TECHNICAL REPORT

for the
Pennsylvania
System of School Assessment

2006 Reading and Mathematics
Grades 4, 6, and 7

Provided by
Data Recognition Corporation

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PREFACE: An Overview of Recent and Future Assessments

The period from 2003 through 2006 brought significant structural changes in 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 in the operational assessment. Included in this process was the development and implementation of assessments in additional grade levels.

For reading and mathematics, 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, review of open-ended tasks and multiple-choice items, field testing, selection of items, statistical analysis of assessment data, reliability, validity, standards 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 *Technical Report for 2006 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.

Changes in the writing assessment 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 as it is for reading and mathematics. The writing testing window was changed from Fall to February 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 contributed to a more valid 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 *Technical Report for 2006 Writing*.

To assist the reader in navigating through the year-to-year changes in all aspects of the PSSA, tables are presented along with explanatory text. Provided is an overview of 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). [Please note that the grade 3 mathematics and reading assessment is not addressed in this technical report because CTB/McGraw-Hill, the scoring contractor for grade 3, is responsible for preparing that technical report.]

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 grade 6 and grade 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 of the subject areas, 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
4	No assessment	
5	Operational Mathematics and Reading	April
	Standalone field test in Mathematics and Reading	April/May
6	Operational Writing	October
7	No assessment	
8	Operational Mathematics and Reading	April
	Standalone field test in Mathematics and Reading	April/May
9	Operational Writing	October
11	Operational Mathematics and Reading	April
	Standalone field test in Mathematics and Reading	April/May
	Operational Writing	February
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

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 through 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 abandoned 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. The writing assessment also 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
4	Standalone field test for Mathematics and Reading	April
5	Operational Mathematics and Reading with embedded field test	April
	Standalone field test in Writing	February
6	Standalone field test for Mathematics and Reading	April
7	Standalone field test for Mathematics and Reading	April
8	Operational Mathematics and Reading with embedded field test	April
	Standalone field test in Writing	February
9	No assessment	
11	Operational Mathematics and Reading with embedded field test	April
	Operational Writing with embedded field test	February
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

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 from grades 3 through 8 and at 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 process 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 this year while the grade 11 writing assessment continued in the same February test window. New this year 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 *Technical Report for 2006 PSSA Writing* 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
4	Operational Mathematics and Reading with embedded field test	March
5	Operational Mathematics and Reading with embedded field test	March
	Operational Writing with embedded field test	February
6	Operational Mathematics and Reading with embedded field test	March
7	Operational Mathematics and Reading with embedded field test	March
8	Operational Mathematics and Reading with embedded field test	March
	Operational Writing with embedded field test	February
9	No assessment	
11	Operational Mathematics and Reading with embedded field test	March
	Operational Writing with embedded field test	February
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

ASSESSMENT ACTIVITIES PLANNED FOR THE 2006–07 SCHOOL YEAR

Table P–4 shows the assessment plan for the 2006–07 school year. Note that again the mathematics and reading assessments will be operational consecutively from grades 3 through 8 and at grade 11. For grades 4, 6, and 7, it will be the second year for operational assessments and the first year in which these grade levels will be included in the AYP calculations. Field testing for mathematics and reading will continue to be embedded as part of the operational assessments at each grade level. This is the first year in which DRC will be responsible for the grade 3 assessment as the transition from CTB/McGraw-Hill is completed. As in the previous years, the retest opportunity at grade 12 will continue.

The operational assessment for writing at grades 5, 8, and 11 continues in the same February test 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 will be field tested in 2007. However, new multiple-choice items will be field tested in the 2007 writing assessment.

