	813 (2.0%)	1333 (1.4%)	979 (1.3%)	1497 (1.2%)
Blank	215 (0.5%)	802 (0.8%)	302 (0.4%)	741 (0.6%)

Table U–7. Survey Results for Question 6 by Grade Level and Mode

Question: In the past month, I have understood almost all my assignments.

Option Text	Lower Math Online	Lower Math Paper	Middle Math Online	Middle Math Paper
Strongly agree	18770 (46.5%)	39167 (40.1%)	27571 (36.4%)	38487 (30.9%)
Somewhat agree	18284 (45.3%)	46558 (47.7%)	38013 (50.2%)	62019 (49.8%)
Somewhat disagree	2331 (5.8%)	6965 (7.1%)	7578 (10.0%)	15506 (12.4%)
Strongly disagree	686 (1.7%)	1828 (1.9%)	2217 (2.9%)	4073 (3.3%)
Blank	316 (0.8%)	3122 (3.2%)	414 (0.5%)	4520 (3.6%)

Table U–8. Survey Results for Question 7 by Grade Level and Mode

Question: In the past month, I have completed almost all my assignments.

Option Text	Lower Math Online	Lower Math Paper	Middle Math Online	Middle Math Paper
Strongly agree	26215 (64.9%)	60848 (62.3%)	41662 (55.0%)	66101 (53.0%)
Somewhat agree	11199 (27.7%)	28973 (29.7%)	24813 (32.7%)	40489 (32.5%)
Somewhat disagree	1946 (4.8%)	5441 (5.6%)	6810 (9.0%)	12512 (10.0%)
Strongly disagree	677 (1.7%)	1405 (1.4%)	2057 (2.7%)	3609 (2.9%)
Blank	350 (0.9%)	973 (1.0%)	451 (0.6%)	1894 (1.5%)

Table U–9. Survey Results for Question 8 by Grade Level and Mode

Question: I feel positive about my learning so far this school year.

Option Text	Lower Math Online	Lower Math Paper	Middle Math Online	Middle Math Paper
Strongly agree	24902 (61.7%)	52949 (54.2%)	29880 (39.4%)	41561 (33.4%)
Somewhat agree	12051 (29.8%)	35079 (35.9%)	32247 (42.5%)	55502 (44.5%)
Somewhat disagree	2115 (5.2%)	6409 (6.6%)	9015 (11.9%)	18395 (14.8%)
Strongly disagree	792 (2.0%)	2260 (2.3%)	3704 (4.9%)	7213 (5.8%)
Blank	527 (1.3%)	943 (1.0%)	947 (1.2%)	1934 (1.6%)

Table U–10. Survey Results for Question 9 by Grade Level and Mode

Question: Indicate the month in which you took this assessment. (*Select the month when you started the assessment if the administration crossed over two months*.)

Option Text	Lower Math Online	Lower Math Paper	Middle Math Online	Middle Math Paper
April	14035 (33.9%)	35065 (26.6%)	31989 (40.9%)	43873 (25.5%)
May	24132 (58.3%)	54722 (41.5%)	40504 (51.7%)	69801 (40.6%)
June	3196 (7.7%)	5821 (4.4%)	5778 (7.4%)	7292 (4.2%)
July	4 (0.0%)	107 (0.1%)	16 (0.0%)	302 (0.2%)
August		36 (0.0%)		61 (0.0%)
September		24 (0.0%)		41 (0%)
Blank		36074 (27.4%)		50518 (29.4%)

Note. All data is reported in this table. If an online test-taker omitted this question, the month was populated using the testing start time.

RESULTS BY INSTRUCTIONAL MODE

Results are disaggregated and presented for each instructional mode (in-person, hybrid, and virtual) that students selected in survey question 1. Students that indicated that they attended school in-person every day were categorized as in-person, students that indicated that they did not attend school in-person at all were classified as virtual, and students that indicated that they attended school 1 to 4 days per week were classified as hybrid.

Table U–11. Survey Results for Question 2 by Grade Level and Instructional Mode

Question: In the past month, how many days have you used the Internet for schoolwork outside of a school building?

Option Text	Lower Math In-Person	Lower Math Hybrid	Lower Math Virtual	Middle Math In-Person	Middle Math Hybrid	Middle Math Virtual
I have used the Internet every day (7 days per week)	5998 (7.0%)	2896 (8.3%)	3877 (27.3%)	14811 (13.6%)	8980 (14.5%)	10173 (40.4%)
I have used the Internet 4–6 days per week	16477 (19.2%)	8941 (25.7%)	9143 (64.3%)	34694 (31.9%)	22149 (35.6%)	12531 (49.7%)
I have used the Internet 2–3 days per week	17942 (21.0%)	8600 (24.7%)	485 (3.4%)	28153 (25.9%)	18019 (29%)	1273 (5.1%)
I have used the Internet 0–1 days per week	44577 (52.1%)	13996 (40.3%)	604 (4.2%)	30449 (28.0%)	12627 (20.3%)	1058 (4.2%)
Blank	619 (0.7%)	333 (1.0%)	118 (0.8%)	486 (0.4%)	358 (0.6%)	165 (0.7%)

Table U–12. Survey Results for Question 3 by Grade Level and Instructional Mode

Question: When you are not in a school building, what device do you use most often to complete your schoolwork?

Option Text	Lower Math In-Person	Lower Math Hybrid	Lower Math Virtual	Middle Math In-Person	Middle Math Hybrid	Middle Math Virtual
I use a personal computer (PC), Laptop, Chromebook, iPad, or other tablet	70532 (82.4%)	31906 (91.8%)	13547 (95.2%)	90789 (83.6%)	55491 (89.3%)	23633 (93.8%)
I use a smartphone (cell phone)	3759 (4.4%)	1093 (3.1%)	230 (1.6%)	10810 (10.0%)	4331 (7.0%)	¬950 (3.8%)
I am not sure what kind of device I use	2254 (2.6%)	600 (1.7%)	187 (1.3%)	1990 (1.8%)	851 (1.4%)	278 (1.1%)
I do not use a device when I am not in a school building	8570 (10.0%)	892 (2.6%)	173 (1.2%)	4572 (4.2%)	1193 (1.9%)	255 (1.0%)
Blank	498 (0.6%)	275 (0.8%)	90 (0.6%)	432 (0.4%)	267 (0.4%)	84 (0.3%)

Table U–13. Survey Results for Question 4 by Grade Level and Instructional Mode

Question: In the past month, where have you completed most of your schoolwork?

Option Text	Lower Math In-Person	Lower Math Hybrid	Lower Math Virtual	Middle Math In-Person	Middle Math Hybrid	Middle Math Virtual
in my own home	9826 (11.5%)	9385 (27.0%)	13206 (92.8%)	20242 (18.6%)	23914 (38.5%)	24177 (95.9%)
at the home of a friend, neighbor, or relative	629 (0.7%)	687 (2.0%)	526 (3.7%)	775 (0.7%)	883 (1.4%)	512 (2.0%)
at the place where my parent/guardian works	331 (0.4%)	308 (0.9%)	146 (1%)	303 (0.3%)	341 (0.5%)	147 (0.6%)
at a library, store, restaurant, or other public building	674 (0.8%)	480 (1.4%)	110 (0.8%)	573 (0.5%)	476 (0.8%)	72 (0.3%)
in a school building	73606 (86.0%)	23608 (67.9%)	187 (1.3%)	86263 (79.4%)	36215 (58.3%)	234 (0.9%)
Blank	547 (0.6%)	298 (0.9%)	52 (0.4%)	437 (0.4%)	304 (0.5%)	58 (0.2%)

Table U–14. Survey Results for Question 5 by Grade Level and Instructional Mode

Question: Which statement best describes how comfortable you are with using online tools for schoolwork (such as Zoom, Schoology, Google Meet, or Teams)?

Option Text	Lower Math In-Person	Lower Math Hybrid	Lower Math Virtual	Middle Math In-Person	Middle Math Hybrid	Middle Math Virtual
I feel very comfortable using online tools for schoolwork	40235 (47.0%)	16518 (47.5%)	8233 (57.9%)	46941 (43.2%)	26308 (42.3%)	12913 (51.2%)
I feel somewhat comfortable using online tools for schoolwork	36932 (43.1%)	14779 (42.5%)	5027 (35.3%)	50471 (46.5%)	29108 (46.8%)	10296 (40.9%)
I do not feel comfortable using online tools for schoolwork	6500 (7.6%)	2794 (8.0%)	680 (4.8%)	9403 (8.7%)	5736 (9.2%)	1503 (6.0%)
I have not used online tools for schoolwork	1366 (1.6%)	396 (1.1%)	222 (1.6%)	1286 (1.2%)	643 (1.0%)	412 (1.6%)
Blank	580 (0.7%)	279 (0.8%)	65 (0.5%)	492 (0.5%)	338 (0.5%)	76 (0.3%)

Table U–15. Survey Results for Question 6 by Grade Level and Instructional Mode

Question: In the past month, I have understood almost all my assignments.

Option Text	Lower Math In-Person	Lower Math Hybrid	Lower Math Virtual	Middle Math In-Person	Middle Math Hybrid	Middle Math Virtual
Strongly agree	38233 (44.7%)	13037 (37.5%)	6002 (42.2%)	39526 (36.4%)	17646 (28.4%)	7715 (30.6%)
Somewhat agree	40207 (47.0%)	17574 (50.5%)	6772 (47.6%)	54668 (50.3%)	32060 (51.6%)	12988 (51.5%)
Somewhat disagree	5202 (6.1%)	3029 (8.7%)	999 (7%)	10893 (10.0%)	8791 (14.1%)	3299 (13.1%)
Strongly disagree	1377 (1.6%)	809 (2.3%)	266 (1.9%)	2744 (2.5%)	2514 (4.0%)	964 (3.8%)
Blank	594 (0.7%)	317 (0.9%)	188 (1.3%)	762 (0.7%)	1122 (1.8%)	234 (0.9%)

Table U–16. Survey Results for Question 7 by Grade Level and Instructional Mode

Question: In the past month, I have completed almost all my assignments.

Option Text	Lower Math In-Person	Lower Math Hybrid	Lower Math Virtual	Middle Math In-Person	Middle Math Hybrid	Middle Math Virtual
Strongly agree	57788 (67.5%)	19422 (55.9%)	8288 (58.3%)	63839 (58.8%)	29533 (47.5%)	12531 (49.7%)
Somewhat agree	22645 (26.5%)	11546 (33.2%)	4543 (31.9%)	33625 (31.0%)	21412 (34.5%)	8295 (32.9%)
Somewhat disagree	3523 (4.1%)	2694 (7.7%)	892 (6.3%)	8192 (7.5%)	7648 (12.3%)	3019 (12.0%)
Strongly disagree	998 (1.2%)	735 (2.1%)	291 (2.0%)	2111 (1.9%)	2386 (3.8%)	1093 (4.3%)
Blank	659 (0.8%)	369 (1.1%)	213 (1.5%)	826 (0.8%)	1154 (1.9%)	262 (1.0%)

Table U–17. Survey Results for Question 8 by Grade Level and Instructional Mode

Question: I feel positive about my learning so far this school year.

Option Text	Lower Math In-Person	Lower Math Hybrid	Lower Math Virtual	Middle Math In-Person	Middle Math Hybrid	Middle Math Virtual
Strongly agree	50956 (59.5%)	17683 (50.9%)	7796 (54.8%)	43054 (39.6%)	18372 (29.6%)	8498 (33.7%)
Somewhat agree	27975 (32.7%)	12768 (36.7%)	4855 (34.1%)	46971 (43.3%)	27876 (44.9%)	10743 (42.6%)
Somewhat disagree	4422 (5.2%)	2865 (8.2%)	959 (6.7%)	12801 (11.8%)	10180 (16.4%)	3911 (15.5%)
Strongly disagree	1516 (1.8%)	1041 (3.0%)	423 (3%)	4611 (4.2%)	4410 (7.1%)	1717 (6.8%)
Blank	744 (0.9%)	409 (1.2%)	194 (1.4%)	1156 (1.1%)	1295 (2.1%)	331 (1.3%)

APPENDIX V: EXAMINING STUDENT PERFORMANCE IN 2019 AND 2021 USING PROPENSITY SCORE MATCHING

SUMMARY

The purpose of the research study was to contextualize the results from the Spring 2021 PSSA. To explain observed differences in performance, we compared covariates and outcomes from two testing populations: students who were administered the PSSA in 2019 and students who were administered the PSSA in 2021 during the first reporting window[1]. The two groups of students were significantly different on most covariates prior to matching, including race/ethnicity, locale (e.g., city, suburb), mode of administration, English Learner (EL) status, and whether the student had an Individualized Educational Plan (IEP), was economically disadvantaged, or received an accommodated form. Moreover, the 2021 test-takers had higher scores on prior PSSA ELA and mathematics assessments. To develop comparable groups for analyses, propensity scores were estimated using covariates and then the two groups of test-takers were matched using the nearest neighbor algorithm. Once two comparable groups were developed, independent samples t-tests were employed to assess whether there were significant differences in mean scaled scores between the two groups. Results indicated that the 2021 test-takers earned significantly lower scores than students who tested in 2019 for all subjects and grade levels. These results provide evidence that the group of 2021 test-takers were not representative of previous PSSA administrations. Moreover, the continued disruption to learning may have caused the lower student performance on PSSA in 2021.

INTRODUCTION

Historically, the testing population for each subject and grade level has been consistent across years. However due to the circumstances surrounding the Covid-19 pandemic, there have been changes that impacted the consistency of the representativeness of the 2021 test-taking population. Specifically, testing windows were extended through the start of 2021–2022 academic year, allowing students to test over the summer and into the following school year. Consequentially, approximately 68% of the expected spring enrollment took the PSSA in spring and summer 2021. As such, the spring 2021 test-taking population was qualitatively and quantitatively different compared to prior spring administrations with respect to demographics, subgroup representation (i.e., IEP, EL, economically disadvantaged), and locale representation (i.e., city, suburb, town, rural).

There are many factors that may have influenced the test-taking population in the 2020–2021 school year. In Fall 2020, school districts employed a wide variety of instructional models, including a full in-school instructional model, a full virtual instructional model, and a hybrid model. Hybrid models were implemented in an assortment of ways across the state and were often specific to each district or school. During the spring 2021 PSSA administration, test-takers in grades 4 through 8 were asked to respond to a survey as a part of the PSSA mathematics exam (see Appendix U for complete results). The response rate was 80% across all grade levels. Results indicated that over 60% of students attended school in a school building every day, and approximately 10% did not attend school in a school building at all. These results and the results of other questions asked on the survey indicate that the test-takers represented a variety of modes and a variety of different experiences during the 2020–2021 school year.

In addition, the demographic composition of the spring 2021 testing population was substantially different from that of any prior spring administration. In prior administrations, approximately 20–23% of tests were taken by students in city settings (e.g., Pittsburgh, Philadelphia); however due to differences in instructional models, there was a very low proportion of students testing in city settings in 2021 (10–12%). The proportion of online test administrations exceeded all prior administrations, such that over 20% of the tests administered were computer-based. Inconsistent with prior administrations, over 70% of the testing population was comprised of white students and there was a lower proportion of Black and Hispanic students. The spring test-takers were a group who had an opportunity to test based on local decisions. These differences are critical to note because they contextualize observed differences in student performance on the PSSA.

[1] The study included students who tested prior to mid-July 2021; however, the same methods were followed with the total test-taking population (students who tested by the completion of the testing window in the end of September 2021). This included approximately 3,000 to 7,000 additional students for each subject and grade level. All results were comparable, with slightly lower mean scaled scores for the entire student population and similar effect sizes. Due to the confounding factors introduced by differences in timing of test administration, only results for the first reporting window were presented in this report.

Although it has been well-established that the Covid-19 pandemic is a wide-spread public health crisis, minority groups and vulnerable populations have undoubtedly been disproportionately impacted. Factors that contribute to an increased risk of contracting and dying from the virus include occupation and housing (Center for Disease Control [CDC], 2020) and may have also influenced local policies that informed school closures in the 2019–2020 academic year. Therefore, districts and communities have not been uniformly impacted by the pandemic, and we expect that some of these factors influenced whether students took the spring PSSA. Table V–9 presents a comparison between key demographic characteristics for the spring 2017 and spring 2021 administrations.

The purpose of this study was to compare the student performance on PSSA examinations in 2019 and 2021 to understand the influence that Covid-related disruptions had on the testing population with respect to mean performance and performance-level classification. This study employed PSM to develop two comparable groups that were then used to analyze differences in performance.

METHODS

DATA

The data used for this study included two groups of test-takers for each subject: test-takers from 2019 (hereinafter "control"), and test-takers from 2021 (hereinafter "treatment"). Test-takers were included if they met the following criteria: (a) earned a valid total score on the examination, and (b) had documentation of complete demographic and background characteristics. Any duplicate records that could not be resolved were removed from the dataset. The same inclusion and exclusion criteria were applied to both the control and treatment groups. Information about additional variables was provided to DRC by PDE and used for analyses, including demographic characteristics (i.e., race/ethnicity, gender), whether the student was identified as an EL or economically disadvantaged student, or whether the student had an IEP.

Data was merged with National Center for Educational Statistics (NCES) data that assigns districts into location classifications such as city, suburb, town, and rural based on the physical address of a district and its proximity to an urbanized area (NCES, 2020a). These classifications were used as covariates in PSM.

For students in grades 5 through 8 who had previously taken PSSA ELA and math tests, we aggregated and merged PSSA scores from 2 years prior (see Table V–1). For example, students in grade 5 in 2021 had previously taken the PSSA in 2019 while in 3rd grade; therefore, their scores on the ELA and math 3rd grade tests were included as covariates. In addition, before there was a substantial difference in the volume of online administrations in 2021 that were confounded by many Covid-related factors, we used mode data from the first year of testing in the PSM analyses. Students in 3rd and 4th grade in 2021 did not have any prior PSSA scores that could be used as covariates.

Table V–1. Prior Performance Covariate Descriptions by Grade Level

Grade Level (All Subjects)	Treatment Group Grade in 2019	Control Group Grade in 2017
Grade 3	-	-
Grade 4	-	-
Grade 5	3	3
Grade 6	4	4
Grade 7	5	5
Grade 8	6	6

Note. Students in grades 3 and 4 did not have prior PSSA scores included as covariates.

Table V–2 shows the final dataset counts for each subject and condition that were used for PSM. The subjects and grades presented with an asterisk indicate that PSM did not include any prior PSSA covariates. For this reason, the counts tended to be slightly higher for grades 3 and 4 than counts for grades 5 to 8.

Table V–2. Total Counts by Subject and Condition

Subject/ Grade	Control (2019)	Treatment (2021)
ELA Grade 3*	120,564	86,142
ELA Grade 4*	123,172	86,647
ELA Grade 5	115,359	79,701
ELA Grade 6	114,893	78,080
ELA Grade 7	113,029	78,004
ELA Grade 8	111,125	75,354
Math Grade 3*	120,604	86,236
Math Grade 4*	123,286	86,517
Math Grade 5	115,339	79,505
Math Grade 6	114,785	77,294
Math Grade 7	112,888	77,117
Math Grade 8	110,838	74,918
Science Grade 4*	123,093	86,006
Science Grade 8	110,421	74,090

*Subject/grade did not have prior PSSA covariates in PSM.

ANALYSES

The count of test-takers between the treatment and control group differs (see Table V–2), and as such, comparing mean student performance between the two groups would be inappropriate. Moreover, the two groups of test-takers differed on many background characteristics, as previously discussed. PSM was used to develop comparable groups for analyzing mean differences of the total scaled scores and analyzing differences in performance-level classifications. PSM allows researchers to model the conditional probability of assignment to a condition given a set of covariates (Rosenbaum & Rubin, 1983). For the current study, we modeled the probability of a student taking the PSSA based on the set of covariates presented in Table V–3. Unless otherwise specified, the covariates were provided by PDE.

