TECHNICAL REPORT

for the
2015 Pennsylvania
System of School Assessment

Provided by
Data Recognition Corporation

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 paper scores that differ by one point).
Alternate Forms	Two or more versions of a test that are considered exchangeable, i.e., they measure the same constructs in the same ways, are intended for the same purposes, and are administered using the same directions. More specific terminology applies 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).

Table G–1 (continued). Glossary of Terms

Term	Common Definition
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, polytomously (e.g., 0, 1, 2, and 3). 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.
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 process (see also Linking). 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 student 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 that results in dividing the score range into various proficiency level ranges. 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).
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 the same way from 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 (also called a foil).

Table G–1 (continued). Glossary of Terms

Term	Common Definition
Equating	The strongest of several linking methods used to establish comparability between scores from multiple tests. Equated test scores should be considered exchangeable. Consequently, the criteria needed to refer to a linkage as equating are strong and somewhat complex (equal construct and precision, equity, and invariance). In practical terms, it is often stated that it should be a matter of indifference to a student if he/she takes any of the equated tests (see also Linking).
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 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 composed 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 making a correct response. 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.

Table G–1 (continued). Glossary of Terms

Term	Common Definition
Linking	A generic term referring to one of 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).
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.
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}, $n = 6$.

Table G–1 (continued). Glossary of Terms

Term	Common Definition
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 received. 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.

Table G–1 (continued). Glossary of Terms

Term	Common Definition
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.
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.
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	Sometimes abbreviated by RS—it is 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.

Table G–1 (continued). Glossary of Terms

Term	Common Definition
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).
Scaled Score	A mathematical transformation of a raw 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 score scale across different forms of a test.
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.
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 set of scores. 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. 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.

Table G–1 (continued). Glossary of Terms

Term	Common Definition
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 1–4 point scale.
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.
Writing Prompt	A type of constructed-response item found in the ELA assessment that requires the test taker to compose a mode-specific (opinion (Grades 3–5)/argumentative (Grades 6–8), informative/explanatory, or narrative) essay that is scored on a holistic, mode-specific scoring guideline on a 1–4 point scale.

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.

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. Hover over K-12 in the blue banner at the top of the page and select "Assessment and Accountability." Then select "Pennsylvania System of School Assessment (PSSA)" followed by "PSSA Technical Reports" in the column on the right under "PSSA and AYP Results."

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
	Standalone field test in mathematics and reading	April/May 2004
6	Operational writing	October 2004
8	Operational mathematics and reading	April 2004
	Standalone field test in mathematics and reading	April/May 2004
9	Operational writing	October 2004
11	Operational mathematics and reading	April 2004
	Standalone field test in mathematics and reading	April/May 2004
	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
	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
	Standalone field test in writing	February 2005
11	Operational mathematics and reading with embedded field test	April 2005
	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
	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
	Operational writing with embedded field test	February 2006
11	Operational mathematics and reading with embedded field test	March 2006
	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
	Standalone field test in science	April/May 2007
5	Operational mathematics and reading with embedded field test	March 2007
	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
	Operational writing with embedded field test	February 2007
	Standalone field test in science	April/May 2007
11	Operational mathematics and reading with embedded field test	March 2007
	Operational writing with embedded field test	February 2007
	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
	Operational science with embedded field test	April/May 2008
5	Operational mathematics and reading with embedded field test	March/April 2008
	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
	Operational writing with embedded field test	February 2008
	Operational science with embedded field test	April/May 2008
11	Operational mathematics and reading with embedded field test	March/April 2008
	Operational writing with embedded field test	February 2008
	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
	Operational science with embedded field test	April/May 2009
5	Operational mathematics and reading with embedded field test	March 2009
	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
	Operational writing with embedded field test	February 2009
	Operational science with embedded field test	April/May 2009
11	Operational mathematics and reading with embedded field test	March 2009
	Operational writing with embedded field test	February 2009
	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
	Operational science with embedded field test	April/May 2010
5	Operational mathematics and reading with embedded field test	April/May 2010
	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
	Operational writing with embedded field test	April/May 2010
	Operational science with embedded field test	April/May 2010
11	Operational mathematics and reading with embedded field test	April/May 2010
	Operational writing with embedded field test	April/May 2010
	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
	Operational science with embedded field test	March/April 2011
5	Operational mathematics and reading with embedded field test	March/April 2011
	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
	Operational writing with embedded field test	March/April 2011
	Operational science with embedded field test	March/April 2011
11	Operational mathematics and reading with embedded field test	March/April 2011
	Operational writing with embedded field test	March/April 2011
	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
	Operational science with embedded field test	April 2012
5	Operational mathematics and reading with embedded field test	March 2012
	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
	Operational writing with embedded field test	April 2012
	Operational science with embedded field test	April 2012
11	Operational mathematics and reading with embedded field test	March 2012
	Operational writing with embedded field test	April 2012
	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 (Planned)

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test (field test aligned to the PCS)	April 2013
	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
	Operational science with embedded field test	April 2013
	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
	Operational writing	March 2013
	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
	Operational writing with embedded field test	March 2013
	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
	Operational science with embedded field test	April–May 2014
5	Operational mathematics and reading with embedded field test	March 2014
	Operational writing	March–April 2014
6	Operational mathematics and reading with embedded field test	March 2014
	Standalone field test in ELA: writing	February 2014
7	Operational mathematics and reading with embedded field test	March 2014
	Standalone field test in ELA: writing	February 2014
8	Operational mathematics and reading with embedded field test	March 2014
	Operational writing with embedded field test	March–April 2014
	Operational science with embedded field test	April–May 2014
	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 completed 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
	Operational ELA with embedded field test	April 2015
4	Operational mathematics with embedded field test	April 2015
	Operational ELA with embedded field test	April 2015
	Operational science with embedded field test	April–May 2015
5	Operational mathematics embedded field test	April 2015
	Operational ELA with embedded field test	April 2015
6	Operational mathematics with embedded field test	April 2015
	Operational ELA with embedded field test	April 2015
7	Operational mathematics with embedded field test	April 2015
	Operational ELA with embedded field test	April 2015
8	Operational mathematics with embedded field test	April 2015
	Operational ELA with embedded field test	April 2015
	Operational science with embedded field test	April–May 2015

ASSESSMENT ACTIVITIES PLANNED FOR 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 will be in mid-April followed by the testing windows for Mathematics in mid to late April and then Science in late April. The makeup assessments will be available through 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–13. Operational Assessment and Field Testing During the 2015–16 School Year (Planned)

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

Chapter One: Background 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). The Academic Standards, which are part of *Chapter Four 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 2015 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 and will continue to guide item development in future years.

More information regarding the 2015 mathematics and reading tests may be found in Chapter Two and in the following Pennsylvania Department of Education publications available on the PDE website: *2014–2015 PSSA Assessment Handbook*, *2014–2015 PSSA English Language Arts Preliminary Item and Scoring Sampler* (one per assessed grade level), and *2013–2014 or 2014–2015 PSSA Mathematics Preliminary Item and Scoring Sampler* (one per assessed grade level). These materials can be accessed by going to the PDE website, www.education.pa.gov. Hover over K-12 in the blue banner at the top of the page and select "Assessment and Accountability." Then select "Pennsylvania System of School Assessment (PSSA)."

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: *2014–2015 PSSA Assessment Handbook* and *2009–2010 PSSA Science Item and Scoring Sampler Supplement* (one per assessed grade level). These handbooks can be accessed by going to www.education.pa.gov. Hover over K-12 in the blue banner at the top of the page and select "Assessment and Accountability," then select "Pennsylvania System of School Assessment (PSSA)," then scroll down to "Science Resources." The establishment of performance levels for science, utilizing the Bookmark method, took place during the summer of 2008. See Chapter Thirteen of this technical report for a brief summary.

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. Hover over K-12 in the blue banner at the top of the page and select "Assessment and Accountability." Then select "Pennsylvania System of School Assessment (PSSA)" followed by "Assessment Anchors" in the column on the right under "Other Materials."

OVERVIEW OF THE 2015 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 better sample 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.

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
  - C = Writing
  - D = Language
  - 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. Dual Reporting in ELA: Reading

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
	A-K.1.1.2	A-C.3.1.1	A-V.4.1.2
	A-K.1.1.3		
Informational Text	B-K.1.1.1	B-C.2.1.1	B-V.4.1.1
	B-K.1.1.2	B-C.2.1.2	B-V.4.1.2
	B-K.1.1.3	B-C.3.1.1	
		B-C.3.1.2	
		B-C.3.1.3	

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], Text-Dependent Analysis (TDA) questions [Grades 4–8] and mode-specific Writing Prompts (WP).

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.

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.

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.

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.

WRITING PROMPTS

At each grade level, students respond to writing prompts developed to measure composition of writing as specified in the Pennsylvania Core Standards for Text Types and Purposes. A student response to a prompt requires approximately 30 minutes per prompt, though students are allowed more time to finish their responses if necessary.

The writing prompts were field tested in a standalone field test in February 2013 for Grades 3, 4, and 5 and in February 2014 for Grades 6, 7, and 8. Prompt modes and prompts were spiraled across the total number of available forms. Spiraling is accomplished by administering each student one of many available field test forms in a sequential manner. For example, the first student received Form 1, the second student Form 2, and so on until every form was

administered. If there were more students than forms, the sequence was repeated starting with the first form until every student was assigned a form. This process ensured that each form was administered to approximately equal and representative student populations in regard to demographics like gender, ethnicity, school size, and location in the state.

With the transition to the Pennsylvania Core Standards, students are expected to receive instruction in all three modes of writing at all grade levels, and students may be assessed in any of the three modes at each grade level. These modes include Narrative, Informative/Explanatory, and Opinion (Grades 3–5) or Argumentative (Grades 6–8). Beginning with the operational assessment in 2015, students respond to one pre-selected operational prompt chosen from across the three modes.

The responses to writing prompts are scored on 1–4-point scale using the mode-specific holistic scoring guidelines. These writing prompt scoring guidelines describe a hierarchy of responses, which represent the four score levels, and include mode-specific writing skills as well as language conventions. See Appendix A or the *English Language Arts Item and Scoring Samplers* available on the PDE website.

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 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 2015 PSSA for science achieves a reasonable balance between the two item types.

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 2015 PSSA operational administration is made up of items that were field tested primarily in the 2014 PSSA administration with the exception of mathematics and English language arts in Grades 3, 4, and 5, which also include items that were field tested in the 2013 PSSA administration. Therefore, the activities that led to the 2015 PSSA operational administration began with the development of the test items that appeared in the field test portion of the 2014 operational administration. In turn, items that appeared on the field test portion of the 2014 operational administration were developed during and prior to 2013. (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

	Events Occurring in Calendar Year				
Operational Admin Year	**2011**	**2012**	**2013**	**2014**	**2015**
2013	Initial Item Development →	Field Test →	Operational Core Admin with embedded equating block items→	Core-to-Core Link	
2014		Initial Item Development →	Field Test →	Operational Core Admin with embedded equating block items→	Core-to-Core Link
2015			Initial Item Development →	Field Test →	Operational Core Admin with embedded equating block items[1]

[1] Core-to-core links did not appear on the 2015 assessments for mathematics and ELA.

Table 3–2. General Timeline Associated with 2013 and 2014 Field Test and 2015 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	2013 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

MATHEMATICS AND ENGLISH LANGUAGE ARTS

A series of major activities took place from 2011 through 2014 that led to the 2015 PSSA in mathematics and ELA that is aligned to the Pennsylvania Core Standards. These activities include the development of the Pennsylvania Core Standards Assessment Anchors and Eligible Content; test item development; content review; bias, fairness, and sensitivity review; field testing of items in spring 2013 and spring 2014; item review with data; and final selection of items to compose the 2015 PSSA.

These activities are described in some detail in this chapter as well as in Chapters Four and Five. It should also be noted that test items for the 2013 and 2014 field tests were developed by Data Recognition Corporation (DRC) and WestEd.

Test Content Blueprint for 2015 Mathematics and English Language Arts Assessments

The 2015 PSSA is based on the Pennsylvania Core Standards. The 2015 PSSA reflects the Assessment Anchors (PDE 2013), which were designed as a means of improving the articulation of curricular, instructional, and assessment practices. The Assessment Anchors serve to clarify the standards assessed on the PSSA and to communicate assessment limits, or the range of knowledge and skills from which the PSSA was designed. Relevant to item development are the refinement and clarification embodied in the Assessment Anchors.

The Assessment Anchors aligned to the Pennsylvania Core Standards were developed during 2011; items aligned to these Assessment Anchors were field tested in 2013 for Grades 3, 4, and 5 and in 2014 for Grades 6, 7, and 8. The PSSA for Grades 3 through 8 in 2015 followed a revised blueprint and testing plan to reflect the new Assessment Anchors and reporting categories.

Operational Layout for 2015 Mathematics

The mathematics PSSA plan was developed through the collaborative efforts of Data Recognition Corporation (DRC) and PDE. At Grades 4–8, the mathematics assessments are presented in one test booklet and one separate answer booklet. The test booklet contains multiple-choice items. The answer booklet contains scannable pages for multiple-choice (MC) responses, open-ended (OE) mathematics items with response spaces, and demographic data collection areas. At Grade 3, the mathematics assessment is presented in one integrated test/answer booklet. Each MC item is worth 1 point. Mathematics OE items receive a maximum of 4 points (on a scale of 0–4). Each test form contains common items (identical on all forms) along with placeholder items (which will be replaced with equating items in future administrations) and embedded field test items. The common items consist of a set of core items taken by all students. The placeholder items were used in the 2015 test forms to maintain consistency in the length of the assessment with that in future years when additional psychometric use items will be added to the forms. The embedded field test items are unique, in most instances, to a form. That is, there can be instances in which an embedded field test item appears on more than one form.

The 2015 PSSA had nine field test forms per grade with a normal core as well as unscored placeholder items. All of the forms contain the common items identical for all students and sets of generally unique field test items.

Tables 3–3 through 3–4 display the test design for mathematics for each form. The column entries for these tables denote the following:

- Grade level
- Number of unique common, or core, MC items
- Number of psychometric use MC items
- Number of embedded MC field test items
- Number of unique common, or core, OE items
- Number of embedded OE field test items

- Total number of MC and OE items in the form
- Total number of operational points (derived from Core MC and Core OE only) for producing a student score

Table 3–3. Mathematics Test Plan 2015

Grade	Total Core MC (all forms)	Total Psychometric Use MC (all forms)*	Total Embedded Field Test MC (all forms)	Total MC (Core, PS Use, & Field Test) positions (all forms)	Total Core 4 point OE (all forms)	Total Embedded Field Test OE (all forms)	Total OE (Core, PS Use, & Field Test) (all forms)	Total No. of Items per Op. Form MC/OE	Total No. of Core Points per Op. Test
3	60	18	90	168	3	9	12	72/4	72
4	60	18	90	168	3	9	12	72/4	72
5	60	18	90	168	3	9	12	72/4	72
6	60	18	90	168	3	9	12	72/4	72
7	60	18	90	168	3	9	12	72/4	72
8	60	18	90	168	3	9	12	72/4	72

* Psychometric Use is generally for equating purposes. In 2015, these items were used as placeholders only. Some of the psychometric use items may not be unique.

Table 3–4. Mathematics Operational Core Test Plan 2015

Grade	Unique Core MC per Form	Unique Core 4 point OE per Form	Total Number of Core Items (MC/OE)	Total Core Points per Test
3, 4, 5, 6, 7, and 8	60	3	60/3	72

The mathematics core was built from items appearing in the embedded field test positions from the 2014 embedded field test or from the 2013 embedded field test (only for Grades 3–5). For more information concerning the process used to convert the operational layout into forms (i.e., form construction), see Chapter Six. For more information about operational layout across forms and across years (i.e., form equivalency) see Chapter Ten.

Operational Layout for 2015 English Language Arts

The English language arts PSSA plan was developed through the collaborative efforts of Data Recognition Corporation (DRC) and PDE. At Grades 4–8, the English language arts assessments are combined in one test booklet and one separate answer booklet. The test booklet contains standalone multiple-choice items, a writing prompt with a mode-specific writer's checklist, and reading passages with multiple-choice and evidence-based selected-response items. The answer booklet contains scannable pages for standalone and passage-based multiple-choice (MC) responses, evidence-based selected-response (EBSR) responses, response spaces for the writing prompt, text-dependent analysis questions with a writer's checklist and response spaces, and

demographic data collection areas. At Grade 3, the English language arts assessment is presented in one integrated test/answer booklet.

Each MC item is worth 1 point. Each EBSR item is worth either 2 or 3 points, depending upon the number of responses students are asked to provide. Each writing prompt is worth a maximum of 4 points (on a scale of 1–4). In Grade 3, reading short-answer (SA) items receive a maximum of 3 points (on a scale of 0–3). In Grades 4–8, text-dependent analysis (TDA) items receive a maximum of 4 points (on a scale of 1–4). Each test form contains common items (identical on all forms) along with placeholder items (which will be replaced with equating items in future administrations) and embedded field test items. The common items consist of a set of core items taken by all students. The placeholder items were used in the 2015 test forms to maintain consistency in the length of the assessment with that in future years when additional psychometric use items will be added to the forms. The embedded field test items are unique, in most instances, to a form. That is, there can be instances in which an embedded field test item appears on more than one form.

The 2015 PSSA had nine field test forms per grade with a normal core as well as unscored placeholder items. All of the forms contain the common items identical for all students and sets of generally unique field test items.

Table 3–5 displays the test design for English language arts for each form. The column entries for these tables denote the following:

- Grade level
- Number of unique common, or core, MC and EBSR items
- Number of psychometric use MC items
- Number of embedded MC and EBSR field test items
- Number of unique common, or core, WP and SA or TDA items
- Number of embedded SA or TDA field test items
- Total number of MC, EBSR, WP, and SA or TDA items in the form
- Total number of operational points (derived from Core MC and EBSR and Core WP and SA or TDA only) for producing a student score

Table 3–5. ELA Test Plan 2015 per Operational Form

Grade	Selected Response							Constructed Response					Total Core Items	Total Core Points (Raw)	Total Core Points (Weighted)
	Passage-Based Multiple Choice (MC)			Stand Alone MC		Evidence-Based Selected Response (EBSR)		Passage-Based Short-Answer (SA)		Prompt (WP)	Text Dependent Analysis (TDA)				
	Core	Psychometric Use*	Embedded FT	Core	Psychometric Use*	Core	Embedded FT	Core	Embedded FT	Core**	Core**	Embedded FT			
3	20 (4 pass.)	6 (1 pass.)	8 (1 pass.)	18	2	4	2	2	1	1	0	0	42 SR 3 CR	58	62
4	23 (4 pass.)	6 (1 pass.)	8 (1 pass.)	18	2	6	2	0	0	1	1	1	47 SR 2 CR	64	84
5	23 (4 pass.)	6 (1 pass.)	8 (1 pass.)	18	2	6	2	0	0	1	1	1	47 SR 2 CR	64	84
6	23 (4 pass.)	6 (1 pass.)	8 (1 pass.)	18	2	6	2	0	0	1	1	1	47 SR 2 CR	64	84
7	23 (4 pass.)	6 (1 pass.)	8 (1 pass.)	18	2	6	2	0	0	1	1	1	47 SR 2 CR	64	84
8	23 (4 pass.)	6 (1 pass.)	8 (1 pass.)	18	2	6	2	0	0	1	1	1	47 SR 2 CR	64	84

***** Psychometric Use is generally for equating purposes. In 2015, these items were used as placeholders only. Some of the psychometric use items may not be unique.

****** Weighted (G3: WP x 2; G4-8: WP x 3, TDA x 4)

The English language arts core for 2015 was built from items appearing in the embedded field test positions from the 2014 standalone and embedded field test or from the 2013 standalone and embedded field test (only for Grades 3–5).

For more information concerning the process used to convert the operational layout into forms (i.e., form construction), see Chapter Six. For more information about operational layout across forms and across years (i.e., form equivalency) see Chapter Ten.

Test Sessions and Timing for 2015 Mathematics Assessment

The testing window for the 2015 operational mathematics assessment, including make-up sessions, extended from April 20 through May 8, 2015. The mathematics assessments consisted of three sections. Test administration recommendations called for each section to be scheduled as one assessment session, although schools were permitted to combine multiple sections in a single session. Administration guidelines stipulated that the sections be administered in the sequence in which they were printed in the test booklets. Table 3–6 outlines the assessment schedule and estimated times for each section, as well as the number and types of items tested for each grade level. The estimated Student Testing Times shown on the next page do not include time for administrative tasks that occur during the pre- and post-administration activities. These times are estimated separately. Times are approximate and are supplied to test administrators for scheduling purposes only.

Table 3–6. Mathematics—2015 Administration and Testing Times

Test Section	Suggested Times (In Minutes)			Grade Level Number of Items and Item Type					
	Administration (Total)	Administrative (Pre & Post)	Student Testing	3	4	5	6	7	8
1	70 to 85	15 to 20	55 to 65	24 MC 2 CR	24 MC 2 CR	24 MC 2 CR	24 MC 2 CR	24 MC 2 CR	24 MC 2 CR
2	65 to 80	15 to 20	50 to 60	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR
3	65 to 80	15 to 20	50 to 60	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR

During the assessment, students may request an extended assessment period if they indicate that they have not completed the task. Such requests are granted if the test administrator finds the request to be educationally valid. See Chapter Seven for more information about testing sessions.

Test Sessions and Timing for 2015 English Language Arts Assessment

The testing window for the 2015 operational ELA assessment, including make-up sessions, extended from April 13 through May 8, 2015. The ELA assessment consisted of four sections. Test administration recommendations called for each section to be scheduled as one assessment session, although schools were permitted to combine multiple sections in a single session. Administration guidelines stipulated that the sections be administered in the sequence in which they were printed in the test booklets. Table 3–7 outlines the assessment schedule and estimated times for each section, as well as the number and types of items tested for each grade level. The estimated Student Testing Times shown on the next page do not include time for administrative tasks that occur during the pre- and post-administration activities. These times are estimated separately. Times are approximate and are supplied to test administrators for scheduling purposes only.

Table 3–7. English Language Arts—2015 Administration and Testing Times

Test Section & Content	Suggested Times (In Minutes)			Grade Level Number of Items and Item Type					
	Administration (Total)	Administrative (Pre & Post)	Student Testing	3	4	5	6	7	8
1 ELA: Writing	70 to 85	15 to 20	55 to 65	20 MC 1 WP	20 MC 1 WP	20 MC 1 WP	20 MC 1 WP	20 MC 1 WP	20 MC 1 WP
2 ELA: Reading	55 to 95	15 to 20	40 to 75	12 MC/ EBSR 1 SA	22 MC/ EBSR	23 MC/ EBSR	23 MC/ EBSR	22 MC/ EBSR	22 MC/ EBSR
3 ELA: Reading	60 to 100	15 to 20	45 to 80	16 MC/ EBSR 1 SA	16 MC 1 TDA	16 MC 1 TDA	16 MC 1 TDA	16 MC 1 TDA	16 MC 1 TDA
4 ELA: Reading	55 to 80	15 to 20	40 to 60	12 MC/ EBSR 1 SA	7 MC/ EBSR 1 TDA	6 MC/ EBSR 1 TDA	6 MC/ EBSR 1 TDA	7 MC/ EBSR 1 TDA	7 MC/ EBSR 1 TDA

During the assessment, students may request an extended assessment period if they indicate that they have not completed the task. Such requests are granted if the test administrator finds the request to be educationally valid. See Chapter Seven for more information about testing sessions.

Reporting Categories and Points Distributions for 2015 Mathematics and English Language Arts Assessments

The content blueprints for the PCS-based Mathematics assessment are shown in the following tables. The blueprint is organized around four thematic Reporting Clusters (Numbers and Operations, Algebraic Concepts, Geometry, and Data Analysis and Probability) based on the expressed emphasis contained within the PCS. Each cluster is broken down into Reporting Categories that are associated with specific grades or grade-spans. The corresponding Reporting Categories are as follows (grade associations are shown in parentheses):

- 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)

Table 3–8. Mathematics Reporting Categories

Reporting Category	Grade			Reporting Category	Grade		Reporting Category	Grade
	3	4	5		6	7		8
A-T	14–17%	18–22%	24–28%	A-N	18–22%	14–17%	A-N	14–17%
A-F	14–17%	20–25%	26–30%	A-R	17–21%	24–28%	B-E	30–35%
B-0	26–32%	24–28%	14–17%	B-E	26–30%	24–28%	B-F	20–25%
C-G	14–17%	14–17%	14–17%	C-G	14–17%	18–22%	C-G	17–21%
D-M	26–32%	17–21%	17–21%	D-S	18–22%	14–17%	D-S	14–17%
Total	100%	100%	100%	Total	100%	100%	Total	100%

The content blueprints for the PCS-based ELA assessment (beginning with the 2015 PSSA administration) are shown in the following tables. The blueprints are organized around three Reporting Clusters (Reading, Writing, and TDA) based on the expressed emphasis contained within the PCS. As stated in the released PDE Assessment Anchor and Eligible Content documents, the Reporting Categories are as follows:

- A = Literature Text
- B = Informational Text
- C = Writing
- D = Language
- E = Text Dependent Analysis

In addition to the above, the first two Reporting Categories (Literature Text and Informational Text) are understood to be the "Genre Reporting Categories." The Genre Reporting Categories A and B for ELA will be mapped as part of a dual-alignment into Core Competencies Reporting Categories. There are three themes prevalent throughout the PCS-ELA Standards, and these themes appear in both Literature Text and Informational Text that will appear on the PCS-based PSSA ELA test. The following table shows how the results of specific PCS-based Assessment Anchors and Eligible Content will be mapped to provide for a second layer of reporting. These three additional (dual) Reporting Categories are as follows:

- A–K/B–K: Key Ideas and Details [Key Ideas]
- A–C/B–C: Craft and Structure, and Integration of Knowledge and Ideas [CSI]
- A–V/B–V: Vocabulary Acquisition and Use [Vocabulary]

Table 3–9. Reading Reporting Categories

Cluster	Reporting Category	Grade					
		3	4	5	6	7	8
Reading	A	24–34%	18–27%	18–27%	18–27%	18–27%	18–27%
	B	24–34%	18–27%	18–27%	18–27%	18–27%	18–27%
Writing	C*	13%	14%	14%	14%	14%	14%
	D	29%	21%	21%	21%	21%	21%
TDA	E*		19%	19%	19%	19%	19%
All Areas Total		100%	100%	100%	100%	100%	100%

*Reflect the impact of weighted values

Assessment Anchor Content Standards Subsumed within Reporting Categories for 2015 Mathematics and English Language Arts Assessments

For mathematics, there are four classifications that are used throughout the grade levels. In addition to these classifications, there are five Reporting Categories for each grade level. Within those Reporting Categories are Assessment Anchors that represent categories of subject matter (skills and concepts) that anchor the content of the PSSA. The Assessment Anchors differ across grades. The number of Assessment Anchors in each grade is shown in the list below.

- Grade 3: 10 Assessment Anchors
- Grade 4: 12 Assessment Anchors
- Grade 5: 11 Assessment Anchors
- Grade 6: 9 Assessment Anchors
- Grade 7: 9 Assessment Anchors
- Grade 8: 10 Assessment Anchors

For English language arts in Grade 3, there are eleven Assessment Anchors aligned to the Pennsylvania Core Standards. Within each of Reading Literature and Informational text, four Assessment Anchors pertain to Key Ideas and Details; Craft and Structure; Integration of Knowledge and Ideas; and Vocabulary Acquisition and Use. Within Writing is an Assessment Anchor for Text Types and Purposes which is further subdivided into three Anchor Descriptors for the three modes of writing. Two additional Assessment Anchors represent the language skills and concepts of Conventions of Standard English and Knowledge of Language. These same Assessment Anchors are found in Grades 4–8 in addition to Evidence-Based Analysis of Text, which makes use of both Literature and Informational texts.

Mathematics and ELA scores are based on the core (common) sections. Also reported are the student's mathematics and ELA performance levels. See Appendix B for a summary by grade level and content.

SCIENCE

In 2003, the existing Science, Technology, Environment, and Ecology (STEE) test was deferred, and PDE began efforts to develop a new science assessment. In the winter of 2006, a series of cognitive labs or item pilots were conducted across Pennsylvania with the primary focus of ascertaining language and contextual issues within the draft open-ended test items (Grade 4), scenario-based multiple-choice items (Grades 8 and 11), and scenario-based open-ended items (Grade 11), as well as determining the relative difficulty of the test items, the time required to complete the individual tasks, and the opportunity to know factors related to the implementation of the new science Assessment Anchors and Eligible Content by the participating schools. (See the section on the science cognitive labs discussed later in this chapter.)

Following the series of successful cognitive labs or item pilots, DRC developed another set of test items for the proposed voluntary, standalone field test. During the development phase, PDE made the determination to change the designation of the field test from a voluntary assessment to a census-based assessment. Leading up to the administration of the standalone field test, both content review and bias, fairness, and sensitivity review were conducted in Pennsylvania with Pennsylvania educators. In the spring of 2007, the initial standalone field test was administered to the census populations at Grades 4, 8, and 11, followed by a rangefinding for the open-ended

items. After the scoring was completed, an item review with data was conducted for the field test items administered in 2007. Table 3–10 shows a timeline for development of the science assessment.

Table 3–10. Science Development Implementation Timeline

Year	Event
2003	STEE test put on hold
2004–2005	New assessment plan developed by PDE
2006	Item Pilot (Cognitive Labs) to try out scenario-based science items
2007	Initial Standalone Field Test for Grades 4, 8, and 11
2008	Initial Operational Administration with core, matrix, and embedded field test positions
2009	Second Operational Administration with core, equating block, and embedded field test positions
2010–2015	Continuation of Operational Administration with core, equating block, and embedded field test positions

Test Content Blueprint for the 2015 Operational Science Test

The PSSA is based on the Pennsylvania Academic Standards as defined by the Eligible Content. The PSSA science assessment for 2015 reflects the Assessment Anchor Content Standards, which were designed as a means of improving the articulation of curricular, instructional, and assessment practices. The Assessment Anchors serve to clarify the Academic Standards assessed on the PSSA and to communicate assessment limits, or the range of knowledge and skills from which the PSSA would be designed. Relevant to item development are the refinement and clarification embodied in the Assessment Anchors (PDE, 2004).

The Assessment Anchors are rooted in the Academic Standards adopted by the State Board of Education in January of 2002, and the standards—under two documents: *Science and Technology Standards* and the *Environment and Ecology Standards*—cover seventeen major categories describing what students need to know. Rather than attempting to report results for all seventeen standards, the categories are organized into only four. These categories are similar to those used by the National Assessment of Educational Progress (NEAP) and The Third International Mathematics and Science Study (TIMSS). However, the PSSA organizes the categories differently.

Achieve, Inc. conducted a preliminary review of the anchors in 2003 and produced a follow-up report on the anchors in 2005. More information about the Assessment Anchors and the Eligible Content can be found by referencing the Pennsylvania Science Assessment Anchors located on PDE's website at www.education.state.pa.us.

More information on the Assessment Anchors can be found in Chapter Two.

Operational Layout for 2015 Science

The eighth operational administration of the PSSA science test took place in 2015. Critical to the preparation for this operational assessment, the design of the operational assessment had to be configured to meet NCLB requirements as well as other test development and psychometric requirements. The preliminary science PSSA plan was developed in 2004 through the collaborative efforts of DRC and PDE based on the recommendations of the Pennsylvania Technical Advisory Committee (TAC). At Grades 4 and 8, the science assessment consists of one test booklet and one separate answer booklet. The test booklet contains multiple-choice items and at Grade 8 contains stimulus scenario text. The answer booklet contains scannable pages for multiple-choice (MC) responses (answer grids), open-ended (OE) items with response spaces, and demographic data collection areas.

All MC items are worth 1 point. Standalone OE items receive a maximum of 2 points (on a scale of 0–2). Each test form contains common items (that are identical on all forms) along with equating block (equating items) and embedded field test items. The common items consist of a set of core items taken by all students. The equating block items and the embedded field test items are unique, in most instances, to a form. That is, there can be instances in which an equating block or embedded field test item appears on more than one form.

At Grades 4 and 8, the 2015 PSSA science assessment is composed of 12 forms per grade. All of the forms contain common items identical for all students and sets of generally unique items that fulfill two purposes:

1. Field testing new items
2. Using items from the previous years' assessments for the purpose of linking

Tables 3–11 through 3–13 display the 2015 operational test design for science.

Table 3–11. 2015 Science Test Plan per Operational Form

Grade	No. of Unique Core MC per Op. Form	No. of Core-to-Core MC per Op. Form	No. of Equating Block MC per Op. Form	No. of Embedded FT MC per Op. Form	No. of Unique Core OE per Op. Form	No. of Core-to-Core OE per Op. Form	No. of Equating Block OE per Op. Form	No. of Embedded FT OE per Op. Form	Total No. of Items per Op. Form MC/OE	Total No. of Core Points per Op Test*
4	42	16	2	8	3 (2 pt)	2 (2 pt)	0	1 (2 pt)	68 MC 6 OE	68
8	38 + 4 scenario-based	16	2	6 + 4 scenario-based	3 (2 pt)	2 (2 pt)	0	1 (2 pt)	70 MC 6 OE	68

*Some equating block items may not be unique to each form.

Since an individual student's score is based solely on the common (or core) items, the total number of operational points is 68 for both grades. The total score is obtained by combining the points from the core MC and OE portions of the test as follows:

Table 3–12. 2015 Science Core Plan per Grade

Grade	Standalone MC Items	Scenario-based MC Items	Standalone OE Items	Scenario-based OE Items	Total Points
4	58	0	5 (2 pt)	0 (4 pt)	68
8	54	4	5 (2 pt)	0 (4 pt)	68

For more information concerning the process used to convert the operational layout into forms (i.e., form construction), see Chapter Six. For more information about operational layout across forms and across years (i.e., form equivalency), see Chapter Ten.

Linking for 2015 Science Assessment

Linking provides a statistical bridge between assessment administrations. The 2015 administration is linked back to the 2014 administration through the use of linking items in the core (core-to-core linking items) and the equating block (equating items).

MULTIPLE-CHOICE ITEMS

For Grades 4 and 8, science used 16 core-to-core linking MC items and 24 equating block MC items per grade.

OPEN-ENDED ITEMS

For both grades, science used two 2-point core-to-core linking OE items and no [zero] equating block OE items per grade.

Table 3–13. 2015 Science Linking Points Plan

Grade	No. of Core-to-Core MC	No. of Equating Block MC	No. of Core-to-Core. OE	No. of Equating Block OE	Max. No. of Linking Points per Op. Test*
4	16	24*	2 (2 pt)	0	44*
8	16	24*	2 (2 pt)	0	44*

*Not all equating block items will be unique; some may appear on more than one form.

The topic of *linking* is discussed thoroughly in Chapter Fifteen.

Test Sessions and Timing for 2015 Science Assessment

The testing window for the 2015 operational assessment extended from April 27 through May 8, 2015, including make-up sessions. The science assessments consisted of two sections in each grade. Test administration recommendations call for each section to be scheduled as one assessment session, although schools are permitted to combine both sections in a single session. Administration guidelines stipulate that the sections be administered in the sequence in which they are printed in the booklets. Table 3–14 outlines the assessment schedule and estimated times for each section and the number and types of items tested for each grade level. The estimated student testing times did not include time for administrative tasks that occur during the pre- and post-administration activities.

Table 3–14. Science – 2015 Administration and Testing Times

Test Section	Suggested Times (In Minutes)			Grade Level Number of Items and Item Type	
	Administration (Total)	Administrative (Pre & Post)	Student Testing	4	8
1	60 to 80	15 to 20	45 to 60	34 MC 3 OE	35 MC 3 OE
2	60 to 80	15 to 20	45 to 60	34 MC 3 OE	35 MC 3 OE

During the assessment, students were allowed to request an extended assessment period if they indicated that they had not completed the task. Such requests were granted if the assessment administrator found them to be educationally valid. See Chapter Seven for more information about testing sessions.

Reporting Categories and Points Distributions

The science assessment results will be reported in four categories, coded as A through D:

- **A.** The Nature of Science
- **B.** Biological Sciences
- **C.** Physical Sciences
- **D.** Earth and Space Sciences

The distribution of science items into these four categories is shown in Table 3–15.

Table 3–15. Science Reporting Categories

Grade	Reporting Categories			
	A: Nature of Science	**B: Biological Sciences**	**C: Physical Sciences**	**D: Earth & Space Sciences**
4	~50%	~17%	~17%	~17%
8	~50%	~17%	~17%	~17%

The Reporting Categories are further subdivided for specificity and Eligible Content limits. Each subdivision is coded by adding an additional numeral, such as A.1. These subdivisions are called Assessment Anchors, Descriptors (Sub-Assessment Anchors), and Eligible Content.

Assessment Anchor Content Standards Subsumed within Reporting Categories for 2015 Science Assessment

Distributed across the four Reporting Categories are a dozen Sub-Reporting Categories. Each of the 12 Assessment Anchors exists at each grade level, with the Assessment Anchors and Eligible Content varying to reflect grade-level appropriateness. The numbers of Assessment Anchors targeted by grade level are 21 at Grade 4 and 23 at Grade 8.

Total science scores reported at the student level are based on the core (common) sections. School and district-level scores are reported at the Eligible Content level under the Assessment Anchors and are based on the core (common) positions. See Appendix B for a summary by grade level and subject.

2006 Science Item Pilot

Prior to the initial field test in 2007, DRC, in collaboration with PDE, conducted a science cognitive lab/item pilot in selected schools throughout the Commonwealth from February 27 through March 17, 2006. A sample of 507 students from urban, suburban, and rural school districts from across the Commonwealth participated in the PSSA Science Item Tryout Project. The impetus for this study was Pennsylvania's response to the mandatory science assessment component of the No Child Left Behind legislation to create a rigorous science test for Grades 4, 8, and 11 by 2008. The primary purpose of the cognitive lab or item tryout was to pilot the use of the new science scenarios at Grade 8 and Grade 11, and to pilot the multiple-choice items at Grade 4.

The project involved development of science scenarios, refinement of science test items, creation of survey questions, and design of interview protocols to be administered using a cognitive laboratory technique. The cognitive laboratory technique was developed in the early 1980s through an interdisciplinary effort by survey methodologists and psychologists (Willis, 1999; Erickson and Simon, 1993). Different models of the cognitive process to solve a test item have evolved over the years, but all have four major processes in common: 1) comprehension of the question, 2) retrieval of relevant information, 3) decision process, and 4) response process (Tourangearu, 1984).

In the development and execution of the cognitive laboratory project, DRC customized the techniques employed specifically to meet PDE's goal and expectations. The goal of the project was to gather relevant information about the thinking processes of students enrolled in science in Grades 4, 8, and 11 in order to create a better science assessment for Pennsylvania students.

Logistics and Demographics

PDE provided DRC with a list of the Science, Technology, Environment, and Ecology Assessment Advisory Committee (STEEAAC) members who agreed to participate and to facilitate the PSSA Science Item Tryout Project in their respective districts. Disbursed throughout Pennsylvania, participating districts provided a representative sample of students enrolled in science in Grades 4, 8, and 11 in urban, suburban, and rural schools. Participating districts are listed in Table 3–16.

Table 3–16. 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 strands (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

Alignment to the Pennsylvania Core Standards-aligned Assessment Anchors and Eligible (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 were major considerations in the item development process. The *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 1999) 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 meet Standard 7.4 of the Standards for Educational and Psychological Testing (AERA, APA, NCME, 1999).

> *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

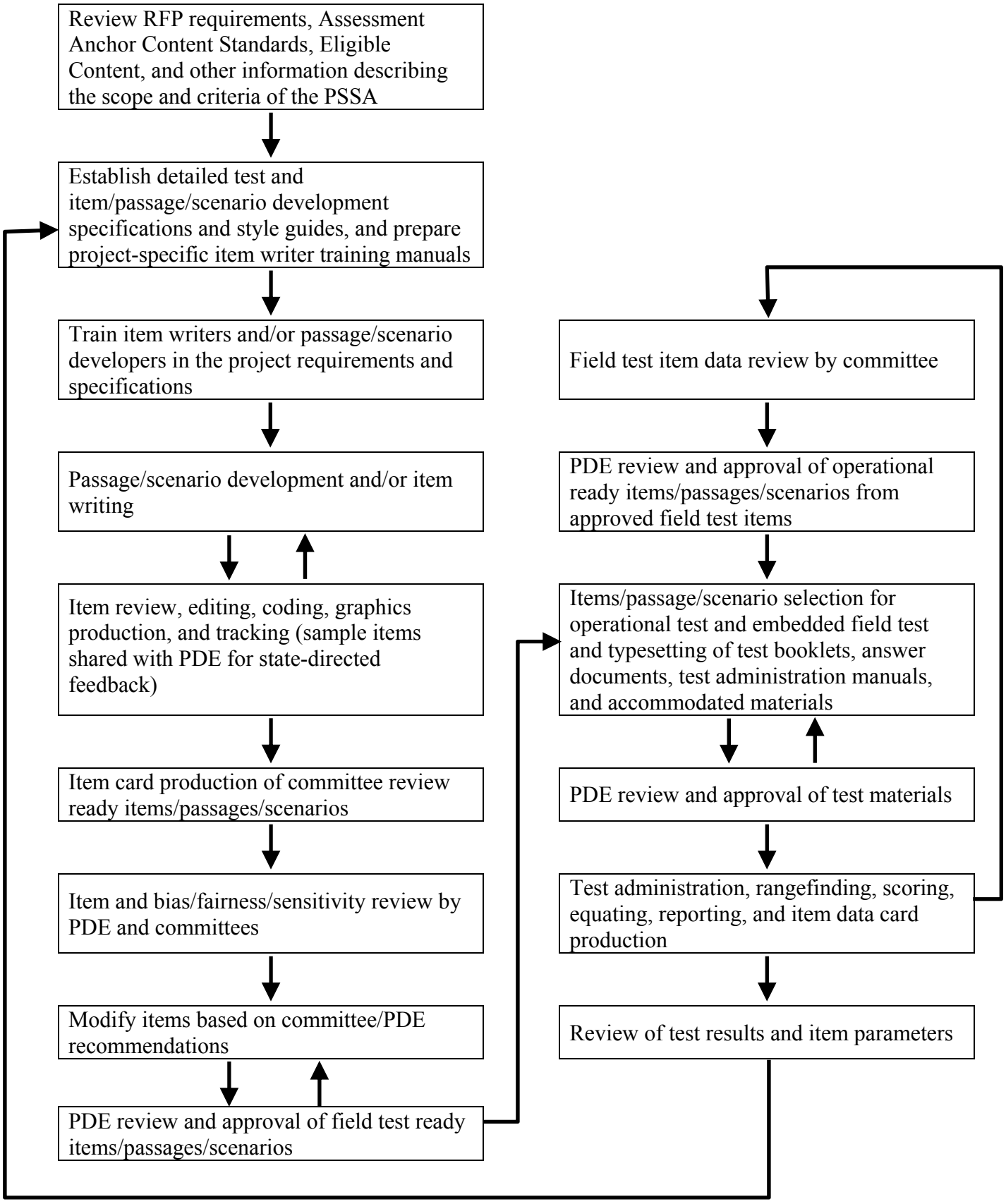
The test development process for passages, scenarios, and items followed a logical timeline, which is outlined below in Figure 3–1. On the front end of the schedule, tasks were generally completed with the goal of presenting field test candidate items to committees of Pennsylvania educators. On the back-end of the schedule, all tasks lead to the field test data review.

Figure 3–1. 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 3–2 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 3–2. 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 all the 2013 field test items used as operational items in the 2014 administration.

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 2015 operational administration, the initial planning meeting for the item authoring process for the 2014 field test occurred in fall 2012. Item authoring began early in 2013, with the item review meetings occurring in June 2013. 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 2014 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 2014 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, at WestEd, or at both companies (depending on the grade level and content). 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 include, but are 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 2013: All Assessments

Prior to the 2014 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 24–26, 2013 for science, June 24–28, 2013 for ELA, and June 24–27, 2013 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 and WestEd. 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 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 of which were shredded.

Bias, Fairness, and Sensitivity Reviews in June 2013: All Assessments

Prior to 2014 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 June 3–7, 2013 and June 11–13, 2013. The committee's primary responsibility was to evaluate items with regard to bias, fairness, and sensitivity issues. They also made recommendations for changes 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, 2003–2013). Members of the committee also had expertise with students with special needs and English Language 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, regional, religious, socioeconomic, 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 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 3–17 shows the gender and race/ethnicity composition for the members of the bias committee who reviewed the PSSA items and passages for bias, fairness, and sensitivity.

Table 3–17. Demographic Composition of the 2013 Bias, Fairness, and Sensitivity Committee

Member #	Gender	Race/Ethnicity	Background
1.	Female	Hispanic American	Migrant Education Student Support Specialist
2.	Female	Hispanic American	Community Leader
3.	Female	Hispanic American	ELL Representative/Education Leader
4.	Male	Hispanic American	Special Education/ELL/PATTAN Representative
5.	Female	Asian American	Retired Educator/National Consultant
6.	Male	Asian American	Retired Educator/National Consultant
7.	Female	Caucasian American	Educator/Special Education
8.	Female	Caucasian American	Special Education/PATTAN Representative
9.	Female	Caucasian American	Educator/Special Education
10.	Female	Caucasian American	Educator/Special Education Educator
11.	Female	Caucasian American	Educator
12.	Male	Caucasian American	University Professor
13.	Female	African American	Educator/Instructional Specialist
14.	Female	African American	Education Specialist
15.	Female	African American	Retired Administrator
16.	Female	Native American	Retired University Professor/Multicultural Education
17.	Male	African American	PDE Staff Member
Totals	13 Females 4 Males	4 Hispanic Americans 2 Asian Americans 6 Caucasian Americans 4 African Americans 1 Native American	

The results from the Bias, Fairness, and Sensitivity Committee review of mathematics are summarized in Table 3–18.

Table 3–18. Number of Items—2013
Bias, Fairness, and Sensitivity Committee Review for Mathematics

Grade	Mathematics Items			
	Total items reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
3	123	111	12	0
4	127	122	5	0
5	131	130	1	0
6	287	271	16	0
7	290	281	9	0
8	293	286	7	0
Total	1,251	1,201	50	0

The results from the Bias, Fairness, and Sensitivity Committee review of science are summarized in Table 3–19.

Table 3–19. Number of Items—2013
Bias, Fairness, and Sensitivity Committee Review for Science

Grade	Science Items				
	Total scenarios reviewed per grade	Total items reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
4	n/a	153	148	5	0
8	9	269	268	1	0
Total	9	422	416	6	0

The results from the Bias, Fairness, and Sensitivity Committee review of ELA: Reading are summarized in Table 3–20.

Table 3–20. Number of Items—2013
Bias, Fairness, and Sensitivity Committee Review for ELA: Reading

Grade	Writing Items, Passages, and Prompts				
	Total passages reviewed per grade	Total items or prompts reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
3	12	143	140	3	0
4	12	157	150	2	5
5	11	134	133	1	0
6	24	294	283	0	11
7	23	298	292	6	0
8	23	290	276	3	11
Total	105	1,316	1,274	15	27

The results from the Bias, Fairness, and Sensitivity Committee review of ELA: Writing are summarized in Table 3–21.

Table 3–21. Number of Items—2013
Bias, Fairness, and Sensitivity Committee Review for ELA: Writing

Grade	Writing Items, Passages, and Prompts			
	Total items or prompts reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
6	265	260	5	0
7	268	264	4	0
8	266	261	5	0
Total	799	785	14	0

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 Language 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 Language 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 being added after the fact.

- **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 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.[2] 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.

[2] 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.

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.
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. A Spanish version of the PSSA mathematics and PSSA science test was available for use by English Language 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 and WestEd work closely with the Pennsylvania Department of Education to help ensure that PSSA tests comply with nationally recognized Principles of Universal Design. The implementation of accommodations on large-scale statewide assessments for students with disabilities is supported in the development of the PSSA. In addition to the Principles of Universal Design as described in the Pennsylvania Technical Report, DRC and WestEd apply to each content area assessment the standards for test accessibility as 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 and WestEd embrace the following precepts:

- Test directions are 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 are made aware of the Principles of Universal Design and of issues that may adversely affect students with disabilities with the goal of ensuring that PSSA tests are 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 instructs DRC and WestEd to limit item types that are difficult to format in Braille and that may become distorted when published in large print. DRC and WestEd are instructed to limit the following on the PSSA.
  - Mathematics: Complicated tessellations; charts or graphs that extend beyond one page
  - Reading: Graphics and illustrations that are not germane to the content presented
  - All content areas: Unnecessary boxes and framing of text, unless enclosing the text provides necessary context for the student; use of italics (limited to only when it is absolutely necessary, such as with variables)

ITEM FORMATTING

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

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

- High contrast and clarity is used to convey detailed information.
- Typically, shading is avoided; when necessary for content purposes, 10 percent screens are used as the standard.
- Overlaid print on diagrams, charts, and graphs is avoided.
- Charts, graphs, diagrams, and tables are clearly labeled with titles and with short descriptions where applicable.
- Only relevant information is included in diagrams, pictures, and graphics.
- Symbols used in keys and legends are meaningful and provide reasonable representations of the topics they depict.
- Pictures that require physical measurement are 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 for the PSSA titled *2015 Accommodations Guidelines* and *Accommodations Guidelines for English Language Learners* were developed for use with the 2015 PSSA.

The manuals can be accessed by going to www.education.pa.gov. Hover over K-12 in the blue banner at the top of the page and select "Assessment and Accountability." Then select "Pennsylvania System of School Assessment (PSSA)." The manuals can be found under the heading "Testing Accommodations."

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

Chapter Five: Field Test Leading to the 2015 Core

The 2015 core items for English language arts and mathematics assessments came from the 2013 (Grades 3, 4, and 5 only) and 2014 embedded field test positions. As the 2015 assessments represented completion of the shift to the Pennsylvania Core Standards and new score scales, no linking items were included for ELA or mathematics as core-to-core linking items or equating block items. Generally, all non-linking core items appearing on the 2015 science assessments came from the 2014 embedded field test positions. PSSA test forms contained common items that were identical on all forms along with embedded field test items and equating block items. The common items consisted of a set of core items taken by all students. The field test items and equating block items were embedded and were unique, in most instances, to a form; however, there were instances in which an embedded field test or equating block item appeared on more than one form. The purpose of administering field test items is to obtain statistics for them so they can be reviewed before becoming operational. Based on this statistical review, many of the field test items embedded in the 2014 PSSA were selected for use as common or equating block items (equating items in science only) in the 2015 PSSA.

More information on the field test designs for all contents can be found in the content-specific portions of Chapter Three.

STATISTICAL ANALYSIS OF ITEM DATA

All field tested items were analyzed statistically following conventional item analysis methods. For SR items (including multiple-choice and evidence-based selected-response items), traditional or 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, text-dependent analysis questions, and writing prompts), the statistical indices included the item-test correlation, the point-biserial correlation for each score level, percent in each score category or level, 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 dichotomous (MC) items and the item-total correlation for polytomous (EBSR and CR) items. 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.

Item statistics are used as a means of detecting items that deserve closer scrutiny, rather than being a mechanism for automatic retention or rejection. Toward this end, a set of criteria was used as a screening tool to identify items that needed a closer review by committees of Pennsylvania educators. For an MC item to be flagged, the criteria included any of the following:

- Percent correct less than 0.3 or greater than 0.9
- Point-biserial correlation for the correct response of less than 0.25
- Point-biserial correlation for any incorrect response greater than 0.0

- Percent responding to any incorrect responses greater than the percent correct
- Gender DIF code of either C- or C+
- Any ethnic DIF code of 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 of 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 the percent correct
- Gender DIF code of either C- or C+
- Any ethnic DIF code of C- or C+
- Score proportion < 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
- Score Proportion < 0.05
- Gender DIF code of C- or C+
- Any ethnic DIF code of C- or C+

Item analysis results for field test items are presented in Appendix F.

REVIEW OF ITEMS WITH DATA

In the preceding section on Statistical Analysis of Item Data, it was stated that test development content-area specialists used certain statistics from item and DIF analyses of the 2014 field test to identify items for further review. Specific flagging criteria for this purpose were specified in the previous section. Items not identified for this review were those that had good statistical characteristics and, consequently, were regarded as statistically acceptable. Likewise, items of extremely poor statistical quality were regarded as unacceptable and needed no further review. However, there were some items—relatively few in number—that DRC content-area test development specialists and DRC psychometric specialists regarded as needing further review by a committee of Pennsylvania educators. The intent was to capture all items that needed a closer look; thus, the criteria employed tended to over-identify rather than under-identify items.

The review of the items with data was conducted by over 50 Pennsylvania educators (teachers and PDE staff) broken out into subject-area and/or grade level or span committees. Additional information, including gender, ethnicity (when available), and Instructional Unit (geographic location within Pennsylvania), about the participants is provided in Tables 5–1 through 5–5. The review for mathematics Grades 3–5 took place July 22–23, 2014. The review for mathematics Grades 6–8 took place July 22–24, 2014. The review for ELA Grades 3–5 took place July 21–24, 2014. The review for ELA Grades 6–8 took place July 21–25, 2014. The review for science took place on July 22, 2014. 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.

Table 5–1. Demographic Composition of the 2014 Mathematics Grades 3–5 Data Review Committee

Member #	Gender	Race/Ethnicity	Instructional Unit Represented
1.	Female	White	23
2.	Female	White	24
3.	Female	White	12
4.	Female	White	28
5.	Male	White	15
6.	Female	White	20
7.	Female	White	20
8.	Female	Not Specified	13
9.	Female	White	11
10.	Female	White	6
11.	Female	White	20
12.	Female	African American	26
Totals	11 Female 1 Male	1 African American 10 White 1 Not Specified	

Table 5–2. Demographic Composition of the 2014 Mathematics Grades 6–8 Data Review Committee

Member #	Gender	Race/Ethnicity	Instructional Unit Represented
1.	Female	White	18
2.	Male	Not Specified	25
3.	Male	Not Specified	13
4.	Male	White	7
5.	Female	White	18
6.	Male	White	14
7.	Female	Not Specified	13
8.	Female	White	6
9.	Female	White	5
10.	Female	White	7
11.	Female	White	18
12.	Female	White	18
Totals	8 Female 4 Male	9 White 3 Not Specified	

Table 5–3. Demographic Composition of the 2014 English Language Arts Grades 3–5 Data Review Committee

Member #	Gender	Race/Ethnicity	Instructional Unit Represented
1.	Female	African American	26
2.	Female	White	17
3.	Female	White	21
4.	Female	White	3
5.	Female	White	25
6.	Female	White	23
7.	Female	White	13
8.	Female	White	24
Totals	9 Female	1 African American 8 White	

Table 5–4. Demographic Composition of the 2014 English Language Arts Grades 6–8 Data Review Committee

Member #	Gender	Race/Ethnicity	Instructional Unit Represented
1.	Female	White	23
2.	Female	Hispanic	13
3.	Female	White	6
4.	Female	White	20
5.	Female	African American	26
6.	Female	White	26
7.	Female	White	18
8.	Female	White	2
9.	Female	White	17
Totals	9 Female	1 African American 1 Hispanic 7 White	

Table 5–5. Demographic Composition of the 2014 Science Data Review Committee

Member #	Gender	Race/Ethnicity	Instructional Unit Represented
1.	Male	White	4
2.	Female	White	3
3.	Female	White	26
4.	Male	White	8
5.	Male	White	7
6.	Male	White	29
7.	Female	White	23
8.	Male	White	29
9.	Female	White	5
10.	Female	Multiracial	24
11.	Male	White	20
Totals	5 Female 6 Male	1 Multiracial 10 White	

Table 5–6. 2014 Data Review Committee Results

Assessment	Grade	No. of Items in 2014 Field Test	Flagged Items in 2014 Field Test Examined at 2014 Data Review Committee					Flagged Items in 2014 Field Test Rejected by 2014 Data Review Committee		Items Classified as "Rejected" from 2014 Field Test (all sources: Data Review Committee, PDE, and DRC)	
			SR*	CR	Items flagged for DIF only	Total	Total (% of FT)	No. of	% of FT	No. of	% of FT
English Language Arts	3	99	14	3	3	17	17.2%	0	0.0%	0	0.0%
	4	99	22	9	9	31	31.3%	1	1.0%	1	1.0%
	5	99	26	9	0	35	35.4%	5	5.1%	6	6.1%
	6	473	155	40	15	195	41.2%	11	2.3%	17	3.6%
	7	473	139	40	5	179	37.8%	14	3.0%	18	3.8%
	8	473	179	40	13	219	46.3%	11	2.3%	13	2.7%
Mathematics	3	99	34	6	1	40	40.4%	6	6.1%	6	6.1%
	4	99	29	7	0	36	36.4%	5	5.1%	6	6.1%
	5	99	44	9	0	53	53.5%	14	14.1%	14	14.1%
	6	220	106	16	1	122	55.5%	13	5.9%	14	6.4%
	7	220	101	19	2	120	54.5%	19	8.6%	19	8.6%
	8	220	98	17	1	115	52.3%	26	11.8%	26	11.8%
Science	4	108	22	6	4	28	25.9%	8	7.4%	8	7.4%
	8	132	28	5	4	33	25.0%	8	6.1%	8	6.1%
Totals											

* SR includes multiple-choice items and EBSR items.

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. This pattern of results may suggest the presence of *item bias*. As a statistical concept, however, DIF can be differentiated from item bias, which is a content issue that can arise when an item presents negative group stereotypes, uses language that is more familiar to one subpopulation than to another, or is presented in a format that disadvantages certain learning styles. While the source of item bias is often plain to trained judges, DIF may have no clear cause. However, studying how DIF arises and how it presents itself can provide information about how to detect and correct for it.

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 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 depending on the situation. No analysis can guarantee that a test is free of bias, but almost any thoughtful analysis will uncover the most flagrant problems.

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 will locate the problems. If, however, all items on the test show consistent DIF to the disadvantage of a given subpopulation, a statistical analysis of the items will not be able to separate DIF effects from true differences in achievement.

Mantel-Haenszel Procedure for Differential Item Functioning

For multiple-choice (MC) items, the *Mantel-Haenszel* procedure (Mantel & Haenszel, 1959) for detecting differential item functioning 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 to organize 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 group was 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 or wrong). The ability groups are defined by the test's score distribution for the total examinee populations.

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 based on the magnitude 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

Counts of the number of items from each grade and subject area that were assigned to each severity code are shown below in Table 5–7A (MC items), 5–7B (OE items), 5–7C (EBSR items), and 5–7D (TDA items). DIF analyses were conducted on the 2015 PSSA field test items and may be compared to the 2014 results.

The number of field test items in each DIF category across the two years was quite similar. Overall, relatively few items had B or C DIF for the Male/Female or White/Black reference and focal groups. Generally speaking, there were more items showing White/Black DIF than Male/Female DIF. Male/Female DIF for TDA items in ELA exhibited the slightly higher proportion of B or C classifications than White/Black DIF. The nature of TDA items are similar to writing prompt items. While this matches historical trends (writing tended to exhibit more Male/Female DIF than White/Black DIF historically), additional monitoring and study of DIF in these areas may be warranted.[3]

[3] As suggested earlier, only a subset of items showing DIF will actually be biased. For example, any given B or C DIF code might be a false positive. It may also be the result of one of a number of systematic factors not actually attributable to bias. Of course, only items approved by teacher review committees will actually appear on operational PSSA tests.

Table 5–7A. DIF Summary—MC Items

	Grade	Male/Female														White/Black												
		2014							2015							2014							2015						
		A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot
Mathematics	3	37	49	2	2	0	0	90	55	52	1	0	0	0	108	17	64	0	8	0	1	90	25	77	0	6	0	0	108
	4	43	47	0	0	0	0	90	64	41	2	1	0	0	108	18	67	0	5	0	0	90	22	76	0	8	0	2	108
	5	39	50	0	1	0	0	90	55	52	0	1	0	0	108	25	65	0	0	0	0	90	33	74	0	1	0	0	108
	6	77	118	2	2	0	1	200	53	54	1	0	0	0	108	34	159	0	6	0	1	200	27	81	0	0	0	0	108
	7	69	123	0	7	1	0	200	44	60	0	4	0	0	108	49	142	0	9	0	0	200	21	83	0	4	0	0	108
	8	68	125	1	5	0	1	200	45	63	0	0	0	0	108	69	123	0	7	0	1	200	27	80	0	1	0	0	108
ELA	3	24	47	0	1	0	0	72	27	46	0	0	0	1	74	13	58	0	1	0	0	72	6	68	0	0	0	0	75
	4	39	33	0	0	0	0	72	27	44	1	2	0	0	74	6	50	0	12	0	4	72	14	53	0	7	0	0	74
	5	40	32	0	0	0	0	72	37	34	1	1	0	1	74	14	57	0	1	0	0	72	21	51	0	1	0	1	74
	6	71	85	0	4	0	0	160	30	39	0	3	0	2	74	32	119	0	5	0	4	160	21	52	0	1	0	0	74
	7	74	81	1	4	0	0	160	32	39	1	1	0	1	74	24	125	0	11	0	0	160	20	50	0	4	0	0	74
	8	58	89	0	11	0	2	160	24	43	0	3	0	4	74	31	114	0	14	0	1	160	13	54	0	6	0	1	74
Science	4	44	51	0	1	0	0	96	48	44	3	1	0	0	96	9	82	0	5	0	0	96	11	83	0	2	0	0	96
	8	63	48	2	7	0	0	120	67	47	6	0	0	0	120	33	85	0	2	0	0	120	30	89	0	1	0	0	120

Table 5–7B. DIF Summary—OE Items

	Grade	Male/Female																White/Black											
		2014							2015							2014							2015							
		A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot
Mathematics	3	5	4	0	0	0	0	9	5	3	0	0	0	0	8	0	6	0	3	0	0	9	1	4	0	1	0	2	8
	4	5	3	0	0	0	0	8	6	3	0	0	0	0	9	0	8	0	0	0	0	8	1	5	0	3	0	0	9
	5	7	1	1	0	0	0	9	7	1	1	0	0	0	9	3	4	0	2	0	0	9	2	4	0	2	0	1	9
	6	13	4	1	1	0	0	19	4	4	1	0	0	0	9	2	12	0	4	0	1	19	0	6	0	2	0	1	9
	7	12	5	2	0	1	0	20	5	2	1	0	1	0	9	2	14	0	1	0	3	20	0	9	0	0	0	0	9
	8	8	12	0	0	0	0	20	6	3	0	0	0	0	9	1	12	0	6	0	1	20	0	7	0	2	0	0	9
ELA	3	4	0	2	0	3	0	9	7	1	1	0	0	0	9	2	7	0	0	0	0	9	0	6	0	2	0	1	9
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Science	4	4	8	0	0	0	0	12	9	2	0	1	0	0	12	0	5	1	3	0	3	12	1	6	0	5	0	0	12
	8	7	4	0	1	0	0	12	3	5	1	0	0	2	11	0	6	0	2	0	4	12	1	6	0	4	0	0	11

Table 5–7C. DIF Summary—EBSR Items

	Grade	Male/Female														White/Black												
		2014							2015							2014							2015						
		A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot
ELA	3	8	10	0	0	0	0	18	6	12	0	0	0	0	18	3	15	0	0	0	0	18	1	16	0	0	0	1	18
	4	11	7	0	0	0	0	18	6	12	0	0	0	0	18	1	8	0	9	0	0	18	0	16	0	2	0	0	18
	5	7	11	0	0	0	0	18	10	8	0	0	0	0	18	1	16	0	0	0	1	18	2	16	0	0	0	0	18
	6	20	20	0	0	0	0	40	12	5	0	1	0	0	18	1	33	0	6	0	0	40	2	14	0	2	0	0	18
	7	18	21	0	1	0	0	40	10	7	1	0	0	0	18	3	29	0	8	0	0	40	2	15	0	1	0	0	18
	8	20	18	0	1	0	1	40	5	13	0	0	0	0	18	8	25	0	7	0	0	40	4	9	0	4	0	1	18

Table 5–7D. DIF Summary—TDA Items

	Grade	Male/Female														White/Black												
		2014							2015							2014							2015						
		A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot
ELA	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4	4	0	3	0	2	0	9	5	0	4	0	0	0	9	0	5	0	4	0	0	9	0	4	0	5	0	0	9
	5	3	0	4	0	2	0	9	5	0	3	0	1	0	9	0	7	0	1	0	1	9	0	7	0	2	0	0	9
	6	2	0	5	0	13	0	20	1	0	4	0	4	0	9	1	13	0	5	0	1	20	0	8	0	1	0	0	9
	7	4	0	4	0	12	0	20	0	0	5	0	4	0	9	0	16	0	3	0	1	20	0	8	0	1	0	0	9
	8	6	0	9	0	5	0	20	1	0	7	0	1	0	9	2	13	0	5	0	0	20	0	6	0	2	0	1	9

Chapter Six: Operational Forms Construction for 2015

FINAL SELECTION OF ITEMS AND 2015 PSSA FORMS CONSTRUCTION

When the final selection of items for the operational 2015 test was ready to begin, the candidate items that emerged, including those from the spring 2014 field test, had undergone multiple reviews, including:

- Reviews by DRC and WestEd 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 Language 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 2015 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 (science only).

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 (science only) 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 (part of the overall core pull for science), 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 (science only), equating block items (science only), and placeholder items (so the mathematics and ELA forms would maintain consistency in length in future years when equating block items were again included), 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 2015 PSSA

Braille and Large Print

Students with visual impairments were able to respond to test materials that were available in either Braille or large print. At each grade level assessed, one form was selected for the creation of a Braille and a large print edition. School district personnel ordered Braille or large print assessment materials directly from DRC. They could also contact PaTTAN for technical assistance regarding students with visual impairments.

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.

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. Second Language Testing, Incorporated uses translators with varying cultural and regional backgrounds to create the Spanish versions of the mathematics and science assessments. The translations are 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 Second Language Testing, Incorporated, the mathematics assessment for Grades 4–8 and the science assessment for Grades 4 and 8 were designed with a side-by-side format with the English text and Spanish translated text on facing pages. The Spanish translated text was on the left-hand side followed by 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.

Spanish-translated versions of the mathematics assessment were used by a total of 2,831 students at Grades 3–8 in 2015. Spanish-translated versions of the science assessment were used by a total of 937 students at Grades 4 and 8 in 2015.

Instructions for the appropriate use of these special forms are detailed in accommodation manuals titled *2015 Accommodations Guidelines* and *Accommodations Guidelines for English Language Learners.*

Summary of the Translation Verification Study by SLTI of the 2009 PSSA Science Assessments

From November 2009 through January 2010, Second Language Testing, Incorporated 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, were used to determine 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 shows 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 as appropriate but the 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 is 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, text-dependent analysis items, and writing prompts) 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	Test Booklet	Answer Booklet	Single Consumable Booklet
ELA	3			✓
	4	✓	✓	
	5	✓	✓	
	6	✓	✓	
	7	✓	✓	
	8	✓	✓	
Mathematics	3			✓
	4	✓	✓	
	5	✓	✓	
	6	✓	✓	
	7	✓	✓	
	8	✓	✓	
Science	4	✓	✓	
	8	✓	✓	

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 2015 operational assessment varied based on the content area of the assessment. The ELA assessments consisted of four sections. The mathematics assessments consisted of three sections. The science assessments consisted of two sections. See also Appendix G.

Table 7–2. PSSA Test Section Information

	Content Area	No. of Sections per Form
1.	**ELA**	4
2.	**Mathematics**	3
3.	**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**	60	4	240 to 300
	4	65	3	295 to 355
	5	65	3	295 to 355
	6	65	3	295 to 355
	7	65	3	295 to 355
	8	65	3	295 to 355
Mathematics	**3**	72	4	200 to 245
	4	72	4	200 to 245
	5	72	4	200 to 245
	6	72	4	200 to 245
	7	72	4	200 to 245
	8	72	4	200 to 245
Science	**4**	68	6	120 to 150
	8	70	6	130 to 160

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**	64	240 to 300	140	440 to 545
	Mathematics	76	200 to 245		
4	**ELA**	68	295 to 355	218	615 to 750
	Mathematics	76	200 to 245		
	Science	74	120 to 150		
5	**ELA**	68	295 to 355	144	495 to 600
	Mathematics	76	200 to 245		
6	**ELA**	68	295 to 355	144	495 to 600
	Mathematics	68	200 to 245		
7	**ELA**	68	295 to 355	144	495 to 600
	Mathematics	76	200 to 245		
8	**ELA**	68	295 to 355	220	625 to 760
	Mathematics	76	200 to 245		
	Science	76	130 to 160		

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. Writing prompts and 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.

Additional information concerning testing time and test layouts can be found in Chapter Three.

TESTING WINDOW

The testing windows for the 2015 operational assessments were as follows:

- ELA – April 13 through April 17, 2015
- Make-up for ELA – April 20 through May 8, 2015
- Mathematics – April 20 through April 24, 2015
- Make-up for Mathematics – April 27 through May 8, 2015
- Science – April 27 through May 1, 2015
- Make-up for Science – May 4 through May 8, 2015

Additional information concerning testing time and test layouts can be found in Chapter Three.

SHIPPING, PACKAGING, AND DELIVERY OF MATERIALS

DRC sent two shipments for the 2015 PSSA operational assessment:

- Shipment one contained the *Handbook for Assessment Coordinators* and the *Directions for Administration Manual*s for each grade tested at a school participating in the English Language Arts, Mathematics, and Science assessments. Shipment one was delivered by March 16, 2015.
- Shipment two contained 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. Shipment two was delivered by March 30, 2015.

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 packed 4,271,284 assessment booklets and 163,068 *Directions for Administration Manual*s for 2,673 testing sites. DRC used United Parcel Service (UPS) and Advanced Shipping Technologies to deliver the secure materials to the testing sites.

MATERIALS RETURNED

DRC used UPS for all returns. The return windows for the PSSA materials were as follows:

- English Language Arts primary return window – April 17 through April 22, 2015
- Mathematics primary return window – April 24 through April 29, 2015
- Science primary return window – May 1 through May 6, 2015
- Make-ups for ELA, Mathematics, and Science primary return window – May 4 through 8, 2015

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 prior to the assessment being 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.

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.state.pa.us.

TESTING WINDOW ASSESSMENT ACCOMMODATIONS

The *Accommodations Guidelines* was developed by PDE for use with the 2014 PSSA. This manual can be found on the PDE website at www.education.state.pa.us. Additional information regarding assessment accommodations can be found in Chapter Four of this report.

Chapter Eight: Processing and Scoring

RECEIPT OF MATERIALS

Receipt of PSSA test materials began on April 22, 2013, and concluded with all make-up tests on May 13, 2015. 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.

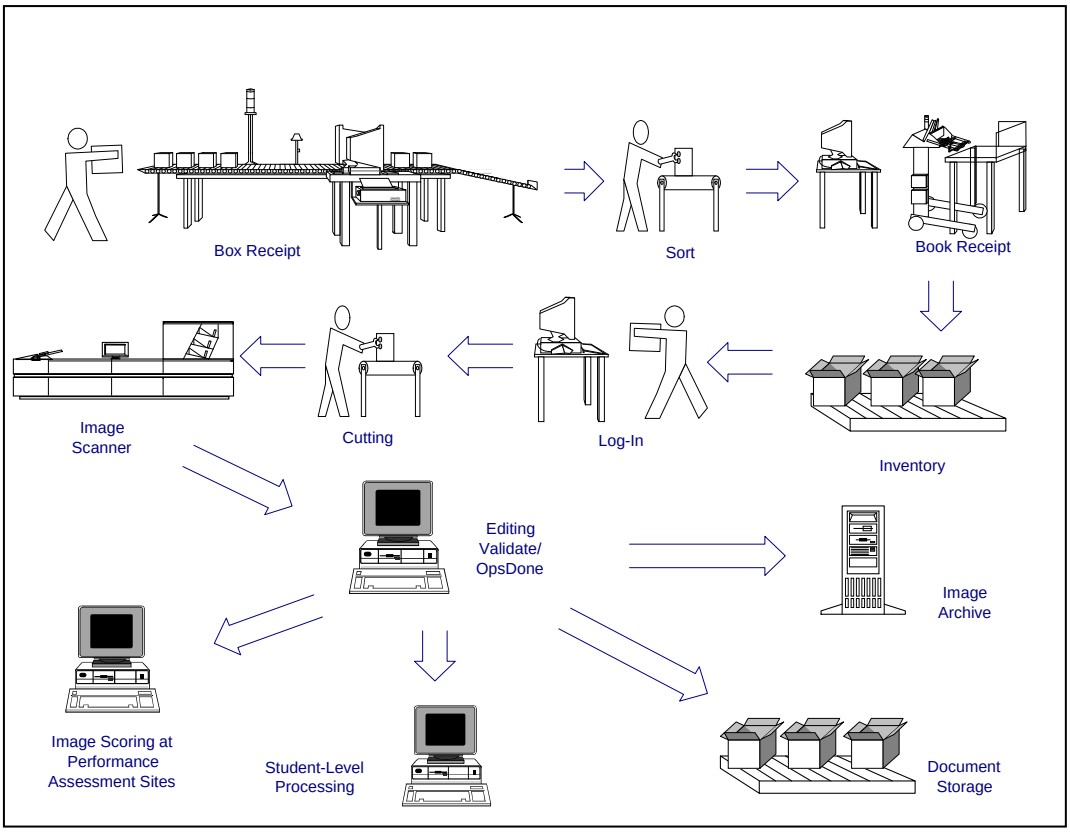
Table 8–1 shows the number of answer booklets received through booklet check-in, the number of booklets that contained student responses that were scanned and scored, the number of test booklets received, and the total number of booklets received for the English Language Arts assessment (ELA), the Mathematics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

Table 8–1. Counts of 2014 PSSA Materials Received: Grades 3–8

	Answer Booklets Received	Used Answer Booklets Received	Test Booklets Received	Total Booklets Received	Total Booklets Shipped
Grade 3 ELA	167,189	128,635	NA	167,189	167,212
Grade 4 ELA	165,408	127,276	165,401	330,809	330,888
Grade 5 ELA	166,774	129,362	166,768	333,542	333,574
Grade 6 ELA	163,216	128,772	163,220	326,436	326,468
Grade 7 ELA	161,536	128,079	161,532	323,068	323,102
Grade 8 ELA	163,297	129,748	163,290	326,587	326,638
Grade 3 Math	168,148	128,207	NA	168,148	168,164
Grade 4 Math	165,425	126,823	165,419	330,844	330,888
Grade 5 Math	166,722	128,804	166,702	333,424	333,472
Grade 6 Math	163,067	128,339	163,066	326,133	326,162
Grade 7 Math	161,554	127,654	161,552	323,106	323,170
Grade 8 Math	163,484	129,589	163,483	326,967	327,012
Grade 4 Science	164,563	125,863	164,554	329,117	329,154
Grade 8 Science	162,640	128,537	162,642	325,282	325,380

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.

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

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. All items were embedded in the 2015 operational PSSA. All grades of PCS writing prompts (WPs) were rangefound and field tested as part of separate standalone field tests not addressed in this technical report.

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. 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 1–5, The Penn Stater Hotel & Conference Center, State College, PA
- Reading Field Test Rangefinding (grade 3), June 1–3, The Penn Stater Hotel & Conference Center, State College, PA
- Math Field Test Rangefinding (grades 3–8), June 2–4, The Penn Stater Hotel & Conference Center, State College, PA
- Science Field Test Rangefinding (grades 4 and 8), June 2–3, The Penn Stater Hotel & Conference Center, State College, PA

Each rangefinding meeting began in a joint session with a review of the history of the assessment and a discussion of the transition to a PCS assessment and then broke into subject/grade-specific groups. 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 that everyone was interpreting the scoring guidelines consistently. 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. This pool of experienced raters was drawn from to staff the scoring of the 2015 PSSA. To complete the rater staffing for this project, DRC placed advertisements in local newspapers and utilized a variety of web sites. Open houses 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. Thus, 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 by content specialists 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, and management skills. A majority of scoring directors and team leaders had at least five years of leadership experience working on large-scale assessments, including the PSSA. All scoring directors, team leaders, and raters were required to sign confidentiality agreements before handling secure materials.

Each room of raters was assigned a scoring director. This individual led all handscoring activities 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. All scoring directors were monitored by the project director, the project manager and the content specialists.

Team leaders assisted the scoring director with rater training by leading their teams in small group discussions and answering individual questions that raters may not have felt comfortable asking in a large group. Once raters were qualified, team leaders were responsible for 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. 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 2015 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 and WPs 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 qualifying standards were more stringent due to the extra responsibilities required of team leaders. During team leader training, all PSSA materials were reviewed and discussed. Team leaders were required to annotate all of their 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 8–10 raters ensured sufficient monitoring rates for team members.

The 2015 assessment included the opportunity for students to respond in Spanish to mathematics and science items. The scoring director responsible for overseeing this is a Spanish language speaker who has a strong mathematics and science background and has worked closely with the PSSA in this capacity for six years. All Spanish raters were bilingual and hired specifically to score the Spanish portion of the assessment. They were required to meet the same training and scoring standards set for the raters of the English version of the assessment.

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, the scoring director or team leaders led a thorough discussion of the responses, either in a large-group or small-group setting.

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 70 percent exact agreement on the first qualifying set were given additional, individual training. 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.

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 on PC monitors at DRC Scoring Centers in Sharonville and Columbus, Ohio; Plymouth and Woodbury, Minnesota; Pittsburgh, Pennsylvania; and Austin, Texas. Raters were seated at tables with two imaging stations at each table. 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 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. However, PDE does not receive students' responses or any other identifying information about the students. At no time in the alerts process do raters, or other DRC 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 2015 PSSA, scoring consistency was maintained, in part, through the validity process.

The validity process began with the selection of scored responses from the initial field test. The content specialist for each subject selected 40 validity papers 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 and the content specialist). The scores on validity papers are considered true scores.

The validity papers were then implemented to test rater accuracy. The responses were scanned into 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 that 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. It is important to note that all raters who received validity papers had already successfully completed the training/qualifying process.

Next, 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 core mathematics, ELA: reading, and science OE items, as well as for all operational WPs and 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 was often higher than the inter-rater agreement rate for the same item. The reason for this discrepancy has to do with how validity sets are formulated. The 40 validity papers for each item, chosen by the content specialist, 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 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 usually unique, any potential lesson the response might teach would apply only to that

particular paper. Conversely, the papers in validity sets are chosen because they represent common response-types and teach lessons that can be applied to other similar papers. Due to this distinction, validity sets often generate a slightly higher agreement rate than is typically generated during operational scoring.

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. Inter-rater 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, content specialists, and project directors. 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 because of 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. 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 done with live items scored by a particular 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. This check 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 used for training sets.

Table 8–2 shows exact and adjacent agreement rates of raters on the core open-ended responses for the mathematics items in the 2015 PSSA. All student responses were read once, and ten percent of the responses were read a second time. The data collected from this ten percent double read was used to calculate the exact and adjacent agreement rates.

Table 8–2. Inter-rater Agreement for 2015 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	89	10	99	94
	2	86	14	100	93
	3	89	11	100	92
Grade 4	1	94	6	100	97
	2	95	5	100	92
	3	90	9	99	96
Grade 5	1	90	10	100	91
	2	94	6	100	92
	3	89	11	100	91
Grade 6	1	88	12	100	88
	2	90	10	100	93
	3	92	8	100	96
Grade 7	1	92	8	100	99
	2	88	12	100	92
	3	87	13	100	92
Grade 8	1	92	8	100	92
	2	86	14	100	90
	3	89	11	100	91

Note. 0–4 possible score points

Table 8–3 shows the distribution of scores for the mathematics items. All mathematics items are scored with a 0–4 score point range.

Table 8–3. Percentages Awarded for Each Possible Score Point
2015 PSSA Mathematics Grades 3–8

Mathematics	Common Item	%0	%1	%2	%3	%4	%B/NS*
Grade 3	1	24	44	15	12	4	1
	2	6	47	19	21	5	2
	3	32	52	10	4	2	1
Grade 4	1	60	18	8	8	3	2
	2	28	39	22	4	0	7
	3	19	31	15	20	13	2
Grade 5	1	37	30	11	14	5	3
	2	25	29	25	8	3	8
	3	38	30	20	9	2	2
Grade 6	1	36	28	28	2	2	3
	2	34	12	15	20	9	10
	3	20	43	12	16	7	2
Grade 7	1	37	38	12	7	3	2
	2	4	18	29	29	13	7
	3	17	24	22	20	14	3
Grade 8	1	22	57	12	5	1	4
	2	33	28	27	2	2	8
	3	10	37	25	22	4	2

*B=blank and NS=non-scoreable

Table 8–4 shows exact and adjacent agreement rates of raters on the core open-ended responses for the reading items in the 2015 PSSA. All student responses were read once, and ten percent of responses were read a second time. The data collected from this ten percent double read was used to calculate the exact and adjacent agreement rates.

Table 8–4. Inter-rater Agreement for 2015 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	79	21	100	75
	2	78	21	99	76

Note. 0–3 possible score points

Table 8–5 shows the distribution of scores for the reading items. All reading items are scored with a 0–3 score point range.

Table 8–5. Percentages Awarded for Each Possible Score Point
2015 PSSA Reading Grades 3–8

Reading	Common Item	%0	%1	%2	%3	%B/NS*
Grade 3	1	11	38	42	6	3
	2	13	44	33	6	4

*B=blank and NS=non-scoreable

Table 8–6 shows exact and adjacent agreement rates of raters on the core open-ended responses for the text-dependent analysis items in the 2015 PSSA. All student responses were read once, and ten percent of responses were read a second time. The data collected from this 10 percent double read was used to calculate the exact and adjacent agreement rates.

Table 8–6. Inter-rater Agreement for 2015 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	85	15	100	81
Grade 5	1	84	16	100	83
Grade 6	1	79	20	99	88
Grade 7	1	83	17	100	84
Grade 8	1	75	24	99	71

Note. 1–4 possible score points

Table 8–7 shows the distribution of scores for the text-dependent analysis (TDA) items. All TDA items are scored with a 1–4 score point range for reporting purposes.

Table 8–7. Percentages Awarded for Each Possible Score Point
2015 PSSA TDA items Grades 4–8

TDA	Common Item	%1	%2	%3	%4	%B/NS*
Grade 4	1	43	36	8	1	11
Grade 5	1	35	50	8	1	6
Grade 6	1	41	40	13	1	4
Grade 7	1	35	38	17	3	7
Grade 8	1	29	36	25	4	5

*B=blank and NS=non-scoreable

Table 8–8 shows exact and adjacent agreement rates of raters on the core open-ended responses for the writing items in the 2015 PSSA. All student responses were read once, and ten percent of responses were read a second time. The data collected from this ten percent double read was used to calculate the exact and adjacent agreement rates.

Table 8–8. Inter-rater Agreement for 2015 PSSA
Writing Grades 3—8
Open-Ended Response Items and Validity

Writing	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 3	1	80	20	100	76
Grade 4	1	76	24	100	75
Grade 5	1	82	18	100	83
Grade 6	1	74	25	99	81
Grade 7	1	74	25	99	80
Grade 8	1	82	18	100	81

Note. 1–4 possible score points

Table 8–9 shows the distribution of scores for the writing items. All prompts are scored with a 1–4 score point range.

Table 8–9 Percentages Awarded for Each Possible Score Point
2015 PSSA Writing Grades 3–8

Writing	Common Item	%1	%2	%3	%4	%B/NS*
Grade 3	1	18	48	25	6	4
Grade 4	1	31	47	17	3	3
Grade 5	1	16	44	32	5	2
Grade 6	1	11	32	43	12	1
Grade 7	1	12	39	39	8	1
Grade 8	1	8	27	54	9	2

* NS=non-scoreable and NT=not taken

Table 8–10 shows exact and adjacent agreement rates of raters on the core open-ended responses for the science items in the 2015 PSSA. All student responses were read once, and ten percent of responses were read a second time. The data collected from this 10 percent double read was used to calculate the exact and adjacent agreement rates.

Table 8–10. Inter-rater Agreement for 2015 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	85	15	100	94
	2	93	7	100	97
	3	96	4	100	98
	4	90	9	99	97
	5	93	7	100	98
Grade 8	1	89	11	100	96
	2	81	19	100	91
	3	93	7	100	95
	4	85	15	100	91
	5	79	21	100	90

Note. 0–2 possible score points

Table 8–11 shows the distribution of scores for the science items. All science items are scored with a 0–2 score point range for reporting purposes.

Table 8–11. Percentages Awarded for Each Possible Score Point
2015 PSSA Science Grades 4 and 8

Science	Common Item	%0	%1	%2	%B/NS*
Grade 4	1	36	39	22	3
	2	16	39	43	3
	3	5	43	49	3
	4	15	18	65	2
	5	17	39	40	3
Grade 8	1	10	26	61	2
	2	14	39	44	4
	3	35	32	27	6
	4	28	52	17	2
	5	17	42	36	5

*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; 2) analyses associated with the calibration, scaling, and linking processes; 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.

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 ELL 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 subjects' 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 as long as there is reasonable variability in the total test scores of students.

For 2015 this data included all public school students who 1) had their MC items scanned and scored by May 11 (mathematics/ELA) or May 18 (science) 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).

CALIBRATION DATA

Calibration data included students who met the preliminary state reporting criteria (including attempt criteria) by May 19. The state reporting criteria were preliminary, meaning that attributions and final PIMS[4] 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[5]). This data file was used to provide impact results to the Technical Advisory Committee (TAC) during the linking review process.

ITEM BANK DATA

The item bank data included students who met the state reporting criteria by July 9. No sampling was undertaken in this data (i.e., it included all students who met the above criteria with scored field test data up to this point). The data banked for field test items were based on this data file.

FINAL DATA

This file included all students who met state reporting criteria by August 12 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 (item bank data). The majority of the results included in this technical report were derived using the final data file.

[4] Pennsylvania Information Management System

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

FINAL *N*-COUNTS FOR ALL DATA SOURCES

The *n*-counts for all data sources are provided in Table 9–1.The calibration count includes students who met the preliminary state reporting criteria, while the final count includes students who met the final state reporting criteria.[6] A computer-based test (CBT) was offered for all subjects. Calibration data shows the number of students in both modes. Calibration of item parameters was conducted with paper students only; however, other analyses conducted during the calibration period (see Chapter Twelve) used both paper and CBT students. 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. However, the *n*-counts of paper students and total are not very different because the proportions of CBT students were small (see Table 9–2).

Table 9–1. Data Source *N*-Counts

Subject	Grade	Key Validation (Paper)	Key Validation (CBT)	Calibration (Paper/CBT)	Item Bank (Paper)	Final (Paper/CBT)
Mathematics	3	10235	702	125533	124573	125309
	4	7598	794	124384	123371	124201
	5	13456	1120	126790	125524	126683
	6	6815	1552	126359	124823	126413
	7	8595	2295	126050	123954	126299
	8	3364	3480	128256	125298	128859
ELA	3	65902	540	125381	124599	125160
	4	71450	635	124107	123316	123986
	5	69519	936	126532	125525	126501
	6	68884	1409	126248	124885	126331
	7	59034	2257	125942	123936	126228
	8	59466	3729	128257	125091	128889
Science	4	49504	1510	124481	122762	124309
	8	47915	4129	128139	124481	128733

[6] For this reason, the final count may be smaller than the calibration count in any given year.

COMPUTER-BASED TEST (CBT)

Table 9–2 displays the count of students who took the 2015 PSSAs broken out by content, grade, and mode with the final data. In all grades, only approximately three percent or less of students were enrolled to take the PSSAs online in the spring. Lower grades had fewer students who took CBT and grade 8 had highest CBT proportion of students in all subjects. Almost three percent of grade 8 students took CBT with mathematics and ELA, and slightly over three percent of grade 8 students took science CBT.

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

Subject	Grade	*N*-Counts		Proportion (%)	
		Paper	CBT	Paper	CBT
Mathematics	3	124574	735	99.41	0.59
	4	123370	831	99.33	0.67
	5	125524	1159	99.09	0.91
	6	124818	1595	98.74	1.26
	7	123950	2349	98.14	1.86
	8	125299	3560	97.24	2.76
ELA	3	124599	561	99.55	0.45
	4	123316	670	99.46	0.54
	5	125525	976	99.23	0.77
	6	124881	1450	98.85	1.15
	7	123930	2298	98.18	1.82
	8	125092	3797	97.05	2.95
Science	4	122761	1548	98.75	1.25
	8	124483	4250	96.70	3.30

SPIRALING OF FORMS

PSSA forms were scrambled and spiraled for all grades and subjects. Appendix H provides summary statistics for all test forms for each grade and subject-area test. The tables provide the form number (Form), the number of students (N), test length in items (L), total points (Pts.), the minimum score (Min), the maximum score (Max), the mean score (Mean), the median score (Med), and the standard deviation (SD). The mean raw 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

In response to test security issues raised in prior PSSA administrations, multiple scrambled patterns of operational forms were constructed for each mathematics, ELA, and science assessment. The core form was constructed following the past test construction and equating 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. More importantly, the data obtained from administration of the Master Core were used for operational MC item calibration.

Once the Master Core was constructed and approved, DRC and PDE content specialists built seven scrambled patterns of the Master Core for each content and grade. OE items were not scrambled so each OE item appeared in the same position on every form. Some MC items also appear in the same position on multiple forms due to content constraints. In some content areas 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 limited 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; 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 due to the fact that 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 items. Recall that the OE items were not part of the scrambling. The blocks generally contained six to seven MC items (or one passage), but the block sizes varied depending on the content and test session. Within each block, MC 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. Table 9–3 shows the mathematics Grade 8 scrambled form structure. The core was divided into nine blocks (labeled "1"–"9") and each block was scrambled in five different permutations (labeled I, II, III, IV, and M). So, for example, Form 1 was constructed with scrambled block version "I" for all nine blocks. Seven scrambled variations (labeled A, B, C, D, E, F, and G in the "Pattern" column) of the Master Core were used in addition to the Master Core across the twenty field-test forms. The Master Core was used on Forms 2, and 9.

Table 9–3. Mathematics Grade 8 Scrambling

	Block									
Form	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	Pattern
1	II	III	I	M	II	II	I	III	IV	A
2	M	M	M	M	M	M	M	M	M	Master
3	III	IV	III	III	M	I	I	I	II	B
4	M	I	IV	IV	IV	II	II	II	II	C
5	I	II	M	III	I	III	II	III	I	D
6	I	III	II	IV	III	I	M	IV	III	E
7	IV	II	III	I	IV	IV	III	IV	IV	F
8	II	IV	IV	II	I	IV	IV	M	III	G
9	M	M	M	M	M	M	M	M	M	Master

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. 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).
- Scrambling should not place a difficult item as the first item in a passage set.
- 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.)

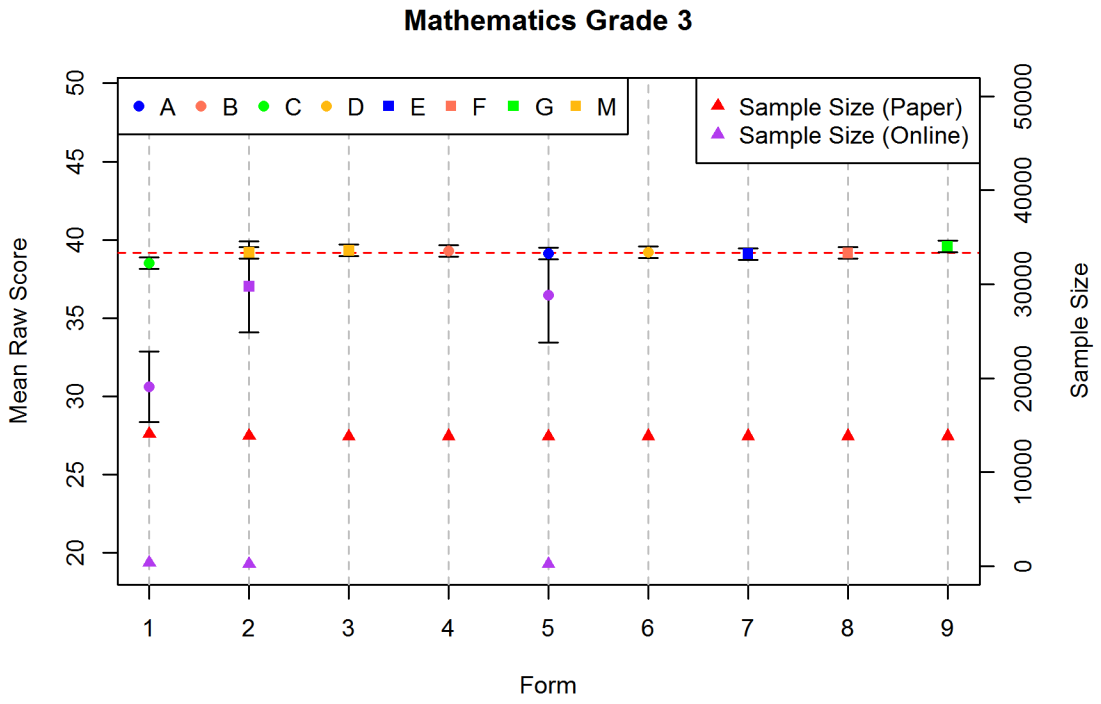
Table 9–4 shows a summary of the scrambling strategy employed for the 2015 PSSAs. Each content and grade used a total of eight different patterns of the core including the Master Core.

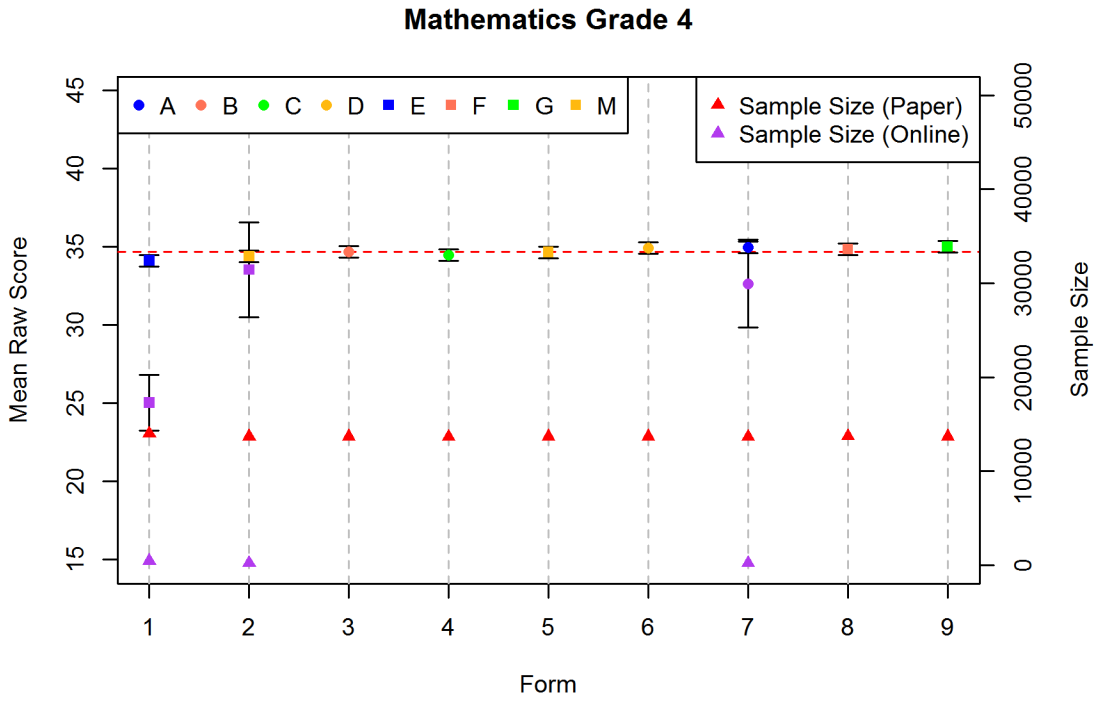
Table 9–4. Form Scrambling

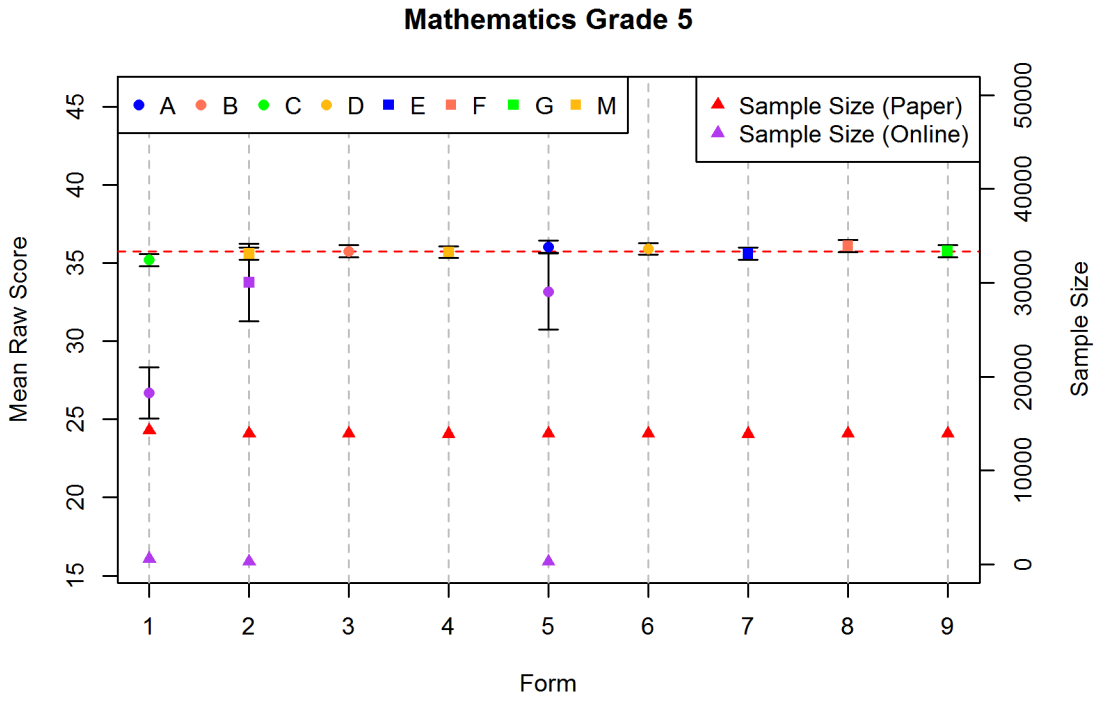
Content	Grade	Forms	Total Patterns	Master Cores
Mathematics	3	9	8	2
	4	9	8	2
	5	9	8	2
	6	9	8	2
	7	9	8	2
	8	9	8	2
ELA	3	9	8	2
	4	9	8	2
	5	9	8	2
	6	9	8	2
	7	9	8	2
	8	9	8	2
Science	4	12	8	2
	8	12	8	2

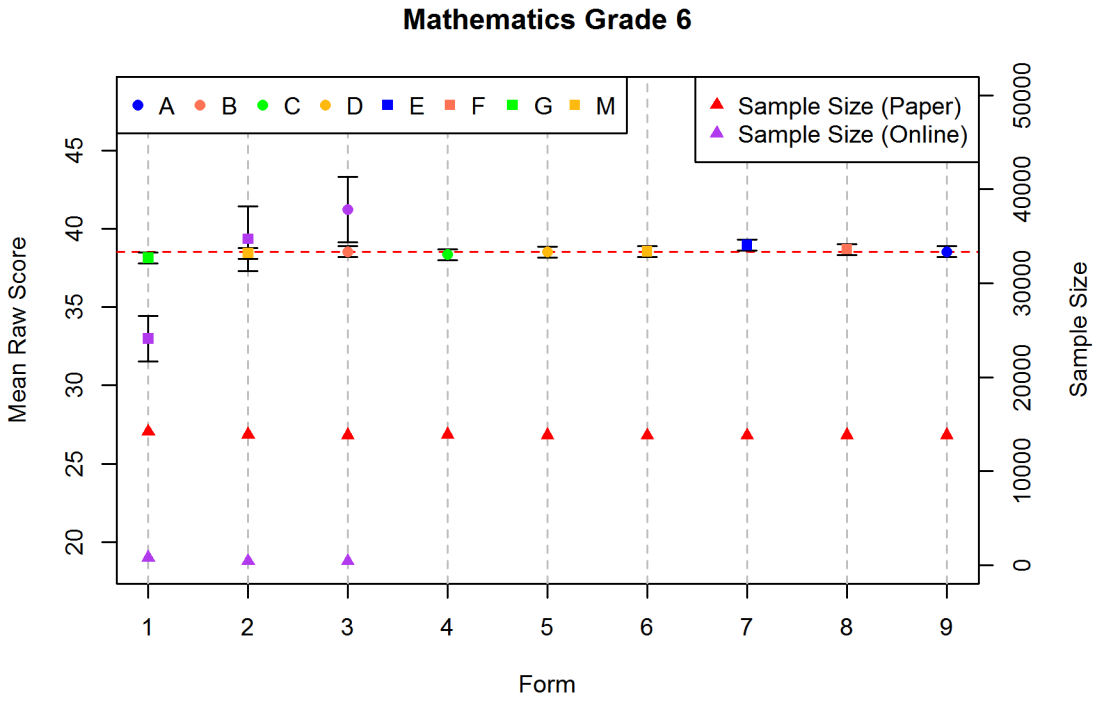
An important assumption for effectively collapsing forms into pattern groups is that the form spiraling yielded randomly equivalent groups. Figure 9–1 displays the raw score mean, a 3 standard error band, and the scramble pattern for each form by mode. Online is shown in light purple for both mean and sample size. The standard error bands we have plotted here are equivalent to approximately 99 percent confidence interval for the form means. When the error bands for a form overlapped the overall mean (the red line), the form means were not statistically different from the overall mean regardless of the type of scrambling. As can be seen, the spiraling essentially produced randomly equivalent groups. Please note that Form 1 is used for all accommodated administrations and as such appears very different from the remaining forms in these plots.

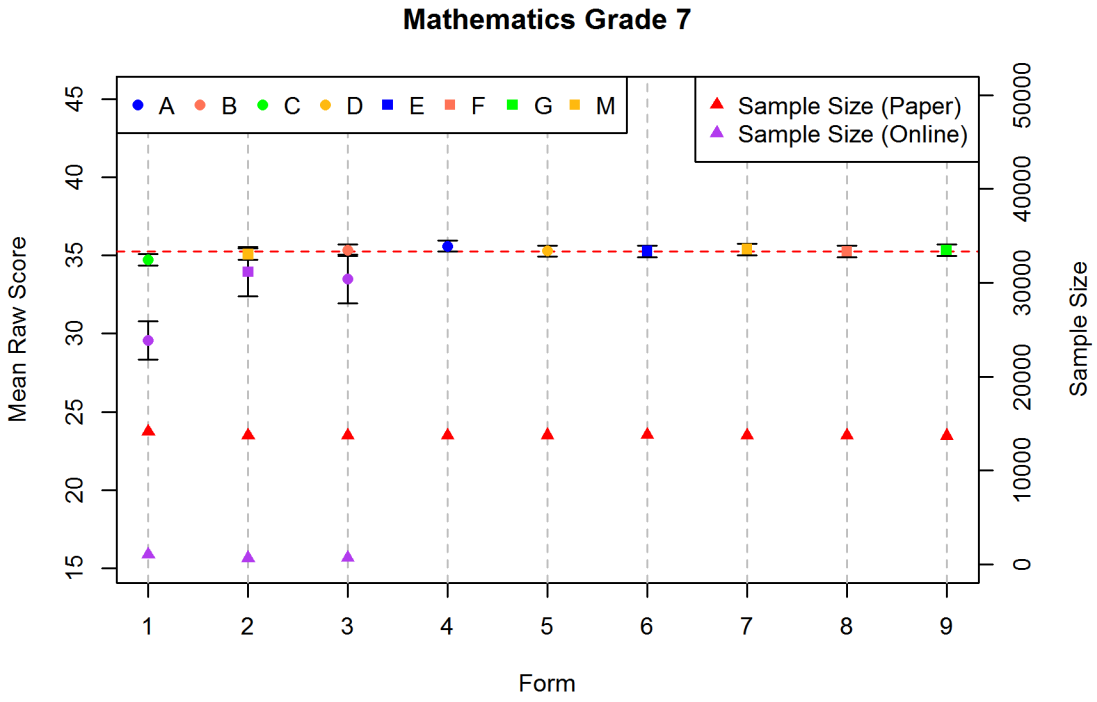
Figure 9–1. Form Mean Scores with +/- Three Standard Error (SE) Bands

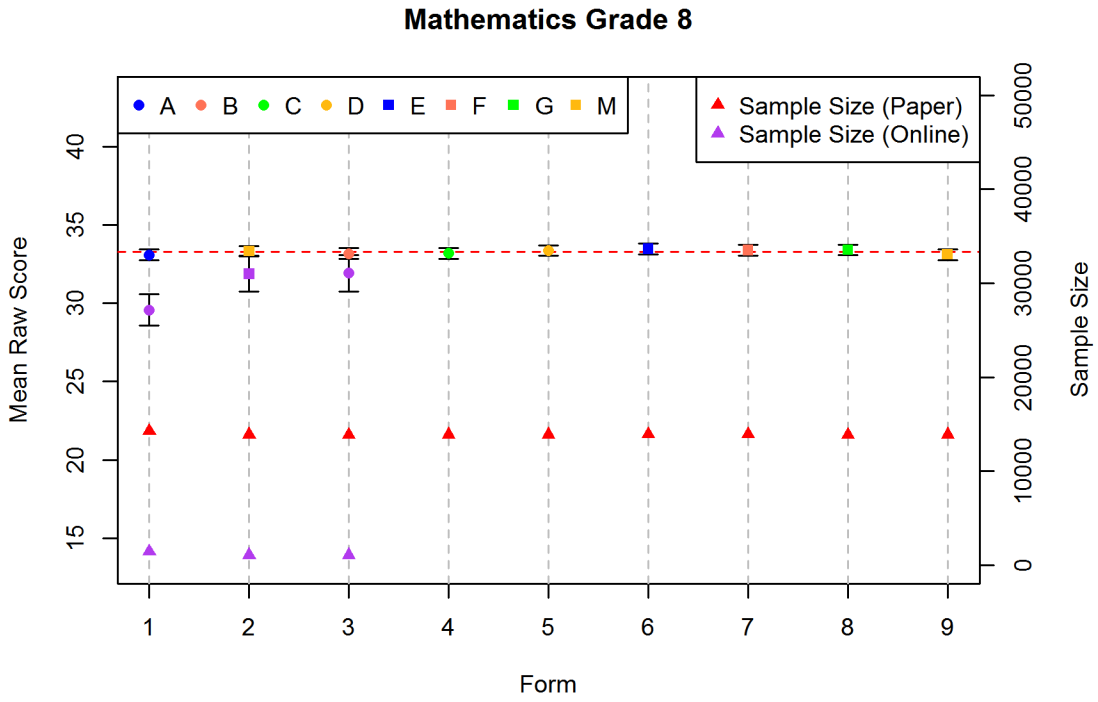


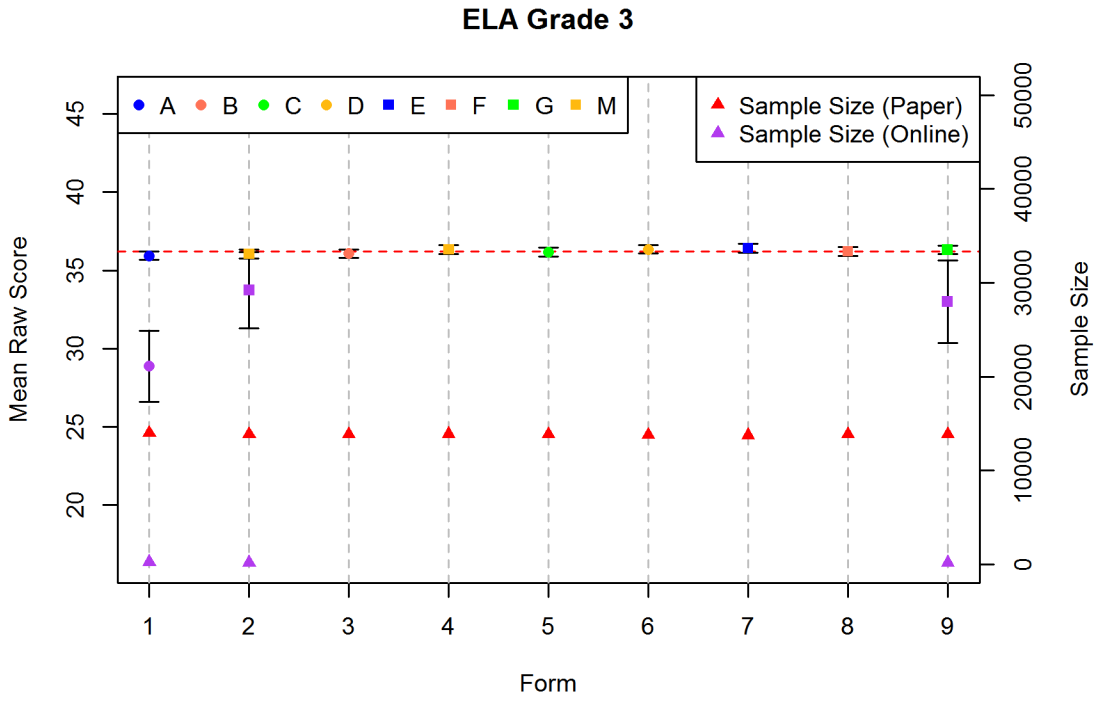


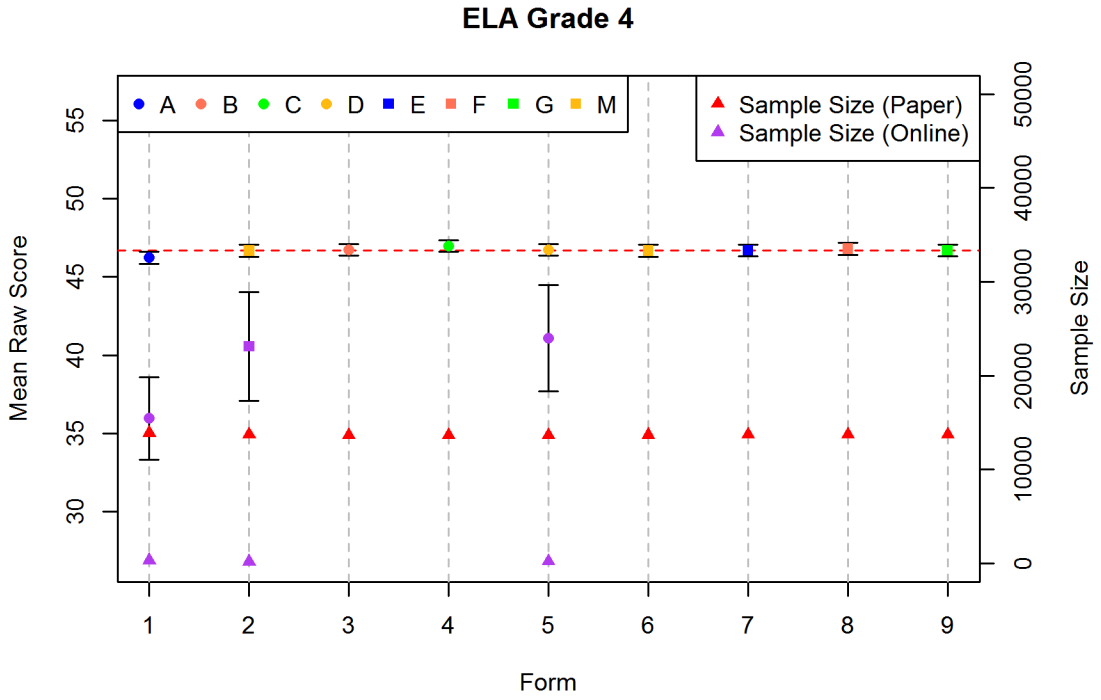

Mathematics Grade 5
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
15 20 25 30 35 40 45
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9

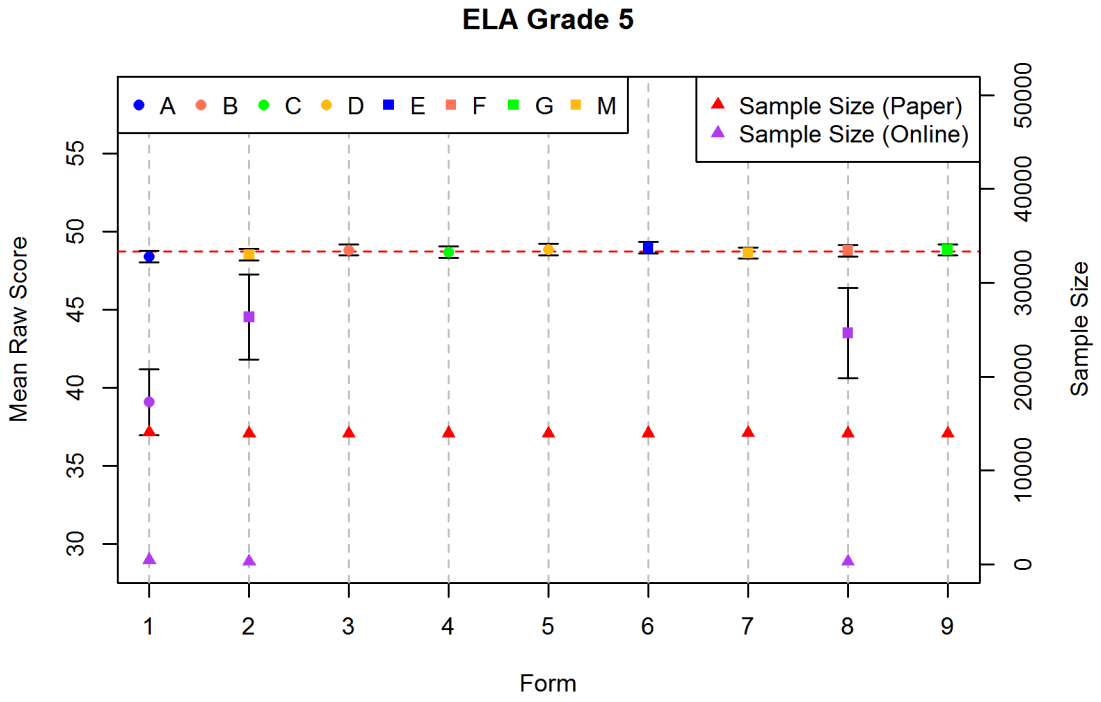

Mathematics Grade 6
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
20 25 30 35 40 45
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9

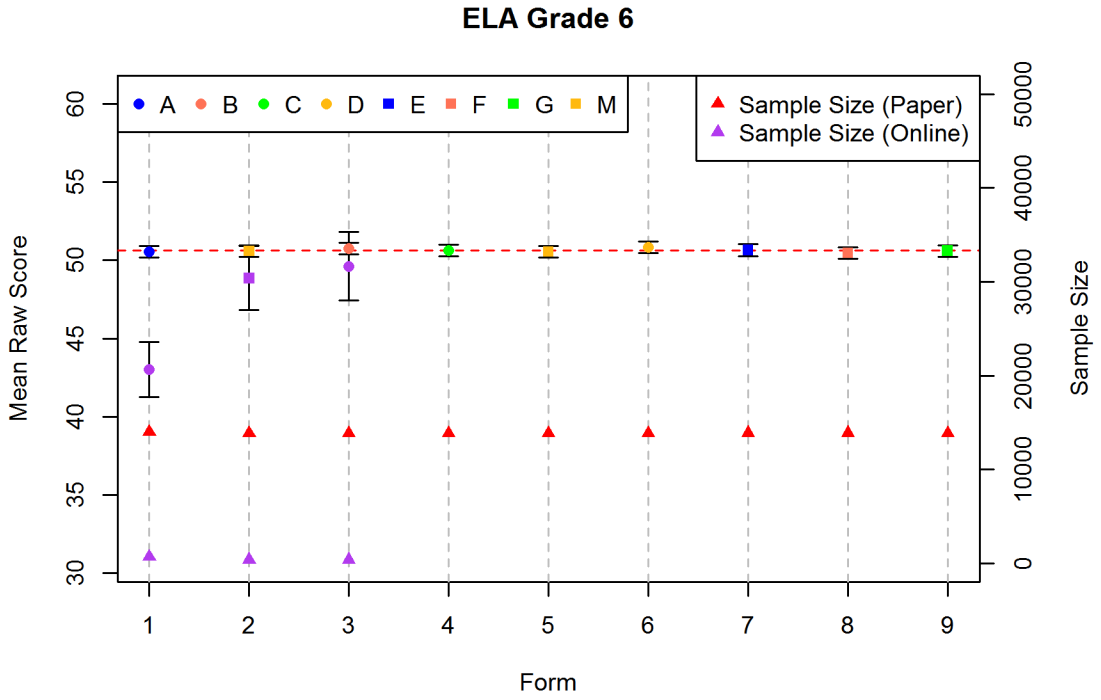

Mathematics Grade 7
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
15 20 25 30 35 40 45
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9

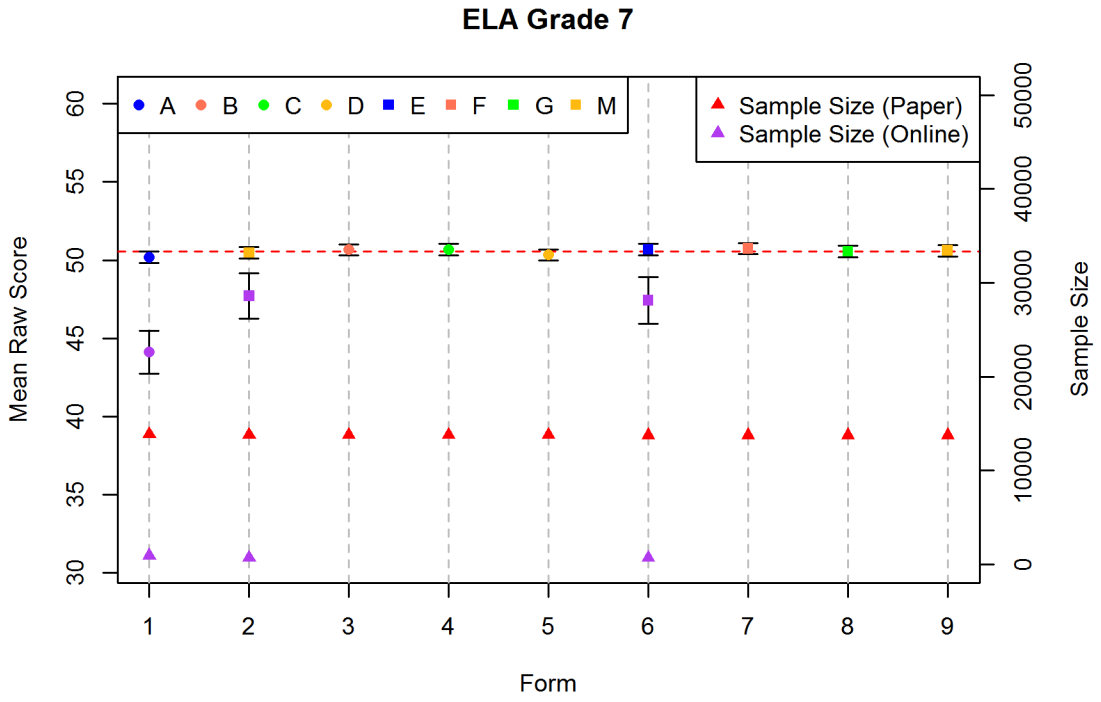

Mathematics Grade 8
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
15 20 25 30 35 40
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9

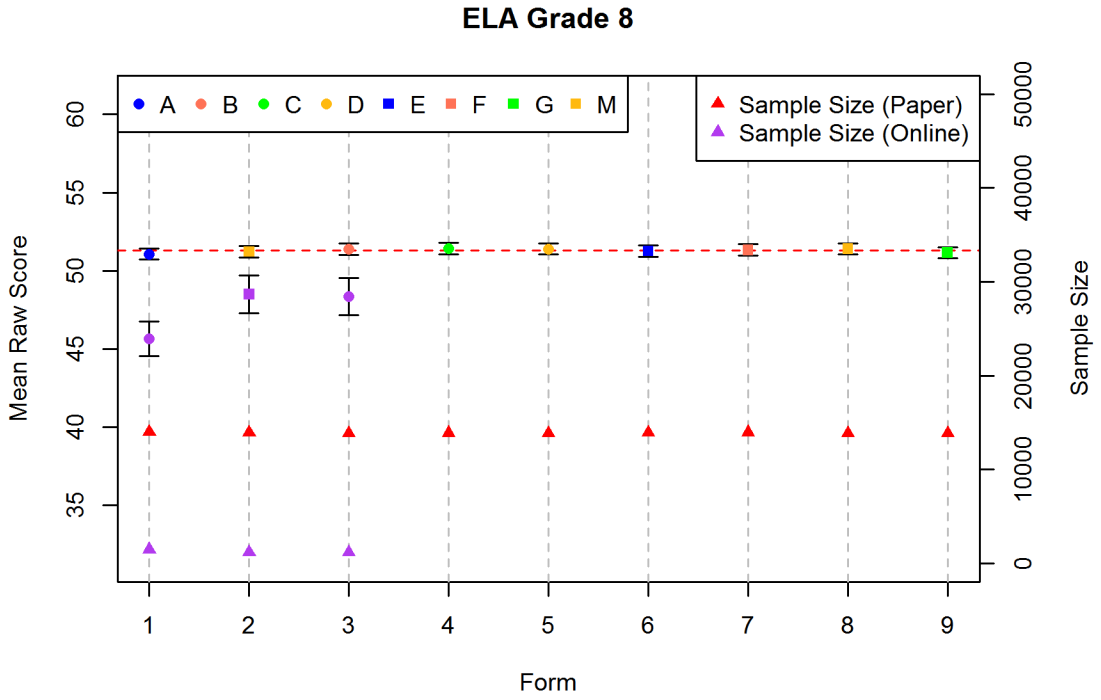

ELA Grade 3
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
20 25 30 35 40 45
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9

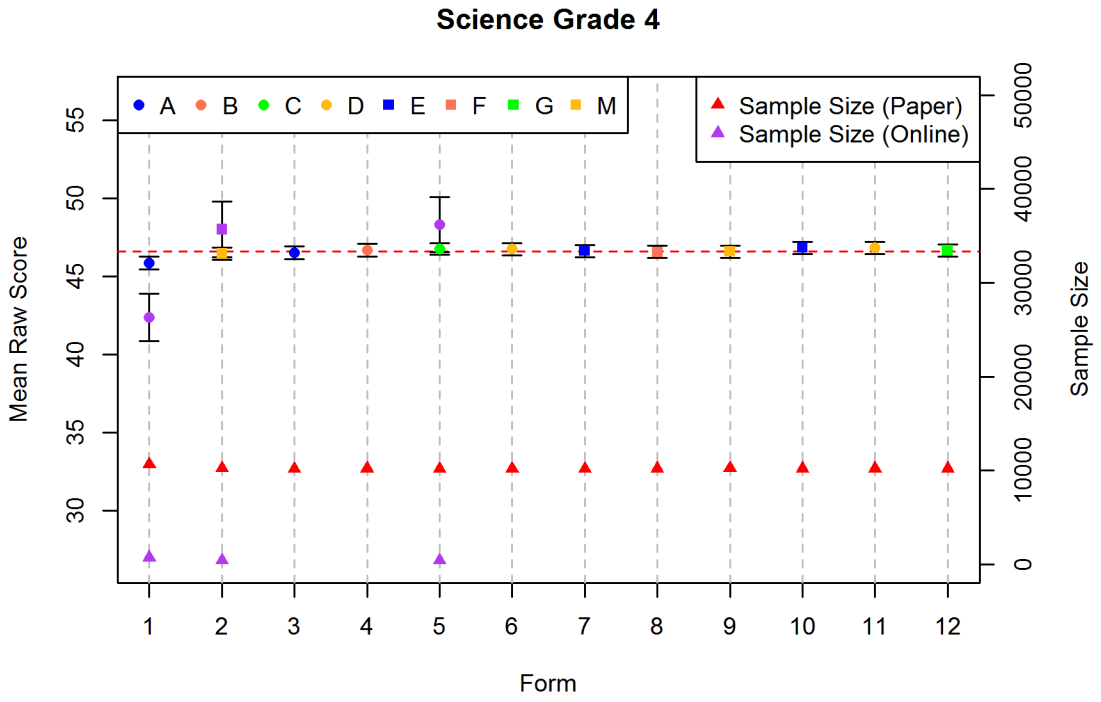

ELA Grade 4
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
30 35 40 45 50 55
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9


ELA Grade 5
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
30 35 40 45 50 55
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9


ELA Grade 6
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
30 35 40 45 50 55 60
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9


ELA Grade 7
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
30 35 40 45 50 55 60
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9


ELA Grade 8
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
35 40 45 50 55 60
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9


Science Grade 4
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
30 35 40 45 50 55
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9 10 11 12

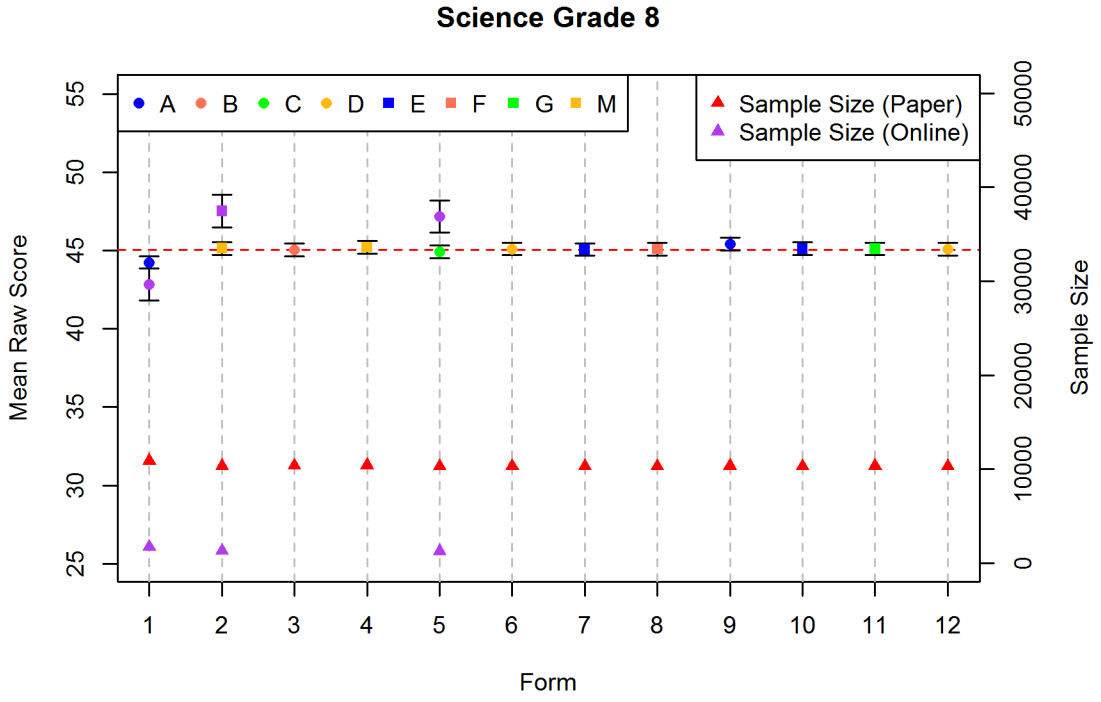

Science Grade 8
A B C D E F G M
Sample Size (Paper)
Sample Size (Online)
Mean Raw Score
Sample Size
Form
25 30 35 40 45 50 55
0 10000 20000 30000 40000 50000
1 2 3 4 5 6 7 8 9 10 11 12

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 gives the form to scramble pattern conversion.

Table 9–5. Form Pattern Counts

Content	Grade	Pattern							
		A	B	C	D	E	F	G	M
Mathematics	3	13988	13829	14413	13802	13824	13807	13809	27837
	4	13841	13691	13629	13673	14405	13716	13691	27555
	5	14191	13919	14834	13924	13891	13899	13937	28088
	6	13828	14225	13880	13825	13781	13827	14966	28081
	7	13723	14413	15145	13757	13781	13703	13690	28087
	8	15691	14910	13876	13881	13900	13900	13869	28832
ELA	3	14204	13841	13855	13771	13753	13864	14004	27868
	4	14178	13664	13651	13813	13716	13699	13712	27553
	5	14489	13925	13945	13928	13942	14200	13934	28138
	6	14671	14241	13846	13866	13892	13880	13857	28078
	7	14782	13769	13766	13779	14442	13743	13752	28195
	8	15442	15032	13892	13861	13932	13941	13846	28943
Science	4	21548	10213	10554	20366	20352	10195	10201	20880
	8	22894	10386	11584	20605	20623	10304	10333	22004

Note. Final data was used

Table 9–6. Form to Pattern Conversion Table

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

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 9–7 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 was excluded from these analyses since the accommodations tend to lower average performance. This means that there are no pattern A results for mathematics grade 8 and all grades in ELA because pattern A was only used once in these contents and grades and form 1 followed pattern A. Also grades 3, 5, and 7 mathematics Pattern C, grade 4 mathematics Pattern E, and grade 6 mathematics pattern G do not have the results because they were only offered in form 1. Table 9–7 shows that 2 of 36, 0 of 36, and 0 of 14 scramble pattern raw score means showed a significant difference from the Master Core in mathematics, ELA, and science, respectively. Although there are some content grades showing a constant direction of performance differences of the scramble patterns from the Master Core, there does not appear to be a general pattern by either content or grade.

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

		Scramble Pattern						
Content	**Grade**	**A**	**B**	**C**	**D**	**E**	**F**	**G**
Mathematics	**3**	-0.14	0.05		-0.02	-0.14	-0.08	0.35
	4	0.42	0.17	-0.03	0.42		0.33	0.49
	5	0.36	0.12		0.27	-0.02	0.46	0.13
	6	0.03	0.11	-0.15	0.01	0.47	0.18	
	7	0.40	0.04		0.07	0.06	0.04	0.13
	8		-0.09	0.01	0.20	0.29	0.21	0.24
ELA	**3**		-0.10	-0.02	0.18	0.23	0.04	0.10
	4		0.10	0.34	0.02	0.07	0.16	0.05
	5		0.29	0.16	0.32	0.42	0.14	0.30
	6		0.18	0.09	0.30	0.11	-0.07	0.06
	7		0.19	0.22	-0.14	0.05	0.27	0.09
	8		-0.04	0.23	0.20	0.06	0.13	-0.04
Science	**4**	-0.05	0.13	0.27	0.24	0.18	0.01	0.10
	8	0.10	-0.26	-0.15	-0.22	-0.21	-0.23	-0.21

Note. Final data is used and highlighted cell indicate the scramble patter is statistically significant different from master core form at family-wise $\alpha = 0.01$ for each subject and grade combination.

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. With ELA, EBSR items were also scrambled. As with the MC items, DIF analysis was used for item level scrambling check for EBSR items. For EBSR 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.

In this section, master core form is reference group and non-master core form was 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. At item level, there was no item exhibiting item DIF due to scrambling.

With ELA, EBSR items were also scrambled. There were 4 EBSR items with grade 3, and other grades had 6 EBSR items. As with the MC items, DIF analysis was used for item level scrambling check.

Table 9–8. The number of items with C DIF for Scrambling Effect

			Scramble Pattern						
Content		**Grade**	**A**	**B**	**C**	**D**	**E**	**F**	**G**
Mathematics	**MC**	**3**	0	0	-	0	0	0	0
		4	0	0	0	0	-	0	0
		5	0	0	-	0	0	0	0
		6	0	0	0	0	0	0	-
		7	0	0	-	0	0	0	0
		8	-	0	0	0	0	0	0
ELA	**MC**	**3**	-	0	0	0	0	0	0
		4	-	0	0	0	0	0	0
		5	-	0	0	0	0	0	0
		6	-	0	0	0	0	0	0
		7	-	0	0	0	0	0	0
		8	-	0	0	0	0	0	0
	EBSR	**3**	-	0	0	0	0	0	0
		4	-	0	0	0	0	0	0
		5	-	0	0	0	0	0	0
		6	-	0	0	0	0	0	0
		7	-	0	0	0	0	0	0
		8	-	0	0	0	0	0	0
Science	**MC**	**4**	0	0	0	0	0	0	0
		8	0	0	0	0	0	0	0

Chapter Ten: Summary Demographic, Program, and Accommodation Data for the 2015 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 per grade) and a small number of foreign exchange students (generally fewer than 30 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 *2015 Pennsylvania System of School Assessment: Handbook for Assessment Coordinators*, p.8.)

Results for this chapter are presented in sets of 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. Table set 10–1E through 10–1S provides a summary of the assessed students for each subject. Presented on the first line is the total number of non-blank answer documents processed by grade level for the 2015 PSSA. This number pertains to the total number of records on the student file and is typically less than the "Used Answer Booklets Scanned" column shown in the Appendix L tables. The reason for the difference is that completely blank answer booklets (no student name and no items responded to) get removed from the initial batch of materials scanned. See Chapter Eight for more details on processing. The second line shows the number and percentage of students with a PSSA score in the subject area, followed by the number and percentage not receiving a score. The final line shows the number of students contributing to state summary statistics, which is especially relevant for all tables in Appendices I, J, K, and L. (See the section of this chapter entitled "Composition of Sample Used in Subsequent Tables" for additional explanation.)

Table 10–1E. Students Assessed on the 2015 PSSA: ELA

	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	128,627	127,262	129,347	128,765	128,058	129,724
Total number of CBT processed	608	719	1,024	1,529	2,399	3,933
Total number of tests processed	129,235	127,981	130,371	130,294	130,457	133,657
Total number of tests processed with a score	127,696 98.8	126,316 98.7	128,748 98.8	128,570 98.7	128,543 98.5	131,213 98.2
Total number of tests processed without a score	1,539 1.2	1,665 1.3	1,623 1.2	1,724 1.3	1,914 1.5	2,444 1.8
Students with an English language arts score score used in state summaries	125,160	123,986	126,501	126,331	126,228	128,889

Table 10–1M. Students Assessed on the 2015 PSSA: Mathematics

	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	128,569	127,233	129,246	128,812	128,212	130,103
Total number of CBT processed	774	877	1,208	1,677	2,450	3,690
Total number of tests processed	129,343	128,110	130,454	130,489	130,662	133,793
Total number of tests processed with a score	128,235 99.1	126,936 99.1	129,305 99.1	128,957 98.8	128,984 98.7	131,471 98.3
Total number of tests processed without a score	1,108 0.9	1,174 0.9	1,149 0.9	1,532 1.2	1,678 1.3	2,322 1.7
Students with a mathematics score used in state summaries	125,309	124,201	126,683	126,413	126,299	128,859

Table 10–1S. Students Assessed on the 2015 PSSA: Science

	Gr. 4	Gr. 8
	N/Pct	N/Pct
Total number of PPT processed	126,266	129,051
Total number of CBT processed	1,597	4,374
Total number of tests processed	127,863	133,425
Total number of tests processed with a score	126,695 99.1	131,046 98.2
Total number of tests processed without a score	1,168 0.9	2,379 1.8
Students with a science score used in state summaries	124,309	128,733

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
- Absence without make-up for at least one section of a subject-area test
- 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.
- ELL students in the first year in U.S. schools (ELA only)
- Medical emergency
- Other reasons (includes parental request due to religious reasons, students who are court-agency placed, students with multiple reasons coded, and the category of other)

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 2015 PSSA: ELA

Reason for Non-Assessment	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	42	44	47	86	199	270
	2.7	2.6	2.9	5.0	10.4	11.0
Absent without make-up	24	13	29	46	74	131
	1.6	0.8	1.8	2.7	3.9	5.4
Non-attempt	452	568	483	474	601	594
	29.4	34.1	29.8	27.5	31.4	24.3
ELL in first year in U.S. schools	234	227	230	149	143	143
	15.2	13.6	14.2	8.6	7.5	5.9
Medical emergency	87	117	141	178	262	390
	5.7	7.0	8.7	10.3	13.7	16.0
Parental request	601	583	574	527	412	551
	39.1	35.0	35.4	30.6	21.5	22.5
Other reasons	99	113	119	264	223	365
	6.4	6.8	7.3	15.3	11.7	14.9
Total not assessed	1,539	1,665	1,623	1,724	1,914	2,444

Table 10–2M. Counts of Students without Scores on the 2015 PSSA: Mathematics

Reason for Non-Assessment	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	55	45	54	113	234	339
	5.0	3.8	4.7	7.4	13.9	14.6
Absent without make-up	23	18	23	40	88	125
	2.1	1.5	2.0	2.6	5.2	5.4
Non-attempt	270	282	229	385	407	480
	24.4	24.0	19.9	25.1	24.3	20.7
Medical emergency	87	141	152	209	312	437
	7.9	12.0	13.2	13.6	18.6	18.8
Parental request	574	580	574	521	419	572
	51.8	49.4	50.0	34.0	25.0	24.6
Other reasons	99	108	117	264	218	369
	8.9	9.2	10.2	17.2	13.0	15.9
Total not assessed	1,108	1,174	1,149	1,532	1,678	2,322

Table 10–2S. Counts of Students without Scores on the 2015 PSSA: Science

Reason for Non-Assessment	Gr. 4	Gr. 8
	N/Pct	N/Pct
Extended absence from school	80	452
	6.8	19.0
Absent without make-up	19	101
	1.6	4.2
Non-attempt	211	392
	18.1	16.5
Medical emergency	153	476
	13.1	20.0
Parental request	584	536
	50.0	22.5
Other reasons	121	422
	10.4	17.7
Total not assessed	1,168	2,379

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 August 2015. Students not included in the present state summary data were those who were 1) enrolled in a Pennsylvania school after October 1, 2014, 2) coded as ELL and enrolled after April 11, 2014, 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 one to three percent for mathematics and ELA, and science. There was an increase in the percent of students taking a CBT across grade levels. For mathematics and ELA the percent of CBT usage went from less than one percent to almost three percent from Grades 3 through 8. For science, CBT participation rate was 1.25 percent and 3.30 percent for grades 4 and 8, respectively.

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.

Demographic Characteristics of Students Taking the 2015 PSSA can be found in Appendix I.

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, *Accommodations Guidelines: Keystone Exams and PSSA* (PDE, revised 12/17/2014), was updated for use with the 2015 PSSA and Keystone Exams. This manual may be found on the PDE website at www.education.pa.gov. You can find the document by typing the manual title in the search box. A glossary of accommodation terms as applied to the Keystone Exams is provided in Table 10–3 at the end of this chapter.

It should be noted that a few of the accommodations available to students in the current year differ from those of the previous year. These include several new or revised accommodations along with several that were dropped.

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. Because of the very small number of students utilizing CBT, combined with the fact that a number of accommodations are primarily accessed by only one of the two administration modes, meaningful comparisons with PPT are rather limited. 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 2015 PSSA varied by subject and testing mode as follows:

- PPT: mathematics and science, 11; ELA, 11.
- CBT: mathematics and science, 11; ELA, 10.

As depicted in Appendix J, the actual frequencies were quite low, generally representing less than two-tenths of one percent of assessed students statewide. Frequencies of less than one-tenth of one percent were observed in at least half of the instances. The most notable exceptions were "All test items/questions read aloud" and "Some test items/questions read aloud" (mathematics and science), and "some language questions/writing/prompts/text-dependent analysis questions read aloud" (ELA) and "all language questions/writing prompts/text-dependent analysis questions read aloud" (ELA). Among accommodations specific to CBT the use of audio was the most frequent. Although included in the tabled data, Spanish version (mathematics and science) is not included in the counts listed above. For CBT administration there were also four unique accommodations for mathematics and science and three for ELA.

Incidence of Presentation Accommodations Received on the 2015 PSSA can be found in Appendix J.

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 2014 PSSA varied by subject as follows:

- PPT: mathematics and science, 12; ELA, 8.
- CBT: mathematics and science, 8; ELA, 4.

Summarized in Appendix J is the frequency with which these accommodations were utilized, most of which are quite low. Very few response accommodations were coded as being utilized by students responding by CBT.

Incidence of Response Accommodations Received on the 2015 PSSA can be found in Appendix J.

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 2015 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. In mathematics and ELA the percentage of use for this accommodation by students using a PPT was greatest at Grade 4, followed by gradual decreases through Grade 8. Similarly, usage of a small group setting was greatest at the elementary level for science (Grade 4) with a slightly lower percentage at Grade 8.

Incidence of Setting Accommodations Received on the 2015 PSSA can be found in Appendix J.

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 2015 PSSA. As depicted in Appendix J, the most commonly used accommodation was extended time, followed by frequent breaks. One consistent finding for mathematics and ELA was that students responding by CBT had a slightly higher usage of frequent breaks across all six grade levels than observed for students taking a PPT. This was also true for the two grade levels assessed for science.

Incidence of Timing Accommodations Received on the 2015 PSSA can be found in Appendix J.

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, 27. The number of available accommodations for students taking a CBT was as follows: mathematics and science, 27; and ELA, 22. 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.

Accommodation Rates for Non-IEP and IEP Students can be found in Appendix K.

THE INCIDENCE OF ACCOMMODATIONS AND IEP AND ELL STATUS

As noted in Appendix L, students with an IEP received an accommodation of some type far more often than non-IEP students. Certain accommodations with very low frequencies are specific to particular disabilities while others are far more common and may also apply to students classified as English Language Learners (ELL). 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/writing prompts/text-dependent analysis questions read aloud (ELA)
- All language questions/writing prompts/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 Language Learner (ELL) is a student classified ELL and enrolled in a U.S. school on or before April 11, 2014. 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-ELL. Students coded as ELL and enrolled in a U.S. school after April 11, 2014, are excluded from state summary statistics, with the exception of science, 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 ELL students. To separate out the effect of being classified IEP or ELL, four possible combinations are presented in the tables. These include general education students who are neither IEP nor ELL, students who are IEP but non-ELL, students who are ELL but non-IEP, and students who are both IEP and ELL. The bottom row for each grade provides the total number of assessed students in each of the four classifications.

Although the separate presentation of data for PPT and CBT modes provides an impression of overall findings, the much smaller *N*-counts and accommodation rate by students taking a CBT renders an administration mode comparison meaningless for two groups, namely, ELL and Non-IEP and Both IEP and ELL. Nevertheless, it is possible to make some cautious descriptive observations when sufficient *N*-counts and consistency are present. In the summary comments regarding the tables in Appendix L the term "instances" refers to the set of **accommodations for which data is displayed**. The general findings for each of the four classifications of students may be summarized as follows.

Group Comparisons for Students Taking a PPT

The general findings for students receiving a PPT, where the volume of data is quite substantial, showed a great deal of consistency. Among the accommodations presented in Appendix L, frequent breaks displayed the least differentiation among the four comparison groups. Small group testing had the largest frequency for each subject area at all assessed grades. A dominant pattern was in the especially high number of times that the IEP/ELL group had the largest percent of accommodations at the elementary level (grades 3–5), which then shifted as the IEP/Non-ELL group tended to receive larger percentages of particular accommodations at the middle school level (grades 6–8). Major findings for each of the four classifications of students are summarized below:

- General education students (neither IEP nor ELL) had a very low incidence of accommodations in general and less than the other three groups in nearly all instances. When general students received accommodation, they typically received 'small group setting' and/or 'extended time' in all subjects, and generally less than five percent of the students received the accommodations. With mathematics and science there were more than one percent of general education students who received 'some test items/questions read aloud.'
- More than 50% of IEP/non-ELL students received 'small group setting' in all subjects and grades. Lower grades received more accommodation than higher grades in all subjects. The next most common accommodation for this group was 'all/some items/questions read aloud' with lower grades, often exceeding 20%. Frequent breaks also showed similar pattern as 'all/some items/question read aloud', showing higher percentage of lower grade students receiving it than higher grades students. With higher grades, 'extended time tended' to have higher percentage of students than 'all/some items/questions read aloud'.
- The ELL/non-IEP students received a larger percentage of these accommodations than the general education students in all instances. The most common accommodation was 'small group setting' followed by 'extended time' and 'some items/questions read aloud'. Lower grades needed more some items/questions read aloud than higher grades. With higher grades, more students received 'extended time' than 'some items/questions read aloud'.
- The IEP/ELL students received more accommodations than other groups, however, the pattern is similar as other groups. The most common accommodation is 'small group setting' in all grades and subjects. Lower grades students received more 'all/some items/questions read aloud' than higher grades students. Frequent breaks also showed similar pattern as "all/some items/questions read aloud', showing higher percentage of students receiving it than higher grades. With higher grades students, 'extended time' accommodation was received by more or similar proportion of students receiving 'all/some items/questions read aloud'.

CBT Comparisons with PPT

The only groups for which comparisons between PPT and CBT administration modes were deemed reasonable based on sample sizes were within the general education group and the IEP/non-ELL group. The findings are summarized below.

- In all grades and subjects, general education students had at least 400 students with CBT. As noted for PPT, CBT also displayed a very low incidence of accommodations. With most accommodations, less or similar proportion of CBT students received accommodation compared to PPT students, except 'extended time' with grade 3 mathematics and ELA, and 'small group setting' with grade 4 science where CBT students had more students receiving those accommodations.
- The number of IEP/non-ELL students taking CBT increased with higher grades. Grade 5 or higher with mathematics and ELA and both science grades had at least 300 students. In all subjects and grades, the proportion of 'small group setting' was similar between PPT and CBT, while the proportion of 'extended time' and 'frequent breaks' were substantially larger with CBT than PPT. The proportions of 'some items/questions read aloud' were noticeably less with CBT than PPT, but the proportion of '*all* items/questions read aloud' was substantially larger with CBT than PPT. For example, grade 8 mathematics had 10.7% and 5.5% of '*some* items/questions read aloud' for PPT and CBT, respectively, while they had 6.2% and 17.1% for of '*all* items/questions read aloud' for PPT and CBT, respectively.

Incidence of IEP and ELL Students Receiving Selected Accommodations can be found in Appendix L.

GLOSSARY OF ACCOMMODATION TERMS

Table 10–3 provides a brief description of accommodation terms as used in the PSSA and Keystone Exams. 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, 2015 *Accommodations Guidelines: Keystone Exams and PSSA* (PDE, revised 12/17/2014, pages 23–40). This manual may be found on the PDE website at www.education.pa.gov. You can find the document by typing the manual title in the search box.

Table 10–3. Glossary of Accommodation Terms as Applied in the 2015 PSSA and 2014–2015 Keystone Exams

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/prompt/ 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, essay prompts, and text-dependent analysis questions and all items in PSSA mathematics and science and for Keystone Algebra and Biology.
Test items/questions/prompt/ text-dependent analysis interpreted for ELL	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, essay prompts, and text-dependent analysis questions and Keystone Algebra and Biology exams.
Some or all test items/questions/prompt/ 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, essay prompts, 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.

Table 10–3 (continued). Glossary of Accommodation Terms as Applied in the 2015 PSSA and 2014–2015 Keystone Exams

Type of Testing Accommodation	Explanation
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, essay prompts, 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 a VSL on the PSSA mathematics and science 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.
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 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 ELL 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.

Table 10–3 (continued). Glossary of Accommodation Terms as Applied in the 2015 PSSA and 2014–2015 Keystone Exams

Type of Testing Accommodation	Explanation
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.
Audio recording of student responses (per *Accommodations Guidelines*)	An electronic recording device may be used to record responses, which must be transcribed into the answer booklet by the test administrator. (Students who are unable to use a pencil or have illegible handwriting may answer MC questions orally. Answers must be recorded in the answer booklet without alteration during the testing period.)
Translation dictionary for ELL 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.
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.

Table 10–3 (continued). Glossary of Accommodation Terms as Applied in the 2015 PSSA and 2014–2015 Keystone Exams

Type of Testing Accommodation	Explanation
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 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 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)[7] 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).

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

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[8] 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 of this, some assert that this index would be more accurately referred to as the item's easiness.)

[7] OE items for ELA include Short Answer (SA), Evidence Based Selected Response (EBSR), Text Dependent Analysis (TDA), and Writing Prompt (WP) in this chapter.
[8] For MC items with four response options, pure random guessing would lead to an expected *p*-value of 0.25.

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 taps 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 PSSAs, a test development goal is to include a wide range of item difficulties.

ITEM DISCRIMINATION

At the most general level, item discrimination[9] 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 more likely to answer the same item incorrectly. 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 the aforementioned expectation is met (high-scoring students tend to get the item right while low-scoring students do not), 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.[10] 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.

[9] 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.

[10] 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.

DISCRIMINATION ON DIFFICULTY SCATTERPLOTS

Figure 11–1 contains a series of scatterplots showing item discrimination values (item-total correlation, *y*-axis) on the item difficulty (p-value, *x*-axis) for each grade and subject area test. Note that pseudo *p*-values (described above) are used for OE items in these plots. These plots provide maximum information about item discrimination and difficulty in a single visual image for each PSSA test. This is because the *x*- and *y*-axes also show histogram with following descriptive statistics:

- Minimum and maximum values
- Mean scores
- Median scores
- First and third quantile (Q1 and Q3).

The bivariate relationship between item discrimination (item-test *correlations*) and difficulty (item *mean* scores) is also presented through scatterplots in these figures. One does not usually expect any type of trend here. However, as noted earlier, it is often the case that items with extreme difficulties can have lower discrimination values, as this can be revealed in such plots.

OBSERVATIONS AND INTERPRETATIONS

To support the visuals, Table 11–1 provides break-out results for the MC and OE items. The mean *p*-values for the MC items ranged from about 0.49 to 0.52 for Mathematics and from 0.61 to 0.65 for ELA. Science MC items' *p*-values were approximately 0.70 for both grades. Science *p*-values were consistent with their historic values while mathematics and ELA *p*-values were slightly lower than previously[11]. OE items' *p*-values ranged from 0.29 to 0.42 in mathematics, 0.54 to 0.66 in ELA, and had approximately 0.60 *p*-value for both grades in science. Mathematics OE items *p*-values show the OE items were more challenging than the historical items, but ELA and Science were consistent with the historic values. From the difficulty distributions illustrated in the plots, a wide range of item difficulties appeared on each exam, which was one test development goal.

The mean item-test correlations ranged from roughly 0.35 to 0.42 and 0.47 to 0.67 for the MC and OE items, respectively. These were 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 was quite good.

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.

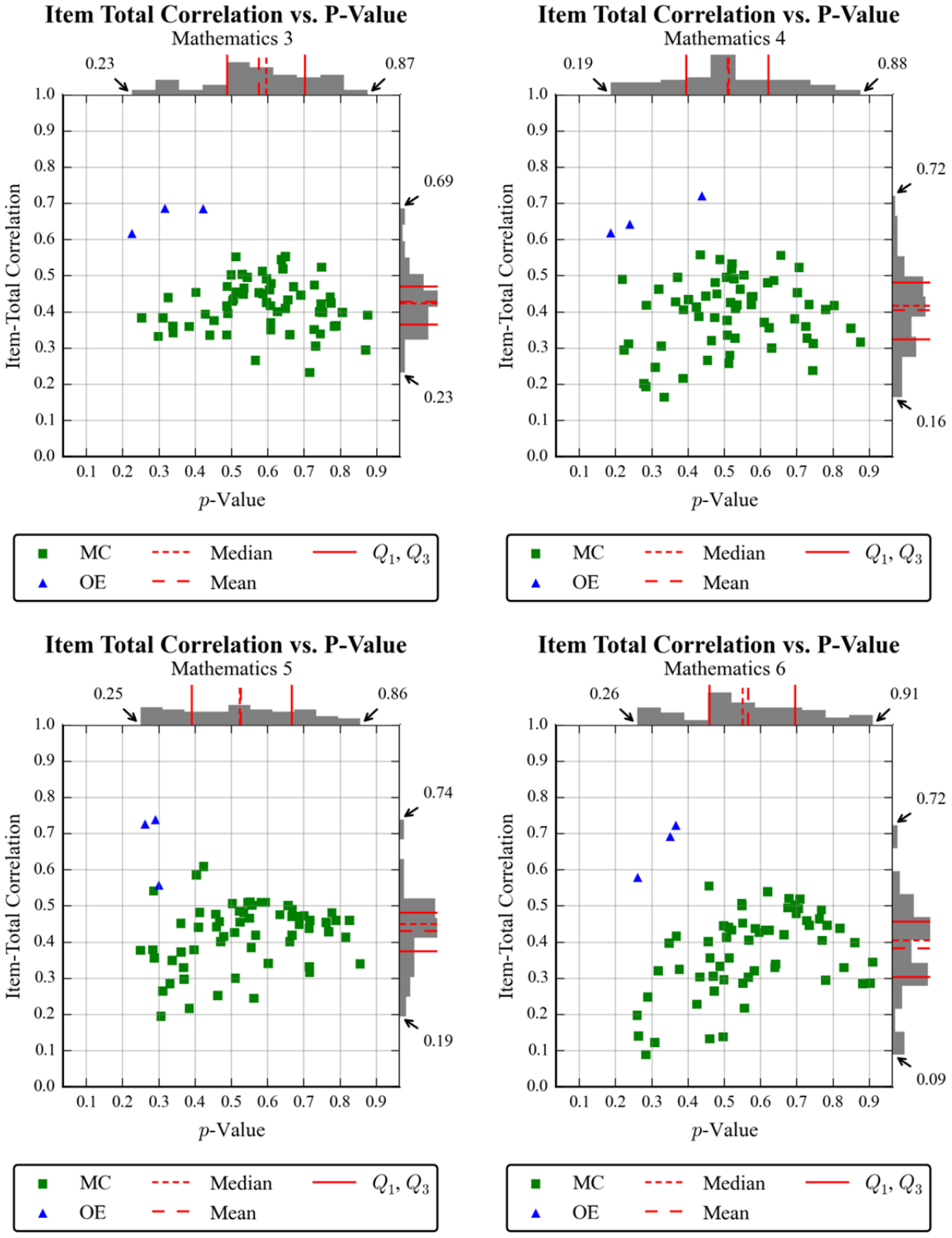
[11] Historically, average item difficulties have ranged from mid 0.60s to low 0.70s for most PSSA tests. The difference in mathematics and ELA in 2015 is likely due to the change to the Pennsylvania Core Standards.

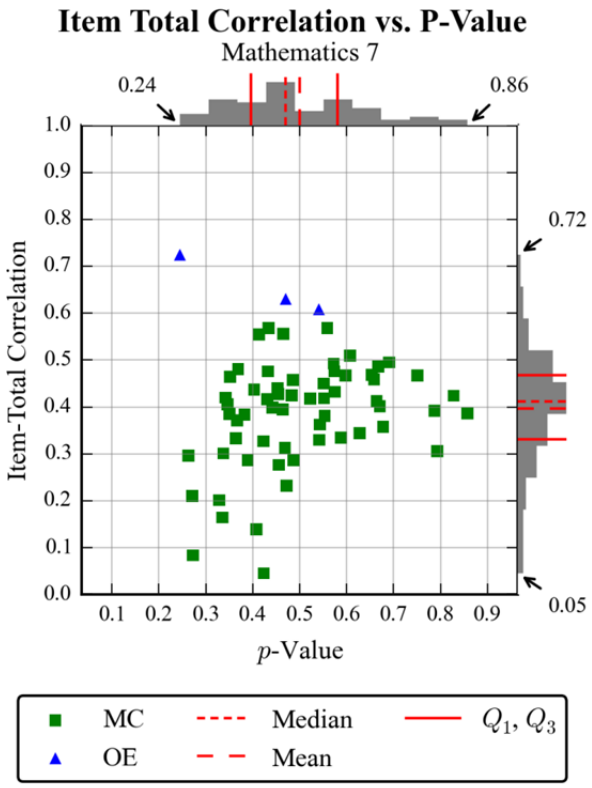
Table 11–1. Sum and Mean Statistics for MC and OE Items

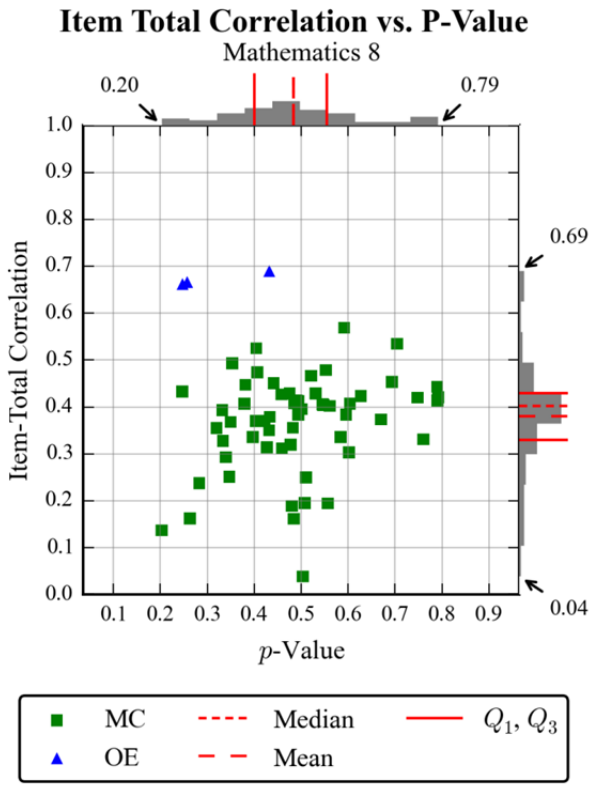
Subject	Grade	Multiple-Choice Items				Open-Ended Items			
		Points	Sum	Mean *P*-val.	Mean I-T Corr.	Points	Sum	Mean *P*-Val.	Mean I-T Corr.
Mathematics	3	60	35.31	0.59	0.42	12	3.85	0.32	0.66
	4	60	31.21	0.52	0.39	12	3.45	0.29	0.66
	5	60	32.32	0.54	0.42	12	3.41	0.28	0.67
	6	60	34.62	0.58	0.37	12	3.91	0.33	0.66
	7	60	30.23	0.50	0.38	12	5.02	0.42	0.65
	8	60	29.54	0.49	0.37	12	3.75	0.31	0.67
ELA	3	38	23.39	0.62	0.38	20	10.65	0.54	0.49
	4	41	25.34	0.62	0.38	23	13.01	0.59	0.56
	5	41	25.60	0.62	0.39	23	13.58	0.61	0.56
	6	41	26.75	0.65	0.40	23	13.68	0.61	0.52
	7	41	25.99	0.63	0.38	23	14.29	0.64	0.50
	8	41	25.01	0.61	0.35	23	14.90	0.66	0.50
Science	4	58	40.34	0.70	0.41	10	6.25	0.62	0.52
	8	58	39.31	0.68	0.42	10	5.73	0.57	0.47

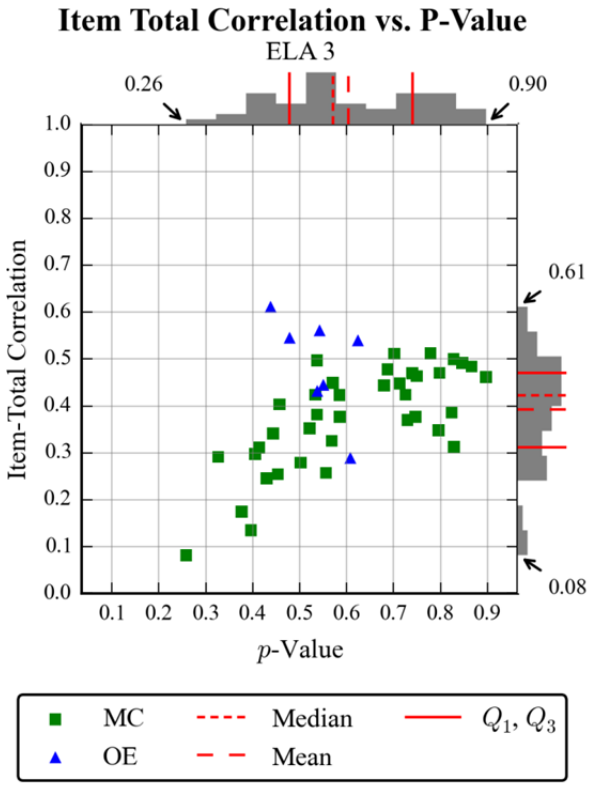
Note. I-T Corr. is the item-test score correlation.
OE items for ELA include SA, EBSR, TDA, and WP items.

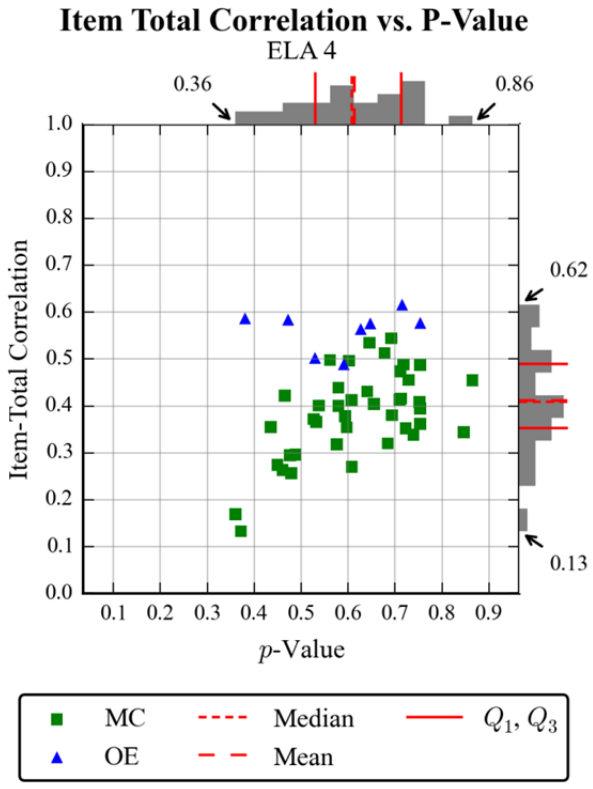
Figure 11–1. Discrimination on Difficulty Scatterplots

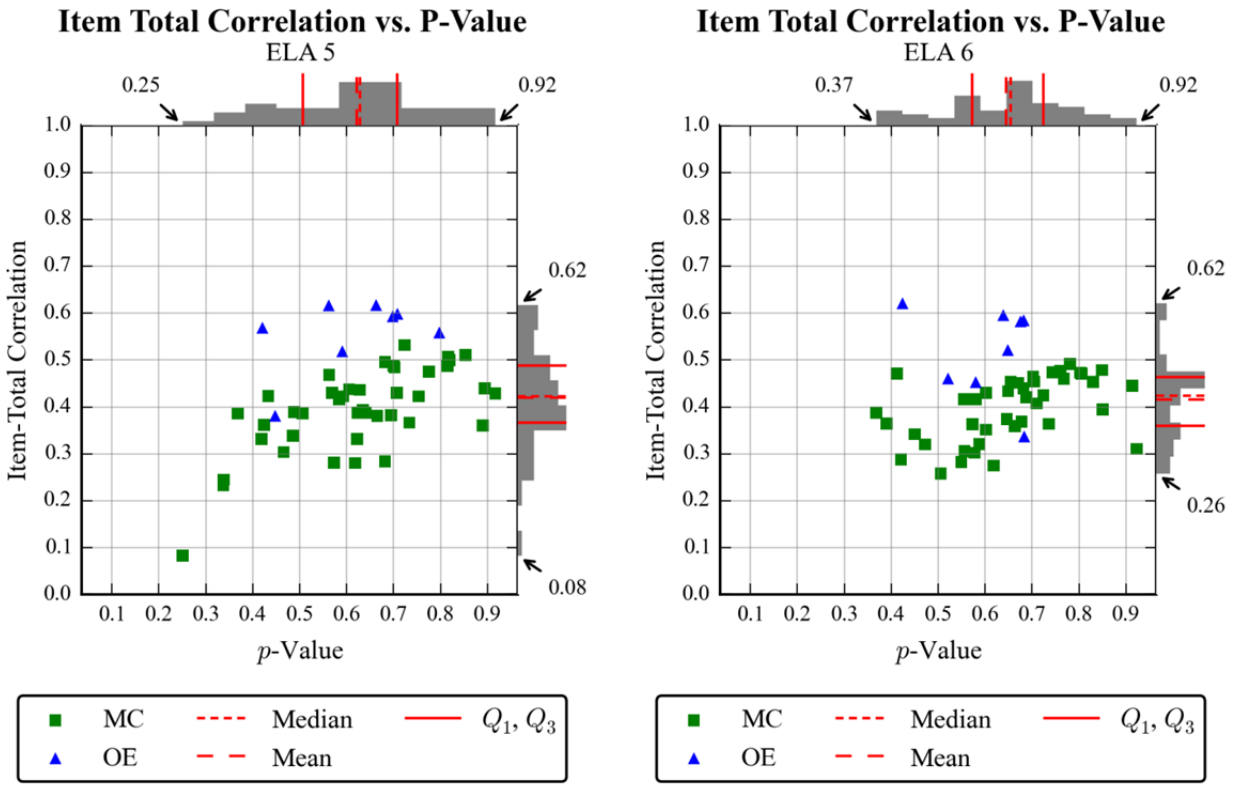



Item Total Correlation vs. P-Value
Mathematics 7
0.24
0.86
0.72
0.05
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

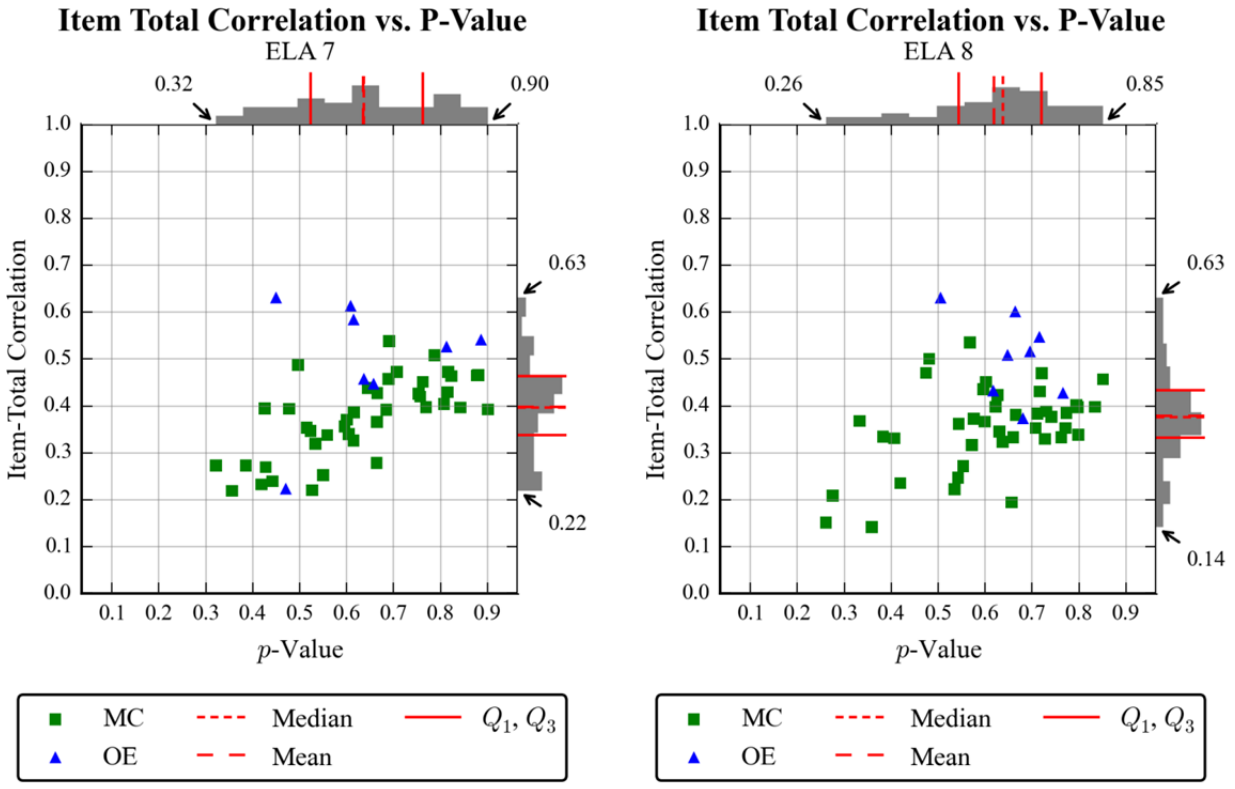

Item Total Correlation vs. P-Value
Mathematics 8
0.20
0.79
0.69
0.04
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3


Item Total Correlation vs. P-Value
ELA 3
0.26
0.90
0.61
0.08
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

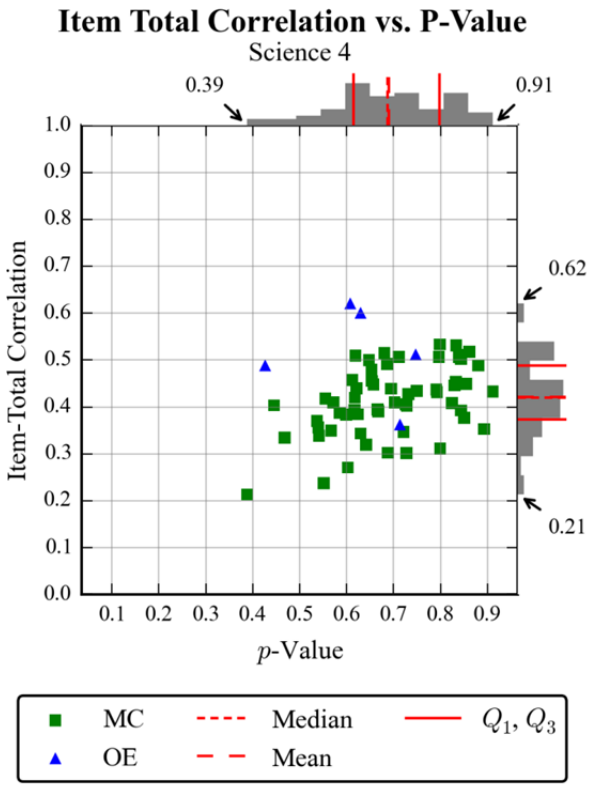

Item Total Correlation vs. P-Value
ELA 4
0.36
0.86
0.62
0.13
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

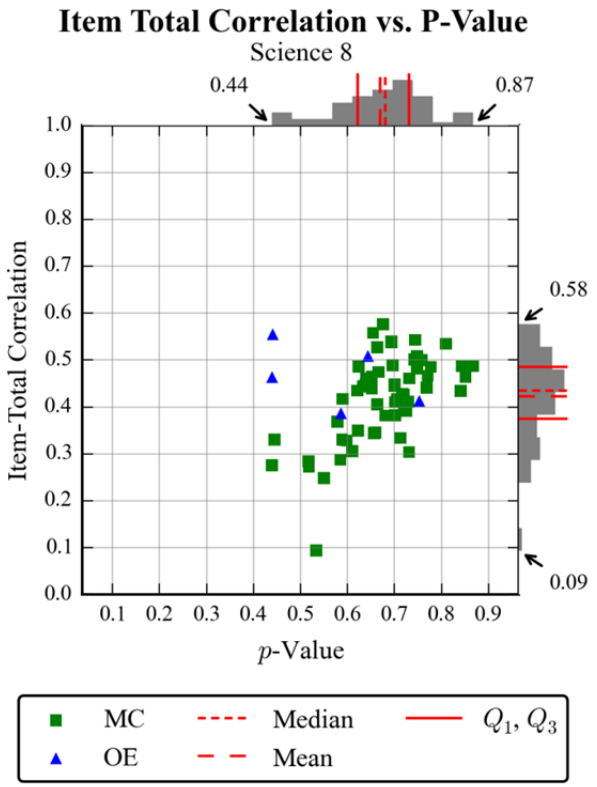

Item Total Correlation vs. P-Value
ELA 5
0.25
0.92
0.62
0.08
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

Item Total Correlation vs. P-Value
ELA 6
0.37
0.92
0.62
0.26
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3


Item Total Correlation vs. P-Value
ELA 7
0.32
0.90
0.63
0.22
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

Item Total Correlation vs. P-Value
ELA 8
0.26
0.85
0.63
0.14
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3


Item Total Correlation vs. P-Value
Science 4
0.39
0.91
0.62
0.21
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3


Item Total Correlation vs. P-Value
Science 8
0.44
0.87
0.58
0.09
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

Chapter Twelve: Rasch Item Calibration

The particular 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 a number of 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 scale linking 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 ($x = 0, 1, 2, \ldots m_i$) 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 j^{th} 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, item fit, and item parameter invariance. 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 10 components given that beyond 10^{th} component the additional information would be negligible.

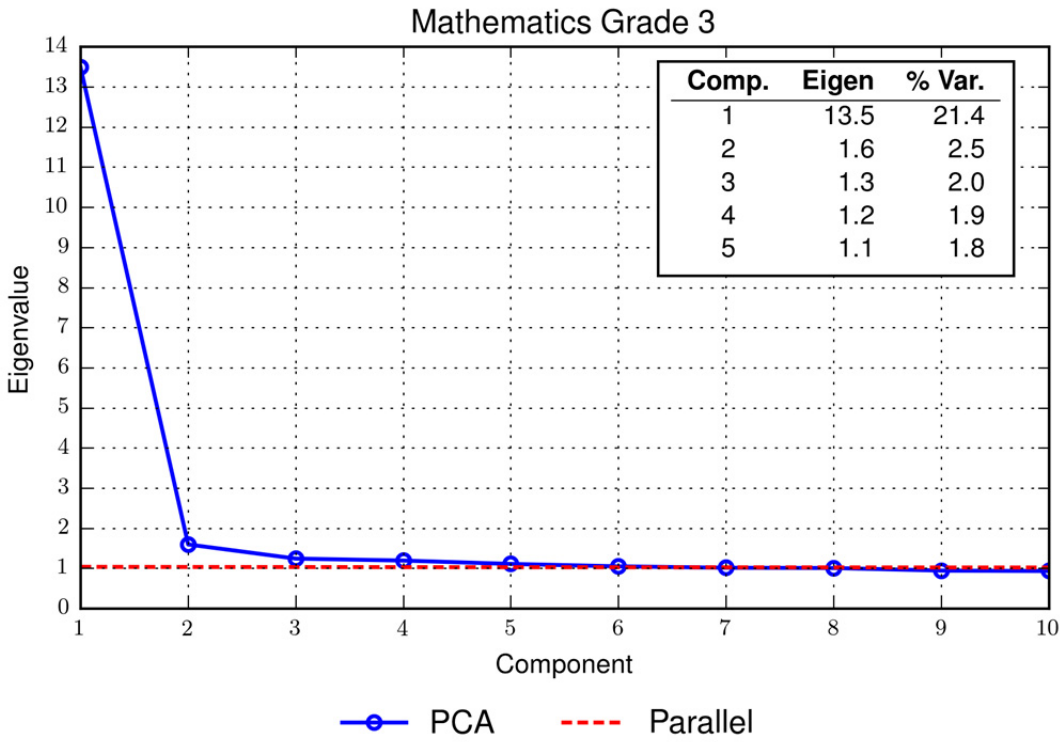
Parallel analysis (Horn, 1965) is a technique to decide how many factors exists in principal components. A parallel analysis (Horn, 1965) was also conducted to help distinguish components that are real from components that are random. For the parallel analysis, 100 random data sets were created of size 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.

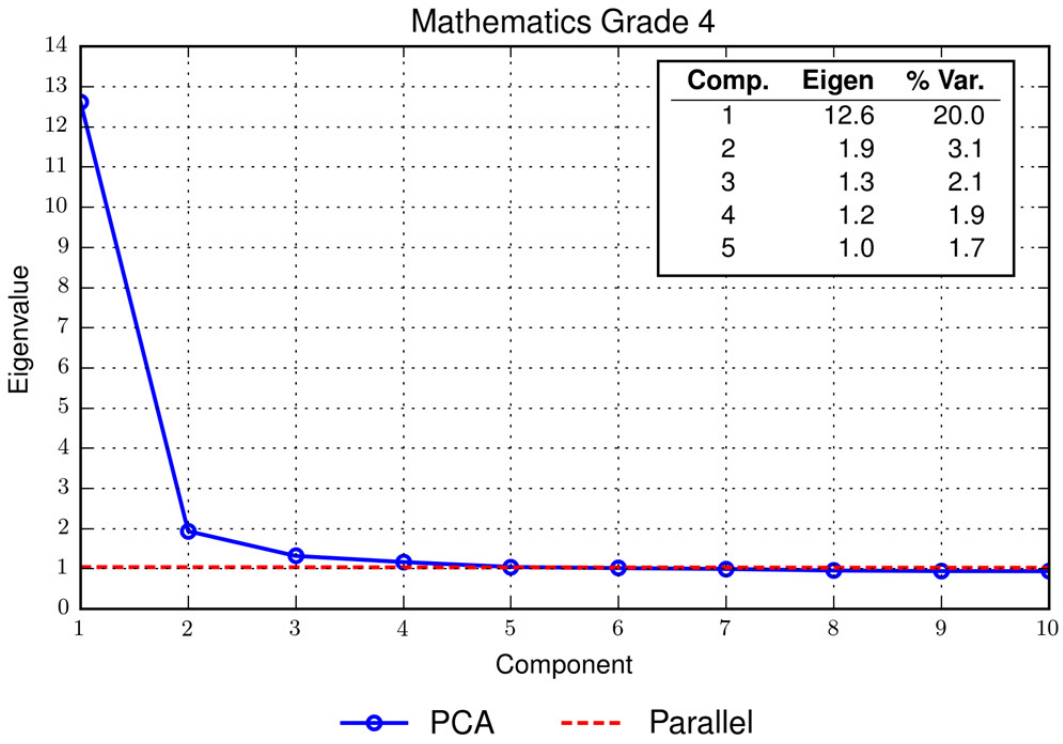
As can been seen in Figure 12–1, for PSSA mathematics the primary dimension explained about 18 percent to 22 percent of the total variance across Grades 3 through 8. The eigenvalues of the second dimensions ranged from 2.5 to 3.4. This indicates that the second dimension accounted for only 1.6 to 2.2 units out of 63 units of total variance, where 63 is the total number of items in a test. Overall, the PCA suggests that there is one clearly dominant dimension for all mathematics tests.

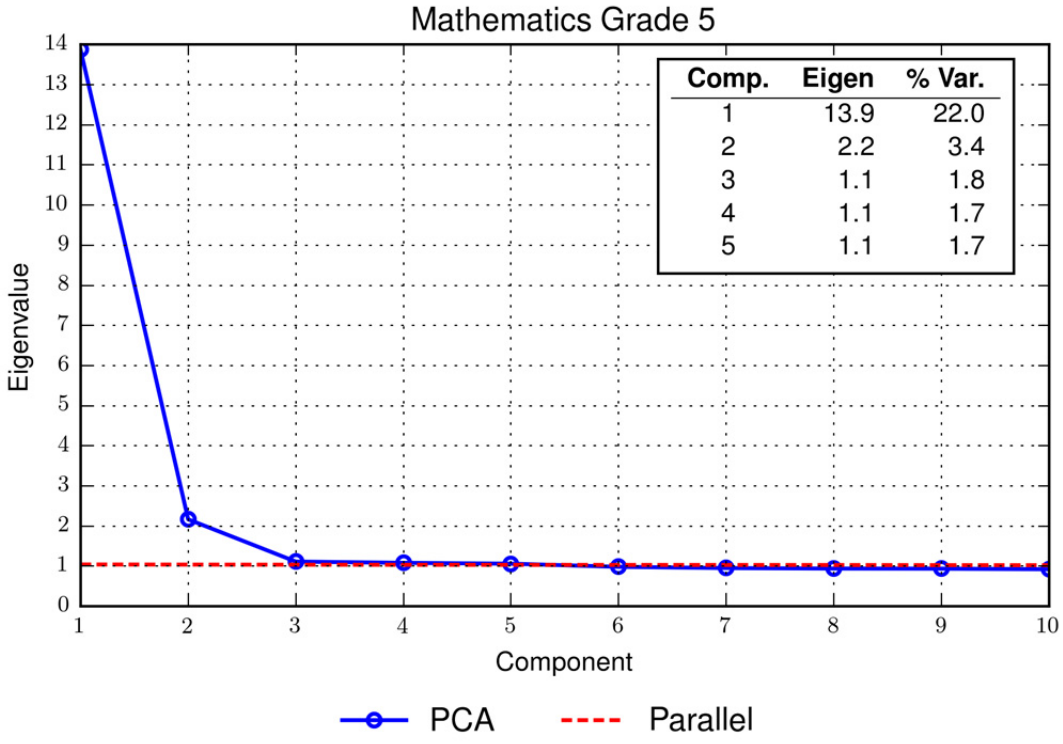
For the PSSA ELA tests, the primary dimension explained about 19 percent to 22 percent of the total variance. The second dimension accounted for only 1.2 to 1.6 units out of 45 or 49 units total variance. These results also suggest that each ELA test essentially measures a single dominant dimension.

For the PSSA science tests, the primary dimension explained about 21 percent of the total variance for both grades 4 and 8. The second dimension accounted for only 1.8 and 1.3 units out of 63 unit of total variance. This, too, suggests that one dominant dimension was measured by each science test.