Following the spring operational assessments, a separate, "standalone" field test in science is planned 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 (Planned)

Grade	Assessment Activity	Date
3	Operational Mathematics and Reading with embedded field test	March
4	Operational Mathematics and Reading with embedded field test	March
	Standalone field test in Science	April/May
5	Operational Mathematics and Reading with embedded field test	March
	Operational Writing with embedded field test	February
6	Operational Mathematics and Reading with embedded field test	March
7	Operational Mathematics and Reading with embedded field test	March
8	Operational Mathematics and Reading with embedded field test	March
	Operational Writing with embedded field test	February
	Standalone field test in Science	April/May
9	No assessment	
11	Operational Mathematics and Reading with embedded field test	March
	Operational Writing with embedded field test	February
	Standalone field test in Science	April/May
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

Chapter One: Background of Pennsylvania System of School Assessment (PSSA)

This brief overview of assessment in Pennsylvania describes the original and subsequent legislative mandates, previous assessment programs, 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.

THE ORIGIN OF STATE ASSESSMENT IN PENNSYLVANIA

State assessment of student achievement came about as a result of legislation enacted in 1963. Generally known as the School District Reorganization Act (Act 299), the issue of whether large or small district size provided a better quality education led to the development of Section 299.1 of Act 299, which required the State Board of Education to

> . . . develop or cause to be developed an evaluation procedure designed to measure objectively the adequacy and efficiency of the educational program offered by the public schools of the Commonwealth . . . The evaluation procedure shall be so constructed and developed as to provide each school district with relevant comparative data to enable directors and administrators to more readily appraise the educational performance and to effectuate without delay the strengthening of the district's educational program. Tests developed . . . shall be used for the purpose of providing a uniform evaluation of each school district . . .

In response to the legislative mandate, the State Board of Education contracted with Educational Testing Service of Princeton, New Jersey, to engage in a two-year process of surveying and interviewing stakeholders in business, industry, education, and the general public as to what constituted a quality education. This led to the State Board adoption of *The Goals of Quality Education* in 1965. In 1967 the Department of Education formed an organizational unit along with staff to begin developing appropriate measures and engaging in extensive field testing during the 1967-68 and 1968-69 school years.

EDUCATIONAL QUALITY ASSESSMENT (EQA) PROGRAM

The first state assessment of students in Pennsylvania took place in the 1969-70 school year. Initially, state assessment was a purely school-based evaluation in the form of the *Educational Quality Assessment (EQA)* program, which reported grade 5 and 11 school-level results in ten goal areas. Grade 8 was added in 1974. Measuring both cognitive and non-cognitive areas, the program operated from 1970 through 1988. As the program evolved, a matrix sampling design was used in measuring and reporting school results in subject areas such as reading, language arts, mathematics, science, health, social studies, and analytical thinking. Initially, it operated as a voluntary program, but in 1974 it became mandatory on a cyclical basis.

TESTING FOR ESSENTIAL LEARNING AND LITERACY SKILLS (TELLS)

The next major revision in state assessment was the advent of the state's first mandated competency testing program, *Testing for Essential Learning and Literacy Skills (TELLS)* in the 1984–85 school year. The impetus for a statewide essential skills test evolved from an October 1983 document entitled *Turning the Tide: An Agenda for Excellence in Pennsylvania Public Schools*. A two-pronged approach was advocated, calling for

- competency testing in grades 3, 5, and 8 as an "early warning system" to identify students with reading and mathematics difficulties and
- state-funded remedial instruction to provide needed additional help.

In response to this and other recommendations, the State Board of Education added *Chapter 3: Student Testing* to its regulations on June 14, 1984. It required all public school students in grades 3, 5, and 8 to be given criterion-referenced tests in reading and mathematics. The second part of the program, remedial instruction, was mandated by Act 93-1984, and required districts to provide remedial instruction programs to students identified by the tests given under the State Board regulation. Subsequently, funds were distributed to districts and intermediate units for this part of the program. The *TELLS* and *EQA* testing programs coexisted until the *EQA* was concluded in 1988. The *TELLS* program continued through the spring of 1991.