Table V–3. Covariate Descriptions

Variable Category	Covariate	Values	Description
Race/Ethnicity	Asian	0/1	Mutually exclusive ethnicities included in analysis are Black/African American (not Hispanic), Hispanic, White/Caucasian (not Hispanic), Multi-Racial (not Hispanic), Asian (not Hispanic). Due to small counts, other races/ethnicities were considered as the reference group (Native Hawaiian or Pacific Islander and American Indian Alaskan Native).
	Black	0/1	
	Hispanic	0/1	
	Multi-Race	0/1	
	White	0/1	
Gender	Male	0/1	Genders included Male and Female and were defined according to student registration data. Female was used as the reference group.
District Location	City	0/1	NCES defines the district classifications as four mutually exclusive categories of school location: city, suburb, town, and rural. Schools are assigned to these categories in the NCES Common Core of Data based on the proximity to an urbanized area. Town was used as the reference group.
	Rural	0/1	
	Suburb	0/1	
	Town	0/1	
Subgroup	Economically Disadvantaged	0/1	Defines students from various poverty data sources, such as Temporary Assistance for Needy Families cases, census poor, Medicaid, children living in institutions for the neglected or delinquent, or those supported in foster homes. If such data are not available, defines students based on the most recent reliable data available (e.g., free and reduced-price lunch eligibility) (NCES, 2020b).
	English Learner	0/1	Defines students as English Learners (ELs) for the current administration. The classification of ELs does not include students who exited EL and are currently monitored, or students in Limited or Interrupted Formal Education (LIFE) programs.
	Individualized Education Plan	0/1	Identifies students enrolled in special education programs.
	Accommodations	0/1	Identifies whether the student received an accommodation for the test. Interaction variable between accommodation and IEP was included in the model.
	Spanish	0/1	Identifies whether the student received a form in Spanish. Spanish forms only apply to PSSA mathematics or science.
Prior PSSA**	ELA Performance	600–1800	Student's most recent ELA score. Linear and quadratic terms were included in the model.
	Math Performance	600–1800	Student's most recent math score. Linear and quadratic terms were included in the model.

***Note.* Prior PSSA covariates are only included for grades 5–8 due to data availability.

Propensity scores were calculated using a multinomial logistic model (see equation below). The model adequacy was examined by evaluating the area under the curve and the match quality on each covariate. To ensure that students at each propensity score level had equal probability of being in either condition group, common support techniques were employed. Specifically, after propensity scores were calculated, descriptive statistics for each condition were computed and the dataset was refined to include only students with propensity scores greater than the maximum of the minimum of propensity scores (by condition group) and the minimum of the maximum of propensity scores (by condition group).

$$Pr(y) = \frac{1}{1 + e^{-(B_1 x_1 + B_2 x_2 + \ldots + B_n x_n + B_0)}}$$

Once common support was established, propensity scores were matched (1:1) and a matched sample was created. The match quality was assessed for the covariates using chi-square tests for categorical variables and t-tests for continuous variables. The Bonferroni correction for family-wise error was applied when appropriate. In addition, PSM results were evaluated by comparing the pseudo-R^2 value from the logistic regression model on the unmatched raw data and the same value from the matched data (Staffa & Zurakowski, 2018). The matched pseudo-R^2 should be considerably lower than that of the unmatched data and should be close to 0 implying that the covariates do not predict the treatment. We calculated and compared McFadden's pseudo-R^2 for the total (unmatched) dataset and for the matched dataset (McFadden, 1974).

Then, additional analyses were conducted to assess differences in outcomes (assessment scaled scores and performance-level classifications). Specifically, independent-samples t-tests were conducted to determine whether there were significant differences in the outcome variable (assessment scaled score) between the treatment conditions. Lastly, chi-square tests were conducted to determine whether there were significant differences in the percentages of students in each performance-level classification. The Bonferroni correction for family-wise error was applied when appropriate.

SAS was used for all data aggregation and management. Matching samples and conducting analyses on outcome variables was conducted using MatchIt in R (Ho, Imai, King & Stuart, 2011).

RESULTS

After computing propensity scores, we established common support by refining both datasets. After computing propensity scores and ensuring common support, the match quality was assessed (see Table V–4). The means of dichotomous variables represent proportions, and the means of continuous variables represent the average within the dataset. For dichotomous variables, two-proportion Z-tests were conducted to assess whether the proportions between the control and treatment groups were significantly different. For continuous variables, independent sample t-tests were used to test whether the means between the two groups were significantly different. Then, mean difference and Cohen's D were calculated to assess match quality (see Table V–4).

Although there were covariates across each subject and grade level that indicated significant differences between the control and treatment groups, all effect sizes were low and met the criterion threshold of less than 0.10. In fact, all effect sizes were less than 0.05. The maximum and average effect sizes are shown in Table V–5.

Even after controlling for population differences using PSM, there were significant differences with respect to prior performance for grades 5–8 across all subjects. The treatment group (2021) is a significantly higher achieving group than the control group, indicating both quantitative and qualitative differences between the 2019 and 2021 population of test-takers.

Table V–4. Covariate Quality

Subject/Grade	Covariate	Control Mean	Control SD	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
ELA Grade 3**	Asian	0.043	0.204	0.044	0.205	0.320	0.001	0.003
(N=86141)	Black	0.091	0.288	0.091	0.288	0.001	0.000	0.000
	Hispanic	0.095	0.293	0.097	0.296	3.180	0.003	0.009
	Multi-race	0.050	0.218	0.050	0.218	0.040	0.000	0.001
	White	0.718	0.450	0.715	0.452	2.764	-0.004	-0.008
	Male	0.507	0.500	0.506	0.500	0.037	-0.001	-0.001
	Ec. Disadvantaged	0.403	0.490	0.402	0.490	0.256	-0.001	-0.002
	EL	0.036	0.186	0.038	0.192	6.505	0.002	0.012
	IEP	0.151	0.358	0.152	0.359	0.095	0.001	0.001
	Accommodations	0.172	0.377	0.172	0.377	0.002	0.000	0.000
	City	0.111	0.314	0.111	0.314	0.000	0.000	0.000
	Rural	0.178	0.382	0.178	0.382	0.003	0.000	0.000
	Suburb	0.609	0.488	0.610	0.488	0.578	0.002	0.004
	Town	0.101	0.301	0.101	0.302	0.028	0.000	0.001
ELA Grade 4**	Asian	0.042	0.202	0.043	0.203	0.690	0.001	0.004
(N=86641)	Black	0.092	0.289	0.092	0.289	0.003	0.000	0.000
	Hispanic	0.094	0.292	0.095	0.293	0.312	0.001	0.003
	Multi-race	0.049	0.215	0.049	0.215	0.024	0.000	0.001
	White	0.721	0.449	0.719	0.449	0.751	-0.002	-0.004
	Male	0.510	0.500	0.509	0.500	0.083	-0.001	-0.001
	Ec. Disadvantaged	0.396	0.489	0.395	0.489	0.009	0.000	0.000
	EL	0.034	0.180	0.036	0.186	6.098	0.002	0.012
	IEP	0.169	0.375	0.168	0.374	0.202	-0.001	-0.002
	Accommodations	0.210	0.407	0.210	0.407	0.011	0.000	0.001
	City	0.108	0.310	0.108	0.310	0.000	0.000	0.000
	Rural	0.183	0.387	0.183	0.387	0.003	0.000	0.000
	Suburb	0.607	0.488	0.608	0.488	0.159	0.001	0.002
	Town	0.100	0.300	0.101	0.302	1.112	0.002	0.005

Subject/Grade	Covariate	Control Mean	Control SD	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
ELA Grade 5	Asian	0.041	0.198	0.038	0.192	2.693	-0.003	-0.014
(N=78203)	Black	0.084	0.278	0.086	0.280	1.106	0.002	0.006
	Hispanic	0.093	0.290	0.087	0.282	3.605*	-0.005	-0.018
	Multi-race	0.051	0.219	0.048	0.214	2.359	-0.003	-0.012
	White	0.729	0.444	0.738	0.440	4.020*	0.009	0.020
	Male	0.511	0.500	0.509	0.500	0.880	-0.002	-0.004
	Ec. Disadvantaged	0.394	0.489	0.387	0.487	3.188*	-0.008	-0.016
	EL	0.027	0.161	0.025	0.155	2.337	-0.002	-0.012
	IEP	0.180	0.384	0.174	0.379	2.795	-0.005	-0.014
	Accommodations	0.193	0.394	0.187	0.390	3.089*	-0.006	-0.016
	City	0.100	0.300	0.101	0.301	0.807	0.001	0.004
	Rural	0.196	0.397	0.190	0.392	3.165*	-0.006	-0.016
	Suburb	0.594	0.491	0.604	0.489	4.168*	0.010	0.021
	Town	0.108	0.310	0.105	0.307	1.672	-0.003	-0.008
	ELA Score	1052.278	105.870	1054.164	105.773	-3.524*	1.886	0.018
	Math Score	1044.313	121.502	1045.970	121.442	-2.697	1.657	0.014
	Prior Mode	0.017	0.128	0.020	0.141	5.153*	0.004	0.026
ELA Grade 6	Asian	0.042	0.201	0.039	0.195	2.777	-0.003	-0.014
(N=76463)	Black	0.086	0.280	0.086	0.281	0.283	0.000	0.001
	Hispanic	0.092	0.289	0.087	0.282	3.145*	-0.005	-0.016
	Multi-race	0.049	0.215	0.045	0.208	3.023*	-0.003	-0.016
	White	0.730	0.444	0.740	0.439	4.634*	0.011	0.024
	Male	0.515	0.500	0.511	0.500	1.381	-0.004	-0.007
	Ec. Disadvantaged	0.399	0.490	0.390	0.488	3.684*	-0.009	-0.019
	EL	0.021	0.142	0.020	0.141	0.741	-0.001	-0.004
	IEP	0.178	0.383	0.169	0.375	4.747*	-0.009	-0.024
	Accommodations	0.171	0.376	0.164	0.370	3.857*	-0.007	-0.020
	City	0.100	0.300	0.100	0.300	0.154	0.000	0.001
	Rural	0.205	0.404	0.194	0.395	5.474*	-0.011	-0.028
	Suburb	0.581	0.493	0.599	0.490	6.879*	0.017	0.035
	Town	0.110	0.313	0.108	0.310	1.542	-0.003	-0.008
	ELA Score	1048.978	109.925	1050.749	108.862	-3.166*	1.771	0.016
	Math Score	1010.730	121.064	1013.300	120.945	-4.154*	2.571	0.021
	Prior Mode	0.018	0.132	0.022	0.146	5.655*	0.004	0.029

Subject/Grade	Covariate	Control Mean	Control SD	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
ELA Grade 7	Asian	0.041	0.198	0.038	0.191	2.804	-0.003	-0.014
(N=75484)	Black	0.086	0.281	0.087	0.282	0.393	0.001	0.002
	Hispanic	0.087	0.282	0.082	0.275	3.359*	-0.005	-0.017
	Multi-race	0.045	0.208	0.042	0.200	3.345*	-0.004	-0.017
	White	0.738	0.440	0.749	0.433	4.846*	0.011	0.025
	Male	0.521	0.500	0.513	0.500	2.910	-0.008	-0.015
	Ec. Disadvantaged	0.397	0.489	0.383	0.486	5.435*	-0.014	-0.028
	EL	0.019	0.137	0.018	0.134	1.217	-0.001	-0.006
	IEP	0.173	0.378	0.163	0.370	5.243*	-0.010	-0.027
	Accommodations	0.159	0.365	0.150	0.357	4.752*	-0.009	-0.024
	City	0.098	0.297	0.097	0.297	0.191	0.000	-0.001
	Rural	0.207	0.405	0.198	0.398	4.349*	-0.009	-0.022
	Suburb	0.575	0.494	0.589	0.492	5.405*	0.014	0.028
	Town	0.115	0.319	0.116	0.320	0.467	0.001	0.003
	ELA Score	1039.265	103.816	1042.677	104.047	-6.377*	3.412	0.033
	Math Score	1007.299	116.950	1010.750	117.403	-5.722*	3.451	0.030
	Prior Mode	0.026	0.160	0.028	0.165	1.791	0.002	0.009
ELA Grade 8	Asian	0.042	0.200	0.039	0.193	3.215*	-0.003	-0.017
(N=73913)	Black	0.091	0.288	0.089	0.285	1.661	-0.003	-0.009
	Hispanic	0.088	0.283	0.082	0.275	3.982*	-0.006	-0.021
	Multi-race	0.041	0.198	0.039	0.193	2.138	-0.002	-0.011
	White	0.735	0.441	0.749	0.434	6.070*	0.014	0.032
	Male	0.521	0.500	0.519	0.500	0.505	-0.001	-0.003
	Ec. Disadvantaged	0.387	0.487	0.370	0.483	6.729*	-0.017	-0.035
	EL	0.017	0.127	0.016	0.126	0.431	0.000	-0.002
	IEP	0.177	0.382	0.161	0.367	8.136*	-0.016	-0.042
	Accommodations	0.160	0.366	0.146	0.353	7.473*	-0.014	-0.039
	City	0.101	0.302	0.101	0.302	0.052	0.000	0.000
	Rural	0.210	0.408	0.202	0.401	4.135*	-0.009	-0.022
	Suburb	0.562	0.496	0.578	0.494	6.362*	0.016	0.033
	Town	0.119	0.324	0.119	0.324	0.113	0.000	-0.001
	ELA Score	1045.934	104.841	1049.626	103.567	-6.811*	3.692	0.035
	Math Score	993.869	117.917	997.966	117.468	-6.692*	4.097	0.035
	Prior Mode	0.042	0.201	0.047	0.212	4.416*	0.005	0.023

Subject/Grade	Covariate	Control Mean	Control SD	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
Math Grade 3**	Asian	0.044	0.206	0.044	0.206	0.007	0.000	0.001
(N=86235)	Black	0.091	0.288	0.092	0.288	0.016	0.000	0.001
	Hispanic	0.095	0.293	0.098	0.297	2.637	0.002	0.008
	Multi-race	0.051	0.219	0.050	0.218	0.368	-0.001	-0.003
	White	0.716	0.451	0.714	0.452	0.794	-0.002	-0.004
	Male	0.508	0.500	0.507	0.500	0.089	-0.001	-0.001
	Ec. Disadvantaged	0.403	0.490	0.402	0.490	0.170	-0.001	-0.002
	EL	0.037	0.189	0.038	0.192	2.007	0.001	0.007
	IEP	0.152	0.359	0.152	0.359	0.004	0.000	0.000
	Accommodations	0.191	0.393	0.190	0.393	0.164	-0.001	-0.002
	Spanish	0.002	0.041	0.002	0.048	8.206	0.001	0.014
	City	0.111	0.314	0.111	0.314	0.000	0.000	0.000
	Rural	0.179	0.383	0.178	0.383	0.051	0.000	-0.001
	Suburb	0.607	0.488	0.608	0.488	0.215	0.001	0.002
	Town	0.101	0.301	0.102	0.303	0.714	0.001	0.004
Math Grade 4**	Asian	0.043	0.203	0.043	0.204	0.009	0.000	0.001
(N=86516)	Black	0.091	0.288	0.091	0.287	0.040	0.000	-0.001
	Hispanic	0.094	0.292	0.095	0.294	0.728	0.001	0.004
	Multi-race	0.049	0.216	0.049	0.216	0.135	0.000	-0.002
	White	0.720	0.449	0.719	0.449	0.202	-0.001	-0.002
	Male	0.510	0.500	0.509	0.500	0.022	0.000	-0.001
	Ec. Disadvantaged	0.395	0.489	0.395	0.489	0.007	0.000	0.000
	EL	0.034	0.182	0.036	0.186	2.804	0.002	0.008
	IEP	0.170	0.375	0.168	0.374	0.819	-0.002	-0.004
	Accommodations	0.199	0.400	0.199	0.399	0.215	-0.001	-0.002
	Spanish	0.002	0.042	0.003	0.050	12.39*	0.001	0.017
	City	0.108	0.311	0.108	0.311	0.000	0.000	0.000
	Rural	0.185	0.388	0.184	0.388	0.015	0.000	-0.001
	Suburb	0.607	0.488	0.607	0.489	0.016	0.000	-0.001
	Town	0.098	0.297	0.101	0.301	4.467	0.003	0.010

Subject/Grade	Covariate	Control Mean	Control SD	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
Math Grade 5	Asian	0.042	0.200	0.039	0.193	2.820	-0.003	-0.014
(N=77881)	Black	0.084	0.277	0.086	0.281	1.989	0.003	0.010
	Hispanic	0.093	0.290	0.088	0.283	3.370*	-0.005	-0.017
	Multi-race	0.051	0.221	0.048	0.213	3.316*	-0.004	-0.017
	White	0.728	0.445	0.737	0.440	3.853*	0.009	0.019
	Male	0.511	0.500	0.509	0.500	0.791	-0.002	-0.004
	Ec. Disadvantaged	0.397	0.489	0.388	0.487	3.970*	-0.010	-0.020
	EL	0.026	0.160	0.025	0.156	1.699	-0.001	-0.009
	IEP	0.181	0.385	0.174	0.379	3.275*	-0.006	-0.017
	Accommodations	0.195	0.396	0.183	0.387	6.033*	-0.012	-0.031
	Spanish	0.000	0.010	0.000	0.009	0.258	0.000	0.000
	City	0.099	0.299	0.101	0.301	1.241	0.002	0.006
	Rural	0.195	0.396	0.189	0.392	2.921	-0.006	-0.015
	Suburb	0.593	0.491	0.605	0.489	4.875*	0.012	0.025
	Town	0.111	0.314	0.105	0.307	3.552*	-0.006	-0.018
	ELA Score	1052.329	106.325	1054.011	105.900	-3.127*	1.682	0.016
	Math Score	1044.456	121.654	1045.842	121.474	-2.249	1.385	0.011
	Prior Mode	0.017	0.129	0.020	0.139	3.917*	0.003	0.020
Math Grade 6	Asian	0.043	0.203	0.040	0.195	3.348*	-0.003	-0.017
(N=75621)	Black	0.087	0.282	0.086	0.280	0.659	-0.001	-0.004
	Hispanic	0.092	0.290	0.087	0.282	3.570*	-0.005	-0.018
	Multi-race	0.050	0.218	0.045	0.208	4.496*	-0.005	-0.023
	White	0.725	0.446	0.740	0.439	6.513*	0.015	0.033
	Male	0.516	0.500	0.512	0.500	1.415	-0.004	-0.007
	Ec. Disadvantaged	0.402	0.490	0.388	0.487	5.328*	-0.013	-0.027
	EL	0.021	0.143	0.020	0.141	0.905	-0.001	-0.005
	IEP	0.181	0.385	0.169	0.375	5.894*	-0.012	-0.030
	Accommodations	0.177	0.382	0.164	0.370	6.862*	-0.013	-0.035
	Spanish	0.000	0.013	0.000	0.011	0.626	0.000	0.000
	City	0.098	0.297	0.099	0.298	0.475	0.001	0.002
	Rural	0.207	0.405	0.194	0.395	6.399*	-0.013	-0.033
	Suburb	0.580	0.494	0.600	0.490	7.947*	0.020	0.041
	Town	0.111	0.315	0.108	0.310	2.405	-0.004	-0.013
	ELA Score	1048.705	110.391	1050.816	108.801	-3.745*	2.111	0.019
	Math Score	1010.064	121.546	1013.505	121.386	-5.509*	3.441	0.028
	Prior Mode	0.018	0.133	0.021	0.144	4.265*	0.003	0.022