Figure 12–1. Scree Plots




Mathematics Grade 4
Comp. Eigen % Var.
1 12.6 20.0
2 1.9 3.1
3 1.3 2.1
4 1.2 1.9
5 1.0 1.7
Eigenvalue
Component
PCA
Parallel


Mathematics Grade 5
Comp. Eigen % Var.
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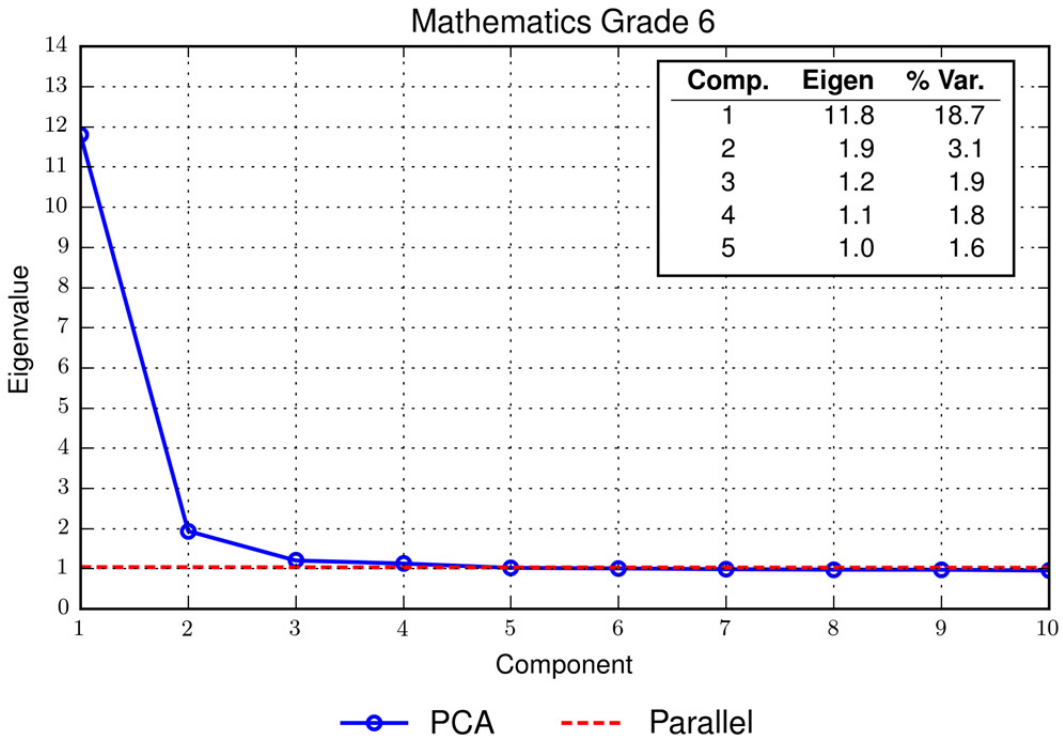
4 1.1 1.7
5 1.1 1.7
Eigenvalue
Component
PCA
Parallel


Mathematics Grade 6
Comp. Eigen % Var.
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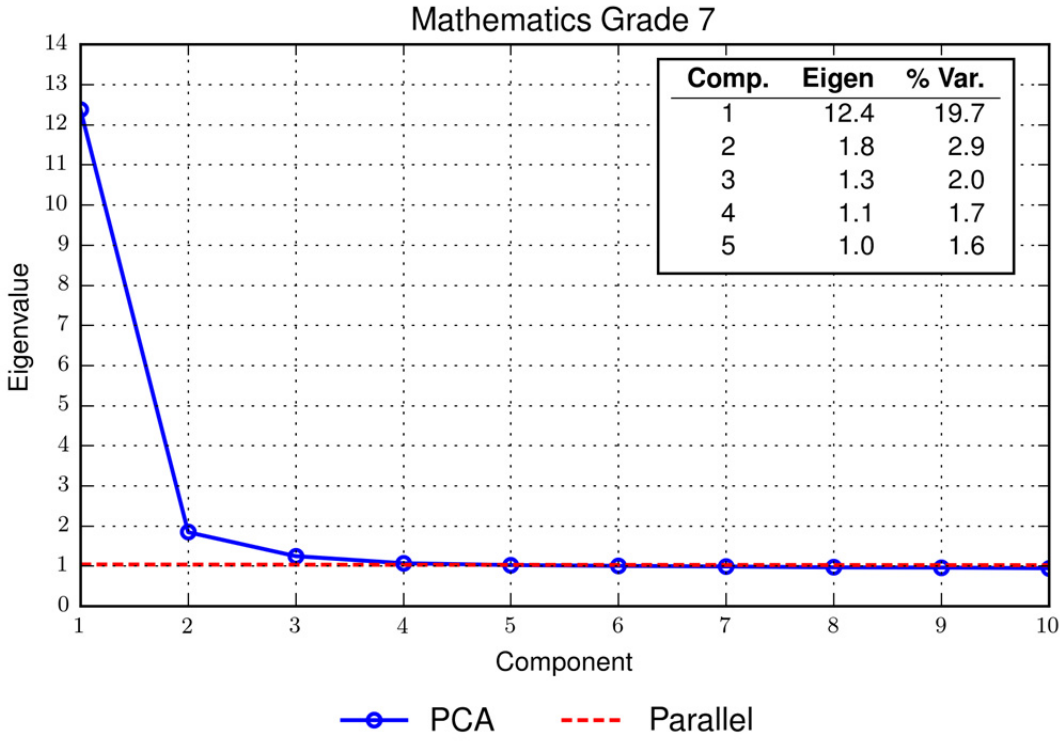
2 1.9 3.1
3 1.2 1.9
4 1.1 1.8
5 1.0 1.6
Eigenvalue
Component
PCA
Parallel


Mathematics Grade 7
Comp. Eigen % Var.
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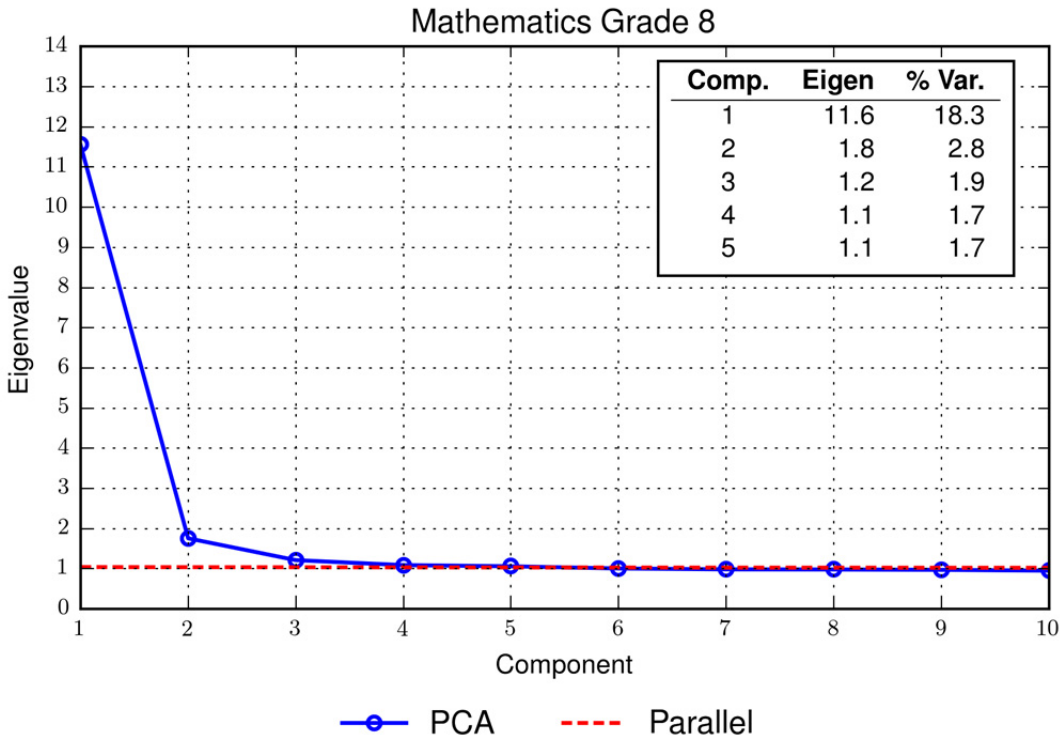
5 1.0 1.6
Eigenvalue
Component
PCA
Parallel


Mathematics Grade 8
Comp. Eigen % Var.
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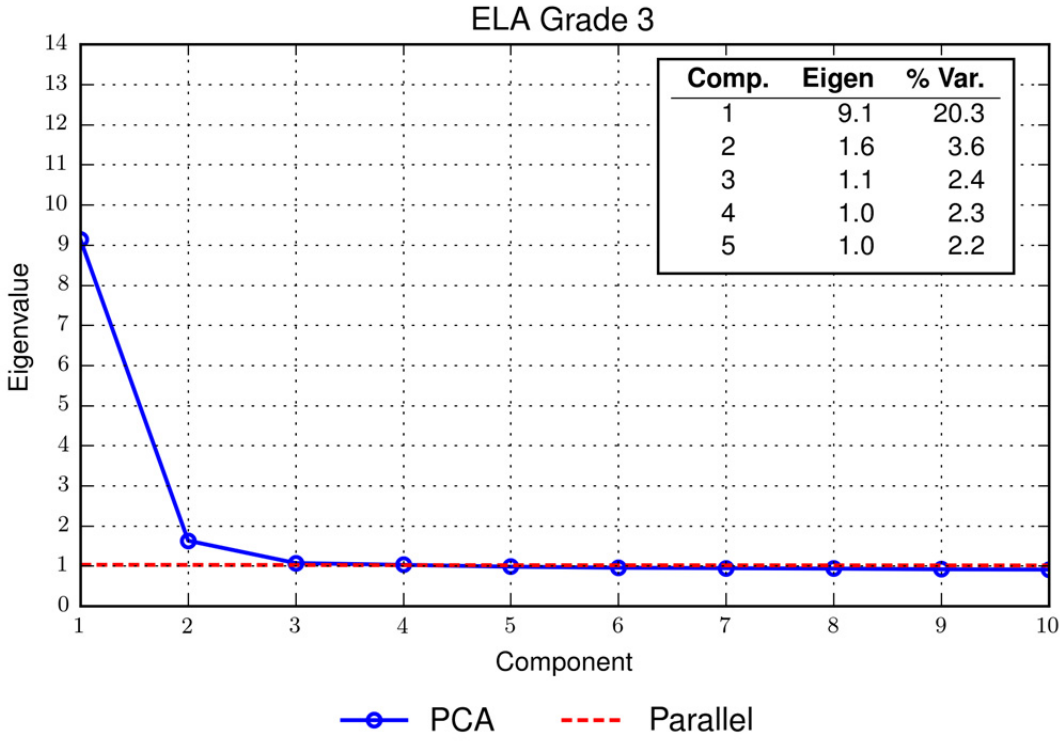
3 1.2 1.9
4 1.1 1.7
5 1.1 1.7
Eigenvalue
Component
PCA
Parallel


ELA Grade 3
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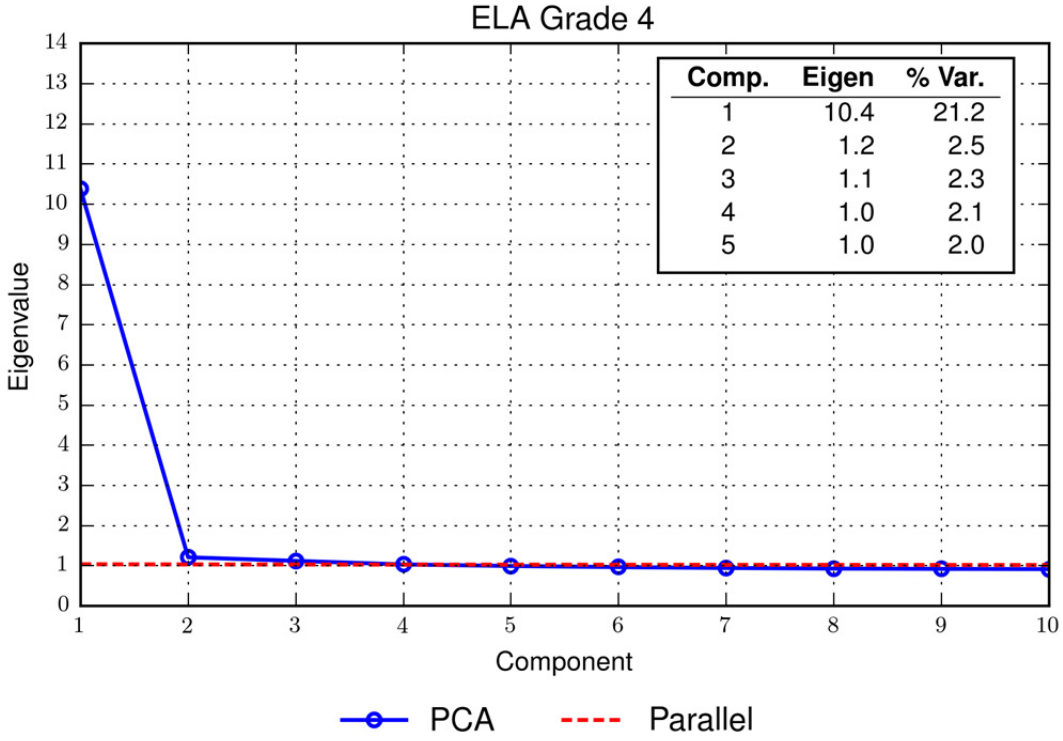
3 1.1 2.4
4 1.0 2.3
5 1.0 2.2
Eigenvalue
Component
PCA
Parallel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Comp. Eigen % Var.
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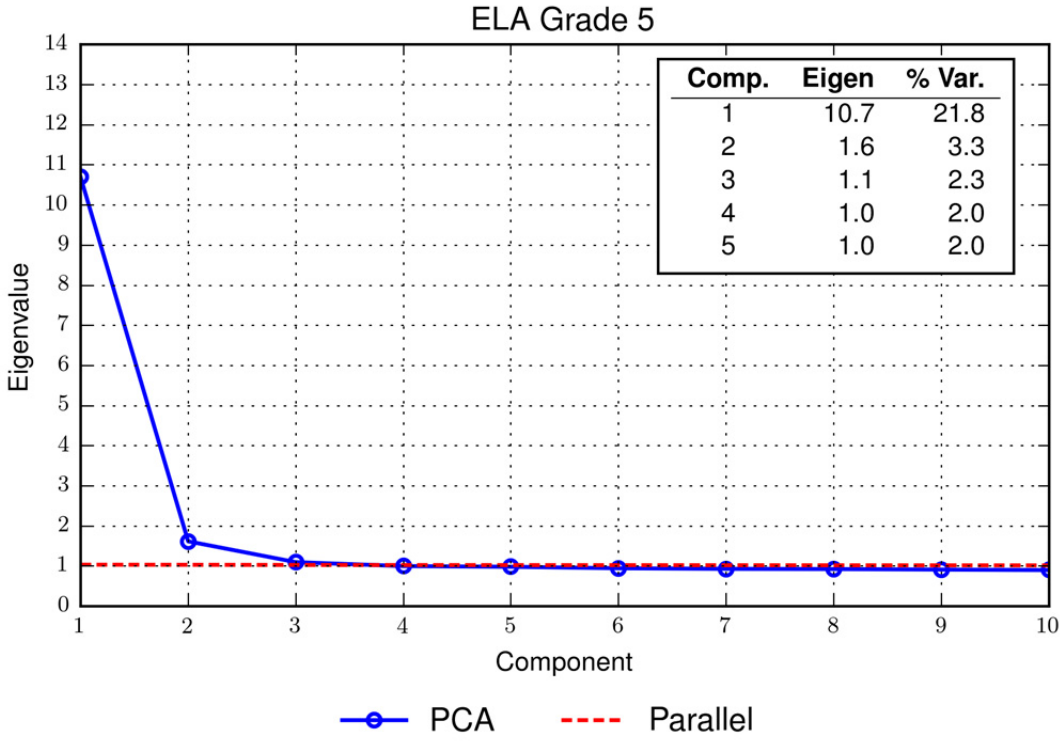
4 1.0 2.1
5 1.0 2.0
Eigenvalue
Component
PCA
Parallel


ELA Grade 5
Comp. Eigen % Var.
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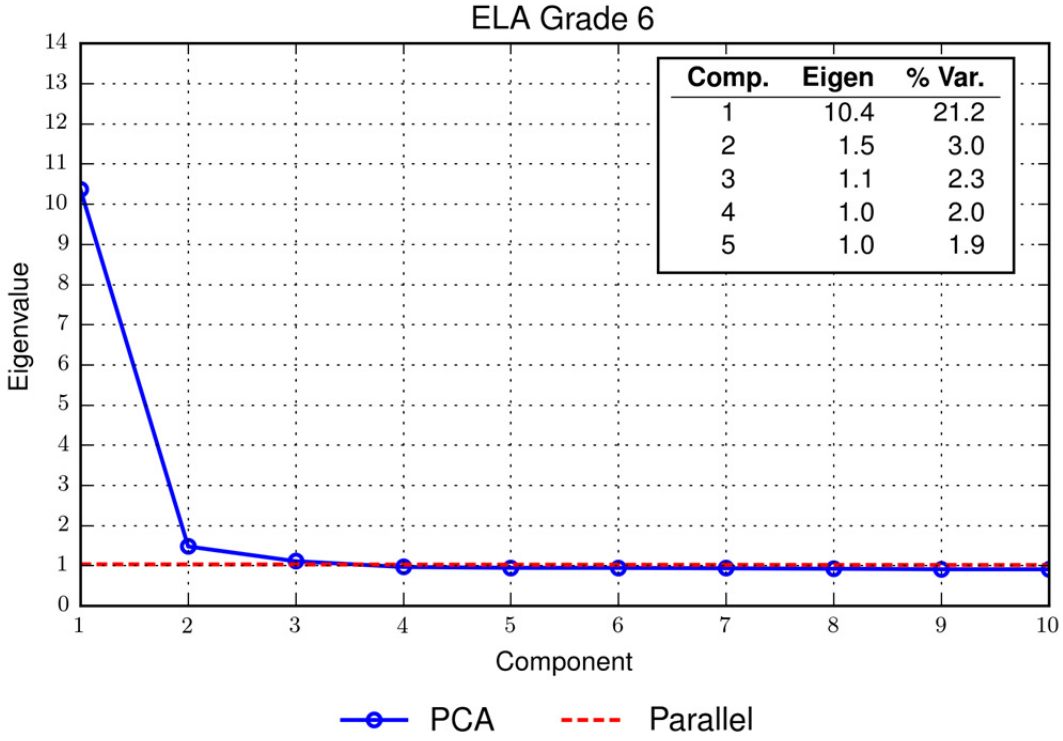
2 1.6 3.3
3 1.1 2.3
4 1.0 2.0
5 1.0 2.0
Eigenvalue
Component
PCA
Parallel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Comp. Eigen % Var.
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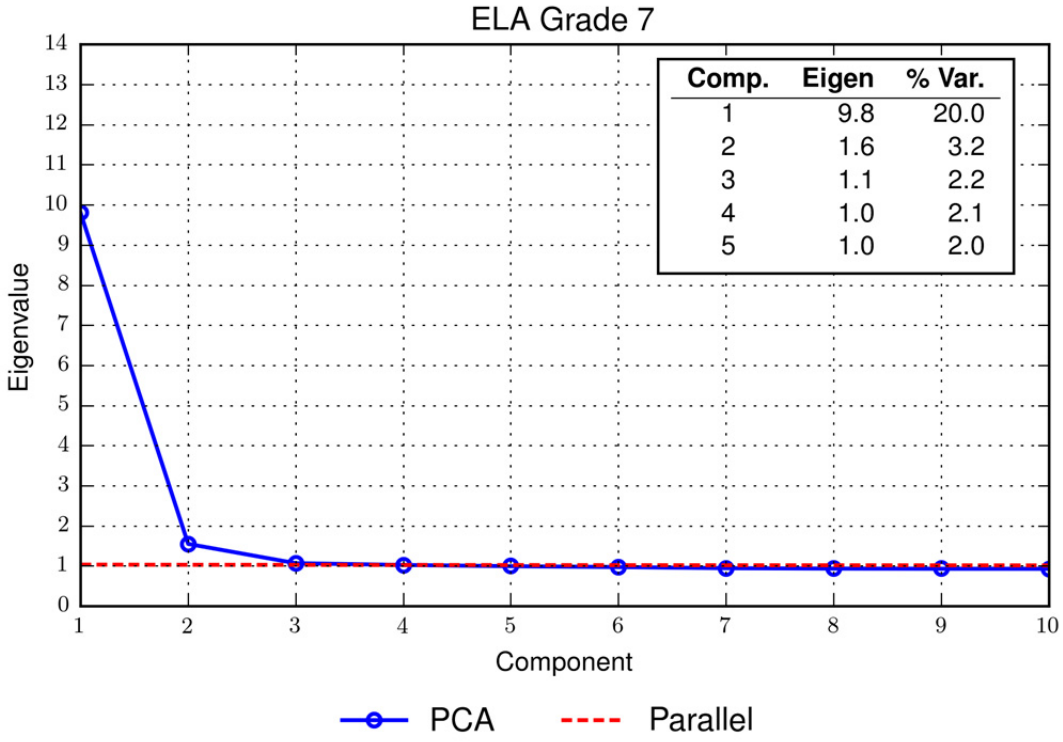
4 1.0 2.0
5 1.0 1.9
Eigenvalue
Component
PCA
Parallel


ELA Grade 7
Comp. Eigen % Var.
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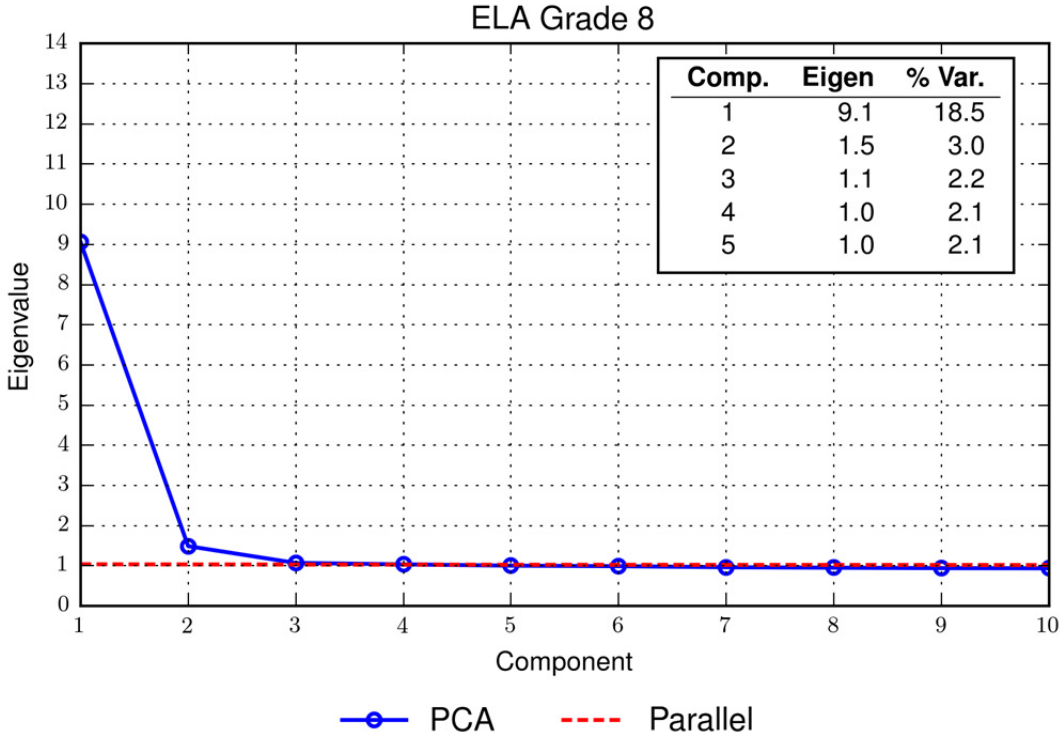
4 1.0 2.1
5 1.0 2.0
Eigenvalue
Component
PCA
Parallel


ELA Grade 8
Comp. Eigen % Var.
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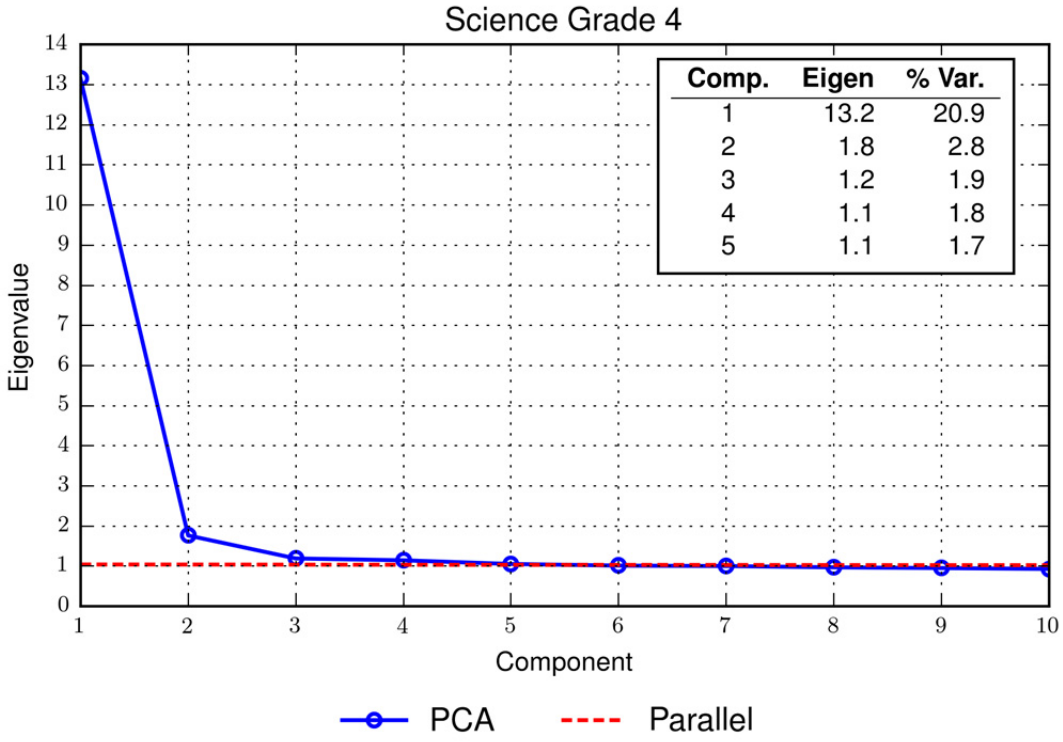
4 1.0 2.1
5 1.0 2.1
Eigenvalue
Component
PCA
Parallel


Science Grade 4
Comp. Eigen % Var.
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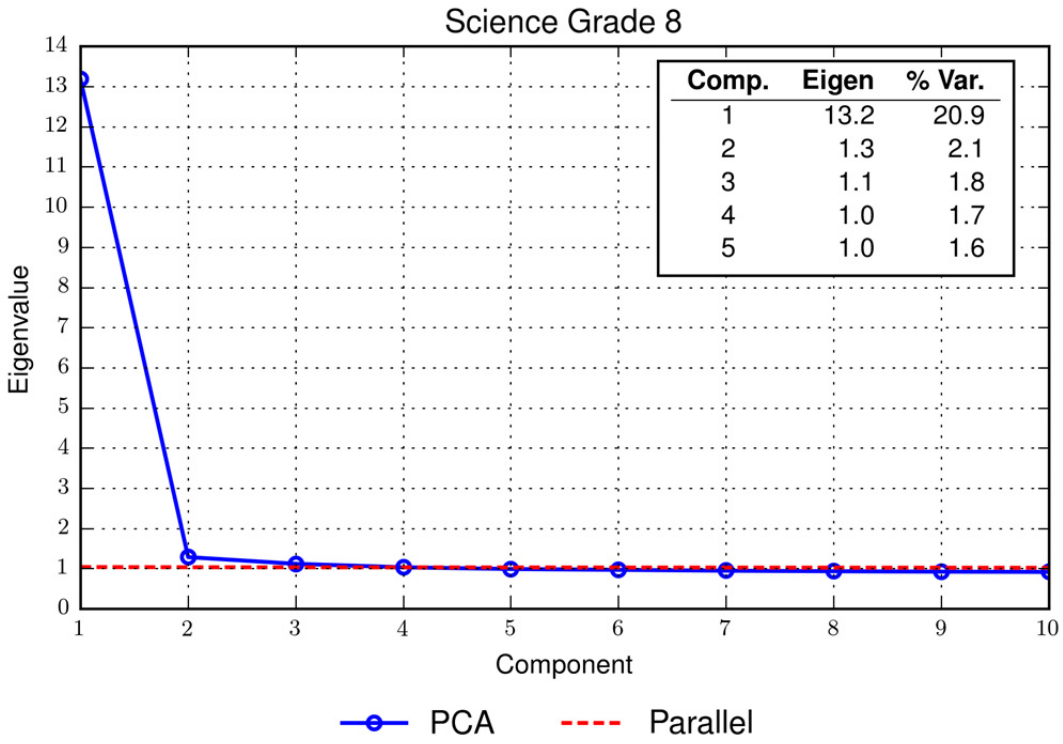
3 1.2 1.9
4 1.1 1.8
5 1.1 1.7
Eigenvalue
Component
PCA
Parallel



Local 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,…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,

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

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 (WLI) was proposed by McDonald (1979). The distinction is important as many indicators of local dependency are actually framed by WLI. 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 WLI, the following expression can be derived:

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

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 slightly negative and the values were close to -0.01. The vast majority of the correlations were very small, suggesting local item independence generally holds for the PSSA ELA, mathematics, and science tests.

Table 12–1. Summary of Item Residual Correlations for PSSA Mathematics, ELA, and Science

	Mathematics					
Statistic	**3**	**4**	**5**	**6**	**7**	**8**
N	1953	1953	1953	1953	1953	1953
Mean	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02
SD	0.02	0.03	0.03	0.03	0.03	0.03
Minimum	-0.08	-0.09	-0.13	-0.10	-0.13	-0.18
P_{10}	-0.04	-0.05	-0.05	-0.05	-0.05	-0.05
P_{25}	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
P_{50}	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
P_{75}	-0.01	0.00	0.00	0.00	0.00	0.00
P_{90}	0.01	0.02	0.02	0.02	0.02	0.01
Maximum	0.28	0.29	0.16	0.22	0.19	0.18
$> \lvert 0.20 \rvert$	2	2	0	1	0	0

	ELA					
Statistic	**3**	**4**	**5**	**6**	**7**	**8**
N	990	1176	1176	1176	1176	1176
Mean	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01
SD	0.03	0.03	0.03	0.03	0.04	0.03
Minimum	-0.13	-0.18	-0.16	-0.20	-0.23	-0.22
P_{10}	-0.06	-0.04	-0.04	-0.04	-0.04	-0.04
P_{25}	-0.04	-0.02	-0.02	-0.02	-0.02	-0.02
P_{50}	-0.02	-0.01	-0.01	-0.01	0.00	-0.01
P_{75}	0.00	0.01	0.01	0.00	0.01	0.01
P_{90}	0.02	0.02	0.02	0.02	0.02	0.02
Maximum	0.13	0.10	0.16	0.10	0.13	0.13
$> \lvert 0.20 \rvert$	0	0	0	1	1	1

	Science	
Statistic	**4**	**8**
N	1953	1953
Mean	-0.01	-0.02
SD	0.02	0.02
Minimum	-0.07	-0.11
P_{10}	-0.04	-0.04
P_{25}	-0.03	-0.03
P_{50}	-0.02	-0.02
P_{75}	-0.01	0.00
P_{90}	0.01	0.01
Maximum	0.38	0.08
$> \lvert 0.20 \rvert$	1	0

Table 12–2 lists all item pairs with residual correlations greater than 0.20 with the added information of session, sequence, and Eligible Content. Item sequence in the table is the master core form's item sequence, but the MC items are scrambled across forms.

The pattern that is evident is that these correlated items share identical or very similar Eligible Content and are testing the same or similar skills when the correlations are positive. ELA's large residual correlations were observed with Evidence Based Select Response (EBSR) items and Text Dependent Analysis (TDA) items, and they were negatively correlated. 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.

Table 12–2. Item Pairs With Large Residual Correlations

		Item 1			Item 2			
	Grade	Seq.	Type	Eligible Content	Seq.	Type	Eligible Content	Resid. Corr.
Mathematics	3	27	MC	D-M	32	MC	D-M	0.28
	3	28	MC	A-F	60	MC	A-F	0.25
	4	4	MC	A-F	37	MC	A-F	0.29
	4	4	MC	A-F	76	OE	A-F	0.24
	6	52	MC	B-E	66	MC	B-E	0.22
ELA	6	44	EBSR	A-K	68	TDA	E	-0.20
	7	36	EBSR	A-K	68	TDA	E	-0.23
	8	42	EBSR	A-C	68	TDA	E	-0.22
Science	4	11	MC	D.3.1.1	62	MC	D.3.1.1	0.38

Item Fit

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. In the results below, values outside of 0.7 to 1.3 are given 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 in Table 12–3. As can be seen, the mean values for both fit statistics were close to 1.00 for all subjects. Almost all the items had infit values falling in the range of [0.7, 1.3]. Though more outfit values fell outside this range than infit values, most of the extreme values were just barely above 1.3 or below 0.7, except grades 5 and 7 ELA. Overall, these results indicate that the Rasch model fits the PSSA item data well in mathematics, ELA, and science.

Table 12–3. Summary of Infit and Outfit Mean Square Statistics for PSSA Mathematics, ELA, and Science

		Infit Mean Square					Outfit Mean Square				
		Mean	SD	Min	Max	[0.7,1.3]	Mean	SD	Min	Max	[0.7,1.3]
Mathematics	3	1.00	0.08	0.82	1.23	63/63	1.01	0.15	0.74	1.56	62/63
	4	1.00	0.11	0.80	1.27	63/63	1.01	0.18	0.72	1.45	57/63
	5	1.00	0.12	0.81	1.29	63/63	1.02	0.21	0.68	1.55	54/63
	6	1.00	0.12	0.81	1.29	63/63	1.01	0.22	0.64	1.59	55/63
	7	1.00	0.13	0.79	1.38	61/63	1.01	0.19	0.64	1.55	56/63
	8	1.00	0.12	0.80	1.34	62/63	1.01	0.19	0.69	1.64	58/63
ELA	3	1.00	0.13	0.80	1.37	44/45	1.01	0.23	0.59	1.62	37/45
	4	1.02	0.12	0.72	1.30	49/49	1.06	0.19	0.65	1.54	44/49
	5	1.01	0.13	0.75	1.36	48/49	1.04	0.26	0.53	1.97	37/49
	6	1.02	0.13	0.67	1.37	47/49	1.05	0.21	0.58	1.55	43/49
	7	1.02	0.16	0.63	1.71	47/49	1.05	0.24	0.61	1.83	38/49
	8	1.02	0.13	0.65	1.42	47/49	1.08	0.20	0.65	1.62	40/49
Science	4	0.99	0.09	0.81	1.24	87/87	0.98	0.17	0.59	1.40	78/87
	8	1.00	0.10	0.83	1.36	86/87	0.99	0.17	0.66	1.47	82/87

Population Invariance

The property of invariance is regarded as the cornerstone of IRT and is its major distinguishing attribute from classical test theory (Hambleton, Swaminathan, & Rogers, 1991). It is this property that makes many IRT applications possible (e.g., equating, item banking, investigation of item bias, and adaptive testing) (Hambleton et al., 1991, p.25). Inferences from these IRT applications are valid to the extent that the property of invariance holds. Therefore, it is important to evaluate invariance whenever applying IRT.

Invariance should hold for both item and ability parameters. Item invariance implies that item parameter estimates do not depend on the particular sample of examinees used to derive them. Person (ability parameter) invariance means that examinees' ability estimates do not depend on

which items are administered. For the Rasch item calibrations, it is more important to determine how well the item invariance assumption holds. Therefore, only item invariance is evaluated here. We call item invariance "population invariance" with the intention that item parameters do not depends on particular population.

Population invariance was examined using the root mean squared difference (RMSD) and the root expected mean standardized difference (REMSD) statistics (Dorans and Holland, 2000; von Davier & Wilson, 2008). The RMSD statistic quantifies the difference in the equating relationship at a given observed 2014 raw score point in terms of the subgroup relationship and the full group (population) equating relationship. The RMSD statistic is given as follows:

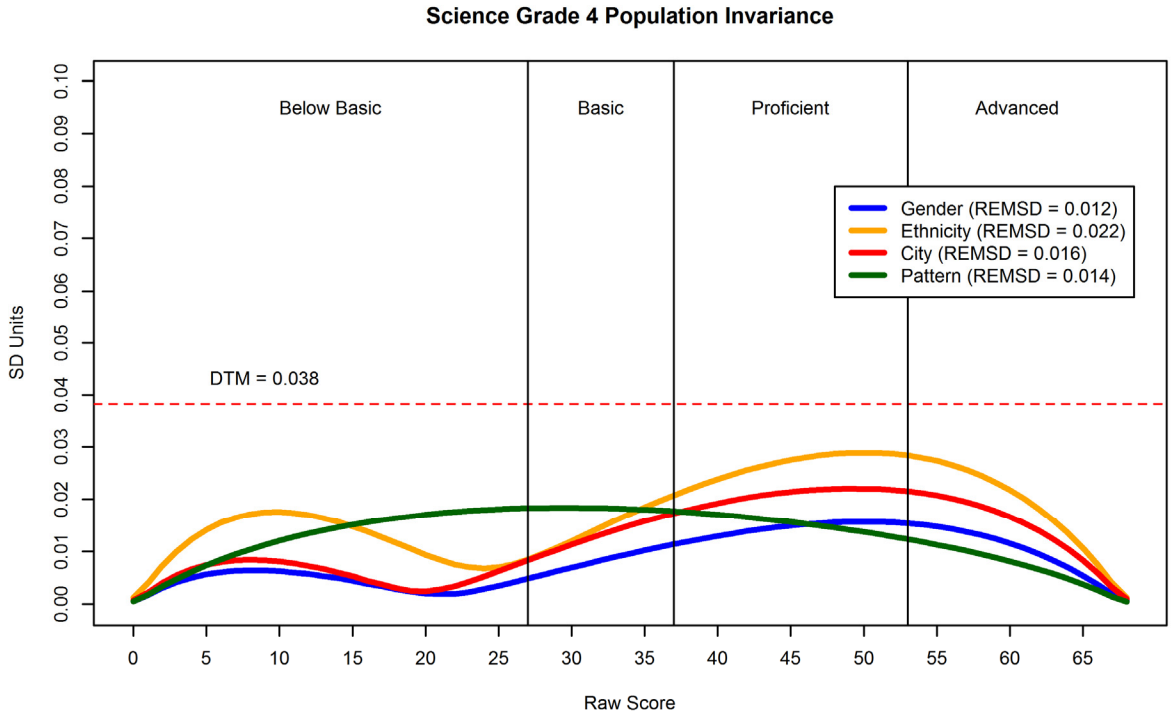
$$RMSD_x = \frac{\sqrt{\sum_{j=1}^{J} w_j [\hat{y}_{jx} - \hat{y}_{Px}]^2}}{\sigma_Y},$$

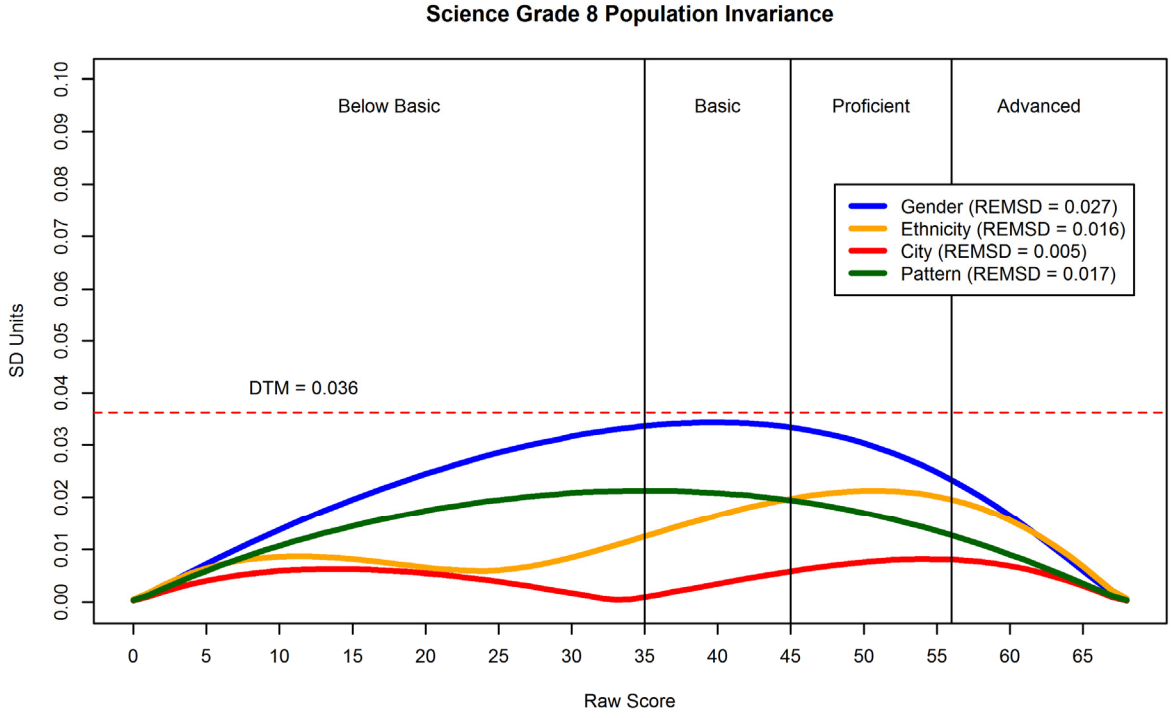
where x is an observed current year (scale of X) raw score, $\hat{y}_{jx}$ is the expected previous year's raw score for subgroup j (based on the subgroup calibration/equating) given current year's raw score x, $\hat{y}_{Px}$is the expected previous year raw score for population (P, based on calibration/equating with all students) given current year's raw score x, the weight, w_j, is the proportion for the subgroup, and σ_Y is the standard deviation of the previous year raw scores with all students. A related index, REMSD, summarizes the average difference between the equating across all observed score points. Dorans, Holland, Thayer and Tatenkeni (2003) used the notion of a "difference that matters" (DTM) to provide further context for interpreting the population invariance results. The DTM for a particular assessment depends on the reporting scale. For the PSSAs, one raw score point translates to different scaled scores and potentially different performance level classifications. Differences in equating functions greater than half a raw score point could result in different scores reported. For this reason, a DTM of a half a point is used for our evaluation of population invariance. RMSD and REMSD are compared relative to the standardized DTM which is obtained by dividing 0.5 by the standard deviation in the denominator of the RMSD and REMSD.

Since mathematics and ELA was new assessment in 2015, no equating was conducted with mathematics and ELA. Thus this population invariance section only shows science results. The subgroups considered within the population invariance analyses are gender (male, female), ethnicity (White, Black, and Hispanic), city (City or Not City), and scrambling pattern (A, B, C, D, E, F, G, M). The REMSD statistics, which provide a summary of the differences across all observed score points, were all lower than the DTM indicating that the equating results were invariant with respect to gender, ethnicity, city, and scramble pattern group.

Figure 12–2 presents the RMSDs (y-axis) for gender, ethnicity, city, and scramble pattern group and includes REMSD estimates for each equating set. The population invariance curves (or deviance curves) of the RMSDs fell below the DTM for all score points across each test. The 2015 population invariance results are consistent with previous year in that both grades in science showed population invariance of the equating relationship across gender, ethnic and scramble groups. City subgroup is added from 2015, thus not comparable to 2014 results.

Figure 12–2. Population Invariance Plots





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. In the simplest case, a logit is a transformed *p*-value with the average *p*-value becoming a logit of zero. In this form, logits resemble *z*-scores or standard normal deviates; a very difficult item might have a logit of +4.0 and a very easy item might have a logit of –4.0. However, they have no formal relationship to the normal distribution.

The logit metric has several mathematical advantages over *p*-values. 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, whether the average item *p*-value for the student sample is 0.8 or 0.3.

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 a third-grade ELA test or a 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 8science 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 in a particular grade and content area 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 scale linking procedures.

Appendix F reports the item statistics including classical and Rasch logit difficulties for all the operational items. Table 12–4 summarizes the Rasch logit difficulties of the operational items on each test. 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. The mean item difficulties are not exactly zero with mathematics and ELA although there was no equating was conducted. This is because the first round of calibration is only with a subset of all items (operational MC items only). Calibration of non-MC items are conducted anchoring the MC item. See Chapter Fifteen for more detailed information on mathematics and ELA calibration.

Table 12–4. Summary of Rasch Item Difficulties for PSSA Mathematics, ELA, and Science

		N	Mean	SD	Min	Max
Mathematics	**3**	63	0.07	0.88	-1.75	2.20
	4	63	0.07	0.90	-2.11	2.09
	5	63	0.07	0.92	-2.13	1.74
	6	63	0.06	0.97	-2.27	1.77
	7	63	0.02	0.76	-2.06	1.37
	8	63	0.05	0.74	-1.60	1.63
ELA	**3**	45	0.07	0.91	-2.04	1.90
	4	49	0.03	0.66	-1.56	1.56
	5	49	0.02	0.90	-2.15	2.03
	6	49	0.04	0.80	-2.08	1.62
	7	49	-0.01	0.88	-1.88	1.58
	8	49	-0.05	0.76	-1.45	1.76
Science	**4**	63	0.04	0.77	-1.75	1.73
	8	63	-0.29	0.57	-1.66	0.99

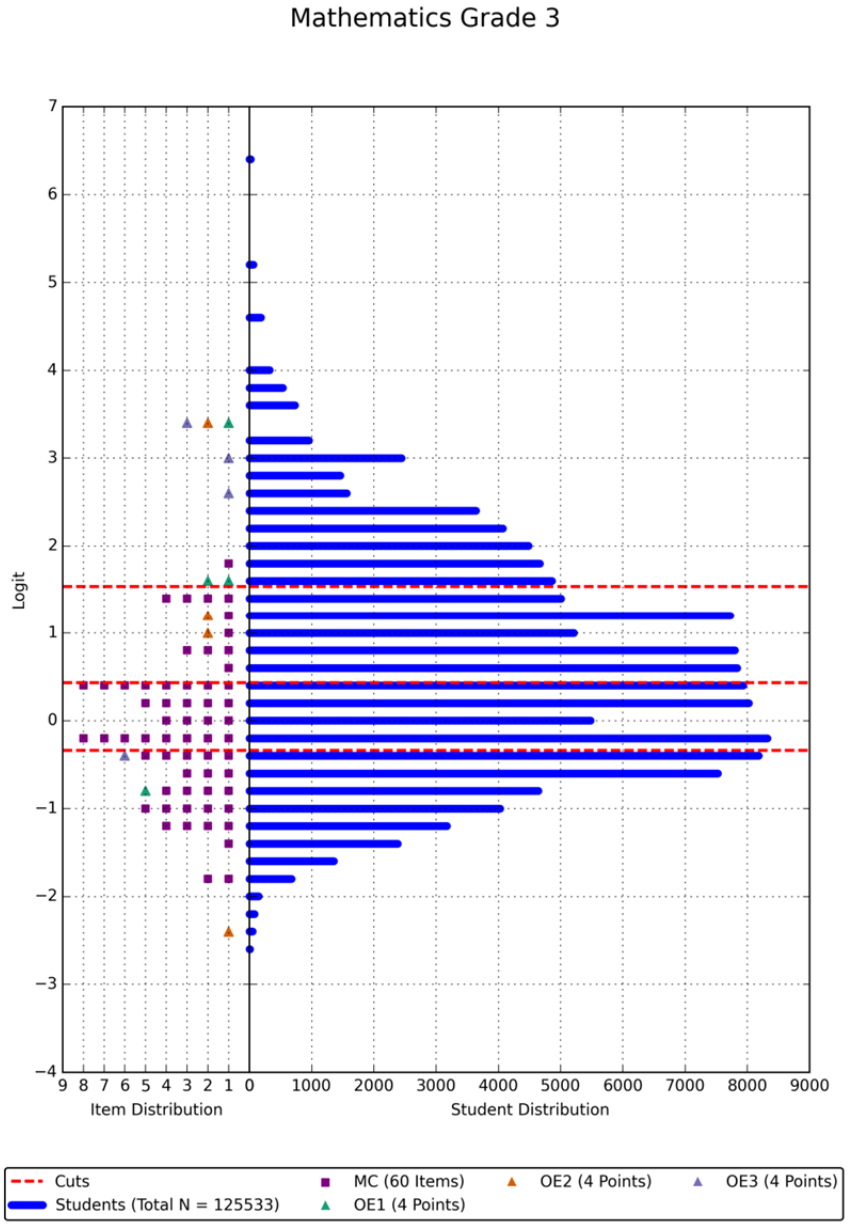
Note. The mean logit values not necessarily 0.0 because the items have been placed on a scale that was developed in prior years.

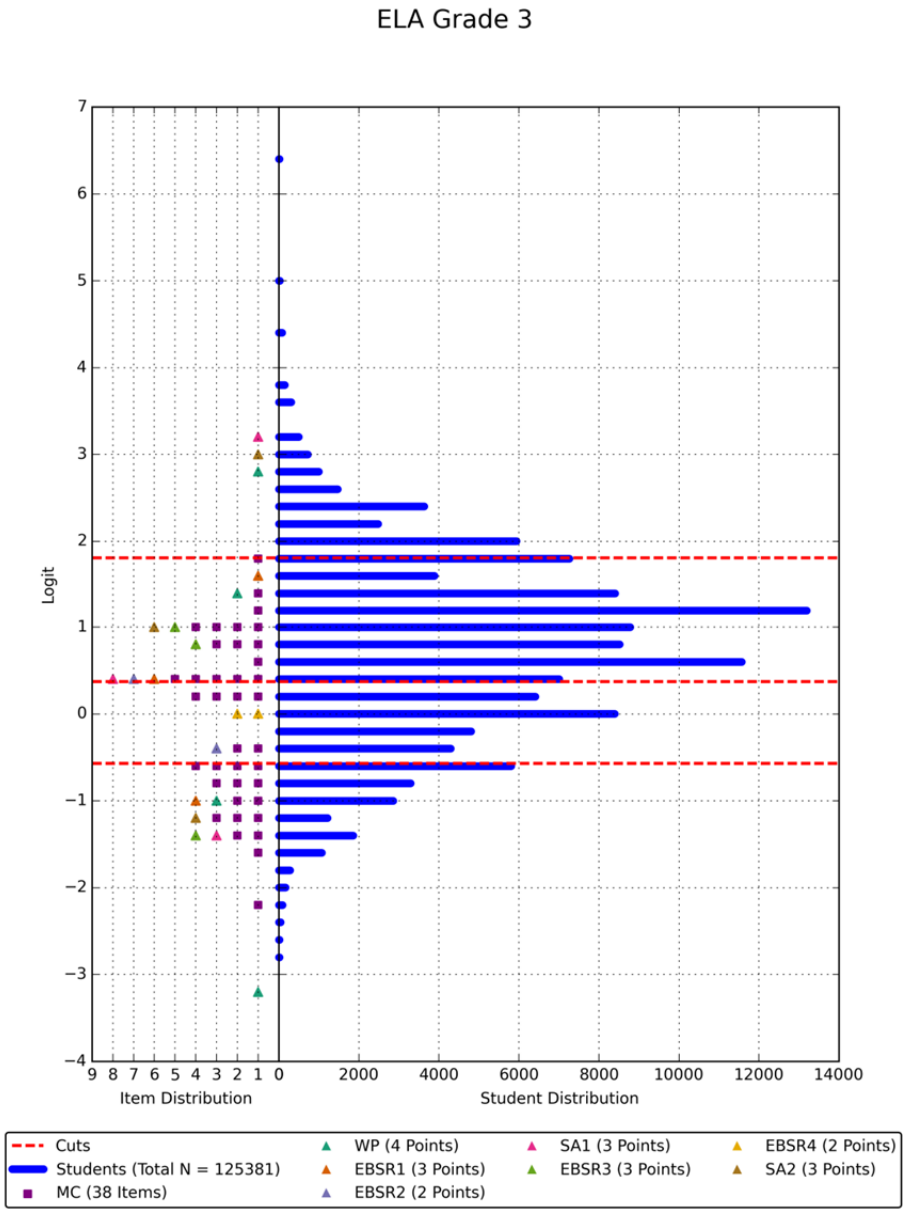
Item Difficulty-Student Ability Wright Maps

The distributions of the Rasch item logits (item difficulty estimates) are shown on the item difficulty-student ability maps presented in Figure 12–3. In each item-student map, markers on the left-hand side represent item difficulty parameter estimates, whereas markers on the right hand side represent person ability parameter estimates. One MC item is represented by one symbol on the left-hand side of the plots and one OE item has multiple symbols to present score points. As noted earlier, the Rasch model enables placement of both items and students on the same scale. Consequently, one can easily visualize information about how the difficulty of the test items related to the ability distribution of students who took the test. The students located in the upper right quadrant of any given plot have relatively higher ability. Items in the lower left quadrant are relatively easier. High ability students have higher probabilities of correctly answering easier items. Similarly, low ability students (in lower right quadrant of any given plot) have lower probabilities of answering harder items (in upper left quadrant).

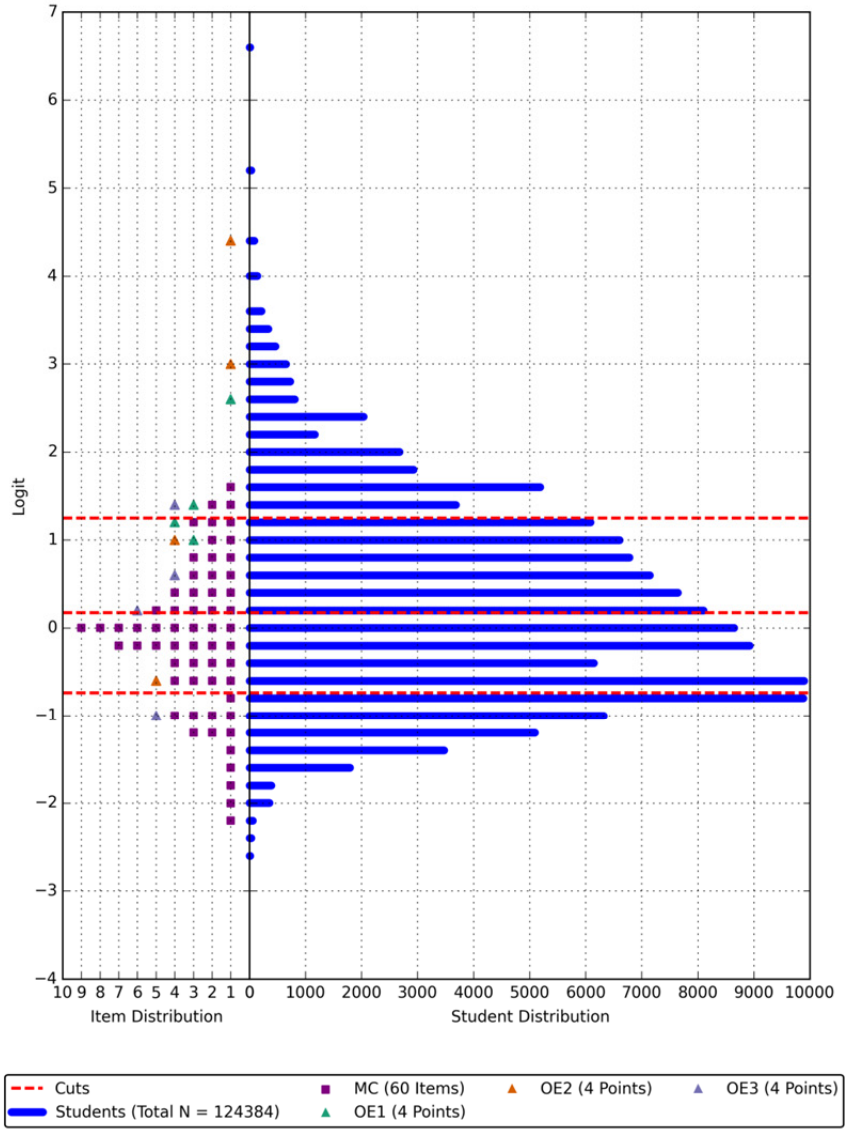
In previous years, a common pattern seen across the maps for most grades and content areas was for students to have relatively higher ability and for items to be relatively easier. In 2015 a number of maps in mathematics and ELA show closer alignment between student ability and item difficulty. This may be a reflection of the new content standards and cutscores.

Figure 12–3. Item-Student Maps

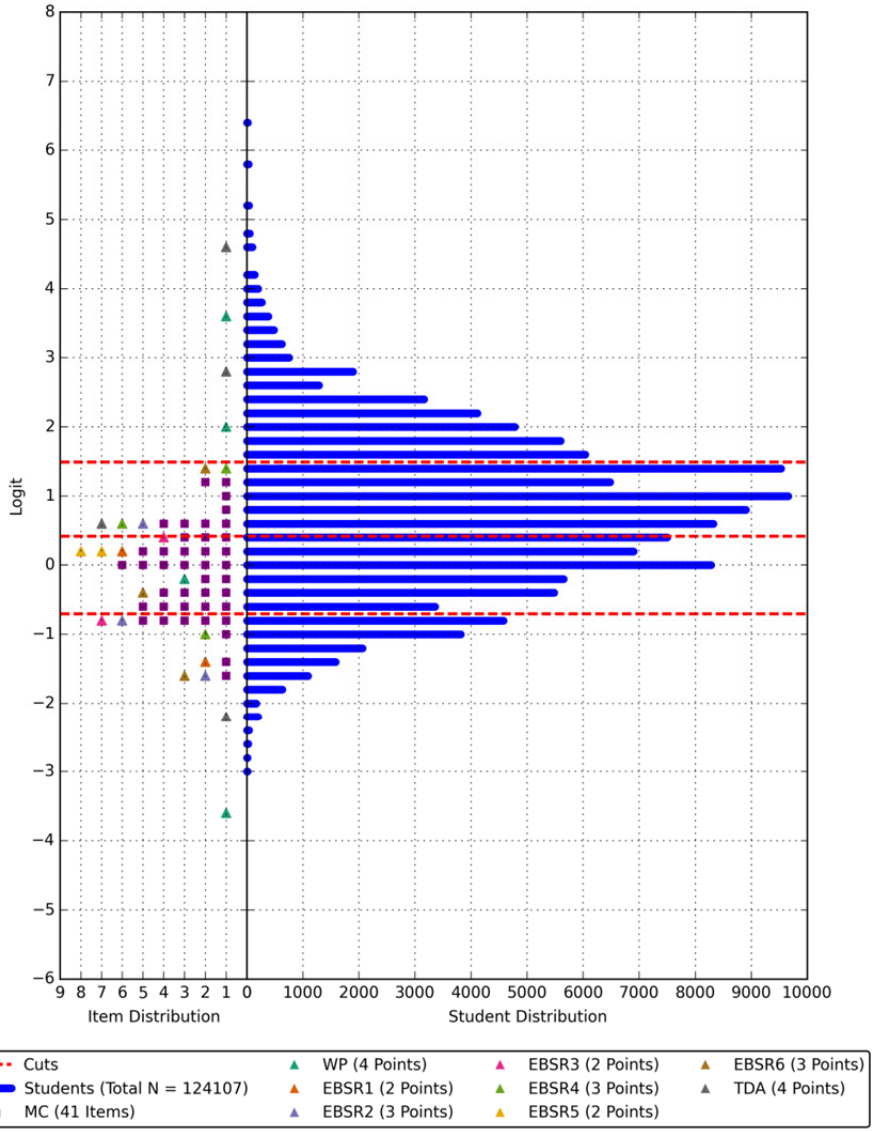


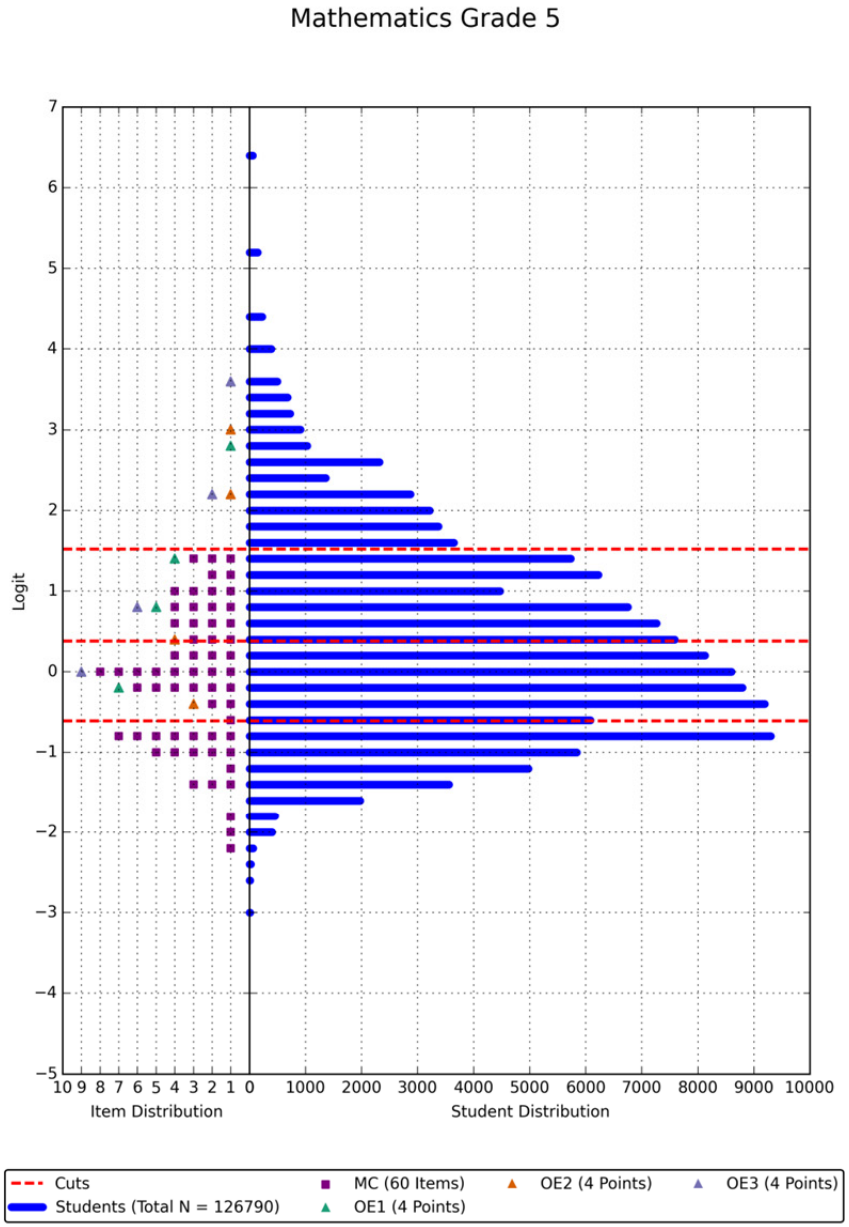


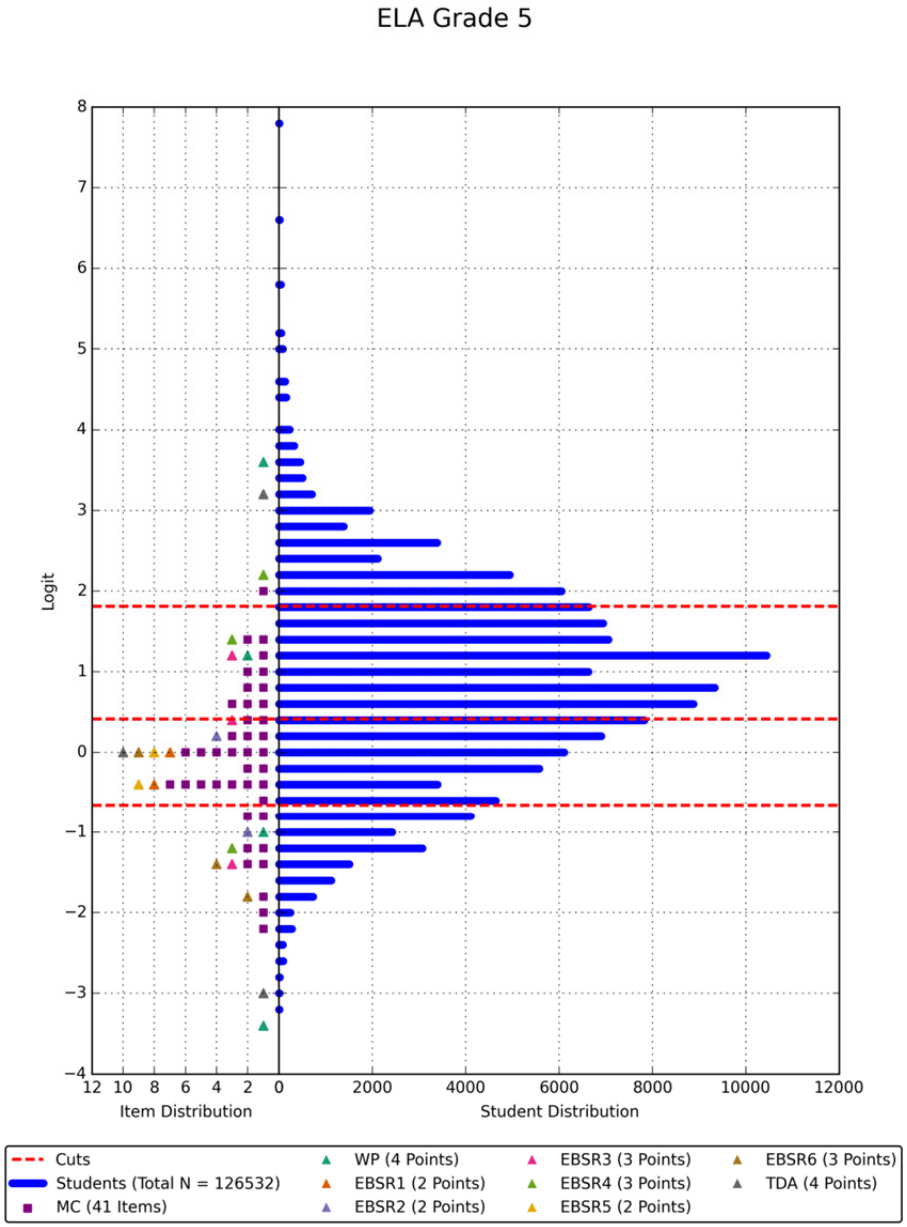
Mathematics Grade 4



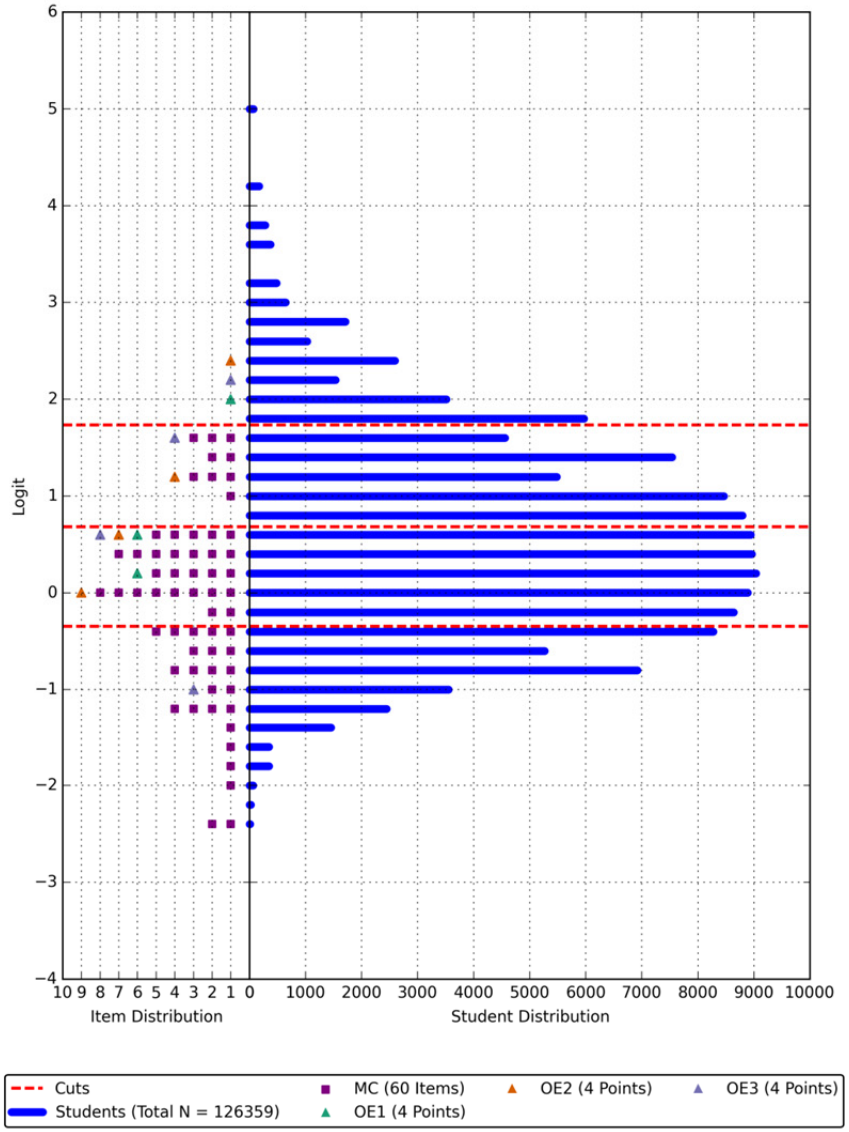
ELA Grade 4



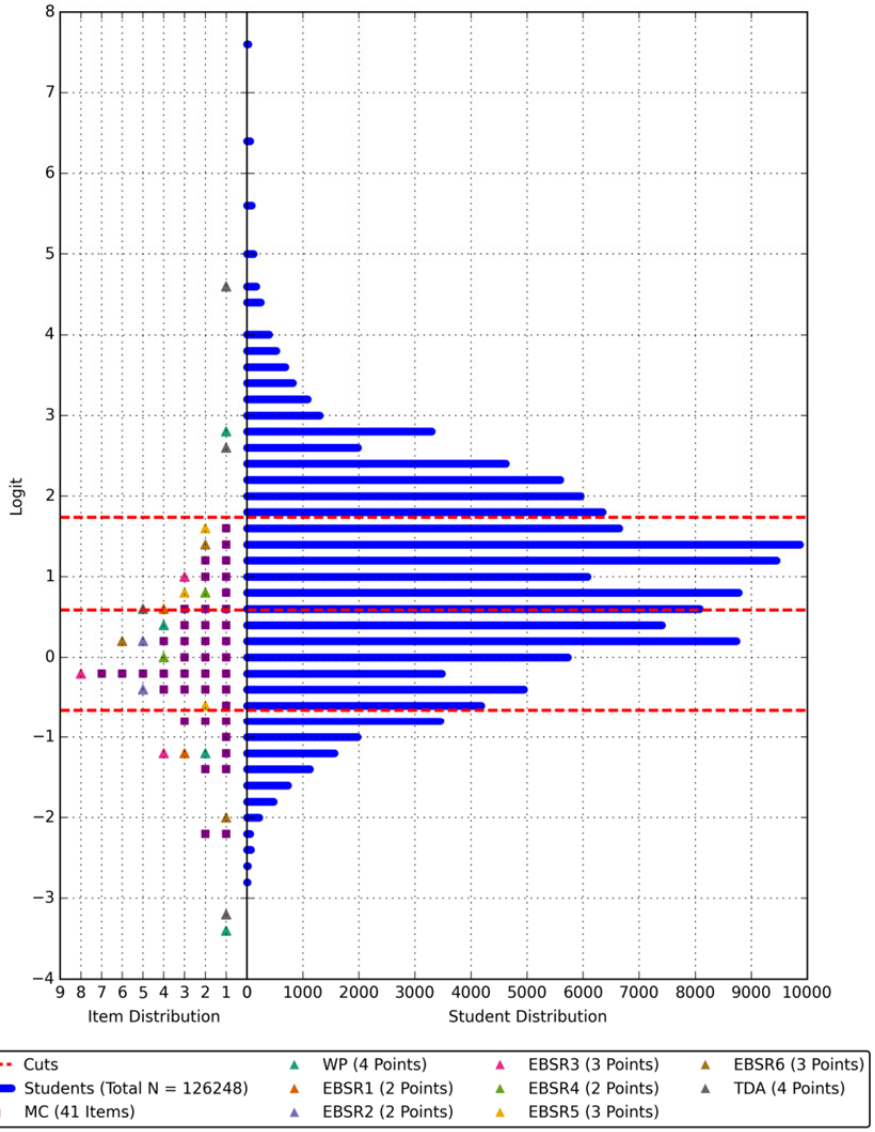

Mathematics Grade 5
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 126790)
MC (60 Items)
OE1 (4 Points)
OE2 (4 Points)
OE3 (4 Points)


ELA Grade 5
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 126532)
MC (41 Items)
WP (4 Points)
EBSR1 (2 Points)
EBSR2 (2 Points)
EBSR3 (3 Points)
EBSR4 (3 Points)
EBSR5 (2 Points)
EBSR6 (3 Points)
TDA (4 Points)

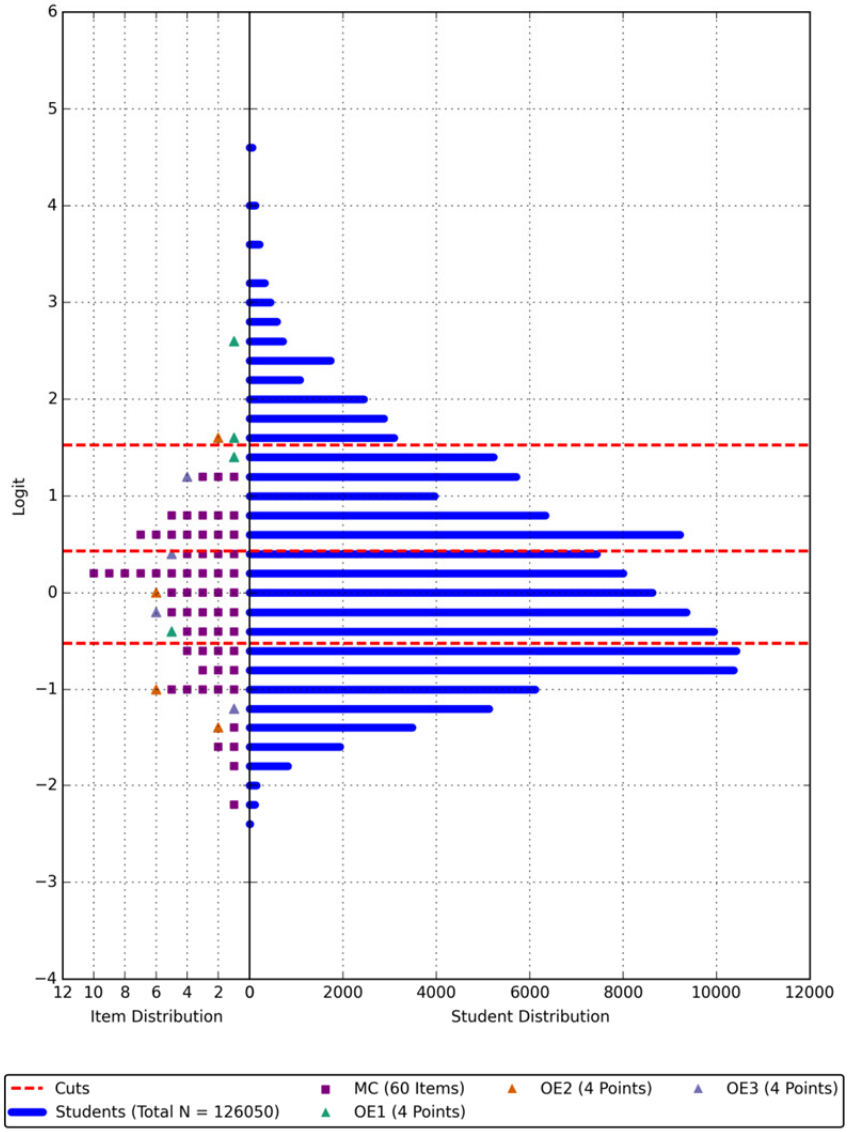
Mathematics Grade 6



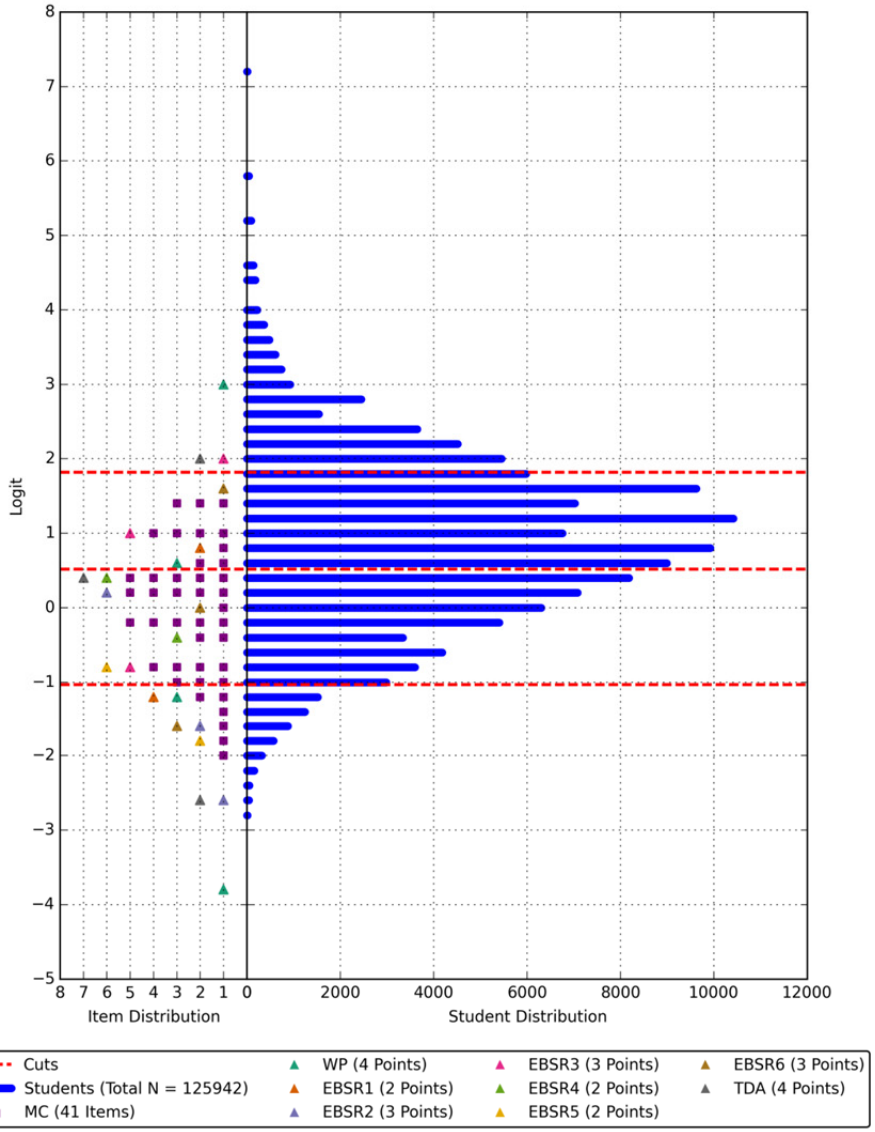
ELA Grade 6



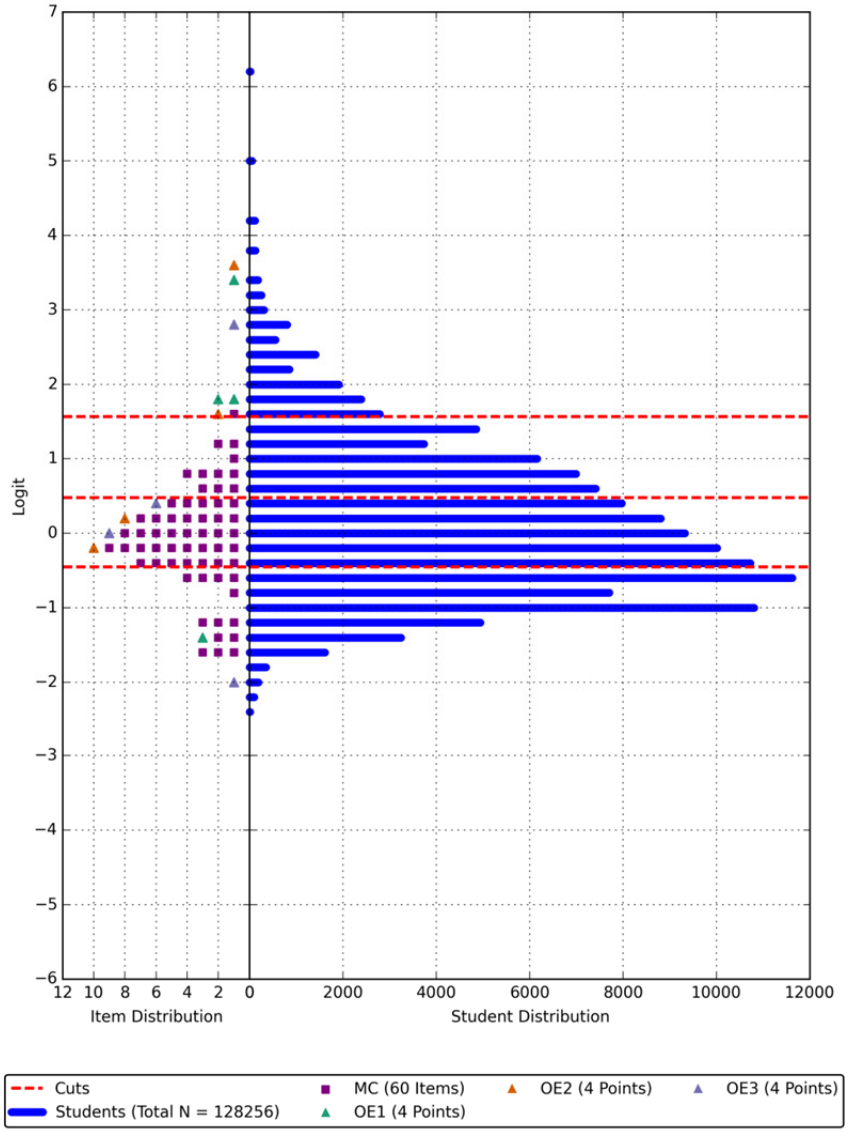
Mathematics Grade 7



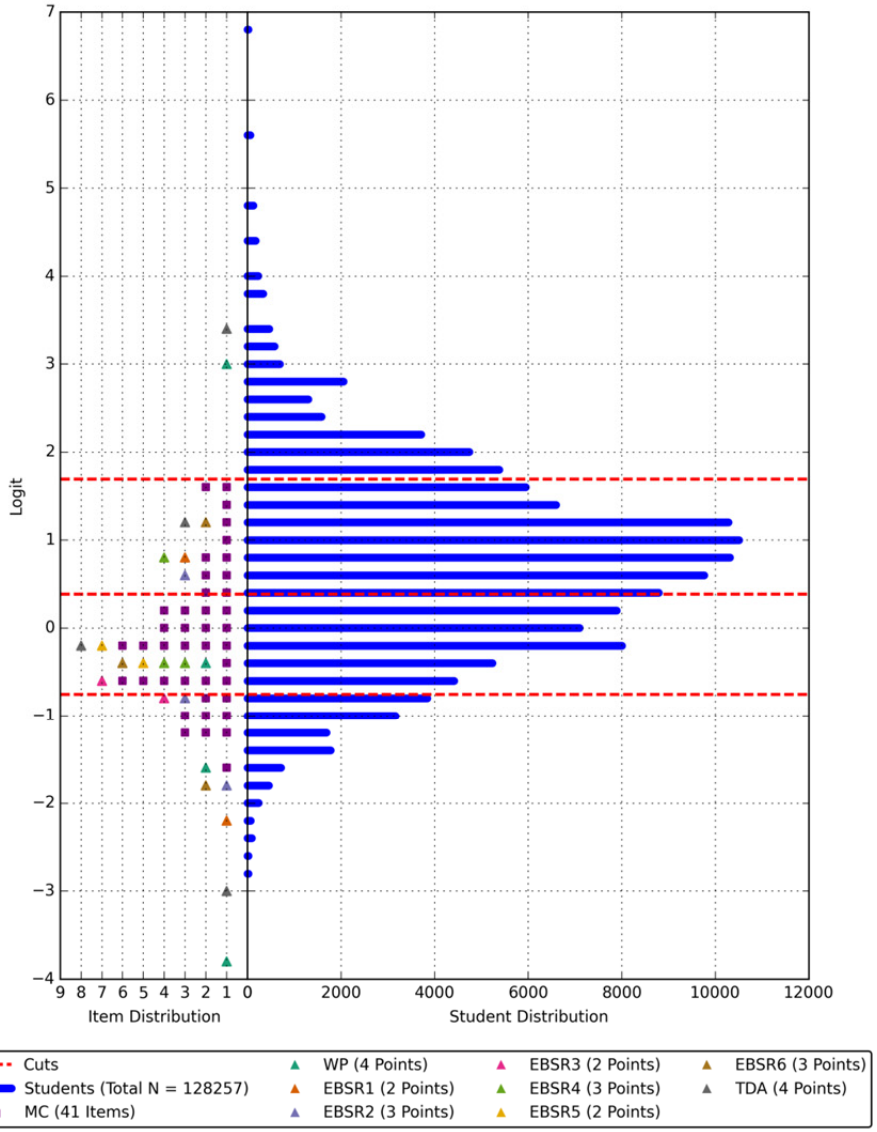
ELA Grade 7



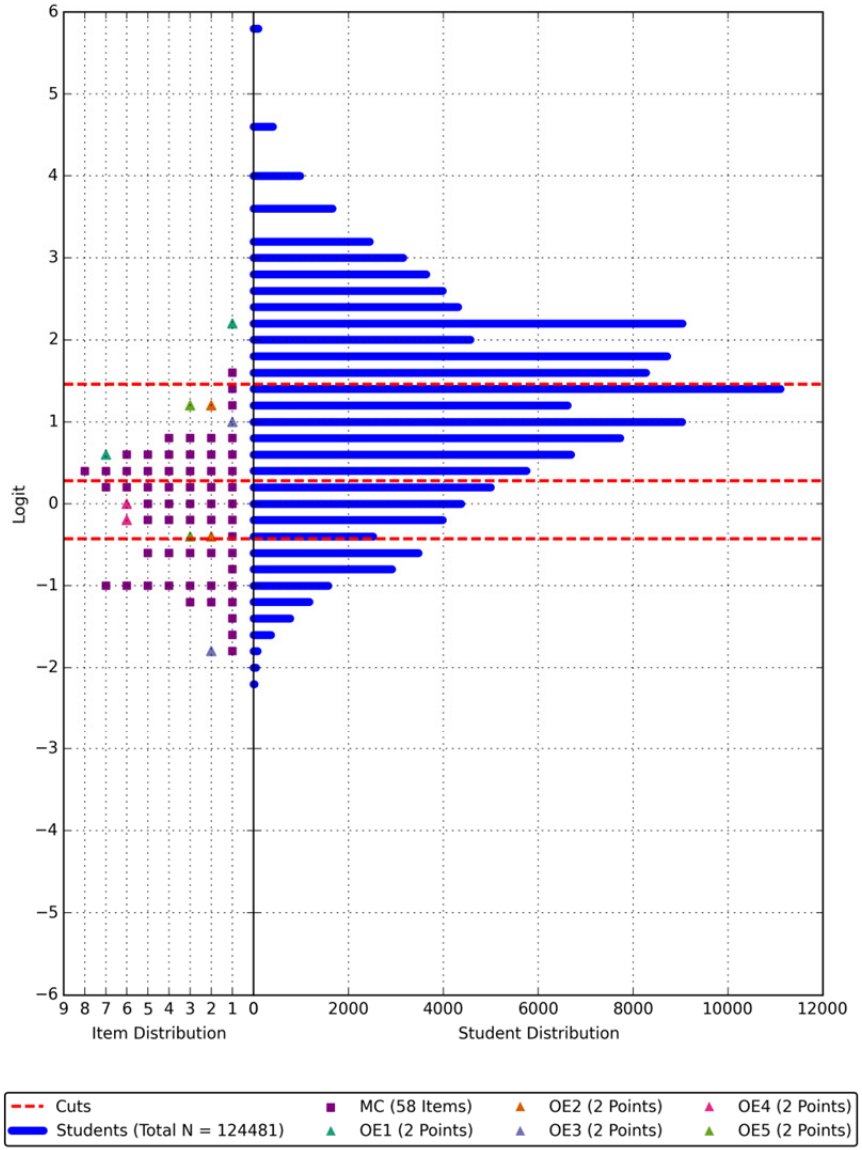
Mathematics Grade 8



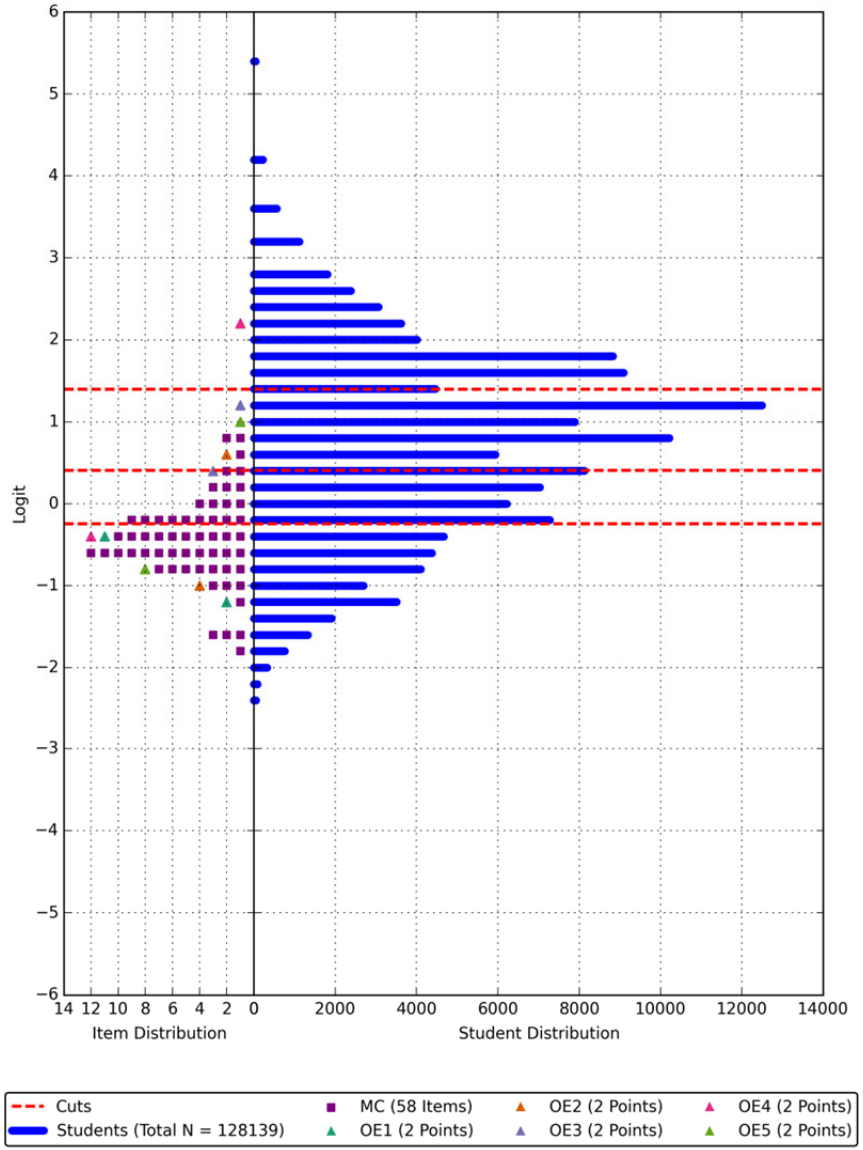
ELA Grade 8



Science Grade 4



Science Grade 8



Chapter Thirteen: Performance Level Setting

Performance level setting events for grades 3 through 8 in mathematics and ELA took place June 9–12, 2015. No performance level setting occurred for science this year. 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 Tables 13–2 and 13–3. For additional details about sciences 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.

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 Rasch ability and scaled score cuts for each PSSA test. For reader convenience, these are documented next in a different format. Table 13–2 documents the Rasch ability (Theta) cut scores for each grade and subject area test. Table 13–3 documents the same but provides the cut scores on the scaled-score metric. PSSA scaling procedures are discussed further in Chapter Fourteen.

Table 13–2. PSSA Theta (θ) Metric Cut Scores by Grade and Subject Area

Subject	Grade	θ Cuts		
		BB/B	B/P	P/A
Mathematics	3	-0.3376	0.4319	1.5392
	4	-0.7377	0.1758	1.2478
	5	-0.6086	0.3781	1.5176
	6	-0.3443	0.6809	1.7350
	7	-0.5217	0.4334	1.5262
	8	-0.4543	0.4774	1.5637
ELA	3	-0.5715	0.3703	1.8082
	4	-0.7059	0.4201	1.4935
	5	-0.6565	0.4118	1.8092
	6	-0.6578	0.5872	1.7381
	7	-1.0305	0.5185	1.8201
	8	-0.7553	0.3839	1.6911
Science	4	-0.4280	0.2792	1.4560
	8	-0.2435	0.4091	1.3958
	11	-0.4390	0.7888	1.4960

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

Table 13–3. PSSA Scaled-Score Metric Cut Scores by Grade and Subject Area

Subject	Grade	Scaled Score Cuts		
		BB/B	**B/P**	**P/A**
Mathematics	**3**	923	1000	1110
	4	908	1000	1107
	5	901	1000	1113
	6	897	1000	1105
	7	904	1000	1109
	8	906	1000	1108
ELA	**3**	905	1000	1143
	4	887	1000	1107
	5	893	1000	1139
	6	875	1000	1115
	7	845	1000	1130
	8	886	1000	1130
Science	**4**	1150	1275	1483
	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 a number of changes to the PSSA in mathematics and ELA. In mathematics, content changed grades 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 replaces PSSA Reading and PSSA Writing. Additional changes in ELA include 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 are not comparable to previous years. Science score scales were established in 2008 and no changes were made to science cutpoints or score scales in 2015. Therefore, science scaled scores are comparable to previous years. Table 14–1 shows the scale score cutpoints.

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. (Linking 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 zeroes.
- Open-ended (OE) items: All blank, copied, non-scorable, foreign language, off-task, refusal, or unreadable responses were scored as zeroes.
- 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 zeroes.

WINSTEPS Scaling

Parameter estimates are derived using the WINSTEPS 3.81.00 computer program (Linacre & Wright, 2014), 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 cutpoint 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 cutpoint at 1150 and the Proficient cutpoint at 1275.[12]

The slopes and intercepts for deriving PSSA scaled scores are provided in Table 14–2. For reference purposes, the PSSA theta cut scores have been reproduced in this table as well.

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

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.[13]

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 at Grades 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 is allowed to 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 actually earned the maximum possible.) See tables in Appendix N for HOSS *n*-counts.

[13] 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 cutpoints in 2008.

RAW-SCORE-TO-SCALED-SCORE TABLES

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

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

Subject	Grade	Min	Scaled Score Cuts[1]			Max[2]
			BB/B	B/P	P/A	
Mathematics	3	600	923	1000	1110	1594
	4	600	908	1000	1107	1627
	5	600	901	1000	1113	1594
	6	600	897	1000	1105	1531
	7	600	904	1000	1109	1536
	8	600	906	1000	1108	1558
ELA	3	600	905	1000	1143	1586
	4	600	887	1000	1107	1724
	5	600	893	1000	1139	1730
	6	600	875	1000	1115	1699
	7	600	845	1000	1130	1652
	8	600	886	1000	1130	1636
Science	4	1050	1150	1275	1483	2247
	8	925	1150	1275	1464	2230

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

Table 14–2. PSSA Cut Scores (on θ metric), Intercept, and Slope by Grade and Subject Area

Subject	Grade	Θ Cuts			Intercept	Slope
		BB/B	B/P	P/A		
Mathematics	**3**	-0.3376	0.4319	1.5392	956.31	100
	4	-0.7377	0.1758	1.2478	981.92	100
	5	-0.6086	0.3781	1.5176	961.69	100
	6	-0.3443	0.6809	1.7350	931.41	100
	7	-0.5217	0.4334	1.5262	956.16	100
	8	-0.4543	0.4774	1.5637	951.76	100
ELA	**3**	-0.5715	0.3703	1.8082	962.47	100
	4	-0.7059	0.4201	1.4935	957.49	100
	5	-0.6565	0.4118	1.8092	958.32	100
	6	-0.6578	0.5872	1.7381	940.78	100
	7	-1.0305	0.5185	1.8201	947.65	100
	8	-0.7553	0.3839	1.6911	961.11	100
Science	**4**	-0.4280	0.2792	1.4560	1225.65	176.75
	8	-0.2435	0.4091	1.3958	1196.64	191.54

Notes. Linear Transformation Intercepts and Slopes are used to derive the Scaled Scores.
BB = Below Basic; B = Basic; P = Proficient; and A = Advanced

STRAND (REPORTING CATEGORY) SCORE STRENGTH PROFILE

Strength profiles for strand (reporting category) scores have been provided since 2009. New mathematics and ELA continue to report the strength profile. 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 (equivalent to Below Basic and Basic); M=Medium (equivalent to Proficient); H=High (equivalent to Advanced). 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. See Chapter Sixteen for more information on strand scores and how they are used in score reports.

Chapter Fifteen: Linking

In large-scale testing programs it is a common practice to have different item sets appear in test forms within and/or across years. Linking operational scores from the different test forms to a common scale of measurement ensures that all forms for a given grade and subject area provide comparable scores. Consequently, students are not given an unfair advantage or disadvantage because the particular test form they took is easier or harder than a test form taken by other students.

In order to account for the differences between different test forms, an application of an item response theory (IRT) linking methodology is required to place the item parameters and student ability estimates on the same scale as other forms. (As cautioned earlier, the success of these methods depends on how well the IRT assumptions are met.) The IRT model used for the PSSA is the Rasch Partial Credit Model (RPCM; Masters, 1982). Further descriptions of the RPCM are given in Chapter Twelve. Without linking analyses, the Rasch item calibrations for the new test items and associated scores on these items would be unique to the new test administration.

A chained linking design is utilized for the science PSSA operational scores. As 2015 PSSA mathematics and ELA are new assessments with new scales, linking was not established to previous years. From 2016, all subjects will have a chained linking design. With a chained linking design, scores from the new test form are linked to the scale of previous test forms. The chain originates from 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). When the item parameters from the new test are placed on the bank's scale, the resulting scaled scores for the new test form will be expressed on the same as the scale as defined by the base form.

This chapter begins with an explanation of specific PSSA design elements and associated analysis procedures. This is followed by a summary of the entire PSSA linking procedure. Some summary results are also provided.

PSSA MATHEMATICS, ELA, AND SCIENCE

The test designs for the operational PSSA mathematics, ELA, and science assessments used multiple test forms that shared several common elements. The operational items are the same on all forms and for all students. Student total raw scores and scaled scores, as well as accountability reporting, are based exclusively on the operational items. In addition, each test form has a different set of nonoperational items (i.e., items that are not part of student scores). One such example is the embedded field test items that are tested for possible inclusion in the PSSA item pool. Equating block items were included to bolster the linking design (discussed further below). With 2015 PSSA mathematics and ELA, there was no linking but the future equating block positions contained place holder items which were neither counted toward operational test scores nor used as equating block items. The forms containing the nonoperational items were spiraled to ensure the items would have randomly equivalent samples of students responding to them. In summary, each test form for 2015 mathematics, ELA, and science was composed of core operational, equating block (or place holder items), and field test sections.

Data Collection Design

The item status codes used in the IDEAS item banking system are given in Table 15–1. For brevity, these codes are used for the remainder of this chapter.

The link between years was based on the core linking (LK) and equating block (EB) items. These items had been used in previous administrations (most often from the prior year). The LK and EB items were used in approximately the same context. That is, the items were not altered in any way, they appeared in about the same position in the booklet, and they were administered at about the same time of year.

The equivalence of student samples across years cannot be assumed. Further, the same item can have different properties in different years because of changes in the item's position or changes in the students' experiences. Consequently, between-year linking requires more scrutiny than within-year linking. This chapter focuses more on the linking between years.

The linking design employed for PSSA is often referred to as a common-item nonequivalent groups design. Test forms contained a set of common items, called core LK items or EB items, which served as anchors for linking test forms across years to a common scale. LK items were internal anchor items (i.e., they contribute to student test scores) and EB items were external anchor items (i.e., they did not contribute to student test scores). All EB items were MC items.

Since LK items were in the tests' operational sections, they were common across all test forms within a year. For 2015 PSSA science, all core MC LK items were from 2014. The forms containing EB items were spiraled, and thus, randomly distributed across the student population. All EB items in the 2015 PSSA science tests were pulled from the 2014 tests.

The number of the LK/EB items are summarized in Table 15–2. Specifically, there were 16 LK MC items and 2 LK open-ended items for all science grade levels. The number of EB items shown in Table 15–2 is the total number of EB items across all forms.

There were 60 core MC items in mathematics, 38 core MC items with grade 3 ELA, 41 core MC items in grades 4 and higher ELA, and science had 58 MC items. There were three core OE with mathematics, seven core OE[14] items in grade 3 ELA, eight with grades 4 and higher ELA. Further break down of OE items are also presented in Table 16-1 in Chapter Sixteen. There were three core OE items in mathematics. Science had five OE items.

[14] OE items in ELA include SA, EBSR, TDA, and WP in this chapter.

Table 15–1. Item Status Codes in IDEAS

Item	Comments	Code in IDEAS
Core	Include core linking (i.e., anchor) items and unique core items	OP
Core linking	Linking items in the core section which include MC and OE items	LK
Equating Block	All items in the EB are MC linking items	EB
Field Test	Items in the embedded FT section	FT

Table 15–2. 2015 PSSA Linking Designs: Mathematics, ELA, and Science

Subject	Grade	Number Of Forms	Total Core		Core Links		EB*
			MC	OE	MC	OE	MC
Mathematics	3	9	60	3	No Linking in 2015		
	4	9	60	3			
	5	9	60	3			
	6	9	60	3			
	7	9	60	3			
	8	9	60	3			
ELA	3	9	38	7			
	4	9	41	8			
	5	9	41	8			
	6	9	41	8			
	7	9	41	8			
	8	9	41	8			
Science	4	12	58	5	16	2	24
	8	12	58	5	16	2	24

* 2 EB items per form for science.

LINKING METHOD FOR PSSA SCIENCE

The first step in linking the 2015 PSSA to the base scale was to express all 2015 item parameters on the same scale. This was accomplished by calibrating all OP (including LK) MC items with master core and paper students. Then the OP MC items were anchored to calibrate EB MC items with all forms and paper students. Next, the resulting MC item parameters were anchored in WINSTEPS while all OE items in the operational section (including OP LKs) items were calibrated including paper students.[15] At this point all OP and EB item parameters were on a unique scale for 2015. Between-year linking was required to place these items on the bank scale.

Between-year linking utilized the 2015 LK and EB item parameters and their banked counterparts. The scale transformation methodology used for PSSA is the mean-shift procedure. This has been the procedure employed by the PSSA program for some time. After evaluating the robustness of the link by identifying items that did not maintain their relative difficulty across years, the difference between the 2015 and banked parameters was then determined. The mean of the differences was then used to statistically adjust the 2015 parameters to the bank scale. The final (linking) item parameters were then used to estimate student abilities, which were, in turn, transformed to scaled scores. (Transformation formulas are provided in Chapter Fourteen.)

Rater Drift

Before the final mean-shift value was determined, a rater-effect adjustment was applied to the OE LK items. All OE linking items were in the Core section (LK OE). Students' responses from the previous administration (n = 1,000 per item) for the OE linking items were selected for the rater drift study (DRC jointly stratified by point value and on ability). The selected responses were scored by 2015 raters. Thus, the selected students' responses had scores from previous year and 2015 raters and the difference between them was used to adjust for the rater effect. See Tables 18–11 through 18–13 (see Chapter Eighteen) for the correlations between the old and new scores for these OE LK items.

SUMMARY OF THE PSSA LINKING PROCEDURE

The following steps outline the linking procedure. Mathematics and ELA item calibration in 2015 followed the first and third steps followed by the eighth and ninth steps to calibrate MC and OE operational items and produce raw to scale score tables.

1. Calibrate all operational (OP) multiple-choice (MC) items in an unanchored Winsteps run
   - **a.** Include only the Master Core and paper students with completeness status "01" and "00" (all students with MC responses)
   - **b.** Include all MC items in the core operational section (OP MC).
   - **c.** Do not include any equating block (EB) items.
   - **d.** Do not include any field test (FT) items.

[15] No field test items were included in any of these calibrations. FT items were calibrated after the operational linking by anchoring all OP and EB items. This placed all FT items on the bank scale.

2. Calibrate selected multiple-choice (MC) items in an anchored run:

- **a.** Include all forms, but only paper students with completeness status "01" and "00" (all students with MC responses)
- **b.** Include all MC items in the core operational section (OP MC).
- **c.** Include all equating block (EB) items.
- **d.** Do not include any field test (FT) items.
- **e.** Fix all OP MC items from Step 1

3. Calibrate selected open-ended (OE) items in an anchored run by putting them on the MC item scale from Step 3:

- **a.** Include all forms, but only paper students
- **b.** Include all OE items in the Core section (OP OE).
- **c.** Do not include any FT items.
- **d.** Fix all MC items from Step 2.

4. Compute the rater-effect constant for each OE-Link item:

- **a.** Pull sample responses from the previous year (N ~ 1,000 students)[16] and create a data file including the selected students' MC and OE response scores (from the previous year's raters).
- **b.** Have the current year's raters score the selected OE responses.
- **c.** Calibrate the difficulty parameters for OE items based on the previous year's scores. (This is done separately for each OE item.)
  - i. Calibrate all MC items (from the previous year's test) in an unanchored run using the data file from Step 4.a.
  - ii. Calibrate each OE item separately using an anchored run for each item.
- **d.** Compute the rater-effect constant for each OE-Link item based on OE parameters from Step 4.c.ii.
  - i. Use current and previous year's rater raw score means as the true/expected raw scores.
  - ii. Using expected score distribution conditional on ability (item characteristic curve) for the previous year's rater scores, determine the two ability values for the two expected raw scores (i.e., the current and previous year's rater score means).
  - iii. The rater-effect constant is the difference between the two abilities.

5. For each OE linking item, adjust the item parameter estimate obtained in Step 3 by the Step 4 Value—remove the rater effect:

- **a.** Each OE linking item (LK OE) has a specific rater-effect adjustment value.

[16] This sample is generally stratified on previous year's total test scores; however, a minimum of 100 responses are selected for each possible score point.

6. Evaluate the stability of the linking items using Robust *Z*:

a. Include all core linking (LK) items—LK MC and LK OE.
b. Include all EB items.

c. LK OE item parameters should be obtained from Step 5.

d. Calculate Robust *Z* for each item in the linking.

Once the above calculations were made, the following guidelines were used in determining possible sets of linking items used for the equating:

e. Items with an absolute value of Robust *Z* exceeding 1.645 may be considered for exclusion.

f. No more than 20 percent of the pool of linking items may be considered for exclusion.

g. The ratio of the standard deviations of previous year and current Rasch difficulties should be in the 90 to 110 percent range.

h. The correlation of previous year and current year Rasch difficulties is greater than 0.95.

Final decisions about the linking items were made in the national technical advisory committee (TAC) meeting in collaboration with PDE and DRC staff following these rules:

i. Drop items that DRC identified as having a large Robust Z and were out of sequence because they were pulled from a separate FT form.

j. If an item has been changed in any way from the previous year, it may no longer be used for linking.

Scatterplots of the linking item difficulties (logits) were constructed (i.e., the current year values were plotted against those from the prior year). Ideally, these plots should have a strong linear trend. Items straying from the trend line did not perform in the same way in both years. As noted above, items that departed significantly from this were further evaluated. The scatterplots with final LK/EB item sets are shown in Figure 15–1.

7. Calculate the mean shift over MC and OE linking items using global item difficulties (weighted by number of score points) for OE items:

a. Include all core linking (LK) items—LK MC and LK OE.
b. Include all EB items.

c. Weight LK OE items by maximum possible score.

8. Apply the mean shift to the item parameters calibrated in Steps 2 and 3:

a. All OP items (OP MC + OP OE).
b. All EB items.

9. Scale the operational test by fixing all operational (OP) items obtained in Step 8:
   a. Include all students (all forms and all modes)
   b. The result from this step is a Raw-to-Logit (Rasch Ability) table.
10. Apply the appropriate linear transformation to the logit values to derive the scaled scores and SEMs:
   a. The result from this step is a Raw-to-Scaled Score table.

RESULTS SUMMARY

Table 15–3 shows the number of linking items and the shift parameters associated with those over the two years, and the correlation of item difficulties across years for each grade/content area. At first glance, some of the mean shift values may appear large. However, the shift constants are being applied to parameter estimates from Step 1 in the equating process (where the mean of the unanchored MC items is fixed at zero). The adjustment needed to place the Step 1 estimates on the current scale can be large in magnitude as it must take into account multiple factors (e.g., weighting in the case of the writing test, rater drift, changes in student ability since the base-year administration, and differences in difficulty).

Table 15–3. Summary Data for Linking Items

Subject	Grade	Final Counts MC	Final Counts OE	2014 Shift	2015 Shift	2015 Correlation
Science	4	40	2	0.0215	0.0098	0.9704
	8	40	2	-0.3202	-0.3395	0.9782

Note. No item was dropped.

Appendix O provides the statistics for the linking items used. The previous and current values for item sequence, *p*-values, and logits are also provided. Appendix Q provides the mean raw and scaled score points across years. Together, these appendices provide a summary of how the items and test changed across years.

VISUALIZATION SUPPLEMENT

Linking analyses require considerable scrutiny given their critical role in reporting student performance. Items repeated over administrations can behave differently because of contextual changes or changes in the students' experiences. In addition to evaluating the linking items using Robust Z analyses, the graphs in Figure 15–1 provide a visualization to help identify extreme differences over different test administrations. The calibration data file described in Chapter Nine was used to construct these plots.

Graphs

This technical report uses figures to help one visualize the across-year differences in linking items for science at each grade. This section presents four types of figures, three of which illustrate the stability between the old (banked) and new (2015) item data:

1. Scatterplot of new-year *p*-values (2015) on old-year *p*-values (2014).
2. Scatterplot of new-year logits (2015) on old-year logits (2014).
3. Scatterplot of old and new *p*-values on new logits.
4. Test Characteristic Curves (TCCs) for the linked score distribution.

All four plots are presented for each grade and subject-area test. Each plot is described further below and Grade 4 science results are considered as an example of each.

NEW-YEAR *P*-VALUES ON OLD-YEAR *P*-VALUES

The top left-hand plot in Figure 15–1 describes the relationship between the item *p*-values for the two years. The data points in these plots should have a clear trend where the vertical axis values rise as the horizontal axis values increases (i.e., as one moves from left to right). If the *p*-values for both years were correlated at 1.0, the relationship would be expected to fall on a straight line. Generally, linking items are not perfectly stable across years, so some scatter is expected. As an example, the plot for Grade 4 science shows strong across-year stability. The extent to which the trend does not pass through the origin indicates a change in student performance.

Many test score users are familiar with the *p*-value metric, which is why these charts are provided. However, the logit charts discussed below have advantages for visualizing this trend data.

NEW-YEAR LOGITS ON OLD-YEAR LOGITS

The top right-hand plot in Figure 15–1 focuses on the logit difficulties. It shows more clearly the relationship between new- and old-year item difficulties. Logit plots often provide more defined trends, but still can present varying degrees of scatter and in some instances reveal outlier data points. As with the associated *p*-value plot, this figure for Grade 4 science suggests strong across-year stability (with a very strong, but not perfect relationship).

OLD- AND NEW-YEAR *P*-VALUES ON NEW-YEAR LOGITS

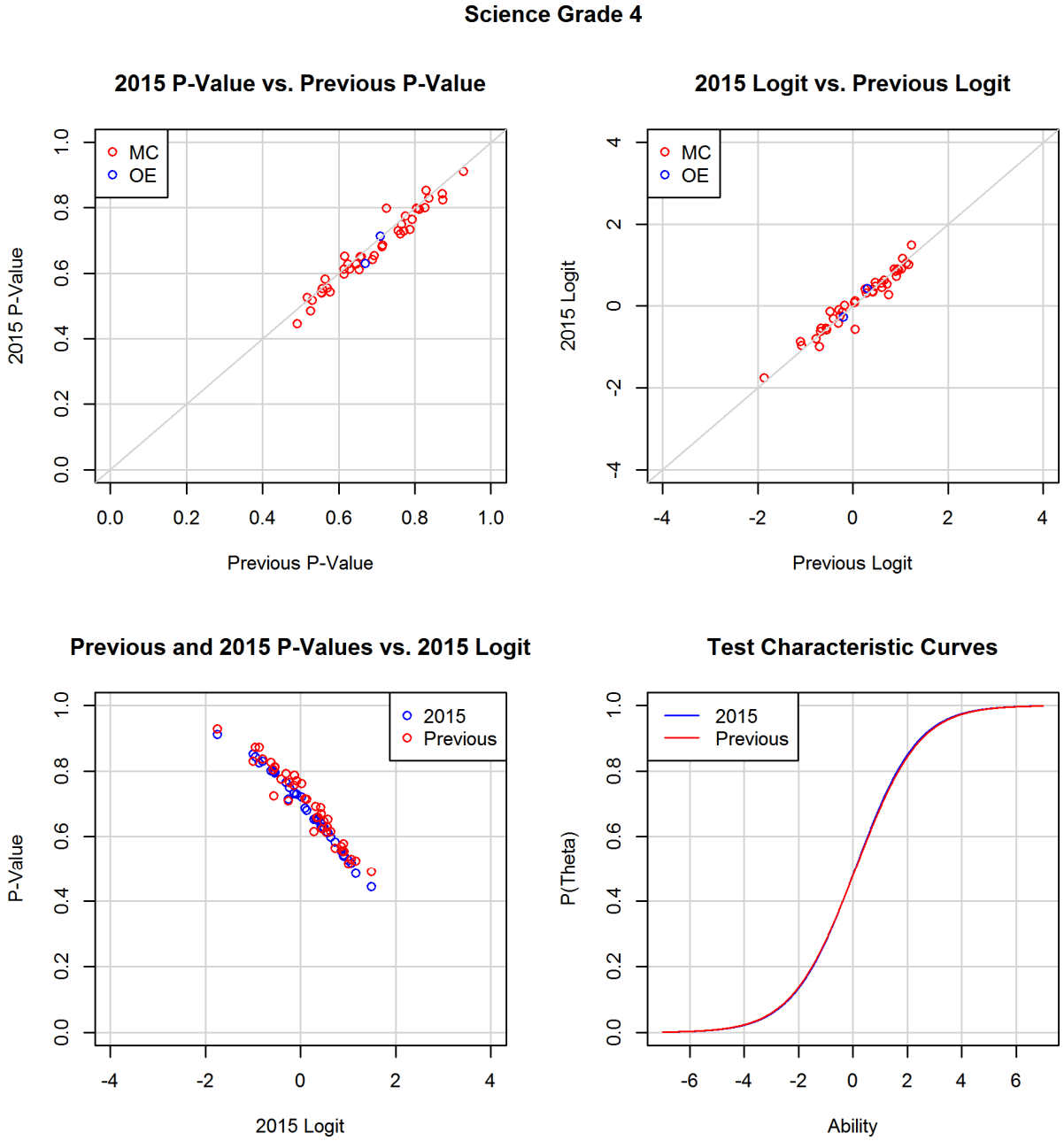
Plotting *p*-values against logit difficulties across years is not as reliable as it is within a year. Using spiraled forms within a year, a given *p*-value will translate to a given logit regardless of the form on which it is used, within the limits of statistical precision. Within a year, the *p*-values-on-logit plot should be a single curved line. The corresponding between-year plots could have separate lines for each year. The difference between the two lines is a reflection of the adjustment (positive or negative) that is required to link the two item sets.

To bolster the number of linking items, different sets of EB linking items were included on different forms. Because the forms were spiraled within classrooms, the samples generated are randomly equivalent and the same *p*-values would be expected to translate into roughly the same logit, with some random variation expected. This is the case with the Grade 4 science data as the relative smoothness of this curve indicates very good agreement among the forms.

TEST CHARACTERISTIC CURVES

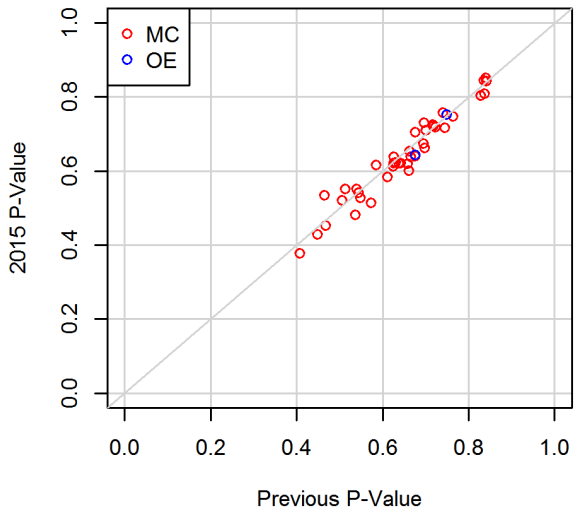
The old and new-year Test Characteristic Curves (TCCs) by grade and subject are shown in the bottom right-hand plot figures. The TCCs show the similarity between the new- and old-year tests in terms of difficulty in the logit metric (new-year results are for the final, linked values). Assuming equal numbers of items for the two years, curves that are close to being coincident will translate into similar raw-score cut points. With extreme differences in test difficulties, some loss of precision and reliability may result. However, this is generally not evidenced in the figures, which display a close match across years. For Grade 4 science the TCCs were essentially coincident.

Figure 15–1. Item Stability Plots and Test Characteristic Curves

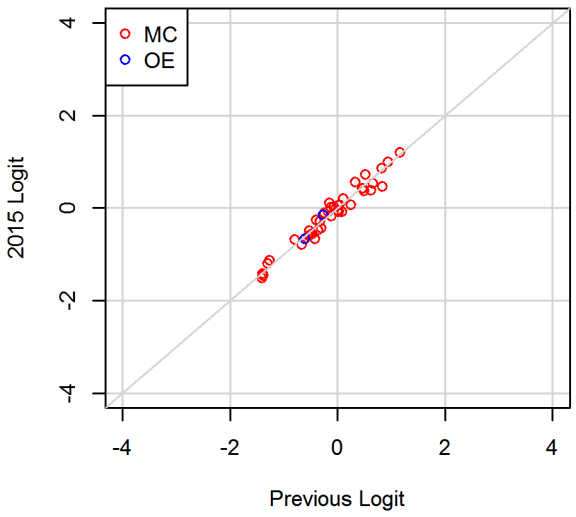


Science Grade 8

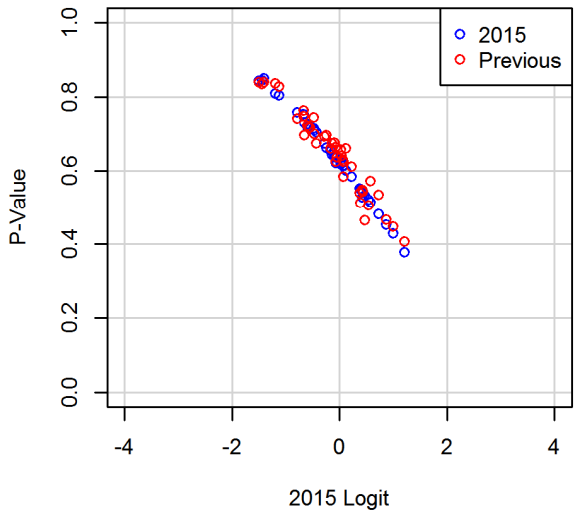
2015 P-Value vs. Previous P-Value



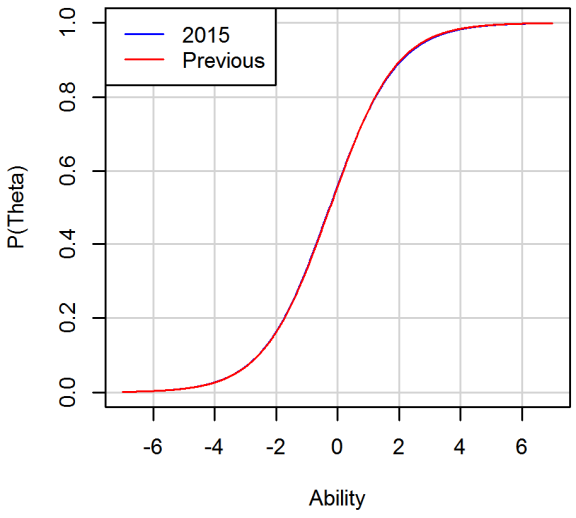
2015 Logit vs. Previous Logit



Previous and 2015 P-Values vs. 2015 Logit



Test Characteristic Curves



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.

SCORING THE PSSA

PSSA items are composed of multiple-choice (MC) and open-ended (OE) items. Each correct response to an MC item receives a score of 1. Incorrect responses receive a score of zero. Scores on OE items range from zero to four, depending on the grade and subject area. 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 Three.

Table 16–1. Item Types Used by Subject Area

		Subject		
Item Type		**Mathematics**	**ELA**	**Science**
Multiple-Choice (1 point)		■	■	■
Open-Ended	OE	■ (4 points)		■ (2 points)
	Short Answer		■ (3 points)	
	Evidence Based Select Response		■ (2 or 3 points)	
	Text Dependent Analysis		■ (4 points)	
	Writing Prompt		■ (4 points)	

Note. Text-dependent analysis item and writing prompt are weighted as described in Chapter Three.

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 particular scores used depend on the purposes for which the test has been given. The following types of scores are provided for reporting a student's overall performance on 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 very 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 switching to the more abstract scaled score metric is that it produces more general, interpretable, and equitable results. 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.)

Another advantage of scaled scores is that they lend themselves to interpretations of what is referred to as an interval level, while 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 linked across years, a scaled score of 1300—or any other value for a particular grade and content area test, such as Grade 4 science—should have the same absolute meaning in the current year as it had in previous years.[17] More importantly, an increase in the scaled score for Grade 4 science from last year to the current year means that student performance improved;[18] it does not say anything about whether this year's test is easier or harder than last year's test. To make these interpretations requires 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.

[17] Since mathematics and ELA are new tests in 2015, scaled scores in these subjects should not be compared to previous years.

[18] 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.

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.

Table 16–2. PSSA Scaled Score Cuts for Each Performance Level by Grade and Subject Area

			Scaled Score Cuts[1]			
Subject	**Grade**	**Min**	**BB/B**	**B/P**	**P/A**	**Max[2]**
Mathematics	**3**	600	923	1000	1110	1594
	4	600	908	1000	1107	1627
	5	600	901	1000	1113	1594
	6	600	897	1000	1105	1531
	7	600	904	1000	1109	1536
	8	600	906	1000	1108	1558
ELA	**3**	600	905	1000	1143	1586
	4	600	887	1000	1107	1724
	5	600	893	1000	1139	1730
	6	600	875	1000	1115	1699
	7	600	845	1000	1130	1652
	8	600	886	1000	1130	1636
Science	**4**	1050	1150	1275	1483	2247
	8	925	1150	1275	1464	2230

Notes. [1] BB = Below Basic; B = Basic; P = Proficient; and A = Advanced.
[2] Scaled Score Maximum Values are unique for the current 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 status. 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 scores:

- 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.)

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). A greater 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. (Details regarding the creation of the strength profile are provided in Chapter Fourteen. These scaled scores are not printed on

score reports. They only exist to determine whether performance in the strands was Low, Medium, or High.) A Low score on the strength profile indicates performance that is below Proficient on the overall PSSA scale. A Medium score on the strength profile indicates performance that is comparable to Proficient on the PSSA. A High score on the strength profile indicates performance that is comparable to Advanced.

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 grade and subject area 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 performance.

CAUTIONS FOR SCORE USES

Extreme Error for Extreme Scores

Student scores toward the minimum or maximum ends of the score range will 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 the maximum score for the PSSA Grade 6 mathematics test were 1550[19] and a student achieved this score, 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

[19] It is not, at least for this year

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 grade and subject area test separately. Therefore, PSSA scaled scores should be interpreted only within each grade and content area. 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, student 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 no across-grade comparisons or growth statements for a student are 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.[20]

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 on the basis of the 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, many of the strand scores are very unreliable. 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.)

[20] Since mathematics and ELA are new tests in 2015, scaled scores should not be compared to previous years.

Using PSSA Results for Other Purposes

Should PSSA results be used for placement decisions such as eligibility for gifted/talented programs or for other special programs or services? Frequently asked questions about the PSSA pertain to the maximum possible PSSA scaled scores for various subjects or to which PSSA score represents the 90th percentile. The motivation behind many of these questions may be associated with special program eligibility.

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

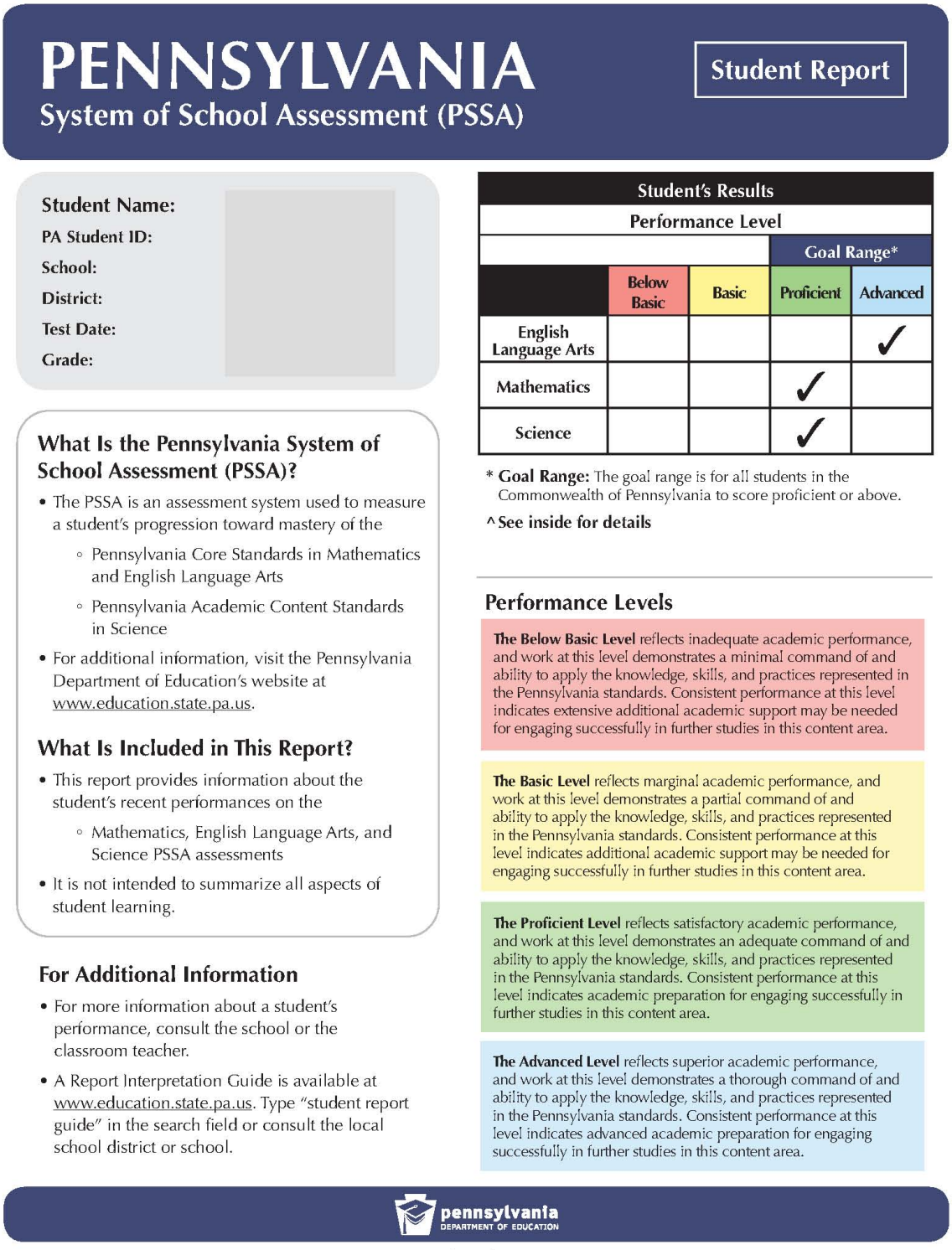
Parent Letter

Typically, parent letters are delivered in mid-June and provide parents and students with their first glimpse of performance on the spring PSSA tests. In 2015, parent letters were not delivered to Pennsylvania districts due to the need for Performance Level Setting for mathematics and ELA. Test results were released in late July.

Individual Student Report

An individual student report is provided for all students who took the PSSA. This report was delivered to Pennsylvania school districts in September 2015. 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 2015 Individual Student Reports. Screen shots of the four pages from a sample individual student report are provided in Figures 16–1 through 16–4.

Figure 16–1. 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

	Below Basic	Basic	Goal Range* Proficient	Goal Range* Advanced
English Language Arts				✓
Mathematics			✓	
Science			✓	

* **Goal Range:** The goal range is for all students in the Commonwealth of Pennsylvania to score proficient or above.

^ **See inside for details**

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 Mathematics and English Language Arts
  - Pennsylvania Academic Content Standards in Science
- For additional information, visit the Pennsylvania Department of Education's website at www.education.state.pa.us.

What Is Included in This Report?

- This report provides information about the student's recent performances on the
  - Mathematics, English Language Arts, 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.state.pa.us. 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.

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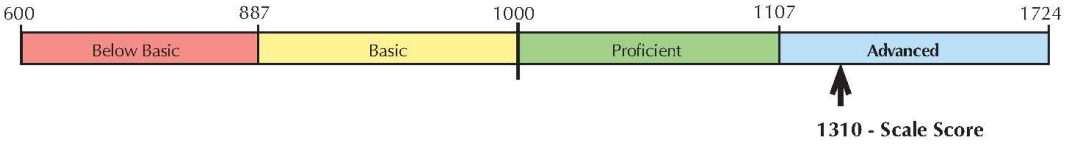
Page 1 |

Figure 16–2. Page 2 of the Individual Student Report

English Language Arts

Performance Level



1310 - 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: **1266–1354**.

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile♦
Reading♦♦			
Key Ideas and Details	16	17	High
Craft and Structure/Integration of Knowledge and Ideas	9	12	Medium
Vocabulary Acquisition and Use	7	9	Medium
Writing			
Types of Writing	8	12	Medium
Language	14	18	Medium
Text-Dependent Analysis			
Text-Dependent Analysis	16	16	High

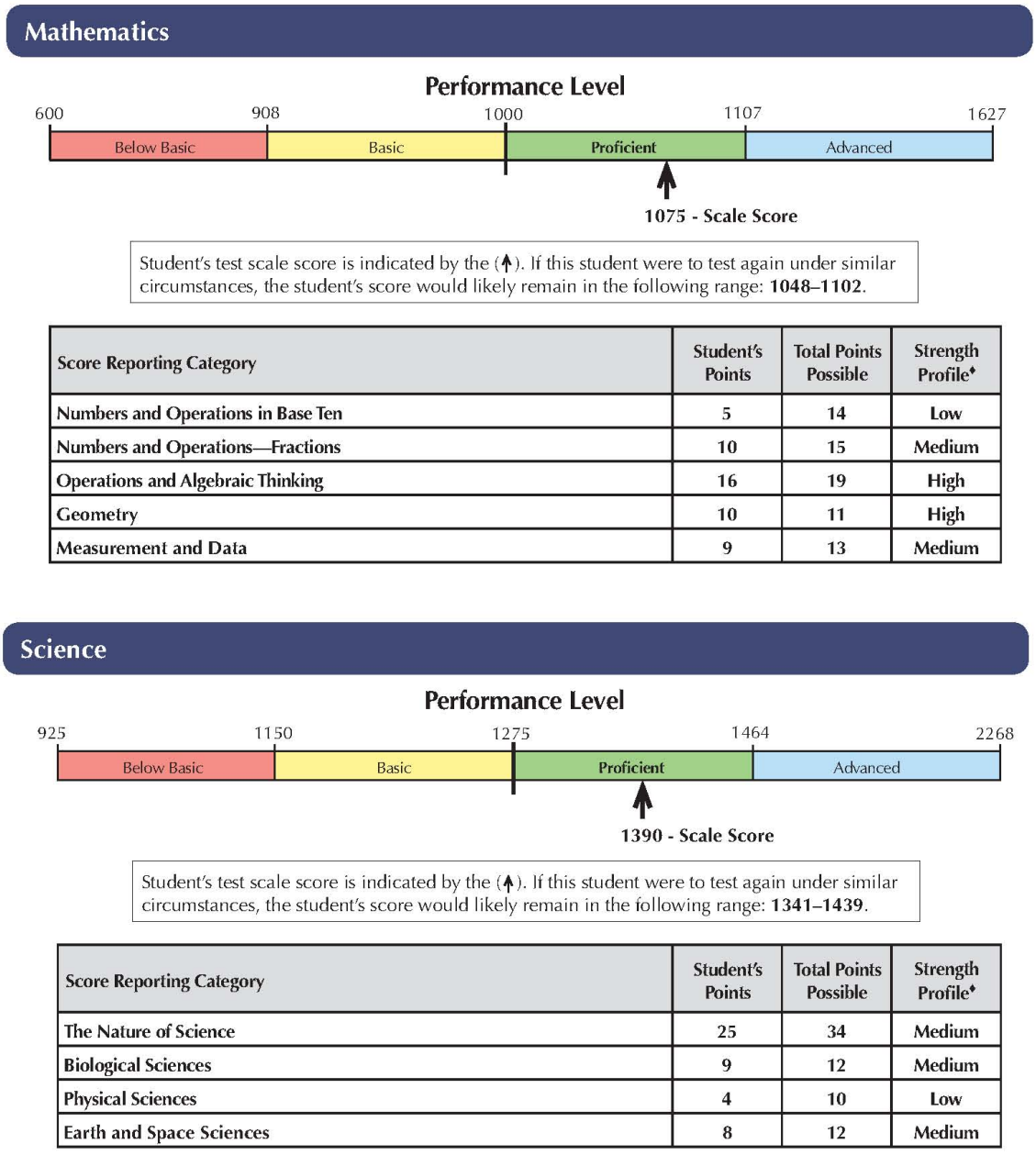
♦♦Each reading question connects to a Reading reporting category in the table above as well as to a Text Type reporting category in the table below. However, each reading question counts only one time in the student's score.

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile♦
Text Types			
Literature Text	14	19	Medium
Informational Text	18	19	High

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 16–3. Page 3 of the Individual Student Report



Mathematics

Performance Level

600 | 908 | 1000 | 1107 | 1627

Below Basic | Basic | **Proficient** | Advanced

1075 - 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: **1048–1102**.

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Numbers and Operations in Base Ten	5	14	Low
Numbers and Operations—Fractions	10	15	Medium
Operations and Algebraic Thinking	16	19	High
Geometry	10	11	High
Measurement and Data	9	13	Medium

Science

Performance Level

925 | 1150 | 1275 | 1464 | 2268

Below Basic | Basic | **Proficient** | Advanced

1390 - 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: **1341–1439**.

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
The Nature of Science	25	34	Medium
Biological Sciences	9	12	Medium
Physical Sciences	4	10	Low
Earth and Space Sciences	8	12	Medium

Page 3 |

Figure 16–4. 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 in passages to summarize important ideas/events, determine a theme or main idea, and draw on evidence from text to support overall inferences and understanding.
- **Craft and Structure/Integration of Knowledge and Ideas**
  Students demonstrate understanding of passages by comparing points of view and first-hand/second-hand accounts of similar events; making connections within and between texts; referring to text features to support information; and analyzing use of evidence to support overall integration of ideas/key aspects of text.
- **Vocabulary Acquisition and Use**
  Students demonstrate understanding of vocabulary and figurative language in literature and informational texts.

- **Types of Writing**
  Students write opinion, informative, or narrative essays demonstrating effective techniques as appropriate for type and purpose.
- **Language**
  Students demonstrate command of the conventions of standard English grammar and usage, capitalization, punctuation, and spelling and use knowledge of language and its conventions for effect.

- **Text-Dependent Analysis**
  Students write a response to literature or informational passages, drawing on the evidence presented in the text to support analysis, reflection, and/or research.

- **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 understanding.
- **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.

Mathematics

- **Numbers and Operations in Base Ten**
  Students develop number skills by understanding place value, relative sizes of numbers in each place, and properties of operations. They practice estimating, doing mental calculations, and developing fluency in multiplying whole numbers.
- **Numbers and Operations—Fractions**
  Students learn the meaning of fractions by exploring relationships between fractions and division, creating fractions by counting and partitioning, and using unit fractions to represent whole numbers.
- **Operations and Algebraic Thinking**
  Students solve problems using all four arithmetic operations with whole numbers. They use drawings, equations, and symbols to represent quantities and analyze patterns. They also learn how factors and multiples relate to multiplication and division.
- **Geometry**
  Students compare and classify two-dimensional shapes to better understand two-dimensional objects. They explore problems involving symmetry, visual and spatial reasoning, and how to select tools to answer questions about size and relationships.
- **Measurement and Data**
  Students use arithmetic operations to solve problems involving measurements and conversions with customary and metric units. They represent and interpret data using line plots, and they use fractions to interpret and calculate intervals.

Science

- **The Nature of Science**
  Students use reasoning skills to develop possible solutions for everyday problems. They plan and conduct fair and valid scientific investigations. They identify patterns and use models to help explain natural and human-made systems.
- **Biological Sciences**
  Students evaluate structures and functions of organisms, describe ecological behaviors within living systems, and recognize the interdependencies between humans and the natural world.
- **Physical Sciences**
  Students demonstrate understanding of physical properties of matter and basic energy types and sources. They describe how energy can change form and apply the scientific principles of force and motion.
- **Earth and Space Sciences**
  Students identify and describe Earth features and processes that change the environment. They recognize processes and changes associated with weather, climate, the atmosphere, and the Earth-Moon-Sun system.

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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.

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 performance level percentages for prior years.

Table 17–1. Performance Level Percentages for 2015 PSSA

		Percentage in Each Performance Level			
Subject	**Grade**	**Below Basic**	**Basic**	**Proficient**	**Advanced**
Mathematics	**3**	28.0	23.5	28.5	20.0
ELA		13.4	24.6	49.0	13.0
Mathematics	**4**	24.8	30.8	27.5	16.9
ELA		12.9	28.5	37.0	21.6
Science		10.5	12.2	36.1	41.2
Mathematics	**5**	25.9	31.3	27.4	15.4
ELA		13.4	24.8	44.1	17.8
Mathematics	**6**	25.2	35.1	28.4	11.3
ELA		10.0	29.4	39.4	21.3
Mathematics	**7**	33.5	33.4	23.4	9.6
ELA		6.4	34.9	41.7	16.9
Mathematics	**8**	37.7	32.6	21.8	8.0
ELA		10.9	31.1	43.5	14.5
Science		23.2	18.1	31.8	27.0

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 2015 PSSA Scaled Scores

	Mathematics		ELA		Science	
Grade	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
3	1008.1	120.5	1026.7	102.6		
4	995.5	108.8	1021.1	112.5	1426.7	198.9
5	987.2	119.9	1029.8	117.5		
6	976.1	104.7	1028.0	116.5		
7	961.5	104.0	1023.4	112.6		
8	950.5	101.2	1020.2	107.3	1317.1	207.6

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

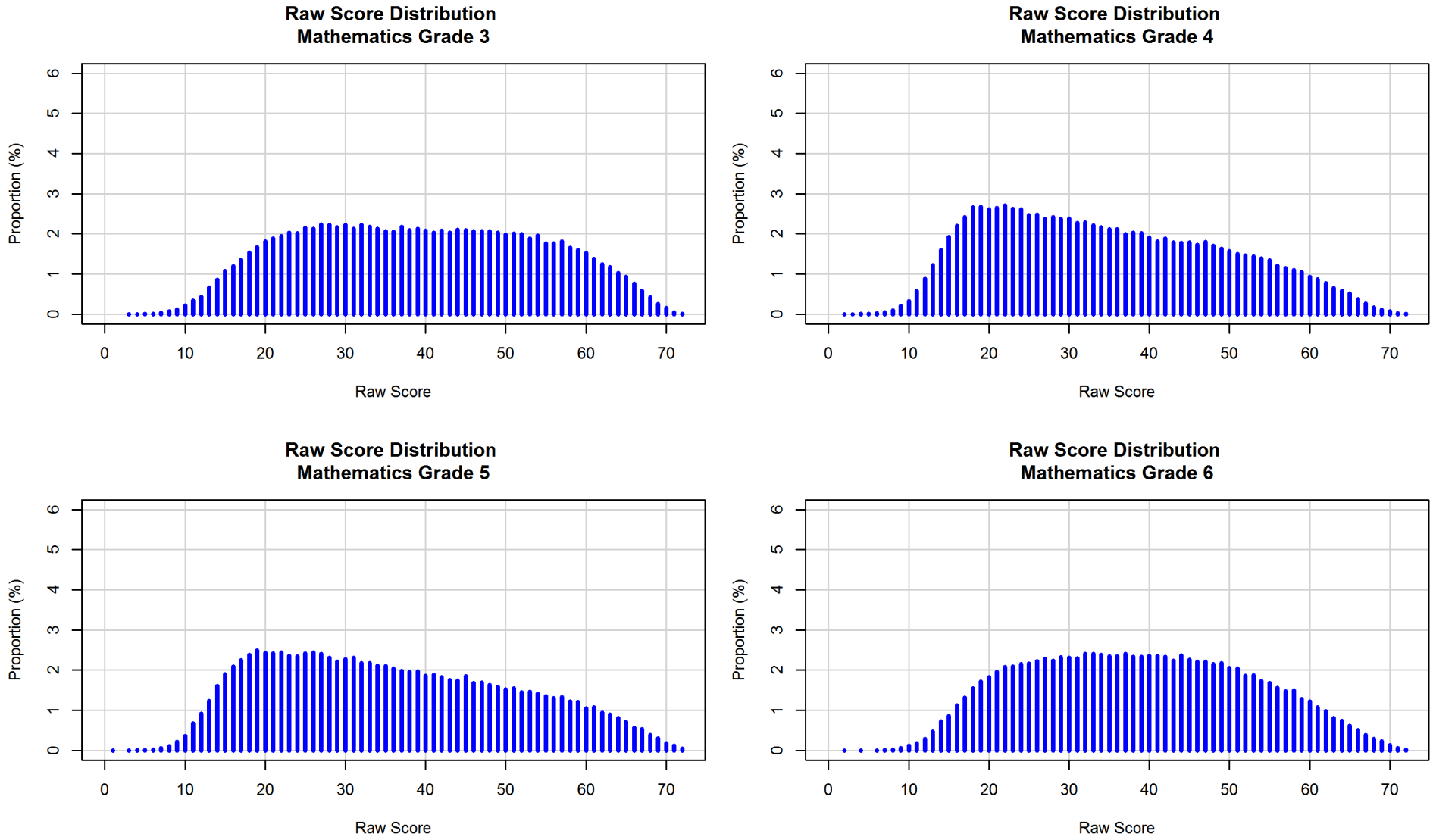
Summary Statistics

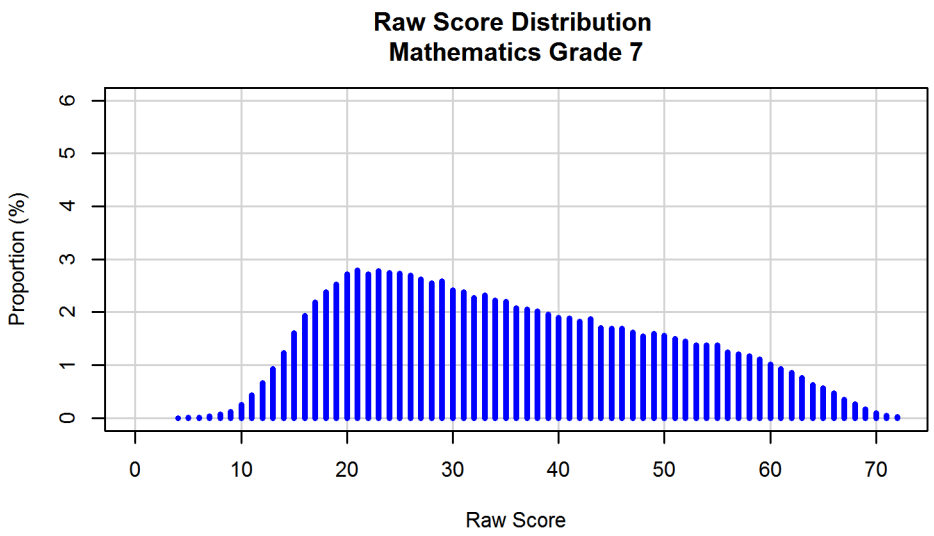
Appendix P provides summary statistics for the operational raw scores. The statistics reported include the number of points possible (Pts.), number of items (Len.), number of students tested (N), mean number of score points received (Mean), standard deviation of test scores (SD), reliability (r), traditional standard error of measurement (SEM), and item types (Items) 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 ELA, OE items are further disaggregated by short-answer (grade 3 only), EBSR, text dependent analysis (TDA, grade 4 and higher) and writing prompt (WP). (For information disaggregated by item type, Chapter Eleven provides breakout statistics for MC and OE items.)

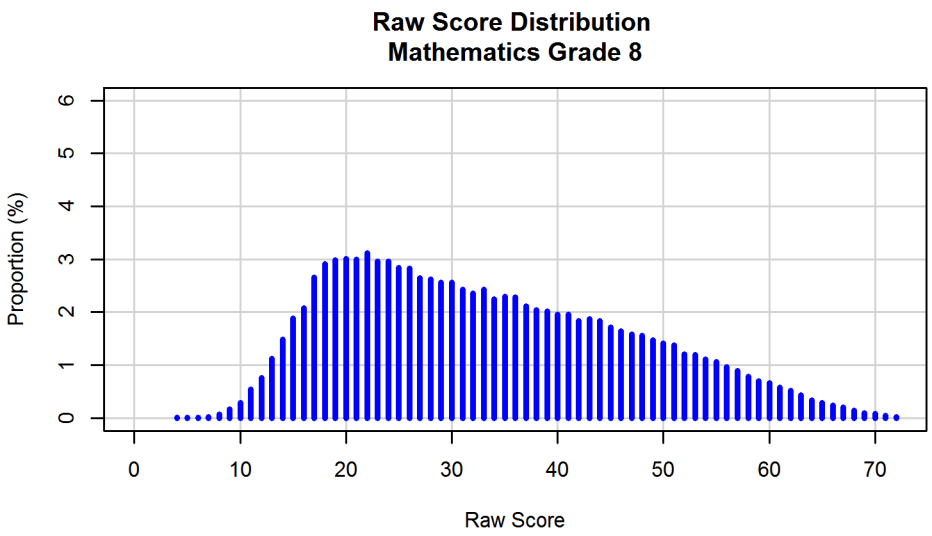
Score Distributions

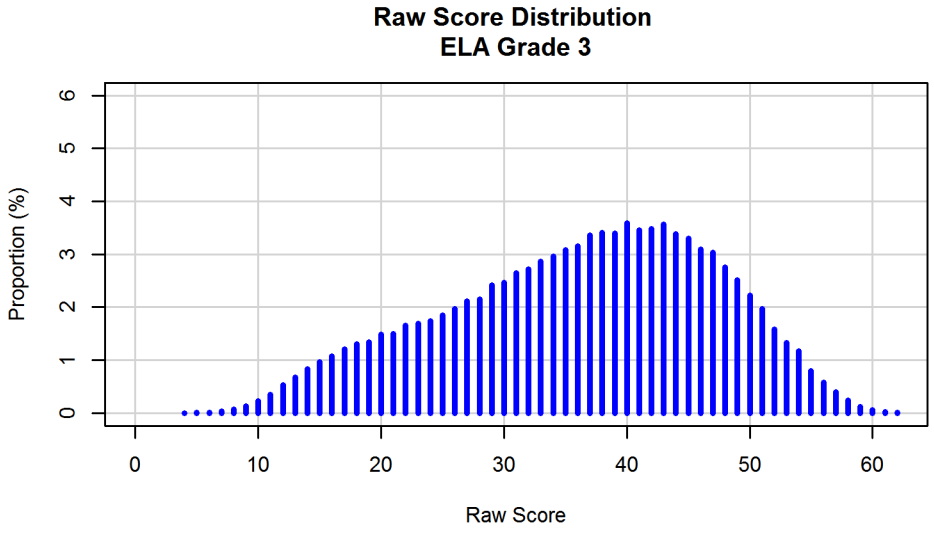
Raw score relative-frequency (rf) distributions are provided in Figure 17–1. Most distributions in ELA and science are negatively skewed and unimodal. Mathematics distributions are positively skewed, indicating mathematics was more challenging which is consistent with the average *p*-value in Chapter Eleven.

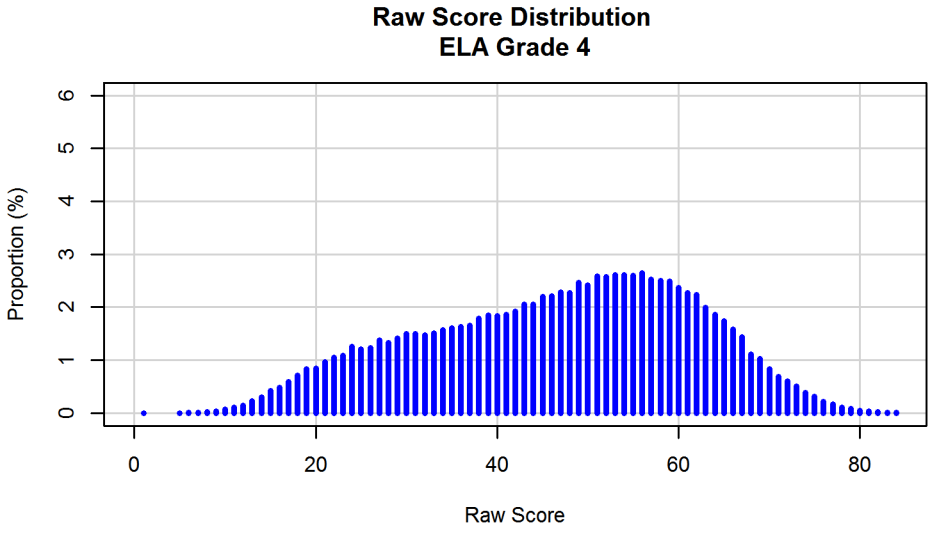
Figure 17–1. 2014 PSSA Raw Score Distributions

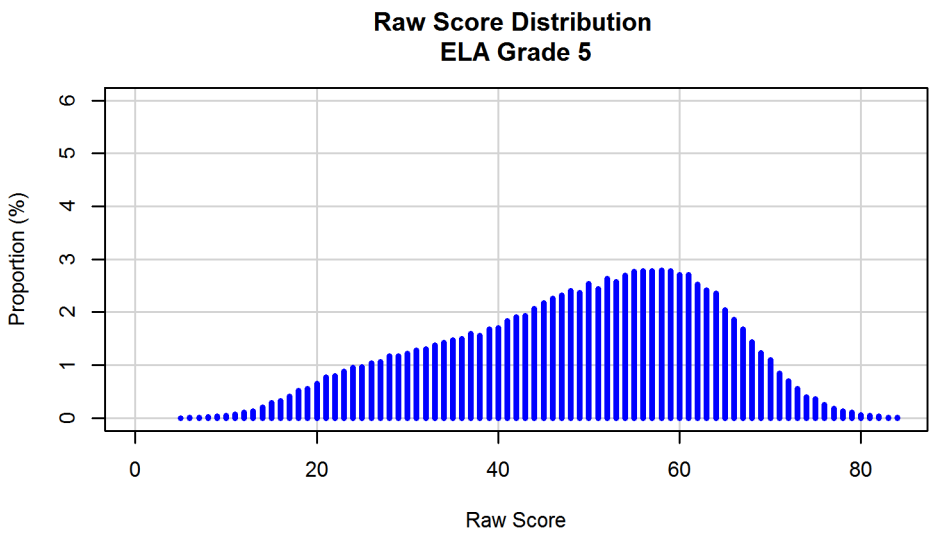


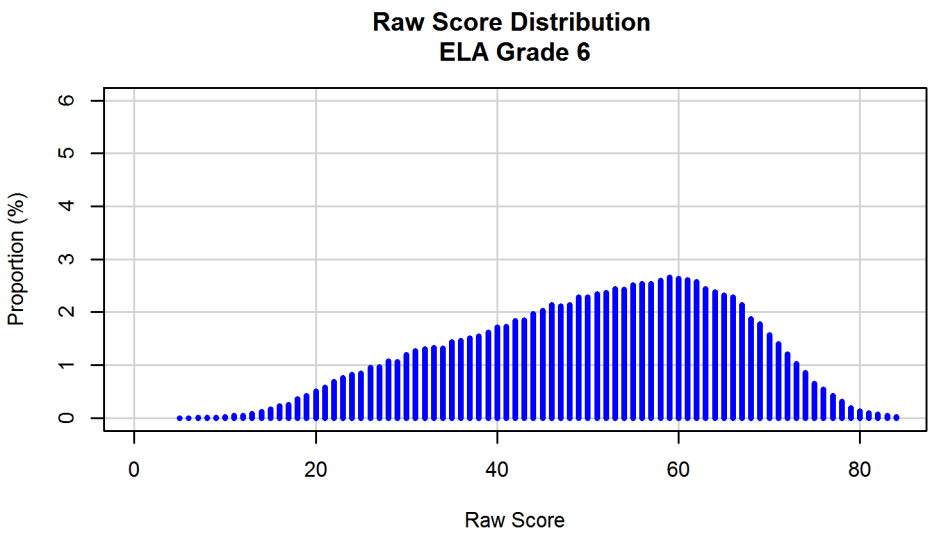

Raw Score Distribution
Mathematics Grade 7
Proportion (%)
0
1
2
3
4
5
6
0
10
20
30
40
50
60
70
Raw Score

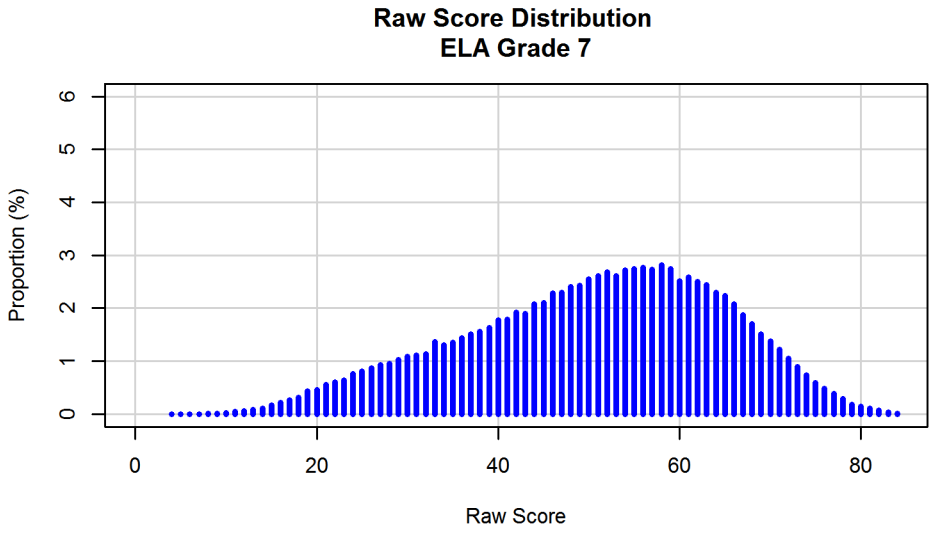

Raw Score Distribution
Mathematics Grade 8
Proportion (%)
0
1
2
3
4
5
6
0
10
20
30
40
50
60
70
Raw Score

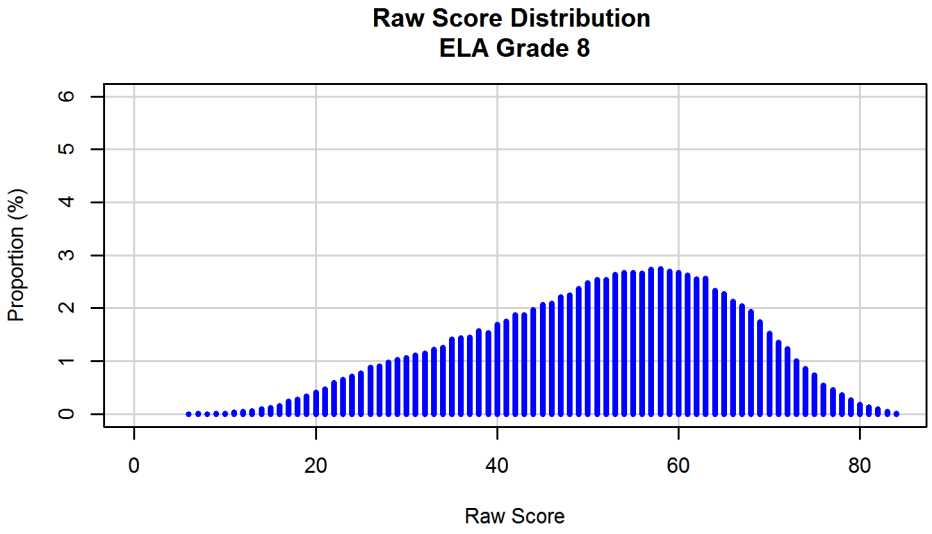

Raw Score Distribution
ELA Grade 3
Proportion (%)
0
1
2
3
4
5
6
0
10
20
30
40
50
60
Raw Score

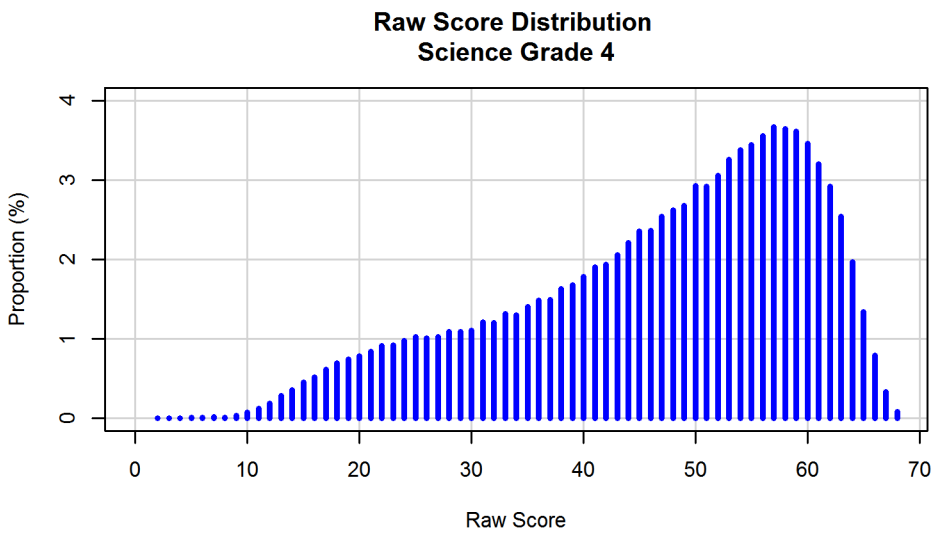

Raw Score Distribution
ELA Grade 4
Proportion (%)
0
1
2
3
4
5
6
0
20
40
60
80
Raw Score

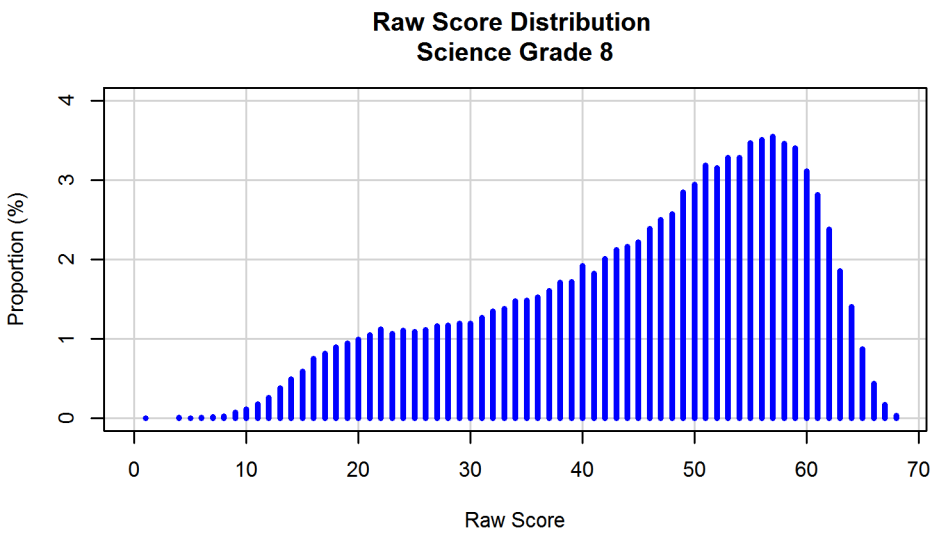

Raw Score Distribution
ELA Grade 5
Proportion (%)
0
1
2
3
4
5
6
0
20
40
60
80
Raw Score


Raw Score Distribution
ELA Grade 6
Proportion (%)
0
1
2
3
4
5
6
0
20
40
60
80
Raw Score


Raw Score Distribution
ELA Grade 7
Proportion (%)
0
1
2
3
4
5
6
0
20
40
60
80
Raw Score


Raw Score Distribution
ELA Grade 8
Proportion (%)
0
1
2
3
4
5
6
0
20
40
60
80
Raw Score


Raw Score Distribution
Science Grade 4
Proportion (%)
0
1
2
3
4
0
10
20
30
40
50
60
70
Raw Score


Raw Score Distribution
Science Grade 8
Proportion (%)
0
1
2
3
4
0
10
20
30
40
50
60
70
Raw Score

Chapter Eighteen: Reliability

This chapter[21] 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 make reference to a reliable test. While reliability concerns test scores (and not the test specifically), it is important to appreciate the fact that test scores can be affected by characteristics of the instrument. For example, all other things being equal, tests with more items/points tend to be more reliable than tests with fewer items/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.

[21] Please note that some of the material in this chapter is technical in nature.

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 shown 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.[22]

$$\rho_X^2 = \frac{\sigma_T^2}{\sigma_X^2} = \frac{\sigma_T^2}{\sigma_T^2 + \sigma_E^2}$$

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). If the index achieved a value of 1.0, scores would be perfectly consistent (i.e., contain no measurement error). Although values of 1.0 are never achieved in practice, it is clear that 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 noted in the introduction, 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 take into account 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 a number of 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.

[22] A covariance term is not required as true scores and error are assumed to be uncorrelated in classical test theory.

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. Variation in student performance from one sample of items to the next should be of particular concern for any achievement test user. 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

If a representative group of students could take both of these 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 following data matrix representing the scores of persons (rows) on items (columns).

Table 18–2. Person × Item Score (X_{pi}) Infinite (Population-Universe) Matrix

	Item			
Person	1	2	. . . *I*	. . . *k*
1	*Y*11	*Y*12	. . . *Y*1*i*	. . . *X*1*k*
2	*Y*21	*Y*22	. . . *Y*2*i*	. . . *X*2*k*
. . . . .				
. . . . .				
P	*Yp*1	*Yp*2	. . . *Ypi*	. . . *Xpk*
. . . . .				
. . . . .				
N	*YN*1	*YN*2	. . . *YNi*	. . . *XNk*

Notes. Adapted from Cronbach and Shavelson (2004).

Then, a 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 the observed 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

	Degree of Measurement Parallelism*		
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.

Biases That Might Make Alpha an Underestimate of Reliability

There are factors that might negatively bias Coefficent Alpha, making the apparent reliability lower than it may actually be. 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

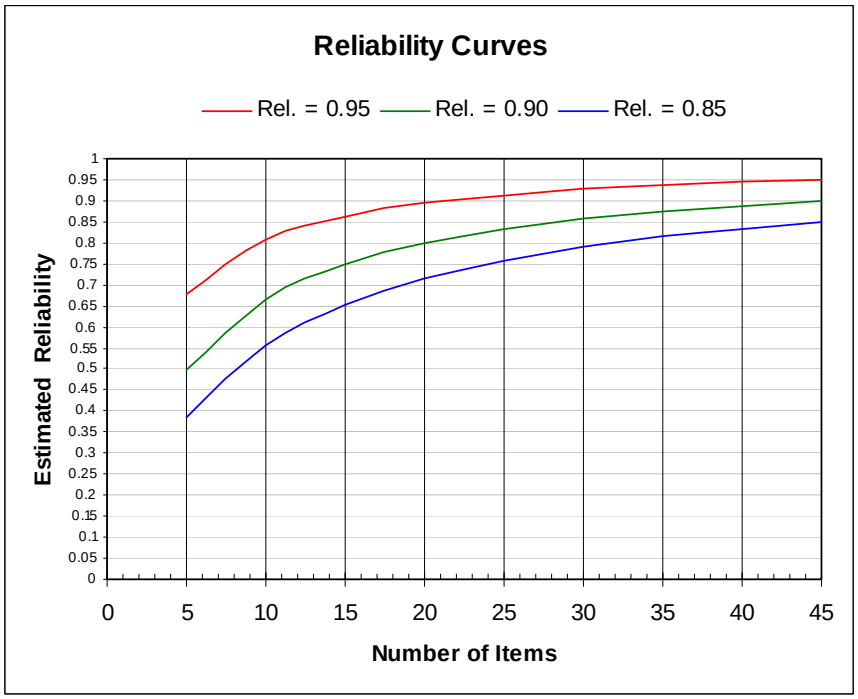
As emphasized in earlier sections, Coefficient Alpha only takes into account measurement error that arises from the selection of items used on a particular test form. There are other sources of random inaccuracy. One is due to the occasion of testing. Other various random conditions that might affect 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 10-item strand would be expected to have a score reliability of just over 0.65. 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., is 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 too 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 tends to be large student-by-task interactions on such assessments. In the case of ELA, individual student performance may fluctuate significantly across writing prompt (WP), 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. In sum, the large student-by-task interaction combined with the limited number of tasks often results in a relatively low reliability for ELA 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. It always ranges between 0.0 and 1.0 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 SEM at that 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,[23] 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[24] 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.

[23] True score is the score the person would receive if the measurement process were perfect.

[24] 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 10-point 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.[25] 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. In reality 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.

[25] 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.

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 the occasion of 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 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

Coefficient Alpha results and associated (traditional) SEMs for various PSSA scores are documented in Table 18–4 and Appendix P. Values were derived using the PSSA final data file (see Chapter Nine). The results are organized by subject area and grade. Each table in Appendix P also breaks out the various reporting strands and groups of interest (i.e., the total student population, gender and ethnic groups, English language learners (ELL), students with individualized education plan (IEP), and the economically disadvantaged (ED)). The statistics reported in Appendix P include number of points possible (Pts.), number of items (Len.), 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 (Items) used to determine each score.

Table 18–4. Reliabilities and Standard Errors of Measurement

Subject	Grade	Reliability	*SEM*
Mathematics	**3**	0.94	3.61
	4	0.93	3.78
	5	0.94	3.72
	6	0.92	3.84
	7	0.93	3.87
	8	0.92	3.74
ELA	**3**	0.92	3.74
	4	0.90	3.46
	5	0.92	4.28
	6	0.92	4.10
	7	0.91	4.33
	8	0.91	4.27
Science	**4**	0.93	3.39
	8	0.93	3.48

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 excellent, with all in the low 0.90s, for mathematics, ELA, and science. It was also noted that reliabilities tend to go up in value with an increase in test length and population heterogeneity and go down in value with a decrease in test length and more homogeneous populations. Across the grades and subjects tabled in Appendix P, reliabilities for the sub-strands tended to follow these same trends. That is, strands with more items tended to show higher reliability coefficients. 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 strand score 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 in the neighborhood of a score level 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.

$$\text{CSEM(SS)} = CSEM\left(\hat{\theta}\right) * m$$

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

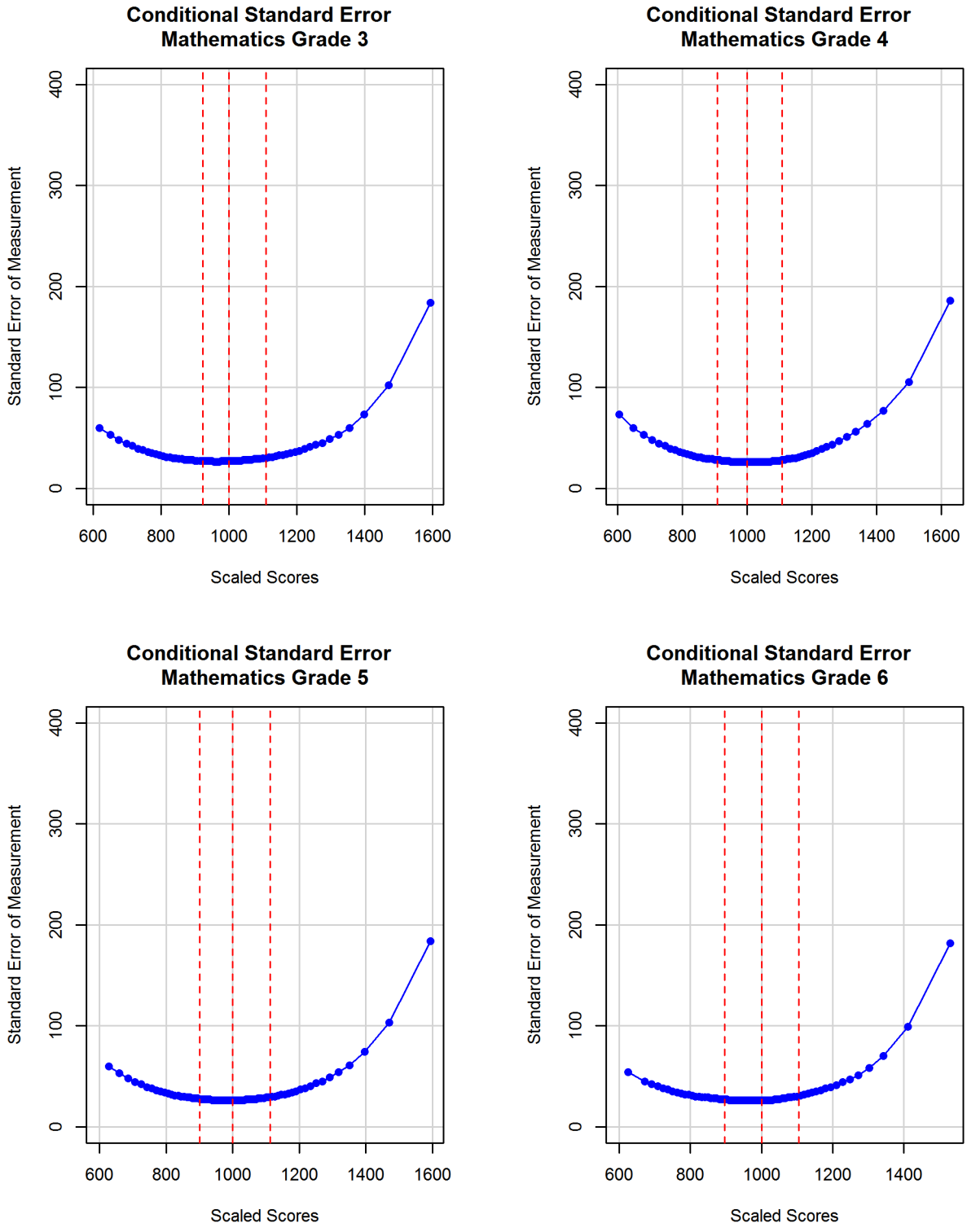
The SEMs documented on the PSSA score reports are the Rasch-based conditional standard errors of measurement described above. These are provided by the WINSTEPS scaling program described in Chapter Twelve. As noted earlier, these CSEMs are based on the concept of statistical information. For the purpose of providing 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.[26] Score report content is considered in greater detail in Chapter Sixteen.

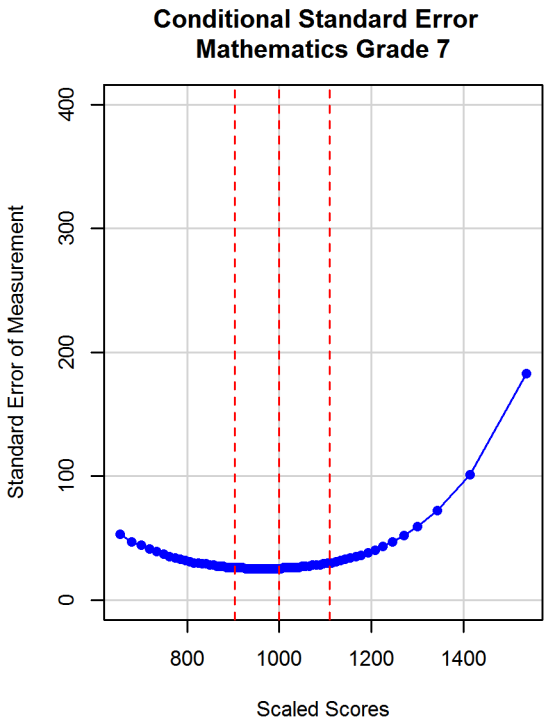
RESULTS AND OBSERVATIONS

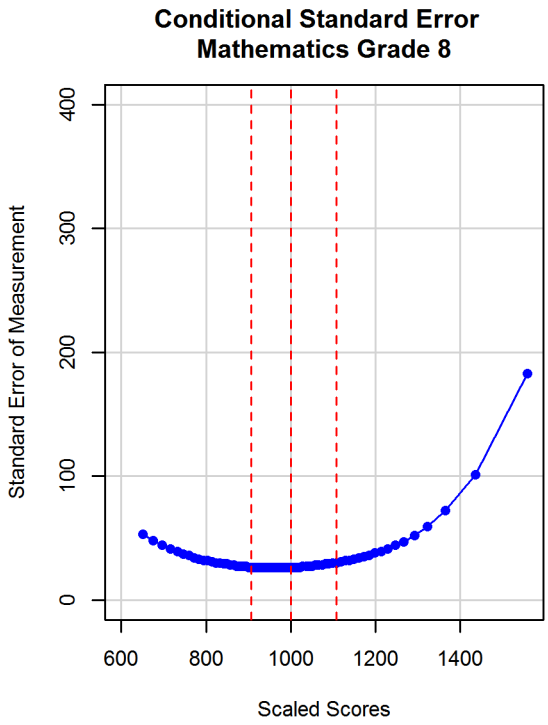
Figure 18–2 shows the Rasch CSEMs associated with each scaled score level. (This information is also provided in tabular form in Appendix N.) Values were derived using the calibration data file described in Chapter Nine. The values are fairly consistent across a noticeably large range of the scaled scores, 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. SEM values at the cut score lines were generally associated with smaller SEM values, indicating more precise measurement occurs at these cuts.

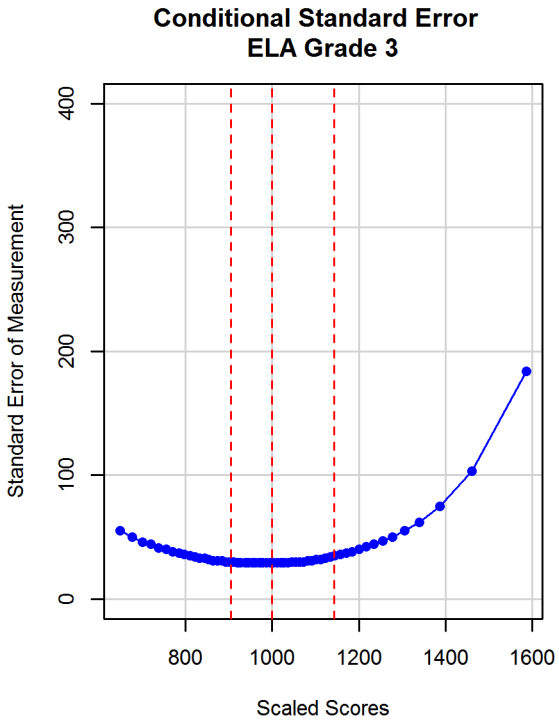
[26] Because IRT CSEMs are based on statistical information, it is questionable whether they account for error variance due to items. However, it seems difficult to construct a simple explanation of IRT CSEMs for the general public.

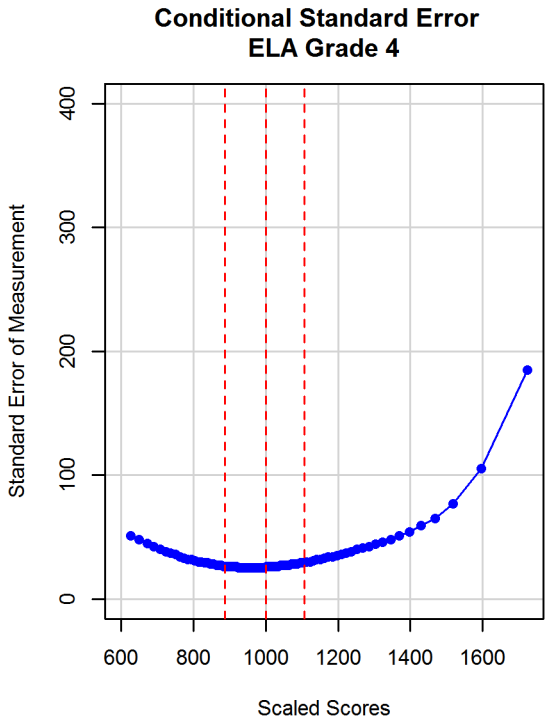
Figure 18–2. Conditional Standard Error Plots for Each Grade and Subject

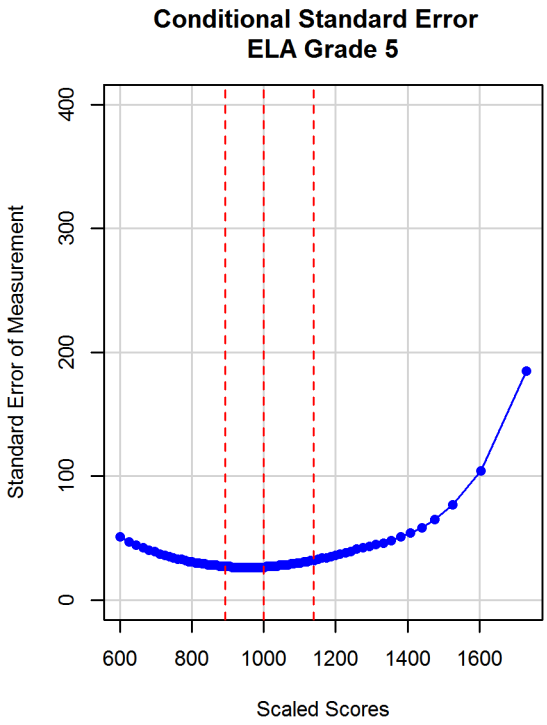


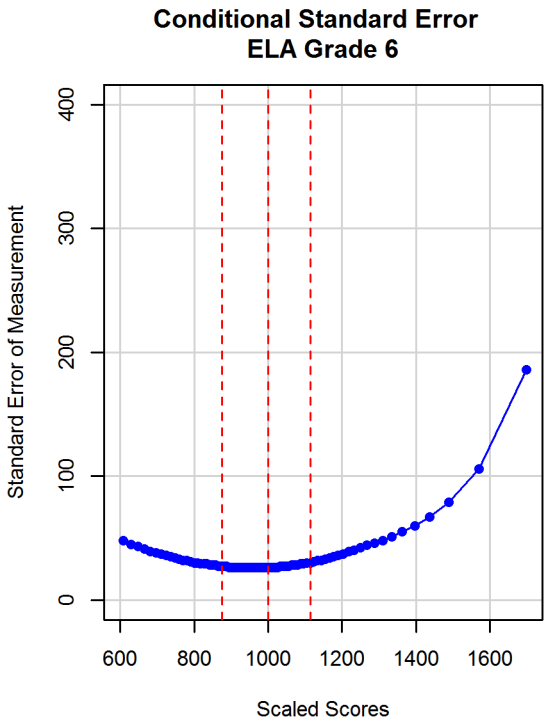

Conditional Standard Error
Mathematics Grade 7
Standard Error of Measurement
0
100
200
300
400
800
1000
1200
1400
Scaled Scores

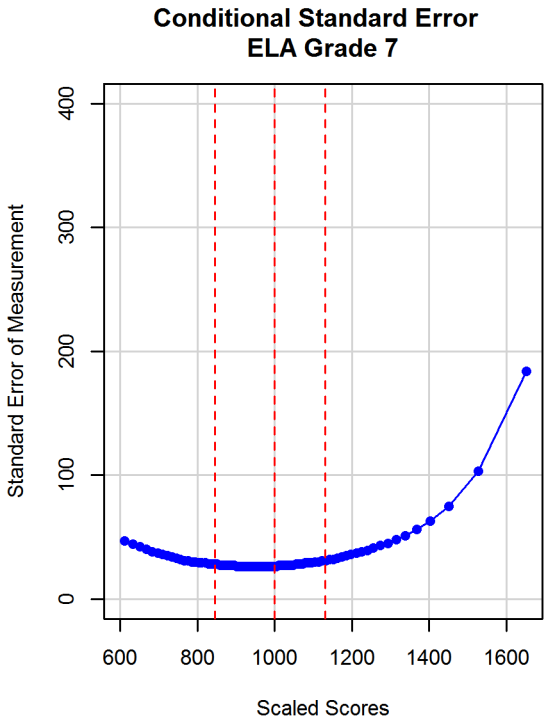

Conditional Standard Error
Mathematics Grade 8
Standard Error of Measurement
0
100
200
300
400
600
800
1000
1200
1400
Scaled Scores

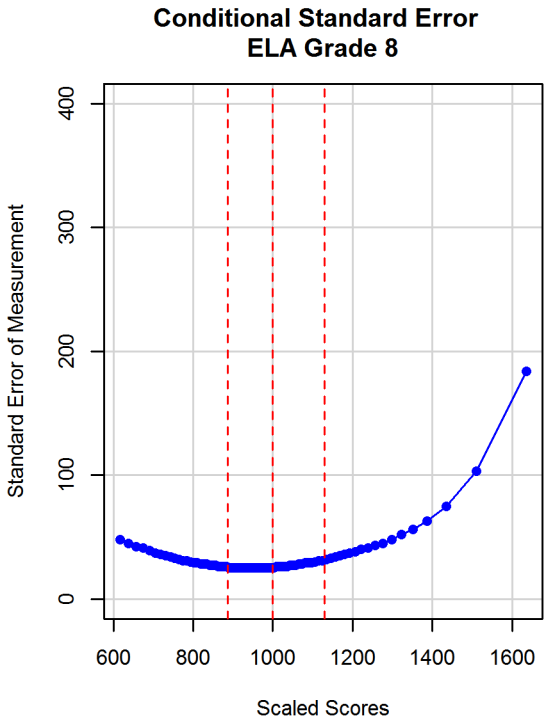

Conditional Standard Error
ELA Grade 3
Standard Error of Measurement
0
100
200
300
400
800
1000
1200
1400
1600
Scaled Scores

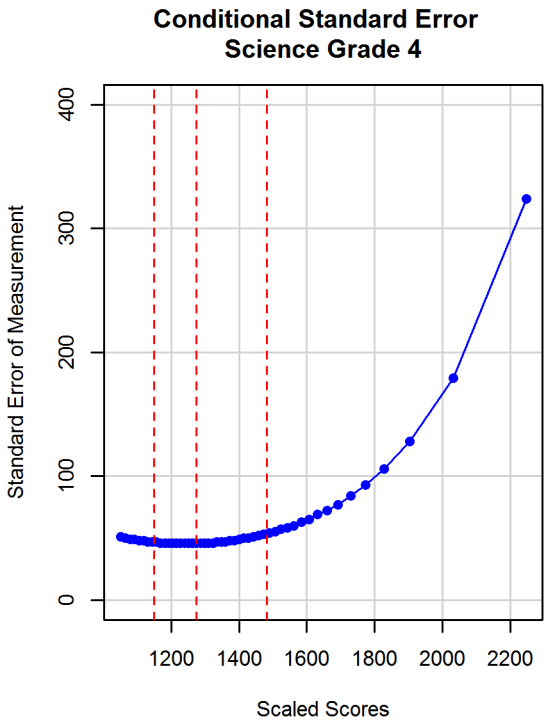

Conditional Standard Error
ELA Grade 4
Standard Error of Measurement
0
100
200
300
400
600
800
1000
1200
1400
1600
Scaled Scores

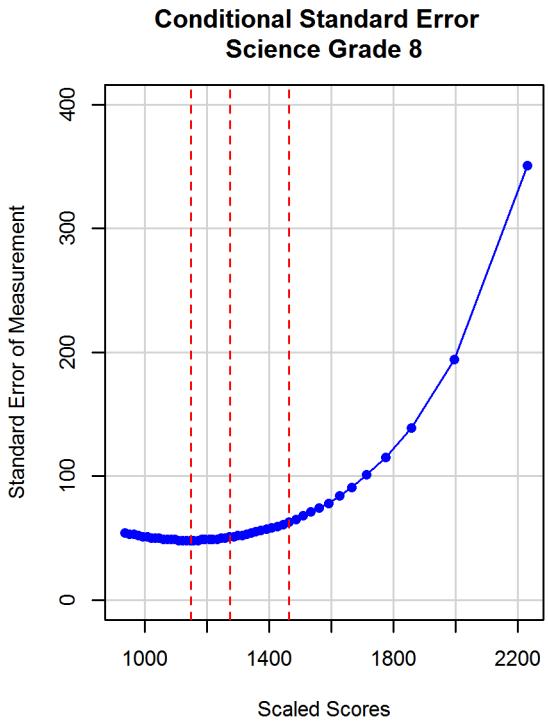

Conditional Standard Error
ELA Grade 5
Standard Error of Measurement
0
100
200
300
400
600
800
1000
1200
1400
1600
Scaled Scores


Conditional Standard Error
ELA Grade 6
Standard Error of Measurement
0
100
200
300
400
600
800
1000
1200
1400
1600
Scaled Scores


Conditional Standard Error
ELA Grade 7
Standard Error of Measurement
0
100
200
300
400
600
800
1000
1200
1400
1600
Scaled Scores


Conditional Standard Error
ELA Grade 8
Standard Error of Measurement
0
100
200
300
400
600
800
1000
1200
1400
1600
Scaled Scores





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

		TEST ONE		
		LEVEL I	LEVEL II	MARGINAL
TEST TWO	LEVEL I	φ11	φ12	φ1●
	LEVEL II	φ21	φ22	φ2●
	MARGINAL	φ●1	φ●2	1

Table 18–6. Pseudo-Decision Table for Four Hypothetical Categories

		TEST ONE				
		LEVEL I	**LEVEL II**	**LEVEL III**	**LEVEL IV**	**MARGINAL**
TEST TWO	**LEVEL I**	φ11	φ12	φ13	φ14	φ1●
	LEVEL II	φ21	φ22	φ23	φ24	φ2●
	LEVEL III	φ31	φ32	φ33	φ34	φ3●
	LEVEL IV	φ41	φ42	φ43	φ44	φ4●
	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 exactly 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 on the basis of 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 $Observed = True + Error$. 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 in order 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 a number of 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, derived using the program *BB-Class* (Brennan, 2004) using the Livingston and Lewis method. Across all subject areas, the overall decision consistency ranged from the low 0.70s to the high 0.70s while the decision accuracy ranged from the high 0.70s to the low 0.80s. The overall consistency and accuracy in ELA was slightly lower than the other subject areas on average. It should be noted that consistency and accuracy indices for the four performance levels should be lower than those based on two categories (discussed above).

Dichotomous decisions using the Below Basic/Basic cuts generally have the highest consistency and accuracy values and exceeded 0.90 in all cases in ELA and science. Proficient/Advanced cuts have the highest consistency and accuracy values and exceeded 0.90 in all cases in mathematics.

Table 18–7. Decision Consistency and Accuracy Results

	Grade	Statistic	Overall	BBas/Bas	Bas/Prof	Prof/Adv
Mathematics	**3**	Consist.	0.74	0.91	0.90	0.93
		Accuracy	0.82	0.93	0.93	0.95
	4	Consist.	0.73	0.89	0.90	0.94
		Accuracy	0.81	0.92	0.93	0.95
	5	Consist.	0.75	0.90	0.91	0.94
		Accuracy	0.82	0.93	0.94	0.96
	6	Consist.	0.73	0.89	0.89	0.94
		Accuracy	0.81	0.92	0.92	0.96
	7	Consist.	0.76	0.89	0.91	0.95
		Accuracy	0.83	0.92	0.94	0.97
	8	Consist.	0.75	0.88	0.91	0.96
		Accuracy	0.82	0.91	0.94	0.97
ELA	**3**	Consist.	0.71	0.93	0.88	0.90
		Accuracy	0.79	0.95	0.91	0.93
	4	Consist.	0.72	0.94	0.89	0.90
		Accuracy	0.80	0.95	0.92	0.93
	5	Consist.	0.73	0.94	0.89	0.90
		Accuracy	0.81	0.96	0.92	0.93
	6	Consist.	0.72	0.94	0.88	0.89
		Accuracy	0.80	0.96	0.92	0.92
	7	Consist.	0.74	0.96	0.88	0.90
		Accuracy	0.81	0.97	0.91	0.93
	8	Consist.	0.71	0.94	0.87	0.91
		Accuracy	0.79	0.95	0.91	0.93
Science	**4**	Consist.	0.76	0.95	0.92	0.88
		Accuracy	0.83	0.96	0.95	0.92
	8	Consist.	0.70	0.93	0.90	0.87
		Accuracy	0.79	0.95	0.93	0.91

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 is used here, not 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 noted earlier, the linking process adjusts for across-year changes (see Chapter Sixteen). 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 agreement percentages range from 86 percent to 95 percent for mathematics, 74 percent to 85 percent for ELA, and 79 percent to 96 percent for science. Mathematics had validity ranging from 88 percent to 99 percent; ELA had validity ranging from 71 percent to 88 percent; and science had validity ranging from 90 percent to 98 percent. (Validity is discussed further in Chapter Eighteen.) The ranges above are similar to prior results for the PSSA.

Across-year data are presented in Table 18–11 for science. Note that for science, data are only available for the designated OE core anchor items, and there is no across year comparison for mathematics and ELA in 2015 because they are new assessments. The number of responses (N), the old score and new score means, and the Pearson correlations are tabled. Science correlations range from the 0.71 to 0.95. The correlation ranges above are similar to prior results for the PSSAs.

Table 18–8. Inter-Rater Agreement and Percentage Awarded for Each Score Point for OE Items—Mathematics

		Inter-Rater Agreement %			Percentage Awarded for Each Score Point %					
Grade	**Item**	**Exact**	**Adjacent**	**Validity**	**0**	**1**	**2**	**3**	**4**	**B/NS**
	1	89	10	94	24	44	15	12	4	1
3	2	86	14	93	6	47	19	21	5	2
	3	89	11	92	32	52	10	4	2	1
	1	94	6	97	60	18	8	8	3	2
4	2	95	5	92	28	39	22	4	0	7
	3	90	9	96	19	31	15	20	13	3
	1	90	10	91	37	30	11	14	5	3
5	2	94	6	92	25	29	25	8	3	8
	3	89	11	91	38	30	20	9	2	2
	1	88	12	88	36	28	28	2	2	3
6	2	90	10	93	34	12	15	20	9	10
	3	92	8	96	20	43	12	16	7	2
	1	92	8	99	37	38	12	7	3	2
7	2	88	12	92	4	18	29	29	13	7
	3	87	13	92	17	24	22	20	14	3
	1	92	8	92	22	57	12	5	1	4
8	2	86	14	90	33	28	27	2	2	8
	3	89	11	91	10	37	25	22	4	2

Note. B = blank; NS = non-scoreable

Table 18–9. Inter-Rater Agreement and Percentage Awarded for Each Score Point for OE Items—ELA

			Inter-Rater Agreement %			Percentage Awarded for Each Score Point %					
Grade	Item	Item Type	Exact	Adjacent	Validity	0	1	2	3	4	B/NS
3	1	WP	80	20	76	-	18	48	25	6	4
	2	SA	79	21	75	11	38	42	6	-	3
	3	SA	78	21	76	13	44	33	6	-	4
4	1	WP	76	24	75	-	31	47	17	3	3
	2	TDA	85	15	81	-	43	36	8	1	11
5	1	WP	82	18	83	-	16	44	32	5	2
	2	TDA	84	16	83	-	35	50	8	1	6
6	1	WP	74	25	81	-	11	32	43	12	1
	2	TDA	79	20	88	-	41	40	13	1	4
7	1	WP	74	25	80	-	12	39	39	8	1
	2	TDA	83	17	84	-	35	38	17	3	7
8	1	WP	82	18	81	-	8	27	54	9	2
	2	TDA	75	24	71	-	29	36	25	4	5

Note. B = blank; NS = non-scoreable. EBSR items are machine scored because they are two-part MC like items and not shown in this table.

Table 18–10. Inter-Rater Agreement and Percentage Awarded for Each Score Point for OE Items—Science

		Inter-Rater Agreement %			Percentage Awarded for Each Score Point %			
Grade	Item	Exact	Adjacent	Validity	0	1	2	B/NS
4	1	85	15	94	36	39	22	3
	2	93	7	97	16	39	43	3
	3	96	4	98	5	43	49	3
	4	90	9	97	15	18	65	2
	5	93	7	98	17	39	40	3
8	1	89	11	96	10	26	61	2
	2	81	19	91	14	39	44	4
	3	93	7	95	35	32	27	6
	4	85	15	91	28	52	17	2
	5	79	21	90	17	42	36	5

Note. B = blank; NS = non-scoreable. For more information regarding validity, see the section on Handscoring Validity Process in Chapter Eight.

Table 18–11. Science Mean Scores and Correlations

Grade	Item ID	N	Prev. Mean	2014 Mean	Corr.
4	1	999	1.36	1.37	0.95
	2	999	1.35	1.33	0.89
8	1	999	1.51	1.52	0.79
	2	998	1.38	1.37	0.71

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 a variety of evidence to support the proposed test score interpretations and uses. This entire technical report describes 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 three main purposes of the PSSA include the following

1. Measuring 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.
2. Providing information on school and district accountability.
3. Improving 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).

EVIDENCE BASED ON TEST CONTENT

Test content validity evidence for the PSSA rests greatly on establishing a link between each piece 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. 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 the PSSA:

- Evaluate the degree to which the PSSA 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 PSSA 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 PSSA should not be interpreted as meaning that instruction was ineffective.
- Conduct content reviews of the PSSA 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 (i.e., Achieve.org).

Chapters Two through Eight of this report present a considerable amount of evidence related to test content. As described in these chapters, all the PSSA items were developed and aligned with the PSSA Assessment Anchors and Eligible Content for mathematics, ELA, and science 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.

Some efforts made to ensure content validity are summarized below:

- 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 and WestEd 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 and/or WestEd 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 particular groups. Empirical investigation of DIF strengthens the validity evidence related to score interpretations for students in particular 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. Students were given ample time to complete the tests (i.e., there were no speededness issues).
- 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.

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. (No cognitive lab studies have been conducted for the PSSA mathematics or ELA because these assessments do not have scenarios.)

For all the PSSA tests, well-organized scorer training and subsequent monitoring of rating accuracy helped ensure that raters strictly followed the scoring criteria and that no rubric-unrelated features significantly affected their scoring.

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). Several dimensionality studies were conducted in order to provide internal-structure evidence relating to the use of both types of scores.

Item-Test Correlations

Item-test correlations are reviewed in Chapter Eleven. All values are positive and of acceptable magnitude.

Item Response Theory Dimensionality

Results from principle components analyses were presented in Chapter Twelve. The PSSA mathematics, ELA and science tests were essentially unidimensional, providing evidence supporting interpretations based on the total scores for the respective PSSA tests.

Strand Correlations

Correlations and disattenuated correlations between strand scores within each subject area are presented below. Values were derived from the PSSA final data file (see Chapter Nine). This data can also provide information on score dimensionality that is part of internal-structure evidence. As noted in Chapter Three, the PSSA mathematics tests have four strands (denoted by M.A, M.B, M.C, and M.D). The PSSA ELA tests have five strands (denoted by E.A, E.B, E.C, E.D, and E.E), except grade 3 which has four strands (E.A, E.B, E.C 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 19–1a through 19–1f. The inter-correlations between the strands within the content areas are positive and generally range from moderate to high in value.

Table 19–1a. Correlations between Mathematics and ELA Strands for Grade 3

	M.A	M.B	M.C	M.D	E.A	E.B	E.C	E.D
M.A	-							
M.B	0.82	-						
M.C	0.69	0.70	-					
M.D	0.81	0.81	0.69	-				
E.A	0.68	0.69	0.61	0.67	-			
E.B	0.67	0.68	0.59	0.66	0.76	-		
E.C	0.45	0.46	0.41	0.44	0.50	0.52	-	
E.D	0.68	0.69	0.61	0.67	0.70	0.69	0.49	-

Table 19–1b. Correlations between Mathematics, ELA, and Science Strands for Grade 4

	M.A	M.B	M.C	M.D	E.A	E.B	E.C	E.D	E.E	S.A	S.B	S.C	S.D
M.A	-												
M.B	0.80	-											
M.C	0.67	0.65	-										
M.D	0.76	0.75	0.63	-									
E.A	0.67	0.66	0.56	0.59	-								
E.B	0.68	0.67	0.57	0.61	0.80	-							
E.C	0.49	0.46	0.40	0.44	0.52	0.53	-						
E.D	0.68	0.67	0.58	0.61	0.72	0.72	0.53	-					
E.E	0.49	0.46	0.39	0.43	0.52	0.54	0.53	0.51	-				
S.A	0.73	0.70	0.61	0.65	0.77	0.78	0.51	0.72	0.52	-			
S.B	0.62	0.59	0.52	0.55	0.68	0.69	0.44	0.63	0.46	0.80	-		
S.C	0.60	0.57	0.52	0.53	0.63	0.64	0.41	0.59	0.41	0.76	0.68	-	
S.D	0.65	0.63	0.57	0.60	0.66	0.67	0.43	0.63	0.43	0.77	0.69	0.66	-

Table 19–1c. Correlations between Mathematics and ELA Strands for Grade 5

	M.A	M.B	M.C	M.D	E.A	E.B	E.C	E.D	E.E
M.A	-								
M.B	0.76	-							
M.C	0.73	0.64	-						
M.D	0.81	0.68	0.66	-					
E.A	0.68	0.61	0.61	0.58	-				
E.B	0.72	0.64	0.63	0.64	0.76	-			
E.C	0.55	0.50	0.47	0.48	0.54	0.55	-		
E.D	0.71	0.64	0.63	0.63	0.73	0.74	0.57	-	
E.E	0.50	0.46	0.43	0.43	0.52	0.51	0.52	0.50	-

Table 19–1d. Correlations between Mathematics and ELA Strands for Grade 6

	M.A	M.B	M.C	M.D	E.A	E.B	E.C	E.D	E.E
M.A	-								
M.B	0.81	-							
M.C	0.68	0.67	-						
M.D	0.74	0.71	0.63	-					
E.A	0.70	0.66	0.53	0.60	-				
E.B	0.75	0.71	0.56	0.64	0.76	-			
E.C	0.52	0.49	0.39	0.45	0.50	0.54	-		
E.D	0.70	0.66	0.53	0.60	0.71	0.75	0.56	-	
E.E	0.56	0.54	0.44	0.50	0.54	0.58	0.50	0.55	-

Table 19–1e. Correlations between Mathematics and ELA Strands for Grade 7

	M.A	M.B	M.C	M.D	E.A	E.B	E.C	E.D	E.E
M.A	-								
M.B	0.81	-							
M.C	0.72	0.69	-						
M.D	0.75	0.68	0.62	-					
E.A	0.66	0.59	0.54	0.64	-				
E.B	0.67	0.61	0.55	0.65	0.73	-			
E.C	0.53	0.49	0.44	0.50	0.53	0.53	-		
E.D	0.70	0.64	0.58	0.67	0.72	0.72	0.55	-	
E.E	0.56	0.52	0.46	0.53	0.56	0.55	0.59	0.56	-

Table 19–1f. Correlations between Mathematics, ELA, and Science Strands for Grade 8

	M.A	M.B	M.C	M.D	E.A	E.B	E.C	E.D	E.E	S.A	S.B	S.C	S.D
M.A	-												
M.B	0.76	-											
M.C	0.67	0.76	-										
M.D	0.63	0.72	0.63	-									
E.A	0.57	0.62	0.52	0.56	-								
E.B	0.61	0.67	0.57	0.60	0.71	-							
E.C	0.48	0.49	0.42	0.43	0.51	0.52	-						
E.D	0.63	0.68	0.58	0.60	0.68	0.70	0.53	-					
E.E	0.52	0.55	0.47	0.47	0.53	0.56	0.57	0.56	-				
S.A	0.66	0.72	0.63	0.66	0.71	0.74	0.52	0.71	0.56	-			
S.B	0.57	0.62	0.55	0.58	0.65	0.66	0.47	0.64	0.50	0.80	-		
S.C	0.58	0.63	0.56	0.58	0.61	0.64	0.44	0.62	0.47	0.78	0.70	-	
S.D	0.54	0.59	0.53	0.55	0.58	0.60	0.41	0.58	0.44	0.75	0.68	0.67	-

The correlations in Tables 19–1a through 19–1f are based on the observed strand scores. These observed-score correlations are weakened by 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 19–2a through 19–2f show the corresponding disattenuated correlations for the 2015 PSSA tests for each grade. Note that with ELA, text dependent analysis (TDA) and writing prompt (WP) items belongs to separate strands and they are the only item for the strand. Given that these strands (E.C and E.E) have only one item, reliability cannot be computed. Therefore, disattenuated correlation cannot be computed for any correlation with these strands. Where reliability can be computed, the disattenuated strand correlations are higher than their observed score counterparts, given that none of the strands has perfect reliabilities (see Chapter Eighteen).

Some within-subject correlations are very high (e.g., above 0.95), suggesting that the within-subject strands might be measuring essentially the same construct. This, in turn, suggests that some strand scores might not provide unique information about the strengths or weaknesses of students.

On the other hand, some within-subject strand correlations are somewhat lower than 1.00. For such strands, partial evidence is provided regarding the multidimensional structure of some tests and further supporting the validity of those specific strand scores.

On a fairly consistent basis, the correlations between the strands within each subject area were higher than the correlations between strands across different subject areas. In general, within-subject strand disattenuated correlations are higher than across-subject strand disattenuated correlations. As a specific example, Grade 3 disattenuated correlations for the M.A, M.B, M.C, and M.D strands range from 0.92 to 1.02 and the correlations between E.A, E.B, and E.D range from 0.93 to 1.04. In contrast, the disattenuated correlations between mathematics and ELA strands range from 0.84 to 0.90. Such a pattern is expected since the two subject-area tests were designed to measure different constructs. Similar patterns are also observed at other grade levels.