THE PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT (PSSA)

The Pennsylvania System of School Assessment (PSSA) program was instituted in 1992. The PSSA returned to 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. Reading and mathematics were assessed at grades 5, 8, and 11; districts could choose to participate in the writing assessment at grades 6 and 9. State Board revisions to Chapter 5 in November 1994 brought major changes to the PSSA, beginning with the Spring 1995 assessment. These changes included

1. all districts were required to participate in the reading and mathematics assessment each year,
2. student-level reports were generated in addition to school reports, and
3. the grades 6 and 9 writing assessment became mandatory on a three-year cycle corresponding to the district's strategic planning cycle.

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 4 Regulations on Academic Standards and Assessment*, detailed what students should know (knowledge) and be able to do (skills) at various grade levels. Subsequently, the State Board approved a set of criteria defining Advanced, Proficient, Basic, and Below Basic levels of performance. Reading and mathematics 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 standards.

ASSESSMENT ANCHOR CONTENT STANDARDS, CONTENT STRUCTURE, AND NEW GRADE LEVELS

Assessment in 2005 was marked by major structural changes in 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 was 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. Year 3 calculations for AYP were conducted and reported.

The 2006 operational reading and mathematics assessment incorporated grades 4, 6, and 7 for the first time. The assessed grade levels for 2006 included grades 3 through 8 and 11. Year 4 calculations for AYP were conducted and reported for grades 5, 8 and 11. AYP calculations for grades 4, 6 and 7 will take place in 2007 when they are assessed for the second time.

PURPOSES OF THE PSSA

As outlined in Chapter 4 of the State Board Regulations, the purposes of the statewide assessment component of the PSSA are as follows:

1. Provide students, parents, educators, and citizens with an understanding of student and school performance.
2. Determine the degree to which school programs enable students to attain proficiency of academic standards.
3. Provide results to school districts (including charter schools) and Area Vocational Technical Schools (AVTSs) for consideration in the development of strategic plans.
4. Provide information to state policymakers, including the State Senate, the General Assembly, and the State Board, on how effective schools are in promoting and demonstrating student proficiency of academic standards.
5. Provide information to the general public on school performance.
6. Provide results to school districts (including charter schools and AVTSs) based upon the aggregate performance of all students, for students with an Individualized Education Program (IEP), and for those without an IEP.

The broad purpose of the state assessments is to provide information to teachers and schools to guide the improvement of curricula and instructional strategies to enable students to reach proficiency in the academic standards.

THE PENNSYLVANIA WRITING ASSESSMENT

In 1990 the state initiated an on-demand writing assessment in which students wrote an essay in response to a particular topic or prompt. Offered to school districts on a voluntary basis, the writing assessment consisted of three modes of writing: narrative, informational, and persuasive. The test administration for grades 6 and 9 used a matrix sampling design; nine prompts (three per mode) were administered to students within a school, although each student responded to just one randomly distributed prompt. Scoring was based on a six-point holistic scale. Student results were aggregated and reported at the school level only. In 1992 the writing assessment was incorporated as part of the PSSA. Beginning in 1995, districts were required to participate in the writing assessment every third year in accordance with their strategic planning cycle. However, districts were also given the choice to participate more frequently. As a result, participation rose dramatically from the expected 167 districts (one-third) in any given year to

235 (47%) in 1995, 306 (61%) in 1996, 412 (82%) in 1997, 445 (89%) in 1998, and 449 (90%) in 1999.

With the advent of the Pennsylvania Academic Standards in 1999, major changes took place in the writing assessment, including alignment to the Academic Standards as well as changes in scoring method, prompts, testing date, and reporting. These changes, which are summarized below, were implemented in the 2000–01 school year and were followed by performance level reporting in the 2001–02 school year.