Subject/Grade	Covariate	Control Mean	Control SD	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
Math Grade 7	Asian	0.041	0.199	0.038	0.192	3.309*	-0.003	-0.017
(N=75242)	Black	0.087	0.283	0.086	0.280	1.109	-0.002	-0.006
	Hispanic	0.087	0.282	0.082	0.274	4.014*	-0.006	-0.021
	Multi-race	0.045	0.207	0.042	0.200	2.941	-0.003	-0.015
	White	0.737	0.440	0.751	0.433	6.271*	0.014	0.032
	Male	0.521	0.500	0.515	0.500	2.203	-0.006	-0.011
	Ec. Disadvantaged	0.401	0.490	0.381	0.486	7.967*	-0.020	-0.041
	EL	0.019	0.136	0.018	0.133	1.075	-0.001	-0.005
	IEP	0.175	0.380	0.164	0.370	5.992*	-0.012	-0.031
	Accommodations	0.158	0.365	0.144	0.351	7.700*	-0.014	-0.040
	Spanish	0.000	0.014	0.000	0.013	0.378	0.000	0.000
	City	0.097	0.296	0.099	0.299	1.127	0.002	0.006
	Rural	0.210	0.407	0.200	0.400	4.683*	-0.010	-0.024
	Suburb	0.571	0.495	0.587	0.492	6.296*	0.016	0.032
	Town	0.117	0.322	0.115	0.318	1.691	-0.003	-0.009
	ELA Score	1038.107	103.177	1042.709	103.874	-8.623*	4.603	0.045
	Math Score	1005.826	116.225	1011.031	117.385	-8.643*	5.205	0.045
	Prior Mode	0.032	0.176	0.035	0.183	3.141*	0.003	0.016
Math Grade 8	Asian	0.043	0.203	0.039	0.193	4.051*	-0.004	-0.021
(N=73441)	Black	0.093	0.291	0.090	0.286	2.254	-0.003	-0.012
	Hispanic	0.090	0.286	0.082	0.275	5.011*	-0.007	-0.026
	Multi-race	0.042	0.200	0.039	0.194	2.572	-0.003	-0.013
	White	0.730	0.444	0.748	0.434	7.698*	0.018	0.040
	Male	0.524	0.499	0.521	0.500	1.149	-0.003	-0.006
	Ec. Disadvantaged	0.390	0.488	0.370	0.483	8.171*	-0.021	-0.043
	EL	0.017	0.130	0.017	0.128	0.952	-0.001	-0.005
	IEP	0.178	0.383	0.161	0.367	8.797*	-0.017	-0.046
	Accommodations	0.154	0.361	0.137	0.344	8.984*	-0.017	-0.047
	Spanish	0.000	0.012	0.000	0.012	0.000	0.000	0.000
	City	0.103	0.304	0.103	0.304	0.052	0.000	0.000
	Rural	0.213	0.410	0.202	0.402	5.158*	-0.011	-0.027
	Suburb	0.558	0.497	0.577	0.494	7.357*	0.019	0.038
	Town	0.118	0.323	0.118	0.322	0.299	-0.001	-0.002
	ELA Score	1045.248	105.417	1049.488	103.771	-7.768*	4.240	0.041
	Math Score	993.145	118.356	997.972	117.696	-7.837*	4.827	0.041
	Prior Mode	0.041	0.198	0.044	0.205	3.314*	0.004	0.017

Subject/Grade	Covariate	Control Mean	Control SD	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
Science Grade 4**	Asian	0.043	0.203	0.043	0.204	0.248	0.001	0.003
(N=85999)	Black	0.090	0.286	0.090	0.286	0.068	0.000	-0.001
	Hispanic	0.094	0.292	0.095	0.293	0.334	0.001	0.003
	Multi-race	0.048	0.214	0.048	0.215	0.037	0.000	0.001
	White	0.723	0.448	0.722	0.448	0.332	-0.001	-0.003
	Male	0.510	0.500	0.509	0.500	0.168	-0.001	-0.002
	Ec. Disadvantaged	0.394	0.489	0.394	0.489	0.007	0.000	0.000
	EL	0.034	0.182	0.035	0.185	1.797	0.001	0.007
	IEP	0.168	0.374	0.168	0.374	0.135	-0.001	-0.002
	Accommodations	0.174	0.380	0.174	0.380	0.000	0.000	0.000
	Spanish	0.002	0.044	0.003	0.051	7.875	0.001	0.013
	City	0.105	0.307	0.105	0.307	0.000	0.000	0.000
	Rural	0.185	0.388	0.185	0.388	0.053	0.000	-0.001
	Suburb	0.607	0.488	0.608	0.488	0.345	0.001	0.003
	Town	0.100	0.300	0.102	0.302	1.000	0.002	0.005
Science Grade 8	Asian	0.044	0.204	0.039	0.194	4.255*	-0.004	-0.022
(N=72665)	Black	0.092	0.289	0.088	0.284	2.311	-0.004	-0.012
	Hispanic	0.090	0.286	0.082	0.275	5.095*	-0.008	-0.027
	Multi-race	0.041	0.199	0.039	0.193	2.288	-0.002	-0.012
	White	0.731	0.443	0.749	0.434	7.792*	0.018	0.041
	Male	0.527	0.499	0.520	0.500	2.379	-0.006	-0.012
	Ec. Disadvantaged	0.392	0.488	0.368	0.482	9.235*	-0.024	-0.048
	EL	0.017	0.131	0.016	0.127	1.447	-0.001	-0.008
	IEP	0.178	0.382	0.160	0.367	8.950*	-0.018	-0.047
	Accommodations	0.129	0.336	0.114	0.318	8.754*	-0.015	-0.046
	Spanish	0.000	0.010	0.000	0.011	0.243	0.000	0.000
	City	0.102	0.302	0.101	0.302	0.226	0.000	-0.001
	Rural	0.212	0.409	0.203	0.402	4.226*	-0.009	-0.022
	Suburb	0.558	0.497	0.576	0.494	7.158*	0.019	0.038
	Town	0.121	0.327	0.119	0.324	1.120	-0.002	-0.006
	ELA Score	1045.293	105.655	1049.974	103.709	-8.522*	4.680	0.045
	Math Score	993.518	118.450	998.505	117.673	-8.053*	4.988	0.042
	Prior Mode	0.043	0.203	0.048	0.213	4.373*	0.005	0.023

*$p<.05$
**Subject/grade did not have prior PSSA covariates in PSM.

To evaluate the matched sample, we aim for the absolute value of Cohen's D effect size for each covariate to be less than 0.10 and the average effect size to be less than 0.05 (see Tables V–4 and V–5). Both criteria were met for all subjects and grade levels.

Table V–5. Average Mean Difference and Cohen's D to Support Covariate Balance

Subject/ Grade	Avg. Cohen's D	Max. Cohen's D
ELA Grade 3 (N=86141)	0.003	0.012
ELA Grade 4 (N=86641)	0.003	0.012
ELA Grade 5 (N=78203)	0.014	0.026
ELA Grade 6 (N=76463)	0.017	0.035
ELA Grade 7 (N=75484)	0.018	0.033
ELA Grade 8 (N=73913)	0.021	0.042
Math Grade 3 (N=86235)	0.003	0.014
Math Grade 4 (N=86516)	0.004	0.017
Math Grade 5 (N=77881)	0.015	0.031
Math Grade 6 (N=75621)	0.020	0.041
Math Grade 7 (N=75242)	0.022	0.045
Math Grade 8 (N=73441)	0.024	0.047
Science Grade 4 (N=85999)	0.003	0.013
Science Grade 8 (N=72665)	0.025	0.048

Table V–6 reports McFadden's pseudo-R^2 for the unmatched raw data and the matched raw data for each subject (McFadden, 1974). For each subject, the matched pseudo-R^2 is very close to 0, however the initial values for the total unmatched population are very low, possibly indicating that the PSM failed at creating two well-matched samples for comparison. On the other hand, the other evidence presented in Tables V–4 and V–5 support match quality by the small mean differences and effect sizes that meet acceptable criteria.

Table V–6. McFadden's Pseudo-R^2

Subject/Grade	Total R^2	Matched R^2
ELA Grade 3 (N=86141)	0.021	0.000
ELA Grade 4 (N=86641)	0.023	0.000
ELA Grade 5 (N=78203)	0.032	0.001
ELA Grade 6 (N=76463)	0.029	0.001
ELA Grade 7 (N=75484)	0.028	0.001
ELA Grade 8 (N=73913)	0.022	0.001
Math Grade 3 (N=86235)	0.021	0.000
Math Grade 4 (N=86516)	0.022	0.000
Math Grade 5 (N=77881)	0.029	0.001
Math Grade 6 (N=75621)	0.028	0.001
Math Grade 7 (N=75242)	0.024	0.001
Math Grade 8 (N=73441)	0.021	0.002
Science Grade 4 (N=85999)	0.023	0.000
Science Grade 8 (N=72665)	0.021	0.002

Independent samples t-tests were conducted to test whether there were significant differences in the scaled score between the control and treatment groups both before and after PSM was employed (see Table V–7). After controlling for differences in the demographic backgrounds of the two groups, we hypothesized that the matched samples would earn similar or lower mean scaled scores. Prior to employing PSM, the 2021 test-takers performed significantly lower than the 2019 test-takers ($p<.05$). After employing PSM, mean differences and effect sizes were larger. Although all differences were statistically significant, there were larger mean differences for math and science than for ELA ($p<.05$). These findings support that comparisons should not be made directly between the 2021 and 2019 test-takers, and after taking the differences in testing populations into account, the 2021 group performed significantly more poorly than the 2019 group. These findings provide some evidence of unfinished or disruption to learning in 2020–2021 school year.

Table V–7. T-test Results for Total Sample and Matched Sample

Subject/ Grade	Group	Control N	Control Mean	Control SD	Treatment N	Treatment Mean	Treatment SD	Mean Diff.	SE	T	Cohen's D
ELA	Matched	86141	1053.901	106.011	86141	1027.261	103.711	26.640	0.505	52.721*	-0.254
Grade 3	Total	120563	1039.018	108.919	86142	1027.260	103.710	11.758	0.473	24.884*	-0.110
ELA	Matched	86641	1049.422	109.628	86641	1018.369	104.871	31.053	0.515	60.248*	-0.289
Grade 4	Total	123169	1035.037	112.795	86647	1018.369	104.868	16.668	0.480	34.740*	-0.152
ELA	Matched	78203	1041.067	102.343	78203	1018.488	94.847	22.579	0.499	45.253*	-0.229
Grade 5	Total	115356	1030.750	106.136	79696	1018.319	94.834	12.431	0.459	27.094*	-0.122
ELA	Matched	76463	1049.872	105.257	76463	1026.123	100.494	23.749	0.526	45.125*	-0.231
Grade 6	Total	114892	1038.427	105.664	78074	1025.966	100.740	12.461	0.477	26.144*	-0.120
ELA	Matched	75484	1035.287	91.769	75484	1014.841	92.418	20.446	0.474	43.132*	-0.222
Grade 7	Total	113029	1030.159	95.596	77999	1014.272	92.481	15.887	0.436	36.401*	-0.168
ELA	Matched	73913	1037.040	114.556	73913	1013.309	103.215	23.731	0.567	41.841*	-0.218
Grade 8	Total	111124	1029.695	114.582	75353	1013.187	103.603	16.508	0.510	32.339*	-0.150
Math	Matched	86235	1043.589	122.546	86235	1003.019	120.550	40.570	0.585	69.305*	-0.334
Grade 3	Total	120604	1026.404	124.914	86235	1003.019	120.550	23.385	0.546	42.846*	-0.190
Math	Matched	86516	1010.691	122.684	86516	975.134	111.530	35.557	0.564	63.079*	-0.303
Grade 4	Total	123285	994.250	124.059	86516	975.134	111.530	19.116	0.518	36.884*	-0.161
Math	Matched	77881	1009.880	114.424	77881	977.400	109.953	32.480	0.569	57.118*	-0.289
Grade 5	Total	115337	995.537	117.218	79505	977.377	109.978	18.160	0.521	34.868*	-0.159
Math	Matched	75621	996.001	122.739	75621	955.534	103.632	40.467	0.584	69.274*	-0.356
Grade 6	Total	114762	983.606	119.081	77286	955.344	103.671	28.262	0.512	55.148*	-0.250
Math	Matched	75242	977.609	117.404	75242	943.645	108.740	33.964	0.583	58.219*	-0.300
Grade 7	Total	112888	970.219	120.003	77112	942.945	108.641	27.274	0.530	51.485*	-0.236
Math	Matched	73441	964.787	118.905	73441	924.575	106.571	40.212	0.589	68.248*	-0.356
Grade 8	Total	110835	955.638	116.357	74916	924.656	107.222	30.982	0.525	59.014*	-0.275
Science	Matched	85999	1448.468	169.901	85999	1400.933	160.327	47.535	0.797	59.673*	-0.288
Grade 4	Total	123090	1424.235	174.244	86006	1400.928	160.327	23.307	0.739	31.556*	-0.138
Science	Matched	72665	1336.677	183.487	72665	1297.379	191.522	39.298	0.984	39.940*	-0.210
Grade 8	Total	110414	1322.598	182.408	74088	1297.437	192.085	25.161	0.894	28.142*	-0.135

*$p<.05$

After conducting significance tests for scaled score differences between the control and treatment groups, we conducted chi-square tests to determine whether there were significant differences in the percentages of students in each performance level classification. Table V–8 shows the proportion of students classified into each of the four ordered performance levels (Below Basic, Basic, Proficient, and Advanced) for the control and treatment groups, and it shows the associated chi-square statistic. Across all subjects and grade levels, there were significant differences in the proportion of students earning each classification except for ELA grade 8 Below Basic and Math grade 5 Basic. In addition, we also conducted chi-square tests for the proportion of students who earned proficient or advanced classifications. The results showed that there were significant differences in the proportion of students who earned proficient or advanced scores for all subjects and grade levels. Moreover, the proportion of 2021 students earning proficient or advanced performance-level classifications was lower than that of 2019. Differences in percent proficiency tended to be larger for math than ELA.

Table V–8. Chi-square Test Results for Performance Level Differences

Subject/ Grade	Performance Level	Control N	Control Prop	Treatment N	Treatment Prop	x^2
ELA	Below Basic	6998	8.1%	11445	13.3%	1200.756*
Grade 3	Basic	20624	23.9%	23500	27.3%	251.953*
	Proficient	42095	48.9%	38625	44.8%	280.749*
	Advanced	16424	19.1%	12571	14.6%	615.666*
	Proficient/Advanced	58519	67.9%	51196	59.4%	1346.101*
ELA	Below Basic	6619	7.6%	9578	11.1%	596.275*
Grade 4	Basic	20086	23.2%	26899	31.0%	1355.322*
	Proficient	32893	38.0%	30999	35.8%	88.973*
	Advanced	27043	31.2%	19165	22.1%	1831.64*
	Proficient/Advanced	59936	69.2%	50164	57.9%	2378.985*
ELA	Below Basic	5150	6.6%	7146	9.1%	351.627*
Grade 5	Basic	22527	28.8%	26326	33.7%	429.542*
	Proficient	36595	46.8%	37624	48.1%	27.125*
	Advanced	13931	17.8%	7107	9.1%	2557.571*
	Proficient/Advanced	50526	64.6%	44731	57.2%	901.905*
ELA	Below Basic	2831	3.7%	4521	5.9%	408.076*
Grade 6	Basic	20932	27.4%	26283	34.4%	877.202*
	Proficient	33841	44.3%	31493	41.2%	147.377*
	Advanced	18859	24.7%	14166	18.5%	850.660*
	Proficient/Advanced	52700	68.9%	45659	59.7%	1412.798*
ELA	Below Basic	1272	1.7%	2404	3.2%	357.276*
Grade 7	Basic	25297	33.5%	31092	41.2%	950.484*
	Proficient	37152	49.2%	34027	45.1%	259.668*
	Advanced	11763	15.6%	7961	10.5%	843.071*
	Proficient/Advanced	48915	64.8%	41988	55.6%	1326.926*
ELA	Below Basic	6927	9.4%	7211	9.8%	6.304
Grade 8	Basic	20806	28.1%	26145	35.4%	889.589*
	Proficient	32627	44.1%	32056	43.4%	8.976*
	Advanced	13553	18.3%	8501	11.5%	1360.289*
	Proficient/Advanced	46180	62.5%	40557	54.9%	882.279*

Subject/ Grade	Performance Level	Control N	Control Prop	Treatment N	Treatment Prop	x^2
Math	Below Basic	15026	17.4%	25081	29.1%	3284.506*
Grade 3	Basic	17723	20.6%	18812	21.8%	41.168*
	Proficient	26896	31.2%	26249	30.4%	11.396*
	Advanced	26590	30.8%	16093	18.7%	3430.658*
	Proficient/Advanced	53486	62.0%	42342	49.1%	2916.599*
Math	Below Basic	17909	20.7%	27521	31.8%	2757.586*
Grade 4	Basic	23698	27.4%	26891	31.1%	284.743*
	Proficient	25871	29.9%	21117	24.4%	660.365*
	Advanced	19038	22.0%	10987	12.7%	2612.185*
	Proficient/Advanced	44909	51.9%	32104	37.1%	3837.007*
Math	Below Basic	13093	16.8%	22198	28.5%	3037.054*
Grade 5	Basic	25791	33.1%	25981	33.4%	1.041
	Proficient	24561	31.5%	19937	25.6%	672.751*
	Advanced	14436	18.5%	9765	12.5%	1067.454*
	Proficient/Advanced	38997	50.1%	29702	38.1%	2250.170*
Math	Below Basic	15889	21.0%	24277	32.1%	2384.964*
Grade 6	Basic	26462	35.0%	28367	37.5%	103.789*
	Proficient	18695	24.7%	16688	22.1%	148.643*
	Advanced	14575	19.3%	6289	8.3%	3817.459*
	Proficient/Advanced	33270	44.0%	22977	30.4%	2999.065*
Math	Below Basic	22869	30.4%	32169	42.8%	2477.422*
Grade 7	Basic	20693	27.5%	21208	28.2%	8.763*
	Proficient	20331	27.0%	15210	20.2%	966.111*
	Advanced	11349	15.1%	6655	8.8%	1390.205*
	Proficient/Advanced	31680	42.1%	21865	29.1%	2793.080*
Math	Below Basic	25385	34.6%	37385	50.9%	4005.787*
Grade 8	Basic	21172	28.8%	18773	25.6%	197.941*
	Proficient	17952	24.4%	12417	16.9%	1271.835*
	Advanced	8932	12.2%	4866	6.6%	1322.456*
	Proficient/Advanced	26884	36.6%	17283	23.5%	2984.666*
Science	Below Basic	2924	3.4%	5955	6.9%	1090.967*
Grade 4	Basic	11802	13.7%	13712	15.9%	167.862*
	Proficient	33453	38.9%	37698	43.8%	431.865*
	Advanced	37820	44.0%	28634	33.3%	2069.458*
	Proficient/Advanced	71273	82.9%	66332	77.1%	887.522*
Science	Below Basic	12044	16.6%	17790	24.5%	1392.439*
Grade 8	Basic	14947	20.6%	16236	22.3%	67.816*
	Proficient	26296	36.2%	23685	32.6%	207.951*
	Advanced	19378	26.7%	14954	20.6%	746.477*
	Proficient/Advanced	45674	62.9%	38639	53.2%	1398.317*

*$p < .05$

DISCUSSION

The results of this study provide some evidence of differences in student performance between two populations, likely influenced by the disruption to learning during the Covid-19 pandemic. In the educational measurement community, we acknowledge that student ability will likely be impacted by the disruption to the spring semester of the 2019–2020 school year and the non-streamlined approach to the reopening of Pennsylvania schools in the 2020–2021 school year.

This research study provides evidence that the group of 2019 test-takers and the group of 2021 test-takers were both qualitatively and quantitatively different. The students who tested in 2021 were mostly white, were from suburban or rural populations, and earned higher scores on prior PSSA tests in comparison to the 2019 test-takers. After attempting to control for these differences by developing comparable groups on key covariates, the groups still performed significantly differently for all subjects and grade levels. The 2021 test-takers earned lower scaled scores and were less likely to be categorized in the proficient and advanced performance level classifications. The percent classified as proficient and advanced was also lower. These findings suggest that the disruption to education from the pandemic may have influenced (among other factors) performance on the PSSA. Moreover, the differences in the magnitude of the findings between ELA and mathematics may suggest that student knowledge and skills were impacted differently for different subjects. Further research in this area is warranted.

There are several limitations to the results of this study. First, to assess match quality, we used several indices including mean differences, effect sizes, and pseudo-R^2 values. The initial pseudo-R^2 values for the total, unmatched population are very low. Although the match quality was also supported using alternative means, the pseudo-R^2 values are low. If one were to establish PSM within a high-stakes linking study, these values would be expected to be close to .9, in comparison to .02 found in this study. Although linking and equating is not the purpose of the current research study nor will this information be used for high-stakes decision-making, it is important to note that the initial pseudo-R^2 values do not suggest adequate matching results.