Table 19–2a. Disattenuated Strand Correlations for Mathematics and ELA: Grade 3

	M.A	**M.B**	**M.C**	**M.D**	**E.A**	**E.B**	**E.C**	**E.D**
M.A	-							
M.B	0.99	-						
M.C	0.94	0.92	-					
M.D	1.02	1.00	0.94	-				
E.A	0.86	0.86	0.84	0.86	-			
E.B	0.87	0.87	0.85	0.87	1.02	-		
E.C	-	-	-	-	-	-	-	
E.D	0.88	0.88	0.87	0.89	0.95	0.96	-	-

Table 19–2b. Disattenuated Strand Correlations for Mathematics and ELA: Grade 4

	M.A	M.B	M.C	M.D	E.A	E.B	E.C	E.D	E.E	S.A	S.B	S.C	S.D
M.A	-												
M.B	0.98	-											
M.C	0.90	0.91	-										
M.D	0.99	1.03	0.94	-									
E.A	0.81	0.84	0.78	0.81	-								
E.B	0.82	0.85	0.79	0.83	1.00	-							
E.C	-	-	-	-	-	-	-						
E.D	0.86	0.88	0.83	0.86	0.95	0.94	-	-					
E.E	-	-	-	-	-	-	-	-	-				
S.A	0.83	0.84	0.81	0.83	0.92	0.93	-	0.90	-	-			
S.B	0.79	0.80	0.77	0.78	0.91	0.92	-	0.87	-	1.01	-		
S.C	0.79	0.80	0.79	0.79	0.88	0.88	-	0.85	-	0.99	1.00	-	
S.D	0.83	0.84	0.83	0.85	0.88	0.89	-	0.86	-	0.97	0.96	0.96	-

Table 19–2c. Disattenuated Strand Correlations for Mathematics and ELA: Grade 5

	M.A	M.B	M.C	M.D	E.A	E.B	E.C	E.D	E.E
M.A	-								
M.B	1.00	-							
M.C	0.94	0.98	-						
M.D	1.00	1.01	0.94	-					
E.A	0.81	0.87	0.85	0.77	-				
E.B	0.86	0.91	0.88	0.85	0.98	-			
E.C	-	-	-	-	-	-	-		
E.D	0.85	0.91	0.87	0.83	0.93	0.95	-	-	
E.E	-	-	-	-	-	-	-	-	-

Table 19–2d. Disattenuated Strand Correlations for Mathematics and ELA: Grade 6

	M.A	M.B	M.C	M.D	E.A	E.B	E.C	E.D	E.E
M.A	-								
M.B	1.02	-							
M.C	0.92	0.96	-						
M.D	1.00	1.01	0.96	-					
E.A	0.89	0.89	0.77	0.86	-				
E.B	0.92	0.92	0.79	0.89	1.00	-			
E.C	-	-	-	-	-	-	-		
E.D	0.87	0.87	0.75	0.84	0.93	0.95	-	-	
E.E	-	-	-	-	-	-	-	-	-

Table19–2e. Disattenuated Strand Correlations for Mathematics and ELA: Grade 7

	M.A	M.B	M.C	M.D	E.A	E.B	E.C	E.D	E.E
M.A	-								
M.B	0.99	-							
M.C	0.98	0.98	-						
M.D	1.01	0.97	0.98	-					
E.A	0.83	0.78	0.80	0.94	-				
E.B	0.85	0.81	0.81	0.95	1.00	-			
E.C	-	-	-	-	-	-	-		
E.D	0.86	0.82	0.83	0.95	0.95	0.95	-	-	
E.E	-	-	-	-	-	-	-	-	-

Table 19–2f. Disattenuated Strand Correlations for Mathematics, ELA, and Science: Grade 8

	M.A	M.B	M.C	M.D	E.A	E.B	E.C	E.D	E.E	S.A	S.B	S.C	S.D
M.A	-												
M.B	0.98	-											
M.C	0.98	1.00	-										
M.D	0.95	0.98	0.97	-									
E.A	0.79	0.78	0.75	0.83	-								
E.B	0.86	0.85	0.82	0.89	0.97	-							
E.C	-	-	-	-	-	-	-						
E.D	0.85	0.84	0.81	0.87	0.91	0.94	-	-					
E.E	-	-	-	-	-	-	-	-	-				
S.A	0.84	0.83	0.82	0.90	0.89	0.92	-	0.86	-	-			
S.B	0.80	0.79	0.78	0.86	0.89	0.91	-	0.86	-	1.00	-		
S.C	0.82	0.82	0.82	0.88	0.87	0.90	-	0.85	-	1.00	0.99	-	
S.D	0.78	0.78	0.79	0.85	0.84	0.86	-	0.81	-	0.97	0.98	0.98	-

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 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).

Exploratory Factor Analysis

In order to further explore the internal structure of the PSSA tests, an exploratory factor analysis (EFA) of the strand scores across all the PSSA subject areas was conducted. The PSSA final data file (see Chapter Nine) was used to create the observed correlation matrices shown in Tables 19–1a through 19–1f, which in turn were used in the EFAs. In SPSS, Principle Axis Factor extraction was utilized with an oblique rotation (Promax) of the initial factor solution to improve interpretability. Oblique rotations allow for correlated factors which seemed more appropriate for the PSSA tests because of a priori expectations that academic achievement across subject areas should be correlated.

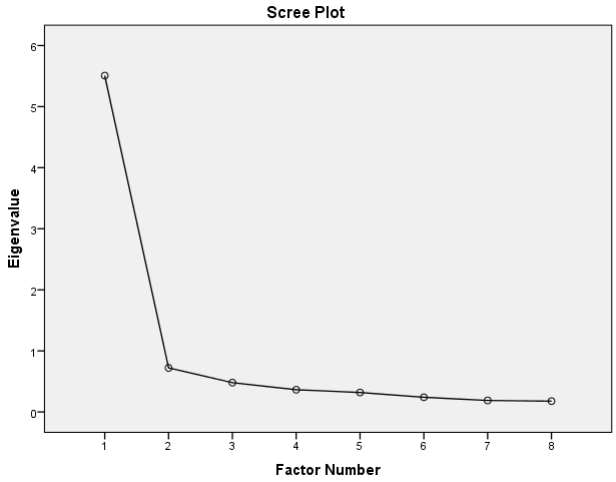
Table 19–3 presents the eigenvalues and the explained variance for the extracted factors for the Grade 3 PSSA tests. The Scree Plot graphing the eigenvalues against the factor number is shown in Figure 19–1. The first factor accounted for about 69 percent of the total variance, while the second factor explained about 9 percent of the total variance. Only the first factor had an eigenvalue greater than 1.0, typically suggesting a one-factor solution using the Kaiser criterion. However, the one-factor solution resulted in many large fitted residual values in the reproduced correlation matrix: all 28 residuals were greater than absolute value 0.005 with one as large as 0.86, while two-factor solution had only 6 out of 28 residuals larger than absolute value 0.005.

Based on this finding and the prior belief that there should be two distinct factors at Grade 3 (one for mathematics and another for ELA), a two-factor solution was further explored.

Table 19–3. Eigenvalues and Explained Variance for Grade 3

Factor	Eigenvalue	%
1	5.51	68.84
2	0.72	9.03
3	0.48	6.00
4	0.36	4.56
5	0.32	3.99
6	0.24	3.01
7	0.19	2.36
8	0.18	2.21

Figure 19–1. Scree Plot for Grade 3



The Pattern loadings resulting from the two-factor solution are presented in Table 19–4a. The Pattern loadings have simple structure which show that the five mathematics strands clearly loaded on the first factor while the ELA strands clearly loaded on the second factor. The respective factor loadings are quite high. The factor correlation matrix shows that the correlation between the two latent factors is 0.80, which is similar to the observed correlation between mathematics and ELA (0.76 as seen Table 19–5) but just lower than the disattenuated correlation.

Table 19–4a. Pattern Matrix and Factor Correlation for Grade 3

	Factor	
Domain	**1**	**2**
Mathematics		
M.A	***0.87***	0.04
M.B	***0.82***	0.11
M.C	***0.63***	0.17
M.D	***0.87***	0.03
ELA		
E.A	0.12	***0.77***
E.B	0.07	***0.81***
E.C	0.02	***0.58***
E.D	0.26	***0.60***
Correlation (F1, F2) = 0.80		

Other grades have similar results. The eigenvalue scree plots consistently indicate a one-factor solution. This possibly resulted because of the high correlations between the PSSA subjects. (The eigenvalues and explained variances are not shown for the other grades due to space considerations.) The pattern matrices and the factor correlations are reported in Table 19–4b through 19–4f for the remaining five grades, respectively. The Pattern loadings clearly suggested that the PSSA tests measured different but correlated constructs.

Table 19–4b. Pattern Matrix and Factor Correlations for Grade 4

	Factor		
Domain	**1**	**2**	**3**
Mathematics			
M.A	0.06	***0.81***	0.06
M.B	0.04	***0.84***	0.02
M.C	0.15	***0.63***	-0.02
M.D	-0.02	***0.88***	-0.01
ELA			
E.A	0.52	0.06	***0.33***
E.B	0.51	0.08	***0.33***
E.C	-0.08	0.02	***0.76***
E.D	0.31	0.24	***0.34***
E.E	-0.02	-0.02	***0.74***
Science			
S.A	***0.89***	0.06	0.00
S.B	***0.89***	-0.05	0.00
S.C	***0.84***	0.03	-0.09
S.D	***0.73***	0.19	-0.09
Correlation (F1, F2) = 0.79		Correlation (F1, F3) = 0.78	
Correlation (F2, F3) = 0.74			

Table 19–4c. Pattern Matrix and Factor Correlations for Grade 5

	Factor	
Domain	**1**	**2**
Mathematics		
M.A	***0.90***	0.05
M.B	***0.67***	0.17
M.C	***0.62***	0.19
M.D	***0.90***	-0.05
ELA		
E.A	0.08	***0.78***
E.B	0.22	***0.67***
E.C	0.03	***0.66***
E.D	0.21	***0.66***
E.E	-0.01	***0.65***
Correlation (F1, F2) = 0.81		

Table 19–4d. Pattern Matrix and Factor Correlation for Grade 6

	Factor	
Domain	**1**	**2**
Mathematics		
M.A	0.22	***0.73***
M.B	0.14	***0.76***
M.C	-0.06	***0.81***
M.D	0.09	***0.74***
ELA		
E.A	***0.73***	0.12
E.B	***0.77***	0.14
E.C	***0.66***	-0.02
E.D	***0.78***	0.08
E.E	***0.58***	0.11
Correlation (F1, F2) = 0.82		

Table 19–4e. Pattern Matrix and Factor Correlation for Grade 7

	Factor	
Domain	**1**	**2**
Mathematics		
M.A	0.08	***0.86***
M.B	0.01	***0.87***
M.C	0.03	***0.76***
M.D	0.33	***0.52***
ELA		
E.A	***0.79***	0.05
E.B	***0.75***	0.10
E.C	***0.67***	0.01
E.D	***0.68***	0.19
E.E	***0.66***	0.05
Correlation (F1, F2) = 0.80		

Table 19–4f. Pattern Matrix and Factor Correlations for Grade 8

	Factor		
Domain	**1**	**2**	**3**
Mathematics			
M.A	0.02	***0.71***	0.13
M.B	0.02	***0.90***	0.01
M.C	0.03	***0.83***	-0.04
M.D	0.23	***0.58***	0.01
ELA			
E.A	0.48	0.00	***0.37***
E.B	0.42	0.09	***0.38***
E.C	-0.06	-0.03	***0.79***
E.D	0.31	0.20	***0.38***
E.E	-0.06	0.07	***0.75***
Science			
S.A	***0.85***	0.08	0.02
S.B	***0.85***	-0.04	0.04
S.C	***0.81***	0.09	-0.07
S.D	***0.84***	0.06	-0.12
Correlation (F1, F2) = 0.79 Correlation (F2, F3) = 0.75		Correlation (F1, F3) = 0.78	

Taken as a whole, all the internal structure evidence presented above generally indicates that related elements of each of the PSSA tests correlate in the intended manner. Different PSSA subject area tests seem to measure different constructs. Additionally, the strands within each subject area have stronger relationships than those across subject strands. This further supports using a total score to report student performance in the different subject areas.

The strand scores present more of a mixed message. Since the strands in each subject area were designed to measure distinct components of the subject area, it is reasonable to expect that the inter-subject strand correlations should be positive and strong, but ideally, not extremely high. However, the disattenuated correlations imply that some strands are essentially measuring the same constructs. Consequently, there may be less support for providing results for some strand scores beyond the total score. While there is content rationale underlying the creation of the strand scores, the empirical correlations illustrate that caution is required when using the strand scores as a way to identify individual student's strengths and weaknesses. Certainly, instructional programs should not be based on strand score information alone but in conjunction with other sources of evidence available (e.g., teacher observations, other exam performance).

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 refers to external structure evidence and is classified on 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).

External evidence for the 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). Since 2015 was the first year of new PSSA mathematics and ELA, additional validity studies for external evidence may be warranted.

For the 2015 PSSA dataset, the correlations between students' test scores on different PSSA tests, including mathematics, ELA, and science are shown in Table 19–5 in order to provide some discriminant validity evidence. In this table, both the observed and disattenuated correlations are reported.

Table 19–5. Correlations among Students' Performance on All PSSA Tests

	Mathematics/ ELA	Mathematics/ Science	ELA/ Science
G3	.80 (.87)	-	-
G4	.78 (.84)	.80 (.86)	.81 (.88)
G5	.80 (.86)	-	-
G6	.80 (.87)	-	-
G7	.79 (.86)	-	-
G8	.78 (.85)	.79 (.85)	.79 (.86)

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 tests range from 0.79 to 0.81.

EVIDENCE BASED ON CONSEQUENCES OF TESTING

Based on the *Standards* (2014), evidence of the consequences of implementing an assessment program is an additional source of validity information. Both positive and negative (intended and unintended) consequences of score-based inferences must be investigated to fully evaluate the pool of validity evidence. It is important to note that the consequences of the assessment program themselves to do not serve as indicators of validity. That is, the investigation and evaluation of the consequences provides a richer context for establishing the validity of an assessment program.

Given that the evaluation of consequential validity is broadly defined, it is difficult to specifically measure aspects of consequential validity. Test data only provide one small insight into this type of validation evidence. Chapter Sixteen includes several different types of scores and score reports used for the PSSA. This chapter 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.

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 staffers follow linking procedures previously vetted by the Pennsylvania National TAC. Moreover, DRC internal replication TAC review ensured the accuracy of the linking results. Note that PSSA mathematics and ELA tests were new in 2015 and no linking or the third-party checks were performed.

VALIDITY EVIDENCE SUMMARY

Validity evidence related to test content was reviewed earlier in this chapter. On the whole, 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, and sensitivity reviews) are presented in Chapter Three.

Strand score intercorrelations 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). Consequently, this provides some favorable evidence regarding the internal and external relationships between the tests' components.

PDE's commitment to validity is also evidenced by the fact that the Pennsylvania State Board of Education commissioned an independent study of an earlier version of the PSSA. That study, conducted by HumRRO, included an extensive evaluation of the items (Thacker & Dickinson, 2004) and statistical relationships of the PSSA, including convergent and discriminant validity (Thacker, Dickinson & Koger, 2004). Given that 2015 was the first year of the new PSSA mathematics and ELA, a similar study may be advisable.

Validity of score inferences is bolstered when test scores are consistent. Here, the reliabilities of the total test scores (see Chapter Eighteen) are very good, with many being in the low 0.90s.

Additionally, reported in Chapter Five, differential item functioning with respect to gender and ethnicity helps address construct-irrelevant variance, which represents an important threat to the validity of inferences made from achievement test scores. 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.

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Appendix A:

General Scoring Guidelines

PENNSYLVANIA DEPARTMENT OF EDUCATION
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Grade 3 Narrative Scoring Guidelines

Score Point	Description
4	• Distinctly established situation/theme that orients the reader and introduces the narrator and/or characters • Effective narrative pattern that sequences events and provides a conclusion • Thorough elaboration that effectively supports the storyline • Effective use of narrative techniques to develop experiences and events • Effective use of transitions • Consistent control of sentence formation • Few errors may be present in grammar, usage, spelling, and punctuation; errors present do not interfere with meaning
3	• Clearly established situation/theme that orients the reader and introduces the narrator and/or characters • Narrative pattern that generally sequences events and provides a conclusion; interruptions to the sequence may occur • Sufficient elaboration that supports the storyline • Adequate use of narrative techniques to develop experiences and events • Clear use of transitions • Adequate control of sentence formation • Some errors may be present in grammar, usage, spelling, and punctuation; errors present seldom interfere with meaning
2	• Vague situation/theme that inconsistently orients the reader and introduces the narrator and/or characters • Weak narrative pattern that inconsistently sequences events and may or may not provide a conclusion • Weak elaboration that somewhat supports the storyline • Limited use of narrative techniques to somewhat develop experiences and events • Inconsistent/limited use of transitions • Inconsistent control of sentence formation • Errors may be present in grammar, usage, spelling, and punctuation; errors present may interfere with meaning
1	• Minimal evidence of a situation/theme • Minimal sequencing of events that may or may not establish a narrative pattern • Minimal elaboration that may or may not support the storyline • Minimal use of narrative techniques • Minimal use of transitions • Minimal control of sentence formation • Many errors may be present in grammar, usage, spelling, and punctuation; errors present often interfere with meaning

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Grade 4 Informative/Explanatory Scoring Guidelines

Score Point	Description
4	• Sharp, distinct topic introduced, developed, and concluded with evident awareness of task, purpose, and audience • Effective order and organizational structure that develop a topic • Substantial and relevant content that demonstrates an understanding of the purpose • Thorough elaboration with clearly presented information that is consistently supported with facts, examples, and concrete details • Effective transitions that connect ideas and concepts • Established and consistently maintained formal style with effective control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Consistent control of sentence formation • Few errors may be present in grammar, usage, spelling, and punctuation; errors present do not interfere with meaning
3	• Clear topic introduced, developed, and concluded with general awareness of task, purpose, and audience • Adequate order and organizational structure that develop a topic • Adequate and relevant content that demonstrates an understanding of the purpose • Sufficient elaboration with clearly presented information that is supported with facts, examples, and concrete details • Clear transitions that connect ideas and concepts • Established and maintained formal style with appropriate control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Adequate control of sentence formation • Some errors may be present in grammar, usage, spelling, and punctuation; errors present seldom interfere with meaning
2	• Vague topic introduced, developed, and concluded with limited awareness of task, purpose, and audience • Inconsistent order and organizational structure that somewhat develop a topic • Inadequate, vague content that demonstrates a weak understanding of the purpose • Underdeveloped and/or repetitive elaboration that is inconsistently supported with facts, examples, and details • Inconsistent/limited transitions that somewhat connect ideas and concepts • Inconsistently maintained formal style with limited control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Inconsistent control of sentence formation • Errors may be present in grammar, usage, spelling, and punctuation; errors present may interfere with meaning
1	• Minimal topic introduced, developed, and concluded with little awareness of task, purpose, and audience • Minimal order and organizational structure • Minimal content that demonstrates little or no understanding of the purpose • Undeveloped writing with little support; may be a bare list • Minimal transitions that may or may not connect ideas and concepts • Ineffective formal style with little control of language • Minimal control of sentence formation • Many errors may be present in grammar, usage, spelling, and punctuation; errors present often interfere with meaning

PENNSYLVANIA DEPARTMENT OF EDUCATION
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Grade 5 Opinion Scoring Guidelines

Score Point	Description
4	• Sharp, distinct opinion introduced, developed, and concluded with evident awareness of task, purpose, and audience • Effective order and organizational structure that support reasons and evidence • Substantial and relevant content that demonstrates a clear understanding of the purpose • Thorough elaboration with clearly presented reasons that are consistently supported with facts and details • Effective transitions that connect opinions and reasons • Established and consistently maintained formal style with effective control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Consistent control of sentence formation • Few errors may be present in grammar, usage, spelling, and punctuation; errors present do not interfere with meaning
3	• Clear opinion introduced, developed, and concluded with general awareness of task, purpose, and audience • Logical order and organizational structure that support reasons and evidence • Adequate and relevant content that demonstrates an understanding of the purpose • Sufficient elaboration with clearly presented reasons that are supported with facts and details • Clear transitions that connect opinions and reasons • Established and maintained formal style with appropriate control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Adequate control of sentence formation • Some errors may be present in grammar, usage, spelling, and punctuation; errors present seldom interfere with meaning
2	• Vague opinion introduced, developed, and concluded with limited awareness of task, purpose, and audience • Inconsistent order and organizational structure that somewhat support reasons and evidence • Inadequate, vague content that demonstrates a weak understanding of the purpose • Underdeveloped and/or repetitive elaboration that is inconsistently supported with facts and details • Inconsistent/limited transitions that somewhat connect opinions and reasons • Inconsistently maintained formal style with limited control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Inconsistent control of sentence formation • Errors may be present in grammar, usage, spelling, and punctuation; errors present may interfere with meaning
1	• Minimal evidence of an opinion introduced, developed, and concluded with little awareness of task, purpose, and audience • Minimal order and organizational structure • Minimal content that demonstrates little or no understanding of the purpose • Undeveloped opinion with little support; may be a bare list • Minimal transitions that may or may not connect opinions and reasons • Ineffective formal style with little control of language • Minimal control of sentence formation • Many errors may be present in grammar, usage, spelling, and punctuation; errors present often interfere with meaning

PENNSYLVANIA DEPARTMENT OF EDUCATION
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Grade 6 Narrative Scoring Guidelines

Score Point	Description
4	• Distinctly established context and point of view that effectively orient the reader and introduce the narrator and/or characters • Skillful narrative pattern/story line that clearly sequences events and provides a conclusion • Thorough elaboration that effectively supports the writer's purpose • Effective use of narrative techniques to develop characters, experiences, and/or events • Effective use of a variety of transitional words and phrases • Precise control of literary devices, sensory language, and sentence structure that clearly conveys experiences and events • Consistent control of sentence formation • Few errors may be present in grammar, usage, spelling, and punctuation; errors present do not interfere with meaning
3	• Clearly established context and point of view that orient the reader and introduce the narrator and/or characters • Adequate narrative pattern/story line that sequences events; minor interruptions to the sequence may occur • Adequate elaboration that supports the writer's purpose • Adequate use of narrative techniques to develop characters, experiences, and/or events • Appropriate use of transitional words and/or phrases • Appropriate control of literary devices, sensory language, and sentence structure that conveys experiences and events • Adequate control of sentence formation • Some errors may be present in grammar, usage, spelling, and punctuation; errors present seldom interfere with meaning
2	• Weakly established context and point of view that inconsistently orient the reader and introduce the narrator and/or characters • Weak narrative pattern/story line that inconsistently sequences events; interruptions to the sequence may detract from the story • Weak elaboration that somewhat supports the writer's purpose • Inconsistent/limited use of narrative techniques • Inconsistent/limited use of transitional words and/or phrases • Limited control of literary devices, sensory language, and sentence structure that inconsistently conveys experiences and/or events • Limited control of sentence formation • Errors may be present in grammar, usage, spelling, and punctuation; errors present may interfere with meaning
1	• Minimally established context and/or point of view • Minimal narrative pattern/story line that may or may not sequence events • Minimal elaboration that may or may not support the writer's purpose • Minimal use of narrative techniques • Minimal use of transitional words and/or phrases • Minimal control of literary devices, sensory language, and sentence structure • Minimal control of sentence formation • Many errors may be present in grammar, usage, spelling, and punctuation; errors present often interfere with meaning

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Grade 7 Argumentative Scoring Guidelines

Score Point	Description
4	• Sharp, distinct claim made convincing through a thoughtful and substantiated argument with evident awareness of task, purpose, counterargument, and audience • Effective organizational strategies and structures that logically support reasons and evidence • Substantive, specific, and relevant content that demonstrates a clear understanding of the purpose • Thorough elaboration that includes a clear position that is consistently supported with precise and relevant evidence • Effective transitions that connect and clarify ideas and concepts • Established and consistently maintained formal style with effective control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Consistent control of sentence formation • Few errors may be present in grammar, usage, spelling, and punctuation; errors present do not interfere with meaning
3	• Clear claim made convincing through a credible and substantiated argument with general awareness of task, purpose, counterargument, and audience • Adequate organizational strategies and structures that support reasons and evidence • Adequate and relevant content that demonstrates an understanding of the purpose • Sufficient elaboration that includes a clear position that is supported with relevant evidence • Appropriate transitions that connect and clarify ideas and concepts • Established and maintained formal style with appropriate control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Adequate control of sentence formation • Some errors may be present in grammar, usage, spelling, and punctuation; errors present seldom interfere with meaning
2	• Claim may lack a credible and/or substantiated argument; limited awareness of task, purpose, counterargument, and audience • Inadequate organizational strategies and structures that ineffectively support reasons and evidence • Inadequate, vague content that demonstrates a weak understanding of the purpose • Insufficient elaboration that includes an underdeveloped position supported with little relevant evidence • Inconsistent transitions that somewhat connect ideas and concepts • Inconsistently maintained formal style with limited control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Inconsistent control of sentence formation • Errors may be present in grammar, usage, spelling, and punctuation; errors present may interfere with meaning
1	• Minimal evidence of a claim that lacks a credible and/or substantiated argument with little awareness of task, purpose, counterargument, and audience • Minimal organizational strategies and structures • Minimal content that demonstrates little or no understanding of the purpose • Undeveloped position with little support; may be a bare list • Minimal transitions that may or may not connect ideas and concepts • Ineffective formal style with little control of language • Minimal control of sentence formation • Many errors may be present in grammar, usage, spelling, and punctuation; errors present often interfere with meaning

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Grade 8 Informative/Explanatory Scoring Guidelines

Score Point	Description
4	• Sharp, distinct topic introduced, developed, and concluded with evident awareness of task, purpose, and audience • Effective organizational strategies and structures that develop a topic • Substantive, specific, and relevant content that demonstrates a clear understanding of the purpose • Thorough elaboration with clearly presented information that is consistently supported with well-chosen facts, examples, and concrete details • Effective transitions that connect and clarify ideas and concepts • Established and consistently maintained formal style with effective control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Consistent control of sentence formation • Few errors may be present in grammar, usage, spelling, and punctuation; errors present do not interfere with meaning
3	• Clear topic introduced, developed, and concluded with general awareness of task, purpose, and audience • Adequate organizational strategies and structures that develop a topic • Adequate and relevant content that demonstrates an understanding of the purpose • Sufficient elaboration with clearly presented information that is supported with well-chosen facts, examples, and concrete details • Appropriate transitions that connect and clarify ideas and concepts • Established and maintained formal style with appropriate control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Adequate control of sentence formation • Some errors may be present in grammar, usage, spelling, and punctuation; errors present seldom interfere with meaning
2	• Incomplete topic introduced, developed, and concluded with limited awareness of task, purpose, and audience • Inadequate organizational strategies and structures that somewhat develop a topic • Inadequate, vague content that demonstrates a weak understanding of the purpose • Underdeveloped and/or repetitive elaboration that is inconsistently supported with facts, examples, and details • Inconsistent/limited transitions that somewhat connect ideas and concepts • Inconsistently maintained formal style with limited control of language, domain-specific vocabulary, stylistic techniques, and sentence variety • Inconsistent control of sentence formation • Errors may be present in grammar, usage, spelling, and punctuation; errors present may interfere with meaning
1	• Minimal topic introduced, developed, and concluded with little awareness of task, purpose, and audience • Minimal organizational strategies and structures • Minimal content that demonstrates little or no understanding of the purpose • Undeveloped writing with little support; may be a bare list • Minimal transitions that may or may not connect ideas and concepts • Ineffective formal style with little control of language • Minimal control of sentence formation • Many errors may be present in grammar, usage, spelling, and punctuation; errors present often interfere with meaning

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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 or too brief to determine response.**
- **OT = off task/topic.**
- **LOE = response in a language other than English.**
- **IL = illegible.**

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Text-Dependent Analysis Scoring Guidelines

Score Point	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
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

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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" (e.g., missing $) 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
IL.....Illegible
LOE .....Response in a language other than English

The Scoring Guideline documents are available on the PDE website.

PENNSYLVANIA DEPARTMENT OF EDUCATION
PSSA

General Description of Scoring Guidelines for Science Open-Ended Questions

2 – 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. Response may contain a minor blemish (e.g., misspelled words) or omission in work or explanation that does not detract from demonstrating a thorough understanding.

1 – 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 – 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.

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:
BLK – Blank, entirely erased or written refusal to respond
OT – Off Task
IL – Illegible
LOE – Response in a language other than English

The Scoring Guideline documents are available on the PDE website.

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				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			Use place-value understanding and properties of operations to perform multi-digit arithmetic.		4				4	4		1				1	1
	1	1		Apply place-value strategies to solve problems.														
	1	1	1	Round two- and three-digit whole numbers to the nearest ten or hundred, respectively.	2				2		2	2				2		2
	1	1	2	Add two- and three-digit whole numbers and/or subtract two- and three-digit numbers from three-digit whole numbers.	2				2		2	2				2		2
	1	1	3	Multiply one-digit whole numbers by two-digit multiples of ten.	1				1		1	1				1		1
	1	1	4	Order a set of whole numbers from least to greatest or greatest to least.	2				2		2	2				2		2
	Total for Assessment Anchor A-T.1 Use place-value understanding and properties of operations to perform multi-digit arithmetic.				7	4			7	4	11	7	1			7	1	8
Total For Reporting Category A-T					7	4			7	4	11	7	1			7	1	8

* No items were designated as Equating Block items on the 2015 operational mathematics assessment.

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		Develop and apply number theory concepts to compare quantities and magnitudes of fractions and whole numbers.														
	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.	3				3		3	3				3		3
	1	1	2	Represent fractions on a number line.	3				3		3	3				3		3
	1	1	3	Recognize and generate simple equivalent fractions.	1				1		1	1				1		1
	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.	2				2		2	2				2		2
	Total for Assessment Anchor A-F.1 Develop an understanding of fractions as numbers.				10				10		10	10				10		10
Total For Reporting Category A-F					10				10		10	10				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
B-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	Interpret and/or describe products of whole numbers.	1				1		1	1				1		1
	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				5		5	5				5		5
	2			Understand properties of multiplication and the relationship between multiplication and division.														
	2	1		Use properties to simplify and solve multiplication problems.														
	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).	2				2		2	2				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.	2				2		2	2				2		2
	Total For Assessment Anchor B-O.2 Understand properties of multiplication and the relationship between multiplication and division.				5				5		5	5				5		5

3			Solve problems involving the four operations, and identify and explain patterns in arithmetic.		4				4	4		1				1	1
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.	2				2		2	2				2		2
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.	1				1		1	1				1		1
3	1	3	Assess the reasonableness of answers. Limit problems posed with whole numbers and having whole-number answers.	1				1		1	1				1		1
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.	2				2		2	2				2		2
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.	1				1		1	1				1		1
Total For Assessment Anchor B-O.3 Solve problems involving the four operations, and identify and explain patterns in arithmetic.				8	4			8	4	12	8	1			8	1	9
Total For Reporting Category B-O				18	4			18	4	22	18	1			18	1	19

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		Analyze characteristics of polygons.														
	1	1	1	Explain that shapes in different categories may share attributes and that the shared attributes can define a larger category.	4				4		4	4				4		4
	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.	3				3		3	3				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.	3				3		3	3				3		3
	Total For Assessment Anchor C-G.1 Reason with shapes and their attributes.				10				10		10	10				10		10
Total For Reporting Category C-G					10				10		10	10				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.	2				2		2	2				2		2
	1	1	2	Calculate elapsed time to the minute in a given situation.	1				1		1	1				1		1
	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				1		1	1				1		1
	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		1	1				1		1
	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.				8				8		8	8				8		8

D-M: Measurement and Data	2			Represent and interpret data.														
	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.	1				1		1	1				1		1
	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.	1				1		1	1				1		1
	2	1	4	Translate information from one type of display to another. Limit to pictographs, tally charts, bar graphs, and tables.														
	Total For Assessment Anchor D-M.2 Represent and interpret data.				3				3		3	3				3		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						
	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						
	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						

	4			Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.																
	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								
	Total For Assessment Anchor D-M.4 Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.				2				2		2	2								
Total For Reporting Category D-M					15				15		15	15				11		11		

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		Apply place-value and numeration concepts to compare, find equivalencies, and round.														
	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.	2				2		2	2				2		2
	1	1	2	Read and write whole numbers in expanded, standard, and word form through 1,000,000.	2				2		2	2				2		2
	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	4	Round multi-digit whole numbers to any place.	2				2		2	2				2		2
	Total For Assessment Anchor A-T.1 Generalize place-value understanding for multi-digit whole numbers.				6				6		6	6				6		6
	2			Use place-value understanding and properties of operations to perform multi-digit arithmetic.														
	2	1		Use operations to solve problems.														
	2	1	1	Add and subtract multi-digit whole numbers.	3				3		3	3				3		3
	2	1	2	Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two-digit numbers.	2				2		2	2				2		2
	2	1	3	Divide up to four-digit dividends by one-digit divisors with answers written as whole-number quotients and remainders.	2				2		2	2				2		2
	2	1	4	Estimate the answer to addition, subtraction, and multiplication problems using whole numbers through six digits.	1				1		1	1				1		1
	Total For Assessment Anchor A-T.2 Use place-value understanding and properties of operations to perform multi-digit arithmetic.				8				8		8	8				8		8
Total For Reporting Category A-T					14				14		14	14				14		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
A-F: Numbers and Operations—Fractions	1			Extend understanding of fraction equivalence and ordering.														
	1	1		Find equivalencies and compare fractions.														
	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				2		2	2				2		2
	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		1	1				1		1
	2	1	3	Add and subtract mixed numbers with a common denominator.	1				1		1	1				1		1
	2	1	4	Solve word problems involving addition and subtraction of fractions referring to the same whole or set and having like denominators.	1				1		1	1				1		1
	2	1	5	Multiply a whole number by a unit fraction.	1				1		1	1				1		1
	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.				5				5		5	5				5		5

3			Understand decimal notation for fractions and compare decimal fractions.		4				4	4		1				1	1
3	1		Use operations to solve problems involving decimals, including converting between fractions and decimals.														
3	1	1	Add two fractions with respective denominators 10 and 100.	2				2		2	2				2		2
3	1	2	Use decimal notation for fractions with denominators of 10 or 100.	1				1		1	1				1		1
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.				4	4			4	4	8	4	1			4	1	5
Total For Reporting Category A-F				11	4			11	4	15	11	1			11	1	12

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.		4				4	4		1				1	1
	1	1		Use numbers and symbols to model the concepts of expressions and equations.	1				1		1	1				1		1
	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.	2				2		2	2				2		2
	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		1	1				1		1
	1	1	4	Identify the missing symbol that makes a number sentence true.	2				2		2	2				2		2
	Total For Assessment Anchor B-O.1 Use the four operations with whole numbers to solve problems.				7	4			7	4	11	7	1			7	1	8

2			Gain familiarity with factors and multiples.	1				1		1	1				1		1
2	1		Develop and apply number theory concepts to represent numbers in various ways.														
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.	1				1		1	1				1		1
Total For Assessment Anchor B-O.2 Gain familiarity with factors and multiples.				2				2		2	2				2		2
3			Generate and analyze patterns.														
3	1		Recognize, describe, extend, create, and replicate a variety of patterns.														
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.	2				2		2	2				2		2
3	1	2	Determine the missing elements in a function table.	2				2		2	2				2		2
3	1	3	Determine the rule for a function given a table.	2				2		2	2				2		2
Total For Assessment Anchor B-O.3 Generate and analyze patterns.				6				6		6	6				6		6
Total For Reporting Category B-O				15	4			15	4	19	15	1			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
C-G: Geometry	1			Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	1				1		1	1				1		1
	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.	2				2		2	2				2		2
	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.	4				4		4	4				4		4
	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.	3				3		3	3				3		3
	Total For Assessment Anchor C-G.1 Draw and identify lines and angles, and classify shapes by properties of their lines and angles.				11				11		11	11				11		11
Total For Reporting Category C-G					11				11		11	11				11		11

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
D-M: Measurement and Data	1			Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.		4				4	4		1				1	1
	1	1		Solve problems involving length, weight (mass), liquid volume, time, area, and perimeter.														
	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		1	1				1		1
	1	1	3	Apply the area and perimeter formulas for rectangles in real-world and mathematical problems.	1				1		1	1				1		1
	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	4			4	4	8	4	1			4	1	5

2			Represent and interpret data.															
2	1		Organize, display, and answer questions based on data.															
2	1	1	Make a line plot to display a data set of measurements in fractions of a unit.	2				2		2	2				2		2
2	1	2	Solve problems involving addition and subtraction of fractions by using information presented in line plots.	1				1		1	1				1		1
2	1	3	Translate information from one type of display to another.															
Total For Assessment Anchor D-M.2 Represent and interpret data.				3				3		3	3				3		3
3			Geometric measurement: understand concepts of angle; measure and create angles.															
3	1		Use appropriate tools and units to sketch an angle and determine angle measurements.															
3	1	1	Measure angles in whole-number degrees using a protractor. With the aid of a protractor, sketch angles of a specified measure.	1				1		1	1				1		1
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.				2				2		2	2				2		2
Total For Reporting Category D-M				9	4			9	4	13	9	1			9	1	10

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	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.	2				2		2	2				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.	2				2		2	2				2		2
	1	1	3	Read and write decimals to thousandths using base-ten numerals, word form, and expanded form.	2				2		2	2				2		2
	1	1	4	Compare two decimals to thousandths based on meanings of the digits in each place using >, =, and < symbols.	2				2		2	2				2		2
	1	1	5	Round decimals to any place.	2				2		2	2				2		2
	Total For Assessment Anchor A-T.1 Understand the place-value system.				10				10		10	10				10		10
	2			Perform operations with multi-digit whole numbers and with decimals to hundredths.														
	2	1		Use whole numbers and decimals to compute accurately.														
	2	1	1	Multiply multi-digit whole numbers.	2				2		2	2				2		2
	2	1	2	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.	3				3		3	3				3		3
	2	1	3	Add, subtract, multiply, and divide decimals to hundredths.	3				3		3	3				3		3
	Total For Assessment Anchor A-T.2 Perform operations with multi-digit whole numbers and with decimals to hundredths.				8				8		8	8				8		8
Total For Reporting Category A-T					18				18		18	18				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.	1				1		1	1				1		1
	1	1		Solve addition and subtraction problems involving fractions.														
	1	1	1	Add and subtract fractions with unlike denominators.	5				5		5	5				5		5
	Total For Assessment Anchor A-F.1 Use equivalent fractions as a strategy to add and subtract fractions.				6				6		6	6				6		6
	2			Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	1	4			1	4	5	1	1			1	1	2
	2	1		Solve multiplication and division problems involving fractions and whole numbers.														
	2	1	1	Solve word problems involving division of whole numbers leading to answers in the form of fractions.	3				3		3	3				3		3
	2	1	2	Multiply a fraction by a fraction.	2				2		2	2				2		2
	2	1	3	Demonstrate an understanding of multiplication as scaling.	2				2		2	2				2		2
	2	1	4	Divide unit fractions by whole numbers and whole numbers by unit fractions.	2				2		2	2				2		2
	Total For Assessment Anchor A-F.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.				10	4			10	4	14	10	1			10	1	11
Total For Reporting Category A-F					16	4			16	4	20	16	1			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		Analyze and complete calculations by applying the order of operations.	1				1		1	1				1		1
	1	1	1	Use multiple grouping symbols in numerical expressions and evaluate expressions containing these symbols.	1				1		1	1				1		1
	1	1	2	Write simple expressions that model calculations with numbers and interpret numerical expressions without evaluating them.	2				2		2	2				2		2
	Total For Assessment Anchor B-O.1 Write and interpret numerical expressions.				4				4		4	4				4		4
	2			Analyze patterns and relationships.		4				4	4		1				1	1
	2	1		Create, extend, and analyze patterns.														
	2	1	1	Generate two numerical patterns using two given rules.	2				2		2	2				2		2
	2	1	2	Identify apparent relationships between corresponding terms of two patterns with the same starting numbers that follow different rules.	1				1		1	1				1		1
	Total For Assessment Anchor B-O.2 Analyze patterns and relationships.				3	4			3	4	7	3	1			3	1	4
Total For Reporting Category B-O					7	4			7	4	11	7	1			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
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.														
	1	1	1	Identify parts of the coordinate plane and the ordered pair. Limit the coordinate plane to quadrant I.	3				3		3	3				3		3
	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.	3				3		3	3				3		3
	Total For Assessment Anchor C-G.1 Graph points on the coordinate plane to solve real-world and mathematical problems.				6				6		6	6				6		6
	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.														
	2	1	1	Classify two-dimensional figures in a hierarchy based on properties.	3				3		3	3				3		3
	Total For Assessment Anchor C-G.2 Classify two-dimensional figures into categories based on their properties.				4				4		4	4				4		4
Total For Reporting Category C-G					10				10		10	10				10		10

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	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				2		2	2				2		2
	2			Represent and interpret data.														
	2	1		Organize, display, and answer questions based on data.														
	2	1	1	Solve problems involving computation of fractions by using information presented in line plots.	2				2		2	2				2		2
	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.	1				1		1	1				1		1
	Total For Assessment Anchor D-M.2 Represent and interpret data.				3				3		3	3				3		3
	3			Geometric measurement: understand concepts of volume and relate volume to mutliplication and to addition.	1	4			1	4	5	1	1			1	1	2
	3	1		Use, describe, and develop procedures to solve problems involving volume.														
	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.	2				2		2	2				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.				4	4			4	4	8	4	1			4	1	5
Total For Reporting Category D-M					9	4			9	4	13	9	1			9	1	10

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-N: The Number System	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.	2				2		2	2				2		2
	Total For Assessment Anchor A-N.1 Apply and extend previous understandings of multiplication and division to divide fractions by fractions.				2				2		2	2				2		2
	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
	Total For Assessment Anchor A-N.2 Compute with multi-digit numbers and find common factors and multiples.				4				4		4	4				4		4

3			Apply and extend previous understandings of numbers to the system of rational numbers.		4				4	4		1				1	1
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.	1				1		1	1				1		1
3	1	1	Represent quantities in real-world contexts using positive and negative numbers, explaining the meaning of 0 in each situation.	1				1		1	1				1		1
3	1	2	Determine the opposite of a number and recognize that the opposite of the opposite of a number is the number itself.														
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.	1				1		1	1				1		1
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.														
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.				4	4			4	4	8	4	1			4	1	5
Total For Reporting Category A-N				10	4			10	4	14	10	1			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		1	1				1		1
	1	1		Represent and/or solve real-world and mathematical problems using rates, ratios, and/or percents.	1				1		1	1				1		1
	1	1	1	Use ratio language and notation to describe a ratio relationship between two quantities.	3				3		3	3				3		3
	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				2		2	2				2		2
	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.	1				1		1	1				1		1
	1	1	4	Solve unit rate problems including those involving unit pricing and constant speed.	3				3		3	3				3		3
	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.				12				12		12	12				12		12
Total For Reporting Category A-R					12				12		12	12				12		12

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.		4				4	4		1				1	1
	1	1		Identify, write, and evaluate numerical and algebraic expressions.														
	1	1	1	Write and evaluate numerical expressions involving whole-number exponents.	2				2		2	2				2		2
	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.	2				2		2	2				2		2
	1	1	5	Apply the properties of operations to generate equivalent expressions.	2				2		2	2				2		2
	Total For Assessment Anchor B-E.1 Apply and extend previous understandings of arithmetic to numerical and algebraic expressions.				8	4			8	4	12	8	1			8	1	9
	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				1		1	1				1		1
	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.	1				1		1	1				1		1
	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.				6				6		6	6				6		6

	3			Represent and analyze quantitative relationships between dependent and independent variables.	1				1		1	1				1		1
	3	1		Use variables to represent two quantities in a real-world problem that change in relationship to one another.														
	3	1	1	Write an equation to express the relationship between the dependent and independent variables.	1				1		1	1				1		1
	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.				3				3		3	3				3		3
Total For Reporting Category B-E					17	4			17	4	21	17	1			17	1	18

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		1	1				1		1
	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				1		1	1				1		1
	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.	2				2		2	2				2		2
	1	1	5	Represent three-dimensional figures using nets made of rectangles and triangles.	2				2		2	2				2		2
	1	1	6	Determine the surface area of triangular and rectangular prisms.	2				2		2	2				2		2
	Total For Assessment Anchor C-G.1 Solve real-world and mathematical problems involving area, surface area, and volume.				11				11		11	11				11		11
Total For Reporting Category C-G					11				11		11	11				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
D-S: Statistics and Probability	1			Demonstrate understanding of statistical variability by summarizing and describing distributions.	1	4			1	4	5	1	1			1	1	2
	1	1		Display, analyze, and summarize numerical data sets in relation to their context.														
	1	1	1	Display numerical data in plots on a number line, including line plots, histograms, and box-and-whisker plots.	2				2		2	2				2		2
	1	1	2	Determine quantitative measures of center and variability.	2				2		2	2				2		2
	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.	2				2		2	2				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.	3				3		3	3				3		3
	Total For Assessment Anchor D-S.1 Demonstrate understanding of statistical variability by summarizing and describing distributions.				10	4			10	4	14	10	1			10	1	11
Total For Reporting Category D-S					10	4			10	4	14	10	1			10	1	11

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.		4				4	4		1				1	1
	1	1		Solve real-world and mathematical problems involving the four operations with rational numbers.	1				1		1	1				1		1
	1	1	1	Apply properties of operations to add and subtract rational numbers, including real-world contexts.	2				2		2	2				2		2
	1	1	2	Represent addition and subtraction on a horizontal or vertical number line.	2				2		2	2				2		2
	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.				7	4			7	4	11	7	1			7	1	8
Total For Reporting Category A-N					7	4			7	4	11	7	1			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		1	1				1		1
	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.	3				3		3	3				3		3
	1	1	2	Determine whether two quantities are proportionally related.	3				3		3	3				3		3
	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.	3				3		3	3				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				2		2	2				2		2
	1	1	6	Use proportional relationships to solve multi-step ratio and percent problems.	3				3		3	3				3		3
	Total For Assessment Anchor A-R.1 Demonstrate an understanding of proportional relationships.				18				18		18	18				18		18
Total For Reporting Category A-R					18				18		18	18				18		18

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	4			1	4	5	1	1			1	1	2
	1	1		Use properties of operations to generate equivalent expressions.														
	1	1	1	Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients.	3				3		3	3				3		3
	Total For Assessment Anchor B-E.1 Represent expressions in equivalent forms.				4	4			4	4	8	4	1			4	1	5
	2			Solve real-world & mathematical problems using numerical and algebraic expressions, equations, and inequalities.														
	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.	2				2		2	2				2		2
	2	2		Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems.														
	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.	3				3		3	3				3		3
	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.	3				3		3	3				3		3
	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.	3				3		3	3				3		3
	Total For Assessment Anchor B-E.2 Solve real-world and mathematical problems using numerical and algebraic expressions, equations, and inequalities.				11				11		11	11				11		11
Total For Reporting Category B-E					15	4			15	4	19	15	1			15	1	16

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		1	1				1		1
	1	1		Demonstrate and apply properties of geometric figures.														
	1	1	1	Solve problems involving scale drawings of geometric figures, including finding length & area.	1				1		1	1				1		1
	1	1	2	Identify or describe 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.	2				2		2	2				2		2
	1	1	4	Describe the two-dimensional figures that result from slicing three-dimensional figures.	1				1		1	1				1		1
	Total For Assessment Anchor C-G.1 Demonstrate an understanding of geometric figures and their properties.				6				6		6	6				6		6
	2			Solve real-world & mathematical problems involving angle measure, circumference, area, surface area, and volume.														
	2	1		Identify, use, and describe properties of angles and their measures.														
	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.	2				2		2	2				2		2
	2	1	2	Identify and use properties of angles formed when two parallel lines are cut by a transversal.	3				3		3	3				3		3
	2	2		Determine circumference, area, surface area, and volume.														
	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 & 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.				7				7		7	7				7		7
Total For Reporting Category C-G					13				13		13	13				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		1	1				1		1
	1	1		Use random samples.														
	1	1	1	Determine whether a sample is a random given a real-world situation.	1				1		1	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		1	1				1		1
	Total For Assessment Anchor D-S.1 Use random sampling to draw inferences about a population.				3				3		3	3				3		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.	1				1		1	1				1		1
	Total For Assessment Anchor D-S.2 Draw comparative inferences about populations.				2				2		2	2				2		2
	3			Investigate chance processes and develop, use, and evaluate probability models.		4				4	4		1				1	1
	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.	1				1		1	1				1		1
	3	2		Use probability to predict outcomes.														
	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.														
	3	2	3	Find probabilities of independent compound events using organized lists, tables, tree diagrams, and simulation.														
	Total For Assessment Anchor D-S.3 Investigate chance processes and develop, use, and evaluate probability models.				2	4			2	4	6	2	1			2	1	3
Total For Reporting Category D-S					6	4			6	4	10	6	1			6	1	7

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.		4				4	4		1				1	1
	1	1		Apply concepts of rational and irrational numbers.														
	1	1	1	Determine whether a number is rational or irrational. For rational numbers, show that the decimal expansion terminates or repeats.	2				2		2	2				2		2
	1	1	2	Convert a terminating or repeating decimal to a rational number.	2				2		2	2				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				2		2	2				2		2
	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	4			8	4	12	8	1			8	1	9
Total For Reporting Category A-N					8	4			8	4	12	8	1			8	1	9

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				1		1	1				1		1
	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		1	1				1		1
	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.	2				2		2	2				2		2
	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.	3				3		3	3				3		3
	Total For Assessment Anchor B-E.1 Demonstrate an understanding of expressions and equations with radicals and integer exponents.				8				8		8	8				8		8

B-E: Expressions and Equations	2			Understand the connections between proportional relationships, lines, and linear equations.		4				4	4		1				1	1
	2	1		Analyze and describe linear relationships between two variables, using slope.	1				1		1	1				1		1
	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.														
	2	1	2	Use similar right triangles to show & 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 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.				3	4			3	4	7	3	1			3	1	4
	3			Analyze and solve linear equations and pairs of simultaneous linear equations.														
	3	1		Write, solve, graph, and interpret linear equations in one or two variables, using various methods.														
	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.	1				1		1	1				1		1
	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.	2				2		2	2				2		2
	3	1	5	Solve real-world & mathematical problems leading to two linear equations in two variables.	2				2		2	2				2		2
	Total For Assessment Anchor B-E.3 Analyze and solve linear equations and pairs of simultaneous linear equations.				7				7		7	7				7		7
Total For Reporting Category B-E					18	4			18	4	22	18	1			18	1	19

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		1	1				1		1
	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.	3				3		3	3				3		3
	1	1	2	Compare properties of two functions, each represented in a different way.	2				2		2	2				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.	2				2		2	2				2		2
	Total For Assessment Anchor B-F.1 Analyze and interpret functions.				9				9		9	9				9		9
	2			Use functions to model relationships between quantities.														
	2	1		Represent or interpret functional relationships between quantities using tables, graphs, and descriptions.	1				1		1	1				1		1
	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.	3				3		3	3				3		3
	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.	2				2		2	2				2		2
	Total For Assessment Anchor B-F.2 Use functions to model relationships between quantities.				6				6		6	6				6		6
Total For Reporting Category B-F					15				15		15	15				15		15

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	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		1	1				1		1
	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.	1				1		1	1				1		1
	Total For Assessment Anchor C-G.1 Demonstrate an understanding of geometric transformations.				4				4		4	4				4		4
	2			Understand and apply the Pythagorean theorem.		4				4	4		1				1	1
	2	1		Solve problems involving right triangles by applying the Pythagorean theorem.	1				1		1	1				1		1
	2	1	1	Apply the converse of the Pythagorean theorem to show a triangle is a right triangle.														
	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	Apply the Pythagorean theorem to find the distance between two points in a coordinate system.	1				1		1	1				1		1
	Total For Assessment Anchor C-G.2 Understand and apply the Pythagorean theorem.				2	4			2	4	6	2	1			2	1	3
	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.	2				2		2	2				2		2
	Total For Assessment Anchor C-G.3 Solve real-world and mathematical problems involving volume.				2				2		2	2				2		2
Total For Reporting Category C-G					8	4			8	4	12	8	1			8	1	9

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.														
	1	1		Analyze and interpret bivariate data displayed in multiple representations.														
	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.	2				2		2	2				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.	2				2		2	2				2		2
	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.	2				2		2	2				2		2
	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	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.	4				4		4	4				4		4
	Total For Assessment Anchor D-S.1 Investigate patterns of association in bivariate data.				10				10		10	10				10		10
Total For Reporting Category D-S					10				10		10	10				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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
A: Literature Text	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			2	2						2			2
	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	3				1	3	3	7	1	1	1				1	1	1	3
	1	1	3	Describe characters in a story and explain how their actions contribute to the sequence of events.		2						2		2		1						1		1
	Total For Assessment Anchor A-K.1 Key Ideas and Details				3	5	3				3	5	3	11	3	2	1				3	2	1	6
	2	1	1	Explain the point of view from which a story is narrated, including the difference between first- and third-person narrations.	2						2			2	2						2			2
	Total For Assessment Anchor A-C.2 Craft and Structure				2						2			2	2						2			2
	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																							
	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.	3						3			3	3						3			3
	4	1	2	Demonstrate understanding of word relationships and nuances in word meanings.	2						2			2	2						2			2
	Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				9						9			9	9						9			9
Total For Reporting Category A					14	5	3				14	5	3	22	14	2	1				14	2	1	17

* Equating Block (EB) items were not used on the 2015 PSSA ELA administration.

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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
B: Informational Text	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		4	2	1					2	1		3
	1	1	2	Determine the main idea of a text; recount the key details and explain how they support the main idea.	1						1			1	1						1			1
	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.			3						3	3			1						1	1
	Total For Assessment Anchor B-K.1 Key Ideas and Details				3	2	3				3	2	3	8	3	1	1				3	1	1	5
	2	1	1	Explain the point of view from which a text is written.	1						1			1	1						1			1
	2	1	2	Use text features and search tools to efficiently locate information relevant to a given topic.	1						1			1	1						1			1
	Total For Assessment Anchor B-C.2 Craft and Structure				1						1			1	2						2			2
	3	1	1	Describe the logical connection between particular sentences and paragraphs to support specific points in a text.		3						3		3		1						1		1
	3	1	2	Compare and contrast the most important points and key details presented in two texts on the same topic.																				
	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				1	3					1	3		4	1	1					1	1		1
	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						2			2	2						2			2
	4	1	2	Demonstrate understanding of word relationships and nuances in word meanings.	2						2			2	2						2			2
	Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				8						8			14	9						9			9
Total For Reporting Category B					4		3				4		3	9	5		1				5		1	7

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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
C: Writing	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.			8						8	8			1						1	1
	Total For Assessment Anchor C.1 Text Types and Purposes						8						8	8			1						1	1
Total For Reporting Category C							8						8	8			1						1	1

Grade 03 **English Language Arts**

Reporting Category	Assessment	Descriptor (Sub-	Eligible Content	Focus	Points										Items									
					Student (Core			Equating Block (EB)			Total Points (Core &				Number of Items						Total Number (Core &			
															Core			EB						
					MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
D: Language	1	1	1	Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.	1						1			1	1						1			1
	1	1	2	Form and use regular and irregular plural nouns.	1						1			1	1						1			1
	1	1	3	Use abstract nouns.																				
	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.	2						2			2	2						2			2
	1	1	6	Ensure subject-verb and prounoun-antecedent agreement.	1						1			1	1						1			1
	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.	2						2			2	2									
	1	2	2	Use commas in addresses.	2						2			2	2						2			2
	1	2	3	Use commas and quotation marks in dialogue.	2						2			2	2						2			2
	1	2	4	Form and use possessives.	1						1			1	1									
	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				16						16			16	16						13			13
	2	1	1	Choose words and phrases for effect.	2						2			2	2						2			2
	Total For Assessment Anchor D.2 Knowledge of Language				2						2			2	2						2			2
Total For Reporting Category D					18						18			18	18						15			15

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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
A: Literature Text	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.	3						3			3	3						3			3
	1	1	2	Determine a theme of a story, drama, or poem from details in the text; summarize the text.	1	2					1	2		3	1	1					1	1		2
	1	1	3	Describe in depth a character, setting, or event in a story, drama, or poem, drawing on specific details in the text.	4						4			4	4						4			4
	Total For Assessment Anchor A-K.1 Key Ideas and Details				8	2					8	2		10	8	1					8	1		9
	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.	1						1			1	1						1			1
	Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas				1						1			1	1						1			1
	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.		3						3		3		1						1		1
	4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	2	2					2	2		4	2	1					2	1		3
	Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				6	5					6	5		11	6	2					6	2		8
Total For Reporting Category A					16	7					16	7		23	16	3					16	3		19

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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
B: Informational Text	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						1			1	1						1			1
	1	1	2	Determine the main idea of a text and explain how it is supported by key details; summarize the text.	2	3					2	3		5	2	1					2	1		3
	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.	1						1			1	1						1			1
	Total For Assessment Anchor B-K.1 Key Ideas and Details				4	3					4	3		7	4	1					4	1		5
	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.	1						1			1	1						1			1
	2	1	2	Describe the overall structure of events, ideas, concepts, or information and text features in a text or part of a text.	1						1			1	1						1			1
	Total For Assessment Anchor B-C.2 Craft and Structure				2						2			2	2						2			2
	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.	1	3					1	3		4	1	1					1	1		2
	3	1	3	Interpret text features and/or make connections between text and the content of text features.	1						1			1	1						1			1
	Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				3	5					3	5		8	3	2					3	2		5
	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.	1						1			1	1						1			1
	Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				2						2			2	2						2			2
Total For Reporting Category B					11	8					11	8		19	11	3					11	3		14

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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
C: Writing	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.			12						12	12			1						1	1
	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						12						12	12			1						1	1
Total For Reporting Category C							12						12	12			1						1	1

Grade 04 **English Language Arts**

Reporting Category	Assessment	Descriptor (Sub-	Eligible Content	Focus	Points										Items									
					Student (Core			Equating Block (EB)			Total Points (Core &				Number of Items						Total Number (Core &			
															Core			EB						
					MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
D: Language	1	1	1	Use relative pronouns and relative adverbs.	1						1			1	1						1			1
	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	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	6	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.	2						2			2	2						2			2
	1	1	7	Correctly use frequently confused words.																				
	1	1	8	Ensure subject-verb and pronoun-antecedent agreement.	1						1			1	1						1			1
	1	2	1	Use correct capitalization.	2						2			2	2						2			2
	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.	2						2			2	2						2			2
	1	2	4	Spell grade-appropriate words correctly.	1						1			1	1						1			1
	Total For Assessment Anchor D.1 Conventions of Standard English				12						12			12	12						12			12
	2	1	1	Choose words and phrases to convey ideas precisely.	2						2			2	2						2			2
	2	1	2	Choose punctuation for effect.	1						1			1	1						1			1
	2	1	3	Choose words and phrases for effect.	3						3			3	3						3			3
	Total For Assessment Anchor D.2 Knowledge of Language				6						6			3	6						6			6
Total For Reporting Category D					18						18			15	18						18			18

Grade 04 **English Language Arts**

Reporting Category	Assessment	Descriptor (Sub-	Eligible Content	Focus	Points										Items									
					Student (Core			Equating Block (EB)			Total Points (Core &				Number of Items						Total Number (Core &			
															Core			EB						
					MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
E: Text-Dependent Analysis	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			16						16	16			1						1	1
	Total For Assessment Anchor E.1 Evidence-based Analysis of Text						16						16	16			1						1	1
Total For Reporting Category E							16						16	16			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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
A: Literature Text	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			3		1	3		4	1	1					1	1		2
	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 text.	1						1			1	1						1			1
	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.	1	3					1	3		4	1	1					1	1		2
	Total For Assessment Anchor A-K.1 Key Ideas and Details				3	6					3	6		9	3	2					3	2		5
	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.	2						2			2	2						2			2
	Total For Assessment Anchor A-C.2 Craft and Structure				2						2			2	2						2			2
	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																							
	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	2					3	2		5	3	1					3	1		4
	Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				5	2					5	2		7	5	1					5	1		6
Total For Reporting Category A					10	8					10	8		18	10	3					10	3		13

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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
B: Informational Text	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.		4						4		4		2						2		2
	1	1	2	Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.	2	3					2	3		5	2	1					2	1		3
	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.	1						1			1	1						1			1
	Total For Assessment Anchor B-K.1 Key Ideas and Details				3	7					3	7		10	3	3					3	3		6
	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																							
	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).	2						2			2	2						2			2
	3	1	2	Integrate information from several texts on the same topic in order to demonstrate subject knowledge.	3						3			3	3						3			3
	3	1	3	Interpret text features and/or make connections between text and the content of text features.																				
	Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				5						5			5	5						5			5
	4	1	1	Determine or clarify 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.	4						4			4	4						4			4
	Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				5						5			5	5						5			5
Total For Reporting Category B					13	7					13	7		20	13	3					13	3		16

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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
C: Writing	1	1		Write opinion pieces on topics or texts, supporting a point of view with reasons and information.			12						12	12			1						1	1
	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						12						12	12			1						1	1
Total For Reporting Category C							12						12	12			1						1	1

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						Total Number (Core &			
															Core			EB						
					MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
D: Language	1	1	1	Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences.	1						1			1	1						1			1
	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			1	1						1			1
	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	7	Correctly use frequently confused words.																				
	1	1	8	Ensure subject-verb and pronoun-antecedent agreement.	1						1			1	1						1			1
	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.	2						2			2	2						2			2
	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			1	1						1			1
	1	2	5	Spell grade-appropriate words correctly.	1						1			1	1						1			1
	Total For Assessment Anchor D.1 Conventions of Standard English				12						12			12	12						12			12

	2	1	1	Expand, combine, and reduce sentences for meaning, reader/listener interest, and style.	2						2			2	2						2			2
	2	1	2	Choose words and phrases to convey ideas precisely.	2						2			2	2						2			2
	2	1	3	Choose punctuation for effect.	1						1			1	1						1			1
	2	1	4	Choose words and phrases for effect.	1						1			1	1						1			1
	Total For Assessment Anchor D.2 Knowledge of Language				6						6			6	6						6			6
Total For Reporting Category D					18						18			18	18						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						Total Number (Core &			
															Core			EB						
					MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
E: Text-Dependent Analysis	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			16						16	16			1							1	1
	Total For Assessment Anchor E.1 Evidence-based Analysis of Text						16						16	16			1						1	1
Total For Reporting Category E							16						16	16			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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
A: Literature Text	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					1	2		3	1	1					1	1		2
	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.	1						1			1	1						1			1
	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					1	3		4	1	1					1	1		2
	Total For Assessment Anchor A-K.1 Key Ideas and Details				3	5					3	5		8	3	2					3	2		5
	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.	1						1			1	1						1			1
	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.	2						2			2	2						2			2
	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	2					1	2		3	1	1					1	1		2
	Total For Assessment Anchor A-C.2 Craft and Structure				4	2					4	2		6	4	1					4	1		5
	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																							
	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.	2						2			2	2						2			2
	Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				4						4			4	4						4			4
Total For Reporting Category A					11	7					11	7		18	11	3					11	3		14

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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
B: Informational Text	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					1	2		3	1	1					1	1		2
	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	3					1	3		4	1	1					1	1		2
	Total For Assessment Anchor B-K.1 Key Ideas and Details				3	5					3	5		8	3	2					3	2		5
	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.	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.	1						1			1	1						1			1
	Total For Assessment Anchor B-C.2 Craft and Structure				2	3					2	3		5	2	1					2	1		3
	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
	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexbily 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.	3						3			3	3						3			3
	Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				4						4			4	4						4			4
Total For Reporting Category B					12	8					12	8		20	12						12	3		15

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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
C: Writing	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.			12						12	12			1						1	1
	Total For Assessment Anchor C.1 Text Types and Purposes						12						12	12			1						1	1
Total For Reporting Category C							12						12	12			1						1	1

Grade 06 **English Language Arts**

Reporting Category	Assessment	Descriptor (Sub-	Eligible Content	Focus	Points										Items									
					Student (Core			Equating Block (EB)			Total Points (Core &				Number of Items						Total Number (Core &			
															Core			EB						
					MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
D: Language	1	1	1	Ensure that pronouns are in the proper case.	1						1			1	1						1			1
	1	1	2	Use intensive pronouns.																				
	1	1	3	Recognize and correct inappropriate shifts in pronoun number and person.																				
	1	1	4	Recognize and correct vague pronouns.	1						1			1	1						1			1
	1	1	5	Recognize and correct inappropriate shifts in verb tense.	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	8	Ensure subject-verb and pronoun-antecedent agreement.	2						2			2	2						2			2
	1	2	1	Use punctuation to set of nonrestrictive/parenthetical elements.	2						2			2	2						2			2
	1	2	2	Spell correctly.	2						2			2	2						2			2
	1	2	3	Use punctuation to separate items in a series.	2						2			2	2						2			2
	Total For Assessment Anchor D.1 Conventions of Standard English				12						12			12	12						12			12
	2	1	1	Vary sentence patterns for meaning, reader/listener interest, and style.	2						2			2	2						2			2
	2	1	2	Maintain consistency in style and tone.	2						2			2	2						2			2
	2	1	3	Choose words and phrases to convey ideas precisely.	2						2			2	2						2			2
	2	1	4	Choose punctuation for effect.																				
	2	1	5	Choose words and phrases for effect.																				
	Total For Assessment Anchor D.2 Knowledge of Language				6						6			6	6						6			6
Total For Reporting Category D					18						18			18	18						18			18

Grade 06 **English Language Arts**

Reporting Category	Assessment	Descriptor (Sub-	Eligible Content	Focus	Points										Items									
					Student (Core			Equating Block (EB)			Total Points (Core &				Number of Items						Total Number (Core &			
															Core			EB						
					MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
E: Text-Dependent	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			16						16	16			1						1	1
	Total For Assessment Anchor E.1 Evidence-based Analysis of Text						16						16	16			1						1	1
Total For Reporting Category E							16						16	16			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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
A: Literature Text	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.	2						2			2	2						2			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.																				
	1	1	3	Analyze how particular elements of a story, drama, or poem interact.		5						5		5		2						2		2
	Total For Assessment Anchor A-K.1 Key Ideas and Details				2	5					2	5		7	2	2					2	2		4
	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
	1	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.	3						3			3	3						3			3
	Total For Assessment Anchor A-C.2 Craft and Structure				3	3					4	3		7	4	1					4	1		5
	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
	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.	2						2			2	2						2			2
	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 A-V.4 Vocabulary Acquisition and Use				4						4			4	4						4			4
Total For Reporting Category A					11	8					11	8		19	11	3					11	3		14

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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
B: Informational Text	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.		2						2		2		1						1		1
	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	2					1	2		3	1	1					1	1		2
	1	1	3	Analyze the interactions between individuals, events, and ideas in a text.	2						2			2	2						2			2
	Total For Assessment Anchor B-K.1 Key Ideas and Details				3	4					3	4		7	3	2					3	2		5
	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.	1	3					1	3		4	1	1					1	1		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.	2						2			2	2						2			2
	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	3					5	3		8	5	1					5	1		6
	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.	1						1			1	1						1			1
	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				1						1			1	1						1			1
	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.	2						2			2	2						2			2
	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 B-V.4 Vocabulary Acquisition and Use				3						3			3	3						3			3
Total For Reporting Category B					12	7					12	7		19	12	3					12	3		15

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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
C: Writing	1	1		Write arguments to support claims with clear reasons and relevant evidence.			12						12	12			1						1	1
	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						12						12	12			1						1	1
Total For Reporting Category C							12						12	12			1						1	1

Grade 07 **English Language Arts**

Reporting Category	Assessment	Descriptor (Sub-	Eligible Content	Focus	Points										Items									
					Student (Core			Equating Block (EB)			Total Points (Core &				Number of Items						Total Number (Core &			
															Core			EB						
					MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
D: Language	1	1	1	Explain the function of phrases and clauses in general and their function in specific sentences.	2						2			2	2						2			2
	1	1	2	Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.																				
	1	1	3	Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.	1						1			1	1						1			1
	1	1	4	Recognize and correct inappropriate shifts in pronoun number and person.																				
	1	1	5	Recognize and correct vague pronouns.	1						1			1	1						1			1
	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						1			1	1						1			1
	1	1	8	Correctly use frequently confused words.																				
	1	1	9	Ensure subject-verb and pronoun-antecedent agreement.																				
	1	2	1	Use a comma to separate coordinate adjectives.	2						2			2	2						2			2
	1	2	2	Spell correctly.	2						2			2	2						2			2
	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.	1						1			1	1						1			1
	Total For Assessment Anchor D.1 Conventions of Standard English				12						12			12	12						12			12

	2	1	1	Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.	1						1			1	1						1			1
	2	1	2	Vary sentence patterns for meaning, reader/listener interest, and style.	2						2			2	2						2			2
	2	1	3	Maintain consistency in style and tone.	2										2						2			
	2	1	4	Choose punctuation for effect.	1										1						1			
	2	1	5	Choose words and phrases for effect.																				
	Total For Assessment Anchor D.2 Knowledge of Language				6						6			6	6						6			6
Total For Reporting Category D					18						18			18	18						18			18

Grade 07 **English Language Arts**

Reporting Category	Assessment	Descriptor (Sub-	Eligible Content	Focus	Points										Items									
					Student (Core			Equating Block (EB)			Total Points (Core &				Number of Items						Total Number (Core &			
															Core			EB						
					MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
E: Text-Dependent Analysis	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			16						16	16			1						1	1
	Total For Assessment Anchor E.1 Evidence-based Analysis of Text						16						16	16			1						1	1
Total For Reporting Category E							16						16	16			1						1	1

Grade 08 **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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
A: Literature Text	1	1	1	Cite 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						1			1	1						1			1
	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.	1	3					1	3		4	1	1					1	1		2
	1	1	3	Analyze how particular lines of dialogue or incidents in a story, drama, or poem propel action, reveal aspects of a character, or provoke a decision.	2						2			2	2						2			2
	Total For Assessment Anchor A-K.1 Key Ideas and Details				4	3					4	3		7	4	1					4	1		5
	2	1	1	Analyze how differences in the points of view of the characters and the audience or reader create such effects as suspense or humor.	1	3					1	3		4	1	1					1	1		2
	2	1	2	Compare/contrast the structure of two or more texts, and analyze how the differing structure of each contributes to its meaning and style.																				
	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	2					1	2		3	1	1					1	1		2
	Total For Assessment Anchor A-C.2 Craft and Structure				2	5					2	5		7	2	2					2	2		4
	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 describing how the material is rendered new.	1						1			1	1						1			1
	Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas				1						1			1	1						1			1
	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.	1						1			1	1						1			1
	4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	4						4			4	4						4			4
	Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				5						5			5	5						5			5
Total For Reporting Category A					12	8					12	8		20	12						12	3		15

Grade 08 **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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
B: Informational Text	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					1	2		3	1	1					1	1		2
	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.	2						2			2	2						2			2
	1	1	3	Analyze how a text makes connections among and distinctions between individuals, ideas, or events.	2						2			2	2						2			2
	Total For Assessment Anchor B-K.1 Key Ideas and Details				5	2					5	2		7	5	1					5	1		6
	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.		3						3		3		1						1		1
	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.	2	2					2	2		4	2	1					2	1		3
	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						1			1	1						1			1
	Total For Assessment Anchor B-C.2 Craft and Structure				3	5					3	5		8	3	2					3	2		5
	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.																				
	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																							

	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						2			2	2						2			2
	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 B-V.4 Vocabulary Acquisition and Use				3						3			3	3						3			3
Total For Reporting Category B					11	7					11	7		18	11	3					11	3		14

Grade 08 **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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
C: Writing	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.			12						12	12			1						1	1
	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						12						12	12			1						1	1
Total For Reporting Category C							12						12	12			1						1	1

Grade 08 **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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
D: Language	1	1	1	Explain the function of verbals in general and their function in particular sentences.	1						1			1	1						1			1
	1	1	2	Form and use verbs in the active and passive voice.																				
	1	1	3	Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.	2						2			2	2						2			2
	1	1	4	Recognize and correct inappropriate shifts in verb voice and mood.																				
	1	1	5	Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.																				
	1	1	6	Recognize and correct inappropriate shifts in pronoun number and person.																				
	1	1	7	Recognize and correct vague pronouns.	1						1			1	1						1			1
	1	1	8	Recognize and correct inappropriate shifts in verb tense.																				
	1	1	9	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.	2						2			2	2						2			2
	1	1	10	Correctly use frequently confused words.																				
	1	1	11	Ensure subject-verb and pronoun-antecedent agreement.																				
	1	2	1	Use punctuation to indicate a pause or a break.	1						1			1	1						1			1
	1	2	2	Use an ellipsis to indicate an omission.	1						1			1	1						1			1
	1	2	3	Spell correctly.	2						2			2	2						2			2
	1	2	4	Use punctuation to set of nonrestrictive/parenthetical elements.																				
	1	2	5	Use punctuation to separate items in a series.	2						2			2	2						2			2
	Total For Assessment Anchor D.1 Conventions of Standard English				12						12			12	12						12			12
	2	1	1	Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects.	2						2			2	2						2			2
	2	1	2	Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.	2						2			2	2						2			2
	2	1	3	Vary sentence patterns for meaning, reader/listener interest, and style.																				
	2	1	4	Maintain consistency in style and tone.	1						1			1	1						1			1
	2	1	5	Choose punctuation for effect.																				
	2	1	6	Choose words and phrases for effect.	1						1			1	1						1			1
	Total For Assessment Anchor D.2 Knowledge of Language				6						6			6	6						6			6
Total For Reporting Category D					18						18			18	18						18			18

Grade 08 **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	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total	MC	EBSR	CR	MC	EBSR	CR	MC	EBSR	CR	Total
E: Text-Dependent Analysis	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			16						16	16			1						1	1
	Total For Assessment Anchor E.1 Evidence-based Analysis of Text						16						16	16			1						1	1
Total For Reporting Category E							16						16	16			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	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	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, agriculture, packaging materials) that have either positive or negative impacts on society or the environment.	1				1		1	1				1		1
	1	3	1	Observe and record change by using time and measurement.	1		1		2		2	1		1		2		2
	1	3	2	Describe relative size, distance, or motion.	1		1		2		2	1		1		2		2
	1	3	3	Observe and describe the change to objects caused by temperature change or light.	1	2	1		2	2	4	1	1	1		2	1	3
	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).	1		1		2		2	1		1		2		2
	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.	2	2	1		3	2	5	2	1	1		3	1	4
Total For Assessment Anchor A.1 Reasoning and Analysis					8	4	6		14	4	18	8	2	6		14	2	16

A: Nature of Science	2	1	1	Generate questions about objects, organisms, or events that can be answered through scientific investigations.	1				1		1	1				1		1
	2	1	2	Design and describe an investigation (a fair test) to test one variable.	2				2		2	2				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.	2		1		3		3	2		1		3		3
	2	1	4	State a conclusion that is consistent with the information/data.	2				2		2	2				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)	2		1		3		3	2		1		3		3
	Total For Assessment Anchor A.2 Processes, Procedures, and Tools of Scientific Investigations				9		2		11		11	9		2		11		11
	3	1	1	Categorize systems as either natural or human-made (e.g., ballpoint pens, simple electrical circuits, plant anatomy, water cycle).	2		2		4		4	2		2		4		4
	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.		2				2	2		1				1	1
	3	1	4	Identify the parts of the food and fiber systems as they relate to agricultural products from the source to the consumer.	2		1		3		3	2		1		3		3
	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	1				1		1	1				1		1
	3	2	2	Use models to make observations to explain how systems work (e.g., water cycle, Sun-Earth-Moon system).	1				1		1	1				1		1

	3	2	3	Use appropriate, simple modeling tools & 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).	2				2		2	2				2		2
	3	3	2	Predict future conditions/events based on observable patterns (e.g., day/night, seasons, sunrise/sunset, lunar phases).	1		1		2		2	1		1		2		2
	Total For Assessment Anchor A.3 Systems, Models, and Patterns				11	2	4		15	2	17	11	1	4		15	1	16
Total For Reporting Category A					28	6	12		40	6	46	28	3	12		40	3	43

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	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1	1	1	Identify life processes of living things (e.g., growth, digestion, respiration).														
	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		1	1				1		1
	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		2		2	1		1		2		2
	1	1	5	Describe the life cycles of different organisms (e.g., moth, grasshopper, frog, seed-producing plant).	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	Identify characteristics for plant and animal survival in different environments (e.g., wetland, tundra, desert, prairie, deep ocean, forest).	1				1		1	1				1		1

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).	1	2	1		2	2	4	1	1	1		2	1	3
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.	1				1		1	1				1		1
Total For Assessment Anchor B.2 Continuity of Life				3	2	1		4	2	6	3	1	1		4	1	5
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.														
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).	2				2		2	2				2		2
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).			1		1		1			1		1		1

B: Biological Sciences

	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.														
	3	3	4	Identify major land uses in the urban, suburban and rural communities (e.g., housing, commercial, recreation).	1				1		1	1				1		1
	3	3	5	Describe the effects of pollution (e.g., litter) in the community.	1				1		1	1				1		1
	Total For Assessment Anchor B.3 Ecological Behavior and Systems				4		2		6		6	4		2		6		6
Total For Reporting Category B					10	2	4		14	2	16	10	1	4		14	1	15

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	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Physical Sciences	1	1	1	Use physical properties [e.g., mass, shape, size, volume, color, texture, magnetism, state to describe matter.	2				2		2	2				2		2
	1	1	2	Categorize/group objects using physical characteristics.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor C.1 Structures, Properties, and Interaction of Matter and Energy				3		1		4		4	3		1		4		4
	2	1	1	Identify energy forms, energy transfer, and energy examples (e.g., light, heat, electrical).	2		1		3		3	2		1		3		3
	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.														
	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				3		2		5		5	3		2		5		5

3	1	1	Describe changes in motion caused by forces (e.g., magnetic, pushes or pulls, gravity, friction).	2				2		2	2				2		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).	1		1		2		2	1		1		2		2
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				4		1		5		5	4		1		5		5
Total For Reporting Category C				10		4		14		14	10		4		14		14

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	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	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	3	Describe the composition of soil as weathered rock and decomposed organic remains.	1				1		1	1				1		1
	1	2	1	Identify products and by-products of plants and animals for human use (e.g., food, clothing, building materials, paper products).			1		1		1			1		1		1
	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	2	3	Recognize ways that humans benefit from the use of water resources (e.g., agriculture, energy, recreation).	1				1		1	1				1		1

D: Earth and Space Sciences	1	3	1	Describe types of freshwater and saltwater bodies (e.g., lakes, rivers, wetlands, oceans).	1		1		2		2	1		1		2		2
	1	3	2	Explain how water goes through phase changes (i.e., evaporation, condensation, freezing, and melting).			1		1		1			1		1		1
	1	3	3	Describe or compare lentic systems (i.e., ponds, lakes, and bays) and lotic systems (i.e., streams, creeks, and rivers).	1				1		1	1				1		1
	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).														
	Total For Assessment Anchor D.1 Earth Features and Processes that Change Earth and its Resources				5		3		8		8	5		3		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).		2				2	2		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				2	2			2	2	4	2	1			2	1	3
	3	1	1	Describe motions of the Sun - Earth - Moon system.	2		1		3		3	2		1		3		3
	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				3		1		4		4	3		1		4		4
Total For Reporting Category D					10	2	4		14	2	16	10	1	4		14	1	15

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	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	2				2		2	2				2		2
	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.	2				2		2	2				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).		2	1		1	2	3		1	1		1	1	2
	1	2	2	Identify environmental issues and explain their potential long-term health effects (e.g., pollution, pest controls, vaccinations).	1				1		1	1				1		1
	1	2	3	Describe fundamental scientific or technological concepts that could solve practical problems (e.g., Newton's laws of motion, Mendelian genetics).	1				1		1	1				1		1
	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).	1		1		2		2	1		1		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		2		2	1		1		2		2
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				12	2	4		16	2	18	12	1	4		16	1	17
2	1	1	Use evidence, observations, or a variety of scales (e.g., mass, distance, volume, temperature) to describe relationships.	3	2			3	2	5	3	1			3	1	4
2	1	2	Use space/time relationships, define concepts operationally, raise testable questions, or formulate hypotheses.	1				1		1	1				1		1
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.														
2	1	4	Interpret data/observations; develop relationships among variables based on data/observations to design models as solutions.	2		1		3		3	2		1		3		3
2	1	5	Use evidence from investigations to clearly communicate and support conclusions.	1				1		1	1				1		1
2	1	6	Identify a design flaw in a simple technological system and devise possible working solutions.	1		1		2		2	1		1		2		2
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

A: Nature of Science

2	2	2	Apply appropriate measurement systems (e.g., time, mass, distance, volume, temperature) to record and interpret observations under varying conditions.	1		1		2		2	1		1		2		2
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				10	2	4		14	2	16	10	1	4		14	1	15
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.			1		1		1			1		1		1
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)].	1				1		1	1				1		1
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.	2		1		3		3	2		1		3		3
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	2			1	2	3	1	1			1	1	2
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).														
	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	2	4		10	2	12	6	1	4		10	1	11
Total For Reporting Category A					28	6	12		40	6	46	28	3	12		40	3	43

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	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	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		2		2	1		1		2		2
	Total For Assessment Anchor B.1 Structures and Functions of Organisms				2		1		3		3	2		1		3		3

B: Biological Sciences	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	1				1		1	1				1		1
	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.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor B.2 Continuity of Life				3		1		4		4	3		1		4		4

3	1	1	Explain the flow of energy through an ecosystem (e.g., food chains, food webs).	1	2			1	2	3	1	1			1	1	2
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).														
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														
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	2			1	2	3	1	1			1	1	2
3	3	1	Explain how human activities may affect local, regional, and global environments.			1		1		1			1		1		1
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).														
3	3	4	Explain the long-term effects of using integrated pest management (e.g., herbicides, natural predators, biogenetics) on the environment.	1		1		2		2	1		1		2		2
Total For Assessment Anchor B.3 Ecological Behavior and Systems				4	4	2		6	4	10	4	2	2		6	2	8
Total For Reporting Category B				9	4	4		13	4	17	9	2	4		13	2	15

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		1	1				1		1
	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				3		1		4		4	3		1		4		4
	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)	2				2		2	2				2		2
	2	1	2	Explain how energy is transferred from one place to another through convection, conduction, or radiation.			1		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		1	1				1		1
	2	2	1	Describe the Sun as the major source of energy that impacts the environment.	1		1		2		2	1		1		2		2
	2	2	2	Compare the time span of renewability for fossil fuels and the time span of renewability for alternative fuels.			1		1		1			1		1		1
	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				4		3		7		7	4		3		7		7
	3	1	1	Describe forces acting on objects (e.g., friction, gravity, balanced versus unbalanced).	3				3		3	3				3		3

	3	1	2	Distinguish between kinetic and potential energy.	1				1		1	1				1		1
	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).														
	Total For Assessment Anchor C.3 Principles of Motion and Force				4				4		4	4				4		4
Total For Reporting Category C					11		4		15		15	11		4		15		15

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	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).	3				3		3	3				3		3

D: Earth and Space Sciences	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	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	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).	2				2		2	2				2		2
	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	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		1		1			1		1		1
	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				5		3		8		8	5		3		8		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		2		2	1		1		2		2
Total For Assessment Anchor D.2 Weather, Climate, and Atmospheric Processes				2		1		3		3	2		1		3		3
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.														
3	1	2	Describe the role of gravity as the force that governs the movement of the solar system and universe.	1				1		1	1				1		1
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).	2				2		2	2				2		2
Total For Assessment Anchor D.3 Composition and Structure of the Universe				3				3		3	3				3		3
Total For Reporting Category D				10		4		14		14	10		4		14		14

Appendix C:

Item and Test Development Process

Item and Test Development Process for the 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.

Item and Test Development Process for the PSSA

Step	Description
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.
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.

Item and Test Development Process for the PSSA

Step	Description
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**.*	

Item and Test Development Process for the PSSA

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.

Item and Test Development Process for the PSSA

Step	Description
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.
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 Review Cards

Standard: Use the four operations with whole numbers to solve problems.

PA - Item Card

1.

A.

B.

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.

PA - Data Card

Item ID
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

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

Appendix E:

Item Rating Sheet and Criteria Guidelines

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

Column Heading	Definition
PubID	Public ID
Form	Form
Std	Standard
DOK	Depth of knowledge
N	N
PVal	P-Value
P( )	Proportion selecting given response (-=blank)
PtBis	Point biserial
PT( )	Point biserial of repsonse
Meas	Rasch item measure
MeasSE	Rasch item measure standard error
t	t fit statistic
MS	Mean square fit statistic
M/F	Male/female DIF statistic
W/B	White/black DIF statistic