- The writing assessment became mandatory for all districts every year.
- Administration of the grades 6 and 9 writing assessment was changed from February to October.
- Scoring changed to a 4-point scale for each of five domains (focus, content, organization, style, and conventions).
- Prompts were different for grade 6 and grade 9 rather than being identical at the two grade levels.
- Within a grade level all students responded to two common prompts.
- The reporting model was greatly revised, and individual student reports were issued for the first time.
- A writing assessment for grade 11 was administered for the first time in February 2001.
- In 2002, performance levels were adopted for writing and implemented in the reporting of total writing results for the February grade 11 and Fall 2002 grades 6 and 9 writing assessment.

The 2006 PSSA operational writing assessment featured additional revisions in the writing assessment that included the following enhancements:

- A shift from grades 6 and 9 to grades 5 and 8, to provide better alignment to the end of elementary school and middle school.
- Grades 5 and 8 joined grade 11 in a February test window rather than the October window used previously for grades 6 and 9.
- Students responded to two writing prompts, which were evaluated in terms of (1) a mode-specific scoring guideline and (2) a conventions scoring guideline instead of the former domain scoring.
- Stimulus-based revising/editing multiple-choice items were incorporated to provide a more reliable and valid measure of the conventions academic standard.

Chapter Two: New Test Development Required by NCLB

Spurred by PL 107-110, the *No Child Left Behind* Act of 2001 (NCLB), the Pennsylvania Department of Education (PDE) began to develop plans to expand testing into other grade levels and to design a standards-based assessment for science. Although grade 3 reading and mathematics tests were developed and administered statewide in 2003 and 2004, reporting results in terms of proficiency levels occurred for the first time in 2005. Reading and mathematics test development in the new grade levels of 4, 6, and 7 took place in 2004, with field testing occurring in 2005 and full implementation occurring in 2006. A field test for science is planned for 2007 with full implementation in 2008.

Assessment Anchor Content Standards and Eligible Content

Educator concerns regarding the number and breadth of Academic Standards led to an initiative by the Pennsylvania Department of Education (PDE) to develop a clear document to explicate what students should know and be able to do. Based on recommendations from teachers, subject-area supervisors, and other curriculum experts, Assessment Anchor Content Standards (Assessment Anchors) (PDE, 2004) were designed as a tool to improve the articulation of curricular, instructional, and assessment practices. The Anchors do not replace the Academic Standards; rather they serve to clarify the standards assessed on the PSSA. See Appendix A for an example of anchor integration for mathematics and reading. They also serve to communicate Eligible Content, also called "assessment limits," or the range of knowledge and skills from which the PSSA would be designed.

A draft version of the Assessment Anchors and Eligible Content was submitted to Achieve, Inc., Washington, D.C., to conduct a special analysis to evaluate the degree of alignment with the Academic Standards. Preliminary feedback enabled PDE to make adjustments to improve the alignment as the Anchors took final form.

Since the Assessment Anchors encompass grades 3 through 8 and grade 11, the document informs test design for the grades undergoing new test development as well as the grade levels currently assessed.

Overview of the 2006 PSSA

The 2006 PSSA reading and mathematics tests contain items designed to reflect the new Assessment Anchors. They were extensively reviewed and field tested in 2005 (see Chapter Three).

Mathematics Assessment Measures

The 2006 PSSA mathematics assessment has five major *reporting categories*: Numbers and Operations, Measurement, Geometry, Algebraic Concepts, and Data Analysis and Probability. By organizing the Assessment Anchors into a five-category reporting structure, there is a similarity to the categories used by the National Council of Teachers of Mathematics (NCTM) and the National Assessment of Educational Progress (NAEP).

The 2006 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 are less efficient in the sense that they generally

generate fewer scorable points in the same amount of testing time. They do, however, provide tasks that are more realistic and that better sample higher-level skills. The design of the 2005 PSSA attempts to achieve a reasonable balance between the two item types. 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.