Secondly, it is important to note that neither students, communities, nor districts were randomly assigned to different instructional models. Districts and communities across the United States have been differently impacted by the pandemic due to a variety of factors. We did not have sufficient information to match each student to a single instructional model as these also changed over the course of the 2020–21 school year. For example, students in large city settings may have had less opportunity for in-person instructional models because students in large urban areas were impacted more heavily by Covid-19 outbreaks than students in small, rural communities. In addition, the 2021 test-takers represented a smaller subgroup of students that tested in spring and summer of 2021; therefore, the findings cannot be generalized to the population.

Although we cannot say how the students who did not test would have performed, we investigated differences in student performance between the first reporting window (students who tested before mid-July) and all test-takers (all students who tested by the completion of the testing window in the end of September). We conducted PSM on the entire group of 2021 test-takers using the same methods presented in this paper. There were approximately an additional 3,000–7,000 students who tested in each subject and grade level during the second reporting window (mid-July to end of September). Results were comparable, both in terms of adequate covariate representation and student performance (in terms of both scaled scores and performance level classification). Mean scaled scores tended to be slightly lower when using the entire group of test-takers, and effect sizes tended to be slightly increased. These results are not included in this paper due to additional confounding variables introduced by differences in examination timing.

Lastly, there are several assumptions of PSM analyses. PSM requires that all the variables that affect assignment to the treatment group are measured. In addition, because PSM is an application of regression analysis, one must also assume that the treated observation data reflects the population and data is missing at random. Due to the confounding variables discussed above, we acknowledge that not all variables that may impact assignment to the treatment group were included in the model. Factors such as community-level outbreak rate and local policy decisions for specific learning modalities along with individual, student-level factors such as recent or continued exposure undoubtedly impact whether a student is included in the treatment group. Furthermore, these factors also impact whether data is missing at random. While these two considerations limit the generalizability of the conclusions of this study, it is important to note that the purpose of this study was not to generalize conclusions about all Pennsylvania students, but to help contextualize results for a specific set of students at a specific time. The information presented in this study can help support the ongoing teaching and learning of students amidst the pandemic; the key purpose of this paper is to help explain the impact of the disruption to student leaning caused by the pandemic in order to support students in the future.

SUPPLEMENTAL INFORMATION

Table V–9. Composition of Students by Administration (in percentages)

Subject/ Grade	Group	Category	Spring 2021	Spring 2019	Spring 2018	Spring 2017
ELA Grade 3	Ethnicity	AIAN	0.13	0.14	0.14	0.16
		Asian	4.39	4.13	4.04	3.74
		Black	9.11	14.82	15.10	14.95
		Hispanic	9.69	12.63	12.17	11.53
		Multi-Race	5.00	5.10	4.79	4.67
		NHPI	0.10	0.09	0.08	0.07
		White	71.23	63.08	63.68	64.88
	Gender	Female	49.19	48.90	49.08	48.96
		Male	50.47	51.10	50.92	51.04
	Mode	CBT	21.33	3.39	2.33	1.18
		Paper	78.67	96.61	97.67	98.82
	Subgroup	Ec. Disadvantaged	40.05	49.10	50.85	49.78
		EL	3.81	4.87	4.38	3.58
		IEP	15.15	17.22	16.52	15.82
	Locale	City	11.10	22.95	23.13	22.89
		Rural	17.82	15.39	15.53	15.65
		Suburb	60.98	53.13	52.80	52.61
		Town	10.11	8.31	8.31	8.64
ELA Grade 4	Ethnicity	AIAN	0.14	0.15	0.15	0.15
		Asian	4.31	4.13	3.86	3.87
		Black	9.16	14.95	14.96	14.75
		Hispanic	9.47	12.67	11.90	11.45
		Multi-Race	4.86	4.74	4.66	4.44
		NHPI	0.08	0.07	0.07	0.09
		White	71.75	63.29	64.40	65.24
	Gender	Female	48.99	49.08	48.88	49.08
		Male	50.80	50.92	51.12	50.92
	Mode	CBT	22.93	3.77	2.41	1.24
		Paper	77.07	96.23	97.59	98.76
	Subgroup	Ec. Disadvantaged	39.46	48.84	50.71	48.86
		EL	3.57	4.51	4.04	2.99
		IEP	16.76	17.99	17.31	16.69
	Locale	City	10.83	22.78	22.61	22.50
		Rural	18.30	15.45	15.73	15.75
		Suburb	60.75	53.25	52.85	52.92
		Town	10.12	8.26	8.56	8.58

Subject/ Grade	Group	Category	Spring 2021	Spring 2019	Spring 2018	Spring 2017
ELA Grade 5	Ethnicity	AIAN	0.15	0.16	0.15	0.14
		Asian	4.22	3.94	3.98	3.86
		Black	8.99	14.93	14.74	14.38
		Hispanic	9.38	12.31	11.86	11.24
		Multi-Race	4.83	4.62	4.44	4.02
		NHPI	0.09	0.08	0.09	0.09
		White	72.06	63.95	64.75	66.26
	Gender	Female	48.88	48.85	48.99	49.02
		Male	50.85	51.15	51.01	50.98
	Mode	CBT	24.55	5.44	3.77	1.81
		Paper	75.45	94.56	96.23	98.19
	Subgroup	Ec. Disadvantaged	38.84	48.10	49.29	47.60
		EL	3.10	3.82	3.30	2.75
		IEP	17.57	18.06	17.34	16.73
	Locale	City	10.42	22.26	22.30	21.83
		Rural	18.56	15.66	15.74	16.05
		Suburb	60.72	53.26	53.12	53.20
		Town	10.31	8.50	8.54	8.65
ELA Grade 6	Ethnicity	AIAN	0.14	0.16	0.13	0.15
		Asian	4.31	4.05	3.92	3.89
		Black	9.04	14.56	14.34	14.30
		Hispanic	9.36	12.31	11.49	10.82
		Multi-Race	4.53	4.40	4.03	3.60
		NHPI	0.07	0.09	0.08	0.07
		White	72.22	64.43	66.00	67.18
	Gender	Female	48.56	48.89	48.98	48.94
		Male	51.11	51.11	51.02	51.06
	Mode	CBT	28.61	5.70	4.20	2.88
		Paper	71.39	94.30	95.80	97.12
	Subgroup	Ec. Disadvantaged	39.05	46.75	47.84	46.15
		EL	2.59	3.16	3.00	2.48
		IEP	17.10	17.57	17.00	16.43
	Locale	City	10.19	21.77	21.19	21.29
		Rural	18.96	15.70	16.12	16.23
		Suburb	60.25	53.53	53.56	53.30
		Town	10.61	8.58	8.72	8.80

Subject/ Grade	Group	Category	Spring 2021	Spring 2019	Spring 2018	Spring 2017
ELA Grade 7	Ethnicity	AIAN	0.13	0.15	0.16	0.14
		Asian	4.10	4.00	3.94	3.95
		Black	9.04	14.21	14.26	13.95
		Hispanic	8.94	11.88	11.21	10.52
		Multi-Race	4.16	4.03	3.63	3.15
		NHPI	0.08	0.09	0.06	0.08
		White	73.17	65.65	66.75	68.21
	Gender	Female	48.19	48.80	48.77	48.67
		Male	51.43	51.20	51.23	51.33
	Mode	CBT	32.30	6.23	4.78	3.83
		Paper	67.70	93.77	95.22	96.17
	Subgroup	Ec. Disadvantaged	38.47	45.21	46.76	44.89
		EL	2.37	3.20	2.78	2.40
		IEP	16.54	17.23	16.73	16.10
	Locale	City	9.87	20.68	21.06	20.52
		Rural	19.31	15.94	16.14	16.31
		Suburb	59.48	53.89	53.25	53.60
		Town	11.35	8.91	8.95	8.98
ELA Grade 8	Ethnicity	AIAN	0.14	0.15	0.13	0.14
		Asian	4.03	4.04	4.08	3.82
		Black	9.23	14.13	13.83	14.07
		Hispanic	8.88	11.72	10.85	10.05
		Multi-Race	3.88	3.65	3.22	2.77
		NHPI	0.10	0.08	0.08	0.08
		White	73.39	66.24	67.82	69.08
	Gender	Female	47.78	48.58	48.56	48.86
		Male	51.88	51.42	51.44	51.14
	Mode	CBT	32.76	6.13	4.87	4.22
		Paper	67.24	93.87	95.13	95.78
	Subgroup	Ec. Disadvantaged	37.40	44.09	45.36	43.63
		EL	2.13	3.05	2.63	2.46
		IEP	16.44	16.99	16.49	15.67
	Locale	City	10.18	20.84	20.21	19.99
		Rural	19.77	15.96	16.21	16.55
		Suburb	58.24	53.46	53.75	53.50
		Town	11.80	9.00	9.06	9.24

Subject/ Grade	Group	Category	Spring 2021	Spring 2019	Spring 2018	Spring 2017
Math Grade 3	Ethnicity	AIAN	0.13	0.14	0.14	0.15
		Asian	4.42	4.14	4.04	3.74
		Black	9.13	14.84	15.15	15.00
		Hispanic	9.72	12.64	12.19	11.56
		Multi-Race	4.98	5.10	4.79	4.67
		NHPI	0.10	0.09	0.08	0.07
		White	71.16	63.04	63.62	64.80
	Gender	Female	49.14	48.89	49.05	48.93
		Male	50.51	51.11	50.95	51.07
	Mode	CBT	21.35	3.48	2.42	1.20
		Paper	78.65	96.52	97.58	98.80
	Subgroup	Ec. Disadvantaged	40.07	49.10	50.89	49.83
		EL	3.81	4.88	4.40	3.61
		IEP	15.17	17.22	16.54	15.86
	Locale	City	11.15	22.97	23.20	22.97
		Rural	17.86	15.38	15.51	15.62
		Suburb	60.78	53.12	52.76	52.55
		Town	10.20	8.31	8.30	8.64
Math Grade 4	Ethnicity	AIAN	0.14	0.15	0.15	0.15
		Asian	4.32	4.13	3.86	3.88
		Black	9.07	14.96	15.02	14.79
		Hispanic	9.53	12.69	11.92	11.45
		Multi-Race	4.87	4.73	4.65	4.44
		NHPI	0.09	0.07	0.07	0.09
		White	71.70	63.26	64.33	65.20
	Gender	Female	48.91	49.06	48.86	49.03
		Male	50.81	50.94	51.14	50.97
	Mode	CBT	23.12	3.86	2.48	1.25
		Paper	76.88	96.14	97.52	98.75
	Subgroup	Ec. Disadvantaged	39.43	48.84	50.76	48.90
		EL	3.56	4.55	4.04	3.00
		IEP	16.76	17.99	17.33	16.71
	Locale	City	10.86	22.82	22.66	22.54
		Rural	18.43	15.42	15.72	15.72
		Suburb	60.63	53.24	52.82	52.88
		Town	10.08	8.25	8.55	8.59

Subject/ Grade	Group	Category	Spring 2021	Spring 2019	Spring 2018	Spring 2017
Math Grade 5	Ethnicity	AIAN	0.16	0.16	0.15	0.14
		Asian	4.27	3.95	3.98	3.87
		Black	9.04	14.94	14.76	14.41
		Hispanic	9.45	12.32	11.86	11.24
		Multi-Race	4.80	4.63	4.43	4.02
		NHPI	0.09	0.08	0.09	0.09
		White	71.91	63.92	64.74	66.22
	Gender	Female	48.82	48.83	48.97	48.99
		Male	50.90	51.17	51.03	51.01
	Mode	CBT	24.65	5.40	4.00	2.18
		Paper	75.35	94.60	96.00	97.82
	Subgroup	Ec. Disadvantaged	38.92	48.08	49.30	47.61
		EL	3.12	3.84	3.31	2.76
		IEP	17.57	18.06	17.34	16.73
	Locale	City	10.46	22.27	22.33	21.86
		Rural	18.49	15.67	15.73	16.03
		Suburb	60.73	53.26	53.09	53.17
		Town	10.33	8.50	8.54	8.67
Math Grade 6	Ethnicity	AIAN	0.14	0.16	0.14	0.15
		Asian	4.33	4.06	3.93	3.89
		Black	9.04	14.56	14.35	14.30
		Hispanic	9.41	12.32	11.52	10.84
		Multi-Race	4.52	4.40	4.02	3.60
		NHPI	0.07	0.09	0.08	0.07
		White	72.14	64.41	65.96	67.15
	Gender	Female	48.45	48.85	48.97	48.91
		Male	51.21	51.15	51.03	51.09
	Mode	CBT	28.74	5.46	4.12	2.75
		Paper	71.26	94.54	95.88	97.25
	Subgroup	Ec. Disadvantaged	38.98	46.71	47.84	46.12
		EL	2.58	3.19	3.03	2.49
		IEP	17.13	17.57	17.01	16.41
	Locale	City	10.09	21.78	21.22	21.31
		Rural	19.00	15.69	16.11	16.22
		Suburb	60.37	53.54	53.55	53.28
		Town	10.55	8.57	8.72	8.81

Subject/ Grade	Group	Category	Spring 2021	Spring 2019	Spring 2018	Spring 2017
Math Grade 7	Ethnicity	AIAN	0.13	0.15	0.16	0.14
		Asian	4.08	4.01	3.95	3.96
		Black	9.00	14.22	14.26	13.92
		Hispanic	8.97	11.89	11.23	10.54
		Multi-Race	4.16	4.03	3.63	3.14
		NHPI	0.07	0.09	0.06	0.08
		White	73.17	65.62	66.71	68.22
	Gender	Female	48.06	48.81	48.74	48.66
		Male	51.53	51.19	51.26	51.34
	Mode	CBT	32.45	5.79	4.64	3.54
		Paper	67.55	94.21	95.36	96.46
	Subgroup	Ec. Disadvantaged	38.37	45.18	46.76	44.87
		EL	2.33	3.21	2.80	2.41
		IEP	16.58	17.19	16.70	16.06
	Locale	City	9.98	20.70	21.09	20.49
		Rural	19.46	15.92	16.14	16.33
		Suburb	59.34	53.91	53.22	53.58
		Town	11.22	8.89	8.95	8.99
Math Grade 8	Ethnicity	AIAN	0.14	0.15	0.13	0.14
		Asian	4.09	4.05	4.08	3.83
		Black	9.32	14.12	13.86	14.05
		Hispanic	9.01	11.72	10.86	10.06
		Multi-Race	3.88	3.64	3.21	2.76
		NHPI	0.10	0.08	0.07	0.07
		White	73.13	66.25	67.78	69.08
	Gender	Female	47.63	48.58	48.53	48.80
		Male	52.04	51.42	51.47	51.20
	Mode	CBT	32.76	5.84	4.79	3.86
		Paper	67.24	94.16	95.21	96.14
	Subgroup	Ec. Disadvantaged	37.36	44.06	45.36	43.58
		EL	2.18	3.05	2.66	2.47
		IEP	16.40	16.95	16.47	15.65
	Locale	City	10.39	20.83	20.23	19.98
		Rural	19.75	15.95	16.20	16.57
		Suburb	58.24	53.49	53.74	53.48
		Town	11.62	9.01	9.06	9.25

Subject/ Grade	Group	Category	Spring 2021	Spring 2019	Spring 2018	Spring 2017
Science Grade 4	Ethnicity	AIAN	0.14	0.15	0.15	0.15
		Asian	4.33	4.14	3.86	3.88
		Black	8.96	14.96	15.00	14.80
		Hispanic	9.44	12.68	11.92	11.46
		Multi-Race	4.83	4.74	4.65	4.44
		NHPI	0.09	0.07	0.07	0.09
		White	71.94	63.26	64.34	65.18
	Gender	Female	48.92	49.07	48.86	49.05
		Male	50.81	50.93	51.14	50.95
	Mode	CBT	23.65	4.81	3.02	2.25
		Paper	76.35	95.19	96.98	97.75
	Subgroup	Ec. Disadvantaged	39.25	48.84	50.75	48.88
		EL	3.54	4.55	4.05	3.00
		IEP	16.74	17.99	17.31	16.68
	Locale	City	10.57	22.82	22.66	22.57
		Rural	18.46	15.42	15.71	15.73
		Suburb	60.80	53.25	52.83	52.86
		Town	10.17	8.24	8.55	8.59
Science Grade 8	Ethnicity	AIAN	0.15	0.15	0.13	0.14
		Asian	4.10	4.06	4.09	3.82
		Black	9.15	14.07	13.82	13.96
		Hispanic	8.94	11.71	10.86	10.05
		Multi-Race	3.87	3.64	3.20	2.76
		NHPI	0.09	0.08	0.07	0.07
		White	73.37	66.30	67.82	69.20
	Gender	Female	47.67	48.58	48.53	48.81
		Male	52.01	51.42	51.47	51.19
	Mode	CBT	33.42	7.07	6.20	4.10
		Paper	66.58	92.93	93.80	95.90
	Subgroup	Ec. Disadvantaged	37.21	44.00	45.32	43.43
		EL	2.17	3.06	2.66	2.48
		IEP	16.36	16.90	16.42	15.65
	Locale	City	10.22	20.82	20.23	19.85
		Rural	19.85	15.96	16.20	16.62
		Suburb	58.08	53.50	53.75	53.61
		Town	11.86	9.01	9.07	9.27

Table V–10. Covariate Quality before Matching

Subject/ Grade	Covariate	Control N	Control Mean	Control SD	Treatment N	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
ELA	Asian	120563	0.041	0.199	86142	0.044	0.205	9.108*	0.003	0.013
Grade 3**	Black	120563	0.148	0.355	86142	0.091	0.288	1489.655*	-0.057	-0.173
	Hispanic	120563	0.126	0.332	86142	0.097	0.296	420.082*	-0.029	-0.092
	Multi-race	120563	0.051	0.220	86142	0.050	0.218	0.648	-0.001	-0.004
	White	120563	0.631	0.483	86142	0.715	0.452	1591.367*	0.084	0.179
	Male	120563	0.511	0.500	86142	0.506	0.500	4.223	-0.005	-0.009
	Ec. Disadvantaged	120563	0.491	0.500	86142	0.402	0.490	1612.589*	-0.089	-0.180
	EL	120563	0.049	0.215	86142	0.038	0.192	128.518*	-0.010	-0.051
	IEP	120563	0.172	0.378	86142	0.152	0.359	149.736*	-0.020	-0.055
	Accommodations	120563	0.203	0.403	86142	0.172	0.377	320.031*	-0.031	-0.080
	City	120563	0.229	0.421	86142	0.111	0.314	4800.057*	-0.119	-0.313
	Rural	120563	0.154	0.361	86142	0.178	0.382	206.190*	0.024	0.064
	Suburb	120563	0.531	0.499	86142	0.610	0.488	1274.869*	0.079	0.160
	Town	120563	0.083	0.276	86142	0.101	0.302	200.963*	0.018	0.063
ELA	Asian	123169	0.041	0.199	86647	0.043	0.203	4.804	0.002	0.010
Grade 4**	Black	123169	0.150	0.357	86647	0.092	0.289	1544.459*	-0.058	-0.175
	Hispanic	123169	0.127	0.333	86647	0.095	0.293	514.050*	-0.032	-0.101
	Multi-race	123169	0.047	0.212	86647	0.049	0.215	2.221	0.001	0.007
	White	123169	0.633	0.482	86647	0.719	0.449	1704.346*	0.086	0.184
	Male	123169	0.509	0.500	86647	0.509	0.500	0.009	0.000	0.000
	Ec. Disadvantaged	123169	0.488	0.500	86647	0.395	0.489	1780.681*	-0.093	-0.188
	EL	123169	0.045	0.208	86647	0.036	0.186	111.763*	-0.009	-0.047
	IEP	123169	0.180	0.384	86647	0.168	0.374	50.747*	-0.012	-0.032
	Accommodations	123169	0.249	0.432	86647	0.210	0.407	427.462*	-0.039	-0.092
	City	123169	0.228	0.419	86647	0.108	0.310	4985.089*	-0.120	-0.317
	Rural	123169	0.154	0.361	86647	0.183	0.387	298.933*	0.029	0.077
	Suburb	123169	0.532	0.499	86647	0.608	0.488	1171.145*	0.075	0.152
	Town	123169	0.083	0.275	86647	0.101	0.302	217.653*	0.019	0.065