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	3	967446	0	B-O	2	124573	0.51	0.28	0.51	0.09	0.10	0.01	0.45	-0.27	0.45	-0.15	-0.20	0.3143	0.0065	-0.3	1.0	-2.4	1.0			
MATH	3	605908	0	D-M	2	124573	0.75	0.75	0.21	0.02	0.02	0.00	0.52	0.52	-0.46	-0.14	-0.15	-0.8683	0.0072	-9.9	0.8	-9.9	0.7			
MATH	3	205692	0	A-T	1	124573	0.51	0.51	0.16	0.09	0.23	0.01	0.55	0.55	-0.17	-0.17	-0.38	0.4252	0.0065	-9.9	0.9	-9.9	0.9			
MATH	3	214755	0	D-M	1	124573	0.53	0.31	0.09	0.53	0.06	0.01	0.45	-0.17	-0.27	0.45	-0.29	0.3764	0.0065	1.3	1.0	-1.8	1.0			
MATH	3	349242	0	B-O	2	124573	0.61	0.08	0.11	0.19	0.61	0.01	0.48	-0.31	-0.29	-0.14	0.48	-0.1384	0.0066	-9.9	1.0	-9.9	0.9			
MATH	3	836133	0	B-O	1	124573	0.67	0.12	0.08	0.67	0.11	0.02	0.47	-0.25	-0.12	0.47	-0.32	-0.4606	0.0068	-9.9	0.9	-9.9	0.9			
MATH	3	401226	0	A-T	2	124573	0.40	0.40	0.27	0.18	0.14	0.01	0.45	0.45	-0.17	-0.14	-0.26	0.9928	0.0066	-2.6	1.0	6.3	1.0			
MATH	3	627710	0	D-M	2	124573	0.69	0.11	0.09	0.11	0.69	0.00	0.45	-0.22	-0.24	-0.22	0.45	-0.5325	0.0068	-9.9	1.0	-9.9	0.9			
MATH	3	736846	0	A-F	1	124573	0.77	0.17	0.01	0.04	0.77	0.00	0.44	-0.35	-0.12	-0.20	0.44	-1.0845	0.0074	-9.9	0.9	-9.9	0.8			
MATH	3	947421	0	A-F	1	124573	0.49	0.38	0.49	0.07	0.06	0.00	0.47	-0.28	0.47	-0.24	-0.16	0.5155	0.0065	-6.7	1.0	-4.2	1.0			
MATH	3	134296	0	D-M	1	124573	0.71	0.71	0.17	0.09	0.02	0.00	0.23	0.23	-0.22	0.02	-0.19	-0.6325	0.0069	9.9	1.2	9.9	1.5			
MATH	3	341121	0	B-O	1	124573	0.73	0.04	0.73	0.20	0.02	0.01	0.47	-0.24	0.47	-0.34	-0.14	-0.7280	0.0070	-9.9	0.9	-9.9	0.8			
MATH	3	311426	0	B-O	1	124573	0.65	0.21	0.06	0.65	0.07	0.01	0.55	-0.38	-0.24	0.55	-0.18	-0.3445	0.0067	-9.9	0.9	-9.9	0.8			
MATH	3	123841	0	D-M	2	124573	0.79	0.04	0.03	0.79	0.14	0.00	0.36	-0.14	-0.18	0.36	-0.26	-1.1418	0.0075	-4.1	1.0	3.1	1.0			
MATH	3	205331	0	B-O	2	124573	0.54	0.25	0.54	0.13	0.07	0.02	0.50	-0.23	0.50	-0.25	-0.25	0.2847	0.0065	-9.9	0.9	-9.9	0.9			
MATH	3	144727	0	C-G	1	124573	0.66	0.66	0.09	0.16	0.09	0.01	0.34	0.34	-0.24	-0.08	-0.20	-0.4016	0.0067	9.9	1.1	9.9	1.2			
MATH	3	690966	0	B-O	2	124573	0.61	0.61	0.27	0.06	0.06	0.01	0.37	0.37	-0.18	-0.20	-0.20	-0.0943	0.0066	9.9	1.1	9.9	1.1			
MATH	3	209940	0	A-F	1	124573	0.75	0.08	0.75	0.10	0.07	0.00	0.40	-0.25	0.40	-0.20	-0.16	-0.9153	0.0072	-5.0	1.0	-7.6	0.9			
MATH	3	258671	0	B-O	2	124573	0.58	0.11	0.58	0.13	0.17	0.01	0.51	-0.12	0.51	-0.33	-0.26	0.0254	0.0065	-9.9	0.9	-9.9	0.9			
MATH	3	196094	0	D-M	2	124573	0.50	0.50	0.08	0.11	0.31	0.00	0.50	0.50	-0.13	-0.15	-0.36	0.5081	0.0065	-9.9	0.9	-9.9	0.9			
MATH	3	785410	0	A-F	1	124573	0.49	0.08	0.15	0.27	0.49	0.01	0.40	-0.28	-0.20	-0.10	0.40	0.5459	0.0065	9.9	1.1	9.9	1.1			
MATH	3	618917	0	B-O	2	124573	0.31	0.40	0.31	0.11	0.17	0.01	0.38	-0.14	0.38	-0.10	-0.20	1.5429	0.0070	9.9	1.1	9.9	1.2			
MATH	3	450389	0	C-G	1	124573	0.34	0.40	0.05	0.20	0.34	0.01	0.34	-0.21	-0.06	-0.11	0.34	1.4204	0.0069	9.9	1.1	9.9	1.3			
MATH	3	843368	0	A-T	2	124573	0.61	0.11	0.12	0.61	0.16	0.00	0.42	-0.13	-0.12	0.42	-0.33	-0.0650	0.0065	8.1	1.0	6.7	1.0			
MATH	3	713406	0	C-G	1	124573	0.53	0.14	0.25	0.06	0.53	0.01	0.47	-0.15	-0.33	-0.14	0.47	0.3170	0.0065	-6.5	1.0	-7.5	1.0			
MATH	3	768417	0	C-G	1	124573	0.60	0.60	0.25	0.04	0.11	0.01	0.43	0.43	-0.16	-0.18	-0.32	-0.1780	0.0066	9.9	1.0	9.3	1.1			
MATH	3	638833	0	C-G	1	124573	0.73	0.05	0.05	0.17	0.73	0.01	0.31	-0.21	-0.13	-0.16	0.31	-0.7583	0.0070	9.9	1.1	9.9	1.2			
MATH	3	473497	0	B-O	2	124573	0.60	0.15	0.60	0.15	0.09	0.01	0.46	-0.24	0.46	-0.23	-0.18	-0.0579	0.0065	-9.4	1.0	-9.9	0.9			
MATH	3	102623	0	C-G	1	124573	0.49	0.07	0.49	0.01	0.42	0.01	0.34	-0.14	0.34	-0.12	-0.23	0.5573	0.0065	9.9	1.1	9.9	1.2			
MATH	3	896374	0	C-G	1	124573	0.74	0.20	0.02	0.74	0.03	0.00	0.40	-0.35	-0.16	0.40	-0.07	-0.8456	0.0071	-8.5	1.0	0.4	1.0			
MATH	3	182425	0	C-G	1	124573	0.78	0.05	0.03	0.13	0.78	0.01	0.36	-0.19	-0.17	-0.22	0.36	-1.0325	0.0074	-9.9	1.0	-6.7	1.0			
MATH	3	528622	0	C-G	1	124573	0.43	0.17	0.22	0.43	0.18	0.00	0.39	-0.18	-0.14	0.39	-0.18	0.8787	0.0065	9.9	1.1	9.9	1.1			
MATH	3	397711	0	D-M	2	124573	0.60	0.12	0.60	0.15	0.12	0.01	0.49	-0.17	0.49	-0.25	-0.28	0.0035	0.0065	-9.9	0.9	-9.9	0.9			
MATH	3	666716	0	A-F	2	124573	0.49	0.49	0.15	0.16	0.20	0.01	0.42	0.42	-0.22	-0.18	-0.15	0.5793	0.0065	9.9	1.0	9.9	1.1			
MATH	3	525219	0	D-M	2	124573	0.75	0.07	0.04	0.75	0.14	0.00	0.42	-0.26	-0.16	0.42	-0.24	-0.9340	0.0072	-7.8	1.0	-6.6	1.0			
MATH	3	584110	0	A-T	2	124573	0.53	0.11	0.53	0.27	0.09	0.00	0.50	-0.23	0.50	-0.21	-0.29	0.3320	0.0065	-9.9	0.9	-9.9	0.9			
MATH	3	977082	0	B-O	2	124573	0.51	0.28	0.11	0.51	0.10	0.01	0.44	-0.14	-0.31	0.44	-0.18	0.5432	0.0065	8.5	1.0	6.2	1.0			
MATH	3	394709	0	B-O	1	124573	0.77	0.04	0.05	0.77	0.12	0.01	0.42	-0.24	-0.26	0.42	-0.21	-1.1100	0.0075	-9.9	1.0	-9.9	0.9			
MATH	3	395111	0	D-M	2	124573	0.30	0.19	0.23	0.28	0.30	0.01	0.33	-0.14	0.06	-0.26	0.33	1.5380	0.0070	9.9	1.1	9.9	1.3			
MATH	3	121745	0	B-O	2	124573	0.65	0.12	0.05	0.18	0.65	0.01	0.41	-0.23	-0.17	-0.21	0.41	-0.3529	0.0067	8.9	1.0	8.4	1.1			
MATH	3	338271	0	B-O	2	124573	0.58	0.11	0.08	0.58	0.21	0.01	0.45	-0.28	-0.23	0.45	-0.19	0.1203	0.0065	-5.6	1.0	-8.0	1.0			
MATH	3	325175	0	A-T	2	124573	0.38	0.17	0.38	0.32	0.11	0.02	0.36	-0.22	0.36	-0.03	-0.24	1.1846	0.0067	9.9	1.1	9.9	1.2			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	3	807265	0	C-G	1	124573	0.66	0.21	0.03	0.66	0.10	0.00	0.43	-0.30	-0.14	0.43	-0.20	-0.3611	0.0067	-3.7	1.0	-5.4	1.0			
MATH	3	646463	0	A-T	1	124573	0.87	0.04	0.04	0.03	0.87	0.01	0.39	-0.22	-0.25	-0.19	0.39	-1.7520	0.0087	-9.9	0.8	-9.9	0.7			
MATH	3	890114	0	D-M	2	124573	0.45	0.11	0.21	0.45	0.22	0.01	0.38	-0.25	-0.18	0.38	-0.08	0.7724	0.0065	9.9	1.1	9.9	1.1			
MATH	3	753663	0	D-M	1	124573	0.64	0.64	0.11	0.07	0.16	0.01	0.54	0.54	-0.21	-0.17	-0.40	-0.2040	0.0066	-9.9	0.9	-9.9	0.8			
MATH	3	277759	0	A-F	2	124573	0.73	0.73	0.16	0.07	0.04	0.01	0.35	0.35	-0.18	-0.20	-0.18	-0.6985	0.0070	9.9	1.0	3.2	1.0			
MATH	3	144623	0	A-F	1	124573	0.74	0.10	0.07	0.08	0.74	0.01	0.34	-0.19	-0.17	-0.16	0.34	-0.8249	0.0071	9.9	1.0	4.5	1.0			
MATH	3	243560	0	A-T	1	124573	0.81	0.09	0.81	0.06	0.03	0.01	0.40	-0.17	0.40	-0.27	-0.23	-1.2428	0.0077	-9.9	0.9	-9.9	0.9			
MATH	3	404024	0	D-M	2	124573	0.25	0.42	0.27	0.25	0.05	0.00	0.38	-0.27	0.02	0.38	-0.18	1.8972	0.0074	0.1	1.0	9.9	1.2			
MATH	3	730242	0	B-O	2	124573	0.44	0.44	0.23	0.21	0.11	0.01	0.34	0.34	0.00	-0.18	-0.28	0.8461	0.0065	9.9	1.2	9.9	1.2			
MATH	3	412990	0	B-O	2	124573	0.64	0.08	0.15	0.12	0.64	0.01	0.52	-0.27	-0.24	-0.26	0.52	-0.2671	0.0066	-9.9	0.9	-9.9	0.8			
MATH	3	721322	0	B-O	2	124573	0.63	0.22	0.10	0.63	0.05	0.01	0.40	-0.23	-0.23	0.40	-0.13	-0.1581	0.0066	9.9	1.0	5.3	1.0			
MATH	3	566922	0	D-M	2	124573	0.59	0.10	0.14	0.59	0.16	0.00	0.45	-0.21	-0.25	0.45	-0.19	-0.0025	0.0065	-1.2	1.0	-6.0	1.0			
MATH	3	128374	0	D-M	2	124573	0.57	0.57	0.07	0.10	0.26	0.01	0.27	0.27	-0.27	-0.10	-0.06	0.0790	0.0065	9.9	1.2	9.9	1.3			
MATH	3	301114	0	A-F	1	124573	0.34	0.34	0.07	0.15	0.43	0.01	0.36	0.36	-0.03	0.03	-0.34	1.3475	0.0068	9.9	1.1	9.9	1.2			
MATH	3	370993	0	D-M	1	124573	0.87	0.06	0.87	0.03	0.03	0.01	0.29	-0.17	0.29	-0.16	-0.14	-1.6736	0.0085	-9.9	0.9	-4.5	1.0			
MATH	3	235669	0	A-F	2	124573	0.61	0.09	0.12	0.17	0.61	0.01	0.35	-0.22	-0.17	-0.13	0.35	-0.0628	0.0065	9.9	1.1	9.9	1.1			
MATH	3	291448	0	B-O	2	124573	0.50	0.20	0.50	0.15	0.14	0.01	0.43	-0.27	0.43	-0.15	-0.14	0.5211	0.0065	9.9	1.0	9.9	1.1			
MATH	3	207850	0	A-F	1	124573	0.33	0.26	0.24	0.33	0.17	0.01	0.44	-0.35	-0.23	0.44	0.13	1.4553	0.0069	-4.3	1.0	7.4	1.0			
MATH	3	221899	1	A-T	2	14063	0.35	0.53	0.08	0.35	0.03	0.01	0.50	-0.33	-0.16	0.50	-0.16	1.2226	0.0202	-6.8	0.9	-3.0	1.0	A+	A-	A-
MATH	3	207345	1	D-M	1	14063	0.84	0.84	0.04	0.07	0.03	0.02	0.30	0.30	-0.22	-0.10	-0.22	-1.6107	0.0246	-1.4	1.0	9.9	1.4	A+	B-	B-
MATH	3	420259	1	C-G	1	14063	0.68	0.68	0.08	0.07	0.16	0.00	0.45	0.45	-0.26	-0.23	-0.21	-0.5469	0.0202	-5.0	1.0	-4.6	0.9	A+	A-	A+
MATH	3	641753	1	B-O	2	14063	0.60	0.60	0.13	0.10	0.17	0.01	0.56	0.56	-0.19	-0.27	-0.34	-0.0838	0.0195	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	3	604811	1	A-F	1	14063	0.52	0.24	0.18	0.52	0.06	0.00	0.48	-0.25	-0.22	0.48	-0.21	0.3332	0.0193	-3.7	1.0	-4.6	0.9	A-	B-	A-
MATH	3	664747	1	D-M	1	14063	0.52	0.20	0.52	0.09	0.18	0.00	0.53	-0.22	0.53	-0.18	-0.32	0.3254	0.0193	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	3	269503	1	A-T	1	14063	0.56	0.08	0.56	0.10	0.26	0.00	0.28	-0.22	0.28	-0.14	-0.09	0.1305	0.0193	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	3	648271	1	C-G	1	14063	0.75	0.75	0.03	0.16	0.05	0.00	0.32	0.32	-0.12	-0.22	-0.17	-0.9846	0.0215	6.8	1.1	1.2	1.0	A+	A-	A-
MATH	3	975393	1	B-O	1	14063	0.75	0.15	0.04	0.75	0.04	0.02	0.51	-0.39	-0.20	0.51	-0.20	-0.9786	0.0215	-9.9	0.8	-9.2	0.8	A+	A-	A-
MATH	3	170828	1	B-O	1	14063	0.72	0.06	0.72	0.12	0.09	0.01	0.45	-0.21	0.45	-0.26	-0.23	-0.7738	0.0208	-7.3	0.9	-7.1	0.9	A+	A-	A-
MATH	3	970037	1	A-F	1	14063	0.71	0.10	0.71	0.12	0.07	0.00	0.35	-0.19	0.35	-0.18	-0.17	-0.6825	0.0205	6.8	1.1	2.0	1.0	A-	A-	A-
MATH	3	317936	1	D-M	1	14063	0.35	0.29	0.29	0.35	0.07	0.01	0.31	-0.12	-0.11	0.31	-0.14	1.2525	0.0203	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	3	236239	2	D-M	2	13854	0.27	0.37	0.30	0.05	0.27	0.01	0.31	-0.36	0.17	-0.17	0.31	1.7573	0.0216	9.9	1.1	9.9	1.4	A-	A+	A-
MATH	3	752617	2	D-M	2	13854	0.53	0.08	0.06	0.31	0.53	0.00	0.30	-0.07	-0.08	-0.24	0.30	0.3092	0.0194	9.9	1.2	9.9	1.3	A+	A+	A-
MATH	3	347516	2	A-T	1	13854	0.80	0.06	0.08	0.80	0.04	0.01	0.42	-0.16	-0.27	0.42	-0.25	-1.2317	0.0230	-8.3	0.9	0.5	1.0	A-	A-	A-
MATH	3	652028	2	B-O	1	13854	0.63	0.63	0.09	0.09	0.18	0.02	0.55	0.55	-0.14	-0.21	-0.42	-0.2059	0.0199	-9.9	0.9	-9.9	0.8	A-	A+	A-
MATH	3	675528	2	D-M	1	13854	0.50	0.26	0.50	0.08	0.14	0.02	0.47	-0.22	0.47	-0.18	-0.24	0.5161	0.0194	-2.6	1.0	-3.2	1.0	A-	A-	A-
MATH	3	655067	2	B-O	2	13854	0.66	0.21	0.08	0.66	0.05	0.01	0.53	-0.34	-0.24	0.53	-0.22	-0.3612	0.0201	-9.9	0.9	-9.9	0.8	A-	A+	A+
MATH	3	174135	2	C-G	1	13854	0.72	0.02	0.72	0.05	0.21	0.00	0.46	-0.18	0.46	-0.17	-0.35	-0.7419	0.0211	-8.3	0.9	-6.2	0.9	A+	A-	A-
MATH	3	354981	2	A-F	2	13854	0.36	0.06	0.36	0.06	0.52	0.00	0.60	-0.09	0.60	-0.13	-0.47	1.2446	0.0202	-9.9	0.8	-9.9	0.8	A-	A-	A-
MATH	3	808456	2	B-O	2	13854	0.82	0.82	0.04	0.08	0.05	0.00	0.40	0.40	-0.20	-0.23	-0.22	-1.3661	0.0237	-5.9	0.9	-3.9	0.9	A+	A-	A-
MATH	3	367585	2	A-T	2	13854	0.54	0.54	0.15	0.14	0.16	0.01	0.40	0.40	-0.25	-0.02	-0.28	0.2783	0.0194	7.5	1.1	9.0	1.1	A+	A-	A-
MATH	3	325365	2	C-G	1	13854	0.70	0.70	0.08	0.11	0.11	0.00	0.40	0.40	-0.20	-0.16	-0.25	-0.5723	0.0206	1.0	1.0	0.0	1.0	A+	A-	A+
MATH	3	571707	2	B-O	1	13854	0.78	0.07	0.04	0.11	0.78	0.01	0.41	-0.24	-0.20	-0.22	0.41	-1.0719	0.0223	-3.9	1.0	-5.1	0.9	A+	A+	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	3	743757	3	C-G	1	13786	0.92	0.03	0.92	0.02	0.03	0.00	0.32	-0.18	0.32	-0.16	-0.20	-2.3881	0.0323	-3.7	0.9	-5.1	0.8	A+	B-	A-
MATH	3	882784	3	A-T	2	13786	0.67	0.04	0.18	0.09	0.67	0.02	0.56	-0.17	-0.43	-0.20	0.56	-0.3789	0.0202	-9.9	0.8	-9.9	0.8	A-	A-	A-
MATH	3	940423	3	A-F	1	13786	0.85	0.06	0.06	0.85	0.02	0.01	0.36	-0.23	-0.19	0.36	-0.16	-1.6329	0.0255	-3.1	1.0	-2.8	0.9	A+	A-	A-
MATH	3	251012	3	C-G	2	13786	0.55	0.55	0.15	0.08	0.22	0.00	0.35	0.35	-0.09	-0.24	-0.18	0.2476	0.0194	9.9	1.1	9.7	1.1	A+	A-	A-
MATH	3	108893	3	D-M	1	13786	0.71	0.03	0.08	0.71	0.17	0.00	0.37	-0.21	-0.25	0.37	-0.15	-0.6255	0.0208	3.1	1.0	7.3	1.2	A-	A-	A-
MATH	3	173603	3	A-F	1	13786	0.15	0.20	0.08	0.57	0.15	0.00	0.20	-0.29	-0.18	0.18	0.20	2.7150	0.0263	6.3	1.1	9.9	1.9	A-	A+	A+
MATH	3	551048	3	D-M	2	13786	0.23	0.68	0.06	0.23	0.03	0.00	0.37	-0.22	-0.19	0.37	-0.03	2.0847	0.0228	2.0	1.0	8.6	1.2	A-	A-	A-
MATH	3	482460	3	D-M	1	13786	0.14	0.30	0.14	0.26	0.30	0.00	0.08	-0.31	0.08	-0.02	0.28	2.8541	0.0273	9.9	1.2	9.9	2.7	A-	A+	A+
MATH	3	648531	3	B-O	1	13786	0.75	0.08	0.10	0.75	0.06	0.01	0.47	-0.25	-0.26	0.47	-0.21	-0.8660	0.0216	-9.2	0.9	-8.1	0.8	A+	A-	A-
MATH	3	628096	3	B-O	2	13786	0.78	0.09	0.78	0.06	0.06	0.02	0.43	-0.26	0.43	-0.21	-0.21	-1.0981	0.0226	-6.8	0.9	-6.4	0.8	A-	A-	A-
MATH	3	717996	3	B-O	1	13786	0.69	0.05	0.69	0.07	0.17	0.02	0.55	-0.17	0.55	-0.17	-0.44	-0.5038	0.0205	-9.9	0.8	-9.9	0.8	A+	A-	A+
MATH	3	830618	3	D-M	2	13786	0.72	0.06	0.11	0.72	0.11	0.01	0.52	-0.24	-0.41	0.52	-0.15	-0.6908	0.0210	-9.9	0.9	-9.2	0.8	A-	B-	A-
MATH	3	675684	4	B-O	1	13829	0.63	0.63	0.15	0.09	0.12	0.02	0.56	0.56	-0.18	-0.27	-0.38	-0.1743	0.0198	-9.9	0.8	-9.9	0.8	A+	A+	A+
MATH	3	868061	4	A-F	1	13829	0.82	0.07	0.82	0.02	0.08	0.00	0.20	-0.21	0.20	-0.17	0.02	-1.4146	0.0240	7.8	1.1	9.9	1.6	B+	A-	A+
MATH	3	736125	4	C-G	1	13829	0.56	0.25	0.56	0.16	0.02	0.01	0.37	-0.18	0.37	-0.20	-0.17	0.1928	0.0194	9.9	1.1	7.5	1.1	A+	A-	A-
MATH	3	311601	4	A-T	1	13829	0.50	0.07	0.29	0.12	0.50	0.01	0.61	-0.18	-0.48	-0.11	0.61	0.4841	0.0194	-9.9	0.8	-9.9	0.8	A-	A-	A-
MATH	3	188315	4	B-O	2	13829	0.27	0.27	0.21	0.24	0.27	0.01	0.22	-0.17	-0.02	-0.03	0.22	1.7892	0.0216	9.9	1.2	9.9	1.5	A+	A+	A+
MATH	3	709469	4	D-M	1	13829	0.58	0.58	0.07	0.06	0.27	0.01	0.56	0.56	-0.12	-0.22	-0.42	0.0658	0.0195	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	3	476438	4	C-G	1	13829	0.36	0.10	0.09	0.36	0.45	0.00	0.30	-0.23	-0.25	0.30	-0.01	1.2224	0.0201	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	3	726668	4	B-O	1	13829	0.63	0.19	0.12	0.06	0.63	0.01	0.46	-0.28	-0.16	-0.25	0.46	-0.1614	0.0197	-5.4	1.0	-4.4	0.9	A+	A-	A+
MATH	3	229504	4	D-M	1	13829	0.60	0.60	0.24	0.09	0.06	0.01	0.40	0.40	-0.25	-0.15	-0.19	-0.0479	0.0196	4.7	1.0	3.5	1.1	A-	A-	A-
MATH	3	875483	4	D-M	1	13829	0.24	0.03	0.24	0.39	0.33	0.01	0.41	-0.17	0.41	-0.42	0.13	1.9778	0.0224	-2.6	1.0	3.8	1.1	A+	A+	A-
MATH	3	600861	4	A-F	1	13829	0.20	0.21	0.20	0.34	0.25	0.00	0.22	-0.10	0.22	-0.10	0.00	2.3152	0.0239	9.9	1.1	9.9	1.7	A-	A+	A-
MATH	3	583425	4	D-M	2	13829	0.65	0.12	0.65	0.09	0.14	0.01	0.52	-0.16	0.52	-0.17	-0.42	-0.2920	0.0200	-9.9	0.9	-7.4	0.9	A-	A-	A-
MATH	3	224225	5	B-O	2	13800	0.64	0.08	0.64	0.12	0.13	0.02	0.56	-0.16	0.56	-0.28	-0.37	-0.2802	0.0199	-9.9	0.8	-9.9	0.8	A+	A+	A-
MATH	3	294146	5	A-F	2	13800	0.48	0.07	0.10	0.34	0.48	0.00	0.35	0.03	-0.20	-0.26	0.35	0.5647	0.0194	9.9	1.1	9.9	1.2	A-	A-	A-
MATH	3	256745	5	C-G	1	13800	0.65	0.16	0.16	0.03	0.65	0.01	0.42	-0.24	-0.23	-0.17	0.42	-0.2970	0.0200	0.1	1.0	-0.5	1.0	A+	A-	A-
MATH	3	442150	5	D-M	2	13800	0.21	0.35	0.21	0.14	0.30	0.00	0.07	0.13	0.07	-0.11	-0.12	2.2180	0.0235	9.9	1.3	9.9	2.1	A-	A-	A-
MATH	3	967566	5	B-O	1	13800	0.62	0.14	0.12	0.12	0.62	0.00	0.48	-0.29	-0.20	-0.22	0.48	-0.1563	0.0198	-7.5	0.9	-8.2	0.9	A-	A-	A-
MATH	3	397141	5	A-T	1	13800	0.68	0.68	0.14	0.10	0.08	0.01	0.49	0.49	-0.25	-0.21	-0.28	-0.4813	0.0203	-9.9	0.9	-8.8	0.9	A+	A-	A-
MATH	3	845249	5	B-O	2	13800	0.61	0.16	0.18	0.61	0.04	0.01	0.49	-0.35	-0.20	0.49	-0.17	-0.0836	0.0197	-9.3	0.9	-6.4	0.9	A+	A+	A-
MATH	3	307996	5	A-F	1	13800	0.12	0.16	0.20	0.52	0.12	0.01	0.06	-0.27	-0.13	0.27	0.06	3.0566	0.0290	9.9	1.3	9.9	2.5	A+	A+	A+
MATH	3	594451	5	D-M	1	13800	0.59	0.25	0.07	0.59	0.09	0.01	0.41	-0.19	-0.22	0.41	-0.21	0.0403	0.0195	5.3	1.0	2.7	1.0	A-	A-	A-
MATH	3	384737	5	D-M	2	13800	0.76	0.05	0.04	0.14	0.76	0.00	0.43	-0.20	-0.19	-0.28	0.43	-0.9416	0.0217	-5.6	0.9	-6.8	0.9	A-	A+	A+
MATH	3	588116	5	D-M	2	13800	0.67	0.02	0.67	0.27	0.03	0.00	0.59	-0.16	0.59	-0.50	-0.15	-0.4033	0.0202	-9.9	0.8	-9.9	0.7	A+	B-	A-
MATH	3	275806	5	A-T	1	13800	0.72	0.09	0.72	0.13	0.05	0.01	0.38	-0.22	0.38	-0.16	-0.23	-0.7400	0.0210	-0.4	1.0	4.8	1.1	A-	A-	A-
MATH	3	311105	6	B-O	2	13802	0.43	0.43	0.38	0.11	0.06	0.00	0.20	0.20	-0.09	-0.06	-0.13	0.8352	0.0196	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	3	901158	6	A-F	2	13802	0.28	0.29	0.20	0.23	0.28	0.01	0.42	-0.27	-0.11	-0.04	0.42	1.7253	0.0215	-2.3	1.0	5.3	1.1	A+	A-	A-
MATH	3	902079	6	B-O	1	13802	0.75	0.13	0.75	0.07	0.04	0.01	0.45	-0.35	0.45	-0.16	-0.18	-0.8912	0.0216	-9.2	0.9	-6.3	0.9	A+	A+	A-
MATH	3	320463	6	C-G	1	13802	0.48	0.22	0.48	0.09	0.20	0.01	0.39	-0.16	0.39	-0.15	-0.20	0.6066	0.0194	9.0	1.1	8.2	1.1	A-	A+	A-
MATH	3	710603	6	C-G	1	13802	0.82	0.82	0.10	0.03	0.05	0.01	0.37	0.37	-0.24	-0.19	-0.17	-1.3508	0.0237	-2.9	1.0	-3.6	0.9	A+	A-	A-
MATH	3	840703	6	A-T	1	13802	0.70	0.07	0.08	0.13	0.70	0.01	0.56	-0.26	-0.32	-0.28	0.56	-0.6018	0.0207	-9.9	0.8	-9.9	0.7	A-	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	3	216610	6	A-F	1	13802	0.30	0.22	0.33	0.30	0.14	0.00	0.38	-0.20	-0.04	0.38	-0.20	1.5748	0.0210	3.9	1.0	9.3	1.2	A-	A+	A-
MATH	3	808667	6	D-M	1	13802	0.44	0.06	0.44	0.08	0.41	0.01	0.33	-0.22	0.33	-0.22	-0.10	0.8127	0.0195	9.9	1.2	9.9	1.2	A+	A+	A-
MATH	3	407400	6	B-O	1	13802	0.76	0.05	0.07	0.11	0.76	0.01	0.45	-0.25	-0.21	-0.26	0.45	-0.9772	0.0219	-8.4	0.9	-8.3	0.8	A-	A+	A+
MATH	3	431886	6	D-M	2	13802	0.45	0.17	0.20	0.45	0.18	0.00	0.44	-0.29	-0.21	0.44	-0.05	0.7601	0.0195	1.9	1.0	3.5	1.0	A+	A-	A-
MATH	3	393140	6	B-O	1	13802	0.91	0.04	0.01	0.91	0.03	0.01	0.32	-0.23	-0.13	0.32	-0.17	-2.2411	0.0307	-3.7	0.9	-5.3	0.8	A-	A-	A-
MATH	3	531749	6	D-M	2	13802	0.60	0.05	0.60	0.17	0.17	0.01	0.55	-0.10	0.55	-0.24	-0.41	-0.0174	0.0196	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	3	385940	7	B-O	1	13823	0.61	0.22	0.61	0.07	0.10	0.00	0.26	-0.07	0.26	-0.17	-0.19	-0.0875	0.0197	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	3	858989	7	A-F	1	13823	0.43	0.25	0.14	0.43	0.18	0.00	0.36	-0.24	-0.25	0.36	0.04	0.8398	0.0196	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	3	908508	7	D-M	1	13823	0.92	0.03	0.02	0.02	0.92	0.01	0.28	-0.16	-0.18	-0.13	0.28	-2.4246	0.0324	-2.5	0.9	-0.5	1.0	A+	A-	A-
MATH	3	216833	7	A-T	1	13823	0.66	0.03	0.12	0.17	0.66	0.01	0.56	-0.20	-0.33	-0.30	0.56	-0.3888	0.0202	-9.9	0.8	-9.9	0.8	A-	A-	A-
MATH	3	808272	7	A-T	1	13823	0.76	0.11	0.05	0.76	0.07	0.01	0.45	-0.26	-0.19	0.45	-0.25	-0.9888	0.0220	-8.6	0.9	-4.9	0.9	A+	A-	A-
MATH	3	280909	7	D-M	2	13823	0.61	0.12	0.13	0.12	0.61	0.01	0.53	-0.28	-0.27	-0.22	0.53	-0.1194	0.0197	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	3	270765	7	A-F	1	13823	0.64	0.12	0.13	0.64	0.10	0.01	0.49	-0.25	-0.25	0.49	-0.22	-0.2703	0.0200	-8.6	0.9	-8.0	0.9	A-	A-	A-
MATH	3	239870	7	B-O	1	13823	0.77	0.11	0.04	0.77	0.07	0.01	0.52	-0.33	-0.19	0.52	-0.29	-1.0345	0.0222	-9.9	0.8	-9.9	0.7	A-	A-	A-
MATH	3	611894	7	D-M	2	13823	0.51	0.28	0.51	0.14	0.05	0.01	0.29	-0.20	0.29	-0.03	-0.17	0.4180	0.0194	9.9	1.2	9.9	1.3	A-	A+	A+
MATH	3	341732	7	C-G	1	13823	0.92	0.03	0.02	0.92	0.02	0.01	0.26	-0.13	-0.16	0.26	-0.15	-2.4530	0.0328	-1.6	1.0	-1.1	0.9	A+	A-	A+
MATH	3	940277	7	D-M	2	13823	0.68	0.25	0.03	0.03	0.68	0.00	0.57	-0.52	-0.12	-0.09	0.57	-0.4756	0.0204	-9.9	0.8	-9.9	0.8	A+	B-	A-
MATH	3	655349	7	B-O	1	13823	0.84	0.04	0.06	0.84	0.05	0.01	0.45	-0.26	-0.28	0.45	-0.20	-1.5698	0.0249	-9.9	0.8	-9.9	0.7	A+	A-	A-
MATH	3	586972	8	A-T	1	13807	0.72	0.07	0.07	0.13	0.72	0.01	0.51	-0.24	-0.31	-0.25	0.51	-0.7248	0.0211	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	3	114617	8	B-O	1	13807	0.78	0.78	0.13	0.05	0.02	0.01	0.42	0.42	-0.27	-0.23	-0.20	-1.1291	0.0226	-6.6	0.9	-3.9	0.9	A+	A+	A-
MATH	3	108625	8	C-G	1	13807	0.82	0.82	0.04	0.09	0.05	0.01	0.38	0.38	-0.18	-0.27	-0.15	-1.3915	0.0239	-3.6	1.0	-3.8	0.9	A+	A-	A-
MATH	3	724858	8	A-F	1	13807	0.40	0.24	0.40	0.29	0.06	0.01	0.50	-0.21	0.50	-0.26	-0.15	1.0281	0.0199	-8.6	0.9	-4.2	1.0	A-	A-	A-
MATH	3	270467	8	B-O	2	13807	0.41	0.24	0.20	0.14	0.41	0.01	0.38	-0.15	-0.18	-0.14	0.38	0.9513	0.0198	9.9	1.1	9.9	1.2	A+	A-	A+
MATH	3	872035	8	D-M	2	13807	0.62	0.04	0.03	0.62	0.31	0.01	0.55	-0.19	-0.16	0.55	-0.44	-0.1324	0.0198	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	3	920351	8	D-M	1	13807	0.51	0.51	0.09	0.27	0.12	0.01	0.54	0.54	-0.09	-0.40	-0.20	0.4492	0.0194	-9.9	0.9	-9.9	0.9	A+	A-	A-
MATH	3	984312	8	A-T	2	13807	0.70	0.05	0.16	0.06	0.70	0.02	0.57	-0.21	-0.41	-0.22	0.57	-0.6045	0.0207	-9.9	0.8	-9.9	0.7	A-	A-	A-
MATH	3	670203	8	B-O	2	13807	0.69	0.09	0.11	0.09	0.69	0.02	0.60	-0.29	-0.36	-0.25	0.60	-0.5310	0.0205	-9.9	0.8	-9.9	0.7	A-	A-	A-
MATH	3	109975	8	B-O	1	13807	0.71	0.06	0.10	0.71	0.12	0.01	0.42	-0.24	-0.19	0.42	-0.22	-0.6299	0.0208	-2.9	1.0	-0.4	1.0	A-	A-	A-
MATH	3	380054	8	C-G	1	13807	0.54	0.26	0.08	0.54	0.11	0.00	0.45	-0.21	-0.21	0.45	-0.23	0.2674	0.0195	1.2	1.0	0.1	1.0	A+	A-	A-
MATH	3	746999	8	D-M	1	13807	0.67	0.09	0.04	0.67	0.20	0.01	0.10	-0.19	-0.09	0.10	0.06	-0.4027	0.0202	9.9	1.4	9.9	1.8	A-	A+	A-
MATH	3	792236	9	C-G	1	13809	0.72	0.09	0.08	0.10	0.72	0.00	0.45	-0.23	-0.22	-0.24	0.45	-0.6954	0.0210	-6.3	0.9	-6.4	0.9	A+	A-	A+
MATH	3	517291	9	A-T	1	13809	0.64	0.11	0.64	0.11	0.13	0.01	0.50	-0.20	0.50	-0.23	-0.29	-0.1945	0.0199	-9.9	0.9	-8.2	0.9	A+	A-	A-
MATH	3	448690	9	A-F	1	13809	0.41	0.41	0.22	0.20	0.17	0.01	0.55	0.55	-0.22	-0.33	-0.11	1.0014	0.0197	-9.9	0.9	-9.8	0.9	A-	A-	A-
MATH	3	893804	9	D-M	1	13809	0.67	0.67	0.05	0.09	0.17	0.01	-0.09	-0.09	-0.16	-0.05	0.25	-0.4029	0.0203	9.9	1.5	9.9	2.4	A+	A-	A+
MATH	3	190923	9	A-F	1	13809	0.76	0.16	0.76	0.05	0.02	0.01	0.35	-0.21	0.35	-0.23	-0.13	-0.9494	0.0219	2.6	1.0	0.7	1.0	A-	A-	A-
MATH	3	191513	9	D-M	2	13809	0.62	0.06	0.12	0.19	0.62	0.01	0.47	-0.26	-0.20	-0.25	0.47	-0.1165	0.0197	-6.3	1.0	-4.7	0.9	A-	A-	A-
MATH	3	244248	9	D-M	2	13809	0.66	0.09	0.66	0.14	0.08	0.03	0.40	-0.13	0.40	-0.18	-0.31	-0.3244	0.0201	1.8	1.0	2.4	1.0	A-	A-	A-
MATH	3	506030	9	B-O	1	13809	0.74	0.08	0.74	0.13	0.05	0.01	0.49	-0.26	0.49	-0.26	-0.25	-0.7783	0.0213	-9.9	0.9	-8.1	0.8	A-	A-	A-
MATH	3	564866	9	A-T	1	13809	0.85	0.04	0.85	0.04	0.07	0.00	0.37	-0.23	0.37	-0.24	-0.16	-1.5893	0.0254	-6.1	0.9	-1.3	1.0	A-	A-	A-
MATH	3	162580	9	B-O	2	13809	0.60	0.60	0.12	0.08	0.18	0.02	0.29	0.29	-0.25	-0.26	0.03	0.0055	0.0196	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	3	544438	9	D-M	2	13809	0.91	0.91	0.03	0.04	0.03	0.00	0.34	0.34	-0.19	-0.19	-0.20	-2.1936	0.0305	-4.9	0.9	-5.8	0.8	A+	A-	A-
MATH	3	199742	9	B-O	1	13809	0.80	0.14	0.03	0.80	0.03	0.01	0.50	-0.41	-0.18	0.50	-0.16	-1.1848	0.0230	-9.9	0.8	-9.9	0.7	A-	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	4	348835	0	A-T	1	123371	0.24	0.33	0.17	0.25	0.24	0.00	0.31	-0.10	-0.30	0.08	0.31	1.5454	0.0074	9.9	1.0	9.9	1.3			
MATH	4	961278	0	A-T	1	123371	0.53	0.11	0.53	0.20	0.16	0.00	0.41	-0.19	0.41	-0.21	-0.17	-0.0179	0.0064	1.6	1.0	0.0	1.0			
MATH	4	226891	0	D-M	1	123371	0.88	0.88	0.03	0.04	0.05	0.00	0.32	0.32	-0.14	-0.18	-0.20	-2.1062	0.0088	-9.9	0.9	-9.9	0.8			
MATH	4	618125	0	A-F	1	123371	0.55	0.07	0.15	0.23	0.55	0.00	0.50	-0.23	-0.17	-0.31	0.50	-0.1522	0.0064	-9.9	0.9	-9.9	0.9			
MATH	4	727662	0	D-M	2	123371	0.37	0.37	0.36	0.18	0.09	0.00	0.43	0.43	-0.11	-0.28	-0.16	0.8376	0.0067	-5.5	1.0	9.9	1.1			
MATH	4	130612	0	D-M	2	123371	0.47	0.47	0.20	0.14	0.19	0.00	0.48	0.48	-0.17	-0.22	-0.25	0.2023	0.0064	-9.9	0.9	-9.9	0.9			
MATH	4	323444	0	A-T	1	123371	0.73	0.13	0.73	0.07	0.07	0.00	0.42	-0.25	0.42	-0.21	-0.19	-1.1090	0.0070	-9.9	0.9	-9.9	0.9			
MATH	4	618007	0	C-G	2	123371	0.43	0.10	0.43	0.31	0.16	0.00	0.39	0.01	0.39	-0.27	-0.18	0.5331	0.0065	9.9	1.1	9.9	1.1			
MATH	4	544749	0	A-F	1	123371	0.73	0.14	0.08	0.04	0.73	0.00	0.33	-0.15	-0.26	-0.11	0.33	-1.1229	0.0070	9.3	1.0	7.2	1.1			
MATH	4	327245	0	B-O	2	123371	0.39	0.39	0.16	0.12	0.33	0.00	0.41	0.41	-0.26	-0.25	-0.04	0.6433	0.0065	2.9	1.0	9.0	1.0			
MATH	4	597314	0	D-M	2	123371	0.39	0.16	0.39	0.28	0.18	0.00	0.22	-0.11	0.22	-0.11	-0.04	0.6536	0.0065	9.9	1.2	9.9	1.3			
MATH	4	650719	0	A-T	1	123371	0.80	0.80	0.09	0.04	0.07	0.00	0.42	0.42	-0.21	-0.20	-0.27	-1.6778	0.0078	-9.9	0.9	-9.9	0.8			
MATH	4	855381	0	B-O	2	123371	0.51	0.07	0.26	0.15	0.51	0.00	0.26	-0.15	-0.17	-0.04	0.26	0.0644	0.0064	9.9	1.2	9.9	1.3			
MATH	4	316632	0	B-O	2	123371	0.22	0.07	0.64	0.07	0.22	0.00	0.49	-0.12	-0.30	-0.10	0.49	1.6563	0.0076	-9.9	0.9	-9.9	0.8			
MATH	4	561434	0	B-O	1	123371	0.70	0.70	0.04	0.05	0.20	0.00	0.45	0.45	-0.21	-0.22	-0.28	-0.9726	0.0068	-9.9	0.9	-9.9	0.8			
MATH	4	381124	0	A-T	2	123371	0.52	0.14	0.52	0.18	0.16	0.00	0.53	-0.14	0.53	-0.37	-0.21	-0.0526	0.0064	-9.9	0.9	-9.9	0.8			
MATH	4	438207	0	D-M	1	123371	0.53	0.53	0.27	0.11	0.08	0.01	0.33	0.33	-0.17	-0.14	-0.15	-0.1554	0.0064	9.9	1.1	9.9	1.1			
MATH	4	815021	0	A-F	1	123371	0.43	0.27	0.27	0.43	0.02	0.00	0.56	-0.41	-0.18	0.56	-0.08	0.4134	0.0064	-9.9	0.9	-9.9	0.8			
MATH	4	290419	0	C-G	2	123371	0.51	0.51	0.07	0.18	0.24	0.00	0.38	0.38	-0.22	-0.09	-0.22	0.0245	0.0064	9.9	1.1	9.9	1.1			
MATH	4	195670	0	C-G	2	123371	0.51	0.51	0.20	0.20	0.10	0.00	0.34	0.34	-0.07	-0.20	-0.20	0.0381	0.0064	9.9	1.1	9.9	1.1			
MATH	4	473534	0	B-O	1	123371	0.58	0.21	0.13	0.58	0.08	0.00	0.44	-0.36	-0.14	0.44	-0.09	-0.2643	0.0064	-9.9	1.0	-9.9	1.0			
MATH	4	330979	0	C-G	2	123371	0.28	0.26	0.28	0.25	0.22	0.00	0.20	-0.02	0.20	-0.01	-0.18	1.3211	0.0071	9.9	1.2	9.9	1.5			
MATH	4	379656	0	C-G	2	123371	0.69	0.06	0.11	0.69	0.13	0.00	0.38	-0.20	-0.21	0.38	-0.18	-0.8587	0.0067	-8.2	1.0	-9.9	0.9			
MATH	4	154484	0	D-M	2	123371	0.71	0.14	0.07	0.08	0.71	0.00	0.52	-0.33	-0.25	-0.21	0.52	-0.8868	0.0067	-9.9	0.8	-9.9	0.7			
MATH	4	937991	0	A-F	1	123371	0.72	0.06	0.16	0.72	0.05	0.00	0.36	-0.20	-0.19	0.36	-0.20	-0.9880	0.0068	-9.9	1.0	-6.2	1.0			
MATH	4	332644	0	C-G	1	123371	0.75	0.16	0.75	0.06	0.03	0.00	0.31	-0.22	0.31	-0.13	-0.14	-1.1157	0.0070	-1.9	1.0	4.9	1.0			
MATH	4	157888	0	B-O	2	123371	0.49	0.24	0.49	0.09	0.17	0.00	0.55	-0.24	0.55	-0.21	-0.28	0.1842	0.0064	-9.9	0.9	-9.9	0.8			
MATH	4	493397	0	B-O	2	123371	0.37	0.11	0.37	0.33	0.19	0.00	0.50	-0.12	0.50	-0.34	-0.11	0.7597	0.0066	-9.9	0.9	-9.9	0.9			
MATH	4	691142	0	B-O	2	123371	0.64	0.14	0.16	0.64	0.06	0.00	0.49	-0.31	-0.21	0.49	-0.19	-0.5629	0.0065	-9.9	0.9	-9.9	0.8			
MATH	4	476496	0	A-T	1	123371	0.62	0.62	0.16	0.14	0.08	0.00	0.48	0.48	-0.16	-0.34	-0.21	-0.5173	0.0065	-9.9	0.9	-9.9	0.9			
MATH	4	968353	0	A-T	1	123371	0.85	0.05	0.05	0.05	0.85	0.00	0.36	-0.22	-0.20	-0.16	0.36	-1.8586	0.0082	-9.9	0.9	-9.9	0.8			
MATH	4	478058	0	A-T	2	123371	0.46	0.07	0.16	0.46	0.31	0.00	0.32	-0.15	-0.05	0.32	-0.22	0.2832	0.0064	9.9	1.1	9.9	1.2			
MATH	4	515898	0	A-F	2	123371	0.74	0.74	0.17	0.05	0.03	0.00	0.24	0.24	-0.11	-0.16	-0.14	-1.2544	0.0071	9.9	1.1	9.9	1.3			
MATH	4	973893	0	A-F	1	123371	0.42	0.24	0.22	0.42	0.11	0.00	0.41	-0.08	-0.23	0.41	-0.23	0.5155	0.0065	4.2	1.0	8.5	1.0			
MATH	4	286977	0	B-O	2	123371	0.53	0.22	0.19	0.53	0.07	0.00	0.49	-0.27	-0.21	0.49	-0.21	-0.0378	0.0064	-9.9	0.9	-9.9	0.9			
MATH	4	938056	0	B-O	2	123371	0.51	0.51	0.07	0.36	0.06	0.00	0.28	0.28	-0.22	-0.05	-0.26	0.2121	0.0064	9.9	1.2	9.9	1.2			
MATH	4	705933	0	B-O	1	123371	0.32	0.03	0.32	0.61	0.04	0.00	0.46	-0.16	0.46	-0.32	-0.16	1.1299	0.0069	-9.9	1.0	-5.9	1.0			
MATH	4	326880	0	D-M	2	123371	0.29	0.30	0.21	0.29	0.20	0.00	0.42	-0.35	-0.26	0.42	0.20	1.3132	0.0071	-1.0	1.0	9.9	1.1			
MATH	4	240514	0	A-T	2	123371	0.66	0.18	0.66	0.10	0.06	0.00	0.56	-0.42	0.56	-0.19	-0.19	-0.6939	0.0066	-9.9	0.8	-9.9	0.7			
MATH	4	285393	0	A-T	2	123371	0.45	0.23	0.45	0.20	0.12	0.00	0.27	0.03	0.27	-0.20	-0.20	0.2815	0.0064	9.9	1.2	9.9	1.2			
MATH	4	784768	0	A-F	2	123371	0.40	0.40	0.11	0.36	0.12	0.00	0.43	0.43	-0.12	-0.24	-0.18	0.5547	0.0065	-7.9	1.0	-1.3	1.0			
MATH	4	952328	0	A-F	2	123371	0.51	0.22	0.51	0.10	0.16	0.01	0.50	-0.29	0.50	-0.13	-0.24	0.1308	0.0064	-9.9	0.9	-9.9	0.9			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	4	350346	0	A-T	2	123371	0.57	0.13	0.13	0.17	0.57	0.00	0.42	-0.20	-0.21	-0.19	0.42	-0.2101	0.0064	-7.7	1.0	-8.6	1.0			
MATH	4	667324	0	C-G	2	123371	0.47	0.06	0.06	0.40	0.47	0.00	0.38	-0.22	-0.22	-0.17	0.38	0.1831	0.0064	9.9	1.0	9.9	1.1			
MATH	4	980747	0	D-M	2	123371	0.48	0.30	0.48	0.11	0.11	0.00	0.45	-0.20	0.45	-0.11	-0.30	0.1703	0.0064	-9.9	1.0	-9.9	1.0			
MATH	4	325971	0	C-G	2	123371	0.62	0.12	0.14	0.62	0.11	0.00	0.36	-0.26	-0.05	0.36	-0.22	-0.4912	0.0065	9.9	1.0	9.9	1.1			
MATH	4	687111	0	C-G	2	123371	0.45	0.15	0.21	0.18	0.45	0.01	0.44	-0.22	-0.18	-0.17	0.44	0.3634	0.0064	-9.0	1.0	-7.2	1.0			
MATH	4	955243	0	A-T	2	123371	0.52	0.12	0.20	0.52	0.17	0.00	0.43	-0.18	-0.32	0.43	-0.07	0.0048	0.0064	-5.2	1.0	-2.1	1.0			
MATH	4	845318	0	B-O	2	123371	0.63	0.16	0.07	0.14	0.63	0.00	0.30	-0.15	-0.18	-0.12	0.30	-0.4328	0.0065	9.9	1.1	9.9	1.1			
MATH	4	956781	0	A-F	2	123371	0.52	0.21	0.19	0.52	0.07	0.00	0.52	-0.26	-0.24	0.52	-0.21	0.0354	0.0064	-9.9	0.9	-9.9	0.9			
MATH	4	188793	0	D-M	2	123371	0.57	0.57	0.23	0.12	0.07	0.00	0.44	0.44	-0.26	-0.19	-0.18	-0.2421	0.0064	-9.9	1.0	-9.9	1.0			
MATH	4	820431	0	A-F	2	123371	0.54	0.05	0.33	0.07	0.54	0.00	0.46	-0.20	-0.27	-0.22	0.46	-0.0990	0.0064	-9.9	1.0	-9.9	0.9			
MATH	4	167068	0	C-G	2	123371	0.28	0.10	0.28	0.35	0.26	0.00	0.19	-0.02	0.19	-0.06	-0.12	1.2433	0.0070	9.9	1.2	9.9	1.4			
MATH	4	479821	0	B-O	2	123371	0.33	0.48	0.13	0.33	0.07	0.00	0.31	-0.02	-0.27	0.31	-0.18	0.9735	0.0068	9.9	1.1	9.9	1.2			
MATH	4	623235	0	A-T	2	123371	0.78	0.08	0.78	0.07	0.06	0.00	0.41	-0.19	0.41	-0.21	-0.25	-1.4308	0.0074	-9.9	0.9	-9.9	0.9			
MATH	4	845516	0	A-T	2	123371	0.22	0.11	0.16	0.22	0.51	0.00	0.29	-0.14	-0.18	0.29	-0.02	1.4912	0.0073	4.4	1.0	9.9	1.2			
MATH	4	377812	0	A-F	1	123371	0.54	0.16	0.16	0.54	0.14	0.00	0.42	-0.29	-0.14	0.42	-0.15	-0.0983	0.0064	-0.1	1.0	-5.2	1.0			
MATH	4	553945	0	B-O	2	123371	0.31	0.13	0.31	0.27	0.28	0.01	0.25	-0.24	0.25	-0.02	-0.04	1.0082	0.0068	9.9	1.1	9.9	1.3			
MATH	4	925083	0	B-O	2	123371	0.33	0.10	0.33	0.15	0.41	0.00	0.16	-0.17	0.16	-0.20	0.09	0.9535	0.0067	9.9	1.3	9.9	1.4			
MATH	4	831271	0	C-G	1	123371	0.61	0.61	0.11	0.14	0.14	0.00	0.37	0.37	-0.19	-0.14	-0.21	-0.3153	0.0064	6.2	1.0	0.5	1.0			
MATH	4	994611	1	A-F	1	13974	0.58	0.14	0.15	0.58	0.12	0.00	0.50	-0.28	-0.33	0.50	-0.09	-0.3639	0.0190	-9.9	0.9	-9.9	0.8	A+	A+	A-
MATH	4	257943	1	C-G	1	13974	0.39	0.31	0.13	0.16	0.39	0.00	0.38	-0.15	-0.13	-0.19	0.38	0.5980	0.0194	6.3	1.1	6.6	1.1	A-	A-	A-
MATH	4	287228	1	B-O	2	13974	0.42	0.07	0.06	0.45	0.42	0.00	0.52	-0.28	-0.20	-0.27	0.52	0.4910	0.0193	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	4	595954	1	A-F	1	13974	0.70	0.70	0.11	0.07	0.12	0.00	0.50	0.50	-0.24	-0.20	-0.31	-0.9606	0.0201	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	4	665284	1	B-O	2	13974	0.53	0.28	0.10	0.09	0.53	0.00	0.41	-0.17	-0.25	-0.17	0.41	-0.0839	0.0189	1.5	1.0	0.5	1.0	A+	A-	A-
MATH	4	268283	1	A-T	1	13974	0.70	0.11	0.11	0.70	0.08	0.00	0.50	-0.27	-0.25	0.50	-0.24	-0.9610	0.0201	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	4	792548	1	A-T	1	13974	0.84	0.06	0.05	0.04	0.84	0.00	0.37	-0.19	-0.22	-0.18	0.37	-1.9393	0.0246	-6.8	0.9	-8.5	0.8	A+	A-	A+
MATH	4	599031	1	D-M	1	13974	0.52	0.52	0.27	0.12	0.08	0.01	0.39	0.39	-0.17	-0.20	-0.21	-0.0585	0.0189	4.3	1.0	4.1	1.1	A+	A-	A-
MATH	4	364838	1	A-F	1	13974	0.54	0.35	0.54	0.07	0.04	0.00	0.46	-0.32	0.46	-0.21	-0.12	-0.1146	0.0189	-5.5	1.0	-6.8	0.9	A+	A+	A+
MATH	4	928093	1	B-O	2	13974	0.45	0.28	0.16	0.45	0.11	0.00	0.20	-0.07	-0.14	0.20	-0.06	0.3073	0.0191	9.9	1.3	9.9	1.3	A+	A+	A+
MATH	4	264552	1	C-G	1	13974	0.61	0.61	0.05	0.18	0.15	0.00	0.33	0.33	-0.15	-0.14	-0.20	-0.5172	0.0192	9.5	1.1	7.1	1.1	A+	A-	A-
MATH	4	285812	1	D-M	2	13974	0.30	0.06	0.30	0.10	0.53	0.00	0.37	-0.12	0.37	-0.31	-0.09	1.1337	0.0207	2.0	1.0	9.9	1.2	A-	A-	A+
MATH	4	251530	2	B-O	2	13687	0.76	0.05	0.13	0.76	0.06	0.00	0.37	-0.21	-0.24	0.37	-0.13	-1.2725	0.0214	-4.8	1.0	-3.3	0.9	A-	A-	A+
MATH	4	980929	2	A-F	2	13687	0.37	0.46	0.37	0.09	0.07	0.00	0.25	-0.05	0.25	-0.20	-0.14	0.7234	0.0197	9.9	1.2	9.9	1.3	A+	A-	A+
MATH	4	789000	2	A-T	1	13687	0.41	0.13	0.31	0.41	0.15	0.00	0.22	-0.14	0.00	0.22	-0.17	0.5195	0.0194	9.9	1.2	9.9	1.3	A-	A-	A+
MATH	4	464304	2	B-O	1	13687	0.85	0.10	0.02	0.03	0.85	0.00	0.39	-0.32	-0.17	-0.12	0.39	-1.9374	0.0250	-8.2	0.9	-9.9	0.7	A-	A-	A-
MATH	4	506597	2	A-T	1	13687	0.61	0.11	0.14	0.14	0.61	0.00	0.48	-0.24	-0.28	-0.18	0.48	-0.4450	0.0193	-9.9	0.9	-9.9	0.9	A+	A+	A-
MATH	4	594043	2	D-M	1	13687	0.81	0.81	0.11	0.05	0.03	0.00	0.41	0.41	-0.27	-0.22	-0.16	-1.6121	0.0230	-9.3	0.9	-9.9	0.7	A+	B-	A-
MATH	4	258236	2	C-G	2	13687	0.62	0.18	0.12	0.07	0.62	0.00	0.43	-0.21	-0.22	-0.20	0.43	-0.5210	0.0194	-7.3	1.0	-4.9	0.9	A+	A-	A-
MATH	4	125499	2	D-M	2	13687	0.31	0.50	0.13	0.31	0.05	0.00	0.46	-0.26	-0.14	0.46	-0.16	1.0654	0.0205	-7.8	0.9	-1.6	1.0	A-	A-	A-
MATH	4	189976	2	A-F	2	13687	0.66	0.22	0.66	0.07	0.06	0.00	0.42	-0.29	0.42	-0.22	-0.10	-0.7059	0.0197	-8.5	0.9	-3.6	1.0	A+	A-	A-
MATH	4	684520	2	A-F	1	13687	0.35	0.30	0.19	0.35	0.15	0.01	0.33	-0.19	-0.07	0.33	-0.10	0.8769	0.0200	7.6	1.1	9.9	1.2	A-	A+	A+
MATH	4	673125	2	C-G	1	13687	0.51	0.16	0.10	0.51	0.23	0.00	0.48	-0.26	-0.21	0.48	-0.19	0.0454	0.0190	-9.9	0.9	-9.9	0.9	A+	A-	A-
MATH	4	392427	2	B-O	1	13687	0.28	0.24	0.13	0.28	0.35	0.00	0.07	0.08	0.09	0.07	-0.20	1.2830	0.0212	9.9	1.4	9.9	1.6	A+	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	4	422232	3	C-G	2	13691	0.44	0.41	0.08	0.44	0.05	0.01	0.23	-0.16	-0.05	0.23	-0.06	0.3832	0.0192	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	4	180026	3	A-T	1	13691	0.78	0.78	0.08	0.09	0.05	0.00	0.41	0.41	-0.22	-0.22	-0.22	-1.4005	0.0221	-9.3	0.9	-6.6	0.9	A+	A-	A-
MATH	4	258517	3	C-G	1	13691	0.41	0.11	0.41	0.16	0.32	0.00	0.38	-0.21	0.38	-0.22	-0.09	0.5832	0.0195	4.5	1.0	5.6	1.1	A-	A-	A-
MATH	4	336249	3	A-F	1	13691	0.30	0.15	0.30	0.22	0.32	0.00	0.19	-0.23	0.19	0.07	-0.07	1.1408	0.0207	9.9	1.2	9.9	1.4	A-	A-	A-
MATH	4	849239	3	B-O	1	13691	0.81	0.05	0.04	0.09	0.81	0.00	0.44	-0.18	-0.21	-0.31	0.44	-1.6345	0.0233	-9.9	0.9	-9.9	0.7	A+	C-	B-
MATH	4	233522	3	D-M	1	13691	0.60	0.60	0.31	0.07	0.02	0.00	0.40	0.40	-0.28	-0.19	-0.14	-0.4156	0.0193	0.6	1.0	-1.8	1.0	A-	C-	C-
MATH	4	561512	3	D-M	1	13691	0.55	0.28	0.09	0.55	0.08	0.00	0.40	-0.13	-0.27	0.40	-0.23	-0.1240	0.0191	0.3	1.0	3.2	1.0	A-	A-	A-
MATH	4	799752	3	A-T	1	13691	0.86	0.04	0.86	0.06	0.04	0.00	0.34	-0.16	0.34	-0.21	-0.19	-2.0799	0.0262	-5.3	0.9	-6.8	0.8	A+	A-	A-
MATH	4	468429	3	A-F	1	13691	0.74	0.16	0.05	0.74	0.05	0.00	0.41	-0.22	-0.24	0.41	-0.22	-1.1714	0.0211	-8.6	0.9	-6.9	0.9	A+	A-	A-
MATH	4	626916	3	B-O	2	13691	0.59	0.20	0.59	0.10	0.12	0.00	0.46	-0.30	0.46	-0.18	-0.16	-0.3357	0.0192	-8.7	0.9	-6.3	0.9	A+	A-	A-
MATH	4	170529	3	A-F	1	13691	0.84	0.04	0.08	0.84	0.04	0.00	0.39	-0.18	-0.25	0.39	-0.20	-1.8466	0.0246	-8.5	0.9	-9.1	0.8	A+	A-	A+
MATH	4	135464	3	B-O	2	13691	0.63	0.63	0.11	0.07	0.17	0.00	0.52	0.52	-0.20	-0.19	-0.36	-0.5700	0.0195	-9.9	0.9	-9.9	0.8	A+	A+	A-
MATH	4	636113	4	A-F	2	13629	0.49	0.17	0.26	0.08	0.49	0.00	0.48	-0.32	-0.24	-0.05	0.48	0.1393	0.0192	-7.2	1.0	-6.0	0.9	A+	A+	A+
MATH	4	670445	4	A-T	2	13629	0.36	0.12	0.22	0.36	0.30	0.00	0.37	-0.22	-0.10	0.37	-0.14	0.7993	0.0200	6.2	1.1	8.4	1.1	A-	A+	A-
MATH	4	993511	4	B-O	2	13629	0.58	0.22	0.58	0.12	0.07	0.00	0.47	-0.25	0.47	-0.23	-0.19	-0.2974	0.0193	-9.0	0.9	-8.6	0.9	A-	A-	A-
MATH	4	802723	4	A-T	1	13629	0.68	0.09	0.10	0.13	0.68	0.00	0.48	-0.25	-0.23	-0.25	0.48	-0.8185	0.0201	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	4	824745	4	B-O	2	13629	0.65	0.11	0.09	0.65	0.15	0.00	0.43	-0.21	-0.26	0.43	-0.17	-0.6656	0.0197	-6.3	1.0	-6.0	0.9	A+	A+	A-
MATH	4	168315	4	D-M	2	13629	0.26	0.12	0.26	0.30	0.31	0.00	0.42	-0.08	0.42	-0.39	0.05	1.3935	0.0217	-3.7	1.0	5.5	1.1	A-	A-	A-
MATH	4	111479	4	B-O	2	13629	0.57	0.57	0.15	0.17	0.11	0.00	0.37	0.37	-0.20	-0.16	-0.16	-0.2463	0.0192	5.8	1.0	2.2	1.0	A+	A+	A-
MATH	4	756436	4	A-T	1	13629	0.67	0.07	0.67	0.19	0.08	0.00	0.49	-0.21	0.49	-0.31	-0.21	-0.7645	0.0199	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	4	769073	4	C-G	1	13629	0.51	0.11	0.13	0.24	0.51	0.00	0.47	-0.28	-0.18	-0.20	0.47	0.0273	0.0192	-7.7	0.9	-7.1	0.9	A+	A-	A-
MATH	4	239102	4	A-F	2	13629	0.19	0.09	0.68	0.05	0.19	0.00	0.35	-0.25	-0.08	-0.13	0.35	1.9244	0.0242	0.4	1.0	6.9	1.2	A-	A-	A-
MATH	4	829018	4	C-G	1	13629	0.72	0.05	0.72	0.10	0.12	0.01	0.21	-0.12	0.21	0.01	-0.21	-1.0396	0.0207	9.9	1.1	9.9	1.4	A+	A-	A-
MATH	4	634818	4	D-M	2	13629	0.89	0.03	0.04	0.04	0.89	0.00	0.32	-0.16	-0.17	-0.20	0.32	-2.3976	0.0289	-4.4	0.9	-6.7	0.8	B+	B-	A-
MATH	4	458330	5	D-M	2	13670	0.26	0.38	0.22	0.26	0.13	0.02	0.26	-0.01	-0.15	0.26	-0.14	1.4409	0.0218	9.9	1.1	9.9	1.5	A-	A-	A-
MATH	4	684956	5	A-T	2	13670	0.63	0.17	0.12	0.63	0.08	0.00	0.56	-0.32	-0.26	0.56	-0.24	-0.5604	0.0196	-9.9	0.8	-9.9	0.7	A-	A-	A-
MATH	4	872110	5	B-O	2	13670	0.70	0.10	0.70	0.09	0.10	0.00	0.48	-0.29	0.48	-0.29	-0.16	-0.9309	0.0204	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	4	285002	5	A-F	2	13670	0.39	0.39	0.16	0.21	0.23	0.00	0.45	0.45	-0.08	-0.33	-0.12	0.6814	0.0197	-2.1	1.0	0.2	1.0	A-	A-	A-
MATH	4	691831	5	D-M	2	13670	0.91	0.03	0.91	0.03	0.03	0.00	0.30	-0.17	0.30	-0.15	-0.19	-2.6272	0.0313	-4.4	0.9	-6.6	0.7	A+	B-	A-
MATH	4	468122	5	A-F	1	13670	0.82	0.06	0.08	0.82	0.04	0.00	0.36	-0.18	-0.24	0.36	-0.16	-1.7066	0.0237	-5.6	0.9	-4.2	0.9	A+	A-	A-
MATH	4	750623	5	B-O	2	13670	0.87	0.07	0.04	0.87	0.03	0.00	0.39	-0.29	-0.19	0.39	-0.16	-2.1212	0.0265	-8.8	0.9	-9.9	0.6	A-	B-	A-
MATH	4	156087	5	C-G	1	13670	0.71	0.16	0.06	0.06	0.71	0.00	0.42	-0.29	-0.20	-0.15	0.42	-1.0157	0.0207	-8.3	0.9	-5.5	0.9	A-	A-	A-
MATH	4	935139	5	A-T	1	13670	0.70	0.12	0.13	0.70	0.04	0.00	0.42	-0.29	-0.19	0.42	-0.15	-0.9597	0.0205	-7.3	0.9	-4.9	0.9	A-	A+	A-
MATH	4	917994	5	B-O	2	13670	0.63	0.12	0.17	0.63	0.08	0.00	0.44	-0.22	-0.19	0.44	-0.25	-0.5744	0.0197	-6.7	1.0	-6.0	0.9	A-	A-	A-
MATH	4	197939	5	D-M	2	13670	0.57	0.14	0.57	0.08	0.20	0.00	0.42	-0.19	0.42	-0.16	-0.23	-0.2311	0.0193	-1.4	1.0	0.4	1.0	A-	A-	A-
MATH	4	848905	5	A-F	1	13670	0.71	0.71	0.11	0.08	0.11	0.00	0.45	0.45	-0.21	-0.22	-0.26	-0.9821	0.0206	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	4	770864	6	A-F	1	13673	0.78	0.13	0.78	0.05	0.03	0.00	0.41	-0.27	0.41	-0.19	-0.18	-1.4397	0.0224	-9.8	0.9	-6.6	0.9	A+	A-	A-
MATH	4	277555	6	B-O	2	13673	0.57	0.11	0.57	0.23	0.09	0.00	0.42	-0.24	0.42	-0.21	-0.14	-0.2498	0.0193	-1.0	1.0	-3.0	1.0	A-	A-	A-
MATH	4	492928	6	B-O	2	13673	0.64	0.64	0.10	0.11	0.15	0.00	0.43	0.43	-0.26	-0.23	-0.16	-0.5659	0.0196	-5.7	1.0	-7.2	0.9	A+	A+	A-
MATH	4	902084	6	D-M	1	13673	0.60	0.06	0.22	0.60	0.12	0.00	0.46	-0.26	-0.33	0.46	-0.08	-0.3776	0.0194	-9.9	0.9	-5.0	0.9	A+	A-	A-
MATH	4	221600	6	A-T	2	13673	0.43	0.10	0.17	0.43	0.30	0.00	0.35	-0.16	-0.13	0.35	-0.16	0.4764	0.0194	9.9	1.1	9.9	1.1	A-	A-	A-
MATH	4	480409	6	A-F	1	13673	0.50	0.27	0.12	0.50	0.11	0.00	0.51	-0.37	-0.15	0.51	-0.13	0.1353	0.0192	-9.9	0.9	-9.9	0.9	A-	A+	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	4	541799	6	A-T	1	13673	0.82	0.03	0.09	0.05	0.82	0.00	0.37	-0.16	-0.23	-0.20	0.37	-1.6871	0.0237	-6.5	0.9	-7.7	0.8	A+	A-	A-
MATH	4	822195	6	B-O	2	13673	0.48	0.48	0.37	0.09	0.06	0.00	0.36	0.36	-0.24	-0.14	-0.11	0.2449	0.0192	9.0	1.1	8.0	1.1	A-	A+	A-
MATH	4	723481	6	A-T	2	13673	0.57	0.28	0.07	0.07	0.57	0.01	0.52	-0.36	-0.21	-0.17	0.52	-0.2205	0.0192	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	4	635976	6	C-G	2	13673	0.73	0.09	0.09	0.73	0.09	0.00	0.44	-0.25	-0.22	0.44	-0.20	-1.1221	0.0211	-9.9	0.9	-8.2	0.8	A+	A-	A-
MATH	4	995579	6	D-M	2	13673	0.89	0.03	0.05	0.89	0.03	0.00	0.31	-0.15	-0.20	0.31	-0.15	-2.3016	0.0282	-4.1	0.9	-6.6	0.8	A+	A-	A-
MATH	4	332940	6	C-G	1	13673	0.74	0.19	0.04	0.02	0.74	0.00	0.26	-0.15	-0.16	-0.14	0.26	-1.1284	0.0211	7.2	1.1	9.9	1.2	A-	A-	A-
MATH	4	232907	7	B-O	2	13640	0.59	0.19	0.14	0.08	0.59	0.00	0.61	-0.36	-0.28	-0.21	0.61	-0.3094	0.0193	-9.9	0.8	-9.9	0.7	A+	A-	A-
MATH	4	739587	7	B-O	2	13640	0.55	0.05	0.55	0.28	0.12	0.00	0.44	-0.16	0.44	-0.17	-0.32	-0.1137	0.0192	-4.4	1.0	-4.5	1.0	A+	A-	A-
MATH	4	175565	7	D-M	2	13640	0.49	0.38	0.05	0.49	0.08	0.00	0.45	-0.34	-0.20	0.45	-0.06	0.1988	0.0192	-4.9	1.0	-3.9	1.0	A+	A-	A-
MATH	4	635007	7	A-F	1	13640	0.52	0.26	0.14	0.09	0.52	0.00	0.55	-0.35	-0.19	-0.19	0.55	0.0491	0.0192	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	4	672824	7	A-F	2	13640	0.53	0.27	0.53	0.09	0.12	0.00	0.45	-0.26	0.45	-0.22	-0.15	-0.0140	0.0192	-3.8	1.0	-5.6	0.9	A+	A+	A+
MATH	4	802302	7	B-O	2	13640	0.74	0.74	0.06	0.07	0.12	0.00	0.46	0.46	-0.23	-0.23	-0.26	-1.1775	0.0213	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	4	231109	7	D-M	1	13640	0.53	0.14	0.09	0.23	0.53	0.00	0.33	-0.26	-0.21	-0.03	0.33	-0.0419	0.0192	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	4	459727	7	C-G	1	13640	0.50	0.17	0.24	0.50	0.08	0.00	0.36	-0.19	-0.11	0.36	-0.22	0.1219	0.0192	8.4	1.1	7.5	1.1	A+	A+	A+
MATH	4	839631	7	A-T	1	13640	0.81	0.05	0.06	0.81	0.07	0.01	0.39	-0.22	-0.22	0.39	-0.20	-1.6313	0.0234	-7.6	0.9	-8.4	0.8	A+	A-	A-
MATH	4	339430	7	C-G	2	13640	0.69	0.03	0.69	0.20	0.07	0.00	0.38	-0.17	0.38	-0.20	-0.24	-0.8647	0.0203	-2.1	1.0	0.7	1.0	A-	B-	A-
MATH	4	400431	7	A-T	1	13640	0.86	0.06	0.05	0.04	0.86	0.00	0.38	-0.25	-0.20	-0.17	0.38	-2.0150	0.0259	-7.6	0.9	-9.4	0.7	A+	A-	A-
MATH	4	164171	7	A-F	2	13640	0.46	0.24	0.46	0.16	0.13	0.00	0.25	-0.02	0.25	-0.11	-0.22	0.3372	0.0193	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	4	222468	8	A-F	2	13715	0.32	0.24	0.17	0.27	0.32	0.00	0.23	0.03	-0.09	-0.19	0.23	1.0384	0.0203	9.9	1.2	9.9	1.3	A+	A-	A+
MATH	4	425724	8	D-M	2	13715	0.45	0.42	0.06	0.45	0.07	0.00	0.43	-0.24	-0.21	0.43	-0.15	0.3868	0.0192	-1.8	1.0	-1.9	1.0	A+	A-	A+
MATH	4	751369	8	B-O	2	13715	0.62	0.21	0.62	0.08	0.10	0.00	0.47	-0.27	0.47	-0.25	-0.17	-0.4679	0.0193	-9.9	0.9	-9.9	0.9	A+	A+	A-
MATH	4	763603	8	D-M	2	13715	0.50	0.33	0.50	0.11	0.05	0.00	0.43	-0.24	0.43	-0.18	-0.17	0.1169	0.0190	-2.2	1.0	-1.8	1.0	A+	A-	A-
MATH	4	112521	8	A-T	2	13715	0.34	0.23	0.20	0.34	0.23	0.00	0.30	-0.14	-0.11	0.30	-0.10	0.9695	0.0202	9.9	1.1	9.9	1.2	A-	A-	A+
MATH	4	908260	8	B-O	1	13715	0.94	0.94	0.03	0.02	0.01	0.00	0.23	0.23	-0.14	-0.13	-0.12	-3.0600	0.0375	-1.6	1.0	-3.2	0.8	B+	B-	A-
MATH	4	667444	8	A-T	2	13715	0.58	0.09	0.14	0.58	0.19	0.00	0.50	-0.22	-0.30	0.50	-0.20	-0.2699	0.0191	-9.9	0.9	-9.9	0.9	A-	B-	A-
MATH	4	780203	8	C-G	1	13715	0.35	0.18	0.27	0.35	0.20	0.00	0.13	-0.20	0.11	0.13	-0.07	0.8688	0.0199	9.9	1.3	9.9	1.5	A+	A+	A+
MATH	4	157486	8	A-F	1	13715	0.44	0.44	0.27	0.09	0.20	0.00	0.56	0.56	-0.26	-0.16	-0.29	0.4018	0.0192	-9.9	0.8	-9.9	0.8	A-	A+	A-
MATH	4	171036	8	A-T	1	13715	0.57	0.05	0.57	0.30	0.08	0.00	0.30	-0.19	0.30	-0.11	-0.21	-0.2273	0.0191	9.9	1.1	9.9	1.2	A-	A-	A-
MATH	4	631006	8	B-O	2	13715	0.56	0.19	0.08	0.56	0.17	0.00	0.45	-0.24	-0.21	0.45	-0.20	-0.1979	0.0191	-7.7	1.0	-8.2	0.9	A+	A-	A-
MATH	4	893365	8	C-G	1	13715	0.60	0.60	0.11	0.11	0.16	0.01	0.39	0.39	-0.17	-0.22	-0.18	-0.3874	0.0192	0.3	1.0	-1.8	1.0	A+	A-	A-
MATH	4	454392	9	B-O	2	13692	0.59	0.26	0.08	0.59	0.06	0.00	0.48	-0.31	-0.22	0.48	-0.16	-0.3459	0.0193	-9.9	0.9	-9.9	0.9	A+	A-	A-
MATH	4	638744	9	A-T	1	13692	0.82	0.07	0.04	0.06	0.82	0.00	0.38	-0.19	-0.21	-0.21	0.38	-1.7062	0.0238	-7.2	0.9	-8.3	0.8	A+	A-	A-
MATH	4	888175	9	D-M	2	13692	0.38	0.38	0.21	0.21	0.20	0.00	0.29	0.29	-0.07	-0.17	-0.10	0.7574	0.0198	9.9	1.1	9.9	1.3	A+	A-	A-
MATH	4	105537	9	B-O	2	13692	0.35	0.35	0.38	0.16	0.11	0.00	0.38	0.38	-0.13	-0.13	-0.23	0.9167	0.0201	3.7	1.0	8.9	1.1	B-	A+	A-
MATH	4	585728	9	B-O	2	13692	0.82	0.82	0.07	0.05	0.04	0.01	0.35	0.35	-0.16	-0.22	-0.23	-1.7045	0.0238	-6.0	0.9	-4.6	0.9	A+	A-	A-
MATH	4	129040	9	D-M	2	13692	0.77	0.06	0.77	0.12	0.05	0.00	0.50	-0.22	0.50	-0.34	-0.22	-1.3525	0.0220	-9.9	0.8	-9.9	0.7	A-	B-	C-
MATH	4	944346	9	A-T	1	13692	0.88	0.04	0.03	0.05	0.88	0.00	0.34	-0.18	-0.18	-0.20	0.34	-2.2356	0.0277	-5.8	0.9	-8.5	0.7	A+	A-	A-
MATH	4	825164	9	C-G	2	13692	0.28	0.13	0.48	0.11	0.28	0.00	0.29	-0.05	-0.21	-0.02	0.29	1.3260	0.0213	9.9	1.1	9.9	1.3	A-	A-	A-
MATH	4	379855	9	A-F	1	13692	0.86	0.04	0.08	0.86	0.03	0.00	0.36	-0.19	-0.25	0.36	-0.15	-1.9837	0.0256	-7.0	0.9	-8.1	0.8	A+	A-	A+
MATH	4	565728	9	A-T	2	13692	0.61	0.14	0.61	0.12	0.12	0.00	0.47	-0.25	0.47	-0.18	-0.24	-0.4456	0.0195	-9.9	0.9	-8.8	0.9	A-	A-	A-
MATH	4	367751	9	A-F	2	13692	0.71	0.71	0.10	0.10	0.09	0.00	0.41	0.41	-0.25	-0.23	-0.16	-0.9459	0.0205	-7.4	0.9	-5.4	0.9	A+	A-	A-
MATH	4	301487	9	A-F	1	13692	0.64	0.09	0.64	0.18	0.08	0.00	0.46	-0.20	0.46	-0.28	-0.18	-0.5948	0.0197	-9.9	0.9	-7.7	0.9	A+	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	5	209566	0	A-F	2	125524	0.76	0.05	0.09	0.76	0.10	0.00	0.46	-0.20	-0.24	0.46	-0.28	-1.1734	0.0071	-9.9	0.9	-9.9	0.7			
MATH	5	749907	0	C-G	1	125524	0.68	0.08	0.16	0.07	0.68	0.00	0.47	-0.29	-0.24	-0.19	0.47	-0.7638	0.0067	-9.9	0.9	-9.9	0.9			
MATH	5	153801	0	A-F	1	125524	0.42	0.06	0.43	0.42	0.08	0.00	0.61	-0.08	-0.53	0.61	-0.07	0.5924	0.0065	-9.9	0.8	-9.9	0.8			
MATH	5	827148	0	A-T	1	125524	0.67	0.67	0.22	0.09	0.03	0.00	0.47	0.47	-0.29	-0.27	-0.15	-0.6612	0.0066	-9.9	0.9	-9.9	0.9			
MATH	5	926460	0	C-G	2	125524	0.51	0.16	0.51	0.15	0.18	0.00	0.30	-0.19	0.30	-0.17	-0.05	0.1525	0.0064	9.9	1.2	9.9	1.2			
MATH	5	291197	0	A-F	1	125524	0.55	0.11	0.55	0.19	0.15	0.00	0.47	-0.22	0.47	-0.16	-0.28	0.0569	0.0063	-9.9	1.0	-9.9	0.9			
MATH	5	953975	0	A-T	1	125524	0.70	0.04	0.14	0.70	0.12	0.00	0.47	-0.20	-0.28	0.47	-0.25	-0.8694	0.0068	-9.9	0.9	-9.9	0.8			
MATH	5	899354	0	A-T	1	125524	0.67	0.10	0.67	0.12	0.11	0.00	0.42	-0.24	0.42	-0.18	-0.21	-0.6641	0.0066	-9.9	1.0	-3.0	1.0			
MATH	5	593575	0	A-T	1	125524	0.82	0.10	0.03	0.06	0.82	0.00	0.41	-0.28	-0.16	-0.21	0.41	-1.6276	0.0078	-9.9	0.9	-9.9	0.8			
MATH	5	613113	0	A-F	2	125524	0.46	0.46	0.39	0.10	0.05	0.00	0.25	0.25	-0.03	-0.23	-0.20	0.4028	0.0064	9.9	1.2	9.9	1.3			
MATH	5	228076	0	A-T	1	125524	0.55	0.18	0.55	0.12	0.14	0.00	0.51	-0.26	0.51	-0.18	-0.27	-0.0894	0.0064	-9.9	0.9	-9.9	0.9			
MATH	5	777119	0	A-F	1	125524	0.50	0.29	0.10	0.50	0.11	0.00	0.51	-0.26	-0.25	0.51	-0.20	0.1016	0.0063	-9.9	0.9	-9.9	0.9			
MATH	5	488010	0	B-O	1	125524	0.78	0.78	0.05	0.11	0.06	0.00	0.48	0.48	-0.20	-0.31	-0.24	-1.3017	0.0073	-9.9	0.8	-9.9	0.7			
MATH	5	875239	0	C-G	1	125524	0.86	0.86	0.05	0.05	0.05	0.00	0.34	0.34	-0.19	-0.23	-0.14	-2.1306	0.0090	9.9	1.1	3.2	1.0			
MATH	5	357144	0	C-G	2	125524	0.34	0.15	0.19	0.32	0.34	0.00	0.35	-0.17	-0.27	0.01	0.35	1.0269	0.0067	9.9	1.1	9.9	1.2			
MATH	5	594957	0	D-M	2	125524	0.40	0.40	0.11	0.13	0.36	0.00	0.59	0.59	-0.06	-0.18	-0.43	0.7400	0.0065	-9.9	0.8	-9.9	0.8			
MATH	5	729230	0	D-M	2	125524	0.33	0.11	0.33	0.08	0.48	0.00	0.29	-0.28	0.29	-0.10	-0.04	1.1039	0.0068	9.9	1.2	9.9	1.3			
MATH	5	907458	0	A-T	1	125524	0.69	0.09	0.18	0.69	0.05	0.00	0.45	-0.30	-0.23	0.45	-0.16	-0.6865	0.0066	-9.9	0.9	-9.9	0.9			
MATH	5	395463	0	A-F	2	125524	0.67	0.10	0.12	0.67	0.12	0.00	0.49	-0.26	-0.28	0.49	-0.19	-0.6649	0.0066	-9.9	0.9	-9.9	0.8			
MATH	5	150672	0	C-G	1	125524	0.72	0.12	0.10	0.07	0.72	0.00	0.46	-0.27	-0.25	-0.18	0.46	-0.9558	0.0069	-9.9	0.9	-9.9	0.8			
MATH	5	276420	0	D-M	2	125524	0.29	0.29	0.21	0.21	0.29	0.00	0.36	0.36	-0.14	-0.17	-0.08	1.4238	0.0071	9.9	1.1	9.9	1.3			
MATH	5	428493	0	A-F	2	125524	0.77	0.12	0.07	0.77	0.04	0.00	0.43	-0.28	-0.23	0.43	-0.15	-1.2085	0.0072	-9.9	0.9	-9.9	0.8			
MATH	5	666969	0	A-F	2	125524	0.31	0.17	0.33	0.31	0.19	0.00	0.26	-0.15	-0.13	0.26	-0.01	1.2365	0.0069	9.9	1.2	9.9	1.4			
MATH	5	514590	0	A-T	2	125524	0.53	0.11	0.20	0.15	0.53	0.00	0.48	-0.29	-0.19	-0.19	0.48	0.0084	0.0064	-9.9	0.9	-9.9	0.9			
MATH	5	477786	0	A-T	1	125524	0.29	0.05	0.29	0.46	0.20	0.00	0.54	-0.03	0.54	-0.42	-0.07	1.3504	0.0070	-9.9	0.9	-9.9	0.8			
MATH	5	135363	0	A-T	1	125524	0.52	0.07	0.52	0.24	0.17	0.00	0.49	-0.15	0.49	-0.17	-0.35	0.1415	0.0064	-9.9	0.9	-9.9	0.9			
MATH	5	321709	0	A-T	2	125524	0.58	0.14	0.58	0.20	0.07	0.00	0.51	-0.19	0.51	-0.29	-0.25	-0.2823	0.0064	-9.9	0.9	-9.9	0.9			
MATH	5	115361	0	D-M	2	125524	0.46	0.46	0.17	0.27	0.11	0.00	0.44	0.44	-0.22	-0.17	-0.19	0.3929	0.0064	-3.7	1.0	-3.1	1.0			
MATH	5	952378	0	C-G	1	125524	0.47	0.11	0.26	0.16	0.47	0.00	0.40	-0.23	-0.17	-0.14	0.40	0.3056	0.0064	9.9	1.0	9.9	1.1			
MATH	5	941655	0	B-O	2	125524	0.25	0.22	0.25	0.48	0.05	0.00	0.38	-0.16	0.38	-0.13	-0.16	1.5883	0.0073	-4.2	1.0	9.9	1.2			
MATH	5	272501	0	D-M	2	125524	0.36	0.22	0.36	0.09	0.32	0.00	0.45	-0.32	0.45	-0.21	-0.05	0.9810	0.0067	-2.4	1.0	3.4	1.0			
MATH	5	974959	0	B-O	2	125524	0.71	0.08	0.10	0.11	0.71	0.00	0.33	-0.17	-0.11	-0.23	0.33	-0.9065	0.0068	8.9	1.0	9.9	1.1			
MATH	5	692867	0	D-M	1	125524	0.79	0.12	0.06	0.03	0.79	0.00	0.46	-0.37	-0.19	-0.13	0.46	-1.3459	0.0074	-9.9	0.8	-9.9	0.7			
MATH	5	796697	0	A-T	1	125524	0.71	0.08	0.71	0.10	0.10	0.00	0.44	-0.22	0.44	-0.10	-0.35	-0.9566	0.0069	-9.9	0.9	-8.7	0.9			
MATH	5	216195	0	D-M	2	125524	0.47	0.18	0.13	0.23	0.47	0.00	0.46	-0.24	-0.29	-0.09	0.46	0.3701	0.0064	-9.7	1.0	-9.3	1.0			
MATH	5	514158	0	A-F	2	125524	0.63	0.10	0.13	0.13	0.63	0.00	0.48	-0.15	-0.25	-0.29	0.48	-0.4574	0.0065	-9.9	0.9	-9.9	0.9			
MATH	5	199285	0	B-O	2	125524	0.36	0.41	0.11	0.36	0.11	0.00	0.37	-0.03	-0.25	0.37	-0.26	1.0851	0.0068	9.9	1.1	9.9	1.2			
MATH	5	646726	0	B-O	2	125524	0.66	0.22	0.07	0.66	0.06	0.00	0.50	-0.34	-0.22	0.50	-0.18	-0.6262	0.0066	-9.9	0.9	-9.9	0.8			
MATH	5	415744	0	A-T	2	125524	0.56	0.14	0.56	0.17	0.13	0.00	0.50	-0.11	0.50	-0.32	-0.26	-0.0641	0.0064	-9.9	0.9	-9.9	0.9			
MATH	5	910060	0	A-T	1	125524	0.56	0.10	0.27	0.56	0.07	0.00	0.25	-0.17	-0.05	0.25	-0.19	-0.0807	0.0064	9.9	1.2	9.9	1.3			
MATH	5	733314	0	A-T	2	125524	0.40	0.27	0.40	0.20	0.13	0.00	0.38	-0.14	0.38	-0.19	-0.12	0.6951	0.0065	9.9	1.1	9.9	1.1			
MATH	5	196650	0	A-T	2	125524	0.28	0.15	0.16	0.41	0.28	0.00	0.38	-0.09	-0.20	-0.13	0.38	1.4277	0.0071	9.8	1.0	9.9	1.2			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	5	345097	0	A-T	2	125524	0.55	0.26	0.09	0.11	0.55	0.00	0.51	-0.22	-0.23	-0.29	0.51	0.0360	0.0064	-9.9	0.9	-9.9	0.9			
MATH	5	149873	0	A-T	2	125524	0.31	0.18	0.39	0.31	0.12	0.00	0.19	-0.02	-0.03	0.19	-0.20	1.1959	0.0069	9.9	1.2	9.9	1.5			
MATH	5	912183	0	A-T	1	125524	0.83	0.02	0.83	0.06	0.09	0.00	0.46	-0.13	0.46	-0.24	-0.34	-1.8052	0.0082	-9.9	0.9	-9.9	0.7			
MATH	5	396973	0	A-F	1	125524	0.72	0.72	0.12	0.09	0.08	0.00	0.32	0.32	-0.19	-0.17	-0.12	-0.9074	0.0068	9.9	1.0	9.9	1.1			
MATH	5	483434	0	A-F	2	125524	0.46	0.46	0.08	0.26	0.19	0.00	0.48	0.48	-0.15	-0.31	-0.14	0.4328	0.0064	-9.9	1.0	-9.9	1.0			
MATH	5	240155	0	A-F	1	125524	0.41	0.30	0.19	0.10	0.41	0.00	0.44	-0.25	-0.14	-0.14	0.44	0.6760	0.0065	-0.1	1.0	0.5	1.0			
MATH	5	283682	0	A-F	2	125524	0.57	0.09	0.17	0.57	0.17	0.00	0.42	-0.20	-0.21	0.42	-0.19	-0.0637	0.0064	0.0	1.0	-4.0	1.0			
MATH	5	616373	0	A-F	1	125524	0.37	0.07	0.37	0.11	0.45	0.00	0.33	-0.16	0.33	-0.12	-0.16	0.9419	0.0067	9.9	1.1	9.9	1.2			
MATH	5	122464	0	A-F	1	125524	0.59	0.59	0.08	0.25	0.07	0.00	0.51	0.51	-0.24	-0.31	-0.20	-0.1956	0.0064	-9.9	0.9	-9.9	0.8			
MATH	5	758317	0	C-G	2	125524	0.66	0.66	0.12	0.10	0.12	0.00	0.40	0.40	-0.23	-0.17	-0.20	-0.6441	0.0066	-1.5	1.0	-3.2	1.0			
MATH	5	993962	0	C-G	1	125524	0.52	0.16	0.52	0.11	0.20	0.00	0.46	-0.28	0.46	-0.25	-0.11	0.1317	0.0064	-9.9	1.0	-9.9	1.0			
MATH	5	370942	0	B-O	2	125524	0.48	0.19	0.13	0.20	0.48	0.00	0.42	-0.28	-0.15	-0.12	0.42	0.3123	0.0064	9.1	1.0	9.1	1.0			
MATH	5	789714	0	C-G	2	125524	0.38	0.23	0.20	0.19	0.38	0.00	0.22	-0.04	-0.05	-0.17	0.22	0.8245	0.0066	9.9	1.3	9.9	1.4			
MATH	5	227661	0	D-M	2	125524	0.55	0.55	0.24	0.15	0.06	0.00	0.39	0.39	-0.22	-0.14	-0.20	-0.0860	0.0064	9.9	1.1	9.9	1.0			
MATH	5	479733	0	D-M	2	125524	0.37	0.37	0.33	0.17	0.13	0.00	0.30	0.30	-0.07	-0.15	-0.15	0.8954	0.0066	9.9	1.2	9.9	1.3			
MATH	5	438526	0	A-F	2	125524	0.41	0.20	0.18	0.20	0.41	0.00	0.48	-0.18	-0.25	-0.17	0.48	0.7102	0.0065	-9.9	1.0	-9.3	1.0			
MATH	5	192250	0	C-G	1	125524	0.51	0.20	0.10	0.19	0.51	0.00	0.43	-0.34	-0.14	-0.09	0.43	0.1936	0.0064	3.9	1.0	2.8	1.0			
MATH	5	727091	0	B-O	1	125524	0.60	0.60	0.17	0.11	0.12	0.00	0.34	0.34	-0.11	-0.22	-0.18	-0.3150	0.0064	9.9	1.1	9.9	1.1			
MATH	5	191871	1	D-M	2	14241	0.23	0.09	0.23	0.23	0.45	0.00	0.01	-0.17	0.01	-0.28	0.32	1.6797	0.0223	9.9	1.5	9.9	2.1	A+	A+	A+
MATH	5	928162	1	B-O	2	14241	0.69	0.69	0.11	0.07	0.14	0.00	0.38	0.38	-0.18	-0.19	-0.20	-0.8198	0.0199	-0.1	1.0	0.5	1.0	A+	A-	A-
MATH	5	552622	1	A-F	1	14241	0.29	0.14	0.29	0.41	0.16	0.00	0.17	-0.09	0.17	0.02	-0.15	1.2979	0.0208	9.9	1.3	9.9	1.6	A+	A-	A-
MATH	5	116930	1	B-O	2	14241	0.40	0.40	0.12	0.38	0.10	0.00	0.38	0.38	-0.28	-0.07	-0.21	0.6581	0.0193	7.7	1.1	9.2	1.1	B-	A-	A-
MATH	5	172885	1	A-T	1	14241	0.77	0.10	0.09	0.77	0.04	0.00	0.42	-0.26	-0.22	0.42	-0.18	-1.3131	0.0215	-8.5	0.9	-9.7	0.8	A-	A+	A-
MATH	5	717813	1	A-T	2	14241	0.44	0.38	0.44	0.09	0.09	0.00	0.35	-0.10	0.35	-0.21	-0.22	0.4952	0.0191	9.9	1.1	9.9	1.1	A-	A-	A+
MATH	5	615747	1	A-F	1	14241	0.63	0.05	0.19	0.63	0.14	0.00	0.50	-0.16	-0.33	0.50	-0.22	-0.4803	0.0192	-9.9	0.9	-9.9	0.8	A+	A-	A+
MATH	5	419548	1	A-T	1	14241	0.57	0.06	0.13	0.57	0.24	0.00	0.45	-0.20	-0.32	0.45	-0.16	-0.1838	0.0189	-4.8	1.0	-4.8	0.9	A-	A-	A-
MATH	5	185640	1	C-G	2	14241	0.47	0.19	0.47	0.14	0.19	0.01	0.46	-0.20	0.46	-0.21	-0.20	0.2984	0.0189	-4.2	1.0	-3.5	1.0	A+	A-	A-
MATH	5	473995	1	D-M	2	14241	0.32	0.27	0.32	0.18	0.23	0.00	0.36	-0.11	0.36	-0.06	-0.22	1.1182	0.0203	7.8	1.1	9.9	1.2	A-	A-	A-
MATH	5	119901	1	C-G	1	14241	0.46	0.46	0.10	0.21	0.23	0.00	0.28	0.28	-0.22	-0.08	-0.10	0.3772	0.0190	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	5	996376	1	A-F	2	14241	0.37	0.16	0.37	0.27	0.19	0.00	0.27	-0.09	0.27	-0.16	-0.06	0.8539	0.0197	9.9	1.2	9.9	1.3	A+	A-	A+
MATH	5	148948	2	A-T	2	13921	0.38	0.38	0.28	0.20	0.14	0.00	0.10	0.10	0.01	-0.06	-0.08	0.8439	0.0197	9.9	1.4	9.9	1.5	A+	A-	A-
MATH	5	471909	2	C-G	1	13921	0.66	0.66	0.12	0.13	0.09	0.00	0.28	0.28	-0.06	-0.15	-0.21	-0.5957	0.0197	9.9	1.1	9.9	1.3	A+	A-	A-
MATH	5	739080	2	D-M	2	13921	0.25	0.25	0.11	0.29	0.35	0.00	0.20	0.20	-0.25	-0.06	0.04	1.5855	0.0219	9.9	1.2	9.9	1.6	A-	A-	A-
MATH	5	713921	2	A-F	2	13921	0.22	0.13	0.35	0.30	0.22	0.00	0.02	-0.14	0.09	-0.01	0.02	1.7758	0.0227	9.9	1.4	9.9	1.9	A+	A-	A+
MATH	5	797068	2	A-F	1	13921	0.63	0.15	0.14	0.63	0.08	0.00	0.51	-0.28	-0.24	0.51	-0.22	-0.4871	0.0195	-9.9	0.9	-9.9	0.8	A+	A+	A+
MATH	5	879541	2	A-F	1	13921	0.68	0.10	0.10	0.12	0.68	0.00	0.49	-0.28	-0.23	-0.23	0.49	-0.7052	0.0199	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	5	455283	2	B-O	2	13921	0.53	0.10	0.16	0.22	0.53	0.00	0.48	-0.28	-0.29	-0.13	0.48	0.0685	0.0190	-9.7	0.9	-7.8	0.9	A+	A-	A+
MATH	5	684473	2	A-T	2	13921	0.62	0.10	0.11	0.62	0.17	0.00	0.39	-0.19	-0.25	0.39	-0.15	-0.4338	0.0194	1.0	1.0	2.9	1.0	A+	A-	A-
MATH	5	375382	2	C-G	2	13921	0.36	0.36	0.24	0.29	0.11	0.00	0.20	0.20	-0.13	-0.01	-0.12	0.9452	0.0199	9.9	1.3	9.9	1.4	A+	A-	A+
MATH	5	729531	2	A-F	2	13921	0.63	0.08	0.19	0.63	0.09	0.00	0.50	-0.20	-0.30	0.50	-0.23	-0.4606	0.0194	-9.9	0.9	-9.9	0.8	A+	A+	A+
MATH	5	736037	2	B-O	2	13921	0.50	0.10	0.19	0.50	0.21	0.00	0.29	-0.19	-0.14	0.29	-0.08	0.2196	0.0190	9.9	1.2	9.9	1.2	A+	A-	A-
MATH	5	360301	2	D-M	2	13921	0.38	0.27	0.15	0.38	0.19	0.01	0.40	-0.09	-0.14	0.40	-0.26	0.8322	0.0197	3.1	1.0	8.1	1.1	A-	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	5	498803	3	A-F	2	13919	0.31	0.17	0.31	0.21	0.31	0.00	0.20	-0.16	0.20	-0.17	0.08	1.2296	0.0207	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	5	547056	3	B-O	1	13919	0.52	0.07	0.08	0.52	0.33	0.00	0.34	-0.26	-0.25	0.34	-0.08	0.0945	0.0190	9.9	1.1	9.9	1.1	A+	A+	A-
MATH	5	373949	3	C-G	2	13919	0.22	0.14	0.43	0.21	0.22	0.00	0.04	-0.19	0.21	-0.13	0.04	1.8185	0.0229	9.9	1.4	9.9	1.9	A+	A-	A+
MATH	5	145350	3	A-F	2	13919	0.37	0.18	0.37	0.22	0.23	0.00	0.16	-0.08	0.16	-0.04	-0.07	0.8909	0.0198	9.9	1.3	9.9	1.5	A-	A+	A+
MATH	5	344434	3	D-M	2	13919	0.44	0.12	0.44	0.31	0.12	0.00	0.27	-0.19	0.27	0.01	-0.23	0.5094	0.0192	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	5	554756	3	A-T	2	13919	0.68	0.68	0.08	0.09	0.14	0.00	0.55	0.55	-0.25	-0.27	-0.31	-0.7132	0.0199	-9.9	0.8	-9.9	0.7	A+	A-	A-
MATH	5	633775	3	A-T	2	13919	0.59	0.08	0.13	0.20	0.59	0.00	0.47	-0.23	-0.25	-0.21	0.47	-0.2267	0.0192	-9.3	0.9	-9.6	0.9	A+	A+	A+
MATH	5	113352	3	A-T	2	13919	0.51	0.51	0.16	0.13	0.20	0.00	0.33	0.33	-0.15	-0.17	-0.13	0.1530	0.0190	9.9	1.1	9.9	1.1	A-	A+	A-
MATH	5	606668	3	B-O	1	13919	0.87	0.05	0.05	0.87	0.03	0.00	0.39	-0.24	-0.23	0.39	-0.16	-2.0658	0.0267	-8.2	0.9	-9.6	0.7	A+	A-	A-
MATH	5	438731	3	A-F	2	13919	0.31	0.31	0.19	0.23	0.27	0.00	0.24	0.24	-0.15	-0.11	-0.02	1.2007	0.0206	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	5	812657	3	C-G	1	13919	0.61	0.15	0.10	0.13	0.61	0.00	0.42	-0.22	-0.22	-0.17	0.42	-0.3585	0.0193	-3.1	1.0	-0.8	1.0	A+	A-	A-
MATH	5	366465	3	D-M	2	13919	0.32	0.40	0.17	0.32	0.11	0.00	0.35	-0.17	-0.14	0.35	-0.09	1.1712	0.0205	6.6	1.1	9.9	1.2	A-	A-	A-
MATH	5	610721	4	D-M	2	13882	0.45	0.15	0.14	0.25	0.45	0.00	0.40	-0.21	-0.25	-0.08	0.40	0.4486	0.0193	6.2	1.1	5.2	1.1	A-	A-	A-
MATH	5	575202	4	A-T	2	13882	0.76	0.07	0.76	0.09	0.08	0.00	0.46	-0.25	0.46	-0.22	-0.26	-1.2042	0.0215	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	5	447580	4	A-F	1	13882	0.66	0.10	0.08	0.16	0.66	0.00	0.46	-0.13	-0.27	-0.29	0.46	-0.6199	0.0198	-9.9	0.9	-5.0	0.9	A+	A+	A+
MATH	5	374544	4	D-M	2	13882	0.50	0.23	0.23	0.50	0.03	0.00	0.53	-0.30	-0.25	0.53	-0.19	0.1820	0.0191	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	5	827572	4	B-O	2	13882	0.24	0.18	0.06	0.52	0.24	0.00	0.39	-0.06	-0.13	-0.23	0.39	1.6634	0.0223	0.4	1.0	5.7	1.1	A-	A-	A-
MATH	5	705513	4	A-T	2	13882	0.38	0.38	0.17	0.21	0.23	0.00	0.30	0.30	-0.16	-0.20	0.00	0.8183	0.0198	9.9	1.2	9.9	1.2	A-	A+	A-
MATH	5	797845	4	D-M	2	13882	0.39	0.22	0.28	0.39	0.10	0.00	0.42	-0.25	-0.13	0.42	-0.15	0.7565	0.0197	1.0	1.0	3.1	1.0	A-	A+	A-
MATH	5	454240	4	A-F	1	13882	0.40	0.40	0.11	0.14	0.35	0.00	0.32	0.32	-0.11	-0.22	-0.09	0.7426	0.0196	9.9	1.1	9.9	1.2	A+	A+	A-
MATH	5	130130	4	A-T	2	13882	0.31	0.31	0.25	0.31	0.13	0.00	0.26	0.10	-0.18	0.26	-0.26	1.2535	0.0208	9.9	1.2	9.9	1.4	A-	A+	A+
MATH	5	500571	4	B-O	2	13882	0.37	0.20	0.37	0.23	0.19	0.00	0.26	-0.06	0.26	-0.14	-0.12	0.8666	0.0199	9.9	1.2	9.9	1.3	A-	A-	A+
MATH	5	467365	4	A-F	1	13882	0.55	0.20	0.16	0.55	0.09	0.00	0.40	-0.20	-0.26	0.40	-0.09	-0.0502	0.0191	2.9	1.0	1.6	1.0	A+	A+	A+
MATH	5	957145	4	C-G	2	13882	0.32	0.32	0.26	0.27	0.15	0.00	0.05	0.05	0.04	-0.02	-0.09	1.1819	0.0206	9.9	1.5	9.9	1.7	A+	A-	A+
MATH	5	637197	5	A-T	2	13910	0.43	0.19	0.43	0.21	0.16	0.00	0.32	-0.15	0.32	-0.16	-0.09	0.5865	0.0194	9.9	1.1	9.9	1.2	A-	A-	A-
MATH	5	812402	5	A-F	2	13910	0.51	0.14	0.20	0.51	0.15	0.01	0.37	-0.17	-0.08	0.37	-0.25	0.2087	0.0192	9.8	1.1	9.9	1.1	A+	A-	A-
MATH	5	856372	5	D-M	2	13910	0.58	0.04	0.04	0.58	0.33	0.00	0.54	-0.18	-0.16	0.54	-0.41	-0.1743	0.0192	-9.9	0.9	-9.9	0.8	A+	A-	A+
MATH	5	316477	5	B-O	2	13910	0.19	0.24	0.31	0.25	0.19	0.00	0.19	-0.07	0.00	-0.10	0.19	2.1110	0.0243	9.9	1.2	9.9	1.7	A+	A+	A-
MATH	5	945795	5	C-G	2	13910	0.16	0.62	0.16	0.09	0.13	0.00	0.11	0.10	0.11	-0.23	-0.06	2.3390	0.0256	9.9	1.3	9.9	2.2	A+	A+	A-
MATH	5	527211	5	A-T	2	13910	0.29	0.07	0.29	0.19	0.45	0.00	0.48	-0.12	0.48	-0.40	-0.06	1.3634	0.0211	-5.8	0.9	-2.4	1.0	A+	A+	A+
MATH	5	821071	5	A-F	1	13910	0.64	0.64	0.08	0.20	0.08	0.00	0.42	0.42	-0.23	-0.22	-0.19	-0.4900	0.0196	-2.0	1.0	-5.3	0.9	A-	A+	A-
MATH	5	812525	5	A-F	1	13910	0.79	0.05	0.79	0.08	0.08	0.00	0.36	-0.19	0.36	-0.22	-0.17	-1.3615	0.0223	-2.9	1.0	-2.0	1.0	A+	A+	A+
MATH	5	382287	5	A-T	2	13910	0.52	0.12	0.52	0.20	0.15	0.00	0.47	-0.18	0.47	-0.16	-0.31	0.1298	0.0191	-5.8	1.0	-5.2	0.9	A+	A-	A-
MATH	5	383734	5	D-M	2	13910	0.41	0.17	0.21	0.20	0.41	0.00	0.54	-0.30	-0.23	-0.14	0.54	0.7077	0.0196	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	5	838430	5	C-G	1	13910	0.80	0.05	0.10	0.05	0.80	0.00	0.44	-0.24	-0.26	-0.22	0.44	-1.4559	0.0228	-9.9	0.9	-9.9	0.7	A+	A-	A-
MATH	5	127352	5	B-O	2	13910	0.19	0.47	0.20	0.15	0.19	0.00	0.11	0.12	-0.14	-0.13	0.11	2.1234	0.0243	9.9	1.3	9.9	2.0	A-	A+	A+
MATH	5	836364	6	A-F	2	13924	0.41	0.30	0.19	0.10	0.41	0.00	0.40	-0.21	-0.17	-0.11	0.40	0.6974	0.0195	5.0	1.0	4.0	1.1	A-	A+	A+
MATH	5	703049	6	C-G	2	13924	0.43	0.20	0.22	0.43	0.15	0.00	0.12	-0.05	-0.04	0.12	-0.06	0.6036	0.0194	9.9	1.4	9.9	1.5	A-	A-	A-
MATH	5	295634	6	A-F	2	13924	0.35	0.12	0.35	0.35	0.17	0.00	0.23	-0.20	0.01	0.23	-0.13	1.0326	0.0201	9.9	1.2	9.9	1.4	A-	A-	A+
MATH	5	795770	6	A-T	2	13924	0.68	0.18	0.08	0.06	0.68	0.00	0.43	-0.23	-0.23	-0.20	0.43	-0.6873	0.0199	-6.7	1.0	-2.9	1.0	A+	A-	A+
MATH	5	367192	6	A-F	2	13924	0.65	0.65	0.12	0.16	0.07	0.00	0.55	0.55	-0.23	-0.37	-0.22	-0.5395	0.0196	-9.9	0.8	-9.9	0.7	A+	A-	A-
MATH	5	836545	6	A-T	2	13924	0.48	0.16	0.16	0.20	0.48	0.00	0.52	-0.19	-0.24	-0.25	0.52	0.3367	0.0191	-9.9	0.9	-9.9	0.9	A+	A+	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	5	212799	6	A-F	1	13924	0.32	0.06	0.32	0.08	0.53	0.00	0.38	-0.18	0.38	-0.21	-0.16	1.1858	0.0205	2.5	1.0	9.4	1.2	A-	A-	A-
MATH	5	942057	6	B-O	2	13924	0.33	0.33	0.25	0.24	0.18	0.00	0.22	0.22	-0.10	-0.05	-0.11	1.1132	0.0203	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	5	964352	6	C-G	2	13924	0.38	0.38	0.08	0.44	0.10	0.00	0.15	0.15	-0.19	0.08	-0.20	0.8539	0.0197	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	5	685994	6	D-M	2	13924	0.40	0.21	0.15	0.40	0.23	0.00	0.54	-0.26	-0.04	0.54	-0.34	0.7156	0.0195	-9.9	0.9	-9.9	0.9	A+	A-	A-
MATH	5	199246	6	D-M	2	13924	0.28	0.14	0.28	0.18	0.39	0.01	0.41	-0.12	0.41	-0.08	-0.21	1.4472	0.0213	-0.4	1.0	4.3	1.1	A-	A-	A-
MATH	5	777340	6	D-M	2	13924	0.27	0.27	0.31	0.15	0.27	0.00	0.23	-0.05	-0.03	-0.19	0.23	1.5196	0.0216	9.9	1.2	9.9	1.5	A+	A-	A+
MATH	5	413019	7	A-F	2	13891	0.30	0.16	0.18	0.30	0.35	0.00	0.09	-0.20	-0.12	0.09	0.17	1.2716	0.0210	9.9	1.4	9.9	1.7	A+	A+	A+
MATH	5	208950	7	A-T	2	13891	0.34	0.10	0.32	0.34	0.24	0.00	0.38	-0.20	-0.08	0.38	-0.19	1.0633	0.0204	5.2	1.1	9.9	1.2	A-	A+	A+
MATH	5	960211	7	D-M	2	13891	0.44	0.20	0.17	0.19	0.44	0.00	0.60	-0.30	-0.24	-0.22	0.60	0.5141	0.0194	-9.9	0.8	-9.9	0.8	A-	A-	A+
MATH	5	817156	7	A-F	2	13891	0.66	0.08	0.66	0.11	0.15	0.00	0.53	-0.19	0.53	-0.31	-0.28	-0.6308	0.0198	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	5	700597	7	A-F	2	13891	0.58	0.14	0.17	0.58	0.11	0.01	0.53	-0.29	-0.27	0.53	-0.20	-0.2008	0.0193	-9.9	0.9	-9.9	0.8	A-	A-	A+
MATH	5	811764	7	B-O	2	13891	0.39	0.39	0.27	0.21	0.13	0.00	0.14	0.14	-0.01	-0.08	-0.10	0.7934	0.0198	9.9	1.4	9.9	1.5	A+	A+	A+
MATH	5	270101	7	A-T	1	13891	0.84	0.04	0.05	0.06	0.84	0.00	0.36	-0.19	-0.21	-0.19	0.36	-1.8295	0.0247	-5.4	0.9	-5.6	0.8	A+	A-	A-
MATH	5	266175	7	C-G	2	13891	0.53	0.25	0.13	0.53	0.09	0.00	0.47	-0.30	-0.18	0.47	-0.16	0.0341	0.0192	-5.2	1.0	-4.6	0.9	A+	A-	A-
MATH	5	337147	7	B-O	2	13891	0.52	0.15	0.52	0.22	0.10	0.00	0.34	-0.15	0.34	-0.10	-0.24	0.1129	0.0192	9.9	1.1	9.9	1.2	A-	A+	A-
MATH	5	613828	7	A-T	1	13891	0.64	0.64	0.11	0.12	0.13	0.00	0.39	0.39	-0.23	-0.23	-0.12	-0.5054	0.0196	2.8	1.0	-0.1	1.0	A-	A-	A+
MATH	5	819348	7	D-M	2	13891	0.36	0.36	0.08	0.46	0.10	0.00	0.53	0.53	-0.16	-0.33	-0.15	0.9590	0.0201	-9.9	0.9	-8.2	0.9	A-	B-	A-
MATH	5	814323	7	C-G	2	13891	0.24	0.52	0.15	0.24	0.09	0.00	0.35	-0.11	-0.20	0.35	-0.09	1.6771	0.0224	4.8	1.1	9.9	1.3	A-	A-	A-
MATH	5	425044	8	A-T	1	13899	0.77	0.77	0.11	0.08	0.04	0.00	0.41	0.41	-0.23	-0.21	-0.21	-1.2646	0.0219	-7.4	0.9	-6.6	0.9	A-	A-	A-
MATH	5	485303	8	A-F	2	13899	0.27	0.27	0.25	0.25	0.24	0.00	0.21	0.21	-0.05	-0.13	-0.03	1.5390	0.0216	9.9	1.2	9.9	1.5	A-	A+	A+
MATH	5	192128	8	A-T	2	13899	0.38	0.31	0.38	0.19	0.12	0.00	0.33	-0.04	0.33	-0.24	-0.15	0.8440	0.0197	9.9	1.1	9.9	1.2	A-	A+	A-
MATH	5	696295	8	A-F	2	13899	0.30	0.19	0.30	0.26	0.24	0.00	0.21	-0.12	0.21	-0.15	0.04	1.3055	0.0209	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	5	747611	8	A-F	2	13899	0.45	0.17	0.45	0.18	0.20	0.00	0.42	-0.20	0.42	-0.19	-0.15	0.5103	0.0193	1.4	1.0	1.4	1.0	A+	A+	A+
MATH	5	876198	8	A-T	2	13899	0.26	0.17	0.31	0.26	0.26	0.00	0.30	-0.12	-0.01	0.30	-0.18	1.5677	0.0217	7.4	1.1	9.9	1.4	A-	A-	A-
MATH	5	883802	8	B-O	2	13899	0.43	0.43	0.30	0.16	0.11	0.00	0.28	0.28	-0.09	-0.13	-0.16	0.5737	0.0193	9.9	1.2	9.9	1.2	A+	A-	A+
MATH	5	783416	8	D-M	2	13899	0.27	0.24	0.27	0.29	0.20	0.00	0.01	-0.01	0.01	0.13	-0.15	1.5041	0.0215	9.9	1.5	9.9	1.9	A-	A-	A-
MATH	5	994134	8	C-G	2	13899	0.41	0.41	0.19	0.26	0.14	0.00	0.26	0.26	-0.03	-0.17	-0.12	0.6982	0.0195	9.9	1.2	9.9	1.3	A-	A+	A-
MATH	5	993717	8	C-G	1	13899	0.69	0.69	0.10	0.10	0.11	0.00	0.45	0.45	-0.23	-0.20	-0.25	-0.7618	0.0201	-8.9	0.9	-6.6	0.9	A+	A-	A-
MATH	5	896497	8	B-O	2	13899	0.56	0.56	0.28	0.09	0.06	0.00	0.47	0.47	-0.26	-0.23	-0.20	-0.0666	0.0191	-7.9	0.9	-2.4	1.0	A+	A-	A-
MATH	5	963029	8	D-M	1	13899	0.63	0.23	0.63	0.08	0.05	0.00	0.50	-0.31	0.50	-0.24	-0.20	-0.4506	0.0195	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	5	654888	9	A-F	2	13937	0.60	0.18	0.13	0.60	0.09	0.00	0.34	-0.16	-0.15	0.34	-0.17	-0.2740	0.0192	9.9	1.1	4.8	1.1	A+	A-	A-
MATH	5	559679	9	B-O	1	13937	0.80	0.05	0.04	0.11	0.80	0.00	0.39	-0.20	-0.17	-0.25	0.39	-1.5013	0.0228	-6.9	0.9	-6.2	0.8	A+	A-	A-
MATH	5	793255	9	A-T	2	13937	0.43	0.43	0.32	0.13	0.12	0.00	0.29	0.29	-0.10	-0.14	-0.14	0.5580	0.0193	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	5	565047	9	A-T	2	13937	0.46	0.07	0.46	0.23	0.24	0.00	0.47	-0.16	0.47	-0.17	-0.28	0.4040	0.0192	-5.4	1.0	-4.2	1.0	A-	A-	A-
MATH	5	281584	9	C-G	2	13937	0.34	0.34	0.11	0.34	0.21	0.01	0.26	-0.05	-0.19	0.26	-0.09	1.0502	0.0202	9.9	1.2	9.9	1.4	A+	A+	A-
MATH	5	488797	9	A-F	2	13937	0.36	0.19	0.30	0.36	0.14	0.00	0.28	-0.12	-0.10	0.28	-0.11	0.9480	0.0200	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	5	949897	9	B-O	2	13937	0.65	0.13	0.16	0.65	0.05	0.00	0.49	-0.31	-0.21	0.49	-0.22	-0.5761	0.0196	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	5	722242	9	A-T	1	13937	0.59	0.08	0.59	0.28	0.05	0.00	0.49	-0.27	0.49	-0.28	-0.20	-0.2387	0.0192	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	5	685288	9	A-F	2	13937	0.28	0.14	0.28	0.18	0.39	0.00	0.19	-0.14	0.19	-0.15	0.04	1.3979	0.0212	9.9	1.2	9.9	1.5	A-	A-	A-
MATH	5	883207	9	D-M	1	13937	0.36	0.25	0.23	0.16	0.36	0.00	0.57	-0.36	-0.19	-0.09	0.57	0.9425	0.0200	-9.9	0.8	-9.9	0.8	A-	A-	A-
MATH	5	876519	9	D-M	2	13937	0.67	0.12	0.67	0.13	0.07	0.00	0.45	-0.22	0.45	-0.26	-0.18	-0.6911	0.0199	-7.6	0.9	-8.6	0.9	A+	A-	A-
MATH	5	294310	9	C-G	2	13937	0.17	0.17	0.16	0.32	0.34	0.00	-0.01	-0.01	-0.15	-0.11	0.24	2.1840	0.0248	9.9	1.4	9.9	2.3	A-	A+	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	6	321891	0	A-N	1	124823	0.86	0.06	0.86	0.05	0.02	0.00	0.40	-0.26	0.40	-0.21	-0.18	-1.6902	0.0086	-9.9	0.9	-9.9	0.7			
MATH	6	475727	0	A-R	1	124823	0.88	0.07	0.02	0.88	0.02	0.00	0.29	-0.20	-0.15	0.29	-0.12	-1.8792	0.0091	-8.5	1.0	-9.9	0.9			
MATH	6	118320	0	B-E	1	124823	0.28	0.36	0.26	0.28	0.10	0.00	0.09	-0.13	0.17	0.09	-0.17	1.4978	0.0068	9.9	1.2	9.9	1.5			
MATH	6	174013	0	C-G	2	124823	0.29	0.36	0.29	0.22	0.13	0.00	0.25	-0.08	0.25	-0.10	-0.10	1.6279	0.0070	9.9	1.1	9.9	1.4			
MATH	6	535076	0	A-N	2	124823	0.59	0.59	0.17	0.16	0.09	0.00	0.44	0.44	-0.13	-0.26	-0.25	0.0441	0.0063	-9.9	0.9	-9.9	0.9			
MATH	6	531873	0	A-N	1	124823	0.90	0.04	0.03	0.90	0.03	0.00	0.29	-0.14	-0.18	0.29	-0.16	-2.2724	0.0104	6.3	1.1	0.5	1.0			
MATH	6	334529	0	A-N	1	124823	0.83	0.02	0.08	0.07	0.83	0.00	0.33	-0.14	-0.19	-0.20	0.33	-1.4966	0.0081	-0.1	1.0	-8.6	0.9			
MATH	6	850856	0	A-N	1	124823	0.68	0.15	0.11	0.06	0.68	0.00	0.49	-0.25	-0.24	-0.27	0.49	-0.4693	0.0066	-9.9	0.9	-9.9	0.8			
MATH	6	764488	0	A-N	1	124823	0.52	0.28	0.12	0.52	0.08	0.00	0.43	-0.29	-0.12	0.43	-0.16	0.3487	0.0062	-9.9	1.0	-9.9	0.9			
MATH	6	859330	0	A-R	2	124823	0.71	0.71	0.10	0.10	0.09	0.00	0.52	0.52	-0.24	-0.31	-0.24	-0.7066	0.0068	-9.9	0.9	-9.9	0.8			
MATH	6	941773	0	A-N	2	124823	0.51	0.51	0.28	0.11	0.10	0.00	0.41	0.41	-0.25	-0.25	-0.04	0.3875	0.0062	-9.9	1.0	-9.9	1.0			
MATH	6	922808	0	A-R	2	124823	0.43	0.21	0.43	0.25	0.11	0.00	0.30	0.00	0.30	-0.19	-0.21	0.6903	0.0063	9.9	1.1	9.9	1.1			
MATH	6	764535	0	C-G	2	124823	0.78	0.16	0.04	0.78	0.03	0.00	0.30	-0.18	-0.19	0.30	-0.14	-1.0604	0.0073	2.7	1.0	5.1	1.0			
MATH	6	737758	0	C-G	2	124823	0.64	0.21	0.04	0.64	0.11	0.00	0.33	-0.27	-0.18	0.33	-0.05	-0.3161	0.0065	9.9	1.1	9.9	1.1			
MATH	6	967138	0	A-R	2	124823	0.46	0.13	0.23	0.18	0.46	0.00	0.40	-0.33	-0.06	-0.16	0.40	0.5807	0.0062	-8.2	1.0	-6.6	1.0			
MATH	6	957824	0	B-E	2	124823	0.50	0.10	0.17	0.22	0.50	0.00	0.14	-0.08	0.07	-0.17	0.14	0.4182	0.0062	9.9	1.3	9.9	1.4			
MATH	6	771516	0	D-S	2	124823	0.73	0.73	0.10	0.10	0.07	0.00	0.46	0.46	-0.25	-0.25	-0.20	-0.8152	0.0069	-9.9	0.9	-9.9	0.8			
MATH	6	925775	0	A-N	2	124823	0.69	0.08	0.13	0.69	0.10	0.00	0.50	-0.24	-0.24	0.50	-0.29	-0.6290	0.0067	-9.9	0.9	-9.9	0.8			
MATH	6	826581	0	C-G	2	124823	0.31	0.25	0.31	0.27	0.17	0.00	0.12	-0.04	0.12	-0.04	-0.04	1.4165	0.0067	9.9	1.2	9.9	1.4			
MATH	6	803183	0	D-S	2	124823	0.26	0.18	0.26	0.29	0.26	0.00	0.14	-0.15	-0.04	0.04	0.14	1.7021	0.0071	9.9	1.2	9.9	1.5			
MATH	6	619193	0	A-R	2	124823	0.57	0.24	0.08	0.57	0.11	0.00	0.41	-0.14	-0.26	0.41	-0.22	0.0844	0.0063	-9.9	1.0	-9.9	1.0			
MATH	6	149589	0	D-S	2	124823	0.46	0.18	0.14	0.22	0.46	0.00	0.36	-0.07	-0.15	-0.24	0.36	0.5909	0.0062	9.9	1.0	9.9	1.0			
MATH	6	859248	0	D-S	2	124823	0.47	0.25	0.47	0.12	0.16	0.00	0.27	-0.06	0.27	-0.20	-0.12	0.6016	0.0062	9.9	1.1	9.9	1.2			
MATH	6	129359	0	B-E	2	124823	0.49	0.49	0.43	0.04	0.04	0.00	0.33	0.33	-0.17	-0.23	-0.19	0.5006	0.0062	9.9	1.1	9.9	1.1			
MATH	6	416325	0	B-E	2	124823	0.51	0.51	0.14	0.25	0.09	0.00	0.44	0.44	-0.25	-0.16	-0.21	0.3334	0.0062	-9.9	1.0	-9.9	0.9			
MATH	6	751693	0	A-R	1	124823	0.73	0.73	0.13	0.07	0.07	0.00	0.45	0.45	-0.27	-0.21	-0.21	-0.7768	0.0069	-9.9	0.9	-9.9	0.8			
MATH	6	871521	0	A-R	1	124823	0.64	0.15	0.64	0.08	0.12	0.00	0.34	-0.14	0.34	-0.12	-0.25	-0.2705	0.0064	9.9	1.0	-0.7	1.0			
MATH	6	878381	0	A-R	2	124823	0.78	0.78	0.08	0.08	0.05	0.00	0.45	0.45	-0.26	-0.21	-0.24	-1.0347	0.0072	-9.9	0.9	-9.9	0.7			
MATH	6	113527	0	B-E	1	124823	0.82	0.13	0.04	0.82	0.02	0.00	0.44	-0.36	-0.16	0.44	-0.14	-1.3669	0.0078	-9.9	0.9	-9.9	0.7			
MATH	6	369726	0	B-E	1	124823	0.62	0.12	0.16	0.10	0.62	0.00	0.54	-0.28	-0.29	-0.20	0.54	-0.2119	0.0064	-9.9	0.9	-9.9	0.8			
MATH	6	536657	0	B-E	1	124823	0.55	0.11	0.55	0.19	0.15	0.00	0.51	-0.26	0.51	-0.24	-0.21	0.1994	0.0062	-9.9	0.9	-9.9	0.9			
MATH	6	423304	0	B-E	2	124823	0.70	0.12	0.70	0.07	0.11	0.00	0.49	-0.28	0.49	-0.21	-0.27	-0.6152	0.0067	-9.9	0.9	-9.9	0.8			
MATH	6	139700	0	B-E	2	124823	0.77	0.02	0.08	0.11	0.77	0.00	0.40	-0.17	-0.33	-0.17	0.40	-1.0229	0.0072	-9.9	0.9	-9.9	0.9			
MATH	6	264844	0	B-E	2	124823	0.55	0.55	0.10	0.24	0.11	0.00	0.45	0.45	-0.23	-0.20	-0.22	0.1654	0.0062	-9.9	0.9	-9.9	0.9			
MATH	6	780554	0	B-E	2	124823	0.37	0.22	0.32	0.37	0.09	0.00	0.42	-0.18	-0.19	0.42	-0.12	1.2852	0.0066	2.1	1.0	9.9	1.1			
MATH	6	238479	0	B-E	1	124823	0.46	0.14	0.19	0.21	0.46	0.00	0.13	-0.10	-0.02	-0.06	0.13	0.6984	0.0063	9.9	1.3	9.9	1.3			
MATH	6	569592	0	B-E	2	124823	0.56	0.56	0.16	0.16	0.13	0.00	0.22	0.22	-0.13	-0.10	-0.07	0.2580	0.0062	9.9	1.2	9.9	1.2			
MATH	6	317029	0	C-G	2	124823	0.26	0.37	0.19	0.26	0.17	0.00	0.20	0.00	-0.13	0.20	-0.09	1.7686	0.0072	9.9	1.1	9.9	1.5			
MATH	6	660480	0	C-G	1	124823	0.60	0.60	0.19	0.09	0.12	0.00	0.43	0.43	-0.23	-0.21	-0.18	-0.0686	0.0063	-9.9	1.0	-9.9	0.9			
MATH	6	112259	0	A-R	2	124823	0.77	0.07	0.77	0.09	0.07	0.00	0.49	-0.26	0.49	-0.22	-0.29	-1.0065	0.0072	-9.9	0.9	-9.9	0.7			
MATH	6	854416	0	C-G	2	124823	0.61	0.11	0.16	0.61	0.12	0.00	0.43	-0.26	-0.26	0.43	-0.11	-0.1231	0.0063	-9.9	0.9	-9.9	0.9			
MATH	6	781178	0	C-G	2	124823	0.68	0.11	0.07	0.14	0.68	0.00	0.52	-0.30	-0.24	-0.26	0.52	-0.4089	0.0065	-9.9	0.8	-9.9	0.8			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	6	838929	0	D-S	2	124823	0.35	0.27	0.17	0.21	0.35	0.00	0.40	-0.14	-0.22	-0.10	0.40	1.2706	0.0066	-3.6	1.0	9.9	1.1			
MATH	6	180744	0	D-S	3	124823	0.50	0.21	0.50	0.19	0.10	0.00	0.30	-0.04	0.30	-0.17	-0.20	0.3993	0.0062	9.9	1.1	9.9	1.1			
MATH	6	626154	0	A-N	1	124823	0.58	0.13	0.58	0.21	0.07	0.00	0.32	-0.10	0.32	-0.20	-0.16	0.0545	0.0063	9.9	1.1	9.9	1.1			
MATH	6	606794	0	A-R	2	124823	0.50	0.26	0.50	0.17	0.07	0.00	0.45	-0.29	0.45	-0.07	-0.27	0.4583	0.0062	-9.9	0.9	-9.9	0.9			
MATH	6	438211	0	B-E	2	124823	0.42	0.23	0.18	0.42	0.16	0.00	0.23	-0.07	-0.15	0.23	-0.07	0.7615	0.0063	9.9	1.2	9.9	1.2			
MATH	6	261593	0	C-G	1	124823	0.46	0.11	0.07	0.46	0.37	0.00	0.56	-0.17	-0.12	0.56	-0.40	0.6681	0.0063	-9.9	0.8	-9.9	0.8			
MATH	6	170250	0	D-S	2	124823	0.51	0.18	0.51	0.20	0.11	0.00	0.36	-0.18	0.36	-0.15	-0.16	0.4683	0.0062	9.9	1.0	9.9	1.0			
MATH	6	260237	0	D-S	2	124823	0.70	0.70	0.19	0.04	0.07	0.00	0.48	0.48	-0.31	-0.19	-0.22	-0.5671	0.0067	-9.9	0.9	-9.9	0.8			
MATH	6	182355	0	D-S	2	124823	0.62	0.20	0.11	0.07	0.62	0.00	0.43	-0.21	-0.25	-0.19	0.43	-0.2250	0.0064	-9.9	1.0	-9.9	0.9			
MATH	6	371004	0	C-G	2	124823	0.47	0.47	0.19	0.22	0.12	0.00	0.31	0.31	-0.08	-0.19	-0.12	0.4623	0.0062	9.9	1.1	9.9	1.1			
MATH	6	754076	0	A-R	2	124823	0.66	0.08	0.66	0.12	0.13	0.00	0.42	-0.12	0.42	-0.22	-0.28	-0.3661	0.0065	-9.9	0.9	-9.9	0.9			
MATH	6	280560	0	A-N	2	124823	0.76	0.76	0.08	0.08	0.08	0.00	0.46	0.46	-0.24	-0.24	-0.24	-0.8548	0.0070	-9.9	0.8	-9.9	0.8			
MATH	6	793597	0	B-E	2	124823	0.55	0.22	0.11	0.11	0.55	0.00	0.50	-0.19	-0.27	-0.26	0.50	0.1548	0.0062	-9.9	0.9	-9.9	0.9			
MATH	6	956529	0	B-E	2	124823	0.57	0.21	0.13	0.57	0.09	0.00	0.30	-0.14	-0.16	0.30	-0.14	0.1076	0.0063	9.9	1.1	9.9	1.1			
MATH	6	527481	0	A-R	2	124823	0.32	0.32	0.22	0.23	0.23	0.00	0.32	0.32	-0.16	-0.14	-0.06	1.2664	0.0066	2.6	1.0	9.9	1.1			
MATH	6	173444	0	C-G	2	124823	0.38	0.18	0.29	0.38	0.16	0.00	0.32	-0.19	-0.07	0.32	-0.15	1.0627	0.0064	9.9	1.1	9.9	1.1			
MATH	6	119805	0	D-S	2	124823	0.91	0.02	0.03	0.04	0.91	0.00	0.34	-0.16	-0.22	-0.19	0.34	-2.2208	0.0102	-9.9	0.9	-9.9	0.6			
MATH	6	407713	0	B-E	1	124823	0.55	0.23	0.55	0.05	0.16	0.00	0.29	-0.32	0.29	-0.22	0.11	0.1406	0.0063	9.9	1.1	9.9	1.1			
MATH	6	447417	1	A-N	2	14183	0.40	0.33	0.11	0.40	0.15	0.00	0.48	-0.29	-0.24	0.48	-0.07	0.8666	0.0189	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	6	299358	1	B-E	2	14183	0.70	0.06	0.17	0.07	0.70	0.00	0.55	-0.27	-0.30	-0.28	0.55	-0.6139	0.0199	-9.9	0.8	-9.9	0.7	A+	A-	A-
MATH	6	199262	1	A-N	2	14183	0.58	0.13	0.19	0.58	0.09	0.00	0.42	-0.21	-0.18	0.42	-0.21	0.0012	0.0187	-4.2	1.0	-4.4	1.0	A+	A-	A-
MATH	6	115543	1	C-G	2	14183	0.57	0.13	0.13	0.17	0.57	0.00	0.41	-0.10	-0.23	-0.25	0.41	0.0331	0.0187	-2.8	1.0	-3.2	1.0	A-	A-	A-
MATH	6	630907	1	A-R	2	14183	0.41	0.41	0.18	0.23	0.17	0.00	0.14	0.14	-0.12	-0.01	-0.06	0.8377	0.0189	9.9	1.3	9.9	1.4	A+	A+	A+
MATH	6	376003	1	B-E	2	14183	0.15	0.23	0.17	0.44	0.15	0.00	0.05	-0.13	-0.20	0.24	0.05	2.4705	0.0253	9.9	1.2	9.9	1.9	A+	A+	A+
MATH	6	950018	1	A-N	1	14183	0.70	0.03	0.22	0.04	0.70	0.00	0.37	-0.20	-0.22	-0.21	0.37	-0.6516	0.0200	-3.1	1.0	1.2	1.0	A+	A-	A-
MATH	6	734625	1	A-R	2	14183	0.31	0.14	0.31	0.28	0.27	0.00	0.26	-0.23	0.26	0.14	-0.24	1.3629	0.0200	9.9	1.1	9.9	1.3	A-	A-	A-
MATH	6	928409	1	D-S	2	14183	0.50	0.10	0.24	0.50	0.16	0.00	0.45	-0.23	-0.14	0.45	-0.26	0.3880	0.0186	-7.7	1.0	-5.7	0.9	A+	A-	A-
MATH	6	331595	1	B-E	2	14183	0.30	0.30	0.26	0.26	0.18	0.00	0.17	0.17	-0.01	-0.09	-0.09	1.4483	0.0202	9.9	1.2	9.9	1.4	A-	A-	A-
MATH	6	142442	1	B-E	2	14183	0.34	0.34	0.20	0.10	0.36	0.00	0.33	0.33	-0.25	-0.29	0.07	1.2222	0.0196	4.9	1.0	9.9	1.2	A+	A+	A-
MATH	6	352463	1	C-G	2	14183	0.24	0.30	0.31	0.15	0.24	0.00	0.37	-0.15	-0.08	-0.14	0.37	1.7829	0.0215	-6.1	0.9	7.7	1.1	A-	A-	A+
MATH	6	717929	2	A-N	2	13884	0.43	0.14	0.43	0.37	0.06	0.00	0.34	-0.19	0.34	-0.11	-0.20	0.7687	0.0188	3.9	1.0	5.0	1.1	A-	A-	A-
MATH	6	336568	2	B-E	2	13884	0.59	0.59	0.13	0.12	0.16	0.00	0.45	0.45	-0.19	-0.28	-0.18	-0.0186	0.0188	-9.9	0.9	-9.8	0.9	A+	A-	A-
MATH	6	655350	2	B-E	2	13884	0.62	0.12	0.62	0.16	0.09	0.00	0.41	-0.26	0.41	-0.20	-0.14	-0.1741	0.0190	-6.4	1.0	-6.5	0.9	A-	A-	A-
MATH	6	428170	2	B-E	2	13884	0.24	0.24	0.30	0.25	0.21	0.00	0.02	0.02	-0.02	-0.04	0.05	1.7952	0.0216	9.9	1.3	9.9	1.6	A-	A-	A-
MATH	6	293762	2	A-N	2	13884	0.14	0.15	0.57	0.14	0.14	0.00	-0.12	-0.13	0.26	-0.12	-0.12	2.5702	0.0262	9.9	1.3	9.9	2.4	A-	A-	A-
MATH	6	572801	2	C-G	2	13884	0.31	0.15	0.28	0.31	0.25	0.00	0.07	-0.14	0.13	0.07	-0.09	1.3629	0.0200	9.9	1.3	9.9	1.5	A-	A+	A+
MATH	6	211966	2	A-R	2	13884	0.28	0.28	0.20	0.22	0.29	0.00	0.41	0.41	-0.15	-0.05	-0.22	1.5562	0.0206	-8.3	0.9	-1.4	1.0	A-	A-	A-
MATH	6	108295	2	B-E	2	13884	0.38	0.32	0.38	0.17	0.13	0.00	0.28	-0.02	0.28	-0.17	-0.18	1.0078	0.0192	9.9	1.1	9.9	1.1	A-	A-	A-
MATH	6	480630	2	A-N	1	13884	0.56	0.37	0.05	0.56	0.02	0.00	0.39	-0.33	-0.10	0.39	-0.11	0.1179	0.0187	-2.9	1.0	-2.5	1.0	A-	A-	A-
MATH	6	899582	2	D-S	2	13884	0.45	0.25	0.15	0.45	0.15	0.00	0.31	-0.16	-0.18	0.31	-0.06	0.6429	0.0187	9.1	1.1	9.0	1.1	A-	A-	A-
MATH	6	387155	2	D-S	2	13884	0.30	0.13	0.30	0.32	0.25	0.00	0.21	-0.17	0.21	-0.09	0.01	1.4500	0.0203	9.9	1.1	9.9	1.3	A+	A-	A-
MATH	6	510403	2	A-R	2	13884	0.27	0.26	0.30	0.27	0.16	0.00	0.06	0.03	-0.02	0.06	-0.08	1.6138	0.0208	9.9	1.3	9.9	1.5	A-	A+	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	6	999346	3	A-N	2	13830	0.21	0.46	0.16	0.21	0.16	0.00	-0.09	0.34	-0.15	-0.09	-0.21	2.0262	0.0227	9.9	1.4	9.9	2.0	A-	A-	A+
MATH	6	139879	3	D-S	2	13830	0.48	0.48	0.17	0.17	0.18	0.00	0.40	0.40	-0.16	-0.21	-0.17	0.5207	0.0188	-1.9	1.0	-1.2	1.0	A+	A-	A-
MATH	6	977620	3	B-E	2	13830	0.55	0.14	0.55	0.14	0.17	0.00	0.49	-0.15	0.49	-0.23	-0.29	0.1916	0.0188	-9.9	0.9	-9.9	0.9	A-	A+	A-
MATH	6	590817	3	A-N	2	13830	0.45	0.19	0.16	0.19	0.45	0.00	0.49	-0.22	-0.17	-0.24	0.49	0.6627	0.0189	-9.9	0.9	-9.9	0.9	A+	A-	A-
MATH	6	683531	3	C-G	2	13830	0.33	0.18	0.33	0.32	0.17	0.00	0.08	-0.09	0.08	0.01	-0.01	1.2961	0.0199	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	6	374463	3	C-G	2	13830	0.62	0.62	0.17	0.14	0.07	0.00	0.36	0.36	-0.24	-0.11	-0.18	-0.1420	0.0191	2.5	1.0	-0.9	1.0	A+	A-	A-
MATH	6	319661	3	B-E	2	13830	0.15	0.17	0.32	0.15	0.36	0.00	-0.02	-0.28	0.02	-0.02	0.22	2.5392	0.0258	9.9	1.3	9.9	2.1	A+	A+	A-
MATH	6	524976	3	A-R	2	13830	0.62	0.11	0.62	0.18	0.08	0.00	0.50	-0.27	0.50	-0.19	-0.30	-0.1648	0.0192	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	6	165411	3	D-S	2	13830	0.20	0.12	0.46	0.22	0.20	0.00	0.13	-0.07	0.00	-0.07	0.13	2.0952	0.0230	9.9	1.2	9.9	1.6	A+	A+	A-
MATH	6	822516	3	B-E	1	13830	0.56	0.20	0.10	0.13	0.56	0.00	0.16	-0.03	-0.17	-0.05	0.16	0.1292	0.0188	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	6	799223	3	B-E	1	13830	0.73	0.12	0.73	0.07	0.07	0.00	0.48	-0.28	0.48	-0.26	-0.20	-0.7602	0.0207	-9.9	0.9	-9.9	0.8	A+	A-	A+
MATH	6	930303	3	A-N	1	13830	0.59	0.59	0.11	0.07	0.23	0.00	0.41	0.41	-0.21	-0.28	-0.15	-0.0129	0.0190	-4.8	1.0	-3.1	1.0	A-	A-	A-
MATH	6	707372	4	B-E	2	13881	0.47	0.18	0.12	0.23	0.47	0.00	0.48	-0.30	-0.18	-0.15	0.48	0.5726	0.0187	-9.9	0.9	-9.9	0.9	A-	A+	A-
MATH	6	709468	4	B-E	1	13881	0.32	0.18	0.32	0.19	0.31	0.00	0.21	0.03	0.21	-0.14	-0.11	1.3014	0.0199	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	6	118124	4	B-E	2	13881	0.47	0.15	0.31	0.47	0.07	0.00	0.47	-0.08	-0.32	0.47	-0.22	0.5744	0.0187	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	6	584327	4	B-E	2	13881	0.48	0.07	0.16	0.48	0.29	0.00	0.11	-0.16	-0.26	0.11	0.18	0.5223	0.0187	9.9	1.3	9.9	1.4	A+	A-	A+
MATH	6	527221	4	C-G	2	13881	0.43	0.25	0.21	0.43	0.11	0.00	0.33	-0.05	-0.18	0.33	-0.21	0.7409	0.0188	6.6	1.1	7.6	1.1	A+	A-	A-
MATH	6	111864	4	A-R	2	13881	0.31	0.24	0.19	0.26	0.31	0.00	0.29	-0.05	-0.18	-0.09	0.29	1.3793	0.0201	5.6	1.1	9.9	1.2	A+	A-	A+
MATH	6	933087	4	C-G	2	13881	0.24	0.30	0.24	0.26	0.19	0.00	0.02	-0.03	0.02	-0.05	0.07	1.7642	0.0215	9.9	1.3	9.9	1.7	A-	A+	A-
MATH	6	390792	4	A-N	2	13881	0.37	0.14	0.19	0.37	0.30	0.00	0.22	-0.16	-0.03	0.22	-0.09	1.0736	0.0193	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	6	515580	4	A-N	2	13881	0.38	0.29	0.38	0.21	0.12	0.00	0.02	0.20	0.02	-0.14	-0.12	0.9918	0.0192	9.9	1.4	9.9	1.5	A+	A+	A+
MATH	6	953001	4	A-R	2	13881	0.53	0.14	0.53	0.18	0.15	0.00	0.27	-0.03	0.27	-0.20	-0.13	0.2848	0.0187	9.9	1.1	9.9	1.1	A-	A-	A-
MATH	6	159836	4	A-N	1	13881	0.59	0.09	0.59	0.20	0.11	0.00	0.34	-0.23	0.34	-0.21	-0.05	-0.0285	0.0189	5.0	1.0	3.2	1.0	A-	A-	A-
MATH	6	433029	4	D-S	2	13881	0.39	0.16	0.22	0.22	0.39	0.00	0.26	-0.17	-0.19	0.04	0.26	0.9529	0.0191	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	6	406988	5	A-N	2	13825	0.58	0.19	0.13	0.58	0.09	0.00	0.37	-0.12	-0.23	0.37	-0.20	0.0221	0.0189	0.2	1.0	0.8	1.0	A+	A-	A-
MATH	6	139072	5	B-E	1	13825	0.47	0.47	0.15	0.21	0.18	0.00	0.51	0.51	-0.25	-0.23	-0.19	0.5746	0.0187	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	6	738963	5	B-E	2	13825	0.63	0.19	0.63	0.08	0.10	0.00	0.43	-0.16	0.43	-0.24	-0.27	-0.2328	0.0192	-9.3	0.9	-9.4	0.9	A+	A+	A+
MATH	6	435627	5	A-N	2	13825	0.47	0.13	0.21	0.47	0.18	0.00	0.27	-0.18	-0.12	0.27	-0.07	0.5437	0.0187	9.9	1.1	9.9	1.1	A+	A+	A+
MATH	6	395021	5	A-R	2	13825	0.16	0.16	0.12	0.59	0.12	0.00	0.16	0.16	-0.15	0.10	-0.17	2.3653	0.0247	5.7	1.1	9.9	1.6	A+	A+	A+
MATH	6	161443	5	D-S	2	13825	0.34	0.13	0.34	0.34	0.19	0.00	0.12	-0.08	-0.03	0.12	-0.03	1.2082	0.0197	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	6	339482	5	A-R	2	13825	0.50	0.14	0.20	0.16	0.50	0.00	0.39	-0.12	-0.30	-0.09	0.39	0.4290	0.0187	-1.6	1.0	-1.2	1.0	A+	A+	A-
MATH	6	171117	5	B-E	2	13825	0.39	0.19	0.20	0.22	0.39	0.00	0.31	-0.20	-0.19	0.01	0.31	0.9617	0.0192	7.7	1.1	9.3	1.1	A-	A-	A+
MATH	6	225748	5	B-E	1	13825	0.52	0.22	0.18	0.52	0.08	0.00	0.47	-0.25	-0.24	0.47	-0.15	0.3309	0.0187	-9.9	0.9	-9.9	0.9	A+	A-	A+
MATH	6	573940	5	C-G	2	13825	0.28	0.24	0.33	0.14	0.28	0.00	0.16	-0.14	0.07	-0.12	0.16	1.5368	0.0206	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	6	245837	5	A-N	1	13825	0.37	0.29	0.06	0.28	0.37	0.00	0.19	0.06	-0.18	-0.17	0.19	1.0483	0.0193	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	6	987401	5	D-S	2	13825	0.27	0.25	0.18	0.30	0.27	0.00	0.11	-0.08	-0.04	0.01	0.11	1.6226	0.0209	9.9	1.3	9.9	1.5	A+	A-	A+
MATH	6	221521	6	B-E	2	13782	0.64	0.64	0.14	0.12	0.09	0.00	0.44	0.44	-0.24	-0.21	-0.19	-0.2729	0.0194	-7.4	0.9	-9.9	0.9	A+	A+	A+
MATH	6	318850	6	B-E	2	13782	0.42	0.42	0.12	0.38	0.08	0.00	0.41	0.41	-0.23	-0.14	-0.22	0.8021	0.0190	-3.7	1.0	-1.2	1.0	A-	A-	A-
MATH	6	668878	6	B-E	2	13782	0.46	0.46	0.17	0.23	0.14	0.00	0.37	0.37	-0.25	-0.03	-0.22	0.6424	0.0189	2.5	1.0	3.0	1.0	A-	A-	A+
MATH	6	664362	6	A-R	2	13782	0.44	0.25	0.44	0.21	0.10	0.00	0.45	-0.05	0.45	-0.34	-0.22	0.7239	0.0189	-8.6	0.9	-5.7	0.9	A+	A-	A-
MATH	6	791117	6	A-N	2	13782	0.55	0.55	0.23	0.07	0.14	0.00	0.42	0.42	-0.20	-0.18	-0.21	0.1726	0.0188	-4.0	1.0	-3.8	1.0	A-	A-	A-
MATH	6	421333	6	D-S	2	13782	0.29	0.23	0.31	0.16	0.29	0.00	0.08	-0.02	0.09	-0.18	0.08	1.4985	0.0205	9.9	1.3	9.9	1.5	A+	A-	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	6	535489	6	D-S	2	13782	0.29	0.26	0.29	0.23	0.23	0.00	0.22	-0.07	0.22	-0.13	-0.03	1.5405	0.0207	9.9	1.1	9.9	1.3	A-	A-	A+
MATH	6	464534	6	C-G	2	13782	0.29	0.29	0.29	0.20	0.22	0.00	0.27	0.27	-0.10	-0.13	-0.05	1.5036	0.0206	7.5	1.1	9.9	1.2	A+	A+	A+
MATH	6	195503	6	A-N	1	13782	0.70	0.07	0.70	0.16	0.08	0.00	0.48	-0.18	0.48	-0.24	-0.31	-0.5668	0.0201	-9.9	0.9	-9.9	0.8	A+	A-	A+
MATH	6	932006	6	A-R	2	13782	0.14	0.26	0.31	0.29	0.14	0.00	0.04	-0.23	0.06	0.14	0.04	2.5958	0.0263	9.9	1.2	9.9	1.9	A-	A-	A+
MATH	6	964532	6	A-N	2	13782	0.20	0.20	0.22	0.21	0.37	0.00	0.11	0.11	-0.15	-0.04	0.07	2.1064	0.0231	9.9	1.2	9.9	1.7	A-	A-	A-
MATH	6	139155	6	B-E	2	13782	0.49	0.49	0.16	0.25	0.10	0.00	0.44	0.44	-0.11	-0.28	-0.19	0.4561	0.0188	-6.8	1.0	-6.7	0.9	A-	A-	A-
MATH	6	984325	7	C-G	2	13781	0.52	0.27	0.17	0.52	0.04	0.00	0.54	-0.41	-0.15	0.54	-0.17	0.3462	0.0187	-9.9	0.8	-9.9	0.8	A+	A-	A-
MATH	6	637014	7	B-E	2	13781	0.28	0.28	0.23	0.21	0.28	0.00	0.17	-0.04	-0.08	-0.06	0.17	1.5902	0.0207	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	6	690523	7	A-N	2	13781	0.30	0.30	0.24	0.26	0.19	0.00	0.33	0.33	-0.19	-0.04	-0.13	1.4552	0.0203	1.6	1.0	8.4	1.1	A+	A-	A-
MATH	6	303717	7	B-E	1	13781	0.63	0.11	0.11	0.63	0.14	0.00	0.36	-0.18	-0.32	0.36	-0.04	-0.1936	0.0193	-0.4	1.0	3.4	1.0	A+	A+	A+
MATH	6	404684	7	A-N	1	13781	0.80	0.08	0.80	0.04	0.07	0.00	0.39	-0.23	0.39	-0.20	-0.19	-1.1873	0.0227	-6.6	0.9	-6.5	0.9	A-	A-	A-
MATH	6	471480	7	C-G	2	13781	0.40	0.08	0.40	0.48	0.03	0.00	0.29	-0.11	0.29	-0.18	-0.11	0.9321	0.0191	9.9	1.1	9.9	1.1	A-	A-	A+
MATH	6	686702	7	B-E	2	13781	0.45	0.18	0.45	0.19	0.17	0.00	0.40	-0.16	0.40	-0.19	-0.16	0.6781	0.0188	-2.3	1.0	-0.6	1.0	A+	A-	A-
MATH	6	481818	7	A-R	2	13781	0.37	0.18	0.37	0.30	0.14	0.00	0.12	-0.11	0.12	0.04	-0.09	1.0802	0.0193	9.9	1.3	9.9	1.4	A+	A-	A+
MATH	6	534468	7	D-S	2	13781	0.71	0.06	0.71	0.15	0.09	0.00	0.34	-0.23	0.34	-0.15	-0.17	-0.5871	0.0202	1.0	1.0	1.9	1.0	A-	A-	A-
MATH	6	300137	7	A-N	2	13781	0.25	0.22	0.36	0.25	0.17	0.00	0.22	-0.16	0.08	0.22	-0.17	1.8038	0.0215	8.6	1.1	9.9	1.3	A-	A-	A-
MATH	6	905318	7	B-E	1	13781	0.65	0.14	0.08	0.65	0.14	0.00	0.40	-0.18	-0.23	0.40	-0.20	-0.2867	0.0194	-4.8	1.0	-4.7	0.9	A+	A-	A-
MATH	6	964771	7	D-S	2	13781	0.33	0.11	0.33	0.40	0.17	0.00	-0.04	-0.19	-0.04	0.22	-0.08	1.3234	0.0199	9.9	1.4	9.9	1.6	A+	A+	A+
MATH	6	107599	8	A-N	2	13827	0.37	0.05	0.26	0.32	0.37	0.00	0.31	-0.19	-0.21	-0.02	0.31	1.1086	0.0195	8.2	1.1	9.9	1.2	A+	A-	A+
MATH	6	298129	8	A-N	1	13827	0.68	0.18	0.68	0.08	0.06	0.00	0.38	-0.17	0.38	-0.23	-0.20	-0.4807	0.0199	-3.4	1.0	3.0	1.1	A-	A-	A-
MATH	6	495535	8	B-E	2	13827	0.46	0.19	0.19	0.16	0.46	0.00	0.44	-0.18	-0.14	-0.24	0.44	0.6497	0.0189	-6.2	1.0	-4.9	1.0	A+	A-	A-
MATH	6	510843	8	A-R	2	13827	0.44	0.15	0.19	0.44	0.22	0.00	0.34	-0.14	-0.18	0.34	-0.11	0.7434	0.0190	6.4	1.1	7.0	1.1	A-	A-	A-
MATH	6	837425	8	B-E	1	13827	0.24	0.24	0.29	0.38	0.08	0.00	-0.08	-0.08	-0.01	0.19	-0.19	1.8046	0.0216	9.9	1.4	9.9	1.9	A-	A-	A+
MATH	6	316638	8	D-S	2	13827	0.32	0.33	0.18	0.32	0.17	0.00	0.29	-0.07	-0.15	0.29	-0.12	1.3453	0.0200	8.8	1.1	9.9	1.2	A+	A+	A+
MATH	6	488607	8	A-N	1	13827	0.82	0.05	0.10	0.82	0.03	0.00	0.46	-0.27	-0.28	0.46	-0.19	-1.3378	0.0234	-9.9	0.9	-9.9	0.7	A-	A-	A-
MATH	6	965179	8	C-G	2	13827	0.61	0.61	0.12	0.18	0.10	0.00	0.46	0.46	-0.22	-0.23	-0.21	-0.0967	0.0191	-9.7	0.9	-9.9	0.9	A-	A-	A-
MATH	6	996607	8	B-E	2	13827	0.26	0.27	0.32	0.26	0.15	0.00	0.12	-0.08	0.02	0.12	-0.07	1.7078	0.0212	9.9	1.2	9.9	1.5	A-	A+	A+
MATH	6	692262	8	D-S	2	13827	0.74	0.10	0.07	0.09	0.74	0.00	0.50	-0.24	-0.24	-0.30	0.50	-0.8168	0.0209	-9.9	0.9	-9.9	0.8	B+	A-	A-
MATH	6	719568	8	A-R	2	13827	0.57	0.57	0.06	0.30	0.07	0.00	0.55	0.55	-0.20	-0.34	-0.26	0.1146	0.0189	-9.9	0.8	-9.9	0.8	A-	A-	A-
MATH	6	425147	8	B-E	2	13827	0.33	0.33	0.17	0.25	0.24	0.00	0.35	0.35	0.02	-0.23	-0.16	1.2733	0.0199	2.7	1.0	9.4	1.1	A+	A+	A-
MATH	6	246157	9	A-N	2	13830	0.24	0.24	0.18	0.33	0.25	0.00	0.26	0.26	-0.07	-0.01	-0.18	1.8019	0.0216	2.6	1.0	9.9	1.3	A+	A+	A+
MATH	6	598977	9	A-N	2	13830	0.33	0.33	0.34	0.22	0.11	0.00	0.23	0.23	0.03	-0.17	-0.16	1.2525	0.0197	9.9	1.1	9.9	1.2	A-	A-	A+
MATH	6	716960	9	B-E	2	13830	0.45	0.45	0.17	0.15	0.24	0.00	0.35	0.35	-0.17	-0.23	-0.06	0.6665	0.0187	4.0	1.0	3.6	1.0	A-	A-	A+
MATH	6	682645	9	D-S	2	13830	0.66	0.66	0.18	0.09	0.06	0.00	0.43	0.43	-0.29	-0.18	-0.16	-0.3738	0.0194	-8.9	0.9	-9.9	0.9	A+	A-	A+
MATH	6	834107	9	C-G	2	13830	0.29	0.25	0.30	0.16	0.29	0.00	0.09	0.15	-0.17	-0.06	0.09	1.5216	0.0205	9.9	1.2	9.9	1.5	A+	A+	A-
MATH	6	997435	9	B-E	1	13830	0.19	0.19	0.17	0.20	0.44	0.00	0.02	0.02	-0.16	-0.19	0.26	2.1419	0.0233	9.9	1.3	9.9	1.8	A-	A-	A-
MATH	6	201880	9	A-R	2	13830	0.22	0.21	0.45	0.22	0.12	0.00	0.02	-0.06	0.01	0.02	0.03	1.9142	0.0221	9.9	1.3	9.9	1.7	A-	A-	A-
MATH	6	266480	9	A-R	2	13830	0.23	0.26	0.24	0.28	0.23	0.00	0.25	-0.02	-0.09	-0.12	0.25	1.8903	0.0220	4.4	1.1	9.9	1.3	A-	A-	A-
MATH	6	291604	9	B-E	2	13830	0.51	0.20	0.51	0.15	0.14	0.00	0.35	-0.10	0.35	-0.22	-0.15	0.3745	0.0186	3.6	1.0	1.8	1.0	A+	A+	A-
MATH	6	610105	9	D-S	2	13830	0.31	0.12	0.28	0.31	0.29	0.00	0.11	-0.22	0.23	0.11	-0.18	1.4076	0.0201	9.9	1.3	9.9	1.4	A-	A+	A-
MATH	6	487045	9	B-E	2	13830	0.43	0.43	0.11	0.12	0.33	0.00	0.13	0.13	-0.26	-0.24	0.20	0.7676	0.0188	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	6	124704	9	B-E	2	13830	0.53	0.13	0.26	0.53	0.08	0.00	0.41	-0.20	-0.17	0.41	-0.23	0.2852	0.0186	-5.3	1.0	-4.0	1.0	A+	A+	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	7	485060	0	A-R	2	123954	0.61	0.11	0.15	0.61	0.13	0.00	0.51	-0.18	-0.32	0.51	-0.24	-0.5190	0.0063	-9.9	0.9	-9.9	0.8			
MATH	7	602646	0	A-N	1	123954	0.57	0.57	0.11	0.23	0.09	0.00	0.48	0.48	-0.29	-0.26	-0.13	-0.4340	0.0063	-9.9	0.9	-9.9	0.9			
MATH	7	373532	0	A-N	2	123954	0.43	0.16	0.19	0.22	0.43	0.00	0.48	-0.26	-0.24	-0.11	0.48	0.4272	0.0064	-9.9	0.9	-9.9	0.9			
MATH	7	628561	0	A-R	2	123954	0.69	0.07	0.69	0.10	0.14	0.00	0.49	-0.20	0.49	-0.27	-0.28	-0.9681	0.0067	-9.9	0.9	-9.9	0.8			
MATH	7	655858	0	A-R	2	123954	0.40	0.29	0.15	0.15	0.40	0.00	0.44	-0.06	-0.22	-0.29	0.44	0.5613	0.0064	-9.9	1.0	-9.9	1.0			
MATH	7	637104	0	B-E	2	123954	0.67	0.05	0.67	0.06	0.23	0.00	0.49	-0.22	0.49	-0.21	-0.31	-0.8319	0.0065	-9.9	0.9	-9.9	0.8			
MATH	7	591542	0	A-N	2	123954	0.56	0.23	0.17	0.56	0.04	0.00	0.57	-0.31	-0.31	0.57	-0.18	-0.2933	0.0063	-9.9	0.8	-9.9	0.8			
MATH	7	899374	0	A-N	2	123954	0.66	0.12	0.66	0.16	0.06	0.00	0.46	-0.24	0.46	-0.24	-0.22	-0.7542	0.0065	-9.9	0.9	-9.9	0.8			
MATH	7	168746	0	A-R	2	123954	0.83	0.08	0.05	0.04	0.83	0.00	0.42	-0.26	-0.21	-0.21	0.42	-1.6913	0.0077	-9.9	0.8	-9.9	0.6			
MATH	7	523712	0	B-E	2	123954	0.27	0.27	0.48	0.15	0.10	0.00	0.08	0.08	0.30	-0.33	-0.23	1.2252	0.0070	9.9	1.3	9.9	1.5			
MATH	7	933943	0	A-R	2	123954	0.35	0.08	0.35	0.12	0.45	0.00	0.41	-0.15	0.41	-0.22	-0.16	0.8331	0.0066	-3.8	1.0	6.2	1.0			
MATH	7	309694	0	A-N	1	123954	0.27	0.15	0.27	0.36	0.22	0.00	0.21	-0.10	0.21	-0.05	-0.08	1.2211	0.0070	9.9	1.2	9.9	1.3			
MATH	7	934676	0	A-N	2	123954	0.45	0.17	0.15	0.45	0.22	0.00	0.44	-0.15	-0.23	0.44	-0.19	0.2555	0.0063	-9.9	1.0	-9.9	1.0			
MATH	7	752786	0	C-G	2	123954	0.34	0.11	0.15	0.34	0.40	0.00	0.30	-0.19	-0.17	0.30	-0.04	0.7348	0.0066	9.9	1.1	9.9	1.1			
MATH	7	220051	0	B-E	2	123954	0.43	0.43	0.26	0.17	0.14	0.00	0.42	0.42	-0.18	-0.22	-0.13	0.3227	0.0063	-9.8	1.0	-9.9	1.0			
MATH	7	211015	0	B-E	2	123954	0.37	0.37	0.31	0.15	0.17	0.00	0.37	0.37	-0.16	-0.12	-0.17	0.7164	0.0065	5.4	1.0	9.9	1.1			
MATH	7	807213	0	C-G	2	123954	0.55	0.25	0.11	0.55	0.08	0.00	0.38	-0.20	-0.18	0.38	-0.17	-0.2597	0.0063	2.1	1.0	-0.3	1.0			
MATH	7	188132	0	D-S	2	123954	0.79	0.07	0.79	0.05	0.08	0.00	0.31	-0.18	0.31	-0.18	-0.13	-1.4937	0.0073	-9.9	1.0	-8.7	0.9			
MATH	7	926487	0	A-R	2	123954	0.26	0.13	0.13	0.48	0.26	0.00	0.30	-0.08	-0.22	-0.05	0.30	1.3659	0.0072	9.9	1.1	9.9	1.2			
MATH	7	481179	0	A-R	2	123954	0.41	0.16	0.19	0.23	0.41	0.00	0.55	-0.24	-0.24	-0.21	0.55	0.4602	0.0064	-9.9	0.8	-9.9	0.8			
MATH	7	305443	0	B-E	1	123954	0.45	0.24	0.16	0.15	0.45	0.00	0.43	-0.34	-0.11	-0.08	0.43	0.2005	0.0063	-9.9	1.0	-9.9	1.0			
MATH	7	414722	0	D-S	2	123954	0.44	0.32	0.15	0.44	0.09	0.00	0.40	-0.12	-0.27	0.40	-0.15	0.3195	0.0063	-1.2	1.0	-1.0	1.0			
MATH	7	586823	0	A-R	2	123954	0.47	0.47	0.27	0.17	0.09	0.00	0.23	0.23	0.10	-0.30	-0.17	0.1966	0.0063	9.9	1.2	9.9	1.2			
MATH	7	805300	0	B-E	2	123954	0.55	0.09	0.18	0.55	0.18	0.00	0.42	-0.16	-0.23	0.42	-0.19	-0.1795	0.0063	-9.9	1.0	-9.9	0.9			
MATH	7	711028	0	C-G	2	123954	0.68	0.68	0.10	0.11	0.12	0.00	0.36	0.36	-0.21	-0.16	-0.17	-0.8573	0.0066	-8.2	1.0	3.1	1.0			
MATH	7	115470	0	D-S	2	123954	0.57	0.21	0.08	0.13	0.57	0.00	0.49	-0.19	-0.25	-0.29	0.49	-0.4266	0.0063	-9.9	0.9	-9.9	0.9			
MATH	7	869774	0	A-R	2	123954	0.67	0.05	0.18	0.67	0.10	0.00	0.40	-0.20	-0.26	0.40	-0.15	-0.8212	0.0065	-9.9	1.0	-9.9	0.9			
MATH	7	272622	0	A-R	2	123954	0.54	0.23	0.54	0.15	0.07	0.00	0.36	-0.10	0.36	-0.23	-0.21	-0.1050	0.0063	9.0	1.0	8.7	1.0			
MATH	7	452425	0	A-R	1	123954	0.54	0.15	0.12	0.54	0.19	0.00	0.33	-0.09	-0.14	0.33	-0.22	-0.1721	0.0063	9.9	1.1	9.9	1.1			
MATH	7	302059	0	A-R	2	123954	0.65	0.07	0.13	0.15	0.65	0.00	0.47	-0.23	-0.18	-0.29	0.47	-0.7155	0.0065	-9.9	0.9	-9.9	0.9			
MATH	7	474287	0	A-R	2	123954	0.34	0.21	0.22	0.34	0.24	0.00	0.16	0.11	-0.18	0.16	-0.11	0.9368	0.0067	9.9	1.3	9.9	1.4			
MATH	7	149396	0	A-R	1	123954	0.43	0.26	0.08	0.23	0.43	0.00	0.57	-0.28	-0.20	-0.25	0.57	0.2746	0.0063	-9.9	0.8	-9.9	0.8			
MATH	7	179647	0	C-G	2	123954	0.38	0.38	0.38	0.11	0.13	0.00	0.38	0.38	-0.12	-0.17	-0.23	0.6555	0.0065	5.9	1.0	9.9	1.1			
MATH	7	604134	0	C-G	2	123954	0.86	0.05	0.05	0.86	0.04	0.00	0.39	-0.23	-0.22	0.39	-0.18	-2.0619	0.0085	-9.9	0.9	-9.9	0.7			
MATH	7	621932	0	D-S	2	123954	0.59	0.27	0.06	0.59	0.08	0.00	0.33	-0.11	-0.23	0.33	-0.21	-0.3832	0.0063	9.9	1.0	9.9	1.1			
MATH	7	710607	0	B-E	2	123954	0.75	0.75	0.11	0.07	0.07	0.00	0.47	0.47	-0.23	-0.25	-0.26	-1.2830	0.0070	-9.9	0.9	-9.9	0.7			
MATH	7	732284	0	B-E	2	123954	0.52	0.52	0.11	0.22	0.15	0.00	0.42	0.42	-0.24	-0.17	-0.18	-0.1641	0.0063	-9.9	1.0	-9.9	1.0			
MATH	7	216600	0	B-E	2	123954	0.55	0.28	0.05	0.12	0.55	0.00	0.45	-0.22	-0.21	-0.23	0.45	-0.1639	0.0063	-9.9	0.9	-9.9	0.9			
MATH	7	443841	0	B-E	2	123954	0.42	0.15	0.23	0.42	0.19	0.00	0.33	-0.19	-0.13	0.33	-0.09	0.3989	0.0064	9.9	1.1	9.9	1.1			
MATH	7	485321	0	B-E	2	123954	0.57	0.09	0.07	0.57	0.26	0.00	0.43	-0.20	-0.20	0.43	-0.23	-0.3293	0.0063	-9.9	0.9	-9.9	0.9			
MATH	7	681492	0	C-G	1	123954	0.37	0.21	0.37	0.19	0.23	0.00	0.48	-0.17	0.48	-0.29	-0.12	0.6595	0.0065	-9.9	0.9	-9.9	0.9			
MATH	7	939832	0	A-R	2	123954	0.47	0.07	0.33	0.13	0.47	0.00	0.56	-0.09	-0.41	-0.18	0.56	0.2168	0.0063	-9.9	0.8	-9.9	0.8			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	7	978459	0	B-E	1	123954	0.49	0.13	0.09	0.29	0.49	0.00	0.46	-0.23	-0.21	-0.19	0.46	0.0779	0.0063	-9.9	0.9	-9.9	0.9			
MATH	7	701529	0	C-G	1	123954	0.47	0.21	0.03	0.47	0.29	0.00	0.31	-0.20	-0.11	0.31	-0.13	0.2011	0.0063	9.9	1.1	9.9	1.1			
MATH	7	560633	0	B-E	2	123954	0.35	0.39	0.35	0.09	0.16	0.00	0.38	-0.16	0.38	-0.21	-0.13	0.8038	0.0066	2.1	1.0	9.9	1.1			
MATH	7	349125	0	C-G	2	123954	0.42	0.15	0.42	0.36	0.06	0.00	0.05	-0.12	0.05	0.08	-0.07	0.2985	0.0063	9.9	1.4	9.9	1.5			
MATH	7	519280	0	C-G	2	123954	0.46	0.19	0.26	0.46	0.09	0.00	0.39	-0.27	-0.15	0.39	-0.09	0.1240	0.0063	-1.0	1.0	-2.0	1.0			
MATH	7	631973	0	C-G	2	123954	0.41	0.41	0.27	0.23	0.09	0.00	0.14	0.14	-0.13	0.00	-0.03	0.4689	0.0064	9.9	1.3	9.9	1.3			
MATH	7	803716	0	C-G	1	123954	0.79	0.06	0.79	0.08	0.08	0.00	0.39	-0.21	0.39	-0.21	-0.21	-1.4607	0.0073	-9.9	0.9	-9.9	0.8			
MATH	7	395162	0	C-G	2	123954	0.48	0.19	0.48	0.23	0.09	0.00	0.42	-0.27	0.42	-0.18	-0.10	0.1215	0.0063	-9.9	1.0	-9.9	1.0			
MATH	7	565233	0	D-S	2	123954	0.60	0.12	0.23	0.60	0.04	0.00	0.47	-0.27	-0.23	0.47	-0.19	-0.4908	0.0063	-9.9	0.9	-9.9	0.9			
MATH	7	801913	0	B-E	2	123954	0.34	0.39	0.21	0.34	0.05	0.00	0.42	-0.28	-0.08	0.42	-0.14	0.9118	0.0067	-4.8	1.0	9.9	1.0			
MATH	7	825394	0	D-S	2	123954	0.46	0.11	0.34	0.09	0.46	0.00	0.28	-0.08	-0.13	-0.17	0.28	0.3030	0.0063	9.9	1.1	9.9	1.2			
MATH	7	346909	0	A-R	2	123954	0.36	0.15	0.29	0.19	0.36	0.00	0.33	-0.13	-0.21	-0.05	0.33	0.6837	0.0065	9.9	1.1	9.9	1.1			
MATH	7	945589	0	A-R	2	123954	0.49	0.49	0.10	0.33	0.09	0.00	0.29	0.29	-0.26	-0.02	-0.20	0.1183	0.0063	9.9	1.1	9.9	1.1			
MATH	7	589673	0	C-G	2	123954	0.39	0.20	0.39	0.16	0.25	0.00	0.29	-0.12	0.29	-0.22	-0.02	0.6386	0.0065	9.9	1.1	9.9	1.2			
MATH	7	339790	0	D-S	2	123954	0.66	0.14	0.11	0.09	0.66	0.00	0.41	-0.14	-0.29	-0.20	0.41	-0.8627	0.0066	-9.9	1.0	-9.9	1.0			
MATH	7	338681	0	B-E	2	123954	0.33	0.20	0.33	0.30	0.17	0.00	0.20	-0.13	0.20	-0.11	0.03	0.8285	0.0066	9.9	1.2	9.9	1.3			
MATH	7	848106	0	A-R	2	123954	0.63	0.16	0.63	0.12	0.10	0.00	0.34	-0.17	0.34	-0.19	-0.14	-0.6281	0.0064	9.9	1.0	2.8	1.0			
MATH	7	128622	0	A-N	2	123954	0.35	0.31	0.15	0.19	0.35	0.00	0.46	-0.14	-0.23	-0.19	0.46	0.7885	0.0066	-9.9	0.9	-9.9	0.9			
MATH	7	321178	1	C-G	2	14137	0.33	0.30	0.33	0.23	0.14	0.00	0.08	-0.02	0.08	-0.04	-0.02	0.8744	0.0199	9.9	1.4	9.9	1.5	A-	A+	A+
MATH	7	166979	1	A-R	2	14137	0.67	0.12	0.67	0.12	0.09	0.00	0.51	-0.28	0.51	-0.26	-0.21	-0.8619	0.0194	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	7	616159	1	D-S	1	14137	0.50	0.20	0.10	0.20	0.50	0.00	0.41	-0.22	-0.22	-0.13	0.41	-0.0266	0.0186	-2.3	1.0	-1.5	1.0	A+	A-	A-
MATH	7	462929	1	A-R	2	14137	0.66	0.66	0.16	0.13	0.06	0.00	0.53	0.53	-0.26	-0.30	-0.23	-0.7999	0.0193	-9.9	0.8	-9.9	0.8	A+	A-	A-
MATH	7	541826	1	B-E	2	14137	0.56	0.07	0.56	0.20	0.17	0.00	0.47	-0.16	0.47	-0.21	-0.29	-0.3088	0.0186	-9.9	0.9	-9.9	0.9	A-	A+	A-
MATH	7	574958	1	C-G	2	14137	0.35	0.15	0.30	0.20	0.35	0.00	0.19	-0.17	0.03	-0.11	0.19	0.7560	0.0196	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	7	693209	1	A-N	2	14137	0.43	0.15	0.43	0.26	0.15	0.00	0.33	-0.17	0.33	-0.09	-0.17	0.3201	0.0188	9.9	1.1	9.6	1.1	A-	A-	A-
MATH	7	342866	1	B-E	2	14137	0.50	0.09	0.50	0.35	0.06	0.00	0.49	-0.25	0.49	-0.25	-0.23	-0.0204	0.0186	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	7	259310	1	B-E	2	14137	0.18	0.08	0.14	0.18	0.60	0.00	0.12	-0.12	-0.10	0.12	0.05	1.8392	0.0239	9.9	1.2	9.9	1.7	A-	A-	A-
MATH	7	818130	1	C-G	2	14137	0.22	0.19	0.22	0.22	0.37	0.00	0.08	-0.15	-0.12	0.08	0.16	1.5034	0.0222	9.9	1.3	9.9	1.6	A-	A-	A-
MATH	7	851885	1	D-S	2	14137	0.44	0.44	0.06	0.09	0.40	0.00	0.48	0.48	-0.24	-0.27	-0.20	0.2670	0.0188	-9.9	0.9	-9.9	0.9	B-	B-	A-
MATH	7	254225	1	A-R	2	14137	0.56	0.14	0.11	0.19	0.56	0.00	0.40	-0.25	-0.19	-0.14	0.40	-0.3039	0.0186	-2.3	1.0	0.2	1.0	A+	A+	A-
MATH	7	857416	2	A-R	2	13706	0.42	0.18	0.42	0.31	0.09	0.00	0.45	-0.25	0.45	-0.13	-0.23	0.3955	0.0191	-8.8	0.9	-6.5	0.9	A-	A-	A-
MATH	7	897071	2	A-R	2	13706	0.58	0.12	0.07	0.58	0.23	0.00	0.50	-0.33	-0.22	0.50	-0.20	-0.3978	0.0189	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	7	109745	2	B-E	2	13706	0.37	0.16	0.31	0.17	0.37	0.00	0.46	-0.24	-0.14	-0.18	0.46	0.6572	0.0195	-9.8	0.9	-6.8	0.9	A+	A-	A+
MATH	7	900182	2	D-S	2	13706	0.41	0.17	0.41	0.19	0.23	0.00	0.25	-0.15	0.25	-0.07	-0.09	0.4548	0.0192	9.9	1.2	9.9	1.2	A+	A+	A-
MATH	7	982157	2	A-R	2	13706	0.36	0.18	0.27	0.19	0.36	0.00	0.37	-0.17	-0.13	-0.13	0.37	0.7187	0.0197	1.7	1.0	4.7	1.1	A-	A-	A+
MATH	7	889943	2	A-R	2	13706	0.32	0.36	0.32	0.21	0.10	0.00	0.30	0.08	0.30	-0.27	-0.21	0.9116	0.0202	7.5	1.1	9.9	1.2	A-	A-	A-
MATH	7	643064	2	B-E	1	13706	0.34	0.34	0.28	0.21	0.17	0.00	0.16	0.16	0.01	-0.09	-0.11	0.8352	0.0200	9.9	1.2	9.9	1.3	A+	A-	A+
MATH	7	899973	2	A-N	2	13706	0.53	0.09	0.09	0.30	0.53	0.00	0.40	-0.23	-0.21	-0.17	0.40	-0.1313	0.0188	-2.8	1.0	-1.0	1.0	A-	A-	A-
MATH	7	320640	2	C-G	2	13706	0.35	0.35	0.27	0.26	0.12	0.00	0.22	0.22	-0.03	-0.08	-0.16	0.7404	0.0197	9.9	1.2	9.9	1.2	A+	A+	A+
MATH	7	657096	2	A-R	2	13706	0.26	0.27	0.27	0.26	0.20	0.00	0.13	0.01	-0.09	0.13	-0.05	1.2898	0.0214	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	7	641913	2	B-E	2	13706	0.50	0.27	0.50	0.14	0.09	0.00	0.27	0.00	0.27	-0.23	-0.20	-0.0010	0.0188	9.9	1.1	9.9	1.1	A+	A-	A-
MATH	7	245231	2	D-S	2	13706	0.47	0.15	0.47	0.26	0.12	0.00	0.35	-0.10	0.35	-0.15	-0.22	0.1666	0.0189	5.2	1.0	3.9	1.0	A-	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	7	644979	3	A-N	2	13734	0.21	0.14	0.42	0.21	0.23	0.00	-0.16	-0.07	0.23	-0.16	-0.05	1.6302	0.0229	9.9	1.6	9.9	2.2	A-	A+	A+
MATH	7	337623	3	D-S	2	13734	0.49	0.39	0.49	0.05	0.07	0.00	0.52	-0.37	0.52	-0.19	-0.14	0.0990	0.0189	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	7	746523	3	B-E	2	13734	0.54	0.54	0.23	0.12	0.10	0.00	0.52	0.52	-0.25	-0.26	-0.22	-0.1778	0.0189	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	7	684086	3	C-G	2	13734	0.62	0.15	0.62	0.14	0.09	0.00	0.52	-0.29	0.52	-0.24	-0.22	-0.5506	0.0192	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	7	578017	3	A-R	2	13734	0.38	0.11	0.24	0.38	0.27	0.00	0.18	-0.02	-0.10	0.18	-0.09	0.6522	0.0196	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	7	316348	3	C-G	1	13734	0.59	0.59	0.16	0.15	0.10	0.00	0.42	0.42	-0.31	-0.20	-0.07	-0.4279	0.0190	-5.0	1.0	-5.3	0.9	A+	A-	A-
MATH	7	456088	3	B-E	2	13734	0.27	0.27	0.10	0.51	0.11	0.00	0.37	0.37	-0.17	-0.10	-0.20	1.2722	0.0214	-1.7	1.0	7.9	1.1	A+	A-	A-
MATH	7	416542	3	A-R	2	13734	0.32	0.35	0.32	0.22	0.12	0.00	0.42	-0.33	0.42	-0.09	-0.01	0.9697	0.0204	-4.4	1.0	2.5	1.0	B-	A-	A-
MATH	7	896838	3	A-R	2	13734	0.71	0.08	0.08	0.71	0.14	0.00	0.38	-0.20	-0.26	0.38	-0.15	-1.0244	0.0202	-5.7	1.0	-3.2	1.0	A+	A-	A-
MATH	7	903026	3	C-G	2	13734	0.26	0.34	0.18	0.22	0.26	0.00	0.41	-0.21	-0.14	-0.06	0.41	1.3424	0.0216	-5.8	0.9	3.1	1.1	A-	A-	A-
MATH	7	513941	3	A-N	2	13734	0.57	0.57	0.19	0.04	0.20	0.00	0.51	0.51	-0.21	-0.19	-0.33	-0.2941	0.0189	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	7	879185	3	D-S	2	13734	0.79	0.79	0.09	0.07	0.04	0.00	0.44	0.44	-0.23	-0.27	-0.20	-1.5476	0.0223	-9.9	0.9	-9.9	0.7	A+	A-	A-
MATH	7	986483	4	A-R	2	13723	0.78	0.11	0.06	0.78	0.05	0.00	0.44	-0.24	-0.23	0.44	-0.23	-1.4015	0.0217	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	7	132051	4	C-G	2	13723	0.24	0.29	0.24	0.32	0.15	0.00	0.18	0.10	0.18	-0.15	-0.15	1.4496	0.0219	9.9	1.2	9.9	1.4	A-	A-	A+
MATH	7	742436	4	B-E	2	13723	0.42	0.17	0.15	0.42	0.26	0.00	0.25	-0.15	-0.14	0.25	-0.04	0.4529	0.0191	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	7	574655	4	B-E	2	13723	0.28	0.32	0.28	0.30	0.10	0.00	-0.04	0.21	-0.04	-0.11	-0.10	1.1976	0.0209	9.9	1.4	9.9	1.7	A-	A-	A-
MATH	7	721891	4	A-R	2	13723	0.46	0.17	0.17	0.20	0.46	0.00	0.40	-0.08	-0.23	-0.20	0.40	0.2571	0.0188	-1.2	1.0	-1.4	1.0	A+	A+	A-
MATH	7	406531	4	A-N	2	13723	0.42	0.15	0.17	0.26	0.42	0.00	0.29	-0.09	-0.12	-0.15	0.29	0.4384	0.0190	9.9	1.1	9.9	1.1	A+	A-	A-
MATH	7	388351	4	C-G	2	13723	0.35	0.08	0.41	0.35	0.16	0.00	0.09	-0.13	0.01	0.09	-0.04	0.7780	0.0196	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	7	200487	4	C-G	1	13723	0.49	0.18	0.26	0.49	0.07	0.00	0.51	-0.38	-0.21	0.51	-0.07	0.1010	0.0188	-9.9	0.9	-9.9	0.9	A+	A-	A-
MATH	7	585954	4	B-E	2	13723	0.47	0.35	0.47	0.13	0.06	0.00	0.22	0.08	0.22	-0.30	-0.20	0.2046	0.0188	9.9	1.2	9.9	1.2	A-	A+	A+
MATH	7	683188	4	A-R	2	13723	0.23	0.29	0.32	0.16	0.23	0.00	0.09	0.00	-0.01	-0.10	0.09	1.5248	0.0222	9.9	1.3	9.9	1.5	A+	A+	A-
MATH	7	950695	4	D-S	2	13723	0.54	0.14	0.15	0.17	0.54	0.00	0.52	-0.29	-0.19	-0.25	0.52	-0.1444	0.0187	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	7	790414	4	D-S	2	13723	0.35	0.18	0.31	0.16	0.35	0.00	0.22	-0.09	-0.05	-0.13	0.22	0.8039	0.0197	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	7	426789	5	D-S	2	13758	0.65	0.06	0.65	0.13	0.15	0.00	0.49	-0.19	0.49	-0.24	-0.30	-0.7388	0.0194	-9.9	0.9	-9.9	0.8	B-	B-	B-
MATH	7	783898	5	A-R	2	13758	0.44	0.21	0.44	0.23	0.12	0.00	0.42	-0.18	0.42	-0.20	-0.15	0.3414	0.0190	-3.4	1.0	-3.3	1.0	A+	A-	A-
MATH	7	705516	5	A-R	2	13758	0.53	0.14	0.25	0.08	0.53	0.00	0.41	-0.15	-0.23	-0.19	0.41	-0.1426	0.0188	-3.6	1.0	-4.8	1.0	A+	A-	A-
MATH	7	288683	5	A-N	2	13758	0.41	0.17	0.22	0.19	0.41	0.00	0.51	-0.22	-0.24	-0.17	0.51	0.4697	0.0192	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	7	776594	5	C-G	2	13758	0.34	0.26	0.27	0.34	0.12	0.00	0.28	-0.13	-0.14	0.28	-0.04	0.8165	0.0198	9.9	1.1	9.9	1.2	A-	A-	A-
MATH	7	687677	5	C-G	2	13758	0.30	0.20	0.30	0.33	0.17	0.00	0.18	-0.14	0.18	0.09	-0.18	1.0400	0.0205	9.9	1.2	9.9	1.4	A+	A-	A+
MATH	7	348052	5	A-R	2	13758	0.18	0.18	0.26	0.33	0.22	0.00	0.13	0.13	-0.14	-0.06	0.11	1.8453	0.0241	9.9	1.2	9.9	1.6	A-	A+	A+
MATH	7	899764	5	B-E	2	13758	0.37	0.25	0.25	0.37	0.13	0.00	0.17	-0.07	-0.06	0.17	-0.08	0.6932	0.0196	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	7	634511	5	A-N	1	13758	0.63	0.63	0.15	0.12	0.10	0.00	0.40	0.40	-0.19	-0.22	-0.17	-0.5903	0.0191	-4.6	1.0	-5.0	0.9	A+	A-	A-
MATH	7	409057	5	B-E	2	13758	0.38	0.25	0.18	0.38	0.18	0.00	0.33	-0.20	-0.15	0.33	-0.03	0.6045	0.0194	7.4	1.1	8.8	1.1	A-	A+	A+
MATH	7	913777	5	C-G	2	13758	0.45	0.13	0.25	0.45	0.18	0.00	0.16	-0.09	-0.21	0.16	0.11	0.2785	0.0189	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	7	409015	5	D-S	2	13758	0.44	0.12	0.44	0.35	0.09	0.00	0.30	-0.22	0.30	-0.05	-0.19	0.3302	0.0190	9.9	1.1	9.9	1.1	A-	A-	A-
MATH	7	927532	6	A-R	2	13782	0.29	0.16	0.29	0.19	0.36	0.00	0.36	-0.20	0.36	-0.05	-0.14	1.0932	0.0206	0.6	1.0	6.4	1.1	A-	A-	A+
MATH	7	215174	6	A-R	2	13782	0.50	0.13	0.23	0.50	0.14	0.00	0.46	-0.18	-0.21	0.46	-0.24	0.0280	0.0187	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	7	391309	6	A-R	2	13782	0.47	0.47	0.16	0.18	0.19	0.00	0.48	0.48	-0.25	-0.19	-0.19	0.1761	0.0188	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	7	686763	6	B-E	2	13782	0.33	0.16	0.33	0.31	0.20	0.00	0.13	-0.16	0.13	-0.03	0.03	0.8934	0.0200	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	7	663372	6	C-G	2	13782	0.26	0.27	0.37	0.26	0.09	0.00	0.05	-0.07	0.06	0.05	-0.06	1.3080	0.0214	9.9	1.3	9.9	1.6	A-	A+	A-
MATH	7	532665	6	D-S	2	13782	0.32	0.15	0.27	0.26	0.32	0.00	0.26	-0.20	-0.04	-0.07	0.26	0.9651	0.0202	9.9	1.1	9.9	1.2	A+	A+	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	7	731165	6	A-R	2	13782	0.42	0.31	0.42	0.21	0.06	0.00	0.38	-0.14	0.38	-0.18	-0.20	0.3941	0.0190	1.7	1.0	1.7	1.0	A-	A-	A-
MATH	7	188066	6	B-E	2	13782	0.65	0.65	0.19	0.07	0.09	0.00	0.55	0.55	-0.32	-0.25	-0.25	-0.6966	0.0193	-9.9	0.8	-9.9	0.7	A+	B-	A-
MATH	7	676665	6	B-E	1	13782	0.33	0.38	0.33	0.15	0.14	0.00	0.25	-0.16	0.25	-0.05	-0.05	0.9007	0.0200	9.9	1.1	9.9	1.2	A+	A+	A+
MATH	7	723756	6	B-E	2	13782	0.34	0.34	0.24	0.28	0.13	0.00	0.42	0.42	-0.09	-0.18	-0.25	0.8259	0.0199	-5.2	1.0	-1.2	1.0	A-	A-	A-
MATH	7	710067	6	C-G	2	13782	0.32	0.27	0.32	0.22	0.18	0.00	0.29	-0.13	0.29	-0.12	-0.08	0.9293	0.0201	8.9	1.1	9.9	1.2	A-	A+	A-
MATH	7	943178	6	C-G	2	13782	0.52	0.11	0.19	0.52	0.18	0.00	0.42	-0.22	-0.17	0.42	-0.19	-0.0575	0.0187	-4.7	1.0	-6.4	0.9	A-	A-	A-
MATH	7	686307	7	A-R	2	13721	0.58	0.11	0.58	0.18	0.12	0.00	0.43	-0.18	0.43	-0.22	-0.22	-0.3755	0.0189	-8.9	0.9	-9.3	0.9	A+	A-	A-
MATH	7	179532	7	C-G	2	13721	0.21	0.21	0.36	0.33	0.09	0.00	0.16	0.16	0.02	-0.07	-0.13	1.6014	0.0226	9.9	1.2	9.9	1.5	A-	A-	A+
MATH	7	591911	7	D-S	2	13721	0.46	0.11	0.26	0.46	0.16	0.00	0.39	-0.27	-0.21	0.39	-0.04	0.2059	0.0188	-0.2	1.0	-0.3	1.0	A-	A-	A-
MATH	7	583227	7	A-R	2	13721	0.23	0.34	0.23	0.21	0.22	0.00	0.05	0.27	0.05	-0.18	-0.19	1.4665	0.0220	9.9	1.3	9.9	1.6	A-	A+	A-
MATH	7	308523	7	C-G	1	13721	0.66	0.66	0.10	0.10	0.14	0.00	0.48	0.48	-0.20	-0.25	-0.26	-0.7693	0.0195	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	7	896577	7	A-R	2	13721	0.23	0.38	0.20	0.23	0.18	0.00	-0.16	0.36	-0.19	-0.16	-0.08	1.4801	0.0221	9.9	1.5	9.9	2.0	A+	A-	A+
MATH	7	477791	7	B-E	2	13721	0.51	0.51	0.25	0.13	0.10	0.00	0.42	0.42	-0.19	-0.19	-0.23	-0.0285	0.0187	-5.3	1.0	-5.7	1.0	A+	A+	A+
MATH	7	736718	7	B-E	1	13721	0.39	0.17	0.22	0.39	0.22	0.00	0.15	-0.04	-0.15	0.15	0.00	0.5608	0.0193	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	7	525773	7	A-N	1	13721	0.58	0.58	0.19	0.11	0.11	0.00	0.41	0.41	-0.21	-0.21	-0.16	-0.3583	0.0189	-4.8	1.0	-3.5	1.0	A+	A-	A-
MATH	7	632562	7	A-N	2	13721	0.39	0.39	0.15	0.37	0.09	0.00	0.31	0.31	-0.15	-0.11	-0.15	0.6006	0.0193	8.9	1.1	9.6	1.1	A-	A-	A+
MATH	7	764111	7	C-G	2	13721	0.34	0.44	0.11	0.11	0.34	0.00	0.36	-0.05	-0.26	-0.20	0.36	0.8194	0.0198	3.7	1.0	3.0	1.0	A+	A-	A-
MATH	7	740678	7	D-S	2	13721	0.32	0.30	0.23	0.16	0.32	0.00	0.28	-0.01	-0.20	-0.11	0.28	0.9653	0.0202	9.9	1.1	9.9	1.2	A-	A-	A-
MATH	7	482828	8	C-G	2	13703	0.50	0.21	0.50	0.17	0.11	0.00	0.43	-0.27	0.43	-0.22	-0.07	-0.0016	0.0189	-4.0	1.0	-4.5	1.0	A-	A-	A-
MATH	7	916085	8	C-G	2	13703	0.44	0.44	0.15	0.21	0.19	0.00	0.27	0.27	-0.12	-0.16	-0.07	0.3085	0.0191	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	7	568156	8	A-N	2	13703	0.49	0.17	0.19	0.49	0.14	0.00	0.44	-0.25	-0.26	0.44	-0.06	0.0726	0.0189	-5.8	1.0	-6.1	0.9	A+	A-	A-
MATH	7	666337	8	C-G	2	13703	0.21	0.15	0.15	0.49	0.21	0.00	0.26	-0.26	-0.28	0.18	0.26	1.6809	0.0233	4.2	1.1	9.9	1.4	A-	A-	A-
MATH	7	141622	8	B-E	2	13703	0.40	0.40	0.27	0.13	0.19	0.00	0.25	0.25	-0.07	-0.21	-0.06	0.5268	0.0194	9.9	1.2	9.9	1.2	A+	A-	A-
MATH	7	573007	8	B-E	2	13703	0.39	0.40	0.39	0.13	0.08	0.00	0.25	0.09	0.25	-0.29	-0.26	0.5721	0.0195	9.9	1.2	9.9	1.2	A-	A+	A+
MATH	7	165049	8	D-S	2	13703	0.53	0.53	0.08	0.32	0.07	0.00	0.51	0.51	-0.15	-0.34	-0.23	-0.1495	0.0189	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	7	279616	8	A-N	2	13703	0.30	0.13	0.30	0.46	0.11	0.00	0.34	-0.18	0.34	-0.10	-0.13	1.0716	0.0207	3.6	1.0	9.9	1.2	A-	A-	A-
MATH	7	738438	8	A-R	2	13703	0.69	0.06	0.17	0.69	0.07	0.00	0.53	-0.24	-0.31	0.53	-0.25	-0.9621	0.0200	-9.9	0.8	-9.9	0.7	A-	A-	A-
MATH	7	844239	8	A-R	2	13703	0.50	0.27	0.13	0.50	0.10	0.00	0.54	-0.27	-0.23	0.54	-0.23	0.0319	0.0189	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	7	915936	8	A-R	2	13703	0.34	0.06	0.19	0.34	0.40	0.00	0.32	-0.21	-0.19	0.32	-0.05	0.8400	0.0201	9.3	1.1	9.9	1.1	A-	A-	A-
MATH	7	278272	8	D-S	2	13703	0.47	0.19	0.47	0.13	0.21	0.00	0.37	-0.22	0.37	-0.23	-0.05	0.1922	0.0190	4.8	1.0	2.9	1.0	A-	A-	A-
MATH	7	342742	9	A-R	2	13690	0.79	0.10	0.79	0.06	0.05	0.00	0.39	-0.19	0.39	-0.20	-0.25	-1.5145	0.0222	-8.6	0.9	-8.0	0.8	A-	A-	A-
MATH	7	244112	9	A-R	2	13690	0.62	0.12	0.62	0.15	0.11	0.00	0.49	-0.18	0.49	-0.29	-0.23	-0.5403	0.0191	-9.9	0.9	-9.9	0.8	A+	A+	A-
MATH	7	363515	9	C-G	1	13690	0.42	0.42	0.17	0.13	0.27	0.00	0.41	0.41	-0.05	-0.16	-0.28	0.4110	0.0191	-1.6	1.0	-1.7	1.0	A-	B-	A-
MATH	7	608982	9	B-E	2	13690	0.50	0.50	0.18	0.19	0.13	0.00	0.33	0.33	-0.15	-0.19	-0.10	0.0146	0.0188	7.2	1.1	5.7	1.1	A+	A-	A-
MATH	7	106691	9	B-E	2	13690	0.38	0.28	0.14	0.38	0.20	0.00	0.45	-0.28	-0.16	0.45	-0.09	0.6415	0.0195	-7.9	0.9	-4.9	1.0	B-	A-	A-
MATH	7	821908	9	D-S	2	13690	0.44	0.21	0.19	0.44	0.16	0.00	0.27	-0.10	-0.07	0.27	-0.18	0.3440	0.0190	9.9	1.1	9.9	1.2	A-	A-	A-
MATH	7	946178	9	D-S	2	13690	0.30	0.30	0.23	0.32	0.15	0.00	0.21	0.21	-0.21	0.04	-0.06	1.0658	0.0206	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	7	881473	9	A-N	2	13690	0.37	0.17	0.37	0.34	0.11	0.00	0.29	-0.15	0.29	-0.03	-0.21	0.6606	0.0195	9.9	1.1	9.9	1.2	A-	A+	A+
MATH	7	579727	9	A-R	2	13690	0.26	0.36	0.24	0.26	0.14	0.00	0.10	0.15	-0.18	0.10	-0.11	1.2894	0.0214	9.9	1.2	9.9	1.5	A-	A-	A-
MATH	7	128798	9	A-N	1	13690	0.67	0.08	0.14	0.11	0.67	0.00	0.33	-0.19	-0.14	-0.18	0.33	-0.8191	0.0196	0.4	1.0	1.7	1.0	A+	A-	A-
MATH	7	997151	9	C-G	2	13690	0.49	0.21	0.49	0.20	0.11	0.00	0.28	-0.17	0.28	-0.08	-0.11	0.0925	0.0188	9.9	1.1	9.9	1.1	A+	A-	A-
MATH	7	607050	9	C-G	1	13690	0.26	0.20	0.43	0.26	0.11	0.00	0.24	-0.15	0.03	0.24	-0.19	1.3073	0.0215	9.6	1.1	9.9	1.3	A-	A+	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	8	440420	0	C-G	2	125298	0.52	0.52	0.12	0.28	0.08	0.00	0.47	0.47	-0.21	-0.24	-0.21	-0.1579	0.0062	-9.9	0.9	-9.9	0.9			
MATH	8	915447	0	B-F	2	125298	0.53	0.18	0.13	0.53	0.16	0.00	0.43	-0.12	-0.21	0.43	-0.26	-0.2157	0.0062	-9.9	1.0	-9.9	0.9			
MATH	8	684935	0	B-F	2	125298	0.48	0.10	0.12	0.30	0.48	0.00	0.36	-0.21	-0.23	-0.09	0.36	0.0357	0.0062	9.3	1.0	6.7	1.0			
MATH	8	308935	0	B-E	2	125298	0.44	0.12	0.44	0.19	0.25	0.00	0.45	-0.20	0.45	-0.19	-0.19	0.2036	0.0062	-9.9	0.9	-9.9	0.9			
MATH	8	764281	0	C-G	2	125298	0.43	0.15	0.20	0.22	0.43	0.00	0.38	-0.20	-0.17	-0.11	0.38	0.2775	0.0063	0.9	1.0	0.7	1.0			
MATH	8	296358	0	B-F	2	125298	0.48	0.14	0.22	0.48	0.16	0.00	0.32	-0.12	-0.18	0.32	-0.12	0.1388	0.0062	9.9	1.1	9.9	1.1			
MATH	8	292841	0	C-G	2	125298	0.43	0.29	0.43	0.20	0.08	0.00	0.31	-0.08	0.31	-0.15	-0.21	0.2699	0.0063	9.9	1.1	9.9	1.1			
MATH	8	116743	0	B-F	2	125298	0.49	0.12	0.16	0.22	0.49	0.00	0.38	-0.14	-0.26	-0.12	0.38	-0.0782	0.0062	-3.2	1.0	-3.4	1.0			
MATH	8	848234	0	B-E	2	125298	0.48	0.48	0.14	0.18	0.19	0.00	0.16	0.16	-0.02	-0.15	-0.04	0.0610	0.0062	9.9	1.2	9.9	1.3			
MATH	8	608506	0	C-G	2	125298	0.40	0.40	0.26	0.15	0.18	0.00	0.53	0.53	-0.22	-0.15	-0.28	0.4041	0.0063	-9.9	0.9	-9.9	0.8			
MATH	8	112674	0	B-E	2	125298	0.55	0.08	0.55	0.30	0.07	0.00	0.48	-0.22	0.48	-0.29	-0.19	-0.3498	0.0062	-9.9	0.9	-9.9	0.9			
MATH	8	710974	0	B-F	2	125298	0.26	0.28	0.26	0.12	0.33	0.00	0.16	-0.12	0.16	-0.19	0.09	1.2320	0.0071	9.9	1.2	9.9	1.4			
MATH	8	600231	0	D-S	2	125298	0.56	0.20	0.09	0.56	0.15	0.00	0.40	-0.16	-0.24	0.40	-0.19	-0.2836	0.0062	-9.9	1.0	-9.9	1.0			
MATH	8	337316	0	A-N	2	125298	0.50	0.14	0.20	0.50	0.15	0.00	0.40	-0.25	-0.22	0.40	-0.07	-0.0322	0.0062	-8.6	1.0	-6.8	1.0			
MATH	8	260591	0	B-F	2	125298	0.59	0.16	0.11	0.13	0.59	0.00	0.57	-0.28	-0.27	-0.27	0.57	-0.5045	0.0062	-9.9	0.8	-9.9	0.8			
MATH	8	645046	0	C-G	2	125298	0.49	0.49	0.18	0.18	0.14	0.00	0.41	0.41	-0.21	-0.23	-0.10	-0.0980	0.0062	-9.9	1.0	-9.9	1.0			
MATH	8	670093	0	B-E	1	125298	0.75	0.75	0.13	0.07	0.05	0.00	0.42	0.42	-0.25	-0.20	-0.21	-1.2928	0.0069	-9.9	0.9	-9.9	0.8			
MATH	8	509086	0	B-F	2	125298	0.70	0.70	0.08	0.17	0.05	0.00	0.53	0.53	-0.26	-0.33	-0.23	-1.0748	0.0066	-9.9	0.8	-9.9	0.7			
MATH	8	675247	0	B-E	1	125298	0.49	0.16	0.22	0.13	0.49	0.00	0.41	-0.21	-0.18	-0.16	0.41	0.0787	0.0062	-9.9	1.0	-9.9	1.0			
MATH	8	930158	0	B-E	2	125298	0.55	0.19	0.55	0.15	0.12	0.00	0.41	-0.19	0.41	-0.19	-0.18	-0.2825	0.0062	-9.9	1.0	-9.9	0.9			
MATH	8	507093	0	D-S	2	125298	0.33	0.48	0.09	0.10	0.33	0.00	0.39	-0.12	-0.23	-0.19	0.39	0.7657	0.0066	-8.3	1.0	-1.7	1.0			
MATH	8	206142	0	A-N	1	125298	0.49	0.10	0.49	0.21	0.20	0.00	0.41	-0.20	0.41	-0.07	-0.28	-0.0017	0.0062	-9.9	1.0	-9.9	1.0			
MATH	8	166151	0	B-E	1	125298	0.51	0.51	0.16	0.24	0.09	0.00	0.25	0.25	-0.23	-0.04	-0.09	-0.1332	0.0062	9.9	1.1	9.9	1.2			
MATH	8	204285	0	B-E	1	125298	0.51	0.09	0.24	0.51	0.16	0.00	0.20	-0.15	0.07	0.20	-0.23	0.0068	0.0062	9.9	1.2	9.9	1.2			
MATH	8	617066	0	B-E	2	125298	0.49	0.08	0.18	0.25	0.49	0.00	0.41	-0.19	-0.16	-0.21	0.41	-0.0204	0.0062	-9.9	1.0	-9.9	1.0			
MATH	8	122520	0	B-E	2	125298	0.35	0.35	0.11	0.34	0.20	0.00	0.37	0.37	-0.23	-0.18	-0.05	0.7885	0.0066	8.9	1.0	9.9	1.1			
MATH	8	362817	0	B-E	1	125298	0.34	0.14	0.16	0.36	0.34	0.00	0.29	-0.13	-0.13	-0.09	0.29	0.8706	0.0067	9.9	1.1	9.9	1.2			
MATH	8	904858	0	B-E	2	125298	0.55	0.10	0.55	0.26	0.09	0.00	0.40	-0.21	0.40	-0.21	-0.16	-0.2377	0.0062	-9.9	1.0	-9.9	1.0			
MATH	8	322005	0	B-E	2	125298	0.20	0.20	0.35	0.12	0.33	0.00	0.14	0.14	-0.14	-0.24	0.19	1.6346	0.0077	9.9	1.2	9.9	1.6			
MATH	8	282882	0	B-E	1	125298	0.40	0.40	0.12	0.09	0.38	0.00	0.37	0.37	-0.19	-0.22	-0.11	0.5462	0.0064	9.9	1.0	9.9	1.1			
MATH	8	627665	0	A-N	1	125298	0.69	0.11	0.13	0.69	0.07	0.00	0.45	-0.27	-0.21	0.45	-0.21	-1.0582	0.0066	-9.9	0.9	-9.9	0.8			
MATH	8	980601	0	A-N	1	125298	0.38	0.16	0.08	0.38	0.38	0.00	0.41	-0.27	-0.16	-0.11	0.41	0.5633	0.0064	-8.1	1.0	-7.4	1.0			
MATH	8	309128	0	B-E	1	125298	0.41	0.41	0.12	0.29	0.18	0.00	0.47	0.47	-0.17	-0.22	-0.20	0.3625	0.0063	-9.9	0.9	-9.9	0.9			
MATH	8	915417	0	D-S	2	125298	0.63	0.16	0.17	0.63	0.04	0.00	0.42	-0.25	-0.22	0.42	-0.14	-0.6664	0.0063	-9.9	0.9	-9.9	0.9			
MATH	8	720281	0	C-G	2	125298	0.50	0.29	0.50	0.15	0.06	0.00	0.04	0.09	0.04	-0.07	-0.14	-0.0497	0.0062	9.9	1.3	9.9	1.5			
MATH	8	593241	0	B-F	2	125298	0.35	0.35	0.27	0.15	0.23	0.00	0.49	0.49	-0.13	-0.21	-0.24	0.6987	0.0065	-9.9	0.9	-9.9	0.9			
MATH	8	838065	0	D-S	2	125298	0.79	0.79	0.07	0.08	0.06	0.00	0.41	0.41	-0.22	-0.24	-0.19	-1.5539	0.0073	-9.9	0.9	-9.9	0.8			
MATH	8	454680	0	B-F	2	125298	0.58	0.58	0.10	0.27	0.05	0.00	0.34	0.34	-0.22	-0.13	-0.18	-0.4860	0.0062	9.9	1.0	9.9	1.1			
MATH	8	227106	0	B-F	2	125298	0.48	0.28	0.09	0.48	0.15	0.00	0.43	-0.21	-0.10	0.43	-0.25	0.0496	0.0062	-9.9	1.0	-9.9	0.9			
MATH	8	556419	0	C-G	2	125298	0.25	0.44	0.25	0.29	0.03	0.00	0.43	-0.20	0.43	-0.14	-0.13	1.2322	0.0071	-9.9	0.9	-9.9	0.9			
MATH	8	273371	0	A-N	1	125298	0.79	0.09	0.05	0.79	0.06	0.00	0.42	-0.22	-0.24	0.42	-0.22	-1.5020	0.0072	-9.9	0.8	-9.9	0.7			
MATH	8	372222	0	D-S	2	125298	0.60	0.15	0.07	0.18	0.60	0.00	0.41	-0.18	-0.21	-0.21	0.41	-0.5633	0.0063	-9.9	1.0	-9.9	0.9			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	8	920544	0	A-N	1	125298	0.67	0.67	0.06	0.23	0.04	0.00	0.37	0.37	-0.22	-0.21	-0.19	-1.0268	0.0066	3.5	1.0	-5.3	1.0			
MATH	8	465783	0	B-F	2	125298	0.79	0.03	0.05	0.79	0.13	0.00	0.44	-0.19	-0.22	0.44	-0.29	-1.5969	0.0073	-9.9	0.9	-9.9	0.7			
MATH	8	562591	0	B-F	1	125298	0.43	0.22	0.43	0.18	0.16	0.00	0.35	-0.11	0.35	-0.13	-0.20	0.2389	0.0062	9.9	1.0	9.6	1.0			
MATH	8	433215	0	B-F	2	125298	0.48	0.12	0.48	0.11	0.28	0.00	0.19	-0.12	0.19	-0.20	0.02	0.2262	0.0062	9.9	1.2	9.9	1.3			
MATH	8	444993	0	C-G	2	125298	0.49	0.49	0.20	0.07	0.24	0.00	0.41	0.41	-0.18	-0.20	-0.19	-0.0337	0.0062	-9.9	1.0	-9.9	1.0			
MATH	8	354154	0	B-F	1	125298	0.33	0.41	0.11	0.14	0.33	0.00	0.33	0.02	-0.24	-0.24	0.33	0.8442	0.0066	9.9	1.1	9.9	1.1			
MATH	8	819259	0	B-F	2	125298	0.60	0.25	0.60	0.08	0.07	0.00	0.30	-0.10	0.30	-0.21	-0.18	-0.3362	0.0062	9.9	1.0	9.9	1.1			
MATH	8	952397	0	D-S	2	125298	0.46	0.20	0.46	0.21	0.13	0.00	0.31	-0.16	0.31	-0.14	-0.10	0.1514	0.0062	9.9	1.1	9.9	1.1			
MATH	8	850631	0	B-E	2	125298	0.28	0.26	0.28	0.21	0.25	0.00	0.24	0.09	0.24	-0.15	-0.20	1.0973	0.0069	9.9	1.1	9.9	1.2			
MATH	8	973157	0	B-E	2	125298	0.40	0.13	0.40	0.30	0.17	0.00	0.34	-0.08	0.34	-0.11	-0.23	0.4319	0.0063	9.9	1.0	9.9	1.1			
MATH	8	953234	0	B-E	1	125298	0.46	0.46	0.19	0.22	0.13	0.00	0.43	0.43	-0.20	-0.16	-0.19	0.1154	0.0062	-9.9	1.0	-9.9	0.9			
MATH	8	796144	0	D-S	2	125298	0.76	0.09	0.05	0.76	0.09	0.00	0.33	-0.19	-0.21	0.33	-0.14	-1.3187	0.0069	-9.9	0.9	-9.9	0.9			
MATH	8	583734	0	B-E	1	125298	0.32	0.32	0.50	0.04	0.14	0.00	0.35	0.35	-0.07	-0.19	-0.26	0.8310	0.0066	4.4	1.0	6.8	1.0			
MATH	8	878434	0	D-S	2	125298	0.56	0.30	0.10	0.56	0.04	0.00	0.19	0.05	-0.28	0.19	-0.17	-0.3023	0.0062	9.9	1.2	9.9	1.3			
MATH	8	400013	0	A-N	2	125298	0.60	0.24	0.60	0.11	0.06	0.00	0.38	-0.18	0.38	-0.21	-0.21	-0.5645	0.0063	-9.9	1.0	-1.5	1.0			
MATH	8	289852	0	A-N	2	125298	0.42	0.12	0.34	0.13	0.42	0.00	0.37	-0.25	-0.11	-0.15	0.37	0.3270	0.0063	5.1	1.0	3.5	1.0			
MATH	8	667423	0	D-S	2	125298	0.38	0.11	0.30	0.38	0.21	0.00	0.45	-0.23	-0.29	0.45	-0.03	0.5342	0.0064	-9.9	0.9	-9.9	0.9			
MATH	8	443466	0	D-S	2	125298	0.35	0.11	0.13	0.41	0.35	0.00	0.25	-0.23	-0.25	0.08	0.25	0.8041	0.0066	9.9	1.2	9.9	1.2			
MATH	8	485390	1	B-E	1	14267	0.39	0.40	0.13	0.39	0.08	0.00	0.18	0.09	-0.21	0.18	-0.22	0.5010	0.0189	9.9	1.2	9.9	1.3	A-	A+	A+
MATH	8	362709	1	B-F	2	14267	0.39	0.10	0.39	0.39	0.12	0.00	0.34	-0.26	0.01	0.34	-0.28	0.4671	0.0189	6.5	1.1	6.8	1.1	A-	A-	A-
MATH	8	767096	1	C-G	2	14267	0.42	0.20	0.42	0.23	0.15	0.00	0.37	-0.15	0.37	-0.12	-0.19	0.3502	0.0187	1.8	1.0	1.9	1.0	A+	A-	A-
MATH	8	765432	1	B-E	1	14267	0.41	0.21	0.19	0.41	0.18	0.00	0.34	-0.16	-0.13	0.34	-0.14	0.3839	0.0188	6.3	1.1	7.1	1.1	A+	A-	A-
MATH	8	780616	1	B-F	2	14267	0.68	0.68	0.12	0.09	0.11	0.00	0.46	0.46	-0.21	-0.29	-0.21	-0.9404	0.0193	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	8	340471	1	D-S	2	14267	0.64	0.08	0.18	0.10	0.64	0.00	0.54	-0.28	-0.28	-0.25	0.54	-0.7240	0.0188	-9.9	0.8	-9.9	0.8	A+	A-	A-
MATH	8	314987	1	B-E	2	14267	0.23	0.14	0.23	0.43	0.20	0.00	-0.04	-0.17	-0.04	0.28	-0.15	1.3934	0.0217	9.9	1.4	9.9	1.8	A-	A-	A-
MATH	8	817051	1	A-N	1	14267	0.51	0.08	0.10	0.30	0.51	0.00	0.42	-0.21	-0.23	-0.17	0.42	-0.0914	0.0184	-5.9	1.0	-5.1	1.0	A+	A-	A-
MATH	8	302322	1	C-G	2	14267	0.24	0.21	0.33	0.24	0.22	0.00	0.04	-0.08	-0.02	0.04	0.06	1.3133	0.0213	9.9	1.3	9.9	1.6	A+	A+	A-
MATH	8	540203	1	A-N	2	14267	0.68	0.13	0.11	0.08	0.68	0.00	0.48	-0.31	-0.22	-0.19	0.48	-0.9438	0.0193	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	8	576467	1	B-F	2	14267	0.29	0.29	0.11	0.20	0.40	0.00	0.28	0.28	-0.19	-0.17	0.00	1.0089	0.0202	8.9	1.1	9.9	1.2	A-	A-	A-
MATH	8	615061	1	C-G	2	14267	0.30	0.13	0.23	0.34	0.30	0.00	0.28	-0.14	-0.22	0.02	0.28	0.9534	0.0200	9.4	1.1	9.9	1.2	A+	A+	A-
MATH	8	751771	2	B-E	2	13885	0.58	0.58	0.16	0.13	0.13	0.00	0.45	0.45	-0.15	-0.26	-0.23	-0.4008	0.0187	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	8	439047	2	B-E	1	13885	0.26	0.09	0.26	0.52	0.13	0.00	0.36	-0.19	0.36	-0.05	-0.23	1.2244	0.0212	-1.6	1.0	6.5	1.1	A-	A-	A+
MATH	8	805355	2	B-F	2	13885	0.28	0.23	0.15	0.28	0.34	0.00	0.29	-0.11	-0.16	0.29	-0.05	1.0786	0.0206	7.3	1.1	9.9	1.2	A-	A-	A-
MATH	8	453209	2	B-F	1	13885	0.49	0.49	0.21	0.16	0.13	0.00	0.41	0.41	-0.22	-0.19	-0.12	-0.0131	0.0186	-4.3	1.0	-3.9	1.0	A+	A-	A-
MATH	8	386797	2	A-N	1	13885	0.64	0.07	0.17	0.64	0.12	0.00	0.40	-0.24	-0.20	0.40	-0.18	-0.7374	0.0191	-8.7	0.9	-6.1	0.9	A+	A-	A-
MATH	8	159215	2	C-G	2	13885	0.41	0.10	0.24	0.41	0.25	0.00	0.31	-0.17	-0.06	0.31	-0.18	0.3766	0.0189	8.6	1.1	7.8	1.1	A-	A-	A-
MATH	8	592012	2	C-G	2	13885	0.31	0.15	0.31	0.26	0.27	0.00	0.03	-0.23	0.03	-0.02	0.17	0.9005	0.0200	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	8	307885	2	B-F	2	13885	0.25	0.21	0.25	0.45	0.09	0.00	0.08	0.15	0.08	-0.09	-0.17	1.2976	0.0215	9.9	1.3	9.9	1.5	A+	A+	A+
MATH	8	563124	2	D-S	2	13885	0.61	0.13	0.17	0.61	0.08	0.00	0.45	-0.24	-0.23	0.45	-0.19	-0.5899	0.0189	-9.9	0.9	-9.9	0.9	A+	A-	A-
MATH	8	237717	2	B-E	2	13885	0.37	0.18	0.37	0.20	0.25	0.00	0.17	-0.05	0.17	-0.14	-0.01	0.6159	0.0193	9.9	1.2	9.9	1.3	A-	A+	A+
MATH	8	428579	2	B-E	1	13885	0.54	0.54	0.21	0.12	0.14	0.00	0.46	0.46	-0.18	-0.27	-0.20	-0.2057	0.0186	-9.9	0.9	-9.9	0.9	A+	A-	A-
MATH	8	625783	2	B-E	2	13885	0.34	0.34	0.33	0.22	0.10	0.00	0.19	0.19	-0.12	0.02	-0.14	0.7560	0.0197	9.9	1.2	9.9	1.3	A-	A-	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	8	843294	3	B-F	2	13838	0.56	0.56	0.13	0.20	0.10	0.00	0.47	0.47	-0.28	-0.22	-0.16	-0.3537	0.0187	-9.9	0.9	-9.9	0.9	A+	A+	A+
MATH	8	966330	3	A-N	1	13838	0.62	0.11	0.06	0.62	0.21	0.00	0.45	-0.34	-0.21	0.45	-0.16	-0.6377	0.0190	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	8	472763	3	B-E	1	13838	0.46	0.46	0.27	0.18	0.09	0.00	0.45	0.45	-0.23	-0.16	-0.21	0.1279	0.0187	-9.6	0.9	-7.3	0.9	A+	A+	A+
MATH	8	178235	3	B-E	1	13838	0.33	0.33	0.34	0.25	0.09	0.00	0.41	0.41	-0.16	-0.17	-0.15	0.8137	0.0199	-4.4	1.0	-0.4	1.0	A-	A-	A-
MATH	8	103184	3	B-F	2	13838	0.19	0.23	0.19	0.19	0.39	0.00	0.00	-0.19	-0.15	0.00	0.29	1.6819	0.0234	9.9	1.3	9.9	1.8	A-	A+	A+
MATH	8	680736	3	B-E	1	13838	0.36	0.36	0.36	0.16	0.12	0.00	0.24	-0.16	0.24	-0.14	0.03	0.6413	0.0195	9.9	1.1	9.9	1.2	A-	A+	A+
MATH	8	793705	3	D-S	2	13838	0.50	0.10	0.14	0.26	0.50	0.00	0.27	-0.24	-0.26	0.06	0.27	-0.0709	0.0186	9.9	1.1	9.9	1.3	A+	A-	A+
MATH	8	680556	3	D-S	2	13838	0.60	0.60	0.13	0.10	0.17	0.00	0.47	0.47	-0.28	-0.16	-0.23	-0.5297	0.0188	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	8	277922	3	C-G	2	13838	0.48	0.19	0.12	0.21	0.48	0.00	0.46	-0.24	-0.23	-0.14	0.46	0.0573	0.0187	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	8	536744	3	C-G	2	13838	0.28	0.28	0.35	0.25	0.12	0.00	0.10	0.10	0.13	-0.05	-0.26	1.1023	0.0208	9.9	1.3	9.9	1.4	A-	A-	A-
MATH	8	931878	3	B-E	2	13838	0.50	0.14	0.17	0.19	0.50	0.00	0.36	-0.17	-0.14	-0.18	0.36	-0.0452	0.0186	2.3	1.0	1.2	1.0	A-	A-	A-
MATH	8	325730	3	B-E	2	13838	0.31	0.27	0.31	0.31	0.10	0.00	0.12	0.07	-0.12	0.12	-0.10	0.8924	0.0201	9.9	1.3	9.9	1.4	A-	A+	A-
MATH	8	112758	4	C-G	2	13876	0.25	0.47	0.15	0.13	0.25	0.00	0.31	0.03	-0.20	-0.22	0.31	1.2590	0.0214	2.9	1.0	9.3	1.2	A-	A+	A-
MATH	8	943251	4	B-F	2	13876	0.51	0.15	0.14	0.51	0.20	0.00	0.49	-0.28	-0.21	0.49	-0.18	-0.0881	0.0186	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	8	820177	4	B-E	1	13876	0.65	0.11	0.14	0.65	0.11	0.00	0.44	-0.19	-0.24	0.44	-0.23	-0.7751	0.0192	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	8	310831	4	A-N	2	13876	0.39	0.31	0.10	0.39	0.20	0.00	0.26	-0.15	-0.21	0.26	0.02	0.4809	0.0191	9.9	1.1	9.9	1.2	A+	A+	A-
MATH	8	510929	4	C-G	2	13876	0.26	0.22	0.30	0.22	0.26	0.00	0.27	-0.11	-0.04	-0.14	0.27	1.1984	0.0212	8.2	1.1	9.9	1.2	A+	A-	A-
MATH	8	981167	4	B-E	2	13876	0.58	0.06	0.58	0.18	0.17	0.00	0.40	-0.20	0.40	-0.23	-0.16	-0.4515	0.0187	-5.9	1.0	-6.5	0.9	A-	A-	A-
MATH	8	878799	4	B-F	2	13876	0.26	0.38	0.17	0.19	0.26	0.00	0.17	0.15	-0.16	-0.21	0.17	1.2091	0.0212	9.9	1.2	9.9	1.4	A-	A+	A-
MATH	8	575961	4	B-E	2	13876	0.33	0.26	0.27	0.33	0.14	0.00	0.26	-0.13	-0.02	0.26	-0.17	0.7928	0.0198	9.9	1.1	9.9	1.2	A-	A+	A+
MATH	8	847578	4	B-F	2	13876	0.16	0.27	0.25	0.32	0.16	0.00	0.25	-0.02	-0.05	-0.12	0.25	1.9205	0.0250	1.2	1.0	9.9	1.4	A+	A+	A-
MATH	8	383491	4	D-S	2	13876	0.39	0.39	0.16	0.26	0.19	0.00	0.44	0.44	-0.20	-0.14	-0.20	0.4641	0.0191	-8.3	0.9	-5.6	0.9	A-	A-	A-
MATH	8	362645	4	C-G	2	13876	0.29	0.29	0.23	0.29	0.19	0.00	-0.01	0.02	0.01	-0.01	-0.02	1.0575	0.0206	9.9	1.4	9.9	1.6	A+	A-	A-
MATH	8	763883	4	B-E	2	13876	0.62	0.12	0.15	0.11	0.62	0.00	0.48	-0.16	-0.28	-0.25	0.48	-0.6428	0.0189	-9.9	0.9	-9.9	0.8	A-	B-	B-
MATH	8	753652	5	B-E	2	13881	0.34	0.14	0.35	0.34	0.17	0.00	0.31	-0.18	-0.16	0.31	-0.03	0.7778	0.0197	5.5	1.1	8.1	1.1	A-	A-	A-
MATH	8	597023	5	C-G	2	13881	0.39	0.18	0.28	0.39	0.15	0.00	0.36	-0.12	-0.24	0.36	-0.07	0.4843	0.0191	0.8	1.0	2.4	1.0	A-	A-	A-
MATH	8	821868	5	B-F	2	13881	0.26	0.16	0.27	0.30	0.26	0.00	0.32	-0.09	-0.21	-0.02	0.32	1.2080	0.0211	2.3	1.0	7.5	1.1	A-	A-	A-
MATH	8	598086	5	B-F	2	13881	0.22	0.22	0.25	0.30	0.23	0.00	0.06	0.06	-0.03	-0.04	0.02	1.4588	0.0222	9.9	1.3	9.9	1.6	A-	A-	A-
MATH	8	212840	5	B-E	2	13881	0.44	0.19	0.19	0.18	0.44	0.00	0.35	-0.15	-0.07	-0.22	0.35	0.2439	0.0187	4.3	1.0	3.2	1.0	A-	A-	A-
MATH	8	295759	5	D-S	2	13881	0.54	0.54	0.10	0.26	0.10	0.00	0.43	0.43	-0.19	-0.19	-0.24	-0.2087	0.0185	-8.9	0.9	-7.4	0.9	A-	A-	A-
MATH	8	322233	5	A-N	1	13881	0.37	0.19	0.37	0.23	0.21	0.00	0.27	-0.13	0.27	-0.13	-0.06	0.5947	0.0193	9.9	1.1	9.9	1.1	A-	A-	A-
MATH	8	294883	5	B-F	1	13881	0.56	0.22	0.56	0.10	0.12	0.00	0.32	-0.12	0.32	-0.16	-0.18	-0.3086	0.0186	6.3	1.0	4.7	1.1	A+	A+	A-
MATH	8	615975	5	A-N	2	13881	0.40	0.24	0.26	0.40	0.10	0.00	0.37	-0.32	0.00	0.37	-0.16	0.4377	0.0190	0.9	1.0	3.0	1.0	A+	A+	A+
MATH	8	907926	5	B-E	2	13881	0.30	0.16	0.30	0.28	0.26	0.00	0.21	-0.05	0.21	-0.18	0.00	0.9723	0.0203	9.9	1.2	9.9	1.2	A+	A-	A-
MATH	8	789558	5	C-G	2	13881	0.39	0.39	0.25	0.22	0.14	0.00	0.16	0.16	0.07	-0.14	-0.14	0.5255	0.0191	9.9	1.2	9.9	1.3	A-	A+	A-
MATH	8	377739	5	C-G	2	13881	0.26	0.32	0.16	0.26	0.26	0.00	0.22	-0.02	-0.22	0.00	0.22	1.2506	0.0213	9.9	1.1	9.9	1.3	A-	A-	A+
MATH	8	203401	6	C-G	2	13901	0.28	0.18	0.35	0.28	0.19	0.00	0.42	-0.14	-0.14	0.42	-0.17	1.1016	0.0207	-4.8	1.0	-0.8	1.0	A-	A-	A-
MATH	8	471535	6	D-S	2	13901	0.46	0.08	0.11	0.46	0.34	0.00	0.27	-0.20	-0.29	0.27	0.02	0.1458	0.0186	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	8	855200	6	B-E	1	13901	0.69	0.13	0.11	0.69	0.07	0.00	0.42	-0.24	-0.25	0.42	-0.14	-0.9596	0.0196	-9.9	0.9	-8.6	0.9	A+	A-	A+
MATH	8	115339	6	B-E	2	13901	0.59	0.59	0.09	0.26	0.06	0.00	0.43	0.43	-0.19	-0.25	-0.20	-0.4515	0.0187	-9.9	0.9	-2.8	1.0	A-	A-	A-
MATH	8	583094	6	C-G	2	13901	0.47	0.10	0.47	0.31	0.12	0.00	0.42	-0.21	0.42	-0.22	-0.13	0.1179	0.0186	-5.6	1.0	-5.6	1.0	A+	A-	A-
MATH	8	364512	6	B-F	2	13901	0.57	0.12	0.18	0.13	0.57	0.00	0.35	-0.13	-0.18	-0.18	0.35	-0.3501	0.0186	0.6	1.0	2.7	1.0	A+	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	8	265596	6	D-S	2	13901	0.33	0.44	0.33	0.15	0.08	0.00	0.12	0.05	0.12	-0.12	-0.15	0.8112	0.0198	9.9	1.3	9.9	1.4	A-	A-	A-
MATH	8	695273	6	B-F	2	13901	0.31	0.22	0.31	0.26	0.20	0.00	0.09	0.03	0.09	-0.08	-0.05	0.9217	0.0201	9.9	1.3	9.9	1.4	A-	A+	A+
MATH	8	838163	6	B-F	2	13901	0.42	0.42	0.31	0.17	0.10	0.00	0.27	0.27	-0.10	-0.13	-0.11	0.3642	0.0189	9.9	1.1	9.9	1.1	A-	A-	A-
MATH	8	757074	6	B-E	2	13901	0.44	0.15	0.27	0.44	0.14	0.00	0.31	-0.23	-0.15	0.31	-0.02	0.2755	0.0188	9.9	1.1	9.9	1.1	A+	A-	A-
MATH	8	269603	6	A-N	2	13901	0.72	0.07	0.12	0.09	0.72	0.00	0.39	-0.27	-0.14	-0.21	0.39	-1.1331	0.0202	-9.4	0.9	-4.1	0.9	A+	A+	A-
MATH	8	750794	6	B-E	2	13901	0.38	0.24	0.18	0.38	0.20	0.00	0.32	-0.11	-0.20	0.32	-0.09	0.5472	0.0192	6.4	1.1	7.2	1.1	A-	A-	A-
MATH	8	373426	7	B-E	2	13899	0.61	0.11	0.17	0.61	0.11	0.00	0.50	-0.26	-0.27	0.50	-0.21	-0.5788	0.0189	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	8	422112	7	B-E	2	13899	0.63	0.09	0.19	0.63	0.08	0.00	0.42	-0.24	-0.20	0.42	-0.20	-0.6744	0.0190	-9.9	0.9	-8.5	0.9	A+	A-	A+
MATH	8	255718	7	D-S	2	13899	0.28	0.19	0.25	0.28	0.28	0.00	0.31	-0.13	-0.18	-0.03	0.31	1.1155	0.0207	4.2	1.0	6.8	1.1	A-	A-	A-
MATH	8	794669	7	B-F	2	13899	0.42	0.16	0.42	0.22	0.20	0.00	0.29	-0.15	0.29	-0.08	-0.14	0.3413	0.0188	9.9	1.1	9.9	1.1	A+	A-	A-
MATH	8	771275	7	A-N	1	13899	0.27	0.27	0.12	0.46	0.13	0.00	0.09	0.09	-0.21	0.20	-0.20	1.1371	0.0208	9.9	1.3	9.9	1.4	A-	A-	A-
MATH	8	302151	7	C-G	2	13899	0.30	0.30	0.20	0.36	0.14	0.00	0.26	0.26	-0.16	-0.07	-0.06	1.0037	0.0204	9.5	1.1	9.9	1.2	A+	A-	A-
MATH	8	296121	7	B-F	2	13899	0.10	0.23	0.10	0.11	0.56	0.00	-0.06	0.02	-0.06	-0.07	0.07	2.5780	0.0302	9.9	1.3	9.9	2.4	A-	A+	A+
MATH	8	165059	7	C-G	2	13899	0.46	0.17	0.17	0.46	0.19	0.00	0.36	-0.21	-0.21	0.36	-0.06	0.1374	0.0186	2.3	1.0	0.8	1.0	A-	A-	A-
MATH	8	339699	7	B-E	2	13899	0.43	0.15	0.18	0.24	0.43	0.00	0.38	-0.22	-0.11	-0.15	0.38	0.2950	0.0188	0.5	1.0	0.0	1.0	A-	A+	A+
MATH	8	970552	7	B-E	2	13899	0.53	0.53	0.18	0.14	0.15	0.00	0.30	0.30	-0.16	-0.17	-0.07	-0.1888	0.0185	9.9	1.1	6.3	1.1	A+	A-	A+
MATH	8	376699	7	B-E	2	13899	0.25	0.20	0.29	0.25	0.26	0.00	0.20	-0.14	-0.21	0.20	0.16	1.2854	0.0214	9.9	1.1	9.9	1.3	A-	A-	A-
MATH	8	708317	7	B-E	2	13899	0.37	0.22	0.37	0.26	0.15	0.00	0.21	-0.04	0.21	-0.09	-0.12	0.6234	0.0193	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	8	920900	8	B-F	2	13868	0.13	0.08	0.13	0.07	0.71	0.00	-0.07	-0.21	-0.07	-0.24	0.32	2.2165	0.0270	9.9	1.3	9.9	2.3	A-	A+	A+
MATH	8	997079	8	C-G	1	13868	0.60	0.60	0.25	0.10	0.05	0.00	0.48	0.48	-0.37	-0.20	-0.06	-0.5155	0.0188	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	8	938980	8	B-E	2	13868	0.53	0.53	0.14	0.19	0.15	0.00	0.43	0.43	-0.18	-0.28	-0.11	-0.1516	0.0185	-9.0	0.9	-8.4	0.9	A+	A-	A+
MATH	8	663009	8	B-F	2	13868	0.38	0.10	0.38	0.26	0.26	0.00	0.33	-0.10	0.33	-0.13	-0.17	0.5536	0.0191	5.7	1.1	5.8	1.1	A-	A-	A-
MATH	8	310918	8	B-E	2	13868	0.40	0.16	0.25	0.40	0.20	0.00	0.10	0.01	-0.07	0.10	-0.05	0.4545	0.0190	9.9	1.3	9.9	1.3	A-	A-	A-
MATH	8	585580	8	B-E	2	13868	0.35	0.19	0.21	0.25	0.35	0.00	0.30	-0.17	-0.17	-0.01	0.30	0.6856	0.0194	7.8	1.1	9.3	1.1	A+	A-	A+
MATH	8	244716	8	A-N	2	13868	0.52	0.19	0.52	0.16	0.13	0.00	0.42	-0.20	0.42	-0.23	-0.14	-0.1217	0.0185	-8.0	1.0	-8.2	0.9	A+	A-	A-
MATH	8	313107	8	D-S	2	13868	0.37	0.19	0.18	0.25	0.37	0.00	0.29	-0.14	-0.16	-0.05	0.29	0.5889	0.0192	9.3	1.1	9.7	1.1	A-	A-	A-
MATH	8	181295	8	B-E	2	13868	0.20	0.16	0.31	0.33	0.20	0.00	0.13	-0.13	-0.03	0.02	0.13	1.6198	0.0230	9.9	1.2	9.9	1.5	A-	A+	A-
MATH	8	525346	8	D-S	2	13868	0.20	0.38	0.31	0.20	0.10	0.00	0.01	0.13	-0.07	0.01	-0.11	1.5905	0.0228	9.9	1.3	9.9	1.7	A-	A-	A-
MATH	8	922861	8	B-E	1	13868	0.78	0.08	0.07	0.78	0.06	0.00	0.39	-0.23	-0.19	0.39	-0.19	-1.5202	0.0218	-8.7	0.9	-9.3	0.8	A+	A-	A-
MATH	8	383694	8	C-G	2	13868	0.28	0.27	0.28	0.29	0.16	0.00	0.08	-0.04	0.08	-0.01	-0.03	1.0932	0.0206	9.9	1.3	9.9	1.4	A-	A+	A-
MATH	8	387186	9	B-E	1	13883	0.61	0.61	0.19	0.13	0.07	0.00	0.42	0.42	-0.16	-0.26	-0.21	-0.5786	0.0189	-7.6	1.0	-7.3	0.9	A-	A-	A-
MATH	8	535164	9	B-F	2	13883	0.39	0.39	0.12	0.13	0.35	0.00	0.44	0.44	-0.13	-0.18	-0.23	0.4697	0.0191	-7.2	0.9	-4.9	1.0	A-	A-	A+
MATH	8	109287	9	C-G	2	13883	0.45	0.45	0.22	0.20	0.12	0.00	0.42	0.42	-0.17	-0.17	-0.21	0.1756	0.0187	-3.6	1.0	-2.8	1.0	A+	A-	A-
MATH	8	398742	9	B-F	2	13883	0.32	0.14	0.23	0.31	0.32	0.00	0.37	-0.18	-0.17	-0.08	0.37	0.8548	0.0200	0.4	1.0	2.9	1.0	A+	A+	A+
MATH	8	404440	9	B-E	2	13883	0.29	0.27	0.25	0.29	0.18	0.00	0.02	0.11	-0.04	0.02	-0.10	1.0357	0.0206	9.9	1.4	9.9	1.6	A-	A-	A-
MATH	8	567134	9	B-E	2	13883	0.65	0.09	0.17	0.65	0.09	0.00	0.47	-0.23	-0.27	0.47	-0.20	-0.8069	0.0192	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	8	401014	9	D-S	2	13883	0.36	0.36	0.37	0.13	0.13	0.00	0.20	0.20	0.00	-0.26	-0.02	0.6252	0.0194	9.9	1.2	9.9	1.3	A-	A+	A+
MATH	8	248335	9	A-N	1	13883	0.71	0.11	0.71	0.10	0.08	0.00	0.42	-0.24	0.42	-0.22	-0.18	-1.1247	0.0201	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	8	281719	9	B-F	2	13883	0.26	0.26	0.17	0.13	0.43	0.00	0.27	0.27	-0.15	-0.19	0.01	1.2128	0.0212	7.6	1.1	9.9	1.2	A-	A-	A-
MATH	8	761709	9	C-G	2	13883	0.20	0.31	0.16	0.32	0.20	0.00	0.18	0.01	-0.10	-0.08	0.18	1.6199	0.0231	9.5	1.1	9.9	1.4	A+	A-	A+
MATH	8	294140	9	B-E	2	13883	0.46	0.08	0.46	0.17	0.28	0.00	0.41	-0.20	0.41	-0.23	-0.13	0.1392	0.0187	-3.8	1.0	-1.5	1.0	A+	A-	A-
MATH	8	622128	9	B-E	1	13883	0.31	0.21	0.24	0.31	0.24	0.00	0.26	-0.10	-0.10	0.26	-0.09	0.8902	0.0201	9.9	1.1	9.9	1.2	A+	A-	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	3	645878	0	D	1	124599	0.57	0.08	0.09	0.57	0.26	0.01	0.33	-0.23	-0.22	0.33	-0.08	0.3387	0.0063	9.9	1.1	9.9	1.1			
ELA	3	891141	0	D	3	124599	0.54	0.12	0.54	0.20	0.14	0.01	0.38	-0.18	0.38	-0.19	-0.15	0.4847	0.0062	-1.3	1.0	-1.7	1.0			
ELA	3	925069	0	D	2	124599	0.83	0.07	0.02	0.83	0.09	0.00	0.31	-0.36	-0.16	0.31	-0.02	-1.2270	0.0080	-5.7	1.0	9.9	1.2			
ELA	3	787380	0	D	2	124599	0.78	0.10	0.08	0.04	0.78	0.00	0.51	-0.29	-0.26	-0.27	0.51	-0.8759	0.0074	-9.9	0.9	-9.9	0.7			
ELA	3	810885	0	D	2	124599	0.69	0.06	0.11	0.14	0.69	0.00	0.48	-0.29	-0.24	-0.22	0.48	-0.3228	0.0067	-9.9	0.9	-9.9	0.8			
ELA	3	542693	0	D	2	124599	0.50	0.16	0.50	0.09	0.25	0.00	0.28	-0.12	0.28	-0.15	-0.12	0.6462	0.0062	9.9	1.1	9.9	1.1			
ELA	3	843421	0	D	3	124599	0.53	0.11	0.27	0.53	0.08	0.00	0.42	-0.14	-0.27	0.42	-0.17	0.5133	0.0062	-9.9	1.0	-9.9	1.0			
ELA	3	820903	0	D	2	124599	0.38	0.22	0.18	0.22	0.38	0.01	0.17	-0.06	-0.07	-0.07	0.17	1.2765	0.0064	9.9	1.2	9.9	1.3			
ELA	3	345670	0	D	2	124599	0.40	0.40	0.25	0.20	0.15	0.01	0.13	0.13	0.01	-0.01	-0.18	1.1799	0.0064	9.9	1.2	9.9	1.4			
ELA	3	565057	0	D	2	124599	0.82	0.09	0.82	0.03	0.05	0.01	0.39	-0.28	0.39	-0.20	-0.15	-1.1554	0.0079	-9.9	0.9	-9.9	0.9			
ELA	3	680304	0	D	2	124599	0.59	0.09	0.13	0.19	0.59	0.00	0.38	-0.21	-0.22	-0.12	0.38	0.2188	0.0063	1.9	1.0	0.0	1.0			
ELA	3	204957	0	D	2	124599	0.41	0.17	0.19	0.41	0.22	0.01	0.31	-0.18	-0.17	0.31	-0.04	1.1151	0.0063	9.9	1.1	9.9	1.1			
ELA	3	261343	0	D	2	124599	0.44	0.20	0.22	0.44	0.13	0.01	0.34	-0.21	-0.05	0.34	-0.18	0.8433	0.0062	8.7	1.0	9.9	1.1			
ELA	3	401954	0	D	3	124599	0.56	0.56	0.07	0.27	0.10	0.00	0.26	0.26	-0.21	-0.10	-0.10	0.5399	0.0062	9.9	1.1	9.9	1.2			
ELA	3	878728	0	D	3	124599	0.26	0.20	0.26	0.24	0.29	0.01	0.08	-0.02	0.08	-0.07	0.02	1.8976	0.0070	9.9	1.2	9.9	1.6			
ELA	3	774185	0	D	2	124599	0.75	0.75	0.08	0.06	0.10	0.01	0.38	0.38	-0.26	-0.16	-0.16	-0.6872	0.0071	-2.1	1.0	-7.5	1.0			
ELA	3	131560	0	B-K	2	124599	0.75	0.07	0.75	0.10	0.08	0.01	0.46	-0.31	0.46	-0.20	-0.22	-0.7178	0.0072	-9.9	0.9	-9.9	0.9			
ELA	3	613401	0	B-K	3	124599	0.87	0.04	0.87	0.03	0.05	0.01	0.48	-0.27	0.48	-0.25	-0.29	-1.5150	0.0087	-9.9	0.8	-9.9	0.6			
ELA	3	785412	0	B-C	2	124599	0.43	0.14	0.32	0.43	0.11	0.01	0.25	-0.20	0.05	0.25	-0.23	1.0473	0.0063	9.9	1.1	9.9	1.2			
ELA	3	781702	0	B-V	2	124599	0.90	0.04	0.02	0.90	0.03	0.01	0.46	-0.28	-0.22	0.46	-0.27	-2.0420	0.0103	-8.5	0.9	-9.9	0.6			
ELA	3	379412	0	B-V	2	124599	0.85	0.85	0.03	0.05	0.05	0.01	0.49	0.49	-0.25	-0.29	-0.28	-1.3224	0.0082	-9.9	0.8	-9.9	0.6			
ELA	3	698032	0	B-C	2	124599	0.33	0.48	0.12	0.07	0.33	0.00	0.29	0.00	-0.26	-0.20	0.29	1.4787	0.0066	3.2	1.0	9.9	1.2			
ELA	3	861138	0	D	2	124599	0.73	0.73	0.09	0.09	0.08	0.01	0.37	0.37	-0.18	-0.20	-0.19	-0.5433	0.0069	-4.2	1.0	-8.2	1.0			
ELA	3	655530	0	D	2	124599	0.58	0.10	0.58	0.20	0.10	0.01	0.42	-0.18	0.42	-0.23	-0.19	0.2747	0.0063	-9.9	1.0	-9.9	0.9			
ELA	3	527956	0	A-K	3	124599	0.45	0.14	0.45	0.24	0.16	0.01	0.25	-0.19	0.25	-0.12	-0.01	0.8747	0.0063	9.9	1.1	9.9	1.2			
ELA	3	227683	0	A-V	2	124599	0.80	0.80	0.06	0.04	0.10	0.00	0.35	0.35	-0.25	-0.21	-0.13	-1.0203	0.0076	-0.5	1.0	2.7	1.0			
ELA	3	716424	0	A-V	2	124599	0.73	0.10	0.13	0.04	0.73	0.01	0.42	-0.27	-0.15	-0.27	0.42	-0.5013	0.0069	-9.9	0.9	-9.9	0.9			
ELA	3	196615	0	A-C	2	124599	0.41	0.15	0.24	0.20	0.41	0.01	0.30	-0.20	-0.07	-0.11	0.30	1.1231	0.0063	9.9	1.1	9.9	1.1			
ELA	3	660483	0	A-K	2	124599	0.46	0.09	0.14	0.46	0.31	0.00	0.40	-0.18	-0.23	0.40	-0.15	0.8178	0.0062	-9.9	1.0	-6.4	1.0			
ELA	3	585909	0	A-C	2	124599	0.54	0.09	0.08	0.29	0.54	0.00	0.50	-0.20	-0.15	-0.33	0.50	0.4542	0.0063	-9.9	0.9	-9.9	0.9			
ELA	3	280647	0	A-K	2	124599	0.68	0.11	0.08	0.13	0.68	0.00	0.44	-0.15	-0.20	-0.31	0.44	-0.4225	0.0068	-7.9	1.0	-4.2	1.0			
ELA	3	552568	0	A-V	2	124599	0.80	0.07	0.80	0.04	0.09	0.01	0.47	-0.26	0.47	-0.23	-0.26	-0.9882	0.0076	-9.9	0.9	-9.9	0.8			
ELA	3	415628	0	A-V	2	124599	0.83	0.83	0.04	0.07	0.05	0.01	0.50	0.50	-0.29	-0.27	-0.26	-1.1993	0.0080	-9.9	0.8	-9.9	0.6			
ELA	3	944330	0	A-V	2	124599	0.74	0.10	0.74	0.11	0.05	0.01	0.47	-0.22	0.47	-0.22	-0.32	-0.6930	0.0071	-9.9	0.9	-9.9	0.9			
ELA	3	261352	0	B-C	2	124599	0.57	0.14	0.18	0.57	0.11	0.00	0.45	-0.23	-0.19	0.45	-0.22	0.3198	0.0063	-9.9	0.9	-9.9	0.9			
ELA	3	370115	0	B-V	2	124599	0.71	0.71	0.14	0.07	0.07	0.00	0.45	0.45	-0.19	-0.28	-0.23	-0.4076	0.0068	-9.9	0.9	-9.9	0.9			
ELA	3	631918	0	B-V	2	124599	0.70	0.14	0.10	0.05	0.70	0.01	0.51	-0.24	-0.29	-0.28	0.51	-0.3792	0.0067	-9.9	0.9	-9.9	0.8			
ELA	3	344533	0	B-K	2	124599	0.52	0.20	0.12	0.16	0.52	0.00	0.35	-0.15	-0.16	-0.17	0.35	0.5760	0.0062	9.9	1.0	9.9	1.1			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	3	814740	0	D	2	124599	0.71	0.07	0.11	0.71	0.10	0.00	0.45	-0.25	-0.24	0.45	-0.21	-0.4315	0.0068	-9.9	0.9	-9.9	0.9	A+	A-	A-
ELA	3	613757	0	D	2	124599	0.65	0.16	0.65	0.12	0.07	0.01	0.37	-0.21	0.37	-0.14	-0.20	-0.0894	0.0065	3.2	1.0	1.2	1.0	A-	A-	A-
ELA	3	923865	1	B-V	2	13972	0.52	0.52	0.31	0.12	0.05	0.00	0.20	0.20	0.01	-0.17	-0.20	0.5341	0.0186	9.9	1.2	9.9	1.2	A+	A+	A+
ELA	3	493075	1	B-K	2	13972	0.31	0.31	0.28	0.28	0.12	0.00	0.18	0.18	-0.08	-0.04	-0.08	1.5681	0.0199	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	3	629521	1	B-K	2	13972	0.33	0.42	0.14	0.33	0.10	0.01	0.30	-0.06	-0.14	0.30	-0.19	1.4754	0.0196	3.0	1.0	9.9	1.1	A-	A-	A-
ELA	3	109732	1	B-V	2	13972	0.46	0.46	0.17	0.28	0.07	0.00	0.40	0.40	-0.25	-0.08	-0.25	0.7863	0.0186	-4.7	1.0	-2.6	1.0	A+	A-	A+
ELA	3	822711	1	B-C	3	13972	0.37	0.27	0.37	0.27	0.09	0.00	0.36	-0.11	0.36	-0.13	-0.22	1.2670	0.0192	-3.4	1.0	5.3	1.1	A-	A-	A-
ELA	3	868600	1	B-V	2	13972	0.31	0.48	0.07	0.13	0.31	0.01	0.21	0.04	-0.28	-0.13	0.21	1.6039	0.0200	9.9	1.1	9.9	1.3	A-	A-	A-
ELA	3	877723	1	B-C	3	13972	0.58	0.22	0.58	0.09	0.10	0.01	0.44	-0.17	0.44	-0.25	-0.24	0.2360	0.0188	-8.1	0.9	-8.5	0.9	A+	A-	A-
ELA	3	317673	1	B-K	3	13972	0.42	0.29	0.13	0.16	0.42	0.00	0.29	0.02	-0.26	-0.16	0.29	1.0011	0.0188	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	3	962770	2	B-V	2	13839	0.55	0.27	0.12	0.55	0.06	0.01	0.30	-0.04	-0.19	0.30	-0.27	0.3969	0.0187	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	3	839431	2	B-K	2	13839	0.49	0.18	0.49	0.20	0.12	0.00	0.33	-0.06	0.33	-0.21	-0.18	0.6868	0.0187	5.4	1.0	6.3	1.1	A+	A-	A-
ELA	3	430828	2	B-V	2	13839	0.33	0.33	0.32	0.13	0.22	0.00	0.13	0.13	-0.02	-0.11	-0.04	1.4508	0.0196	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	3	864641	2	B-V	2	13839	0.73	0.73	0.12	0.03	0.11	0.01	0.48	0.48	-0.26	-0.22	-0.28	-0.5377	0.0207	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	3	864527	2	B-K	3	13839	0.45	0.09	0.35	0.11	0.45	0.01	0.36	-0.28	-0.07	-0.20	0.36	0.8865	0.0187	0.2	1.0	2.7	1.0	A-	A-	A-
ELA	3	364630	2	B-K	2	13839	0.26	0.29	0.36	0.08	0.26	0.00	0.22	-0.10	0.03	-0.22	0.22	1.8660	0.0208	7.8	1.1	9.9	1.3	A-	A-	A+
ELA	3	555500	2	B-C	2	13839	0.44	0.09	0.05	0.44	0.41	0.01	0.28	-0.25	-0.19	0.28	-0.05	0.9128	0.0187	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	3	227262	2	B-C	2	13839	0.46	0.15	0.22	0.15	0.46	0.01	0.40	-0.14	-0.29	-0.06	0.40	0.8266	0.0187	-5.8	1.0	-2.7	1.0	A-	A-	A-
ELA	3	659666	3	B-C	2	13841	0.30	0.14	0.11	0.30	0.44	0.01	0.13	-0.04	-0.16	0.13	0.02	1.6588	0.0202	9.9	1.2	9.9	1.5	A-	A-	A-
ELA	3	710241	3	B-V	2	13841	0.46	0.17	0.15	0.22	0.46	0.00	0.41	-0.23	-0.15	-0.15	0.41	0.8370	0.0187	-7.4	1.0	-2.7	1.0	A-	A-	A-
ELA	3	287886	3	B-V	2	13841	0.72	0.12	0.07	0.72	0.08	0.00	0.49	-0.26	-0.23	0.49	-0.26	-0.4779	0.0205	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	3	457483	3	B-K	2	13841	0.53	0.53	0.09	0.25	0.12	0.01	0.20	0.20	-0.29	0.07	-0.13	0.4669	0.0187	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	3	678373	3	B-C	2	13841	0.75	0.09	0.75	0.07	0.08	0.01	0.41	-0.21	0.41	-0.26	-0.18	-0.7063	0.0214	-6.1	0.9	-3.7	0.9	A-	A-	A-
ELA	3	365056	3	B-C	3	13841	0.56	0.56	0.11	0.07	0.25	0.01	0.30	0.30	-0.17	-0.26	-0.06	0.3182	0.0188	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	3	998454	3	B-K	2	13841	0.22	0.29	0.11	0.35	0.22	0.03	0.11	-0.13	-0.19	0.16	0.11	2.1178	0.0220	9.9	1.2	9.9	1.6	A+	A-	A+
ELA	3	321839	3	B-C	2	13841	0.53	0.53	0.26	0.10	0.10	0.00	0.42	0.42	-0.21	-0.18	-0.20	0.4690	0.0187	-7.7	1.0	-6.4	0.9	A-	A-	A-
ELA	3	285697	4	B-V	2	13870	0.70	0.09	0.11	0.09	0.70	0.00	0.50	-0.25	-0.23	-0.29	0.50	-0.3767	0.0203	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	3	948389	4	B-V	1	13870	0.74	0.74	0.09	0.08	0.08	0.00	0.53	0.53	-0.26	-0.34	-0.22	-0.6243	0.0211	-9.9	0.8	-9.9	0.7	A-	A-	A-
ELA	3	479299	4	B-V	2	13870	0.69	0.15	0.69	0.08	0.07	0.01	0.52	-0.29	0.52	-0.26	-0.24	-0.3024	0.0200	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	3	225789	4	B-K	3	13870	0.45	0.27	0.15	0.45	0.13	0.01	0.26	-0.07	-0.15	0.26	-0.12	0.9176	0.0188	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	3	850548	4	B-C	2	13870	0.76	0.76	0.12	0.05	0.06	0.01	0.38	0.38	-0.19	-0.24	-0.18	-0.7600	0.0217	-3.0	1.0	-1.4	1.0	A+	A-	A-
ELA	3	903368	4	B-C	3	13870	0.40	0.24	0.40	0.16	0.20	0.01	0.27	-0.18	0.27	-0.09	-0.05	1.1707	0.0191	9.2	1.1	9.9	1.2	A-	A-	A+
ELA	3	250086	4	B-C	3	13870	0.51	0.26	0.15	0.51	0.08	0.00	0.39	-0.15	-0.21	0.39	-0.18	0.5906	0.0187	-1.5	1.0	-0.8	1.0	A+	A-	A-
ELA	3	873665	4	B-C	3	13870	0.58	0.13	0.10	0.19	0.58	0.00	0.46	-0.29	-0.27	-0.13	0.46	0.2728	0.0189	-9.9	0.9	-9.9	0.9	A+	A-	A+
ELA	3	419516	5	B-C	3	13855	0.51	0.16	0.51	0.18	0.14	0.01	0.36	-0.17	0.36	-0.14	-0.17	0.5958	0.0187	1.0	1.0	1.9	1.0	A-	A-	A-
ELA	3	205546	5	B-V	2	13855	0.45	0.12	0.45	0.34	0.09	0.01	0.28	-0.12	0.28	-0.06	-0.24	0.9013	0.0188	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	3	524317	5	B-K	2	13855	0.31	0.49	0.09	0.11	0.31	0.01	0.26	0.06	-0.30	-0.19	0.26	1.5802	0.0199	7.0	1.1	9.9	1.2	A+	A-	A-
ELA	3	747113	5	B-V	2	13855	0.80	0.80	0.06	0.06	0.08	0.01	0.46	0.46	-0.21	-0.31	-0.21	-0.9891	0.0227	-9.9	0.9	-9.9	0.8	C-	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	3	295894	5	B-V	2	13855	0.41	0.31	0.20	0.07	0.41	0.01	0.33	-0.08	-0.19	-0.17	0.33	1.0709	0.0189	3.7	1.0	7.1	1.1	A-	A-	A-
ELA	3	852294	5	B-K	3	13855	0.54	0.24	0.54	0.14	0.08	0.00	0.37	-0.27	0.37	-0.08	-0.14	0.4603	0.0187	-0.7	1.0	-0.7	1.0	A-	A-	A-
ELA	3	928166	5	B-C	2	13855	0.35	0.17	0.28	0.35	0.19	0.01	0.22	-0.28	0.08	0.22	-0.09	1.3768	0.0194	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	3	296857	5	B-C	3	13855	0.47	0.22	0.47	0.12	0.18	0.00	0.38	-0.19	0.38	-0.26	-0.07	0.7722	0.0187	-3.1	1.0	-0.1	1.0	A-	A-	A-
ELA	3	368987	6	A-V	2	13770	0.63	0.14	0.08	0.63	0.14	0.01	0.49	-0.25	-0.26	0.49	-0.22	0.0197	0.0194	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	3	259682	6	A-V	1	13770	0.88	0.88	0.05	0.03	0.03	0.01	0.26	0.26	-0.06	-0.20	-0.19	-1.7046	0.0279	-0.5	1.0	4.7	1.2	A+	A-	A-
ELA	3	588763	6	A-K	2	13770	0.65	0.09	0.65	0.12	0.14	0.01	0.45	-0.23	0.45	-0.26	-0.18	-0.0657	0.0195	-9.9	0.9	-8.4	0.9	A+	A+	A-
ELA	3	815772	6	A-K	2	13770	0.73	0.73	0.10	0.09	0.07	0.01	0.45	0.45	-0.21	-0.28	-0.22	-0.5182	0.0208	-9.6	0.9	-9.3	0.9	A+	A+	A+
ELA	3	575384	6	A-K	3	13770	0.50	0.20	0.17	0.11	0.50	0.01	0.29	-0.08	-0.14	-0.17	0.29	0.6345	0.0188	9.9	1.1	9.9	1.1	A+	A-	A+
ELA	3	242721	6	A-K	2	13770	0.57	0.14	0.57	0.14	0.14	0.00	0.30	-0.27	0.30	-0.13	-0.02	0.3006	0.0190	9.9	1.1	9.9	1.1	A+	A+	A+
ELA	3	499529	6	A-K	2	13770	0.33	0.29	0.16	0.33	0.20	0.02	0.28	-0.06	-0.25	0.28	-0.01	1.5086	0.0198	5.5	1.1	9.9	1.2	A+	A-	A-
ELA	3	780408	6	A-V	2	13770	0.66	0.12	0.66	0.10	0.11	0.01	0.44	-0.27	0.44	-0.17	-0.21	-0.1648	0.0198	-8.0	0.9	-8.3	0.9	A+	A-	A-
ELA	3	701837	7	A-K	2	13753	0.62	0.15	0.13	0.09	0.62	0.01	0.55	-0.25	-0.25	-0.32	0.55	0.0544	0.0195	-9.9	0.8	-9.9	0.8	A+	A-	A-
ELA	3	141823	7	A-C	3	13753	0.59	0.59	0.24	0.10	0.07	0.00	0.46	0.46	-0.20	-0.29	-0.21	0.2318	0.0192	-8.6	0.9	-9.1	0.9	A-	A-	A-
ELA	3	953362	7	A-V	2	13753	0.55	0.13	0.24	0.07	0.55	0.01	0.37	-0.19	-0.06	-0.34	0.37	0.4055	0.0190	3.7	1.0	2.4	1.0	A-	A-	A-
ELA	3	885604	7	A-V	2	13753	0.61	0.61	0.09	0.18	0.11	0.00	0.41	0.41	-0.26	-0.17	-0.19	0.1065	0.0194	-3.0	1.0	-1.7	1.0	A-	A-	A-
ELA	3	842737	7	A-K	2	13753	0.64	0.19	0.64	0.10	0.07	0.00	0.30	-0.16	0.30	-0.16	-0.12	-0.0381	0.0196	9.9	1.1	9.9	1.2	A+	A-	A-
ELA	3	557530	7	A-V	2	13753	0.82	0.06	0.04	0.82	0.08	0.00	0.49	-0.29	-0.29	0.49	-0.22	-1.1364	0.0238	-9.9	0.9	-9.9	0.7	A+	A-	A-
ELA	3	996389	7	A-V	1	13753	0.80	0.10	0.05	0.80	0.05	0.01	0.51	-0.33	-0.26	0.51	-0.22	-0.9930	0.0230	-9.9	0.8	-9.9	0.7	A-	A-	A-
ELA	3	671900	7	A-K	2	13753	0.65	0.08	0.65	0.18	0.08	0.01	0.39	-0.27	0.39	-0.13	-0.21	-0.0919	0.0198	-0.8	1.0	1.3	1.0	A-	A+	A-
ELA	3	245489	8	A-K	2	13864	0.26	0.33	0.26	0.12	0.29	0.01	0.01	0.04	0.01	-0.14	0.06	1.9022	0.0209	9.9	1.3	9.9	1.8	A-	A-	A+
ELA	3	716959	8	A-K	3	13864	0.81	0.08	0.05	0.81	0.06	0.00	0.52	-0.31	-0.30	0.52	-0.23	-1.0985	0.0233	-9.9	0.8	-9.9	0.7	A+	A-	A-
ELA	3	368858	8	A-K	2	13864	0.53	0.53	0.24	0.08	0.15	0.00	0.43	0.43	-0.20	-0.18	-0.21	0.5129	0.0187	-8.3	0.9	-7.7	0.9	A-	A-	A-
ELA	3	215202	8	A-K	2	13864	0.67	0.06	0.14	0.12	0.67	0.01	0.54	-0.31	-0.29	-0.24	0.54	-0.2064	0.0197	-9.9	0.8	-9.9	0.8	A-	A-	A-
ELA	3	568574	8	A-C	3	13864	0.35	0.32	0.12	0.35	0.20	0.01	0.23	-0.09	-0.10	0.23	-0.08	1.3846	0.0194	9.9	1.1	9.9	1.2	A+	A-	A+
ELA	3	948543	8	A-V	2	13864	0.60	0.60	0.06	0.04	0.29	0.01	0.38	0.38	-0.24	-0.26	-0.15	0.1689	0.0190	0.3	1.0	-0.5	1.0	A-	A-	A-
ELA	3	522425	8	A-V	2	13864	0.60	0.14	0.60	0.14	0.11	0.01	0.43	-0.20	0.43	-0.18	-0.23	0.1334	0.0191	-6.5	1.0	-6.6	0.9	A-	A-	A-
ELA	3	395294	8	A-V	2	13864	0.74	0.05	0.02	0.18	0.74	0.00	0.45	-0.33	-0.25	-0.23	0.45	-0.6128	0.0210	-9.8	0.9	-9.4	0.9	A+	A-	A-
ELA	3	495866	9	A-V	2	13835	0.37	0.16	0.27	0.20	0.37	0.00	0.27	-0.11	-0.07	-0.14	0.27	1.2884	0.0192	7.0	1.1	9.9	1.2	A+	A-	A-
ELA	3	548637	9	A-V	2	13835	0.45	0.45	0.23	0.04	0.27	0.00	0.21	0.21	-0.05	-0.24	-0.06	0.8743	0.0187	9.9	1.2	9.9	1.2	A-	A+	A-
ELA	3	385497	9	A-V	2	13835	0.34	0.34	0.15	0.10	0.40	0.00	0.00	0.00	-0.15	-0.21	0.24	1.4558	0.0195	9.9	1.4	9.9	1.5	A+	A-	A-
ELA	3	974825	9	A-V	2	13835	0.49	0.17	0.21	0.49	0.13	0.00	0.37	-0.30	-0.06	0.37	-0.14	0.6990	0.0186	-0.5	1.0	2.5	1.0	A-	A-	A+
ELA	3	616254	9	A-K	2	13835	0.79	0.10	0.79	0.05	0.06	0.01	0.53	-0.29	0.53	-0.22	-0.34	-0.8846	0.0222	-9.9	0.8	-9.9	0.7	A+	A-	A-
ELA	3	709331	9	A-K	2	13835	0.68	0.07	0.19	0.06	0.68	0.00	0.41	-0.25	-0.17	-0.24	0.41	-0.2625	0.0199	-5.1	1.0	-5.6	0.9	A-	A-	A-
ELA	3	786775	9	A-K	2	13835	0.62	0.08	0.62	0.21	0.08	0.01	0.34	-0.20	0.34	-0.10	-0.25	0.0595	0.0192	2.8	1.0	3.9	1.0	A-	A-	A-
ELA	3	143532	9	A-K	3	13835	0.49	0.16	0.16	0.18	0.49	0.00	0.38	-0.30	-0.11	-0.10	0.38	0.6900	0.0186	-2.7	1.0	-2.1	1.0	A-	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	4	286599	0	D	2	123316	0.44	0.18	0.24	0.14	0.44	0.00	0.35	-0.13	-0.15	-0.17	0.35	1.0155	0.0064	9.9	1.1	9.9	1.1			
ELA	4	813438	0	A-K	2	123316	0.69	0.09	0.69	0.08	0.13	0.00	0.54	-0.29	0.54	-0.26	-0.28	-0.3576	0.0068	-9.9	0.9	-9.9	0.8			
ELA	4	379706	0	A-K	3	123316	0.37	0.37	0.22	0.27	0.14	0.00	0.13	0.13	-0.05	-0.03	-0.08	1.2316	0.0065	9.9	1.3	9.9	1.5			
ELA	4	874151	0	A-C	3	123316	0.47	0.20	0.13	0.19	0.47	0.00	0.42	-0.13	-0.23	-0.19	0.42	0.7592	0.0064	-7.3	1.0	4.7	1.0			
ELA	4	307743	0	A-K	2	123316	0.60	0.17	0.08	0.14	0.60	0.01	0.50	-0.25	-0.24	-0.22	0.50	0.1573	0.0065	-9.9	0.9	-9.9	0.9			
ELA	4	117423	0	D	2	123316	0.72	0.72	0.14	0.07	0.07	0.00	0.35	0.35	-0.09	-0.25	-0.24	-0.5499	0.0070	9.9	1.0	9.9	1.1			
ELA	4	289970	0	D	2	123316	0.58	0.21	0.07	0.58	0.13	0.00	0.40	-0.14	-0.22	0.40	-0.23	0.2682	0.0064	6.3	1.0	9.9	1.0			
ELA	4	283280	0	D	2	123316	0.53	0.07	0.30	0.09	0.53	0.00	0.37	-0.21	-0.11	-0.26	0.37	0.5421	0.0064	9.9	1.1	9.9	1.1			
ELA	4	183806	0	A-C	3	123316	0.65	0.20	0.65	0.07	0.09	0.00	0.53	-0.26	0.53	-0.28	-0.29	-0.1276	0.0066	-9.9	0.9	-9.9	0.8			
ELA	4	383940	0	A-K	2	123316	0.65	0.06	0.65	0.10	0.18	0.00	0.40	-0.28	0.40	-0.23	-0.14	-0.1585	0.0066	1.5	1.0	6.8	1.0			
ELA	4	472050	0	A-V	2	123316	0.75	0.75	0.08	0.11	0.06	0.00	0.36	0.36	-0.21	-0.13	-0.24	-0.7535	0.0072	4.4	1.0	9.9	1.1			
ELA	4	473639	0	A-V	1	123316	0.71	0.13	0.71	0.04	0.12	0.00	0.47	-0.28	0.47	-0.22	-0.24	-0.4391	0.0069	-9.9	0.9	-9.9	0.9			
ELA	4	316181	0	A-K	2	123316	0.75	0.75	0.08	0.13	0.04	0.00	0.39	0.39	-0.18	-0.22	-0.24	-0.7673	0.0073	-2.0	1.0	0.2	1.0			
ELA	4	892626	0	A-K	2	123316	0.86	0.02	0.06	0.86	0.05	0.00	0.46	-0.22	-0.25	0.46	-0.28	-1.5619	0.0088	-9.9	0.8	-9.9	0.6			
ELA	4	354419	0	A-K	2	123316	0.49	0.09	0.14	0.27	0.49	0.00	0.30	-0.17	-0.15	-0.10	0.30	0.5509	0.0064	9.9	1.1	9.9	1.2			
ELA	4	241178	0	A-K	2	123316	0.61	0.11	0.16	0.12	0.61	0.00	0.27	-0.19	-0.12	-0.09	0.27	0.1230	0.0065	9.9	1.2	9.9	1.3			
ELA	4	156065	0	D	2	123316	0.85	0.05	0.85	0.02	0.08	0.00	0.34	-0.22	0.34	-0.13	-0.21	-1.3990	0.0084	-5.6	1.0	-9.9	0.9			
ELA	4	349420	0	D	2	123316	0.36	0.36	0.26	0.14	0.24	0.00	0.17	0.17	-0.05	-0.10	-0.05	1.3170	0.0066	9.9	1.2	9.9	1.4			
ELA	4	813695	0	B-C	3	123316	0.64	0.21	0.64	0.08	0.07	0.00	0.43	-0.15	0.43	-0.27	-0.28	0.0315	0.0065	-9.9	1.0	-1.4	1.0			
ELA	4	200256	0	B-K	2	123316	0.53	0.27	0.07	0.13	0.53	0.00	0.37	-0.15	-0.27	-0.14	0.37	0.4248	0.0064	9.9	1.1	9.9	1.1			
ELA	4	237754	0	B-K	3	123316	0.56	0.25	0.08	0.10	0.56	0.00	0.50	-0.23	-0.25	-0.24	0.50	0.3265	0.0064	-9.9	0.9	-9.9	0.9			
ELA	4	610911	0	B-K	2	123316	0.61	0.61	0.08	0.22	0.09	0.00	0.41	0.41	-0.27	-0.08	-0.31	0.1460	0.0065	-0.5	1.0	1.1	1.0			
ELA	4	203186	0	B-C	2	123316	0.54	0.22	0.11	0.54	0.12	0.00	0.40	-0.06	-0.27	0.40	-0.26	0.3996	0.0064	9.4	1.0	9.9	1.0			
ELA	4	634822	0	D	2	123316	0.69	0.15	0.69	0.08	0.08	0.00	0.38	-0.19	0.38	-0.22	-0.17	-0.3400	0.0068	2.7	1.0	0.7	1.0			
ELA	4	980090	0	D	2	123316	0.48	0.21	0.17	0.48	0.14	0.00	0.26	-0.06	-0.12	0.26	-0.17	0.7756	0.0064	9.9	1.2	9.9	1.3			
ELA	4	693865	0	B-V	2	123316	0.72	0.03	0.18	0.72	0.07	0.00	0.49	-0.24	-0.32	0.49	-0.20	-0.4189	0.0069	-9.9	0.9	-9.9	0.8			
ELA	4	837651	0	D	3	123316	0.68	0.68	0.12	0.09	0.10	0.00	0.32	0.32	-0.16	-0.18	-0.14	-0.2234	0.0067	9.9	1.1	9.9	1.1			
ELA	4	340159	0	D	3	123316	0.59	0.08	0.59	0.07	0.26	0.00	0.38	-0.24	0.38	-0.23	-0.14	0.0732	0.0065	9.9	1.1	9.9	1.1			
ELA	4	341383	0	D	2	123316	0.73	0.07	0.12	0.73	0.08	0.00	0.46	-0.24	-0.25	0.46	-0.22	-0.6000	0.0071	-9.9	0.9	-9.9	0.9			
ELA	4	213653	0	D	3	123316	0.45	0.45	0.09	0.33	0.13	0.00	0.27	0.27	-0.14	-0.09	-0.16	0.8004	0.0064	9.9	1.1	9.9	1.2			
ELA	4	561868	0	D	2	123316	0.71	0.07	0.15	0.06	0.71	0.00	0.42	-0.27	-0.19	-0.21	0.42	-0.4834	0.0069	-7.6	1.0	-8.9	1.0			
ELA	4	932786	0	D	2	123316	0.60	0.07	0.15	0.60	0.17	0.00	0.35	-0.24	-0.18	0.35	-0.12	0.1078	0.0065	9.9	1.1	9.9	1.1			
ELA	4	683749	0	D	2	123316	0.71	0.17	0.06	0.71	0.06	0.00	0.41	-0.21	-0.21	0.41	-0.24	-0.4714	0.0069	-4.2	1.0	-9.9	0.9			
ELA	4	838137	0	D	3	123316	0.58	0.24	0.06	0.12	0.58	0.00	0.32	-0.10	-0.21	-0.19	0.32	0.2407	0.0064	9.9	1.1	9.9	1.2			
ELA	4	373566	0	D	3	123316	0.48	0.12	0.48	0.07	0.33	0.00	0.29	-0.23	0.29	-0.25	-0.01	0.7177	0.0064	9.9	1.1	9.9	1.2			
ELA	4	273085	0	D	3	123316	0.74	0.74	0.14	0.06	0.06	0.00	0.34	0.34	-0.24	-0.17	-0.10	-0.6020	0.0071	7.7	1.0	9.9	1.1			
ELA	4	139647	0	B-C	3	123316	0.75	0.08	0.05	0.75	0.11	0.01	0.49	-0.27	-0.24	0.49	-0.26	-0.8062	0.0073	-9.9	0.9	-9.9	0.8			
ELA	4	328815	0	B-V	2	123316	0.68	0.22	0.06	0.68	0.04	0.00	0.51	-0.34	-0.20	0.51	-0.24	-0.2598	0.0067	-9.9	0.9	-9.9	0.8			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	4	245955	0	B-C	2	123316	0.46	0.14	0.46	0.29	0.10	0.00	0.26	-0.25	0.26	0.03	-0.18	0.7731	0.0064	9.9	1.2	9.9	1.3			
ELA	4	305988	0	B-K	3	123316	0.75	0.06	0.11	0.09	0.75	0.00	0.41	-0.27	-0.15	-0.24	0.41	-0.6820	0.0072	-9.9	0.9	-3.0	1.0			
ELA	4	331839	0	B-C	3	123316	0.58	0.14	0.16	0.12	0.58	0.00	0.44	-0.21	-0.19	-0.22	0.44	0.2199	0.0064	-8.7	1.0	-9.1	1.0			
ELA	4	640354	0	D	2	123316	0.66	0.66	0.08	0.09	0.17	0.00	0.39	0.39	-0.22	-0.20	-0.18	-0.1858	0.0067	6.0	1.0	3.5	1.0	A+	A-	A-
ELA	4	957534	0	D	2	123316	0.43	0.36	0.09	0.43	0.12	0.00	0.23	-0.06	-0.14	0.23	-0.15	0.9588	0.0064	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	4	169479	1	A-V	2	13873	0.74	0.09	0.07	0.10	0.74	0.00	0.47	-0.20	-0.23	-0.30	0.47	-0.6922	0.0212	-9.7	0.9	-6.4	0.9	A-	B-	B-
ELA	4	159401	1	A-V	2	13873	0.35	0.41	0.12	0.11	0.35	0.00	0.13	0.16	-0.26	-0.17	0.13	1.3375	0.0196	9.9	1.3	9.9	1.5	A+	A-	A+
ELA	4	455267	1	A-V	2	13873	0.61	0.15	0.07	0.61	0.17	0.00	0.40	-0.26	-0.25	0.40	-0.09	0.0643	0.0193	2.5	1.0	4.4	1.1	A-	A-	B-
ELA	4	638837	1	A-V	2	13873	0.47	0.47	0.26	0.17	0.09	0.00	0.23	0.23	-0.04	-0.07	-0.23	0.7252	0.0190	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	4	793812	1	A-K	2	13873	0.65	0.14	0.65	0.05	0.16	0.00	0.36	-0.22	0.36	-0.24	-0.11	-0.1634	0.0197	5.9	1.1	7.8	1.1	A+	A-	A-
ELA	4	842943	1	A-K	2	13873	0.36	0.26	0.17	0.20	0.36	0.01	0.22	-0.11	-0.14	-0.01	0.22	1.3341	0.0196	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	4	619860	1	A-C	3	13873	0.60	0.21	0.05	0.14	0.60	0.00	0.49	-0.20	-0.24	-0.30	0.49	0.1008	0.0193	-9.9	0.9	-8.8	0.9	A+	A-	A-
ELA	4	555450	1	A-V	2	13873	0.37	0.08	0.45	0.37	0.09	0.00	0.19	-0.21	0.08	0.19	-0.25	1.2320	0.0195	9.9	1.2	9.9	1.4	A-	A+	A-
ELA	4	996313	2	A-K	2	13694	0.63	0.63	0.09	0.13	0.15	0.00	0.28	0.28	-0.24	-0.12	-0.06	-0.0304	0.0197	9.9	1.2	9.9	1.2	A-	A+	A-
ELA	4	243882	2	A-K	1	13694	0.56	0.15	0.10	0.56	0.19	0.00	0.34	-0.15	-0.23	0.34	-0.11	0.3379	0.0192	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	4	231676	2	A-K	2	13694	0.44	0.34	0.10	0.13	0.44	0.00	0.34	-0.08	-0.20	-0.20	0.34	0.9387	0.0192	9.0	1.1	9.9	1.2	A+	A+	A-
ELA	4	569121	2	A-K	2	13694	0.53	0.12	0.21	0.13	0.53	0.00	0.41	-0.24	-0.08	-0.27	0.41	0.4711	0.0191	1.1	1.0	2.2	1.0	A-	A-	A-
ELA	4	593644	2	A-K	3	13694	0.40	0.27	0.11	0.40	0.20	0.01	0.29	-0.15	-0.22	0.29	0.00	1.1168	0.0194	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	4	433064	2	A-V	2	13694	0.46	0.46	0.09	0.16	0.29	0.00	0.34	0.34	-0.30	-0.10	-0.10	0.8413	0.0192	9.1	1.1	9.9	1.1	A+	A-	A-
ELA	4	157232	2	A-V	2	13694	0.56	0.14	0.56	0.10	0.20	0.00	0.51	-0.26	0.51	-0.27	-0.20	0.3428	0.0192	-9.9	0.9	-9.9	0.9	A-	B-	A-
ELA	4	454008	2	A-V	2	13694	0.73	0.12	0.73	0.09	0.06	0.00	0.55	-0.32	0.55	-0.26	-0.27	-0.5793	0.0211	-9.9	0.8	-9.9	0.7	A+	A-	A-
ELA	4	442065	3	A-V	2	13664	0.48	0.32	0.48	0.07	0.12	0.00	0.34	-0.10	0.34	-0.22	-0.20	0.7222	0.0191	9.2	1.1	9.9	1.1	B+	A+	A-
ELA	4	961851	3	A-V	2	13664	0.73	0.06	0.03	0.73	0.17	0.00	0.38	-0.28	-0.27	0.38	-0.13	-0.5831	0.0212	0.1	1.0	7.5	1.1	A-	B-	B-
ELA	4	915846	3	A-V	2	13664	0.57	0.18	0.57	0.13	0.12	0.00	0.46	-0.26	0.46	-0.22	-0.16	0.2873	0.0193	-4.9	1.0	-2.8	1.0	A-	B-	B-
ELA	4	545827	3	A-V	1	13664	0.74	0.13	0.07	0.06	0.74	0.00	0.50	-0.27	-0.25	-0.26	0.50	-0.6268	0.0213	-9.9	0.9	-9.9	0.8	B-	B-	C-
ELA	4	521847	3	A-K	2	13664	0.36	0.36	0.32	0.25	0.07	0.00	0.14	0.14	0.01	-0.01	-0.26	1.3710	0.0198	9.9	1.3	9.9	1.5	A+	A-	A-
ELA	4	392175	3	A-K	2	13664	0.56	0.09	0.18	0.56	0.16	0.00	0.43	-0.30	-0.07	0.43	-0.25	0.3439	0.0192	-0.5	1.0	1.9	1.0	A-	A-	A-
ELA	4	104840	3	A-K	2	13664	0.67	0.15	0.07	0.11	0.67	0.00	0.46	-0.25	-0.23	-0.21	0.46	-0.2424	0.0202	-6.9	0.9	-3.3	1.0	A+	A-	A-
ELA	4	751823	3	A-C	2	13664	0.54	0.54	0.21	0.14	0.09	0.01	0.37	0.37	-0.16	-0.17	-0.20	0.4320	0.0192	7.5	1.1	7.4	1.1	A-	A-	A-
ELA	4	778126	4	A-K	2	13652	0.58	0.25	0.08	0.58	0.09	0.00	0.45	-0.26	-0.23	0.45	-0.17	0.2536	0.0194	-4.3	1.0	0.3	1.0	A+	A+	A+
ELA	4	305625	4	A-K	2	13652	0.84	0.07	0.84	0.04	0.05	0.00	0.50	-0.30	0.50	-0.25	-0.26	-1.3540	0.0251	-9.9	0.8	-9.9	0.7	A+	A-	A-
ELA	4	641605	4	A-K	2	13652	0.82	0.07	0.04	0.07	0.82	0.00	0.51	-0.28	-0.25	-0.29	0.51	-1.1663	0.0239	-9.9	0.8	-9.9	0.7	A+	A-	A+
ELA	4	911100	4	A-C	3	13652	0.35	0.34	0.13	0.35	0.17	0.01	0.26	-0.11	-0.16	0.26	-0.05	1.4270	0.0199	9.9	1.1	9.9	1.4	A-	A-	A-
ELA	4	756740	4	A-V	2	13652	0.61	0.16	0.11	0.12	0.61	0.00	0.53	-0.27	-0.23	-0.26	0.53	0.1028	0.0196	-9.9	0.9	-9.9	0.9	A-	A-	A-
ELA	4	701327	4	A-V	2	13652	0.49	0.49	0.27	0.12	0.12	0.01	0.37	0.37	-0.25	-0.15	-0.06	0.7057	0.0192	8.5	1.1	9.9	1.1	A-	A+	A-
ELA	4	722169	4	A-V	2	13652	0.90	0.04	0.90	0.04	0.03	0.00	0.45	-0.25	0.45	-0.27	-0.23	-1.9562	0.0299	-9.2	0.8	-9.9	0.6	A+	B-	B-
ELA	4	656682	4	A-V	1	13652	0.60	0.08	0.09	0.60	0.22	0.00	0.43	-0.26	-0.28	0.43	-0.13	0.1712	0.0195	-0.2	1.0	0.3	1.0	A-	A-	A-
ELA	4	876051	5	A-K	2	13626	0.79	0.09	0.05	0.79	0.06	0.01	0.53	-0.29	-0.28	0.53	-0.27	-1.0113	0.0230	-9.9	0.8	-9.9	0.7	A+	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	4	288662	5	A-K	2	13626	0.60	0.08	0.10	0.21	0.60	0.00	0.49	-0.26	-0.26	-0.21	0.49	0.1338	0.0195	-9.9	0.9	-8.0	0.9	A+	A-	A-
ELA	4	507669	5	A-K	2	13626	0.53	0.53	0.09	0.31	0.07	0.00	0.19	0.19	-0.18	0.01	-0.19	0.4831	0.0192	9.9	1.3	9.9	1.4	A-	A+	A-
ELA	4	369033	5	A-K	2	13626	0.69	0.69	0.08	0.12	0.11	0.01	0.49	0.49	-0.19	-0.27	-0.27	-0.3762	0.0206	-8.9	0.9	-6.1	0.9	A-	A-	A-
ELA	4	255710	5	A-V	2	13626	0.38	0.16	0.09	0.37	0.38	0.00	0.39	-0.30	-0.20	-0.03	0.39	1.2701	0.0197	1.4	1.0	5.7	1.1	A-	A-	A-
ELA	4	989093	5	A-V	2	13626	0.74	0.74	0.07	0.14	0.04	0.00	0.42	0.42	-0.16	-0.27	-0.23	-0.6762	0.0216	-2.5	1.0	-3.3	0.9	A-	A-	A-
ELA	4	938377	5	A-V	2	13626	0.92	0.02	0.92	0.04	0.02	0.00	0.30	-0.18	0.30	-0.17	-0.16	-2.2385	0.0327	-2.5	0.9	0.9	1.0	A+	A-	B-
ELA	4	489985	5	A-K	2	13626	0.57	0.10	0.14	0.57	0.18	0.00	0.34	-0.21	-0.17	0.34	-0.12	0.2697	0.0194	9.9	1.1	8.3	1.1	A-	A-	A-
ELA	4	752177	6	B-C	2	13680	0.40	0.15	0.26	0.19	0.40	0.00	0.33	-0.10	-0.14	-0.16	0.33	1.1499	0.0194	8.8	1.1	9.9	1.2	A-	A-	A-
ELA	4	635996	6	B-C	2	13680	0.62	0.18	0.62	0.13	0.07	0.00	0.45	-0.14	0.45	-0.24	-0.32	0.0361	0.0195	-6.1	1.0	-6.2	0.9	A+	A+	A-
ELA	4	633811	6	B-K	2	13680	0.49	0.14	0.10	0.26	0.49	0.00	0.48	-0.25	-0.18	-0.22	0.48	0.6779	0.0190	-9.9	0.9	-8.4	0.9	A-	A-	A-
ELA	4	138880	6	B-C	2	13680	0.43	0.43	0.20	0.09	0.27	0.01	0.20	0.20	-0.09	-0.21	0.00	0.9680	0.0192	9.9	1.2	9.9	1.4	A-	A-	A+
ELA	4	635856	6	B-V	2	13680	0.71	0.15	0.08	0.71	0.07	0.00	0.45	-0.26	-0.19	0.45	-0.26	-0.4563	0.0206	-6.8	0.9	-6.5	0.9	A-	A-	A-
ELA	4	113106	6	B-V	2	13680	0.53	0.35	0.07	0.06	0.53	0.00	0.31	-0.14	-0.21	-0.16	0.31	0.4804	0.0191	9.9	1.1	9.9	1.2	A+	A+	A+
ELA	4	211561	6	B-K	2	13680	0.43	0.21	0.43	0.13	0.22	0.00	0.35	-0.24	0.35	-0.26	0.04	0.9545	0.0192	6.7	1.1	9.6	1.1	A-	A-	A+
ELA	4	186079	6	B-V	2	13680	0.42	0.05	0.45	0.42	0.07	0.00	0.30	-0.28	-0.06	0.30	-0.21	1.0068	0.0192	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	4	811029	7	B-C	2	13716	0.56	0.05	0.56	0.20	0.19	0.00	0.34	-0.22	0.34	-0.14	-0.15	0.3401	0.0192	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	4	196871	7	B-C	2	13716	0.63	0.63	0.05	0.06	0.26	0.00	0.36	0.36	-0.25	-0.24	-0.14	-0.0261	0.0196	6.6	1.1	4.7	1.1	A+	A-	A+
ELA	4	117114	7	B-V	2	13716	0.75	0.13	0.07	0.75	0.05	0.00	0.50	-0.33	-0.25	0.50	-0.19	-0.7059	0.0215	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	4	952801	7	B-V	2	13716	0.66	0.17	0.10	0.07	0.66	0.00	0.33	-0.17	-0.16	-0.18	0.33	-0.1860	0.0200	7.8	1.1	9.9	1.2	A-	A-	A-
ELA	4	332429	7	B-K	2	13716	0.55	0.07	0.15	0.55	0.23	0.00	0.49	-0.26	-0.25	0.49	-0.21	0.3816	0.0191	-9.9	0.9	-8.8	0.9	A+	A-	A-
ELA	4	962307	7	B-K	2	13716	0.41	0.31	0.41	0.22	0.05	0.01	0.21	-0.07	0.21	-0.03	-0.26	1.0784	0.0193	9.9	1.2	9.9	1.3	A+	A+	A-
ELA	4	191005	7	B-K	2	13716	0.76	0.07	0.06	0.12	0.76	0.00	0.36	-0.14	-0.17	-0.25	0.36	-0.7616	0.0218	0.6	1.0	4.2	1.1	A-	A-	A-
ELA	4	907447	7	B-C	2	13716	0.77	0.77	0.06	0.04	0.12	0.00	0.36	0.36	-0.21	-0.24	-0.15	-0.8785	0.0223	0.2	1.0	4.2	1.1	A-	A+	A-
ELA	4	278437	8	B-C	2	13699	0.62	0.12	0.62	0.17	0.10	0.00	0.44	-0.19	0.44	-0.22	-0.23	0.0568	0.0194	-4.8	1.0	-3.4	1.0	A+	A-	A-
ELA	4	198983	8	B-V	2	13699	0.62	0.62	0.10	0.19	0.09	0.00	0.15	0.15	-0.07	0.00	-0.18	0.0321	0.0195	9.9	1.3	9.9	1.5	A-	A+	A-
ELA	4	497466	8	B-V	1	13699	0.86	0.04	0.86	0.07	0.03	0.00	0.35	-0.19	0.35	-0.19	-0.21	-1.5522	0.0263	-3.3	1.0	-3.3	0.9	A+	A+	A+
ELA	4	153856	8	B-V	2	13699	0.33	0.32	0.14	0.20	0.33	0.00	0.14	0.06	-0.21	-0.04	0.14	1.5138	0.0200	9.9	1.2	9.9	1.5	A-	A-	A-
ELA	4	191585	8	B-K	2	13699	0.43	0.19	0.22	0.43	0.16	0.00	0.28	-0.30	-0.02	0.28	-0.03	0.9966	0.0191	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	4	564435	8	B-C	3	13699	0.34	0.36	0.10	0.34	0.19	0.01	0.14	0.05	-0.20	0.14	-0.06	1.4652	0.0199	9.9	1.2	9.9	1.5	A-	A-	A-
ELA	4	534436	8	B-V	2	13699	0.65	0.10	0.08	0.18	0.65	0.00	0.37	-0.24	-0.25	-0.10	0.37	-0.1083	0.0198	4.4	1.0	6.5	1.1	A-	A-	A-
ELA	4	436194	8	B-C	3	13699	0.62	0.62	0.10	0.13	0.15	0.00	0.43	0.43	-0.16	-0.22	-0.23	0.0442	0.0195	-3.4	1.0	-3.3	1.0	A-	A-	A-
ELA	4	824452	9	B-C	3	13712	0.58	0.17	0.58	0.11	0.15	0.00	0.49	-0.21	0.49	-0.25	-0.24	0.2514	0.0192	-9.9	0.9	-9.7	0.9	B-	A-	A-
ELA	4	774947	9	B-C	2	13712	0.64	0.64	0.05	0.18	0.13	0.00	0.43	0.43	-0.28	-0.21	-0.19	-0.0974	0.0197	-3.3	1.0	-1.3	1.0	A-	A-	A-
ELA	4	903446	9	B-K	2	13712	0.75	0.08	0.06	0.75	0.10	0.00	0.39	-0.12	-0.20	0.39	-0.28	-0.7416	0.0217	-1.5	1.0	-2.8	0.9	A-	A-	A-
ELA	4	602530	9	B-C	3	13712	0.38	0.29	0.38	0.11	0.20	0.01	-0.01	0.18	-0.01	-0.16	-0.06	1.2199	0.0195	9.9	1.5	9.9	1.7	A+	A+	A+
ELA	4	407120	9	B-C	3	13712	0.65	0.18	0.06	0.11	0.65	0.00	0.50	-0.30	-0.24	-0.20	0.50	-0.1154	0.0198	-9.9	0.9	-9.8	0.9	A-	A-	A-
ELA	4	969922	9	B-V	2	13712	0.71	0.11	0.07	0.71	0.11	0.00	0.41	-0.21	-0.22	0.41	-0.20	-0.4435	0.0206	-1.8	1.0	-0.6	1.0	A-	B-	A-
ELA	4	956594	9	B-K	2	13712	0.49	0.49	0.21	0.13	0.16	0.00	0.35	0.35	-0.18	-0.22	-0.06	0.6638	0.0190	7.9	1.1	9.7	1.1	A-	A-	A-
ELA	4	213522	9	B-C	3	13712	0.48	0.21	0.19	0.48	0.12	0.00	0.38	-0.17	-0.19	0.38	-0.14	0.7328	0.0190	2.8	1.0	5.5	1.1	A-	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	5	132818	0	D	1	125525	0.62	0.13	0.62	0.13	0.11	0.00	0.33	-0.16	0.33	-0.13	-0.19	0.0741	0.0065	9.9	1.1	9.9	1.1			
ELA	5	338527	0	D	2	125525	0.63	0.63	0.12	0.07	0.17	0.00	0.39	0.39	-0.11	-0.22	-0.26	0.0133	0.0066	9.9	1.0	9.9	1.1			
ELA	5	967431	0	D	2	125525	0.62	0.62	0.26	0.06	0.06	0.00	0.28	0.28	-0.03	-0.26	-0.25	0.0667	0.0065	9.9	1.2	9.9	1.3			
ELA	5	249024	0	D	2	125525	0.56	0.05	0.20	0.56	0.18	0.00	0.47	-0.21	-0.24	0.47	-0.23	0.4605	0.0064	-9.9	1.0	-9.9	0.9			
ELA	5	312056	0	A-K	2	125525	0.51	0.51	0.40	0.05	0.04	0.00	0.39	0.39	-0.16	-0.29	-0.25	0.6842	0.0063	9.9	1.0	9.9	1.1			
ELA	5	916374	0	A-K	3	125525	0.85	0.04	0.07	0.03	0.85	0.00	0.51	-0.30	-0.30	-0.24	0.51	-1.3496	0.0084	-9.9	0.8	-9.9	0.6			
ELA	5	441237	0	A-V	2	125525	0.82	0.82	0.05	0.06	0.07	0.00	0.49	0.49	-0.29	-0.24	-0.26	-1.1535	0.0080	-9.9	0.9	-9.9	0.8			
ELA	5	244143	0	A-V	2	125525	0.58	0.25	0.08	0.58	0.08	0.00	0.42	-0.17	-0.25	0.42	-0.23	0.3340	0.0064	4.7	1.0	8.2	1.0			
ELA	5	536631	0	A-V	1	125525	0.57	0.24	0.08	0.57	0.11	0.00	0.43	-0.32	-0.10	0.43	-0.15	0.4433	0.0064	-1.0	1.0	9.9	1.0			
ELA	5	742469	0	B-V	3	125525	0.82	0.82	0.07	0.08	0.03	0.00	0.50	0.50	-0.24	-0.33	-0.23	-1.2392	0.0082	-9.9	0.9	-9.9	0.8			
ELA	5	443299	0	B-K	3	125525	0.68	0.16	0.68	0.06	0.09	0.00	0.50	-0.23	0.50	-0.26	-0.29	-0.2329	0.0067	-9.9	0.9	-9.9	0.9			
ELA	5	361748	0	B-C	3	125525	0.43	0.22	0.15	0.20	0.43	0.00	0.42	-0.17	-0.18	-0.19	0.42	1.1161	0.0064	-7.9	1.0	9.9	1.1			
ELA	5	669754	0	B-V	2	125525	0.92	0.02	0.02	0.04	0.92	0.00	0.43	-0.24	-0.23	-0.26	0.43	-2.1505	0.0107	-9.9	0.8	-9.9	0.5			
ELA	5	107549	0	B-C	2	125525	0.73	0.73	0.06	0.12	0.08	0.00	0.37	0.37	-0.18	-0.31	-0.06	-0.3142	0.0068	-9.2	1.0	4.4	1.0			
ELA	5	407829	0	B-V	2	125525	0.68	0.19	0.07	0.68	0.05	0.00	0.28	-0.08	-0.21	0.28	-0.21	-0.2813	0.0068	9.9	1.2	9.9	1.4			
ELA	5	627423	0	D	2	125525	0.34	0.34	0.21	0.23	0.22	0.00	0.23	0.23	-0.08	-0.12	-0.06	1.4533	0.0066	9.9	1.2	9.9	1.4			
ELA	5	159602	0	D	2	125525	0.78	0.06	0.13	0.78	0.03	0.00	0.47	-0.28	-0.28	0.47	-0.21	-0.7547	0.0073	-9.9	0.9	-9.9	0.8			
ELA	5	469521	0	D	2	125525	0.64	0.12	0.14	0.11	0.64	0.00	0.39	-0.19	-0.20	-0.19	0.39	0.0754	0.0065	9.2	1.0	6.6	1.0			
ELA	5	875933	0	D	3	125525	0.61	0.08	0.61	0.19	0.13	0.00	0.44	-0.13	0.44	-0.24	-0.26	0.1987	0.0064	-6.2	1.0	-8.5	1.0			
ELA	5	259999	0	D	3	125525	0.37	0.09	0.16	0.37	0.38	0.00	0.39	-0.12	-0.23	0.39	-0.14	1.2858	0.0065	-6.6	1.0	9.9	1.1			
ELA	5	175294	0	D	2	125525	0.70	0.12	0.09	0.09	0.70	0.00	0.49	-0.22	-0.28	-0.25	0.49	-0.3849	0.0069	-9.9	0.9	-9.9	0.9			
ELA	5	335141	0	D	2	125525	0.82	0.04	0.10	0.05	0.82	0.00	0.51	-0.24	-0.33	-0.23	0.51	-1.0813	0.0078	-9.9	0.8	-9.9	0.7			
ELA	5	523209	0	D	2	125525	0.75	0.75	0.09	0.10	0.05	0.00	0.42	0.42	-0.26	-0.21	-0.20	-0.6687	0.0072	-9.8	1.0	-8.2	0.9			
ELA	5	210209	0	D	2	125525	0.47	0.21	0.16	0.47	0.16	0.00	0.30	-0.20	-0.13	0.30	-0.06	0.8577	0.0063	9.9	1.1	9.9	1.2			
ELA	5	654924	0	D	3	125525	0.62	0.08	0.62	0.17	0.12	0.00	0.39	-0.26	0.39	-0.14	-0.19	0.0799	0.0065	9.9	1.0	9.9	1.1			
ELA	5	443788	0	D	3	125525	0.25	0.39	0.25	0.23	0.13	0.00	0.08	0.02	0.08	0.03	-0.17	2.0252	0.0071	9.9	1.2	9.9	1.9			
ELA	5	135241	0	D	3	125525	0.67	0.20	0.07	0.06	0.67	0.00	0.38	-0.21	-0.19	-0.18	0.38	-0.0379	0.0066	6.6	1.0	9.3	1.1			
ELA	5	756738	0	D	3	125525	0.72	0.04	0.17	0.07	0.72	0.00	0.53	-0.26	-0.33	-0.25	0.53	-0.4978	0.0070	-9.9	0.9	-9.9	0.8			
ELA	5	369449	0	D	3	125525	0.69	0.69	0.14	0.04	0.13	0.00	0.38	0.38	-0.25	-0.14	-0.18	-0.3677	0.0069	9.9	1.1	7.5	1.0			
ELA	5	593157	0	B-K	3	125525	0.49	0.22	0.17	0.49	0.12	0.00	0.39	-0.18	-0.18	0.39	-0.16	0.7113	0.0063	9.9	1.0	9.9	1.1			
ELA	5	356097	0	B-K	3	125525	0.42	0.23	0.42	0.15	0.19	0.00	0.33	-0.18	0.33	-0.11	-0.11	1.0928	0.0064	9.9	1.1	9.9	1.2			
ELA	5	701409	0	B-C	3	125525	0.42	0.42	0.09	0.27	0.22	0.00	0.36	0.36	-0.28	-0.13	-0.10	0.9969	0.0064	9.9	1.1	9.9	1.1			
ELA	5	780123	0	B-C	2	125525	0.49	0.16	0.12	0.22	0.49	0.00	0.34	-0.22	-0.18	-0.06	0.34	0.7393	0.0063	9.9	1.1	9.9	1.2			
ELA	5	734900	0	B-C	2	125525	0.59	0.21	0.59	0.10	0.09	0.01	0.42	-0.24	0.42	-0.23	-0.13	0.3025	0.0064	-2.3	1.0	-0.5	1.0			
ELA	5	649386	0	B-V	2	125525	0.34	0.34	0.18	0.15	0.33	0.00	0.24	0.24	-0.16	-0.24	0.07	1.4612	0.0066	9.9	1.1	9.9	1.4			
ELA	5	543161	0	B-V	1	125525	0.63	0.12	0.07	0.18	0.63	0.00	0.44	-0.22	-0.18	-0.24	0.44	-0.0049	0.0066	0.8	1.0	0.6	1.0			
ELA	5	960215	0	A-K	3	125525	0.70	0.07	0.70	0.17	0.06	0.00	0.48	-0.22	0.48	-0.25	-0.29	-0.3478	0.0068	-9.9	0.9	-9.9	0.9			
ELA	5	984398	0	A-C	3	125525	0.57	0.13	0.57	0.20	0.09	0.00	0.28	-0.12	0.28	-0.10	-0.19	0.3450	0.0064	9.9	1.2	9.9	1.3			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	5	532681	0	A-V	2	125525	0.89	0.04	0.04	0.03	0.89	0.00	0.44	-0.23	-0.27	-0.23	0.44	-1.8838	0.0098	-9.9	0.9	-9.9	0.7			
ELA	5	969091	0	A-V	2	125525	0.89	0.89	0.06	0.03	0.02	0.00	0.36	0.36	-0.19	-0.23	-0.19	-1.7482	0.0094	-9.9	0.9	-9.9	0.8			
ELA	5	830843	0	A-C	2	125525	0.71	0.04	0.16	0.71	0.09	0.00	0.43	-0.26	-0.17	0.43	-0.28	-0.3182	0.0068	-9.9	1.0	-9.9	0.9			
ELA	5	678434	0	D	1	125525	0.76	0.04	0.08	0.12	0.76	0.00	0.28	-0.21	-0.15	-0.11	0.28	-0.7052	0.0073	9.9	1.1	9.9	1.3	A+	A+	A+
ELA	5	780941	0	D	2	125525	0.84	0.03	0.04	0.09	0.84	0.00	0.31	-0.18	-0.15	-0.18	0.31	-1.3493	0.0084	6.8	1.0	5.5	1.1	A+	A-	A-
ELA	5	182371	1	B-V	2	14052	0.81	0.81	0.04	0.05	0.10	0.00	0.47	0.47	-0.25	-0.31	-0.22	-1.1346	0.0236	-7.7	0.9	-9.3	0.8	A+	A-	A-
ELA	5	685810	1	B-K	2	14052	0.47	0.09	0.28	0.47	0.16	0.00	0.30	-0.19	-0.18	0.30	-0.03	0.8511	0.0191	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	5	605551	1	B-K	2	14052	0.68	0.13	0.07	0.12	0.68	0.00	0.45	-0.31	-0.29	-0.10	0.45	-0.2684	0.0203	-3.9	1.0	0.8	1.0	A+	A+	A-
ELA	5	125260	1	B-K	3	14052	0.73	0.73	0.11	0.10	0.06	0.00	0.48	0.48	-0.22	-0.26	-0.26	-0.5463	0.0211	-7.8	0.9	-7.4	0.9	A+	A+	A-
ELA	5	458782	1	B-K	2	14052	0.63	0.08	0.13	0.17	0.63	0.00	0.42	-0.22	-0.25	-0.16	0.42	0.0272	0.0196	1.9	1.0	2.9	1.0	A-	A-	A-
ELA	5	149172	1	B-C	3	14052	0.49	0.24	0.08	0.49	0.19	0.00	0.40	-0.11	-0.18	0.40	-0.26	0.7368	0.0191	5.0	1.0	8.2	1.1	A-	A-	A-
ELA	5	187484	1	B-C	3	14052	0.59	0.59	0.12	0.22	0.07	0.00	0.35	0.35	-0.19	-0.08	-0.31	0.2023	0.0194	9.9	1.1	9.9	1.2	A-	A+	A+
ELA	5	172476	1	B-V	2	14052	0.72	0.11	0.72	0.10	0.07	0.00	0.46	-0.29	0.46	-0.23	-0.19	-0.4891	0.0209	-5.8	0.9	-3.7	0.9	C-	B-	A-
ELA	5	961985	2	B-K	2	13898	0.65	0.65	0.13	0.08	0.13	0.01	0.41	0.41	-0.17	-0.27	-0.17	-0.0681	0.0197	0.2	1.0	0.3	1.0	A+	A-	A-
ELA	5	610396	2	B-K	3	13898	0.37	0.19	0.22	0.37	0.20	0.00	0.23	-0.09	-0.06	0.23	-0.12	1.3280	0.0195	9.9	1.2	9.9	1.3	A+	A+	A-
ELA	5	265856	2	B-C	3	13898	0.38	0.18	0.14	0.38	0.29	0.00	0.23	-0.14	-0.07	0.23	-0.07	1.2771	0.0194	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	5	231022	2	B-C	3	13898	0.35	0.10	0.23	0.32	0.35	0.00	0.27	-0.19	-0.12	-0.04	0.27	1.4751	0.0197	9.9	1.1	9.9	1.3	A+	A-	A-
ELA	5	180433	2	B-V	2	13898	0.70	0.70	0.07	0.16	0.07	0.00	0.39	0.39	-0.29	-0.18	-0.15	-0.3725	0.0205	1.6	1.0	2.2	1.0	A-	A-	A-
ELA	5	227011	2	B-V	2	13898	0.49	0.30	0.11	0.49	0.10	0.00	0.28	-0.06	-0.18	0.28	-0.18	0.7480	0.0189	9.9	1.2	9.9	1.2	A-	A-	A-
ELA	5	878054	2	B-V	2	13898	0.20	0.42	0.20	0.29	0.09	0.00	0.06	0.01	0.06	0.04	-0.16	2.3970	0.0231	9.9	1.2	9.9	2.1	A-	A-	A-
ELA	5	724915	2	B-K	2	13898	0.47	0.47	0.33	0.07	0.13	0.00	0.28	0.28	0.01	-0.27	-0.23	0.8564	0.0190	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	5	642303	3	B-V	1	13926	0.82	0.13	0.03	0.82	0.02	0.00	0.33	-0.18	-0.20	0.33	-0.22	-1.1185	0.0238	1.5	1.0	4.7	1.1	A+	A-	A-
ELA	5	989416	3	B-C	3	13926	0.66	0.66	0.23	0.07	0.04	0.00	0.50	0.50	-0.32	-0.20	-0.24	-0.1074	0.0200	-9.2	0.9	-8.8	0.9	A+	A-	A-
ELA	5	268618	3	B-C	3	13926	0.57	0.10	0.15	0.18	0.57	0.00	0.33	-0.27	-0.10	-0.11	0.33	0.3494	0.0192	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	5	910008	3	B-K	2	13926	0.71	0.11	0.05	0.71	0.13	0.00	0.39	-0.24	-0.27	0.39	-0.12	-0.3779	0.0207	2.2	1.0	4.0	1.1	A-	A-	A-
ELA	5	514898	3	B-V	2	13926	0.59	0.22	0.59	0.09	0.10	0.00	0.48	-0.23	0.48	-0.25	-0.22	0.2881	0.0193	-7.7	0.9	-4.8	0.9	A-	A+	A-
ELA	5	242778	3	B-V	2	13926	0.85	0.08	0.85	0.03	0.04	0.00	0.43	-0.24	0.43	-0.26	-0.22	-1.4089	0.0256	-6.6	0.9	-2.7	0.9	A-	A-	A-
ELA	5	461145	3	B-C	3	13926	0.50	0.13	0.22	0.15	0.50	0.00	0.34	-0.21	-0.14	-0.12	0.34	0.7370	0.0190	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	5	266799	3	B-V	2	13926	0.66	0.66	0.06	0.22	0.06	0.00	0.21	0.21	-0.20	-0.03	-0.17	-0.1315	0.0200	9.9	1.2	9.9	1.5	A-	A-	A-
ELA	5	125070	4	B-K	3	13945	0.56	0.56	0.11	0.16	0.16	0.00	0.33	0.33	-0.22	-0.04	-0.19	0.4172	0.0190	9.9	1.1	9.9	1.2	A-	A+	A+
ELA	5	503297	4	B-K	2	13945	0.54	0.06	0.21	0.19	0.54	0.00	0.40	-0.25	-0.13	-0.20	0.40	0.5182	0.0189	2.2	1.0	4.1	1.0	A-	A-	A-
ELA	5	745967	4	B-K	2	13945	0.26	0.29	0.08	0.26	0.37	0.00	0.22	-0.15	-0.22	0.22	0.06	1.9839	0.0211	9.0	1.1	9.9	1.5	A-	A-	A-
ELA	5	194211	4	B-C	3	13945	0.42	0.42	0.24	0.18	0.16	0.00	0.17	0.17	0.03	-0.15	-0.10	1.1295	0.0191	9.9	1.3	9.9	1.4	A-	A-	A-
ELA	5	231287	4	B-V	2	13945	0.70	0.11	0.16	0.70	0.03	0.00	0.35	-0.16	-0.18	0.35	-0.25	-0.3650	0.0205	5.6	1.1	4.1	1.1	A-	A-	A-
ELA	5	925947	4	B-V	2	13945	0.15	0.53	0.26	0.15	0.06	0.00	0.10	0.05	-0.07	0.10	-0.14	2.7803	0.0253	9.4	1.2	9.9	2.1	B-	A-	A-
ELA	5	420172	4	B-V	2	13945	0.46	0.20	0.46	0.12	0.21	0.00	0.19	-0.03	0.19	-0.27	0.03	0.9217	0.0189	9.9	1.3	9.9	1.4	A-	A-	A-
ELA	5	105228	4	B-V	2	13945	0.43	0.24	0.43	0.16	0.18	0.00	0.29	-0.16	0.29	-0.18	-0.02	1.0764	0.0190	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	5	133126	5	B-C	3	13928	0.44	0.15	0.23	0.44	0.17	0.00	0.27	-0.17	-0.11	0.27	-0.07	1.0083	0.0191	9.9	1.1	9.9	1.3	A+	A+	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	5	492402	5	B-C	3	13928	0.59	0.59	0.18	0.05	0.18	0.01	0.41	0.41	-0.19	-0.25	-0.19	0.2873	0.0192	0.4	1.0	2.8	1.0	A+	A-	A-
ELA	5	452973	5	B-C	3	13928	0.48	0.13	0.12	0.48	0.27	0.00	0.36	-0.22	-0.24	0.36	-0.05	0.8073	0.0190	7.4	1.1	9.8	1.1	A+	A+	A-
ELA	5	648394	5	B-K	3	13928	0.45	0.29	0.45	0.16	0.10	0.00	0.30	-0.09	0.30	-0.15	-0.16	0.9856	0.0190	9.9	1.1	9.9	1.2	A+	A+	A+
ELA	5	649571	5	B-K	2	13928	0.51	0.20	0.09	0.20	0.51	0.00	0.34	-0.19	-0.23	-0.07	0.34	0.6733	0.0190	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	5	590884	5	B-V	2	13928	0.69	0.11	0.69	0.11	0.08	0.01	0.44	-0.29	0.44	-0.20	-0.18	-0.2487	0.0202	-3.7	1.0	-3.8	0.9	A+	A+	A+
ELA	5	376716	5	B-V	2	13928	0.52	0.52	0.17	0.25	0.06	0.00	0.24	0.24	-0.13	-0.07	-0.17	0.6096	0.0190	9.9	1.2	9.9	1.3	A+	A-	A+
ELA	5	619492	5	B-C	3	13928	0.85	0.05	0.85	0.07	0.03	0.00	0.48	-0.30	0.48	-0.26	-0.24	-1.3860	0.0255	-9.9	0.9	-9.9	0.7	A+	A-	B-
ELA	5	522931	6	A-C	3	13942	0.44	0.18	0.27	0.44	0.10	0.01	0.31	-0.26	0.01	0.31	-0.17	1.0360	0.0191	9.9	1.1	9.9	1.2	A+	A+	A-
ELA	5	248499	6	A-C	3	13942	0.59	0.59	0.05	0.28	0.08	0.00	0.35	0.35	-0.24	-0.12	-0.25	0.2629	0.0193	9.9	1.1	9.4	1.1	A-	A-	A-
ELA	5	812302	6	A-V	2	13942	0.84	0.84	0.06	0.06	0.04	0.00	0.34	0.34	-0.22	-0.12	-0.21	-1.2921	0.0249	-0.5	1.0	3.9	1.1	A+	A-	A-
ELA	5	228529	6	A-V	2	13942	0.88	0.04	0.88	0.03	0.04	0.00	0.47	-0.27	0.47	-0.25	-0.26	-1.6676	0.0277	-9.6	0.8	-9.9	0.6	A-	A-	A-
ELA	5	778446	6	A-V	2	13942	0.51	0.17	0.23	0.09	0.51	0.00	0.38	-0.24	-0.08	-0.22	0.38	0.6952	0.0190	5.7	1.0	8.3	1.1	A-	A+	A-
ELA	5	415229	6	A-V	2	13942	0.66	0.09	0.66	0.08	0.17	0.00	0.32	-0.09	0.32	-0.20	-0.19	-0.1003	0.0199	9.9	1.1	9.9	1.2	A+	C-	B-
ELA	5	884893	6	A-K	2	13942	0.81	0.04	0.08	0.81	0.07	0.00	0.48	-0.22	-0.28	0.48	-0.27	-1.0232	0.0234	-8.5	0.9	-9.9	0.8	A+	A-	A-
ELA	5	932952	6	A-K	2	13942	0.36	0.25	0.18	0.21	0.36	0.00	0.26	-0.04	-0.16	-0.12	0.26	1.4437	0.0196	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	5	570157	7	A-K	2	13972	0.76	0.05	0.76	0.06	0.13	0.00	0.43	-0.27	0.43	-0.24	-0.19	-0.7458	0.0219	-4.5	1.0	-2.1	1.0	A+	A-	A-
ELA	5	472814	7	A-K	3	13972	0.54	0.18	0.15	0.12	0.54	0.00	0.49	-0.25	-0.20	-0.23	0.49	0.4844	0.0191	-9.9	0.9	-7.7	0.9	B+	A+	A+
ELA	5	221911	7	A-K	3	13972	0.50	0.50	0.35	0.07	0.08	0.00	0.15	0.15	0.12	-0.23	-0.27	0.7199	0.0190	9.9	1.3	9.9	1.5	A+	A+	A+
ELA	5	376047	7	A-C	3	13972	0.36	0.11	0.31	0.21	0.36	0.01	0.29	-0.24	-0.03	-0.11	0.29	1.4341	0.0196	9.9	1.1	9.9	1.3	A+	A-	A-
ELA	5	623070	7	A-C	2	13972	0.67	0.67	0.18	0.06	0.09	0.00	0.33	0.33	-0.05	-0.28	-0.25	-0.1973	0.0201	8.8	1.1	9.9	1.3	A+	A-	A-
ELA	5	660399	7	A-V	2	13972	0.69	0.07	0.13	0.69	0.11	0.00	0.46	-0.28	-0.22	0.46	-0.21	-0.2983	0.0204	-4.2	1.0	-4.0	0.9	A+	A-	A-
ELA	5	328856	7	A-V	2	13972	0.54	0.25	0.12	0.54	0.09	0.00	0.34	-0.07	-0.27	0.34	-0.17	0.5302	0.0191	9.9	1.1	9.9	1.2	A+	A+	A+
ELA	5	402951	7	A-V	2	13972	0.80	0.80	0.06	0.09	0.06	0.00	0.46	0.46	-0.29	-0.20	-0.26	-0.9830	0.0230	-7.8	0.9	-1.5	1.0	A-	A-	A-
ELA	5	719669	8	A-K	3	13928	0.47	0.47	0.10	0.18	0.25	0.00	0.36	0.36	-0.25	-0.20	-0.06	0.8749	0.0189	6.9	1.1	9.5	1.1	A-	A-	A-
ELA	5	997534	8	A-K	2	13928	0.31	0.15	0.30	0.31	0.24	0.00	0.21	-0.04	-0.02	0.21	-0.17	1.7112	0.0202	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	5	317574	8	A-K	3	13928	0.49	0.49	0.14	0.20	0.17	0.00	0.26	0.26	-0.22	-0.01	-0.13	0.7558	0.0189	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	5	811715	8	A-V	2	13928	0.57	0.24	0.57	0.11	0.08	0.00	0.30	-0.17	0.30	-0.13	-0.13	0.3469	0.0191	9.9	1.1	9.9	1.2	A+	A+	A+
ELA	5	163659	8	A-K	2	13928	0.41	0.21	0.18	0.41	0.19	0.00	0.29	-0.19	-0.17	0.29	0.01	1.1400	0.0191	9.9	1.1	9.9	1.2	A+	A+	A-
ELA	5	953039	8	A-V	2	13928	0.59	0.59	0.19	0.11	0.11	0.00	0.37	0.37	-0.16	-0.16	-0.21	0.2480	0.0192	7.3	1.1	4.5	1.1	A-	A+	A+
ELA	5	411440	8	A-V	2	13928	0.30	0.46	0.09	0.30	0.15	0.00	0.16	0.11	-0.17	0.16	-0.23	1.7806	0.0204	9.9	1.2	9.9	1.5	A+	A-	A+
ELA	5	690685	8	A-K	3	13928	0.77	0.77	0.10	0.06	0.07	0.00	0.47	0.47	-0.24	-0.25	-0.25	-0.7792	0.0221	-8.1	0.9	-8.6	0.8	A+	A+	A-
ELA	5	566627	9	A-V	2	13934	0.64	0.17	0.64	0.08	0.11	0.00	0.37	-0.24	0.37	-0.14	-0.16	0.0033	0.0198	7.0	1.1	9.3	1.1	A-	A-	A-
ELA	5	279090	9	A-V	2	13934	0.54	0.54	0.18	0.08	0.20	0.00	0.23	0.23	0.02	-0.25	-0.14	0.5096	0.0191	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	5	473379	9	A-V	2	13934	0.68	0.08	0.18	0.68	0.06	0.00	0.49	-0.27	-0.25	0.49	-0.25	-0.2080	0.0202	-8.4	0.9	-5.4	0.9	A-	A-	A-
ELA	5	669152	9	A-K	2	13934	0.76	0.08	0.08	0.76	0.08	0.00	0.50	-0.28	-0.21	0.50	-0.29	-0.7267	0.0219	-9.9	0.9	-9.0	0.8	A+	A-	A-
ELA	5	600314	9	A-V	2	13934	0.59	0.06	0.59	0.20	0.15	0.00	0.38	-0.27	0.38	-0.12	-0.21	0.2491	0.0194	6.1	1.1	9.2	1.1	A+	A+	A+
ELA	5	116038	9	A-K	3	13934	0.82	0.08	0.03	0.07	0.82	0.00	0.49	-0.28	-0.24	-0.28	0.49	-1.1705	0.0241	-9.7	0.9	-9.9	0.7	A+	A-	A-
ELA	5	431105	9	A-C	3	13934	0.47	0.12	0.18	0.47	0.23	0.00	0.34	-0.20	-0.18	0.34	-0.08	0.8855	0.0191	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	5	182770	9	A-K	3	13934	0.53	0.22	0.16	0.08	0.53	0.01	0.47	-0.21	-0.21	-0.25	0.47	0.5822	0.0191	-6.5	1.0	-2.2	1.0	A-	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	6	541818	0	B-V	2	124885	0.67	0.67	0.14	0.06	0.13	0.00	0.45	0.45	-0.25	-0.22	-0.22	-0.1059	0.0067	-6.9	1.0	-3.6	1.0			
ELA	6	646187	0	B-C	3	124885	0.42	0.30	0.19	0.09	0.42	0.00	0.29	-0.10	-0.06	-0.24	0.29	1.2038	0.0064	9.9	1.1	9.9	1.2			
ELA	6	632034	0	B-C	2	124885	0.37	0.11	0.44	0.37	0.08	0.00	0.39	-0.17	-0.16	0.39	-0.19	1.6180	0.0066	3.3	1.0	9.9	1.1			
ELA	6	806081	0	B-V	2	124885	0.83	0.83	0.04	0.09	0.04	0.00	0.45	0.45	-0.27	-0.24	-0.24	-1.0267	0.0080	-9.9	0.9	-9.9	0.8			
ELA	6	956172	0	B-C	2	124885	0.60	0.18	0.60	0.06	0.16	0.00	0.35	-0.15	0.35	-0.26	-0.15	0.2063	0.0065	9.9	1.1	9.9	1.1			
ELA	6	596167	0	B-K	2	124885	0.59	0.59	0.08	0.09	0.25	0.00	0.32	0.32	-0.22	-0.24	-0.07	0.2227	0.0065	9.9	1.1	9.9	1.3			
ELA	6	263494	0	B-V	2	124885	0.77	0.14	0.04	0.05	0.77	0.00	0.46	-0.24	-0.26	-0.26	0.46	-0.6888	0.0074	-9.9	1.0	-9.9	0.9			
ELA	6	519375	0	B-C	2	124885	0.81	0.11	0.05	0.03	0.81	0.00	0.47	-0.25	-0.28	-0.26	0.47	-0.7834	0.0076	-9.9	0.8	-9.9	0.8			
ELA	6	219899	0	B-V	2	124885	0.91	0.03	0.02	0.91	0.03	0.00	0.45	-0.25	-0.23	0.45	-0.26	-2.0796	0.0111	-7.2	0.9	-9.9	0.6			
ELA	6	584421	0	B-K	3	124885	0.65	0.12	0.65	0.05	0.19	0.00	0.37	-0.13	0.37	-0.21	-0.23	0.1296	0.0066	9.9	1.0	9.9	1.2			
ELA	6	487364	0	B-K	2	124885	0.70	0.07	0.70	0.11	0.12	0.00	0.46	-0.33	0.46	-0.29	-0.11	-0.1778	0.0068	-9.9	0.9	-9.9	0.9			
ELA	6	813560	0	B-C	2	124885	0.41	0.25	0.21	0.13	0.41	0.00	0.47	-0.11	-0.30	-0.19	0.47	1.3300	0.0064	-9.9	0.9	-9.9	1.0			
ELA	6	709751	0	A-C	3	124885	0.70	0.13	0.70	0.07	0.09	0.00	0.45	-0.21	0.45	-0.29	-0.21	-0.0991	0.0067	-9.9	0.9	-9.9	0.9			
ELA	6	426862	0	A-K	3	124885	0.51	0.51	0.22	0.09	0.19	0.00	0.26	0.26	-0.13	-0.23	-0.03	0.8569	0.0063	9.9	1.2	9.9	1.3			
ELA	6	305074	0	A-K	2	124885	0.71	0.71	0.11	0.08	0.09	0.00	0.41	0.41	-0.24	-0.25	-0.13	-0.2634	0.0069	-2.6	1.0	6.1	1.0			
ELA	6	307127	0	A-V	2	124885	0.66	0.12	0.18	0.66	0.04	0.00	0.36	-0.25	-0.12	0.36	-0.21	-0.0231	0.0067	9.9	1.1	9.9	1.1			
ELA	6	633592	0	A-K	2	124885	0.68	0.11	0.68	0.16	0.05	0.00	0.44	-0.27	0.44	-0.20	-0.22	-0.1275	0.0068	-6.9	1.0	-7.0	1.0			
ELA	6	213309	0	D	2	124885	0.85	0.07	0.05	0.85	0.03	0.00	0.39	-0.16	-0.29	0.39	-0.23	-1.2028	0.0084	-9.9	0.9	-6.5	0.9			
ELA	6	294525	0	D	2	124885	0.74	0.07	0.14	0.05	0.74	0.00	0.47	-0.24	-0.28	-0.23	0.47	-0.3772	0.0070	-9.9	0.9	-9.9	0.8			
ELA	6	491778	0	D	2	124885	0.80	0.05	0.04	0.11	0.80	0.00	0.47	-0.28	-0.21	-0.27	0.47	-0.8366	0.0077	-9.9	0.9	-9.9	0.8			
ELA	6	533685	0	D	2	124885	0.78	0.78	0.05	0.13	0.03	0.00	0.49	0.49	-0.25	-0.32	-0.21	-0.6526	0.0074	-9.9	0.9	-9.9	0.7			
ELA	6	671275	0	D	2	124885	0.72	0.04	0.21	0.72	0.03	0.00	0.42	-0.24	-0.26	0.42	-0.21	-0.3364	0.0070	-8.5	1.0	-9.9	0.9			
ELA	6	157409	0	D	2	124885	0.56	0.05	0.56	0.23	0.17	0.00	0.31	-0.28	0.31	-0.16	-0.07	0.6138	0.0063	9.9	1.1	9.9	1.2			
ELA	6	331838	0	D	2	124885	0.68	0.15	0.68	0.11	0.06	0.00	0.37	-0.20	0.37	-0.17	-0.20	-0.0724	0.0067	9.9	1.0	9.9	1.1			
ELA	6	565107	0	A-C	2	124885	0.58	0.58	0.10	0.12	0.20	0.00	0.30	0.30	-0.20	-0.21	-0.05	0.5239	0.0064	9.9	1.1	9.9	1.2			
ELA	6	127423	0	A-C	2	124885	0.65	0.14	0.10	0.65	0.10	0.00	0.45	-0.28	-0.26	0.45	-0.13	0.0275	0.0066	-9.9	1.0	-9.9	1.0			
ELA	6	492032	0	A-C	2	124885	0.60	0.21	0.11	0.08	0.60	0.00	0.43	-0.15	-0.25	-0.26	0.43	0.3261	0.0064	-4.3	1.0	-4.2	1.0			
ELA	6	616753	0	A-V	2	124885	0.57	0.57	0.18	0.07	0.17	0.00	0.36	0.36	-0.14	-0.23	-0.16	0.4899	0.0064	9.9	1.1	9.9	1.1			
ELA	6	236377	0	A-V	2	124885	0.76	0.07	0.76	0.06	0.11	0.00	0.48	-0.25	0.48	-0.28	-0.24	-0.5687	0.0073	-9.9	0.9	-9.9	0.8			
ELA	6	180664	0	A-V	2	124885	0.55	0.12	0.22	0.55	0.09	0.01	0.42	-0.13	-0.25	0.42	-0.19	0.6138	0.0063	0.5	1.0	7.7	1.0			
ELA	6	873295	0	D	2	124885	0.39	0.39	0.16	0.13	0.31	0.00	0.36	0.36	-0.21	-0.22	-0.06	1.4402	0.0065	7.2	1.0	9.9	1.1			
ELA	6	878117	0	D	2	124885	0.65	0.65	0.07	0.15	0.12	0.00	0.43	0.43	-0.22	-0.28	-0.15	0.1002	0.0066	-9.4	1.0	-1.8	1.0			
ELA	6	387585	0	D	2	124885	0.58	0.15	0.17	0.10	0.58	0.00	0.42	-0.19	-0.19	-0.22	0.42	0.4727	0.0064	1.0	1.0	1.1	1.0			
ELA	6	595505	0	D	2	124885	0.55	0.55	0.19	0.13	0.14	0.00	0.28	0.28	-0.08	-0.18	-0.14	0.6193	0.0063	9.9	1.1	9.9	1.2			
ELA	6	380561	0	D	2	124885	0.74	0.11	0.05	0.10	0.74	0.00	0.36	-0.22	-0.18	-0.16	0.36	-0.3311	0.0070	0.4	1.0	-1.4	1.0			
ELA	6	299155	0	D	2	124885	0.69	0.15	0.69	0.10	0.06	0.00	0.42	-0.25	0.42	-0.17	-0.22	-0.1193	0.0068	-5.6	1.0	-9.7	1.0			
ELA	6	802821	0	D	2	124885	0.47	0.18	0.08	0.47	0.26	0.00	0.32	-0.18	-0.23	0.32	-0.06	1.0037	0.0063	9.9	1.1	9.9	1.2			
ELA	6	660495	0	D	2	124885	0.92	0.05	0.92	0.01	0.01	0.00	0.31	-0.22	0.31	-0.16	-0.16	-2.0267	0.0109	-9.9	0.9	-9.9	0.8			
ELA	6	460619	0	D	2	124885	0.85	0.08	0.85	0.04	0.04	0.00	0.48	-0.32	0.48	-0.20	-0.25	-1.2677	0.0086	-9.9	0.9	-9.9	0.7			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	6	167560	0	D	2	124885	0.62	0.13	0.06	0.62	0.19	0.00	0.27	-0.09	-0.24	0.27	-0.11	0.3068	0.0065	9.9	1.1	9.9	1.2			
ELA	6	278363	0	D	2	124885	0.45	0.18	0.23	0.45	0.13	0.00	0.34	-0.19	-0.10	0.34	-0.16	1.0613	0.0063	9.9	1.1	9.9	1.1			
ELA	6	829352	0	D	3	124885	0.66	0.07	0.66	0.14	0.13	0.00	0.32	-0.19	0.32	-0.11	-0.18	0.0231	0.0066	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	6	776949	0	D	2	124885	0.90	0.90	0.02	0.01	0.07	0.00	0.34	0.34	-0.18	-0.20	-0.21	-1.7539	0.0099	-8.9	0.9	-5.4	0.9	A+	A-	A-
ELA	6	345375	1	A-K	2	13997	0.40	0.14	0.37	0.08	0.40	0.00	0.18	-0.16	0.09	-0.27	0.18	1.3498	0.0192	9.9	1.3	9.9	1.4	A+	A-	A-
ELA	6	662132	1	A-V	2	13997	0.73	0.07	0.73	0.15	0.06	0.00	0.48	-0.26	0.48	-0.25	-0.25	-0.3548	0.0209	-8.1	0.9	-9.9	0.8	A+	A-	A-
ELA	6	609000	1	A-C	3	13997	0.18	0.18	0.11	0.51	0.20	0.00	-0.14	-0.14	-0.23	0.16	0.12	2.6996	0.0238	9.9	1.4	9.9	2.8	A-	A+	A+
ELA	6	688742	1	A-V	2	13997	0.38	0.18	0.31	0.38	0.13	0.00	0.25	-0.04	-0.08	0.25	-0.20	1.4721	0.0194	9.9	1.2	9.9	1.3	B-	A-	A-
ELA	6	329255	1	A-C	2	13997	0.27	0.36	0.23	0.27	0.14	0.00	0.16	0.05	-0.15	0.16	-0.09	2.1044	0.0210	9.9	1.2	9.9	1.7	A-	A+	A+
ELA	6	337726	1	A-V	2	13997	0.70	0.70	0.06	0.15	0.09	0.00	0.43	0.43	-0.25	-0.18	-0.24	-0.1772	0.0204	-3.4	1.0	-3.2	1.0	A+	A+	A+
ELA	6	158511	1	A-K	2	13997	0.45	0.10	0.25	0.20	0.45	0.00	0.35	-0.29	-0.09	-0.11	0.35	1.1292	0.0190	9.4	1.1	9.9	1.2	A+	A-	A-
ELA	6	839105	1	A-C	3	13997	0.59	0.10	0.59	0.23	0.08	0.00	0.32	-0.19	0.32	-0.13	-0.17	0.4221	0.0192	9.9	1.1	9.9	1.2	A+	A-	A+
ELA	6	896971	2	A-K	2	13853	0.53	0.20	0.53	0.20	0.07	0.00	0.35	-0.15	0.35	-0.14	-0.24	0.7130	0.0190	7.8	1.1	6.8	1.1	A-	A-	A-
ELA	6	106574	2	A-K	2	13853	0.64	0.14	0.13	0.64	0.08	0.00	0.43	-0.21	-0.20	0.43	-0.23	0.1186	0.0197	-2.3	1.0	-3.2	1.0	A-	A-	A-
ELA	6	704699	2	A-K	2	13853	0.38	0.38	0.18	0.15	0.28	0.00	0.20	0.20	-0.12	-0.16	0.02	1.4431	0.0194	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	6	983550	2	A-C	3	13853	0.32	0.13	0.39	0.15	0.32	0.01	0.24	-0.13	0.04	-0.24	0.24	1.7818	0.0201	9.9	1.1	9.9	1.4	A+	A-	A-
ELA	6	607834	2	A-C	2	13853	0.58	0.58	0.21	0.15	0.06	0.00	0.24	0.24	-0.08	-0.14	-0.16	0.4414	0.0192	9.9	1.2	9.9	1.3	A+	A-	A+
ELA	6	470378	2	A-C	2	13853	0.47	0.23	0.15	0.47	0.14	0.00	0.31	-0.11	-0.18	0.31	-0.12	0.9959	0.0190	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	6	290860	2	A-V	2	13853	0.68	0.17	0.68	0.10	0.04	0.00	0.53	-0.31	0.53	-0.25	-0.26	-0.0837	0.0202	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	6	995632	2	A-V	2	13853	0.30	0.24	0.35	0.12	0.30	0.00	0.21	-0.10	0.02	-0.19	0.21	1.9210	0.0205	9.9	1.2	9.9	1.4	A-	A+	A+
ELA	6	363038	3	A-C	3	13855	0.63	0.15	0.10	0.63	0.13	0.00	0.48	-0.21	-0.27	0.48	-0.22	0.2346	0.0194	-9.9	0.9	-9.9	0.9	A+	A+	A+
ELA	6	351780	3	A-C	3	13855	0.47	0.22	0.11	0.19	0.47	0.01	0.33	-0.08	-0.18	-0.17	0.33	1.0029	0.0189	9.7	1.1	9.9	1.2	A+	A+	A+
ELA	6	854634	3	A-K	2	13855	0.21	0.46	0.17	0.15	0.21	0.00	0.16	-0.02	-0.04	-0.11	0.16	2.4717	0.0226	9.9	1.2	9.9	1.5	A+	A-	A-
ELA	6	442490	3	A-C	2	13855	0.52	0.52	0.28	0.07	0.13	0.00	0.31	0.31	-0.07	-0.32	-0.13	0.7619	0.0189	9.9	1.1	9.9	1.1	A+	A-	A+
ELA	6	701326	3	A-V	2	13855	0.49	0.19	0.49	0.20	0.12	0.00	0.14	-0.05	0.14	-0.05	-0.10	0.9238	0.0189	9.9	1.3	9.9	1.4	A+	A+	A+
ELA	6	233872	3	A-V	2	13855	0.56	0.56	0.11	0.18	0.15	0.00	0.19	0.19	-0.16	0.00	-0.12	0.5498	0.0190	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	6	335652	3	A-K	2	13855	0.45	0.23	0.45	0.16	0.16	0.00	0.28	-0.04	0.28	-0.25	-0.08	1.1251	0.0189	9.9	1.1	9.9	1.2	A-	A+	A+
ELA	6	429071	3	A-K	2	13855	0.46	0.39	0.11	0.46	0.04	0.00	0.34	-0.11	-0.26	0.34	-0.16	1.0707	0.0189	6.2	1.0	9.6	1.1	A-	A-	A-
ELA	6	388975	4	A-K	3	13846	0.10	0.11	0.57	0.22	0.10	0.01	-0.26	-0.19	0.37	-0.10	-0.26	3.4736	0.0298	9.9	1.4	9.9	4.3	A-	A-	A-
ELA	6	828777	4	A-V	2	13846	0.69	0.69	0.10	0.09	0.12	0.00	0.46	0.46	-0.24	-0.23	-0.23	-0.1193	0.0203	-6.1	0.9	-6.6	0.9	A+	A+	A-
ELA	6	532951	4	A-V	2	13846	0.55	0.10	0.09	0.26	0.55	0.00	0.41	-0.28	-0.26	-0.10	0.41	0.6296	0.0191	1.8	1.0	1.9	1.0	A-	A-	A-
ELA	6	215894	4	A-V	2	13846	0.47	0.22	0.19	0.47	0.12	0.00	0.35	-0.07	-0.15	0.35	-0.28	1.0166	0.0191	8.8	1.1	9.9	1.1	A-	A+	A-
ELA	6	859004	4	A-C	2	13846	0.49	0.15	0.15	0.21	0.49	0.00	0.25	-0.19	-0.12	-0.03	0.25	0.9098	0.0190	9.9	1.2	9.9	1.3	A-	A+	A+
ELA	6	883713	4	A-K	3	13846	0.58	0.10	0.23	0.58	0.09	0.00	0.35	-0.25	-0.11	0.35	-0.17	0.4705	0.0192	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	6	289576	4	A-C	3	13846	0.24	0.30	0.24	0.33	0.13	0.00	0.04	-0.05	0.04	0.11	-0.14	2.3057	0.0219	9.9	1.3	9.9	1.9	A-	A-	A-
ELA	6	814712	4	A-C	3	13846	0.48	0.48	0.15	0.18	0.18	0.00	0.32	0.32	-0.20	-0.20	-0.03	0.9362	0.0190	9.9	1.1	9.9	1.2	A-	A+	A-
ELA	6	473184	5	A-K	2	13837	0.67	0.07	0.67	0.14	0.12	0.00	0.42	-0.16	0.42	-0.25	-0.21	-0.0019	0.0200	-0.7	1.0	-0.5	1.0	A-	A-	A+
ELA	6	199439	5	A-C	2	13837	0.49	0.28	0.10	0.49	0.13	0.00	0.33	-0.18	-0.13	0.33	-0.14	0.9078	0.0190	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	6	281407	5	A-C	2	13837	0.48	0.48	0.41	0.04	0.07	0.00	0.25	0.25	-0.04	-0.26	-0.21	0.9409	0.0190	9.9	1.2	9.9	1.3	A+	A+	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	6	820361	5	A-V	2	13837	0.44	0.44	0.20	0.13	0.23	0.00	0.25	0.25	-0.17	-0.09	-0.06	1.1746	0.0191	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	6	725239	5	A-C	3	13837	0.41	0.13	0.15	0.30	0.41	0.00	0.16	-0.20	-0.06	0.02	0.16	1.3096	0.0192	9.9	1.3	9.9	1.4	A+	A-	A-
ELA	6	838539	5	A-C	3	13837	0.38	0.23	0.22	0.38	0.17	0.00	0.31	-0.06	-0.14	0.31	-0.18	1.4384	0.0194	8.7	1.1	9.9	1.2	A-	A+	A-
ELA	6	706396	5	A-K	2	13837	0.51	0.21	0.51	0.14	0.14	0.01	0.34	-0.20	0.34	-0.19	-0.05	0.8110	0.0190	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	6	728247	5	A-V	2	13837	0.51	0.11	0.24	0.14	0.51	0.00	0.39	-0.28	-0.19	-0.07	0.39	0.8031	0.0190	4.2	1.0	5.9	1.1	A-	A-	A-
ELA	6	720975	6	B-K	3	13866	0.56	0.13	0.56	0.25	0.06	0.00	0.22	-0.20	0.22	-0.01	-0.18	0.5990	0.0190	9.9	1.2	9.9	1.3	A+	A-	A+
ELA	6	342422	6	B-V	2	13866	0.41	0.41	0.30	0.08	0.20	0.00	0.14	0.14	0.16	-0.20	-0.22	1.3049	0.0191	9.9	1.3	9.9	1.5	A-	A-	A-
ELA	6	361898	6	B-V	2	13866	0.26	0.10	0.30	0.26	0.34	0.00	0.16	-0.02	-0.01	0.16	-0.12	2.1584	0.0212	9.9	1.2	9.9	1.6	B-	A+	A+
ELA	6	402739	6	B-V	2	13866	0.34	0.09	0.07	0.49	0.34	0.00	0.19	-0.30	-0.28	0.14	0.19	1.6754	0.0197	9.9	1.2	9.9	1.4	A+	A+	A+
ELA	6	449622	6	B-C	2	13866	0.52	0.32	0.10	0.52	0.06	0.00	0.18	0.12	-0.28	0.18	-0.25	0.7580	0.0189	9.9	1.3	9.9	1.4	A+	A-	A+
ELA	6	257225	6	B-C	3	13866	0.62	0.09	0.08	0.20	0.62	0.00	0.37	-0.22	-0.24	-0.12	0.37	0.2835	0.0194	5.3	1.0	4.3	1.1	A+	A-	A-
ELA	6	796003	6	B-K	2	13866	0.47	0.21	0.47	0.11	0.21	0.00	0.40	-0.05	0.40	-0.28	-0.22	1.0464	0.0189	-0.2	1.0	4.7	1.1	A-	A-	A-
ELA	6	394528	6	B-K	3	13866	0.59	0.59	0.10	0.17	0.13	0.01	0.42	0.42	-0.28	-0.19	-0.13	0.4232	0.0192	-0.2	1.0	0.6	1.0	A-	A-	A-
ELA	6	267033	7	B-V	2	13893	0.53	0.35	0.05	0.53	0.06	0.00	0.31	-0.08	-0.26	0.31	-0.23	0.6998	0.0190	9.9	1.1	9.9	1.2	C-	A-	A-
ELA	6	278193	7	B-V	2	13893	0.59	0.13	0.59	0.16	0.12	0.00	0.37	-0.27	0.37	-0.14	-0.13	0.4171	0.0192	5.9	1.1	9.9	1.1	A-	A-	A-
ELA	6	995161	7	B-K	2	13893	0.40	0.28	0.18	0.14	0.40	0.00	0.27	0.00	-0.15	-0.20	0.27	1.3886	0.0193	9.9	1.1	9.9	1.3	A-	A-	A-
ELA	6	744659	7	B-C	2	13893	0.78	0.05	0.78	0.09	0.08	0.00	0.43	-0.29	0.43	-0.23	-0.18	-0.6897	0.0223	-6.0	0.9	-0.3	1.0	A-	A-	A-
ELA	6	122561	7	B-K	2	13893	0.34	0.34	0.47	0.11	0.07	0.00	0.12	0.12	0.20	-0.27	-0.27	1.6722	0.0198	9.9	1.3	9.9	1.6	A-	A-	A-
ELA	6	135875	7	B-V	2	13893	0.42	0.42	0.12	0.23	0.22	0.00	0.26	0.26	-0.17	-0.07	-0.09	1.2391	0.0191	9.9	1.2	9.9	1.3	C-	A-	A-
ELA	6	119430	7	B-C	3	13893	0.23	0.40	0.20	0.17	0.23	0.00	0.03	0.14	-0.01	-0.20	0.03	2.3392	0.0220	9.9	1.3	9.9	2.0	A-	A+	A+
ELA	6	576659	7	B-C	2	13893	0.72	0.03	0.06	0.72	0.18	0.00	0.52	-0.27	-0.30	0.52	-0.28	-0.2959	0.0208	-9.9	0.9	-9.9	0.8	B-	B-	C-
ELA	6	209031	8	B-K	2	13880	0.57	0.33	0.05	0.05	0.57	0.01	0.44	-0.21	-0.27	-0.27	0.44	0.4896	0.0191	-5.3	1.0	-3.1	1.0	A-	A-	A-
ELA	6	179720	8	B-K	3	13880	0.54	0.14	0.54	0.16	0.16	0.00	0.35	-0.27	0.35	-0.17	-0.04	0.6648	0.0189	8.0	1.1	8.4	1.1	A+	A-	A-
ELA	6	245336	8	B-K	2	13880	0.69	0.69	0.07	0.19	0.05	0.00	0.42	0.42	-0.21	-0.25	-0.18	-0.1355	0.0202	-2.5	1.0	-3.0	1.0	A-	A-	A-
ELA	6	847355	8	B-C	3	13880	0.32	0.28	0.11	0.32	0.28	0.00	0.19	0.01	-0.19	0.19	-0.07	1.7459	0.0200	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	6	355715	8	B-V	2	13880	0.45	0.45	0.29	0.06	0.19	0.00	0.18	0.18	-0.04	-0.26	-0.02	1.0679	0.0190	9.9	1.3	9.9	1.4	A-	A-	A-
ELA	6	554146	8	B-C	3	13880	0.62	0.08	0.15	0.14	0.62	0.00	0.26	-0.14	-0.04	-0.20	0.26	0.2452	0.0194	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	6	150842	8	B-V	2	13880	0.26	0.12	0.11	0.26	0.51	0.00	0.21	0.06	-0.29	0.21	-0.04	2.1381	0.0213	9.9	1.1	9.9	1.5	A-	A-	A-
ELA	6	746384	8	B-C	2	13880	0.83	0.08	0.83	0.06	0.02	0.00	0.43	-0.28	0.43	-0.23	-0.19	-1.1044	0.0245	-7.2	0.9	-5.5	0.9	A-	A-	A-
ELA	6	433849	9	B-C	3	13858	0.50	0.19	0.50	0.15	0.16	0.00	0.22	-0.15	0.22	-0.04	-0.09	0.8810	0.0190	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	6	796196	9	B-V	2	13858	0.59	0.59	0.16	0.15	0.10	0.00	0.35	0.35	-0.15	-0.15	-0.21	0.4097	0.0192	8.2	1.1	7.9	1.1	A+	A+	A-
ELA	6	773991	9	B-K	3	13858	0.74	0.74	0.10	0.05	0.10	0.00	0.48	0.48	-0.21	-0.30	-0.27	-0.4405	0.0213	-9.9	0.9	-9.2	0.8	A-	A-	A+
ELA	6	934506	9	B-K	2	13858	0.48	0.14	0.11	0.48	0.27	0.00	0.30	-0.30	-0.20	0.30	0.04	0.9501	0.0190	9.9	1.1	9.9	1.3	A+	A+	A-
ELA	6	259146	9	B-C	3	13858	0.77	0.06	0.07	0.10	0.77	0.00	0.55	-0.29	-0.28	-0.29	0.55	-0.6146	0.0220	-9.9	0.8	-9.9	0.7	A+	A+	A+
ELA	6	610524	9	B-C	2	13858	0.50	0.32	0.07	0.50	0.11	0.00	0.30	-0.02	-0.29	0.30	-0.21	0.8407	0.0190	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	6	560457	9	B-C	2	13858	0.49	0.28	0.49	0.13	0.09	0.01	0.25	-0.05	0.25	-0.16	-0.14	0.8835	0.0190	9.9	1.2	9.9	1.3	A-	A+	A-
ELA	6	754559	9	B-C	3	13858	0.30	0.15	0.23	0.32	0.30	0.00	0.00	-0.09	0.00	0.07	0.00	1.9213	0.0205	9.9	1.4	9.9	1.8	A+	A-	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	7	241828	0	D	2	123936	0.88	0.05	0.03	0.04	0.88	0.00	0.46	-0.25	-0.27	-0.25	0.46	-1.5753	0.0091	-9.9	0.8	-9.9	0.6			
ELA	7	396194	0	D	2	123936	0.82	0.82	0.07	0.05	0.06	0.00	0.47	0.47	-0.29	-0.25	-0.22	-1.0624	0.0079	-9.9	0.9	-9.9	0.8			
ELA	7	525418	0	D	2	123936	0.68	0.04	0.06	0.21	0.68	0.00	0.39	-0.24	-0.18	-0.23	0.39	-0.1968	0.0068	3.8	1.0	7.6	1.0			
ELA	7	478160	0	D	2	123936	0.60	0.04	0.06	0.60	0.30	0.00	0.34	-0.25	-0.22	0.34	-0.15	0.2223	0.0065	9.9	1.1	9.9	1.1			
ELA	7	471619	0	D	2	123936	0.50	0.15	0.50	0.06	0.29	0.00	0.49	-0.20	0.49	-0.21	-0.27	0.7846	0.0063	-9.9	0.9	-9.9	0.9			
ELA	7	262964	0	A-K	2	123936	0.61	0.21	0.61	0.10	0.08	0.00	0.33	-0.18	0.33	-0.14	-0.16	0.2398	0.0064	9.9	1.1	9.9	1.2			
ELA	7	130329	0	A-V	2	123936	0.75	0.75	0.04	0.09	0.12	0.00	0.43	0.43	-0.19	-0.19	-0.28	-0.7061	0.0073	-0.8	1.0	-2.3	1.0			
ELA	7	464494	0	A-V	2	123936	0.76	0.08	0.11	0.76	0.05	0.00	0.42	-0.31	-0.14	0.42	-0.24	-0.7603	0.0074	1.1	1.0	9.9	1.1			
ELA	7	591655	0	A-C	2	123936	0.42	0.10	0.37	0.11	0.42	0.00	0.23	-0.18	0.01	-0.21	0.23	1.1777	0.0064	9.9	1.2	9.9	1.3			
ELA	7	518357	0	A-C	3	123936	0.69	0.10	0.10	0.11	0.69	0.00	0.54	-0.25	-0.34	-0.22	0.54	-0.2323	0.0068	-9.9	0.9	-9.9	0.8			
ELA	7	370163	0	B-C	2	123936	0.43	0.19	0.32	0.06	0.43	0.00	0.27	-0.31	0.11	-0.27	0.27	1.0876	0.0064	9.9	1.1	9.9	1.2			
ELA	7	341596	0	B-C	3	123936	0.55	0.55	0.04	0.35	0.06	0.00	0.25	0.25	-0.23	-0.07	-0.20	0.4838	0.0064	9.9	1.2	9.9	1.3			
ELA	7	125140	0	B-V	2	123936	0.77	0.06	0.04	0.77	0.14	0.00	0.40	-0.21	-0.19	0.40	-0.24	-0.6363	0.0072	-9.9	0.9	-7.3	1.0			
ELA	7	984180	0	B-V	2	123936	0.90	0.02	0.02	0.90	0.06	0.00	0.39	-0.20	-0.22	0.39	-0.24	-1.8791	0.0101	-9.9	0.9	-9.9	0.8			
ELA	7	540437	0	B-C	2	123936	0.53	0.23	0.13	0.10	0.53	0.00	0.32	-0.05	-0.26	-0.16	0.32	0.5577	0.0063	9.9	1.1	9.9	1.2			
ELA	7	730924	0	B-K	2	123936	0.39	0.39	0.29	0.20	0.12	0.00	0.27	0.27	0.01	-0.22	-0.14	1.4108	0.0065	9.9	1.1	9.9	1.3			
ELA	7	116612	0	D	3	123936	0.60	0.17	0.18	0.60	0.06	0.00	0.36	-0.11	-0.21	0.36	-0.22	0.2693	0.0064	9.9	1.1	9.9	1.1			
ELA	7	436208	0	D	3	123936	0.66	0.07	0.13	0.66	0.14	0.00	0.37	-0.24	-0.21	0.37	-0.12	-0.0804	0.0067	9.9	1.0	9.9	1.1			
ELA	7	335632	0	D	2	123936	0.62	0.12	0.62	0.18	0.08	0.00	0.39	-0.18	0.39	-0.22	-0.15	0.2087	0.0065	8.5	1.0	3.3	1.0			
ELA	7	963082	0	D	2	123936	0.53	0.53	0.25	0.08	0.14	0.00	0.22	0.22	-0.07	-0.18	-0.09	0.5930	0.0063	9.9	1.2	9.9	1.3			
ELA	7	574709	0	D	2	123936	0.32	0.27	0.23	0.17	0.32	0.00	0.27	-0.05	-0.16	-0.09	0.27	1.5779	0.0066	9.9	1.1	9.9	1.2			
ELA	7	991786	0	D	2	123936	0.76	0.76	0.06	0.09	0.09	0.00	0.45	0.45	-0.26	-0.27	-0.20	-0.6733	0.0073	-9.9	0.9	-9.9	0.8			
ELA	7	230882	0	B-K	3	123936	0.60	0.10	0.10	0.60	0.19	0.00	0.37	-0.24	-0.26	0.37	-0.08	0.2431	0.0064	9.9	1.0	9.9	1.1			
ELA	7	947201	0	B-K	2	123936	0.44	0.23	0.24	0.08	0.44	0.00	0.24	-0.03	-0.06	-0.26	0.24	1.1270	0.0064	9.9	1.2	9.9	1.3			
ELA	7	150630	0	B-C	3	123936	0.52	0.52	0.15	0.16	0.16	0.00	0.35	0.35	-0.19	-0.20	-0.08	0.5048	0.0064	9.9	1.1	9.9	1.1			
ELA	7	116987	0	B-C	3	123936	0.52	0.20	0.14	0.52	0.15	0.00	0.35	-0.18	-0.18	0.35	-0.11	0.7437	0.0063	9.9	1.1	9.9	1.1			
ELA	7	400195	0	B-C	2	123936	0.71	0.11	0.71	0.10	0.08	0.00	0.47	-0.28	0.47	-0.22	-0.21	-0.2242	0.0068	-9.9	0.9	-9.9	0.9			
ELA	7	427934	0	B-V	2	123936	0.79	0.05	0.07	0.09	0.79	0.00	0.51	-0.29	-0.29	-0.24	0.51	-0.8142	0.0075	-9.9	0.9	-9.9	0.7			
ELA	7	146134	0	A-C	2	123936	0.88	0.07	0.88	0.03	0.02	0.00	0.47	-0.31	0.47	-0.24	-0.21	-1.7236	0.0096	-9.9	0.9	-9.9	0.7			
ELA	7	548539	0	A-V	2	123936	0.48	0.11	0.38	0.48	0.03	0.00	0.39	-0.25	-0.17	0.39	-0.20	0.8230	0.0063	4.5	1.0	9.9	1.0			
ELA	7	317631	0	A-V	2	123936	0.82	0.82	0.08	0.05	0.05	0.00	0.46	0.46	-0.28	-0.20	-0.26	-1.0855	0.0080	-9.9	0.9	-9.9	0.8			
ELA	7	886216	0	A-C	2	123936	0.65	0.11	0.11	0.65	0.13	0.00	0.44	-0.17	-0.22	0.44	-0.25	0.1429	0.0065	-9.9	0.9	-9.9	0.9			
ELA	7	884198	0	A-K	2	123936	0.81	0.09	0.07	0.03	0.81	0.00	0.40	-0.22	-0.20	-0.26	0.40	-0.9675	0.0078	-9.9	0.9	-9.3	0.9			
ELA	7	788235	0	D	2	123936	0.69	0.08	0.06	0.17	0.69	0.00	0.46	-0.32	-0.27	-0.16	0.46	-0.1746	0.0067	-9.9	0.9	-9.9	0.9			
ELA	7	728844	0	D	2	123936	0.67	0.19	0.08	0.07	0.67	0.00	0.43	-0.21	-0.25	-0.20	0.43	-0.1163	0.0067	-4.5	1.0	-3.9	1.0			
ELA	7	373094	0	D	2	123936	0.56	0.12	0.56	0.24	0.08	0.00	0.34	-0.16	0.34	-0.19	-0.13	0.4562	0.0064	9.9	1.1	9.9	1.1			
ELA	7	730438	0	D	2	123936	0.84	0.06	0.84	0.06	0.04	0.00	0.40	-0.28	0.40	-0.18	-0.18	-1.2174	0.0083	-9.9	0.9	-9.9	0.9			
ELA	7	565724	0	D	2	123936	0.43	0.43	0.23	0.24	0.10	0.00	0.39	0.39	-0.17	-0.18	-0.15	1.0812	0.0064	-6.9	1.0	9.9	1.0			
ELA	7	336699	0	D	2	123936	0.66	0.17	0.03	0.66	0.13	0.00	0.28	-0.14	-0.15	0.28	-0.16	-0.0300	0.0066	9.9	1.1	9.9	1.1			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	7	441996	0	A-C	2	123936	0.36	0.20	0.36	0.04	0.40	0.00	0.22	-0.20	0.22	-0.22	0.05	1.4119	0.0065	9.9	1.2	9.9	1.3			
ELA	7	507003	0	D	2	123936	0.82	0.04	0.09	0.82	0.05	0.00	0.43	-0.22	-0.25	0.43	-0.22	-0.9916	0.0078	-9.9	0.9	-9.9	0.8			
ELA	7	509534	0	D	2	123936	0.83	0.08	0.05	0.05	0.83	0.00	0.46	-0.30	-0.27	-0.17	0.46	-1.1328	0.0081	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	7	470685	0	D	2	123936	0.40	0.19	0.40	0.22	0.20	0.00	0.27	-0.09	0.27	-0.17	-0.07	1.2575	0.0064	9.9	1.1	9.9	1.3	A+	A+	A+
ELA	7	680698	1	A-K	2	13864	0.65	0.12	0.08	0.65	0.14	0.00	0.53	-0.33	-0.23	0.53	-0.23	-0.0598	0.0198	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	7	908672	1	A-C	2	13864	0.40	0.13	0.41	0.06	0.40	0.00	0.15	-0.09	0.03	-0.24	0.15	1.2168	0.0193	9.9	1.3	9.9	1.5	A+	A+	A+
ELA	7	472410	1	A-V	2	13864	0.83	0.04	0.05	0.83	0.07	0.00	0.46	-0.26	-0.24	0.46	-0.26	-1.2119	0.0245	-8.2	0.9	-9.9	0.7	A-	A-	B-
ELA	7	879274	1	A-V	2	13864	0.46	0.15	0.46	0.17	0.21	0.00	0.35	-0.22	0.35	-0.09	-0.15	0.9238	0.0190	6.6	1.1	9.9	1.1	A-	A-	A-
ELA	7	518358	1	A-K	2	13864	0.63	0.63	0.18	0.10	0.08	0.00	0.41	0.41	-0.15	-0.23	-0.24	0.0500	0.0196	1.3	1.0	2.8	1.0	A-	A-	A-
ELA	7	849361	1	A-C	3	13864	0.47	0.16	0.17	0.47	0.19	0.00	0.29	-0.22	-0.17	0.29	0.01	0.8786	0.0190	9.9	1.1	9.9	1.2	A+	A+	A+
ELA	7	175042	1	A-K	3	13864	0.58	0.18	0.11	0.13	0.58	0.00	0.44	-0.20	-0.21	-0.21	0.44	0.3399	0.0192	-3.8	1.0	-3.4	1.0	A+	A-	A-
ELA	7	449093	1	A-V	2	13864	0.69	0.69	0.11	0.13	0.08	0.00	0.43	0.43	-0.26	-0.18	-0.22	-0.2401	0.0203	-2.7	1.0	-0.9	1.0	A-	A-	A-
ELA	7	165086	2	A-V	2	13765	0.52	0.06	0.20	0.52	0.22	0.00	0.32	-0.27	-0.18	0.32	-0.06	0.6312	0.0189	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	7	244414	2	A-V	2	13765	0.69	0.69	0.12	0.10	0.09	0.00	0.27	0.27	-0.21	-0.08	-0.11	-0.2112	0.0202	9.9	1.1	9.9	1.3	A+	A+	A+
ELA	7	839395	2	A-K	2	13765	0.40	0.29	0.09	0.21	0.40	0.01	0.17	0.02	-0.21	-0.05	0.17	1.2394	0.0192	9.9	1.2	9.9	1.4	A+	A+	A-
ELA	7	981841	2	A-K	3	13765	0.56	0.56	0.17	0.20	0.07	0.00	0.31	0.31	-0.15	-0.10	-0.24	0.4678	0.0190	9.9	1.1	9.9	1.2	A-	A-	A+
ELA	7	355074	2	A-V	2	13765	0.74	0.11	0.74	0.11	0.04	0.00	0.45	-0.18	0.45	-0.30	-0.26	-0.5143	0.0212	-6.9	0.9	-6.5	0.9	A-	A-	A-
ELA	7	494388	2	A-C	3	13765	0.30	0.42	0.30	0.19	0.08	0.00	0.11	0.03	0.11	0.00	-0.24	1.7875	0.0204	9.9	1.2	9.9	1.6	A-	A-	A+
ELA	7	285158	2	A-C	2	13765	0.71	0.19	0.71	0.04	0.05	0.00	0.46	-0.28	0.46	-0.27	-0.18	-0.3717	0.0207	-7.0	0.9	-6.4	0.9	A-	A-	A-
ELA	7	527325	2	A-K	3	13765	0.35	0.29	0.19	0.35	0.17	0.00	0.17	0.00	-0.07	0.17	-0.13	1.5169	0.0197	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	7	294926	3	A-K	3	13771	0.30	0.30	0.14	0.11	0.44	0.00	0.18	0.18	-0.21	-0.20	0.11	1.7943	0.0204	9.9	1.2	9.9	1.5	A+	A+	A+
ELA	7	984377	3	A-V	2	13771	0.78	0.06	0.09	0.78	0.07	0.00	0.37	-0.25	-0.11	0.37	-0.25	-0.7553	0.0223	-0.3	1.0	4.1	1.1	A-	A-	A-
ELA	7	743543	3	A-V	2	13771	0.70	0.07	0.11	0.70	0.12	0.00	0.48	-0.32	-0.27	0.48	-0.17	-0.2673	0.0205	-8.7	0.9	-9.8	0.9	A+	A-	A-
ELA	7	543541	3	A-V	3	13771	0.52	0.25	0.52	0.14	0.08	0.00	0.30	-0.05	0.30	-0.24	-0.17	0.6662	0.0190	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	7	528991	3	A-C	3	13771	0.56	0.16	0.09	0.20	0.56	0.00	0.43	-0.22	-0.30	-0.11	0.43	0.4841	0.0191	-2.8	1.0	-1.3	1.0	A+	A-	A-
ELA	7	831454	3	A-C	2	13771	0.52	0.13	0.22	0.52	0.13	0.00	0.31	-0.24	-0.15	0.31	-0.04	0.6673	0.0190	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	7	679051	3	A-K	2	13771	0.74	0.07	0.10	0.08	0.74	0.00	0.51	-0.29	-0.27	-0.24	0.51	-0.5061	0.0213	-9.9	0.9	-9.9	0.8	A+	A+	A+
ELA	7	457685	3	A-K	2	13771	0.60	0.14	0.13	0.13	0.60	0.00	0.41	-0.18	-0.17	-0.23	0.41	0.2458	0.0194	-0.2	1.0	-0.7	1.0	B+	A+	A+
ELA	7	599425	4	A-K	3	13766	0.75	0.09	0.08	0.08	0.75	0.00	0.51	-0.24	-0.25	-0.32	0.51	-0.5913	0.0217	-9.9	0.9	-9.9	0.8	A+	A+	A-
ELA	7	364135	4	A-C	3	13766	0.56	0.17	0.17	0.56	0.10	0.00	0.26	-0.07	-0.13	0.26	-0.18	0.4601	0.0191	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	7	123320	4	A-C	3	13766	0.64	0.64	0.12	0.05	0.18	0.00	0.38	0.38	-0.19	-0.29	-0.13	0.0776	0.0197	3.6	1.0	6.7	1.1	A-	A-	A-
ELA	7	154445	4	A-C	2	13766	0.59	0.06	0.59	0.32	0.03	0.00	0.24	-0.18	0.24	-0.10	-0.18	0.3003	0.0193	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	7	603504	4	A-V	2	13766	0.82	0.82	0.09	0.05	0.05	0.00	0.43	0.43	-0.24	-0.22	-0.24	-1.0451	0.0239	-5.8	0.9	-4.9	0.9	A-	A-	A+
ELA	7	595064	4	A-V	2	13766	0.39	0.25	0.20	0.16	0.39	0.00	0.16	0.03	-0.08	-0.16	0.16	1.3172	0.0193	9.9	1.3	9.9	1.4	A-	A-	A-
ELA	7	865852	4	A-C	3	13766	0.78	0.05	0.06	0.11	0.78	0.00	0.38	-0.23	-0.21	-0.18	0.38	-0.7948	0.0226	-1.7	1.0	3.0	1.1	A+	A-	A-
ELA	7	616185	4	A-V	2	13766	0.80	0.05	0.08	0.80	0.07	0.00	0.42	-0.20	-0.25	0.42	-0.23	-0.9051	0.0231	-4.4	0.9	-5.7	0.9	A-	A-	A-
ELA	7	234612	5	A-K	3	13780	0.54	0.25	0.13	0.08	0.54	0.00	0.36	-0.04	-0.28	-0.25	0.36	0.5396	0.0190	5.7	1.0	7.8	1.1	A+	A+	A+
ELA	7	200828	5	A-K	2	13780	0.52	0.10	0.27	0.52	0.11	0.01	0.42	-0.20	-0.20	0.42	-0.19	0.6570	0.0190	-2.6	1.0	-0.7	1.0	A-	A-	A-
ELA	7	710427	5	A-C	2	13780	0.52	0.21	0.21	0.52	0.06	0.00	0.25	-0.25	0.03	0.25	-0.15	0.6167	0.0190	9.9	1.2	9.9	1.3	A+	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	7	761351	5	A-C	3	13780	0.29	0.26	0.14	0.30	0.29	0.00	0.24	-0.08	-0.29	0.06	0.24	1.8120	0.0205	9.9	1.1	9.9	1.3	A+	A-	A-
ELA	7	897353	5	A-C	3	13780	0.32	0.36	0.32	0.19	0.13	0.00	0.02	0.19	0.02	-0.12	-0.16	1.6477	0.0201	9.9	1.4	9.9	1.7	A+	A+	A+
ELA	7	344091	5	A-V	2	13780	0.61	0.16	0.61	0.14	0.09	0.00	0.41	-0.22	0.41	-0.14	-0.24	0.1726	0.0194	-0.5	1.0	-1.9	1.0	A-	A-	A-
ELA	7	703509	5	A-V	2	13780	0.68	0.68	0.11	0.11	0.10	0.00	0.49	0.49	-0.28	-0.27	-0.19	-0.1915	0.0202	-9.9	0.9	-9.9	0.8	A-	A+	A-
ELA	7	807085	5	A-V	2	13780	0.48	0.48	0.11	0.22	0.19	0.00	0.42	0.42	-0.18	-0.20	-0.18	0.8400	0.0190	-3.9	1.0	-0.4	1.0	A-	A-	A-
ELA	7	935835	6	B-C	2	13754	0.29	0.23	0.19	0.29	0.30	0.00	0.22	-0.10	-0.01	0.22	-0.13	1.8567	0.0206	9.9	1.1	9.9	1.3	A+	A-	A-
ELA	7	312247	6	B-C	3	13754	0.51	0.51	0.18	0.18	0.12	0.00	0.42	0.42	-0.18	-0.17	-0.22	0.7005	0.0189	-3.2	1.0	0.1	1.0	A+	A+	A+
ELA	7	663220	6	B-K	2	13754	0.45	0.45	0.08	0.27	0.20	0.00	0.21	0.21	-0.21	-0.04	-0.06	1.0092	0.0190	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	7	956392	6	B-V	2	13754	0.57	0.24	0.06	0.57	0.13	0.00	0.25	-0.09	-0.24	0.25	-0.09	0.4385	0.0191	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	7	297064	6	B-V	2	13754	0.53	0.07	0.09	0.30	0.53	0.00	0.42	-0.14	-0.28	-0.19	0.42	0.5988	0.0190	0.1	1.0	1.5	1.0	C-	B-	C-
ELA	7	653303	6	B-V	2	13754	0.77	0.13	0.05	0.05	0.77	0.00	0.45	-0.21	-0.28	-0.26	0.45	-0.6845	0.0220	-7.5	0.9	-7.4	0.9	A-	A-	B-
ELA	7	326844	6	B-V	2	13754	0.47	0.29	0.47	0.21	0.03	0.00	0.41	-0.24	0.41	-0.15	-0.19	0.9153	0.0190	-3.2	1.0	1.3	1.0	A+	A-	B-
ELA	7	850060	6	B-K	3	13754	0.35	0.44	0.35	0.13	0.08	0.00	0.13	0.06	0.13	-0.14	-0.17	1.5424	0.0197	9.9	1.3	9.9	1.5	A-	A+	A+
ELA	7	921033	7	B-K	2	13744	0.70	0.12	0.13	0.05	0.70	0.00	0.46	-0.23	-0.21	-0.29	0.46	-0.2458	0.0205	-7.5	0.9	-5.9	0.9	A+	A-	A-
ELA	7	608005	7	B-C	2	13744	0.65	0.15	0.10	0.65	0.10	0.00	0.48	-0.24	-0.26	0.48	-0.22	0.0157	0.0198	-9.7	0.9	-9.9	0.9	A+	A-	A-
ELA	7	292957	7	B-C	2	13744	0.22	0.22	0.33	0.11	0.34	0.00	0.13	0.13	0.06	-0.18	-0.05	2.3501	0.0226	9.9	1.2	9.9	1.7	A-	A+	A+
ELA	7	270823	7	B-C	2	13744	0.57	0.57	0.11	0.18	0.14	0.00	0.40	0.40	-0.28	-0.06	-0.24	0.4182	0.0192	2.8	1.0	7.4	1.1	A+	A-	A-
ELA	7	101008	7	B-V	2	13744	0.57	0.09	0.57	0.13	0.21	0.00	0.26	-0.25	0.26	-0.13	-0.04	0.4348	0.0192	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	7	236170	7	B-V	2	13744	0.38	0.11	0.19	0.38	0.32	0.00	0.20	-0.22	-0.18	0.20	0.09	1.3771	0.0195	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	7	251541	7	B-V	1	13744	0.65	0.13	0.65	0.13	0.08	0.00	0.44	-0.18	0.44	-0.25	-0.23	-0.0046	0.0199	-2.8	1.0	-5.5	0.9	A-	A-	A-
ELA	7	237994	7	B-V	2	13744	0.07	0.71	0.03	0.19	0.07	0.00	-0.06	0.18	-0.21	-0.07	-0.06	3.8023	0.0348	6.8	1.2	9.9	3.3	A+	B-	A-
ELA	7	634441	8	B-K	2	13752	0.53	0.10	0.31	0.53	0.06	0.00	0.46	-0.28	-0.19	0.46	-0.24	0.6272	0.0191	-6.9	1.0	-2.2	1.0	A-	B-	A-
ELA	7	494182	8	B-C	3	13752	0.31	0.31	0.31	0.19	0.18	0.00	0.08	0.02	0.08	-0.02	-0.10	1.7494	0.0203	9.9	1.3	9.9	1.7	A-	A+	A+
ELA	7	891979	8	B-V	2	13752	0.75	0.09	0.06	0.09	0.75	0.00	0.47	-0.25	-0.27	-0.23	0.47	-0.6000	0.0217	-8.0	0.9	-9.1	0.8	B-	A-	A-
ELA	7	320044	8	B-V	2	13752	0.86	0.86	0.04	0.06	0.04	0.00	0.47	0.47	-0.26	-0.28	-0.23	-1.4245	0.0262	-8.8	0.9	-9.9	0.7	A-	A-	A-
ELA	7	999390	8	B-V	2	13752	0.80	0.06	0.08	0.06	0.80	0.00	0.45	-0.20	-0.25	-0.27	0.45	-0.9463	0.0232	-7.2	0.9	-7.9	0.8	A-	A-	A-
ELA	7	541862	8	B-C	2	13752	0.49	0.49	0.21	0.20	0.10	0.00	0.30	0.30	-0.09	-0.20	-0.11	0.7932	0.0191	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	7	519141	8	B-V	2	13752	0.77	0.09	0.77	0.10	0.03	0.00	0.39	-0.20	0.39	-0.21	-0.23	-0.7561	0.0223	-1.1	1.0	-0.2	1.0	A-	B-	A-
ELA	7	125283	8	B-K	3	13752	0.36	0.19	0.23	0.36	0.20	0.00	0.15	-0.15	0.01	0.15	-0.03	1.4744	0.0197	9.9	1.3	9.9	1.5	A+	A-	A+
ELA	7	172179	9	B-K	3	13740	0.49	0.49	0.20	0.18	0.12	0.00	0.29	0.29	-0.10	-0.14	-0.14	0.8076	0.0189	9.9	1.1	9.9	1.2	A+	A+	A+
ELA	7	243621	9	B-V	2	13740	0.47	0.24	0.12	0.16	0.47	0.00	0.28	-0.01	-0.21	-0.17	0.28	0.8975	0.0189	9.9	1.1	9.9	1.2	A-	A+	A+
ELA	7	594162	9	B-C	2	13740	0.61	0.14	0.61	0.14	0.10	0.00	0.32	-0.11	0.32	-0.15	-0.21	0.2235	0.0193	9.9	1.1	9.9	1.2	A-	A-	A+
ELA	7	863345	9	B-C	3	13740	0.29	0.22	0.29	0.24	0.25	0.00	0.22	-0.16	0.22	0.00	-0.07	1.8438	0.0205	9.9	1.1	9.9	1.4	A+	A-	A-
ELA	7	941162	9	B-K	2	13740	0.46	0.46	0.15	0.24	0.15	0.00	0.31	0.31	-0.24	-0.10	-0.08	0.9693	0.0190	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	7	661206	9	B-K	2	13740	0.57	0.06	0.20	0.57	0.17	0.00	0.41	-0.31	-0.25	0.41	-0.07	0.4193	0.0191	-0.6	1.0	-0.9	1.0	A+	A+	A+
ELA	7	843104	9	B-V	2	13740	0.64	0.10	0.13	0.64	0.13	0.00	0.39	-0.22	-0.13	0.39	-0.24	0.0599	0.0196	0.7	1.0	1.7	1.0	A-	A-	A-
ELA	7	848516	9	B-C	3	13740	0.24	0.44	0.15	0.17	0.24	0.00	0.01	0.17	-0.11	-0.12	0.01	2.1831	0.0218	9.9	1.3	9.9	1.9	A+	A+	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	8	832549	0	A-K	2	125091	0.42	0.35	0.42	0.16	0.06	0.00	0.24	-0.04	0.24	-0.12	-0.22	0.9980	0.0063	9.9	1.2	9.9	1.3			
ELA	8	816711	0	A-C	2	125091	0.79	0.12	0.79	0.03	0.05	0.00	0.40	-0.21	0.40	-0.19	-0.27	-1.1372	0.0077	-1.4	1.0	-2.9	1.0			
ELA	8	600360	0	A-V	2	125091	0.74	0.74	0.07	0.09	0.09	0.00	0.38	0.38	-0.25	-0.17	-0.17	-0.6699	0.0070	-1.7	1.0	-9.9	0.9			
ELA	8	572802	0	A-K	2	125091	0.77	0.08	0.07	0.77	0.08	0.00	0.39	-0.25	-0.22	0.39	-0.14	-0.8086	0.0072	-9.9	0.9	-5.6	1.0			
ELA	8	183051	0	A-C	3	125091	0.80	0.03	0.14	0.04	0.80	0.00	0.34	-0.22	-0.17	-0.22	0.34	-0.9738	0.0074	-9.9	1.0	1.6	1.0			
ELA	8	693230	0	A-C	2	125091	0.85	0.85	0.04	0.06	0.05	0.00	0.46	0.46	-0.23	-0.25	-0.27	-1.4484	0.0084	-9.9	0.9	-9.9	0.7			
ELA	8	539477	0	A-V	2	125091	0.64	0.27	0.06	0.64	0.03	0.00	0.32	-0.13	-0.26	0.32	-0.20	-0.0589	0.0064	9.9	1.1	9.9	1.1			
ELA	8	506610	0	D	2	125091	0.71	0.04	0.10	0.71	0.15	0.00	0.38	-0.25	-0.25	0.38	-0.14	-0.4898	0.0068	-3.9	1.0	-4.7	1.0			
ELA	8	214964	0	D	2	125091	0.63	0.63	0.20	0.10	0.07	0.00	0.42	0.42	-0.26	-0.20	-0.15	-0.0517	0.0064	-9.9	1.0	-9.9	0.9			
ELA	8	705457	0	D	2	125091	0.47	0.34	0.10	0.09	0.47	0.00	0.47	-0.31	-0.16	-0.14	0.47	0.7320	0.0062	-9.9	0.9	-9.9	0.9			
ELA	8	240591	0	D	2	125091	0.54	0.06	0.36	0.54	0.05	0.00	0.22	-0.16	-0.09	0.22	-0.15	0.4294	0.0062	9.9	1.2	9.9	1.2			
ELA	8	825183	0	D	2	125091	0.83	0.03	0.12	0.02	0.83	0.00	0.40	-0.20	-0.29	-0.14	0.40	-1.1915	0.0078	-9.9	0.9	-9.9	0.8			
ELA	8	118720	0	B-K	2	125091	0.54	0.14	0.15	0.16	0.54	0.00	0.36	-0.11	-0.25	-0.14	0.36	0.4338	0.0062	9.9	1.0	9.9	1.1			
ELA	8	519656	0	B-K	2	125091	0.36	0.29	0.11	0.24	0.36	0.00	0.14	0.01	-0.19	-0.03	0.14	1.2392	0.0064	9.9	1.2	9.9	1.4			
ELA	8	920102	0	B-C	2	125091	0.67	0.11	0.67	0.12	0.11	0.00	0.38	-0.18	0.38	-0.28	-0.10	-0.2183	0.0065	-2.1	1.0	2.6	1.0			
ELA	8	804053	0	B-C	3	125091	0.33	0.33	0.29	0.14	0.24	0.00	0.37	0.37	-0.21	-0.17	-0.03	1.4687	0.0066	-4.8	1.0	9.9	1.1			
ELA	8	186392	0	B-V	2	125091	0.57	0.57	0.20	0.08	0.15	0.00	0.32	0.32	-0.12	-0.25	-0.11	0.0148	0.0064	9.9	1.1	9.9	1.2			
ELA	8	708167	0	B-V	2	125091	0.55	0.15	0.04	0.55	0.25	0.00	0.27	-0.17	-0.25	0.27	-0.05	0.2152	0.0063	9.9	1.1	9.9	1.2			
ELA	8	662035	0	D	2	125091	0.72	0.07	0.09	0.12	0.72	0.00	0.47	-0.24	-0.21	-0.27	0.47	-0.4990	0.0068	-9.9	0.9	-9.9	0.8			
ELA	8	520415	0	D	3	125091	0.48	0.48	0.19	0.21	0.12	0.00	0.50	0.50	-0.22	-0.25	-0.18	0.6866	0.0062	-9.9	0.9	-9.9	0.9			
ELA	8	313369	0	D	2	125091	0.73	0.73	0.19	0.04	0.05	0.00	0.33	0.33	-0.15	-0.21	-0.21	-0.5784	0.0069	8.6	1.0	9.9	1.1			
ELA	8	637760	0	D	2	125091	0.77	0.09	0.06	0.77	0.08	0.00	0.35	-0.11	-0.21	0.35	-0.25	-0.8424	0.0072	-6.5	1.0	9.9	1.1			
ELA	8	814117	0	D	2	125091	0.57	0.06	0.57	0.11	0.26	0.00	0.54	-0.15	0.54	-0.27	-0.33	0.2319	0.0063	-9.9	0.9	-9.9	0.8			
ELA	8	833265	0	D	2	125091	0.28	0.36	0.28	0.09	0.27	0.00	0.21	0.04	0.21	-0.29	-0.06	1.7425	0.0069	9.9	1.1	9.9	1.4			
ELA	8	259512	0	D	2	125091	0.26	0.26	0.22	0.22	0.30	0.00	0.15	0.15	-0.09	-0.02	-0.05	1.7648	0.0069	9.9	1.2	9.9	1.4			
ELA	8	901683	0	D	2	125091	0.66	0.15	0.66	0.12	0.08	0.00	0.19	-0.21	0.19	0.00	-0.07	-0.1494	0.0065	9.9	1.2	9.9	1.3			
ELA	8	816172	0	D	2	125091	0.38	0.47	0.38	0.05	0.09	0.00	0.33	-0.23	0.33	-0.14	-0.06	1.1618	0.0064	9.9	1.0	9.9	1.1			
ELA	8	884651	0	D	2	125091	0.60	0.16	0.12	0.60	0.11	0.00	0.44	-0.18	-0.24	0.44	-0.21	0.1293	0.0063	-9.9	1.0	-9.9	0.9			
ELA	8	360234	0	D	2	125091	0.80	0.10	0.80	0.06	0.04	0.00	0.40	-0.17	0.40	-0.28	-0.21	-1.0003	0.0075	-9.9	0.9	-9.9	0.9			
ELA	8	175278	0	D	2	125091	0.58	0.09	0.14	0.19	0.58	0.00	0.37	-0.19	-0.23	-0.13	0.37	0.2257	0.0063	8.7	1.0	9.9	1.0			
ELA	8	536666	0	B-C	3	125091	0.66	0.66	0.12	0.06	0.15	0.00	0.33	0.33	-0.17	-0.28	-0.10	-0.1666	0.0065	9.9	1.0	9.9	1.2			
ELA	8	797702	0	B-V	2	125091	0.60	0.04	0.22	0.60	0.13	0.00	0.45	-0.19	-0.33	0.45	-0.13	0.0748	0.0064	-9.9	1.0	-9.9	0.9			
ELA	8	352349	0	B-K	2	125091	0.60	0.16	0.60	0.20	0.05	0.00	0.37	-0.27	0.37	-0.09	-0.21	-0.0273	0.0064	9.9	1.1	9.9	1.1			
ELA	8	276947	0	B-K	2	125091	0.73	0.11	0.73	0.08	0.08	0.00	0.39	-0.21	0.39	-0.23	-0.16	-0.5901	0.0069	-9.9	1.0	-4.6	1.0			
ELA	8	993337	0	B-K	2	125091	0.63	0.19	0.06	0.12	0.63	0.00	0.35	-0.12	-0.21	-0.22	0.35	-0.0298	0.0064	9.9	1.0	9.9	1.1			
ELA	8	383407	0	A-K	3	125091	0.76	0.05	0.12	0.06	0.76	0.00	0.33	-0.25	-0.10	-0.22	0.33	-0.7909	0.0072	-0.5	1.0	9.9	1.2			
ELA	8	872579	0	A-K	2	125091	0.72	0.07	0.72	0.06	0.15	0.00	0.43	-0.26	0.43	-0.26	-0.18	-0.5766	0.0069	-9.9	1.0	-9.9	0.9			
ELA	8	309487	0	A-V	2	125091	0.54	0.54	0.13	0.22	0.10	0.00	0.25	0.25	-0.20	0.02	-0.19	0.2274	0.0063	9.9	1.2	9.9	1.3			
ELA	8	992459	0	A-V	2	125091	0.62	0.12	0.09	0.62	0.16	0.00	0.40	-0.25	-0.24	0.40	-0.11	0.0659	0.0064	-7.9	1.0	-7.7	1.0			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	8	876908	0	A-V	2	125091	0.41	0.25	0.11	0.24	0.41	0.00	0.33	-0.18	-0.17	-0.07	0.33	0.9639	0.0063	9.9	1.0	9.9	1.1			
ELA	8	657032	0	D	2	125091	0.71	0.09	0.08	0.71	0.12	0.00	0.35	-0.28	-0.21	0.35	-0.07	-0.5066	0.0068	6.5	1.0	9.9	1.1			
ELA	8	381645	0	D	2	125091	0.35	0.08	0.35	0.17	0.40	0.00	0.17	-0.18	0.17	-0.05	-0.03	1.3554	0.0065	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	8	213906	0	D	2	125091	0.57	0.14	0.13	0.57	0.15	0.00	0.38	-0.17	-0.21	0.38	-0.16	0.2269	0.0063	5.0	1.0	-0.7	1.0	A+	A-	A-
ELA	8	232280	1	A-K	3	13984	0.09	0.77	0.07	0.09	0.06	0.00	-0.18	0.37	-0.23	-0.18	-0.19	3.2764	0.0310	9.9	1.3	9.9	3.7	A-	A+	A+
ELA	8	931520	1	A-K	2	13984	0.44	0.44	0.20	0.22	0.13	0.00	0.39	0.39	-0.19	-0.13	-0.17	0.8407	0.0188	-2.0	1.0	2.8	1.0	A-	A-	A-
ELA	8	670306	1	A-K	3	13984	0.35	0.26	0.35	0.23	0.16	0.00	0.24	-0.06	0.24	-0.09	-0.13	1.3403	0.0195	9.9	1.1	9.9	1.3	A-	A-	A-
ELA	8	620362	1	A-C	2	13984	0.66	0.66	0.09	0.18	0.07	0.00	0.29	0.29	-0.21	-0.14	-0.08	-0.2090	0.0195	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	8	829336	1	A-V	2	13984	0.74	0.08	0.74	0.08	0.09	0.00	0.41	-0.26	0.41	-0.17	-0.21	-0.6943	0.0210	-4.9	1.0	-2.4	1.0	A-	A-	A-
ELA	8	856066	1	A-V	2	13984	0.54	0.08	0.23	0.15	0.54	0.00	0.29	-0.20	-0.07	-0.16	0.29	0.3587	0.0187	9.9	1.1	9.9	1.1	A+	A+	A+
ELA	8	125176	1	A-C	2	13984	0.26	0.20	0.21	0.26	0.33	0.00	0.06	-0.04	-0.18	0.06	0.15	1.8581	0.0211	9.9	1.3	9.9	1.7	A-	A-	A-
ELA	8	316956	1	A-V	2	13984	0.56	0.06	0.18	0.21	0.56	0.01	0.24	-0.20	-0.03	-0.14	0.24	0.2964	0.0188	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	8	352868	2	A-K	2	13916	0.71	0.12	0.71	0.09	0.08	0.00	0.42	-0.23	0.42	-0.22	-0.18	-0.5235	0.0205	-4.6	1.0	0.0	1.0	A-	A-	A-
ELA	8	227202	2	A-V	2	13916	0.88	0.03	0.03	0.05	0.88	0.00	0.46	-0.25	-0.20	-0.30	0.46	-1.8036	0.0278	-9.3	0.8	-9.5	0.7	A-	A-	B-
ELA	8	609077	2	A-V	2	13916	0.86	0.02	0.10	0.02	0.86	0.00	0.41	-0.22	-0.26	-0.23	0.41	-1.5800	0.0260	-6.4	0.9	-5.9	0.8	A-	A-	B-
ELA	8	638847	2	A-K	3	13916	0.67	0.18	0.07	0.67	0.07	0.00	0.35	-0.14	-0.22	0.35	-0.20	-0.2633	0.0198	4.2	1.0	6.5	1.1	A+	A-	A+
ELA	8	955072	2	A-C	2	13916	0.86	0.86	0.03	0.03	0.07	0.00	0.50	0.50	-0.27	-0.26	-0.30	-1.6108	0.0262	-9.9	0.8	-9.9	0.6	A+	B-	C-
ELA	8	280639	2	A-C	2	13916	0.74	0.12	0.74	0.09	0.05	0.00	0.37	-0.12	0.37	-0.21	-0.29	-0.7083	0.0212	-2.0	1.0	6.1	1.1	A+	A-	A-
ELA	8	224203	2	A-C	2	13916	0.65	0.65	0.11	0.11	0.13	0.00	0.41	0.41	-0.24	-0.24	-0.14	-0.1689	0.0196	-2.6	1.0	-2.7	1.0	A+	A-	A-
ELA	8	947342	2	A-C	2	13916	0.72	0.14	0.09	0.72	0.06	0.00	0.41	-0.21	-0.23	0.41	-0.20	-0.5643	0.0207	-4.0	1.0	-4.6	0.9	A+	A-	A-
ELA	8	160138	3	A-K	2	13867	0.62	0.07	0.22	0.08	0.62	0.00	0.41	-0.26	-0.12	-0.29	0.41	-0.0203	0.0193	-2.3	1.0	2.2	1.0	A+	A-	A-
ELA	8	584526	3	A-K	2	13867	0.70	0.10	0.16	0.70	0.05	0.00	0.42	-0.16	-0.25	0.42	-0.26	-0.4289	0.0203	-4.8	1.0	-1.9	1.0	B-	A-	A-
ELA	8	533131	3	A-K	3	13867	0.32	0.26	0.20	0.22	0.32	0.00	0.29	-0.17	-0.05	-0.11	0.29	1.5207	0.0200	4.8	1.0	9.9	1.2	A-	A-	A-
ELA	8	868296	3	A-C	3	13867	0.49	0.13	0.11	0.49	0.26	0.00	0.32	-0.16	-0.17	0.32	-0.12	0.6243	0.0188	8.9	1.1	9.9	1.1	A-	A-	A-
ELA	8	340784	3	A-C	2	13867	0.42	0.05	0.42	0.39	0.14	0.00	0.29	-0.26	0.29	-0.06	-0.15	0.9669	0.0190	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	8	673323	3	A-C	2	13867	0.83	0.07	0.83	0.05	0.05	0.00	0.48	-0.26	0.48	-0.26	-0.26	-1.2866	0.0241	-9.9	0.9	-9.9	0.7	A-	A-	A-
ELA	8	587765	3	A-V	2	13867	0.54	0.54	0.04	0.04	0.38	0.00	0.28	0.28	-0.26	-0.24	-0.08	0.4012	0.0188	9.9	1.1	9.9	1.2	C-	C-	A-
ELA	8	281566	3	A-V	1	13867	0.82	0.82	0.06	0.08	0.04	0.00	0.52	0.52	-0.29	-0.30	-0.25	-1.2103	0.0236	-9.9	0.8	-9.9	0.6	A+	A-	A-
ELA	8	699240	4	A-K	3	13892	0.34	0.34	0.32	0.17	0.17	0.00	0.09	0.09	0.16	-0.19	-0.13	1.3855	0.0196	9.9	1.3	9.9	1.5	A+	A+	A+
ELA	8	296631	4	A-C	3	13892	0.71	0.11	0.71	0.09	0.09	0.00	0.49	-0.26	0.49	-0.23	-0.26	-0.4714	0.0203	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	8	770329	4	A-K	3	13892	0.57	0.18	0.06	0.19	0.57	0.00	0.46	-0.20	-0.28	-0.22	0.46	0.2676	0.0188	-9.9	0.9	-9.6	0.9	A-	A-	A-
ELA	8	583834	4	A-K	2	13892	0.56	0.19	0.56	0.15	0.10	0.00	0.39	-0.19	0.39	-0.21	-0.14	0.3001	0.0188	-0.2	1.0	-0.2	1.0	A+	A-	A-
ELA	8	182119	4	A-V	2	13892	0.35	0.11	0.33	0.35	0.21	0.00	0.22	-0.14	-0.08	0.22	-0.06	1.3268	0.0195	9.9	1.1	9.9	1.3	A-	A-	A+
ELA	8	337436	4	A-C	2	13892	0.58	0.15	0.07	0.20	0.58	0.00	0.33	-0.14	-0.20	-0.16	0.33	0.1997	0.0189	7.7	1.1	9.7	1.1	A-	A-	A-
ELA	8	469425	4	A-C	2	13892	0.51	0.29	0.16	0.51	0.04	0.00	0.24	-0.10	-0.11	0.24	-0.15	0.5580	0.0187	9.9	1.2	9.9	1.2	A+	A+	A-
ELA	8	492641	4	A-V	2	13892	0.55	0.55	0.06	0.18	0.21	0.00	0.30	0.30	-0.22	-0.14	-0.10	0.3491	0.0188	9.9	1.1	9.9	1.1	A+	A+	A+
ELA	8	326872	5	A-C	3	13860	0.56	0.21	0.13	0.09	0.56	0.00	0.44	-0.17	-0.22	-0.26	0.44	0.3119	0.0189	-8.1	0.9	-6.1	0.9	A+	A+	A-
ELA	8	131835	5	A-K	2	13860	0.51	0.14	0.17	0.17	0.51	0.00	0.36	-0.12	-0.17	-0.19	0.36	0.5312	0.0187	4.6	1.0	5.4	1.1	A-	A-	A-
ELA	8	667284	5	A-K	3	13860	0.46	0.08	0.46	0.15	0.31	0.00	0.20	-0.26	0.20	-0.11	0.02	0.8022	0.0188	9.9	1.2	9.9	1.3	A-	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	8	451956	5	A-C	2	13860	0.33	0.12	0.33	0.49	0.05	0.00	0.21	-0.23	0.21	0.06	-0.24	1.4334	0.0198	9.9	1.2	9.9	1.4	A+	A-	A+
ELA	8	556446	5	A-C	3	13860	0.66	0.66	0.12	0.06	0.16	0.00	0.42	0.42	-0.25	-0.26	-0.15	-0.2060	0.0196	-5.1	1.0	-3.9	1.0	A-	A-	A-
ELA	8	701119	5	A-V	2	13860	0.62	0.22	0.12	0.62	0.04	0.00	0.38	-0.20	-0.14	0.38	-0.26	0.0095	0.0192	0.8	1.0	3.4	1.0	A+	A-	A-
ELA	8	400916	5	A-K	3	13860	0.51	0.51	0.25	0.15	0.09	0.00	0.30	0.30	-0.12	-0.20	-0.08	0.5343	0.0187	9.9	1.1	9.9	1.1	A+	A+	A+
ELA	8	529715	5	A-C	3	13860	0.63	0.16	0.11	0.63	0.10	0.00	0.34	-0.14	-0.20	0.34	-0.16	-0.0353	0.0193	5.5	1.0	7.1	1.1	A-	A-	A-
ELA	8	574496	6	B-C	2	13931	0.34	0.40	0.34	0.09	0.17	0.00	0.15	-0.05	0.15	-0.11	-0.04	1.3785	0.0196	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	8	854843	6	B-K	3	13931	0.71	0.71	0.06	0.17	0.07	0.00	0.51	0.51	-0.26	-0.31	-0.21	-0.4761	0.0203	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	8	117321	6	B-C	3	13931	0.44	0.13	0.44	0.27	0.15	0.00	0.30	-0.25	0.30	-0.03	-0.13	0.8783	0.0188	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	8	742319	6	B-C	2	13931	0.19	0.39	0.18	0.19	0.24	0.00	0.05	-0.03	0.01	0.05	-0.02	2.3129	0.0233	9.9	1.2	9.9	1.8	A+	A+	A+
ELA	8	830282	6	B-V	2	13931	0.71	0.16	0.71	0.05	0.08	0.00	0.33	-0.17	0.33	-0.22	-0.15	-0.5012	0.0203	3.7	1.0	4.0	1.1	C-	B-	A-
ELA	8	164395	6	B-V	2	13931	0.71	0.71	0.09	0.08	0.12	0.00	0.37	0.37	-0.11	-0.25	-0.21	-0.5211	0.0204	-0.6	1.0	0.9	1.0	A-	A-	A-
ELA	8	372897	6	B-V	2	13931	0.80	0.05	0.05	0.80	0.10	0.00	0.40	-0.26	-0.24	0.40	-0.18	-1.0745	0.0228	-5.5	0.9	-3.5	0.9	A-	A-	A-
ELA	8	344180	6	B-K	3	13931	0.65	0.07	0.07	0.21	0.65	0.00	0.40	-0.24	-0.25	-0.15	0.40	-0.1575	0.0194	-2.1	1.0	-1.3	1.0	A-	A-	A-
ELA	8	474508	7	B-V	2	13942	0.79	0.08	0.05	0.08	0.79	0.00	0.42	-0.24	-0.26	-0.19	0.42	-0.9716	0.0222	-6.9	0.9	-5.3	0.9	A-	A-	A-
ELA	8	779196	7	B-K	2	13942	0.67	0.67	0.16	0.11	0.06	0.00	0.47	0.47	-0.27	-0.21	-0.24	-0.2554	0.0196	-9.9	0.9	-9.9	0.9	A+	A-	A-
ELA	8	140683	7	B-V	2	13942	0.30	0.11	0.25	0.30	0.34	0.00	0.27	-0.18	-0.10	0.27	-0.05	1.6063	0.0202	7.8	1.1	9.9	1.3	C-	A-	A-
ELA	8	391435	7	B-C	2	13942	0.47	0.29	0.12	0.47	0.11	0.00	0.23	0.07	-0.25	0.23	-0.19	0.7299	0.0187	9.9	1.2	9.9	1.3	A-	A-	A+
ELA	8	134069	7	B-V	2	13942	0.33	0.12	0.46	0.09	0.33	0.00	0.14	-0.12	0.07	-0.21	0.14	1.4559	0.0198	9.9	1.2	9.9	1.4	C-	A+	A+
ELA	8	167833	7	B-C	3	13942	0.63	0.15	0.63	0.15	0.07	0.00	0.45	-0.27	0.45	-0.20	-0.17	-0.0532	0.0192	-7.7	0.9	-5.9	0.9	A-	A-	A-
ELA	8	737712	7	B-C	2	13942	0.58	0.30	0.58	0.07	0.06	0.00	0.35	-0.17	0.35	-0.25	-0.15	0.1822	0.0189	5.3	1.0	4.6	1.1	A-	A-	A+
ELA	8	433874	7	B-C	2	13942	0.31	0.37	0.31	0.11	0.21	0.00	0.11	-0.01	0.11	-0.16	0.00	1.5502	0.0201	9.9	1.2	9.9	1.5	A-	A-	A-
ELA	8	251848	8	B-V	2	13853	0.81	0.81	0.13	0.03	0.04	0.00	0.44	0.44	-0.26	-0.26	-0.23	-1.1294	0.0232	-7.8	0.9	-9.4	0.8	A-	B-	B-
ELA	8	260448	8	B-V	2	13853	0.60	0.60	0.07	0.17	0.16	0.00	0.29	0.29	-0.18	-0.12	-0.14	0.0849	0.0191	9.9	1.1	9.9	1.1	B-	B-	A-
ELA	8	982566	8	B-V	2	13853	0.83	0.05	0.05	0.83	0.08	0.00	0.49	-0.28	-0.26	0.49	-0.25	-1.2582	0.0240	-9.9	0.9	-9.9	0.7	B-	B-	A-
ELA	8	791593	8	B-C	2	13853	0.52	0.16	0.52	0.24	0.08	0.00	0.29	-0.08	0.29	-0.19	-0.13	0.4866	0.0188	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	8	290480	8	B-K	3	13853	0.68	0.07	0.13	0.11	0.68	0.00	0.44	-0.23	-0.24	-0.20	0.44	-0.3347	0.0200	-7.4	0.9	-1.2	1.0	A-	A-	A-
ELA	8	605042	8	B-K	3	13853	0.54	0.27	0.10	0.09	0.54	0.00	0.30	0.01	-0.22	-0.29	0.30	0.4064	0.0188	9.9	1.1	9.9	1.2	A+	A-	A-
ELA	8	338218	8	B-K	2	13853	0.47	0.25	0.47	0.10	0.18	0.00	0.28	-0.04	0.28	-0.22	-0.15	0.7622	0.0188	9.9	1.1	9.9	1.2	A-	A+	A-
ELA	8	772342	8	B-C	2	13853	0.36	0.29	0.26	0.36	0.09	0.00	0.19	-0.02	-0.12	0.19	-0.11	1.2806	0.0194	9.9	1.2	9.9	1.3	A+	A+	A-
ELA	8	531258	9	B-C	2	13846	0.48	0.25	0.11	0.48	0.17	0.00	0.29	-0.03	-0.28	0.29	-0.11	0.6792	0.0186	9.9	1.1	9.9	1.1	A-	A+	A+
ELA	8	257393	9	B-V	2	13846	0.73	0.15	0.73	0.08	0.04	0.00	0.47	-0.25	0.47	-0.26	-0.25	-0.6034	0.0206	-9.9	0.9	-9.9	0.8	A-	B-	B-
ELA	8	221654	9	B-C	3	13846	0.28	0.46	0.13	0.28	0.14	0.00	0.04	0.14	-0.26	0.04	0.00	1.7160	0.0206	9.9	1.3	9.9	1.6	A+	A-	A+
ELA	8	508484	9	B-C	3	13846	0.50	0.50	0.19	0.13	0.17	0.00	0.18	0.18	-0.09	-0.07	-0.07	0.5497	0.0186	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	8	223499	9	B-V	2	13846	0.59	0.10	0.59	0.08	0.23	0.00	0.28	-0.21	0.28	-0.24	-0.03	0.1533	0.0189	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	8	660849	9	B-C	2	13846	0.33	0.33	0.19	0.29	0.19	0.00	0.21	0.21	-0.09	-0.09	-0.06	1.4309	0.0197	9.9	1.1	9.9	1.3	A-	A-	A-
ELA	8	980913	9	B-C	2	13846	0.23	0.15	0.22	0.40	0.23	0.00	0.14	-0.22	-0.04	0.08	0.14	1.9976	0.0218	9.9	1.1	9.9	1.5	A-	A-	A-
ELA	8	246252	9	B-K	2	13846	0.21	0.15	0.46	0.18	0.21	0.00	0.22	-0.16	0.12	-0.25	0.22	2.1217	0.0224	3.9	1.1	9.9	1.4	A-	A+	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
SCIENCE	4	982646	0	D	1	122762	0.73	0.06	0.08	0.73	0.13	0.00	0.40	-0.24	-0.21	0.40	-0.19	-0.0995	0.0071	1.0	1.0	-2.3	1.0			
SCIENCE	4	388332	0	C	2	122762	0.69	0.69	0.22	0.05	0.04	0.00	0.30	0.30	-0.10	-0.24	-0.24	0.2657	0.0068	9.9	1.1	9.9	1.1			
SCIENCE	4	889403	0	C	2	122762	0.85	0.06	0.04	0.05	0.85	0.00	0.38	-0.18	-0.23	-0.22	0.38	-0.9308	0.0085	-9.9	0.9	-5.2	1.0			
SCIENCE	4	766847	0	A	3	122762	0.59	0.59	0.09	0.21	0.11	0.00	0.39	0.39	-0.28	-0.14	-0.17	0.7046	0.0065	9.9	1.0	9.9	1.1			
SCIENCE	4	496835	0	A	2	122762	0.80	0.06	0.80	0.04	0.11	0.00	0.31	-0.14	0.31	-0.17	-0.19	-0.5825	0.0078	9.9	1.1	9.9	1.2			
SCIENCE	4	199154	0	A	2	122762	0.88	0.04	0.03	0.88	0.05	0.00	0.49	-0.28	-0.27	0.49	-0.25	-1.3083	0.0094	-9.9	0.8	-9.9	0.6			
SCIENCE	4	384371	0	A	3	122762	0.67	0.14	0.67	0.09	0.10	0.00	0.39	-0.13	0.39	-0.23	-0.23	0.2870	0.0067	6.8	1.0	0.3	1.0			
SCIENCE	4	686664	0	A	2	122762	0.60	0.60	0.12	0.21	0.06	0.00	0.27	0.27	-0.11	-0.12	-0.19	0.6015	0.0065	9.9	1.2	9.9	1.3			
SCIENCE	4	144270	0	B	2	122762	0.54	0.54	0.06	0.17	0.23	0.00	0.36	0.36	-0.21	-0.13	-0.17	0.9004	0.0064	9.9	1.1	9.9	1.1			
SCIENCE	4	969254	0	C	2	122762	0.73	0.08	0.12	0.06	0.73	0.00	0.43	-0.23	-0.16	-0.30	0.43	-0.1393	0.0072	-4.9	1.0	-4.1	1.0			
SCIENCE	4	115172	0	D	2	122762	0.69	0.10	0.12	0.09	0.69	0.00	0.49	-0.24	-0.28	-0.22	0.49	0.0925	0.0069	-9.9	0.9	-9.9	0.9			
SCIENCE	4	195405	0	C	2	122762	0.72	0.09	0.72	0.07	0.12	0.00	0.35	-0.18	0.35	-0.17	-0.18	0.0193	0.0070	9.9	1.0	9.9	1.1			
SCIENCE	4	320929	0	D	2	122762	0.54	0.54	0.20	0.14	0.12	0.00	0.34	0.34	-0.10	-0.21	-0.16	0.9065	0.0064	9.9	1.1	9.9	1.1			
SCIENCE	4	595247	0	B	1	122762	0.91	0.03	0.03	0.91	0.02	0.00	0.43	-0.23	-0.26	0.43	-0.23	-1.7543	0.0109	-9.9	0.9	-9.9	0.7			
SCIENCE	4	620206	0	A	2	122762	0.70	0.04	0.08	0.17	0.70	0.00	0.41	-0.27	-0.23	-0.18	0.41	0.1520	0.0069	-6.2	1.0	-3.6	1.0			
SCIENCE	4	194554	0	B	1	122762	0.80	0.05	0.08	0.80	0.07	0.00	0.51	-0.28	-0.28	0.51	-0.25	-0.5420	0.0077	-9.9	0.9	-9.9	0.8			
SCIENCE	4	488691	0	A	2	122762	0.80	0.80	0.07	0.06	0.07	0.00	0.53	0.53	-0.29	-0.27	-0.29	-0.5631	0.0078	-9.9	0.8	-9.9	0.7			
SCIENCE	4	932344	0	A	2	122762	0.69	0.09	0.69	0.06	0.16	0.00	0.44	-0.23	0.44	-0.27	-0.19	0.1160	0.0069	-9.6	1.0	-9.9	0.9			
SCIENCE	4	299971	0	A	2	122762	0.65	0.10	0.17	0.65	0.07	0.00	0.46	-0.22	-0.18	0.46	-0.30	0.3172	0.0067	-9.9	1.0	-9.9	0.9			
SCIENCE	4	573031	0	A	2	122762	0.68	0.68	0.09	0.16	0.06	0.00	0.51	0.51	-0.18	-0.34	-0.26	0.1306	0.0069	-9.9	0.9	-9.9	0.9			
SCIENCE	4	722660	0	A	2	122762	0.67	0.15	0.09	0.67	0.09	0.00	0.39	-0.16	-0.25	0.39	-0.18	0.2768	0.0068	8.1	1.0	-2.4	1.0			
SCIENCE	4	714022	0	D	2	122762	0.62	0.22	0.06	0.62	0.10	0.00	0.39	-0.14	-0.26	0.39	-0.23	0.4075	0.0067	9.9	1.1	7.4	1.0			
SCIENCE	4	542369	0	B	2	122762	0.82	0.06	0.03	0.08	0.82	0.00	0.41	-0.26	-0.26	-0.16	0.41	-0.7872	0.0082	-9.9	1.0	-5.6	1.0			
SCIENCE	4	258949	0	C	2	122762	0.62	0.10	0.14	0.62	0.14	0.00	0.44	-0.27	-0.25	0.44	-0.13	0.5564	0.0066	-9.9	1.0	-9.9	1.0			
SCIENCE	4	115428	0	A	2	122762	0.84	0.06	0.05	0.04	0.84	0.00	0.50	-0.26	-0.28	-0.29	0.50	-0.9595	0.0085	-9.9	0.9	-9.9	0.7			
SCIENCE	4	191202	0	A	2	122762	0.45	0.12	0.32	0.12	0.45	0.00	0.40	-0.28	-0.06	-0.25	0.40	1.4850	0.0064	-9.9	1.0	9.9	1.0			
SCIENCE	4	994204	0	A	2	122762	0.75	0.12	0.06	0.75	0.07	0.00	0.43	-0.25	-0.24	0.43	-0.19	-0.2439	0.0073	-9.2	1.0	-9.9	0.9			
SCIENCE	4	819443	0	D	2	122762	0.65	0.14	0.09	0.65	0.12	0.00	0.48	-0.21	-0.29	0.48	-0.21	0.2771	0.0068	-9.9	1.0	-9.9	0.9			
SCIENCE	4	457535	0	A	2	122762	0.62	0.24	0.08	0.62	0.06	0.00	0.51	-0.30	-0.25	0.51	-0.20	0.5967	0.0065	-9.9	0.9	-9.9	0.8			
SCIENCE	4	670098	0	A	2	122762	0.79	0.06	0.79	0.08	0.07	0.00	0.44	-0.24	0.44	-0.25	-0.20	-0.5183	0.0077	-9.9	0.9	-9.9	0.9			
SCIENCE	4	873293	0	C	2	122762	0.83	0.83	0.05	0.08	0.03	0.00	0.45	0.45	-0.24	-0.24	-0.25	-0.8059	0.0082	-9.9	0.9	-9.9	0.8			
SCIENCE	4	607313	0	D	2	122762	0.66	0.14	0.10	0.66	0.10	0.00	0.45	-0.16	-0.26	0.45	-0.26	0.4130	0.0067	-9.9	1.0	-9.9	0.9			
SCIENCE	4	426259	0	A	3	122762	0.73	0.09	0.11	0.73	0.07	0.00	0.41	-0.22	-0.19	0.41	-0.21	-0.1281	0.0071	3.6	1.0	5.5	1.0			
SCIENCE	4	379270	0	A	2	122762	0.55	0.03	0.36	0.06	0.55	0.00	0.24	-0.25	-0.04	-0.25	0.24	0.7618	0.0065	9.9	1.2	9.9	1.3			
SCIENCE	4	242203	0	A	2	122762	0.57	0.19	0.06	0.57	0.19	0.00	0.35	-0.15	-0.27	0.35	-0.13	0.7321	0.0065	9.9	1.1	9.9	1.1			
SCIENCE	4	449641	0	A	1	122762	0.71	0.08	0.71	0.10	0.11	0.00	0.51	-0.26	0.51	-0.26	-0.25	-0.0030	0.0070	-9.9	0.9	-9.9	0.8			
SCIENCE	4	404498	0	A	2	122762	0.79	0.08	0.06	0.79	0.06	0.00	0.43	-0.21	-0.27	0.43	-0.21	-0.5235	0.0077	-9.9	0.9	-9.9	0.9			
SCIENCE	4	143659	0	B	2	122762	0.86	0.86	0.04	0.04	0.06	0.00	0.45	0.45	-0.24	-0.25	-0.24	-1.1088	0.0089	-9.9	0.9	-9.9	0.8			
SCIENCE	4	501722	0	B	2	122762	0.47	0.19	0.18	0.47	0.16	0.00	0.33	-0.23	-0.09	0.33	-0.11	1.2669	0.0064	9.9	1.1	9.9	1.1			
SCIENCE	4	649620	0	B	1	122762	0.62	0.06	0.62	0.20	0.12	0.00	0.42	-0.25	0.42	-0.16	-0.24	0.5585	0.0066	-1.2	1.0	-1.1	1.0			
SCIENCE	4	693893	0	B	1	122762	0.84	0.06	0.84	0.03	0.07	0.00	0.39	-0.27	0.39	-0.20	-0.17	-1.0624	0.0088	4.5	1.0	-0.2	1.0			
SCIENCE	4	790862	0	A	2	122762	0.73	0.11	0.73	0.09	0.07	0.00	0.30	-0.13	0.30	-0.15	-0.19	-0.1531	0.0072	9.9	1.1	9.9	1.3			
SCIENCE	4	513714	0	B	2	122762	0.83	0.03	0.83	0.06	0.07	0.00	0.53	-0.26	0.53	-0.27	-0.33	-0.8894	0.0084	-9.9	0.9	-9.9	0.7			
SCIENCE	4	258470	0	C	2	122762	0.54	0.22	0.09	0.15	0.54	0.00	0.37	-0.17	-0.17	-0.17	0.37	0.8714	0.0064	9.9	1.1	9.9	1.1			
SCIENCE	4	599736	0	B	2	122762	0.60	0.12	0.60	0.08	0.19	0.00	0.38	-0.20	0.38	-0.16	-0.20	0.6062	0.0065	9.9	1.1	9.8	1.0			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
SCIENCE	4	658134	0	C	2	122762	0.89	0.05	0.02	0.03	0.89	0.00	0.35	-0.23	-0.17	-0.17	0.35	-1.5222	0.0100	-0.4	1.0	-2.3	1.0			
SCIENCE	4	597491	0	C	2	122762	0.62	0.19	0.11	0.62	0.08	0.00	0.38	-0.14	-0.21	0.38	-0.25	0.4897	0.0066	9.9	1.0	9.9	1.0			
SCIENCE	4	516129	0	C	2	122762	0.83	0.83	0.09	0.04	0.04	0.00	0.45	0.45	-0.24	-0.27	-0.24	-0.8458	0.0083	-9.9	0.9	-9.9	0.8			
SCIENCE	4	177856	0	A	2	122762	0.57	0.14	0.17	0.57	0.12	0.00	0.41	-0.17	-0.17	0.41	-0.24	0.7589	0.0065	2.1	1.0	2.1	1.0			
SCIENCE	4	956936	0	A	2	122762	0.84	0.84	0.05	0.07	0.04	0.00	0.51	0.51	-0.29	-0.27	-0.27	-0.8680	0.0083	-9.9	0.8	-9.9	0.7			
SCIENCE	4	149320	0	A	2	122762	0.65	0.18	0.65	0.07	0.10	0.00	0.50	-0.22	0.50	-0.27	-0.28	0.3071	0.0067	-9.9	0.9	-9.9	0.9			
SCIENCE	4	264698	0	A	1	122762	0.86	0.04	0.04	0.06	0.86	0.00	0.52	-0.28	-0.27	-0.30	0.52	-1.0820	0.0088	-9.9	0.8	-9.9	0.6			
SCIENCE	4	329994	0	A	2	122762	0.64	0.03	0.22	0.11	0.64	0.00	0.32	-0.25	-0.03	-0.31	0.32	0.3943	0.0067	9.9	1.1	9.9	1.2			
SCIENCE	4	167943	0	D	2	122762	0.63	0.10	0.63	0.17	0.10	0.00	0.34	-0.23	0.34	-0.14	-0.15	0.5158	0.0066	9.9	1.1	9.9	1.2			
SCIENCE	4	837560	0	D	1	122762	0.84	0.04	0.08	0.84	0.04	0.00	0.51	-0.30	-0.27	0.51	-0.27	-0.8660	0.0083	-9.9	0.8	-9.9	0.7			
SCIENCE	4	704166	0	D	2	122762	0.39	0.27	0.39	0.21	0.13	0.00	0.21	0.04	0.21	-0.17	-0.16	1.7255	0.0065	9.9	1.2	9.9	1.4			
SCIENCE	4	452013	0	D	2	122762	0.61	0.17	0.10	0.61	0.11	0.00	0.46	-0.20	-0.23	0.46	-0.23	0.5525	0.0066	-9.9	1.0	-9.9	0.9			
SCIENCE	4	101412	0	A	2	122762	0.55	0.06	0.55	0.30	0.08	0.00	0.42	-0.24	0.42	-0.18	-0.24	0.8090	0.0065	-1.7	1.0	-1.9	1.0			
SCIENCE	4	419703	1	B	2	10641	0.49	0.13	0.10	0.49	0.29	0.00	0.39	-0.18	-0.26	0.39	-0.12	1.1606	0.0220	2.2	1.0	5.3	1.1			
SCIENCE	4	895674	1	A	2	10641	0.82	0.07	0.05	0.05	0.82	0.01	0.55	-0.33	-0.28	-0.28	0.55	-0.8671	0.0279	-9.9	0.8	-9.9	0.6			
SCIENCE	4	780059	1	A	2	10641	0.76	0.10	0.76	0.07	0.07	0.00	0.56	-0.26	0.56	-0.32	-0.29	-0.4068	0.0254	-9.9	0.8	-9.9	0.7	A+	A-	A-
SCIENCE	4	945843	1	B	2	10641	0.75	0.75	0.07	0.08	0.10	0.00	0.52	0.52	-0.27	-0.29	-0.25	-0.3177	0.0250	-9.8	0.9	-9.9	0.8	A+	A-	A-
SCIENCE	4	847451	1	D	2	10641	0.49	0.18	0.16	0.17	0.49	0.00	0.39	-0.11	-0.18	-0.22	0.39	1.1551	0.0220	3.4	1.0	6.4	1.1	A-	A-	A-
SCIENCE	4	135817	1	A	2	10641	0.73	0.08	0.73	0.07	0.12	0.00	0.53	-0.28	0.53	-0.33	-0.22	-0.1907	0.0245	-9.9	0.9	-9.9	0.8	A+	A-	A-
SCIENCE	4	959134	1	A	2	10641	0.61	0.61	0.11	0.16	0.12	0.00	0.41	0.41	-0.22	-0.19	-0.19	0.5032	0.0226	3.0	1.0	1.7	1.0	A+	A-	A-
SCIENCE	4	224089	1	A	2	10641	0.42	0.23	0.20	0.42	0.15	0.00	0.24	-0.16	-0.05	0.24	-0.08	1.4897	0.0222	9.9	1.2	9.9	1.4	A-	A-	A-
SCIENCE	4	502343	1	B	2	10641	0.34	0.34	0.23	0.16	0.27	0.00	0.27	0.27	-0.08	-0.11	-0.11	1.9563	0.0230	9.9	1.1	9.9	1.4	A-	A-	A-
SCIENCE	4	126642	1	C	2	10641	0.67	0.10	0.67	0.07	0.15	0.01	0.49	-0.29	0.49	-0.27	-0.19	0.1752	0.0233	-5.9	0.9	-6.8	0.9	A-	A-	A-
SCIENCE	4	815323	2	C	2	10230	0.61	0.09	0.08	0.21	0.61	0.00	0.39	-0.20	-0.29	-0.12	0.39	0.5355	0.0228	3.7	1.0	2.4	1.0			
SCIENCE	4	213922	2	A	2	10230	0.63	0.10	0.10	0.17	0.63	0.00	0.50	-0.24	-0.24	-0.25	0.50	0.4537	0.0229	-9.2	0.9	-8.7	0.9			
SCIENCE	4	759653	2	A	3	10230	0.68	0.10	0.09	0.13	0.68	0.00	0.49	-0.21	-0.30	-0.23	0.49	0.1908	0.0236	-8.3	0.9	-8.2	0.9	A+	A-	A-
SCIENCE	4	518298	2	A	2	10230	0.56	0.26	0.09	0.56	0.09	0.00	0.46	-0.23	-0.22	0.46	-0.21	0.8301	0.0224	-5.9	1.0	-5.2	0.9	A+	A-	A-
SCIENCE	4	390049	2	B	2	10230	0.54	0.06	0.23	0.17	0.54	0.00	0.22	-0.28	-0.02	-0.09	0.22	0.9252	0.0223	9.9	1.2	9.9	1.3	A+	A-	A-
SCIENCE	4	911152	2	B	2	10230	0.56	0.08	0.14	0.56	0.21	0.01	0.43	-0.30	-0.23	0.43	-0.12	0.7926	0.0224	-1.1	1.0	-0.9	1.0	A-	A-	A-
SCIENCE	4	566707	2	D	2	10230	0.48	0.09	0.48	0.16	0.27	0.00	0.24	-0.28	0.24	-0.15	0.05	1.2375	0.0222	9.9	1.2	9.9	1.3	A-	A-	A-
SCIENCE	4	593601	2	C	2	10230	0.33	0.38	0.33	0.24	0.06	0.00	0.20	0.00	0.20	-0.09	-0.23	2.0200	0.0234	9.9	1.2	9.9	1.4	A-	A-	A-
SCIENCE	4	107044	2	A	2	10230	0.70	0.70	0.13	0.06	0.11	0.00	0.47	0.47	-0.26	-0.30	-0.18	0.0659	0.0240	-5.8	0.9	-6.7	0.9	A-	A-	A-
SCIENCE	4	191137	2	A	2	10230	0.83	0.07	0.83	0.05	0.05	0.01	0.43	-0.18	0.43	-0.26	-0.28	-0.8526	0.0287	-5.4	0.9	-0.9	1.0	A+	A-	A-
SCIENCE	4	851193	3	D	2	10181	0.54	0.20	0.07	0.54	0.18	0.01	0.43	-0.14	-0.23	0.43	-0.25	0.9025	0.0225	0.1	1.0	0.4	1.0			
SCIENCE	4	215227	3	A	2	10181	0.80	0.80	0.08	0.07	0.05	0.00	0.55	0.55	-0.32	-0.29	-0.26	-0.6265	0.0273	-9.9	0.8	-9.9	0.7			
SCIENCE	4	198360	3	A	2	10181	0.61	0.11	0.11	0.61	0.17	0.00	0.38	-0.16	-0.29	0.38	-0.12	0.5870	0.0229	5.4	1.1	5.4	1.1	A-	A-	A-
SCIENCE	4	668409	3	A	2	10181	0.45	0.11	0.18	0.25	0.45	0.00	0.35	-0.21	-0.17	-0.09	0.35	1.3635	0.0225	6.5	1.1	9.4	1.1	A+	A-	A-
SCIENCE	4	141129	3	A	2	10181	0.50	0.15	0.10	0.50	0.25	0.00	0.34	-0.11	-0.22	0.34	-0.15	1.1231	0.0224	9.5	1.1	9.0	1.1	A-	A+	A+
SCIENCE	4	784388	3	B	2	10181	0.47	0.47	0.16	0.09	0.28	0.00	0.36	0.36	-0.20	-0.26	-0.07	1.2864	0.0224	6.7	1.1	8.6	1.1	A+	A+	A-
SCIENCE	4	511830	3	D	2	10181	0.64	0.15	0.64	0.13	0.08	0.01	0.48	-0.22	0.48	-0.23	-0.27	0.4095	0.0232	-5.6	0.9	-6.3	0.9	A-	A-	A-
SCIENCE	4	830523	3	C	2	10181	0.51	0.11	0.16	0.22	0.51	0.00	0.45	-0.29	-0.19	-0.14	0.45	1.0935	0.0224	-3.8	1.0	-2.6	1.0	A+	A-	A-
SCIENCE	4	693203	3	A	2	10181	0.50	0.18	0.17	0.15	0.50	0.00	0.36	-0.14	-0.10	-0.25	0.36	1.1362	0.0224	7.1	1.1	8.1	1.1	A+	A-	A-
SCIENCE	4	929145	3	C	2	10181	0.74	0.06	0.09	0.11	0.74	0.00	0.47	-0.31	-0.11	-0.32	0.47	-0.2109	0.0252	-5.5	0.9	-1.9	1.0	A+	A-	A+
SCIENCE	4	178854	4	C	2	10212	0.52	0.17	0.19	0.52	0.12	0.00	0.38	-0.14	-0.20	0.38	-0.17	1.0606	0.0221	2.6	1.0	4.5	1.1			
SCIENCE	4	982028	4	A	2	10212	0.64	0.64	0.12	0.09	0.15	0.00	0.30	0.30	-0.17	-0.22	-0.07	0.4129	0.0230	9.9	1.1	9.9	1.2			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
SCIENCE	4	481556	4	A	2	10212	0.43	0.16	0.26	0.43	0.14	0.00	0.32	-0.08	-0.13	0.32	-0.19	1.4751	0.0222	7.3	1.1	9.9	1.2	A+	A+	A+
SCIENCE	4	253737	4	D	2	10212	0.37	0.16	0.14	0.37	0.33	0.00	0.11	-0.14	-0.16	0.11	0.13	1.8105	0.0227	9.9	1.3	9.9	1.5	A+	A-	A-
SCIENCE	4	409446	4	C	2	10212	0.65	0.06	0.12	0.65	0.16	0.00	0.31	-0.23	-0.18	0.31	-0.09	0.3379	0.0232	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	4	414831	4	A	2	10212	0.41	0.25	0.09	0.24	0.41	0.00	0.15	0.00	-0.26	0.01	0.15	1.5639	0.0223	9.9	1.3	9.9	1.4	A+	A-	A-
SCIENCE	4	239436	4	A	2	10212	0.65	0.14	0.09	0.11	0.65	0.01	0.42	-0.18	-0.21	-0.22	0.42	0.3615	0.0231	-0.7	1.0	-2.5	1.0	A+	A-	A-
SCIENCE	4	568118	4	A	3	10212	0.57	0.16	0.12	0.57	0.14	0.01	0.44	-0.22	-0.22	0.44	-0.17	0.7818	0.0223	-4.1	1.0	-4.0	1.0	A+	A-	A+
SCIENCE	4	397046	4	B	2	10212	0.73	0.07	0.73	0.16	0.04	0.00	0.50	-0.29	0.50	-0.26	-0.27	-0.1047	0.0247	-8.4	0.9	-9.6	0.8	A-	A-	A-
SCIENCE	4	568382	4	C	2	10212	0.58	0.22	0.09	0.10	0.58	0.00	0.39	-0.16	-0.23	-0.17	0.39	0.7317	0.0224	3.0	1.0	2.8	1.0	A+	A-	A-
SCIENCE	4	739619	5	B	2	10151	0.65	0.11	0.11	0.65	0.13	0.00	0.51	-0.24	-0.28	0.51	-0.23	0.3575	0.0232	-9.9	0.9	-9.9	0.8			
SCIENCE	4	129039	5	A	2	10151	0.79	0.79	0.07	0.06	0.06	0.01	0.49	0.49	-0.21	-0.29	-0.30	-0.5460	0.0270	-7.7	0.9	-8.2	0.8			
SCIENCE	4	937472	5	A	2	10151	0.45	0.07	0.36	0.12	0.45	0.00	0.16	-0.25	0.09	-0.18	0.16	1.3927	0.0222	9.9	1.3	9.9	1.4	A+	A-	A-
SCIENCE	4	465952	5	A	2	10151	0.34	0.27	0.06	0.33	0.34	0.01	0.10	0.01	-0.26	0.01	0.10	1.9432	0.0231	9.9	1.3	9.9	1.6	A-	A-	A+
SCIENCE	4	142038	5	A	2	10151	0.84	0.05	0.07	0.04	0.84	0.00	0.48	-0.27	-0.25	-0.28	0.48	-0.8817	0.0292	-8.0	0.9	-8.6	0.7	A+	A-	A-
SCIENCE	4	861778	5	D	2	10151	0.39	0.19	0.39	0.24	0.18	0.00	0.22	-0.11	0.22	-0.08	-0.07	1.6877	0.0225	9.9	1.2	9.9	1.3	A+	A-	A-
SCIENCE	4	415973	5	C	2	10151	0.73	0.09	0.73	0.08	0.10	0.00	0.49	-0.29	0.49	-0.28	-0.19	-0.1105	0.0248	-7.5	0.9	-8.9	0.8	B+	A-	A-
SCIENCE	4	291431	5	A	2	10151	0.69	0.69	0.07	0.21	0.03	0.00	0.29	0.29	-0.21	-0.12	-0.19	0.1124	0.0240	9.9	1.1	9.2	1.2	B+	A-	A+
SCIENCE	4	458270	5	B	2	10151	0.36	0.19	0.19	0.26	0.36	0.00	0.25	-0.02	-0.19	-0.08	0.25	1.8687	0.0229	9.5	1.1	9.9	1.3	A-	A-	A+
SCIENCE	4	947064	5	C	2	10151	0.64	0.14	0.09	0.64	0.13	0.00	0.35	-0.14	-0.23	0.35	-0.16	0.4340	0.0230	6.5	1.1	5.2	1.1	A+	A+	A-
SCIENCE	4	571160	6	A	2	10180	0.63	0.17	0.63	0.09	0.11	0.00	0.49	-0.24	0.49	-0.26	-0.21	0.4831	0.0232	-6.5	0.9	-6.7	0.9			
SCIENCE	4	289847	6	A	2	10180	0.73	0.05	0.11	0.73	0.10	0.01	0.45	-0.29	-0.24	0.45	-0.20	-0.1288	0.0250	-3.4	1.0	-1.3	1.0			
SCIENCE	4	683176	6	A	3	10180	0.52	0.17	0.21	0.10	0.52	0.00	0.43	-0.18	-0.17	-0.24	0.43	1.0667	0.0224	-0.9	1.0	0.9	1.0	A+	A-	A-
SCIENCE	4	772126	6	A	2	10180	0.53	0.06	0.29	0.53	0.11	0.00	0.35	-0.28	-0.09	0.35	-0.22	0.9875	0.0225	8.8	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	706809	6	A	2	10180	0.54	0.05	0.54	0.18	0.22	0.00	0.45	-0.16	0.45	-0.14	-0.31	0.9511	0.0225	-3.5	1.0	-2.0	1.0	A-	A-	A-
SCIENCE	4	363398	6	D	2	10180	0.70	0.09	0.10	0.70	0.11	0.00	0.48	-0.26	-0.25	0.48	-0.22	0.0863	0.0243	-5.2	0.9	-4.6	0.9	A+	A-	A-
SCIENCE	4	725655	6	C	2	10180	0.84	0.03	0.05	0.84	0.07	0.00	0.50	-0.26	-0.29	0.50	-0.27	-0.9609	0.0298	-8.4	0.9	-9.7	0.7	A+	B-	B-
SCIENCE	4	104562	6	A	2	10180	0.80	0.80	0.05	0.05	0.10	0.00	0.40	0.40	-0.30	-0.26	-0.11	-0.5567	0.0271	-0.9	1.0	1.4	1.0	A-	A-	A-
SCIENCE	4	412303	6	A	2	10180	0.80	0.04	0.80	0.05	0.10	0.01	0.43	-0.27	0.43	-0.22	-0.23	-0.5582	0.0271	-3.1	1.0	-1.3	1.0	A+	A-	A-
SCIENCE	4	257481	6	C	2	10180	0.72	0.09	0.72	0.07	0.12	0.00	0.49	-0.23	0.49	-0.26	-0.27	-0.0181	0.0246	-6.3	0.9	-7.4	0.9	B+	A-	A-
SCIENCE	4	743758	7	A	2	10155	0.55	0.19	0.08	0.55	0.18	0.00	0.41	-0.18	-0.27	0.41	-0.16	0.8535	0.0224	-0.5	1.0	-0.4	1.0			
SCIENCE	4	690009	7	A	2	10155	0.60	0.09	0.60	0.13	0.18	0.00	0.37	-0.29	0.37	-0.15	-0.12	0.6345	0.0227	5.6	1.1	7.8	1.1			
SCIENCE	4	256614	7	A	2	10155	0.47	0.18	0.16	0.47	0.18	0.00	0.31	-0.16	-0.13	0.31	-0.11	1.2745	0.0223	9.9	1.1	9.9	1.2	A+	A+	A+
SCIENCE	4	834555	7	A	3	10155	0.60	0.11	0.15	0.13	0.60	0.00	0.38	-0.14	-0.19	-0.21	0.38	0.6172	0.0227	4.8	1.1	4.4	1.1	A+	A-	A+
SCIENCE	4	122264	7	D	2	10155	0.63	0.13	0.10	0.14	0.63	0.01	0.35	-0.24	-0.18	-0.10	0.35	0.4660	0.0230	7.6	1.1	8.9	1.1	A-	A-	A-
SCIENCE	4	622078	7	D	2	10155	0.47	0.23	0.17	0.13	0.47	0.00	0.39	-0.11	-0.22	-0.19	0.39	1.2844	0.0223	-0.8	1.0	2.5	1.0	A-	A-	A-
SCIENCE	4	817962	7	C	2	10155	0.57	0.09	0.17	0.18	0.57	0.00	0.44	-0.27	-0.18	-0.19	0.44	0.7996	0.0225	-3.5	1.0	-3.4	1.0	A-	A-	A-
SCIENCE	4	705136	7	A	2	10155	0.73	0.09	0.73	0.11	0.07	0.00	0.50	-0.29	0.50	-0.20	-0.29	-0.0996	0.0247	-8.7	0.9	-8.5	0.8	A+	A-	A+
SCIENCE	4	370537	7	A	2	10155	0.46	0.24	0.13	0.46	0.16	0.01	0.33	-0.05	-0.23	0.33	-0.18	1.3167	0.0223	7.1	1.1	8.5	1.1	A-	A-	A+
SCIENCE	4	892553	7	B	2	10155	0.66	0.66	0.06	0.15	0.13	0.00	0.40	0.40	-0.30	-0.19	-0.13	0.3137	0.0234	2.2	1.0	4.1	1.1	A+	A-	A+
SCIENCE	4	804809	8	C	2	10195	0.77	0.77	0.06	0.06	0.10	0.01	0.41	0.41	-0.22	-0.23	-0.21	-0.4116	0.0261	-1.7	1.0	-3.0	0.9			
SCIENCE	4	852090	8	A	2	10195	0.65	0.11	0.10	0.65	0.13	0.00	0.37	-0.18	-0.18	0.37	-0.20	0.3415	0.0232	4.1	1.0	4.1	1.1			
SCIENCE	4	280239	8	A	3	10195	0.40	0.17	0.18	0.40	0.24	0.00	0.21	-0.05	-0.20	0.21	-0.01	1.6402	0.0225	9.9	1.2	9.9	1.4	A-	A+	A-
SCIENCE	4	558256	8	D	2	10195	0.41	0.14	0.33	0.41	0.12	0.00	0.30	-0.20	-0.05	0.30	-0.17	1.5637	0.0224	7.3	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	781725	8	D	2	10195	0.53	0.30	0.10	0.53	0.07	0.00	0.27	0.01	-0.26	0.27	-0.23	0.9682	0.0222	9.9	1.2	9.9	1.2	A+	A+	A-
SCIENCE	4	541346	8	C	2	10195	0.68	0.11	0.14	0.68	0.06	0.00	0.49	-0.22	-0.27	0.49	-0.26	0.1681	0.0237	-8.1	0.9	-8.6	0.9	A-	A-	A-
SCIENCE	4	826655	8	A	2	10195	0.08	0.65	0.08	0.17	0.09	0.00	-0.16	0.36	-0.16	-0.17	-0.19	3.9247	0.0372	7.5	1.2	9.9	4.1	A-	A+	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
SCIENCE	4	643303	8	B	2	10195	0.29	0.12	0.18	0.29	0.41	0.00	0.13	-0.25	-0.14	0.13	0.16	2.2472	0.0240	9.9	1.2	9.9	1.6	A-	A-	A+
SCIENCE	4	793609	8	B	3	10195	0.47	0.19	0.20	0.47	0.14	0.01	0.32	-0.15	-0.09	0.32	-0.18	1.2763	0.0222	8.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	431441	8	A	2	10195	0.89	0.89	0.03	0.04	0.03	0.00	0.45	0.45	-0.25	-0.26	-0.25	-1.4558	0.0342	-6.1	0.9	-9.3	0.6	A+	A-	A-
SCIENCE	4	679332	9	B	2	10232	0.61	0.11	0.15	0.61	0.12	0.00	0.44	-0.24	-0.17	0.44	-0.23	0.5606	0.0227	-4.0	1.0	-4.7	0.9			
SCIENCE	4	200551	9	C	2	10232	0.53	0.22	0.12	0.13	0.53	0.01	0.32	-0.10	-0.15	-0.20	0.32	1.0088	0.0221	9.9	1.1	9.9	1.1			
SCIENCE	4	228470	9	A	2	10232	0.21	0.20	0.22	0.21	0.36	0.00	0.09	-0.14	-0.09	0.09	0.12	2.7314	0.0263	9.9	1.2	9.9	1.9	A-	A+	A+
SCIENCE	4	204398	9	B	2	10232	0.65	0.14	0.65	0.08	0.12	0.00	0.41	-0.12	0.41	-0.24	-0.26	0.3246	0.0232	-0.1	1.0	1.9	1.0	A+	A-	A-
SCIENCE	4	538698	9	B	2	10232	0.44	0.44	0.17	0.29	0.09	0.00	0.32	0.32	-0.17	-0.04	-0.26	1.4230	0.0222	8.1	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	905333	9	B	2	10232	0.83	0.03	0.08	0.83	0.06	0.00	0.43	-0.25	-0.21	0.43	-0.24	-0.8095	0.0284	-4.2	0.9	-4.2	0.9	A+	A-	A-
SCIENCE	4	210008	9	D	2	10232	0.30	0.18	0.36	0.16	0.30	0.00	0.23	-0.21	0.05	-0.13	0.23	2.1936	0.0238	7.0	1.1	9.9	1.4	A-	A-	A-
SCIENCE	4	323872	9	D	2	10232	0.37	0.20	0.24	0.20	0.37	0.00	0.25	-0.17	-0.03	-0.09	0.25	1.8053	0.0228	9.9	1.1	9.9	1.3	A-	A-	A+
SCIENCE	4	648963	9	A	2	10232	0.34	0.33	0.10	0.34	0.22	0.01	0.25	-0.17	-0.12	0.25	0.00	1.9355	0.0231	8.6	1.1	9.9	1.3	A-	A-	A-
SCIENCE	4	715199	9	C	2	10232	0.41	0.18	0.25	0.15	0.41	0.00	0.32	-0.19	-0.08	-0.12	0.32	1.5687	0.0224	7.7	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	455555	10	A	2	10197	0.85	0.04	0.85	0.06	0.05	0.00	0.31	-0.21	0.31	-0.17	-0.14	-0.9973	0.0301	0.8	1.0	3.2	1.1			
SCIENCE	4	792659	10	B	1	10197	0.77	0.08	0.04	0.11	0.77	0.01	0.45	-0.29	-0.25	-0.20	0.45	-0.3140	0.0257	-4.6	0.9	-6.3	0.9			
SCIENCE	4	199548	10	A	2	10197	0.79	0.06	0.09	0.79	0.05	0.00	0.43	-0.22	-0.23	0.43	-0.24	-0.5284	0.0269	-3.6	1.0	-5.3	0.9	A+	A-	A-
SCIENCE	4	140989	10	A	2	10197	0.56	0.12	0.56	0.08	0.23	0.00	0.30	-0.17	0.30	-0.22	-0.07	0.8233	0.0224	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	4	279068	10	D	2	10197	0.60	0.12	0.60	0.10	0.17	0.00	0.42	-0.20	0.42	-0.23	-0.18	0.6319	0.0227	-0.7	1.0	-2.2	1.0	A-	A-	A-
SCIENCE	4	713982	10	D	2	10197	0.66	0.08	0.06	0.20	0.66	0.00	0.45	-0.25	-0.25	-0.21	0.45	0.3305	0.0233	-3.1	1.0	-5.5	0.9	A-	A-	A-
SCIENCE	4	305265	10	A	2	10197	0.50	0.19	0.50	0.17	0.13	0.00	0.36	-0.07	0.36	-0.18	-0.24	1.1255	0.0222	5.6	1.1	7.8	1.1	A+	A-	A-
SCIENCE	4	110370	10	B	2	10197	0.78	0.78	0.08	0.04	0.09	0.01	0.42	0.42	-0.23	-0.26	-0.20	-0.4127	0.0262	-2.4	1.0	-2.9	0.9	A+	A-	A-
SCIENCE	4	357799	10	B	2	10197	0.73	0.73	0.08	0.13	0.06	0.00	0.43	0.43	-0.24	-0.19	-0.26	-0.0939	0.0248	-2.5	1.0	-3.3	0.9	A+	A-	A-
SCIENCE	4	877530	10	C	2	10197	0.39	0.21	0.15	0.25	0.39	0.00	0.17	0.00	-0.15	-0.06	0.17	1.6992	0.0226	9.9	1.3	9.9	1.4	A+	A+	A-
SCIENCE	4	845106	11	A	2	10187	0.73	0.73	0.07	0.14	0.06	0.00	0.37	0.37	-0.25	-0.13	-0.22	-0.0910	0.0247	2.5	1.0	5.4	1.1			
SCIENCE	4	294591	11	D	2	10187	0.55	0.55	0.18	0.15	0.11	0.01	0.39	0.39	-0.15	-0.15	-0.26	0.8785	0.0223	0.8	1.0	1.7	1.0			
SCIENCE	4	698368	11	A	2	10187	0.78	0.06	0.10	0.78	0.07	0.00	0.57	-0.29	-0.33	0.57	-0.28	-0.3877	0.0261	-9.9	0.8	-9.9	0.7	A+	A-	A-
SCIENCE	4	251897	11	A	2	10187	0.77	0.10	0.08	0.05	0.77	0.00	0.41	-0.15	-0.25	-0.26	0.41	-0.3319	0.0258	-2.2	1.0	-1.5	1.0	A+	A-	A-
SCIENCE	4	832787	11	D	2	10187	0.48	0.48	0.22	0.11	0.19	0.00	0.18	0.18	-0.03	-0.16	-0.07	1.2377	0.0221	9.9	1.3	9.9	1.4	A+	A-	A+
SCIENCE	4	581582	11	D	2	10187	0.34	0.29	0.19	0.18	0.34	0.00	0.24	-0.11	-0.01	-0.14	0.24	1.9848	0.0231	9.9	1.1	9.9	1.3	A-	A-	A-
SCIENCE	4	205564	11	C	2	10187	0.65	0.65	0.07	0.11	0.17	0.00	0.41	0.41	-0.27	-0.23	-0.15	0.3694	0.0232	-0.1	1.0	-2.4	1.0	B-	B-	A-
SCIENCE	4	966991	11	A	2	10187	0.48	0.19	0.48	0.16	0.17	0.00	0.24	-0.11	0.24	-0.12	-0.08	1.2587	0.0221	9.9	1.2	9.9	1.3	A+	A-	A-
SCIENCE	4	611487	11	B	2	10187	0.19	0.11	0.23	0.19	0.48	0.00	-0.05	-0.22	-0.14	-0.05	0.30	2.9369	0.0274	9.9	1.3	9.9	2.5	A-	A-	A-
SCIENCE	4	595487	11	B	2	10187	0.73	0.09	0.73	0.07	0.11	0.00	0.45	-0.21	0.45	-0.28	-0.21	-0.1040	0.0248	-4.2	1.0	-3.9	0.9	A+	A-	A-
SCIENCE	4	121189	12	D	2	10201	0.61	0.16	0.10	0.13	0.61	0.00	0.42	-0.15	-0.26	-0.21	0.42	0.5727	0.0227	-1.0	1.0	-0.9	1.0			
SCIENCE	4	891504	12	D	2	10201	0.58	0.06	0.23	0.13	0.58	0.00	0.43	-0.27	-0.14	-0.26	0.43	0.7223	0.0224	-2.5	1.0	-3.6	1.0			
SCIENCE	4	472950	12	D	2	10201	0.47	0.35	0.13	0.47	0.05	0.00	0.26	0.00	-0.22	0.26	-0.25	1.2618	0.0222	9.9	1.2	9.9	1.2	A+	A-	A-
SCIENCE	4	871484	12	D	2	10201	0.51	0.15	0.18	0.16	0.51	0.00	0.40	-0.12	-0.20	-0.21	0.40	1.0740	0.0222	0.2	1.0	0.9	1.0	A-	A-	A-
SCIENCE	4	698610	12	A	2	10201	0.57	0.20	0.57	0.10	0.12	0.01	0.41	-0.18	0.41	-0.17	-0.25	0.7928	0.0223	-1.8	1.0	-2.6	1.0	A-	A-	A-
SCIENCE	4	143687	12	A	3	10201	0.63	0.63	0.16	0.10	0.10	0.00	0.46	0.46	-0.27	-0.18	-0.22	0.4617	0.0229	-5.2	1.0	-5.1	0.9	A-	A-	A-
SCIENCE	4	835107	12	A	2	10201	0.30	0.13	0.30	0.26	0.30	0.00	0.06	-0.18	0.08	0.00	0.06	2.1559	0.0237	9.9	1.3	9.9	1.7	A-	A-	A-
SCIENCE	4	867624	12	B	2	10201	0.55	0.55	0.02	0.40	0.03	0.00	0.23	0.23	-0.23	-0.09	-0.19	0.9017	0.0222	9.9	1.2	9.9	1.3	A-	A-	A-
SCIENCE	4	280754	12	B	2	10201	0.49	0.12	0.17	0.21	0.49	0.00	0.42	-0.16	-0.24	-0.15	0.42	1.1741	0.0221	-4.2	1.0	-2.0	1.0	A-	A-	A-
SCIENCE	4	190376	12	C	2	10201	0.30	0.17	0.20	0.32	0.30	0.01	0.17	-0.16	-0.14	0.09	0.17	2.1892	0.0238	9.9	1.2	9.9	1.5	A-	A+	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
SCIENCE	8	207041	0	B	1	124481	0.62	0.62	0.07	0.11	0.20	0.00	0.35	0.35	-0.21	-0.29	-0.06	-0.0718	0.0065	9.9	1.1	9.9	1.2			
SCIENCE	8	398149	0	D	2	124481	0.72	0.16	0.04	0.72	0.09	0.00	0.43	-0.21	-0.29	0.43	-0.21	-0.4877	0.0069	-9.9	1.0	-9.9	0.9			
SCIENCE	8	865322	0	C	2	124481	0.72	0.72	0.10	0.10	0.08	0.00	0.43	0.43	-0.26	-0.29	-0.10	-0.5983	0.0070	-4.1	1.0	-1.7	1.0			
SCIENCE	8	615036	0	A	2	124481	0.53	0.05	0.10	0.53	0.32	0.00	0.09	-0.25	-0.21	0.09	0.15	0.5306	0.0063	9.9	1.3	9.9	1.4			
SCIENCE	8	510943	0	D	2	124481	0.62	0.18	0.13	0.07	0.62	0.00	0.49	-0.22	-0.27	-0.24	0.49	0.0562	0.0065	-9.9	0.9	-9.9	0.9			
SCIENCE	8	185119	0	B	2	124481	0.44	0.44	0.38	0.10	0.08	0.00	0.33	0.33	-0.08	-0.22	-0.23	0.9881	0.0064	9.9	1.0	9.9	1.1			
SCIENCE	8	823915	0	A	2	124481	0.59	0.19	0.11	0.11	0.59	0.00	0.42	-0.15	-0.24	-0.22	0.42	0.1579	0.0064	-4.0	1.0	-4.7	1.0			
SCIENCE	8	613591	0	A	2	124481	0.60	0.30	0.60	0.06	0.05	0.00	0.33	-0.08	0.33	-0.30	-0.23	0.1342	0.0064	9.9	1.1	9.9	1.1			
SCIENCE	8	482430	0	C	2	124481	0.69	0.69	0.14	0.09	0.07	0.00	0.54	0.54	-0.25	-0.31	-0.27	-0.3984	0.0068	-9.9	0.9	-9.9	0.8			
SCIENCE	8	573542	0	C	2	124481	0.78	0.12	0.05	0.05	0.78	0.00	0.49	-0.24	-0.28	-0.27	0.49	-0.9198	0.0074	-9.9	0.9	-9.9	0.8			
SCIENCE	8	434584	0	D	2	124481	0.69	0.69	0.14	0.07	0.10	0.00	0.54	0.54	-0.28	-0.30	-0.25	-0.4143	0.0068	-9.9	0.9	-9.9	0.8			
SCIENCE	8	430671	0	A	2	124481	0.73	0.09	0.04	0.13	0.73	0.00	0.46	-0.24	-0.28	-0.22	0.46	-0.6593	0.0071	-9.9	0.9	-9.9	0.9			
SCIENCE	8	641082	0	B	2	124481	0.84	0.05	0.05	0.84	0.05	0.00	0.49	-0.24	-0.27	0.49	-0.28	-1.5041	0.0086	-9.9	0.9	-9.9	0.7			
SCIENCE	8	289897	0	C	2	124481	0.61	0.06	0.10	0.22	0.61	0.00	0.31	-0.25	-0.27	-0.01	0.31	0.0913	0.0064	9.9	1.1	9.9	1.2			
SCIENCE	8	711707	0	D	2	124481	0.70	0.08	0.70	0.15	0.06	0.00	0.41	-0.20	0.41	-0.19	-0.25	-0.4252	0.0068	-4.9	1.0	-9.9	1.0			
SCIENCE	8	887644	0	D	2	124481	0.55	0.28	0.10	0.55	0.07	0.00	0.25	-0.06	-0.16	0.25	-0.19	0.3152	0.0064	9.9	1.2	9.9	1.3			
SCIENCE	8	243467	0	A	2	124481	0.74	0.09	0.09	0.08	0.74	0.00	0.54	-0.27	-0.31	-0.26	0.54	-0.6930	0.0071	-9.9	0.8	-9.9	0.7			
SCIENCE	8	510562	0	B	2	124481	0.64	0.14	0.12	0.10	0.64	0.00	0.46	-0.19	-0.22	-0.28	0.46	-0.0258	0.0065	-9.9	0.9	-9.9	0.9			
SCIENCE	8	304745	0	D	2	124481	0.52	0.09	0.52	0.09	0.30	0.00	0.27	-0.14	0.27	-0.19	-0.09	0.6830	0.0063	9.9	1.1	9.9	1.2			
SCIENCE	8	261252	0	A	2	124481	0.64	0.64	0.11	0.13	0.12	0.00	0.45	0.45	-0.23	-0.28	-0.15	-0.0755	0.0065	-9.9	1.0	-9.9	0.9			
SCIENCE	8	319690	0	B	2	124481	0.81	0.05	0.05	0.09	0.81	0.00	0.53	-0.27	-0.30	-0.30	0.53	-1.1955	0.0079	-9.9	0.9	-9.9	0.7			
SCIENCE	8	246054	0	A	2	124481	0.71	0.08	0.08	0.14	0.71	0.00	0.42	-0.18	-0.22	-0.24	0.42	-0.4359	0.0068	-9.5	1.0	-0.1	1.0			
SCIENCE	8	210913	0	D	2	124481	0.52	0.21	0.52	0.15	0.12	0.00	0.28	-0.10	0.28	-0.14	-0.16	0.5445	0.0063	9.9	1.1	9.9	1.2			
SCIENCE	8	901677	0	D	1	124481	0.75	0.75	0.08	0.12	0.06	0.00	0.51	0.51	-0.29	-0.26	-0.25	-0.6744	0.0071	-9.9	0.9	-9.9	0.8			
SCIENCE	8	926759	0	B	2	124481	0.73	0.04	0.04	0.19	0.73	0.00	0.41	-0.26	-0.24	-0.21	0.41	-0.6206	0.0070	-4.2	1.0	-7.4	1.0			
SCIENCE	8	707781	0	A	2	124481	0.76	0.09	0.08	0.76	0.07	0.00	0.50	-0.26	-0.25	0.50	-0.27	-0.7903	0.0073	-9.9	0.9	-9.9	0.8			
SCIENCE	8	471992	0	D	2	124481	0.75	0.08	0.75	0.06	0.12	0.00	0.48	-0.19	0.48	-0.29	-0.29	-0.7730	0.0072	-9.9	0.9	-9.9	0.9			
SCIENCE	8	871105	0	A	2	124481	0.65	0.13	0.14	0.07	0.65	0.00	0.56	-0.29	-0.26	-0.29	0.56	-0.1724	0.0066	-9.9	0.8	-9.9	0.8			
SCIENCE	8	875224	0	A	3	124481	0.70	0.70	0.12	0.11	0.07	0.00	0.49	0.49	-0.29	-0.25	-0.19	-0.4224	0.0068	-9.9	0.9	-9.9	0.9			
SCIENCE	8	321038	0	D	2	124481	0.58	0.10	0.58	0.08	0.23	0.00	0.29	-0.23	0.29	-0.24	-0.02	0.2341	0.0064	9.9	1.1	9.9	1.2			
SCIENCE	8	756987	0	B	2	124481	0.70	0.05	0.70	0.04	0.21	0.00	0.38	-0.25	0.38	-0.29	-0.16	-0.3934	0.0068	0.7	1.0	3.3	1.0			
SCIENCE	8	934274	0	A	2	124481	0.85	0.85	0.05	0.07	0.03	0.00	0.46	0.46	-0.27	-0.26	-0.24	-1.4125	0.0083	-9.9	0.8	-9.9	0.7			
SCIENCE	8	185970	0	A	2	124481	0.67	0.11	0.13	0.10	0.67	0.00	0.47	-0.20	-0.25	-0.26	0.47	-0.3224	0.0067	-9.9	1.0	-9.9	0.9			
SCIENCE	8	270110	0	A	2	124481	0.66	0.08	0.13	0.66	0.14	0.00	0.35	-0.21	-0.21	0.35	-0.11	-0.3092	0.0067	9.9	1.1	9.9	1.1			
SCIENCE	8	595843	0	C	2	124481	0.66	0.22	0.06	0.66	0.06	0.00	0.41	-0.14	-0.29	0.41	-0.28	-0.2537	0.0067	2.5	1.0	-0.5	1.0			
SCIENCE	8	507046	0	C	2	124481	0.62	0.62	0.22	0.08	0.07	0.00	0.43	0.43	-0.13	-0.31	-0.26	-0.0551	0.0065	-6.6	1.0	-9.9	1.0			
SCIENCE	8	433766	0	A	2	124481	0.73	0.17	0.06	0.73	0.05	0.00	0.39	-0.20	-0.24	0.39	-0.19	-0.5805	0.0070	-0.4	1.0	-1.7	1.0			
SCIENCE	8	637701	0	C	2	124481	0.70	0.09	0.70	0.15	0.06	0.00	0.45	-0.22	0.45	-0.25	-0.22	-0.3178	0.0067	-9.9	0.9	-9.9	0.9			
SCIENCE	8	192606	0	C	2	124481	0.70	0.08	0.12	0.10	0.70	0.00	0.45	-0.26	-0.23	-0.19	0.45	-0.4315	0.0068	-9.9	1.0	-9.9	0.9			
SCIENCE	8	718050	0	C	1	124481	0.59	0.23	0.13	0.59	0.05	0.00	0.33	-0.08	-0.26	0.33	-0.18	-0.0163	0.0065	9.9	1.1	9.9	1.1			
SCIENCE	8	735443	0	C	3	124481	0.44	0.44	0.15	0.29	0.12	0.00	0.28	0.28	-0.23	0.05	-0.23	0.8729	0.0063	9.9	1.1	9.9	1.2			
SCIENCE	8	177896	0	C	2	124481	0.73	0.10	0.73	0.08	0.08	0.00	0.30	-0.20	0.30	-0.18	-0.08	-0.5272	0.0069	9.9	1.1	9.9	1.1			
SCIENCE	8	285309	0	A	2	124481	0.68	0.68	0.07	0.05	0.20	0.00	0.38	0.38	-0.20	-0.27	-0.17	-0.2760	0.0067	3.4	1.0	-2.5	1.0			
SCIENCE	8	635701	0	A	2	124481	0.74	0.12	0.08	0.74	0.06	0.00	0.50	-0.23	-0.31	0.50	-0.26	-0.7170	0.0072	-9.9	0.9	-9.9	0.8			
SCIENCE	8	433151	0	A	2	124481	0.65	0.65	0.10	0.16	0.09	0.00	0.44	0.44	-0.22	-0.21	-0.23	-0.2230	0.0066	-6.2	1.0	-9.9	0.9			
SCIENCE	8	443478	0	A	2	124481	0.72	0.13	0.09	0.06	0.72	0.00	0.41	-0.23	-0.20	-0.20	0.41	-0.5127	0.0069	-7.7	1.0	-9.9	0.9			
SCIENCE	8	943167	0	A	2	124481	0.84	0.06	0.06	0.84	0.05	0.00	0.43	-0.24	-0.27	0.43	-0.19	-1.5203	0.0086	-6.7	1.0	0.8	1.0			
SCIENCE	8	646930	0	A	2	124481	0.77	0.13	0.07	0.77	0.03	0.00	0.44	-0.23	-0.25	0.44	-0.26	-0.9255	0.0074	-9.4	1.0	-9.9	0.9			
SCIENCE	8	717367	0	A	2	124481	0.66	0.10	0.66	0.10	0.15	0.00	0.34	-0.24	0.34	-0.15	-0.13	-0.0810	0.0065	9.9	1.0	9.9	1.1			
SCIENCE	8	679592	0	A	2	124481	0.71	0.07	0.17	0.71	0.05	0.00	0.33	-0.26	-0.08	0.33	-0.26	-0.5206	0.0069	9.9	1.1	9.9	1.2			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
SCIENCE	8	666382	0	A	2	124481	0.66	0.13	0.09	0.11	0.66	0.00	0.53	-0.25	-0.29	-0.25	0.53	-0.1707	0.0066	-9.9	0.9	-9.9	0.8			
SCIENCE	8	556846	0	A	2	124481	0.63	0.08	0.63	0.18	0.11	0.00	0.44	-0.30	0.44	-0.17	-0.22	-0.2046	0.0066	-1.4	1.0	-3.9	1.0			
SCIENCE	8	168330	0	B	2	124481	0.71	0.23	0.02	0.03	0.71	0.00	0.41	-0.23	-0.25	-0.27	0.41	-0.4932	0.0069	-6.1	1.0	0.3	1.0			
SCIENCE	8	498276	0	B	2	124481	0.68	0.68	0.11	0.13	0.09	0.00	0.58	0.58	-0.32	-0.29	-0.25	-0.3680	0.0068	-9.9	0.8	-9.9	0.7			
SCIENCE	8	808650	0	A	1	124481	0.77	0.15	0.04	0.03	0.77	0.00	0.47	-0.25	-0.28	-0.28	0.47	-0.8183	0.0073	-9.9	0.9	-9.9	0.8			
SCIENCE	8	389597	0	A	3	124481	0.87	0.87	0.05	0.05	0.04	0.00	0.49	0.49	-0.28	-0.28	-0.24	-1.6578	0.0089	-9.9	0.9	-9.9	0.7			
SCIENCE	8	693480	0	A	3	124481	0.58	0.18	0.58	0.14	0.10	0.00	0.37	-0.11	0.37	-0.23	-0.19	0.2412	0.0064	9.9	1.0	9.2	1.0			
SCIENCE	8	172947	0	A	2	124481	0.65	0.04	0.65	0.23	0.08	0.00	0.46	-0.26	0.46	-0.23	-0.26	-0.0740	0.0065	-9.9	0.9	-9.9	0.9			
SCIENCE	8	282298	1	C	1	10867	0.38	0.16	0.13	0.38	0.33	0.00	0.30	-0.15	-0.18	0.30	-0.06	1.2021	0.0219	6.9	1.1	9.9	1.2			
SCIENCE	8	266526	1	D	2	10867	0.53	0.13	0.15	0.53	0.19	0.00	0.25	-0.12	-0.16	0.25	-0.06	0.4212	0.0214	9.9	1.2	9.9	1.2			
SCIENCE	8	501905	1	A	2	10867	0.29	0.30	0.25	0.15	0.29	0.00	0.14	0.10	-0.08	-0.20	0.14	1.6169	0.0230	9.9	1.2	9.9	1.5	A+	A-	A-
SCIENCE	8	141776	1	A	2	10867	0.61	0.13	0.11	0.61	0.16	0.00	0.41	-0.21	-0.27	0.41	-0.12	0.0087	0.0219	0.2	1.0	-1.2	1.0	A+	A-	A+
SCIENCE	8	890560	1	B	2	10867	0.40	0.40	0.31	0.16	0.13	0.00	0.26	0.26	0.02	-0.18	-0.20	1.0503	0.0217	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	8	972504	1	C	2	10867	0.30	0.24	0.19	0.30	0.26	0.00	0.18	-0.01	-0.13	0.18	-0.05	1.5753	0.0229	9.9	1.1	9.9	1.5	A-	A-	A-
SCIENCE	8	532126	1	A	2	10867	0.66	0.13	0.12	0.08	0.66	0.00	0.53	-0.22	-0.29	-0.30	0.53	-0.2936	0.0225	-9.9	0.9	-9.9	0.8	B+	A+	A-
SCIENCE	8	778399	1	B	2	10867	0.74	0.10	0.74	0.10	0.05	0.00	0.42	-0.17	0.42	-0.27	-0.22	-0.7495	0.0241	-3.2	1.0	-1.4	1.0	A+	A-	A-
SCIENCE	8	966547	1	D	2	10867	0.29	0.22	0.29	0.29	0.19	0.00	0.04	-0.06	0.03	0.04	-0.01	1.6222	0.0230	9.9	1.3	9.9	1.7	A-	A+	A-
SCIENCE	8	591045	1	A	2	10867	0.36	0.11	0.36	0.08	0.45	0.00	0.20	-0.22	0.20	-0.28	0.10	1.2802	0.0221	9.9	1.2	9.9	1.4	A-	A-	A+
SCIENCE	8	730434	1	C	2	10867	0.29	0.29	0.25	0.19	0.26	0.00	0.07	0.07	-0.08	-0.05	0.07	1.6174	0.0230	9.9	1.3	9.9	1.7	A-	A-	A-
SCIENCE	8	726478	1	A	2	10867	0.73	0.07	0.11	0.73	0.10	0.00	0.48	-0.29	-0.23	0.48	-0.22	-0.6564	0.0237	-7.5	0.9	-7.6	0.9	A+	A+	A-
SCIENCE	8	751908	2	A	2	10331	0.34	0.26	0.34	0.18	0.22	0.00	0.08	0.07	0.08	-0.09	-0.07	1.4460	0.0228	9.9	1.3	9.9	1.6	A+	A+	A-
SCIENCE	8	805323	2	A	2	10331	0.59	0.18	0.07	0.59	0.16	0.00	0.43	-0.15	-0.30	0.43	-0.21	0.1676	0.0223	-3.6	1.0	-3.4	1.0	A+	A-	A-
SCIENCE	8	166925	2	D	2	10331	0.44	0.15	0.44	0.30	0.11	0.00	0.34	-0.12	0.34	-0.16	-0.17	0.9235	0.0220	3.8	1.0	7.9	1.1	A-	A-	A-
SCIENCE	8	922483	2	B	2	10331	0.78	0.09	0.06	0.06	0.78	0.00	0.51	-0.27	-0.26	-0.28	0.51	-0.9583	0.0261	-9.9	0.9	-9.9	0.8	A+	A-	A-
SCIENCE	8	268151	2	B	2	10331	0.55	0.13	0.55	0.19	0.13	0.00	0.36	-0.19	0.36	-0.13	-0.18	0.3867	0.0220	4.0	1.0	3.4	1.0			
SCIENCE	8	727655	2	C	1	10331	0.64	0.12	0.13	0.64	0.11	0.00	0.35	-0.27	-0.15	0.35	-0.10	-0.0793	0.0227	5.2	1.1	3.6	1.1			
SCIENCE	8	432131	2	A	2	10331	0.50	0.41	0.06	0.50	0.03	0.00	0.13	0.08	-0.26	0.13	-0.23	0.6363	0.0219	9.9	1.3	9.9	1.4	A+	A-	A-
SCIENCE	8	956424	2	A	3	10331	0.66	0.11	0.66	0.14	0.08	0.00	0.50	-0.24	0.50	-0.26	-0.26	-0.2200	0.0231	-9.9	0.9	-9.9	0.8	A+	A-	A-
SCIENCE	8	339665	2	A	2	10331	0.34	0.34	0.24	0.13	0.28	0.00	0.18	0.18	-0.02	-0.19	-0.02	1.4304	0.0228	9.9	1.1	9.9	1.4	A+	A+	A-
SCIENCE	8	890260	2	D	2	10331	0.68	0.68	0.10	0.17	0.06	0.00	0.53	0.53	-0.30	-0.24	-0.28	-0.2841	0.0233	-9.9	0.9	-9.9	0.8	A+	A-	A-
SCIENCE	8	690927	2	B	2	10331	0.37	0.21	0.10	0.32	0.37	0.00	0.09	-0.13	-0.21	0.15	0.09	1.2707	0.0224	9.9	1.3	9.9	1.5	A-	A+	A+
SCIENCE	8	174799	2	C	2	10331	0.31	0.31	0.28	0.12	0.29	0.00	0.23	0.23	-0.23	-0.18	0.13	1.6186	0.0233	9.8	1.1	9.9	1.3	A+	A-	A-
SCIENCE	8	131309	3	C	2	10386	0.48	0.33	0.08	0.48	0.11	0.00	0.25	0.02	-0.26	0.25	-0.19	0.7234	0.0216	9.9	1.1	9.9	1.2			
SCIENCE	8	305771	3	A	2	10386	0.64	0.10	0.11	0.64	0.15	0.00	0.37	-0.30	-0.29	0.37	0.00	-0.1022	0.0226	2.7	1.0	6.3	1.1			
SCIENCE	8	332260	3	C	2	10386	0.22	0.36	0.20	0.22	0.22	0.00	0.10	0.17	-0.19	-0.11	0.10	2.0758	0.0252	9.9	1.1	9.9	1.6	A+	A+	A+
SCIENCE	8	604416	3	C	2	10386	0.24	0.24	0.28	0.15	0.33	0.00	0.04	0.04	-0.03	-0.20	0.14	1.9899	0.0247	9.9	1.2	9.9	1.7	A-	A-	A+
SCIENCE	8	989044	3	A	2	10386	0.37	0.32	0.14	0.17	0.37	0.00	0.25	-0.04	-0.19	-0.10	0.25	1.2356	0.0222	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	8	669214	3	A	2	10386	0.60	0.17	0.10	0.13	0.60	0.00	0.46	-0.27	-0.22	-0.17	0.46	0.1254	0.0221	-8.2	0.9	-9.3	0.9	B+	A+	B-
SCIENCE	8	460367	3	A	3	10386	0.24	0.13	0.24	0.24	0.39	0.00	-0.01	-0.18	-0.16	-0.01	0.28	1.9753	0.0247	9.9	1.3	9.9	1.9	A-	A-	A-
SCIENCE	8	976877	3	A	2	10386	0.41	0.06	0.32	0.21	0.41	0.00	0.17	-0.21	0.05	-0.13	0.17	1.0585	0.0219	9.9	1.2	9.9	1.3	A+	A+	A+
SCIENCE	8	733574	3	C	2	10386	0.49	0.15	0.21	0.49	0.15	0.00	0.41	-0.12	-0.25	0.41	-0.15	0.6636	0.0216	-4.5	1.0	-2.4	1.0	A+	A+	A+
SCIENCE	8	857791	3	A	2	10386	0.27	0.39	0.18	0.17	0.27	0.00	0.05	0.11	-0.14	-0.06	0.05	1.8001	0.0239	9.9	1.2	9.9	1.6	A+	A+	A+
SCIENCE	8	470752	3	B	2	10386	0.29	0.29	0.22	0.20	0.30	0.00	0.15	0.15	-0.07	-0.16	0.06	1.7015	0.0235	9.9	1.2	9.9	1.4	A-	A-	A+
SCIENCE	8	835977	3	D	2	10386	0.47	0.12	0.47	0.17	0.24	0.00	0.26	-0.17	0.26	-0.17	-0.02	0.7539	0.0217	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	8	455407	4	B	2	10393	0.61	0.11	0.13	0.14	0.61	0.00	0.47	-0.23	-0.18	-0.28	0.47	0.0697	0.0225	-7.7	0.9	-5.0	0.9			
SCIENCE	8	274559	4	A	2	10393	0.62	0.09	0.19	0.62	0.09	0.00	0.41	-0.15	-0.29	0.41	-0.14	0.0254	0.0226	0.1	1.0	-1.3	1.0			
SCIENCE	8	427183	4	C	3	10393	0.20	0.22	0.20	0.49	0.09	0.00	0.00	-0.11	0.00	0.19	-0.17	2.3003	0.0263	9.9	1.2	9.9	2.2	A-	A+	A-
SCIENCE	8	698046	4	B	2	10393	0.61	0.11	0.15	0.61	0.13	0.00	0.43	-0.23	-0.21	0.43	-0.18	0.1007	0.0224	-3.2	1.0	-4.4	0.9	A+	A-	A-
SCIENCE	8	758175	4	A	3	10393	0.51	0.13	0.51	0.24	0.13	0.00	0.38	-0.23	0.38	-0.13	-0.16	0.6001	0.0219	0.4	1.0	1.0	1.0	B+	A+	A-
SCIENCE	8	683885	4	A	2	10393	0.59	0.11	0.59	0.10	0.20	0.00	0.44	-0.24	0.44	-0.26	-0.15	0.1612	0.0223	-4.9	1.0	-6.6	0.9	A+	A+	A-
SCIENCE	8	927067	4	A	3	10393	0.47	0.29	0.12	0.12	0.47	0.00	0.33	-0.10	-0.21	-0.15	0.33	0.7834	0.0219	9.9	1.1	9.7	1.1	A+	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
SCIENCE	8	370053	4	C	2	10393	0.75	0.07	0.08	0.75	0.09	0.00	0.51	-0.26	-0.31	0.51	-0.22	-0.7102	0.0249	-9.9	0.9	-9.9	0.8	A-	A+	A-
SCIENCE	8	334986	4	B	2	10393	0.49	0.13	0.21	0.49	0.16	0.00	0.36	-0.18	-0.19	0.36	-0.10	0.6756	0.0219	4.1	1.0	5.8	1.1	A+	A-	A-
SCIENCE	8	649948	4	D	2	10393	0.66	0.11	0.16	0.66	0.06	0.00	0.32	-0.17	-0.09	0.32	-0.26	-0.2174	0.0231	9.0	1.1	9.9	1.2	A+	A+	A+
SCIENCE	8	436833	4	A	2	10393	0.65	0.19	0.65	0.07	0.09	0.00	0.38	-0.09	0.38	-0.26	-0.27	-0.1301	0.0229	2.2	1.0	3.1	1.1	B+	A+	A+
SCIENCE	8	927351	4	A	2	10393	0.60	0.12	0.20	0.60	0.08	0.00	0.44	-0.23	-0.16	0.44	-0.26	0.1413	0.0224	-3.8	1.0	-5.3	0.9	B+	A+	A-
SCIENCE	8	418492	5	B	2	10314	0.60	0.60	0.23	0.06	0.11	0.00	0.41	0.41	-0.12	-0.27	-0.28	0.1084	0.0224	-1.4	1.0	-2.6	1.0			
SCIENCE	8	282835	5	A	2	10314	0.55	0.10	0.20	0.55	0.15	0.00	0.44	-0.23	-0.19	0.44	-0.19	0.3701	0.0221	-5.1	1.0	-3.9	1.0			
SCIENCE	8	111541	5	D	2	10314	0.17	0.26	0.43	0.14	0.17	0.00	-0.07	-0.05	0.28	-0.25	-0.07	2.5278	0.0281	9.9	1.3	9.9	2.5	A-	A-	A-
SCIENCE	8	757636	5	A	3	10314	0.36	0.29	0.17	0.18	0.36	0.00	0.21	0.03	-0.12	-0.17	0.21	1.3362	0.0227	9.9	1.2	9.9	1.3	A+	A-	A+
SCIENCE	8	950372	5	A	2	10314	0.34	0.34	0.12	0.12	0.42	0.00	0.15	0.15	-0.25	-0.27	0.21	1.4068	0.0229	9.9	1.2	9.9	1.5	A-	A-	A-
SCIENCE	8	266099	5	C	2	10314	0.43	0.16	0.18	0.23	0.43	0.00	0.38	-0.19	-0.22	-0.08	0.38	0.9313	0.0221	-1.2	1.0	2.3	1.0	A+	A-	A+
SCIENCE	8	647780	5	C	2	10314	0.65	0.15	0.65	0.07	0.12	0.00	0.43	-0.26	0.43	-0.25	-0.13	-0.1773	0.0230	-2.6	1.0	-2.0	1.0	A+	A-	A-
SCIENCE	8	979396	5	B	2	10314	0.43	0.26	0.18	0.43	0.12	0.00	0.32	-0.07	-0.26	0.32	-0.08	0.9430	0.0221	6.9	1.1	9.9	1.1	A+	A-	A-
SCIENCE	8	759891	5	A	2	10314	0.47	0.09	0.15	0.47	0.28	0.00	0.25	-0.17	-0.21	0.25	0.01	0.7531	0.0220	9.9	1.2	9.9	1.3	A+	A-	A-
SCIENCE	8	191057	5	D	2	10314	0.51	0.20	0.16	0.51	0.12	0.00	0.35	-0.13	-0.22	0.35	-0.12	0.5629	0.0220	5.3	1.1	5.5	1.1	A-	A-	A-
SCIENCE	8	272531	5	A	2	10314	0.55	0.08	0.06	0.55	0.32	0.00	0.42	-0.23	-0.25	0.42	-0.18	0.3815	0.0220	-2.0	1.0	-1.8	1.0	A+	A-	A-
SCIENCE	8	662321	5	A	2	10314	0.64	0.07	0.11	0.18	0.64	0.00	0.45	-0.29	-0.22	-0.19	0.45	-0.0912	0.0228	-5.4	1.0	-5.8	0.9	A+	A-	A-
SCIENCE	8	309317	6	D	2	10305	0.51	0.13	0.51	0.13	0.22	0.00	0.38	-0.23	0.38	-0.21	-0.10	0.5670	0.0219	0.8	1.0	1.7	1.0			
SCIENCE	8	900522	6	A	2	10305	0.43	0.43	0.12	0.23	0.22	0.00	0.37	0.37	-0.21	-0.20	-0.07	0.9955	0.0221	-2.5	1.0	4.0	1.1			
SCIENCE	8	445465	6	C	2	10305	0.34	0.28	0.20	0.34	0.18	0.00	0.15	0.08	-0.17	0.15	-0.09	1.4388	0.0229	9.9	1.2	9.9	1.4	A+	A-	A-
SCIENCE	8	577259	6	A	2	10305	0.37	0.13	0.32	0.18	0.37	0.00	0.31	-0.26	0.02	-0.18	0.31	1.2732	0.0225	4.8	1.0	9.9	1.2	A+	A-	A-
SCIENCE	8	401196	6	A	2	10305	0.32	0.38	0.18	0.32	0.13	0.00	0.10	0.13	-0.13	0.10	-0.17	1.5430	0.0232	9.9	1.2	9.9	1.6	A+	A-	A+
SCIENCE	8	268785	6	D	1	10305	0.41	0.18	0.22	0.18	0.41	0.00	0.33	-0.08	-0.23	-0.09	0.33	1.0601	0.0222	2.6	1.0	6.6	1.1	A-	A-	A-
SCIENCE	8	745985	6	A	2	10305	0.28	0.28	0.30	0.17	0.25	0.00	0.19	0.19	0.02	-0.17	-0.07	1.7779	0.0240	8.2	1.1	9.9	1.4	A-	A-	A-
SCIENCE	8	129725	6	A	3	10305	0.42	0.42	0.22	0.27	0.09	0.00	0.27	0.27	-0.13	-0.06	-0.19	1.0365	0.0221	9.9	1.1	9.9	1.2	A+	A+	A+
SCIENCE	8	338812	6	B	2	10305	0.43	0.38	0.09	0.43	0.09	0.00	0.20	0.11	-0.27	0.20	-0.27	0.9501	0.0220	9.9	1.2	9.9	1.3	A+	A+	A-
SCIENCE	8	676436	6	D	3	10305	0.40	0.09	0.26	0.24	0.40	0.00	0.36	-0.21	-0.13	-0.13	0.36	1.1158	0.0223	-1.3	1.0	4.2	1.1	A+	A-	A-
SCIENCE	8	760010	6	A	2	10305	0.48	0.20	0.48	0.15	0.17	0.00	0.28	-0.12	0.28	-0.22	-0.03	0.7335	0.0219	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	8	414919	6	C	2	10305	0.34	0.19	0.22	0.26	0.34	0.00	0.26	-0.17	-0.09	-0.04	0.26	1.4404	0.0229	7.6	1.1	9.9	1.2	A-	A-	A-
SCIENCE	8	386240	7	A	2	10305	0.62	0.62	0.12	0.08	0.18	0.00	0.34	0.34	-0.23	-0.26	-0.04	0.0227	0.0225	7.7	1.1	9.9	1.2			
SCIENCE	8	112558	7	A	2	10305	0.80	0.07	0.80	0.06	0.07	0.00	0.53	-0.29	0.53	-0.29	-0.27	-1.1286	0.0271	-9.9	0.9	-9.9	0.7			
SCIENCE	8	400524	7	A	2	10305	0.47	0.40	0.08	0.47	0.05	0.00	0.30	-0.02	-0.29	0.30	-0.25	0.7572	0.0219	9.8	1.1	9.8	1.1	A+	A+	A+
SCIENCE	8	932490	7	A	2	10305	0.60	0.14	0.14	0.60	0.12	0.00	0.40	-0.17	-0.27	0.40	-0.12	0.1376	0.0223	0.8	1.0	-0.7	1.0	A+	A-	A+
SCIENCE	8	332179	7	C	2	10305	0.47	0.18	0.16	0.47	0.19	0.00	0.36	-0.09	-0.17	0.36	-0.21	0.7577	0.0219	1.9	1.0	4.7	1.1	A+	A-	A-
SCIENCE	8	547492	7	D	2	10305	0.30	0.17	0.12	0.30	0.42	0.00	0.11	-0.13	-0.23	0.11	0.15	1.6721	0.0236	9.9	1.2	9.9	1.6	A-	A+	A-
SCIENCE	8	417325	7	A	2	10305	0.45	0.45	0.20	0.15	0.20	0.00	0.24	0.24	-0.11	-0.23	0.02	0.8834	0.0220	9.9	1.2	9.9	1.2	A+	A-	A-
SCIENCE	8	444859	7	A	2	10305	0.22	0.30	0.26	0.21	0.22	0.00	0.07	0.10	-0.11	-0.06	0.07	2.1204	0.0255	9.9	1.2	9.9	1.8	A-	A-	A-
SCIENCE	8	631275	7	B	2	10305	0.38	0.14	0.28	0.19	0.38	0.01	0.26	-0.15	0.03	-0.23	0.26	1.2052	0.0224	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	8	138501	7	D	2	10305	0.47	0.47	0.20	0.10	0.23	0.00	0.27	0.27	-0.13	-0.22	-0.03	0.7615	0.0219	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	8	949433	7	A	3	10305	0.57	0.57	0.15	0.18	0.10	0.00	0.52	0.52	-0.24	-0.26	-0.24	0.2592	0.0221	-9.9	0.9	-9.9	0.8	A-	A-	A-
SCIENCE	8	835384	7	C	2	10305	0.68	0.68	0.12	0.09	0.10	0.00	0.52	0.52	-0.29	-0.29	-0.21	-0.3313	0.0234	-9.9	0.9	-9.9	0.8	A+	A+	A+
SCIENCE	8	834095	8	A	2	10305	0.53	0.53	0.08	0.23	0.16	0.00	0.36	0.36	-0.25	-0.09	-0.21	0.4627	0.0221	5.1	1.1	4.4	1.1			
SCIENCE	8	357997	8	A	2	10305	0.67	0.07	0.07	0.67	0.19	0.00	0.45	-0.29	-0.32	0.45	-0.15	-0.2844	0.0234	-4.9	1.0	-4.3	0.9			
SCIENCE	8	917073	8	A	2	10305	0.57	0.11	0.57	0.11	0.20	0.00	0.52	-0.27	0.52	-0.23	-0.24	0.2790	0.0222	-9.9	0.9	-9.9	0.8	A-	A-	A-
SCIENCE	8	454138	8	A	2	10305	0.79	0.07	0.07	0.79	0.07	0.00	0.52	-0.28	-0.29	0.52	-0.25	-1.0004	0.0263	-9.9	0.9	-9.9	0.7	B+	A-	A-
SCIENCE	8	681315	8	C	2	10305	0.68	0.15	0.68	0.08	0.09	0.00	0.45	-0.18	0.45	-0.29	-0.23	-0.2867	0.0234	-4.0	1.0	-6.5	0.9	A-	A-	A-
SCIENCE	8	435156	8	A	2	10305	0.46	0.10	0.46	0.28	0.16	0.00	0.22	-0.23	0.22	0.01	-0.12	0.8128	0.0220	9.9	1.2	9.9	1.3	A+	A+	A+
SCIENCE	8	501063	8	D	3	10305	0.35	0.21	0.30	0.14	0.35	0.00	0.27	-0.20	0.04	-0.19	0.27	1.3871	0.0228	7.7	1.1	9.9	1.2	A-	A+	A-
SCIENCE	8	790282	8	D	2	10305	0.59	0.13	0.12	0.59	0.16	0.00	0.48	-0.24	-0.32	0.48	-0.14	0.1952	0.0223	-9.5	0.9	-9.6	0.9	A+	A-	A-
SCIENCE	8	912404	8	A	3	10305	0.80	0.05	0.08	0.80	0.06	0.00	0.43	-0.28	-0.24	0.43	-0.17	-1.1068	0.0270	-4.4	0.9	-4.3	0.9	A+	A-	A-
SCIENCE	8	727980	8	B	2	10305	0.32	0.22	0.18	0.32	0.28	0.00	0.13	0.00	-0.24	0.13	0.06	1.5655	0.0233	9.9	1.2	9.9	1.5	A+	A-	A-
SCIENCE	8	466386	8	D	2	10305	0.35	0.32	0.35	0.21	0.12	0.00	0.08	0.17	0.08	-0.11	-0.23	1.3684	0.0228	9.9	1.3	9.9	1.6	A-	A+	A+