MULTIPLE-CHOICE ITEMS

The majority of the mathematics items included on the 2006 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 computation 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 2006 open-ended items require about ten minutes per task. Most of the open-ended items are designed to be scaffolded, which means that they 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 math 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 answer document, 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 with an item-specific scoring guideline. The item-specific scoring guideline outlines the requirements at each score point. Item-specific scoring guidelines are based on the General Description of Mathematics Scoring Guidelines for Open-Ended Items. (See Appendix B.) The general guidelines describe a hierarchy of responses, which represent the five score levels. (See grade-specific *Mathematics Item and Scoring Sampler,* PDE, 2006, available on the PDE web site.)

READING ASSESSMENT MEASURES

The 2006 PSSA reading assessment has two major reporting categories, Comprehension and Reading Skills and Interpretation and Analysis of Fiction and Nonfiction Text. These two

reporting categories are derived from Reading Academic Standards 1.1, 1.2, and 1.3. Standards 1.6, 1.7, and 1.8 are not addressed on the PSSA because they are not specific to reading comprehension and can be more accurately evaluated at the school level. [Standards 1.4 and 1.5 are addressed on the writing portion of the PSSA.]

The reading assessment employs two types of test items: multiple-choice and open-ended. They are designed to measure students' comprehension of the information contained in the reading passages.

MULTIPLE-CHOICE ITEMS

Multiple-choice (selected-response) items measure such concepts as 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 important information from a story. Such information may include setting, central idea, or main events and their sequence.

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.

OPEN-ENDED TASKS FOR READING

Open-ended (constructed-response) tasks are designed to address comprehension of text in ways that multiple-choice items cannot. A short written response, requiring about ten minutes per item, allows students to prepare an answer and summarize using supporting details or examples derived from the text.

The reading open-ended items are scored on a 0-3 point scale with an item-specific scoring guideline. This scale is consistent with the scale used on the National Assessment of Educational Progress (NAEP). Each task is text-dependent and is carefully constructed with the scoring guide reflecting the task requirements. All item-specific scoring guidelines are based on the General Scoring Guidelines for Open-Ended Reading Items. (See Appendix C). The general guidelines describe a hierarchy of responses, which represent the four score levels. (See grade-specific *Reading Item and Scoring Sampler*, PDE, 2006, available on the PDE website.)

MATRIX SAMPLING ASSESSMENT DESIGN

The PSSA was originally designed as a complex matrix-sampling scheme for both mathematics and reading, which was very efficient for measuring *school-level* performance but less efficient for providing *student-level* assessments and diagnostics. In the present design, all forms contain a *common* core of items to which all students respond and *matrix* items that vary by form. Both the *common* and *matrix* sections of the 2006 PSSA use traditional multiple-choice items and open-ended performance tasks. The forms are *spiraled* so that all forms are distributed uniformly within each testing room. This ensures that each matrix section is administered to an unbiased and sequentially random sample of students in each school. Since multiple forms are administered, the blocks of matrix items expand the number of items available to more broadly measure the Assessment Anchors for school-level reporting.

The design changes that began to take effect with the spring 2000 administration shifted the measurement focus toward the student and away from the school. Beginning in 2000, student-level results were reported on an individual student report with diagnostic results at the *academic*

content standard level. All student-level results were based on the common items only and presented in the raw-score, percent-correct metric. In order to accommodate this change in focus, the common section was expanded to better reflect the curriculum. To administer the tests in a reasonable length of time, enhancing the common sections required a compensatory reduction of the matrix sections.

The PSSA design from 2000 through 2005, as well as the 2006 PSSA, is an attempt to have the best of both worlds:

- All student-level results are based on the common core of items that all students in a grade are administered. This ensures that all students are evaluated using the same set of items.
- School-level content area total score results are based on the mean of the student-level scaled scores. This ensures that the results used for school accountability directly reflect the student-level results.
- School-level results at the content standard (academic standards category) level are based on the common items together with all embedded operational items on the matrix forms (embedded field-test items are not included in school-level results). This ensures that decisions regarding potential strengths and weaknesses at the school level better sample the entire curriculum.