Subject/ Grade	Covariate	Control N	Control Mean	Control SD	Treatment N	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
ELA	Asian	115356	0.037	0.188	79696	0.039	0.194	3.009*	0.003	0.014
Grade 5	Black	115356	0.142	0.349	79696	0.086	0.280	37.524*	-0.056	-0.173
	Hispanic	115356	0.113	0.317	79696	0.087	0.282	18.602*	-0.026	-0.086
	Multi-race	115356	0.045	0.208	79696	0.048	0.213	2.369	0.002	0.011
	White	115356	0.661	0.473	79696	0.738	0.440	36.203*	0.077	0.167
	Male	115356	0.509	0.500	79696	0.510	0.500	0.235	0.001	0.001
	Ec. Disadvantaged	115356	0.470	0.499	79696	0.387	0.487	36.570*	-0.084	-0.169
	EL	115356	0.028	0.164	79696	0.025	0.155	3.921*	-0.003	-0.018
	IEP	115356	0.176	0.381	79696	0.175	0.380	0.436	-0.001	-0.002
	Accommodations	115356	0.230	0.421	79696	0.188	0.391	22.039*	-0.042	-0.102
	City	115356	0.212	0.409	79696	0.100	0.300	65.428*	-0.112	-0.305
	Rural	115356	0.161	0.368	79696	0.188	0.391	15.532*	0.027	0.072
	Suburb	115356	0.537	0.499	79696	0.607	0.488	30.652*	0.070	0.142
	Town	115356	0.087	0.282	79696	0.104	0.306	13.102*	0.018	0.060
	ELA Score	115356	1042.468	110.119	79696	1053.909	105.748	-23.094*	11.441	0.106
	Math Score	115356	1024.040	128.596	79696	1045.657	121.411	-37.727*	21.617	0.172
	Mode	115356	0.011	0.106	79696	0.038	0.192	39.749*	0.027	0.184
ELA	Asian	114892	0.039	0.193	78074	0.040	0.197	1.885	0.002	0.009
Grade 6	Black	114892	0.138	0.345	78074	0.086	0.280	35.080*	-0.052	-0.163
	Hispanic	114892	0.113	0.317	78074	0.087	0.282	18.865*	-0.027	-0.088
	Multi-race	114892	0.043	0.203	78074	0.045	0.207	1.818	0.002	0.008
	White	114892	0.664	0.472	78074	0.740	0.439	35.479*	0.076	0.165
	Male	114892	0.509	0.500	78074	0.511	0.500	1.125	0.003	0.005
	Ec. Disadvantaged	114892	0.457	0.498	78074	0.389	0.488	29.663*	-0.068	-0.138
	EL	114892	0.021	0.145	78074	0.020	0.140	1.971	-0.001	-0.009
	IEP	114892	0.171	0.377	78074	0.171	0.376	0.294	-0.001	-0.001
	Accommodations	114892	0.201	0.401	78074	0.166	0.372	19.515*	-0.035	-0.091
	City	114892	0.208	0.406	78074	0.098	0.297	63.822*	-0.109	-0.299
	Rural	114892	0.162	0.368	78074	0.192	0.394	17.426*	0.031	0.081
	Suburb	114892	0.540	0.498	78074	0.602	0.489	26.786*	0.062	0.125
	Town	114892	0.087	0.282	78074	0.108	0.310	14.997*	0.020	0.070
	ELA Score	114892	1033.811	111.530	78074	1050.256	109.017	-32.221*	16.445	0.149
	Math Score	114892	997.269	117.770	78074	1013.158	121.615	-28.529*	15.888	0.133
	Mode	114892	0.012	0.108	78074	0.041	0.198	41.102*	0.029	0.191

Subject/ Grade	Covariate	Control N	Control Mean	Control SD	Treatment N	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
ELA	Asian	113029	0.039	0.193	77999	0.039	0.193	0.021	0.000	0.000
Grade 7	Black	113029	0.134	0.341	77999	0.087	0.281	32.116*	-0.048	-0.150
	Hispanic	113029	0.110	0.312	77999	0.083	0.276	19.303*	-0.027	-0.090
	Multi-race	113029	0.040	0.196	77999	0.041	0.199	1.727	0.002	0.008
	White	113029	0.675	0.468	77999	0.748	0.434	34.470*	0.073	0.161
	Male	113029	0.509	0.500	77999	0.514	0.500	2.126	0.005	0.010
	Ec. Disadvantaged	113029	0.440	0.496	77999	0.383	0.486	25.066*	-0.058	-0.117
	EL	113029	0.021	0.145	77999	0.018	0.132	5.578*	-0.004	-0.026
	IEP	113029	0.168	0.374	77999	0.166	0.372	1.503	-0.003	-0.007
	Accommodations	113029	0.178	0.383	77999	0.153	0.360	14.521*	-0.025	-0.068
	City	113029	0.198	0.398	77999	0.096	0.294	60.599*	-0.102	-0.285
	Rural	113029	0.164	0.370	77999	0.196	0.397	17.948*	0.032	0.084
	Suburb	113029	0.544	0.498	77999	0.594	0.491	21.586*	0.050	0.101
	Town	113029	0.089	0.285	77999	0.115	0.318	17.983*	0.025	0.084
	ELA Score	113029	1033.062	111.356	77999	1042.058	104.423	-18.009*	8.996	0.083
	Math Score	113029	995.942	119.178	77999	1009.807	117.341	-25.222*	13.865	0.117
	Mode	113029	0.018	0.132	77999	0.059	0.236	48.770*	0.042	0.229
ELA	Asian	111124	0.040	0.195	75353	0.039	0.194	0.748	-0.001	-0.004
Grade 8	Black	111124	0.134	0.341	75353	0.088	0.284	30.320*	-0.046	-0.144
	Hispanic	111124	0.106	0.308	75353	0.083	0.276	16.935*	-0.024	-0.080
	Multi-race	111124	0.036	0.185	75353	0.039	0.193	3.324*	0.003	0.016
	White	111124	0.682	0.466	75353	0.749	0.434	31.200*	0.067	0.148
	Male	111124	0.511	0.500	75353	0.519	0.500	3.496*	0.008	0.016
	Ec. Disadvantaged	111124	0.426	0.495	75353	0.370	0.483	24.133*	-0.056	-0.114
	EL	111124	0.020	0.140	75353	0.016	0.125	6.096*	-0.004	-0.029
	IEP	111124	0.165	0.371	75353	0.163	0.369	1.174	-0.002	-0.006
	Accommodations	111124	0.158	0.365	75353	0.148	0.355	6.374*	-0.011	-0.030
	City	111124	0.199	0.399	75353	0.099	0.299	57.807*	-0.100	-0.275
	Rural	111124	0.164	0.371	75353	0.200	0.400	19.562*	0.035	0.093
	Suburb	111124	0.541	0.498	75353	0.583	0.493	17.987*	0.042	0.085
	Town	111124	0.090	0.286	75353	0.118	0.322	19.615*	0.028	0.093
	ELA Score	111124	1039.223	105.028	75353	1049.539	103.991	-20.938*	10.317	0.099
	Math Score	111124	980.969	115.177	75353	998.241	119.268	-31.114*	17.272	0.148
	Mode	111124	0.028	0.166	75353	0.062	0.242	35.803*	0.034	0.170

Subject/ Grade	Covariate	Control N	Control Mean	Control SD	Treatment N	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
Math	Asian	120604	0.041	0.199	86235	0.044	0.206	11.072*	0.003	0.015
Grade 3**	Black	120604	0.148	0.356	86235	0.092	0.288	1491.468*	-0.057	-0.173
	Hispanic	120604	0.126	0.332	86235	0.098	0.297	415.012*	-0.029	-0.091
	Multi-race	120604	0.051	0.220	86235	0.050	0.218	1.290	-0.001	-0.005
	White	120604	0.630	0.483	86235	0.714	0.452	1588.575*	0.084	0.179
	Male	120604	0.511	0.500	86235	0.507	0.500	3.569	-0.004	-0.008
	Ec. Disadvantaged	120604	0.491	0.500	86235	0.402	0.490	1607.172*	-0.089	-0.180
	EL	120604	0.049	0.215	86235	0.038	0.192	130.635*	-0.011	-0.051
	IEP	120604	0.172	0.378	86235	0.152	0.359	145.57*	-0.020	-0.054
	Accommodations	120604	0.219	0.413	86235	0.190	0.393	244.96*	-0.028	-0.070
	Spanish	120604	0.004	0.061	86235	0.002	0.048	33.829*	-0.002	-0.027
	City	120604	0.230	0.421	86235	0.111	0.314	4775.173*	-0.119	-0.312
	Rural	120604	0.154	0.361	86235	0.178	0.383	216.622*	0.024	0.066
	Suburb	120604	0.531	0.499	86235	0.608	0.488	1220.383*	0.077	0.156
	Town	120604	0.083	0.276	86235	0.102	0.303	221.047*	0.019	0.066
Math	Asian	123285	0.041	0.199	86516	0.043	0.204	4.936	0.002	0.010
Grade 4**	Black	123285	0.150	0.357	86516	0.091	0.287	1602.696*	-0.059	-0.178
	Hispanic	123285	0.127	0.333	86516	0.095	0.294	498.940*	-0.032	-0.099
	Multi-race	123285	0.047	0.212	86516	0.049	0.216	2.653	0.002	0.007
	White	123285	0.633	0.482	86516	0.719	0.449	1721.583*	0.087	0.185
	Male	123285	0.509	0.500	86516	0.509	0.500	0.003	0.000	0.000
	Ec. Disadvantaged	123285	0.488	0.500	86516	0.395	0.489	1779.948*	-0.093	-0.188
	EL	123285	0.045	0.208	86516	0.036	0.186	121.677*	-0.010	-0.049
	IEP	123285	0.180	0.384	86516	0.168	0.374	49.319*	-0.012	-0.031
	Accommodations	123285	0.224	0.417	86516	0.199	0.399	193.704*	-0.025	-0.062
	Spanish	123285	0.004	0.064	86516	0.003	0.050	37.972*	-0.002	-0.027
	City	123285	0.228	0.420	86516	0.108	0.311	4984.66*	-0.120	-0.317
	Rural	123285	0.154	0.361	86516	0.184	0.388	332.403*	0.030	0.081
	Suburb	123285	0.532	0.499	86516	0.607	0.489	1136.748*	0.074	0.150
	Town	123285	0.083	0.275	86516	0.101	0.301	209.159*	0.018	0.064

Subject/ Grade	Covariate	Control N	Control Mean	Control SD	Treatment N	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
Math	Asian	115337	0.037	0.188	79505	0.040	0.195	3.536*	0.003	0.016
Grade 5	Black	115337	0.142	0.349	79505	0.086	0.281	37.121*	-0.055	-0.172
	Hispanic	115337	0.113	0.317	79505	0.088	0.283	18.398*	-0.026	-0.085
	Multi-race	115337	0.046	0.208	79505	0.048	0.213	2.132	0.002	0.010
	White	115337	0.661	0.473	79505	0.737	0.440	35.687*	0.076	0.165
	Male	115337	0.509	0.500	79505	0.510	0.500	0.350	0.001	0.002
	Ec. Disadvantaged	115337	0.470	0.499	79505	0.388	0.487	36.068*	-0.083	-0.167
	EL	115337	0.027	0.163	79505	0.025	0.156	3.415*	-0.003	-0.016
	IEP	115337	0.176	0.381	79505	0.175	0.380	0.399	-0.001	-0.002
	Accommodations	115337	0.206	0.405	79505	0.185	0.388	11.816*	-0.022	-0.055
	Spanish	115337	0.000	0.012	79505	0.000	0.010	1.041	0.000	-0.009
	City	115337	0.212	0.409	79505	0.100	0.300	65.212*	-0.112	-0.304
	Rural	115337	0.161	0.368	79505	0.188	0.391	15.163*	0.026	0.070
	Suburb	115337	0.537	0.499	79505	0.607	0.488	30.701*	0.070	0.142
	Town	115337	0.087	0.281	79505	0.105	0.306	13.230*	0.018	0.061
	ELA Score	115337	1042.502	110.109	79505	1053.711	105.907	-22.590*	11.209	0.103
	Math Score	115337	1024.066	128.611	79505	1045.452	121.489	-37.282*	21.386	0.170
	Mode	115337	0.011	0.107	79505	0.039	0.195	40.537*	0.028	0.187
Math	Asian	114762	0.039	0.193	77286	0.040	0.197	1.863	0.002	0.009
Grade 6	Black	114762	0.138	0.345	77286	0.086	0.280	34.876*	-0.052	-0.163
	Hispanic	114762	0.113	0.317	77286	0.087	0.282	18.724*	-0.027	-0.087
	Multi-race	114762	0.043	0.203	77286	0.045	0.207	1.814	0.002	0.008
	White	114762	0.664	0.472	77286	0.740	0.439	35.235*	0.076	0.165
	Male	114762	0.509	0.500	77286	0.512	0.500	1.465	0.003	0.007
	Ec. Disadvantaged	114762	0.457	0.498	77286	0.388	0.487	29.660*	-0.068	-0.138
	EL	114762	0.021	0.145	77286	0.020	0.140	2.050	-0.001	-0.010
	IEP	114762	0.171	0.377	77286	0.171	0.377	0.110	0.000	0.001
	Accommodations	114762	0.179	0.383	77286	0.167	0.373	6.680*	-0.012	-0.031
	Spanish	114762	0.000	0.013	77286	0.000	0.011	0.633	0.000	0.000
	City	114762	0.207	0.405	77286	0.096	0.295	64.520*	-0.111	-0.304
	Rural	114762	0.162	0.368	77286	0.193	0.395	17.739*	0.031	0.083
	Suburb	114762	0.541	0.498	77286	0.603	0.489	27.173*	0.063	0.127
	Town	114762	0.087	0.282	77286	0.107	0.309	14.680*	0.020	0.068
	ELA Score	114762	1033.951	111.452	77286	1050.214	109.057	-31.763*	16.262	0.147
	Math Score	114762	997.372	117.790	77286	1013.195	121.747	-28.297*	15.823	0.133
	Mode	114762	0.012	0.109	77286	0.041	0.199	41.584*	0.030	0.194

Subject/ Grade	Covariate	Control N	Control Mean	Control SD	Treatment N	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
Math	Asian	112888	0.039	0.193	77112	0.039	0.193	0.209	0.000	-0.001
Grade 7	Black	112888	0.135	0.341	77112	0.086	0.281	32.345*	-0.048	-0.152
	Hispanic	112888	0.110	0.312	77112	0.083	0.276	19.254*	-0.027	-0.090
	Multi-race	112888	0.040	0.196	77112	0.041	0.199	1.631	0.002	0.008
	White	112888	0.675	0.468	77112	0.749	0.434	34.703*	0.074	0.163
	Male	112888	0.509	0.500	77112	0.515	0.500	2.635	0.006	0.012
	Ec. Disadvantaged	112888	0.440	0.496	77112	0.382	0.486	25.322*	-0.058	-0.119
	EL	112888	0.022	0.145	77112	0.018	0.132	5.817*	-0.004	-0.027
	IEP	112888	0.168	0.374	77112	0.166	0.372	1.090	-0.002	-0.005
	Accommodations	112888	0.150	0.357	77112	0.147	0.354	1.674	-0.003	-0.008
	Spanish	112888	0.000	0.016	77112	0.000	0.013	1.158	0.000	-0.007
	City	112888	0.198	0.399	77112	0.097	0.295	59.863*	-0.102	-0.282
	Rural	112888	0.164	0.370	77112	0.198	0.398	18.859*	0.034	0.088
	Suburb	112888	0.544	0.498	77112	0.593	0.491	20.968*	0.049	0.098
	Town	112888	0.089	0.285	77112	0.113	0.317	17.148*	0.024	0.080
	ELA Score	112888	1033.111	111.352	77112	1042.092	104.334	-17.927*	8.981	0.083
	Math Score	112888	996.029	119.205	77112	1009.937	117.363	-25.204*	13.908	0.117
	Mode	112888	0.021	0.145	77112	0.058	0.234	42.064*	0.037	0.198
Math	Asian	110835	0.040	0.196	74916	0.040	0.195	0.335	0.000	-0.002
Grade 8	Black	110835	0.134	0.341	74916	0.090	0.285	29.402*	-0.045	-0.139
	Hispanic	110835	0.106	0.308	74916	0.083	0.276	16.533*	-0.023	-0.078
	Multi-race	110835	0.036	0.185	74916	0.039	0.193	3.486*	0.003	0.016
	White	110835	0.682	0.466	74916	0.747	0.435	30.040*	0.065	0.142
	Male	110835	0.511	0.500	74916	0.521	0.500	4.012*	0.010	0.019
	Ec. Disadvantaged	110835	0.426	0.494	74916	0.370	0.483	24.180*	-0.056	-0.115
	EL	110835	0.020	0.139	74916	0.016	0.127	5.566*	-0.004	-0.026
	IEP	110835	0.164	0.370	74916	0.162	0.369	1.118	-0.002	-0.005
	Accommodations	110835	0.143	0.351	74916	0.139	0.346	2.491	-0.004	-0.012
	Spanish	110835	0.000	0.016	74916	0.000	0.012	1.650	0.000	-0.007
	City	110835	0.199	0.399	74916	0.101	0.301	56.456*	-0.098	-0.269
	Rural	110835	0.164	0.371	74916	0.200	0.400	19.645*	0.036	0.093
	Suburb	110835	0.541	0.498	74916	0.583	0.493	17.679*	0.042	0.084
	Town	110835	0.090	0.286	74916	0.116	0.321	18.503*	0.026	0.088
	ELA Score	110835	1039.318	104.978	74916	1049.379	104.133	-20.360*	10.061	0.096
	Math Score	110835	981.098	115.142	74916	998.193	119.521	-30.689*	17.095	0.146
	Mode	110835	0.027	0.162	74916	0.060	0.238	35.338*	0.033	0.168

Subject/ Grade	Covariate	Control N	Control Mean	Control SD	Treatment N	Treatment Mean	Treatment SD	Z/t	Mean Diff.	Cohen's D
Science	Asian	123090	0.041	0.199	86006	0.043	0.204	5.025	0.002	0.010
Grade 4**	Black	123090	0.150	0.357	86006	0.090	0.286	1661.622*	-0.060	-0.182
	Hispanic	123090	0.127	0.333	86006	0.095	0.293	520.826*	-0.032	-0.102
	Multi-race	123090	0.047	0.212	86006	0.048	0.215	1.296	0.001	0.005
	White	123090	0.633	0.482	86006	0.722	0.448	1807.71*	0.089	0.190
	Male	123090	0.509	0.500	86006	0.509	0.500	0.004	0.000	0.000
	Ec. Disadvantaged	123090	0.488	0.500	86006	0.394	0.489	1838.328*	-0.095	-0.191
	EL	123090	0.046	0.208	86006	0.036	0.185	126.711*	-0.010	-0.050
	IEP	123090	0.180	0.384	86006	0.168	0.374	51.481*	-0.012	-0.032
	Accommodations	123090	0.202	0.402	86006	0.174	0.379	252.011*	-0.028	-0.071
	Spanish	123090	0.004	0.064	86006	0.003	0.051	33.065*	-0.002	-0.026
	City	123090	0.228	0.420	86006	0.105	0.307	5227.316*	-0.123	-0.325
	Rural	123090	0.154	0.361	86006	0.185	0.388	334.619*	0.030	0.081
	Suburb	123090	0.533	0.499	86006	0.608	0.488	1184.652*	0.076	0.154
	Town	123090	0.082	0.275	86006	0.102	0.302	230.057*	0.019	0.067
Science	Asian	110414	0.040	0.196	74088	0.040	0.195	0.249	0.000	-0.001
Grade 8	Black	110414	0.134	0.340	74088	0.088	0.283	30.179*	-0.046	-0.144
	Hispanic	110414	0.106	0.308	74088	0.083	0.276	16.739*	-0.024	-0.080
	Multi-race	110414	0.036	0.185	74088	0.039	0.193	3.370*	0.003	0.016
	White	110414	0.682	0.466	74088	0.749	0.434	30.711*	0.066	0.146
	Male	110414	0.511	0.500	74088	0.520	0.500	3.764*	0.009	0.018
	Ec. Disadvantaged	110414	0.425	0.494	74088	0.368	0.482	24.591*	-0.057	-0.117
	EL	110414	0.020	0.140	74088	0.016	0.126	5.809*	-0.004	-0.028
	IEP	110414	0.164	0.370	74088	0.162	0.368	1.301	-0.002	-0.006
	Accommodations	110414	0.119	0.324	74088	0.117	0.321	1.491	-0.002	-0.007
	Spanish	110414	0.000	0.014	74088	0.000	0.011	1.135	0.000	-0.008
	City	110414	0.199	0.399	74088	0.099	0.299	57.199*	-0.099	-0.274
	Rural	110414	0.164	0.371	74088	0.201	0.401	19.969*	0.036	0.095
	Suburb	110414	0.541	0.498	74088	0.581	0.493	16.998*	0.040	0.081
	Town	110414	0.090	0.286	74088	0.118	0.323	19.830*	0.028	0.094
	ELA Score	110414	1039.497	104.961	74088	1049.894	104.019	-20.969*	10.397	0.099
	Math Score	110414	981.284	115.146	74088	998.877	119.478	-31.458*	17.593	0.151
	Mode	110414	0.029	0.166	74088	0.063	0.243	35.955	0.034	0.172

*$p < .05$

**Subject/grade did not have prior PSSA covariates in PSM.

APPENDIX W: WHO DID NOT TEST IN SPRING 2021?