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
SCIENCE	8	897035	8	A	2	10305	0.65	0.11	0.65	0.14	0.09	0.00	0.49	-0.19	0.49	-0.29	-0.24	-0.1266	0.0229	-9.0	0.9	-9.9	0.9	A+	A-	A-
SCIENCE	8	311763	9	A	1	10324	0.71	0.08	0.14	0.71	0.07	0.00	0.49	-0.27	-0.21	0.49	-0.30	-0.4695	0.0240	-8.5	0.9	-9.0	0.8			
SCIENCE	8	163110	9	A	2	10324	0.62	0.62	0.09	0.09	0.21	0.00	0.49	0.49	-0.28	-0.28	-0.20	0.0715	0.0226	-9.9	0.9	-9.9	0.9			
SCIENCE	8	437304	9	A	3	10324	0.50	0.21	0.17	0.50	0.12	0.00	0.34	-0.09	-0.21	0.34	-0.17	0.6595	0.0220	6.7	1.1	8.3	1.1	A-	A-	A-
SCIENCE	8	364824	9	A	2	10324	0.60	0.12	0.60	0.16	0.12	0.00	0.40	-0.20	0.40	-0.21	-0.15	0.1239	0.0225	1.4	1.0	0.3	1.0	A+	A-	A-
SCIENCE	8	808495	9	A	2	10324	0.63	0.08	0.15	0.14	0.63	0.00	0.46	-0.31	-0.21	-0.18	0.46	0.0087	0.0227	-5.3	1.0	-4.6	0.9	A+	A-	A-
SCIENCE	8	439856	9	B	2	10324	0.64	0.10	0.11	0.15	0.64	0.00	0.48	-0.24	-0.26	-0.22	0.48	-0.0671	0.0229	-8.0	0.9	-8.9	0.9	A+	A-	A+
SCIENCE	8	510323	9	C	2	10324	0.49	0.19	0.20	0.49	0.11	0.00	0.28	-0.18	-0.05	0.28	-0.15	0.6881	0.0220	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	8	118677	9	A	2	10324	0.70	0.15	0.08	0.70	0.06	0.00	0.51	-0.25	-0.30	0.51	-0.26	-0.4279	0.0239	-9.9	0.9	-9.9	0.8	A+	A-	A-
SCIENCE	8	228816	9	B	2	10324	0.42	0.42	0.19	0.23	0.16	0.00	0.35	0.35	-0.18	-0.14	-0.11	1.0583	0.0222	2.7	1.0	7.2	1.1	A-	A+	A+
SCIENCE	8	378700	9	D	2	10324	0.34	0.34	0.23	0.26	0.16	0.00	0.20	0.20	-0.10	-0.04	-0.09	1.4517	0.0229	9.9	1.2	9.9	1.4	A-	A-	A+
SCIENCE	8	463932	9	A	2	10324	0.30	0.23	0.30	0.19	0.27	0.00	0.08	0.01	0.08	-0.19	0.08	1.6901	0.0236	9.9	1.3	9.9	1.7	A-	A-	A-
SCIENCE	8	178534	9	C	2	10324	0.54	0.18	0.14	0.54	0.14	0.00	0.41	-0.20	-0.22	0.41	-0.14	0.4766	0.0221	-1.9	1.0	-1.6	1.0	A-	A-	A+
SCIENCE	8	289448	10	A	2	10318	0.54	0.14	0.09	0.23	0.54	0.00	0.45	-0.24	-0.32	-0.12	0.45	0.4309	0.0220	-7.3	0.9	-5.9	0.9			
SCIENCE	8	485404	10	D	2	10318	0.52	0.52	0.21	0.11	0.16	0.00	0.38	0.38	-0.20	-0.23	-0.09	0.5318	0.0219	1.8	1.0	2.2	1.0			
SCIENCE	8	556466	10	A	2	10318	0.46	0.19	0.46	0.09	0.26	0.00	0.23	-0.08	0.23	-0.29	0.00	0.8180	0.0219	9.9	1.2	9.9	1.3	A-	A-	A-
SCIENCE	8	418723	10	A	2	10318	0.48	0.20	0.11	0.48	0.22	0.00	0.33	-0.18	-0.28	0.33	-0.02	0.7374	0.0219	6.1	1.1	7.3	1.1	A+	A-	A-
SCIENCE	8	202541	10	A	3	10318	0.65	0.65	0.11	0.14	0.10	0.00	0.43	0.43	-0.24	-0.22	-0.17	-0.1281	0.0228	-2.8	1.0	-3.6	1.0	A+	A-	A+
SCIENCE	8	648337	10	B	2	10318	0.63	0.13	0.63	0.13	0.11	0.00	0.53	-0.25	0.53	-0.30	-0.22	-0.0378	0.0226	-9.9	0.9	-9.9	0.8	A-	A-	A-
SCIENCE	8	534573	10	D	2	10318	0.44	0.14	0.08	0.44	0.34	0.00	0.32	-0.25	-0.29	0.32	0.03	0.9333	0.0220	5.8	1.1	8.9	1.1	A-	A-	A-
SCIENCE	8	875540	10	A	3	10318	0.47	0.11	0.23	0.19	0.47	0.00	0.29	-0.14	-0.11	-0.14	0.29	0.7580	0.0219	9.9	1.1	9.9	1.1	A+	A+	A-
SCIENCE	8	817085	10	B	2	10318	0.31	0.13	0.42	0.31	0.14	0.00	0.08	-0.23	0.20	0.08	-0.17	1.5866	0.0233	9.9	1.3	9.9	1.6	A+	A-	A-
SCIENCE	8	815493	10	D	2	10318	0.32	0.20	0.32	0.26	0.21	0.00	0.11	-0.06	0.11	-0.04	-0.02	1.5365	0.0231	9.9	1.2	9.9	1.5	A-	A-	A-
SCIENCE	8	124889	10	A	3	10318	0.34	0.18	0.34	0.36	0.11	0.00	0.10	-0.08	0.10	0.06	-0.13	1.4272	0.0228	9.9	1.2	9.9	1.5	A-	A-	A-
SCIENCE	8	929860	10	C	2	10318	0.50	0.24	0.15	0.50	0.12	0.00	0.35	-0.20	-0.20	0.35	-0.05	0.6363	0.0219	4.4	1.0	4.8	1.1	A-	A-	A-
SCIENCE	8	570538	11	B	1	10333	0.84	0.08	0.84	0.04	0.04	0.00	0.50	-0.28	0.50	-0.27	-0.28	-1.4490	0.0293	-8.5	0.9	-9.9	0.7			
SCIENCE	8	156031	11	D	2	10333	0.45	0.13	0.45	0.23	0.19	0.00	0.25	-0.19	0.25	-0.08	-0.05	0.8627	0.0219	9.9	1.1	9.9	1.2			
SCIENCE	8	185636	11	A	3	10333	0.61	0.09	0.61	0.14	0.16	0.00	0.42	-0.21	0.42	-0.21	-0.20	0.0847	0.0223	-1.9	1.0	-1.8	1.0	A-	A-	A+
SCIENCE	8	134693	11	A	2	10333	0.69	0.08	0.09	0.15	0.69	0.00	0.51	-0.31	-0.28	-0.20	0.51	-0.3447	0.0234	-9.9	0.9	-9.9	0.8	A+	A-	A-
SCIENCE	8	658227	11	D	2	10333	0.49	0.13	0.49	0.19	0.18	0.00	0.28	-0.13	0.28	-0.17	-0.07	0.6432	0.0218	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	8	836001	11	B	2	10333	0.72	0.06	0.72	0.12	0.10	0.00	0.41	-0.29	0.41	-0.15	-0.22	-0.5180	0.0240	-1.4	1.0	-0.8	1.0	A+	A+	A-
SCIENCE	8	719484	11	A	2	10333	0.51	0.07	0.51	0.31	0.11	0.00	0.29	-0.25	0.29	-0.05	-0.18	0.5788	0.0218	9.9	1.1	9.9	1.2	A-	B-	A-
SCIENCE	8	911049	11	A	2	10333	0.47	0.09	0.47	0.20	0.24	0.00	0.21	-0.22	0.21	-0.15	0.04	0.7848	0.0219	9.9	1.2	9.9	1.3	A-	A+	A+
SCIENCE	8	805446	11	C	2	10333	0.39	0.39	0.08	0.29	0.23	0.00	0.11	0.11	-0.25	0.01	0.03	1.1392	0.0222	9.9	1.3	9.9	1.4	A+	A-	A-
SCIENCE	8	196636	11	C	2	10333	0.37	0.37	0.30	0.19	0.14	0.00	0.21	0.21	0.05	-0.15	-0.19	1.2480	0.0224	9.9	1.1	9.9	1.3	A-	A-	A-
SCIENCE	8	832590	11	C	2	10333	0.50	0.23	0.11	0.15	0.50	0.00	0.34	-0.10	-0.17	-0.20	0.34	0.5964	0.0218	6.5	1.1	6.3	1.1	A+	A-	A-
SCIENCE	8	995744	11	C	2	10333	0.54	0.54	0.16	0.20	0.10	0.00	0.38	0.38	-0.20	-0.17	-0.15	0.4162	0.0219	1.8	1.0	1.0	1.0	A+	A-	A-
SCIENCE	8	487986	12	C	2	10300	0.58	0.10	0.16	0.15	0.58	0.00	0.46	-0.22	-0.18	-0.26	0.46	0.2144	0.0222	-8.2	0.9	-7.9	0.9			
SCIENCE	8	615877	12	A	2	10300	0.72	0.20	0.04	0.72	0.04	0.00	0.47	-0.26	-0.28	0.47	-0.28	-0.5564	0.0242	-7.3	0.9	-8.0	0.9			
SCIENCE	8	168299	12	A	2	10300	0.49	0.08	0.25	0.18	0.49	0.00	0.37	-0.24	-0.10	-0.21	0.37	0.6653	0.0219	1.7	1.0	3.1	1.0	A+	A-	A-
SCIENCE	8	365743	12	A	3	10300	0.42	0.24	0.42	0.18	0.16	0.00	0.24	-0.05	0.24	-0.16	-0.09	1.0127	0.0221	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	8	355425	12	C	2	10300	0.37	0.20	0.19	0.37	0.24	0.00	0.28	-0.21	-0.16	0.28	0.04	1.2484	0.0225	6.8	1.1	9.9	1.2	A-	A-	A-
SCIENCE	8	392662	12	B	2	10300	0.33	0.34	0.18	0.33	0.15	0.00	0.11	0.04	-0.03	0.11	-0.16	1.4675	0.0230	9.9	1.3	9.9	1.5	A+	A-	A-
SCIENCE	8	835663	12	D	2	10300	0.62	0.13	0.09	0.62	0.15	0.00	0.42	-0.14	-0.25	0.42	-0.23	0.0010	0.0226	-1.7	1.0	-2.5	1.0	A-	A-	A-
SCIENCE	8	280907	12	A	2	10300	0.23	0.22	0.28	0.26	0.23	0.00	0.02	-0.04	0.01	0.01	0.02	2.0920	0.0254	9.9	1.3	9.9	1.9	A-	A-	A-
SCIENCE	8	677899	12	A	2	10300	0.48	0.18	0.16	0.48	0.18	0.00	0.38	-0.16	-0.22	0.38	-0.12	0.7273	0.0219	-0.4	1.0	1.1	1.0	A+	A-	A-
SCIENCE	8	663979	12	A	3	10300	0.29	0.19	0.27	0.25	0.29	0.00	0.20	-0.13	-0.05	-0.04	0.20	1.7306	0.0238	9.9	1.1	9.9	1.4	A+	A-	A-
SCIENCE	8	988555	12	C	2	10300	0.46	0.46	0.23	0.22	0.09	0.00	0.33	0.33	-0.06	-0.18	-0.22	0.8293	0.0220	5.2	1.0	7.8	1.1	A+	A-	A+
SCIENCE	8	788121	12	A	2	10300	0.53	0.19	0.12	0.53	0.16	0.00	0.34	-0.11	-0.18	0.34	-0.18	0.4817	0.0220	6.8	1.1	6.8	1.1	A+	A-	A-

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	3	967446	0	B-O	2	735	0.44	0.28	0.44	0.16	0.11	0.00	0.42	-0.19	0.42	-0.17	-0.19
MATH	3	605908	0	D-M	2	735	0.60	0.60	0.35	0.02	0.03	0.00	0.51	0.51	-0.41	-0.11	-0.21
MATH	3	205692	0	A-T	1	735	0.43	0.43	0.19	0.11	0.26	0.01	0.55	0.55	-0.19	-0.18	-0.32
MATH	3	214755	0	D-M	1	735	0.41	0.34	0.15	0.41	0.10	0.00	0.49	-0.07	-0.33	0.49	-0.31
MATH	3	349242	0	B-O	2	735	0.54	0.11	0.13	0.20	0.54	0.01	0.49	-0.29	-0.32	-0.10	0.49
MATH	3	836133	0	B-O	1	735	0.56	0.15	0.13	0.56	0.16	0.00	0.51	-0.28	-0.14	0.51	-0.29
MATH	3	401226	0	A-T	2	735	0.28	0.28	0.30	0.22	0.20	0.00	0.49	0.49	-0.18	-0.11	-0.23
MATH	3	627710	0	D-M	2	735	0.67	0.10	0.08	0.14	0.67	0.00	0.37	-0.19	-0.14	-0.21	0.37
MATH	3	736846	0	A-F	1	735	0.68	0.20	0.02	0.09	0.68	0.00	0.43	-0.28	-0.10	-0.25	0.43
MATH	3	947421	0	A-F	1	735	0.38	0.44	0.38	0.09	0.10	0.00	0.46	-0.21	0.46	-0.24	-0.17
MATH	3	134296	0	D-M	1	735	0.65	0.65	0.20	0.12	0.02	0.00	0.27	0.27	-0.20	-0.05	-0.18
MATH	3	341121	0	B-O	1	735	0.62	0.09	0.62	0.26	0.03	0.00	0.50	-0.27	0.50	-0.30	-0.17
MATH	3	311426	0	B-O	1	735	0.55	0.27	0.08	0.55	0.09	0.00	0.53	-0.35	-0.22	0.53	-0.15
MATH	3	123841	0	D-M	2	735	0.80	0.04	0.05	0.80	0.12	0.00	0.35	-0.18	-0.17	0.35	-0.21
MATH	3	205331	0	B-O	2	735	0.47	0.27	0.47	0.16	0.09	0.00	0.48	-0.21	0.48	-0.21	-0.24
MATH	3	144727	0	C-G	1	735	0.51	0.51	0.13	0.20	0.16	0.00	0.22	0.22	-0.24	0.08	-0.16
MATH	3	690966	0	B-O	2	735	0.53	0.53	0.28	0.10	0.09	0.00	0.34	0.34	-0.15	-0.16	-0.19
MATH	3	209940	0	A-F	1	735	0.69	0.08	0.69	0.11	0.11	0.00	0.44	-0.20	0.44	-0.22	-0.24
MATH	3	258671	0	B-O	2	735	0.47	0.09	0.47	0.18	0.26	0.00	0.54	-0.09	0.54	-0.31	-0.28
MATH	3	196094	0	D-M	2	735	0.43	0.43	0.12	0.10	0.34	0.01	0.42	0.42	-0.13	-0.05	-0.30
MATH	3	785410	0	A-F	1	735	0.45	0.10	0.16	0.29	0.45	0.00	0.33	-0.22	-0.15	-0.08	0.33
MATH	3	618917	0	B-O	2	735	0.24	0.39	0.24	0.15	0.21	0.01	0.35	-0.11	0.35	-0.07	-0.18
MATH	3	450389	0	C-G	1	735	0.28	0.45	0.07	0.19	0.28	0.00	0.24	-0.12	-0.14	-0.03	0.24
MATH	3	843368	0	A-T	2	735	0.57	0.14	0.12	0.57	0.17	0.00	0.38	-0.11	-0.13	0.38	-0.29
MATH	3	713406	0	C-G	1	735	0.42	0.19	0.31	0.08	0.42	0.00	0.40	-0.10	-0.24	-0.19	0.40
MATH	3	768417	0	C-G	1	735	0.43	0.43	0.31	0.05	0.20	0.00	0.40	0.40	-0.02	-0.18	-0.35
MATH	3	638833	0	C-G	1	735	0.59	0.07	0.08	0.26	0.59	0.01	0.26	-0.18	-0.15	-0.08	0.26
MATH	3	473497	0	B-O	2	735	0.52	0.18	0.52	0.19	0.11	0.00	0.43	-0.19	0.43	-0.22	-0.16
MATH	3	102623	0	C-G	1	735	0.47	0.08	0.47	0.01	0.43	0.00	0.35	-0.13	0.35	-0.07	-0.26
MATH	3	896374	0	C-G	1	735	0.67	0.26	0.04	0.67	0.03	0.00	0.30	-0.21	-0.19	0.30	-0.07
MATH	3	182425	0	C-G	1	735	0.70	0.08	0.07	0.14	0.70	0.00	0.35	-0.23	-0.17	-0.15	0.35
MATH	3	528622	0	C-G	1	735	0.38	0.18	0.20	0.38	0.23	0.01	0.22	-0.05	-0.02	0.22	-0.18
MATH	3	397711	0	D-M	2	735	0.56	0.15	0.56	0.15	0.14	0.00	0.41	-0.12	0.41	-0.18	-0.27
MATH	3	666716	0	A-F	2	735	0.37	0.37	0.17	0.24	0.22	0.00	0.37	0.37	-0.19	-0.20	-0.05
MATH	3	525219	0	D-M	2	735	0.67	0.07	0.06	0.67	0.20	0.00	0.42	-0.19	-0.16	0.42	-0.28
MATH	3	584110	0	A-T	2	735	0.44	0.13	0.44	0.29	0.13	0.00	0.46	-0.23	0.46	-0.12	-0.28
MATH	3	977082	0	B-O	2	735	0.43	0.31	0.13	0.43	0.12	0.01	0.32	-0.02	-0.28	0.32	-0.16
MATH	3	394709	0	B-O	1	735	0.70	0.09	0.09	0.70	0.12	0.00	0.44	-0.27	-0.27	0.44	-0.14
MATH	3	395111	0	D-M	2	735	0.29	0.21	0.21	0.28	0.29	0.00	0.34	-0.11	-0.01	-0.23	0.34