Chapter Three: Item Development Process

A series of major activities took place in 2003 and 2004, which culminated in the implementation of changes to the structure of the operational PSSA in the 2005 assessment and continued into the 2006 administration. These key activities included the development of the Pennsylvania Assessment Anchor Content Standards (Assessment Anchors), test item development, content review, bias/sensitivity review, field-test of new reading and mathematics items in spring 2005, item review with data, and final selection of items to compose the 2006 PSSA. The table below provides a timeline of these major activities, which 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 2005 field test were developed by Data Recognition Corporation (DRC) and WestEd.

Table 3–1. General Timeline Associated with 2005 Field Test and 2006 Operational Assessment of Mathematics and Reading at Grades 4, 6, and 7.

Time Frame	Activity
February-August 2004	Item Development for 2005 Stand-alone Field Test
October 4-8, 2004	Item Review and Bias, Fairness, and Sensitivity Review of Newly Developed Items for 2005 Stand-alone Field Test
October 2004-January 2005	Forms Construction for 2005 Stand-alone Field Test
January-July 2005	Item Development for Newly Developed Items to Embed on 2006 Operational Assessment
April 4-15, 2005	2005 Stand-alone Field Test
August 8–10, 2005	Statistical Review of 2005 Field-Tested Items
August 8–12, 2005	Item Review and Bias, Fairness, and Sensitivity Review of Newly Developed Items for the Embedded Field Test in 2006 Operational Assessment
September 2005–January 2006	Forms Construction for 2006 Operational Assessment
March 20-31, 2006	2006 Operational Assessment

TEST CONTENT BLUEPRINT FOR 2006

The PSSA is based on the Pennsylvania Academic Standards. The PSSA test for 2006 reflects the new Assessment Anchors, which were designed as a means of improving the articulation of curricular, instructional, and assessment practices. The 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 and the Spring 2004 field test are the refinement and clarification embodied in the Assessment Anchors (PDE, 2004). Since the Assessment Anchors encompass grades 3 through 8 and grade 11, the document informs test design for the grades undergoing new test development as well as the grades currently assessed.

The first operational administration of the PSSA test for grades 4, 6, and 7 took place in 2006. It followed the new blueprint and testing plan, and it reflected the new Assessment Anchors and

item distribution plan first applied on the PSSA test for grades 3, 5, 8, and 11 in 2005 and again in 2006.

2006 OPERATIONAL LAYOUT FOR READING AND MATHEMATICS: GRADES 4, 6, AND 7

The mathematics and reading PSSA plan was developed through the collaborative efforts of Data Recognition Corporation (DRC) and National Center for Improvement of Educational Assessment (NCIEA). The plan was subsequently evaluated and approved by PDE. The reading and mathematics tests are combined in one test booklet and one separate answer booklet. The test booklet contains reading passages and reading and mathematics multiple-choice items. The answer booklet contains scannable pages for multiple-choice (MC) responses, open-ended (OE) items with response spaces, and demographic data collection areas. All MC items are worth 1 point. Reading OE items receive a maximum of 3 points (scale of 0-3) and mathematics OE items receive a maximum of 4 points (scale of 0-4). Each test form contains common items (identical on all forms) along with matrix/embedded field-test items. The common items consist of a set of "core" items taken by all students. The matrix items and the embedded field-test items are unique, in most instances, to a form. That is, there are several instances in which a matrix or embedded field-test OE item appears on more than one form.

At these grades, the 2006 PSSA comprises 16 forms per grade. All of the forms contain the common items identical for all students and sets of generally unique ("matrix") items that fulfill several purposes. These purposes include:

1. Expanding the total pool of items for school-level reporting,
2. Field testing new items,
3. Using items from the previous year's assessment for the purpose of linking.