Appendix W presents information about the group of students who did not test in 2021. For 2019 and 2021, data from PIMS was used to define the population of eligible test-takers for each PSSA. Students who did not earn scores were classified as "not tested," and students who earned scores were classified as "tested." Students who took the Pennsylvania Alternate System of Assessment (PASA) were excluded from the datasets used for analyses. Findings suggest that 24% to 39% of students eligible to take the PSSA grade 3 through grade 8 examinations did not test in 2021. Information presented in this appendix provides an in-depth review of their background characteristics and prior performance.

Table W–1 displays the count and proportion of students not tested in 2019 and 2021. 2019 data is presented for reference and comparison. In 2019, 2.5% to 5.7% of eligible students did not take the state-wide summative PSSA, whereas in 2021, 24.4% to 39.0% of eligible students did not take the PSSA. Not tested rates were slightly higher for middle grades (29–39%; grades 6 to 8) than elementary grades (24–26%; grades 3 to 5).

Table W–1. Count and Proportion of 2021 and 2019 Students Not Tested

Sub./Grade	2021 Not Tested	2021 Tested	2021 Total	2019 Not Tested	2019 Tested	2019 Total	2021 % Not Tested	2019 % Not Tested
Math Grade 3	30115	91693	121808	2931	120604	123535	24.72	2.37
Math Grade 4	31893	92387	124280	3367	123286	126653	25.66	2.66
Math Grade 5	34320	90866	125186	3644	127592	131236	27.42	2.78
Math Grade 6	38564	90563	129127	4310	127496	131806	29.87	3.27
Math Grade 7	43544	90812	134356	5393	125808	131201	32.41	4.11
Math Grade 8	49704	85253	134957	6821	123186	130007	36.83	5.25
ELA Grade 3	30919	90980	121899	3548	120564	124112	25.36	2.86
ELA Grade 4	32528	91862	124390	4079	123172	127251	26.15	3.21
ELA Grade 5	34258	91028	125286	4181	127550	131731	27.34	3.17
ELA Grade 6	38974	90232	129206	4698	127560	132258	30.16	3.55
ELA Grade 7	43903	90515	134418	5649	125998	131647	32.66	4.29
ELA Grade 8	49329	85686	135015	6886	123503	130389	36.54	5.28
Science Grade 4	33242	91071	124313	3576	123093	126669	26.74	2.82
Science Grade 8	50745	84244	134989	7376	122654	130030	37.59	5.67

Information in Tables W–2 and W–3 is presented in previous sections of the technical report and also repeated here for ease of reference. The tables indicate that students earned lower scaled scores and performance level classifications in 2021 than in prior administrations. In addition, there was less variation in test scores in 2021 than in prior administrations.

Table W–2. Scaled Score Descriptive Statistics by Administration and Subject/Grade

Sub./Grade	Admin.	N	Min	Max	Mean	SD
Math Grade 3	2021	91693	600	1577	997.87	121.17
	2019	120604	600	1530	1026.40	124.91
	2018	122563	600	1545	1017.38	123.06
	2017	125205	600	1561	1019.85	129.66
Math Grade 4	2021	92387	600	1553	970.30	111.98
	2019	123286	600	1532	994.25	124.06
	2018	126481	600	1514	987.88	120.51
	2017	125575	600	1529	993.58	118.67
Math Grade 5	2021	90866	600	1556	971.14	110.74
	2019	127592	600	1601	991.77	117.51
	2018	126868	600	1515	991.83	126.15
	2017	124405	626	1550	991.82	119.70
Math Grade 6	2021	90563	600	1513	948.46	104.18
	2019	127496	600	1500	979.60	119.40
	2018	125385	617	1490	976.34	117.60
	2017	123112	651	1534	976.25	115.64
Math Grade 7	2021	90812	600	1546	936.22	108.50
	2019	125808	600	1536	965.62	120.08
	2018	124225	600	1522	967.32	134.16
	2017	125584	600	1551	968.65	126.69
Math Grade 8	2021	85253	600	1495	919.00	106.95
	2019	123186	600	1470	950.33	116.49
	2018	124780	600	1638	948.41	123.41
	2017	123271	600	1618	953.46	118.27
ELA Grade 3	2021	90980	600	1536	1024.61	104.18
	2019	120564	600	1544	1039.02	108.92
	2018	122397	600	1551	1042.06	108.34
	2017	124923	638	1680	1039.30	111.21
ELA Grade 4	2021	91862	600	1621	1015.07	105.70
	2019	123172	617	1636	1035.03	112.80
	2018	126223	600	1652	1029.60	109.89
	2017	125200	600	1714	1030.55	112.72
ELA Grade 5	2021	91028	600	1660	1013.21	96.39
	2019	127550	609	1647	1027.19	107.18
	2018	126761	600	1685	1029.17	104.53
	2017	124183	665	1723	1029.58	112.26

Sub./Grade	Admin.	N	Min	Max	Mean	SD
ELA Grade 6	2021	90232	615	1614	1020.17	102.25
	2019	127560	637	1692	1034.42	106.76
	2018	125341	645	1754	1041.36	110.45
	2017	123170	620	1737	1035.08	106.23
ELA Grade 7	2021	90515	617	1616	1009.38	93.71
	2019	125998	647	1639	1026.27	96.85
	2018	124226	600	1641	1032.49	105.77
	2017	125744	600	1724	1031.71	113.46
ELA Grade 8	2021	85686	600	1654	1007.74	105.02
	2019	123503	600	1699	1024.16	115.76
	2018	124907	600	1640	1027.49	101.42
	2017	123653	600	1677	1025.03	108.86
Science Grade 4	2021	91071	1050	2313	1395.72	161.83
	2019	123093	1050	2309	1424.23	174.24
	2018	126353	1050	2321	1412.60	173.56
	2017	125488	1050	2344	1406.07	170.94
Science Grade 8	2021	84244	925	2299	1287.61	193.95
	2019	122654	925	2406	1314.95	184.20
	2018	124417	925	2337	1305.20	180.89
	2017	122716	925	2416	1299.33	183.99

Note. Spring 2020 testing was cancelled due to the Covid-19 pandemic.

Table W–3. Performance Level Classification by Administration and Subject/Grade

Sub./Grade	Admin.	Count	Below Basic %	Basic %	Proficient %	Advanced %	Prof./Adv. %
Math Grade 3	2021	91693	30.97	21.75	29.46	17.83	47.29
	2019	120604	22.41	21.60	29.29	26.69	55.98
	2018	122563	24.49	21.44	31.37	22.70	54.07
	2017	125205	25.86	19.69	28.42	26.04	54.46
Math Grade 4	2021	92387	33.89	30.56	23.45	12.11	35.56
	2019	123286	26.06	27.69	27.23	19.02	46.25
	2018	126481	29.76	26.71	25.75	17.78	43.53
	2017	125575	26.11	27.32	28.47	18.10	46.57
Math Grade 5	2021	90866	31.30	32.61	24.25	11.84	36.09
	2019	127592	23.26	33.68	27.21	15.84	43.05
	2018	126868	28.70	26.09	27.44	17.76	45.20
	2017	124405	24.81	31.43	27.51	16.24	43.75
Math Grade 6	2021	90563	35.13	36.64	20.59	7.64	28.23
	2019	127496	25.91	35.10	23.19	15.79	38.98
	2018	125385	29.66	30.78	24.83	14.73	39.56
	2017	123112	29.07	30.65	26.13	14.15	40.28
Math Grade 7	2021	90812	46.07	27.05	18.81	8.07	26.88
	2019	125808	35.80	25.97	24.29	13.95	38.24
	2018	124225	37.76	23.32	22.76	16.16	38.92
	2017	125584	36.95	25.23	22.10	15.72	37.82
Math Grade 8	2021	85253	53.45	24.46	15.79	6.30	22.09
	2019	123186	39.60	28.24	22.30	9.86	32.16
	2018	124780	41.06	27.89	20.21	10.84	31.05
	2017	123271	39.72	27.82	21.89	10.57	32.46
ELA Grade 3	2021	90980	14.01	27.74	44.07	14.18	58.25
	2019	120564	11.45	26.64	45.43	16.48	61.91
	2018	122397	10.38	26.07	44.41	19.14	63.55
	2017	124923	12.09	23.29	47.56	17.06	64.62
ELA Grade 4	2021	91862	11.91	31.45	35.20	21.44	56.64
	2019	123172	10.31	26.08	36.26	27.34	63.60
	2018	126223	9.65	30.56	34.73	25.06	59.79
	2017	125200	10.92	28.16	35.26	25.65	60.91
ELA Grade 5	2021	91028	10.61	34.40	46.41	8.58	54.99
	2019	127550	9.64	31.83	42.70	15.83	58.53
	2018	126761	8.89	31.71	45.42	13.99	59.41
	2017	124183	11.48	28.94	43.18	16.40	59.58

Sub./Grade	Admin.	Count	Below Basic %	Basic %	Proficient %	Advanced %	Prof./Adv. %
ELA Grade 6	2021	90232	7.12	35.58	39.84	17.45	57.30
	2019	127560	5.68	31.28	42.25	20.79	63.04
	2018	125341	5.26	32.24	36.31	26.18	62.49
	2017	123170	6.90	29.52	41.43	22.16	63.59
ELA Grade 7	2021	90515	3.91	42.80	43.46	9.83	53.29
	2019	125998	2.61	36.94	45.59	14.86	60.45
	2018	124226	2.52	35.55	44.28	17.65	61.93
	2017	125744	3.65	36.90	40.14	19.31	59.45
ELA Grade 8	2021	85686	11.37	36.00	41.71	10.92	52.63
	2019	123503	11.94	30.20	41.88	15.99	57.87
	2018	124907	7.83	30.63	47.10	14.44	61.54
	2017	123653	10.50	30.63	42.93	15.94	58.87
Science Grade 4	2021	91071	7.61	16.58	43.48	32.34	75.81
	2019	123093	5.03	17.17	39.04	38.76	77.80
	2018	126353	5.44	19.06	39.70	35.79	75.49
	2017	125488	5.28	20.17	41.57	32.98	74.55
Science Grade 8	2021	84244	26.67	22.50	31.21	19.63	50.83
	2019	122654	19.98	21.85	35.11	23.06	58.17
	2018	124417	22.20	23.94	33.47	20.38	53.85
	2017	122716	24.96	22.36	31.50	21.18	52.68

Note. Spring 2020 testing was cancelled due to the Covid-19 pandemic.

BACKGROUND CHARACTERISTICS

Tables W–4 and W–5 compare the background characteristics of students not tested and students tested in 2021. Table W–4 summarizes the information by elementary grade levels (grades 3 to 5) and middle school grade levels (grades 6 to 8), and Table W–5 presents the information for each subject and grade level.

According to Table W–4, on average, 39.1% of elementary students not tested were White and 28.3% were Black. In middle school, 47.3% of students not tested were White, 23.7% were Black, and 19.2% were Hispanic. This indicates that although there was a higher representation of White students in the testing population, a large proportion of those who did not test in 2021 were White. Table W–4 also shows that 62.1% of elementary students not tested and 55.3% of middle school students not tested were economically disadvantaged. As expected, the proportion of students not tested was considerably higher for city and suburb settings than rural and town settings.

Table W–5 shows percentages for the total population, not tested subgroup, and tested subgroup for various demographic categories. For example, in 2021 grade 3 Math, 23.61% of the population was from a city setting. However, only 15.1% of the tested population was from a city, while 49.54% of the non-tested population was from a city.

Table W–4. Summary of Demographic Backgrounds of 2021 Students Not Tested and Tested by Grade Level (Elementary and Middle)

Group	Demographic	Elementary Average of Not Tested (%)	Elementary Average of Tested (%)	Middle Average of Not Tested (%)	Middle Average of Tested (%)
Ethnicity	AIAN	0.22	0.13	0.21	0.14
	Asian	4.61	4.30	4.19	4.10
	Black	28.26	10.52	23.70	10.32
	Hispanic	22.24	10.45	19.16	10.09
	Multi-Race	5.43	4.97	5.33	4.24
	NHPI	0.10	0.09	0.11	0.08
	White	39.13	69.53	47.29	71.02
Gender	Female	48.57	49.05	49.96	48.16
	Male	51.43	50.95	50.04	51.84
Subgroup	Ec. Disadvantaged	62.09	42.56	55.29	40.65
	EL	8.36	3.86	5.71	2.70
	IEP	21.51	17.94	21.70	17.50
Locale	City	49.24	14.33	40.23	13.25
	Rural	6.91	17.67	8.01	18.73
	Suburb	39.77	58.28	47.36	57.07
	Town	3.84	9.70	4.14	10.88

Table W–5. Demographic Backgrounds for 2019 and 2021 Students by Subject and Grade

Sub./Grade	Demographic	2021 Not Tested (%)	2021 Tested (%)	2021 Total (%)	2019 Not Tested (%)	2019 Tested (%)	2019 Total (%)
Math Grade 3	AIAN	0.27	0.13	0.16	0.20	0.14	0.14
	Asian	4.94	4.37	4.51	1.81	4.14	4.08
	Black	28.88	10.53	15.07	21.32	14.84	15.00
	Hispanic	21.91	10.97	13.68	13.54	12.64	12.66
	Multi-Race	5.28	5.07	5.12	5.42	5.10	5.11
	NHPI	0.09	0.10	0.10	0.10	0.09	0.09
	White	38.62	68.83	61.36	57.59	63.04	62.91
	Female	48.13	49.19	48.93	41.45	48.89	48.71
	Male	51.87	50.81	51.07	58.55	51.11	51.29
	Ec. Disadvantaged	62.68	43.41	48.17	52.30	49.10	49.18
	EL	8.32	4.38	5.35	4.67	4.88	4.88
	IEP	20.30	17.24	18.00	41.39	17.22	17.79
	City	49.54	15.10	23.61	29.44	23.06	23.21
	Rural	6.88	17.13	14.59	11.87	15.40	15.32
	Suburb	39.67	58.08	53.53	48.99	53.19	53.09
	Town	3.66	9.68	8.19	8.29	8.34	8.34
Math Grade 4	AIAN	0.23	0.12	0.15	0.30	0.15	0.15
	Asian	4.54	4.29	4.36	1.81	4.13	4.07
	Black	29.10	10.55	15.31	19.33	14.96	15.08
	Hispanic	20.87	10.86	13.43	12.38	12.69	12.69
	Multi-Race	5.47	4.96	5.09	5.79	4.73	4.76
	NHPI	0.09	0.08	0.08	0.06	0.07	0.07
	White	39.69	69.13	61.58	60.32	63.26	63.18
	Female	49.21	49.01	49.06	43.07	49.06	48.90
	Male	50.79	50.99	50.94	56.93	50.94	51.10
	Ec. Disadvantaged	61.78	42.77	47.65	50.40	48.84	48.89
	EL	8.27	4.07	5.14	3.80	4.55	4.53
	IEP	21.88	18.07	19.05	39.95	17.99	18.57
	City	48.14	15.06	23.55	27.12	22.89	23.00
	Rural	7.02	17.67	14.94	12.56	15.47	15.39
	Suburb	40.49	57.76	53.33	49.72	53.33	53.24
	Town	4.11	9.49	8.11	8.76	8.29	8.30

Sub./Grade	Demographic	2021 Not Tested (%)	2021 Tested (%)	2021 Total (%)	2019 Not Tested (%)	2019 Tested (%)	2019 Total (%)
Math Grade 5	AIAN	0.17	0.14	0.15	0.14	0.16	0.16
	Asian	4.43	4.23	4.28	1.78	3.95	3.89
	Black	27.07	10.51	15.05	17.15	14.94	15.01
	Hispanic	22.38	10.19	13.53	11.33	12.32	12.30
	Multi-Race	5.59	4.87	5.07	5.68	4.63	4.65
	NHPI	0.13	0.09	0.10	0.14	0.08	0.08
	White	40.24	69.98	61.82	63.78	63.92	63.91
	Female	48.30	48.89	48.72	44.29	48.83	48.71
	Male	51.70	51.11	51.28	55.71	51.17	51.29
	Ec. Disadvantaged	61.24	41.93	47.23	47.59	48.08	48.07
	EL	7.61	3.29	4.48	3.27	3.84	3.82
	IEP	22.42	18.40	19.50	39.41	18.06	18.65
	City	48.58	13.61	23.20	24.29	22.38	22.43
	Rural	7.03	17.99	14.99	11.58	15.71	15.60
	Suburb	40.34	58.49	53.52	53.05	53.37	53.36
	Town	3.81	9.88	8.22	9.66	8.53	8.56
Math Grade 6	AIAN	0.18	0.14	0.15	0.39	0.16	0.17
	Asian	4.27	4.28	4.28	1.35	4.06	3.97
	Black	25.65	10.48	15.01	16.82	14.56	14.63
	Hispanic	19.45	10.81	13.39	10.72	12.32	12.27
	Multi-Race	5.42	4.57	4.83	5.41	4.40	4.43
	NHPI	0.11	0.07	0.08	0.07	0.09	0.09
	White	44.91	69.64	62.25	65.24	64.41	64.44
	Female	49.60	48.61	48.90	47.26	48.85	48.79
	Male	50.40	51.39	51.10	52.74	51.15	51.21
	Ec. Disadvantaged	57.93	42.09	46.82	47.29	46.71	46.73
	EL	5.76	3.02	3.84	2.53	3.19	3.17
	IEP	22.07	17.75	19.04	37.15	17.57	18.21
	City	42.33	14.32	22.68	22.65	21.94	21.96
	Rural	7.52	18.15	14.97	12.06	15.75	15.63
	Suburb	45.98	57.30	53.92	54.59	53.67	53.70
	Town	3.94	10.18	8.32	9.54	8.60	8.63