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	3	121745	0	B-O	2	735	0.57	0.16	0.08	0.18	0.57	0.00	0.43	-0.21	-0.24	-0.18	0.43
MATH	3	338271	0	B-O	2	735	0.51	0.11	0.10	0.51	0.27	0.00	0.47	-0.21	-0.26	0.47	-0.20
MATH	3	325175	0	A-T	2	735	0.34	0.20	0.34	0.30	0.17	0.00	0.32	-0.18	0.32	0.04	-0.25
MATH	3	807265	0	C-G	1	735	0.60	0.21	0.04	0.60	0.15	0.00	0.42	-0.23	-0.14	0.42	-0.23
MATH	3	646463	0	A-T	1	735	0.81	0.08	0.05	0.05	0.81	0.00	0.45	-0.29	-0.23	-0.19	0.45
MATH	3	890114	0	D-M	2	735	0.43	0.11	0.20	0.43	0.26	0.00	0.36	-0.23	-0.11	0.36	-0.13
MATH	3	753663	0	D-M	1	735	0.58	0.58	0.13	0.09	0.19	0.00	0.53	0.53	-0.25	-0.14	-0.34
MATH	3	277759	0	A-F	2	735	0.66	0.66	0.18	0.09	0.07	0.00	0.35	0.35	-0.20	-0.19	-0.15
MATH	3	144623	0	A-F	1	735	0.68	0.11	0.09	0.11	0.68	0.00	0.38	-0.20	-0.20	-0.18	0.38
MATH	3	243560	0	A-T	1	735	0.75	0.11	0.75	0.08	0.06	0.00	0.43	-0.18	0.43	-0.26	-0.24
MATH	3	404024	0	D-M	2	735	0.16	0.42	0.28	0.16	0.14	0.00	0.20	-0.03	0.14	0.20	-0.35
MATH	3	730242	0	B-O	2	735	0.42	0.42	0.25	0.20	0.13	0.00	0.31	0.31	-0.10	-0.10	-0.20
MATH	3	412990	0	B-O	2	735	0.54	0.11	0.18	0.17	0.54	0.00	0.50	-0.27	-0.18	-0.26	0.50
MATH	3	721322	0	B-O	2	735	0.54	0.24	0.16	0.54	0.06	0.00	0.42	-0.21	-0.27	0.42	-0.08
MATH	3	566922	0	D-M	2	735	0.61	0.13	0.12	0.61	0.14	0.00	0.35	-0.19	-0.13	0.35	-0.19
MATH	3	128374	0	D-M	2	735	0.46	0.46	0.13	0.12	0.30	0.00	0.32	0.32	-0.23	-0.15	-0.08
MATH	3	301114	0	A-F	1	735	0.32	0.32	0.07	0.17	0.45	0.00	0.39	0.39	-0.09	-0.01	-0.31
MATH	3	370993	0	D-M	1	735	0.75	0.12	0.75	0.05	0.08	0.00	0.32	-0.18	0.32	-0.15	-0.17
MATH	3	235669	0	A-F	2	735	0.54	0.09	0.14	0.23	0.54	0.01	0.32	-0.21	-0.11	-0.14	0.32
MATH	3	291448	0	B-O	2	735	0.45	0.20	0.45	0.17	0.17	0.00	0.43	-0.20	0.43	-0.19	-0.16
MATH	3	207850	0	A-F	1	735	0.28	0.32	0.27	0.28	0.12	0.01	0.40	-0.27	-0.19	0.40	0.13
MATH	3	221899	1	A-T	2	350	0.20	0.60	0.11	0.20	0.07	0.01	0.34	-0.09	-0.08	0.34	-0.23
MATH	3	207345	1	D-M	1	350	0.75	0.75	0.10	0.11	0.04	0.00	0.34	0.34	-0.25	-0.13	-0.15
MATH	3	420259	1	C-G	1	350	0.51	0.51	0.13	0.11	0.24	0.00	0.43	0.43	-0.20	-0.17	-0.21
MATH	3	641753	1	B-O	2	350	0.41	0.41	0.16	0.11	0.31	0.01	0.54	0.54	-0.09	-0.20	-0.36
MATH	3	604811	1	A-F	1	350	0.32	0.32	0.26	0.32	0.09	0.01	0.34	-0.09	-0.14	0.34	-0.19
MATH	3	664747	1	D-M	1	350	0.38	0.20	0.38	0.14	0.27	0.01	0.55	-0.08	0.55	-0.17	-0.38
MATH	3	269503	1	A-T	1	350	0.42	0.10	0.42	0.16	0.32	0.01	0.41	-0.21	0.41	-0.30	-0.07
MATH	3	648271	1	C-G	1	350	0.59	0.59	0.04	0.25	0.12	0.00	0.34	0.34	-0.10	-0.20	-0.19
MATH	3	975393	1	B-O	1	350	0.57	0.27	0.08	0.57	0.07	0.00	0.55	-0.36	-0.22	0.55	-0.22
MATH	3	170828	1	B-O	1	350	0.61	0.10	0.61	0.15	0.13	0.01	0.37	-0.25	0.37	-0.16	-0.15
MATH	3	970037	1	A-F	1	350	0.62	0.14	0.62	0.15	0.09	0.00	0.42	-0.19	0.42	-0.19	-0.23
MATH	3	317936	1	D-M	1	350	0.34	0.23	0.31	0.34	0.11	0.01	0.06	0.04	0.04	0.06	-0.20
MATH	3	236239	2	D-M	2	197	0.26	0.40	0.26	0.08	0.26	0.00	0.25	-0.25	0.13	-0.17	0.25
MATH	3	752617	2	D-M	2	197	0.52	0.06	0.07	0.35	0.52	0.00	0.20	-0.02	0.03	-0.22	0.20
MATH	3	347516	2	A-T	1	197	0.83	0.04	0.07	0.83	0.06	0.00	0.37	-0.01	-0.31	0.37	-0.24
MATH	3	652028	2	B-O	1	197	0.59	0.59	0.11	0.09	0.21	0.01	0.56	0.56	-0.09	-0.24	-0.43
MATH	3	675528	2	D-M	1	197	0.44	0.23	0.44	0.15	0.17	0.00	0.48	-0.29	0.48	-0.18	-0.14
MATH	3	655067	2	B-O	2	197	0.59	0.22	0.11	0.59	0.08	0.00	0.49	-0.28	-0.18	0.49	-0.26

Item Information						Classical										
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	3	174135	2	C-G	1	197	0.71	0.01	0.71	0.07	0.21	0.00	0.48	-0.12	0.48	-0.22	-0.37
MATH	3	354981	2	A-F	2	197	0.25	0.03	0.25	0.10	0.61	0.01	0.59	-0.02	0.59	-0.25	-0.36
MATH	3	808456	2	B-O	2	197	0.78	0.78	0.05	0.13	0.03	0.01	0.41	0.41	-0.15	-0.29	-0.21
MATH	3	367585	2	A-T	2	197	0.46	0.46	0.16	0.13	0.25	0.01	0.44	0.44	-0.14	-0.11	-0.29
MATH	3	325365	2	C-G	1	197	0.69	0.69	0.04	0.16	0.11	0.00	0.33	0.33	-0.04	-0.27	-0.15
MATH	3	571707	2	B-O	1	197	0.79	0.05	0.05	0.10	0.79	0.01	0.24	-0.10	-0.13	-0.13	0.24
MATH	3	224225	5	B-O	2	188	0.61	0.09	0.61	0.15	0.15	0.01	0.55	-0.12	0.55	-0.31	-0.33
MATH	3	294146	5	A-F	2	188	0.51	0.05	0.11	0.32	0.51	0.01	0.25	0.13	-0.20	-0.18	0.25
MATH	3	256745	5	C-G	1	188	0.60	0.15	0.23	0.02	0.60	0.01	0.26	-0.01	-0.24	-0.16	0.26
MATH	3	442150	5	D-M	2	188	0.15	0.38	0.15	0.18	0.29	0.01	0.07	0.19	0.07	-0.16	-0.11
MATH	3	967566	5	B-O	1	188	0.56	0.13	0.13	0.17	0.56	0.01	0.32	-0.15	-0.07	-0.21	0.32
MATH	3	397141	5	A-T	1	188	0.56	0.56	0.19	0.13	0.10	0.02	0.61	0.61	-0.30	-0.22	-0.33
MATH	3	845249	5	B-O	2	188	0.64	0.13	0.18	0.64	0.04	0.01	0.45	-0.31	-0.20	0.45	-0.12
MATH	3	307996	5	A-F	1	188	0.11	0.19	0.18	0.53	0.11	0.01	0.11	-0.26	-0.22	0.31	0.11
MATH	3	594451	5	D-M	1	188	0.52	0.28	0.06	0.52	0.13	0.01	0.43	-0.21	-0.23	0.43	-0.18
MATH	3	384737	5	D-M	2	188	0.78	0.05	0.05	0.12	0.78	0.01	0.25	-0.02	-0.17	-0.17	0.25
MATH	3	588116	5	D-M	2	188	0.57	0.03	0.57	0.36	0.04	0.01	0.60	-0.12	0.60	-0.51	-0.13
MATH	3	275806	5	A-T	1	188	0.67	0.06	0.67	0.18	0.08	0.01	0.37	-0.07	0.37	-0.19	-0.29

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	4	348835	0	A-T	1	831	0.22	0.30	0.22	0.26	0.22	0.00	0.24	-0.02	-0.26	0.04	0.24
MATH	4	961278	0	A-T	1	831	0.45	0.13	0.45	0.26	0.16	0.00	0.37	-0.17	0.37	-0.20	-0.09
MATH	4	226891	0	D-M	1	831	0.77	0.77	0.06	0.07	0.09	0.00	0.41	0.41	-0.18	-0.21	-0.25
MATH	4	618125	0	A-F	1	831	0.42	0.09	0.18	0.31	0.42	0.01	0.51	-0.22	-0.13	-0.29	0.51
MATH	4	727662	0	D-M	2	831	0.27	0.27	0.34	0.29	0.09	0.00	0.36	0.36	0.07	-0.33	-0.13
MATH	4	130612	0	D-M	2	831	0.37	0.37	0.21	0.18	0.24	0.00	0.47	0.47	-0.14	-0.15	-0.26
MATH	4	323444	0	A-T	1	831	0.66	0.16	0.66	0.09	0.08	0.01	0.49	-0.25	0.49	-0.23	-0.25
MATH	4	618007	0	C-G	2	831	0.34	0.08	0.34	0.37	0.21	0.00	0.33	0.09	0.33	-0.23	-0.18
MATH	4	544749	0	A-F	1	831	0.66	0.18	0.10	0.05	0.66	0.01	0.34	-0.10	-0.27	-0.20	0.34
MATH	4	327245	0	B-O	2	831	0.30	0.30	0.23	0.18	0.28	0.00	0.38	0.38	-0.30	-0.16	0.04
MATH	4	597314	0	D-M	2	831	0.36	0.13	0.36	0.32	0.19	0.01	0.17	0.00	0.17	-0.12	-0.07
MATH	4	650719	0	A-T	1	831	0.67	0.67	0.12	0.06	0.14	0.00	0.51	0.51	-0.23	-0.20	-0.33
MATH	4	855381	0	B-O	2	831	0.42	0.10	0.32	0.16	0.42	0.00	0.27	-0.18	-0.14	-0.03	0.27
MATH	4	316632	0	B-O	2	831	0.18	0.10	0.63	0.09	0.18	0.00	0.44	-0.23	-0.13	-0.12	0.44
MATH	4	561434	0	B-O	1	831	0.60	0.60	0.07	0.10	0.23	0.00	0.45	0.45	-0.19	-0.28	-0.21
MATH	4	381124	0	A-T	2	831	0.45	0.14	0.45	0.24	0.17	0.00	0.55	-0.05	0.55	-0.40	-0.21
MATH	4	438207	0	D-M	1	831	0.49	0.49	0.24	0.13	0.13	0.00	0.31	0.31	-0.13	-0.07	-0.22
MATH	4	815021	0	A-F	1	831	0.32	0.32	0.31	0.32	0.04	0.01	0.52	-0.33	-0.12	0.52	-0.13
MATH	4	290419	0	C-G	2	831	0.44	0.44	0.05	0.23	0.27	0.00	0.40	0.40	-0.18	-0.09	-0.26
MATH	4	195670	0	C-G	2	831	0.40	0.40	0.19	0.27	0.13	0.00	0.43	0.43	-0.09	-0.20	-0.25
MATH	4	473534	0	B-O	1	831	0.45	0.28	0.13	0.45	0.14	0.00	0.48	-0.37	-0.14	0.48	-0.08
MATH	4	330979	0	C-G	2	831	0.23	0.26	0.23	0.24	0.26	0.00	0.18	-0.01	0.18	-0.02	-0.14
MATH	4	379656	0	C-G	2	831	0.63	0.10	0.14	0.63	0.13	0.00	0.39	-0.22	-0.21	0.39	-0.15
MATH	4	154484	0	D-M	2	831	0.58	0.23	0.10	0.09	0.58	0.00	0.57	-0.34	-0.26	-0.20	0.57
MATH	4	937991	0	A-F	1	831	0.66	0.09	0.20	0.66	0.05	0.00	0.38	-0.23	-0.17	0.38	-0.21
MATH	4	332644	0	C-G	1	831	0.69	0.19	0.69	0.08	0.03	0.00	0.34	-0.24	0.34	-0.12	-0.15
MATH	4	157888	0	B-O	2	831	0.39	0.23	0.39	0.09	0.30	0.00	0.52	-0.10	0.52	-0.18	-0.35
MATH	4	493397	0	B-O	2	831	0.27	0.10	0.27	0.43	0.20	0.01	0.49	-0.01	0.49	-0.40	-0.03
MATH	4	691142	0	B-O	2	831	0.51	0.21	0.19	0.51	0.08	0.00	0.51	-0.31	-0.19	0.51	-0.20
MATH	4	476496	0	A-T	1	831	0.58	0.58	0.16	0.17	0.08	0.00	0.45	0.45	-0.13	-0.34	-0.17
MATH	4	968353	0	A-T	1	831	0.74	0.10	0.08	0.07	0.74	0.01	0.44	-0.28	-0.21	-0.18	0.44
MATH	4	478058	0	A-T	2	831	0.39	0.08	0.18	0.39	0.34	0.00	0.32	-0.12	-0.08	0.32	-0.19
MATH	4	515898	0	A-F	2	831	0.68	0.68	0.22	0.07	0.04	0.00	0.24	0.24	-0.08	-0.18	-0.18
MATH	4	973893	0	A-F	1	831	0.31	0.26	0.26	0.31	0.16	0.01	0.31	0.00	-0.14	0.31	-0.21
MATH	4	286977	0	B-O	2	831	0.47	0.25	0.19	0.47	0.09	0.00	0.45	-0.21	-0.17	0.45	-0.23
MATH	4	938056	0	B-O	2	831	0.44	0.44	0.11	0.34	0.12	0.00	0.42	0.42	-0.22	-0.10	-0.30
MATH	4	705933	0	B-O	1	831	0.24	0.03	0.24	0.67	0.06	0.00	0.40	-0.18	0.40	-0.19	-0.19
MATH	4	326880	0	D-M	2	831	0.23	0.36	0.23	0.23	0.18	0.00	0.36	-0.32	-0.20	0.36	0.24
MATH	4	240514	0	A-T	2	831	0.54	0.26	0.54	0.11	0.08	0.00	0.58	-0.36	0.58	-0.18	-0.24

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	4	285393	0	A-T	2	831	0.41	0.26	0.41	0.19	0.14	0.00	0.19	0.10	0.19	-0.13	-0.25
MATH	4	784768	0	A-F	2	831	0.32	0.32	0.13	0.38	0.16	0.01	0.41	0.41	-0.18	-0.17	-0.12
MATH	4	952328	0	A-F	2	831	0.44	0.23	0.44	0.13	0.19	0.00	0.41	-0.18	0.41	-0.15	-0.18
MATH	4	350346	0	A-T	2	831	0.48	0.15	0.18	0.18	0.48	0.00	0.35	-0.11	-0.19	-0.16	0.35
MATH	4	667324	0	C-G	2	831	0.40	0.08	0.09	0.42	0.40	0.01	0.28	-0.17	-0.27	-0.02	0.28
MATH	4	980747	0	D-M	2	831	0.35	0.34	0.35	0.13	0.17	0.00	0.48	-0.08	0.48	-0.19	-0.32
MATH	4	325971	0	C-G	2	831	0.53	0.16	0.15	0.53	0.16	0.00	0.37	-0.22	-0.05	0.37	-0.23
MATH	4	687111	0	C-G	2	831	0.43	0.14	0.21	0.21	0.43	0.00	0.42	-0.14	-0.16	-0.23	0.42
MATH	4	955243	0	A-T	2	831	0.45	0.14	0.23	0.45	0.19	0.00	0.41	-0.17	-0.32	0.41	-0.03
MATH	4	845318	0	B-O	2	831	0.53	0.22	0.10	0.15	0.53	0.00	0.33	-0.13	-0.19	-0.14	0.33
MATH	4	956781	0	A-F	2	831	0.43	0.25	0.25	0.43	0.07	0.00	0.47	-0.21	-0.21	0.47	-0.18
MATH	4	188793	0	D-M	2	831	0.51	0.51	0.27	0.14	0.08	0.01	0.42	0.42	-0.23	-0.19	-0.16
MATH	4	820431	0	A-F	2	831	0.41	0.07	0.39	0.13	0.41	0.00	0.44	-0.20	-0.16	-0.25	0.44
MATH	4	167068	0	C-G	2	831	0.25	0.12	0.25	0.37	0.26	0.00	0.17	-0.04	0.17	-0.10	-0.01
MATH	4	479821	0	B-O	2	831	0.33	0.39	0.17	0.33	0.10	0.00	0.30	0.03	-0.23	0.30	-0.21
MATH	4	623235	0	A-T	2	831	0.67	0.11	0.67	0.11	0.12	0.00	0.47	-0.24	0.47	-0.22	-0.25
MATH	4	845516	0	A-T	2	831	0.20	0.11	0.18	0.20	0.49	0.01	0.19	-0.12	-0.14	0.19	0.04
MATH	4	377812	0	A-F	1	831	0.48	0.23	0.16	0.48	0.14	0.00	0.40	-0.28	-0.09	0.40	-0.14
MATH	4	553945	0	B-O	2	831	0.31	0.15	0.31	0.27	0.26	0.01	0.15	-0.27	0.15	0.04	0.03
MATH	4	925083	0	B-O	2	831	0.35	0.08	0.35	0.18	0.38	0.00	0.07	-0.17	0.07	-0.13	0.15
MATH	4	831271	0	C-G	1	831	0.57	0.57	0.11	0.17	0.14	0.00	0.37	0.37	-0.21	-0.14	-0.18
MATH	4	994611	1	A-F	1	431	0.43	0.16	0.26	0.43	0.15	0.00	0.49	-0.20	-0.33	0.49	-0.06
MATH	4	257943	1	C-G	1	431	0.32	0.29	0.15	0.23	0.32	0.00	0.19	0.08	-0.13	-0.18	0.19
MATH	4	287228	1	B-O	2	431	0.25	0.14	0.08	0.52	0.25	0.00	0.54	-0.28	-0.15	-0.19	0.54
MATH	4	595954	1	A-F	1	431	0.55	0.55	0.16	0.11	0.19	0.00	0.49	0.49	-0.21	-0.19	-0.27
MATH	4	665284	1	B-O	2	431	0.43	0.28	0.15	0.14	0.43	0.00	0.36	-0.06	-0.21	-0.22	0.36
MATH	4	268283	1	A-T	1	431	0.54	0.13	0.17	0.54	0.17	0.00	0.48	-0.16	-0.24	0.48	-0.25
MATH	4	792548	1	A-T	1	431	0.68	0.13	0.12	0.07	0.68	0.00	0.48	-0.26	-0.26	-0.19	0.48
MATH	4	599031	1	D-M	1	431	0.39	0.39	0.27	0.22	0.11	0.00	0.33	0.33	-0.01	-0.20	-0.22
MATH	4	364838	1	A-F	1	431	0.41	0.45	0.41	0.10	0.04	0.00	0.29	-0.13	0.29	-0.18	-0.10
MATH	4	928093	1	B-O	2	431	0.39	0.32	0.18	0.39	0.11	0.00	0.21	-0.09	-0.09	0.21	-0.09
MATH	4	264552	1	C-G	1	431	0.48	0.48	0.05	0.25	0.23	0.00	0.23	0.23	-0.18	-0.01	-0.17
MATH	4	285812	1	D-M	2	431	0.21	0.07	0.21	0.18	0.53	0.00	0.19	-0.09	0.19	-0.30	0.13
MATH	4	251530	2	B-O	2	198	0.81	0.02	0.12	0.81	0.05	0.00	0.43	-0.12	-0.33	0.43	-0.22
MATH	4	980929	2	A-F	2	198	0.38	0.44	0.38	0.05	0.12	0.00	0.20	-0.09	0.20	-0.06	-0.12
MATH	4	789000	2	A-T	1	198	0.43	0.09	0.36	0.43	0.11	0.01	0.20	-0.06	-0.08	0.20	-0.12
MATH	4	464304	2	B-O	1	198	0.88	0.07	0.03	0.03	0.88	0.00	0.44	-0.34	-0.19	-0.18	0.44
MATH	4	506597	2	A-T	1	198	0.56	0.13	0.12	0.19	0.56	0.01	0.52	-0.29	-0.27	-0.17	0.52
MATH	4	594043	2	D-M	1	198	0.86	0.86	0.08	0.04	0.02	0.01	0.43	0.43	-0.35	-0.22	-0.11

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	4	258236	2	C-G	2	198	0.59	0.24	0.09	0.09	0.59	0.00	0.50	-0.30	-0.19	-0.24	0.50
MATH	4	125499	2	D-M	2	198	0.29	0.55	0.11	0.29	0.06	0.00	0.36	-0.16	-0.13	0.36	-0.18
MATH	4	189976	2	A-F	2	198	0.66	0.23	0.66	0.06	0.05	0.00	0.45	-0.31	0.45	-0.19	-0.16
MATH	4	684520	2	A-F	1	198	0.30	0.34	0.23	0.30	0.13	0.01	0.37	-0.25	-0.09	0.37	-0.02
MATH	4	673125	2	C-G	1	198	0.50	0.15	0.12	0.50	0.24	0.00	0.53	-0.27	-0.18	0.53	-0.27
MATH	4	392427	2	B-O	1	198	0.31	0.23	0.08	0.31	0.37	0.01	0.11	0.07	0.02	0.11	-0.17
MATH	4	232907	7	B-O	2	202	0.51	0.18	0.20	0.10	0.51	0.01	0.58	-0.23	-0.31	-0.25	0.58
MATH	4	739587	7	B-O	2	202	0.50	0.02	0.50	0.33	0.15	0.00	0.47	-0.08	0.47	-0.22	-0.35
MATH	4	175565	7	D-M	2	202	0.45	0.43	0.05	0.45	0.06	0.00	0.39	-0.22	-0.27	0.39	-0.10
MATH	4	635007	7	A-F	1	202	0.43	0.33	0.15	0.09	0.43	0.00	0.52	-0.29	-0.18	-0.19	0.52
MATH	4	672824	7	A-F	2	202	0.46	0.37	0.46	0.06	0.10	0.00	0.33	-0.14	0.33	-0.17	-0.17
MATH	4	802302	7	B-O	2	202	0.77	0.77	0.05	0.09	0.08	0.00	0.37	0.37	-0.23	-0.23	-0.14
MATH	4	231109	7	D-M	1	202	0.44	0.15	0.13	0.28	0.44	0.00	0.28	-0.23	-0.30	0.11	0.28
MATH	4	459727	7	C-G	1	202	0.51	0.17	0.22	0.51	0.09	0.00	0.49	-0.23	-0.22	0.49	-0.21
MATH	4	839631	7	A-T	1	202	0.83	0.03	0.07	0.83	0.06	0.00	0.43	-0.16	-0.28	0.43	-0.24
MATH	4	339430	7	C-G	2	202	0.69	0.04	0.69	0.16	0.09	0.00	0.28	-0.13	0.28	-0.11	-0.19
MATH	4	400431	7	A-T	1	202	0.83	0.04	0.05	0.08	0.83	0.00	0.41	-0.14	-0.23	-0.28	0.41
MATH	4	164171	7	A-F	2	202	0.40	0.27	0.40	0.19	0.13	0.01	0.17	0.02	0.17	-0.06	-0.17

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	5	209566	0	A-F	2	1159	0.65	0.06	0.14	0.65	0.15	0.00	0.50	-0.20	-0.26	0.50	-0.28
MATH	5	749907	0	C-G	1	1159	0.59	0.11	0.22	0.07	0.59	0.00	0.49	-0.27	-0.23	-0.22	0.49
MATH	5	153801	0	A-F	1	1159	0.31	0.07	0.51	0.31	0.10	0.01	0.56	-0.06	-0.44	0.56	-0.07
MATH	5	827148	0	A-T	1	1159	0.58	0.58	0.28	0.11	0.03	0.01	0.43	0.43	-0.27	-0.23	-0.10
MATH	5	926460	0	C-G	2	1159	0.42	0.20	0.42	0.18	0.20	0.00	0.31	-0.12	0.31	-0.25	-0.03
MATH	5	291197	0	A-F	1	1159	0.47	0.13	0.47	0.19	0.20	0.01	0.45	-0.17	0.45	-0.13	-0.28
MATH	5	953975	0	A-T	1	1159	0.65	0.04	0.17	0.65	0.15	0.00	0.41	-0.17	-0.26	0.41	-0.19
MATH	5	899354	0	A-T	1	1159	0.57	0.10	0.57	0.18	0.14	0.00	0.42	-0.17	0.42	-0.21	-0.20
MATH	5	593575	0	A-T	1	1159	0.74	0.14	0.06	0.06	0.74	0.00	0.42	-0.25	-0.20	-0.21	0.42
MATH	5	613113	0	A-F	2	1159	0.41	0.41	0.40	0.13	0.06	0.00	0.21	0.21	0.03	-0.23	-0.18
MATH	5	228076	0	A-T	1	1159	0.48	0.20	0.48	0.16	0.16	0.00	0.49	-0.21	0.49	-0.21	-0.23
MATH	5	777119	0	A-F	1	1159	0.41	0.33	0.14	0.41	0.12	0.00	0.47	-0.21	-0.24	0.47	-0.14
MATH	5	488010	0	B-O	1	1159	0.71	0.71	0.06	0.16	0.07	0.00	0.52	0.52	-0.20	-0.36	-0.23
MATH	5	875239	0	C-G	1	1159	0.76	0.76	0.08	0.08	0.08	0.00	0.41	0.41	-0.21	-0.27	-0.17
MATH	5	357144	0	C-G	2	1159	0.29	0.13	0.25	0.33	0.29	0.00	0.31	-0.11	-0.25	0.02	0.31
MATH	5	594957	0	D-M	2	1159	0.30	0.30	0.14	0.15	0.41	0.00	0.52	0.52	-0.01	-0.18	-0.34
MATH	5	729230	0	D-M	2	1159	0.32	0.14	0.32	0.09	0.44	0.00	0.16	-0.23	0.16	-0.18	0.13
MATH	5	907458	0	A-T	1	1159	0.59	0.12	0.23	0.59	0.06	0.00	0.43	-0.30	-0.17	0.43	-0.18
MATH	5	395463	0	A-F	2	1159	0.57	0.15	0.17	0.57	0.11	0.00	0.48	-0.26	-0.30	0.48	-0.10
MATH	5	150672	0	C-G	1	1159	0.62	0.13	0.14	0.11	0.62	0.00	0.49	-0.19	-0.29	-0.23	0.49
MATH	5	276420	0	D-M	2	1159	0.28	0.28	0.20	0.25	0.27	0.00	0.17	0.17	-0.08	-0.10	0.00
MATH	5	428493	0	A-F	2	1159	0.63	0.19	0.13	0.63	0.06	0.00	0.50	-0.30	-0.26	0.50	-0.15
MATH	5	666969	0	A-F	2	1159	0.27	0.18	0.36	0.27	0.19	0.00	0.10	-0.12	-0.10	0.10	0.12
MATH	5	514590	0	A-T	2	1159	0.44	0.15	0.22	0.19	0.44	0.00	0.49	-0.26	-0.18	-0.19	0.49
MATH	5	477786	0	A-T	1	1159	0.19	0.04	0.19	0.53	0.24	0.00	0.43	0.05	0.43	-0.34	-0.01
MATH	5	135363	0	A-T	1	1159	0.44	0.04	0.44	0.25	0.26	0.00	0.47	-0.10	0.47	-0.09	-0.40
MATH	5	321709	0	A-T	2	1159	0.52	0.16	0.52	0.21	0.11	0.00	0.48	-0.15	0.48	-0.27	-0.24
MATH	5	115361	0	D-M	2	1159	0.37	0.37	0.18	0.30	0.15	0.00	0.43	0.43	-0.19	-0.15	-0.19
MATH	5	952378	0	C-G	1	1159	0.42	0.13	0.24	0.21	0.42	0.00	0.39	-0.22	-0.13	-0.14	0.39
MATH	5	941655	0	B-O	2	1159	0.21	0.24	0.21	0.51	0.04	0.00	0.25	-0.12	0.25	-0.06	-0.10
MATH	5	272501	0	D-M	2	1159	0.29	0.24	0.29	0.12	0.35	0.00	0.42	-0.25	0.42	-0.23	-0.02
MATH	5	974959	0	B-O	2	1159	0.67	0.10	0.11	0.12	0.67	0.00	0.32	-0.17	-0.10	-0.21	0.32
MATH	5	692867	0	D-M	1	1159	0.70	0.16	0.08	0.06	0.70	0.00	0.47	-0.36	-0.16	-0.17	0.47
MATH	5	796697	0	A-T	1	1159	0.65	0.09	0.65	0.12	0.14	0.00	0.52	-0.22	0.52	-0.20	-0.34
MATH	5	216195	0	D-M	2	1159	0.39	0.19	0.14	0.27	0.39	0.00	0.38	-0.17	-0.22	-0.10	0.38
MATH	5	514158	0	A-F	2	1159	0.55	0.09	0.15	0.20	0.55	0.00	0.41	-0.06	-0.21	-0.28	0.41
MATH	5	199285	0	B-O	2	1159	0.31	0.40	0.16	0.31	0.13	0.00	0.29	0.05	-0.26	0.29	-0.19
MATH	5	646726	0	B-O	2	1159	0.58	0.25	0.10	0.58	0.07	0.00	0.49	-0.30	-0.24	0.49	-0.15
MATH	5	415744	0	A-T	2	1159	0.49	0.15	0.49	0.21	0.16	0.00	0.48	-0.07	0.48	-0.31	-0.24

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Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	5	910060	0	A-T	1	1159	0.52	0.10	0.29	0.52	0.09	0.00	0.19	-0.13	-0.02	0.19	-0.16
MATH	5	733314	0	A-T	2	1159	0.32	0.29	0.32	0.26	0.13	0.00	0.28	-0.11	0.28	-0.14	-0.05
MATH	5	196650	0	A-T	2	1159	0.23	0.15	0.19	0.42	0.23	0.00	0.31	-0.05	-0.16	-0.09	0.31
MATH	5	345097	0	A-T	2	1159	0.50	0.25	0.10	0.15	0.50	0.00	0.47	-0.12	-0.22	-0.33	0.47
MATH	5	149873	0	A-T	2	1159	0.28	0.17	0.39	0.28	0.15	0.00	0.08	0.07	0.05	0.08	-0.23
MATH	5	912183	0	A-T	1	1159	0.77	0.02	0.77	0.09	0.12	0.00	0.46	-0.11	0.46	-0.27	-0.31
MATH	5	396973	0	A-F	1	1159	0.64	0.64	0.14	0.13	0.08	0.00	0.29	0.29	-0.14	-0.17	-0.10
MATH	5	483434	0	A-F	2	1159	0.32	0.32	0.09	0.34	0.24	0.00	0.42	0.42	-0.16	-0.26	-0.06
MATH	5	240155	0	A-F	1	1159	0.28	0.39	0.22	0.11	0.28	0.00	0.36	-0.16	-0.11	-0.13	0.36
MATH	5	283682	0	A-F	2	1159	0.50	0.12	0.21	0.50	0.17	0.00	0.37	-0.16	-0.21	0.37	-0.12
MATH	5	616373	0	A-F	1	1159	0.30	0.08	0.30	0.10	0.52	0.00	0.26	-0.14	0.26	-0.13	-0.08
MATH	5	122464	0	A-F	1	1159	0.48	0.48	0.13	0.32	0.08	0.00	0.53	0.53	-0.29	-0.28	-0.15
MATH	5	758317	0	C-G	2	1159	0.55	0.55	0.15	0.14	0.16	0.00	0.39	0.39	-0.20	-0.20	-0.15
MATH	5	993962	0	C-G	1	1159	0.45	0.17	0.45	0.15	0.22	0.00	0.43	-0.22	0.43	-0.22	-0.12
MATH	5	370942	0	B-O	2	1159	0.41	0.20	0.17	0.22	0.41	0.00	0.45	-0.22	-0.19	-0.15	0.45
MATH	5	789714	0	C-G	2	1159	0.33	0.24	0.23	0.21	0.33	0.00	0.24	-0.05	-0.08	-0.14	0.24
MATH	5	227661	0	D-M	2	1159	0.52	0.52	0.25	0.16	0.06	0.00	0.29	0.29	-0.18	-0.07	-0.17
MATH	5	479733	0	D-M	2	1159	0.28	0.28	0.33	0.21	0.18	0.00	0.37	0.37	-0.04	-0.22	-0.14
MATH	5	438526	0	A-F	2	1159	0.28	0.25	0.22	0.24	0.28	0.00	0.42	-0.08	-0.19	-0.17	0.42
MATH	5	192250	0	C-G	1	1159	0.44	0.21	0.12	0.22	0.44	0.00	0.42	-0.33	-0.13	-0.07	0.42
MATH	5	727091	0	B-O	1	1159	0.50	0.50	0.20	0.15	0.15	0.00	0.29	0.29	-0.02	-0.23	-0.14
MATH	5	191871	1	D-M	2	593	0.22	0.08	0.22	0.30	0.39	0.00	-0.08	-0.09	-0.08	-0.22	0.33
MATH	5	928162	1	B-O	2	593	0.54	0.54	0.16	0.09	0.21	0.00	0.38	0.38	-0.20	-0.06	-0.24
MATH	5	552622	1	A-F	1	593	0.26	0.11	0.26	0.42	0.20	0.00	0.09	-0.17	0.09	0.11	-0.10
MATH	5	116930	1	B-O	2	593	0.29	0.29	0.17	0.39	0.14	0.00	0.38	0.38	-0.27	-0.03	-0.17
MATH	5	172885	1	A-T	1	593	0.61	0.18	0.15	0.61	0.06	0.00	0.46	-0.27	-0.21	0.46	-0.19
MATH	5	717813	1	A-T	2	593	0.38	0.36	0.38	0.12	0.14	0.00	0.19	0.08	0.19	-0.19	-0.19
MATH	5	615747	1	A-F	1	593	0.46	0.07	0.34	0.46	0.14	0.00	0.50	-0.16	-0.35	0.50	-0.12
MATH	5	419548	1	A-T	1	593	0.42	0.07	0.23	0.42	0.27	0.00	0.35	-0.14	-0.28	0.35	-0.04
MATH	5	185640	1	C-G	2	593	0.34	0.18	0.34	0.24	0.24	0.00	0.43	-0.11	0.43	-0.21	-0.17
MATH	5	473995	1	D-M	2	593	0.22	0.22	0.22	0.26	0.29	0.00	0.25	0.01	0.25	-0.09	-0.15
MATH	5	119901	1	C-G	1	593	0.37	0.37	0.13	0.22	0.28	0.00	0.20	0.20	-0.23	-0.04	-0.01
MATH	5	996376	1	A-F	2	593	0.29	0.19	0.29	0.30	0.22	0.00	0.17	-0.09	0.17	-0.05	-0.03
MATH	5	148948	2	A-T	2	284	0.33	0.33	0.30	0.20	0.17	0.00	0.06	0.06	-0.08	0.02	0.01
MATH	5	471909	2	C-G	1	284	0.68	0.68	0.12	0.12	0.08	0.00	0.36	0.36	-0.21	-0.18	-0.14
MATH	5	739080	2	D-M	2	284	0.22	0.22	0.10	0.36	0.32	0.00	0.26	0.26	-0.18	-0.08	-0.04
MATH	5	713921	2	A-F	2	284	0.23	0.14	0.31	0.32	0.23	0.00	0.05	-0.17	0.13	-0.05	0.05
MATH	5	797068	2	A-F	1	284	0.67	0.13	0.15	0.67	0.05	0.00	0.49	-0.25	-0.30	0.49	-0.19
MATH	5	879541	2	A-F	1	284	0.61	0.12	0.16	0.11	0.61	0.00	0.49	-0.21	-0.27	-0.21	0.49

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MATH	5	455283	2	B-O	2	284	0.51	0.13	0.12	0.24	0.51	0.00	0.47	-0.30	-0.22	-0.14	0.47
MATH	5	684473	2	A-T	2	284	0.60	0.07	0.10	0.60	0.24	0.00	0.26	-0.14	-0.13	0.26	-0.13
MATH	5	375382	2	C-G	2	284	0.28	0.28	0.30	0.29	0.13	0.00	0.24	0.24	-0.13	-0.02	-0.11
MATH	5	729531	2	A-F	2	284	0.56	0.10	0.24	0.56	0.10	0.00	0.49	-0.25	-0.25	0.49	-0.20
MATH	5	736037	2	B-O	2	284	0.50	0.11	0.22	0.50	0.18	0.00	0.26	-0.12	-0.15	0.26	-0.08
MATH	5	360301	2	D-M	2	284	0.37	0.25	0.17	0.37	0.21	0.00	0.29	0.03	-0.13	0.29	-0.25
MATH	5	637197	5	A-T	2	282	0.43	0.20	0.43	0.21	0.16	0.01	0.30	-0.09	0.30	-0.24	-0.02
MATH	5	812402	5	A-F	2	282	0.45	0.16	0.23	0.45	0.16	0.00	0.30	-0.23	0.05	0.30	-0.24
MATH	5	856372	5	D-M	2	282	0.53	0.07	0.03	0.53	0.37	0.00	0.45	-0.21	-0.17	0.45	-0.30
MATH	5	316477	5	B-O	2	282	0.23	0.25	0.31	0.21	0.23	0.00	0.13	-0.02	-0.01	-0.11	0.13
MATH	5	945795	5	C-G	2	282	0.17	0.62	0.17	0.12	0.09	0.00	0.05	0.20	0.05	-0.28	-0.08
MATH	5	527211	5	A-T	2	282	0.21	0.08	0.21	0.21	0.50	0.00	0.51	-0.14	0.51	-0.43	0.01
MATH	5	821071	5	A-F	1	282	0.61	0.61	0.09	0.19	0.11	0.00	0.38	0.38	-0.21	-0.21	-0.14
MATH	5	812525	5	A-F	1	282	0.67	0.06	0.67	0.15	0.12	0.00	0.35	-0.20	0.35	-0.30	-0.04
MATH	5	382287	5	A-T	2	282	0.45	0.15	0.45	0.24	0.15	0.00	0.41	-0.13	0.41	-0.14	-0.27
MATH	5	383734	5	D-M	2	282	0.34	0.21	0.21	0.24	0.34	0.00	0.52	-0.27	-0.23	-0.11	0.52
MATH	5	838430	5	C-G	1	282	0.82	0.04	0.10	0.04	0.82	0.00	0.43	-0.23	-0.27	-0.20	0.43
MATH	5	127352	5	B-O	2	282	0.16	0.44	0.23	0.17	0.16	0.00	0.06	0.19	-0.09	-0.21	0.06

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MATH	6	321891	0	A-N	1	1595	0.83	0.08	0.83	0.05	0.03	0.00	0.42	-0.26	0.42	-0.24	-0.18
MATH	6	475727	0	A-R	1	1595	0.90	0.06	0.02	0.90	0.02	0.00	0.25	-0.19	-0.13	0.25	-0.09
MATH	6	118320	0	B-E	1	1595	0.31	0.34	0.24	0.31	0.10	0.00	0.12	-0.11	0.13	0.12	-0.18
MATH	6	174013	0	C-G	2	1595	0.25	0.33	0.25	0.27	0.15	0.00	0.18	-0.06	0.18	-0.05	-0.06
MATH	6	535076	0	A-N	2	1595	0.54	0.54	0.17	0.19	0.10	0.00	0.49	0.49	-0.10	-0.30	-0.28
MATH	6	531873	0	A-N	1	1595	0.88	0.04	0.04	0.88	0.04	0.00	0.36	-0.15	-0.20	0.36	-0.23
MATH	6	334529	0	A-N	1	1595	0.77	0.02	0.12	0.08	0.77	0.00	0.37	-0.16	-0.23	-0.19	0.37
MATH	6	850856	0	A-N	1	1595	0.56	0.23	0.13	0.08	0.56	0.00	0.50	-0.18	-0.24	-0.33	0.50
MATH	6	764488	0	A-N	1	1595	0.49	0.28	0.12	0.49	0.10	0.01	0.45	-0.27	-0.15	0.45	-0.16
MATH	6	859330	0	A-R	2	1595	0.69	0.69	0.09	0.13	0.09	0.00	0.53	0.53	-0.21	-0.36	-0.21
MATH	6	941773	0	A-N	2	1595	0.49	0.49	0.30	0.11	0.09	0.01	0.40	0.40	-0.25	-0.23	-0.04
MATH	6	922808	0	A-R	2	1595	0.43	0.25	0.43	0.20	0.12	0.00	0.37	-0.08	0.37	-0.20	-0.20
MATH	6	764535	0	C-G	2	1595	0.81	0.15	0.02	0.81	0.02	0.00	0.32	-0.26	-0.11	0.32	-0.13
MATH	6	737758	0	C-G	2	1595	0.70	0.17	0.03	0.70	0.10	0.00	0.31	-0.24	-0.15	0.31	-0.08
MATH	6	967138	0	A-R	2	1595	0.45	0.13	0.24	0.18	0.45	0.00	0.42	-0.31	-0.08	-0.17	0.42
MATH	6	957824	0	B-E	2	1595	0.52	0.05	0.15	0.27	0.52	0.00	0.23	-0.08	0.01	-0.22	0.23
MATH	6	771516	0	D-S	2	1595	0.69	0.69	0.11	0.12	0.09	0.00	0.53	0.53	-0.27	-0.31	-0.21
MATH	6	925775	0	A-N	2	1595	0.68	0.06	0.13	0.68	0.12	0.00	0.46	-0.17	-0.19	0.46	-0.32
MATH	6	826581	0	C-G	2	1595	0.30	0.27	0.30	0.26	0.16	0.00	0.11	-0.06	0.11	-0.02	-0.04
MATH	6	803183	0	D-S	2	1595	0.26	0.17	0.25	0.32	0.26	0.00	0.09	-0.14	0.00	0.04	0.09
MATH	6	619193	0	A-R	2	1595	0.57	0.22	0.11	0.57	0.10	0.00	0.42	-0.17	-0.27	0.42	-0.18
MATH	6	149589	0	D-S	2	1595	0.44	0.17	0.18	0.21	0.44	0.00	0.38	-0.08	-0.16	-0.24	0.38
MATH	6	859248	0	D-S	2	1595	0.46	0.24	0.46	0.14	0.16	0.00	0.26	-0.03	0.26	-0.22	-0.11
MATH	6	129359	0	B-E	2	1595	0.45	0.45	0.45	0.06	0.04	0.00	0.34	0.34	-0.13	-0.27	-0.20
MATH	6	416325	0	B-E	2	1595	0.48	0.48	0.16	0.26	0.10	0.00	0.49	0.49	-0.24	-0.19	-0.25
MATH	6	751693	0	A-R	1	1595	0.70	0.70	0.16	0.07	0.07	0.00	0.45	0.45	-0.29	-0.20	-0.18
MATH	6	871521	0	A-R	1	1595	0.64	0.15	0.64	0.08	0.13	0.00	0.37	-0.18	0.37	-0.12	-0.24
MATH	6	878381	0	A-R	2	1595	0.75	0.75	0.11	0.07	0.07	0.00	0.48	0.48	-0.32	-0.16	-0.26
MATH	6	113527	0	B-E	1	1595	0.76	0.18	0.04	0.76	0.02	0.00	0.48	-0.39	-0.17	0.48	-0.16
MATH	6	369726	0	B-E	1	1595	0.57	0.13	0.19	0.11	0.57	0.00	0.59	-0.28	-0.34	-0.19	0.59
MATH	6	536657	0	B-E	1	1595	0.53	0.11	0.53	0.18	0.17	0.00	0.52	-0.24	0.52	-0.26	-0.22
MATH	6	423304	0	B-E	2	1595	0.65	0.14	0.65	0.08	0.13	0.00	0.50	-0.27	0.50	-0.22	-0.26
MATH	6	139700	0	B-E	2	1595	0.72	0.03	0.12	0.13	0.72	0.00	0.47	-0.20	-0.38	-0.16	0.47
MATH	6	264844	0	B-E	2	1595	0.51	0.51	0.12	0.24	0.12	0.00	0.49	0.49	-0.27	-0.17	-0.25
MATH	6	780554	0	B-E	2	1595	0.37	0.21	0.33	0.37	0.09	0.00	0.38	-0.15	-0.17	0.38	-0.14
MATH	6	238479	0	B-E	1	1595	0.44	0.12	0.19	0.25	0.44	0.00	0.16	-0.06	-0.03	-0.11	0.16
MATH	6	569592	0	B-E	2	1595	0.53	0.53	0.16	0.17	0.14	0.00	0.23	0.23	-0.10	-0.12	-0.09
MATH	6	317029	0	C-G	2	1595	0.25	0.37	0.19	0.25	0.19	0.00	0.28	-0.03	-0.18	0.28	-0.10
MATH	6	660480	0	C-G	1	1595	0.56	0.56	0.22	0.10	0.12	0.00	0.36	0.36	-0.16	-0.23	-0.13

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	6	112259	0	A-R	2	1595	0.73	0.07	0.73	0.10	0.09	0.00	0.52	-0.24	0.52	-0.24	-0.32
MATH	6	854416	0	C-G	2	1595	0.62	0.11	0.15	0.62	0.12	0.00	0.42	-0.21	-0.26	0.42	-0.12
MATH	6	781178	0	C-G	2	1595	0.65	0.11	0.07	0.17	0.65	0.00	0.50	-0.25	-0.23	-0.26	0.50
MATH	6	838929	0	D-S	2	1595	0.33	0.26	0.18	0.22	0.33	0.00	0.43	-0.10	-0.24	-0.16	0.43
MATH	6	180744	0	D-S	3	1595	0.45	0.19	0.45	0.24	0.12	0.00	0.31	0.02	0.31	-0.23	-0.19
MATH	6	626154	0	A-N	1	1595	0.58	0.14	0.58	0.21	0.06	0.01	0.29	-0.09	0.29	-0.18	-0.15
MATH	6	606794	0	A-R	2	1595	0.48	0.24	0.48	0.20	0.08	0.00	0.45	-0.26	0.45	-0.10	-0.27
MATH	6	438211	0	B-E	2	1595	0.44	0.23	0.18	0.44	0.15	0.00	0.26	-0.12	-0.15	0.26	-0.05
MATH	6	261593	0	C-G	1	1595	0.42	0.10	0.08	0.42	0.39	0.00	0.56	-0.19	-0.17	0.56	-0.36
MATH	6	170250	0	D-S	2	1595	0.51	0.19	0.51	0.18	0.12	0.00	0.38	-0.18	0.38	-0.17	-0.17
MATH	6	260237	0	D-S	2	1595	0.54	0.54	0.28	0.06	0.11	0.00	0.49	0.49	-0.26	-0.22	-0.23
MATH	6	182355	0	D-S	2	1595	0.60	0.21	0.13	0.06	0.60	0.00	0.45	-0.23	-0.25	-0.17	0.45
MATH	6	371004	0	C-G	2	1595	0.44	0.44	0.18	0.26	0.12	0.00	0.39	0.39	-0.09	-0.24	-0.17
MATH	6	754076	0	A-R	2	1595	0.68	0.07	0.68	0.12	0.12	0.00	0.38	-0.04	0.38	-0.24	-0.27
MATH	6	280560	0	A-N	2	1595	0.70	0.70	0.08	0.13	0.09	0.00	0.51	0.51	-0.25	-0.29	-0.24
MATH	6	793597	0	B-E	2	1595	0.51	0.21	0.12	0.15	0.51	0.00	0.53	-0.17	-0.28	-0.28	0.53
MATH	6	956529	0	B-E	2	1595	0.59	0.18	0.12	0.59	0.11	0.00	0.31	-0.14	-0.11	0.31	-0.19
MATH	6	527481	0	A-R	2	1595	0.30	0.30	0.24	0.25	0.20	0.00	0.37	0.37	-0.22	-0.13	-0.04
MATH	6	173444	0	C-G	2	1595	0.39	0.16	0.27	0.39	0.18	0.00	0.29	-0.14	-0.06	0.29	-0.17
MATH	6	119805	0	D-S	2	1595	0.89	0.01	0.04	0.06	0.89	0.00	0.34	-0.11	-0.24	-0.20	0.34
MATH	6	407713	0	B-E	1	1595	0.54	0.25	0.54	0.07	0.15	0.00	0.34	-0.31	0.34	-0.27	0.09
MATH	6	447417	1	A-N	2	785	0.35	0.36	0.15	0.35	0.15	0.00	0.47	-0.25	-0.23	0.47	-0.07
MATH	6	299358	1	B-E	2	785	0.57	0.08	0.21	0.14	0.57	0.00	0.55	-0.23	-0.25	-0.31	0.55
MATH	6	199262	1	A-N	2	785	0.54	0.11	0.21	0.54	0.13	0.00	0.31	-0.09	-0.11	0.31	-0.23
MATH	6	115543	1	C-G	2	785	0.50	0.12	0.16	0.22	0.50	0.00	0.38	0.00	-0.18	-0.30	0.38
MATH	6	630907	1	A-R	2	785	0.36	0.36	0.21	0.24	0.19	0.00	0.12	0.12	-0.06	0.03	-0.11
MATH	6	376003	1	B-E	2	785	0.17	0.23	0.22	0.38	0.17	0.00	0.06	-0.04	-0.25	0.21	0.06
MATH	6	950018	1	A-N	1	785	0.61	0.03	0.31	0.06	0.61	0.00	0.34	-0.12	-0.22	-0.18	0.34
MATH	6	734625	1	A-R	2	785	0.28	0.16	0.28	0.22	0.33	0.00	0.25	-0.25	0.25	0.19	-0.22
MATH	6	928409	1	D-S	2	785	0.40	0.09	0.25	0.40	0.25	0.00	0.41	-0.16	-0.08	0.41	-0.28
MATH	6	331595	1	B-E	2	785	0.28	0.28	0.30	0.25	0.18	0.00	0.11	0.11	-0.02	-0.05	-0.04
MATH	6	142442	1	B-E	2	785	0.25	0.25	0.25	0.16	0.34	0.00	0.33	0.33	-0.16	-0.31	0.08
MATH	6	352463	1	C-G	2	785	0.20	0.26	0.35	0.19	0.20	0.00	0.35	-0.08	-0.11	-0.13	0.35
MATH	6	717929	2	A-N	2	415	0.43	0.14	0.43	0.37	0.05	0.00	0.26	-0.18	0.26	-0.04	-0.19
MATH	6	336568	2	B-E	2	415	0.60	0.60	0.15	0.12	0.12	0.00	0.55	0.55	-0.29	-0.26	-0.23
MATH	6	655350	2	B-E	2	415	0.63	0.12	0.63	0.19	0.07	0.00	0.47	-0.25	0.47	-0.25	-0.19
MATH	6	428170	2	B-E	2	415	0.18	0.18	0.40	0.28	0.13	0.00	0.03	0.03	0.09	-0.16	0.08
MATH	6	293762	2	A-N	2	415	0.13	0.13	0.61	0.13	0.12	0.00	-0.06	-0.07	0.18	-0.06	-0.12
MATH	6	572801	2	C-G	2	415	0.29	0.13	0.35	0.29	0.22	0.00	0.03	-0.08	0.13	0.03	-0.11

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MATH	6	211966	2	A-R	2	415	0.32	0.32	0.23	0.21	0.24	0.00	0.39	0.39	-0.14	-0.07	-0.20
MATH	6	108295	2	B-E	2	415	0.39	0.27	0.39	0.21	0.12	0.00	0.35	0.03	0.35	-0.31	-0.17
MATH	6	480630	2	A-N	1	415	0.56	0.35	0.06	0.56	0.02	0.00	0.34	-0.19	-0.22	0.34	-0.14
MATH	6	899582	2	D-S	2	415	0.44	0.24	0.16	0.44	0.16	0.00	0.40	-0.13	-0.32	0.40	-0.05
MATH	6	387155	2	D-S	2	415	0.32	0.11	0.32	0.34	0.22	0.00	0.28	-0.12	0.28	-0.17	-0.01
MATH	6	510403	2	A-R	2	415	0.30	0.26	0.33	0.30	0.11	0.00	0.08	0.01	-0.05	0.08	-0.05
MATH	6	999346	3	A-N	2	395	0.18	0.47	0.21	0.18	0.14	0.00	-0.18	0.39	-0.15	-0.18	-0.18
MATH	6	139879	3	D-S	2	395	0.53	0.53	0.13	0.13	0.20	0.00	0.45	0.45	-0.17	-0.21	-0.24
MATH	6	977620	3	B-E	2	395	0.60	0.12	0.60	0.13	0.15	0.00	0.50	-0.16	0.50	-0.25	-0.31
MATH	6	590817	3	A-N	2	395	0.52	0.15	0.13	0.19	0.52	0.00	0.57	-0.26	-0.25	-0.27	0.57
MATH	6	683531	3	C-G	2	395	0.33	0.14	0.33	0.34	0.19	0.01	0.13	-0.07	0.13	-0.11	0.06
MATH	6	374463	3	C-G	2	395	0.61	0.61	0.16	0.16	0.07	0.00	0.44	0.44	-0.26	-0.15	-0.23
MATH	6	319661	3	B-E	2	395	0.12	0.17	0.36	0.12	0.35	0.00	-0.07	-0.34	0.07	-0.07	0.25
MATH	6	524976	3	A-R	2	395	0.66	0.08	0.66	0.18	0.07	0.00	0.55	-0.31	0.55	-0.27	-0.27
MATH	6	165411	3	D-S	2	395	0.24	0.09	0.49	0.18	0.24	0.01	0.18	-0.09	-0.01	-0.13	0.18
MATH	6	822516	3	B-E	1	395	0.57	0.24	0.09	0.11	0.57	0.00	0.22	-0.07	-0.22	-0.06	0.22
MATH	6	799223	3	B-E	1	395	0.79	0.09	0.79	0.07	0.05	0.00	0.46	-0.31	0.46	-0.27	-0.14
MATH	6	930303	3	A-N	1	395	0.63	0.63	0.09	0.05	0.24	0.00	0.44	0.44	-0.22	-0.24	-0.23

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Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	7	485060	0	A-R	2	2349	0.58	0.12	0.16	0.58	0.13	0.00	0.49	-0.18	-0.30	0.49	-0.21
MATH	7	602646	0	A-N	1	2349	0.47	0.47	0.15	0.29	0.09	0.00	0.45	0.45	-0.31	-0.20	-0.06
MATH	7	373532	0	A-N	2	2349	0.36	0.17	0.23	0.24	0.36	0.00	0.50	-0.24	-0.27	-0.09	0.50
MATH	7	628561	0	A-R	2	2349	0.66	0.06	0.66	0.13	0.15	0.00	0.49	-0.13	0.49	-0.30	-0.28
MATH	7	655858	0	A-R	2	2349	0.34	0.31	0.18	0.17	0.34	0.00	0.42	-0.01	-0.24	-0.26	0.42
MATH	7	637104	0	B-E	2	2349	0.62	0.06	0.62	0.07	0.25	0.00	0.46	-0.23	0.46	-0.21	-0.26
MATH	7	591542	0	A-N	2	2349	0.48	0.25	0.21	0.48	0.05	0.00	0.59	-0.29	-0.31	0.59	-0.19
MATH	7	899374	0	A-N	2	2349	0.61	0.12	0.61	0.18	0.09	0.00	0.46	-0.21	0.46	-0.23	-0.25
MATH	7	168746	0	A-R	2	2349	0.81	0.07	0.05	0.06	0.81	0.00	0.41	-0.22	-0.21	-0.23	0.41
MATH	7	523712	0	B-E	2	2349	0.28	0.28	0.45	0.16	0.11	0.00	0.09	0.09	0.29	-0.30	-0.24
MATH	7	933943	0	A-R	2	2349	0.30	0.08	0.30	0.15	0.47	0.00	0.35	-0.12	0.35	-0.19	-0.13
MATH	7	309694	0	A-N	1	2349	0.23	0.17	0.23	0.36	0.23	0.00	0.13	-0.06	0.13	0.02	-0.10
MATH	7	934676	0	A-N	2	2349	0.43	0.17	0.18	0.43	0.22	0.00	0.43	-0.18	-0.20	0.43	-0.15
MATH	7	752786	0	C-G	2	2349	0.35	0.11	0.18	0.35	0.36	0.00	0.24	-0.15	-0.17	0.24	0.00
MATH	7	220051	0	B-E	2	2349	0.38	0.38	0.28	0.19	0.15	0.00	0.41	0.41	-0.18	-0.19	-0.13
MATH	7	211015	0	B-E	2	2349	0.29	0.29	0.38	0.18	0.15	0.00	0.30	0.30	-0.13	-0.11	-0.08
MATH	7	807213	0	C-G	2	2349	0.56	0.23	0.12	0.56	0.09	0.00	0.35	-0.14	-0.18	0.35	-0.19
MATH	7	188132	0	D-S	2	2349	0.78	0.07	0.78	0.05	0.10	0.00	0.25	-0.13	0.25	-0.17	-0.11
MATH	7	926487	0	A-R	2	2349	0.24	0.15	0.18	0.42	0.24	0.00	0.24	-0.10	-0.23	0.05	0.24
MATH	7	481179	0	A-R	2	2349	0.36	0.16	0.21	0.28	0.36	0.00	0.51	-0.18	-0.22	-0.19	0.51
MATH	7	305443	0	B-E	1	2349	0.43	0.24	0.19	0.14	0.43	0.00	0.39	-0.30	-0.08	-0.10	0.39
MATH	7	414722	0	D-S	2	2349	0.40	0.27	0.23	0.40	0.10	0.00	0.41	-0.07	-0.31	0.41	-0.13
MATH	7	586823	0	A-R	2	2349	0.43	0.43	0.27	0.22	0.08	0.00	0.25	0.25	0.10	-0.29	-0.16
MATH	7	805300	0	B-E	2	2349	0.52	0.08	0.21	0.52	0.19	0.00	0.38	-0.13	-0.21	0.38	-0.18
MATH	7	711028	0	C-G	2	2349	0.57	0.57	0.12	0.17	0.13	0.00	0.37	0.37	-0.22	-0.15	-0.15
MATH	7	115470	0	D-S	2	2349	0.50	0.23	0.11	0.16	0.50	0.00	0.49	-0.14	-0.25	-0.30	0.49
MATH	7	869774	0	A-R	2	2349	0.62	0.03	0.21	0.62	0.13	0.00	0.36	-0.14	-0.24	0.36	-0.15
MATH	7	272622	0	A-R	2	2349	0.49	0.20	0.49	0.22	0.09	0.00	0.32	-0.02	0.32	-0.23	-0.19
MATH	7	452425	0	A-R	1	2349	0.55	0.12	0.12	0.55	0.20	0.00	0.27	-0.03	-0.14	0.27	-0.20
MATH	7	302059	0	A-R	2	2349	0.61	0.08	0.14	0.18	0.61	0.00	0.51	-0.23	-0.19	-0.32	0.51
MATH	7	474287	0	A-R	2	2349	0.32	0.20	0.26	0.32	0.21	0.00	0.17	0.05	-0.16	0.17	-0.07
MATH	7	149396	0	A-R	1	2349	0.37	0.26	0.09	0.28	0.37	0.00	0.53	-0.22	-0.20	-0.24	0.53
MATH	7	179647	0	C-G	2	2349	0.37	0.37	0.37	0.12	0.14	0.00	0.37	0.37	-0.12	-0.16	-0.21
MATH	7	604134	0	C-G	2	2349	0.82	0.06	0.08	0.82	0.04	0.00	0.41	-0.24	-0.25	0.41	-0.17
MATH	7	621932	0	D-S	2	2349	0.60	0.25	0.07	0.60	0.08	0.00	0.33	-0.11	-0.24	0.33	-0.19
MATH	7	710607	0	B-E	2	2349	0.71	0.71	0.11	0.09	0.09	0.00	0.47	0.47	-0.22	-0.24	-0.26
MATH	7	732284	0	B-E	2	2349	0.48	0.48	0.14	0.25	0.13	0.00	0.43	0.43	-0.25	-0.16	-0.17
MATH	7	216600	0	B-E	2	2349	0.49	0.32	0.06	0.13	0.49	0.00	0.43	-0.20	-0.21	-0.21	0.43
MATH	7	443841	0	B-E	2	2349	0.38	0.16	0.27	0.38	0.18	0.00	0.26	-0.11	-0.13	0.26	-0.07

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	7	485321	0	B-E	2	2349	0.53	0.09	0.12	0.53	0.26	0.00	0.42	-0.18	-0.21	0.42	-0.21
MATH	7	681492	0	C-G	1	2349	0.32	0.24	0.32	0.22	0.22	0.00	0.47	-0.17	0.47	-0.26	-0.09
MATH	7	939832	0	A-R	2	2349	0.39	0.08	0.38	0.16	0.39	0.00	0.52	-0.08	-0.35	-0.18	0.52
MATH	7	978459	0	B-E	1	2349	0.46	0.13	0.11	0.30	0.46	0.00	0.43	-0.19	-0.20	-0.18	0.43
MATH	7	701529	0	C-G	1	2349	0.41	0.24	0.02	0.41	0.33	0.00	0.24	-0.17	-0.12	0.24	-0.07
MATH	7	560633	0	B-E	2	2349	0.35	0.38	0.35	0.12	0.15	0.00	0.28	-0.06	0.28	-0.21	-0.11
MATH	7	349125	0	C-G	2	2349	0.41	0.15	0.41	0.39	0.06	0.00	0.00	-0.09	0.00	0.09	-0.06
MATH	7	519280	0	C-G	2	2349	0.47	0.18	0.25	0.47	0.09	0.00	0.34	-0.25	-0.13	0.34	-0.07
MATH	7	631973	0	C-G	2	2349	0.34	0.34	0.30	0.27	0.09	0.00	0.10	0.10	-0.09	0.01	-0.03
MATH	7	803716	0	C-G	1	2349	0.76	0.05	0.76	0.10	0.09	0.00	0.41	-0.18	0.41	-0.24	-0.23
MATH	7	395162	0	C-G	2	2349	0.43	0.19	0.43	0.27	0.11	0.00	0.44	-0.22	0.44	-0.21	-0.11
MATH	7	565233	0	D-S	2	2349	0.56	0.12	0.27	0.56	0.04	0.00	0.47	-0.26	-0.25	0.47	-0.18
MATH	7	801913	0	B-E	2	2349	0.31	0.40	0.23	0.31	0.05	0.00	0.34	-0.21	-0.05	0.34	-0.14
MATH	7	825394	0	D-S	2	2349	0.42	0.10	0.36	0.11	0.42	0.00	0.27	-0.06	-0.12	-0.18	0.27
MATH	7	346909	0	A-R	2	2349	0.32	0.16	0.33	0.19	0.32	0.00	0.30	-0.11	-0.19	-0.03	0.30
MATH	7	945589	0	A-R	2	2349	0.46	0.46	0.14	0.33	0.07	0.00	0.23	0.23	-0.28	0.04	-0.13
MATH	7	589673	0	C-G	2	2349	0.37	0.19	0.37	0.19	0.25	0.00	0.24	-0.09	0.24	-0.21	0.00
MATH	7	339790	0	D-S	2	2349	0.61	0.16	0.13	0.10	0.61	0.00	0.39	-0.11	-0.27	-0.21	0.39
MATH	7	338681	0	B-E	2	2349	0.34	0.15	0.34	0.33	0.18	0.00	0.14	-0.10	0.14	-0.05	-0.01
MATH	7	848106	0	A-R	2	2349	0.62	0.17	0.62	0.12	0.09	0.00	0.34	-0.17	0.34	-0.17	-0.17
MATH	7	128622	0	A-N	2	2349	0.28	0.35	0.15	0.22	0.28	0.00	0.43	-0.11	-0.20	-0.15	0.43
MATH	7	321178	1	C-G	2	1008	0.35	0.34	0.35	0.19	0.12	0.00	0.04	-0.04	0.04	0.01	-0.01
MATH	7	166979	1	A-R	2	1008	0.52	0.12	0.52	0.19	0.17	0.00	0.53	-0.22	0.53	-0.27	-0.24
MATH	7	616159	1	D-S	1	1008	0.44	0.23	0.11	0.22	0.44	0.00	0.33	-0.18	-0.13	-0.12	0.33
MATH	7	462929	1	A-R	2	1008	0.55	0.55	0.20	0.17	0.08	0.00	0.51	0.51	-0.21	-0.30	-0.21
MATH	7	541826	1	B-E	2	1008	0.49	0.05	0.49	0.23	0.23	0.00	0.45	-0.06	0.45	-0.21	-0.29
MATH	7	574958	1	C-G	2	1008	0.32	0.13	0.30	0.24	0.32	0.00	0.16	-0.13	0.04	-0.12	0.16
MATH	7	693209	1	A-N	2	1008	0.40	0.16	0.40	0.29	0.13	0.01	0.20	-0.11	0.20	-0.07	-0.07
MATH	7	342866	1	B-E	2	1008	0.41	0.10	0.41	0.41	0.08	0.00	0.44	-0.16	0.44	-0.22	-0.23
MATH	7	259310	1	B-E	2	1008	0.19	0.07	0.18	0.19	0.56	0.00	0.00	-0.10	-0.11	0.00	0.13
MATH	7	818130	1	C-G	2	1008	0.20	0.21	0.25	0.20	0.33	0.00	0.01	-0.13	-0.07	0.01	0.17
MATH	7	851885	1	D-S	2	1008	0.35	0.35	0.09	0.12	0.43	0.00	0.47	0.47	-0.26	-0.25	-0.14
MATH	7	254225	1	A-R	2	1008	0.49	0.14	0.16	0.20	0.49	0.00	0.35	-0.21	-0.21	-0.05	0.35
MATH	7	857416	2	A-R	2	661	0.38	0.18	0.38	0.36	0.08	0.00	0.34	-0.24	0.34	-0.04	-0.20
MATH	7	897071	2	A-R	2	661	0.59	0.10	0.07	0.59	0.23	0.00	0.50	-0.27	-0.24	0.50	-0.24
MATH	7	109745	2	B-E	2	661	0.33	0.14	0.33	0.19	0.33	0.00	0.40	-0.20	-0.12	-0.16	0.40
MATH	7	900182	2	D-S	2	661	0.37	0.16	0.37	0.20	0.27	0.00	0.22	-0.13	0.22	-0.06	-0.08
MATH	7	982157	2	A-R	2	661	0.28	0.17	0.34	0.21	0.28	0.00	0.38	-0.17	-0.09	-0.15	0.38
MATH	7	889943	2	A-R	2	661	0.31	0.38	0.31	0.22	0.09	0.00	0.19	0.14	0.19	-0.25	-0.17

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MATH	7	643064	2	B-E	1	661	0.29	0.29	0.29	0.25	0.16	0.00	0.12	0.12	-0.03	-0.03	-0.07
MATH	7	899973	2	A-N	2	661	0.55	0.10	0.09	0.27	0.55	0.00	0.31	-0.22	-0.21	-0.06	0.31
MATH	7	320640	2	C-G	2	661	0.29	0.29	0.32	0.28	0.11	0.00	0.19	0.19	0.03	-0.09	-0.18
MATH	7	657096	2	A-R	2	661	0.32	0.21	0.28	0.32	0.19	0.00	0.09	0.00	-0.03	0.09	-0.08
MATH	7	641913	2	B-E	2	661	0.46	0.25	0.46	0.19	0.09	0.00	0.25	0.11	0.25	-0.25	-0.26
MATH	7	245231	2	D-S	2	661	0.45	0.12	0.45	0.26	0.16	0.00	0.32	-0.04	0.32	-0.13	-0.25
MATH	7	644979	3	A-N	2	680	0.25	0.12	0.41	0.25	0.23	0.00	-0.14	-0.08	0.24	-0.14	-0.08
MATH	7	337623	3	D-S	2	680	0.46	0.44	0.46	0.05	0.04	0.00	0.52	-0.40	0.52	-0.19	-0.09
MATH	7	746523	3	B-E	2	680	0.50	0.50	0.28	0.12	0.11	0.00	0.54	0.54	-0.29	-0.26	-0.18
MATH	7	684086	3	C-G	2	680	0.57	0.16	0.57	0.19	0.07	0.00	0.48	-0.27	0.48	-0.26	-0.13
MATH	7	578017	3	A-R	2	680	0.38	0.13	0.26	0.38	0.23	0.00	0.08	0.04	-0.10	0.08	-0.01
MATH	7	316348	3	C-G	1	680	0.60	0.60	0.18	0.15	0.07	0.00	0.42	0.42	-0.31	-0.22	-0.03
MATH	7	456088	3	B-E	2	680	0.20	0.20	0.08	0.58	0.14	0.00	0.40	0.40	-0.14	-0.08	-0.22
MATH	7	416542	3	A-R	2	680	0.27	0.39	0.27	0.21	0.13	0.00	0.49	-0.34	0.49	-0.09	-0.03
MATH	7	896838	3	A-R	2	680	0.76	0.08	0.07	0.76	0.10	0.00	0.36	-0.21	-0.23	0.36	-0.14
MATH	7	903026	3	C-G	2	680	0.21	0.33	0.19	0.26	0.21	0.00	0.39	-0.16	-0.06	-0.14	0.39
MATH	7	513941	3	A-N	2	680	0.55	0.55	0.22	0.03	0.20	0.00	0.46	0.46	-0.16	-0.18	-0.32
MATH	7	879185	3	D-S	2	680	0.78	0.78	0.08	0.09	0.04	0.00	0.46	0.46	-0.22	-0.29	-0.22

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MATH	8	440420	0	C-G	2	3560	0.48	0.48	0.12	0.31	0.08	0.00	0.45	0.45	-0.19	-0.22	-0.21
MATH	8	915447	0	B-F	2	3560	0.53	0.18	0.15	0.53	0.13	0.00	0.37	-0.09	-0.23	0.37	-0.20
MATH	8	684935	0	B-F	2	3560	0.46	0.11	0.12	0.31	0.46	0.00	0.35	-0.17	-0.25	-0.08	0.35
MATH	8	308935	0	B-E	2	3560	0.42	0.11	0.42	0.23	0.23	0.00	0.41	-0.17	0.41	-0.16	-0.18
MATH	8	764281	0	C-G	2	3560	0.38	0.15	0.19	0.27	0.38	0.00	0.34	-0.17	-0.14	-0.11	0.34
MATH	8	296358	0	B-F	2	3560	0.47	0.15	0.21	0.47	0.17	0.00	0.29	-0.10	-0.18	0.29	-0.09
MATH	8	292841	0	C-G	2	3560	0.42	0.27	0.42	0.22	0.08	0.00	0.24	-0.02	0.24	-0.14	-0.19
MATH	8	116743	0	B-F	2	3560	0.48	0.11	0.17	0.24	0.48	0.00	0.37	-0.11	-0.23	-0.15	0.37
MATH	8	848234	0	B-E	2	3560	0.46	0.46	0.13	0.18	0.22	0.00	0.09	0.09	-0.03	-0.08	-0.02
MATH	8	608506	0	C-G	2	3560	0.32	0.32	0.28	0.18	0.21	0.00	0.49	0.49	-0.16	-0.13	-0.26
MATH	8	112674	0	B-E	2	3560	0.51	0.08	0.51	0.32	0.08	0.00	0.45	-0.21	0.45	-0.26	-0.18
MATH	8	710974	0	B-F	2	3560	0.23	0.31	0.23	0.13	0.33	0.00	0.11	-0.13	0.11	-0.19	0.17
MATH	8	600231	0	D-S	2	3560	0.56	0.17	0.11	0.56	0.15	0.00	0.35	-0.07	-0.26	0.35	-0.17
MATH	8	337316	0	A-N	2	3560	0.50	0.13	0.22	0.50	0.15	0.00	0.37	-0.24	-0.20	0.37	-0.05
MATH	8	260591	0	B-F	2	3560	0.55	0.16	0.13	0.16	0.55	0.00	0.58	-0.25	-0.29	-0.27	0.58
MATH	8	645046	0	C-G	2	3560	0.43	0.43	0.20	0.24	0.14	0.00	0.35	0.35	-0.16	-0.19	-0.09
MATH	8	670093	0	B-E	1	3560	0.69	0.69	0.15	0.10	0.05	0.00	0.42	0.42	-0.22	-0.22	-0.21
MATH	8	509086	0	B-F	2	3560	0.70	0.70	0.09	0.16	0.05	0.00	0.51	0.51	-0.26	-0.30	-0.22
MATH	8	675247	0	B-E	1	3560	0.44	0.17	0.24	0.15	0.44	0.00	0.44	-0.21	-0.17	-0.19	0.44
MATH	8	930158	0	B-E	2	3560	0.56	0.21	0.56	0.15	0.08	0.00	0.36	-0.17	0.36	-0.17	-0.17
MATH	8	507093	0	D-S	2	3560	0.32	0.46	0.10	0.12	0.32	0.00	0.35	-0.04	-0.22	-0.24	0.35
MATH	8	206142	0	A-N	1	3560	0.44	0.11	0.44	0.21	0.24	0.00	0.39	-0.17	0.39	-0.05	-0.28
MATH	8	166151	0	B-E	1	3560	0.47	0.47	0.21	0.23	0.09	0.00	0.26	0.26	-0.23	-0.04	-0.07
MATH	8	204285	0	B-E	1	3560	0.52	0.06	0.22	0.52	0.20	0.00	0.20	-0.09	0.05	0.20	-0.24
MATH	8	617066	0	B-E	2	3560	0.44	0.07	0.20	0.28	0.44	0.00	0.34	-0.15	-0.10	-0.19	0.34
MATH	8	122520	0	B-E	2	3560	0.31	0.31	0.14	0.35	0.20	0.00	0.35	0.35	-0.24	-0.17	0.01
MATH	8	362817	0	B-E	1	3560	0.28	0.14	0.18	0.40	0.28	0.00	0.23	-0.08	-0.10	-0.07	0.23
MATH	8	904858	0	B-E	2	3560	0.50	0.09	0.50	0.30	0.10	0.00	0.35	-0.17	0.35	-0.19	-0.13
MATH	8	322005	0	B-E	2	3560	0.15	0.15	0.37	0.14	0.33	0.00	0.06	0.06	-0.12	-0.27	0.27
MATH	8	282882	0	B-E	1	3560	0.37	0.37	0.12	0.12	0.39	0.00	0.34	0.34	-0.16	-0.25	-0.06
MATH	8	627665	0	A-N	1	3560	0.70	0.12	0.12	0.70	0.07	0.00	0.41	-0.25	-0.18	0.41	-0.20
MATH	8	980601	0	A-N	1	3560	0.34	0.18	0.08	0.40	0.34	0.00	0.38	-0.29	-0.14	-0.07	0.38
MATH	8	309128	0	B-E	1	3560	0.33	0.33	0.12	0.35	0.20	0.00	0.45	0.45	-0.15	-0.15	-0.22
MATH	8	915417	0	D-S	2	3560	0.62	0.15	0.18	0.62	0.05	0.00	0.41	-0.24	-0.21	0.41	-0.15
MATH	8	720281	0	C-G	2	3560	0.52	0.25	0.52	0.18	0.05	0.00	0.10	0.05	0.10	-0.07	-0.19
MATH	8	593241	0	B-F	2	3560	0.28	0.28	0.31	0.18	0.22	0.00	0.50	0.50	-0.11	-0.23	-0.20
MATH	8	838065	0	D-S	2	3560	0.76	0.76	0.09	0.09	0.06	0.00	0.43	0.43	-0.22	-0.25	-0.20
MATH	8	454680	0	B-F	2	3560	0.52	0.52	0.11	0.32	0.06	0.00	0.38	0.38	-0.21	-0.19	-0.17
MATH	8	227106	0	B-F	2	3560	0.43	0.31	0.08	0.43	0.18	0.00	0.38	-0.15	-0.05	0.38	-0.27

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MATH	8	556419	0	C-G	2	3560	0.19	0.47	0.19	0.31	0.03	0.00	0.34	-0.12	0.34	-0.11	-0.13
MATH	8	273371	0	A-N	1	3560	0.77	0.09	0.07	0.77	0.07	0.00	0.45	-0.21	-0.26	0.45	-0.23
MATH	8	372222	0	D-S	2	3560	0.58	0.14	0.07	0.21	0.58	0.00	0.39	-0.16	-0.20	-0.22	0.39
MATH	8	920544	0	A-N	1	3560	0.64	0.64	0.07	0.26	0.03	0.00	0.37	0.37	-0.24	-0.20	-0.17
MATH	8	465783	0	B-F	2	3560	0.79	0.03	0.06	0.79	0.13	0.00	0.44	-0.17	-0.23	0.44	-0.29
MATH	8	562591	0	B-F	1	3560	0.41	0.21	0.41	0.24	0.14	0.00	0.31	-0.07	0.31	-0.17	-0.15
MATH	8	433215	0	B-F	2	3560	0.53	0.10	0.53	0.14	0.23	0.00	0.24	-0.06	0.24	-0.24	-0.03
MATH	8	444993	0	C-G	2	3560	0.46	0.46	0.22	0.06	0.25	0.00	0.41	0.41	-0.19	-0.18	-0.18
MATH	8	354154	0	B-F	1	3560	0.26	0.40	0.13	0.20	0.26	0.00	0.34	0.09	-0.27	-0.24	0.34
MATH	8	819259	0	B-F	2	3560	0.61	0.24	0.61	0.09	0.07	0.00	0.32	-0.08	0.32	-0.25	-0.19
MATH	8	952397	0	D-S	2	3560	0.43	0.19	0.43	0.25	0.13	0.00	0.26	-0.09	0.26	-0.16	-0.06
MATH	8	850631	0	B-E	2	3560	0.26	0.24	0.26	0.22	0.28	0.00	0.23	0.11	0.23	-0.13	-0.20
MATH	8	973157	0	B-E	2	3560	0.34	0.10	0.34	0.38	0.17	0.00	0.31	0.00	0.31	-0.12	-0.23
MATH	8	953234	0	B-E	1	3560	0.45	0.45	0.17	0.24	0.14	0.00	0.40	0.40	-0.20	-0.15	-0.18
MATH	8	796144	0	D-S	2	3560	0.76	0.10	0.05	0.76	0.09	0.00	0.31	-0.17	-0.19	0.31	-0.14
MATH	8	583734	0	B-E	1	3560	0.30	0.30	0.50	0.06	0.14	0.00	0.36	0.36	-0.07	-0.19	-0.24
MATH	8	878434	0	D-S	2	3560	0.60	0.23	0.13	0.60	0.04	0.00	0.16	0.11	-0.26	0.16	-0.18
MATH	8	400013	0	A-N	2	3560	0.59	0.23	0.59	0.11	0.07	0.00	0.42	-0.16	0.42	-0.26	-0.22
MATH	8	289852	0	A-N	2	3560	0.42	0.11	0.34	0.13	0.42	0.00	0.32	-0.21	-0.07	-0.18	0.32
MATH	8	667423	0	D-S	2	3560	0.37	0.08	0.33	0.37	0.21	0.00	0.33	-0.16	-0.24	0.33	-0.01
MATH	8	443466	0	D-S	2	3560	0.26	0.14	0.20	0.39	0.26	0.00	0.27	-0.19	-0.28	0.12	0.27
MATH	8	485390	1	B-E	1	1424	0.39	0.34	0.15	0.39	0.13	0.00	0.17	0.09	-0.15	0.17	-0.21
MATH	8	362709	1	B-F	2	1424	0.37	0.10	0.36	0.37	0.17	0.00	0.26	-0.21	0.08	0.26	-0.26
MATH	8	767096	1	C-G	2	1424	0.38	0.20	0.38	0.26	0.15	0.00	0.22	-0.13	0.22	-0.06	-0.08
MATH	8	765432	1	B-E	1	1424	0.36	0.23	0.21	0.36	0.19	0.00	0.29	-0.14	-0.15	0.29	-0.05
MATH	8	780616	1	B-F	2	1424	0.62	0.62	0.13	0.13	0.12	0.00	0.45	0.45	-0.19	-0.28	-0.20
MATH	8	340471	1	D-S	2	1424	0.60	0.08	0.18	0.14	0.60	0.00	0.53	-0.23	-0.25	-0.29	0.53
MATH	8	314987	1	B-E	2	1424	0.25	0.12	0.25	0.42	0.21	0.00	-0.03	-0.13	-0.03	0.21	-0.11
MATH	8	817051	1	A-N	1	1424	0.46	0.08	0.12	0.34	0.46	0.00	0.41	-0.19	-0.22	-0.17	0.41
MATH	8	302322	1	C-G	2	1424	0.31	0.16	0.29	0.31	0.24	0.00	-0.02	-0.03	0.00	-0.02	0.05
MATH	8	540203	1	A-N	2	1424	0.59	0.15	0.13	0.13	0.59	0.00	0.47	-0.27	-0.16	-0.25	0.47
MATH	8	576467	1	B-F	2	1424	0.25	0.25	0.14	0.19	0.42	0.00	0.21	0.21	-0.22	-0.08	0.03
MATH	8	615061	1	C-G	2	1424	0.28	0.12	0.25	0.34	0.28	0.00	0.21	-0.10	-0.22	0.06	0.21
MATH	8	751771	2	B-E	2	1064	0.54	0.54	0.16	0.17	0.13	0.00	0.48	0.48	-0.21	-0.27	-0.16
MATH	8	439047	2	B-E	1	1064	0.21	0.09	0.21	0.55	0.15	0.00	0.31	-0.18	0.31	0.01	-0.24
MATH	8	805355	2	B-F	2	1064	0.29	0.24	0.16	0.29	0.31	0.00	0.22	-0.10	-0.11	0.22	-0.03
MATH	8	453209	2	B-F	1	1064	0.44	0.44	0.23	0.20	0.12	0.00	0.43	0.43	-0.18	-0.20	-0.16
MATH	8	386797	2	A-N	1	1064	0.68	0.07	0.14	0.68	0.11	0.00	0.38	-0.26	-0.15	0.38	-0.18
MATH	8	159215	2	C-G	2	1064	0.45	0.05	0.27	0.45	0.23	0.00	0.25	-0.12	-0.03	0.25	-0.20

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
MATH	8	592012	2	C-G	2	1064	0.33	0.16	0.33	0.29	0.22	0.00	-0.06	-0.21	-0.06	0.04	0.20
MATH	8	307885	2	B-F	2	1064	0.25	0.20	0.25	0.45	0.10	0.00	0.10	0.22	0.10	-0.13	-0.21
MATH	8	563124	2	D-S	2	1064	0.63	0.11	0.17	0.63	0.09	0.00	0.43	-0.24	-0.20	0.43	-0.19
MATH	8	237717	2	B-E	2	1064	0.37	0.14	0.37	0.23	0.26	0.00	0.11	-0.07	0.11	-0.07	0.01
MATH	8	428579	2	B-E	1	1064	0.43	0.43	0.25	0.15	0.17	0.00	0.47	0.47	-0.10	-0.34	-0.18
MATH	8	625783	2	B-E	2	1064	0.31	0.31	0.38	0.24	0.07	0.00	0.22	0.22	-0.08	-0.09	-0.08
MATH	8	843294	3	B-F	2	1072	0.51	0.51	0.12	0.24	0.13	0.00	0.50	0.50	-0.26	-0.22	-0.20
MATH	8	966330	3	A-N	1	1072	0.62	0.14	0.05	0.62	0.19	0.00	0.45	-0.34	-0.20	0.45	-0.14
MATH	8	472763	3	B-E	1	1072	0.39	0.39	0.27	0.23	0.11	0.00	0.53	0.53	-0.26	-0.16	-0.25
MATH	8	178235	3	B-E	1	1072	0.30	0.30	0.36	0.26	0.08	0.00	0.39	0.39	-0.18	-0.16	-0.08
MATH	8	103184	3	B-F	2	1072	0.21	0.21	0.19	0.21	0.39	0.00	-0.09	-0.16	-0.15	-0.09	0.34
MATH	8	680736	3	B-E	1	1072	0.33	0.37	0.33	0.18	0.12	0.00	0.18	-0.05	0.18	-0.18	0.02
MATH	8	793705	3	D-S	2	1072	0.49	0.10	0.14	0.26	0.49	0.00	0.30	-0.27	-0.26	0.05	0.30
MATH	8	680556	3	D-S	2	1072	0.57	0.57	0.15	0.09	0.19	0.00	0.49	0.49	-0.30	-0.13	-0.25
MATH	8	277922	3	C-G	2	1072	0.43	0.18	0.12	0.27	0.43	0.00	0.42	-0.22	-0.21	-0.12	0.42
MATH	8	536744	3	C-G	2	1072	0.26	0.26	0.39	0.25	0.10	0.00	0.03	0.03	0.16	-0.06	-0.21
MATH	8	931878	3	B-E	2	1072	0.50	0.11	0.16	0.22	0.50	0.00	0.32	-0.11	-0.11	-0.20	0.32
MATH	8	325730	3	B-E	2	1072	0.31	0.28	0.32	0.31	0.09	0.00	0.12	0.10	-0.17	0.12	-0.08

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Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	3	645878	0	D	1	561	0.58	0.10	0.11	0.58	0.21	0.00	0.25	-0.25	-0.19	0.25	0.03
ELA	3	891141	0	D	3	561	0.42	0.14	0.42	0.26	0.18	0.00	0.42	-0.18	0.42	-0.20	-0.14
ELA	3	925069	0	D	2	561	0.83	0.07	0.03	0.83	0.08	0.00	0.28	-0.28	-0.17	0.28	-0.03
ELA	3	787380	0	D	2	561	0.70	0.14	0.10	0.06	0.70	0.00	0.47	-0.29	-0.21	-0.23	0.47
ELA	3	810885	0	D	2	561	0.58	0.11	0.15	0.15	0.58	0.00	0.48	-0.31	-0.23	-0.15	0.48
ELA	3	542693	0	D	2	561	0.48	0.20	0.48	0.11	0.20	0.00	0.36	-0.23	0.36	-0.24	-0.02
ELA	3	843421	0	D	3	561	0.47	0.12	0.31	0.47	0.11	0.00	0.40	-0.10	-0.24	0.40	-0.19
ELA	3	820903	0	D	2	561	0.31	0.23	0.20	0.25	0.31	0.01	0.12	-0.07	-0.03	-0.01	0.12
ELA	3	345670	0	D	2	561	0.37	0.37	0.24	0.22	0.17	0.00	0.06	0.06	0.07	-0.01	-0.15
ELA	3	565057	0	D	2	561	0.77	0.14	0.77	0.04	0.05	0.01	0.43	-0.29	0.43	-0.23	-0.15
ELA	3	680304	0	D	2	561	0.56	0.09	0.17	0.17	0.56	0.00	0.39	-0.22	-0.23	-0.11	0.39
ELA	3	204957	0	D	2	561	0.40	0.17	0.21	0.40	0.21	0.00	0.30	-0.20	-0.14	0.30	-0.02
ELA	3	261343	0	D	2	561	0.41	0.23	0.17	0.41	0.18	0.01	0.35	-0.15	-0.06	0.35	-0.21
ELA	3	401954	0	D	3	561	0.49	0.49	0.08	0.32	0.10	0.00	0.15	0.15	-0.23	0.05	-0.11
ELA	3	878728	0	D	3	561	0.26	0.18	0.26	0.25	0.30	0.01	-0.01	-0.01	-0.01	-0.02	0.06
ELA	3	774185	0	D	2	561	0.69	0.69	0.10	0.08	0.13	0.00	0.39	0.39	-0.26	-0.15	-0.17
ELA	3	131560	0	B-K	2	561	0.64	0.12	0.64	0.13	0.11	0.00	0.40	-0.29	0.40	-0.18	-0.12
ELA	3	613401	0	B-K	3	561	0.74	0.09	0.74	0.09	0.08	0.00	0.55	-0.27	0.55	-0.32	-0.27
ELA	3	785412	0	B-C	2	561	0.40	0.16	0.32	0.40	0.13	0.00	0.28	-0.21	-0.01	0.28	-0.16
ELA	3	781702	0	B-V	2	561	0.82	0.07	0.03	0.82	0.07	0.00	0.49	-0.30	-0.19	0.49	-0.29
ELA	3	379412	0	B-V	2	561	0.77	0.77	0.06	0.07	0.10	0.00	0.53	0.53	-0.22	-0.28	-0.33
ELA	3	698032	0	B-C	2	561	0.28	0.44	0.17	0.10	0.28	0.00	0.26	0.09	-0.21	-0.27	0.26
ELA	3	861138	0	D	2	561	0.72	0.72	0.09	0.11	0.08	0.00	0.29	0.29	-0.18	-0.10	-0.17
ELA	3	655530	0	D	2	561	0.51	0.10	0.51	0.24	0.14	0.01	0.38	-0.15	0.38	-0.13	-0.26
ELA	3	527956	0	A-K	3	561	0.41	0.19	0.41	0.26	0.14	0.00	0.29	-0.21	0.29	-0.08	-0.07
ELA	3	227683	0	A-V	2	561	0.73	0.73	0.12	0.06	0.09	0.00	0.39	0.39	-0.33	-0.19	-0.07
ELA	3	716424	0	A-V	2	561	0.65	0.11	0.15	0.09	0.65	0.00	0.45	-0.23	-0.17	-0.29	0.45
ELA	3	196615	0	A-C	2	561	0.36	0.17	0.26	0.21	0.36	0.00	0.25	-0.16	-0.03	-0.12	0.25
ELA	3	660483	0	A-K	2	561	0.48	0.11	0.17	0.48	0.24	0.00	0.39	-0.17	-0.22	0.39	-0.14
ELA	3	585909	0	A-C	2	561	0.43	0.15	0.13	0.29	0.43	0.00	0.50	-0.24	-0.21	-0.21	0.50
ELA	3	280647	0	A-K	2	561	0.54	0.14	0.12	0.19	0.54	0.00	0.40	-0.16	-0.11	-0.27	0.40
ELA	3	552568	0	A-V	2	561	0.71	0.10	0.71	0.09	0.10	0.00	0.55	-0.26	0.55	-0.30	-0.28
ELA	3	415628	0	A-V	2	561	0.70	0.70	0.09	0.12	0.09	0.00	0.57	0.57	-0.32	-0.29	-0.27
ELA	3	944330	0	A-V	2	561	0.68	0.11	0.68	0.13	0.08	0.00	0.52	-0.26	0.52	-0.25	-0.28
ELA	3	261352	0	B-C	2	561	0.44	0.19	0.25	0.44	0.12	0.00	0.44	-0.13	-0.16	0.44	-0.29
ELA	3	370115	0	B-V	2	561	0.60	0.60	0.16	0.15	0.09	0.00	0.43	0.43	-0.16	-0.27	-0.18
ELA	3	631918	0	B-V	2	561	0.55	0.18	0.16	0.10	0.55	0.00	0.52	-0.19	-0.26	-0.29	0.52
ELA	3	344533	0	B-K	2	561	0.35	0.25	0.20	0.19	0.35	0.01	0.28	-0.04	-0.18	-0.09	0.28
ELA	3	814740	0	D	2	561	0.60	0.10	0.19	0.60	0.10	0.01	0.43	-0.25	-0.27	0.43	-0.09

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Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	3	613757	0	D	2	561	0.68	0.11	0.68	0.12	0.09	0.00	0.31	-0.18	0.31	-0.09	-0.21
ELA	3	923865	1	B-V	2	232	0.46	0.46	0.36	0.12	0.06	0.00	0.13	0.13	0.02	-0.10	-0.16
ELA	3	493075	1	B-K	2	232	0.28	0.28	0.35	0.24	0.13	0.00	0.15	0.15	-0.10	0.05	-0.12
ELA	3	629521	1	B-K	2	232	0.27	0.38	0.23	0.27	0.13	0.00	0.20	0.06	-0.14	0.20	-0.17
ELA	3	109732	1	B-V	2	232	0.41	0.41	0.21	0.28	0.09	0.00	0.39	0.39	-0.20	-0.12	-0.17
ELA	3	822711	1	B-C	3	232	0.25	0.27	0.25	0.31	0.17	0.00	0.23	0.03	0.23	-0.01	-0.29
ELA	3	868600	1	B-V	2	232	0.32	0.38	0.13	0.16	0.32	0.00	0.11	0.11	-0.28	0.00	0.11
ELA	3	877723	1	B-C	3	232	0.46	0.21	0.46	0.19	0.14	0.00	0.44	-0.07	0.44	-0.23	-0.29
ELA	3	317673	1	B-K	3	232	0.38	0.25	0.18	0.19	0.38	0.00	0.25	0.01	-0.21	-0.11	0.25
ELA	3	962770	2	B-V	2	160	0.51	0.27	0.13	0.51	0.08	0.01	0.25	0.09	-0.14	0.25	-0.41
ELA	3	839431	2	B-K	2	160	0.52	0.21	0.52	0.18	0.07	0.02	0.25	-0.11	0.25	-0.24	0.04
ELA	3	430828	2	B-V	2	160	0.34	0.34	0.27	0.14	0.24	0.01	0.11	0.11	0.13	-0.18	-0.11
ELA	3	864641	2	B-V	2	160	0.63	0.63	0.15	0.05	0.16	0.01	0.39	0.39	-0.19	-0.19	-0.18
ELA	3	864527	2	B-K	3	160	0.38	0.10	0.37	0.14	0.38	0.01	0.34	-0.19	-0.11	-0.15	0.34
ELA	3	364630	2	B-K	2	160	0.26	0.26	0.36	0.11	0.26	0.01	0.24	-0.11	0.03	-0.21	0.24
ELA	3	555500	2	B-C	2	160	0.41	0.05	0.03	0.41	0.50	0.01	0.22	-0.06	-0.04	0.22	-0.18
ELA	3	227262	2	B-C	2	160	0.39	0.19	0.28	0.12	0.39	0.02	0.34	-0.13	-0.15	-0.11	0.34
ELA	3	495866	9	A-V	2	169	0.31	0.18	0.24	0.27	0.31	0.00	0.36	-0.06	-0.10	-0.23	0.36
ELA	3	548637	9	A-V	2	169	0.42	0.42	0.27	0.05	0.26	0.00	0.21	0.21	-0.12	-0.23	0.00
ELA	3	385497	9	A-V	2	169	0.34	0.34	0.20	0.11	0.36	0.01	0.18	0.18	-0.13	-0.34	0.16
ELA	3	974825	9	A-V	2	169	0.44	0.14	0.29	0.44	0.12	0.00	0.37	-0.24	-0.20	0.37	-0.03
ELA	3	616254	9	A-K	2	169	0.69	0.14	0.69	0.11	0.07	0.00	0.52	-0.33	0.52	-0.21	-0.25
ELA	3	709331	9	A-K	2	169	0.66	0.05	0.17	0.12	0.66	0.00	0.23	-0.11	-0.02	-0.23	0.23
ELA	3	786775	9	A-K	2	169	0.61	0.11	0.61	0.18	0.11	0.00	0.36	-0.13	0.36	-0.13	-0.27
ELA	3	143532	9	A-K	3	169	0.42	0.20	0.12	0.26	0.42	0.01	0.30	-0.21	-0.06	-0.09	0.30

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Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	4	286599	0	D	2	670	0.38	0.17	0.26	0.19	0.38	0.00	0.39	-0.08	-0.18	-0.19	0.39
ELA	4	813438	0	A-K	2	670	0.52	0.13	0.52	0.16	0.19	0.00	0.53	-0.28	0.53	-0.24	-0.20
ELA	4	379706	0	A-K	3	670	0.30	0.30	0.25	0.27	0.18	0.00	0.10	0.10	-0.10	0.08	-0.08
ELA	4	874151	0	A-C	3	670	0.34	0.23	0.21	0.20	0.34	0.01	0.43	-0.15	-0.21	-0.11	0.43
ELA	4	307743	0	A-K	2	670	0.48	0.19	0.14	0.19	0.48	0.00	0.49	-0.18	-0.27	-0.20	0.49
ELA	4	117423	0	D	2	670	0.67	0.67	0.15	0.10	0.08	0.00	0.40	0.40	-0.15	-0.27	-0.20
ELA	4	289970	0	D	2	670	0.53	0.19	0.11	0.53	0.16	0.00	0.45	-0.14	-0.26	0.45	-0.23
ELA	4	283280	0	D	2	670	0.47	0.10	0.30	0.14	0.47	0.00	0.39	-0.17	-0.15	-0.22	0.39
ELA	4	183806	0	A-C	3	670	0.51	0.24	0.51	0.12	0.13	0.00	0.53	-0.20	0.53	-0.29	-0.23
ELA	4	383940	0	A-K	2	670	0.54	0.12	0.54	0.11	0.22	0.00	0.40	-0.26	0.40	-0.19	-0.12
ELA	4	472050	0	A-V	2	670	0.66	0.66	0.13	0.12	0.08	0.01	0.44	0.44	-0.26	-0.14	-0.25
ELA	4	473639	0	A-V	1	670	0.58	0.16	0.58	0.09	0.17	0.00	0.52	-0.21	0.52	-0.31	-0.24
ELA	4	316181	0	A-K	2	670	0.61	0.61	0.11	0.19	0.09	0.00	0.43	0.43	-0.19	-0.19	-0.27
ELA	4	892626	0	A-K	2	670	0.75	0.06	0.10	0.75	0.09	0.00	0.45	-0.28	-0.23	0.45	-0.21
ELA	4	354419	0	A-K	2	670	0.41	0.13	0.18	0.28	0.41	0.00	0.34	-0.20	-0.17	-0.07	0.34
ELA	4	241178	0	A-K	2	670	0.49	0.12	0.24	0.15	0.49	0.00	0.31	-0.19	-0.09	-0.15	0.31
ELA	4	156065	0	D	2	670	0.81	0.06	0.81	0.03	0.10	0.00	0.33	-0.25	0.33	-0.15	-0.15
ELA	4	349420	0	D	2	670	0.32	0.32	0.26	0.17	0.25	0.00	0.19	0.19	-0.04	-0.13	-0.05
ELA	4	813695	0	B-C	3	670	0.52	0.24	0.52	0.11	0.12	0.00	0.39	-0.05	0.39	-0.23	-0.30
ELA	4	200256	0	B-K	2	670	0.41	0.27	0.12	0.19	0.41	0.00	0.32	0.02	-0.28	-0.20	0.32
ELA	4	237754	0	B-K	3	670	0.46	0.26	0.15	0.13	0.46	0.00	0.46	-0.13	-0.27	-0.22	0.46
ELA	4	610911	0	B-K	2	670	0.50	0.50	0.13	0.20	0.16	0.00	0.50	0.50	-0.27	-0.15	-0.25
ELA	4	203186	0	B-C	2	670	0.48	0.23	0.16	0.48	0.14	0.00	0.36	-0.06	-0.26	0.36	-0.18
ELA	4	634822	0	D	2	670	0.59	0.20	0.59	0.10	0.11	0.00	0.38	-0.20	0.38	-0.25	-0.10
ELA	4	980090	0	D	2	670	0.39	0.21	0.23	0.39	0.17	0.00	0.20	0.03	-0.14	0.20	-0.12
ELA	4	693865	0	B-V	2	670	0.63	0.04	0.26	0.63	0.07	0.00	0.53	-0.21	-0.36	0.53	-0.22
ELA	4	837651	0	D	3	670	0.62	0.62	0.15	0.12	0.11	0.00	0.38	0.38	-0.20	-0.22	-0.12
ELA	4	340159	0	D	3	670	0.53	0.10	0.53	0.09	0.28	0.00	0.35	-0.25	0.35	-0.23	-0.05
ELA	4	341383	0	D	2	670	0.62	0.10	0.19	0.62	0.09	0.00	0.46	-0.22	-0.23	0.46	-0.21
ELA	4	213653	0	D	3	670	0.42	0.42	0.10	0.36	0.13	0.00	0.17	0.17	-0.17	-0.02	-0.05
ELA	4	561868	0	D	2	670	0.60	0.13	0.17	0.10	0.60	0.00	0.46	-0.30	-0.18	-0.21	0.46
ELA	4	932786	0	D	2	670	0.54	0.10	0.15	0.54	0.20	0.00	0.41	-0.25	-0.22	0.41	-0.12
ELA	4	683749	0	D	2	670	0.66	0.17	0.09	0.66	0.08	0.00	0.40	-0.18	-0.25	0.40	-0.18
ELA	4	838137	0	D	3	670	0.47	0.31	0.07	0.14	0.47	0.01	0.38	-0.12	-0.21	-0.21	0.38
ELA	4	373566	0	D	3	670	0.40	0.17	0.40	0.11	0.32	0.00	0.26	-0.14	0.26	-0.21	-0.02
ELA	4	273085	0	D	3	670	0.68	0.68	0.19	0.07	0.06	0.00	0.40	0.40	-0.25	-0.17	-0.18
ELA	4	139647	0	B-C	3	670	0.58	0.15	0.11	0.58	0.15	0.00	0.46	-0.21	-0.29	0.46	-0.17
ELA	4	328815	0	B-V	2	670	0.58	0.25	0.09	0.58	0.08	0.00	0.54	-0.28	-0.22	0.54	-0.30
ELA	4	245955	0	B-C	2	670	0.41	0.18	0.41	0.25	0.16	0.00	0.36	-0.15	0.36	-0.09	-0.21

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	4	305988	0	B-K	3	670	0.62	0.09	0.18	0.11	0.62	0.00	0.46	-0.25	-0.19	-0.25	0.46
ELA	4	331839	0	B-C	3	670	0.43	0.18	0.18	0.20	0.43	0.00	0.38	-0.11	-0.12	-0.24	0.38
ELA	4	640354	0	D	2	670	0.55	0.55	0.12	0.10	0.22	0.00	0.39	0.39	-0.23	-0.18	-0.14
ELA	4	957534	0	D	2	670	0.39	0.35	0.14	0.39	0.12	0.00	0.25	-0.06	-0.15	0.25	-0.12
ELA	4	169479	1	A-V	2	305	0.64	0.11	0.08	0.16	0.64	0.00	0.42	-0.24	-0.15	-0.23	0.42
ELA	4	159401	1	A-V	2	305	0.28	0.40	0.16	0.16	0.28	0.00	0.12	0.24	-0.25	-0.23	0.12
ELA	4	455267	1	A-V	2	305	0.48	0.21	0.13	0.48	0.17	0.00	0.44	-0.19	-0.30	0.44	-0.10
ELA	4	638837	1	A-V	2	305	0.43	0.43	0.28	0.17	0.12	0.00	0.29	0.29	-0.08	-0.06	-0.26
ELA	4	793812	1	A-K	2	305	0.52	0.20	0.52	0.08	0.20	0.00	0.35	-0.22	0.35	-0.24	-0.06
ELA	4	842943	1	A-K	2	305	0.28	0.29	0.22	0.22	0.28	0.00	0.07	0.07	-0.14	0.00	0.07
ELA	4	619860	1	A-C	3	305	0.48	0.21	0.10	0.22	0.48	0.00	0.50	-0.17	-0.21	-0.28	0.50
ELA	4	555450	1	A-V	2	305	0.28	0.12	0.44	0.28	0.16	0.00	0.15	-0.23	0.19	0.15	-0.24
ELA	4	996313	2	A-K	2	179	0.52	0.52	0.09	0.17	0.22	0.00	0.29	0.29	-0.15	-0.24	-0.03
ELA	4	243882	2	A-K	1	179	0.50	0.13	0.15	0.50	0.22	0.00	0.36	-0.18	-0.24	0.36	-0.08
ELA	4	231676	2	A-K	2	179	0.40	0.28	0.13	0.18	0.40	0.00	0.29	0.05	-0.18	-0.28	0.29
ELA	4	569121	2	A-K	2	179	0.51	0.12	0.21	0.16	0.51	0.00	0.32	-0.18	-0.01	-0.27	0.32
ELA	4	593644	2	A-K	3	179	0.42	0.26	0.17	0.42	0.15	0.00	0.23	-0.14	-0.24	0.23	0.11
ELA	4	433064	2	A-V	2	179	0.37	0.37	0.12	0.21	0.29	0.00	0.42	0.42	-0.40	-0.12	-0.06
ELA	4	157232	2	A-V	2	179	0.52	0.15	0.52	0.15	0.19	0.00	0.49	-0.18	0.49	-0.29	-0.20
ELA	4	454008	2	A-V	2	179	0.66	0.15	0.66	0.15	0.04	0.00	0.60	-0.37	0.60	-0.35	-0.14
ELA	4	876051	5	A-K	2	186	0.76	0.12	0.05	0.76	0.06	0.00	0.51	-0.24	-0.24	0.51	-0.35
ELA	4	288662	5	A-K	2	186	0.49	0.11	0.12	0.27	0.49	0.01	0.54	-0.21	-0.32	-0.21	0.54
ELA	4	507669	5	A-K	2	186	0.49	0.49	0.11	0.32	0.08	0.00	0.23	0.23	-0.22	0.04	-0.25
ELA	4	369033	5	A-K	2	186	0.66	0.66	0.07	0.11	0.16	0.00	0.57	0.57	-0.12	-0.34	-0.36
ELA	4	255710	5	A-V	2	186	0.38	0.19	0.09	0.35	0.38	0.00	0.44	-0.21	-0.28	-0.11	0.44
ELA	4	989093	5	A-V	2	186	0.72	0.72	0.06	0.19	0.03	0.00	0.47	0.47	-0.23	-0.37	-0.07
ELA	4	938377	5	A-V	2	186	0.86	0.02	0.86	0.07	0.04	0.01	0.42	-0.18	0.42	-0.32	-0.17
ELA	4	489985	5	A-K	2	186	0.60	0.13	0.13	0.60	0.14	0.00	0.47	-0.21	-0.24	0.47	-0.22

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	5	132818	0	D	1	976	0.50	0.26	0.50	0.13	0.11	0.00	0.31	-0.14	0.31	-0.15	-0.14
ELA	5	338527	0	D	2	976	0.53	0.53	0.14	0.10	0.23	0.00	0.45	0.45	-0.14	-0.24	-0.25
ELA	5	967431	0	D	2	976	0.57	0.57	0.24	0.11	0.08	0.00	0.32	0.32	0.00	-0.29	-0.24
ELA	5	249024	0	D	2	976	0.46	0.06	0.28	0.46	0.20	0.00	0.45	-0.22	-0.26	0.45	-0.13
ELA	5	312056	0	A-K	2	976	0.41	0.41	0.43	0.09	0.07	0.00	0.43	0.43	-0.08	-0.32	-0.30
ELA	5	916374	0	A-K	3	976	0.72	0.08	0.15	0.05	0.72	0.00	0.57	-0.29	-0.34	-0.24	0.57
ELA	5	441237	0	A-V	2	976	0.76	0.76	0.08	0.07	0.09	0.00	0.53	0.53	-0.33	-0.25	-0.25
ELA	5	244143	0	A-V	2	976	0.55	0.26	0.10	0.55	0.09	0.00	0.42	-0.14	-0.26	0.42	-0.24
ELA	5	536631	0	A-V	1	976	0.50	0.29	0.07	0.50	0.13	0.00	0.44	-0.29	-0.16	0.44	-0.13
ELA	5	742469	0	B-V	3	976	0.72	0.72	0.12	0.12	0.04	0.00	0.49	0.49	-0.24	-0.32	-0.20
ELA	5	443299	0	B-K	3	976	0.53	0.23	0.53	0.12	0.13	0.00	0.45	-0.16	0.45	-0.23	-0.24
ELA	5	361748	0	B-C	3	976	0.32	0.23	0.20	0.25	0.32	0.00	0.31	-0.11	-0.07	-0.15	0.31
ELA	5	669754	0	B-V	2	976	0.84	0.05	0.05	0.06	0.84	0.00	0.53	-0.28	-0.31	-0.28	0.53
ELA	5	107549	0	B-C	2	976	0.64	0.64	0.09	0.18	0.09	0.00	0.47	0.47	-0.23	-0.30	-0.14
ELA	5	407829	0	B-V	2	976	0.63	0.21	0.09	0.63	0.07	0.00	0.33	-0.07	-0.27	0.33	-0.21
ELA	5	627423	0	D	2	976	0.32	0.32	0.21	0.19	0.28	0.00	0.24	0.24	-0.10	-0.09	-0.08
ELA	5	159602	0	D	2	976	0.69	0.09	0.18	0.69	0.05	0.00	0.48	-0.25	-0.29	0.48	-0.21
ELA	5	469521	0	D	2	976	0.52	0.18	0.17	0.13	0.52	0.00	0.41	-0.20	-0.19	-0.17	0.41
ELA	5	875933	0	D	3	976	0.51	0.10	0.51	0.21	0.17	0.00	0.41	-0.13	0.41	-0.17	-0.24
ELA	5	259999	0	D	3	976	0.32	0.11	0.19	0.32	0.37	0.00	0.36	-0.15	-0.21	0.36	-0.07
ELA	5	175294	0	D	2	976	0.60	0.17	0.13	0.11	0.60	0.00	0.53	-0.22	-0.29	-0.27	0.53
ELA	5	335141	0	D	2	976	0.75	0.05	0.15	0.05	0.75	0.00	0.55	-0.27	-0.39	-0.18	0.55
ELA	5	523209	0	D	2	976	0.64	0.64	0.14	0.16	0.06	0.00	0.47	0.47	-0.28	-0.25	-0.16
ELA	5	210209	0	D	2	976	0.41	0.25	0.19	0.41	0.16	0.00	0.37	-0.20	-0.15	0.37	-0.10
ELA	5	654924	0	D	3	976	0.57	0.12	0.57	0.19	0.12	0.00	0.35	-0.29	0.35	-0.08	-0.14
ELA	5	443788	0	D	3	976	0.23	0.41	0.23	0.22	0.14	0.00	0.10	0.07	0.10	-0.07	-0.14
ELA	5	135241	0	D	3	976	0.61	0.22	0.10	0.07	0.61	0.00	0.38	-0.14	-0.26	-0.18	0.38
ELA	5	756738	0	D	3	976	0.68	0.05	0.19	0.08	0.68	0.00	0.53	-0.23	-0.33	-0.25	0.53
ELA	5	369449	0	D	3	976	0.64	0.64	0.16	0.04	0.16	0.00	0.39	0.39	-0.23	-0.14	-0.21
ELA	5	593157	0	B-K	3	976	0.37	0.27	0.21	0.37	0.15	0.00	0.33	-0.05	-0.20	0.33	-0.14
ELA	5	356097	0	B-K	3	976	0.37	0.24	0.37	0.19	0.19	0.00	0.28	-0.12	0.28	-0.14	-0.08
ELA	5	701409	0	B-C	3	976	0.41	0.41	0.10	0.29	0.21	0.00	0.29	0.29	-0.16	-0.13	-0.07
ELA	5	780123	0	B-C	2	976	0.42	0.18	0.16	0.24	0.42	0.00	0.34	-0.17	-0.15	-0.11	0.34
ELA	5	734900	0	B-C	2	976	0.53	0.21	0.53	0.14	0.11	0.00	0.36	-0.11	0.36	-0.21	-0.19
ELA	5	649386	0	B-V	2	976	0.32	0.32	0.16	0.22	0.29	0.00	0.24	0.24	-0.10	-0.26	0.08
ELA	5	543161	0	B-V	1	976	0.56	0.13	0.09	0.22	0.56	0.00	0.46	-0.17	-0.26	-0.22	0.46
ELA	5	960215	0	A-K	3	976	0.61	0.10	0.61	0.19	0.10	0.00	0.52	-0.23	0.52	-0.25	-0.29
ELA	5	984398	0	A-C	3	976	0.54	0.14	0.54	0.20	0.12	0.00	0.34	-0.12	0.34	-0.12	-0.25
ELA	5	532681	0	A-V	2	976	0.80	0.09	0.07	0.05	0.80	0.00	0.53	-0.27	-0.29	-0.28	0.53

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	5	969091	0	A-V	2	976	0.80	0.80	0.09	0.07	0.04	0.00	0.45	0.45	-0.23	-0.27	-0.23
ELA	5	830843	0	A-C	2	976	0.61	0.06	0.21	0.61	0.12	0.00	0.44	-0.28	-0.14	0.44	-0.27
ELA	5	678434	0	D	1	976	0.72	0.06	0.09	0.12	0.72	0.00	0.36	-0.22	-0.21	-0.14	0.36
ELA	5	780941	0	D	2	976	0.80	0.04	0.06	0.11	0.80	0.00	0.37	-0.18	-0.23	-0.20	0.37
ELA	5	182371	1	B-V	2	437	0.65	0.65	0.11	0.08	0.16	0.00	0.56	0.56	-0.33	-0.31	-0.21
ELA	5	685810	1	B-K	2	437	0.34	0.10	0.39	0.34	0.16	0.00	0.26	-0.13	-0.12	0.26	-0.06
ELA	5	605551	1	B-K	2	437	0.53	0.19	0.14	0.15	0.53	0.00	0.46	-0.24	-0.31	-0.06	0.46
ELA	5	125260	1	B-K	3	437	0.61	0.61	0.15	0.14	0.10	0.00	0.55	0.55	-0.30	-0.22	-0.27
ELA	5	458782	1	B-K	2	437	0.50	0.14	0.17	0.19	0.50	0.00	0.32	-0.15	-0.14	-0.13	0.32
ELA	5	149172	1	B-C	3	437	0.39	0.28	0.15	0.39	0.18	0.00	0.28	-0.03	-0.21	0.28	-0.13
ELA	5	187484	1	B-C	3	437	0.45	0.45	0.12	0.30	0.13	0.00	0.34	0.34	-0.07	-0.11	-0.28
ELA	5	172476	1	B-V	2	437	0.65	0.13	0.65	0.12	0.10	0.00	0.41	-0.15	0.41	-0.24	-0.21
ELA	5	961985	2	B-K	2	267	0.64	0.64	0.17	0.08	0.10	0.00	0.26	0.26	-0.23	-0.11	-0.03
ELA	5	610396	2	B-K	3	267	0.36	0.25	0.18	0.36	0.22	0.00	0.13	-0.08	-0.12	0.13	0.04
ELA	5	265856	2	B-C	3	267	0.35	0.20	0.18	0.35	0.27	0.00	0.20	-0.11	-0.15	0.20	0.02
ELA	5	231022	2	B-C	3	267	0.28	0.14	0.30	0.29	0.28	0.00	0.35	-0.10	-0.18	-0.09	0.35
ELA	5	180433	2	B-V	2	267	0.63	0.63	0.11	0.18	0.08	0.00	0.43	0.43	-0.37	-0.14	-0.17
ELA	5	227011	2	B-V	2	267	0.44	0.32	0.12	0.44	0.11	0.00	0.22	-0.06	-0.14	0.22	-0.12
ELA	5	878054	2	B-V	2	267	0.17	0.47	0.17	0.30	0.06	0.00	-0.01	0.11	-0.01	-0.02	-0.16
ELA	5	724915	2	B-K	2	267	0.43	0.43	0.25	0.12	0.21	0.00	0.32	0.32	0.01	-0.32	-0.16
ELA	5	719669	8	A-K	3	272	0.40	0.40	0.13	0.19	0.27	0.00	0.34	0.34	-0.26	-0.16	-0.03
ELA	5	997534	8	A-K	2	272	0.29	0.15	0.29	0.29	0.26	0.00	0.13	0.00	-0.03	0.13	-0.10
ELA	5	317574	8	A-K	3	272	0.50	0.50	0.11	0.20	0.19	0.00	0.31	0.31	-0.19	-0.03	-0.22
ELA	5	811715	8	A-V	2	272	0.53	0.26	0.53	0.13	0.08	0.00	0.40	-0.13	0.40	-0.24	-0.22
ELA	5	163659	8	A-K	2	272	0.37	0.24	0.19	0.37	0.20	0.00	0.26	-0.17	-0.11	0.26	-0.02
ELA	5	953039	8	A-V	2	272	0.61	0.61	0.13	0.10	0.17	0.00	0.44	0.44	-0.14	-0.21	-0.28
ELA	5	411440	8	A-V	2	272	0.29	0.46	0.11	0.29	0.14	0.00	0.13	0.19	-0.25	0.13	-0.21
ELA	5	690685	8	A-K	3	272	0.68	0.68	0.14	0.06	0.13	0.00	0.55	0.55	-0.22	-0.22	-0.40

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	6	541818	0	B-V	2	1450	0.64	0.64	0.16	0.07	0.13	0.00	0.51	0.51	-0.26	-0.24	-0.26
ELA	6	646187	0	B-C	3	1450	0.38	0.34	0.17	0.11	0.38	0.00	0.30	-0.02	-0.15	-0.24	0.30
ELA	6	632034	0	B-C	2	1450	0.31	0.11	0.48	0.31	0.10	0.00	0.30	-0.14	-0.10	0.30	-0.15
ELA	6	806081	0	B-V	2	1450	0.78	0.78	0.06	0.12	0.05	0.00	0.50	0.50	-0.29	-0.27	-0.24
ELA	6	956172	0	B-C	2	1450	0.55	0.21	0.55	0.07	0.17	0.00	0.35	-0.13	0.35	-0.31	-0.11
ELA	6	596167	0	B-K	2	1450	0.53	0.53	0.08	0.10	0.29	0.00	0.34	0.34	-0.22	-0.24	-0.09
ELA	6	263494	0	B-V	2	1450	0.71	0.16	0.06	0.06	0.71	0.00	0.50	-0.23	-0.31	-0.29	0.50
ELA	6	519375	0	B-C	2	1450	0.77	0.11	0.06	0.05	0.77	0.00	0.49	-0.22	-0.26	-0.32	0.49
ELA	6	219899	0	B-V	2	1450	0.89	0.04	0.03	0.89	0.04	0.00	0.46	-0.22	-0.28	0.46	-0.26
ELA	6	584421	0	B-K	3	1450	0.57	0.14	0.57	0.07	0.22	0.00	0.34	-0.07	0.34	-0.25	-0.19
ELA	6	487364	0	B-K	2	1450	0.67	0.09	0.67	0.14	0.09	0.00	0.49	-0.33	0.49	-0.31	-0.10
ELA	6	813560	0	B-C	2	1450	0.38	0.26	0.26	0.11	0.38	0.00	0.45	-0.04	-0.32	-0.19	0.45
ELA	6	709751	0	A-C	3	1450	0.70	0.13	0.70	0.09	0.08	0.00	0.45	-0.19	0.45	-0.30	-0.21
ELA	6	426862	0	A-K	3	1450	0.49	0.49	0.23	0.10	0.18	0.00	0.25	0.25	-0.12	-0.20	-0.04
ELA	6	305074	0	A-K	2	1450	0.62	0.62	0.16	0.11	0.10	0.00	0.43	0.43	-0.22	-0.27	-0.14
ELA	6	307127	0	A-V	2	1450	0.61	0.15	0.18	0.61	0.05	0.00	0.39	-0.25	-0.16	0.39	-0.17
ELA	6	633592	0	A-K	2	1450	0.66	0.11	0.66	0.17	0.05	0.00	0.44	-0.24	0.44	-0.22	-0.23
ELA	6	213309	0	D	2	1450	0.83	0.08	0.06	0.83	0.03	0.00	0.38	-0.13	-0.31	0.38	-0.20
ELA	6	294525	0	D	2	1450	0.70	0.09	0.16	0.05	0.70	0.00	0.45	-0.19	-0.27	-0.24	0.45
ELA	6	491778	0	D	2	1450	0.77	0.06	0.05	0.12	0.77	0.00	0.47	-0.28	-0.23	-0.24	0.47
ELA	6	533685	0	D	2	1450	0.65	0.65	0.07	0.25	0.04	0.00	0.46	0.46	-0.24	-0.29	-0.20
ELA	6	671275	0	D	2	1450	0.69	0.05	0.22	0.69	0.04	0.00	0.41	-0.27	-0.23	0.41	-0.18
ELA	6	157409	0	D	2	1450	0.49	0.06	0.49	0.27	0.19	0.00	0.28	-0.29	0.28	-0.14	-0.03
ELA	6	331838	0	D	2	1450	0.65	0.18	0.65	0.11	0.07	0.00	0.37	-0.22	0.37	-0.14	-0.19
ELA	6	565107	0	A-C	2	1450	0.50	0.50	0.13	0.14	0.23	0.00	0.31	0.31	-0.25	-0.19	0.00
ELA	6	127423	0	A-C	2	1450	0.63	0.16	0.12	0.63	0.09	0.00	0.44	-0.19	-0.30	0.44	-0.16
ELA	6	492032	0	A-C	2	1450	0.53	0.23	0.14	0.10	0.53	0.00	0.40	-0.11	-0.24	-0.23	0.40
ELA	6	616753	0	A-V	2	1450	0.54	0.54	0.18	0.09	0.19	0.00	0.45	0.45	-0.18	-0.26	-0.20
ELA	6	236377	0	A-V	2	1450	0.76	0.06	0.76	0.06	0.12	0.00	0.47	-0.21	0.47	-0.28	-0.26
ELA	6	180664	0	A-V	2	1450	0.52	0.15	0.21	0.52	0.12	0.00	0.40	-0.16	-0.21	0.40	-0.19
ELA	6	873295	0	D	2	1450	0.31	0.31	0.19	0.13	0.38	0.00	0.33	0.33	-0.24	-0.22	0.03
ELA	6	878117	0	D	2	1450	0.61	0.61	0.10	0.15	0.14	0.00	0.45	0.45	-0.21	-0.26	-0.18
ELA	6	387585	0	D	2	1450	0.53	0.16	0.19	0.12	0.53	0.00	0.40	-0.18	-0.18	-0.18	0.40
ELA	6	595505	0	D	2	1450	0.54	0.54	0.19	0.13	0.14	0.00	0.25	0.25	-0.07	-0.15	-0.13
ELA	6	380561	0	D	2	1450	0.73	0.12	0.05	0.10	0.73	0.00	0.37	-0.24	-0.15	-0.17	0.37
ELA	6	299155	0	D	2	1450	0.62	0.18	0.62	0.14	0.06	0.00	0.43	-0.27	0.43	-0.15	-0.22
ELA	6	802821	0	D	2	1450	0.49	0.16	0.10	0.49	0.25	0.00	0.35	-0.21	-0.21	0.35	-0.08
ELA	6	660495	0	D	2	1450	0.92	0.05	0.92	0.01	0.01	0.00	0.31	-0.22	0.31	-0.15	-0.15
ELA	6	460619	0	D	2	1450	0.86	0.08	0.86	0.03	0.03	0.00	0.42	-0.30	0.42	-0.16	-0.22

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	6	167560	0	D	2	1450	0.62	0.15	0.07	0.62	0.16	0.00	0.29	-0.13	-0.26	0.29	-0.08
ELA	6	278363	0	D	2	1450	0.46	0.16	0.26	0.46	0.12	0.00	0.37	-0.19	-0.17	0.37	-0.13
ELA	6	829352	0	D	3	1450	0.66	0.07	0.66	0.13	0.15	0.00	0.34	-0.19	0.34	-0.10	-0.21
ELA	6	776949	0	D	2	1450	0.87	0.87	0.02	0.02	0.09	0.00	0.34	0.34	-0.19	-0.22	-0.20
ELA	6	345375	1	A-K	2	674	0.32	0.20	0.35	0.13	0.32	0.00	0.24	-0.17	0.08	-0.25	0.24
ELA	6	662132	1	A-V	2	674	0.64	0.08	0.64	0.20	0.08	0.00	0.44	-0.20	0.44	-0.23	-0.25
ELA	6	609000	1	A-C	3	674	0.22	0.22	0.14	0.49	0.15	0.00	-0.09	-0.09	-0.23	0.25	0.00
ELA	6	688742	1	A-V	2	674	0.36	0.16	0.31	0.36	0.16	0.00	0.31	-0.09	-0.11	0.31	-0.19
ELA	6	329255	1	A-C	2	674	0.24	0.32	0.29	0.24	0.15	0.00	0.00	0.07	-0.05	0.00	-0.02
ELA	6	337726	1	A-V	2	674	0.54	0.54	0.10	0.22	0.14	0.00	0.44	0.44	-0.26	-0.15	-0.22
ELA	6	158511	1	A-K	2	674	0.38	0.15	0.27	0.20	0.38	0.00	0.38	-0.26	-0.03	-0.19	0.38
ELA	6	839105	1	A-C	3	674	0.50	0.14	0.50	0.26	0.10	0.00	0.28	-0.14	0.28	-0.10	-0.15
ELA	6	896971	2	A-K	2	390	0.53	0.21	0.53	0.23	0.04	0.00	0.39	-0.19	0.39	-0.20	-0.17
ELA	6	106574	2	A-K	2	390	0.61	0.17	0.15	0.61	0.06	0.00	0.39	-0.13	-0.27	0.39	-0.15
ELA	6	704699	2	A-K	2	390	0.34	0.34	0.22	0.17	0.27	0.00	0.23	0.23	-0.12	-0.14	-0.02
ELA	6	983550	2	A-C	3	390	0.33	0.12	0.38	0.17	0.33	0.00	0.20	-0.01	-0.01	-0.23	0.20
ELA	6	607834	2	A-C	2	390	0.58	0.58	0.19	0.16	0.07	0.00	0.36	0.36	-0.13	-0.21	-0.20
ELA	6	470378	2	A-C	2	390	0.41	0.28	0.17	0.41	0.14	0.00	0.31	-0.08	-0.24	0.31	-0.08
ELA	6	290860	2	A-V	2	390	0.71	0.16	0.71	0.10	0.02	0.00	0.48	-0.31	0.48	-0.26	-0.14
ELA	6	995632	2	A-V	2	390	0.26	0.24	0.36	0.13	0.26	0.00	0.20	-0.07	0.03	-0.21	0.20
ELA	6	363038	3	A-C	3	386	0.65	0.14	0.06	0.65	0.15	0.00	0.45	-0.24	-0.25	0.45	-0.20
ELA	6	351780	3	A-C	3	386	0.44	0.27	0.10	0.19	0.44	0.00	0.36	-0.06	-0.18	-0.25	0.36
ELA	6	854634	3	A-K	2	386	0.24	0.41	0.20	0.15	0.24	0.00	0.06	0.02	0.01	-0.11	0.06
ELA	6	442490	3	A-C	2	386	0.58	0.58	0.29	0.05	0.09	0.00	0.26	0.26	-0.07	-0.30	-0.13
ELA	6	701326	3	A-V	2	386	0.53	0.16	0.53	0.20	0.12	0.00	0.14	-0.07	0.14	-0.03	-0.10
ELA	6	233872	3	A-V	2	386	0.54	0.54	0.11	0.21	0.14	0.00	0.12	0.12	-0.11	0.03	-0.10
ELA	6	335652	3	A-K	2	386	0.48	0.26	0.48	0.12	0.13	0.00	0.31	-0.07	0.31	-0.20	-0.17
ELA	6	429071	3	A-K	2	386	0.41	0.45	0.11	0.41	0.03	0.00	0.39	-0.14	-0.30	0.39	-0.17

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Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	7	241828	0	D	2	2298	0.85	0.06	0.05	0.04	0.85	0.00	0.47	-0.24	-0.29	-0.24	0.47
ELA	7	396194	0	D	2	2298	0.78	0.78	0.09	0.05	0.08	0.00	0.43	0.43	-0.26	-0.24	-0.19
ELA	7	525418	0	D	2	2298	0.62	0.04	0.08	0.26	0.62	0.00	0.34	-0.20	-0.17	-0.18	0.34
ELA	7	478160	0	D	2	2298	0.61	0.05	0.07	0.61	0.27	0.00	0.30	-0.22	-0.19	0.30	-0.11
ELA	7	471619	0	D	2	2298	0.45	0.15	0.45	0.08	0.32	0.00	0.45	-0.19	0.45	-0.28	-0.17
ELA	7	262964	0	A-K	2	2298	0.56	0.22	0.56	0.12	0.09	0.00	0.35	-0.16	0.35	-0.16	-0.18
ELA	7	130329	0	A-V	2	2298	0.75	0.75	0.04	0.10	0.12	0.00	0.39	0.39	-0.17	-0.17	-0.27
ELA	7	464494	0	A-V	2	2298	0.77	0.07	0.11	0.77	0.05	0.00	0.39	-0.27	-0.12	0.39	-0.27
ELA	7	591655	0	A-C	2	2298	0.38	0.15	0.36	0.10	0.38	0.00	0.19	-0.15	0.03	-0.17	0.19
ELA	7	518357	0	A-C	3	2298	0.63	0.10	0.12	0.14	0.63	0.00	0.53	-0.21	-0.31	-0.26	0.53
ELA	7	370163	0	B-C	2	2298	0.46	0.22	0.23	0.09	0.46	0.00	0.33	-0.22	0.02	-0.28	0.33
ELA	7	341596	0	B-C	3	2298	0.53	0.53	0.05	0.34	0.07	0.00	0.27	0.27	-0.21	-0.09	-0.18
ELA	7	125140	0	B-V	2	2298	0.73	0.07	0.05	0.73	0.16	0.00	0.38	-0.23	-0.21	0.38	-0.18
ELA	7	984180	0	B-V	2	2298	0.89	0.02	0.02	0.89	0.07	0.00	0.40	-0.21	-0.24	0.40	-0.24
ELA	7	540437	0	B-C	2	2298	0.47	0.25	0.16	0.12	0.47	0.00	0.30	-0.02	-0.25	-0.16	0.30
ELA	7	730924	0	B-K	2	2298	0.32	0.32	0.33	0.24	0.12	0.00	0.19	0.19	0.06	-0.20	-0.10
ELA	7	116612	0	D	3	2298	0.55	0.19	0.19	0.55	0.06	0.00	0.31	-0.08	-0.21	0.31	-0.16
ELA	7	436208	0	D	3	2298	0.58	0.10	0.16	0.58	0.16	0.00	0.36	-0.24	-0.18	0.36	-0.11
ELA	7	335632	0	D	2	2298	0.54	0.16	0.54	0.22	0.08	0.00	0.32	-0.13	0.32	-0.19	-0.12
ELA	7	963082	0	D	2	2298	0.50	0.50	0.27	0.08	0.15	0.00	0.21	0.21	-0.07	-0.16	-0.10
ELA	7	574709	0	D	2	2298	0.30	0.28	0.23	0.19	0.30	0.00	0.24	-0.02	-0.15	-0.09	0.24
ELA	7	991786	0	D	2	2298	0.71	0.71	0.07	0.11	0.11	0.00	0.45	0.45	-0.28	-0.26	-0.15
ELA	7	230882	0	B-K	3	2298	0.54	0.12	0.13	0.54	0.21	0.00	0.39	-0.21	-0.25	0.39	-0.10
ELA	7	947201	0	B-K	2	2298	0.43	0.21	0.25	0.11	0.43	0.00	0.22	0.00	-0.05	-0.27	0.22
ELA	7	150630	0	B-C	3	2298	0.45	0.45	0.19	0.17	0.19	0.00	0.30	0.30	-0.17	-0.18	-0.04
ELA	7	116987	0	B-C	3	2298	0.46	0.21	0.16	0.46	0.16	0.00	0.28	-0.07	-0.18	0.28	-0.11
ELA	7	400195	0	B-C	2	2298	0.61	0.14	0.61	0.11	0.15	0.00	0.44	-0.21	0.44	-0.22	-0.21
ELA	7	427934	0	B-V	2	2298	0.75	0.06	0.08	0.11	0.75	0.00	0.48	-0.28	-0.27	-0.21	0.48
ELA	7	146134	0	A-C	2	2298	0.84	0.08	0.84	0.05	0.03	0.00	0.50	-0.30	0.50	-0.28	-0.23
ELA	7	548539	0	A-V	2	2298	0.43	0.12	0.42	0.43	0.03	0.00	0.35	-0.24	-0.15	0.35	-0.14
ELA	7	317631	0	A-V	2	2298	0.74	0.74	0.12	0.08	0.06	0.00	0.49	0.49	-0.29	-0.23	-0.25
ELA	7	886216	0	A-C	2	2298	0.54	0.13	0.16	0.54	0.16	0.00	0.38	-0.19	-0.17	0.38	-0.17
ELA	7	884198	0	A-K	2	2298	0.76	0.11	0.10	0.04	0.76	0.00	0.43	-0.19	-0.25	-0.26	0.43
ELA	7	788235	0	D	2	2298	0.66	0.09	0.08	0.16	0.66	0.00	0.46	-0.30	-0.31	-0.13	0.46
ELA	7	728844	0	D	2	2298	0.60	0.21	0.10	0.08	0.60	0.00	0.37	-0.15	-0.25	-0.15	0.37
ELA	7	373094	0	D	2	2298	0.51	0.11	0.51	0.30	0.08	0.00	0.27	-0.12	0.27	-0.14	-0.12
ELA	7	730438	0	D	2	2298	0.81	0.06	0.81	0.08	0.04	0.00	0.38	-0.25	0.38	-0.20	-0.18
ELA	7	565724	0	D	2	2298	0.35	0.35	0.28	0.27	0.10	0.00	0.37	0.37	-0.14	-0.19	-0.11
ELA	7	336699	0	D	2	2298	0.63	0.18	0.04	0.63	0.15	0.00	0.23	-0.08	-0.17	0.23	-0.14

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	7	441996	0	A-C	2	2298	0.33	0.22	0.33	0.05	0.39	0.00	0.16	-0.17	0.16	-0.25	0.11
ELA	7	507003	0	D	2	2298	0.81	0.06	0.08	0.81	0.05	0.00	0.40	-0.22	-0.23	0.40	-0.19
ELA	7	509534	0	D	2	2298	0.82	0.07	0.06	0.05	0.82	0.00	0.46	-0.27	-0.28	-0.18	0.46
ELA	7	470685	0	D	2	2298	0.33	0.21	0.33	0.24	0.22	0.00	0.12	-0.03	0.12	-0.12	0.02
ELA	7	680698	1	A-K	2	918	0.52	0.17	0.13	0.52	0.18	0.00	0.50	-0.28	-0.27	0.50	-0.15
ELA	7	908672	1	A-C	2	918	0.38	0.15	0.38	0.09	0.38	0.00	0.21	-0.09	0.02	-0.28	0.21
ELA	7	472410	1	A-V	2	918	0.78	0.05	0.08	0.78	0.10	0.00	0.43	-0.22	-0.25	0.43	-0.23
ELA	7	879274	1	A-V	2	918	0.35	0.22	0.35	0.21	0.22	0.00	0.31	-0.19	0.31	-0.06	-0.10
ELA	7	518358	1	A-K	2	918	0.53	0.53	0.21	0.14	0.12	0.00	0.41	0.41	-0.20	-0.16	-0.21
ELA	7	849361	1	A-C	3	918	0.41	0.17	0.22	0.41	0.19	0.00	0.22	-0.07	-0.14	0.22	-0.05
ELA	7	175042	1	A-K	3	918	0.46	0.22	0.17	0.15	0.46	0.00	0.38	-0.13	-0.22	-0.16	0.38
ELA	7	449093	1	A-V	2	918	0.60	0.60	0.14	0.16	0.10	0.00	0.43	0.43	-0.25	-0.20	-0.16
ELA	7	165086	2	A-V	2	691	0.45	0.08	0.24	0.45	0.23	0.00	0.31	-0.27	-0.19	0.31	0.01
ELA	7	244414	2	A-V	2	691	0.67	0.67	0.15	0.11	0.07	0.00	0.24	0.24	-0.23	-0.04	-0.08
ELA	7	839395	2	A-K	2	691	0.42	0.29	0.11	0.18	0.42	0.00	0.17	-0.01	-0.13	-0.10	0.17
ELA	7	981841	2	A-K	3	691	0.50	0.50	0.20	0.23	0.08	0.00	0.32	0.32	-0.12	-0.09	-0.27
ELA	7	355074	2	A-V	2	691	0.76	0.11	0.76	0.11	0.02	0.00	0.40	-0.22	0.40	-0.24	-0.20
ELA	7	494388	2	A-C	3	691	0.27	0.40	0.27	0.22	0.11	0.00	0.09	0.09	0.09	-0.02	-0.25
ELA	7	285158	2	A-C	2	691	0.72	0.17	0.72	0.06	0.05	0.00	0.39	-0.17	0.39	-0.31	-0.18
ELA	7	527325	2	A-K	3	691	0.36	0.29	0.18	0.36	0.18	0.00	0.10	0.04	-0.07	0.10	-0.11
ELA	7	935835	6	B-C	2	689	0.29	0.17	0.18	0.29	0.36	0.00	0.15	-0.08	0.05	0.15	-0.12
ELA	7	312247	6	B-C	3	689	0.46	0.46	0.22	0.23	0.09	0.00	0.42	0.42	-0.25	-0.14	-0.16
ELA	7	663220	6	B-K	2	689	0.41	0.41	0.08	0.28	0.23	0.00	0.22	0.22	-0.25	-0.02	-0.08
ELA	7	956392	6	B-V	2	689	0.56	0.22	0.07	0.56	0.15	0.00	0.22	-0.06	-0.20	0.22	-0.10
ELA	7	297064	6	B-V	2	689	0.51	0.08	0.11	0.30	0.51	0.00	0.43	-0.09	-0.30	-0.20	0.43
ELA	7	653303	6	B-V	2	689	0.74	0.15	0.04	0.07	0.74	0.00	0.41	-0.14	-0.28	-0.27	0.41
ELA	7	326844	6	B-V	2	689	0.44	0.29	0.44	0.24	0.04	0.00	0.44	-0.19	0.44	-0.21	-0.21
ELA	7	850060	6	B-K	3	689	0.32	0.46	0.32	0.16	0.07	0.00	0.14	0.05	0.14	-0.19	-0.07

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	8	832549	0	A-K	2	3797	0.38	0.37	0.38	0.17	0.08	0.00	0.22	0.01	0.22	-0.13	-0.22
ELA	8	816711	0	A-C	2	3797	0.77	0.12	0.77	0.05	0.06	0.00	0.41	-0.17	0.41	-0.22	-0.30
ELA	8	600360	0	A-V	2	3797	0.72	0.72	0.08	0.11	0.09	0.00	0.40	0.40	-0.27	-0.18	-0.17
ELA	8	572802	0	A-K	2	3797	0.69	0.11	0.10	0.69	0.11	0.00	0.39	-0.23	-0.24	0.39	-0.13
ELA	8	183051	0	A-C	3	3797	0.75	0.04	0.16	0.05	0.75	0.00	0.34	-0.23	-0.15	-0.21	0.34
ELA	8	693230	0	A-C	2	3797	0.80	0.80	0.06	0.08	0.06	0.00	0.45	0.45	-0.25	-0.24	-0.24
ELA	8	539477	0	A-V	2	3797	0.63	0.26	0.08	0.63	0.03	0.00	0.34	-0.11	-0.29	0.34	-0.20
ELA	8	506610	0	D	2	3797	0.67	0.04	0.12	0.67	0.17	0.00	0.38	-0.22	-0.26	0.38	-0.12
ELA	8	214964	0	D	2	3797	0.64	0.64	0.19	0.10	0.08	0.00	0.38	0.38	-0.22	-0.17	-0.18
ELA	8	705457	0	D	2	3797	0.43	0.37	0.11	0.09	0.43	0.00	0.48	-0.33	-0.14	-0.11	0.48
ELA	8	240591	0	D	2	3797	0.51	0.10	0.32	0.51	0.06	0.00	0.22	-0.15	-0.07	0.22	-0.14
ELA	8	825183	0	D	2	3797	0.82	0.04	0.13	0.02	0.82	0.00	0.39	-0.22	-0.28	-0.11	0.39
ELA	8	118720	0	B-K	2	3797	0.50	0.13	0.19	0.18	0.50	0.00	0.33	-0.06	-0.23	-0.14	0.33
ELA	8	519656	0	B-K	2	3797	0.35	0.26	0.15	0.23	0.35	0.00	0.13	0.05	-0.20	-0.03	0.13
ELA	8	920102	0	B-C	2	3797	0.61	0.11	0.61	0.16	0.12	0.00	0.39	-0.17	0.39	-0.30	-0.09
ELA	8	804053	0	B-C	3	3797	0.31	0.31	0.30	0.16	0.24	0.00	0.37	0.37	-0.21	-0.17	-0.02
ELA	8	186392	0	B-V	2	3797	0.59	0.59	0.18	0.08	0.14	0.00	0.33	0.33	-0.15	-0.23	-0.11
ELA	8	708167	0	B-V	2	3797	0.55	0.13	0.04	0.55	0.27	0.00	0.27	-0.17	-0.24	0.27	-0.06
ELA	8	662035	0	D	2	3797	0.70	0.06	0.10	0.13	0.70	0.00	0.47	-0.22	-0.23	-0.27	0.47
ELA	8	520415	0	D	3	3797	0.48	0.48	0.19	0.20	0.12	0.00	0.49	0.49	-0.23	-0.21	-0.20
ELA	8	313369	0	D	2	3797	0.70	0.70	0.20	0.04	0.05	0.00	0.33	0.33	-0.15	-0.21	-0.21
ELA	8	637760	0	D	2	3797	0.77	0.08	0.07	0.77	0.08	0.00	0.35	-0.11	-0.21	0.35	-0.24
ELA	8	814117	0	D	2	3797	0.51	0.07	0.51	0.12	0.29	0.00	0.51	-0.16	0.51	-0.25	-0.29
ELA	8	833265	0	D	2	3797	0.30	0.30	0.30	0.11	0.29	0.00	0.22	0.04	0.22	-0.29	-0.06
ELA	8	259512	0	D	2	3797	0.24	0.24	0.23	0.23	0.30	0.00	0.13	0.13	-0.10	0.00	-0.02
ELA	8	901683	0	D	2	3797	0.65	0.17	0.65	0.11	0.07	0.00	0.20	-0.22	0.20	0.01	-0.06
ELA	8	816172	0	D	2	3797	0.35	0.49	0.35	0.05	0.11	0.00	0.34	-0.26	0.34	-0.12	0.00
ELA	8	884651	0	D	2	3797	0.58	0.18	0.12	0.58	0.12	0.00	0.43	-0.20	-0.22	0.43	-0.19
ELA	8	360234	0	D	2	3797	0.79	0.09	0.79	0.07	0.05	0.00	0.41	-0.15	0.41	-0.29	-0.23
ELA	8	175278	0	D	2	3797	0.55	0.08	0.16	0.21	0.55	0.00	0.41	-0.15	-0.25	-0.17	0.41
ELA	8	536666	0	B-C	3	3797	0.61	0.61	0.14	0.08	0.18	0.00	0.39	0.39	-0.19	-0.29	-0.13
ELA	8	797702	0	B-V	2	3797	0.57	0.04	0.23	0.57	0.17	0.00	0.44	-0.18	-0.32	0.44	-0.13
ELA	8	352349	0	B-K	2	3797	0.58	0.16	0.58	0.21	0.05	0.00	0.36	-0.28	0.36	-0.08	-0.20
ELA	8	276947	0	B-K	2	3797	0.71	0.10	0.71	0.10	0.09	0.00	0.38	-0.20	0.38	-0.23	-0.16
ELA	8	993337	0	B-K	2	3797	0.64	0.19	0.06	0.11	0.64	0.00	0.33	-0.11	-0.19	-0.22	0.33
ELA	8	383407	0	A-K	3	3797	0.74	0.05	0.13	0.07	0.74	0.00	0.33	-0.21	-0.10	-0.23	0.33
ELA	8	872579	0	A-K	2	3797	0.69	0.08	0.69	0.07	0.15	0.00	0.38	-0.24	0.38	-0.27	-0.11
ELA	8	309487	0	A-V	2	3797	0.49	0.49	0.14	0.25	0.12	0.00	0.27	0.27	-0.18	0.02	-0.24
ELA	8	992459	0	A-V	2	3797	0.59	0.12	0.10	0.59	0.19	0.00	0.38	-0.22	-0.24	0.38	-0.11

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
ELA	8	876908	0	A-V	2	3797	0.40	0.25	0.09	0.26	0.40	0.00	0.28	-0.18	-0.13	-0.05	0.28
ELA	8	657032	0	D	2	3797	0.67	0.10	0.09	0.67	0.14	0.00	0.32	-0.27	-0.20	0.32	-0.03
ELA	8	381645	0	D	2	3797	0.38	0.08	0.38	0.17	0.37	0.00	0.16	-0.13	0.16	-0.08	-0.02
ELA	8	213906	0	D	2	3797	0.52	0.17	0.15	0.52	0.16	0.00	0.36	-0.12	-0.23	0.36	-0.14
ELA	8	232280	1	A-K	3	1458	0.13	0.71	0.10	0.13	0.06	0.00	-0.17	0.39	-0.23	-0.17	-0.19
ELA	8	931520	1	A-K	2	1458	0.33	0.33	0.24	0.25	0.18	0.00	0.35	0.35	-0.19	-0.09	-0.12
ELA	8	670306	1	A-K	3	1458	0.29	0.24	0.29	0.28	0.19	0.00	0.12	0.02	0.12	-0.09	-0.06
ELA	8	620362	1	A-C	2	1458	0.61	0.61	0.13	0.18	0.08	0.00	0.36	0.36	-0.24	-0.16	-0.13
ELA	8	829336	1	A-V	2	1458	0.72	0.09	0.72	0.09	0.10	0.00	0.39	-0.23	0.39	-0.19	-0.19
ELA	8	856066	1	A-V	2	1458	0.51	0.10	0.22	0.16	0.51	0.00	0.31	-0.22	-0.10	-0.12	0.31
ELA	8	125176	1	A-C	2	1458	0.28	0.18	0.24	0.28	0.30	0.00	0.06	-0.03	-0.17	0.06	0.13
ELA	8	316956	1	A-V	2	1458	0.56	0.07	0.15	0.22	0.56	0.00	0.20	-0.19	0.01	-0.14	0.20
ELA	8	352868	2	A-K	2	1175	0.69	0.13	0.69	0.08	0.09	0.00	0.38	-0.20	0.38	-0.26	-0.12
ELA	8	227202	2	A-V	2	1175	0.90	0.03	0.02	0.05	0.90	0.00	0.41	-0.24	-0.12	-0.29	0.41
ELA	8	609077	2	A-V	2	1175	0.86	0.01	0.11	0.02	0.86	0.00	0.41	-0.18	-0.27	-0.25	0.41
ELA	8	638847	2	A-K	3	1175	0.65	0.19	0.09	0.65	0.07	0.00	0.33	-0.16	-0.20	0.33	-0.16
ELA	8	955072	2	A-C	2	1175	0.85	0.85	0.03	0.03	0.08	0.00	0.48	0.48	-0.25	-0.23	-0.30
ELA	8	280639	2	A-C	2	1175	0.72	0.14	0.72	0.10	0.04	0.00	0.37	-0.14	0.37	-0.23	-0.25
ELA	8	224203	2	A-C	2	1175	0.68	0.68	0.10	0.10	0.12	0.00	0.37	0.37	-0.20	-0.26	-0.10
ELA	8	947342	2	A-C	2	1175	0.71	0.13	0.07	0.71	0.09	0.00	0.41	-0.16	-0.21	0.41	-0.28
ELA	8	160138	3	A-K	2	1164	0.59	0.07	0.25	0.08	0.59	0.00	0.40	-0.24	-0.13	-0.28	0.40
ELA	8	584526	3	A-K	2	1164	0.66	0.12	0.19	0.66	0.04	0.00	0.41	-0.14	-0.28	0.41	-0.20
ELA	8	533131	3	A-K	3	1164	0.28	0.25	0.24	0.23	0.28	0.00	0.20	-0.15	-0.01	-0.03	0.20
ELA	8	868296	3	A-C	3	1164	0.42	0.17	0.14	0.42	0.27	0.00	0.17	-0.09	-0.10	0.17	-0.02
ELA	8	340784	3	A-C	2	1164	0.42	0.05	0.42	0.40	0.13	0.00	0.26	-0.17	0.26	-0.07	-0.16
ELA	8	673323	3	A-C	2	1164	0.80	0.09	0.80	0.04	0.07	0.00	0.52	-0.24	0.52	-0.26	-0.33
ELA	8	587765	3	A-V	2	1164	0.55	0.55	0.04	0.03	0.38	0.00	0.27	0.27	-0.26	-0.23	-0.08
ELA	8	281566	3	A-V	1	1164	0.85	0.85	0.05	0.05	0.04	0.00	0.48	0.48	-0.28	-0.27	-0.22

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
SCIENCE	4	982646	0	D	1	1548	0.75	0.05	0.06	0.75	0.13	0.00	0.32	-0.21	-0.14	0.32	-0.16
SCIENCE	4	388332	0	C	2	1548	0.70	0.70	0.20	0.05	0.05	0.00	0.30	0.30	-0.09	-0.20	-0.26
SCIENCE	4	889403	0	C	2	1548	0.88	0.06	0.03	0.03	0.88	0.00	0.33	-0.17	-0.18	-0.21	0.33
SCIENCE	4	766847	0	A	3	1548	0.55	0.55	0.10	0.22	0.13	0.00	0.37	0.37	-0.27	-0.13	-0.14
SCIENCE	4	496835	0	A	2	1548	0.77	0.06	0.77	0.05	0.12	0.00	0.35	-0.14	0.35	-0.18	-0.22
SCIENCE	4	199154	0	A	2	1548	0.88	0.04	0.04	0.88	0.04	0.00	0.49	-0.30	-0.29	0.49	-0.21
SCIENCE	4	384371	0	A	3	1548	0.64	0.14	0.64	0.10	0.12	0.00	0.41	-0.14	0.41	-0.21	-0.24
SCIENCE	4	686664	0	A	2	1548	0.59	0.59	0.12	0.23	0.06	0.00	0.26	0.26	-0.13	-0.09	-0.20
SCIENCE	4	144270	0	B	2	1548	0.51	0.51	0.08	0.18	0.23	0.00	0.32	0.32	-0.19	-0.14	-0.12
SCIENCE	4	969254	0	C	2	1548	0.72	0.10	0.11	0.07	0.72	0.00	0.38	-0.21	-0.07	-0.32	0.38
SCIENCE	4	115172	0	D	2	1548	0.66	0.08	0.13	0.12	0.66	0.00	0.47	-0.19	-0.30	-0.20	0.47
SCIENCE	4	195405	0	C	2	1548	0.74	0.08	0.74	0.07	0.10	0.00	0.31	-0.19	0.31	-0.17	-0.13
SCIENCE	4	320929	0	D	2	1548	0.52	0.52	0.20	0.14	0.14	0.00	0.38	0.38	-0.11	-0.21	-0.19
SCIENCE	4	595247	0	B	1	1548	0.96	0.02	0.01	0.96	0.01	0.00	0.34	-0.17	-0.17	0.34	-0.21
SCIENCE	4	620206	0	A	2	1548	0.66	0.05	0.10	0.18	0.66	0.00	0.44	-0.28	-0.24	-0.19	0.44
SCIENCE	4	194554	0	B	1	1548	0.76	0.06	0.10	0.76	0.07	0.00	0.52	-0.28	-0.29	0.52	-0.23
SCIENCE	4	488691	0	A	2	1548	0.78	0.78	0.05	0.07	0.09	0.00	0.52	0.52	-0.24	-0.28	-0.30
SCIENCE	4	932344	0	A	2	1548	0.69	0.08	0.69	0.06	0.17	0.00	0.40	-0.17	0.40	-0.26	-0.20
SCIENCE	4	299971	0	A	2	1548	0.65	0.11	0.16	0.65	0.07	0.00	0.45	-0.23	-0.18	0.45	-0.27
SCIENCE	4	573031	0	A	2	1548	0.64	0.64	0.10	0.20	0.07	0.00	0.54	0.54	-0.18	-0.35	-0.25
SCIENCE	4	722660	0	A	2	1548	0.62	0.15	0.11	0.62	0.11	0.00	0.40	-0.14	-0.26	0.40	-0.19
SCIENCE	4	714022	0	D	2	1548	0.62	0.23	0.04	0.62	0.10	0.00	0.37	-0.11	-0.23	0.37	-0.27
SCIENCE	4	542369	0	B	2	1548	0.86	0.05	0.03	0.06	0.86	0.00	0.42	-0.23	-0.27	-0.19	0.42
SCIENCE	4	258949	0	C	2	1548	0.62	0.10	0.14	0.62	0.13	0.00	0.44	-0.25	-0.28	0.44	-0.12
SCIENCE	4	115428	0	A	2	1548	0.83	0.07	0.05	0.05	0.83	0.00	0.50	-0.25	-0.26	-0.31	0.50
SCIENCE	4	191202	0	A	2	1548	0.40	0.13	0.35	0.11	0.40	0.00	0.39	-0.29	0.00	-0.28	0.39
SCIENCE	4	994204	0	A	2	1548	0.74	0.11	0.07	0.74	0.07	0.00	0.42	-0.27	-0.22	0.42	-0.14
SCIENCE	4	819443	0	D	2	1548	0.68	0.12	0.07	0.68	0.12	0.00	0.48	-0.21	-0.28	0.48	-0.23
SCIENCE	4	457535	0	A	2	1548	0.56	0.29	0.10	0.56	0.05	0.00	0.48	-0.30	-0.23	0.48	-0.16
SCIENCE	4	670098	0	A	2	1548	0.76	0.07	0.76	0.10	0.07	0.00	0.47	-0.23	0.47	-0.29	-0.19
SCIENCE	4	873293	0	C	2	1548	0.85	0.85	0.04	0.08	0.03	0.00	0.45	0.45	-0.21	-0.28	-0.23
SCIENCE	4	607313	0	D	2	1548	0.65	0.15	0.11	0.65	0.09	0.00	0.43	-0.13	-0.27	0.43	-0.25
SCIENCE	4	426259	0	A	3	1548	0.74	0.08	0.11	0.74	0.06	0.00	0.37	-0.23	-0.16	0.37	-0.20
SCIENCE	4	379270	0	A	2	1548	0.53	0.02	0.37	0.07	0.53	0.00	0.21	-0.26	0.00	-0.24	0.21
SCIENCE	4	242203	0	A	2	1548	0.58	0.16	0.07	0.58	0.19	0.00	0.36	-0.16	-0.29	0.36	-0.12
SCIENCE	4	449641	0	A	1	1548	0.69	0.09	0.69	0.12	0.11	0.00	0.50	-0.24	0.50	-0.28	-0.23
SCIENCE	4	404498	0	A	2	1548	0.76	0.10	0.08	0.76	0.06	0.00	0.46	-0.22	-0.29	0.46	-0.17
SCIENCE	4	143659	0	B	2	1548	0.87	0.87	0.03	0.03	0.06	0.00	0.42	0.42	-0.27	-0.23	-0.20
SCIENCE	4	501722	0	B	2	1548	0.45	0.19	0.18	0.45	0.18	0.00	0.31	-0.21	-0.05	0.31	-0.12

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
SCIENCE	4	649620	0	B	1	1548	0.61	0.06	0.61	0.20	0.13	0.00	0.38	-0.20	0.38	-0.12	-0.26
SCIENCE	4	693893	0	B	1	1548	0.84	0.06	0.84	0.02	0.08	0.00	0.35	-0.24	0.35	-0.19	-0.15
SCIENCE	4	790862	0	A	2	1548	0.70	0.14	0.70	0.09	0.07	0.00	0.28	-0.05	0.28	-0.18	-0.21
SCIENCE	4	513714	0	B	2	1548	0.82	0.03	0.82	0.06	0.09	0.00	0.54	-0.22	0.54	-0.29	-0.35
SCIENCE	4	258470	0	C	2	1548	0.51	0.23	0.09	0.16	0.51	0.00	0.39	-0.21	-0.20	-0.13	0.39
SCIENCE	4	599736	0	B	2	1548	0.60	0.12	0.60	0.07	0.21	0.00	0.38	-0.18	0.38	-0.18	-0.18
SCIENCE	4	658134	0	C	2	1548	0.93	0.04	0.01	0.02	0.93	0.00	0.32	-0.26	-0.09	-0.13	0.32
SCIENCE	4	597491	0	C	2	1548	0.61	0.21	0.11	0.61	0.08	0.00	0.38	-0.16	-0.24	0.38	-0.18
SCIENCE	4	516129	0	C	2	1548	0.83	0.83	0.11	0.03	0.03	0.00	0.40	0.40	-0.25	-0.19	-0.22
SCIENCE	4	177856	0	A	2	1548	0.53	0.14	0.22	0.53	0.12	0.00	0.34	-0.17	-0.09	0.34	-0.22
SCIENCE	4	956936	0	A	2	1548	0.85	0.85	0.05	0.08	0.03	0.00	0.48	0.48	-0.29	-0.29	-0.20
SCIENCE	4	149320	0	A	2	1548	0.65	0.19	0.65	0.07	0.10	0.00	0.47	-0.19	0.47	-0.28	-0.27
SCIENCE	4	264698	0	A	1	1548	0.86	0.05	0.04	0.06	0.86	0.00	0.52	-0.26	-0.28	-0.29	0.52
SCIENCE	4	329994	0	A	2	1548	0.60	0.03	0.24	0.13	0.60	0.00	0.33	-0.23	-0.02	-0.34	0.33
SCIENCE	4	167943	0	D	2	1548	0.60	0.10	0.60	0.19	0.11	0.00	0.34	-0.22	0.34	-0.12	-0.17
SCIENCE	4	837560	0	D	1	1548	0.83	0.05	0.09	0.83	0.04	0.00	0.51	-0.32	-0.26	0.51	-0.27
SCIENCE	4	704166	0	D	2	1548	0.43	0.23	0.43	0.20	0.14	0.00	0.24	-0.02	0.24	-0.14	-0.14
SCIENCE	4	452013	0	D	2	1548	0.67	0.15	0.10	0.67	0.08	0.00	0.42	-0.19	-0.22	0.42	-0.22
SCIENCE	4	101412	0	A	2	1548	0.51	0.06	0.51	0.34	0.09	0.00	0.45	-0.24	0.45	-0.18	-0.27
SCIENCE	4	419703	1	B	2	726	0.44	0.14	0.13	0.44	0.28	0.00	0.37	-0.14	-0.22	0.37	-0.12
SCIENCE	4	895674	1	A	2	726	0.76	0.11	0.10	0.03	0.76	0.00	0.55	-0.34	-0.33	-0.18	0.55
SCIENCE	4	780059	1	A	2	726	0.72	0.11	0.72	0.09	0.07	0.00	0.56	-0.25	0.56	-0.34	-0.26
SCIENCE	4	945843	1	B	2	726	0.70	0.70	0.10	0.09	0.12	0.00	0.49	0.49	-0.29	-0.26	-0.20
SCIENCE	4	847451	1	D	2	726	0.39	0.19	0.20	0.22	0.39	0.01	0.29	-0.06	-0.12	-0.16	0.29
SCIENCE	4	135817	1	A	2	726	0.62	0.11	0.62	0.10	0.16	0.00	0.54	-0.29	0.54	-0.30	-0.21
SCIENCE	4	959134	1	A	2	726	0.53	0.53	0.13	0.21	0.13	0.00	0.35	0.35	-0.19	-0.17	-0.11
SCIENCE	4	224089	1	A	2	726	0.37	0.28	0.22	0.37	0.13	0.01	0.26	-0.15	-0.05	0.26	-0.08
SCIENCE	4	502343	1	B	2	726	0.30	0.30	0.23	0.18	0.28	0.01	0.27	0.27	-0.07	-0.09	-0.12
SCIENCE	4	126642	1	C	2	726	0.59	0.13	0.59	0.05	0.23	0.00	0.45	-0.25	0.45	-0.16	-0.23
SCIENCE	4	815323	2	C	2	419	0.58	0.08	0.10	0.24	0.58	0.00	0.34	-0.22	-0.33	-0.02	0.34
SCIENCE	4	213922	2	A	2	419	0.62	0.09	0.12	0.16	0.62	0.00	0.40	-0.19	-0.17	-0.22	0.40
SCIENCE	4	759653	2	A	3	419	0.65	0.13	0.07	0.16	0.65	0.00	0.49	-0.22	-0.31	-0.23	0.49
SCIENCE	4	518298	2	A	2	419	0.54	0.29	0.08	0.54	0.09	0.00	0.50	-0.18	-0.28	0.50	-0.31
SCIENCE	4	390049	2	B	2	419	0.52	0.07	0.26	0.15	0.52	0.00	0.18	-0.30	-0.02	0.00	0.18
SCIENCE	4	911152	2	B	2	419	0.62	0.05	0.12	0.62	0.20	0.00	0.31	-0.24	-0.28	0.31	-0.01
SCIENCE	4	566707	2	D	2	419	0.51	0.08	0.51	0.15	0.25	0.00	0.24	-0.26	0.24	-0.23	0.08
SCIENCE	4	593601	2	C	2	419	0.27	0.47	0.27	0.24	0.03	0.00	0.17	0.00	0.17	-0.11	-0.20
SCIENCE	4	107044	2	A	2	419	0.74	0.74	0.11	0.06	0.09	0.00	0.43	0.43	-0.21	-0.28	-0.20
SCIENCE	4	191137	2	A	2	419	0.86	0.08	0.86	0.04	0.03	0.00	0.49	-0.28	0.49	-0.26	-0.29

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
SCIENCE	4	739619	5	B	2	403	0.68	0.09	0.10	0.68	0.12	0.00	0.51	-0.15	-0.33	0.51	-0.28
SCIENCE	4	129039	5	A	2	403	0.85	0.85	0.07	0.05	0.03	0.00	0.44	0.44	-0.15	-0.34	-0.28
SCIENCE	4	937472	5	A	2	403	0.47	0.03	0.39	0.10	0.47	0.00	0.07	-0.20	0.14	-0.21	0.07
SCIENCE	4	465952	5	A	2	403	0.31	0.26	0.05	0.39	0.31	0.00	0.06	0.05	-0.29	0.03	0.06
SCIENCE	4	142038	5	A	2	403	0.86	0.03	0.07	0.02	0.86	0.00	0.43	-0.19	-0.30	-0.19	0.43
SCIENCE	4	861778	5	D	2	403	0.38	0.16	0.38	0.25	0.20	0.00	0.16	-0.08	0.16	-0.05	-0.07
SCIENCE	4	415973	5	C	2	403	0.78	0.10	0.78	0.06	0.06	0.00	0.47	-0.32	0.47	-0.30	-0.09
SCIENCE	4	291431	5	A	2	403	0.76	0.76	0.04	0.18	0.01	0.00	0.31	0.31	-0.14	-0.19	-0.25
SCIENCE	4	458270	5	B	2	403	0.33	0.22	0.18	0.26	0.33	0.00	0.26	-0.04	-0.22	-0.04	0.26
SCIENCE	4	947064	5	C	2	403	0.67	0.14	0.05	0.67	0.14	0.00	0.24	-0.10	-0.19	0.24	-0.10

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
SCIENCE	8	207041	0	B	1	4250	0.63	0.63	0.04	0.11	0.21	0.00	0.31	0.31	-0.19	-0.28	-0.05
SCIENCE	8	398149	0	D	2	4250	0.74	0.13	0.03	0.74	0.09	0.00	0.39	-0.22	-0.25	0.39	-0.18
SCIENCE	8	865322	0	C	2	4250	0.69	0.69	0.11	0.11	0.10	0.00	0.40	0.40	-0.24	-0.30	-0.06
SCIENCE	8	615036	0	A	2	4250	0.52	0.04	0.11	0.52	0.34	0.00	0.06	-0.20	-0.22	0.06	0.16
SCIENCE	8	510943	0	D	2	4250	0.63	0.17	0.13	0.07	0.63	0.00	0.49	-0.22	-0.27	-0.25	0.49
SCIENCE	8	185119	0	B	2	4250	0.46	0.46	0.38	0.07	0.08	0.00	0.31	0.31	-0.08	-0.18	-0.24
SCIENCE	8	823915	0	A	2	4250	0.58	0.20	0.12	0.10	0.58	0.00	0.37	-0.11	-0.22	-0.20	0.37
SCIENCE	8	613591	0	A	2	4250	0.56	0.33	0.56	0.05	0.06	0.00	0.31	-0.07	0.31	-0.29	-0.24
SCIENCE	8	482430	0	C	2	4250	0.68	0.68	0.14	0.08	0.10	0.00	0.52	0.52	-0.23	-0.29	-0.28
SCIENCE	8	573542	0	C	2	4250	0.77	0.13	0.05	0.04	0.77	0.00	0.41	-0.21	-0.22	-0.26	0.41
SCIENCE	8	434584	0	D	2	4250	0.72	0.72	0.13	0.05	0.09	0.00	0.54	0.54	-0.31	-0.26	-0.27
SCIENCE	8	430671	0	A	2	4250	0.71	0.11	0.05	0.13	0.71	0.00	0.50	-0.27	-0.30	-0.24	0.50
SCIENCE	8	641082	0	B	2	4250	0.88	0.04	0.04	0.88	0.05	0.00	0.46	-0.21	-0.27	0.46	-0.27
SCIENCE	8	289897	0	C	2	4250	0.57	0.07	0.12	0.24	0.57	0.00	0.35	-0.23	-0.26	-0.07	0.35
SCIENCE	8	711707	0	D	2	4250	0.70	0.08	0.70	0.16	0.06	0.00	0.41	-0.17	0.41	-0.23	-0.24
SCIENCE	8	887644	0	D	2	4250	0.56	0.28	0.10	0.56	0.05	0.00	0.24	-0.09	-0.18	0.24	-0.11
SCIENCE	8	243467	0	A	2	4250	0.76	0.07	0.07	0.09	0.76	0.00	0.53	-0.25	-0.29	-0.29	0.53
SCIENCE	8	510562	0	B	2	4250	0.65	0.13	0.12	0.10	0.65	0.00	0.43	-0.16	-0.22	-0.27	0.43
SCIENCE	8	304745	0	D	2	4250	0.56	0.08	0.56	0.08	0.29	0.00	0.25	-0.13	0.25	-0.20	-0.08
SCIENCE	8	261252	0	A	2	4250	0.62	0.62	0.12	0.13	0.12	0.00	0.45	0.45	-0.24	-0.28	-0.12
SCIENCE	8	319690	0	B	2	4250	0.82	0.05	0.05	0.08	0.82	0.00	0.56	-0.30	-0.31	-0.30	0.56
SCIENCE	8	246054	0	A	2	4250	0.74	0.06	0.08	0.12	0.74	0.00	0.40	-0.16	-0.21	-0.24	0.40
SCIENCE	8	210913	0	D	2	4250	0.52	0.22	0.52	0.15	0.11	0.00	0.28	-0.09	0.28	-0.16	-0.13
SCIENCE	8	901677	0	D	1	4250	0.74	0.74	0.08	0.12	0.07	0.00	0.52	0.52	-0.30	-0.27	-0.24
SCIENCE	8	926759	0	B	2	4250	0.78	0.03	0.03	0.15	0.78	0.00	0.41	-0.29	-0.23	-0.22	0.41
SCIENCE	8	707781	0	A	2	4250	0.74	0.08	0.10	0.74	0.08	0.00	0.50	-0.21	-0.27	0.50	-0.31
SCIENCE	8	471992	0	D	2	4250	0.76	0.07	0.76	0.06	0.12	0.00	0.46	-0.16	0.46	-0.31	-0.27
SCIENCE	8	871105	0	A	2	4250	0.68	0.11	0.14	0.07	0.68	0.00	0.56	-0.28	-0.25	-0.34	0.56
SCIENCE	8	875224	0	A	3	4250	0.70	0.70	0.10	0.13	0.07	0.00	0.51	0.51	-0.25	-0.30	-0.22
SCIENCE	8	321038	0	D	2	4250	0.60	0.09	0.60	0.07	0.25	0.00	0.27	-0.25	0.27	-0.23	-0.01
SCIENCE	8	756987	0	B	2	4250	0.73	0.04	0.73	0.03	0.20	0.00	0.35	-0.24	0.35	-0.23	-0.18
SCIENCE	8	934274	0	A	2	4250	0.87	0.87	0.04	0.07	0.02	0.00	0.46	0.46	-0.27	-0.27	-0.23
SCIENCE	8	185970	0	A	2	4250	0.69	0.10	0.11	0.10	0.69	0.00	0.43	-0.20	-0.24	-0.22	0.43
SCIENCE	8	270110	0	A	2	4250	0.64	0.09	0.14	0.64	0.13	0.00	0.30	-0.19	-0.21	0.30	-0.05
SCIENCE	8	595843	0	C	2	4250	0.70	0.21	0.04	0.70	0.05	0.00	0.35	-0.15	-0.22	0.35	-0.26
SCIENCE	8	507046	0	C	2	4250	0.65	0.65	0.20	0.07	0.07	0.00	0.44	0.44	-0.15	-0.32	-0.24
SCIENCE	8	433766	0	A	2	4250	0.72	0.17	0.07	0.72	0.04	0.00	0.39	-0.20	-0.27	0.39	-0.17
SCIENCE	8	637701	0	C	2	4250	0.72	0.08	0.72	0.17	0.04	0.00	0.38	-0.20	0.38	-0.24	-0.15
SCIENCE	8	192606	0	C	2	4250	0.69	0.09	0.12	0.10	0.69	0.00	0.44	-0.27	-0.24	-0.17	0.44

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
SCIENCE	8	718050	0	C	1	4250	0.60	0.24	0.12	0.60	0.03	0.00	0.28	-0.05	-0.27	0.28	-0.14
SCIENCE	8	735443	0	C	3	4250	0.40	0.40	0.12	0.33	0.14	0.00	0.22	0.22	-0.25	0.11	-0.22
SCIENCE	8	177896	0	C	2	4250	0.73	0.11	0.73	0.07	0.08	0.00	0.25	-0.19	0.25	-0.12	-0.07
SCIENCE	8	285309	0	A	2	4250	0.70	0.70	0.07	0.05	0.18	0.00	0.38	0.38	-0.22	-0.29	-0.14
SCIENCE	8	635701	0	A	2	4250	0.75	0.12	0.07	0.75	0.06	0.00	0.48	-0.20	-0.32	0.48	-0.26
SCIENCE	8	433151	0	A	2	4250	0.65	0.65	0.09	0.17	0.09	0.00	0.43	0.43	-0.20	-0.23	-0.22
SCIENCE	8	443478	0	A	2	4250	0.74	0.14	0.08	0.04	0.74	0.00	0.42	-0.23	-0.23	-0.21	0.42
SCIENCE	8	943167	0	A	2	4250	0.85	0.06	0.06	0.85	0.04	0.00	0.45	-0.25	-0.31	0.45	-0.15
SCIENCE	8	646930	0	A	2	4250	0.81	0.11	0.06	0.81	0.02	0.00	0.40	-0.22	-0.22	0.40	-0.24
SCIENCE	8	717367	0	A	2	4250	0.65	0.09	0.65	0.09	0.17	0.00	0.36	-0.22	0.36	-0.20	-0.13
SCIENCE	8	679592	0	A	2	4250	0.72	0.06	0.17	0.72	0.05	0.00	0.29	-0.16	-0.07	0.29	-0.29
SCIENCE	8	666382	0	A	2	4250	0.69	0.12	0.08	0.10	0.69	0.00	0.53	-0.22	-0.30	-0.30	0.53
SCIENCE	8	556846	0	A	2	4250	0.63	0.06	0.63	0.20	0.12	0.00	0.44	-0.22	0.44	-0.24	-0.21
SCIENCE	8	168330	0	B	2	4250	0.74	0.20	0.02	0.04	0.74	0.00	0.44	-0.26	-0.26	-0.28	0.44
SCIENCE	8	498276	0	B	2	4250	0.68	0.68	0.11	0.13	0.08	0.00	0.57	0.57	-0.34	-0.30	-0.22
SCIENCE	8	808650	0	A	1	4250	0.77	0.17	0.03	0.03	0.77	0.00	0.43	-0.24	-0.25	-0.28	0.43
SCIENCE	8	389597	0	A	3	4250	0.88	0.88	0.05	0.04	0.04	0.00	0.49	0.49	-0.32	-0.23	-0.25
SCIENCE	8	693480	0	A	3	4250	0.57	0.17	0.57	0.15	0.11	0.00	0.35	-0.07	0.35	-0.27	-0.16
SCIENCE	8	172947	0	A	2	4250	0.65	0.04	0.65	0.24	0.07	0.00	0.43	-0.26	0.43	-0.22	-0.24
SCIENCE	8	282298	1	C	1	1701	0.36	0.14	0.12	0.36	0.38	0.00	0.29	-0.07	-0.14	0.29	-0.14
SCIENCE	8	266526	1	D	2	1701	0.54	0.15	0.13	0.54	0.18	0.00	0.25	-0.12	-0.12	0.25	-0.10
SCIENCE	8	501905	1	A	2	1701	0.30	0.26	0.24	0.20	0.30	0.00	0.20	0.10	-0.11	-0.22	0.20
SCIENCE	8	141776	1	A	2	1701	0.57	0.14	0.12	0.57	0.17	0.00	0.40	-0.18	-0.27	0.40	-0.11
SCIENCE	8	890560	1	B	2	1701	0.35	0.35	0.30	0.19	0.16	0.00	0.22	0.22	0.13	-0.17	-0.27
SCIENCE	8	972504	1	C	2	1701	0.28	0.21	0.23	0.28	0.28	0.00	0.12	0.00	-0.10	0.12	-0.02
SCIENCE	8	532126	1	A	2	1701	0.63	0.12	0.11	0.13	0.63	0.00	0.52	-0.20	-0.26	-0.29	0.52
SCIENCE	8	778399	1	B	2	1701	0.75	0.11	0.75	0.08	0.06	0.00	0.37	-0.18	0.37	-0.20	-0.20
SCIENCE	8	966547	1	D	2	1701	0.26	0.25	0.29	0.26	0.21	0.00	0.02	-0.09	0.02	0.02	0.06
SCIENCE	8	591045	1	A	2	1701	0.35	0.10	0.35	0.09	0.46	0.00	0.15	-0.20	0.15	-0.26	0.13
SCIENCE	8	730434	1	C	2	1701	0.26	0.26	0.27	0.23	0.25	0.00	0.09	0.09	-0.12	-0.06	0.10
SCIENCE	8	726478	1	A	2	1701	0.74	0.07	0.11	0.74	0.07	0.00	0.50	-0.29	-0.30	0.50	-0.20
SCIENCE	8	751908	2	A	2	1280	0.37	0.18	0.37	0.23	0.22	0.00	0.16	0.07	0.16	-0.20	-0.04
SCIENCE	8	805323	2	A	2	1280	0.61	0.16	0.06	0.61	0.17	0.00	0.37	-0.13	-0.31	0.37	-0.16
SCIENCE	8	166925	2	D	2	1280	0.44	0.13	0.44	0.32	0.11	0.00	0.36	-0.16	0.36	-0.15	-0.17
SCIENCE	8	922483	2	B	2	1280	0.82	0.07	0.05	0.06	0.82	0.00	0.49	-0.20	-0.28	-0.32	0.49
SCIENCE	8	268151	2	B	2	1280	0.59	0.11	0.59	0.18	0.13	0.00	0.34	-0.21	0.34	-0.17	-0.11
SCIENCE	8	727655	2	C	1	1280	0.63	0.13	0.12	0.63	0.11	0.00	0.29	-0.25	-0.16	0.29	0.00
SCIENCE	8	432131	2	A	2	1280	0.55	0.38	0.06	0.55	0.02	0.00	0.14	0.05	-0.31	0.14	-0.14
SCIENCE	8	956424	2	A	3	1280	0.70	0.10	0.70	0.15	0.06	0.00	0.46	-0.21	0.46	-0.29	-0.19

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)
SCIENCE	8	339665	2	A	2	1280	0.31	0.31	0.26	0.16	0.26	0.00	0.22	0.22	-0.05	-0.23	0.01
SCIENCE	8	890260	2	D	2	1280	0.72	0.72	0.07	0.17	0.04	0.00	0.49	0.49	-0.31	-0.23	-0.27
SCIENCE	8	690927	2	B	2	1280	0.38	0.21	0.09	0.32	0.38	0.00	0.05	-0.07	-0.14	0.10	0.05
SCIENCE	8	174799	2	C	2	1280	0.34	0.34	0.29	0.09	0.28	0.00	0.21	0.21	-0.29	-0.14	0.16
SCIENCE	8	418492	5	B	2	1269	0.65	0.65	0.23	0.04	0.09	0.00	0.44	0.44	-0.24	-0.22	-0.24
SCIENCE	8	282835	5	A	2	1269	0.59	0.10	0.18	0.59	0.13	0.00	0.40	-0.22	-0.20	0.40	-0.15
SCIENCE	8	111541	5	D	2	1269	0.18	0.25	0.42	0.15	0.18	0.00	-0.08	-0.01	0.25	-0.25	-0.08
SCIENCE	8	757636	5	A	3	1269	0.32	0.29	0.17	0.22	0.32	0.00	0.19	0.05	-0.14	-0.14	0.19
SCIENCE	8	950372	5	A	2	1269	0.34	0.34	0.10	0.12	0.45	0.00	0.16	0.16	-0.22	-0.26	0.16
SCIENCE	8	266099	5	C	2	1269	0.42	0.13	0.19	0.26	0.42	0.00	0.37	-0.19	-0.22	-0.07	0.37
SCIENCE	8	647780	5	C	2	1269	0.70	0.13	0.70	0.06	0.12	0.00	0.39	-0.26	0.39	-0.24	-0.11
SCIENCE	8	979396	5	B	2	1269	0.45	0.28	0.15	0.45	0.13	0.00	0.24	-0.05	-0.22	0.24	-0.05
SCIENCE	8	759891	5	A	2	1269	0.49	0.07	0.15	0.49	0.29	0.00	0.25	-0.11	-0.23	0.25	-0.04
SCIENCE	8	191057	5	D	2	1269	0.53	0.18	0.16	0.53	0.12	0.00	0.36	-0.13	-0.26	0.36	-0.10
SCIENCE	8	272531	5	A	2	1269	0.57	0.05	0.03	0.57	0.34	0.00	0.34	-0.18	-0.20	0.34	-0.19
SCIENCE	8	662321	5	A	2	1269	0.65	0.05	0.12	0.19	0.65	0.00	0.43	-0.26	-0.18	-0.23	0.43

Item Information						Classical														Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	PT(4)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	3	606941	0	B-O	3	124573	0.90	0.32	0.52	0.10	0.04	0.02	0.00	0.62	-0.53	0.14	0.33	0.26	0.20	2.2019	0.0044	-9.9	0.9	-9.9	0.9			
MATH	3	264355	0	A-T	2	124573	1.69	0.07	0.47	0.19	0.21	0.05	0.01	0.69	-0.33	-0.47	0.19	0.46	0.27	0.8732	0.0038	-9.9	0.9	-9.9	0.9			
MATH	3	292452	0	D-M	3	124573	1.27	0.24	0.45	0.15	0.12	0.04	0.00	0.69	-0.54	-0.08	0.25	0.41	0.26	1.5374	0.0037	-9.9	0.9	-9.9	0.9			
MATH	3	700467	1	D-M	3	1094	1.28	0.19	0.48	0.21	0.08	0.03	0.00	0.59	-0.39	-0.17	0.27	0.31	0.26	1.5619	0.0421	1.8	1.1	1.6	1.1	A+	A+	A-
MATH	3	537001	2	D-M	3	1093	0.97	0.32	0.44	0.19	0.05	0.00	0.01	0.62	-0.53	0.08	0.37	0.29	0.10	2.5305	0.0461	-1.2	1.0	-1.6	0.9	A-	A-	A+
MATH	3	955995	3	A-T	2	1092	1.46	0.07	0.47	0.41	0.03	0.02	0.00	0.65	-0.34	-0.41	0.43	0.23	0.27	1.3558	0.0499	-4.3	0.8	-4.7	0.8	A+	C-	A-
MATH	3	648964	4	A-T	3	1096	1.84	0.08	0.31	0.36	0.17	0.08	0.00	0.74	-0.41	-0.45	0.16	0.39	0.37	0.6745	0.0395	-5.6	0.8	-5.8	0.8	A+	C-	C-
MATH	3	323570	5	B-O	3	1094	1.38	0.22	0.42	0.15	0.17	0.04	0.00	0.71	-0.51	-0.20	0.25	0.46	0.25	1.4027	0.0384	-2.0	0.9	-2.6	0.9	A-	A-	A-
MATH	3	402374	6	D-M	2	1093	1.60	0.14	0.43	0.21	0.14	0.08	0.00	0.69	-0.42	-0.35	0.23	0.34	0.37	0.9604	0.0380	-0.8	1.0	-1.4	0.9	A-	B-	A+
MATH	3	805287	7	B-O	3	1092	1.52	0.25	0.34	0.14	0.20	0.08	0.00	0.69	-0.52	-0.15	0.13	0.38	0.37	1.1538	0.0357	0.8	1.0	0.3	1.0	A+	A-	A-
MATH	3	793782	9	C-G	2	1093	1.70	0.15	0.32	0.27	0.21	0.05	0.01	0.65	-0.36	-0.34	0.09	0.43	0.31	1.0101	0.0382	0.5	1.0	0.4	1.0	A+	A-	A+
MATH	4	959284	0	D-M	2	123371	0.75	0.61	0.18	0.08	0.08	0.04	0.01	0.62	-0.57	0.15	0.22	0.36	0.30	1.6473	0.0036	9.9	1.1	-1.2	1.0			
MATH	4	936224	0	A-F	3	123371	1.75	0.21	0.31	0.15	0.20	0.13	0.01	0.72	-0.46	-0.29	0.06	0.35	0.47	0.3621	0.0031	-9.9	0.9	-9.9	0.9			
MATH	4	958265	0	B-O	2	123371	0.96	0.35	0.39	0.22	0.04	0.00	0.06	0.64	-0.54	0.05	0.43	0.26	0.11	2.0930	0.0042	-9.9	0.9	-9.9	0.9			
MATH	4	886524	1	A-T	3	1091	1.37	0.26	0.31	0.28	0.08	0.07	0.01	0.67	-0.51	-0.09	0.18	0.34	0.38	0.9007	0.0368	-0.6	1.0	-1.6	0.9	A-	A-	A-
MATH	4	328676	2	D-M	3	1089	0.88	0.52	0.23	0.13	0.07	0.04	0.01	0.68	-0.61	0.12	0.29	0.33	0.35	1.4730	0.0378	-2.0	0.9	-3.5	0.8	A+	A-	A-
MATH	4	660510	3	A-T	3	1091	1.65	0.23	0.11	0.46	0.16	0.03	0.00	0.71	-0.55	-0.12	0.08	0.50	0.26	0.8810	0.0366	-6.1	0.8	-5.3	0.8	A-	A-	B-
MATH	4	606545	4	A-F	3	1092	0.47	0.67	0.23	0.07	0.01	0.01	0.00	0.62	-0.60	0.34	0.36	0.17	0.23	2.3073	0.0497	-2.7	0.8	-4.3	0.7	A+	A+	A-
MATH	4	164534	5	C-G	2	1094	1.60	0.22	0.30	0.23	0.16	0.09	0.00	0.56	-0.37	-0.19	0.08	0.28	0.35	0.6116	0.0347	6.4	1.3	5.9	1.3	A-	B-	A+
MATH	4	932491	6	C-G	3	1094	1.14	0.21	0.54	0.17	0.05	0.02	0.01	0.62	-0.46	-0.08	0.34	0.29	0.22	1.3642	0.0441	-0.8	1.0	-1.4	0.9	A+	B-	A-
MATH	4	749454	7	D-M	2	1091	1.17	0.35	0.30	0.21	0.13	0.02	0.01	0.65	-0.49	-0.09	0.25	0.45	0.20	1.4253	0.0380	-0.2	1.0	-1.1	1.0	A+	A-	A-
MATH	4	923662	8	B-O	2	1095	1.74	0.19	0.31	0.20	0.16	0.14	0.01	0.66	-0.42	-0.29	0.12	0.26	0.45	0.3531	0.0330	1.1	1.1	0.9	1.0	A+	B-	A-
MATH	4	750542	9	C-G	2	1093	1.82	0.12	0.34	0.24	0.21	0.10	0.00	0.67	-0.37	-0.37	0.11	0.33	0.39	0.3086	0.0359	-0.4	1.0	-0.5	1.0	A+	A-	A-
MATH	5	675400	0	D-M	3	125524	1.16	0.39	0.31	0.12	0.14	0.05	0.01	0.74	-0.63	0.02	0.24	0.42	0.35	1.3375	0.0034	-9.9	0.9	-9.9	0.8			
MATH	5	831563	0	B-O	3	125524	1.20	0.33	0.30	0.26	0.08	0.03	0.08	0.56	-0.41	-0.09	0.26	0.26	0.29	1.4398	0.0037	9.9	1.3	9.9	1.2			
MATH	5	121078	0	A-F	3	125524	1.05	0.39	0.31	0.20	0.09	0.02	0.01	0.73	-0.61	0.00	0.39	0.39	0.23	1.7449	0.0038	-9.9	0.8	-9.9	0.8			
MATH	5	246703	1	A-F	2	1093	1.41	0.33	0.23	0.18	0.23	0.04	0.01	0.72	-0.59	-0.10	0.17	0.49	0.27	1.1895	0.0353	-2.1	0.9	-2.4	0.9	A+	A-	A-
MATH	5	946241	2	C-G	2	1092	1.06	0.45	0.16	0.28	0.10	0.01	0.00	0.50	-0.42	-0.01	0.19	0.36	0.15	1.8125	0.0382	8.5	1.4	6.8	1.4	A+	B-	A-
MATH	5	432209	3	B-O	2	1091	0.58	0.60	0.29	0.06	0.04	0.01	0.01	0.57	-0.48	0.18	0.30	0.31	0.21	2.4419	0.0483	0.5	1.0	0.4	1.0	A+	A-	A-
MATH	5	960475	4	A-T	3	1091	1.06	0.28	0.48	0.15	0.08	0.01	0.00	0.67	-0.49	-0.04	0.32	0.39	0.23	1.8182	0.0440	-2.4	0.9	-3.1	0.9	A+	A+	A+
MATH	5	358892	5	C-G	3	1090	0.78	0.40	0.43	0.15	0.02	0.00	0.01	0.62	-0.54	0.20	0.38	0.25		1.9723	0.0501	-1.9	0.9	-2.3	0.9	A+	A-	B-
MATH	5	241436	6	A-T	2	1090	1.39	0.20	0.42	0.20	0.16	0.02	0.00	0.68	-0.47	-0.22	0.25	0.45	0.21	1.2997	0.0396	-2.0	0.9	-2.2	0.9	B+	A+	B-
MATH	5	158005	7	A-T	2	1100	1.36	0.26	0.31	0.31	0.08	0.05	0.00	0.74	-0.56	-0.17	0.34	0.32	0.36	1.1744	0.0387	-4.5	0.8	-5.1	0.8	A-	B-	A-
MATH	5	278942	8	B-O	3	1093	1.30	0.26	0.37	0.19	0.17	0.01	0.01	0.58	-0.39	-0.18	0.22	0.43	0.10	1.6837	0.0391	4.0	1.2	3.5	1.2	A+	A-	A+
MATH	5	853487	9	D-M	3	1093	1.83	0.10	0.31	0.30	0.27	0.03	0.01	0.70	-0.37	-0.41	0.07	0.52	0.21	0.6921	0.0393	-3.8	0.9	-3.6	0.9	A+	C-	C-
MATH	6	941679	0	D-S	3	124823	1.04	0.37	0.29	0.29	0.03	0.03	0.01	0.58	-0.50	0.02	0.35	0.20	0.24	1.7466	0.0037	4.9	1.0	-2.5	1.0			
MATH	6	373255	0	A-N	3	124823	1.47	0.21	0.43	0.12	0.16	0.08	0.01	0.72	-0.52	-0.20	0.20	0.42	0.36	0.9945	0.0033	-9.9	0.8	-9.9	0.8			
MATH	6	176639	0	B-E	3	124823	1.40	0.43	0.12	0.15	0.21	0.09	0.09	0.69	-0.60	-0.06	0.14	0.38	0.39	1.1292	0.0029	-9.9	0.9	-9.9	0.9			
MATH	6	349172	1	A-N	3	1091	1.32	0.33	0.14	0.43	0.07	0.03	0.01	0.63	-0.56	0.02	0.28	0.33	0.24	1.5065	0.0366	-1.7	0.9	-2.1	0.9	A+	A-	A+
MATH	6	147368	2	B-E	3	1095	0.83	0.36	0.51	0.08	0.04	0.01	0.01	0.59	-0.46	0.12	0.32	0.29	0.20	2.0149	0.0453	-3.1	0.8	-4.1	0.8	A+	A-	A-
MATH	6	372525	3	A-R	3	1097	0.30	0.78	0.16	0.05	0.01	0.00	0.01	0.39	-0.34	0.16	0.27	0.15	0.13	3.0057	0.0574	1.0	1.1	0.9	1.1	A-	A-	A+
MATH	6	713241	4	D-S	3	1094	1.52	0.26	0.30	0.19	0.19	0.07	0.00	0.71	-0.56	-0.15	0.19	0.39	0.35	1.0131	0.0329	-5.1	0.8	-5.1	0.8	B+	C-	B-
MATH	6	792719	5	C-G	3	1089	0.61	0.57	0.29	0.10	0.02	0.01	0.01	0.60	-0.58	0.31	0.31	0.25	0.16	2.3252	0.0449	-2.1	0.9	-3.9	0.8	A+	A-	A-
MATH	6	523270	6	B-E	3	1097	0.71	0.36	0.58	0.06	0.00	0.00	0.01	0.59	-0.54	0.34	0.34	0.10		2.6495	0.0578	-4.7	0.8	-5.0	0.8	A-	B-	B-
MATH	6	838908	7	A-R	3	1094	0.63	0.57	0.29	0.07	0.04	0.01	0.01	0.67	-0.66	0.34	0.32	0.30	0.20	2.3194	0.0439	-4.4	0.8	-6.3	0.7	A+	A-	A-
MATH	6	813765	8	A-N	3	1094	0.38	0.70	0.24	0.04	0.01	0.01	0.01	0.51	-0.49	0.32	0.24	0.20	0.16	2.8298	0.0541	-2.4	0.9	-2.6	0.8	A-	A-	A-
MATH	6	587368	9	A-N	3	1089	1.64	0.14	0.38	0.21	0.23	0.04	0.01	0.73	-0.44	-0.35	0.15	0.51	0.28	0.9808	0.0362	-7.1	0.7	-6.9	0.7	A-	B-	A-