The following two tables display the design for reading and mathematics for forms 1 through 16. The column entries for these tables denote

- the grade level (Grade),
- number of common or core MC items (Core MC),
- number of matrix MC items included in school-level reporting (Matrix MC),
- number of embedded MC field-test items (Embedded FT MC),
- number of common or core OE items (Core 3-pt. or Core 4-pt. OE),
- number of matrix OE items included in school-level reporting (Matrix OE),
- number of embedded OE field-test items (Embedded FT OE),
- total number of MC and OE items in the form (Total Items MC/OE), and
- the total number of operational points (derived from Core MC and Core OE only) for producing a student score (Total Operational Points).

Table 3–2. Reading Test Plan 2006 per Operational Form (16 Forms: Forms 1–16)

Grade	No. of Core MC per Op. Form	No. of Matrix MC per Op. Form	No. of Embedded FT MC per Op. Form	No. of Core 3-pt. OE per Op. Form	No. of Matrix 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	40	8	8	4	1	1	56/6	52
6	40	8	8	4	1	1	56/6	52
7	40	8	8	4	1	1	56/6	52

Table 3–3. Mathematics Test Plan 2006 per Operational Form (16 Forms: Forms 1–16)

Grade	No. of Core MC per Op. Form	No. of Matrix MC per Op. Form	No. of Embedded FT MC per Op. Form	No. of Core 4-pt. OE per Op. Form	No. of Matrix 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	54	4	8	3	1	1	66/5	66
6	54	4	8	3	1	1	66/5	66
7	54	4	8	3	1	1	66/5	66

Since an individual student's score is based solely on the common, or core, items the total number of operational points is 52 for reading and 66 for mathematics. The total score is obtained by combining the points from the core MC and OE portions of the test as follows:

udent's Score	MC Items	OE Items	Total Score
:ading	40	4 items X 3-points=12 points	52
athematics	54	3 items X 4-points=12 points	66

School-level reporting relies on the matrix items to expand the pool of items available to produce a more extensive content breakdown of results than is possible for student-level reporting.

For more information concerning the process used to converting the operational layout into forms (form construction), see chapter 6. For more information about operational layout across forms and across years (form equivalency) see chapter 10.

LINKING

Linking provides a statistical bridge between assessment administrations; however, because the Mathematics and Reading tests for grades 4, 6, and 7 were new in 2006, no linking analyses were performed. Linking items will be part of the 2007 assessment, linking the 2007 assessment back to the 2006 administration through the use of linking items in the core and matrix.

TEST SESSIONS AND TIMING

The test window for the 2006 operational assessment extended from March 20 through March 31, 2006, including make-ups. The reading and mathematics assessments consisted of six 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 are printed in the test booklets. The following tables outline the assessment schedule and estimated times for each section ("MC" refers to multiple-choice and "OE" refers to open-ended items). The estimated testing times do not include time for administrative tasks that occur during the pre- and post-administration activities.

Table 3–4. Reading and Mathematics – Grade 4, 6, & 7

Section	Suggested Testing Time (Minutes)	Subject/Contents	
1	55	Mathematics	22 MC, 2 OE
2	60	Grade 4 Reading Grade 6 Reading Grade 7 Reading	24 MC, 2 OE 22 MC, 2 OE 20 MC, 2 OE
3	55	Mathematics	22 MC, 2 OE
4	50	Reading	16 MC, 2 OE
5	45	Mathematics	22 MC, 1 OE
6	50	Grade 4 Reading Grade 6 Reading Grade 7 Reading	16 MC, 2 OE 18 MC, 2 OE 20 MC, 2 OE

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 assessment administrator finds the request to be educationally valid.

REPORTING CATEGORIES AND POINTS DISTRIBUTIONS

The **reading assessment** results will be reported in two broad categories:

A. Comprehension and Reading Skills
B. Interpretation and Analysis of Fiction and Nonfiction Text

Assessment Anchors associated with Comprehension and Reading Skills are coded with an initial letter "A" and those related to Interpretation and Analysis of Fiction and Nonfiction Text are coded with an initial letter "B." The distribution of items into these two categories across genres is shown on the following table.