Sub./Grade	Demographic	2021 Not Tested (%)	2021 Tested (%)	2021 Total (%)	2019 Not Tested (%)	2019 Tested (%)	2019 Total (%)
Math Grade 7	AIAN	0.22	0.13	0.16	0.19	0.15	0.15
	Asian	3.99	4.03	4.02	1.21	4.01	3.90
	Black	23.90	10.52	14.85	15.65	14.22	14.28
	Hispanic	18.71	10.40	13.10	11.11	11.89	11.86
	Multi-Race	5.45	4.33	4.69	5.47	4.03	4.09
	NHPI	0.10	0.08	0.09	0.07	0.09	0.09
	White	47.63	70.50	63.09	66.31	65.62	65.65
	Female	49.75	48.21	48.71	47.43	48.81	48.76
	Male	50.25	51.79	51.29	52.57	51.19	51.24
	Ec. Disadvantaged	55.72	41.22	45.92	49.45	45.18	45.36
	EL	5.76	2.86	3.80	2.73	3.21	3.19
	IEP	22.06	17.58	19.03	34.51	17.19	17.90
	City	39.74	14.01	22.35	22.40	20.92	20.98
	Rural	7.90	18.51	15.07	12.11	15.99	15.83
	Suburb	47.82	56.72	53.83	53.42	54.08	54.06
	Town	4.27	10.70	8.62	10.50	8.91	8.97
Math Grade 8	AIAN	0.22	0.15	0.17	0.37	0.15	0.16
	Asian	4.26	4.03	4.11	1.22	4.05	3.90
	Black	22.21	10.19	14.62	15.85	14.12	14.21
	Hispanic	18.52	9.75	12.98	10.86	11.72	11.67
	Multi-Race	5.19	3.98	4.43	4.72	3.64	3.70
	NHPI	0.12	0.09	0.10	0.07	0.08	0.08
	White	49.49	71.80	63.58	66.91	66.25	66.28
	Female	50.58	47.72	48.78	51.75	48.58	48.75
	Male	49.42	52.28	51.22	48.25	51.42	51.25
	Ec. Disadvantaged	52.91	39.54	44.46	46.69	44.06	44.20
	EL	5.30	2.48	3.52	2.39	3.05	3.02
	IEP	21.28	17.28	18.75	32.43	16.95	17.76
	City	38.32	12.53	22.03	22.50	21.09	21.16
	Rural	8.61	19.11	15.24	11.95	16.04	15.83
	Suburb	48.54	56.85	53.79	54.23	53.70	53.73
	Town	4.26	11.38	8.76	9.62	9.03	9.06

Sub./Grade	Demographic	2021 Not Tested (%)	2021 Tested (%)	2021 Total (%)	2019 Not Tested (%)	2019 Tested (%)	2019 Total (%)
ELA Grade 3	AIAN	0.27	0.12	0.16	0.17	0.14	0.15
	Asian	4.94	4.39	4.53	4.23	4.13	4.13
	Black	28.53	10.48	15.06	19.76	14.82	14.96
	Hispanic	23.27	10.46	13.71	21.34	12.63	12.88
	Multi-Race	5.18	5.10	5.12	4.79	5.10	5.09
	NHPI	0.09	0.09	0.09	0.06	0.09	0.09
	White	37.73	69.34	61.33	49.66	63.08	62.70
	Female	47.90	49.25	48.91	42.56	48.90	48.72
	Male	52.10	50.75	51.09	57.44	51.10	51.28
	Ec. Disadvantaged	63.10	43.09	48.16	51.66	49.10	49.17
	EL	8.96	4.22	5.42	19.62	4.87	5.29
	IEP	20.15	17.26	17.99	35.26	17.22	17.73
	City	50.89	14.37	23.63	35.77	23.03	23.39
	Rural	6.72	17.26	14.59	9.50	15.42	15.25
	Suburb	38.53	58.60	53.51	46.25	53.19	53.00
	Town	3.59	9.75	8.19	6.71	8.34	8.30
ELA Grade 4	AIAN	0.21	0.13	0.15	0.22	0.15	0.15
	Asian	4.54	4.30	4.36	3.75	4.13	4.12
	Black	28.48	10.63	15.30	18.24	14.95	15.06
	Hispanic	22.51	10.29	13.48	20.20	12.67	12.91
	Multi-Race	5.43	4.98	5.10	4.93	4.74	4.74
	NHPI	0.10	0.08	0.08	0.10	0.07	0.08
	White	38.73	69.60	61.53	52.56	63.29	62.95
	Female	49.05	49.05	49.05	42.90	49.08	48.89
	Male	50.95	50.95	50.95	57.10	50.92	51.11
	Ec. Disadvantaged	62.02	42.57	47.66	50.70	48.84	48.90
	EL	8.92	3.90	5.22	17.58	4.51	4.93
	IEP	21.68	18.11	19.04	33.73	17.99	18.50
	City	49.52	14.38	23.57	33.83	22.84	23.20
	Rural	6.78	17.82	14.94	10.35	15.49	15.33
	Suburb	39.58	58.19	53.32	46.78	53.35	53.14
	Town	3.92	9.59	8.11	7.31	8.30	8.26

Sub./Grade	Demographic	2021 Not Tested (%)	2021 Tested (%)	2021 Total (%)	2019 Not Tested (%)	2019 Tested (%)	2019 Total (%)
ELA Grade 5	AIAN	0.16	0.14	0.15	0.14	0.16	0.16
	Asian	4.45	4.23	4.29	3.54	3.94	3.93
	Black	27.02	10.53	15.04	16.43	14.93	14.98
	Hispanic	22.53	10.18	13.56	18.13	12.31	12.50
	Multi-Race	5.53	4.89	5.06	5.02	4.62	4.64
	NHPI	0.14	0.09	0.10	0.14	0.08	0.08
	White	40.16	69.95	61.80	56.59	63.95	63.72
	Female	48.20	48.93	48.73	44.68	48.85	48.72
	Male	51.80	51.07	51.27	55.32	51.15	51.28
	Ec. Disadvantaged	61.33	41.92	47.23	47.76	48.10	48.09
	EL	7.93	3.26	4.54	14.90	3.82	4.18
	IEP	22.45	18.37	19.49	34.78	18.06	18.59
	City	48.70	13.61	23.21	29.25	22.37	22.59
	Rural	7.04	17.97	14.98	10.21	15.71	15.54
	Suburb	40.17	58.53	53.51	50.80	53.37	53.29
	Town	3.83	9.86	8.21	8.23	8.54	8.53
ELA Grade 6	AIAN	0.18	0.14	0.15	0.32	0.16	0.17
	Asian	4.24	4.30	4.28	2.94	4.05	4.01
	Black	25.56	10.45	15.01	16.48	14.56	14.63
	Hispanic	20.66	10.32	13.44	15.56	12.31	12.42
	Multi-Race	5.40	4.57	4.82	4.94	4.40	4.42
	NHPI	0.11	0.07	0.08	0.09	0.09	0.09
	White	43.84	70.16	62.22	59.68	64.43	64.26
	Female	49.37	48.70	48.90	45.72	48.89	48.77
	Male	50.63	51.30	51.10	54.28	51.11	51.23
	Ec. Disadvantaged	58.27	41.88	46.83	47.00	46.75	46.75
	EL	6.24	2.87	3.89	11.62	3.16	3.46
	IEP	21.98	17.77	19.04	34.25	17.57	18.17
	City	43.48	13.73	22.70	26.63	21.93	22.09
	Rural	7.29	18.28	14.97	10.77	15.76	15.58
	Suburb	45.14	57.71	53.92	52.45	53.66	53.62
	Town	3.89	10.23	8.32	8.49	8.60	8.60

Sub./Grade	Demographic	2021 Not Tested (%)	2021 Tested (%)	2021 Total (%)	2019 Not Tested (%)	2019 Tested (%)	2019 Total (%)
ELA Grade 7	AIAN	0.23	0.12	0.16	0.16	0.15	0.15
	Asian	4.01	4.03	4.02	2.41	4.00	3.94
	Black	23.95	10.44	14.85	15.52	14.21	14.26
	Hispanic	19.68	9.95	13.13	15.35	11.88	12.03
	Multi-Race	5.45	4.32	4.69	5.05	4.03	4.07
	NHPI	0.10	0.09	0.09	0.09	0.09	0.09
	White	46.58	71.06	63.06	61.43	65.65	65.47
	Female	49.52	48.33	48.72	47.42	48.80	48.75
	Male	50.48	51.67	51.28	52.58	51.20	51.25
	Ec. Disadvantaged	56.17	40.95	45.92	49.07	45.21	45.38
	EL	6.17	2.72	3.85	9.93	3.20	3.49
	IEP	22.00	17.56	19.01	31.62	17.23	17.85
	City	41.01	13.32	22.36	25.69	20.89	21.10
	Rural	7.67	18.66	15.07	11.01	16.00	15.79
	Suburb	46.98	57.15	53.83	51.90	54.08	53.99
	Town	4.09	10.81	8.62	9.52	8.93	8.95
ELA Grade 8	AIAN	0.22	0.15	0.17	0.35	0.15	0.16
	Asian	4.29	4.01	4.11	1.95	4.04	3.93
	Black	22.44	10.11	14.61	15.25	14.13	14.19
	Hispanic	18.69	9.73	13.00	14.16	11.72	11.85
	Multi-Race	5.20	3.98	4.42	4.46	3.65	3.69
	NHPI	0.12	0.09	0.10	0.07	0.08	0.08
	White	49.03	71.93	63.57	63.77	66.24	66.11
	Female	50.39	47.84	48.77	51.87	48.58	48.75
	Male	49.61	52.16	51.23	48.13	51.42	51.25
	Ec. Disadvantaged	53.06	39.51	44.46	46.69	44.09	44.22
	EL	5.48	2.45	3.56	7.61	3.05	3.29
	IEP	21.27	17.30	18.75	30.61	16.99	17.71
	City	38.72	12.42	22.03	24.41	21.12	21.29
	Rural	8.48	19.14	15.25	10.89	16.06	15.78
	Suburb	48.31	56.92	53.78	53.35	53.67	53.65
	Town	4.20	11.39	8.76	9.16	9.03	9.03

Sub./Grade	Demographic	2021 Not Tested (%)	2021 Tested (%)	2021 Total (%)	2019 Not Tested (%)	2019 Tested (%)	2019 Total (%)
Science Grade 4	AIAN	0.21	0.13	0.15	0.28	0.15	0.15
	Asian	4.45	4.32	4.36	1.85	4.14	4.08
	Black	28.77	10.41	15.32	19.10	14.96	15.08
	Hispanic	22.23	10.22	13.43	12.70	12.68	12.68
	Multi-Race	5.50	4.95	5.09	5.65	4.74	4.76
	NHPI	0.09	0.08	0.08	0.08	0.07	0.07
	White	38.75	69.89	61.57	60.35	63.26	63.18
	Female	49.21	49.00	49.06	43.43	49.07	48.91
	Male	50.79	51.00	50.94	56.57	50.93	51.09
	Ec. Disadvantaged	62.48	42.25	47.66	50.84	48.84	48.89
	EL	8.53	3.91	5.14	3.94	4.55	4.54
	IEP	21.68	18.10	19.06	38.51	17.99	18.57
	City	49.32	14.16	23.56	27.15	22.88	23.00
	Rural	6.91	17.87	14.93	12.81	15.47	15.39
	Suburb	39.59	58.33	53.32	49.22	53.35	53.24
	Town	3.93	9.64	8.11	9.03	8.28	8.30
Science Grade 8	AIAN	0.21	0.15	0.17	0.34	0.15	0.16
	Asian	4.23	4.04	4.11	1.23	4.06	3.90
	Black	22.23	10.03	14.62	16.58	14.07	14.21
	Hispanic	18.42	9.71	12.98	11.06	11.71	11.67
	Multi-Race	5.21	3.96	4.43	4.73	3.64	3.70
	NHPI	0.13	0.09	0.10	0.07	0.08	0.08
	White	49.58	72.02	63.58	65.98	66.30	66.28
	Female	50.50	47.73	48.77	51.86	48.58	48.76
	Male	49.50	52.27	51.23	48.14	51.42	51.24
	Ec. Disadvantaged	52.95	39.35	44.46	47.57	44.00	44.20
	EL	5.27	2.47	3.52	2.28	3.06	3.02
	IEP	21.27	17.23	18.75	32.05	16.90	17.76
	City	38.00	12.41	22.03	22.56	21.08	21.17
	Rural	8.62	19.24	15.25	11.94	16.06	15.82
	Suburb	48.78	56.80	53.79	54.19	53.69	53.72
	Town	4.33	11.43	8.76	9.68	9.04	9.07

DISTRICT-LEVEL INFORMATION

Districts with large proportions of students not tested were identified for each subject and grade level (elementary and middle). The 95th percentile of not tested rates was calculated for each subject, and grade levels and districts with proportions greater than the 95th percentile are shown in Table W–6. There were 7–8 districts fitting the criteria. If a school district had low enrollment (fewer than 500 students per grade), it was excluded from the table, therefore the table identifies larger districts.

Table W–6. School Districts with High Proportion of Non-Tested Students in 2021

Subject	Level	District Name	Locale	Type	2019 N	2019 Not Tested (%)	2021 N	2021 Not Tested (%)
Math	Elem.	Scranton SD	City	Regular	2213	3.84	2046	81.43
		Philadelphia City SD	City	Regular	30521	2.82	28246	80.68
		Chester Community CS	Suburb	Charter	1508	2.59	1601	75.70
		Bethlehem Area SD	City	Regular	2789	1.86	2790	71.18
		Pocono Mountain SD	Rural	Regular	1893	2.59	1717	66.92
		Reading SD	City	Regular	3943	0.91	3916	65.68
		Hazleton Area SD	Suburb	Regular	2646	3.51	2593	64.44
	Middle	Commonwealth Charter Academy CS	City	Charter	2154	32.68	5264	96.39
		Philadelphia City SD	City	Regular	26329	4.41	26892	88.24
		Pocono Mountain SD	Rural	Regular	2024	5.19	1966	82.15
		Pennsylvania Cyber CS	Town	Charter	2368	34.08	2828	78.89
		Reading SD	City	Regular	3915	3.04	3941	77.59
		Hazleton Area SD	Suburb	Regular	2589	4.48	2685	76.31
		Downingtown Area SD	Suburb	Regular	3201	2.75	3179	73.67
		Scranton SD	City	Regular	2182	3.02	2086	72.48
ELA	Elem.	Allentown City SD	City	Regular	4108	6.67	3643	99.84
		Scranton SD	City	Regular	2222	3.83	2040	83.63
		Philadelphia City SD	City	Regular	31070	5.01	28277	80.57
		Chester Community CS	Suburb	Charter	1522	3.35	1598	75.03
		Bethlehem Area SD	City	Regular	2830	2.90	2791	71.23
		Pocono Mountain SD	Rural	Regular	1897	2.48	1716	66.43
		Reading SD	City	Regular	4059	4.02	3937	65.30
		Hazleton Area SD	Suburb	Regular	2649	3.62	2590	63.75
	Middle	Allentown City SD	City	Regular	3651	7.12	3783	99.63
		Commonwealth Charter Academy CS	City	Charter	2137	32.52	5262	96.41
		Philadelphia City SD	City	Regular	26711	5.75	26894	88.31
		Pocono Mountain SD	Rural	Regular	2030	4.68	1969	81.87
		Pennsylvania Cyber CS	Town	Charter	2352	32.65	2827	78.39
		Reading SD	City	Regular	4015	5.08	3958	77.31
		Hazleton Area SD	Suburb	Regular	2587	3.94	2681	75.94
		Downingtown Area SD	Suburb	Regular	3203	2.65	3179	73.45

Subject	Level	District Name	Locale	Type	2019 N	2019 Not Tested (%)	2021 N	2021 Not Tested (%)
Science	Elem. (Grade 4 only)	Allentown City SD	City	Regular	1330	3.76	1202	99.83
		Scranton SD	City	Regular	759	2.90	688	83.43
		Philadelphia City SD	City	Regular	10268	3.04	9510	81.69
		Chester Community CS	Suburb	Charter	528	4.55	564	78.01
		Bethlehem Area SD	City	Regular	974	2.87	972	71.30
		Hazleton Area SD	Suburb	Regular	874	4.23	865	66.71
		Pocono Mountain SD	Rural	Regular	622	3.05	561	64.35
	Middle (Grade 8 only)	Allentown City SD	City	Regular	1114	5.92	1233	99.59
		Commonwealth Charter Academy CS	City	Charter	825	33.45	1831	97.00
		Philadelphia City SD	City	Regular	8541	6.81	9087	90.91
		Pocono Mountain SD	Rural	Regular	705	7.38	685	87.01
		Pennsylvania Cyber CS	Town	Charter	932	35.84	1051	83.16
		Downingtown Area SD	Suburb	Regular	1043	3.36	1069	82.13
		Reading SD	City	Regular	1368	6.87	1311	81.69

There was consistent overlap for districts with low participation rates in 2021. Specifically, Philadelphia City School District and Pocono Mountain School District were identified in all 6 of the subjects/grade levels, indicating consistently low participation rates in 2021. Moreover, Reading School District and Hazleton Area School District were identified for all subjects and grade levels except Science Elementary and Science Middle, respectively. All school districts identified were regular school districts except for three independent charter school districts: Commonwealth Charter Academy Charter School (Harrisburg), Chester Community Charter School (Chester), and Pennsylvania Cyber Charter School (Midland).

Table W–7 shows demographic representation of key variables for low participating school districts. The percentage of students for specific racial/ethnic backgrounds and the percentage of students in three subgroups (economically disadvantaged, EL, and IEP) are presented in the table.

Table W–7. Demographic Characteristics of Low Participation School Districts

District Name	City	Black %	Hisp. %	White %	Ec. Disad. %	EL %	IEP %
Allentown City SD	Allentown	13.53	74.31	7.16	81.07	18.53	17.87
Bethlehem Area SD	Bethlehem	9.78	44.70	39.98	55.44	6.75	19.39
Chester Community CS	Chester	84.47	11.65	0.98	100	6.59	26.24
Commonwealth Charter Academy CS	Harrisburg	13.37	14.45	61.35	49.53	2.21	20.98
Downingtown Area SD	Downingtown	2.75	5.27	69.46	11.10	1.58	16.36
Hazleton Area SD	Hazle Township	2.03	62.71	33.17	55.11	20.99	14.08
Pennsylvania Cyber CS	Midland	11.20	4.62	72.59	34.18	1.17	23.58
Philadelphia City SD	Philadelphia	47.48	23.34	14.77	74.93	14.50	18.35
Pocono Mountain SD	Swiftwater	23.22	29.56	41.90	44.30	3.56	22.88
Reading SD	Reading	7.52	86.50	4.45	95.12	26.63	26.39
Scranton SD	Scranton	13.89	35.88	37.41	78.51	9.94	22.38

PRIOR PERFORMANCE

To compare prior performance for students not tested versus students tested, data from two years prior was aggregated. Specifically, the 2021 PSSA records were matched with 2019 PSSA records based on PA Secure ID, and the matching accounted for two grade level differences (i.e., 2021 grade 8 math records were matched with 2019 grade 6 math records). In addition, the 2019 PSSA records were matched with 2017 PSSA records based on the same criteria (i.e., 2019 grade 5 ELA records were matched with 2017 grade 3 ELA records). Not all student records could be matched with prior PSSA records, so counts differ from those presented in Table W–1. Table W–8 only reports when prior performance data was available for grades 5 through 8.

Table W–8 presents prior performance data for students who tested and students who did not test for the 2021 and 2019 cohorts. There were large differences in the mean scaled scores and percentage of students earning proficient or advanced scores for both cohorts based on testing status (tested versus not tested). Specifically, students who tested earned higher scaled scores on prior PSSAs than students not tested. Patterns were similar for the percentage of students earning proficient or advanced classifications on prior PSSA tests. In other words, students who tested earned higher proficiency levels on the prior PSSA than students not tested. Findings held for both the 2019 and 2021 cohorts; however it is important to note that the number of students who did not test in 2019 ($1993 < N < 4086$) was substantially different than the number of students who did not test in 2021 ($29168 < N < 42400$).

Lastly, when comparing students who tested in 2021 and students who tested in 2019, the 2021 tested cohort earned higher mean scaled scores and proficient classifications than the 2019 tested cohort. This evidence indicates that the 2021 tested cohort tended to be a higher ability group than the 2019 tested cohort. Figures W–1 and W–2 present the same information for the 2021 cohort.