Item Information						Classical														Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	PT(4)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	7	909622	0	A-N	3	123954	1.88	0.18	0.25	0.23	0.20	0.14	0.01	0.63	-0.43	-0.26	0.06	0.31	0.37	0.1497	0.0030	9.9	1.1	9.9	1.1			
MATH	7	107972	0	D-S	3	123954	2.16	0.10	0.18	0.29	0.29	0.13	0.06	0.61	-0.26	-0.37	-0.14	0.34	0.39	-0.1032	0.0032	-2.1	1.0	9.7	1.0			
MATH	7	274385	0	B-E	3	123954	0.98	0.38	0.39	0.13	0.07	0.03	0.01	0.72	-0.61	0.08	0.35	0.37	0.28	1.3516	0.0037	-9.9	0.8	-9.9	0.8			
MATH	7	320158	1	C-G	3	1093	0.75	0.53	0.28	0.12	0.05	0.02	0.01	0.67	-0.57	0.14	0.34	0.34	0.26	1.6771	0.0410	-4.6	0.8	-4.2	0.8	A+	A-	A-
MATH	7	253134	2	C-G	3	1093	0.60	0.57	0.32	0.06	0.03	0.02	0.00	0.65	-0.63	0.36	0.30	0.23	0.26	1.8799	0.0460	-2.8	0.8	-5.0	0.7	A+	A-	A-
MATH	7	824344	3	B-E	3	1089	0.54	0.66	0.22	0.07	0.03	0.02	0.01	0.68	-0.67	0.35	0.36	0.26	0.25	1.9475	0.0450	-4.7	0.8	-6.5	0.6	A+	A-	A-
MATH	7	207373	4	A-R	2	1089	1.24	0.24	0.45	0.17	0.11	0.03	0.01	0.75	-0.49	-0.21	0.32	0.47	0.28	1.0781	0.0387	-7.3	0.7	-7.4	0.7	A+	A-	C-
MATH	7	824819	5	B-E	2	1094	0.30	0.84	0.09	0.03	0.02	0.02	0.02	0.53	-0.54	0.29	0.25	0.23	0.28	2.1831	0.0524	-0.5	1.0	-3.1	0.6	A-	A-	A-
MATH	7	106556	6	D-S	3	1094	0.87	0.38	0.40	0.20	0.02	0.00	0.01	0.63	-0.54	0.10	0.44	0.21	0.13	2.0430	0.0457	-2.9	0.9	-3.5	0.9	B+	A-	A+
MATH	7	476039	7	A-N	2	1094	1.38	0.18	0.46	0.21	0.10	0.05	0.01	0.66	-0.38	-0.28	0.27	0.35	0.34	0.7761	0.0383	-2.8	0.9	-2.8	0.9	A-	A-	A-
MATH	7	612934	8	B-E	3	1094	1.58	0.28	0.28	0.16	0.13	0.15	0.01	0.77	-0.58	-0.21	0.23	0.27	0.51	0.4285	0.0319	-5.0	0.8	-4.8	0.8	C+	A-	A+
MATH	7	813444	9	D-S	3	1089	0.41	0.62	0.35	0.02	0.00	0.00	0.01	0.48	-0.44	0.36	0.24	0.14		2.9234	0.0630	-1.9	0.9	-1.9	0.9	A+	A-	A-
MATH	8	183609	0	C-G	2	125298	0.99	0.39	0.29	0.28	0.02	0.02	0.06	0.66	-0.54	-0.01	0.45	0.19	0.29	1.3968	0.0038	-9.9	0.9	-9.9	0.8			
MATH	8	284525	0	B-E	2	125298	1.73	0.11	0.37	0.26	0.22	0.04	0.01	0.69	-0.32	-0.43	0.12	0.45	0.33	0.3894	0.0035	-9.9	0.8	-9.9	0.8			
MATH	8	859719	0	A-N	3	125298	1.03	0.23	0.59	0.12	0.05	0.01	0.01	0.67	-0.48	-0.03	0.36	0.35	0.21	1.4801	0.0044	-9.9	0.8	-9.9	0.8			
MATH	8	204777	1	B-E	3	1092	0.71	0.60	0.21	0.10	0.06	0.03	0.02	0.72	-0.66	0.21	0.33	0.35	0.34	1.4850	0.0391	-5.5	0.7	-5.4	0.7	A+	A-	A-
MATH	8	943642	2	C-G	3	1086	0.45	0.61	0.36	0.02	0.01	0.00	0.01	0.54	-0.49	0.37	0.23	0.21	0.14	2.7433	0.0582	-1.1	0.9	-3.1	0.9	A+	A-	A+
MATH	8	408772	3	A-N	3	1095	1.34	0.17	0.49	0.22	0.09	0.03	0.01	0.70	-0.42	-0.30	0.34	0.39	0.28	0.8291	0.0400	-4.6	0.8	-5.0	0.8	A+	B-	A-
MATH	8	638468	4	D-S	3	1090	0.73	0.40	0.51	0.04	0.04	0.00	0.01	0.58	-0.49	0.24	0.26	0.30	0.13	2.1476	0.0493	-2.1	0.9	-2.7	0.9	A-	A-	A+
MATH	8	291331	5	B-E	3	1096	1.26	0.34	0.32	0.15	0.13	0.07	0.01	0.73	-0.56	-0.09	0.25	0.34	0.44	0.7916	0.0340	-5.1	0.8	-5.1	0.8	A+	B-	B-
MATH	8	484966	6	B-F	3	1093	0.51	0.66	0.25	0.05	0.03	0.02	0.01	0.63	-0.52	0.19	0.33	0.30	0.30	1.9366	0.0473	-3.8	0.8	-4.7	0.7	A-	A-	A-
MATH	8	192238	7	C-G	3	1093	0.72	0.36	0.60	0.01	0.03	0.00	0.01	0.56	-0.49	0.33	0.18	0.29	0.10	2.2576	0.0550	-2.2	0.9	-2.4	0.9	A+	A-	B-
MATH	8	293459	8	B-F	3	1093	0.49	0.69	0.19	0.07	0.04	0.01	0.02	0.65	-0.61	0.27	0.35	0.32	0.23	1.9115	0.0450	-4.1	0.8	-6.3	0.6	A-	A-	A-
MATH	8	842675	9	B-F	2	1092	0.84	0.41	0.39	0.15	0.04	0.01	0.01	0.63	-0.55	0.15	0.36	0.29	0.15	1.8267	0.0438	-2.8	0.9	-3.8	0.8	A+	A-	B-
ELA	3	272023	0	A-K	3	124599	1.31	0.15	0.45	0.34	0.06		0.01	0.61	-0.52	-0.11	0.38	0.26		1.0418	0.0043	-9.9	0.9	-9.9	0.9			
ELA	3	858711	0	B-K	3	124599	1.44	0.12	0.39	0.43	0.07		0.02	0.55	-0.43	-0.19	0.36	0.22		0.8706	0.0043	-9.9	1.0	-9.9	1.0			
ELA	3	975513	1	B-K	3	1096	1.60	0.09	0.38	0.37	0.16		0.01	0.57	-0.42	-0.23	0.21	0.37		0.3898	0.0425	-2.0	0.9	-1.8	0.9	B+	B-	A+
ELA	3	445766	2	B-K	3	1091	1.60	0.12	0.35	0.33	0.20		0.01	0.61	-0.46	-0.22	0.19	0.42		0.4176	0.0401	-3.2	0.9	-3.1	0.9	A+	A-	A-
ELA	3	568157	3	B-C	3	1095	1.63	0.11	0.30	0.44	0.15		0.01	0.57	-0.46	-0.18	0.22	0.33		0.4609	0.0427	-1.5	0.9	-0.9	1.0	A+	C-	B-
ELA	3	105264	4	B-C	3	1091	1.24	0.20	0.43	0.30	0.07		0.00	0.65	-0.55	-0.07	0.39	0.30		1.1601	0.0435	-5.0	0.8	-5.3	0.8	A+	A-	A-
ELA	3	637993	5	B-C	3	1097	1.53	0.17	0.31	0.32	0.19		0.01	0.67	-0.53	-0.21	0.27	0.43		0.5882	0.0387	-5.5	0.8	-5.3	0.8	A-	B-	B-
ELA	3	951532	6	A-K	3	1095	1.27	0.20	0.41	0.32	0.07		0.02	0.61	-0.56	-0.01	0.32	0.29		1.1282	0.0430	-3.6	0.9	-3.7	0.9	A+	A-	A-
ELA	3	141531	7	A-K	3	1090	1.22	0.23	0.42	0.26	0.09		0.01	0.61	-0.54	-0.01	0.31	0.33		1.1349	0.0419	-3.4	0.9	-3.6	0.9	A+	A-	A+
ELA	3	658027	8	A-K	3	1096	1.65	0.11	0.32	0.38	0.19		0.01	0.65	-0.52	-0.24	0.26	0.39		0.3638	0.0410	-4.6	0.8	-4.6	0.8	A+	A-	A-
ELA	3	756364	9	A-K	3	1091	1.18	0.22	0.45	0.26	0.07		0.01	0.54	-0.44	-0.07	0.37	0.23		1.2141	0.0430	-1.3	1.0	-1.4	0.9	A+	A-	A+

Item Information						Classical														Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	PT(4)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
SCIENCE	4	318885	0	A	2	122762	1.26	0.17	0.39	0.43			0.01	0.60	-0.47	-0.17	0.53			0.4322	0.0048	-9.9	0.9	-9.9	0.9			
SCIENCE	4	796118	0	A	2	122762	1.43	0.07	0.43	0.50			0.01	0.36	-0.36	-0.08	0.26			-0.2665	0.0054	9.9	1.2	9.9	1.2			
SCIENCE	4	758701	0	D	2	122762	0.85	0.37	0.40	0.23			0.01	0.49	-0.48	0.19	0.33			1.5026	0.0046	9.9	1.1	9.9	1.1			
SCIENCE	4	123851	0	A	2	122762	1.22	0.19	0.40	0.41			0.01	0.62	-0.58	-0.01	0.48			0.5570	0.0047	-9.9	0.9	-9.9	0.9			
SCIENCE	4	958300	0	B	2	122762	1.49	0.16	0.18	0.66			0.01	0.51	-0.42	-0.20	0.49			-0.0169	0.0047	9.9	1.1	9.9	1.2			
SCIENCE	4	114194	1	C	3	1093	0.99	0.37	0.27	0.36			0.02	0.41	-0.36	0.00	0.36			1.1838	0.0451	7.9	1.3	8.0	1.5	A-	B-	A+
SCIENCE	4	872114	2	D	3	1092	0.90	0.30	0.49	0.21			0.01	0.22	-0.10	-0.14	0.28			1.4008	0.0510	9.9	1.4	9.9	1.5	A+	A-	A+
SCIENCE	4	926417	3	D	2	1096	0.26	0.76	0.22	0.02			0.03	0.39	-0.38	0.34	0.17			3.6465	0.0702	-1.0	1.0	-1.7	0.9	A+	A-	A-
SCIENCE	4	600700	4	A	2	1093	1.14	0.27	0.32	0.41			0.02	0.59	-0.57	0.04	0.47			0.7958	0.0465	-1.7	0.9	-1.7	0.9	A+	A-	A-
SCIENCE	4	855367	5	A	2	1094	1.47	0.16	0.22	0.63			0.01	0.67	-0.58	-0.19	0.60			0.0273	0.0503	-4.9	0.8	-4.4	0.7	A+	B-	A-
SCIENCE	4	206221	6	B	2	1095	0.63	0.54	0.29	0.17			0.01	0.53	-0.53	0.28	0.36			2.0471	0.0491	-1.3	1.0	-1.3	0.9	A+	A-	A+
SCIENCE	4	875105	7	B	2	1093	1.05	0.29	0.37	0.34			0.01	0.46	-0.41	0.01	0.37			1.0222	0.0470	4.4	1.2	4.0	1.2	A+	A-	A+
SCIENCE	4	586531	8	C	3	1093	0.83	0.38	0.42	0.21			0.01	0.44	-0.41	0.15	0.31			1.5773	0.0489	2.7	1.1	3.1	1.1	A+	B-	B-
SCIENCE	4	459081	9	A	2	1096	0.70	0.44	0.42	0.14			0.01	0.41	-0.41	0.23	0.25			1.9371	0.0512	2.3	1.1	2.9	1.1	B-	B-	A+
SCIENCE	4	596277	10	B	2	1087	1.57	0.11	0.21	0.68			0.00	0.54	-0.46	-0.19	0.48			-0.2846	0.0542	-0.5	1.0	1.6	1.1	A+	A-	A-
SCIENCE	4	379044	11	B	2	1090	0.49	0.63	0.25	0.12			0.01	0.37	-0.35	0.19	0.27			2.3392	0.0506	1.0	1.0	4.0	1.3	A-	A+	A+
SCIENCE	4	595834	12	D	2	1092	1.02	0.28	0.42	0.30			0.01	0.52	-0.49	0.09	0.38			1.0865	0.0483	0.2	1.0	0.3	1.0	A+	B-	A-
SCIENCE	8	289643	0	B	2	124481	1.51	0.11	0.27	0.62			0.01	0.41	-0.36	-0.13	0.35			-0.6704	0.0049	9.9	1.2	9.9	1.3			
SCIENCE	8	924943	0	A	2	124481	1.29	0.16	0.40	0.44			0.01	0.51	-0.44	-0.10	0.42			-0.1484	0.0047	7.4	1.0	7.5	1.0			
SCIENCE	8	996058	0	B	3	124481	0.88	0.30	0.53	0.18			0.01	0.46	-0.41	0.13	0.33			0.9726	0.0049	9.3	1.0	8.1	1.0			
SCIENCE	8	695711	0	A	2	124481	1.17	0.20	0.43	0.37			0.02	0.39	-0.37	0.02	0.28			0.1545	0.0047	9.9	1.2	9.9	1.2			
SCIENCE	8	371251	0	A	3	124481	0.88	0.39	0.33	0.28			0.02	0.56	-0.53	0.14	0.43			0.8938	0.0043	-9.9	1.0	-9.9	0.9			
SCIENCE	8	379863	1	A	3	1091	0.85	0.39	0.38	0.23			0.01	0.44	-0.44	0.18	0.29			0.9934	0.0471	3.1	1.1	2.5	1.1	B+	A+	A-
SCIENCE	8	801270	2	A	2	1093	0.79	0.43	0.34	0.22			0.02	0.61	-0.59	0.24	0.43			1.1440	0.0473	-4.3	0.9	-4.2	0.8	A+	A-	B-
SCIENCE	8	692443	3	A	2	1097	0.51	0.58	0.33	0.09			0.02	0.45	-0.44	0.30	0.27			1.9090	0.0528	-1.7	0.9	-1.8	0.9	A-	A-	A-
SCIENCE	8	709883	4	B	2	1098	1.06	0.26	0.42	0.32			0.02	0.55	-0.50	0.05	0.42			0.4706	0.0484	-0.4	1.0	-0.2	1.0	A+	A-	B-
SCIENCE	8	216061	5	B	3	1093	1.30	0.13	0.43	0.43			0.01	0.49	-0.38	-0.16	0.42			-0.1944	0.0517	0.4	1.0	0.9	1.0	A+	B-	B-
SCIENCE	8	123701	6	B	3	1094	0.45	0.59	0.38	0.04			0.02	0.45	-0.44	0.38	0.19			2.4591	0.0603	-1.4	0.9	-2.0	0.9	C-	B-	A-
SCIENCE	8	413224	7	B	3	1094	0.79	0.49	0.22	0.28			0.03	0.46	-0.48	0.19	0.35			1.0772	0.0436	3.7	1.1	2.5	1.2	A-	A-	B-
SCIENCE	8	588001	8	C	3	1094	0.78	0.28	0.66	0.06			0.01	0.22	-0.15	0.04	0.22			1.6170	0.0635	4.4	1.2	4.6	1.2	A-	A-	A+
SCIENCE	8	698170	10	C	3	1087	0.34	0.73	0.21	0.06			0.02	0.49	-0.50	0.38	0.28			2.4204	0.0594	-4.0	0.8	-4.5	0.7	A-	A-	A-
SCIENCE	8	615609	11	C	3	1090	0.49	0.63	0.25	0.12			0.02	0.47	-0.47	0.29	0.32			1.8314	0.0504	-2.5	0.9	-1.5	0.9	C-	B-	A-
SCIENCE	8	635800	12	D	2	1095	0.61	0.54	0.31	0.15			0.02	0.49	-0.49	0.28	0.32			1.5736	0.0491	-1.2	1.0	-1.2	0.9	A-	B-	C-

Item Information						Classical													
Cont	**Grade**	**PubID**	**Form**	**Std**	**DOK**	**N**	**Mean**	**P(0)**	**P(1)**	**P(2)**	**P(3)**	**P(4)**	**P(B)**	**PtBis**	**PT(0)**	**PT(1)**	**PT(2)**	**PT(3)**	**PT(4)**
MATH	3	606941	0	B-O	3	735	0.70	0.43	0.48	0.06	0.02	0.01	0.01	0.60	-0.51	0.25	0.32	0.23	0.21
MATH	3	264355	0	A-T	2	735	1.37	0.14	0.55	0.15	0.14	0.03	0.02	0.72	-0.39	-0.37	0.31	0.48	0.27
MATH	3	292452	0	D-M	3	735	0.87	0.47	0.33	0.09	0.08	0.03	0.01	0.70	-0.59	0.13	0.25	0.39	0.32
MATH	4	959284	0	D-M	2	831	0.44	0.71	0.19	0.05	0.04	0.01	0.01	0.55	-0.51	0.25	0.25	0.30	0.20
MATH	4	936224	0	A-F	3	831	1.10	0.38	0.34	0.12	0.11	0.05	0.01	0.71	-0.55	-0.02	0.21	0.41	0.38
MATH	4	958265	0	B-O	2	831	0.69	0.46	0.40	0.14	0.01	0.00	0.02	0.73	-0.66	0.29	0.49	0.21	
MATH	5	675400	0	D-M	3	1159	0.76	0.56	0.26	0.09	0.07	0.03	0.02	0.69	-0.63	0.21	0.27	0.37	0.31
MATH	5	831563	0	B-O	3	1159	0.81	0.50	0.26	0.19	0.05	0.01	0.02	0.60	-0.52	0.07	0.40	0.28	0.15
MATH	5	121078	0	A-F	3	1159	0.70	0.52	0.31	0.12	0.04	0.01	0.02	0.72	-0.62	0.18	0.44	0.34	0.20
MATH	6	941679	0	D-S	3	1595	0.87	0.45	0.28	0.23	0.02	0.02	0.01	0.60	-0.53	0.11	0.37	0.19	0.24
MATH	6	373255	0	A-N	3	1595	1.17	0.33	0.39	0.13	0.12	0.05	0.00	0.77	-0.63	-0.02	0.32	0.42	0.32
MATH	6	176639	0	B-E	3	1595	1.29	0.47	0.13	0.14	0.16	0.09	0.01	0.74	-0.68	0.00	0.21	0.37	0.42
MATH	7	909622	0	A-N	3	2349	1.23	0.32	0.32	0.22	0.09	0.05	0.01	0.65	-0.50	-0.08	0.27	0.34	0.29
MATH	7	107972	0	D-S	3	2349	1.99	0.09	0.25	0.33	0.24	0.09	0.01	0.66	-0.32	-0.38	-0.02	0.38	0.37
MATH	7	274385	0	B-E	3	2349	0.76	0.49	0.34	0.10	0.05	0.02	0.01	0.71	-0.63	0.19	0.39	0.32	0.26
MATH	8	183609	0	C-G	2	3560	0.65	0.55	0.27	0.17	0.01	0.01	0.02	0.65	-0.60	0.22	0.46	0.12	0.19
MATH	8	284525	0	B-E	2	3560	1.54	0.14	0.42	0.23	0.19	0.03	0.00	0.68	-0.35	-0.37	0.18	0.47	0.27
MATH	8	859719	0	A-N	3	3560	0.87	0.32	0.54	0.10	0.03	0.01	0.01	0.67	-0.53	0.13	0.39	0.31	0.15
ELA	3	272023	0	A-K	3	561	1.10	0.29	0.37	0.28	0.06		0.01	0.71	-0.61	-0.02	0.48	0.31	
ELA	3	858711	0	B-K	3	561	1.30	0.18	0.43	0.30	0.09		0.03	0.61	-0.47	-0.16	0.38	0.30	
SCIENCE	4	318885	0	A	2	1548	1.13	0.24	0.39	0.37			0.01	0.61	-0.51	-0.06	0.51		
SCIENCE	4	796118	0	A	2	1548	1.38	0.10	0.43	0.48			0.01	0.43	-0.46	-0.01	0.29		
SCIENCE	4	758701	0	D	2	1548	0.73	0.45	0.37	0.18			0.01	0.46	-0.45	0.21	0.32		
SCIENCE	4	123851	0	A	2	1548	1.07	0.27	0.39	0.34			0.01	0.64	-0.61	0.09	0.48		
SCIENCE	4	958300	0	B	2	1548	1.31	0.24	0.21	0.55			0.01	0.55	-0.46	-0.15	0.52		
SCIENCE	8	289643	0	B	2	4250	1.51	0.11	0.26	0.63			0.01	0.40	-0.37	-0.10	0.33		
SCIENCE	8	924943	0	A	2	4250	1.35	0.15	0.35	0.50			0.01	0.53	-0.44	-0.15	0.46		
SCIENCE	8	996058	0	B	3	4250	0.99	0.23	0.55	0.22			0.00	0.49	-0.43	0.07	0.36		
SCIENCE	8	695711	0	A	2	4250	1.16	0.21	0.42	0.37			0.01	0.43	-0.43	0.06	0.30		
SCIENCE	8	371251	0	A	3	4250	0.85	0.41	0.33	0.26			0.02	0.56	-0.54	0.18	0.41		

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	3	562043	0	B-C	3	124599	1.65	0.12	0.37	0.24	0.26	0.00	0.45	-0.18	-0.24	-0.07	0.47	0.2839	0.0036	9.9	1.2	9.9	1.2			
ELA	3	873104	0	A-K	3	124599	1.25	0.25	0.24	0.50		0.00	0.54	-0.43	-0.18	0.53		0.1292	0.0042	-6.9	1.0	4.7	1.0			
ELA	3	583290	0	A-K	3	124599	1.61	0.14	0.32	0.35	0.20	0.00	0.43	-0.28	-0.23	0.19	0.29	0.4320	0.0038	9.9	1.2	9.9	1.3			
ELA	3	466804	0	B-K	3	124599	1.22	0.22	0.33	0.44		0.00	0.29	-0.13	-0.26	0.35		0.1513	0.0043	9.9	1.4	9.9	1.5			
ELA	3	848531	1	B-V	3	13972	2.07	0.06	0.22	0.33	0.39	0.00	0.55	-0.21	-0.41	-0.03	0.48	-0.3947	0.0116	-0.9	1.0	-0.9	1.0	A-	A-	A-
ELA	3	786808	1	B-K	3	13972	0.99	0.39	0.22	0.38		0.00	0.34	-0.20	-0.26	0.42		0.6440	0.0119	9.9	1.3	9.9	1.5	A+	A-	A-
ELA	3	405478	2	B-C	3	13839	1.66	0.13	0.30	0.38	0.20	0.00	0.45	-0.22	-0.33	0.18	0.33	0.3609	0.0113	9.9	1.2	9.9	1.2	A-	A-	A-
ELA	3	876312	2	B-C	3	13839	0.61	0.49	0.41	0.10		0.00	0.19	-0.16	0.08	0.14		1.7101	0.0148	9.9	1.3	9.9	1.5	A-	A+	A+
ELA	3	766636	3	B-V	3	13841	1.47	0.11	0.31	0.58		0.00	0.55	-0.45	-0.21	0.48		-0.5614	0.0146	-9.9	0.9	-9.7	0.9	A+	A-	A-
ELA	3	166658	3	B-K	3	13841	1.93	0.13	0.20	0.28	0.39	0.00	0.57	-0.29	-0.37	-0.02	0.52	0.0035	0.0105	2.4	1.0	2.7	1.0	A-	C-	B-
ELA	3	816032	4	B-K	3	13870	0.85	0.37	0.41	0.22		0.00	0.32	-0.26	0.02	0.28		1.0152	0.0134	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	3	721138	4	B-K	3	13870	1.26	0.24	0.38	0.27	0.12	0.00	0.32	-0.08	-0.26	0.12	0.34	1.0387	0.0113	9.9	1.4	9.9	1.4	A-	A-	A-
ELA	3	847137	5	B-C	3	13855	1.21	0.26	0.40	0.22	0.13	0.01	0.30	-0.10	-0.18	0.04	0.34	1.0483	0.0110	9.9	1.4	9.9	1.5	A-	A-	A-
ELA	3	551669	5	B-C	3	13855	1.02	0.35	0.28	0.37		0.00	0.47	-0.31	-0.24	0.53		0.5854	0.0123	5.6	1.1	5.0	1.1	A-	A-	A-
ELA	3	858405	6	A-K	3	13770	0.92	0.35	0.37	0.28		0.00	0.36	-0.25	-0.09	0.37		0.8353	0.0129	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	3	123097	6	A-C	3	13770	1.66	0.19	0.29	0.20	0.32	0.00	0.52	-0.18	-0.38	-0.04	0.56	0.3799	0.0101	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	3	790087	7	A-K	3	13753	1.22	0.27	0.24	0.49		0.00	0.61	-0.47	-0.21	0.60		0.2127	0.0126	-9.9	0.9	-8.6	0.9	A-	A-	A-
ELA	3	285724	7	A-K	3	13753	1.82	0.11	0.30	0.26	0.33	0.00	0.57	-0.29	-0.33	-0.02	0.53	0.0780	0.0110	1.8	1.0	1.5	1.0	A+	A-	A-
ELA	3	534006	8	A-K	3	13864	1.94	0.13	0.18	0.32	0.37	0.00	0.31	-0.06	-0.29	-0.09	0.36	0.0204	0.0107	9.9	1.6	9.9	1.8	A-	A-	A-
ELA	3	205951	8	A-K	3	13864	1.14	0.29	0.28	0.43		0.00	0.54	-0.44	-0.11	0.51		0.3596	0.0124	-4.2	1.0	-1.6	1.0	A-	A-	A-
ELA	3	700335	9	A-K	3	13835	1.59	0.10	0.36	0.39	0.15	0.00	0.36	-0.23	-0.17	0.14	0.24	0.4539	0.0120	9.9	1.3	9.9	1.3	A-	A-	A-
ELA	3	947743	9	A-C	3	13835	0.88	0.40	0.33	0.27		0.00	0.38	-0.21	-0.22	0.46		0.9165	0.0126	9.9	1.2	9.9	1.2	A-	A-	A-
ELA	4	413367	0	A-V	2	123316	1.51	0.19	0.11	0.70		0.00	0.58	-0.47	-0.29	0.60		-0.4468	0.0045	-9.9	0.9	2.3	1.0			
ELA	4	713295	0	A-V	2	123316	1.59	0.16	0.34	0.27	0.24	0.00	0.50	-0.28	-0.25	0.09	0.43	0.4297	0.0037	9.9	1.2	9.9	1.3			
ELA	4	406767	0	B-K	3	123316	2.15	0.06	0.16	0.35	0.43	0.00	0.62	-0.29	-0.45	-0.04	0.51	-0.4909	0.0040	-9.9	0.9	-7.6	1.0			
ELA	4	731015	0	A-K	3	123316	1.29	0.18	0.34	0.48		0.00	0.58	-0.49	-0.13	0.50		-0.1024	0.0046	-9.9	1.0	-6.6	1.0			
ELA	4	618030	0	B-C	3	123316	1.88	0.08	0.23	0.43	0.27	0.00	0.56	-0.31	-0.37	0.12	0.41	-0.0579	0.0041	9.1	1.0	9.9	1.1			
ELA	4	709984	0	B-C	3	123316	1.18	0.29	0.24	0.47		0.00	0.49	-0.37	-0.19	0.50		0.2378	0.0042	9.9	1.2	9.9	1.3			
ELA	4	692417	1	A-K	3	13873	1.32	0.10	0.56	0.27	0.07	0.00	0.35	-0.28	-0.08	0.15	0.21	0.8357	0.0137	9.9	1.3	9.9	1.3	A-	A-	A-
ELA	4	499727	1	A-K	3	13873	1.29	0.24	0.23	0.53		0.00	0.62	-0.48	-0.25	0.62		-0.0294	0.0129	-8.0	0.9	-6.6	0.9	A-	A-	A-
ELA	4	126973	2	A-K	3	13694	1.63	0.16	0.31	0.25	0.28	0.00	0.53	-0.25	-0.35	0.10	0.47	0.3622	0.0108	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	4	355070	2	A-V	2	13694	1.57	0.10	0.22	0.67		0.00	0.54	-0.39	-0.30	0.52		-0.7998	0.0152	-6.8	0.9	-1.4	1.0	A-	A-	B-
ELA	4	872052	3	A-K	3	13664	1.47	0.14	0.25	0.61		0.00	0.59	-0.40	-0.36	0.60		-0.4929	0.0143	-9.8	0.9	-4.3	0.9	A+	B-	A-
ELA	4	741344	3	A-K	3	13664	1.73	0.09	0.33	0.35	0.23	0.00	0.43	-0.24	-0.24	0.08	0.34	0.1401	0.0119	9.9	1.3	9.9	1.4	A+	A-	A-
ELA	4	797450	4	A-K	3	13652	1.90	0.07	0.26	0.39	0.29	0.00	0.54	-0.30	-0.36	0.11	0.39	-0.1280	0.0121	7.3	1.1	9.9	1.2	A-	A-	A-
ELA	4	630807	4	A-K	3	13652	1.50	0.15	0.20	0.65		0.00	0.57	-0.42	-0.31	0.57		-0.4962	0.0142	-3.4	1.0	-0.7	1.0	A+	A-	A-
ELA	4	568631	5	A-K	3	13626	2.08	0.05	0.14	0.50	0.31	0.00	0.55	-0.32	-0.38	0.06	0.37	-0.4647	0.0133	-1.4	1.0	0.9	1.0	A+	A-	A-
ELA	4	850086	5	A-K	2	13626	0.83	0.38	0.40	0.22		0.00	0.39	-0.30	-0.01	0.37		1.0630	0.0138	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	4	770053	6	B-C	3	13680	0.80	0.49	0.22	0.29		0.00	0.30	-0.16	-0.24	0.39		1.0510	0.0125	9.9	1.4	9.9	1.8	A-	A-	A-
ELA	4	106720	6	B-K	3	13680	2.00	0.13	0.21	0.20	0.46	0.00	0.62	-0.31	-0.41	-0.07	0.60	-0.1432	0.0106	2.8	1.0	2.7	1.1	A-	A-	A-
ELA	4	677602	7	B-K	3	13716	1.82	0.11	0.24	0.36	0.28	0.00	0.56	-0.32	-0.33	0.10	0.44	0.0877	0.0114	7.6	1.1	9.9	1.2	A-	B-	A-
ELA	4	838523	7	B-V	3	13716	1.11	0.23	0.42	0.35		0.00	0.40	-0.33	-0.05	0.34		0.3407	0.0137	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	4	689074	8	B-K	3	13699	1.76	0.10	0.31	0.34	0.26	0.00	0.52	-0.31	-0.26	0.07	0.41	0.1320	0.0115	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	4	428450	8	B-K	3	13699	1.14	0.29	0.29	0.42		0.00	0.50	-0.36	-0.20	0.52		0.3418	0.0127	9.2	1.1	9.7	1.1	A-	A-	A-
ELA	4	695750	9	B-V	2	13712	1.18	0.25	0.31	0.44		0.00	0.39	-0.32	-0.08	0.36		0.2113	0.0130	9.9	1.3	9.9	1.5	A-	A-	A-
ELA	4	111462	9	B-C	3	13712	1.53	0.19	0.35	0.20	0.26	0.00	0.52	-0.26	-0.28	0.03	0.51	0.5103	0.0106	9.9	1.2	9.9	1.2	A-	A-	A-
ELA	5	505490	0	A-K	2	125525	1.77	0.10	0.31	0.29	0.29	0.00	0.52	-0.36	-0.21	0.02	0.43	0.1556	0.0038	9.9	1.2	9.9	1.3			
ELA	5	834190	0	A-V	2	125525	1.42	0.14	0.31	0.55		0.00	0.60	-0.42	-0.30	0.57		-0.3702	0.0048	-9.9	0.9	-9.9	0.9			
ELA	5	622377	0	B-K	3	125525	1.40	0.21	0.19	0.60		0.00	0.59	-0.46	-0.28	0.60		-0.1706	0.0044	-6.5	1.0	-7.0	1.0			
ELA	5	101494	0	B-K	3	125525	1.33	0.20	0.27	0.53		0.00	0.62	-0.48	-0.24	0.60		-0.0488	0.0045	-9.9	0.9	-9.9	0.9			
ELA	5	208058	0	B-K	3	125525	1.34	0.15	0.48	0.24	0.12	0.00	0.38	-0.23	-0.13	0.09	0.33	0.8967	0.0041	9.9	1.4	9.9	1.4			
ELA	5	608892	0	A-K	3	125525	2.39	0.04	0.09	0.30	0.56	0.00	0.56	-0.28	-0.37	-0.17	0.48	-0.9185	0.0044	-1.9	1.0	7.2	1.0			
ELA	5	778246	1	B-K	3	14052	1.32	0.27	0.15	0.59		0.00	0.58	-0.45	-0.29	0.62		0.0228	0.0127	4.3	1.1	3.4	1.1	A-	A-	A-
ELA	5	300777	1	B-K	3	14052	2.17	0.07	0.15	0.32	0.46	0.00	0.62	-0.34	-0.41	-0.06	0.52	-0.4680	0.0120	-2.3	1.0	-0.5	1.0	A+	A-	A-
ELA	5	136969	2	B-V	2	13898	0.90	0.31	0.48	0.21		0.00	0.39	-0.38	0.14	0.25		0.9787	0.0142	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	5	975584	2	B-K	3	13898	1.48	0.31	0.22	0.15	0.32	0.00	0.42	-0.13	-0.37	-0.07	0.51	0.6997	0.0097	9.9	1.6	9.9	2.0	A+	A-	A-
ELA	5	529304	3	B-K	3	13926	1.64	0.15	0.31	0.31	0.24	0.00	0.52	-0.25	-0.36	0.16	0.42	0.4433	0.0112	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	5	524759	3	B-K	3	13926	1.63	0.14	0.08	0.78		0.00	0.58	-0.45	-0.37	0.62		-0.6908	0.0148	-5.0	0.9	-4.1	0.8	A+	A-	B-
ELA	5	919177	4	B-K	3	13945	1.63	0.13	0.33	0.34	0.21	0.00	0.52	-0.30	-0.27	0.13	0.41	0.4491	0.0114	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	5	408739	4	B-K	3	13945	1.10	0.29	0.33	0.38		0.00	0.37	-0.26	-0.14	0.37		0.4834	0.0129	9.9	1.3	9.9	1.6	A-	A-	A-
ELA	5	418300	5	B-V	3	13928	1.31	0.19	0.30	0.50		0.00	0.48	-0.38	-0.17	0.45		-0.0151	0.0135	9.9	1.1	9.9	1.3	A-	A-	A-
ELA	5	184692	5	B-K	3	13928	1.72	0.18	0.23	0.28	0.31	0.00	0.50	-0.29	-0.32	0.11	0.42	0.3888	0.0105	9.9	1.3	9.9	1.4	A+	A-	A-
ELA	5	252072	6	A-K	3	13942	0.99	0.36	0.28	0.35		0.00	0.44	-0.30	-0.18	0.47		0.7540	0.0126	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	5	297996	6	A-K	3	13942	1.70	0.11	0.35	0.27	0.27	0.00	0.40	-0.21	-0.17	-0.07	0.41	0.3012	0.0113	9.9	1.4	9.9	1.5	A+	A-	A-
ELA	5	640396	7	A-K	3	13972	1.75	0.07	0.29	0.44	0.19	0.00	0.50	-0.31	-0.31	0.19	0.32	0.1748	0.0126	9.9	1.1	9.9	1.1	A+	A-	A+
ELA	5	871826	7	A-V	3	13972	1.52	0.15	0.18	0.67		0.00	0.52	-0.39	-0.29	0.53		-0.4984	0.0142	4.9	1.1	4.6	1.1	A+	A+	A+
ELA	5	575286	8	A-V	3	13928	0.76	0.44	0.37	0.19		0.00	0.22	-0.21	0.09	0.16		1.3167	0.0136	9.9	1.5	9.9	1.7	A-	A-	A-
ELA	5	451643	8	A-C	3	13928	1.50	0.21	0.32	0.23	0.24	0.00	0.47	-0.22	-0.29	0.09	0.44	0.6667	0.0105	9.9	1.3	9.9	1.4	A-	A-	A-
ELA	5	509502	9	A-C	3	13934	1.19	0.32	0.16	0.52		0.00	0.52	-0.37	-0.33	0.59		0.3335	0.0123	9.9	1.2	9.9	1.3	A-	A+	A+
ELA	5	198511	9	A-C	3	13934	2.08	0.06	0.21	0.32	0.41	0.00	0.56	-0.30	-0.35	-0.05	0.47	-0.3842	0.0120	7.6	1.1	9.9	1.2	A+	A-	A-

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	6	416513	0	B-K	3	124885	1.36	0.17	0.29	0.54		0.00	0.58	-0.48	-0.17	0.53		-0.0192	0.0046	-9.9	0.9	-9.9	0.9			
ELA	6	960923	0	B-C	3	124885	1.95	0.05	0.27	0.35	0.32	0.00	0.52	-0.26	-0.33	0.00	0.44	-0.1041	0.0041	9.9	1.1	9.9	1.1			
ELA	6	940846	0	B-K	2	124885	2.03	0.08	0.19	0.34	0.39	0.00	0.58	-0.32	-0.36	-0.02	0.49	-0.0445	0.0039	9.9	1.1	9.5	1.0			
ELA	6	818581	0	A-C	3	124885	1.37	0.12	0.39	0.49		0.00	0.34	-0.26	-0.13	0.30		-0.1698	0.0049	9.9	1.3	9.9	1.4			
ELA	6	720926	0	A-K	3	124885	1.16	0.26	0.32	0.42		0.00	0.45	-0.30	-0.23	0.48		0.4862	0.0043	9.9	1.2	9.9	1.2			
ELA	6	906456	0	A-K	3	124885	1.56	0.18	0.31	0.28	0.23	0.00	0.46	-0.23	-0.27	0.09	0.41	0.7291	0.0036	9.9	1.3	9.9	1.4			
ELA	6	749051	1	A-K	3	13997	1.39	0.21	0.20	0.59		0.00	0.59	-0.41	-0.35	0.62		0.0063	0.0132	-4.6	1.0	0.0	1.0	A+	A+	A-
ELA	6	184289	1	A-K	3	13997	2.19	0.05	0.19	0.30	0.47	0.00	0.65	-0.30	-0.44	-0.10	0.57	-0.4048	0.0120	-9.9	0.9	-9.6	0.9	A+	B-	A-
ELA	6	440210	2	A-K	3	13853	1.12	0.28	0.40	0.24	0.08	0.00	0.23	-0.12	-0.10	0.11	0.21	1.5446	0.0119	9.9	1.6	9.9	1.8	A-	A-	A-
ELA	6	869658	2	A-V	3	13853	1.52	0.12	0.24	0.64		0.00	0.58	-0.44	-0.30	0.56		-0.4274	0.0147	-7.9	0.9	-7.6	0.9	B-	B-	A-
ELA	6	789415	3	A-K	3	13855	1.40	0.21	0.37	0.23	0.19	0.00	0.28	-0.11	-0.15	-0.02	0.32	0.9590	0.0109	9.9	1.6	9.9	1.8	A+	A-	A-
ELA	6	410772	3	A-V	3	13855	1.46	0.17	0.19	0.63		0.00	0.43	-0.29	-0.29	0.46		-0.1502	0.0135	9.9	1.2	9.9	1.5	A+	A-	A-
ELA	6	480108	4	A-K	3	13846	1.43	0.14	0.29	0.57		0.00	0.53	-0.41	-0.22	0.49		-0.2133	0.0143	-1.3	1.0	3.6	1.1	A+	A-	A-
ELA	6	566677	4	A-K	3	13846	1.86	0.14	0.22	0.28	0.36	0.00	0.64	-0.42	-0.32	0.06	0.53	0.3026	0.0108	-2.9	1.0	-0.8	1.0	A+	A-	A-
ELA	6	423817	5	A-C	3	13837	1.89	0.07	0.28	0.34	0.31	0.00	0.47	-0.25	-0.30	0.04	0.38	0.0807	0.0118	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	6	685342	5	A-V	2	13837	1.37	0.18	0.26	0.56		0.00	0.39	-0.32	-0.13	0.36		-0.0102	0.0135	9.9	1.3	9.9	1.5	A+	A-	B-
ELA	6	632871	6	B-C	3	13866	0.94	0.31	0.45	0.24		0.00	0.17	-0.10	-0.08	0.20		1.0330	0.0138	9.9	1.5	9.9	1.7	A+	A+	A+
ELA	6	780403	6	B-K	3	13866	1.76	0.11	0.29	0.31	0.28	0.00	0.52	-0.26	-0.31	0.03	0.47	0.3918	0.0112	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	6	958981	7	B-K	3	13893	1.71	0.11	0.31	0.36	0.23	0.00	0.47	-0.26	-0.26	0.10	0.37	0.4447	0.0116	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	6	734192	7	B-K	3	13893	0.87	0.45	0.22	0.33		0.00	0.38	-0.24	-0.22	0.45		1.1262	0.0122	9.9	1.3	9.9	1.6	A-	A-	A-
ELA	6	810224	8	B-K	3	13880	0.62	0.41	0.56	0.03		0.00	0.12	-0.16	0.18	-0.08		2.4855	0.0176	9.9	1.4	9.9	1.5	A-	A-	A-
ELA	6	399775	8	B-C	3	13880	1.60	0.14	0.32	0.34	0.20	0.00	0.44	-0.23	-0.25	0.10	0.38	0.6539	0.0114	9.9	1.3	9.9	1.4	A-	A-	A-
ELA	6	896729	9	B-K	3	13858	0.96	0.27	0.50	0.23		0.00	0.46	-0.40	0.07	0.35		0.9809	0.0143	6.7	1.1	9.1	1.1	A-	A-	A-
ELA	6	461838	9	B-C	3	13858	2.00	0.08	0.15	0.46	0.31		0.46	-0.17	-0.39	0.01	0.38	0.0291	0.0122	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	7	959939	0	B-K	3	123936	1.31	0.14	0.41	0.45		0.00	0.45	-0.34	-0.16	0.39		-0.1141	0.0049	9.9	1.1	9.9	1.1			
ELA	7	324729	0	B-C	3	123936	2.44	0.02	0.08	0.36	0.55	0.00	0.53	-0.21	-0.36	-0.21	0.45	-1.2043	0.0049	-5.0	1.0	-4.7	1.0			
ELA	7	763591	0	A-K	3	123936	1.41	0.17	0.40	0.28	0.15	0.00	0.22	-0.11	-0.06	-0.06	0.27	0.8683	0.0039	9.9	1.7	9.9	1.8			
ELA	7	511686	0	B-K	2	123936	1.27	0.20	0.33	0.47		0.00	0.46	-0.36	-0.15	0.43		0.0996	0.0045	9.9	1.2	9.9	1.2			
ELA	7	605617	0	A-K	3	123936	1.77	0.07	0.09	0.84		0.00	0.54	-0.37	-0.40	0.57		-1.2186	0.0060	-9.9	0.8	-9.9	0.6			
ELA	7	539750	0	A-C	3	123936	1.84	0.08	0.26	0.41	0.25	0.00	0.58	-0.35	-0.37	0.16	0.40	0.0871	0.0041	-2.4	1.0	-0.2	1.0			
ELA	7	712535	1	A-K	3	13864	0.73	0.48	0.30	0.22		0.00	0.34	-0.26	-0.03	0.35		1.3535	0.0132	9.9	1.3	9.9	1.6	A-	A-	A-
ELA	7	217342	1	A-C	3	13864	1.86	0.07	0.30	0.34	0.29	0.00	0.55	-0.31	-0.30	0.01	0.46	-0.0094	0.0118	7.3	1.1	9.3	1.1	A+	A-	A-
ELA	7	546469	2	A-K	3	13765	1.86	0.19	0.18	0.23	0.41	0.00	0.57	-0.29	-0.39	-0.02	0.55	0.2621	0.0101	9.9	1.2	9.9	1.2	A-	A-	A-
ELA	7	755528	2	A-C	3	13765	0.65	0.45	0.46	0.09		0.00	0.18	-0.17	0.10	0.12		1.8160	0.0153	9.9	1.4	9.9	1.5	A-	A-	A-
ELA	7	761392	3	A-K	3	13771	1.22	0.27	0.23	0.49		0.00	0.35	-0.22	-0.24	0.40		0.3018	0.0126	9.9	1.4	9.9	1.8	A+	A-	A+
ELA	7	897390	3	A-C	3	13771	1.68	0.08	0.37	0.36	0.20	0.00	0.47	-0.30	-0.20	0.06	0.38	0.3218	0.0122	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	7	438676	4	A-K	3	13766	0.94	0.33	0.41	0.27		0.00	0.38	-0.25	-0.12	0.40		0.9203	0.0135	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	7	363628	4	A-K	3	13766	1.94	0.04	0.31	0.31	0.33	0.00	0.29	-0.23	-0.09	-0.09	0.28	-0.2743	0.0120	9.9	1.5	9.9	1.8	B+	A-	A+
ELA	7	762334	5	A-K	3	13780	1.65	0.14	0.27	0.40	0.19	0.00	0.54	-0.39	-0.24	0.22	0.34	0.5153	0.0116	8.0	1.1	9.9	1.1	A-	A-	A-
ELA	7	573039	5	A-C	3	13780	1.02	0.33	0.31	0.35		0.00	0.41	-0.31	-0.10	0.40		0.6927	0.0127	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	7	185031	6	B-K	3	13754	1.70	0.14	0.28	0.32	0.26	0.00	0.32	-0.17	-0.15	-0.04	0.32	0.4263	0.0111	9.9	1.6	9.9	1.7	A+	A-	A-
ELA	7	728788	6	B-C	3	13754	1.23	0.30	0.18	0.52		0.00	0.48	-0.37	-0.22	0.50		0.3102	0.0123	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	7	313602	7	B-K	3	13744	1.53	0.14	0.33	0.40	0.13	0.00	0.44	-0.19	-0.33	0.22	0.33	0.7598	0.0121	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	7	112276	7	B-K	3	13744	1.41	0.16	0.27	0.57		0.00	0.53	-0.33	-0.36	0.57		-0.1953	0.0139	0.6	1.0	4.5	1.1	A+	A+	A-
ELA	7	156122	8	B-K	3	13752	1.93	0.07	0.25	0.36	0.32	0.00	0.57	-0.32	-0.36	0.06	0.45	-0.0837	0.0119	3.8	1.0	5.8	1.1	A-	B-	B-
ELA	7	679912	8	B-V	3	13752	1.34	0.18	0.31	0.52		0.00	0.60	-0.45	-0.24	0.57		-0.0506	0.0137	-8.1	0.9	-8.4	0.9	A+	A-	A-
ELA	7	300092	9	B-C	3	13740	1.34	0.11	0.51	0.32	0.07	0.00	0.25	-0.29	0.04	0.08	0.12	1.0392	0.0135	9.9	1.4	9.9	1.5	A+	A+	A+
ELA	7	711110	9	B-C	3	13740	1.47	0.15	0.23	0.62		0.00	0.56	-0.40	-0.31	0.56		-0.3090	0.0140	-4.5	1.0	-2.2	1.0	A-	A-	A-
ELA	8	621616	0	A-C	2	125091	1.36	0.07	0.50	0.43		0.00	0.37	-0.36	-0.09	0.27		-0.6329	0.0053	9.9	1.1	9.9	1.2			
ELA	8	174620	0	A-K	3	125091	2.15	0.05	0.17	0.36	0.42	0.00	0.55	-0.28	-0.35	-0.07	0.46	-0.5538	0.0040	5.5	1.0	7.7	1.0			
ELA	8	956928	0	B-K	2	125091	1.53	0.13	0.21	0.66		0.00	0.43	-0.33	-0.21	0.41		-0.6382	0.0047	9.9	1.1	9.9	1.3			
ELA	8	459522	0	B-C	3	125091	1.94	0.07	0.23	0.39	0.31	0.00	0.51	-0.29	-0.31	0.04	0.40	-0.2275	0.0039	9.9	1.1	9.9	1.1			
ELA	8	143832	0	B-C	3	125091	1.39	0.18	0.25	0.57		0.00	0.52	-0.36	-0.28	0.53		-0.2773	0.0044	2.0	1.0	2.3	1.0			
ELA	8	524867	0	A-C	3	125091	1.85	0.16	0.17	0.31	0.35	0.00	0.43	-0.14	-0.37	-0.07	0.47	0.1130	0.0035	9.9	1.4	9.9	1.6			
ELA	8	892827	1	A-C	2	13984	1.97	0.06	0.25	0.35	0.34	0.00	0.59	-0.29	-0.39	0.01	0.50	-0.2908	0.0116	-4.1	1.0	-2.7	1.0	A+	A-	A-
ELA	8	742010	1	A-K	2	13984	1.27	0.14	0.44	0.41		0.00	0.45	-0.39	-0.08	0.36		-0.1643	0.0143	4.5	1.1	6.6	1.1	A-	A-	A-
ELA	8	983362	2	A-K	3	13916	2.11	0.04	0.21	0.36	0.40	0.00	0.61	-0.28	-0.43	-0.03	0.50	-0.6162	0.0122	-8.0	0.9	-6.3	0.9	A+	B-	B-
ELA	8	801732	2	A-C	3	13916	1.51	0.15	0.19	0.66		0.00	0.50	-0.41	-0.21	0.48		-0.5624	0.0139	1.1	1.0	5.6	1.1	A+	A+	A-
ELA	8	951737	3	A-K	3	13867	1.87	0.10	0.24	0.36	0.31	0.00	0.52	-0.22	-0.37	0.02	0.46	-0.0374	0.0113	9.7	1.1	9.8	1.1	A-	B-	A-
ELA	8	114105	3	A-V	3	13867	1.30	0.20	0.29	0.51		0.00	0.48	-0.36	-0.20	0.47		-0.0915	0.0131	7.2	1.1	8.9	1.1	A-	A-	A-
ELA	8	282082	4	A-K	3	13892	1.73	0.24	0.16	0.22	0.38	0.00	0.40	-0.19	-0.29	-0.08	0.45	0.3076	0.0096	9.9	1.5	9.9	1.8	A-	A-	A+
ELA	8	445179	4	A-V	3	13892	1.11	0.23	0.43	0.34		0.00	0.46	-0.31	-0.16	0.45		0.3228	0.0135	5.5	1.1	6.3	1.1	A+	A+	A-
ELA	8	555271	5	A-K	3	13860	1.38	0.13	0.35	0.51		0.00	0.46	-0.40	-0.12	0.39		-0.3693	0.0141	2.9	1.0	9.9	1.2	A-	A+	A-
ELA	8	192639	5	A-V	3	13860	2.28	0.05	0.12	0.32	0.51	0.00	0.55	-0.26	-0.35	-0.18	0.51	-0.6735	0.0122	1.3	1.0	0.5	1.0	A-	B-	B-
ELA	8	320762	6	B-C	3	13931	1.37	0.15	0.34	0.51		0.00	0.49	-0.32	-0.27	0.48		-0.3198	0.0138	1.5	1.0	3.4	1.1	A-	A-	A-
ELA	8	372958	6	B-K	3	13931	1.42	0.22	0.26	0.38	0.13	0.00	0.42	-0.28	-0.18	0.20	0.29	0.8064	0.0110	9.9	1.3	9.9	1.3	A-	C-	B-
ELA	8	359889	7	B-K	3	13942	1.19	0.32	0.17	0.51		0.00	0.44	-0.31	-0.28	0.50		0.2105	0.0119	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	8	430825	7	B-K	3	13942	2.11	0.13	0.11	0.27	0.49	0.00	0.55	-0.28	-0.37	-0.12	0.53	-0.2309	0.0105	9.3	1.1	9.9	1.2	A-	A-	A-
ELA	8	803247	8	B-C	3	13853	1.84	0.05	0.24	0.54	0.17	0.00	0.46	-0.31	-0.28	0.17	0.27	-0.0685	0.0133	6.5	1.1	7.2	1.1	A-	B-	B-
ELA	8	272267	8	B-C	3	13853	1.23	0.17	0.43	0.40		0.00	0.49	-0.35	-0.18	0.45		-0.0035	0.0139	1.1	1.0	1.0	1.0	A+	A+	A-
ELA	8	145634	9	B-K	3	13846	0.98	0.41	0.20	0.39		0.00	0.35	-0.21	-0.27	0.43		0.5981	0.0117	9.9	1.3	9.9	1.6	A-	A-	A-
ELA	8	693229	9	B-C	3	13846	1.75	0.19	0.18	0.31	0.31	0.00	0.46	-0.19	-0.34	-0.02	0.47	0.2588	0.0101	9.9	1.3	9.9	1.4	A-	A-	A-

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)
ELA	3	562043	0	B-C	3	561	1.42	0.17	0.42	0.24	0.17	0.00	0.50	-0.28	-0.17	0.03	0.47
ELA	3	873104	0	A-K	3	561	0.96	0.38	0.29	0.34		0.00	0.61	-0.51	-0.04	0.57	
ELA	3	583290	0	A-K	3	561	1.30	0.21	0.38	0.30	0.10	0.00	0.52	-0.36	-0.18	0.30	0.31
ELA	3	466804	0	B-K	3	561	1.10	0.26	0.39	0.35		0.00	0.38	-0.23	-0.20	0.41	
ELA	3	848531	1	B-V	3	232	1.69	0.11	0.31	0.36	0.22	0.00	0.56	-0.23	-0.36	0.06	0.50
ELA	3	786808	1	B-K	3	232	0.72	0.49	0.31	0.21		0.00	0.47	-0.30	-0.15	0.53	
ELA	3	405478	2	B-C	3	160	1.44	0.16	0.37	0.33	0.14	0.01	0.37	-0.19	-0.24	0.22	0.24
ELA	3	876312	2	B-C	3	160	0.71	0.43	0.43	0.14		0.01	0.15	-0.13	0.04	0.12	
ELA	3	700335	9	A-K	3	169	1.37	0.19	0.37	0.33	0.11	0.00	0.32	-0.33	0.00	0.20	0.11
ELA	3	947743	9	A-C	3	169	0.86	0.37	0.40	0.23		0.00	0.38	-0.24	-0.11	0.41	
ELA	4	413367	0	A-V	2	670	1.24	0.24	0.28	0.48		0.00	0.59	-0.42	-0.27	0.61	
ELA	4	713295	0	A-V	2	670	1.39	0.20	0.38	0.26	0.17	0.00	0.48	-0.25	-0.24	0.12	0.44
ELA	4	406767	0	B-K	3	670	1.81	0.12	0.26	0.31	0.30	0.00	0.61	-0.27	-0.45	0.10	0.52
ELA	4	731015	0	A-K	3	670	1.01	0.30	0.38	0.31		0.00	0.55	-0.43	-0.08	0.51	
ELA	4	618030	0	B-C	3	670	1.54	0.14	0.32	0.40	0.14	0.00	0.55	-0.33	-0.32	0.30	0.34
ELA	4	709984	0	B-C	3	670	0.91	0.39	0.31	0.30		0.00	0.46	-0.28	-0.23	0.53	
ELA	4	692417	1	A-K	3	305	1.22	0.15	0.53	0.27	0.05	0.00	0.32	-0.29	0.02	0.10	0.21
ELA	4	499727	1	A-K	3	305	0.87	0.41	0.31	0.28		0.00	0.65	-0.42	-0.26	0.73	
ELA	4	126973	2	A-K	3	179	1.39	0.17	0.43	0.23	0.16	0.00	0.57	-0.27	-0.31	0.18	0.50
ELA	4	355070	2	A-V	2	179	1.39	0.17	0.26	0.56		0.00	0.61	-0.38	-0.39	0.64	
ELA	4	568631	5	A-K	3	186	1.88	0.06	0.22	0.51	0.22	0.00	0.50	-0.25	-0.38	0.17	0.32
ELA	4	850086	5	A-K	2	186	0.78	0.42	0.38	0.20		0.00	0.30	-0.25	0.05	0.25	
ELA	5	505490	0	A-K	2	976	1.54	0.14	0.40	0.26	0.20	0.00	0.51	-0.34	-0.20	0.12	0.40
ELA	5	834190	0	A-V	2	976	1.26	0.21	0.32	0.47		0.00	0.58	-0.42	-0.24	0.57	
ELA	5	622377	0	B-K	3	976	1.06	0.34	0.27	0.39		0.00	0.59	-0.43	-0.23	0.62	
ELA	5	101494	0	B-K	3	976	1.12	0.28	0.31	0.41		0.00	0.58	-0.44	-0.18	0.57	
ELA	5	208058	0	B-K	3	976	1.20	0.20	0.48	0.24	0.08	0.00	0.36	-0.16	-0.17	0.15	0.32
ELA	5	608892	0	A-K	3	976	2.08	0.07	0.18	0.36	0.39	0.00	0.63	-0.30	-0.43	-0.04	0.54
ELA	5	778246	1	B-K	3	437	0.97	0.42	0.19	0.39		0.00	0.58	-0.46	-0.16	0.60	
ELA	5	300777	1	B-K	3	437	1.78	0.12	0.26	0.33	0.29	0.00	0.63	-0.33	-0.37	0.05	0.54
ELA	5	136969	2	B-V	2	267	0.89	0.32	0.47	0.21		0.00	0.32	-0.28	0.06	0.24	
ELA	5	975584	2	B-K	3	267	1.18	0.36	0.31	0.12	0.21	0.00	0.42	-0.15	-0.28	0.00	0.50
ELA	5	575286	8	A-V	3	272	0.74	0.44	0.38	0.18		0.00	0.19	-0.10	-0.08	0.23	
ELA	5	451643	8	A-C	3	272	1.31	0.24	0.39	0.20	0.17	0.00	0.39	-0.16	-0.24	0.08	0.40

Item Information						Classical											
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)
ELA	6	416513	0	B-K	3	1450	1.23	0.22	0.32	0.45		0.00	0.58	-0.45	-0.18	0.55	
ELA	6	960923	0	B-C	3	1450	1.74	0.07	0.34	0.37	0.22	0.00	0.52	-0.25	-0.35	0.14	0.39
ELA	6	940846	0	B-K	2	1450	1.84	0.10	0.23	0.41	0.27	0.00	0.56	-0.31	-0.35	0.10	0.42
ELA	6	818581	0	A-C	3	1450	1.31	0.14	0.40	0.46		0.00	0.39	-0.27	-0.17	0.36	
ELA	6	720926	0	A-K	3	1450	1.12	0.25	0.38	0.37		0.00	0.48	-0.31	-0.22	0.50	
ELA	6	906456	0	A-K	3	1450	1.38	0.20	0.37	0.28	0.15	0.00	0.35	-0.11	-0.29	0.13	0.34
ELA	6	749051	1	A-K	3	674	0.97	0.38	0.27	0.35		0.00	0.59	-0.45	-0.14	0.60	
ELA	6	184289	1	A-K	3	674	1.72	0.12	0.29	0.32	0.26	0.00	0.62	-0.31	-0.37	0.05	0.56
ELA	6	440210	2	A-K	3	390	1.13	0.25	0.44	0.23	0.07	0.00	0.18	-0.04	-0.15	0.11	0.17
ELA	6	869658	2	A-V	3	390	1.53	0.09	0.29	0.62		0.00	0.58	-0.33	-0.43	0.59	
ELA	6	789415	3	A-K	3	386	1.42	0.23	0.29	0.30	0.18	0.00	0.25	-0.10	-0.19	0.10	0.22
ELA	6	410772	3	A-V	3	386	1.47	0.17	0.20	0.63		0.00	0.50	-0.40	-0.21	0.48	
ELA	7	959939	0	B-K	3	2298	1.25	0.15	0.45	0.40		0.00	0.48	-0.41	-0.09	0.39	
ELA	7	324729	0	B-C	3	2298	2.22	0.03	0.12	0.45	0.40	0.00	0.51	-0.26	-0.33	-0.09	0.40
ELA	7	763591	0	A-K	3	2298	1.32	0.19	0.41	0.29	0.11	0.00	0.19	-0.12	-0.05	0.02	0.20
ELA	7	511686	0	B-K	2	2298	1.22	0.20	0.37	0.42		0.00	0.45	-0.33	-0.15	0.42	
ELA	7	605617	0	A-K	3	2298	1.66	0.11	0.12	0.77		0.00	0.52	-0.36	-0.38	0.56	
ELA	7	539750	0	A-C	3	2298	1.55	0.13	0.34	0.37	0.15	0.00	0.56	-0.36	-0.28	0.25	0.37
ELA	7	712535	1	A-K	3	918	0.62	0.54	0.31	0.16		0.00	0.32	-0.22	-0.04	0.35	
ELA	7	217342	1	A-C	3	918	1.59	0.10	0.38	0.35	0.17	0.00	0.50	-0.27	-0.29	0.15	0.39
ELA	7	546469	2	A-K	3	691	1.76	0.19	0.20	0.30	0.32	0.00	0.55	-0.30	-0.37	0.08	0.48
ELA	7	755528	2	A-C	3	691	0.60	0.48	0.45	0.08		0.00	0.15	-0.11	0.04	0.14	
ELA	7	185031	6	B-K	3	689	1.59	0.14	0.30	0.38	0.18	0.00	0.25	-0.12	-0.15	0.04	0.23
ELA	7	728788	6	B-C	3	689	1.11	0.34	0.21	0.45		0.00	0.47	-0.35	-0.21	0.50	
ELA	8	621616	0	A-C	2	3797	1.34	0.08	0.49	0.42		0.00	0.39	-0.36	-0.08	0.29	
ELA	8	174620	0	A-K	3	3797	1.97	0.06	0.24	0.37	0.33	0.00	0.54	-0.25	-0.35	0.00	0.45
ELA	8	956928	0	B-K	2	3797	1.41	0.16	0.27	0.57		0.00	0.43	-0.29	-0.24	0.44	
ELA	8	459522	0	B-C	3	3797	1.71	0.10	0.29	0.41	0.20	0.00	0.49	-0.28	-0.28	0.14	0.36
ELA	8	143832	0	B-C	3	3797	1.38	0.20	0.23	0.57		0.00	0.52	-0.37	-0.29	0.54	
ELA	8	524867	0	A-C	3	3797	1.61	0.22	0.20	0.32	0.26	0.00	0.39	-0.12	-0.34	-0.01	0.44
ELA	8	892827	1	A-C	2	1458	1.72	0.09	0.31	0.38	0.22	0.00	0.53	-0.27	-0.33	0.12	0.42
ELA	8	742010	1	A-K	2	1458	1.16	0.19	0.47	0.35		0.00	0.49	-0.42	-0.04	0.39	
ELA	8	983362	2	A-K	3	1175	2.02	0.05	0.21	0.39	0.34	0.00	0.61	-0.29	-0.40	-0.03	0.51
ELA	8	801732	2	A-C	3	1175	1.47	0.16	0.21	0.63		0.00	0.50	-0.34	-0.32	0.53	
ELA	8	951737	3	A-K	3	1164	1.71	0.11	0.29	0.39	0.21	0.00	0.46	-0.19	-0.32	0.08	0.40
ELA	8	114105	3	A-V	3	1164	1.26	0.22	0.30	0.48		0.00	0.42	-0.32	-0.16	0.41	

Item Information						Classical													Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	PT(4)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	4	546260	0	E	3	123316	1.52	0.07	0.45	0.38	0.09	0.01	0.01	0.59	-0.38	-0.34	0.35	0.29	0.11	1.5581	0.0045	-9.9	0.8	-9.9	0.8			
ELA	4	678084	1	E	3	1490	1.73	0.08	0.31	0.41	0.18	0.01	0.02	0.71	-0.40	-0.47	0.28	0.45	0.13	1.2931	0.0368	-9.9	0.6	-9.9	0.6	B+	B-	A-
ELA	4	232428	2	E	3	1491	1.46	0.12	0.42	0.36	0.11	0.00	0.01	0.65	-0.47	-0.27	0.35	0.36	0.06	1.9470	0.0384	-9.9	0.7	-9.9	0.7	B+	B-	C-
ELA	4	739286	3	E	3	1492	1.70	0.05	0.33	0.48	0.13	0.01	0.01	0.65	-0.37	-0.43	0.30	0.37	0.11	1.4305	0.0407	-9.9	0.7	-9.9	0.7	B+	B-	B-
ELA	4	468059	4	E	3	1491	1.47	0.08	0.49	0.31	0.11	0.00	0.02	0.60	-0.43	-0.27	0.29	0.35	0.07	1.8277	0.0397	-8.8	0.7	-8.6	0.7	A+	A-	A-
ELA	4	770892	5	E	3	1488	1.55	0.09	0.36	0.44	0.10	0.00	0.01	0.62	-0.43	-0.31	0.36	0.31	0.08	1.8453	0.0399	-9.1	0.7	-9.1	0.7	B+	A-	A+
ELA	4	320206	6	E	3	1495	1.32	0.06	0.64	0.23	0.07	0.00	0.01	0.54	-0.33	-0.29	0.34	0.29	0.10	1.8683	0.0441	-6.1	0.8	-6.4	0.7	A+	A-	A+
ELA	4	491063	7	E	3	1493	1.63	0.07	0.38	0.42	0.11	0.01	0.02	0.63	-0.42	-0.33	0.28	0.34	0.16	1.3371	0.0390	-9.1	0.7	-9.1	0.7	A+	B-	A-
ELA	4	675670	8	E	3	1494	1.35	0.11	0.50	0.31	0.08	0.00	0.01	0.62	-0.47	-0.22	0.37	0.31	0.04	2.4256	0.0403	-9.9	0.7	-9.9	0.7	A+	A-	A-
ELA	4	543181	9	E	3	1490	1.42	0.12	0.44	0.35	0.09	0.00	0.02	0.63	-0.46	-0.25	0.36	0.33	0.11	1.9668	0.0390	-9.7	0.7	-9.6	0.7	A+	B-	A-
ELA	5	937069	0	E	3	125525	1.68	0.03	0.36	0.52	0.08	0.01	0.00	0.57	-0.29	-0.44	0.36	0.25	0.11	1.3353	0.0049	-9.9	0.8	-9.9	0.8			
ELA	5	987958	1	E	3	1494	1.75	0.05	0.38	0.36	0.19	0.02	0.01	0.61	-0.34	-0.40	0.21	0.37	0.19	1.1011	0.0371	-8.4	0.7	-8.4	0.7	C+	A-	A+
ELA	5	518074	2	E	3	1492	1.62	0.04	0.44	0.38	0.12	0.01	0.00	0.58	-0.32	-0.40	0.29	0.33	0.13	1.3378	0.0401	-7.6	0.8	-7.7	0.7	A+	A-	A-
ELA	5	830483	3	E	3	1487	1.66	0.04	0.36	0.52	0.07	0.01	0.01	0.58	-0.30	-0.44	0.39	0.23	0.14	1.3366	0.0443	-6.9	0.8	-7.1	0.8	B+	A-	A-
ELA	5	632153	4	E	3	1493	1.64	0.08	0.34	0.46	0.11	0.02	0.01	0.60	-0.36	-0.36	0.32	0.30	0.16	1.3735	0.0385	-7.7	0.7	-7.8	0.7	A+	A-	A-
ELA	5	559772	5	E	3	1496	1.64	0.05	0.41	0.42	0.10	0.02	0.01	0.65	-0.37	-0.45	0.36	0.31	0.19	1.2066	0.0395	-9.9	0.7	-9.9	0.7	A+	A-	A-
ELA	5	626015	6	E	3	1491	1.79	0.03	0.37	0.39	0.19	0.02	0.01	0.66	-0.32	-0.50	0.24	0.40	0.18	1.0668	0.0387	-9.9	0.7	-9.9	0.7	A+	A-	A-
ELA	5	247143	7	E	3	1493	1.71	0.03	0.41	0.41	0.15	0.01	0.00	0.55	-0.28	-0.40	0.23	0.33	0.13	1.1251	0.0401	-6.0	0.8	-6.2	0.8	B+	A-	A-
ELA	5	973476	8	E	3	1494	1.56	0.07	0.45	0.34	0.13	0.01	0.01	0.62	-0.33	-0.41	0.33	0.37	0.12	1.5793	0.0388	-9.9	0.7	-9.8	0.7	A+	B-	A-
ELA	5	394089	9	E	3	1489	1.63	0.03	0.43	0.42	0.11	0.01	0.01	0.61	-0.30	-0.46	0.35	0.32	0.11	1.5101	0.0424	-8.8	0.7	-9.0	0.7	B+	B-	A-
ELA	6	183974	0	E	3	124885	1.70	0.02	0.42	0.42	0.13	0.01	0.00	0.62	-0.24	-0.53	0.34	0.34	0.14	1.2733	0.0045	-9.9	0.7	-9.9	0.7			
ELA	6	282110	1	E	3	1494	1.86	0.02	0.31	0.46	0.18	0.02	0.01	0.63	-0.24	-0.53	0.23	0.38	0.16	1.0093	0.0396	-9.5	0.7	-9.5	0.7	B+	A-	A-
ELA	6	487157	2	E	3	1492	1.48	0.07	0.49	0.35	0.09	0.01	0.01	0.60	-0.34	-0.37	0.37	0.31	0.10	1.9051	0.0410	-8.6	0.7	-8.6	0.7	A+	A-	A+
ELA	6	833076	3	E	3	1496	1.68	0.04	0.43	0.39	0.12	0.03	0.01	0.62	-0.26	-0.47	0.28	0.34	0.23	1.2017	0.0390	-9.4	0.7	-9.4	0.7	B+	A-	A-
ELA	6	821772	4	E	3	1487	1.76	0.04	0.38	0.40	0.16	0.03	0.00	0.62	-0.31	-0.43	0.21	0.37	0.20	1.1569	0.0380	-9.4	0.7	-9.4	0.7	C+	A-	A-
ELA	6	370850	5	E	3	1489	1.68	0.04	0.43	0.38	0.14	0.02	0.01	0.64	-0.29	-0.47	0.25	0.41	0.18	1.2955	0.0392	-9.9	0.7	-9.9	0.7	C+	A-	A-
ELA	6	807619	6	E	3	1493	1.65	0.03	0.44	0.38	0.12	0.02	0.01	0.61	-0.28	-0.48	0.34	0.31	0.18	1.2456	0.0392	-9.3	0.7	-9.3	0.7	C+	A-	A-
ELA	6	656010	7	E	3	1488	1.62	0.06	0.43	0.36	0.13	0.02	0.01	0.61	-0.33	-0.41	0.28	0.35	0.18	1.3835	0.0380	-8.7	0.7	-8.9	0.7	B+	A-	A-
ELA	6	203623	8	E	3	1491	1.75	0.04	0.37	0.42	0.15	0.03	0.01	0.56	-0.25	-0.42	0.21	0.32	0.20	1.1784	0.0381	-6.9	0.8	-7.0	0.8	B+	B-	A-
ELA	6	807381	9	E	3	1490	1.43	0.09	0.51	0.30	0.09	0.01	0.01	0.64	-0.40	-0.34	0.38	0.31	0.17	1.8121	0.0394	-9.9	0.7	-9.9	0.7	C+	A-	B-
ELA	7	159471	0	E	3	123936	1.80	0.04	0.36	0.40	0.18	0.03	0.01	0.63	-0.31	-0.46	0.21	0.38	0.20	0.9830	0.0041	-9.9	0.7	-9.9	0.7			
ELA	7	554872	1	E	3	1490	1.46	0.05	0.54	0.32	0.08	0.01	0.01	0.59	-0.31	-0.42	0.40	0.29	0.11	1.7708	0.0426	-9.1	0.7	-9.2	0.7	B+	A-	A-
ELA	7	637658	2	E	3	1491	1.50	0.07	0.51	0.29	0.12	0.01	0.01	0.67	-0.42	-0.38	0.35	0.36	0.17	1.5204	0.0385	-9.9	0.6	-9.9	0.6	B+	A-	A-
ELA	7	722268	3	E	3	1494	1.67	0.07	0.40	0.36	0.16	0.02	0.01	0.67	-0.34	-0.44	0.26	0.41	0.19	1.3415	0.0371	-9.9	0.6	-9.9	0.6	C+	A-	B-
ELA	7	352185	4	E	3	1485	1.54	0.04	0.52	0.32	0.11	0.01	0.01	0.56	-0.24	-0.42	0.29	0.34	0.14	1.4024	0.0407	-9.5	0.7	-9.1	0.7	C+	A-	A-
ELA	7	678766	5	E	3	1488	1.59	0.05	0.47	0.35	0.12	0.01	0.01	0.64	-0.30	-0.46	0.31	0.38	0.18	1.4022	0.0398	-9.9	0.6	-9.9	0.6	B+	A-	A-
ELA	7	862102	6	E	3	1493	1.68	0.02	0.44	0.38	0.15	0.01	0.01	0.66	-0.23	-0.56	0.31	0.41	0.15	1.2255	0.0405	-9.9	0.6	-9.9	0.6	C+	A-	A-
ELA	7	943386	7	E	3	1493	1.86	0.04	0.33	0.40	0.20	0.03	0.01	0.67	-0.34	-0.49	0.21	0.39	0.22	0.9382	0.0367	-9.9	0.6	-9.9	0.6	B+	A-	A-
ELA	7	625469	8	E	3	1490	1.62	0.04	0.45	0.37	0.13	0.01	0.01	0.65	-0.29	-0.50	0.34	0.38	0.13	1.3733	0.0401	-9.9	0.6	-9.9	0.6	B+	B-	B-
ELA	7	499439	9	E	3	1487	1.63	0.05	0.42	0.39	0.12	0.02	0.01	0.62	-0.33	-0.42	0.28	0.36	0.18	1.3409	0.0391	-9.9	0.7	-9.9	0.7	C+	A-	A-
ELA	8	312647	0	E	3	125091	2.02	0.03	0.29	0.37	0.27	0.05	0.01	0.63	-0.25	-0.49	0.07	0.40	0.24	0.4348	0.0039	-9.9	0.7	-9.9	0.7			
ELA	8	377897	1	E	3	1491	1.99	0.01	0.32	0.35	0.28	0.03	0.01	0.67	-0.19	-0.58	0.12	0.44	0.23	0.3706	0.0365	-9.9	0.6	-9.9	0.6	B+	A-	A-
ELA	8	591766	2	E	3	1493	2.09	0.02	0.25	0.39	0.31	0.04	0.00	0.67	-0.22	-0.54	0.02	0.46	0.23	0.3997	0.0371	-9.9	0.6	-9.9	0.6	C+	A-	A-
ELA	8	733182	3	E	3	1489	1.73	0.03	0.43	0.34	0.18	0.02	0.01	0.65	-0.29	-0.51	0.26	0.40	0.19	0.8950	0.0375	-9.9	0.6	-9.9	0.6	B+	C-	A-
ELA	8	516692	4	E	3	1490	1.99	0.03	0.30	0.37	0.26	0.05	0.01	0.67	-0.28	-0.50	0.05	0.44	0.26	0.5081	0.0351	-9.9	0.6	-9.9	0.6	B+	A-	A-
ELA	8	772739	5	E	3	1488	1.92	0.03	0.33	0.35	0.25	0.03	0.01	0.68	-0.32	-0.51	0.15	0.44	0.22	0.6705	0.0355	-9.9	0.6	-9.9	0.6	B+	B-	B-
ELA	8	407349	6	E	3	1487	1.96	0.02	0.32	0.37	0.25	0.03	0.01	0.67	-0.24	-0.54	0.11	0.43	0.23	0.5273	0.0364	-9.9	0.6	-9.9	0.6	B+	A-	A-
ELA	8	156143	7	E	3	1489	2.02	0.02	0.31	0.34	0.28	0.05	0.01	0.62	-0.19	-0.51	0.08	0.39	0.26	0.4162	0.0352	-9.9	0.7	-9.9	0.7	B+	A-	A-
ELA	8	785800	8	E	3	1495	1.92	0.02	0.33	0.38	0.23	0.03	0.01	0.67	-0.22	-0.57	0.19	0.40	0.25	0.5899	0.0366	-9.9	0.6	-9.9	0.6	A+	B-	A-
ELA	8	896779	9	E	3	1490	1.92	0.03	0.34	0.35	0.23	0.05	0.01	0.66	-0.27	-0.52	0.14	0.40	0.27	0.5257	0.0345	-9.9	0.6	-9.9	0.6	B+	A-	A-

Item Information						Classical												
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	PT(4)
ELA	4	546260	0	E	3	670	1.14	0.21	0.49	0.26	0.04	0.00	0.01	0.66	-0.53	-0.08	0.47	0.25	0.07
ELA	5	937069	0	E	3	976	1.40	0.12	0.43	0.40	0.06	0.00	0.01	0.65	-0.41	-0.35	0.49	0.28	
ELA	6	183974	0	E	3	1450	1.46	0.06	0.50	0.38	0.06	0.00	0.00	0.63	-0.32	-0.45	0.47	0.27	0.08
ELA	7	159471	0	E	3	2298	1.47	0.07	0.50	0.35	0.08	0.01	0.01	0.61	-0.34	-0.38	0.38	0.30	0.15
ELA	8	312647	0	E	3	3797	1.68	0.03	0.47	0.34	0.15	0.02	0.01	0.59	-0.23	-0.48	0.25	0.36	0.20

Item Information						Classical													Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	PT(4)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	3	407190	0	C	3	124599	2.17	0.02	0.18	0.49	0.25	0.06	0.01	0.56	-0.17	-0.43	-0.04	0.33	0.26	0.1516	0.0041	-9.9	0.9	-9.9	0.9			
ELA	4	680397	0	C	3	123316	1.89	0.02	0.31	0.48	0.17	0.03	0.01	0.58	-0.16	-0.51	0.18	0.35	0.19	0.5662	0.0044	-9.9	0.8	-9.9	0.8			
ELA	5	154684	0	C	3	125525	2.25	0.01	0.16	0.45	0.33	0.05	0.00	0.62	-0.16	-0.48	-0.10	0.40	0.25	0.1496	0.0043	-9.9	0.8	-9.9	0.8			
ELA	6	305007	0	C	3	124885	2.56	0.01	0.10	0.33	0.44	0.12	0.00	0.60	-0.14	-0.41	-0.25	0.31	0.33	-0.2295	0.0042	-9.9	0.8	-9.9	0.8			
ELA	7	847888	0	C	3	123936	2.43	0.01	0.12	0.39	0.40	0.09	0.00	0.61	-0.13	-0.44	-0.22	0.36	0.30	-0.2267	0.0042	-9.9	0.8	-9.9	0.8			
ELA	8	438591	0	C	3	125091	2.66	0.00	0.08	0.27	0.56	0.09	0.00	0.60	-0.10	-0.39	-0.33	0.33	0.32	-0.6205	0.0045	-9.9	0.8	-9.9	0.8			

Item Information						Classical												
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	PT(4)
ELA	3	407190	0	C	3	561	1.74	0.04	0.35	0.47	0.12	0.02	0.01	0.50	-0.19	-0.39	0.21	0.29	0.16
ELA	4	680397	0	C	3	670	1.56	0.04	0.48	0.37	0.10	0.01	0.00	0.66	-0.28	-0.48	0.33	0.41	0.15
ELA	5	154684	0	C	3	976	1.84	0.03	0.30	0.50	0.15	0.02	0.00	0.59	-0.22	-0.47	0.20	0.35	0.18
ELA	6	305007	0	C	3	1450	2.24	0.02	0.22	0.37	0.28	0.11	0.00	0.65	-0.16	-0.49	-0.10	0.33	0.39
ELA	7	847888	0	C	3	2298	2.29	0.01	0.13	0.50	0.31	0.06	0.00	0.59	-0.10	-0.46	-0.13	0.35	0.28
ELA	8	438591	0	C	3	3797	2.41	0.01	0.11	0.39	0.44	0.05	0.01	0.57	-0.14	-0.37	-0.25	0.40	0.24

Appendix G:

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	18
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)
1 core 4 pt WP	12 (weighted x 3)
Total	84 points

The estimated testing time for English language arts is approximately 230—280 minutes (including placeholder items and embedded field test items). [Timing assumes 30 min per TDA or WP; 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 WP/TDA	WP/ TDA Item Breakdown	Estimated Number of Passages	Section Time (in minutes)
1	Writing and Language	20	18–common (core) items 2–psychometric use/placeholder	1	1–common (core) writing prompt	N/A	55—65
2	Reading	22—23	22–23–common (core) items	0	N/A	3	60—75
3	Reading and Text-Dependent Analysis	16	6–placeholder items 10–field test items	1	1–field test TDA	2	70—80
4	Reading and Text-Dependent Analysis	6—7	6–7–common (core) items	1	1–common (core) TDA	1	45—60

Notes: 1) There were nine forms per grade. 2) Sections 2 and 4 must equal a combined total of 29 MC/SR items.

English Language Arts Test/Answer Booklet Section Layout for Grade 3

English Language Arts Core

Core/common standalone MC items	18
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
1 core 4 pt WP	8 (weighted x 2)
Total	62 points

The estimated testing time for reading is approximately 160—215 minutes (including equating block items and embedded field test items). [Timing assumes 5 to 10 min per SA, 30 min per WP, 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 WP/SA	WP/SA Item Breakdown	Estimated Number of Passages	Section Time (in minutes)
1	Writing and Language	20	18–common (core) items 2–psychometric use/placeholder	1	1–common (core) writing prompt	N/A	55—65
2	Reading	12	12–common (core) items	1	1–common (core) SA	3	40—50
3	Reading	16	6–placeholder items 10–field test items	1	1–field test SA	2	45—55
4	Reading	12	12–common (core) items	1	1–common (core) SA	1	40—50

Notes: 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	60
3 core 4 pt OE items	12
Total	72 points

The estimated testing time for mathematics is approximately 155—185 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	24–common (core) items (includes 4 non–calc in Grades 4–8)	2	2–common (core) items	55—65
2	Mathematics	24	12–common (core) items 2–placeholder items 10–embedded field test items	1	1–embedded field test item	50—60
3	Mathematics	24	24–common (core) items	1	1–core test	50—60

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	58 (16 core linking)
5 core 2 pt OE items	10 (2 core linking)
Total	68 points

The estimated Grade 4 testing time for science is approximately 95—100 minutes or 110—115 minutes administration time (including equating block items and embedded field test items). [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	34	29-common (core) items 1-equating block item 4-embedded field test item	3	3-common (core) items	45—55
4	2	34	29-common (core) items 1-equating block item 4- embedded field test items	3	2-common (core) items 1-embedded field test item	45—55

Science: Grade 8

Core/common MC items	58 (16 core linking)
5 core 2 pt OE items	10 (2 core linking)
Total	68 points

The estimated grade 8 testing time is 105—110 minutes per grade for science or 120—125 minutes administration time (including equating block items and embedded field test items). [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	35	27-common (core) items 4-embedded field test scenario-based items 1-equating block item 3-embedded field test item	3	3-common (core) items	50—60
8	2	35	27-common (core) items 4-common (core) scenario-based items 1-equating block item 3-embedded field test item	3	2-common (core) items 1-embedded field test item	50—60

Appendix H:

Mean Raw Scores by Form

Column Heading	Definition
Form	Form
N	N students
L	Length
Pts	Points possible
Min	Minimum
Max	Maximum
Mean	Mean
Med	Median
SD	Standard deviation

	Mode	Form	N	L	Pts	Min	Max	Mean	Med	SD
Mathematics 3	All	0	125309	63	72	3	72	39.13	39	14.56
		1	14413	63	72	6	72	38.32	37	14.79
		2	14051	63	72	4	72	39.15	39	14.62
		3	13786	63	72	3	72	39.32	39	14.524
		4	13829	63	72	6	72	39.29	39	14.534
		5	13988	63	72	6	72	39.1	39	14.542
		6	13802	63	72	6	72	39.21	39	14.464
		7	13824	63	72	5	72	39.1	39	14.524
		8	13807	63	72	4	71	39.16	39	14.544
		9	13809	63	72	5	72	39.58	39	14.451
	PP	0	124574	63	72	3	72	39.2	39.0	14.56
		1	14063	63	72	7	72	38.5	38.0	14.76
		2	13854	63	72	4	72	39.2	39.0	14.63
		3	13786	63	72	3	72	39.3	39.0	14.52
		4	13829	63	72	6	72	39.3	39.0	14.53
		5	13800	63	72	6	72	39.1	39.0	14.55
		6	13802	63	72	6	72	39.2	39.0	14.46
		7	13824	63	72	5	72	39.1	39.0	14.52
		8	13807	63	72	4	71	39.2	39.0	14.54
		9	13809	63	72	5	72	39.6	39.0	14.45
	CBT	0	735	63	72	6	71	33.8	31.0	14.18
		1	350	63	72	6	71	30.6	27.0	14.02
		2	197	63	72	11	68	37.0	36.0	13.57
		5	188	63	72	11	69	36.5	34.0	13.86

	Mode	Form	N	L	Pts	Min	Max	Mean	Med	SD
Mathematics 4	All	0	124201	63	72	2	72	34.62	33	14.314
		1	14405	63	72	6	72	33.84	32	14.408
		2	13885	63	72	5	72	34.36	33	14.212
		3	13691	63	72	6	72	34.67	33	14.217
		4	13629	63	72	4	72	34.47	33	14.356
		5	13670	63	72	5	71	34.64	33	14.365
		6	13673	63	72	3	71	34.92	33	14.368
		7	13841	63	72	6	71	34.92	33	14.324
		8	13716	63	72	5	72	34.83	33	14.21
		9	13691	63	72	2	72	34.99	34	14.328
	PP	0	123370	63	72	2	72	34.7	33.0	14.31
		1	13974	63	72	6	72	34.1	32.0	14.38
		2	13687	63	72	5	72	34.4	33.0	14.21
		3	13691	63	72	6	72	34.7	33.0	14.22
		4	13629	63	72	4	72	34.5	33.0	14.36
		5	13670	63	72	5	71	34.6	33.0	14.36
		6	13673	63	72	3	71	34.9	33.0	14.37
		7	13639	63	72	6	71	35.0	33.0	14.34
		8	13716	63	72	5	72	34.8	33.0	14.21
		9	13691	63	72	2	72	35.0	34.0	14.33
	CBT	0	831	63	72	6	68	28.9	26.0	13.67
		1	431	63	72	6	68	25.0	21.0	12.37
		2	198	63	72	10	68	33.5	33.0	14.27
		7	202	63	72	10	66	32.6	30.0	13.31

	Mode	Form	N	L	Pts	Min	Max	Mean	Med	SD
Mathematics 5	All	0	126683	63	72	1	72	35.68	34	15.005
		1	14834	63	72	4	72	34.85	33	15.153
		2	14205	63	72	4	72	35.56	34	14.892
		3	13919	63	72	5	72	35.75	34	14.976
		4	13883	63	72	4	72	35.69	34	14.997
		5	14191	63	72	4	72	35.98	35	14.953
		6	13924	63	72	3	72	35.89	34	14.953
		7	13891	63	72	1	72	35.61	34	15.082
		8	13899	63	72	7	72	36.08	34	15.122
		9	13937	63	72	5	72	35.75	34	14.875
	PP	0	125524	63	72	1	72	35.7	34.0	15.00
		1	14241	63	72	4	72	35.2	33.0	15.13
		2	13921	63	72	4	72	35.6	34.0	14.91
		3	13919	63	72	5	72	35.7	34.0	14.98
		4	13883	63	72	4	72	35.7	34.0	15.00
		5	13909	63	72	4	72	36.0	35.0	14.97
		6	13924	63	72	3	72	35.9	34.0	14.95
		7	13891	63	72	1	72	35.6	34.0	15.08
		8	13899	63	72	7	72	36.1	34.0	15.12
		9	13937	63	72	5	72	35.8	34.0	14.87
	CBT	0	1159	63	72	6	71	30.0	27.0	13.96
		1	593	63	72	6	70	26.7	22.0	13.39
		2	284	63	72	9	71	33.8	33.0	13.81
		5	282	63	72	8	65	33.2	30.5	13.64

	Mode	Form	N	L	Pts	Min	Max	Mean	Med	SD
Mathematics 6	All	0	126413	63	72	2	72	38.5	38	13.662
		1	14966	63	72	6	72	37.88	37	13.823
		2	14299	63	72	8	72	38.47	38	13.566
		3	14225	63	72	7	72	38.62	38	13.792
		4	13880	63	72	7	71	38.36	38	13.84
		5	13825	63	72	2	72	38.52	38	13.548
		6	13782	63	72	6	72	38.54	38	13.622
		7	13781	63	72	7	72	38.97	39	13.541
		8	13827	63	72	8	72	38.69	38	13.617
		9	13828	63	72	4	72	38.54	38	13.57
	PP	0	124818	63	72	2	72	38.5	38.0	13.65
		1	14181	63	72	6	72	38.1	38.0	13.78
		2	13884	63	72	8	72	38.4	38.0	13.55
		3	13830	63	72	7	72	38.5	38.0	13.78
		4	13880	63	72	7	71	38.4	38.0	13.84
		5	13825	63	72	2	72	38.5	38.0	13.55
		6	13782	63	72	6	72	38.5	38.0	13.62
		7	13781	63	72	7	72	39.0	39.0	13.54
		8	13827	63	72	8	72	38.7	38.0	13.62
		9	13828	63	72	4	72	38.5	38.0	13.57
	CBT	0	1595	63	72	8	69	36.7	36.0	14.27
		1	785	63	72	9	69	33.0	30.0	13.63
		2	415	63	72	8	68	39.4	40.0	14.05
		3	395	63	72	12	69	41.2	42.0	13.84

	Mode	Form	N	L	Pts	Min	Max	Mean	Med	SD
Mathematics 7	All	0	126299	63	72	4	72	35.19	33	14.276
		1	15145	63	72	6	72	34.38	32	14.412
		2	14367	63	72	5	72	35.03	33	14.175
		3	14413	63	72	5	72	35.25	33	14.265
		4	13723	63	72	7	72	35.61	34	14.283
		5	13757	63	72	5	72	35.28	33	14.301
		6	13781	63	72	5	72	35.27	33	14.133
		7	13720	63	72	4	72	35.4	33	14.252
		8	13703	63	72	5	72	35.25	33	14.369
		9	13690	63	72	6	72	35.34	33	14.251
	PP	0	123950	63	72	4	72	35.3	33.0	14.28
		1	14137	63	72	6	72	34.7	33.0	14.45
		2	13706	63	72	5	72	35.1	33.0	14.20
		3	13733	63	72	5	72	35.3	33.0	14.29
		4	13723	63	72	7	72	35.6	34.0	14.28
		5	13757	63	72	5	72	35.3	33.0	14.30
		6	13781	63	72	5	72	35.3	33.0	14.13
		7	13720	63	72	4	72	35.4	33.0	14.25
		8	13703	63	72	5	72	35.3	33.0	14.37
		9	13690	63	72	6	72	35.3	33.0	14.25
	CBT	0	2349	63	72	7	70	31.9	29.0	13.46
		1	1008	63	72	7	68	29.6	26.0	12.99
		2	661	63	72	7	70	34.0	32.0	13.52
		3	680	63	72	9	70	33.5	31.0	13.55

	Mode	Form	N	L	Pts	Min	Max	Mean	Med	SD
Mathematics 8	All	0	128859	63	72	0	72	33.22	31	13.441
		1	15691	63	72	5	72	32.77	31	13.573
		2	14949	63	72	5	72	33.23	31	13.367
		3	14910	63	72	5	72	33.08	31	13.377
		4	13876	63	72	4	72	33.19	31	13.365
		5	13881	63	72	6	72	33.37	32	13.467
		6	13900	63	72	7	72	33.47	31	13.42
		7	13900	63	72	0	72	33.39	32	13.513
		8	13869	63	72	6	71	33.42	32	13.421
		9	13883	63	72	4	72	33.12	31	13.445
	PP	0	125299	63	72	0	72	33.3	31.0	13.46
		1	14267	63	72	5	72	33.1	31.0	13.63
		2	13885	63	72	5	72	33.3	32.0	13.43
		3	13838	63	72	5	72	33.2	31.0	13.43
		4	13876	63	72	4	72	33.2	31.0	13.37
		5	13881	63	72	6	72	33.4	32.0	13.47
		6	13900	63	72	7	72	33.5	31.0	13.42
		7	13900	63	72	0	72	33.4	32.0	13.51
		8	13869	63	72	6	71	33.4	32.0	13.42
		9	13883	63	72	4	72	33.1	31.0	13.45
	CBT	0	3560	63	72	7	70	31.0	29.0	12.61
		1	1424	63	72	7	70	29.6	27.0	12.56
		2	1064	63	72	7	70	31.9	30.0	12.49
		3	1072	63	72	9	70	31.9	29.0	12.63

	Mod	Form	N	L	Pts	Min	Max	Mean	Med	SD
ELA 3	All	0	125160	45	62	4	62	36.19	37	10.873
		1	14204	45	62	5	61	35.83	37	11.066
		2	13998	45	62	5	61	36.02	37	10.937
		3	13841	45	62	6	62	36.07	37	10.74
		4	13870	45	62	5	62	36.34	38	10.893
		5	13855	45	62	7	62	36.16	37	10.925
		6	13771	45	62	4	62	36.36	38	10.818
		7	13753	45	62	4	61	36.41	38	10.86
		8	13864	45	62	6	61	36.22	37	10.764
		9	14004	45	62	4	61	36.28	37	10.834
	PP	0	124599	45	62	4	62	36.2	37.0	10.87
		1	13972	45	62	5	61	35.9	37.0	11.02
		2	13838	45	62	5	61	36.0	37.0	10.94
		3	13841	45	62	6	62	36.1	37.0	10.74
		4	13870	45	62	5	62	36.3	38.0	10.89
		5	13855	45	62	7	62	36.2	37.0	10.93
		6	13771	45	62	4	62	36.4	38.0	10.82
		7	13753	45	62	4	61	36.4	38.0	10.86
		8	13864	45	62	6	61	36.2	37.0	10.76
		9	13835	45	62	4	61	36.3	37.0	10.82
	CBT	0	561	45	62	8	58	31.5	31.0	11.37
		1	232	45	62	8	58	28.9	27.0	11.56
		2	160	45	62	10	54	33.8	34.5	10.26
		9	169	45	62	10	56	33.0	34.0	11.45

	Mod	Form	N	L	Pts	Min	Max	Mean	Med	SD
ELA 4	All	0	123986	49	84	1	84	46.65	48	14.776
		1	14178	49	84	1	83	46.02	48	14.991
		2	13873	49	84	5	83	46.6	48	14.852
		3	13664	49	84	6	84	46.73	49	14.729
		4	13651	49	84	6	83	46.98	49	14.624
		5	13813	49	84	7	84	46.66	48	14.898
		6	13680	49	84	6	83	46.67	48	14.723
		7	13716	49	84	8	83	46.7	48	14.745
		8	13699	49	84	6	83	46.8	49	14.677
		9	13712	49	84	6	84	46.69	48	14.716
	PP	0	123316	49	84	1	84	46.7	48.0	14.76
		1	13873	49	84	1	83	46.2	48.0	14.91
		2	13694	49	84	5	83	46.7	48.0	14.83
		3	13664	49	84	6	84	46.7	49.0	14.73
		4	13651	49	84	6	83	47.0	49.0	14.62
		5	13627	49	84	7	84	46.7	49.0	14.88
		6	13680	49	84	6	83	46.7	48.0	14.72
		7	13716	49	84	8	83	46.7	48.0	14.74
		8	13699	49	84	6	83	46.8	49.0	14.68
		9	13712	49	84	6	84	46.7	48.0	14.72
	CBT	0	670	49	84	7	76	38.6	37.0	15.62
		1	305	49	84	7	74	36.0	32.0	15.42
		2	179	49	84	10	76	40.6	41.0	15.55
		5	186	49	84	10	75	41.1	41.0	15.40

	Mod	Form	N	L	Pts	Min	Max	Mean	Med	SD
ELA 5	All	0	126501	49	84	5	84	48.66	50	14.355
		1	14489	49	84	6	84	48.1	50	14.59
		2	14166	49	84	6	84	48.45	50	14.504
		3	13925	49	84	6	84	48.82	51	14.255
		4	13945	49	84	8	84	48.7	51	14.253
		5	13928	49	84	7	84	48.86	51	14.176
		6	13942	49	84	7	83	48.95	51	14.343
		7	13972	49	84	5	84	48.62	51	14.374
		8	14200	49	84	8	83	48.67	51	14.36
		9	13934	49	84	7	84	48.83	51	14.306
	PP	0	125525	49	84	5	84	48.7	51.0	14.33
		1	14052	49	84	6	84	48.4	50.0	14.50
		2	13899	49	84	6	84	48.5	50.0	14.49
		3	13925	49	84	6	84	48.8	51.0	14.25
		4	13945	49	84	8	84	48.7	51.0	14.25
		5	13928	49	84	7	84	48.9	51.0	14.18
		6	13942	49	84	7	83	49.0	51.0	14.34
		7	13972	49	84	5	84	48.6	51.0	14.37
		8	13928	49	84	8	83	48.8	51.0	14.31
		9	13934	49	84	7	84	48.8	51.0	14.31
	CBT	0	976	49	84	6	77	41.8	42.0	15.26
		1	437	49	84	6	76	39.1	39.0	14.70
		2	267	49	84	8	77	44.5	46.0	14.82
		8	272	49	84	9	75	43.5	44.0	15.90

	Mod	Form	N	L	Pts	Min	Max	Mean	Med	SD
ELA 6	All	0	126331	49	84	5	84	50.58	52	14.621
		1	14671	49	84	5	84	50.2	52	14.775
		2	14241	49	84	8	84	50.55	52	14.611
		3	14241	49	84	9	84	50.73	52	14.498
		4	13846	49	84	9	84	50.64	52	14.626
		5	13837	49	84	9	83	50.55	52	14.663
		6	13866	49	84	8	84	50.84	52	14.648
		7	13892	49	84	6	84	50.65	52	14.648
		8	13880	49	84	7	83	50.47	52	14.526
		9	13857	49	84	8	84	50.6	52	14.58
	PP	0	124881	49	84	5	84	50.6	52.0	14.61
		1	13997	49	84	5	84	50.5	52.0	14.67
		2	13851	49	84	8	84	50.6	52.0	14.64
		3	13855	49	84	9	84	50.8	52.0	14.50
		4	13846	49	84	9	84	50.6	52.0	14.63
		5	13837	49	84	9	83	50.5	52.0	14.66
		6	13866	49	84	8	84	50.8	52.0	14.65
		7	13892	49	84	6	84	50.7	52.0	14.65
		8	13880	49	84	7	83	50.5	52.0	14.53
		9	13857	49	84	8	84	50.6	52.0	14.58
	CBT	0	1450	49	84	11	81	46.4	47.0	14.85
		1	674	49	84	13	81	43.0	41.0	15.17
		2	390	49	84	11	81	48.9	50.0	13.46
		3	386	49	84	14	80	49.6	51.0	14.43

	Mod	Form	N	L	Pts	Min	Max	Mean	Med	SD
ELA 7	All	0	126228	49	84	4	84	50.47	52	14.148
		1	14782	49	84	7	84	49.82	51	14.369
		2	14456	49	84	9	84	50.34	52	14.038
		3	13769	49	84	7	84	50.66	52	14.087
		4	13766	49	84	9	84	50.69	52	14.255
		5	13779	49	84	5	84	50.33	52	14.114
		6	14442	49	84	8	83	50.52	52	14.131
		7	13743	49	84	7	84	50.74	52	14.127
		8	13752	49	84	4	83	50.56	52	14.129
		9	13739	49	84	8	84	50.6	52	14.048
	PP	0	123930	49	84	4	84	50.5	52.0	14.15
		1	13864	49	84	7	84	50.2	52.0	14.32
		2	13765	49	84	9	84	50.5	52.0	14.09
		3	13769	49	84	7	84	50.7	52.0	14.09
		4	13766	49	84	9	84	50.7	52.0	14.26
		5	13779	49	84	5	84	50.3	52.0	14.11
		6	13753	49	84	8	83	50.7	52.0	14.17
		7	13743	49	84	7	84	50.7	52.0	14.13
		8	13752	49	84	4	83	50.6	52.0	14.13
		9	13739	49	84	8	84	50.6	52.0	14.05
	CBT	0	2298	49	84	9	81	46.2	47.0	13.42
		1	918	49	84	11	81	44.1	44.0	13.95
		2	691	49	84	11	81	47.7	49.0	12.75
		6	689	49	84	9	79	47.4	49.0	13.02

	Mod	Form	N	L	Pts	Min	Max	Mean	Med	SD
ELA 8	All	0	128889	49	84	6	84	51.18	53	14.218
		1	15442	49	84	8	84	50.56	52	14.461
		2	15091	49	84	9	83	51	52	14.166
		3	15032	49	84	6	83	51.16	53	14.156
		4	13892	49	84	7	84	51.42	53	14.304
		5	13861	49	84	6	84	51.4	53	14.12
		6	13932	49	84	7	84	51.26	53	14.113
		7	13941	49	84	9	84	51.33	53	14.271
		8	13852	49	84	9	84	51.41	53	14.124
		9	13846	49	84	7	84	51.15	53	14.207
	PP	0	125092	49	84	6	84	51.3	53.0	14.21
		1	13984	49	84	8	84	51.1	53.0	14.41
		2	13916	49	84	9	83	51.2	53.0	14.16
		3	13868	49	84	6	83	51.4	53.0	14.18
		4	13892	49	84	7	84	51.4	53.0	14.30
		5	13861	49	84	6	84	51.4	53.0	14.12
		6	13932	49	84	7	84	51.3	53.0	14.11
		7	13941	49	84	9	84	51.3	53.0	14.27
		8	13852	49	84	9	84	51.4	53.0	14.12
		9	13846	49	84	7	84	51.2	53.0	14.21
	CBT	0	3797	49	84	8	83	47.4	48.0	13.93
		1	1458	49	84	9	80	45.6	45.0	14.02
		2	1175	49	84	10	82	48.5	49.0	13.95
		3	1164	49	84	8	83	48.4	50.0	13.59

	Mode	Form	N	L	Pts	Min	Max	Mean	Med	SD
Science 4	All	0	124309	63	68	0	68	46.6	50.0	13.21
		1	11367	63	68	2	68	45.6	49.0	13.75
		2	10648	63	68	5	68	46.5	49.0	13.12
		3	10181	63	68	7	68	46.5	50.0	13.39
		4	10213	63	68	5	68	46.7	50.0	13.16
		5	10554	63	68	4	68	46.8	50.0	13.01
		6	10179	63	68	0	68	46.8	50.0	13.25
		7	10155	63	68	7	68	46.6	50.0	13.13
		8	10195	63	68	3	68	46.6	49.0	13.18
		9	10232	63	68	7	68	46.6	49.0	13.14
		10	10197	63	68	6	68	46.8	50.0	13.03
		11	10187	63	68	7	68	46.8	50.0	13.10
		12	10201	63	68	6	68	46.7	50.0	13.10
	PP	0	122761	63	68	0	68	46.6	50.0	13.21
		1	10641	63	68	5	68	45.9	49.0	13.72
		2	10229	63	68	5	68	46.5	49.0	13.16
		3	10181	63	68	7	68	46.5	50.0	13.39
		4	10213	63	68	5	68	46.7	50.0	13.16
		5	10151	63	68	4	68	46.8	50.0	13.05
		6	10179	63	68	0	68	46.8	50.0	13.25
		7	10155	63	68	7	68	46.6	50.0	13.13
		8	10195	63	68	3	68	46.6	49.0	13.18
		9	10232	63	68	7	68	46.6	49.0	13.14
		10	10197	63	68	6	68	46.8	50.0	13.03
		11	10187	63	68	7	68	46.8	50.0	13.10
		12	10201	63	68	6	68	46.7	50.0	13.10
	CBT	0	1548	63	68	2	66	45.4	48.0	13.13
		1	726	63	68	2	66	42.4	43.0	13.69
		2	419	63	68	13	66	48.0	50.0	12.20
		5	403	63	68	12	66	48.3	51.0	11.80

	Mode	Form	N	L	Pts	Min	Max	Mean	Med	SD
Science 8	All	0	128733	63	68	0	68	45.1	48.0	13.56
		1	12570	63	68	6	68	44.0	47.0	13.99
		2	11611	63	68	8	68	45.4	49.0	13.51
		3	10386	63	68	7	67	45.0	48.0	13.54
		4	10393	63	68	1	68	45.2	48.0	13.52
		5	11584	63	68	6	68	45.2	48.0	13.52
		6	10305	63	68	6	68	45.1	48.0	13.61
		7	10305	63	68	4	68	45.1	48.0	13.47
		8	10304	63	68	7	68	45.1	48.0	13.51
		9	10324	63	68	0	68	45.4	49.0	13.46
		10	10318	63	68	4	68	45.1	48.0	13.58
		11	10333	63	68	7	68	45.1	48.0	13.40
		12	10300	63	68	7	67	45.1	48.0	13.52
	PP	0	124483	63	68	0	68	45.0	48.0	13.58
		1	10869	63	68	6	68	44.2	47.0	13.99
		2	10331	63	68	8	68	45.1	48.0	13.62
		3	10386	63	68	7	67	45.0	48.0	13.54
		4	10393	63	68	1	68	45.2	48.0	13.52
		5	10315	63	68	6	68	44.9	48.0	13.65
		6	10305	63	68	6	68	45.1	48.0	13.61
		7	10305	63	68	4	68	45.1	48.0	13.47
		8	10304	63	68	7	68	45.1	48.0	13.51
		9	10324	63	68	0	68	45.4	49.0	13.46
		10	10318	63	68	4	68	45.1	48.0	13.58
		11	10333	63	68	7	68	45.1	48.0	13.40
		12	10300	63	68	7	67	45.1	48.0	13.52
	CBT	0	4250	63	68	6	68	45.5	49.0	13.16
		1	1701	63	68	6	67	42.8	45.0	13.92
		2	1280	63	68	11	68	47.5	50.0	12.40
		5	1269	63	68	10	67	47.2	50.0	12.20

Appendix I:

Demographic Characteristics of Students

Demographic Characteristics of Students Taking the 2015 PSSA: English Language Arts

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender																		
Female	60,909 48.9	266 47.4	61,175 48.9	60,274 48.9	310 46.3	60,584 48.9	61,409 48.9	428 43.9	61,837 48.9	61,279 49.1	665 45.9	61,944 49.0	60,248 48.6	1,077 46.9	61,325 48.6	61,093 48.8	1,795 47.3	62,888 48.8
Male	63,663 51.1	295 52.6	63,958 51.1	63,025 51.1	360 53.7	63,385 51.1	64,092 51.1	548 56.1	64,640 51.1	63,589 50.9	785 54.1	64,374 51.0	63,671 51.4	1,221 53.1	64,892 51.4	63,973 51.1	2,002 52.7	65,975 51.2
Race/Ethnicity																		
American Indian/Alaskan Native (not Hispanic)	164 0.1	0 0.0	164 0.1	198 0.2	5 0.7	203 0.2	178 0.1	3 0.3	181 0.1	174 0.1	1 0.1	175 0.1	181 0.1	1 0.0	182 0.1	170 0.1	9 0.2	179 0.1
Asian (not Hispanic)	4,517 3.6	12 2.1	4,529 3.6	4,519 3.7	5 0.7	4,524 3.6	4,758 3.8	10 1.0	4,768 3.8	4,567 3.7	20 1.4	4,587 3.6	4,519 3.6	9 0.4	4,528 3.6	4,510 3.6	27 0.7	4,537 3.5
Black or African American (not Hispanic)	18,141 14.6	243 43.3	18,384 14.7	17,943 14.6	138 20.6	18,081 14.6	17,976 14.3	147 15.1	18,123 14.3	18,097 14.5	217 15.0	18,314 14.5	18,136 14.6	334 14.5	18,470 14.6	17,962 14.4	435 11.5	18,397 14.3
Hispanic (any race)	13,248 10.6	19 3.4	13,267 10.6	12,610 10.2	31 4.6	12,641 10.2	12,528 10.0	53 5.4	12,581 9.9	11,848 9.5	126 8.7	11,974 9.5	11,787 9.5	167 7.3	11,954 9.5	11,705 9.4	292 7.7	11,997 9.3
Multi-Racial (not Hispanic)	5,053 4.1	20 3.6	5,073 4.1	4,511 3.7	15 2.2	4,526 3.7	3,970 3.2	29 3.0	3,999 3.2	3,453 2.8	25 1.7	3,478 2.8	2,835 2.3	49 2.1	2,884 2.3	2,530 2.0	62 1.6	2,592 2.0
White (not Hispanic)	83,337 66.9	265 47.2	83,602 66.8	83,441 67.7	474 70.7	83,915 67.7	85,998 68.5	731 74.9	86,729 68.6	86,641 69.4	1,060 73.1	87,701 69.4	86,372 69.7	1,738 75.6	88,110 69.8	88,084 70.4	2,969 78.2	91,053 70.6
Native Hawaiian or Other Pacific Islander (not Hispanic)	107 0.1	2 0.4	109 0.1	76 0.1	2 0.3	78 0.1	88 0.1	3 0.3	91 0.1	81 0.1	1 0.1	82 0.1	84 0.1	0 0.0	84 0.1	94 0.1	3 0.1	97 0.1

Demographic Characteristics of Students Taking the 2015 PSSA: English Language Arts (continued)

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Educational Category and Other Demographic Groups																		
IEP (not gifted)	19,232 15.4	131 23.4	19,363 15.5	19,985 16.2	211 31.5	20,196 16.3	20,235 16.1	321 32.9	20,556 16.2	19,537 15.6	444 30.6	19,981 15.8	18,940 15.3	554 24.1	19,494 15.4	19,017 15.2	769 20.3	19,786 15.4
Student exited IEP in last 2 years	2,552 2.0	7 1.2	2,559 2.0	2,827 2.3	16 2.4	2,843 2.3	3,155 2.5	28 2.9	3,183 2.5	3,084 2.5	29 2.0	3,113 2.5	2,463 2.0	70 3.0	2,533 2.0	2,155 1.7	95 2.5	2,250 1.7
Title I	57,172 45.9	364 64.9	57,536 46.0	54,094 43.9	255 38.1	54,349 43.8	49,865 39.7	327 33.5	50,192 39.7	39,394 31.5	752 51.9	40,146 31.8	32,189 26.0	293 12.8	32,482 25.7	30,373 24.3	484 12.7	30,857 23.9
Title III served	4,257 3.4	3 0.5	4,260 3.4	3,217 2.6	7 1.0	3,224 2.6	2,753 2.2	5 0.5	2,758 2.2	2,597 2.1	16 1.1	2,613 2.1	2,568 2.1	17 0.7	2,585 2.0	2,599 2.1	27 0.7	2,626 2.0
Title III not served	1 0.0	1 0.2	2 0.0	0 0.0	0 0.0	0 0.0	1 0.0	0 0.0	1 0.0	0 0.0	0 0.0	0 0.0	2 0.0	0 0.0	2 0.0	1 0.0	0 0.0	1 0.0
Migrant student	40 0.0	0 0.0	40 0.0	37 0.0	0 0.0	37 0.0	43 0.0	0 0.0	43 0.0	54 0.0	0 0.0	54 0.0	44 0.0	1 0.0	45 0.0	51 0.0	0 0.0	51 0.0
ELL (enrolled after 4/11/14)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
ELL (enrolled on or before 4/11/14)	4,481 3.6	3 0.5	4,484 3.6	3,392 2.8	7 1.0	3,399 2.7	2,884 2.3	7 0.7	2,891 2.3	2,751 2.2	23 1.6	2,774 2.2	2,731 2.2	19 0.8	2,750 2.2	2,762 2.2	30 0.8	2,792 2.2
Exited ESL/bilingual program and in first year of monitoring	741 0.6	0 0.0	741 0.6	1,264 1.0	1 0.1	1,265 1.0	957 0.8	5 0.5	962 0.8	570 0.5	2 0.1	572 0.5	397 0.3	5 0.2	402 0.3	398 0.3	6 0.2	404 0.3
Exited ESL/bilingual program and in 2nd year of monitoring	238 0.2	0 0.0	238 0.2	706 0.6	0 0.0	706 0.6	1,023 0.8	3 0.3	1,026 0.8	813 0.7	4 0.3	817 0.6	521 0.4	3 0.1	524 0.4	371 0.3	2 0.1	373 0.3
Former ELL no longer monitored	175 0.1	1 0.2	176 0.1	428 0.3	2 0.3	430 0.3	1,092 0.9	2 0.2	1,094 0.9	2,038 1.6	16 1.1	2,054 1.6	2,637 2.1	22 1.0	2,659 2.1	3,000 2.4	44 1.2	3,044 2.4
Economically disadvantaged	60,635 48.7	340 60.6	60,975 48.7	58,994 47.8	357 53.3	59,351 47.9	58,825 46.9	472 48.4	59,297 46.9	56,805 45.5	690 47.6	57,495 45.5	55,892 45.1	1,116 48.6	57,008 45.2	54,503 43.6	1,724 45.4	56,227 43.6
Historically Underperforming Subgroup	69,137 55.5	389 69.3	69,526 55.5	67,533 54.8	430 64.2	67,963 54.8	67,202 53.5	606 62.1	67,808 53.6	64,915 52.0	891 61.4	65,806 52.1	63,666 51.4	1,343 58.4	65,009 51.5	62,386 49.9	2,034 53.6	64,420 50.0

Demographic Characteristics of Students Taking the 2015 PSSA: English Language Arts (continued)

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Enrollment																		
Enrollment in school of residence after 10/1/14	3,208 2.6	22 3.9	3,230 2.6	3,007 2.4	14 2.1	3,021 2.4	2,773 2.2	26 2.7	2,799 2.2	2,810 2.3	37 2.6	2,847 2.3	3,074 2.5	86 3.7	3,160 2.5	3,142 2.5	126 3.3	3,268 2.5
Enrollment in district of residence after 10/1/14	1,913 1.5	16 2.9	1,929 1.5	1,830 1.5	5 0.7	1,835 1.5	1,676 1.3	12 1.2	1,688 1.3	1,716 1.4	24 1.7	1,740 1.4	2,025 1.6	62 2.7	2,087 1.7	2,179 1.7	93 2.4	2,272 1.8
Enrollment as PA resident after 10/1/14	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Enrollment in school of residence after 10/1/13 but on/before 10/1/14	26,016 20.9	76 13.5	26,092 20.8	23,981 19.4	91 13.6	24,072 19.4	25,697 20.5	108 11.1	25,805 20.4	29,181 23.4	188 13.0	29,369 23.2	24,771 20.0	556 24.2	25,327 20.1	20,442 16.3	380 10.0	20,822 16.2
Enrollment in district of residence after 10/1/13 but on/before 10/1/14	10,324 8.3	44 7.8	10,368 8.3	9,497 7.7	68 10.1	9,565 7.7	10,036 8.0	83 8.5	10,119 8.0	10,913 8.7	146 10.1	11,059 8.8	10,070 8.1	206 9.0	10,276 8.1	8,417 6.7	310 8.2	8,727 6.8
Education in Non-Traditional Settings																		
Court/agency placed	35 0.0	2 0.4	37 0.0	42 0.0	0 0.0	42 0.0	67 0.1	1 0.1	68 0.1	87 0.1	14 1.0	101 0.1	166 0.1	30 1.3	196 0.2	282 0.2	62 1.6	344 0.3
Students with scores used in state summaries	124,599	561	125,160	123,316	670	123,986	125,525	976	126,501	124,881	1,450	126,331	123,930	2,298	126,228	125,092	3,797	128,889

Demographic Characteristics of Students Taking the 2015 PSSA: Mathematics

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender																		
Female	60,895 48.9	340 46.3	61,235 48.9	60,280 48.9	390 46.9	60,670 48.8	61,366 48.9	540 46.6	61,906 48.9	61,255 49.1	735 46.1	61,990 49.0	60,208 48.6	1,115 47.5	61,323 48.6	61,159 48.8	1,674 47.0	62,833 48.8
Male	63,648 51.1	395 53.7	64,043 51.1	63,068 51.1	441 53.1	63,509 51.1	64,128 51.1	619 53.4	64,747 51.1	63,551 50.9	860 53.9	64,411 51.0	63,720 51.4	1,234 52.5	64,954 51.4	64,105 51.2	1,886 53.0	65,991 51.2
Race/Ethnicity																		
American Indian/Alaskan Native (not Hispanic)	165 0.1	0 0.0	165 0.1	199 0.2	5 0.6	204 0.2	180 0.1	2 0.2	182 0.1	172 0.1	1 0.1	173 0.1	179 0.1	0 0.0	179 0.1	171 0.1	8 0.2	179 0.1
Asian (not Hispanic)	4,527 3.6	12 1.6	4,539 3.6	4,527 3.7	5 0.6	4,532 3.6	4,772 3.8	8 0.7	4,780 3.8	4,567 3.7	24 1.5	4,591 3.6	4,521 3.6	14 0.6	4,535 3.6	4,507 3.6	28 0.8	4,535 3.5
Black or African American (not Hispanic)	18,167 14.6	268 36.5	18,435 14.7	18,002 14.6	156 18.8	18,158 14.6	18,021 14.4	157 13.5	18,178 14.3	18,081 14.5	246 15.4	18,327 14.5	18,141 14.6	365 15.5	18,506 14.7	17,944 14.3	445 12.5	18,389 14.3
Hispanic (any race)	13,249 10.6	30 4.1	13,279 10.6	12,622 10.2	42 5.1	12,664 10.2	12,544 10.0	62 5.3	12,606 10.0	11,876 9.5	134 8.4	12,010 9.5	11,823 9.5	169 7.2	11,992 9.5	11,732 9.4	292 8.2	12,024 9.3
Multi-Racial (not Hispanic)	5,068 4.1	21 2.9	5,089 4.1	4,498 3.6	17 2.0	4,515 3.6	3,976 3.2	30 2.6	4,006 3.2	3,453 2.8	24 1.5	3,477 2.8	2,836 2.3	49 2.1	2,885 2.3	2,533 2.0	63 1.8	2,596 2.0
White (not Hispanic)	83,255 66.8	402 54.7	83,657 66.8	83,424 67.6	604 72.7	84,028 67.7	85,905 68.4	897 77.4	86,802 68.5	86,567 69.4	1,165 73.0	87,732 69.4	86,341 69.7	1,752 74.6	88,093 69.7	88,271 70.4	2,721 76.4	90,992 70.6
Native Hawaiian or Other Pacific Islander (not Hispanic)	108 0.1	2 0.3	110 0.1	77 0.1	2 0.2	79 0.1	89 0.1	3 0.3	92 0.1	81 0.1	1 0.1	82 0.1	85 0.1	0 0.0	85 0.1	94 0.1	3 0.1	97 0.1

Demographic Characteristics of Students Taking the 2015 PSSA: Mathematics (continued)

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Educational Category and Other Demographic Groups																		
IEP (not gifted)	19,242 15.4	183 24.9	19,425 15.5	19,954 16.2	293 35.3	20,247 16.3	20,202 16.1	392 33.8	20,594 16.3	19,504 15.6	483 30.3	19,987 15.8	18,924 15.3	590 25.1	19,514 15.5	19,013 15.2	750 21.1	19,763 15.3
Student exited IEP in last 2 years	2,550 2.0	10 1.4	2,560 2.0	2,829 2.3	18 2.2	2,847 2.3	3,151 2.5	32 2.8	3,183 2.5	3,073 2.5	31 1.9	3,104 2.5	2,465 2.0	69 2.9	2,534 2.0	2,158 1.7	96 2.7	2,254 1.7
Title I	57,084 45.8	538 73.2	57,622 46.0	54,063 43.8	401 48.3	54,464 43.9	49,805 39.7	503 43.4	50,308 39.7	39,322 31.5	891 55.9	40,213 31.8	32,193 26.0	336 14.3	32,529 25.8	30,338 24.2	521 14.6	30,859 23.9
Title III served	4,278 3.4	7 1.0	4,285 3.4	3,240 2.6	8 1.0	3,248 2.6	2,778 2.2	6 0.5	2,784 2.2	2,619 2.1	21 1.3	2,640 2.1	2,586 2.1	19 0.8	2,605 2.1	2,614 2.1	37 1.0	2,651 2.1
Title III not served	1 0.0	1 0.1	2 0.0	1 0.0	0 0.0	1 0.0	1 0.0	0 0.0	1 0.0	0 0.0	0 0.0	0 0.0	2 0.0	0 0.0	2 0.0	1 0.0	0 0.0	1 0.0
Migrant student	39 0.0	0 0.0	39 0.0	37 0.0	0 0.0	37 0.0	44 0.0	0 0.0	44 0.0	52 0.0	2 0.1	54 0.0	42 0.0	2 0.1	44 0.0	47 0.0	4 0.1	51 0.0
ELL (enrolled after 4/11/14)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
ELL (enrolled on or before 4/11/14)	4,506 3.6	7 1.0	4,513 3.6	3,415 2.8	9 1.1	3,424 2.8	2,907 2.3	8 0.7	2,915 2.3	2,773 2.2	29 1.8	2,802 2.2	2,749 2.2	22 0.9	2,771 2.2	2,775 2.2	40 1.1	2,815 2.2
Exited ESL/bilingual program and in first year of monitoring	743 0.6	0 0.0	743 0.6	1,268 1.0	0 0.0	1,268 1.0	962 0.8	5 0.4	967 0.8	569 0.5	2 0.1	571 0.5	396 0.3	5 0.2	401 0.3	401 0.3	6 0.2	407 0.3
Exited ESL/bilingual program and in 2nd year of monitoring	238 0.2	0 0.0	238 0.2	708 0.6	0 0.0	708 0.6	1,024 0.8	3 0.3	1,027 0.8	814 0.7	4 0.3	818 0.6	518 0.4	3 0.1	521 0.4	371 0.3	2 0.1	373 0.3
Former ELL no longer monitored	176 0.1	1 0.1	177 0.1	426 0.3	2 0.2	428 0.3	1,092 0.9	2 0.2	1,094 0.9	2,045 1.6	16 1.0	2,061 1.6	2,643 2.1	22 0.9	2,665 2.1	3,001 2.4	41 1.2	3,042 2.4
Economically disadvantaged	60,628 48.7	447 60.8	61,075 48.7	59,012 47.8	453 54.5	59,465 47.9	58,848 46.9	579 50.0	59,427 46.9	56,765 45.5	777 48.7	57,542 45.5	55,897 45.1	1,168 49.7	57,065 45.2	54,545 43.5	1,660 46.6	56,205 43.6
Historically Underperforming Subgroup	69,150 55.5	506 68.8	69,656 55.6	67,565 54.8	549 66.1	68,114 54.8	67,210 53.5	738 63.7	67,948 53.6	64,881 52.0	982 61.6	65,863 52.1	63,679 51.4	1,402 59.7	65,081 51.5	62,447 49.8	1,958 55.0	64,405 50.0

Demographic Characteristics of Students Taking the 2015 PSSA: Mathematics (continued)

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Enrollment																		
Enrollment in school of residence after 10/1/14	3,236 2.6	31 4.2	3,267 2.6	3,012 2.4	20 2.4	3,032 2.4	2,801 2.2	32 2.8	2,833 2.2	2,844 2.3	41 2.6	2,885 2.3	3,117 2.5	97 4.1	3,214 2.5	3,177 2.5	127 3.6	3,304 2.6
Enrollment in district of residence after 10/1/14	1,942 1.6	21 2.9	1,963 1.6	1,843 1.5	8 1.0	1,851 1.5	1,712 1.4	18 1.6	1,730 1.4	1,746 1.4	26 1.6	1,772 1.4	2,048 1.7	74 3.2	2,122 1.7	2,207 1.8	93 2.6	2,300 1.8
Enrollment as PA resident after 10/1/14	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Enrollment in school of residence after 10/1/13 but on/before 10/1/14	26,051 20.9	100 13.6	26,151 20.9	24,022 19.5	108 13.0	24,130 19.4	25,737 20.5	122 10.5	25,859 20.4	29,143 23.3	229 14.4	29,372 23.2	24,780 20.0	565 24.1	25,345 20.1	20,449 16.3	366 10.3	20,815 16.2
Enrollment in district of residence after 10/1/13 but on/before 10/1/14	10,337 8.3	60 8.2	10,397 8.3	9,489 7.7	85 10.2	9,574 7.7	10,038 8.0	92 7.9	10,130 8.0	10,877 8.7	168 10.5	11,045 8.7	10,069 8.1	213 9.1	10,282 8.1	8,415 6.7	296 8.3	8,711 6.8
Education in Non-Traditional Settings																		
Court/agency placed	39 0.0	2 0.3	41 0.0	46 0.0	0 0.0	46 0.0	65 0.1	2 0.2	67 0.1	86 0.1	16 1.0	102 0.1	160 0.1	35 1.5	195 0.2	275 0.2	65 1.8	340 0.3
Students with scores used in state summaries	124,574	735	125,309	123,370	831	124,201	125,524	1,159	126,683	124,818	1,595	126,413	123,950	2,349	126,299	125,299	3,560	128,859

Demographic Characteristics of Students Taking the 2015 PSSA: Science

Demographic or Educational Characteristic	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender						
Female	59,948 48.8	759 49.0	60,707 48.8	60,756 48.8	1,993 46.9	62,749 48.7
Male	62,802 51.2	789 51.0	63,591 51.2	63,701 51.2	2,257 53.1	65,958 51.2
Race/Ethnicity						
American Indian/Alaskan Native (not Hispanic)	198 0.2	6 0.4	204 0.2	169 0.1	9 0.2	178 0.1
Asian (not Hispanic)	4,585 3.7	15 1.0	4,600 3.7	4,533 3.6	45 1.1	4,578 3.6
Black or African American (not Hispanic)	17,997 14.7	159 10.3	18,156 14.6	17,913 14.4	455 10.7	18,368 14.3
Hispanic (any race)	12,789 10.4	77 5.0	12,866 10.4	11,973 9.6	217 5.1	12,190 9.5
Multi-Racial (not Hispanic)	4,498 3.7	29 1.9	4,527 3.6	2,514 2.0	68 1.6	2,582 2.0
White (not Hispanic)	82,609 67.3	1,258 81.3	83,867 67.5	87,251 70.1	3,453 81.2	90,704 70.5
Native Hawaiian or Other Pacific Islander (not Hispanic)	75 0.1	4 0.3	79 0.1	93 0.1	3 0.1	96 0.1

Demographic Characteristics of Students Taking the 2015 PSSA: Science (continued)

Demographic or Educational Characteristic	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Educational Category and Other Demographic Groups						
IEP (not gifted)	19,876 16.2	386 24.9	20,262 16.3	18,861 15.2	826 19.4	19,687 15.3
Student exited IEP in last 2 years	2,784 2.3	50 3.2	2,834 2.3	2,145 1.7	106 2.5	2,251 1.7
Title I	53,893 43.9	716 46.3	54,609 43.9	30,505 24.5	413 9.7	30,918 24.0
Title III served	3,586 2.9	13 0.8	3,599 2.9	2,887 2.3	33 0.8	2,920 2.3
Migrant student	40 0.0	0 0.0	40 0.0	49 0.0	4 0.1	53 0.0
ELL (enrolled after 4/11/14)	382 0.3	3 0.2	385 0.3	301 0.2	5 0.1	306 0.2
ELL (enrolled on or before 4/11/14)	3,410 2.8	12 0.8	3,422 2.8	2,779 2.2	31 0.7	2,810 2.2
Exited ESL/bilingual program and in first year of monitoring	1,258 1.0	7 0.5	1,265 1.0	399 0.3	5 0.1	404 0.3
Exited ESL/bilingual program and in 2nd year of monitoring	705 0.6	0 0.0	705 0.6	374 0.3	1 0.0	375 0.3
Former ELL no longer monitored	424 0.3	3 0.2	427 0.3	3,006 2.4	30 0.7	3,036 2.4
Economically disadvantaged	58,786 47.9	787 50.8	59,573 47.9	54,343 43.7	1,860 43.8	56,203 43.7
Historically Underperforming Subgroup	67,427 54.9	927 59.9	68,354 55.0	62,299 50.0	2,189 51.5	64,488 50.1

Demographic Characteristics of Students Taking the 2015 PSSA: Science (continued)

Demographic or Educational Characteristic	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Enrollment						
Enrollment in school of residence after 10/1/14	3,035 2.5	43 2.8	3,078 2.5	3,167 2.5	126 3.0	3,293 2.6
Enrollment in district of residence after 10/1/14	1,844 1.5	30 1.9	1,874 1.5	2,202 1.8	96 2.3	2,298 1.8
Enrollment as PA resident after 10/1/14	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Enrollment in school of residence after 10/1/13 but on/before 10/1/14	24,281 19.8	145 9.4	24,426 19.6	20,623 16.6	399 9.4	21,022 16.3
Enrollment in district of residence after 10/1/13 but on/before 10/1/14	9,775 8.0	123 7.9	9,898 8.0	8,636 6.9	326 7.7	8,962 7.0
Education in Non-Traditional Settings						
Court/agency placed	46 0.0	0 0.0	46 0.0	282 0.2	66 1.6	348 0.3
Students with scores used in state summaries	122,761	1,548	124,309	124,483	4,250	128,733

Appendix J:

Incidence of Accommodations Received

Incidence of Presentation Accommodations Received on the 2015 PSSA: English Language Arts

Type of Presentation Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Braille format	12 0.0	N/A N/A	12 0.0	3 0.0	N/A N/A	3 0.0	6 0.0	N/A N/A	6 0.0	5 0.0	N/A N/A	5 0.0	7 0.0	N/A N/A	7 0.0	5 0.0	N/A N/A	5 0.0
Large print format	92 0.1	N/A N/A	92 0.1	101 0.1	N/A N/A	101 0.1	106 0.1	N/A N/A	106 0.1	96 0.1	N/A N/A	96 0.1	90 0.1	N/A N/A	90 0.1	87 0.1	N/A N/A	87 0.1
Computer Assistive Technology	13 0.0	N/A N/A	13 0.0	12 0.0	N/A N/A	12 0.0	14 0.0	N/A N/A	14 0.0	8 0.0	N/A N/A	8 0.0	12 0.0	N/A N/A	12 0.0	9 0.0	N/A N/A	9 0.0
Some language questions/writing prompts/text-dependent analysis questions read aloud	6,414 5.1	1 0.2	6,415 5.1	7,332 5.9	12 1.8	7,344 5.9	6,904 5.5	13 1.3	6,917 5.5	4,356 3.5	22 1.5	4,378 3.5	2,593 2.1	26 1.1	2,619 2.1	2,240 1.8	16 0.4	2,256 1.8
All language questions/writing prompts/text-dependent analysis questions read aloud	3,339 2.7	18 3.2	3,357 2.7	3,237 2.6	38 5.7	3,275 2.6	2,692 2.1	27 2.8	2,719 2.1	1,718 1.4	39 2.7	1,757 1.4	955 0.8	88 3.8	1,043 0.8	897 0.7	123 3.2	1,020 0.8
Language questions/writing prompts/text-dependent analysis questions signed	40 0.0	0 0.0	40 0.0	22 0.0	0 0.0	22 0.0	21 0.0	0 0.0	21 0.0	18 0.0	1 0.1	19 0.0	26 0.0	0 0.0	26 0.0	21 0.0	0 0.0	21 0.0
Language questions/writing prompts/text-dependent analysis questions interpreted for ELL student	57 0.0	0 0.0	57 0.0	47 0.0	0 0.0	47 0.0	49 0.0	0 0.0	49 0.0	27 0.0	0 0.0	27 0.0	50 0.0	1 0.0	51 0.0	43 0.0	0 0.0	43 0.0
Amplification device	44 0.0	0 0.0	44 0.0	27 0.0	1 0.1	28 0.0	55 0.0	0 0.0	55 0.0	29 0.0	0 0.0	29 0.0	22 0.0	1 0.0	23 0.0	24 0.0	0 0.0	24 0.0
Magnification device	18 0.0	0 0.0	18 0.0	20 0.0	1 0.1	21 0.0	18 0.0	1 0.1	19 0.0	9 0.0	0 0.0	9 0.0	11 0.0	2 0.1	13 0.0	10 0.0	0 0.0	10 0.0
Color overlay	140 0.1	N/A N/A	140 0.1	199 0.2	N/A N/A	199 0.2	158 0.1	N/A N/A	158 0.1	59 0.0	N/A N/A	59 0.0	23 0.0	N/A N/A	23 0.0	14 0.0	N/A N/A	14 0.0
Other (per Accommodations Guidelines)	743 0.6	1 0.2	744 0.6	1,036 0.8	1 0.1	1,037 0.8	1,124 0.9	1 0.1	1,125 0.9	346 0.3	4 0.3	350 0.3	160 0.1	0 0.0	160 0.1	127 0.1	0 0.0	127 0.1
Online Accommodations Received																		
Audio	N/A N/A	73 13.0	73 0.1	N/A N/A	118 17.6	118 0.1	N/A N/A	163 16.7	163 0.1	N/A N/A	281 19.4	281 0.2	N/A N/A	229 10.0	229 0.2	N/A N/A	292 7.7	292 0.2
Color Chooser	N/A N/A	5 0.9	5 0.0	N/A N/A	18 2.7	18 0.0	N/A N/A	12 1.2	12 0.0	N/A N/A	34 2.3	34 0.0	N/A N/A	14 0.6	14 0.0	N/A N/A	38 1.0	38 0.0
Contrasting Text Chooser	N/A N/A	4 0.7	4 0.0	N/A N/A	18 2.7	18 0.0	N/A N/A	13 1.3	13 0.0	N/A N/A	31 2.1	31 0.0	N/A N/A	9 0.4	9 0.0	N/A N/A	34 0.9	34 0.0

Incidence of Presentation Accommodations Received on the 2015 PSSA: Mathematics

Type of Presentation Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Braille format	10 0.0	N/A N/A	10 0.0	5 0.0	N/A N/A	5 0.0	2 0.0	N/A N/A	2 0.0	7 0.0	N/A N/A	7 0.0	7 0.0	N/A N/A	7 0.0	6 0.0	N/A N/A	6 0.0
Large print format	83 0.1	N/A N/A	83 0.1	104 0.1	N/A N/A	104 0.1	98 0.1	N/A N/A	98 0.1	88 0.1	N/A N/A	88 0.1	81 0.1	N/A N/A	81 0.1	82 0.1	N/A N/A	82 0.1
Computer Assistive Technology	1 0.0	N/A N/A	1 0.0	9 0.0	N/A N/A	9 0.0	2 0.0	N/A N/A	2 0.0	6 0.0	N/A N/A	6 0.0	3 0.0	N/A N/A	3 0.0	5 0.0	N/A N/A	5 0.0
Some test items/questions read aloud	8,532 6.8	10 1.4	8,542 6.8	8,801 7.1	15 1.8	8,816 7.1	8,180 6.5	14 1.2	8,194 6.5	4,888 3.9	22 1.4	4,910 3.9	2,816 2.3	26 1.1	2,842 2.3	2,283 1.8	42 1.2	2,325 1.8
All test items/questions read aloud	6,460 5.2	78 10.6	6,538 5.2	5,844 4.7	107 12.9	5,951 4.8	4,548 3.6	90 7.8	4,638 3.7	2,670 2.1	75 4.7	2,745 2.2	1,558 1.3	106 4.5	1,664 1.3	1,286 1.0	141 4.0	1,427 1.1
Test items/questions signed	39 0.0	0 0.0	39 0.0	16 0.0	0 0.0	16 0.0	20 0.0	0 0.0	20 0.0	18 0.0	0 0.0	18 0.0	24 0.0	0 0.0	24 0.0	18 0.0	1 0.0	19 0.0
Test items/questions interpreted for ELL student	88 0.1	0 0.0	88 0.1	79 0.1	0 0.0	79 0.1	75 0.1	0 0.0	75 0.1	59 0.0	0 0.0	59 0.0	30 0.0	1 0.0	31 0.0	60 0.0	0 0.0	60 0.0
Amplification device	54 0.0	0 0.0	54 0.0	35 0.0	1 0.1	36 0.0	68 0.1	0 0.0	68 0.1	27 0.0	0 0.0	27 0.0	18 0.0	1 0.0	19 0.0	16 0.0	0 0.0	16 0.0
Magnification device	14 0.0	0 0.0	14 0.0	15 0.0	1 0.1	16 0.0	14 0.0	1 0.1	15 0.0	10 0.0	0 0.0	10 0.0	4 0.0	2 0.1	6 0.0	8 0.0	0 0.0	8 0.0
Color overlay	38 0.0	N/A N/A	38 0.0	30 0.0	N/A N/A	30 0.0	56 0.0	N/A N/A	56 0.0	5 0.0	N/A N/A	5 0.0	11 0.0	N/A N/A	11 0.0	2 0.0	N/A N/A	2 0.0
Other (per Accommodations Guidelines)	329 0.3	1 0.1	330 0.3	487 0.4	2 0.2	489 0.4	571 0.5	1 0.1	572 0.5	176 0.1	2 0.1	178 0.1	107 0.1	0 0.0	107 0.1	201 0.2	0 0.0	201 0.2
Spanish version	167 0.1	N/A N/A	167 0.1	178 0.1	N/A N/A	178 0.1	221 0.2	N/A N/A	221 0.2	247 0.2	N/A N/A	247 0.2	293 0.2	N/A N/A	293 0.2	296 0.2	N/A N/A	296 0.2
Online Accommodations Received																		
Audio	N/A N/A	143 19.5	143 0.1	N/A N/A	212 25.5	212 0.2	N/A N/A	278 24.0	278 0.2	N/A N/A	375 23.5	375 0.3	N/A N/A	338 14.4	338 0.3	N/A N/A	353 9.9	353 0.3
Video sign language	N/A N/A	8 1.1	8 0.0	N/A N/A	14 1.7	14 0.0	N/A N/A	12 1.0	12 0.0	N/A N/A	10 0.6	10 0.0	N/A N/A	7 0.3	7 0.0	N/A N/A	6 0.2	6 0.0
Color Chooser	N/A N/A	5 0.7	5 0.0	N/A N/A	42 5.1	42 0.0	N/A N/A	24 2.1	24 0.0	N/A N/A	55 3.4	55 0.0	N/A N/A	26 1.1	26 0.0	N/A N/A	27 0.8	27 0.0
Contrasting Text Chooser	N/A N/A	4 0.5	4 0.0	N/A N/A	42 5.1	42 0.0	N/A N/A	25 2.2	25 0.0	N/A N/A	53 3.3	53 0.0	N/A N/A	21 0.9	21 0.0	N/A N/A	23 0.6	23 0.0

Incidence of Presentation Accommodations Received on the 2014 PSSA: Science

Type of Presentation Accommodation	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Braille format	4 0.0	N/A N/A	4 0.0	6 0.0	N/A N/A	6 0.0
Large print format	91 0.1	N/A N/A	91 0.1	75 0.1	N/A N/A	75 0.1
Computer Assistive Technology	5 0.0	N/A N/A	5 0.0	2 0.0	N/A N/A	2 0.0
Some test items/questions read aloud	7,040 5.7	37 2.4	7,077 5.7	1,891 1.5	36 0.8	1,927 1.5
All test items/questions read aloud	6,100 5.0	130 8.4	6,230 5.0	1,256 1.0	142 3.3	1,398 1.1
Test items/questions signed	32 0.0	1 0.1	33 0.0	13 0.0	1 0.0	14 0.0
Test items/questions interpreted for ELL student	104 0.1	0 0.0	104 0.1	43 0.0	0 0.0	43 0.0
Amplification device	35 0.0	1 0.1	36 0.0	12 0.0	0 0.0	12 0.0
Magnification device	13 0.0	1 0.1	14 0.0	6 0.0	0 0.0	6 0.0
Color overlay	53 0.0	N/A N/A	53 0.0	2 0.0	N/A N/A	2 0.0
Other (per Accommodations Guidelines)	450 0.4	18 1.2	468 0.4	86 0.1	0 0.0	86 0.1
Spanish version	304 0.2	N/A N/A	304 0.2	426 0.3	N/A N/A	426 0.3
Online Accommodations Received						
Audio	N/A N/A	295 19.1	295 0.2	N/A N/A	418 9.8	418 0.3
Video sign language	N/A N/A	24 1.6	24 0.0	N/A N/A	15 0.4	15 0.0
Color Chooser	N/A N/A	41 2.6	41 0.0	N/A N/A	56 1.3	56 0.0
Contrasting Text Chooser	N/A N/A	41 2.6	41 0.0	N/A N/A	52 1.2	52 0.0

Incidence of Response Accommodations Received on the 2015 PSSA: English Language Arts

Type of Response Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	191 0.2	0 0.0	191 0.2	425 0.3	0 0.0	425 0.3	426 0.3	0 0.0	426 0.3	295 0.2	0 0.0	295 0.2	166 0.1	0 0.0	166 0.1	173 0.1	1 0.0	174 0.1
Test administrator transcribed student responses	839 0.7	2 0.4	841 0.7	932 0.8	3 0.4	935 0.8	977 0.8	6 0.6	983 0.8	891 0.7	5 0.3	896 0.7	730 0.6	0 0.0	730 0.6	639 0.5	3 0.1	642 0.5
Keyboard, word processor, or computer	90 0.1	N/A N/A	90 0.1	196 0.2	N/A N/A	196 0.2	346 0.3	N/A N/A	346 0.3	405 0.3	N/A N/A	405 0.3	386 0.3	N/A N/A	386 0.3	363 0.3	N/A N/A	363 0.3
Brailler/Notetaker	10 0.0	N/A N/A	10 0.0	4 0.0	N/A N/A	4 0.0	4 0.0	N/A N/A	4 0.0	4 0.0	N/A N/A	4 0.0	9 0.0	N/A N/A	9 0.0	3 0.0	N/A N/A	3 0.0
Augmentative communication device	5 0.0	N/A N/A	5 0.0	5 0.0	N/A N/A	5 0.0	4 0.0	N/A N/A	4 0.0	3 0.0	N/A N/A	3 0.0	5 0.0	N/A N/A	5 0.0	2 0.0	N/A N/A	2 0.0
Audio recording of student responses	1 0.0	0 0.0	1 0.0	3 0.0	0 0.0	3 0.0	3 0.0	0 0.0	3 0.0	0 0.0	0 0.0	0 0.0	7 0.0	0 0.0	7 0.0	1 0.0	0 0.0	1 0.0
Computer Assistive Technology	2 0.0	N/A N/A	2 0.0	8 0.0	N/A N/A	8 0.0	12 0.0	N/A N/A	12 0.0	12 0.0	N/A N/A	12 0.0	18 0.0	N/A N/A	18 0.0	7 0.0	N/A N/A	7 0.0
Other (per Accommodations Guidelines)	243 0.2	2 0.4	245 0.2	240 0.2	2 0.3	242 0.2	160 0.1	4 0.4	164 0.1	116 0.1	3 0.2	119 0.1	114 0.1	1 0.0	115 0.1	63 0.1	2 0.1	65 0.1

Incidence of Response Accommodations Received on the 2015 PSSA: Mathematics

Type of Response Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	174 0.1	0 0.0	174 0.1	428 0.3	0 0.0	428 0.3	418 0.3	0 0.0	418 0.3	273 0.2	0 0.0	273 0.2	155 0.1	0 0.0	155 0.1	176 0.1	0 0.0	176 0.1
Test administrator scribed open-ended responses at student's direction	604 0.5	2 0.3	606 0.5	465 0.4	2 0.2	467 0.4	356 0.3	4 0.3	360 0.3	228 0.2	1 0.1	229 0.2	146 0.1	1 0.0	147 0.1	112 0.1	0 0.0	112 0.1
Test administrator transcribed student responses	314 0.3	2 0.3	316 0.3	479 0.4	3 0.4	482 0.4	446 0.4	5 0.4	451 0.4	398 0.3	4 0.3	402 0.3	322 0.3	0 0.0	322 0.3	233 0.2	2 0.1	235 0.2
Qualified interpreter translated, transcribed, and/or scribed student's signed responses	6 0.0	0 0.0	6 0.0	5 0.0	0 0.0	5 0.0	2 0.0	0 0.0	2 0.0	2 0.0	0 0.0	2 0.0	2 0.0	0 0.0	2 0.0	6 0.0	0 0.0	6 0.0
Qualified interpreter translated, transcribed, and/or scribed ELL student responses	14 0.0	0 0.0	14 0.0	16 0.0	0 0.0	16 0.0	12 0.0	0 0.0	12 0.0	26 0.0	0 0.0	26 0.0	15 0.0	0 0.0	15 0.0	12 0.0	0 0.0	12 0.0
Keyboard, word processor, or computer	25 0.0	N/A N/A	25 0.0	52 0.0	N/A N/A	52 0.0	65 0.1	N/A N/A	65 0.1	88 0.1	N/A N/A	88 0.1	97 0.1	N/A N/A	97 0.1	95 0.1	N/A N/A	95 0.1
Brailler/Notetaker	6 0.0	N/A N/A	6 0.0	3 0.0	N/A N/A	3 0.0	2 0.0	N/A N/A	2 0.0	2 0.0	N/A N/A	2 0.0	4 0.0	N/A N/A	4 0.0	2 0.0	N/A N/A	2 0.0
Augmentative communication device	2 0.0	N/A N/A	2 0.0	3 0.0	N/A N/A	3 0.0	0 0.0	N/A N/A	0 0.0	2 0.0	N/A N/A	2 0.0	0 0.0	N/A N/A	0 0.0	2 0.0	N/A N/A	2 0.0
Audio recording of student responses	0 0.0	0 0.0	0 0.0	2 0.0	0 0.0	2 0.0	0 0.0	0 0.0	0 0.0	1 0.0	0 0.0	1 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Computer Assistive Technology	1 0.0	N/A N/A	1 0.0	3 0.0	N/A N/A	3 0.0	4 0.0	N/A N/A	4 0.0	2 0.0	N/A N/A	2 0.0	4 0.0	N/A N/A	4 0.0	6 0.0	N/A N/A	6 0.0
Translation dictionary for ELL student	25 0.0	7 1.0	32 0.0	39 0.0	1 0.1	40 0.0	27 0.0	2 0.2	29 0.0	51 0.0	1 0.1	52 0.0	46 0.0	2 0.1	48 0.0	56 0.0	0 0.0	56 0.0
Other (per Accommodations Guidelines)	157 0.1	2 0.3	159 0.1	209 0.2	2 0.2	211 0.2	166 0.1	6 0.5	172 0.1	100 0.1	7 0.4	107 0.1	90 0.1	1 0.0	91 0.1	47 0.0	1 0.0	48 0.0

Incidence of Response Accommodations Received on the 2015 PSSA: Science

Type of Response Accommodation	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	438 0.4	0 0.0	438 0.4	194 0.2	0 0.0	194 0.2
Test administrator scribed open-ended responses at student's direction	586 0.5	2 0.1	588 0.5	159 0.1	0 0.0	159 0.1
Test administrator transcribed student responses	487 0.4	4 0.3	491 0.4	263 0.2	2 0.0	265 0.2
Qualified interpreter translated, transcribed, and/or scribed student's signed responses	10 0.0	0 0.0	10 0.0	2 0.0	0 0.0	2 0.0
Qualified interpreter translated, transcribed, and/or scribed ELL student responses	13 0.0	0 0.0	13 0.0	10 0.0	0 0.0	10 0.0
Keyboard, word processor, or computer	64 0.1	N/A N/A	64 0.1	97 0.1	N/A N/A	97 0.1
Brailler/Notetaker	3 0.0	N/A N/A	3 0.0	4 0.0	N/A N/A	4 0.0
Augmentative communication device	4 0.0	N/A N/A	4 0.0	2 0.0	N/A N/A	2 0.0
Audio recording of student responses	2 0.0	0 0.0	2 0.0	2 0.0	0 0.0	2 0.0
Computer Assistive Technology	1 0.0	N/A N/A	1 0.0	3 0.0	N/A N/A	3 0.0
Translation dictionary for ELL student	59 0.0	2 0.1	61 0.0	84 0.1	1 0.0	85 0.1
Other (per Accommodations Guidelines)	131 0.1	2 0.1	133 0.1	19 0.0	0 0.0	19 0.0

Incidence of Setting Accommodations Received on the 2015 PSSA: English Language Arts

Type of Setting Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Hospital/home setting	25 0.0	0 0.0	25 0.0	36 0.0	0 0.0	36 0.0	39 0.0	0 0.0	39 0.0	34 0.0	0 0.0	34 0.0	39 0.0	0 0.0	39 0.0	48 0.0	0 0.0	48 0.0
One-on-one setting	902 0.7	4 0.7	906 0.7	826 0.7	6 0.9	832 0.7	758 0.6	9 0.9	767 0.6	605 0.5	10 0.7	615 0.5	419 0.3	13 0.6	432 0.3	403 0.3	13 0.3	416 0.3
Small group setting	16,629 13.3	80 14.3	16,709 13.4	17,163 13.9	113 16.9	17,276 13.9	16,842 13.4	201 20.6	17,043 13.5	14,002 11.2	322 22.2	14,324 11.3	12,231 9.9	330 14.4	12,561 10.0	12,683 10.1	476 12.5	13,159 10.2
Other (per Accommodations Guidelines)	260 0.2	4 0.7	264 0.2	273 0.2	7 1.0	280 0.2	245 0.2	6 0.6	251 0.2	345 0.3	14 1.0	359 0.3	324 0.3	9 0.4	333 0.3	354 0.3	8 0.2	362 0.3

Incidence of Setting Accommodations Received on the 2015 PSSA: Mathematics

Type of Setting Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Hospital/home setting	21 0.0	0 0.0	21 0.0	33 0.0	0 0.0	33 0.0	41 0.0	0 0.0	41 0.0	37 0.0	0 0.0	37 0.0	33 0.0	0 0.0	33 0.0	46 0.0	0 0.0	46 0.0
One-on-one setting	809 0.6	3 0.4	812 0.6	761 0.6	6 0.7	767 0.6	666 0.5	9 0.8	675 0.5	575 0.5	8 0.5	583 0.5	413 0.3	12 0.5	425 0.3	389 0.3	12 0.3	401 0.3
Small group setting	16,843 13.5	115 15.6	16,958 13.5	17,294 14.0	182 21.9	17,476 14.1	16,589 13.2	258 22.3	16,847 13.3	13,693 11.0	317 19.9	14,010 11.1	11,994 9.7	266 11.3	12,260 9.7	12,147 9.7	443 12.4	12,590 9.8
Other (per Accommodations Guidelines)	240 0.2	4 0.5	244 0.2	263 0.2	7 0.8	270 0.2	234 0.2	6 0.5	240 0.2	339 0.3	13 0.8	352 0.3	274 0.2	9 0.4	283 0.2	325 0.3	8 0.2	333 0.3

Incidence of Setting Accommodations Received on the 2015 PSSA: Science

Type of Setting Accommodation	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Hospital/home setting	29 0.0	0 0.0	29 0.0	47 0.0	0 0.0	47 0.0
One-on-one setting	771 0.6	9 0.6	780 0.6	393 0.3	12 0.3	405 0.3
Small group setting	16,474 13.4	282 18.2	16,756 13.5	11,865 9.5	456 10.7	12,321 9.6
Other (per Accommodations Guidelines)	257 0.2	7 0.5	264 0.2	267 0.2	7 0.2	274 0.2

Incidence of Timing Accommodations Received on the 2015 PSSA: English Language Arts

Type of Timing Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended time	7,617 6.1	88 15.7	7,705 6.2	10,524 8.5	89 13.3	10,613 8.6	13,051 10.4	120 12.3	13,171 10.4	14,882 11.9	131 9.0	15,013 11.9	10,451 8.4	162 7.0	10,613 8.4	9,331 7.5	244 6.4	9,575 7.4
Frequent breaks	3,743 3.0	62 11.1	3,805 3.0	4,161 3.4	94 14.0	4,255 3.4	3,798 3.0	106 10.9	3,904 3.1	2,691 2.2	76 5.2	2,767 2.2	1,980 1.6	111 4.8	2,091 1.7	1,699 1.4	151 4.0	1,850 1.4
Changed test schedule	495 0.4	1 0.2	496 0.4	487 0.4	1 0.1	488 0.4	491 0.4	0 0.0	491 0.4	322 0.3	5 0.3	327 0.3	436 0.4	4 0.2	440 0.3	433 0.3	1 0.0	434 0.3
Other (per Accommodations Guidelines)	98 0.1	2 0.4	100 0.1	74 0.1	5 0.7	79 0.1	83 0.1	2 0.2	85 0.1	104 0.1	6 0.4	110 0.1	107 0.1	2 0.1	109 0.1	69 0.1	3 0.1	72 0.1

Incidence of Timing Accommodations Received on the 2015 PSSA: Mathematics

Type of Timing Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended time	7,125 5.7	151 20.5	7,276 5.8	9,557 7.7	131 15.8	9,688 7.8	9,931 7.9	164 14.2	10,095 8.0	8,836 7.1	134 8.4	8,970 7.1	7,911 6.4	174 7.4	8,085 6.4	7,589 6.1	233 6.5	7,822 6.1
Frequent breaks	3,533 2.8	69 9.4	3,602 2.9	3,892 3.2	125 15.0	4,017 3.2	3,476 2.8	126 10.9	3,602 2.8	2,393 1.9	79 5.0	2,472 2.0	1,771 1.4	102 4.3	1,873 1.5	1,547 1.2	141 4.0	1,688 1.3
Changed test schedule	509 0.4	1 0.1	510 0.4	542 0.4	1 0.1	543 0.4	510 0.4	0 0.0	510 0.4	340 0.3	4 0.3	344 0.3	451 0.4	4 0.2	455 0.4	364 0.3	1 0.0	365 0.3
Other (per Accommodations Guidelines)	66 0.1	2 0.3	68 0.1	73 0.1	5 0.6	78 0.1	59 0.0	2 0.2	61 0.0	93 0.1	5 0.3	98 0.1	104 0.1	1 0.0	105 0.1	90 0.1	3 0.1	93 0.1

Incidence of Timing Accommodations Received on the 2015 PSSA: Science

Type of Timing Accommodation	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended time	5,048 4.1	172 11.1	5,220 4.2	3,887 3.1	191 4.5	4,078 3.2
Frequent breaks	3,386 2.8	156 10.1	3,542 2.8	1,292 1.0	138 3.2	1,430 1.1
Changed test schedule	367 0.3	1 0.1	368 0.3	309 0.2	1 0.0	310 0.2
Other (per Accommodations Guidelines)	69 0.1	4 0.3	73 0.1	63 0.1	3 0.1	66 0.1

Appendix K:

Accommodation Rate for Non-IEP and IEP Students

Accommodation Rate for Non-IEP and IEP Students on the 2015 PSSA: English Language Arts

Student Subgroup	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Non-IEP Students	105,367	430	105,797	103,331	459	103,790	105,290	655	105,945	105,344	1,006	106,350	104,990	1,744	106,734	106,075	3,028	109,103
Non-Accommodated	93,621 88.9	394 91.6	94,015 88.9	89,938 87.0	442 96.3	90,380 87.1	91,121 86.5	635 96.9	91,756 86.6	91,628 87.0	930 92.4	92,558 87.0	95,624 91.1	1,686 96.7	97,310 91.2	97,504 91.9	2,941 97.1	100,445 92.1
Accommodated	11,746 11.1	36 8.4	11,782 11.1	13,393 13.0	17 3.7	13,410 12.9	14,169 13.5	20 3.1	14,189 13.4	13,716 13.0	76 7.6	13,792 13.0	9,366 8.9	58 3.3	9,424 8.8	8,571 8.1	87 2.9	8,658 7.9
IEP Students	19,232	131	19,363	19,985	211	20,196	20,235	321	20,556	19,537	444	19,981	18,940	554	19,494	19,017	769	19,786
Non-Accommodated	7,223 37.6	44 33.6	7,267 37.5	6,428 32.2	68 32.2	6,496 32.2	5,917 29.2	90 28.0	6,007 29.2	6,348 32.5	88 19.8	6,436 32.2	6,949 36.7	189 34.1	7,138 36.6	6,891 36.2	246 32.0	7,137 36.1
Accommodated	12,009 62.4	87 66.4	12,096 62.5	13,557 67.8	143 67.8	13,700 67.8	14,318 70.8	231 72.0	14,549 70.8	13,189 67.5	356 80.2	13,545 67.8	11,991 63.3	365 65.9	12,356 63.4	12,126 63.8	523 68.0	12,649 63.9

Accommodation Rate for Non-IEP and IEP Students on the 2015 PSSA: Mathematics

Student Subgroup	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Non-IEP Students	105,332	552	105,884	103,416	538	103,954	105,322	767	106,089	105,314	1,112	106,426	105,026	1,759	106,785	106,286	2,810	109,096
Non-Accommodated	92,242 87.6	466 84.4	92,708 87.6	89,874 86.9	512 95.2	90,386 86.9	93,044 88.3	712 92.8	93,756 88.4	96,403 91.5	1,004 90.3	97,407 91.5	97,655 93.0	1,683 95.7	99,338 93.0	98,953 93.1	2,725 97.0	101,678 93.2
Accommodated	13,090 12.4	86 15.6	13,176 12.4	13,542 13.1	26 4.8	13,568 13.1	12,278 11.7	55 7.2	12,333 11.6	8,911 8.5	108 9.7	9,019 8.5	7,371 7.0	76 4.3	7,447 7.0	7,333 6.9	85 3.0	7,418 6.8
IEP Students	19,242	183	19,425	19,954	293	20,247	20,202	392	20,594	19,504	483	19,987	18,924	590	19,514	19,013	750	19,763
Non-Accommodated	7,181 37.3	36 19.7	7,217 37.2	6,375 31.9	55 18.8	6,430 31.8	6,279 31.1	57 14.5	6,336 30.8	6,796 34.8	62 12.8	6,858 34.3	7,234 38.2	171 29.0	7,405 37.9	7,415 39.0	219 29.2	7,634 38.6
Accommodated	12,061 62.7	147 80.3	12,208 62.8	13,579 68.1	238 81.2	13,817 68.2	13,923 68.9	335 85.5	14,258 69.2	12,708 65.2	421 87.2	13,129 65.7	11,690 61.8	419 71.0	12,109 62.1	11,598 61.0	531 70.8	12,129 61.4

Accommodation Rate for Non-IEP and IEP Students on the 2015 PSSA: Science

Student Subgroup	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Non-IEP Students	102,885	1,162	104,047	105,622	3,424	109,046
Non-Accommodated	93,718 91.1	1,056 90.9	94,774 91.1	101,683 96.3	3,368 98.4	105,051 96.3
Accommodated	9,167 8.9	106 9.1	9,273 8.9	3,939 3.7	56 1.6	3,995 3.7
IEP Students	19,876	386	20,262	18,861	826	19,687
Non-Accommodated	6,803 34.2	80 20.7	6,883 34.0	7,702 40.8	227 27.5	7,929 40.3
Accommodated	13,073 65.8	306 79.3	13,379 66.0	11,159 59.2	599 72.5	11,758 59.7

Appendix L:

Incidence of Accommodations Received by IEP and ELL Students

Incidence of IEP and ELL Students Receiving Selected Accommodations on the 2015 PSSA: English Language Arts

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 3	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some language questions/writing prompts/text-dependent analysis questions read aloud	2,037 2.0	0 0.0	2,037 2.0	3,636 19.6	1 0.8	3,637 19.5	572 15.1	0 0.0	572 15.1	169 24.2	0 0.0	169 24.2
All language questions/writing prompts/text-dependent analysis questions read aloud	507 0.5	0 0.0	507 0.5	2,620 14.1	18 13.8	2,638 14.1	102 2.7	0 0.0	102 2.7	110 15.8	0 0.0	110 15.7
Small group setting	4,702 4.6	9 2.1	4,711 4.6	10,220 55.1	70 53.8	10,290 55.1	1,229 32.5	0 0.0	1,229 32.5	478 68.5	1 100.0	479 68.5
Extended time	4,658 4.6	32 7.5	4,690 4.6	2,599 14.0	56 43.1	2,655 14.2	264 7.0	0 0.0	264 7.0	96 13.8	0 0.0	96 13.7
Frequent breaks	520 0.5	3 0.7	523 0.5	3,016 16.3	58 44.6	3,074 16.5	91 2.4	0 0.0	91 2.4	116 16.6	1 100.0	117 16.7
Number assessed	101,584	428	102,012	18,534	130	18,664	3,783	2	3,785	698	1	699

Incidence of IEP and ELL Students Receiving Selected Accommodations on the 2015 PSSA: English Language Arts (continued)

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 4	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some language questions/writing prompts/text-dependent analysis questions read aloud	2,124 2.1	1 0.2	2,125 2.1	4,610 24.0	11 5.3	4,621 23.8	381 14.5	0 0.0	381 14.5	217 28.4	0 0.0	217 28.3
All language questions/writing prompts/text-dependent analysis questions read aloud	312 0.3	2 0.4	314 0.3	2,728 14.2	35 16.7	2,763 14.2	79 3.0	0 0.0	79 3.0	118 15.4	1 50.0	119 15.5
Small group setting	4,245 4.2	8 1.8	4,253 4.2	11,501 59.8	104 49.8	11,605 59.7	886 33.7	0 0.0	886 33.7	531 69.4	1 50.0	532 69.4
Extended time	6,922 6.9	12 2.6	6,934 6.9	3,195 16.6	76 36.4	3,271 16.8	266 10.1	0 0.0	266 10.1	141 18.4	1 50.0	142 18.5
Frequent breaks	465 0.5	5 1.1	470 0.5	3,495 18.2	88 42.1	3,583 18.4	69 2.6	0 0.0	69 2.6	132 17.3	1 50.0	133 17.3
Number assessed	100,704	454	101,158	19,220	209	19,429	2,627	5	2,632	765	2	767

Incidence of IEP and ELL Students Receiving Selected Accommodations on the 2015 PSSA: English Language Arts (continued)

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 5	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some language questions/writing prompts/text-dependent analysis questions read aloud	1,471 1.4	2 0.3	1,473 1.4	4,905 25.2	11 3.5	4,916 24.9	296 14.1	0 0.0	296 14.1	232 29.4	0 0.0	232 29.3
All language questions/writing prompts/text-dependent analysis questions read aloud	293 0.3	0 0.0	293 0.3	2,240 11.5	26 8.2	2,266 11.5	52 2.5	0 0.0	52 2.5	107 13.6	1 33.3	108 13.6
Small group setting	3,333 3.2	5 0.8	3,338 3.2	12,268 63.1	194 61.0	12,462 63.1	660 31.5	1 25.0	661 31.5	581 73.6	1 33.3	582 73.5
Extended time	8,982 8.7	16 2.5	8,998 8.7	3,690 19.0	103 32.4	3,793 19.2	241 11.5	0 0.0	241 11.5	138 17.5	1 33.3	139 17.6
Frequent breaks	412 0.4	4 0.6	416 0.4	3,200 16.5	101 31.8	3,301 16.7	58 2.8	0 0.0	58 2.8	128 16.2	1 33.3	129 16.3
Number assessed	103,195	651	103,846	19,446	318	19,764	2,095	4	2,099	789	3	792

Incidence of IEP and ELL Students Receiving Selected Accommodations on the 2015 PSSA: English Language Arts (continued)

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 6	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some language questions/writing prompts/text-dependent analysis questions read aloud	577 0.6	6 0.6	583 0.6	3,472 18.5	15 3.5	3,487 18.1	143 7.1	0 0.0	143 7.1	164 22.0	1 7.7	165 21.8
All language questions/writing prompts/text-dependent analysis questions read aloud	138 0.1	3 0.3	141 0.1	1,499 8.0	34 7.9	1,533 8.0	29 1.4	0 0.0	29 1.4	52 7.0	2 15.4	54 7.1
Small group setting	2,137 2.1	31 3.1	2,168 2.1	11,111 59.1	273 63.3	11,384 59.2	360 17.9	9 90.0	369 18.3	394 52.9	9 69.2	403 53.2
Extended time	10,790 10.4	28 2.8	10,818 10.4	3,751 20.0	102 23.7	3,853 20.0	189 9.4	1 10.0	190 9.4	152 20.4	0 0.0	152 20.1
Frequent breaks	156 0.2	3 0.3	159 0.2	2,421 12.9	72 16.7	2,493 13.0	32 1.6	0 0.0	32 1.6	82 11.0	1 7.7	83 10.9
Number assessed	103,338	996	104,334	18,792	431	19,223	2,006	10	2,016	745	13	758

Incidence of IEP and ELL Students Receiving Selected Accommodations on the 2015 PSSA: English Language Arts (continued)

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 7	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some language questions/writing prompts/text-dependent analysis questions read aloud	187 0.2	0 0.0	187 0.2	2,218 12.2	25 4.6	2,243 11.9	84 4.2	0 0.0	84 4.1	104 14.5	1 11.1	105 14.5
All language questions/writing prompts/text-dependent analysis questions read aloud	53 0.1	0 0.0	53 0.1	840 4.6	85 15.6	925 4.9	26 1.3	0 0.0	26 1.3	36 5.0	3 33.3	39 5.4
Small group setting	1,194 1.2	36 2.1	1,230 1.2	10,305 56.5	287 52.7	10,592 56.4	358 17.8	2 20.0	360 17.8	374 52.3	5 55.6	379 52.3
Extended time	7,424 7.2	19 1.1	7,443 7.1	2,747 15.1	141 25.9	2,888 15.4	177 8.8	1 10.0	178 8.8	103 14.4	1 11.1	104 14.4
Frequent breaks	129 0.1	1 0.1	130 0.1	1,765 9.7	110 20.2	1,875 10.0	24 1.2	0 0.0	24 1.2	62 8.7	0 0.0	62 8.6
Number assessed	102,974	1,734	104,708	18,225	545	18,770	2,016	10	2,026	715	9	724

Incidence of IEP and ELL Students Receiving Selected Accommodations on the 2015 PSSA: English Language Arts (continued)

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 8	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some language questions/writing prompts/text-dependent analysis questions read aloud	146 0.1	0 0.0	146 0.1	1,934 10.6	16 2.1	1,950 10.2	81 3.9	0 0.0	81 3.9	79 11.2	0 0.0	79 11.0
All language questions/writing prompts/text-dependent analysis questions read aloud	63 0.1	0 0.0	63 0.1	797 4.4	120 15.9	917 4.8	12 0.6	0 0.0	12 0.6	25 3.6	3 21.4	28 3.9
Small group setting	1,398 1.3	40 1.3	1,438 1.3	10,625 58.0	427 56.6	11,052 58.0	314 15.3	0 0.0	314 15.1	346 49.2	9 64.3	355 49.5
Extended time	6,484 6.2	51 1.7	6,535 6.1	2,570 14.0	189 25.0	2,759 14.5	175 8.5	0 0.0	175 8.4	102 14.5	4 28.6	106 14.8
Frequent breaks	109 0.1	6 0.2	115 0.1	1,510 8.2	144 19.1	1,654 8.7	15 0.7	0 0.0	15 0.7	65 9.2	1 7.1	66 9.2
Number assessed	104,016	3,012	107,028	18,314	755	19,069	2,059	16	2,075	703	14	717

Incidence of IEP and ELL Students Receiving Selected Accommodations on the 2015 PSSA: Mathematics

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 3	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	3,897 3.8	5 0.9	3,902 3.8	3,621 19.5	5 2.8	3,626 19.4	809 21.3	0 0.0	809 21.3	205 29.2	0 0.0	205 29.0
All test items/questions read aloud	1,072 1.1	0 0.0	1,072 1.1	5,008 27.0	72 40.4	5,080 27.1	198 5.2	1 50.0	199 5.2	182 25.9	5 100.0	187 26.4
Small group setting	4,919 4.8	11 2.0	4,930 4.8	10,201 55.0	99 55.6	10,300 55.0	1,237 32.5	0 0.0	1,237 32.5	486 69.1	5 100.0	491 69.4
Extended time	4,352 4.3	75 13.6	4,427 4.3	2,425 13.1	72 40.4	2,497 13.3	270 7.1	0 0.0	270 7.1	78 11.1	4 80.0	82 11.6
Frequent breaks	523 0.5	3 0.5	526 0.5	2,817 15.2	61 34.3	2,878 15.4	76 2.0	0 0.0	76 2.0	117 16.6	5 100.0	122 17.2
Number assessed	101,529	550	102,079	18,539	178	18,717	3,803	2	3,805	703	5	708
Grade 4	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	3,430 3.4	1 0.2	3,431 3.4	4,538 23.7	14 4.8	4,552 23.4	612 23.1	0 0.0	612 23.1	221 28.7	0 0.0	221 28.6
All test items/questions read aloud	693 0.7	2 0.4	695 0.7	4,834 25.2	102 35.2	4,936 25.3	113 4.3	1 16.7	114 4.3	204 26.5	2 66.7	206 26.7
Small group setting	4,263 4.2	12 2.3	4,275 4.2	11,573 60.3	167 57.6	11,740 60.3	927 35.0	1 16.7	928 35.0	531 69.1	2 66.7	533 69.0
Extended time	6,192 6.1	13 2.4	6,205 6.1	2,990 15.6	116 40.0	3,106 15.9	235 8.9	1 16.7	236 8.9	140 18.2	1 33.3	141 18.3
Frequent breaks	460 0.5	5 0.9	465 0.5	3,237 16.9	118 40.7	3,355 17.2	54 2.0	1 16.7	55 2.1	141 18.3	1 33.3	142 18.4
Number assessed	100,770	532	101,302	19,185	290	19,475	2,646	6	2,652	769	3	772

Incidence of IEP and ELL Students Receiving Selected Accommodations on the 2015 PSSA: Mathematics (continued)

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 5	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	2,533 2.5	2 0.3	2,535 2.4	4,949 25.5	12 3.1	4,961 25.1	434 20.5	0 0.0	434 20.4	264 33.5	0 0.0	264 33.3
All test items/questions read aloud	448 0.4	1 0.1	449 0.4	3,851 19.8	87 22.4	3,938 19.9	85 4.0	0 0.0	85 4.0	164 20.8	2 50.0	166 21.0
Small group setting	3,371 3.3	21 2.8	3,392 3.3	12,005 61.8	234 60.3	12,239 61.8	655 30.9	1 25.0	656 30.9	558 70.8	2 50.0	560 70.7
Extended time	6,371 6.2	33 4.3	6,404 6.2	3,205 16.5	129 33.2	3,334 16.8	230 10.9	0 0.0	230 10.8	125 15.9	2 50.0	127 16.0
Frequent breaks	344 0.3	4 0.5	348 0.3	2,983 15.4	120 30.9	3,103 15.7	38 1.8	0 0.0	38 1.8	111 14.1	2 50.0	113 14.3
Number assessed	103,203	763	103,966	19,414	388	19,802	2,119	4	2,123	788	4	792
Grade 6	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	817 0.8	6 0.5	823 0.8	3,679 19.6	14 3.0	3,693 19.2	209 10.3	0 0.0	209 10.3	183 24.5	2 13.3	185 24.2
All test items/questions read aloud	187 0.2	7 0.6	194 0.2	2,368 12.6	56 12.0	2,424 12.6	32 1.6	7 50.0	39 1.9	83 11.1	5 33.3	88 11.5
Small group setting	2,077 2.0	31 2.8	2,108 2.0	10,859 57.9	268 57.3	11,127 57.9	389 19.2	9 64.3	398 19.5	368 49.2	9 60.0	377 49.4
Extended time	5,806 5.6	37 3.4	5,843 5.6	2,792 14.9	97 20.7	2,889 15.0	131 6.5	0 0.0	131 6.4	107 14.3	0 0.0	107 14.0
Frequent breaks	159 0.2	3 0.3	162 0.2	2,132 11.4	74 15.8	2,206 11.5	19 0.9	0 0.0	19 0.9	83 11.1	2 13.3	85 11.1
Number assessed	103,289	1,098	104,387	18,756	468	19,224	2,025	14	2,039	748	15	763

Incidence of IEP and ELL Students Receiving Selected Accommodations on the 2015 PSSA: Mathematics (continued)

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 7	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	231 0.2	1 0.1	232 0.2	2,341 12.9	25 4.3	2,366 12.6	136 6.7	0 0.0	136 6.7	108 15.0	0 0.0	108 14.7
All test items/questions read aloud	91 0.1	4 0.2	95 0.1	1,390 7.6	96 16.6	1,486 7.9	18 0.9	2 20.0	20 1.0	59 8.2	4 33.3	63 8.6
Small group setting	1,169 1.1	19 1.1	1,188 1.1	10,138 55.7	243 42.0	10,381 55.3	328 16.2	2 20.0	330 16.2	359 49.8	2 16.7	361 49.2
Extended time	5,351 5.2	40 2.3	5,391 5.1	2,285 12.6	133 23.0	2,418 12.9	169 8.3	0 0.0	169 8.3	106 14.7	1 8.3	107 14.6
Frequent breaks	103 0.1	2 0.1	105 0.1	1,590 8.7	100 17.3	1,690 9.0	22 1.1	0 0.0	22 1.1	56 7.8	0 0.0	56 7.6
Number assessed	102,998	1,749	104,747	18,203	578	18,781	2,028	10	2,038	721	12	733
Grade 8	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	124 0.1	1 0.0	125 0.1	1,955 10.7	40 5.5	1,995 10.5	114 5.5	0 0.0	114 5.4	90 12.8	1 5.6	91 12.6
All test items/questions read aloud	103 0.1	1 0.0	104 0.1	1,137 6.2	125 17.1	1,262 6.6	12 0.6	6 27.3	18 0.9	34 4.8	9 50.0	43 6.0
Small group setting	1,289 1.2	24 0.9	1,313 1.2	10,232 55.9	410 56.0	10,642 55.9	301 14.5	0 0.0	301 14.4	325 46.3	9 50.0	334 46.4
Extended time	5,323 5.1	45 1.6	5,368 5.0	2,030 11.1	184 25.1	2,214 11.6	147 7.1	0 0.0	147 7.0	89 12.7	4 22.2	93 12.9
Frequent breaks	108 0.1	5 0.2	113 0.1	1,372 7.5	135 18.4	1,507 7.9	16 0.8	0 0.0	16 0.8	51 7.3	1 5.6	52 7.2
Number assessed	104,213	2,788	107,001	18,311	732	19,043	2,073	22	2,095	702	18	720

Incidence of IEP and ELL Students Receiving Selected Accommodations on the 2015 PSSA: Science

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 4	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	2,496 2.5	17 1.5	2,513 2.5	3,746 19.6	20 5.2	3,766 19.3	594 19.8	0 0.0	594 19.7	204 25.6	0 0.0	204 25.6
All test items/questions read aloud	645 0.6	6 0.5	651 0.6	5,071 26.6	122 31.8	5,193 26.7	187 6.2	1 7.7	188 6.2	197 24.7	1 50.0	198 24.8
Small group setting	3,601 3.6	72 6.3	3,673 3.6	11,332 59.4	208 54.2	11,540 59.3	1,015 33.9	1 7.7	1,016 33.8	526 66.1	1 50.0	527 66.0
Extended time	2,520 2.5	27 2.3	2,547 2.5	2,243 11.8	143 37.2	2,386 12.3	181 6.0	1 7.7	182 6.0	104 13.1	1 50.0	105 13.2
Frequent breaks	383 0.4	6 0.5	389 0.4	2,841 14.9	148 38.5	2,989 15.4	56 1.9	1 7.7	57 1.9	106 13.3	1 50.0	107 13.4
Number assessed	99,889	1,149	101,038	19,080	384	19,464	2,996	13	3,009	796	2	798
Grade 8	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	122 0.1	0 0.0	122 0.1	1,597 8.8	35 4.3	1,632 8.6	100 4.2	0 0.0	100 4.2	72 10.1	1 5.9	73 10.0
All test items/questions read aloud	79 0.1	0 0.0	79 0.1	1,121 6.2	127 15.7	1,248 6.6	20 0.8	6 31.6	26 1.1	36 5.0	9 52.9	45 6.2
Small group setting	1,219 1.2	27 0.8	1,246 1.2	9,963 54.9	420 51.9	10,383 54.8	388 16.4	0 0.0	388 16.3	295 41.4	9 52.9	304 41.6
Extended time	1,947 1.9	8 0.2	1,955 1.8	1,716 9.5	179 22.1	1,895 10.0	142 6.0	0 0.0	142 6.0	82 11.5	4 23.5	86 11.8
Frequent breaks	86 0.1	4 0.1	90 0.1	1,139 6.3	132 16.3	1,271 6.7	12 0.5	0 0.0	12 0.5	55 7.7	2 11.8	57 7.8
Number assessed	103,255	3,405	106,660	18,148	809	18,957	2,367	19	2,386	713	17	730

Appendix M:

Cut Scores and Scale Transformations

Column Heading	Definition
LOSS	Lowest Obtainable Scaled Score

		Scaling		LOSS	Scaled Score Cuts			Logit Cuts		
	Grade	Intercept	slope		Basic	Prof.	Adv.	Basic	Prof.	Adv.
Mathematics	3	956.31	100	600	923	1000	1110	-0.3376	0.4319	1.5392
	4	981.92	100	600	908	1000	1107	-0.7377	0.1758	1.2478
	5	961.69	100	600	901	1000	1113	-0.6086	0.3781	1.5176
	6	931.41	100	600	897	1000	1105	-0.3443	0.6809	1.7350
	7	956.16	100	600	904	1000	1109	-0.5217	0.4334	1.5262
	11	951.76	100	600	906	1000	1108	-0.4543	0.4774	1.5637
ELA	3	962.47	100	600	905	1000	1143	-0.5715	0.3703	1.8082
	4	957.49	100	600	887	1000	1107	-0.7059	0.4201	1.4935
	5	958.32	100	600	893	1000	1139	-0.6565	0.4118	1.8092
	6	940.78	100	600	875	1000	1115	-0.6578	0.5872	1.7381
	7	947.65	100	600	845	1000	1130	-1.0305	0.5185	1.8201
	11	961.11	100	600	886	1000	1130	-0.7553	0.3839	1.6911
Scienc	7	1225.65	176.75	1050	1150	1275	1483	-0.4280	0.2792	1.4560
	8	1196.64	191.54	925	1150	1275	1464	-0.2435	0.4091	1.3958

Appendix N:

Raw-to-Scaled-Score Conversion Tables

Column Heading	Definition
Raw	Raw score
Meas	Rasch measure
MeasSE	Rasch measure standard error
SS	Scaled score
SSSE	Scaled score standard error
Freq	Frequency
Freq%	Frequency percent
Cum	Cumulative frequency
Cum%	Cumulative frequency percent
Pct	Percentile

Mathematics Grade 3

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.7542	1.8341	600	183	0	0.0	0	0.0	0
1	-4.5288	1.0151	600	102	0	0.0	0	0.0	0
2	-3.8053	0.7282	600	73	0	0.0	0	0.0	0
3	-3.3697	0.6028	619	60	1	0.0	1	0.0	1
4	-3.0521	0.5290	651	53	2	0.0	3	0.0	1
5	-2.7992	0.4793	676	48	6	0.0	9	0.0	1
6	-2.5872	0.4431	698	44	16	0.0	25	0.0	1
7	-2.4034	0.4153	716	42	34	0.0	59	0.0	1
8	-2.2403	0.3933	732	39	81	0.1	140	0.1	1
9	-2.0928	0.3753	747	38	148	0.1	288	0.2	1
10	-1.9577	0.3603	761	36	270	0.2	558	0.4	1
11	-1.8325	0.3477	773	35	421	0.3	979	0.8	1
12	-1.7154	0.3368	785	34	544	0.4	1523	1.2	1
13	-1.6052	0.3275	796	33	833	0.7	2356	1.9	2
14	-1.5006	0.3193	806	32	1065	0.8	3421	2.7	2
15	-1.4010	0.3122	816	31	1346	1.1	4767	3.8	3
16	-1.3055	0.3059	826	31	1491	1.2	6258	5.0	4
17	-1.2137	0.3003	835	30	1695	1.4	7953	6.3	6
18	-1.1250	0.2954	844	30	1928	1.5	9881	7.9	7
19	-1.0391	0.2910	852	29	2089	1.7	11970	9.6	9
20	-0.9556	0.2871	861	29	2273	1.8	14243	11.4	10
21	-0.8742	0.2836	869	28	2360	1.9	16603	13.2	12
22	-0.7946	0.2805	877	28	2440	1.9	19043	15.2	14
23	-0.7167	0.2778	885	28	2544	2.0	21587	17.2	16
24	-0.6402	0.2754	892	28	2520	2.0	24107	19.2	18
25	-0.5650	0.2733	900	27	2688	2.1	26795	21.4	20
26	-0.4908	0.2715	907	27	2670	2.1	29465	23.5	22
27	-0.4175	0.2699	915	27	2799	2.2	32264	25.7	25
28	-0.3451	0.2685	922	27	2788	2.2	35052	28.0	27
29	-0.2733	0.2674	929	27	2709	2.2	37761	30.1	29
30	-0.2020	0.2665	936	27	2780	2.2	40541	32.4	31
31	-0.1312	0.2658	943	27	2665	2.1	43206	34.5	33
32	-0.0607	0.2653	950	27	2785	2.2	45991	36.7	36
33	0.0095	0.2649	957	26	2728	2.2	48719	38.9	38
34	0.0797	0.2648	964	26	2662	2.1	51381	41.0	40
35	0.1498	0.2648	971	26	2593	2.1	53974	43.1	42
36	0.2200	0.2650	978	27	2574	2.1	56548	45.1	44
37	0.2903	0.2654	985	27	2718	2.2	59266	47.3	46
38	0.3608	0.2659	992	27	2624	2.1	61890	49.4	48
39	0.4318	0.2667	999	27	2665	2.1	64555	51.5	50
40	0.5031	0.2676	1007	27	2607	2.1	67162	53.6	53
41	0.5750	0.2687	1014	27	2535	2.0	69697	55.6	55
42	0.6475	0.2700	1021	27	2604	2.1	72301	57.7	57
43	0.7208	0.2715	1028	27	2536	2.0	74837	59.7	59
44	0.7950	0.2732	1036	27	2633	2.1	77470	61.8	61
45	0.8701	0.2751	1043	28	2612	2.1	80082	63.9	63
46	0.9464	0.2772	1051	28	2580	2.1	82662	66.0	65
47	1.0239	0.2797	1059	28	2584	2.1	85246	68.0	67
48	1.1028	0.2824	1067	28	2580	2.1	87826	70.1	69
49	1.1834	0.2854	1075	29	2535	2.0	90361	72.1	71

50	1.2658	0.2887	1083	29	2479	2.0	92840	74.1	73
51	1.3502	0.2924	1091	29	2514	2.0	95354	76.1	75
52	1.4368	0.2965	1100	30	2497	2.0	97851	78.1	77
53	1.5261	0.3011	1109	30	2358	1.9	100209	80.0	79
54	1.6182	0.3061	1118	31	2448	2.0	102657	81.9	81
55	1.7136	0.3118	1128	31	2205	1.8	104862	83.7	83
56	1.8128	0.3180	1138	32	2212	1.8	107074	85.4	85
57	1.9161	0.3250	1148	33	2271	1.8	109345	87.3	86
58	2.0242	0.3328	1159	33	2066	1.6	111411	88.9	88
59	2.1378	0.3415	1170	34	1997	1.6	113408	90.5	90
60	2.2578	0.3512	1182	35	1912	1.5	115320	92.0	91
61	2.3849	0.3622	1195	36	1729	1.4	117049	93.4	93
62	2.5206	0.3746	1208	37	1559	1.2	118608	94.7	94
63	2.6662	0.3889	1223	39	1461	1.2	120069	95.8	95
64	2.8239	0.4056	1239	41	1283	1.0	121352	96.8	96
65	2.9964	0.4258	1256	43	1158	0.9	122510	97.8	97
66	3.1883	0.4513	1275	45	954	0.8	123464	98.5	98
67	3.4068	0.4850	1297	49	729	0.6	124193	99.1	99
68	3.6642	0.5324	1323	53	533	0.4	124726	99.5	99
69	3.9847	0.6047	1355	60	319	0.3	125045	99.8	99
70	4.4226	0.7300	1399	73	185	0.1	125230	99.9	99
71	5.1499	1.0178	1471	102	61	0.0	125291	100.0	99
72	6.3805	1.8368	1594	184	18	0.0	125309	100.0	99

Mathematics Grade 4

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.7187	1.8344	600	183	0	0.0	0	0.0	0
1	-4.4926	1.0156	600	102	0	0.0	0	0.0	0
2	-3.7681	0.7289	605	73	1	0.0	1	0.0	1
3	-3.3315	0.6036	649	60	1	0.0	2	0.0	1
4	-3.0129	0.5300	681	53	4	0.0	6	0.0	1
5	-2.7590	0.4803	706	48	6	0.0	12	0.0	1
6	-2.5460	0.4442	727	44	26	0.0	38	0.0	1
7	-2.3613	0.4164	746	42	61	0.0	99	0.1	1
8	-2.1972	0.3943	762	39	111	0.1	210	0.2	1
9	-2.0490	0.3762	777	38	257	0.2	467	0.4	1
10	-1.9132	0.3612	791	36	403	0.3	870	0.7	1
11	-1.7874	0.3484	803	35	710	0.6	1580	1.3	1
12	-1.6699	0.3374	815	34	1094	0.9	2674	2.2	2
13	-1.5594	0.3279	826	33	1512	1.2	4186	3.4	3
14	-1.4547	0.3195	836	32	1982	1.6	6168	5.0	4
15	-1.3550	0.3121	846	31	2387	1.9	8555	6.9	6
16	-1.2596	0.3056	856	31	2730	2.2	11285	9.1	8
17	-1.1681	0.2997	865	30	3004	2.4	14289	11.5	10
18	-1.0798	0.2945	874	29	3297	2.7	17586	14.2	13
19	-0.9945	0.2898	882	29	3314	2.7	20900	16.8	15
20	-0.9117	0.2856	891	29	3248	2.6	24148	19.4	18
21	-0.8313	0.2818	899	28	3282	2.6	27430	22.1	21
22	-0.7529	0.2783	907	28	3365	2.7	30795	24.8	23
23	-0.6763	0.2752	914	28	3260	2.6	34055	27.4	26
24	-0.6013	0.2724	922	27	3241	2.6	37296	30.0	29
25	-0.5278	0.2699	929	27	3060	2.5	40356	32.5	31
26	-0.4556	0.2676	936	27	3069	2.5	43425	35.0	34
27	-0.3846	0.2656	943	27	2946	2.4	46371	37.3	36
28	-0.3145	0.2638	950	26	3002	2.4	49373	39.8	39
29	-0.2454	0.2622	957	26	2940	2.4	52313	42.1	41
30	-0.1770	0.2608	964	26	2957	2.4	55270	44.5	43
31	-0.1093	0.2596	971	26	2825	2.3	58095	46.8	46
32	-0.0422	0.2586	978	26	2829	2.3	60924	49.1	48
33	0.0245	0.2578	984	26	2746	2.2	63670	51.3	50
34	0.0908	0.2572	991	26	2688	2.2	66358	53.4	52
35	0.1568	0.2568	998	26	2629	2.1	68987	55.5	54
36	0.2227	0.2565	1004	26	2624	2.1	71611	57.7	57
37	0.2885	0.2564	1011	26	2476	2.0	74087	59.7	59
38	0.3543	0.2565	1017	26	2523	2.0	76610	61.7	61
39	0.4201	0.2568	1024	26	2501	2.0	79111	63.7	63
40	0.4862	0.2573	1031	26	2370	1.9	81481	65.6	65
41	0.5526	0.2580	1037	26	2252	1.8	83733	67.4	67
42	0.6193	0.2588	1044	26	2339	1.9	86072	69.3	68
43	0.6866	0.2599	1051	26	2217	1.8	88289	71.1	70
44	0.7545	0.2612	1057	26	2207	1.8	90496	72.9	72
45	0.8231	0.2627	1064	26	2218	1.8	92714	74.6	74
46	0.8925	0.2644	1071	26	2142	1.7	94856	76.4	76
47	0.9629	0.2664	1078	27	2228	1.8	97084	78.2	77
48	1.0345	0.2687	1085	27	2107	1.7	99191	79.9	79
49	1.1073	0.2712	1093	27	2019	1.6	101210	81.5	81

50	1.1817	0.2742	1100	27	1949	1.6	103159	83.1	82
51	1.2578	0.2775	1108	28	1853	1.5	105012	84.6	84
52	1.3358	0.2813	1116	28	1820	1.5	106832	86.0	85
53	1.4162	0.2857	1124	29	1781	1.4	108613	87.4	87
54	1.4992	0.2906	1132	29	1723	1.4	110336	88.8	88
55	1.5853	0.2963	1140	30	1662	1.3	111998	90.2	90
56	1.6750	0.3028	1149	30	1504	1.2	113502	91.4	91
57	1.7689	0.3102	1159	31	1416	1.1	114918	92.5	92
58	1.8678	0.3188	1169	32	1367	1.1	116285	93.6	93
59	1.9725	0.3286	1179	33	1298	1.0	117583	94.7	94
60	2.0841	0.3400	1190	34	1158	0.9	118741	95.6	95
61	2.2042	0.3532	1202	35	1075	0.9	119816	96.5	96
62	2.3342	0.3685	1215	37	955	0.8	120771	97.2	97
63	2.4766	0.3866	1230	39	803	0.6	121574	97.9	98
64	2.6343	0.4082	1245	41	721	0.6	122295	98.5	98
65	2.8114	0.4342	1263	43	648	0.5	122943	99.0	99
66	3.0137	0.4664	1283	47	459	0.4	123402	99.4	99
67	3.2500	0.5073	1307	51	332	0.3	123734	99.6	99
68	3.5346	0.5619	1335	56	212	0.2	123946	99.8	99
69	3.8931	0.6401	1371	64	137	0.1	124083	99.9	99
70	4.3812	0.7677	1420	77	80	0.1	124163	100.0	99
71	5.1712	1.0510	1499	105	27	0.0	124190	100.0	99
72	6.4521	1.8571	1627	186	11	0.0	124201	100.0	99

Mathematics Grade 5

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.7190	1.8343	600	183	0	0.0	0	0.0	0
1	-4.4930	1.0155	600	102	1	0.0	1	0.0	1
2	-3.7687	0.7288	600	73	0	0.0	1	0.0	1
3	-3.3322	0.6035	628	60	1	0.0	2	0.0	1
4	-3.0137	0.5299	660	53	5	0.0	7	0.0	1
5	-2.7599	0.4803	686	48	11	0.0	18	0.0	1
6	-2.5469	0.4441	707	44	23	0.0	41	0.0	1
7	-2.3622	0.4164	725	42	65	0.1	106	0.1	1
8	-2.1982	0.3944	742	39	134	0.1	240	0.2	1
9	-2.0498	0.3764	757	38	272	0.2	512	0.4	1
10	-1.9139	0.3614	770	36	461	0.4	973	0.8	1
11	-1.7880	0.3487	783	35	859	0.7	1832	1.4	1
12	-1.6703	0.3378	795	34	1156	0.9	2988	2.4	2
13	-1.5594	0.3283	806	33	1563	1.2	4551	3.6	3
14	-1.4544	0.3200	816	32	2031	1.6	6582	5.2	4
15	-1.3544	0.3127	826	31	2399	1.9	8981	7.1	6
16	-1.2586	0.3063	836	31	2642	2.1	11623	9.2	8
17	-1.1666	0.3005	845	30	2842	2.2	14465	11.4	10
18	-1.0778	0.2954	854	30	3012	2.4	17477	13.8	13
19	-0.9919	0.2908	863	29	3152	2.5	20629	16.3	15
20	-0.9085	0.2867	871	29	3069	2.4	23698	18.7	17
21	-0.8274	0.2830	879	28	3062	2.4	26760	21.1	20
22	-0.7482	0.2797	887	28	3089	2.4	29849	23.6	22
23	-0.6709	0.2767	895	28	2978	2.4	32827	25.9	25
24	-0.5950	0.2741	902	27	2964	2.3	35791	28.3	27
25	-0.5206	0.2717	910	27	3059	2.4	38850	30.7	29
26	-0.4474	0.2695	917	27	3093	2.4	41943	33.1	32
27	-0.3752	0.2677	924	27	3042	2.4	44985	35.5	34
28	-0.3040	0.2660	931	27	2922	2.3	47907	37.8	37
29	-0.2337	0.2646	938	26	2794	2.2	50701	40.0	39
30	-0.1640	0.2633	945	26	2870	2.3	53571	42.3	41
31	-0.0950	0.2623	952	26	2921	2.3	56492	44.6	43
32	-0.0264	0.2614	959	26	2761	2.2	59253	46.8	46
33	0.0417	0.2607	966	26	2760	2.2	62013	49.0	48
34	0.1096	0.2602	973	26	2680	2.1	64693	51.1	50
35	0.1772	0.2599	979	26	2668	2.1	67361	53.2	52
36	0.2447	0.2597	986	26	2591	2.0	69952	55.2	54
37	0.3121	0.2597	993	26	2501	2.0	72453	57.2	56
38	0.3796	0.2599	1000	26	2475	2.0	74928	59.1	58
39	0.4473	0.2603	1006	26	2500	2.0	77428	61.1	60
40	0.5152	0.2608	1013	26	2353	1.9	79781	63.0	62
41	0.5834	0.2616	1020	26	2393	1.9	82174	64.9	64
42	0.6520	0.2625	1027	26	2312	1.8	84486	66.7	66
43	0.7212	0.2636	1034	26	2224	1.8	86710	68.4	68
44	0.7910	0.2650	1041	27	2203	1.7	88913	70.2	69
45	0.8617	0.2666	1048	27	2338	1.8	91251	72.0	71
46	0.9332	0.2684	1055	27	2121	1.7	93372	73.7	73
47	1.0058	0.2705	1062	27	2148	1.7	95520	75.4	75
48	1.0796	0.2730	1070	27	2060	1.6	97580	77.0	76
49	1.1549	0.2757	1077	28	2001	1.6	99581	78.6	78

50	1.2317	0.2788	1085	28	1924	1.5	101505	80.1	79
51	1.3105	0.2824	1093	28	1956	1.5	103461	81.7	81
52	1.3913	0.2864	1101	29	1838	1.5	105299	83.1	82
53	1.4746	0.2908	1109	29	1853	1.5	107152	84.6	84
54	1.5606	0.2959	1118	30	1789	1.4	108941	86.0	85
55	1.6498	0.3015	1127	30	1707	1.3	110648	87.3	87
56	1.7426	0.3079	1136	31	1658	1.3	112306	88.7	88
57	1.8395	0.3150	1146	32	1674	1.3	113980	90.0	89
58	1.9412	0.3230	1156	32	1545	1.2	115525	91.2	91
59	2.0485	0.3321	1167	33	1529	1.2	117054	92.4	92
60	2.1622	0.3425	1178	34	1335	1.1	118389	93.5	93
61	2.2835	0.3543	1190	35	1361	1.1	119750	94.5	94
62	2.4138	0.3679	1203	37	1186	0.9	120936	95.5	95
63	2.5550	0.3839	1217	38	1126	0.9	122062	96.4	96
64	2.7094	0.4027	1233	40	1024	0.8	123086	97.2	97
65	2.8807	0.4256	1250	43	904	0.7	123990	97.9	98
66	3.0737	0.4540	1269	45	720	0.6	124710	98.4	98
67	3.2962	0.4908	1291	49	677	0.5	125387	99.0	99
68	3.5611	0.5409	1318	54	492	0.4	125879	99.4	99
69	3.8924	0.6149	1351	61	382	0.3	126261	99.7	99
70	4.3440	0.7400	1396	74	226	0.2	126487	99.8	99
71	5.0867	1.0254	1470	103	141	0.1	126628	100.0	99
72	6.3278	1.8407	1594	184	55	0.0	126683	100.0	99