Table W–8. Prior PSSA Performance for 2021 and 2019 Cohorts by Testing Status and Subject/Grade

Sub./Grade	Prior Performance	2021 Not Tested	2021 Tested	2019 Not Tested	2019 Tested
Math Grade 5	N	29589	85742	2041	118167
	SS Mean	982.53	1041.11	961.64	1022.00
	SS SD	120.71	122.62	123.26	129.07
	% Proficient/Advanced	40.80	61.12	35.13	55.17
Math Grade 6	N	33076	84905	2387	117566
	SS Mean	958.54	1007.87	946.11	995.55
	SS SD	119.35	122.81	111.28	118.19
	% Proficient/Advanced	33.87	50.99	31.13	47.27
Math Grade 7	N	37149	85059	3117	115309
	SS Mean	962.94	1004.70	946.42	994.34
	SS SD	111.67	117.56	108.46	119.48
	% Proficient/Advanced	32.79	47.72	28.55	44.64
Math Grade 8	N	42400	80017	4086	113058
	SS Mean	953.97	994.44	942.47	979.56
	SS SD	113.73	119.87	111.42	115.32
	% Proficient/Advanced	30.09	44.14	28.85	41.38
ELA Grade 5	N	29168	85691	1993	117486
	SS Mean	1005.25	1050.75	994.64	1041.42
	SS SD	107.05	106.58	113.34	110.36
	% Proficient/Advanced	48.50	66.60	47.11	65.49
ELA Grade 6	N	33087	84325	2284	116849
	SS Mean	1006.37	1046.60	988.35	1032.73
	SS SD	113.68	110.00	117.87	111.84
	% Proficient/Advanced	52.90	67.96	46.58	61.74
ELA Grade 7	N	37177	84595	2975	114796
	SS Mean	1003.72	1038.19	993.44	1031.98
	SS SD	106.53	105.40	109.93	111.67
	% Proficient/Advanced	49.32	62.90	46.59	60.54
ELA Grade 8	N	41785	80311	3788	112941
	SS Mean	1014.45	1046.40	1012.16	1038.20
	SS SD	106.29	104.83	111.55	105.33
	% Proficient/Advanced	54.95	67.95	53.59	64.89

Figure W–1. Prior PSSA Mean Scaled Scores for Tested and Not Tested Students in 2021

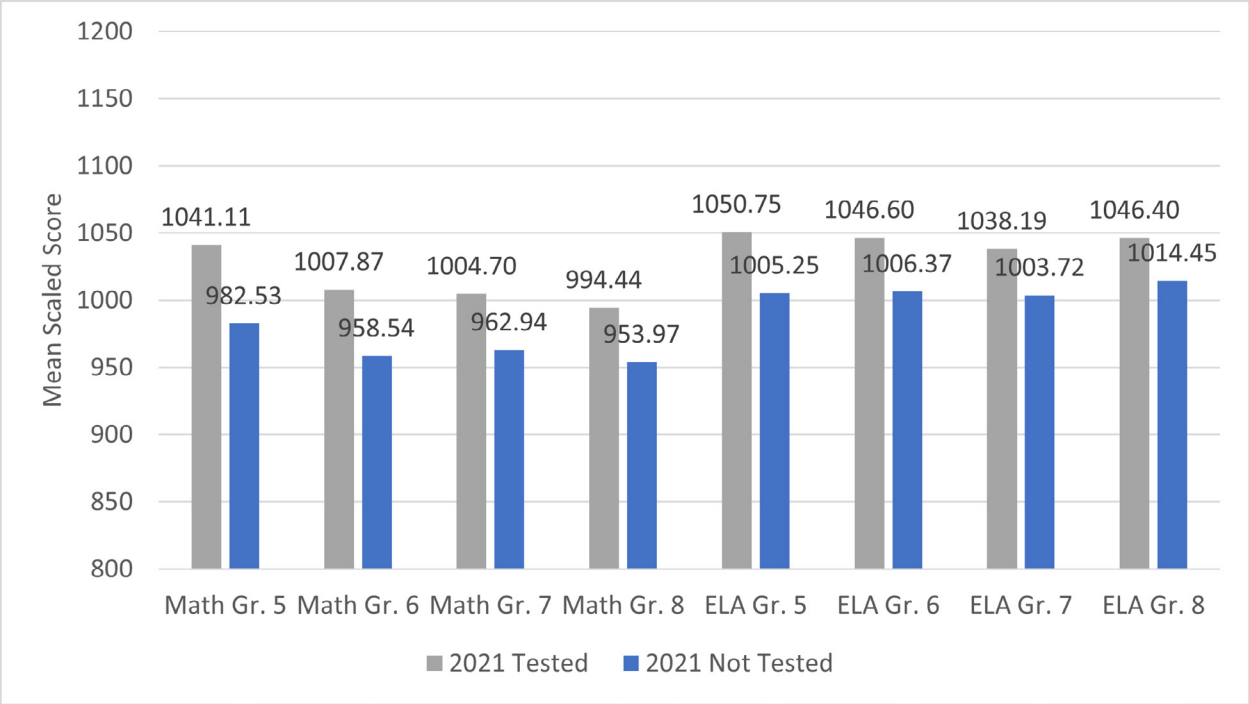
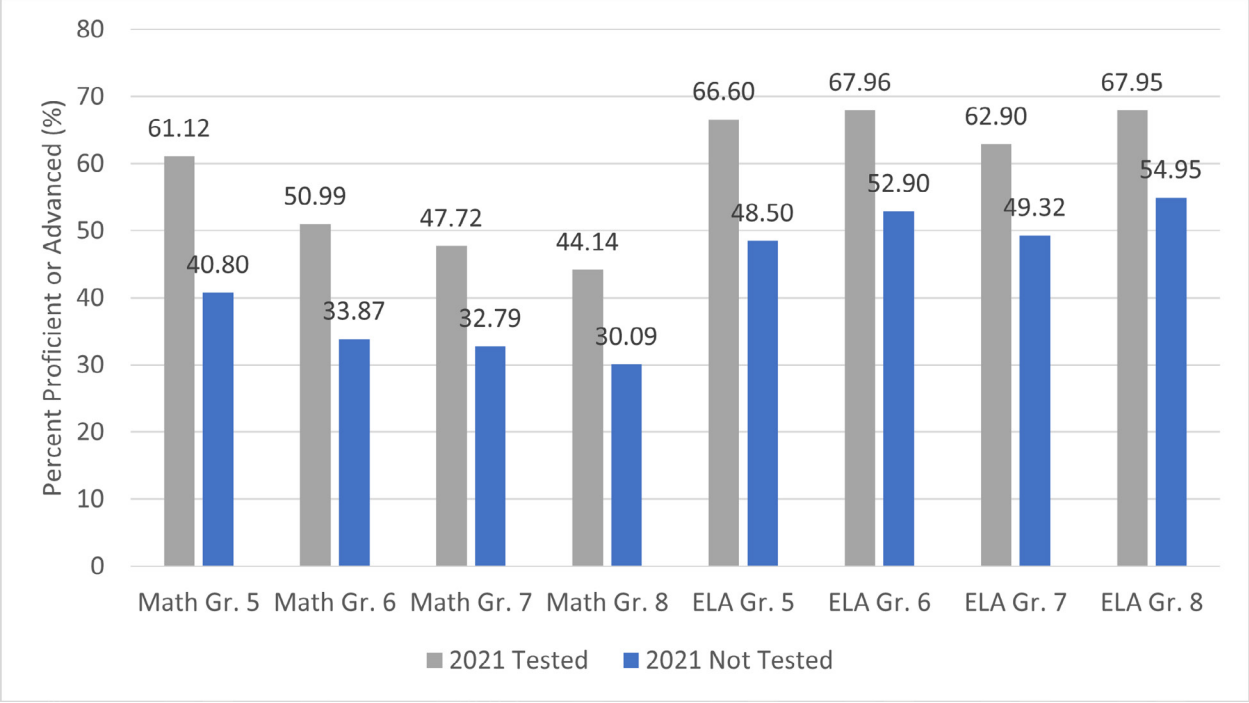


Figure W–2. Prior PSSA Percent Proficiency for Tested and Not Tested Students in 2021



Correlations between prior and current PSSA scores were calculated for the 2019 and 2021 cohorts (see Table W–9). Correlations were slightly lower for the 2021 cohort than the 2019 cohort, although correlations still met acceptable criteria.

Table W–9. Correlations Between Prior PSSA Scores

Sub./Grade	2021 N	2021 Correlation	2019 N	2019 Correlation
ELA Grade 5	85691	0.78	117486	0.82
ELA Grade 6	84325	0.80	116849	0.81
ELA Grade 7	84595	0.79	114796	0.80
ELA Grade 8	80311	0.79	112941	0.81
Math Grade 5	85742	0.79	118167	0.82
Math Grade 6	84905	0.80	117566	0.82
Math Grade 7	85059	0.82	115309	0.85
Math Grade 8	80017	0.81	113058	0.84

MATCH RATES

Two different match rates were calculated by the methodology outlined by Ho (2021). The data used for this section is the final dataset in which state summary filters were applied, so counts differ slightly from those presented in the previous section (prior performance). The first match rate provides information by subject and grade level and indicates the proportion of students who tested in comparison to 2 years prior (see Equation 1). Match rates greater than 100% or less than 0% were winsorized to be between 0 and 100%. Values greater than 100% indicate that a larger number of students tested in the latter year than the former; this occurred in ELA/math grades 5, 6 and 7 in 2019. The 2019 values provide an indication of how much variability occurred between 2017 and 2019 to better interpret the 2021 match rate. For example, in Science grade 4, the 2019 match rate was 98% and the 2021 match rate was 74%. We would not necessarily expect that the maximum match rate in 2021 would be 100% given the level of variability between 2017 and 2019. With that said, most match rates in 2019 were greater than 98% (except grade 3). The 2021 match rates ranged from 69% to 75%, where higher match rates were observed for grades 3 and 4 (75%-76%) and lower match rates were observed for grade 8 (69%).

$$m^*_{(g,y)} = \frac{N_{(g,y)}}{N_{(g-2,y-2)}} \quad \text{(Equation 1)}$$

Table W–10. Match Rates by Subject/Grade in 2019 and 2021

Sub./ Grade	2017	2019	2021	Match Rate 2019	Match Rate 2021
Math Gr. 3	125205	120604	91693	96.33%	76.03%
Math Gr. 4	125575	123286	92387	98.18%	74.94%
Math Gr. 5	124405	127592	90866	100.00%*	71.22%
Math Gr. 6	123112	127496	90563	100.00%*	71.03%
Math Gr. 7	125584	125808	90812	100.00%*	72.18%
Math Gr. 8	123271	123186	85253	99.93%	69.21%
ELA Gr. 3	124923	120564	90980	96.51%	75.46%
ELA Gr. 4	125200	123172	91862	98.38%	74.58%
ELA Gr. 5	124183	127550	91028	100.00%*	71.37%
ELA Gr. 6	123170	127560	90232	100.00%*	70.74%
ELA Gr. 7	125744	125998	90515	100.00%*	71.84%
ELA Gr. 8	123653	123503	85686	99.88%	69.38%
Science Gr. 4	125488	123093	91071	98.09%	73.99%
Science Gr. 8	122716	122654	84244	99.95%	68.68%

*Match rate was winsorized to be between 0–100%

The second rate calculated was a longitudinal match rate, which provides information regarding the number of students that tested in a given year, who also tested 2 years prior (see Equation 2). For example, to calculate ELA grade 5 longitudinal match rate in 2021 ($m_{5,2021}$ = 70.06%), test-takers in ELA grade 5 in 2021 were matched to ELA grade 3 records in 2019 ($n_{5,2021}$ = 84,472). Then, the number of matched records was divided by the total number of ELA grade 3 2019 records ($n_{3,2019}$ = 120,564). The 2019 values were also calculated for comparison purposes. As expected, the 2021 longitudinal match rates were substantially lower than the 2019 match rates (62–70% versus 90–93%). Moreover, there was much more variation in the 2021 match rates than the 2019 match rates. It is important to note that longitudinal match rates are decreased by the students who either enter or exit the state school system. In some cases, this may mean that specific subgroups of students (i.e., English Learners [ELs], migrants, or other high mobility groups) are underrepresented in the matched counts due to movement into or out of the state. For example in 2019, 3.8% of the ELA grade 5 student population were ELs, however only 2.8% of the matched grade 5 students were ELs; as such, there was a substantially lower count of ELs in the longitudinal matched records than what exists in the data.

$$m^*_{g,y} = \frac{N_{g,y}}{N_{(g-2,y-2)}} \text{ (Equation 2)}$$

Table W–11. Longitudinal Match Rates by Subject/Grade in 2019 and 2021

Sub./Grade	2017	2019 Matched	2019	2021 Matched	Longitudinal Match Rate 2019	Longitudinal Match Rate 2021
Math Grade 3	125205		120604			
Math Grade 4	125575		123286			
Math Grade 5	124405	115998	127592	84472	92.65%	70.04%
Math Grade 6	123112	115638	127496	83640	92.09%	67.84%
Math Grade 7	125584	113526	125808	83961	91.26%	65.80%
Math Grade 8	123271	111341	123186	79039	90.44%	61.99%
ELA Grade 3	124923		120564			
ELA Grade 4	125200		123172			
ELA Grade 5	124183	115742	127550	84625	92.65%	70.19%
ELA Grade 6	123170	115336	127560	83326	92.12%	67.65%
ELA Grade 7	125744	113421	125998	83691	91.33%	65.61%
ELA Grade 8	123653	111593	123503	79483	90.60%	62.31%

Table W–12 and Figure W–3 show the longitudinal match rates by student background characteristics and student subgroups. Table W–12 provides the information by subject and grade level whereas Figure W–3 shows the information in a boxplot to represent the variation across subjects and grade levels. As Figure W–3 shows, certain subgroups had much lower than average match rates (i.e., ELs and students in city settings), while other subgroups had higher than average match rates (i.e., White students and students in town or rural settings).

Figure W–3. Boxplots of 2021 Longitudinal Match Rate by Student Background Characteristics and Student Subgroups

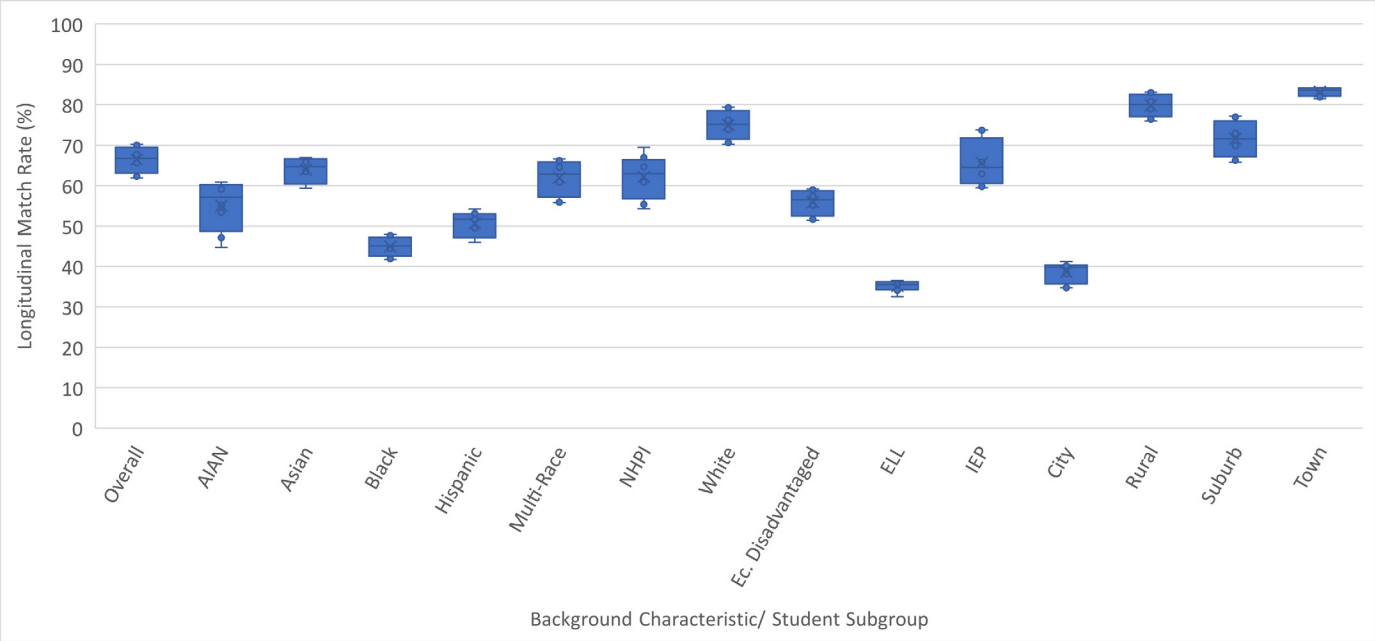


Table W–12. 2021 Longitudinal Match Rates by Background Characteristic and Subject/ Grade

Subject	2019 Grade	2021 Grade	Background Characteristic	Count 2019	Count 2021	Longitudinal Match Rate
Mathematics	3	5	N	120604	84472	70.04
			Asian	4988	3330	66.76
			Black	17903	8542	47.71
			Hispanic	15246	8086	53.04
			White	76030	60261	79.26
			Ec. Disadvantaged	59220	34959	59.03
			EL	5886	2138	36.32
			IEP	20765	15302	73.69
			City	27813	11188	40.23
			Rural	18578	15438	83.10
			Suburb	64146	49398	77.01
			Town	10055	8432	83.86

Subject	2019 Grade	2021 Grade	Background Characteristic	Count 2019	Count 2021	Longitudinal Match Rate
Mathematics	4	6	N	123286	83640	67.84
			Asian	5094	3353	65.82
			Black	18449	8434	45.72
			Hispanic	15650	8481	54.19
			White	77986	59429	76.20
			Ec. Disadvantaged	60218	34819	57.82
			EL	5608	1910	34.06
			IEP	22180	14624	65.93
			City	28219	11626	41.20
			Rural	19073	15401	80.75
			Suburb	65754	47977	72.96
			Town	10216	8606	84.24
Mathematics	5	7	N	127592	83961	65.80
			Asian	5038	3208	63.68
			Black	19067	8557	44.88
			Hispanic	15723	8147	51.82
			White	81555	60272	73.90
			Ec. Disadvantaged	61352	34160	55.68
			EL	4898	1793	36.61
			IEP	23037	14550	63.16
			City	28555	11473	40.18
			Rural	20049	15827	78.94
			Suburb	68090	47593	69.90
			Town	10880	9027	82.97
Mathematics	6	8	N	127496	79039	61.99
			Asian	5179	3075	59.37
			Black	18561	7779	41.91
			EL	4067	1443	35.48
			Hispanic	15713	7224	45.97
			White	82121	57644	70.19
			Ec. Disadvantaged	59553	30670	51.50
			IEP	22401	13325	59.48
			City	27972	9735	34.80
			Rural	20081	15275	76.07
			Suburb	68427	45016	65.79
			Town	10965	8943	81.56

Subject	2019 Grade	2021 Grade	Background Characteristic	Count 2019	Count 2021	Longitudinal Match Rate
ELA	3	5	N	120564	84625	70.19
			Asian	4980	3330	66.87
			Black	17869	8578	48.00
			Hispanic	15226	8091	53.14
			White	76054	60355	79.36
			Ec. Disadvantaged	59193	35021	59.16
			EL	5866	2109	35.95
			IEP	20759	15320	73.80
			City	27760	11214	40.40
			Rural	18589	15440	83.06
			Suburb	64133	49511	77.20
			Town	10058	8442	83.93
ELA	4	6	N	123172	83326	67.65
			Asian	5086	3354	65.95
			Black	18415	8375	45.48
			Hispanic	15609	8062	51.65
			White	77956	59609	76.46
			Ec. Disadvantaged	60160	34539	57.41
			EL	5561	1811	32.57
			IEP	22161	14583	65.80
			City	28136	11127	39.55
			Rural	19083	15462	81.02
			Suburb	65708	48093	73.19
			Town	10218	8611	84.27
ELA	5	7	N	127550	83691	65.61
			Asian	5029	3194	63.51
			Black	19046	8467	44.46
			Hispanic	15702	7774	49.51
			White	81567	60506	74.18
			Ec. Disadvantaged	61352	33851	55.18
			EL	4878	1705	34.95
			IEP	23040	14506	62.96
			City	28531	10921	38.28
			Rural	20040	15882	79.25
			Suburb	68069	47769	70.18
			Town	10890	9084	83.42

Subject	2019 Grade	2021 Grade	Background Characteristic	Count 2019	Count 2021	Longitudinal Match Rate
ELA	6	8	N	127560	79483	62.31
			Asian	5168	3076	59.52
			Black	18570	7753	41.75
			Hispanic	15701	7274	46.33
			White	82190	58067	70.65
			Ec. Disadvantaged	59629	30835	51.71
			EL	4032	1432	35.52
			IEP	22417	13415	59.84
			City	27971	9713	34.73
			Rural	20104	15369	76.45
			Suburb	68454	45337	66.23
			Town	10976	8990	81.91

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