Mathematics Grade 6

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.7957	1.8361	600	184	0	0.0	0	0.0	0
1	-4.5652	1.0187	600	102	0	0.0	0	0.0	0
2	-3.8346	0.7329	600	73	1	0.0	1	0.0	1
3	-3.3921	0.6083	600	61	0	0.0	1	0.0	1
4	-3.0680	0.5350	625	54	1	0.0	2	0.0	1
5	-2.8088	0.4857	651	49	0	0.0	2	0.0	1
6	-2.5908	0.4496	672	45	2	0.0	4	0.0	1
7	-2.4013	0.4220	691	42	8	0.0	12	0.0	1
8	-2.2327	0.3999	708	40	26	0.0	38	0.0	1
9	-2.0801	0.3819	723	38	66	0.1	104	0.1	1
10	-1.9401	0.3668	737	37	143	0.1	247	0.2	1
11	-1.8103	0.3540	750	35	220	0.2	467	0.4	1
12	-1.6890	0.3429	763	34	355	0.3	822	0.7	1
13	-1.5747	0.3333	774	33	590	0.5	1412	1.1	1
14	-1.4664	0.3249	785	32	913	0.7	2325	1.8	1
15	-1.3633	0.3175	795	32	1078	0.9	3403	2.7	2
16	-1.2646	0.3108	805	31	1416	1.1	4819	3.8	3
17	-1.1699	0.3049	814	30	1655	1.3	6474	5.1	4
18	-1.0786	0.2996	824	30	1954	1.5	8428	6.7	6
19	-0.9903	0.2947	832	29	2172	1.7	10600	8.4	8
20	-0.9047	0.2904	841	29	2306	1.8	12906	10.2	9
21	-0.8215	0.2864	849	29	2476	2.0	15382	12.2	11
22	-0.7406	0.2828	857	28	2628	2.1	18010	14.2	13
23	-0.6615	0.2795	865	28	2647	2.1	20657	16.3	15
24	-0.5842	0.2765	873	28	2723	2.2	23380	18.5	17
25	-0.5086	0.2737	881	27	2730	2.2	26110	20.7	20
26	-0.4343	0.2712	888	27	2810	2.2	28920	22.9	22
27	-0.3614	0.2689	895	27	2878	2.3	31798	25.2	24
28	-0.2897	0.2668	902	27	2817	2.2	34615	27.4	26
29	-0.2190	0.2649	910	26	2933	2.3	37548	29.7	29
30	-0.1493	0.2631	916	26	2923	2.3	40471	32.0	31
31	-0.0805	0.2615	923	26	2894	2.3	43365	34.3	33
32	-0.0125	0.2601	930	26	3038	2.4	46403	36.7	36
33	0.0549	0.2589	937	26	3037	2.4	49440	39.1	38
34	0.1216	0.2578	944	26	3009	2.4	52449	41.5	40
35	0.1879	0.2570	950	26	2962	2.3	55411	43.8	43
36	0.2537	0.2563	957	26	2967	2.3	58378	46.2	45
37	0.3192	0.2558	963	26	3032	2.4	61410	48.6	47
38	0.3846	0.2555	970	26	2946	2.3	64356	50.9	50
39	0.4498	0.2554	976	26	2947	2.3	67303	53.2	52
40	0.5151	0.2556	983	26	2982	2.4	70285	55.6	54
41	0.5805	0.2560	989	26	2982	2.4	73267	58.0	57
42	0.6461	0.2566	996	26	2954	2.3	76221	60.3	59
43	0.7122	0.2576	1003	26	2832	2.2	79053	62.5	61
44	0.7789	0.2588	1009	26	2985	2.4	82038	64.9	64
45	0.8463	0.2604	1016	26	2852	2.3	84890	67.2	66
46	0.9146	0.2623	1023	26	2800	2.2	87690	69.4	68
47	0.9839	0.2645	1030	26	2798	2.2	90488	71.6	70
48	1.0545	0.2670	1037	27	2724	2.2	93212	73.7	73
49	1.1266	0.2700	1044	27	2747	2.2	95959	75.9	75

50	1.2004	0.2733	1051	27	2601	2.1	98560	78.0	77
51	1.2761	0.2771	1059	28	2583	2.0	101143	80.0	79
52	1.3540	0.2813	1067	28	2346	1.9	103489	81.9	81
53	1.4345	0.2861	1075	29	2369	1.9	105858	83.7	83
54	1.5178	0.2914	1083	29	2184	1.7	108042	85.5	85
55	1.6044	0.2973	1092	30	2126	1.7	110168	87.1	86
56	1.6948	0.3039	1101	30	1974	1.6	112142	88.7	88
57	1.7893	0.3111	1110	31	1867	1.5	114009	90.2	89
58	1.8886	0.3193	1120	32	1887	1.5	115896	91.7	91
59	1.9934	0.3283	1131	33	1621	1.3	117517	93.0	92
60	2.1044	0.3383	1142	34	1533	1.2	119050	94.2	94
61	2.2225	0.3494	1154	35	1363	1.1	120413	95.3	95
62	2.3490	0.3620	1166	36	1227	1.0	121640	96.2	96
63	2.4851	0.3761	1180	38	1025	0.8	122665	97.0	97
64	2.6327	0.3925	1195	39	933	0.7	123598	97.8	97
65	2.7943	0.4120	1211	41	774	0.6	124372	98.4	98
66	2.9737	0.4361	1229	44	640	0.5	125012	98.9	99
67	3.1774	0.4678	1249	47	482	0.4	125494	99.3	99
68	3.4164	0.5125	1273	51	370	0.3	125864	99.6	99
69	3.7130	0.5816	1303	58	282	0.2	126146	99.8	99
70	4.1189	0.7041	1343	70	168	0.1	126314	99.9	99
71	4.8029	0.9929	1412	99	70	0.1	126384	100.0	99
72	5.9946	1.8200	1531	182	29	0.0	126413	100.0	99

Mathematics Grade 7

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.6996	1.8331	600	183	0	0.0	0	0.0	0
1	-4.4769	1.0132	600	101	0	0.0	0	0.0	0
2	-3.7573	0.7255	600	73	0	0.0	0	0.0	0
3	-3.3257	0.5994	624	60	0	0.0	0	0.0	0
4	-3.0121	0.5251	655	53	1	0.0	1	0.0	1
5	-2.7633	0.4749	680	47	6	0.0	7	0.0	1
6	-2.5556	0.4383	701	44	14	0.0	21	0.0	1
7	-2.3761	0.4101	719	41	36	0.0	57	0.0	1
8	-2.2173	0.3876	734	39	82	0.1	139	0.1	1
9	-2.0743	0.3692	749	37	154	0.1	293	0.2	1
10	-1.9437	0.3539	762	35	313	0.2	606	0.5	1
11	-1.8231	0.3409	774	34	548	0.4	1154	0.9	1
12	-1.7108	0.3297	785	33	839	0.7	1993	1.6	1
13	-1.6053	0.3200	796	32	1178	0.9	3171	2.5	2
14	-1.5057	0.3115	806	31	1554	1.2	4725	3.7	3
15	-1.4110	0.3041	815	30	2020	1.6	6745	5.3	5
16	-1.3205	0.2975	824	30	2441	1.9	9186	7.3	6
17	-1.2338	0.2916	833	29	2765	2.2	11951	9.5	8
18	-1.1503	0.2864	841	29	3004	2.4	14955	11.8	11
19	-1.0696	0.2817	849	28	3183	2.5	18138	14.4	13
20	-0.9914	0.2776	857	28	3433	2.7	21571	17.1	16
21	-0.9155	0.2738	865	27	3524	2.8	25095	19.9	18
22	-0.8414	0.2705	872	27	3438	2.7	28533	22.6	21
23	-0.7691	0.2675	879	27	3502	2.8	32035	25.4	24
24	-0.6983	0.2648	886	26	3461	2.7	35496	28.1	27
25	-0.6288	0.2624	893	26	3455	2.7	38951	30.8	29
26	-0.5605	0.2603	900	26	3401	2.7	42352	33.5	32
27	-0.4932	0.2584	907	26	3305	2.6	45657	36.1	35
28	-0.4269	0.2568	913	26	3212	2.5	48869	38.7	37
29	-0.3613	0.2554	920	26	3268	2.6	52137	41.3	40
30	-0.2964	0.2542	927	25	3048	2.4	55185	43.7	42
31	-0.2320	0.2532	933	25	2998	2.4	58183	46.1	45
32	-0.1681	0.2524	939	25	2868	2.3	61051	48.3	47
33	-0.1046	0.2518	946	25	2928	2.3	63979	50.7	49
34	-0.0413	0.2514	952	25	2799	2.2	66778	52.9	52
35	0.0218	0.2511	958	25	2774	2.2	69552	55.1	54
36	0.0849	0.2510	965	25	2625	2.1	72177	57.1	56
37	0.1479	0.2511	971	25	2586	2.0	74763	59.2	58
38	0.2110	0.2514	977	25	2551	2.0	77314	61.2	60
39	0.2743	0.2518	984	25	2469	2.0	79783	63.2	62
40	0.3379	0.2525	990	25	2393	1.9	82176	65.1	64
41	0.4018	0.2533	996	25	2376	1.9	84552	66.9	66
42	0.4662	0.2542	1003	25	2308	1.8	86860	68.8	68
43	0.5311	0.2554	1009	26	2364	1.9	89224	70.6	70
44	0.5967	0.2568	1016	26	2150	1.7	91374	72.3	71
45	0.6630	0.2584	1022	26	2139	1.7	93513	74.0	73
46	0.7302	0.2601	1029	26	2135	1.7	95648	75.7	75
47	0.7984	0.2622	1036	26	2046	1.6	97694	77.4	77
48	0.8677	0.2645	1043	26	1945	1.5	99639	78.9	78
49	0.9383	0.2670	1050	27	2016	1.6	101655	80.5	80

50	1.0104	0.2698	1057	27	1969	1.6	103624	82.0	81
51	1.0840	0.2730	1065	27	1897	1.5	105521	83.5	83
52	1.1595	0.2765	1072	28	1836	1.5	107357	85.0	84
53	1.2370	0.2804	1080	28	1741	1.4	109098	86.4	86
54	1.3168	0.2848	1088	28	1741	1.4	110839	87.8	87
55	1.3993	0.2897	1096	29	1744	1.4	112583	89.1	88
56	1.4848	0.2951	1105	30	1574	1.2	114157	90.4	90
57	1.5737	0.3013	1114	30	1519	1.2	115676	91.6	91
58	1.6666	0.3084	1123	31	1473	1.2	117149	92.8	92
59	1.7641	0.3164	1133	32	1402	1.1	118551	93.9	93
60	1.8671	0.3256	1143	33	1273	1.0	119824	94.9	94
61	1.9765	0.3363	1154	34	1169	0.9	120993	95.8	95
62	2.0938	0.3489	1166	35	1077	0.9	122070	96.7	96
63	2.2207	0.3639	1178	36	957	0.8	123027	97.4	97
64	2.3596	0.3820	1192	38	783	0.6	123810	98.0	98
65	2.5139	0.4043	1208	40	714	0.6	124524	98.6	98
66	2.6885	0.4324	1225	43	585	0.5	125109	99.1	99
67	2.8910	0.4692	1245	47	444	0.4	125553	99.4	99
68	3.1342	0.5197	1270	52	328	0.3	125881	99.7	99
69	3.4419	0.5945	1300	59	216	0.2	126097	99.8	99
70	3.8676	0.7214	1343	72	122	0.1	126219	99.9	99
71	4.5813	1.0103	1414	101	57	0.0	126276	100.0	99
72	5.8001	1.8316	1536	183	23	0.0	126299	100.0	99

Mathematics Grade 8

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.6958	1.8333	600	183	1	0.0	1	0.0	1
1	-4.4726	1.0137	600	101	0	0.0	1	0.0	1
2	-3.7519	0.7263	600	73	0	0.0	1	0.0	1
3	-3.3190	0.6007	620	60	0	0.0	1	0.0	1
4	-3.0038	0.5267	651	53	4	0.0	5	0.0	1
5	-2.7532	0.4769	676	48	4	0.0	9	0.0	1
6	-2.5435	0.4406	697	44	10	0.0	19	0.0	1
7	-2.3618	0.4127	716	41	33	0.0	52	0.0	1
8	-2.2008	0.3905	732	39	83	0.1	135	0.1	1
9	-2.0555	0.3724	746	37	210	0.2	345	0.3	1
10	-1.9225	0.3572	760	36	374	0.3	719	0.6	1
11	-1.7996	0.3444	772	34	691	0.5	1410	1.1	1
12	-1.6848	0.3333	783	33	982	0.8	2392	1.9	1
13	-1.5770	0.3237	794	32	1443	1.1	3835	3.0	2
14	-1.4749	0.3153	804	32	1913	1.5	5748	4.5	4
15	-1.3779	0.3079	814	31	2429	1.9	8177	6.3	5
16	-1.2851	0.3013	823	30	2677	2.1	10854	8.4	7
17	-1.1961	0.2955	832	30	3427	2.7	14281	11.1	10
18	-1.1104	0.2902	841	29	3757	2.9	18038	14.0	13
19	-1.0275	0.2855	849	29	3839	3.0	21877	17.0	15
20	-0.9472	0.2813	857	28	3871	3.0	25748	20.0	18
21	-0.8691	0.2775	865	28	3867	3.0	29615	23.0	21
22	-0.7931	0.2742	872	27	4019	3.1	33634	26.1	25
23	-0.7187	0.2711	880	27	3816	3.0	37450	29.1	28
24	-0.6460	0.2684	887	27	3809	3.0	41259	32.0	31
25	-0.5746	0.2660	894	27	3657	2.8	44916	34.9	33
26	-0.5044	0.2639	901	26	3646	2.8	48562	37.7	36
27	-0.4352	0.2620	908	26	3409	2.6	51971	40.3	39
28	-0.3670	0.2604	915	26	3376	2.6	55347	43.0	42
29	-0.2996	0.2591	922	26	3302	2.6	58649	45.5	44
30	-0.2328	0.2579	928	26	3306	2.6	61955	48.1	47
31	-0.1665	0.2570	935	26	3122	2.4	65077	50.5	49
32	-0.1006	0.2563	942	26	3040	2.4	68117	52.9	52
33	-0.0351	0.2558	948	26	3134	2.4	71251	55.3	54
34	0.0303	0.2555	955	26	2901	2.3	74152	57.5	56
35	0.0955	0.2554	961	26	2955	2.3	77107	59.8	59
36	0.1608	0.2555	968	26	2934	2.3	80041	62.1	61
37	0.2262	0.2559	974	26	2723	2.1	82764	64.2	63
38	0.2918	0.2564	981	26	2630	2.0	85394	66.3	65
39	0.3577	0.2572	988	26	2599	2.0	87993	68.3	67
40	0.4240	0.2581	994	26	2513	2.0	90506	70.2	69
41	0.4910	0.2593	1001	26	2525	2.0	93031	72.2	71
42	0.5585	0.2607	1008	26	2358	1.8	95389	74.0	73
43	0.6269	0.2623	1014	26	2411	1.9	97800	75.9	75
44	0.6962	0.2642	1021	26	2364	1.8	100164	77.7	77
45	0.7665	0.2663	1028	27	2209	1.7	102373	79.4	79
46	0.8381	0.2687	1036	27	2114	1.6	104487	81.1	80
47	0.9109	0.2713	1043	27	2037	1.6	106524	82.7	82
48	0.9853	0.2742	1050	27	2009	1.6	108533	84.2	83
49	1.0614	0.2774	1058	28	1899	1.5	110432	85.7	85

50	1.1393	0.2810	1066	28	1825	1.4	112257	87.1	86
51	1.2193	0.2849	1074	28	1771	1.4	114028	88.5	88
52	1.3017	0.2891	1082	29	1549	1.2	115577	89.7	89
53	1.3866	0.2937	1090	29	1532	1.2	117109	90.9	90
54	1.4743	0.2988	1099	30	1428	1.1	118537	92.0	91
55	1.5652	0.3043	1108	30	1360	1.1	119897	93.0	93
56	1.6596	0.3103	1118	31	1237	1.0	121134	94.0	94
57	1.7579	0.3168	1128	32	1155	0.9	122289	94.9	94
58	1.8606	0.3240	1138	32	1008	0.8	123297	95.7	95
59	1.9681	0.3320	1149	33	899	0.7	124196	96.4	96
60	2.0813	0.3408	1160	34	849	0.7	125045	97.0	97
61	2.2008	0.3508	1172	35	737	0.6	125782	97.6	97
62	2.3278	0.3621	1185	36	669	0.5	126451	98.1	98
63	2.4636	0.3754	1198	38	554	0.4	127005	98.6	98
64	2.6104	0.3913	1213	39	428	0.3	127433	98.9	99
65	2.7711	0.4111	1229	41	376	0.3	127809	99.2	99
66	2.9502	0.4364	1247	44	313	0.2	128122	99.4	99
67	3.1552	0.4706	1267	47	253	0.2	128375	99.6	99
68	3.3986	0.5189	1292	52	179	0.1	128554	99.8	99
69	3.7049	0.5928	1322	59	120	0.1	128674	99.9	99
70	4.1286	0.7203	1365	72	112	0.1	128786	99.9	99
71	4.8422	1.0114	1436	101	52	0.0	128838	100.0	99
72	6.0642	1.8336	1558	183	21	0.0	128859	100.0	99

English Language Arts Grade 3

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.9292	1.8434	600	184	0	0.0	0	0.0	0
1	-4.6806	1.0307	600	103	0	0.0	0	0.0	0
2	-3.9268	0.7476	600	75	0	0.0	0	0.0	0
3	-3.4640	0.6239	616	62	0	0.0	0	0.0	0
4	-3.1217	0.5507	650	55	3	0.0	3	0.0	1
5	-2.8464	0.5011	678	50	8	0.0	11	0.0	1
6	-2.6140	0.4647	701	46	12	0.0	23	0.0	1
7	-2.4114	0.4366	721	44	37	0.0	60	0.0	1
8	-2.2307	0.4142	739	41	91	0.1	151	0.1	1
9	-2.0669	0.3958	756	40	167	0.1	318	0.3	1
10	-1.9164	0.3806	771	38	287	0.2	605	0.5	1
11	-1.7766	0.3676	785	37	437	0.3	1042	0.8	1
12	-1.6455	0.3566	798	36	655	0.5	1697	1.4	1
13	-1.5219	0.3470	810	35	836	0.7	2533	2.0	2
14	-1.4044	0.3387	822	34	1035	0.8	3568	2.9	2
15	-1.2922	0.3314	833	33	1213	1.0	4781	3.8	3
16	-1.1845	0.3250	844	33	1338	1.1	6119	4.9	4
17	-1.0807	0.3194	854	32	1511	1.2	7630	6.1	5
18	-0.9804	0.3144	864	31	1631	1.3	9261	7.4	7
19	-0.8830	0.3099	874	31	1675	1.3	10936	8.7	8
20	-0.7881	0.3060	884	31	1857	1.5	12793	10.2	9
21	-0.6955	0.3026	893	30	1874	1.5	14667	11.7	11
22	-0.6049	0.2995	902	30	2072	1.7	16739	13.4	13
23	-0.5160	0.2969	911	30	2116	1.7	18855	15.1	14
24	-0.4286	0.2946	920	29	2170	1.7	21025	16.8	16
25	-0.3424	0.2926	928	29	2318	1.9	23343	18.7	18
26	-0.2574	0.2909	937	29	2459	2.0	25802	20.6	20
27	-0.1731	0.2896	945	29	2644	2.1	28446	22.7	22
28	-0.0896	0.2885	954	29	2696	2.2	31142	24.9	24
29	-0.0066	0.2877	962	29	3021	2.4	34163	27.3	26
30	0.0760	0.2872	970	29	3079	2.5	37242	29.8	29
31	0.1584	0.2870	978	29	3317	2.7	40559	32.4	31
32	0.2407	0.2870	987	29	3395	2.7	43954	35.1	34
33	0.3232	0.2873	995	29	3585	2.9	47539	38.0	37
34	0.4059	0.2879	1003	29	3710	3.0	51249	40.9	39
35	0.4890	0.2889	1011	29	3852	3.1	55101	44.0	42
36	0.5728	0.2901	1020	29	3944	3.2	59045	47.2	46
37	0.6574	0.2916	1028	29	4210	3.4	63255	50.5	49
38	0.7429	0.2935	1037	29	4272	3.4	67527	54.0	52
39	0.8297	0.2957	1045	30	4256	3.4	71783	57.4	56
40	0.9179	0.2983	1054	30	4492	3.6	76275	60.9	59
41	1.0077	0.3013	1063	30	4331	3.5	80606	64.4	63
42	1.0995	0.3048	1072	30	4354	3.5	84960	67.9	66
43	1.1936	0.3088	1082	31	4456	3.6	89416	71.4	70
44	1.2903	0.3133	1092	31	4242	3.4	93658	74.8	73
45	1.3901	0.3184	1101	32	4131	3.3	97789	78.1	76
46	1.4933	0.3242	1112	32	3873	3.1	101662	81.2	80
47	1.6005	0.3309	1123	33	3801	3	105463	84.3	83
48	1.7124	0.3384	1134	34	3447	2.8	108910	87	86
49	1.8298	0.347	1145	35	3149	2.5	112059	89.5	88

50	1.9536	0.3568	1158	36	2774	2.2	114833	91.7	91
51	2.0849	0.3681	1171	37	2468	2	117301	93.7	93
52	2.2251	0.3813	1185	38	1972	1.6	119273	95.3	95
53	2.3763	0.3967	1200	40	1657	1.3	120930	96.6	96
54	2.5409	0.4151	1217	42	1465	1.2	122395	97.8	97
55	2.7223	0.4375	1235	44	992	0.8	123387	98.6	98
56	2.9257	0.4654	1255	47	724	0.6	124111	99.2	99
57	3.1587	0.5015	1278	50	497	0.4	124608	99.6	99
58	3.4342	0.5507	1306	55	305	0.2	124913	99.8	99
59	3.7761	0.6233	1340	62	142	0.1	125055	99.9	99
60	4.2378	0.7465	1386	75	74	0.1	125129	100	99
61	4.9893	1.0293	1461	103	24	0	125153	100	99
62	6.2354	1.8424	1586	184	7	0	125160	100	99

English Language Arts Grade 4

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-6.4915	1.8495	600	185	0	0.0	0	0.0	0
1	-5.2273	1.0415	600	104	1	0.0	1	0.0	1
2	-4.4516	0.7617	600	76	0	0.0	1	0.0	1
3	-3.9685	0.6391	600	64	0	0.0	1	0.0	1
4	-3.6083	0.5657	600	57	0	0.0	1	0.0	1
5	-3.3176	0.5148	626	51	1	0.0	2	0.0	1
6	-3.0726	0.4766	650	48	8	0.0	10	0.0	1
7	-2.8599	0.4465	672	45	10	0.0	20	0.0	1
8	-2.6717	0.4218	690	42	21	0.0	41	0.0	1
9	-2.5026	0.4012	707	40	40	0.0	81	0.1	1
10	-2.3488	0.3836	723	38	84	0.1	165	0.1	1
11	-2.2075	0.3684	737	37	126	0.1	291	0.2	1
12	-2.0767	0.3552	750	36	171	0.1	462	0.4	1
13	-1.9547	0.3436	762	34	283	0.2	745	0.6	1
14	-1.8402	0.3332	773	33	376	0.3	1121	0.9	1
15	-1.7323	0.3241	784	32	523	0.4	1644	1.3	1
16	-1.6299	0.3158	795	32	589	0.5	2233	1.8	2
17	-1.5325	0.3085	804	31	728	0.6	2961	2.4	2
18	-1.4395	0.3018	814	30	887	0.7	3848	3.1	3
19	-1.3502	0.2958	822	30	1033	0.8	4881	3.9	4
20	-1.2643	0.2904	831	29	1043	0.8	5924	4.8	4
21	-1.1815	0.2855	839	29	1189	1.0	7113	5.7	5
22	-1.1012	0.2811	847	28	1297	1.0	8410	6.8	6
23	-1.0234	0.2771	855	28	1352	1.1	9762	7.9	7
24	-0.9476	0.2734	863	27	1555	1.3	11317	9.1	9
25	-0.8738	0.2702	870	27	1488	1.2	12805	10.3	10
26	-0.8016	0.2673	877	27	1521	1.2	14326	11.6	11
27	-0.7308	0.2647	884	26	1706	1.4	16032	12.9	12
28	-0.6614	0.2624	891	26	1651	1.3	17683	14.3	14
29	-0.5931	0.2603	898	26	1745	1.4	19428	15.7	15
30	-0.5258	0.2585	905	26	1855	1.5	21283	17.2	16
31	-0.4594	0.2570	912	26	1856	1.5	23139	18.7	18
32	-0.3937	0.2557	918	26	1827	1.5	24966	20.1	19
33	-0.3286	0.2546	925	25	1870	1.5	26836	21.6	21
34	-0.2641	0.2537	931	25	1939	1.6	28775	23.2	22
35	-0.1999	0.2530	938	25	1984	1.6	30759	24.8	24
36	-0.1361	0.2525	944	25	2016	1.6	32775	26.4	26
37	-0.0724	0.2521	950	25	2050	1.7	34825	28.1	27
38	-0.0089	0.2520	957	25	2216	1.8	37041	29.9	29
39	0.0546	0.2520	963	25	2285	1.8	39326	31.7	31
40	0.1182	0.2523	969	25	2280	1.8	41606	33.6	33
41	0.1819	0.2526	976	25	2305	1.9	43911	35.4	34
42	0.2459	0.2532	982	25	2378	1.9	46289	37.3	36
43	0.3102	0.2539	989	25	2541	2.0	48830	39.4	38
44	0.3749	0.2548	995	25	2548	2.1	51378	41.4	40
45	0.4401	0.2559	1002	26	2721	2.2	54099	43.6	43
46	0.5059	0.2572	1008	26	2740	2.2	56839	45.8	45
47	0.5724	0.2586	1015	26	2836	2.3	59675	48.1	47
48	0.6396	0.2602	1021	26	2810	2.3	62485	50.4	49
49	0.7078	0.2620	1028	26	3059	2.5	65544	52.9	52

50	0.7770	0.2641	1035	26	3000	2.4	68544	55.3	54
51	0.8473	0.2663	1042	27	3198	2.6	71742	57.9	57
52	0.9189	0.2688	1049	27	3189	2.6	74931	60.4	59
53	0.9918	0.2715	1057	27	3239	2.6	78170	63	62
54	1.0663	0.2744	1064	27	3240	2.6	81410	65.7	64
55	1.1425	0.2776	1072	28	3222	2.6	84632	68.3	67
56	1.2205	0.2811	1080	28	3278	2.6	87910	70.9	70
57	1.3006	0.2849	1088	28	3135	2.5	91045	73.4	72
58	1.3829	0.289	1096	29	3094	2.5	94139	75.9	75
59	1.4677	0.2934	1104	29	3090	2.5	97229	78.4	77
60	1.5552	0.2982	1113	30	2933	2.4	100162	80.8	80
61	1.6457	0.3034	1122	30	2809	2.3	102971	83.1	82
62	1.7394	0.309	1131	31	2771	2.2	105742	85.3	84
63	1.8368	0.315	1141	32	2475	2	108217	87.3	86
64	1.938	0.3215	1151	32	2298	1.9	110515	89.1	88
65	2.0437	0.3285	1162	33	2155	1.7	112670	90.9	90
66	2.154	0.336	1173	34	1954	1.6	114624	92.4	92
67	2.2696	0.3441	1184	34	1785	1.4	116409	93.9	93
68	2.391	0.3528	1197	35	1376	1.1	117785	95	94
69	2.5188	0.3621	1209	36	1275	1	119060	96	96
70	2.6536	0.3722	1223	37	1029	0.8	120089	96.9	96
71	2.7962	0.3832	1237	38	855	0.7	120944	97.5	97
72	2.9476	0.3951	1252	40	748	0.6	121692	98.1	98
73	3.1088	0.4081	1268	41	618	0.5	122310	98.6	98
74	3.2812	0.4226	1286	42	473	0.4	122783	99	99
75	3.4667	0.439	1304	44	379	0.3	123162	99.3	99
76	3.6675	0.4577	1324	46	265	0.2	123427	99.5	99
77	3.887	0.4798	1346	48	200	0.2	123627	99.7	99
78	4.1298	0.5066	1370	51	137	0.1	123764	99.8	99
79	4.4032	0.5406	1398	54	95	0.1	123859	99.9	99
80	4.7196	0.5866	1429	59	49	0	123908	99.9	99
81	5.1021	0.6548	1468	65	34	0	123942	100	99
82	5.6033	0.7719	1518	77	28	0	123970	100	99
83	6.3921	1.0466	1597	105	13	0	123983	100	99
84	7.6625	1.8514	1724	185	3	0	123986	100	99

English Language Arts Grade 5

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-6.6543	1.8414	600	184	0	0.0	0	0.0	0
1	-5.4100	1.0284	600	103	0	0.0	0	0.0	0
2	-4.6592	0.7467	600	75	0	0.0	0	0.0	0
3	-4.1964	0.6249	600	62	0	0.0	0	0.0	0
4	-3.8519	0.5536	600	55	0	0.0	0	0.0	0
5	-3.5726	0.5057	601	51	1	0.0	1	0.0	1
6	-3.3351	0.4705	625	47	7	0.0	8	0.0	1
7	-3.1268	0.4431	646	44	14	0.0	22	0.0	1
8	-2.9404	0.4210	664	42	25	0.0	47	0.0	1
9	-2.7710	0.4026	681	40	34	0.0	81	0.1	1
10	-2.6153	0.3869	697	39	63	0.0	144	0.1	1
11	-2.4709	0.3733	711	37	89	0.1	233	0.2	1
12	-2.3361	0.3613	725	36	139	0.1	372	0.3	1
13	-2.2094	0.3507	737	35	168	0.1	540	0.4	1
14	-2.0898	0.3412	749	34	254	0.2	794	0.6	1
15	-1.9762	0.3327	761	33	365	0.3	1159	0.9	1
16	-1.8681	0.3251	772	33	413	0.3	1572	1.2	1
17	-1.7647	0.3181	782	32	523	0.4	2095	1.7	1
18	-1.6655	0.3118	792	31	646	0.5	2741	2.2	2
19	-1.5701	0.3061	801	31	705	0.6	3446	2.7	2
20	-1.4780	0.3009	811	30	816	0.6	4262	3.4	3
21	-1.3889	0.2962	819	30	975	0.8	5237	4.1	4
22	-1.3025	0.2918	828	29	1003	0.8	6240	4.9	5
23	-1.2184	0.2879	836	29	1114	0.9	7354	5.8	5
24	-1.1366	0.2843	845	28	1198	0.9	8552	6.8	6
25	-1.0567	0.2810	853	28	1221	1.0	9773	7.7	7
26	-0.9785	0.2781	860	28	1312	1.0	11085	8.8	8
27	-0.9020	0.2754	868	28	1340	1.1	12425	9.8	9
28	-0.8268	0.2730	876	27	1479	1.2	13904	11.0	10
29	-0.7529	0.2708	883	27	1478	1.2	15382	12.2	12
30	-0.6801	0.2688	890	27	1539	1.2	16921	13.4	13
31	-0.6083	0.2671	897	27	1614	1.3	18535	14.7	14
32	-0.5374	0.2656	905	27	1641	1.3	20176	15.9	15
33	-0.4672	0.2643	912	26	1746	1.4	21922	17.3	17
34	-0.3977	0.2632	919	26	1807	1.4	23729	18.8	18
35	-0.3287	0.2623	925	26	1861	1.5	25590	20.2	19
36	-0.2601	0.2616	932	26	1896	1.5	27486	21.7	21
37	-0.1918	0.2611	939	26	2009	1.6	29495	23.3	23
38	-0.1237	0.2607	946	26	1965	1.6	31460	24.9	24
39	-0.0558	0.2606	953	26	2117	1.7	33577	26.5	26
40	0.0121	0.2606	960	26	2156	1.7	35733	28.2	27
41	0.0801	0.2608	966	26	2322	1.8	38055	30.1	29
42	0.1482	0.2612	973	26	2410	1.9	40465	32.0	31
43	0.2166	0.2618	980	26	2438	1.9	42903	33.9	33
44	0.2853	0.2626	987	26	2605	2.1	45508	36.0	35
45	0.3545	0.2635	994	26	2757	2.2	48265	38.2	37
46	0.4242	0.2647	1001	26	2850	2.3	51115	40.4	39
47	0.4946	0.2660	1008	27	2938	2.3	54053	42.7	42
48	0.5657	0.2675	1015	27	3040	2.4	57093	45.1	44
49	0.6378	0.2693	1022	27	2999	2.4	60092	47.5	46

50	0.7108	0.2712	1029	27	3206	2.5	63298	50.0	49
51	0.7849	0.2734	1037	27	3093	2.4	66391	52.5	51
52	0.8603	0.2758	1044	28	3336	2.6	69727	55.1	54
53	0.9371	0.2785	1052	28	3262	2.6	72989	57.7	56
54	1.0155	0.2814	1060	28	3405	2.7	76394	60.4	59
55	1.0955	0.2845	1068	28	3500	2.8	79894	63.2	62
56	1.1775	0.288	1076	29	3509	2.8	83403	65.9	65
57	1.2615	0.2918	1084	29	3517	2.8	86920	68.7	67
58	1.3478	0.2959	1093	30	3523	2.8	90443	71.5	70
59	1.4367	0.3004	1102	30	3514	2.8	93957	74.3	73
60	1.5284	0.3053	1111	31	3418	2.7	97375	77	76
61	1.6232	0.3106	1121	31	3420	2.7	100795	79.7	78
62	1.7214	0.3163	1130	32	3200	2.5	103995	82.2	81
63	1.8234	0.3226	1141	32	3063	2.4	107058	84.6	83
64	1.9296	0.3293	1151	33	2979	2.4	110037	87	86
65	2.0405	0.3366	1162	34	2583	2	112620	89	88
66	2.1565	0.3446	1174	34	2346	1.9	114966	90.9	90
67	2.2781	0.3531	1186	35	2119	1.7	117085	92.6	92
68	2.4061	0.3623	1199	36	1820	1.4	118905	94	93
69	2.5409	0.3722	1212	37	1563	1.2	120468	95.2	95
70	2.6833	0.3827	1227	38	1387	1.1	121855	96.3	96
71	2.8341	0.394	1242	39	1060	0.8	122915	97.2	97
72	2.994	0.4059	1258	41	887	0.7	123802	97.9	98
73	3.1639	0.4186	1275	42	705	0.6	124507	98.4	98
74	3.3449	0.4323	1293	43	508	0.4	125015	98.8	99
75	3.5381	0.4472	1312	45	450	0.4	125465	99.2	99
76	3.7455	0.464	1333	46	324	0.3	125789	99.4	99
77	3.9698	0.4836	1355	48	226	0.2	126015	99.6	99
78	4.2151	0.5078	1380	51	157	0.1	126172	99.7	99
79	4.4884	0.5392	1407	54	135	0.1	126307	99.8	99
80	4.8018	0.5828	1439	58	79	0.1	126386	99.9	99
81	5.1785	0.6493	1476	65	51	0	126437	99.9	99
82	5.6714	0.7658	1525	77	42	0	126479	100	99
83	6.45	1.0413	1603	104	15	0	126494	100	99
84	7.7124	1.8482	1730	185	7	0	126501	100	99

English Language Arts Grade 6

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-6.6824	1.8426	600	184	0	0.0	0	0.0	0
1	-5.4350	1.0307	600	103	0	0.0	0	0.0	0
2	-4.6793	0.7501	600	75	0	0.0	0	0.0	0
3	-4.2111	0.6294	600	63	0	0.0	0	0.0	0
4	-3.8607	0.5590	600	56	0	0.0	0	0.0	0
5	-3.5754	0.5118	600	51	2	0.0	2	0.0	1
6	-3.3316	0.4771	608	48	1	0.0	3	0.0	1
7	-3.1170	0.4502	629	45	4	0.0	7	0.0	1
8	-2.9243	0.4283	648	43	11	0.0	18	0.0	1
9	-2.7488	0.4100	666	41	14	0.0	32	0.0	1
10	-2.5873	0.3942	682	39	32	0.0	64	0.1	1
11	-2.4374	0.3804	697	38	49	0.0	113	0.1	1
12	-2.2975	0.3681	711	37	61	0.0	174	0.1	1
13	-2.1660	0.3572	724	36	95	0.1	269	0.2	1
14	-2.0420	0.3473	737	35	149	0.1	418	0.3	1
15	-1.9246	0.3383	748	34	215	0.2	633	0.5	1
16	-1.8129	0.3301	759	33	287	0.2	920	0.7	1
17	-1.7064	0.3227	770	32	320	0.3	1240	1.0	1
18	-1.6044	0.3159	780	32	448	0.4	1688	1.3	1
19	-1.5066	0.3097	790	31	529	0.4	2217	1.8	2
20	-1.4125	0.3040	800	30	632	0.5	2849	2.3	2
21	-1.3217	0.2987	809	30	733	0.6	3582	2.8	3
22	-1.2339	0.2939	817	29	861	0.7	4443	3.5	3
23	-1.1488	0.2895	826	29	957	0.8	5400	4.3	4
24	-1.0662	0.2855	834	29	1031	0.8	6431	5.1	5
25	-0.9858	0.2818	842	28	1061	0.8	7492	5.9	6
26	-0.9074	0.2784	850	28	1209	1.0	8701	6.9	6
27	-0.8308	0.2753	858	28	1222	1.0	9923	7.9	7
28	-0.7558	0.2724	865	27	1353	1.1	11276	8.9	8
29	-0.6823	0.2699	873	27	1343	1.1	12619	10.0	9
30	-0.6101	0.2675	880	27	1501	1.2	14120	11.2	11
31	-0.5391	0.2654	887	27	1605	1.3	15725	12.4	12
32	-0.4691	0.2636	894	26	1653	1.3	17378	13.8	13
33	-0.4001	0.2619	901	26	1678	1.3	19056	15.1	14
34	-0.3319	0.2604	908	26	1666	1.3	20722	16.4	16
35	-0.2644	0.2591	914	26	1815	1.4	22537	17.8	17
36	-0.1976	0.2580	921	26	1843	1.5	24380	19.3	19
37	-0.1312	0.2571	928	26	1900	1.5	26280	20.8	20
38	-0.0653	0.2564	934	26	1956	1.5	28236	22.4	22
39	0.0003	0.2559	941	26	2046	1.6	30282	24.0	23
40	0.0657	0.2555	947	26	2173	1.7	32455	25.7	25
41	0.1309	0.2553	954	26	2184	1.7	34639	27.4	27
42	0.1960	0.2552	960	26	2323	1.8	36962	29.3	28
43	0.2612	0.2553	967	26	2332	1.8	39294	31.1	30
44	0.3264	0.2556	973	26	2486	2.0	41780	33.1	32
45	0.3919	0.2561	980	26	2560	2.0	44340	35.1	34
46	0.4577	0.2568	987	26	2699	2.1	47039	37.2	36
47	0.5238	0.2576	993	26	2668	2.1	49707	39.3	38
48	0.5904	0.2586	1000	26	2698	2.1	52405	41.5	40
49	0.6576	0.2598	1007	26	2891	2.3	55296	43.8	43

50	0.7254	0.2612	1013	26	2888	2.3	58184	46.1	45
51	0.7941	0.2628	1020	26	2964	2.3	61148	48.4	47
52	0.8637	0.2647	1027	26	2986	2.4	64134	50.8	50
53	0.9343	0.2667	1034	27	3080	2.4	67214	53.2	52
54	1.006	0.269	1041	27	3060	2.4	70274	55.6	54
55	1.0791	0.2716	1049	27	3171	2.5	73445	58.1	57
56	1.1536	0.2744	1056	27	3204	2.5	76649	60.7	59
57	1.2298	0.2776	1064	28	3204	2.5	79853	63.2	62
58	1.3078	0.281	1072	28	3283	2.6	83136	65.8	65
59	1.3878	0.2848	1080	28	3359	2.7	86495	68.5	67
60	1.4701	0.2889	1088	29	3334	2.6	89829	71.1	70
61	1.5549	0.2935	1096	29	3300	2.6	93129	73.7	72
62	1.6424	0.2985	1105	30	3243	2.6	96372	76.3	75
63	1.7331	0.3039	1114	30	3090	2.4	99462	78.7	78
64	1.8273	0.3099	1124	31	3003	2.4	102465	81.1	80
65	1.9254	0.3165	1133	32	2935	2.3	105400	83.4	82
66	2.0278	0.3236	1144	32	2883	2.3	108283	85.7	85
67	2.135	0.3315	1154	33	2697	2.1	110980	87.8	87
68	2.2478	0.3402	1166	34	2367	1.9	113347	89.7	89
69	2.3668	0.3498	1177	35	2247	1.8	115594	91.5	91
70	2.4929	0.3604	1190	36	1978	1.6	117572	93.1	92
71	2.627	0.3722	1203	37	1765	1.4	119337	94.5	94
72	2.7704	0.3854	1218	39	1525	1.2	120862	95.7	95
73	2.9245	0.4001	1233	40	1294	1	122156	96.7	96
74	3.0913	0.4169	1250	42	1078	0.9	123234	97.5	97
75	3.2729	0.4359	1268	44	818	0.6	124052	98.2	98
76	3.4725	0.458	1288	46	683	0.5	124735	98.7	98
77	3.6939	0.4837	1310	48	524	0.4	125259	99.2	99
78	3.9426	0.5144	1335	51	390	0.3	125649	99.5	99
79	4.2263	0.5522	1363	55	245	0.2	125894	99.7	99
80	4.5577	0.6011	1397	60	164	0.1	126058	99.8	99
81	4.9593	0.6706	1437	67	115	0.1	126173	99.9	99
82	5.4827	0.7868	1489	79	81	0.1	126254	99.9	99
83	6.2953	1.058	1570	106	58	0	126312	100	99
84	7.5823	1.8577	1699	186	19	0	126331	100	99

English Language Arts Grade 7

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-6.7204	1.8455	600	185	0	0.0	0	0.0	0
1	-5.4662	1.0348	600	103	0	0.0	0	0.0	0
2	-4.7037	0.7535	600	75	0	0.0	0	0.0	0
3	-4.2320	0.6308	600	63	0	0.0	0	0.0	0
4	-3.8814	0.5580	600	56	1	0.0	1	0.0	1
5	-3.5985	0.5082	600	51	2	0.0	3	0.0	1
6	-3.3593	0.4713	612	47	2	0.0	5	0.0	1
7	-3.1510	0.4425	633	44	3	0.0	8	0.0	1
8	-2.9657	0.4191	651	42	6	0.0	14	0.0	1
9	-2.7983	0.3997	668	40	12	0.0	26	0.0	1
10	-2.6452	0.3832	683	38	29	0.0	55	0.0	1
11	-2.5039	0.3691	697	37	52	0.0	107	0.1	1
12	-2.3722	0.3568	710	36	73	0.1	180	0.1	1
13	-2.2488	0.3461	723	35	107	0.1	287	0.2	1
14	-2.1323	0.3366	734	34	133	0.1	420	0.3	1
15	-2.0219	0.3282	745	33	215	0.2	635	0.5	1
16	-1.9166	0.3207	756	32	273	0.2	908	0.7	1
17	-1.8160	0.3140	766	31	333	0.3	1241	1.0	1
18	-1.7193	0.3080	776	31	394	0.3	1635	1.3	1
19	-1.6260	0.3027	785	30	540	0.4	2175	1.7	2
20	-1.5359	0.2978	794	30	570	0.5	2745	2.2	2
21	-1.4485	0.2935	803	29	705	0.6	3450	2.7	2
22	-1.3635	0.2896	811	29	754	0.6	4204	3.3	3
23	-1.2807	0.2861	820	29	804	0.6	5008	4.0	4
24	-1.1998	0.2829	828	28	965	0.8	5973	4.7	4
25	-1.1205	0.2801	836	28	1012	0.8	6985	5.5	5
26	-1.0428	0.2775	843	28	1090	0.9	8075	6.4	6
27	-0.9665	0.2752	851	28	1169	0.9	9244	7.3	7
28	-0.8913	0.2731	859	27	1206	1.0	10450	8.3	8
29	-0.8172	0.2713	866	27	1289	1.0	11739	9.3	9
30	-0.7441	0.2696	873	27	1370	1.1	13109	10.4	10
31	-0.6718	0.2681	880	27	1405	1.1	14514	11.5	11
32	-0.6003	0.2668	888	27	1431	1.1	15945	12.6	12
33	-0.5295	0.2656	895	27	1714	1.4	17659	14.0	13
34	-0.4592	0.2646	902	26	1639	1.3	19298	15.3	15
35	-0.3895	0.2637	909	26	1707	1.4	21005	16.6	16
36	-0.3201	0.2629	916	26	1817	1.4	22822	18.1	17
37	-0.2512	0.2623	923	26	1901	1.5	24723	19.6	19
38	-0.1825	0.2618	929	26	1964	1.6	26687	21.1	20
39	-0.1140	0.2615	936	26	2062	1.6	28749	22.8	22
40	-0.0458	0.2612	943	26	2246	1.8	30995	24.6	24
41	0.0224	0.2611	950	26	2252	1.8	33247	26.3	25
42	0.0906	0.2611	957	26	2425	1.9	35672	28.3	27
43	0.1588	0.2612	964	26	2396	1.9	38068	30.2	29
44	0.2271	0.2615	970	26	2626	2.1	40694	32.2	31
45	0.2956	0.2619	977	26	2656	2.1	43350	34.3	33
46	0.3643	0.2624	984	26	2880	2.3	46230	36.6	35
47	0.4334	0.2631	991	26	2902	2.3	49132	38.9	38
48	0.5028	0.2640	998	26	3028	2.4	52160	41.3	40
49	0.5728	0.2649	1005	26	3070	2.4	55230	43.8	43

50	0.6433	0.2661	1012	27	3219	2.6	58449	46.3	45
51	0.7144	0.2674	1019	27	3291	2.6	61740	48.9	48
52	0.7863	0.2689	1026	27	3379	2.7	65119	51.6	50
53	0.859	0.2705	1034	27	3296	2.6	68415	54.2	53
54	0.9327	0.2724	1041	27	3432	2.7	71847	56.9	56
55	1.0075	0.2745	1048	27	3460	2.7	75307	59.7	58
56	1.0834	0.2768	1056	28	3494	2.8	78801	62.4	61
57	1.1607	0.2793	1064	28	3451	2.7	82252	65.2	64
58	1.2394	0.2821	1072	28	3546	2.8	85798	68	67
59	1.3199	0.2851	1080	29	3466	2.7	89264	70.7	69
60	1.4021	0.2885	1088	29	3179	2.5	92443	73.2	72
61	1.4863	0.2921	1096	29	3267	2.6	95710	75.8	75
62	1.5729	0.2962	1105	30	3151	2.5	98861	78.3	77
63	1.6619	0.3006	1114	30	3084	2.4	101945	80.8	80
64	1.7536	0.3054	1123	31	2889	2.3	104834	83.1	82
65	1.8485	0.3107	1133	31	2818	2.2	107652	85.3	84
66	1.9469	0.3166	1142	32	2618	2.1	110270	87.4	86
67	2.0491	0.323	1153	32	2365	1.9	112635	89.2	88
68	2.1557	0.3301	1163	33	2147	1.7	114782	90.9	90
69	2.2672	0.3379	1174	34	1911	1.5	116693	92.4	92
70	2.3842	0.3466	1186	35	1735	1.4	118428	93.8	93
71	2.5077	0.3563	1198	36	1540	1.2	119968	95	94
72	2.6385	0.3671	1212	37	1325	1	121293	96.1	96
73	2.7777	0.3794	1225	38	1122	0.9	122415	97	97
74	2.9269	0.3933	1240	39	928	0.7	123343	97.7	97
75	3.0878	0.4094	1256	41	738	0.6	124081	98.3	98
76	3.263	0.4281	1274	43	610	0.5	124691	98.8	99
77	3.4557	0.4505	1293	45	481	0.4	125172	99.2	99
78	3.6709	0.4781	1315	48	366	0.3	125538	99.5	99
79	3.916	0.5134	1339	51	217	0.2	125755	99.6	99
80	4.2035	0.5613	1368	56	183	0.1	125938	99.8	99
81	4.5569	0.6322	1403	63	140	0.1	126078	99.9	99
82	5.0292	0.7531	1451	75	94	0.1	126172	100	99
83	5.7899	1.0333	1527	103	46	0	126218	100	99
84	7.0413	1.8442	1652	184	10	0	126228	100	99

English Language Arts Grade 8

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-6.8162	1.8451	600	185	0	0.0	0	0.0	0
1	-5.5626	1.0347	600	103	0	0.0	0	0.0	0
2	-4.7996	0.7544	600	75	0	0.0	0	0.0	0
3	-4.3258	0.6330	600	63	0	0.0	0	0.0	0
4	-3.9718	0.5614	600	56	0	0.0	0	0.0	0
5	-3.6846	0.5127	600	51	0	0.0	0	0.0	0
6	-3.4407	0.4765	617	48	2	0.0	2	0.0	1
7	-3.2274	0.4480	638	45	4	0.0	6	0.0	1
8	-3.0372	0.4247	657	42	2	0.0	8	0.0	1
9	-2.8653	0.4051	675	41	17	0.0	25	0.0	1
10	-2.7081	0.3882	690	39	17	0.0	42	0.0	1
11	-2.5632	0.3734	705	37	44	0.0	86	0.1	1
12	-2.4287	0.3604	718	36	60	0.0	146	0.1	1
13	-2.3030	0.3488	731	35	72	0.1	218	0.2	1
14	-2.1849	0.3385	743	34	113	0.1	331	0.3	1
15	-2.0736	0.3291	754	33	145	0.1	476	0.4	1
16	-1.9680	0.3207	764	32	201	0.2	677	0.5	1
17	-1.8677	0.3131	774	31	300	0.2	977	0.8	1
18	-1.7718	0.3061	784	31	353	0.3	1330	1.0	1
19	-1.6801	0.2998	793	30	427	0.3	1757	1.4	1
20	-1.5919	0.2941	802	29	518	0.4	2275	1.8	2
21	-1.5070	0.2888	810	29	598	0.5	2873	2.2	2
22	-1.4250	0.2840	819	28	758	0.6	3631	2.8	3
23	-1.3456	0.2796	827	28	843	0.7	4474	3.5	3
24	-1.2685	0.2756	834	28	916	0.7	5390	4.2	4
25	-1.1936	0.2720	842	27	996	0.8	6386	5.0	5
26	-1.1205	0.2687	849	27	1126	0.9	7512	5.8	5
27	-1.0491	0.2657	856	27	1160	0.9	8672	6.7	6
28	-0.9793	0.2629	863	26	1258	1.0	9930	7.7	7
29	-0.9108	0.2604	870	26	1321	1.0	11251	8.7	8
30	-0.8436	0.2582	877	26	1362	1.1	12613	9.8	9
31	-0.7774	0.2562	883	26	1427	1.1	14040	10.9	10
32	-0.7122	0.2545	890	25	1471	1.1	15511	12.0	11
33	-0.6479	0.2529	896	25	1570	1.2	17081	13.3	13
34	-0.5843	0.2516	903	25	1618	1.3	18699	14.5	14
35	-0.5213	0.2504	909	25	1814	1.4	20513	15.9	15
36	-0.4588	0.2494	915	25	1844	1.4	22357	17.3	17
37	-0.3968	0.2487	921	25	1874	1.5	24231	18.8	18
38	-0.3351	0.2481	928	25	2026	1.6	26257	20.4	20
39	-0.2737	0.2476	934	25	1979	1.5	28236	21.9	21
40	-0.2124	0.2474	940	25	2172	1.7	30408	23.6	23
41	-0.1513	0.2473	946	25	2255	1.7	32663	25.3	24
42	-0.0901	0.2474	952	25	2418	1.9	35081	27.2	26
43	-0.0288	0.2476	958	25	2411	1.9	37492	29.1	28
44	0.0326	0.2481	964	25	2529	2.0	40021	31.1	30
45	0.0943	0.2487	971	25	2665	2.1	42686	33.1	32
46	0.1563	0.2494	977	25	2694	2.1	45380	35.2	34
47	0.2187	0.2504	983	25	2849	2.2	48229	37.4	36
48	0.2817	0.2515	989	25	2901	2.3	51130	39.7	39
49	0.3452	0.2528	996	25	3046	2.4	54176	42.0	41

50	0.4095	0.2542	1002	25	3191	2.5	57367	44.5	43
51	0.4745	0.2559	1009	26	3270	2.5	60637	47.0	46
52	0.5405	0.2577	1015	26	3273	2.5	63910	49.6	48
53	0.6074	0.2598	1022	26	3397	2.6	67307	52.2	51
54	0.6755	0.2621	1029	26	3444	2.7	70751	54.9	54
55	0.7448	0.2646	1036	26	3444	2.7	74195	57.6	56
56	0.8155	0.2673	1043	27	3425	2.7	77620	60.2	59
57	0.8878	0.2703	1050	27	3523	2.7	81143	63	62
58	0.9617	0.2735	1057	27	3534	2.7	84677	65.7	64
59	1.0375	0.2771	1065	28	3469	2.7	88146	68.4	67
60	1.1153	0.2809	1073	28	3434	2.7	91580	71.1	70
61	1.1954	0.2851	1081	29	3374	2.6	94954	73.7	72
62	1.278	0.2897	1089	29	3292	2.6	98246	76.2	75
63	1.3634	0.2947	1097	29	3294	2.6	101540	78.8	78
64	1.4518	0.3002	1106	30	3012	2.3	104552	81.1	80
65	1.5437	0.3061	1115	31	2929	2.3	107481	83.4	82
66	1.6393	0.3126	1125	31	2743	2.1	110224	85.5	84
67	1.7392	0.3197	1135	32	2627	2	112851	87.6	87
68	1.8439	0.3275	1146	33	2496	1.9	115347	89.5	89
69	1.9539	0.336	1157	34	2239	1.7	117586	91.2	90
70	2.07	0.3455	1168	35	1962	1.5	119548	92.8	92
71	2.1929	0.3559	1180	36	1749	1.4	121297	94.1	93
72	2.3237	0.3675	1193	37	1583	1.2	122880	95.3	95
73	2.4635	0.3805	1207	38	1292	1	124172	96.3	96
74	2.6138	0.3951	1222	40	1109	0.9	125281	97.2	97
75	2.7764	0.4117	1239	41	940	0.7	126221	97.9	98
76	2.9537	0.4309	1256	43	690	0.5	126911	98.5	98
77	3.149	0.4535	1276	45	581	0.5	127492	98.9	99
78	3.367	0.4811	1298	48	461	0.4	127953	99.3	99
79	3.615	0.5162	1323	52	337	0.3	128290	99.5	99
80	3.9053	0.5637	1352	56	229	0.2	128519	99.7	99
81	4.2613	0.634	1387	63	173	0.1	128692	99.8	99
82	4.7356	0.7543	1435	75	126	0.1	128818	99.9	99
83	5.4976	1.0338	1511	103	55	0	128873	100	99
84	6.7495	1.8443	1636	184	16	0	128889	100	99

Science Grade 4

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.6552	1.8330	1050	324	1	0.0	1	0.0	1
1	-4.4327	1.0132	1050	179	0	0.0	1	0.0	1
2	-3.7129	0.7257	1050	128	1	0.0	2	0.0	1
3	-3.2807	0.6001	1050	106	1	0.0	3	0.0	1
4	-2.9663	0.5261	1050	93	2	0.0	5	0.0	1
5	-2.7163	0.4763	1050	84	3	0.0	8	0.0	1
6	-2.5070	0.4401	1050	78	5	0.0	13	0.0	1
7	-2.3258	0.4123	1050	73	19	0.0	32	0.0	1
8	-2.1651	0.3902	1050	69	10	0.0	42	0.0	1
9	-2.0200	0.3721	1050	66	41	0.0	83	0.1	1
10	-1.8872	0.3571	1050	63	86	0.1	169	0.1	1
11	-1.7644	0.3443	1050	61	146	0.1	315	0.3	1
12	-1.6496	0.3334	1050	59	232	0.2	547	0.4	1
13	-1.5417	0.3239	1050	57	349	0.3	896	0.7	1
14	-1.4395	0.3156	1050	56	440	0.4	1336	1.1	1
15	-1.3422	0.3083	1050	54	559	0.4	1895	1.5	1
16	-1.2492	0.3018	1050	53	642	0.5	2537	2.0	2
17	-1.1598	0.2961	1050	52	759	0.6	3296	2.7	2
18	-1.0737	0.2910	1050	51	858	0.7	4154	3.3	3
19	-0.9904	0.2864	1051	51	922	0.7	5076	4.1	4
20	-0.9096	0.2823	1065	50	971	0.8	6047	4.9	4
21	-0.8309	0.2786	1079	49	1042	0.8	7089	5.7	5
22	-0.7543	0.2753	1092	49	1130	0.9	8219	6.6	6
23	-0.6793	0.2724	1106	48	1139	0.9	9358	7.5	7
24	-0.6058	0.2698	1119	48	1206	1.0	10564	8.5	8
25	-0.5337	0.2675	1131	47	1267	1.0	11831	9.5	9
26	-0.4627	0.2654	1144	47	1249	1.0	13080	10.5	10
27	-0.3927	0.2637	1156	47	1267	1.0	14347	11.5	11
28	-0.3236	0.2622	1168	46	1354	1.1	15701	12.6	12
29	-0.2552	0.2609	1181	46	1353	1.1	17054	13.7	13
30	-0.1874	0.2599	1193	46	1374	1.1	18428	14.8	14
31	-0.1201	0.2591	1204	46	1500	1.2	19928	16.0	15
32	-0.0531	0.2585	1216	46	1489	1.2	21417	17.2	17
33	0.0136	0.2581	1228	46	1636	1.3	23053	18.5	18
34	0.0801	0.2579	1240	46	1611	1.3	24664	19.8	19
35	0.1467	0.2580	1252	46	1746	1.4	26410	21.2	21
36	0.2133	0.2582	1263	46	1837	1.5	28247	22.7	22
37	0.2800	0.2587	1275	46	1853	1.5	30100	24.2	23
38	0.3471	0.2594	1287	46	2021	1.6	32121	25.8	25
39	0.4146	0.2603	1299	46	2083	1.7	34204	27.5	27
40	0.4827	0.2614	1311	46	2214	1.8	36418	29.3	28
41	0.5513	0.2628	1323	46	2363	1.9	38781	31.2	30
42	0.6208	0.2644	1335	47	2398	1.9	41179	33.1	32
43	0.6912	0.2663	1348	47	2549	2.1	43728	35.2	34
44	0.7627	0.2685	1360	47	2748	2.2	46476	37.4	36
45	0.8355	0.2710	1373	48	2921	2.3	49397	39.7	39
46	0.9096	0.2738	1386	48	2939	2.4	52336	42.1	41
47	0.9854	0.2769	1400	49	3150	2.5	55486	44.6	43
48	1.0631	0.2805	1414	50	3257	2.6	58743	47.3	46
49	1.1429	0.2845	1428	50	3327	2.7	62070	49.9	49

50	1.2251	0.2890	1442	51	3641	2.9	65711	52.9	51
51	1.3100	0.2940	1457	52	3630	2.9	69341	55.8	54
52	1.3980	0.2996	1473	53	3800	3.1	73141	58.8	57
53	1.4897	0.3060	1489	54	4047	3.3	77188	62.1	60
54	1.5856	0.3133	1506	55	4193	3.4	81381	65.5	64
55	1.6862	0.3215	1524	57	4282	3.4	85663	68.9	67
56	1.7926	0.3309	1542	58	4420	3.6	90083	72.5	71
57	1.9057	0.3419	1562	60	4558	3.7	94641	76.1	74
58	2.0268	0.3546	1584	63	4525	3.6	99166	79.8	78
59	2.1578	0.3697	1607	65	4492	3.6	103658	83.4	82
60	2.3011	0.3878	1632	69	4301	3.5	107959	86.8	85
61	2.4599	0.4099	1660	72	3972	3.2	111931	90.0	88
62	2.6391	0.4378	1692	77	3631	2.9	115562	93.0	92
63	2.8464	0.4742	1729	84	3155	2.5	118717	95.5	94
64	3.0944	0.5242	1773	93	2443	2.0	121160	97.5	96
65	3.4069	0.5984	1828	106	1659	1.3	122819	98.8	98
66	3.8370	0.7243	1904	128	984	0.8	123803	99.6	99
67	4.5547	1.0122	2031	179	410	0.3	124213	99.9	99
68	5.7758	1.8324	2247	324	96	0.1	124309	100.0	99

Science Grade 8

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.8456	1.8313	925	351	1	0.0	1	0.0	1
1	-4.6273	1.0102	925	193	1	0.0	2	0.0	1
2	-3.9137	0.7215	925	138	0	0.0	2	0.0	1
3	-3.4876	0.5950	925	114	0	0.0	2	0.0	1
4	-3.1791	0.5205	925	100	3	0.0	5	0.0	1
5	-2.9350	0.4702	925	90	2	0.0	7	0.0	1
6	-2.7315	0.4335	925	83	7	0.0	14	0.0	1
7	-2.5560	0.4053	925	78	15	0.0	29	0.0	1
8	-2.4010	0.3829	925	73	33	0.0	62	0.0	1
9	-2.2615	0.3647	925	70	94	0.1	156	0.1	1
10	-2.1341	0.3494	925	67	138	0.1	294	0.2	1
11	-2.0166	0.3366	925	64	224	0.2	518	0.4	1
12	-1.9071	0.3255	925	62	331	0.3	849	0.7	1
13	-1.8043	0.3160	925	61	485	0.4	1334	1.0	1
14	-1.7071	0.3077	925	59	627	0.5	1961	1.5	1
15	-1.6147	0.3003	925	58	755	0.6	2716	2.1	2
16	-1.5265	0.2939	925	56	967	0.8	3683	2.9	2
17	-1.4418	0.2882	925	55	1047	0.8	4730	3.7	3
18	-1.3602	0.2832	936	54	1153	0.9	5883	4.6	4
19	-1.2813	0.2787	951	53	1208	0.9	7091	5.5	5
20	-1.2048	0.2747	966	53	1271	1.0	8362	6.5	6
21	-1.1304	0.2711	980	52	1345	1.0	9707	7.5	7
22	-1.0577	0.2679	994	51	1437	1.1	11144	8.7	8
23	-0.9867	0.2651	1008	51	1367	1.1	12511	9.7	9
24	-0.9171	0.2627	1021	50	1417	1.1	13928	10.8	10
25	-0.8486	0.2605	1034	50	1403	1.1	15331	11.9	11
26	-0.7812	0.2587	1047	50	1425	1.1	16756	13.0	12
27	-0.7148	0.2571	1060	49	1495	1.2	18251	14.2	14
28	-0.6490	0.2557	1072	49	1502	1.2	19753	15.3	15
29	-0.5839	0.2546	1085	49	1538	1.2	21291	16.5	16
30	-0.5194	0.2537	1097	49	1535	1.2	22826	17.7	17
31	-0.4552	0.2531	1109	48	1624	1.3	24450	19.0	18
32	-0.3912	0.2526	1122	48	1726	1.3	26176	20.3	20
33	-0.3275	0.2524	1134	48	1769	1.4	27945	21.7	21
34	-0.2638	0.2524	1146	48	1900	1.5	29845	23.2	22
35	-0.2001	0.2526	1158	48	1903	1.5	31748	24.7	24
36	-0.1362	0.2529	1171	48	1962	1.5	33710	26.2	25
37	-0.0721	0.2535	1183	49	2058	1.6	35768	27.8	27
38	-0.0076	0.2544	1195	49	2202	1.7	37970	29.5	29
39	0.0574	0.2554	1208	49	2211	1.7	40181	31.2	30
40	0.1229	0.2567	1220	49	2469	1.9	42650	33.1	32
41	0.1892	0.2582	1233	49	2345	1.8	44995	35.0	34
42	0.2562	0.2599	1246	50	2580	2.0	47575	37.0	36
43	0.3243	0.2619	1259	50	2730	2.1	50305	39.1	38
44	0.3935	0.2642	1272	51	2778	2.2	53083	41.2	40
45	0.4640	0.2668	1286	51	2852	2.2	55935	43.5	42
46	0.5360	0.2698	1299	52	3073	2.4	59008	45.8	45
47	0.6096	0.2731	1313	52	3212	2.5	62220	48.3	47
48	0.6852	0.2768	1328	53	3306	2.6	65526	50.9	50
49	0.7629	0.2809	1343	54	3666	2.8	69192	53.7	52

50	0.8431	0.2855	1358	55	3791	2.9	72983	56.7	55
51	0.9261	0.2907	1374	56	4100	3.2	77083	59.9	58
52	1.0123	0.2966	1391	57	4052	3.1	81135	63.0	61
53	1.1022	0.3032	1408	58	4218	3.3	85353	66.3	65
54	1.1963	0.3106	1426	59	4220	3.3	89573	69.6	68
55	1.2954	0.3191	1445	61	4465	3.5	94038	73.0	71
56	1.4003	0.3288	1465	63	4508	3.5	98546	76.6	75
57	1.5120	0.3400	1486	65	4569	3.5	103115	80.1	78
58	1.6320	0.3531	1509	68	4446	3.5	107561	83.6	82
59	1.7621	0.3686	1534	71	4376	3.4	111937	87.0	85
60	1.9047	0.3871	1561	74	4005	3.1	115942	90.1	89
61	2.0631	0.4097	1592	78	3615	2.8	119557	92.9	91
62	2.2424	0.4381	1626	84	3062	2.4	122619	95.3	94
63	2.4502	0.4751	1666	91	2381	1.8	125000	97.1	96
64	2.6993	0.5256	1714	101	1805	1.4	126805	98.5	98
65	3.0137	0.6003	1774	115	1114	0.9	127919	99.4	99
66	3.4467	0.7267	1857	139	557	0.4	128476	99.8	99
67	4.1687	1.0146	1995	194	220	0.2	128696	100.0	99
68	5.3937	1.8341	2230	351	37	0.0	128733	100.0	99

Appendix O:

Linking Item Statistics

Column Heading	Definition
Type	Item type
Form	Form
Seq	Sequence
Prev Form	Previous form
Prev Seq	Previous sequence
Prev P-Val	Previous P-Value
P-Val	P-Value
Prev Meas	Previous Rasch item measure
Meas	Rasch item measure

Science Grade 4

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
496835	MC	0	1	0	1	2014	0.80	0.80	-0.5591	-0.5825
144270	MC	0	2	0	2	2014	0.55	0.54	1.0190	0.9004
195405	MC	0	10	0	10	2014	0.76	0.72	-0.1840	0.0193
320929	MC	0	22	0	22	2014	0.55	0.54	0.9388	0.9065
299971	MC	0	28	0	28	2014	0.69	0.65	0.2755	0.3172
873293	MC	0	29	0	29	2014	0.84	0.83	-0.7813	-0.8059
994204	MC	0	38	0	38	2014	0.77	0.75	-0.2710	-0.2439
115428	MC	0	43	0	43	2014	0.87	0.84	-1.0867	-0.9595
115172	MC	0	49	0	49	2014	0.72	0.69	0.0265	0.0925
194554	MC	0	50	0	50	2014	0.81	0.80	-0.5638	-0.5420
191202	MC	0	53	0	53	2014	0.49	0.45	1.2296	1.4850
969254	MC	0	54	0	54	2014	0.76	0.73	-0.2311	-0.1393
573031	MC	0	55	0	55	2014	0.71	0.68	0.0425	0.1306
819443	MC	0	62	0	62	2014	0.61	0.65	0.7418	0.2771
595247	MC	0	64	0	64	2014	0.93	0.91	-1.8682	-1.7543
488691	MC	0	66	0	66	2014	0.72	0.80	0.0409	-0.5631
419703	MC	1	31	1	31	2014	0.53	0.49	1.0434	1.1606
815323	MC	2	70	5	70	2014	0.61	0.61	0.7057	0.5355
851193	MC	3	71	11	71	2014	0.58	0.54	0.8605	0.9025
178854	MC	4	68	7	68	2014	0.53	0.52	1.1178	1.0606
213922	MC	2	32	2	32	2014	0.62	0.63	0.6065	0.4537
895674	MC	1	71	5	34	2014	0.87	0.82	-1.1036	-0.8671
215227	MC	3	31	7	31	2014	0.83	0.80	-0.6823	-0.6265
982028	MC	4	31	8	31	2014	0.69	0.64	0.2516	0.4129
739619	MC	5	69	2	69	2014	0.66	0.65	0.4081	0.3575
129039	MC	5	34	1	34	2014	0.81	0.79	-0.6764	-0.5460
571160	MC	6	33	4	33	2014	0.65	0.63	0.4629	0.4831
289847	MC	6	71	1	71	2014	0.79	0.73	-0.4828	-0.1288
743758	MC	7	31	3	31	2014	0.57	0.55	0.9015	0.8535
455555	MC	10	30	8	30	2014	0.83	0.85	-0.7112	-0.9973
690009	MC	7	68	6	68	2014	0.61	0.60	0.6472	0.6345
792659	MC	10	71	8	71	2014	0.79	0.77	-0.4161	-0.3140
679332	MC	9	32	12	32	2014	0.63	0.61	0.5884	0.5606
804809	MC	8	34	12	34	2014	0.78	0.77	-0.3033	-0.4116
200551	MC	9	71	3	71	2014	0.52	0.53	1.1678	1.0088
852090	MC	8	67	9	67	2014	0.66	0.65	0.4204	0.3415
845106	MC	11	67	10	67	2014	0.77	0.73	-0.2913	-0.0910
294591	MC	11	34	9	34	2014	0.56	0.55	0.9596	0.8785
121189	MC	12	70	8	33	2014	0.65	0.61	0.4627	0.5727
891504	MC	12	30	4	67	2014	0.56	0.58	0.9050	0.7223
318885	SCR	0	36	0	36	2014	0.67	0.63	0.3018	0.4322
796118	SCR	0	37	0	37	2014	0.71	0.71	-0.2069	-0.2665
						Mean	0.69	0.68	0.14	0.13

Science Grade 8

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
433766	MC	0	3	0	3	2014	0.72	0.73	-0.5238	-0.5805
865322	MC	0	10	0	10	2014	0.72	0.72	-0.5455	-0.5983
510943	MC	0	13	0	13	2014	0.63	0.62	0.0125	0.0562
507046	MC	0	17	0	17	2014	0.64	0.62	-0.0020	-0.0551
901677	MC	0	18	0	18	2014	0.76	0.75	-0.7986	-0.6744
319690	MC	0	19	0	19	2014	0.84	0.81	-1.3049	-1.1955
707781	MC	0	21	0	21	2014	0.74	0.76	-0.6723	-0.7903
934274	MC	0	26	0	26	2014	0.84	0.85	-1.3955	-1.4125
641082	MC	0	41	0	41	2014	0.84	0.84	-1.4158	-1.5041
398149	MC	0	42	0	42	2014	0.74	0.72	-0.5325	-0.4877
430671	MC	0	45	0	45	2014	0.70	0.73	-0.4299	-0.6593
871105	MC	0	54	0	54	2014	0.66	0.65	-0.1249	-0.1724
207041	MC	0	55	0	55	2014	0.62	0.62	0.0153	-0.0718
595843	MC	0	56	0	56	2014	0.70	0.66	-0.4027	-0.2537
246054	MC	0	58	0	58	2014	0.68	0.71	-0.3048	-0.4359
261252	MC	0	64	0	64	2014	0.63	0.64	0.0727	-0.0755
282298	MC	1	33	6	33	2014	0.41	0.38	1.1593	1.2021
266526	MC	1	70	9	70	2014	0.55	0.53	0.4600	0.4212
268151	MC	2	72	12	72	2014	0.51	0.55	0.6173	0.3867
727655	MC	2	32	2	32	2014	0.66	0.64	-0.1803	-0.0793
131309	MC	3	34	4	34	2014	0.54	0.48	0.5101	0.7234
418492	MC	5	35	5	35	2014	0.66	0.60	-0.1547	0.1084
309317	MC	6	35	10	35	2014	0.57	0.51	0.3214	0.5670
386240	MC	7	32	11	32	2014	0.66	0.62	-0.1362	0.0227
305771	MC	3	73	7	73	2014	0.68	0.64	-0.2490	-0.1022
282835	MC	5	70	10	70	2014	0.54	0.55	0.4858	0.3701
455407	MC	4	34	3	34	2014	0.62	0.61	0.0272	0.0697
487986	MC	12	72	2	34	2014	0.61	0.58	0.1031	0.2144
834095	MC	8	34	8	34	2014	0.47	0.53	0.8239	0.4627
311763	MC	9	35	9	35	2014	0.70	0.71	-0.3693	-0.4695
900522	MC	6	70	12	70	2014	0.45	0.43	0.9314	0.9955
112558	MC	7	73	5	73	2014	0.83	0.80	-1.2711	-1.1286
274559	MC	4	72	8	72	2014	0.64	0.62	-0.0735	0.0254
289448	MC	10	33	10	33	2014	0.54	0.54	0.4491	0.4309
570538	MC	11	34	1	34	2014	0.84	0.84	-1.3828	-1.4490
357997	MC	8	71	7	71	2014	0.69	0.67	-0.3345	-0.2844
163110	MC	9	73	2	73	2014	0.58	0.62	0.2431	0.0715
615877	MC	12	32	7	32	2014	0.72	0.72	-0.4727	-0.5564
156031	MC	11	71	8	33	2014	0.47	0.45	0.8145	0.8627
485404	MC	10	71	6	71	2014	0.51	0.52	0.6488	0.5318
289643	SCR	0	36	0	36	2014	0.75	0.75	-0.6193	-0.6704
924943	SCR	0	37	0	37	2014	0.68	0.64	-0.2704	-0.1484
						Mean	0.65	0.64	-0.15	-0.15

Appendix P:

Reliabilities

Column Heading	Definition
Strand	Strand (Tot.=total)
Group	Subgroup
Pts.	Points possible
Len.	Length
N	N
Mean	Mean
SD	Standard deviation
r	Reliability coefficient
SEM	Standard error of measurement
Items	Item types present

Mathematics Grade 3

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	125309	39.1	14.56	0.94	3.6	MC*OE
	A	All	21	18	125309	11.5	4.53	0.81	2.0	MC*OE
	B	All	22	19	125309	11.4	4.96	0.85	1.9	MC*OE
	C	All	10	10	125309	6.0	2.37	0.67	1.4	MC
	D	All	19	16	125309	10.2	4.08	0.79	1.9	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	64043	39.4	14.90	0.94	3.6	MC*OE
		Female	72	63	61235	38.9	14.19	0.93	3.6	MC*OE
	A	Male	21	18	64043	11.6	4.62	0.82	1.9	MC*OE
		Female	21	18	61235	11.4	4.43	0.80	2.0	MC*OE
	B	Male	22	19	64043	11.5	5.05	0.85	1.9	MC*OE
		Female	22	19	61235	11.4	4.87	0.84	1.9	MC*OE
	C	Male	10	10	64043	5.9	2.42	0.69	1.4	MC
		Female	10	10	61235	6.0	2.32	0.66	1.4	MC
	D	Male	19	16	64043	10.4	4.15	0.80	1.9	MC*OE
		Female	19	16	61235	10.1	3.99	0.78	1.9	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	83657	42.3	13.68	0.93	3.6	MC*OE
		Af. Amer.	72	63	18435	28.7	12.00	0.91	3.6	MC*OE
		Hispanic	72	63	13279	31.5	12.77	0.92	3.6	MC*OE
		Asian	72	63	4539	47.5	14.80	0.95	3.5	MC*OE
		Am. Indian	72	63	165	34.9	13.34	0.92	3.7	MC*OE
		Pacific Islander	72	63	110	41.0	15.64	0.95	3.6	MC*OE
		Multi	72	63	5089	36.8	14.21	0.93	3.6	MC*OE
	A	White	21	18	83657	12.5	4.28	0.80	1.9	MC*OE
		Af. Amer.	21	18	18435	8.4	3.79	0.74	1.9	MC*OE
		Hispanic	21	18	13279	9.2	4.03	0.77	1.9	MC*OE
		Asian	21	18	4539	14.0	4.64	0.83	1.9	MC*OE
		Am. Indian	21	18	165	10.0	4.08	0.76	2.0	MC*OE
		Pacific Islander	21	18	110	12.0	4.64	0.82	2.0	MC*OE
		Multi	21	18	5089	10.8	4.42	0.80	2.0	MC*OE
	B	White	22	19	83657	12.4	4.76	0.84	1.9	MC*OE
		Af. Amer.	22	19	18435	8.4	4.26	0.78	2.0	MC*OE
		Hispanic	22	19	13279	9.1	4.46	0.80	2.0	MC*OE
		Asian	22	19	4539	14.3	4.94	0.86	1.8	MC*OE
		Am. Indian	22	19	165	10.4	4.72	0.83	2.0	MC*OE
		Pacific Islander	22	19	110	12.2	5.28	0.87	1.9	MC*OE
		Multi	22	19	5089	10.8	4.87	0.84	2.0	MC*OE
	C	White	10	10	83657	6.4	2.26	0.65	1.3	MC
		Af. Amer.	10	10	18435	4.6	2.20	0.59	1.4	MC
		Hispanic	10	10	13279	5.0	2.25	0.61	1.4	MC
		Asian	10	10	4539	7.0	2.32	0.71	1.2	MC
		Am. Indian	10	10	165	5.3	2.23	0.60	1.4	MC
		Pacific Islander	10	10	110	6.2	2.52	0.72	1.3	MC
		Multi	10	10	5089	5.6	2.36	0.66	1.4	MC
	D	White	19	16	83657	11.1	3.82	0.76	1.9	MC*OE
		Af. Amer.	19	16	18435	7.3	3.41	0.70	1.9	MC*OE
		Hispanic	19	16	13279	8.1	3.64	0.74	1.9	MC*OE
		Asian	19	16	4539	12.2	4.15	0.80	1.8	MC*OE
		Am. Indian	19	16	165	9.1	3.85	0.76	1.9	MC*OE
		Pacific Islander	19	16	110	10.6	4.38	0.82	1.8	MC*OE
		Multi	19	16	5089	9.6	3.99	0.78	1.9	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	72	63	4513	27.5	11.42	0.90	3.6	MC*OE
	A	All	21	18	4513	8.1	3.72	0.73	1.9	MC*OE
	B	All	22	19	4513	7.9	4.02	0.76	2.0	MC*OE
	C	All	10	10	4513	4.4	2.13	0.57	1.4	MC
	D	All	19	16	4513	7.0	3.31	0.69	1.8	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	72	63	19425	29.8	13.56	0.93	3.6	MC*OE
	A	All	21	18	19425	8.9	4.30	0.80	1.9	MC*OE
	B	All	22	19	19425	8.4	4.57	0.81	2.0	MC*OE
	C	All	10	10	19425	4.7	2.30	0.63	1.4	MC
	D	All	19	16	19425	7.9	3.86	0.77	1.9	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Disadv.	Tot.	All	72	63	61075	33.0	13.17	0.92	3.6	MC*OE
	A	All	21	18	61075	9.7	4.14	0.78	2.0	MC*OE
	B	All	22	19	61075	9.5	4.56	0.81	2.0	MC*OE
	C	All	10	10	61075	5.1	2.29	0.62	1.4	MC
	D	All	19	16	61075	8.6	3.74	0.75	1.9	MC*OE

Mathematics Grade 4

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	124201	34.6	14.31	0.93	3.8	MC*OE
	A	All	29	26	124201	15.8	6.56	0.86	2.4	MC*OE
	B	All	19	16	124201	7.8	3.93	0.78	1.9	MC*OE
	C	All	11	11	124201	5.6	2.48	0.65	1.5	MC
	D	All	13	10	124201	5.4	2.94	0.69	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	63509	34.9	14.73	0.93	3.8	MC*OE
		Female	72	63	60670	34.3	13.86	0.93	3.8	MC*OE
	A	Male	29	26	63509	15.9	6.76	0.87	2.4	MC*OE
		Female	29	26	60670	15.7	6.33	0.85	2.4	MC*OE
	B	Male	19	16	63509	7.9	4.01	0.79	1.9	MC*OE
		Female	19	16	60670	7.7	3.84	0.77	1.8	MC*OE
	C	Male	11	11	63509	5.6	2.52	0.66	1.5	MC
		Female	11	11	60670	5.6	2.44	0.64	1.5	MC
	D	Male	13	10	63509	5.5	3.00	0.70	1.7	MC*OE
		Female	13	10	60670	5.3	2.87	0.69	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	84028	37.5	13.91	0.93	3.8	MC*OE
		Af. Amer.	72	63	18158	24.8	10.43	0.88	3.7	MC*OE
		Hispanic	72	63	12664	27.6	11.87	0.90	3.7	MC*OE
		Asian	72	63	4532	43.8	15.15	0.94	3.7	MC*OE
		Am. Indian	72	63	204	31.4	12.52	0.91	3.8	MC*OE
		Pacific Islander	72	63	79	37.5	14.44	0.93	3.7	MC*OE
		Multi	72	63	4515	31.6	13.74	0.92	3.8	MC*OE
	A	White	29	26	84028	17.0	6.36	0.86	2.4	MC*OE
		Af. Amer.	29	26	18158	11.5	5.23	0.79	2.4	MC*OE
		Hispanic	29	26	12664	13.0	5.75	0.82	2.4	MC*OE
		Asian	29	26	4532	20.0	6.46	0.88	2.3	MC*OE
		Am. Indian	29	26	204	14.3	6.04	0.83	2.5	MC*OE
		Pacific Islander	29	26	79	17.5	6.38	0.86	2.4	MC*OE
		Multi	29	26	4515	14.6	6.39	0.85	2.4	MC*OE
	B	White	19	16	84028	8.5	3.85	0.77	1.9	MC*OE
		Af. Amer.	19	16	18158	5.5	3.05	0.66	1.8	MC*OE
		Hispanic	19	16	12664	6.0	3.36	0.71	1.8	MC*OE
		Asian	19	16	4532	10.1	4.23	0.81	1.8	MC*OE
		Am. Indian	19	16	204	7.2	3.53	0.72	1.9	MC*OE
		Pacific Islander	19	16	79	8.5	3.87	0.77	1.8	MC*OE
		Multi	19	16	4515	7.1	3.81	0.77	1.8	MC*OE
	C	White	11	11	84028	6.0	2.44	0.64	1.5	MC
		Af. Amer.	11	11	18158	4.2	2.05	0.47	1.5	MC
		Hispanic	11	11	12664	4.6	2.21	0.54	1.5	MC
		Asian	11	11	4532	6.7	2.59	0.71	1.4	MC
		Am. Indian	11	11	204	5.1	2.40	0.63	1.5	MC
		Pacific Islander	11	11	79	5.9	2.66	0.71	1.4	MC
		Multi	11	11	4515	5.2	2.37	0.61	1.5	MC
	D	White	13	10	84028	6.0	2.92	0.67	1.7	MC*OE
		Af. Amer.	13	10	18158	3.6	2.03	0.51	1.4	MC*OE
		Hispanic	13	10	12664	4.0	2.37	0.61	1.5	MC*OE
		Asian	13	10	4532	6.9	3.32	0.71	1.8	MC*OE
		Am. Indian	13	10	204	4.8	2.47	0.60	1.6	MC*OE
		Pacific Islander	13	10	79	5.6	2.93	0.66	1.7	MC*OE
		Multi	13	10	4515	4.8	2.81	0.68	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	72	63	3424	22.0	9.15	0.85	3.6	MC*OE
	A	All	29	26	3424	10.6	4.81	0.75	2.4	MC*OE
	B	All	19	16	3424	4.5	2.66	0.58	1.7	MC*OE
	C	All	11	11	3424	3.8	1.91	0.39	1.5	MC
	D	All	13	10	3424	3.1	1.82	0.44	1.4	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	72	63	20247	25.1	12.13	0.91	3.7	MC*OE
	A	All	29	26	20247	11.5	5.82	0.83	2.4	MC*OE
	B	All	19	16	20247	5.4	3.40	0.73	1.8	MC*OE
	C	All	11	11	20247	4.3	2.20	0.54	1.5	MC
	D	All	13	10	20247	3.9	2.42	0.62	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Disadv.	Tot.	All	72	63	59465	28.5	12.20	0.91	3.7	MC*OE
	A	All	29	26	59465	13.2	5.87	0.83	2.4	MC*OE
	B	All	19	16	59465	6.3	3.42	0.72	1.8	MC*OE
	C	All	11	11	59465	4.8	2.26	0.56	1.5	MC
	D	All	13	10	59465	4.3	2.45	0.62	1.5	MC*OE

Mathematics Grade 5

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	126683	35.7	15.00	0.94	3.7	MC*OE
	A	All	38	35	126683	19.8	8.43	0.90	2.6	MC*OE
	B	All	11	8	126683	5.0	2.45	0.63	1.5	MC*OE
	C	All	10	10	126683	5.6	2.37	0.67	1.4	MC
	D	All	13	10	126683	5.2	3.20	0.73	1.7	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	64747	35.5	15.40	0.94	3.7	MC*OE
		Female	72	63	61906	35.9	14.58	0.93	3.7	MC*OE
	A	Male	38	35	64747	19.8	8.65	0.91	2.6	MC*OE
		Female	38	35	61906	19.8	8.19	0.90	2.6	MC*OE
	B	Male	11	8	64747	4.9	2.47	0.64	1.5	MC*OE
		Female	11	8	61906	5.2	2.42	0.62	1.5	MC*OE
	C	Male	10	10	64747	5.6	2.43	0.69	1.4	MC
		Female	10	10	61906	5.7	2.31	0.65	1.4	MC
	D	Male	13	10	64747	5.2	3.26	0.74	1.7	MC*OE
		Female	13	10	61906	5.2	3.14	0.72	1.7	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	86802	38.5	14.54	0.94	3.7	MC*OE
		Af. Amer.	72	63	18178	25.2	11.01	0.89	3.7	MC*OE
		Hispanic	72	63	12606	28.2	12.37	0.91	3.7	MC*OE
		Asian	72	63	4780	46.2	15.61	0.95	3.6	MC*OE
		Am. Indian	72	63	182	33.0	14.10	0.93	3.7	MC*OE
		Pacific Islander	72	63	92	39.8	15.37	0.94	3.7	MC*OE
		Multi	72	63	4006	32.6	14.33	0.93	3.7	MC*OE
	A	White	38	35	86802	21.4	8.18	0.90	2.6	MC*OE
		Af. Amer.	38	35	18178	14.1	6.48	0.83	2.7	MC*OE
		Hispanic	38	35	12606	15.8	7.12	0.86	2.7	MC*OE
		Asian	38	35	4780	25.7	8.32	0.91	2.4	MC*OE
		Am. Indian	38	35	182	18.5	8.04	0.89	2.7	MC*OE
		Pacific Islander	38	35	92	22.0	8.32	0.90	2.6	MC*OE
		Multi	38	35	4006	18.2	8.08	0.89	2.7	MC*OE
	B	White	11	8	86802	5.4	2.38	0.61	1.5	MC*OE
		Af. Amer.	11	8	18178	3.6	2.07	0.52	1.4	MC*OE
		Hispanic	11	8	12606	4.0	2.20	0.57	1.4	MC*OE
		Asian	11	8	4780	6.5	2.62	0.66	1.5	MC*OE
		Am. Indian	11	8	182	4.5	2.34	0.61	1.5	MC*OE
		Pacific Islander	11	8	92	5.9	2.45	0.59	1.6	MC*OE
		Multi	11	8	4006	4.6	2.41	0.62	1.5	MC*OE
	C	White	10	10	86802	6.0	2.28	0.65	1.3	MC
		Af. Amer.	10	10	18178	4.2	2.11	0.55	1.4	MC
		Hispanic	10	10	12606	4.7	2.19	0.59	1.4	MC
		Asian	10	10	4780	6.8	2.35	0.71	1.3	MC
		Am. Indian	10	10	182	5.3	2.36	0.66	1.4	MC
		Pacific Islander	10	10	92	6.3	2.43	0.71	1.3	MC
		Multi	10	10	4006	5.3	2.35	0.65	1.4	MC
	D	White	13	10	86802	5.7	3.21	0.72	1.7	MC*OE
		Af. Amer.	13	10	18178	3.3	2.15	0.53	1.5	MC*OE
		Hispanic	13	10	12606	3.7	2.50	0.62	1.5	MC*OE
		Asian	13	10	4780	7.2	3.59	0.78	1.7	MC*OE
		Am. Indian	13	10	182	4.7	2.90	0.68	1.6	MC*OE
		Pacific Islander	13	10	92	5.7	3.35	0.77	1.6	MC*OE
		Multi	13	10	4006	4.6	2.98	0.70	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	72	63	2915	21.0	8.48	0.82	3.6	MC*OE
	A	All	38	35	2915	11.9	5.24	0.75	2.6	MC*OE
	B	All	11	8	2915	2.9	1.75	0.42	1.3	MC*OE
	C	All	10	10	2915	3.5	1.83	0.41	1.4	MC
	D	All	13	10	2915	2.7	1.76	0.37	1.4	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	72	63	20594	24.4	12.08	0.91	3.6	MC*OE
	A	All	38	35	20594	13.6	6.99	0.86	2.6	MC*OE
	B	All	11	8	20594	3.4	2.10	0.55	1.4	MC*OE
	C	All	10	10	20594	4.1	2.17	0.57	1.4	MC
	D	All	13	10	20594	3.4	2.44	0.62	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Disadv.	Tot.	All	72	63	59427	29.1	12.71	0.92	3.7	MC*OE
	A	All	38	35	59427	16.2	7.34	0.87	2.7	MC*OE
	B	All	11	8	59427	4.1	2.21	0.57	1.5	MC*OE
	C	All	10	10	59427	4.8	2.23	0.60	1.4	MC
	D	All	13	10	59427	3.9	2.58	0.63	1.6	MC*OE

Mathematics Grade 6

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	126413	38.5	13.66	0.92	3.8	MC*OE
	A	All	26	23	126413	15.8	5.51	0.84	2.2	MC*OE
	B	All	21	18	126413	10.7	4.51	0.75	2.3	MC*OE
	C	All	11	11	126413	5.5	2.42	0.64	1.4	MC
	D	All	14	11	126413	6.6	2.80	0.66	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	64411	37.9	13.98	0.93	3.8	MC*OE
		Female	72	63	61990	39.1	13.30	0.92	3.8	MC*OE
	A	Male	26	23	64411	15.6	5.67	0.85	2.2	MC*OE
		Female	26	23	61990	16.0	5.33	0.83	2.2	MC*OE
	B	Male	21	18	64411	10.4	4.58	0.76	2.2	MC*OE
		Female	21	18	61990	10.9	4.42	0.73	2.3	MC*OE
	C	Male	11	11	64411	5.4	2.45	0.65	1.5	MC
		Female	11	11	61990	5.5	2.39	0.64	1.4	MC
	D	Male	14	11	64411	6.5	2.83	0.67	1.6	MC*OE
		Female	14	11	61990	6.6	2.76	0.65	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	87732	41.2	13.01	0.91	3.8	MC*OE
		Af. Amer.	72	63	18327	28.7	10.87	0.88	3.8	MC*OE
		Hispanic	72	63	12010	31.3	11.76	0.90	3.8	MC*OE
		Asian	72	63	4591	47.7	13.98	0.93	3.7	MC*OE
		Am. Indian	72	63	173	37.0	12.90	0.91	3.9	MC*OE
		Pacific Islander	72	63	82	42.5	14.35	0.93	3.7	MC*OE
		Multi	72	63	3477	35.8	12.81	0.91	3.8	MC*OE
	A	White	26	23	87732	16.9	5.19	0.83	2.2	MC*OE
		Af. Amer.	26	23	18327	12.0	4.79	0.79	2.2	MC*OE
		Hispanic	26	23	12010	13.0	5.00	0.80	2.2	MC*OE
		Asian	26	23	4591	19.3	5.23	0.85	2.1	MC*OE
		Am. Indian	26	23	173	15.4	5.31	0.82	2.2	MC*OE
		Pacific Islander	26	23	82	17.2	5.58	0.85	2.1	MC*OE
		Multi	26	23	3477	14.9	5.25	0.82	2.2	MC*OE
	B	White	21	18	87732	11.4	4.37	0.73	2.3	MC*OE
		Af. Amer.	21	18	18327	7.9	3.76	0.68	2.1	MC*OE
		Hispanic	21	18	12010	8.5	3.97	0.70	2.2	MC*OE
		Asian	21	18	4591	13.4	4.59	0.77	2.2	MC*OE
		Am. Indian	21	18	173	10.3	4.56	0.76	2.2	MC*OE
		Pacific Islander	21	18	82	11.7	4.85	0.79	2.2	MC*OE
		Multi	21	18	3477	9.9	4.30	0.73	2.3	MC*OE
	C	White	11	11	87732	5.8	2.37	0.64	1.4	MC
		Af. Amer.	11	11	18327	4.0	1.97	0.43	1.5	MC
		Hispanic	11	11	12010	4.5	2.14	0.52	1.5	MC
		Asian	11	11	4591	7.0	2.62	0.74	1.3	MC
		Am. Indian	11	11	173	5.1	2.23	0.58	1.4	MC
		Pacific Islander	11	11	82	6.3	2.46	0.67	1.4	MC
		Multi	11	11	3477	5.0	2.30	0.59	1.5	MC
	D	White	14	11	87732	7.0	2.73	0.65	1.6	MC*OE
		Af. Amer.	14	11	18327	4.8	2.30	0.52	1.6	MC*OE
		Hispanic	14	11	12010	5.3	2.46	0.57	1.6	MC*OE
		Asian	14	11	4591	8.1	2.93	0.68	1.7	MC*OE
		Am. Indian	14	11	173	6.2	2.70	0.63	1.6	MC*OE
		Pacific Islander	14	11	82	7.2	2.83	0.69	1.6	MC*OE
		Multi	14	11	3477	6.1	2.66	0.63	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	72	63	2802	23.8	8.48	0.81	3.7	MC*OE
	A	All	26	23	2802	9.9	3.99	0.70	2.2	MC*OE
	B	All	21	18	2802	6.3	2.92	0.54	2.0	MC*OE
	C	All	11	11	2802	3.6	1.80	0.33	1.5	MC
	D	All	14	11	2802	4.0	1.99	0.39	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	72	63	19987	26.7	11.05	0.88	3.8	MC*OE
	A	All	26	23	19987	11.0	4.86	0.79	2.2	MC*OE
	B	All	21	18	19987	7.1	3.69	0.68	2.1	MC*OE
	C	All	11	11	19987	4.1	2.02	0.46	1.5	MC
	D	All	14	11	19987	4.5	2.33	0.54	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Disadv.	Tot.	All	72	63	57542	32.4	12.01	0.90	3.8	MC*OE
	A	All	26	23	57542	13.4	5.10	0.81	2.2	MC*OE
	B	All	21	18	57542	8.8	4.07	0.70	2.2	MC*OE
	C	All	11	11	57542	4.6	2.15	0.53	1.5	MC
	D	All	14	11	57542	5.5	2.49	0.58	1.6	MC*OE

Mathematics Grade 7

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	126299	35.2	14.28	0.93	3.9	MC*OE
	A	All	29	26	126299	14.3	6.43	0.85	2.5	MC*OE
	B	All	19	16	126299	8.0	4.15	0.78	1.9	MC*OE
	C	All	13	13	126299	6.6	2.65	0.63	1.6	MC
	D	All	11	8	126299	6.3	2.60	0.64	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	64954	34.8	14.56	0.93	3.9	MC*OE
		Female	72	63	61323	35.6	13.95	0.92	3.9	MC*OE
	A	Male	29	26	64954	14.2	6.58	0.86	2.5	MC*OE
		Female	29	26	61323	14.4	6.28	0.84	2.5	MC*OE
	B	Male	19	16	64954	7.9	4.16	0.79	1.9	MC*OE
		Female	19	16	61323	8.2	4.13	0.78	1.9	MC*OE
	C	Male	13	13	64954	6.5	2.70	0.65	1.6	MC
		Female	13	13	61323	6.7	2.60	0.62	1.6	MC
	D	Male	11	8	64954	6.2	2.65	0.65	1.6	MC*OE
		Female	11	8	61323	6.4	2.54	0.62	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	88093	37.6	13.90	0.92	3.8	MC*OE
		Af. Amer.	72	63	18506	26.1	10.80	0.87	3.8	MC*OE
		Hispanic	72	63	11992	28.1	11.86	0.89	3.9	MC*OE
		Asian	72	63	4535	46.2	15.49	0.94	3.7	MC*OE
		Am. Indian	72	63	179	34.3	13.68	0.92	3.9	MC*OE
		Pacific Islander	72	63	85	38.1	14.22	0.93	3.7	MC*OE
		Multi	72	63	2885	32.6	13.70	0.92	3.9	MC*OE
	A	White	29	26	88093	15.3	6.26	0.84	2.5	MC*OE
		Af. Amer.	29	26	18506	10.4	5.15	0.77	2.5	MC*OE
		Hispanic	29	26	11992	11.3	5.52	0.80	2.5	MC*OE
		Asian	29	26	4535	19.2	6.66	0.88	2.3	MC*OE
		Am. Indian	29	26	179	13.9	6.21	0.84	2.5	MC*OE
		Pacific Islander	29	26	85	15.9	6.19	0.85	2.4	MC*OE
		Multi	29	26	2885	13.1	6.21	0.84	2.5	MC*OE
	B	White	19	16	88093	8.6	4.15	0.78	1.9	MC*OE
		Af. Amer.	19	16	18506	5.8	3.04	0.63	1.9	MC*OE
		Hispanic	19	16	11992	6.3	3.34	0.68	1.9	MC*OE
		Asian	19	16	4535	11.2	4.69	0.84	1.9	MC*OE
		Am. Indian	19	16	179	7.7	3.88	0.76	1.9	MC*OE
		Pacific Islander	19	16	85	8.7	4.07	0.80	1.8	MC*OE
		Multi	19	16	2885	7.4	3.94	0.76	1.9	MC*OE
	C	White	13	13	88093	7.0	2.62	0.63	1.6	MC
		Af. Amer.	13	13	18506	5.2	2.14	0.41	1.6	MC
		Hispanic	13	13	11992	5.5	2.31	0.50	1.6	MC
		Asian	13	13	4535	8.3	2.88	0.73	1.5	MC
		Am. Indian	13	13	179	6.6	2.69	0.65	1.6	MC
		Pacific Islander	13	13	85	7.0	2.68	0.65	1.6	MC
		Multi	13	13	2885	6.2	2.57	0.60	1.6	MC
	D	White	11	8	88093	6.7	2.47	0.61	1.5	MC*OE
		Af. Amer.	11	8	18506	4.7	2.39	0.56	1.6	MC*OE
		Hispanic	11	8	11992	5.0	2.48	0.59	1.6	MC*OE
		Asian	11	8	4535	7.5	2.57	0.65	1.5	MC*OE
		Am. Indian	11	8	179	6.2	2.50	0.59	1.6	MC*OE
		Pacific Islander	11	8	85	6.5	2.76	0.73	1.4	MC*OE
		Multi	11	8	2885	5.9	2.59	0.64	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	72	63	2771	21.1	8.19	0.80	3.7	MC*OE
	A	All	29	26	2771	8.3	4.09	0.67	2.4	MC*OE
	B	All	19	16	2771	4.8	2.42	0.45	1.8	MC*OE
	C	All	13	13	2771	4.5	1.98	0.32	1.6	MC
	D	All	11	8	2771	3.4	1.94	0.41	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	72	63	19514	23.0	10.10	0.86	3.7	MC*OE
	A	All	29	26	19514	9.0	4.76	0.75	2.4	MC*OE
	B	All	19	16	19514	5.2	2.83	0.59	1.8	MC*OE
	C	All	13	13	19514	4.8	2.18	0.44	1.6	MC
	D	All	11	8	19514	4.0	2.24	0.54	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Disadv.	Tot.	All	72	63	57065	29.1	12.07	0.90	3.9	MC*OE
	A	All	29	26	57065	11.7	5.64	0.81	2.5	MC*OE
	B	All	19	16	57065	6.5	3.40	0.69	1.9	MC*OE
	C	All	13	13	57065	5.7	2.34	0.51	1.6	MC
	D	All	11	8	57065	5.3	2.48	0.59	1.6	MC*OE

Mathematics Grade 8

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	128859	33.2	13.44	0.92	3.7	MC*OE
	A	All	12	9	128859	5.6	2.59	0.71	1.4	MC*OE
	B	All	38	35	128859	17.8	7.41	0.86	2.8	MC*OE
	C	All	12	9	128859	4.5	2.65	0.67	1.5	MC*OE
	D	All	10	10	128859	5.4	2.26	0.62	1.4	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	65991	32.8	13.82	0.93	3.7	MC*OE
		Female	72	63	62833	33.7	13.02	0.92	3.7	MC*OE
	A	Male	12	9	65991	5.4	2.62	0.72	1.4	MC*OE
		Female	12	9	62833	5.7	2.53	0.69	1.4	MC*OE
	B	Male	38	35	65991	17.5	7.59	0.87	2.8	MC*OE
		Female	38	35	62833	18.0	7.20	0.85	2.8	MC*OE
	C	Male	12	9	65991	4.4	2.69	0.68	1.5	MC*OE
		Female	12	9	62833	4.6	2.60	0.66	1.5	MC*OE
	D	Male	10	10	65991	5.4	2.33	0.65	1.4	MC
		Female	10	10	62833	5.4	2.19	0.60	1.4	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	90992	35.3	13.12	0.92	3.7	MC*OE
		Af. Amer.	72	63	18389	25.0	10.17	0.87	3.7	MC*OE
		Hispanic	72	63	12024	26.3	10.97	0.89	3.7	MC*OE
		Asian	72	63	4535	44.2	14.86	0.94	3.6	MC*OE
		Am. Indian	72	63	179	30.3	11.67	0.90	3.8	MC*OE
		Pacific Islander	72	63	97	35.5	13.21	0.92	3.7	MC*OE
		Multi	72	63	2596	30.6	12.82	0.91	3.7	MC*OE
	A	White	12	9	90992	5.9	2.50	0.69	1.4	MC*OE
		Af. Amer.	12	9	18389	4.2	2.30	0.64	1.4	MC*OE
		Hispanic	12	9	12024	4.4	2.34	0.65	1.4	MC*OE
		Asian	12	9	4535	7.4	2.69	0.72	1.4	MC*OE
		Am. Indian	12	9	179	4.8	2.37	0.65	1.4	MC*OE
		Pacific Islander	12	9	97	6.0	2.45	0.70	1.3	MC*OE
		Multi	12	9	2596	5.1	2.55	0.70	1.4	MC*OE
	B	White	38	35	90992	18.8	7.31	0.86	2.8	MC*OE
		Af. Amer.	38	35	18389	13.6	5.67	0.76	2.8	MC*OE
		Hispanic	38	35	12024	14.2	6.05	0.79	2.8	MC*OE
		Asian	38	35	4535	23.8	8.11	0.90	2.6	MC*OE
		Am. Indian	38	35	179	16.4	6.63	0.82	2.8	MC*OE
		Pacific Islander	38	35	97	19.1	7.47	0.86	2.8	MC*OE
		Multi	38	35	2596	16.5	7.04	0.84	2.8	MC*OE
	C	White	12	9	90992	4.9	2.63	0.66	1.5	MC*OE
		Af. Amer.	12	9	18389	3.0	1.99	0.50	1.4	MC*OE
		Hispanic	12	9	12024	3.4	2.19	0.57	1.4	MC*OE
		Asian	12	9	4535	6.3	2.96	0.71	1.6	MC*OE
		Am. Indian	12	9	179	3.9	2.32	0.60	1.5	MC*OE
		Pacific Islander	12	9	97	4.8	2.74	0.68	1.5	MC*OE
		Multi	12	9	2596	4.0	2.53	0.65	1.5	MC*OE
	D	White	10	10	90992	5.8	2.18	0.60	1.4	MC
		Af. Amer.	10	10	18389	4.1	1.98	0.48	1.4	MC
		Hispanic	10	10	12024	4.3	2.08	0.53	1.4	MC
		Asian	10	10	4535	6.6	2.30	0.68	1.3	MC
		Am. Indian	10	10	179	5.1	2.23	0.60	1.4	MC
		Pacific Islander	10	10	97	5.5	2.21	0.61	1.4	MC
		Multi	10	10	2596	5.0	2.23	0.61	1.4	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	72	63	2815	20.4	7.58	0.77	3.6	MC*OE
	A	All	12	9	2815	3.3	2.01	0.55	1.3	MC*OE
	B	All	38	35	2815	11.3	4.32	0.61	2.7	MC*OE
	C	All	12	9	2815	2.6	1.70	0.36	1.4	MC*OE
	D	All	10	10	2815	3.2	1.68	0.29	1.4	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	72	63	19763	22.0	8.97	0.84	3.6	MC*OE
	A	All	12	9	19763	3.5	2.09	0.58	1.4	MC*OE
	B	All	38	35	19763	12.0	4.95	0.70	2.7	MC*OE
	C	All	12	9	19763	2.8	1.89	0.47	1.4	MC*OE
	D	All	10	10	19763	3.7	1.92	0.45	1.4	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Disadv.	Tot.	All	72	63	56205	27.4	11.25	0.89	3.7	MC*OE
	A	All	12	9	56205	4.6	2.36	0.66	1.4	MC*OE
	B	All	38	35	56205	14.8	6.20	0.80	2.8	MC*OE
	C	All	12	9	56205	3.5	2.26	0.58	1.5	MC*OE
	D	All	10	10	56205	4.6	2.10	0.54	1.4	MC

English Language Arts Grade 3

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	62	45	125160	36.2	10.87	0.90	3.5	MC*OE
	A	All	18	13	125160	10.6	3.85	0.77	1.9	MC*OE
	B	All	18	13	125160	10.9	3.54	0.73	1.9	MC*OE
	C	All	8	1	125160	4.3	1.69	-	-	OE
	D	All	18	18	125160	10.3	3.51	0.72	1.9	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	62	45	63958	34.7	10.84	0.90	3.4	MC*OE
		Female	62	45	61175	37.7	10.69	0.90	3.5	MC*OE
	A	Male	18	13	63958	10.2	3.90	0.77	1.8	MC*OE
		Female	18	13	61175	11.0	3.76	0.76	1.8	MC*OE
	B	Male	18	13	63958	10.5	3.54	0.72	1.9	MC*OE
		Female	18	13	61175	11.4	3.49	0.72	1.8	MC*OE
	C	Male	8	1	63958	4.0	1.63	-	-	OE
		Female	8	1	61175	4.7	1.70	-	-	OE
	D	Male	18	18	63958	10.0	3.50	0.71	1.9	MC
		Female	18	18	61175	10.7	3.50	0.72	1.8	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	62	45	83602	38.4	10.08	0.88	3.4	MC*OE
		Af. Amer.	62	45	18384	29.7	10.39	0.88	3.5	MC*OE
		Hispanic	62	45	13267	30.6	10.57	0.89	3.5	MC*OE
		Asian	62	45	4529	40.4	10.85	0.90	3.4	MC*OE
		Am. Indian	62	45	164	33.3	10.48	0.89	3.5	MC*OE
		Pacific Islande	62	45	109	37.0	11.17	0.91	3.4	MC*OE
		Multi	62	45	5073	34.9	10.88	0.90	3.5	MC*OE
	A	White	18	13	83602	11.3	3.58	0.74	1.8	MC*OE
		Af. Amer.	18	13	18384	8.5	3.83	0.75	1.9	MC*OE
		Hispanic	18	13	13267	8.8	3.89	0.76	1.9	MC*OE
		Asian	18	13	4529	11.7	3.71	0.76	1.8	MC*OE
		Am. Indian	18	13	164	9.7	3.66	0.73	1.9	MC*OE
		Pacific Islande	18	13	109	10.7	4.16	0.81	1.8	MC*OE
		Multi	18	13	5073	10.2	3.89	0.77	1.9	MC*OE
	B	White	18	13	83602	11.5	3.35	0.70	1.8	MC*OE
		Af. Amer.	18	13	18384	9.0	3.48	0.71	1.9	MC*OE
		Hispanic	18	13	13267	9.4	3.46	0.70	1.9	MC*OE
		Asian	18	13	4529	12.2	3.40	0.71	1.8	MC*OE
		Am. Indian	18	13	164	9.8	3.62	0.74	1.8	MC*OE
		Pacific Islande	18	13	109	11.3	3.59	0.76	1.8	MC*OE
		Multi	18	13	5073	10.6	3.53	0.72	1.9	MC*OE
	C	White	8	1	83602	4.5	1.65	-	-	OE
		Af. Amer.	8	1	18384	3.7	1.66	-	-	OE
		Hispanic	8	1	13267	3.8	1.63	-	-	OE
		Asian	8	1	4529	4.9	1.77	-	-	OE
		Am. Indian	8	1	164	4.0	1.79	-	-	OE
		Pacific Islande	8	1	109	4.5	1.69	-	-	OE
		Multi	8	1	5073	4.2	1.69	-	-	OE
	D	White	18	18	83602	11.0	3.31	0.70	1.8	MC
		Af. Amer.	18	18	18384	8.4	3.27	0.65	1.9	MC
		Hispanic	18	18	13267	8.6	3.38	0.67	1.9	MC
		Asian	18	18	4529	11.5	3.61	0.76	1.8	MC
		Am. Indian	18	18	164	9.8	3.31	0.66	1.9	MC
		Pacific Islande	18	18	109	10.6	3.37	0.69	1.9	MC
		Multi	18	18	5073	9.9	3.49	0.71	1.9	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	62	45	4484	25.5	9.21	0.85	3.5	MC*OE
	A	All	18	13	4484	6.9	3.42	0.69	1.9	MC*OE
	B	All	18	13	4484	8.0	3.20	0.64	1.9	MC*OE
	C	All	8	1	4484	3.4	1.53	-	-	OE
	D	All	18	18	4484	7.1	3.02	0.58	2.0	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	62	45	19363	27.0	10.79	0.90	3.5	MC*OE
	A	All	18	13	19363	7.6	3.93	0.77	1.9	MC*OE
	B	All	18	13	19363	8.2	3.61	0.73	1.9	MC*OE
	C	All	8	1	19363	3.3	1.60	-	-	OE
	D	All	18	18	19363	7.9	3.39	0.67	1.9	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Dis.	Tot.	All	62	45	60975	31.8	10.46	0.89	3.5	MC*OE
	A	All	18	13	60975	9.2	3.85	0.76	1.9	MC*OE
	B	All	18	13	60975	9.6	3.47	0.71	1.9	MC*OE
	C	All	8	1	60975	3.9	1.61	-	-	OE
	D	All	18	18	60975	9.0	3.35	0.67	1.9	MC

As discussed in chapter 18, the reliability coefficient for ELA total score is stratified alpha due to the weighting of writing prompt (WP) and text-dependent analysis (TDA) items. All other reliability coefficients in this appendix (including ELA strands) are coefficient alpha.

English Language Arts Grade 4

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	84	49	123986	46.6	14.78	0.92	4.3	MC*OE
	A	All	19	15	123986	12.0	4.24	0.79	2.0	MC*OE
	B	All	19	14	123986	12.0	4.34	0.80	1.9	MC*OE
	C	All	12	1	123986	5.7	2.40	-	-	OE
	D	All	18	18	123986	10.9	3.63	0.74	1.9	MC
	E	All	16	1	123986	6.1	3.12	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	84	49	63385	44.3	14.67	0.92	4.2	MC*OE
		Female	84	49	60584	49.1	14.48	0.91	4.3	MC*OE
	A	Male	19	15	63385	11.5	4.32	0.78	2.0	MC*OE
		Female	19	15	60584	12.5	4.10	0.78	1.9	MC*OE
	B	Male	19	14	63385	11.5	4.39	0.80	2.0	MC*OE
		Female	19	14	60584	12.5	4.23	0.80	1.9	MC*OE
	C	Male	12	1	63385	5.2	2.28	-	-	OE
		Female	12	1	60584	6.1	2.44	-	-	OE
	D	Male	18	18	63385	10.5	3.67	0.74	1.9	MC
		Female	18	18	60584	11.3	3.54	0.73	1.8	MC
	E	Male	16	1	63385	5.5	2.94	-	-	OE
		Female	16	1	60584	6.7	3.19	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	84	49	83915	49.6	13.70	0.90	4.3	MC*OE
		Af. Amer.	84	49	18081	37.3	13.79	0.90	4.3	MC*OE
		Hispanic	84	49	12641	38.9	14.30	0.91	4.3	MC*OE
		Asian	84	49	4524	53.7	14.15	0.91	4.2	MC*OE
		Am. Indian	84	49	203	44.9	14.62	0.91	4.4	MC*OE
		Pacific Islande	84	49	78	49.6	14.10	0.90	4.3	MC*OE
		Multi	84	49	4526	44.2	14.91	0.92	4.3	MC*OE
	A	White	19	15	83915	12.8	3.92	0.76	1.9	MC*OE
		Af. Amer.	19	15	18081	9.5	4.20	0.76	2.0	MC*OE
		Hispanic	19	15	12641	9.9	4.26	0.77	2.0	MC*OE
		Asian	19	15	4524	13.6	3.89	0.78	1.8	MC*OE
		Am. Indian	19	15	203	11.4	4.49	0.80	2.0	MC*OE
		Pacific Islande	19	15	78	12.6	3.91	0.75	1.9	MC*OE
		Multi	19	15	4526	11.4	4.32	0.79	2.0	MC*OE
	B	White	19	14	83915	12.8	4.06	0.78	1.9	MC*OE
		Af. Amer.	19	14	18081	9.4	4.17	0.76	2.0	MC*OE
		Hispanic	19	14	12641	9.9	4.25	0.77	2.0	MC*OE
		Asian	19	14	4524	13.5	3.99	0.79	1.8	MC*OE
		Am. Indian	19	14	203	11.8	4.20	0.78	2.0	MC*OE
		Pacific Islande	19	14	78	12.5	4.34	0.81	1.9	MC*OE
		Multi	19	14	4526	11.3	4.41	0.80	2.0	MC*OE
	C	White	12	1	83915	6.0	2.38	-	-	OE
		Af. Amer.	12	1	18081	4.7	2.20	-	-	OE
		Hispanic	12	1	12641	4.8	2.22	-	-	OE
		Asian	12	1	4524	6.6	2.50	-	-	OE
		Am. Indian	12	1	203	5.3	2.57	-	-	OE
		Pacific Islande	12	1	78	6.1	2.21	-	-	OE
		Multi	12	1	4526	5.4	2.38	-	-	OE

	White	18	18	83915	11.6	3.41	0.71	1.8	MC
	Af. Amer.	18	18	18081	8.8	3.35	0.66	2.0	MC
	Hispanic	18	18	12641	9.2	3.54	0.70	1.9	MC
D	Asian	18	18	4524	12.6	3.54	0.76	1.7	MC
	Am. Indian	18	18	203	10.5	3.67	0.74	1.9	MC
	Pacific Islande	18	18	78	11.9	3.28	0.69	1.8	MC
	Multi	18	18	4526	10.3	3.65	0.73	1.9	MC
	White	16	1	83915	6.4	3.06	-	-	OE
	Af. Amer.	16	1	18081	4.9	2.94	-	-	OE
	Hispanic	16	1	12641	5.0	2.97	-	-	OE
E	Asian	16	1	4524	7.3	3.21	-	-	OE
	Am. Indian	16	1	203	5.8	2.90	-	-	OE
	Pacific Islande	16	1	78	6.5	3.24	-	-	OE
	Multi	16	1	4526	5.8	3.13	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
	Tot.	All	84	49	3399	28.9	10.79	0.85	4.2	MC*OE
	A	All	19	15	3399	7.1	3.29	0.62	2.0	MC*OE
ELL	B	All	19	14	3399	7.2	3.23	0.61	2.0	MC*OE
	C	All	12	1	3399	3.9	1.89	-	-	OE
	D	All	18	18	3399	7.0	2.91	0.54	2.0	MC
	E	All	16	1	3399	3.8	2.73	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
	Tot.	All	84	49	20196	33.4	13.80	0.91	4.2	MC*OE
	A	All	19	15	20196	8.5	4.18	0.76	2.0	MC*OE
IEP	B	All	19	14	20196	8.5	4.20	0.77	2.0	MC*OE
	C	All	12	1	20196	4.1	2.02	-	-	OE
	D	All	18	18	20196	8.1	3.47	0.69	1.9	MC
	E	All	16	1	20196	4.1	2.81	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
	Tot.	All	84	49	59351	40.2	13.99	0.90	4.3	MC*OE
	A	All	19	15	59351	10.4	4.22	0.77	2.0	MC*OE
Eco. Dis.	B	All	19	14	59351	10.3	4.25	0.77	2.0	MC*OE
	C	All	12	1	59351	4.9	2.21	-	-	OE
	D	All	18	18	59351	9.5	3.46	0.69	1.9	MC
	E	All	16	1	59351	5.2	2.92	-	-	OE

English Language Arts Grade 5

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	84	49	126501	48.7	14.35	0.92	4.1	MC*OE
	A	All	18	13	126501	12.7	3.80	0.78	1.8	MC*OE
	B	All	20	16	126501	11.7	4.26	0.78	2.0	MC*OE
	C	All	12	1	126501	6.7	2.48	-	-	OE
	D	All	18	18	126501	10.8	3.85	0.78	1.8	MC
	E	All	16	1	126501	6.7	2.81	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	84	49	64640	46.6	14.53	0.92	4.1	MC*OE
		Female	84	49	61837	50.9	13.83	0.91	4.1	MC*OE
	A	Male	18	13	64640	12.3	3.95	0.79	1.8	MC*OE
		Female	18	13	61837	13.0	3.60	0.77	1.7	MC*OE
	B	Male	20	16	64640	11.3	4.31	0.78	2.0	MC*OE
		Female	20	16	61837	12.1	4.17	0.78	2.0	MC*OE
	C	Male	12	1	64640	6.3	2.46	-	-	OE
		Female	12	1	61837	7.2	2.42	-	-	OE
	D	Male	18	18	64640	10.4	3.89	0.78	1.8	MC
		Female	18	18	61837	11.3	3.76	0.78	1.8	MC
	E	Male	16	1	64640	6.3	2.79	-	-	OE
		Female	16	1	61837	7.2	2.77	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	84	49	86729	51.5	13.23	0.91	4.1	MC*OE
		Af. Amer.	84	49	18123	39.1	13.55	0.90	4.2	MC*OE
		Hispanic	84	49	12581	41.1	13.90	0.91	4.2	MC*OE
		Asian	84	49	4768	55.8	13.67	0.91	4.0	MC*OE
		Am. Indian	84	49	181	45.3	15.27	0.92	4.2	MC*OE
		Pacific Islande	84	49	91	51.5	13.53	0.91	4.1	MC*OE
		Multi	84	49	3999	46.3	14.44	0.92	4.2	MC*OE
	A	White	18	13	86729	13.4	3.46	0.75	1.7	MC*OE
		Af. Amer.	18	13	18123	10.4	3.96	0.77	1.9	MC*OE
		Hispanic	18	13	12581	10.8	3.91	0.77	1.9	MC*OE
		Asian	18	13	4768	13.8	3.33	0.75	1.6	MC*OE
		Am. Indian	18	13	181	12.1	4.14	0.80	1.9	MC*OE
		Pacific Islande	18	13	91	13.3	3.47	0.75	1.7	MC*OE
		Multi	18	13	3999	12.2	3.86	0.78	1.8	MC*OE
	B	White	20	16	86729	12.4	4.07	0.77	2.0	MC*OE
		Af. Amer.	20	16	18123	9.2	3.89	0.72	2.0	MC*OE
		Hispanic	20	16	12581	9.7	3.99	0.74	2.0	MC*OE
		Asian	20	16	4768	13.8	4.12	0.79	1.9	MC*OE
		Am. Indian	20	16	181	10.5	4.41	0.78	2.1	MC*OE
		Pacific Islande	20	16	91	12.8	3.87	0.73	2.0	MC*OE
		Multi	20	16	3999	11.1	4.30	0.78	2.0	MC*OE
	C	White	12	1	86729	7.1	2.40	-	-	OE
		Af. Amer.	12	1	18123	5.5	2.34	-	-	OE
		Hispanic	12	1	12581	5.8	2.35	-	-	OE
		Asian	12	1	4768	7.8	2.51	-	-	OE
		Am. Indian	12	1	181	6.6	2.43	-	-	OE
		Pacific Islande	12	1	91	6.8	2.33	-	-	OE
		Multi	12	1	3999	6.4	2.53	-	-	OE

	White	18	18	86729	11.6	3.60	0.76	1.8	MC
	Af. Amer.	18	18	18123	8.5	3.63	0.72	1.9	MC
	Hispanic	18	18	12581	8.9	3.78	0.75	1.9	MC
D	Asian	18	18	4768	12.5	3.68	0.79	1.7	MC
	Am. Indian	18	18	181	9.9	4.11	0.80	1.8	MC
	Pacific Islande	18	18	91	11.5	3.78	0.79	1.7	MC
	Multi	18	18	3999	10.2	3.87	0.77	1.8	MC
	White	16	1	86729	7.0	2.73	-	-	OE
	Af. Amer.	16	1	18123	5.6	2.77	-	-	OE
	Hispanic	16	1	12581	5.9	2.76	-	-	OE
E	Asian	16	1	4768	7.9	2.87	-	-	OE
	Am. Indian	16	1	181	6.1	3.00	-	-	OE
	Pacific Islande	16	1	91	7.0	3.13	-	-	OE
	Multi	16	1	3999	6.4	2.81	-	-	OE

ELL

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	84	49	2891	29.5	10.60	0.84	4.2	MC*OE
A	All	18	13	2891	7.6	3.28	0.65	1.9	MC*OE
B	All	20	16	2891	6.9	2.90	0.51	2.0	MC*OE
C	All	12	1	2891	4.4	2.18	-	-	OE
D	All	18	18	2891	6.1	2.88	0.56	1.9	MC
E	All	16	1	2891	4.5	2.60	-	-	OE

IEP

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	84	49	20556	34.6	13.66	0.91	4.1	MC*OE
A	All	18	13	20556	9.2	4.11	0.78	1.9	MC*OE
B	All	20	16	20556	8.2	3.86	0.72	2.0	MC*OE
C	All	12	1	20556	4.9	2.31	-	-	OE
D	All	18	18	20556	7.6	3.65	0.73	1.9	MC
E	All	16	1	20556	4.8	2.68	-	-	OE

Eco. Dis.

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	84	49	59297	42.4	13.83	0.91	4.2	MC*OE
A	All	18	13	59297	11.2	3.94	0.77	1.9	MC*OE
B	All	20	16	59297	10.0	4.06	0.75	2.0	MC*OE
C	All	12	1	59297	5.9	2.36	-	-	OE
D	All	18	18	59297	9.3	3.74	0.74	1.9	MC
E	All	16	1	59297	5.9	2.72	-	-	OE

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	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	84	49	126331	50.6	14.62	0.91	4.3	MC*OE
	A	All	18	14	126331	11.1	3.85	0.74	2.0	MC*OE
	B	All	20	15	126331	13.0	4.26	0.79	1.9	MC*OE
	C	All	12	1	126331	7.7	2.59	-	-	OE
	D	All	18	18	126331	12.0	3.72	0.78	1.7	MC
	E	All	16	1	126331	6.8	3.11	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	84	49	64374	48.2	14.75	0.92	4.3	MC*OE
		Female	84	49	61944	53.0	14.07	0.90	4.4	MC*OE
	A	Male	18	14	64374	10.7	3.94	0.75	2.0	MC*OE
		Female	18	14	61944	11.4	3.72	0.72	2.0	MC*OE
	B	Male	20	15	64374	12.6	4.38	0.80	2.0	MC*OE
		Female	20	15	61944	13.5	4.09	0.78	1.9	MC*OE
	C	Male	12	1	64374	7.1	2.61	-	-	OE
		Female	12	1	61944	8.3	2.43	-	-	OE
	D	Male	18	18	64374	11.5	3.81	0.78	1.8	MC
		Female	18	18	61944	12.5	3.55	0.77	1.7	MC
	E	Male	16	1	64374	6.3	2.91	-	-	OE
		Female	16	1	61944	7.3	3.20	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	84	49	87701	53.4	13.53	0.90	4.3	MC*OE
		Af. Amer.	84	49	18314	40.7	13.54	0.90	4.4	MC*OE
		Hispanic	84	49	11974	42.8	14.23	0.91	4.4	MC*OE
		Asian	84	49	4587	57.7	14.18	0.91	4.3	MC*OE
		Am. Indian	84	49	175	49.2	15.31	0.92	4.4	MC*OE
		Pacific Islande	84	49	82	54.1	15.06	0.93	4.1	MC*OE
		Multi	84	49	3478	48.7	14.48	0.91	4.4	MC*OE
	A	White	18	14	87701	11.8	3.64	0.71	2.0	MC*OE
		Af. Amer.	18	14	18314	8.7	3.61	0.69	2.0	MC*OE
		Hispanic	18	14	11974	9.2	3.74	0.71	2.0	MC*OE
		Asian	18	14	4587	12.5	3.65	0.73	1.9	MC*OE
		Am. Indian	18	14	175	10.8	4.03	0.76	2.0	MC*OE
		Pacific Islande	18	14	82	11.8	3.78	0.74	1.9	MC*OE
		Multi	18	14	3478	10.5	3.85	0.73	2.0	MC*OE
	B	White	20	15	87701	13.8	3.97	0.77	1.9	MC*OE
		Af. Amer.	20	15	18314	10.5	4.15	0.76	2.0	MC*OE
		Hispanic	20	15	11974	10.9	4.26	0.78	2.0	MC*OE
		Asian	20	15	4587	14.8	3.93	0.80	1.8	MC*OE
		Am. Indian	20	15	175	12.8	4.50	0.81	2.0	MC*OE
		Pacific Islande	20	15	82	13.8	4.20	0.80	1.9	MC*OE
		Multi	20	15	3478	12.5	4.25	0.79	2.0	MC*OE
	C	White	12	1	87701	8.0	2.49	-	-	OE
		Af. Amer.	12	1	18314	6.5	2.59	-	-	OE
		Hispanic	12	1	11974	6.8	2.63	-	-	OE
		Asian	12	1	4587	8.7	2.51	-	-	OE
		Am. Indian	12	1	175	7.6	2.74	-	-	OE
		Pacific Islande	12	1	82	8.5	2.75	-	-	OE
		Multi	12	1	3478	7.5	2.61	-	-	OE

	White	18	18	87701	12.7	3.44	0.76	1.7	MC
	Af. Amer.	18	18	18314	9.7	3.58	0.73	1.9	MC
	Hispanic	18	18	11974	10.2	3.78	0.76	1.9	MC
D	Asian	18	18	4587	13.4	3.50	0.79	1.6	MC
	Am. Indian	18	18	175	11.4	3.76	0.77	1.8	MC
	Pacific Islande	18	18	82	12.6	3.77	0.80	1.7	MC
	Multi	18	18	3478	11.6	3.71	0.77	1.8	MC
	White	16	1	87701	7.2	3.07	-	-	OE
	Af. Amer.	16	1	18314	5.3	2.68	-	-	OE
	Hispanic	16	1	11974	5.6	2.84	-	-	OE
E	Asian	16	1	4587	8.2	3.38	-	-	OE
	Am. Indian	16	1	175	6.7	3.11	-	-	OE
	Pacific Islande	16	1	82	7.5	3.19	-	-	OE
	Multi	16	1	3478	6.6	3.09	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	84	49	2774	30.1	10.08	0.82	4.3	MC*OE
	A	All	18	14	2774	6.4	2.69	0.47	2.0	MC*OE
	B	All	20	15	2774	7.5	3.17	0.58	2.1	MC*OE
	C	All	12	1	2774	5.2	2.52	-	-	OE
	D	All	18	18	2774	7.1	2.99	0.58	1.9	MC
	E	All	16	1	2774	4.1	2.26	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	84	49	19981	35.9	13.23	0.89	4.3	MC*OE
	A	All	18	14	19981	7.9	3.61	0.70	2.0	MC*OE
	B	All	20	15	19981	9.2	4.11	0.75	2.1	MC*OE
	C	All	12	1	19981	5.6	2.58	-	-	OE
	D	All	18	18	19981	8.6	3.62	0.72	1.9	MC
	E	All	16	1	19981	4.7	2.42	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Dis.	Tot.	All	84	49	57495	44.0	14.04	0.90	4.4	MC*OE
	A	All	18	14	57495	9.6	3.77	0.71	2.0	MC*OE
	B	All	20	15	57495	11.3	4.24	0.77	2.0	MC*OE
	C	All	12	1	57495	6.9	2.60	-	-	OE
	D	All	18	18	57495	10.5	3.71	0.75	1.8	MC
	E	All	16	1	57495	5.7	2.80	-	-	OE

English Language Arts Grade 7

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	84	49	126228	50.5	14.15	0.91	4.3	MC*OE
	A	All	19	14	126228	12.2	3.60	0.73	1.9	MC*OE
	B	All	19	15	126228	12.2	3.63	0.73	1.9	MC*OE
	C	All	12	1	126228	7.3	2.51	-	-	OE
	D	All	18	18	126228	11.6	3.77	0.78	1.8	MC
	E	All	16	1	126228	7.2	3.50	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	84	49	64892	47.9	14.25	0.91	4.2	MC*OE
		Female	84	49	61325	53.2	13.50	0.90	4.3	MC*OE
	A	Male	19	14	64892	11.8	3.73	0.74	1.9	MC*OE
		Female	19	14	61325	12.7	3.37	0.71	1.8	MC*OE
	B	Male	19	15	64892	11.8	3.73	0.74	1.9	MC*OE
		Female	19	15	61325	12.6	3.48	0.72	1.9	MC*OE
	C	Male	12	1	64892	6.8	2.48	-	-	OE
		Female	12	1	61325	7.9	2.41	-	-	OE
	D	Male	18	18	64892	11.2	3.86	0.78	1.8	MC
		Female	18	18	61325	12.1	3.63	0.77	1.7	MC
	E	Male	16	1	64892	6.4	3.31	-	-	OE
		Female	16	1	61325	8.0	3.52	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	84	49	88110	53.0	13.16	0.90	4.2	MC*OE
		Af. Amer.	84	49	18470	41.6	13.34	0.90	4.3	MC*OE
		Hispanic	84	49	11954	43.2	13.92	0.90	4.3	MC*OE
		Asian	84	49	4528	58.3	14.04	0.91	4.2	MC*OE
		Am. Indian	84	49	182	49.8	13.51	0.91	4.1	MC*OE
		Pacific Islande	84	49	84	54.9	12.40	0.88	4.4	MC*OE
		Multi	84	49	2884	48.5	13.97	0.90	4.3	MC*OE
	A	White	19	14	88110	12.8	3.35	0.70	1.8	MC*OE
		Af. Amer.	19	14	18470	10.2	3.63	0.71	1.9	MC*OE
		Hispanic	19	14	11954	10.6	3.73	0.73	1.9	MC*OE
		Asian	19	14	4528	13.7	3.27	0.71	1.7	MC*OE
		Am. Indian	19	14	182	11.9	3.62	0.73	1.9	MC*OE
		Pacific Islande	19	14	84	13.1	3.11	0.68	1.8	MC*OE
		Multi	19	14	2884	11.8	3.59	0.72	1.9	MC*OE
	B	White	19	15	88110	12.7	3.42	0.71	1.9	MC*OE
		Af. Amer.	19	15	18470	10.2	3.58	0.69	2.0	MC*OE
		Hispanic	19	15	11954	10.5	3.65	0.71	2.0	MC*OE
		Asian	19	15	4528	13.6	3.50	0.75	1.8	MC*OE
		Am. Indian	19	15	182	12.3	3.60	0.72	1.9	MC*OE
		Pacific Islande	19	15	84	13.1	3.43	0.72	1.8	MC*OE
		Multi	19	15	2884	11.8	3.61	0.72	1.9	MC*OE
	C	White	12	1	88110	7.6	2.41	-	-	OE
		Af. Amer.	12	1	18470	6.2	2.45	-	-	OE
		Hispanic	12	1	11954	6.3	2.47	-	-	OE
		Asian	12	1	4528	8.5	2.53	-	-	OE
		Am. Indian	12	1	182	7.2	2.39	-	-	OE
		Pacific Islande	12	1	84	8.0	2.30	-	-	OE
		Multi	12	1	2884	7.0	2.56	-	-	OE

	White	18	18	88110	12.3	3.55	0.76	1.7	MC
	Af. Amer.	18	18	18470	9.4	3.59	0.72	1.9	MC
	Hispanic	18	18	11954	9.8	3.72	0.75	1.9	MC
D	Asian	18	18	4528	13.3	3.62	0.80	1.6	MC
	Am. Indian	18	18	182	11.6	3.70	0.77	1.8	MC
	Pacific Islande	18	18	84	12.6	3.23	0.71	1.7	MC
	Multi	18	18	2884	11.1	3.77	0.77	1.8	MC
	White	16	1	88110	7.6	3.44	-	-	OE
	Af. Amer.	16	1	18470	5.7	3.14	-	-	OE
	Hispanic	16	1	11954	5.9	3.27	-	-	OE
E	Asian	16	1	4528	9.2	3.79	-	-	OE
	Am. Indian	16	1	182	6.9	3.21	-	-	OE
	Pacific Islande	16	1	84	8.0	3.43	-	-	OE
	Multi	16	1	2884	6.8	3.50	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	84	49	2750	30.9	10.73	0.84	4.3	MC*OE
	A	All	19	14	2750	7.7	3.20	0.61	2.0	MC*OE
	B	All	19	15	2750	7.6	2.94	0.52	2.0	MC*OE
	C	All	12	1	2750	4.8	2.33	-	-	OE
	D	All	18	18	2750	6.7	2.88	0.55	1.9	MC
	E	All	16	1	2750	4.1	2.79	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	84	49	19494	35.8	12.58	0.89	4.2	MC*OE
	A	All	19	14	19494	8.9	3.65	0.70	2.0	MC*OE
	B	All	19	15	19494	8.9	3.50	0.67	2.0	MC*OE
	C	All	12	1	19494	5.3	2.33	-	-	OE
	D	All	18	18	19494	8.1	3.54	0.70	1.9	MC
	E	All	16	1	19494	4.6	2.76	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Dis.	Tot.	All	84	49	57008	44.3	13.58	0.90	4.3	MC*OE
	A	All	19	14	57008	10.9	3.67	0.72	1.9	MC*OE
	B	All	19	15	57008	10.8	3.61	0.71	2.0	MC*OE
	C	All	12	1	57008	6.5	2.44	-	-	OE
	D	All	18	18	57008	10.1	3.69	0.75	1.9	MC
	E	All	16	1	57008	6.0	3.20	-	-	OE

English Language Arts Grade 8

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	84	49	128889	51.2	14.22	0.90	4.4	MC*OE
	A	All	20	15	128889	13.4	3.84	0.73	2.0	MC*OE
	B	All	18	14	128889	11.1	3.67	0.72	1.9	MC*OE
	C	All	12	1	128889	7.9	2.32	-	-	OE
	D	All	18	18	128889	10.7	3.75	0.77	1.8	MC
	E	All	16	1	128889	8.0	3.67	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	84	49	65975	48.4	14.36	0.91	4.4	MC*OE
		Female	84	49	62888	54.1	13.46	0.89	4.5	MC*OE
	A	Male	20	15	65975	12.8	4.01	0.74	2.0	MC*OE
		Female	20	15	62888	14.0	3.55	0.69	2.0	MC*OE
	B	Male	18	14	65975	10.6	3.77	0.73	2.0	MC*OE
		Female	18	14	62888	11.6	3.50	0.70	1.9	MC*OE
	C	Male	12	1	65975	7.4	2.41	-	-	OE
		Female	12	1	62888	8.5	2.09	-	-	OE
	D	Male	18	18	65975	10.1	3.71	0.76	1.8	MC
		Female	18	18	62888	11.3	3.70	0.77	1.8	MC
	E	Male	16	1	65975	7.4	3.55	-	-	OE
		Female	16	1	62888	8.7	3.66	-	-	OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	84	49	91053	53.6	13.27	0.89	4.4	MC*OE
		Af. Amer.	84	49	18397	42.7	13.55	0.89	4.5	MC*OE
		Hispanic	84	49	11997	43.5	13.98	0.90	4.4	MC*OE
		Asian	84	49	4537	58.9	13.91	0.90	4.3	MC*OE
		Am. Indian	84	49	179	47.9	13.09	0.89	4.3	MC*OE
		Pacific Islande	84	49	97	55.1	13.72	0.89	4.6	MC*OE
		Multi	84	49	2592	48.9	14.20	0.90	4.4	MC*OE
	A	White	20	15	91053	13.9	3.62	0.70	2.0	MC*OE
		Af. Amer.	20	15	18397	11.5	3.91	0.72	2.1	MC*OE
		Hispanic	20	15	11997	11.8	3.97	0.73	2.1	MC*OE
		Asian	20	15	4537	14.9	3.58	0.72	1.9	MC*OE
		Am. Indian	20	15	179	13.0	3.66	0.71	2.0	MC*OE
		Pacific Islande	20	15	97	14.1	3.79	0.74	2.0	MC*OE
		Multi	20	15	2592	13.0	3.86	0.73	2.0	MC*OE
	B	White	18	14	91053	11.7	3.49	0.70	1.9	MC*OE
		Af. Amer.	18	14	18397	9.2	3.58	0.68	2.0	MC*OE
		Hispanic	18	14	11997	9.3	3.62	0.69	2.0	MC*OE
		Asian	18	14	4537	12.7	3.40	0.72	1.8	MC*OE
		Am. Indian	18	14	179	10.4	3.36	0.65	2.0	MC*OE
		Pacific Islande	18	14	97	11.7	3.30	0.68	1.9	MC*OE
		Multi	18	14	2592	10.5	3.74	0.72	2.0	MC*OE
	C	White	12	1	91053	8.2	2.19	-	-	OE
		Af. Amer.	12	1	18397	6.9	2.39	-	-	OE
		Hispanic	12	1	11997	7.0	2.44	-	-	OE
		Asian	12	1	4537	9.0	2.15	-	-	OE
		Am. Indian	12	1	179	7.5	2.43	-	-	OE
		Pacific Islande	12	1	97	8.6	2.09	-	-	OE
		Multi	12	1	2592	7.7	2.39	-	-	OE

	White	18	18	91053	11.3	3.59	0.75	1.8	MC
	Af. Amer.	18	18	18397	8.8	3.46	0.71	1.9	MC
	Hispanic	18	18	11997	8.8	3.56	0.72	1.9	MC
D	Asian	18	18	4537	12.5	3.76	0.80	1.7	MC
	Am. Indian	18	18	179	9.7	3.36	0.69	1.9	MC
	Pacific Islande	18	18	97	11.6	3.64	0.76	1.8	MC
	Multi	18	18	2592	10.1	3.72	0.76	1.8	MC
	White	16	1	91053	8.5	3.56	-	-	OE
	Af. Amer.	16	1	18397	6.3	3.41	-	-	OE
	Hispanic	16	1	11997	6.6	3.48	-	-	OE
E	Asian	16	1	4537	10.0	3.77	-	-	OE
	Am. Indian	16	1	179	7.2	3.55	-	-	OE
	Pacific Islande	16	1	97	9.1	3.86	-	-	OE
	Multi	16	1	2592	7.6	3.65	-	-	OE

ELL

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	84	49	2792	31.2	10.48	0.82	4.4	MC*OE
A	All	20	15	2792	8.5	3.35	0.61	2.1	MC*OE
B	All	18	14	2792	6.7	2.76	0.48	2.0	MC*OE
C	All	12	1	2792	5.6	2.40	-	-	OE
D	All	18	18	2792	6.0	2.58	0.46	1.9	MC
E	All	16	1	2792	4.4	3.04	-	-	OE

IEP

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	84	49	19786	36.2	12.30	0.87	4.4	MC*OE
A	All	20	15	19786	9.9	3.93	0.71	2.1	MC*OE
B	All	18	14	19786	7.8	3.33	0.63	2.0	MC*OE
C	All	12	1	19786	6.0	2.46	-	-	OE
D	All	18	18	19786	7.3	3.15	0.63	1.9	MC
E	All	16	1	19786	5.2	2.95	-	-	OE

Eco. Dis.

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	84	49	56227	44.9	13.71	0.89	4.5	MC*OE
A	All	20	15	56227	12.1	3.94	0.73	2.1	MC*OE
B	All	18	14	56227	9.7	3.62	0.69	2.0	MC*OE
C	All	12	1	56227	7.2	2.38	-	-	OE
D	All	18	18	56227	9.2	3.57	0.73	1.9	MC
E	All	16	1	56227	6.8	3.43	-	-	OE

Science Grade 4

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	68	63	124309	46.6	13.21	0.93	3.4	MC*OE
	A	All	34	31	124309	23.3	6.98	0.88	2.4	MC*OE
	B	All	12	11	124309	8.8	2.57	0.71	1.4	MC*OE
	C	All	10	10	124309	7.3	2.12	0.66	1.2	MC
	D	All	12	11	124309	7.2	2.82	0.72	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	68	63	63591	46.2	13.65	0.94	3.4	MC*OE
		Female	68	63	60707	47.0	12.71	0.93	3.4	MC*OE
	A	Male	34	31	63591	22.9	7.16	0.89	2.4	MC*OE
		Female	34	31	60707	23.6	6.76	0.88	2.4	MC*OE
	B	Male	12	11	63591	8.7	2.63	0.72	1.4	MC*OE
		Female	12	11	60707	8.9	2.50	0.70	1.4	MC*OE
	C	Male	10	10	63591	7.3	2.21	0.68	1.2	MC
		Female	10	10	60707	7.4	2.02	0.63	1.2	MC
	D	Male	12	11	63591	7.3	2.88	0.73	1.5	MC*OE
		Female	12	11	60707	7.1	2.76	0.70	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	68	63	83867	49.8	11.42	0.92	3.3	MC*OE
		Af. Amer.	68	63	18156	36.4	13.18	0.92	3.7	MC*OE
		Hispanic	68	63	12866	39.0	13.56	0.93	3.6	MC*OE
		Asian	68	63	4600	51.3	12.00	0.93	3.2	MC*OE
		Am. Indian	68	63	204	44.3	14.26	0.94	3.5	MC*OE
		Pacific Islande	68	63	79	49.3	11.88	0.92	3.3	MC*OE
		Multi	68	63	4527	43.7	13.69	0.93	3.5	MC*OE
	A	White	34	31	83867	24.9	6.08	0.86	2.3	MC*OE
		Af. Amer.	34	31	18156	18.1	7.02	0.86	2.6	MC*OE
		Hispanic	34	31	12866	19.4	7.22	0.87	2.6	MC*OE
		Asian	34	31	4600	25.7	6.36	0.88	2.2	MC*OE
		Am. Indian	34	31	204	22.2	7.60	0.90	2.4	MC*OE
		Pacific Islande	34	31	79	24.5	6.19	0.85	2.4	MC*OE
		Multi	34	31	4527	21.8	7.27	0.88	2.5	MC*OE
	B	White	12	11	83867	9.3	2.23	0.65	1.3	MC*OE
		Af. Amer.	12	11	18156	7.0	2.78	0.69	1.6	MC*OE
		Hispanic	12	11	12866	7.5	2.75	0.70	1.5	MC*OE
		Asian	12	11	4600	9.4	2.35	0.70	1.3	MC*OE
		Am. Indian	12	11	204	8.3	2.85	0.75	1.4	MC*OE
		Pacific Islande	12	11	79	9.4	2.49	0.75	1.3	MC*OE
		Multi	12	11	4527	8.3	2.67	0.71	1.4	MC*OE
	C	White	10	10	83867	7.8	1.88	0.60	1.2	MC
		Af. Amer.	10	10	18156	5.9	2.26	0.62	1.4	MC
		Hispanic	10	10	12866	6.4	2.24	0.64	1.3	MC
		Asian	10	10	4600	7.9	1.88	0.62	1.2	MC
		Am. Indian	10	10	204	7.0	2.37	0.72	1.3	MC
		Pacific Islande	10	10	79	7.6	1.95	0.61	1.2	MC
		Multi	10	10	4527	6.9	2.24	0.67	1.3	MC
	D	White	12	11	83867	7.8	2.59	0.68	1.5	MC*OE
		Af. Amer.	12	11	18156	5.3	2.60	0.64	1.6	MC*OE
		Hispanic	12	11	12866	5.7	2.77	0.69	1.6	MC*OE
		Asian	12	11	4600	8.2	2.64	0.71	1.4	MC*OE
		Am. Indian	12	11	204	6.9	2.79	0.70	1.5	MC*OE
		Pacific Islande	12	11	79	7.9	2.57	0.66	1.5	MC*OE
		Multi	12	11	4527	6.7	2.85	0.71	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	68	63	3807	30.3	11.67	0.90	3.7	MC*OE
	A	All	34	31	3807	14.8	6.21	0.82	2.6	MC*OE
	B	All	12	11	3807	5.9	2.60	0.62	1.6	MC*OE
	C	All	10	10	3807	5.2	2.14	0.55	1.4	MC
	D	All	12	11	3807	4.4	2.40	0.59	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	68	63	20262	37.0	14.03	0.93	3.7	MC*OE
	A	All	34	31	20262	18.2	7.38	0.88	2.6	MC*OE
	B	All	12	11	20262	7.1	2.86	0.71	1.5	MC*OE
	C	All	10	10	20262	6.1	2.34	0.66	1.4	MC
	D	All	12	11	20262	5.5	2.84	0.70	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Disadv.	Tot.	All	68	63	59573	40.9	13.45	0.93	3.6	MC*OE
	A	All	34	31	59573	20.4	7.12	0.87	2.5	MC*OE
	B	All	12	11	59573	7.8	2.72	0.70	1.5	MC*OE
	C	All	10	10	59573	6.6	2.23	0.64	1.3	MC
	D	All	12	11	59573	6.1	2.78	0.69	1.6	MC*OE

Science Grade 8

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	68	63	128733	45.1	13.56	0.93	3.5	MC*OE
	A	All	34	31	128733	22.8	7.12	0.88	2.5	MC*OE
	B	All	13	11	128733	8.6	2.86	0.73	1.5	MC*OE
	C	All	11	11	128733	7.2	2.53	0.69	1.4	MC
	D	All	10	10	128733	6.4	2.36	0.67	1.4	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	68	63	65958	45.0	14.27	0.94	3.4	MC*OE
		Female	68	63	62749	45.1	12.78	0.92	3.5	MC*OE
	A	Male	34	31	65958	22.7	7.51	0.90	2.4	MC*OE
		Female	34	31	62749	22.9	6.68	0.86	2.5	MC*OE
	B	Male	13	11	65958	8.5	2.91	0.73	1.5	MC*OE
		Female	13	11	62749	8.7	2.80	0.72	1.5	MC*OE
	C	Male	11	11	65958	7.3	2.63	0.72	1.4	MC
		Female	11	11	62749	7.2	2.42	0.65	1.4	MC
	D	Male	10	10	65958	6.5	2.44	0.70	1.3	MC
		Female	10	10	62749	6.3	2.28	0.64	1.4	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	68	63	90704	48.1	12.01	0.92	3.4	MC*OE
		Af. Amer.	68	63	18368	34.9	13.24	0.92	3.7	MC*OE
		Hispanic	68	63	12190	36.4	13.79	0.93	3.7	MC*OE
		Asian	68	63	4578	50.6	12.45	0.93	3.2	MC*OE
		Am. Indian	68	63	178	43.0	13.23	0.93	3.6	MC*OE
		Pacific Islande	68	63	96	47.4	11.58	0.91	3.5	MC*OE
		Multi	68	63	2582	42.2	13.76	0.93	3.6	MC*OE
	A	White	34	31	90704	24.3	6.36	0.86	2.4	MC*OE
		Af. Amer.	34	31	18368	17.8	7.13	0.86	2.6	MC*OE
		Hispanic	34	31	12190	18.6	7.33	0.87	2.6	MC*OE
		Asian	34	31	4578	26.1	6.39	0.88	2.2	MC*OE
		Am. Indian	34	31	178	21.5	7.15	0.88	2.5	MC*OE
		Pacific Islande	34	31	96	24.2	6.26	0.85	2.4	MC*OE
		Multi	34	31	2582	21.5	7.27	0.88	2.5	MC*OE
	B	White	13	11	90704	9.2	2.52	0.67	1.4	MC*OE
		Af. Amer.	13	11	18368	6.5	2.92	0.70	1.6	MC*OE
		Hispanic	13	11	12190	6.9	2.99	0.71	1.6	MC*OE
		Asian	13	11	4578	9.3	2.74	0.73	1.4	MC*OE
		Am. Indian	13	11	178	8.3	2.74	0.70	1.5	MC*OE
		Pacific Islande	13	11	96	8.9	2.39	0.61	1.5	MC*OE
		Multi	13	11	2582	8.1	2.90	0.72	1.5	MC*OE
	C	White	11	11	90704	7.7	2.34	0.66	1.4	MC
		Af. Amer.	11	11	18368	5.7	2.48	0.62	1.5	MC
		Hispanic	11	11	12190	5.9	2.58	0.66	1.5	MC
		Asian	11	11	4578	8.2	2.35	0.70	1.3	MC
		Am. Indian	11	11	178	6.9	2.49	0.67	1.4	MC
		Pacific Islande	11	11	96	7.5	2.19	0.57	1.4	MC
		Multi	11	11	2582	6.7	2.57	0.68	1.5	MC
	D	White	10	10	90704	6.9	2.18	0.63	1.3	MC
		Af. Amer.	10	10	18368	4.9	2.27	0.58	1.5	MC
		Hispanic	10	10	12190	5.1	2.35	0.62	1.4	MC
		Asian	10	10	4578	7.1	2.18	0.65	1.3	MC
		Am. Indian	10	10	178	6.3	2.21	0.59	1.4	MC
		Pacific Islande	10	10	96	6.8	2.03	0.55	1.4	MC
		Multi	10	10	2582	5.9	2.40	0.66	1.4	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	68	63	3116	25.7	10.15	0.86	3.8	MC*OE
	A	All	34	31	3116	13.1	5.69	0.78	2.7	MC*OE
	B	All	13	11	3116	4.6	2.42	0.54	1.6	MC*OE
	C	All	11	11	3116	4.3	2.10	0.46	1.5	MC
	D	All	10	10	3116	3.7	1.93	0.42	1.5	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	68	63	19687	32.2	13.28	0.92	3.8	MC*OE
	A	All	34	31	19687	16.1	7.07	0.86	2.7	MC*OE
	B	All	13	11	19687	6.2	2.88	0.68	1.6	MC*OE
	C	All	11	11	19687	5.3	2.53	0.64	1.5	MC
	D	All	10	10	19687	4.7	2.35	0.61	1.5	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Disadv.	Tot.	All	68	63	56203	38.9	13.76	0.93	3.7	MC*OE
	A	All	34	31	56203	19.7	7.28	0.87	2.6	MC*OE
	B	All	13	11	56203	7.4	2.96	0.72	1.6	MC*OE
	C	All	11	11	56203	6.3	2.57	0.66	1.5	MC
	D	All	10	10	56203	5.5	2.40	0.64	1.4	MC

Appendix Q:

Historical Statistics

			All	PP	CBT
Mathematics Grade 3	Raw Score	Mean	39.13	39.16	33.83
		SD	14.56	14.56	14.18
		Max*	72	72	72
	Scaled Score	Mean	1008.1	1008.3	966.0
		SD	120.5	120.5	115.5
		Max*	1594	1594	1594
	Raw Cuts	Bel. Basic/Basic	29	29	29
		Basic/Prof.	40	40	40
		Prof./Adv.	54	54	54
	Theta Cuts	Bel. Basic/Basic	-0.2733	-0.2733	-0.2733
		Basic/Prof.	0.5031	0.5031	0.5031
		Prof./Adv.	1.6182	1.6182	1.6182
	Impact %	Bel. Basic	28.0	27.9	43.5
		Basic	23.5	23.5	24.1
		Proficient	28.5	28.5	20.8
		Advanced	20.0	20.1	11.6
		Prof. + Adv.	48.5	48.6	32.4
	Demographics	N Count	125309	124574	735
		% City	9.8	9.8	0.0
		% White	66.8	66.8	54.7
		% Black	14.7	14.6	36.5
		% Hispanic	10.6	10.6	4.1

			All	PP	CBT
Mathematics Grade 4	Raw Score	Mean	34.62	34.66	28.90
		SD	14.31	14.31	13.67
		Max*	72	72	72
	Scaled Score	Mean	995.5	995.8	951.8
		SD	108.8	108.7	103.9
		Max*	1627	1627	1627
	Raw Cuts	Bel. Basic/Basic	23	23	23
		Basic/Prof.	36	36	36
		Prof./Adv.	51	51	51
	Theta Cuts	Bel. Basic/Basic	-0.6763	-0.6763	-0.6763
		Basic/Prof.	0.2227	0.2227	0.2227
		Prof./Adv.	1.2578	1.2578	1.2578
	Impact %	Bel. Basic	24.8	24.7	42.1
		Basic	30.8	30.8	27.7
		Proficient	27.5	27.6	21.5
		Advanced	16.9	17.0	8.7
		Prof. + Adv.	44.5	44.6	30.2
	Demographics	N Count	124201	123370	831
		% City	9.6	9.6	0.0
		% White	67.7	67.6	72.7
		% Black	14.6	14.6	18.8
		% Hispanic	10.2	10.2	5.1

			2015		
			All	PP	CBT
Mathematics Grade 5	Raw Score	Mean	35.68	35.73	30.00
		SD	15.00	15.00	13.96
		Max*	72	72	72
	Scaled Score	Mean	987.2	987.6	942.3
		SD	119.9	119.9	108.9
		Max*	1594	1594	1594
	Raw Cuts	Bel. Basic/Basic	24	24	24
		Basic/Prof.	38	38	38
		Prof./Adv.	54	54	54
	Theta Cuts	Bel. Basic/Basic	-0.5950	-0.5950	-0.5950
		Basic/Prof.	0.3796	0.3796	0.3796
		Prof./Adv.	1.5606	1.5606	1.5606
	Impact %	Bel. Basic	25.9	25.8	41.6
		Basic	31.3	31.3	29.8
		Proficient	27.4	27.4	21.0
		Advanced	15.4	15.5	7.7
		Prof. + Adv.	42.8	42.9	28.6
	Demographics	N Count	126683	125524	1159
		% City	8.8	8.9	0.0
		% White	68.5	68.4	77.4
		% Black	14.3	14.4	13.5
		% Hispanic	10.0	10.0	5.3

			2015		
			All	PP	CBT
Mathematics Grade 6	Raw Score	Mean	38.50	38.53	36.69
		SD	13.66	13.65	14.27
		Max*	72	72	72
	Scaled Score	Mean	976.1	976.2	962.8
		SD	104.7	104.6	108.9
		Max*	1531	1531	1531
	Raw Cuts	Bel. Basic/Basic	28	28	28
		Basic/Prof.	43	43	43
		Prof./Adv.	57	57	57
	Theta Cuts	Bel. Basic/Basic	-0.2897	-0.2897	-0.2897
		Basic/Prof.	0.7122	0.7122	0.7122
		Prof./Adv.	1.7893	1.7893	1.7893
	Impact %	Bel. Basic	25.2	25.1	32.9
		Basic	35.1	35.2	31.6
		Proficient	28.4	28.5	24.5
		Advanced	11.3	11.3	11.1
		Prof. + Adv.	39.7	39.8	35.5
	Demographics	N Count	126413	124818	1595
		% City	7.8	7.9	1.0
		% White	69.4	69.4	73.0
		% Black	14.5	14.5	15.4
		% Hispanic	9.5	9.5	8.4

			2015		
			All	PP	CBT
Mathematics Grade 7	Raw Score	Mean	35.19	35.25	31.93
		SD	14.28	14.28	13.46
		Max*	72	72	72
	Scaled Score	Mean	961.5	961.9	937.8
		SD	104.0	104.1	96.1
		Max*	1536	1536	1536
	Raw Cuts	Bel. Basic/Basic	27	27	27
		Basic/Prof.	42	42	42
		Prof./Adv.	57	57	57
	Theta Cuts	Bel. Basic/Basic	-0.4932	-0.4932	-0.4932
		Basic/Prof.	0.4662	0.4662	0.4662
		Prof./Adv.	1.5737	1.5737	1.5737
	Impact %	Bel. Basic	33.5	33.4	43.0
		Basic	33.4	33.4	32.5
		Proficient	23.4	23.5	18.3
		Advanced	9.6	9.7	6.1
		Prof. + Adv.	33.1	33.2	24.4
	Demographics	N Count	126299	123950	2349
		% City	7.6	7.7	1.5
		% White	69.7	69.7	74.6
		% Black	14.7	14.6	15.5
		% Hispanic	9.5	9.5	7.2

			2015		
			All	PP	CBT
Mathematics Grade 8	Raw Score	Mean	33.22	33.28	30.97
		SD	13.44	13.46	12.61
		Max*	72	72	72
	Scaled Score	Mean	950.5	951.0	933.5
		SD	101.2	101.4	93.0
		Max*	1558	1558	1558
	Raw Cuts	Bel. Basic/Basic	27	27	27
		Basic/Prof.	41	41	41
		Prof./Adv.	55	55	55
	Theta Cuts	Bel. Basic/Basic	-0.4352	-0.4352	-0.4352
		Basic/Prof.	0.4910	0.4910	0.4910
		Prof./Adv.	1.5652	1.5652	1.5652
	Impact %	Bel. Basic	37.7	37.5	43.7
		Basic	32.6	32.5	32.9
		Proficient	21.8	21.8	18.5
		Advanced	8.0	8.1	5.0
		Prof. + Adv.	29.8	29.9	23.5
	Demographics	N Count	128859	125299	3560
		% City	7.1	7.3	0.8
		% White	70.6	70.4	76.4
		% Black	14.3	14.3	12.5
		% Hispanic	9.3	9.4	8.2

*Note: Maximum possible scores

			All	PP	CBT
ELA Grade 3	Raw Score	**Mean**	36.19	36.21	31.50
		SD	10.87	10.87	11.37
		Max*	62	62	62
	Scaled Score	**Mean**	1026.7	1026.9	983.5
		SD	102.6	102.5	104.3
		Max*	1586	1586	1586
	Raw Cuts	**Bel. Basic/Basic**	23	23	23
		Basic/Prof.	34	34	34
		Prof./Adv.	49	49	49
	Theta Cuts	**Bel. Basic/Basic**	-0.5160	-0.5160	-0.5160
		Basic/Prof.	0.4059	0.4059	0.4059
		Prof./Adv.	1.8298	1.8298	1.8298
	Impact %	**Bel. Basic**	13.4	13.3	26.6
		Basic	24.6	24.6	29.2
		Proficient	49.0	49.1	37.4
		Advanced	13.0	13.0	6.8
		Prof. + Adv.	62.0	62.1	44.2
	Demographics	**N Count**	125160	124599	561
		% City	9.8	9.8	0.0
		% White	66.8	66.9	47.2
		% Black	14.7	14.6	43.3
		% Hispanic	10.6	10.6	3.4

			All	PP	CBT
ELA Grade 4	Raw Score	**Mean**	46.65	46.69	38.61
		SD	14.78	14.76	15.62
		Max*	84	84	84
	Scaled Score	**Mean**	1021.1	1021.4	961.8
		SD	112.5	112.4	114.6
		Max*	1724	1724	1724
	Raw Cuts	**Bel. Basic/Basic**	28	28	28
		Basic/Prof.	45	45	45
		Prof./Adv.	60	60	60
	Theta Cuts	**Bel. Basic/Basic**	-0.6614	-0.6614	-0.6614
		Basic/Prof.	0.4401	0.4401	0.4401
		Prof./Adv.	1.5552	1.5552	1.5552
	Impact %	**Bel. Basic**	12.9	12.8	28.5
		Basic	28.5	28.5	34.3
		Proficient	37.0	37.0	25.4
		Advanced	21.6	21.6	11.8
		Prof. + Adv.	58.6	58.7	37.2
	Demographics	**N Count**	123986	123316	670
		% City	9.6	9.6	0.0
		% White	67.7	67.7	70.7
		% Black	14.6	14.6	20.6
		% Hispanic	10.2	10.2	4.6

			2015		
			All	PP	CBT
ELA Grade 5	Raw Score	Mean	48.66	48.72	41.81
		SD	14.35	14.33	15.26
		Max*	84	84	84
	Scaled Score	Mean	1029.8	1030.2	975.1
		SD	117.5	117.4	119.7
		Max*	1730	1730	1730
	Raw Cuts	Bel. Basic/Basic	31	31	31
		Basic/Prof.	46	46	46
		Prof./Adv.	63	63	63
	Theta Cuts	Bel. Basic/Basic	-0.6083	-0.6083	-0.6083
		Basic/Prof.	0.4242	0.4242	0.4242
		Prof./Adv.	1.8234	1.8234	1.8234
	Impact %	Bel. Basic	13.4	13.3	27.2
		Basic	24.8	24.7	30.6
		Proficient	44.1	44.1	32.3
		Advanced	17.8	17.9	9.9
		Prof. + Adv.	61.8	62.0	42.2
	Demographics	N Count	126501	125525	976
		% City	8.8	8.9	0.0
		% White	68.6	68.5	74.9
		% Black	14.3	14.3	15.1
		% Hispanic	9.9	10.0	5.4

			2015		
			All	PP	CBT
ELA Grade 6	Raw Score	Mean	50.58	50.63	46.35
		SD	14.62	14.61	14.85
		Max*	84	84	84
	Scaled Score	Mean	1028.0	1028.3	994.9
		SD	116.5	116.5	113.3
		Max*	1699	1699	1699
	Raw Cuts	Bel. Basic/Basic	30	30	30
		Basic/Prof.	48	48	48
		Prof./Adv.	64	64	64
	Theta Cuts	Bel. Basic/Basic	-0.6101	-0.6101	-0.6101
		Basic/Prof.	0.5904	0.5904	0.5904
		Prof./Adv.	1.8273	1.8273	1.8273
	Impact %	Bel. Basic	10.0	9.9	15.6
		Basic	29.4	29.3	35.9
		Proficient	39.4	39.4	34.6
		Advanced	21.3	21.4	14.0
		Prof. + Adv.	60.7	60.8	48.6
	Demographics	N Count	126331	124881	1450
		% City	7.8	7.8	0.9
		% White	69.4	69.4	73.1
		% Black	14.5	14.5	15.0
		% Hispanic	9.5	9.5	8.7

			2015		
			All	PP	CBT
ELA Grade 7	Raw Score	Mean	50.47	50.55	46.18
		SD	14.15	14.15	13.42
		Max*	84	84	84
	Scaled Score	Mean	1023.4	1024.0	989.1
		SD	112.6	112.7	102.2
		Max*	1652	1652	1652
	Raw Cuts	Bel. Basic/Basic	27	27	27
		Basic/Prof.	49	49	49
		Prof./Adv.	65	65	65
	Theta Cuts	Bel. Basic/Basic	-0.9665	-0.9665	-0.9665
		Basic/Prof.	0.5728	0.5728	0.5728
		Prof./Adv.	1.8485	1.8485	1.8485
	Impact %	Bel. Basic	6.4	6.4	8.5
		Basic	34.9	34.7	45.7
		Proficient	41.7	41.8	37.8
		Advanced	16.9	17.1	8.0
		Prof. + Adv.	58.7	58.9	45.8
	Demographics	N Count	126228	123930	2298
		% City	7.6	7.7	1.5
		% White	69.8	69.7	75.6
		% Black	14.6	14.6	14.5
		% Hispanic	9.5	9.5	7.3

			2015		
			All	PP	CBT
ELA Grade 8	Raw Score	Mean	51.18	51.29	47.35
		SD	14.22	14.21	13.93
		Max*	84	84	84
	Scaled Score	Mean	1020.2	1021.0	991.7
		SD	107.3	107.3	100.7
		Max*	1636	1636	1636
	Raw Cuts	Bel. Basic/Basic	32	32	32
		Basic/Prof.	50	50	50
		Prof./Adv.	67	67	67
	Theta Cuts	Bel. Basic/Basic	-0.7122	-0.7122	-0.7122
		Basic/Prof.	0.4095	0.4095	0.4095
		Prof./Adv.	1.7392	1.7392	1.7392
	Impact %	Bel. Basic	10.9	10.8	15.1
		Basic	31.1	30.9	38.5
		Proficient	43.5	43.6	38.2
		Advanced	14.5	14.7	8.2
		Prof. + Adv.	58.0	58.3	46.4
	Demographics	N Count	128889	125092	3797
		% City	7.1	7.3	0.8
		% White	70.6	70.4	78.2
		% Black	14.3	14.4	11.5
		% Hispanic	9.3	9.4	7.7

*Note: Maximum possible scores

Science Grade 4		All Modes	2008	2009	2010	2011	2012	2013	2014	2015
	Raw Score	**Mean**	45.80	47.25	48.64	48.47	45.73	45.47	47.41	46.58
		SD	11.04	11.53	12.22	11.88	12.28	13.20	13.01	13.21
		Max*	66	66	68	68	68	68	68	68
	Scaled Score	**Mean**	1429.4	1449.2	1456.8	1452.4	1447.8	1435.5	1447.8	1426.7
		SD	174.1	176.0	200.4	181.9	183.8	196.0	206.9	198.9
		Max*	2256	2271	2254	2234	2285	2269	2259	2247
	Raw Cuts	**Bel. Basic/Basic**	26	25	28	26	24	25	27	27
		Basic/Prof.	36	36	38	37	34	35	37	37
		Prof./Adv.	51	52	53	53	50	51	53	53
	Theta Cuts	**Bel. Basic/Basic**	-0.4243	-0.4261	-0.3909	-0.3994	-0.3851	-0.3750	-0.3956	-0.3927
		Basic/Prof.	0.2798	0.3223	0.3093	0.3180	0.3065	0.3115	0.2983	0.2800
		Prof./Adv.	1.4659	1.5133	1.4914	1.4788	1.4523	1.4658	1.5376	1.4897
	Impact %	**Bel. Basic**	5.9	4.9	7.7	5.6	6.1	9.2	9.4	10.5
		Basic	12.7	11.7	10.8	11.5	11.6	12.2	11.4	12.2
		Proficient	41.2	41.0	35.5	38.0	37.8	36.0	36.0	36.1
		Advanced	40.3	42.4	45.9	44.9	44.5	42.5	43.2	41.2
		Prof. + Adv.	81.5	83.4	81.5	83.0	82.3	78.6	79.2	77.3
	Demographics	**N Count**	126426	127537	128565	128103	125170	126729	127105	124309
		% City	10.9	10.7	10.5	10.2	10.3	10.0	9.6	9.6
		% White	72.9	72.5	72.0	71.2	70.4	69.6	68.7	67.5
		% Black	15.5	15.5	15.3	15.2	15.1	14.8	14.4	14.6
		% Hispanic	7.6	7.7	7.9	8.5	8.9	9.2	9.8	10.4

		All Modes	2008	2009	2010	2011	2012	2013	2014	2015
Science Grade 8	Raw Score	**Mean**	38.25	41.00	42.61	42.10	43.09	44.04	45.48	45.05
		SD	11.71	13.02	13.74	13.62	12.75	13.52	13.81	13.56
		Max*	66	66	68	68	68	68	68	68
	Scaled Score	**Mean**	1284.4	1302.9	1309.0	1312.5	1319.6	1323.2	1324.1	1317.1
		SD	174.1	197.6	210.1	203.2	191.9	209.9	209.3	207.6
		Max*	2297	2303	2258	2283	2276	2268	2213	2230
	Raw Cuts	**Bel. Basic/Basic**	29	31	33	31	32	33	35	35
		Basic/Prof.	39	41	42	41	42	43	45	45
		Prof./Adv.	51	53	55	54	54	55	57	56
	Theta Cuts	**Bel. Basic/Basic**	-0.2333	-0.2118	-0.1829	-0.2267	-0.2018	-0.2263	-0.1862	-0.2001
		Basic/Prof.	0.4587	0.4620	0.4202	0.4102	0.4526	0.4352	0.4695	0.4640
		Prof./Adv.	1.4173	1.4098	1.4771	1.4148	1.4096	1.4295	1.4916	1.4003
	Impact %	**Bel. Basic**	23.1	24.0	25.5	22.9	20.9	22.3	22.9	23.2
		Basic	24.3	21.1	17.3	18.9	19.5	17.7	16.6	18.1
		Proficient	36.4	32.5	33.7	34.0	35.4	33.4	34.9	31.8
		Advanced	16.3	22.3	23.5	24.3	24.3	26.7	25.6	27.0
		Prof. + Adv.	52.7	54.8	57.2	58.3	59.6	60.1	60.5	58.8
	Demographics	**N Count**	137790	134969	132452	127075	126112	130637	130918	128733
		% City	10.1	9.7	9.3	9.0	8.6	7.9	7.4	7.2
		% White	74.6	74.5	74.1	73.2	72.6	71.7	71.3	70.5
		% Black	15.3	14.9	14.6	14.7	14.4	14.7	14.5	14.3
		% Hispanic	6.6	7.0	7.1	7.6	8.1	8.5	8.6	9.5

*Note: Maximum possible scores

		Paper and Pencil	2008	2009	2010	2011	2012	2013	2014	2015
Science Grade 4	Raw Score	Mean	Same as All					45.46	47.41	46.59
		SD						13.21	13.02	13.21
		Max*						68	68	68
	Scaled Score	Mean						1435.4	1447.8	1426.9
		SD						196.0	207.0	198.9
		Max*						2269	2259	2247
	Raw Cuts	Bel. Basic/Basic						25	27	27
		Basic/Prof.						35	37	37
		Prof./Adv.						51	53	53
	Theta Cuts	Bel. Basic/Basic						-0.3750	-0.3956	-0.3927
		Basic/Prof.						0.3115	0.2983	0.2800
		Prof./Adv.						1.4658	1.5376	1.4897
	Impact %	Bel. Basic						9.2	9.4	10.5
		Basic						12.2	11.4	12.2
		Proficient						36.0	36.0	36.1
		Advanced						42.5	43.1	41.2
		Prof. + Adv.						78.6	79.2	77.3
	Demographics	N Count						125723	126246	122761
		% City						10.1	9.7	9.8
		% White						69.5	68.5	67.3
		% Black						14.9	14.5	14.7
		% Hispanic						9.2	9.9	10.4

Science Grade 8		Paper and Pencil	2008	2009	2010	2011	2012	2013	2014	2015
	Raw Score	Mean	Same as All					44.03	45.48	45.04
		SD						13.53	13.83	13.58
		Max*						68	68	68
	Scaled Score	Mean						1323.1	1324.2	1316.9
		SD						210.2	209.7	207.8
		Max*						2268	2213	2230
	Raw Cuts	Bel. Basic/Basic						33	35	35
		Basic/Prof.						43	45	45
		Prof./Adv.						55	57	56
	Theta Cuts	Bel. Basic/Basic						-0.2263	-0.1862	-0.2001
		Basic/Prof.						0.4352	0.4695	0.4640
		Prof./Adv.						1.4295	1.4916	1.4003
	Impact %	Bel. Basic						22.3	23.0	23.2
		Basic						17.6	16.5	18.0
		Proficient						33.4	34.9	31.7
		Advanced						26.7	25.6	27.0
		Prof. + Adv.						60.0	60.5	58.7
	Demographics	N Count						127878	126840	124483
		% City						8.1	7.7	7.4
		% White						71.4	70.8	70.1
		% Black						14.9	14.7	14.4
		% Hispanic						8.6	8.8	9.6

*Note: Maximum possible scores

Computer-Based-Test			2008	2009	2010	2011	2012	2013	2014	2015
Science Grade 4	Raw Score	Mean	No CBT					46.61	48.04	45.44
		SD						12.19	12.29	13.13
		Max*						68	68	68
	Scaled Score	Mean						1449.2	1453.7	1408.1
		SD						183.1	191.8	193.0
		Max*						2269	2259	2247
	Raw Cuts	Bel. Basic/Basic						25	27	27
		Basic/Prof.						35	37	37
		Prof./Adv.						51	53	53
	Theta Cuts	Bel. Basic/Basic						-0.3750	-0.3956	-0.3927
		Basic/Prof.						0.3115	0.2983	0.2800
		Prof./Adv.						1.4658	1.5376	1.4897
	Impact %	Bel. Basic						5.9	6.6	10.3
		Basic						12.9	11.1	15.2
		Proficient						36.2	38.2	38.0
		Advanced						45.0	44.1	36.6
		Prof. + Adv.						81.2	82.3	74.5
	Demographics	N Count						1006	859	1548
		% City						0.0	0.0	0.0
		% White						86.2	87.5	81.3
		% Black						5.3	4.5	10.3
		% Hispanic						3.1	4.4	5.0

	Computer-Based-Test		2008	2009	2010	2011	2012	2013	2014	2015
Science Grade 8	Raw Score	Mean	No CBT					44.67	45.47	45.54
		SD						12.73	13.17	13.16
		Max*						68	68	68
	Scaled Score	Mean						1329.9	1321.0	1322.8
		SD						198.5	198.9	202.0
		Max*						2268	2213	2230
	Raw Cuts	Bel. Basic/Basic						33	35	35
		Basic/Prof.						43	45	45
		Prof./Adv.						55	57	56
	Theta Cuts	Bel. Basic/Basic						-0.2263	-0.1862	-0.2001
		Basic/Prof.						0.4352	0.4695	0.4640
		Prof./Adv.						1.4295	1.4916	1.4003
	Impact %	Bel. Basic						19.5	21.9	21.4
		Basic						18.9	18.7	18.4
		Proficient						34.7	35.3	33.7
		Advanced						26.9	24.1	26.5
		Prof. + Adv.						61.6	59.4	60.2
	Demographics	N Count						2759	4078	4250
		% City						0.0	0.3	0.7
		% White						86.2	85.4	81.2
		% Black						6.4	7.2	10.7
		% Hispanic						3.7	4.8	5.1

*Note: Maximum possible scores

Appendix R:

Development of Student Reports

PSSA Score-Report Development

Process, Feedback, and Results

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 APPOACH

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.

PSSA Score-Report Development

Process, Feedback, and Results

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.

PSSA Score-Report Development

Process, Feedback, and Results

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

PSSA Score-Report Development

Process, Feedback, and Results

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)

Pennsylvania System of School Assessment (PSSA)
Parent Focus Group Survey

SURVEY QUESTIONS

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.
   _____
   _____
   _____

Pennsylvania System of School Assessment (PSSA)
Parent Focus Group Survey

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.

   _____

   _____

   _____

Pennsylvania System of School Assessment (PSSA)
Parent Focus Group Survey

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.

   _____

   _____

   _____

PENNSYLVANIA DEPARTMENT OF EDUCATION

Pennsylvania System of School Assessment (PSSA)
Parent Focus Group Survey

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.

   _____

   _____

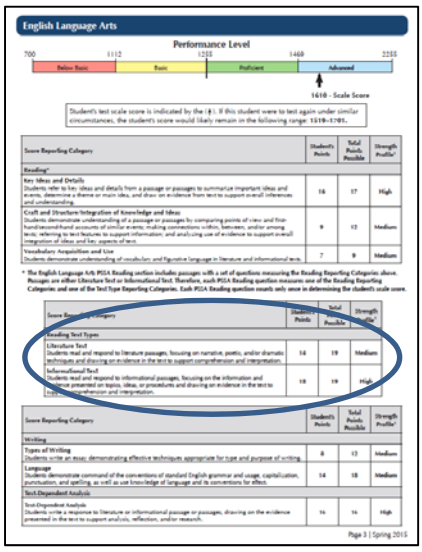
   _____

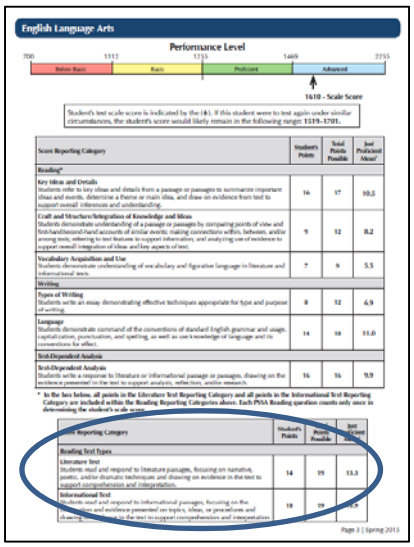
Pennsylvania System of School Assessment (PSSA)
Parent Focus Group Survey

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





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.

_____
_____
_____

PENNSYLVANIA DEPARTMENT OF EDUCATION

Pennsylvania System of School Assessment (PSSA)
Parent Focus Group Survey

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

_____

_____

_____

_____

_____

PENNSYLVANIA
System of School Assessment (PSSA)

Student Report

Student Name:	Sample Student 1
PA Student ID:	*****45154
School:	Sample School
District:	Sample District
Test Date:	Spring 2015
Grade:	4

What Is the Pennsylvania System of School Assessment (PSSA)?

- The PSSA is an assessment used to measure a student's progression toward mastery of the
  - Pennsylvania Core Standards in Mathematics and English Language Arts
  - Pennsylvania Academic Content Standards in Science
- For additional information, visit the Pennsylvania Department of Education's website at www.education.state.pa.us.

What Is Included in This Report?

- This report provides information about the student's recent performances on the
  - Mathematics, English Language Arts, and Science PSSA assessments.
- It is not intended to summarize all aspects of student learning.
- For additional information concerning a student's performance, consult the school or the classroom teacher.
- A Report Interpretation Guide is available at www.education.state.pa.us. Type "student report guide" in the search field or consult the local school district or school.

Student's Results

Performance Level				
			Goal Range*	
	Below Basic	Basic	Proficient	Advanced
Mathematics			✓	
English Language Arts				✓
Science			✓	

* **Goal Range:** The goal range is for all students in the Commonwealth of Pennsylvania to score proficient or above.

Performance Levels

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.

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.

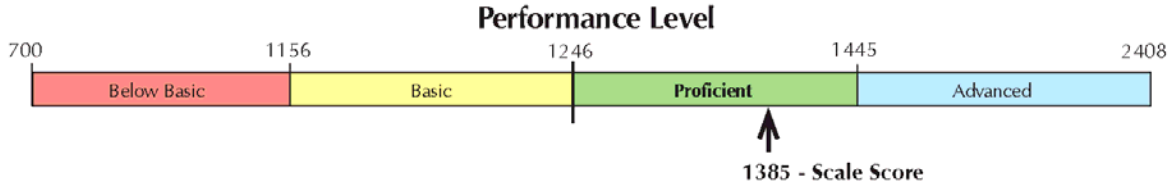
The Basic Level reflects marginal academic performance, and work at this level demonstrates a partial command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates additional academic support may be needed for engaging successfully in further studies in this content area.

The 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.

www.education.state.pa.us

Page 1 | Spring 2015

Mathematics



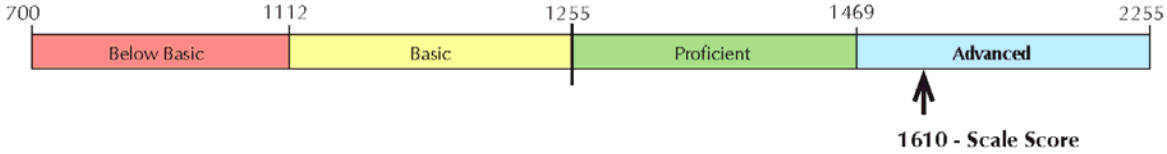
Student's test scale score is indicated by the (↑). If this student were to test again under similar circumstances, the student's score would likely remain in the following range: **1329–1441.**

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile[1]
Numbers and Operations in Base Ten Students develop number skills by understanding place value, relative sizes of numbers in each place, and properties of operations. They practice estimating, doing mental calculations, and developing fluency in multiplying whole numbers.	5	14	Low
Numbers and Operations—Fractions Students learn the meaning of fractions by exploring relationships between fractions and division, creating fractions by counting and partitioning, and using unit fractions to represent whole numbers.	10	15	Medium
Operations and Algebraic Thinking Students solve problems using all four arithmetic operations with whole numbers. They use drawings, equations, and symbols to represent quantities and analyze patterns. They also learn how factors and multiples relate to multiplication and division.	16	19	High
Geometry Students compare and classify two-dimensional shapes to better understand two-dimensional objects. They explore problems involving symmetry, visual and spatial reasoning, and how to select tools to answer questions about size and relationships.	10	11	High
Measurement and Data Students use arithmetic operations to solve problems involving measurements and conversions with customary and metric units. They represent and interpret data using line plots, and they use fractions to interpret and calculate intervals.	9	13	Medium

[1] **THE STRENGTH PROFILE (LOW, MEDIUM, HIGH):** The strength profile for each of the PSSA assessments, Mathematics, English Language Arts, and Science, 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.

English Language Arts

Performance Level



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[1]
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

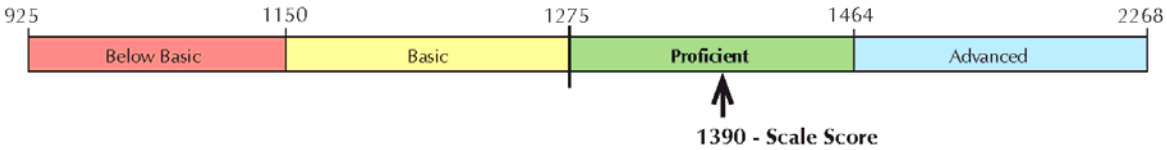
* **The English Language Arts PSSA Reading section includes passages with a set of questions measuring the Reading Reporting Categories above. Passages are either Literature Text or Informational Text. Therefore, each PSSA Reading question measures one of the Reading Reporting Categories and one of the 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[1]
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[1]
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.	16	16	High

Science

Performance Level



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: **1341–1439.**

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile[1]
The Nature of Science Students use reasoning skills to develop possible solutions for everyday problems. They plan and conduct fair and valid scientific investigations. They identify patterns and use models to help explain natural and human-made systems.	25	34	Medium
Biological Sciences Students evaluate structures and functions of organisms, describe ecological behaviors within living systems, and recognize the interdependencies between humans and the natural world.	9	12	Medium
Physical Sciences Students demonstrate understanding of physical properties of matter and basic energy types and sources. They describe how energy can change form and apply the scientific principles of force and motion.	4	10	Low
Earth and Space Sciences Students identify and describe Earth features and processes that change the environment. They recognize processes and changes associated with weather, climate, the atmosphere, and the Earth-Moon-Sun system.	8	12	Medium

[1] **THE STRENGTH PROFILE (LOW, MEDIUM, HIGH):** The strength profile for each of the PSSA assessments, Mathematics, English Language Arts, and Science, 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.

PENNSYLVANIA
System of School Assessment (PSSA)

Student Report

Student Name:	Sample Student 2
PA Student ID:	*****45154
School:	Sample School
District:	Sample District
Test Date:	Spring 2015
Grade:	4

What Is the Pennsylvania System of School Assessment (PSSA)?

- The PSSA is an assessment used to measure a student's progression toward mastery of the
  - Pennsylvania Core Standards in Mathematics and English Language Arts
  - Pennsylvania Academic Content Standards in Science
- For additional information, visit the Pennsylvania Department of Education's website at www.education.state.pa.us.

What Is Included in This Report?

- This report provides information about the student's recent performances on the
  - Mathematics, English Language Arts, and Science PSSA assessments.
- It is not intended to summarize all aspects of student learning.
- For additional information concerning a student's performance, consult the school or the classroom teacher.
- A Report Interpretation Guide is available at www.education.state.pa.us. Type "student report guide" in the search field or consult the local school district or school.

Student's Results

Performance Level				
			Goal Range*	
	Below Basic	Basic	Proficient	Advanced
Mathematics			✓	
English Language Arts				✓
Science			✓	

* **Goal Range:** The goal range is for all students in the Commonwealth of Pennsylvania to score proficient or above.

Performance Levels

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.

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 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.

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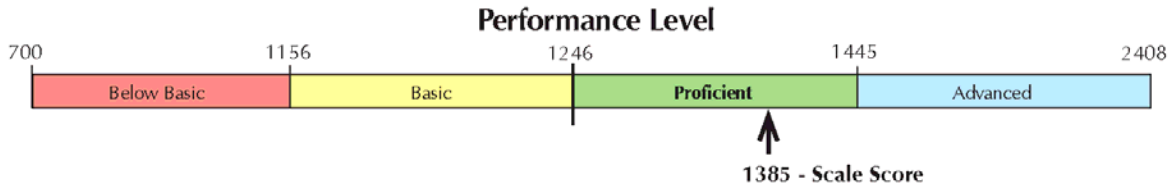
Mathematics

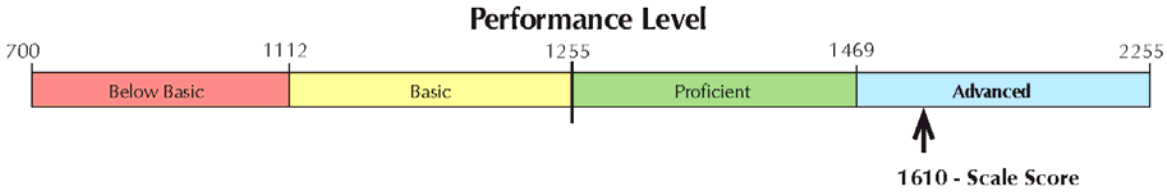


Student's test scale score is indicated by the (↑). If this student were to test again under similar circumstances, the student's score would likely remain in the following range: **1329–1441.**

Score Reporting Category	Student's Points	Total Points Possible	Just Proficient Mean[1]
Numbers and Operations in Base Ten Students develop number skills by understanding place value, relative sizes of numbers in each place, and properties of operations. They practice estimating, doing mental calculations, and developing fluency in multiplying whole numbers.	5	14	6.8
Numbers and Operations—Fractions Students learn the meaning of fractions by exploring relationships between fractions and division, creating fractions by counting and partitioning, and using unit fractions to represent whole numbers.	10	15	8.3
Operations and Algebraic Thinking Students solve problems using all four arithmetic operations with whole numbers. They use drawings, equations, and symbols to represent quantities and analyze patterns. They also learn how factors and multiples relate to multiplication and division.	16	19	11.6
Geometry Students compare and classify two-dimensional shapes to better understand two-dimensional objects. They explore problems involving symmetry, visual and spatial reasoning, and how to select tools to answer questions about size and relationships.	10	11	5.1
Measurement and Data Students use arithmetic operations to solve problems involving measurements and conversions with customary and metric units. They represent and interpret data using line plots, and they use fractions to interpret and calculate intervals.	9	13	8.2

[1] **JUST PROFICIENT MEAN:** The Just Proficient Mean is the average number of points obtained by students who achieved the minimum proficient scale score.

English Language Arts



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.**

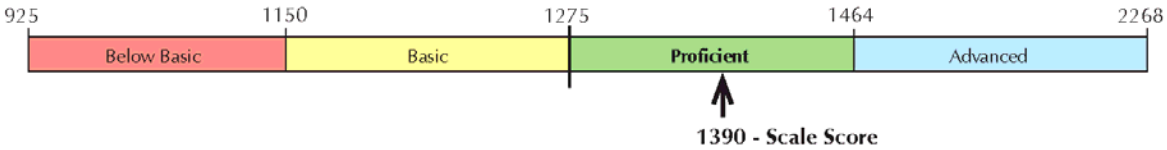
Score Reporting Category	Student's Points	Total Points Possible	Just Proficient Mean[1]
Reading*			
Key Ideas and Details Students refer to key ideas and details from a passage or passages to summarize important ideas and events, determine a theme or main idea, and draw on evidence from text to support 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[1]
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	10.9

Science

Performance Level



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: **1341–1439.**

Score Reporting Category	Student's Points	Total Points Possible	Just Proficient Mean[1]
The Nature of Science Students use reasoning skills to develop possible solutions for everyday problems. They plan and conduct fair and valid scientific investigations. They identify patterns and use models to help explain natural and human-made systems.	25	34	21.4
Biological Sciences Students evaluate structures and functions of organisms, describe ecological behaviors within living systems, and recognize the interdependencies between humans and the natural world.	9	12	6.8
Physical Sciences Students demonstrate understanding of physical properties of matter and basic energy types and sources. They describe how energy can change form and apply the scientific principles of force and motion.	4	10	4.7
Earth and Space Sciences Students identify and describe Earth features and processes that change the environment. They recognize processes and changes associated with weather, climate, the atmosphere, and the Earth-Moon-Sun system.	8	12	6.2

[1] **JUST PROFICIENT MEAN:** The Just Proficient Mean is the average number of points obtained by students who achieved the minimum proficient scale score.

PENNSYLVANIA
System of School Assessment (PSSA)

Student Report

Student Name:	Sample Student 3
PA Student ID:	*****45154
School:	Sample School
District:	Sample District
Test Date:	Spring 2015
Grade:	4

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 Mathematics and English Language Arts
  - Pennsylvania Academic Content Standards in Science
- For additional information, visit the Pennsylvania Department of Education's website at www.education.state.pa.us.

What Is Included in This Report?

- This report provides information about the student's recent performances on the
  - Mathematics, English Language Arts, 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.state.pa.us. Type "student report guide" in the search field or consult the local school district or school.

Student's Results				
Performance Level				
			Goal Range*	
	Below Basic	Basic	Proficient	Advanced
Mathematics			✓	
Science			✓	
English Language Arts				✓

* **Goal Range:** The goal range is for all students in the Commonwealth of Pennsylvania to score proficient or above.

Performance Levels

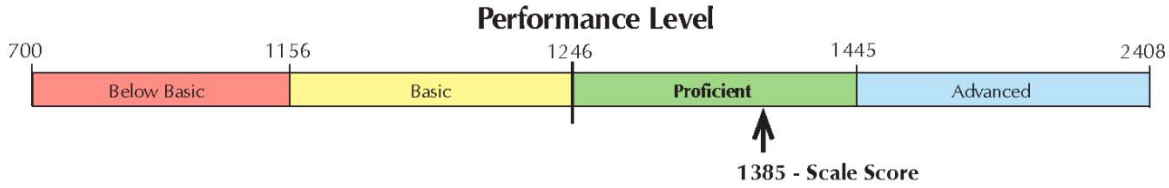
The Below Basic Level reflects inadequate academic performance, and work at this level demonstrates a minimal command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates extensive additional academic support 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.

Mathematics



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: **1331–1439**.

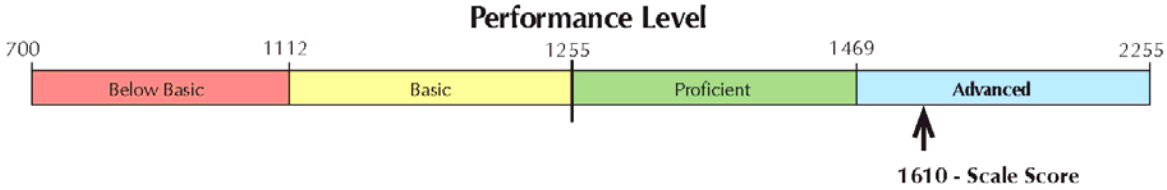
Score Reporting Category	Student's Points	Total Points Possible	Strength Profile†
Numbers and Operations in Base Ten	5	14	Low
Numbers and Operations—Fractions	10	15	Medium
Operations and Algebraic Thinking	16	19	High
Geometry	10	11	High
Measurement and Data	9	13	Medium

Science

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: **1341–1439**.

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile†
The Nature of Science	25	34	Medium
Biological Sciences	9	12	Medium
Physical Sciences	4	10	Low
Earth and Space Sciences	8	12	Medium

English Language Arts



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	16	17	High
Craft and Structure/Integration of Knowledge and Ideas	9	12	Medium
Vocabulary Acquisition and Use	7	9	Medium
Writing			
Types of Writing	8	12	Medium
Language	14	18	Medium
Text-Dependent Analysis			
Text-Dependent Analysis	16	16	High

‡ **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	Strength Profile†
Text Types			
Literature Text	14	19	Medium
Informational Text	18	19	High

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.

Score Reporting Category Descriptions

Mathematics

- **Numbers and Operations in Base Ten**
  Students develop number skills by understanding place value, relative sizes of numbers in each place, and properties of operations. They practice estimating, doing mental calculations, and developing fluency in multiplying whole numbers.
- **Numbers and Operations—Fractions**
  Students learn the meaning of fractions by exploring relationships between fractions and division, creating fractions by counting and partitioning, and using unit fractions to represent whole numbers.
- **Operations and Algebraic Thinking**
  Students solve problems using all four arithmetic operations with whole numbers. They use drawings, equations, and symbols to represent quantities and analyze patterns. They also learn how factors and multiples relate to multiplication and division.
- **Geometry**
  Students compare and classify two-dimensional shapes to better understand two-dimensional objects. They explore problems involving symmetry, visual and spatial reasoning, and how to select tools to answer questions about size and relationships.
- **Measurement and Data**
  Students use arithmetic operations to solve problems involving measurements and conversions with customary and metric units. They represent and interpret data using line plots, and they use fractions to interpret and calculate intervals.

Science

- **The Nature of Science**
  Students use reasoning skills to develop possible solutions for everyday problems. They plan and conduct fair and valid scientific investigations. They identify patterns and use models to help explain natural and human-made systems.
- **Biological Sciences**
  Students evaluate structures and functions of organisms, describe ecological behaviors within living systems, and recognize the interdependencies between humans and the natural world.
- **Physical Sciences**
  Students demonstrate understanding of physical properties of matter and basic energy types and sources. They describe how energy can change form and apply the scientific principles of force and motion.
- **Earth and Space Sciences**
  Students identify and describe Earth features and processes that change the environment. They recognize processes and changes associated with weather, climate, the atmosphere, and the Earth-Moon-Sun system.

English Language Arts

- **Key Ideas and Details**
  Students refer to key ideas and details in passages to summarize important ideas/events, determine a theme or main idea, and draw on evidence from text to support overall inferences and understanding.
- **Craft and Structure/Integration of Knowledge and Ideas**
  Students demonstrate understanding of passages by comparing points of view and first-hand/second-hand accounts of similar events; making connections within and between texts; referring to text features to support information; and analyzing use of evidence to support overall integration of ideas/key aspects of text.
- **Vocabulary Acquisition and Use**
  Students demonstrate understanding of vocabulary and figurative language in literature and informational texts.

- **Types of Writing**
  Students write opinion, informative, or narrative essays demonstrating effective techniques as appropriate for type and purpose.
- **Language**
  Students demonstrate command of the conventions of standard English grammar and usage, capitalization, punctuation, and spelling and use knowledge of language and its conventions for effect.

- **Text-Dependent Analysis**
  Students write a response to literature or informational passages, drawing on the evidence presented in the text to support analysis, reflection, and/or research.

- **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 understanding.
- **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.