Table 3–5. Reading Reporting Categories and Genre

Grade	Comprehension and Reading Skills % range	Interpretation and Analysis of Fiction and Nonfiction Text % range	% of Passages (Genre) Fiction	% Passages (Genre) Nonfiction
4	60-80%	20-40%	50-70%	30-50%
6	50-70%	30-50%	40-60%	40-60%
7	50-70%	30-50%	40-60%	40-60%

The **mathematics assessment** results will be reported in five categories that approximately correspond to those advocated by the National Council of Teachers of Mathematics (NCTM). The code letters for these Assessment Anchor categories are A–E and correspond to:

A. Numbers and Operations
B. Measurement
C. Geometry
D. Algebraic Concepts
E. Data Analysis and Probability

The distribution of mathematics items into these five categories is shown in the following table.

Table 3–6. Mathematics Reporting Categories and Point Distribution

Grade	Category A Numbers and Operations % (number of points)	Category B Measurement % (number of points)	Category C Geometry % (number of points)	Category D Algebraic Concepts % (number of points)	Category E Data Analysis and Probability % (number of points)	Total Points
4	43–47% 28–31 pts	12–15% 8–10 pts	12–15% 8–10 pts	12–15% 8–10 pts	12–15% 8–10 pts	60–71 pts
6	28–32% 18–21 pts	12–15% 8–10 pts	15–20% 10–13 pts	15–20% 10–13 pts	15–20% 10–13 pts	56–70 pts
7	20–24% 13–16 pts	12–15% 8–10 pts	15–20% 10–13 pts	20–27% 13–18 pts	15–20% 10–13 pts	54–70 pts

Both the reading and mathematics reporting categories are further subdivided for specificity and Eligible Content or limits. Each subdivision is coded by adding an additional numeral, e.g., A.1. These subdivisions are called "Assessment Anchors" and "Eligible Content."

ASSESSMENT ANCHOR CONTENT STANDARDS SUBSUMED WITHIN REPORTING CATEGORIES

For mathematics there are 16 Assessment Anchors that occur at all grade levels (grades 3 through 8 and 11), although they are not all assessed at each grade level. More specifically, the number targeted for assessment by grade level are 10 at grade 3, 12 at grade 4, 13 at grade 5, 12 at grade 6, 14 at grade 7, 13 at grade 8, and 13 at grade 11.

For reading there are five Assessment Anchors that vary to reflect grade-level appropriateness. Within the Comprehension and Reading Skills Reporting Category, two Assessment Anchors pertain to understanding fiction text and understanding nonfiction text. Within the Interpretation and Analysis of Fiction and Nonfiction Text Reporting Category, three Assessment Anchors pertain to Components of Text, Literary Devices and Concepts, and Organization of Nonfiction Text.

Total reading and mathematics scores reported at the student level are based on the core (common) sections. Also reported are the student's reading and mathematics performance levels. School and district-level scores are reported at the Eligible Content level under the Assessment Anchors and are based on the core (common) and matrix sections, excluding the embedded field-test items. (See Appendix D for a summary by grade and subject.)

TEST DEVELOPMENT CONSIDERATIONS

Alignment to the PSSA Assessment Anchors and Eligible Content, 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 *Bias, Fairness, and Sensitivity Guidelines*[*] were used for developing items free of bias, fairness, and sensitivity issues. 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) and 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

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.*

In meeting Standard 7.4, DRC employs a series of internal quality steps. DRC provides specific training for our 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). Our 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 includes 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, experiential, and biases against a particular age group (ageism) and against 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

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:

1. Items measure what they are intended to measure.
2. Items respect the diversity of the assessment population.

[*] A printed copy of DRC's current edition of the *Bias, Fairness, and Sensitivity Guidelines* may be obtained by writing to:

ATTN: *Bias, Fairness, and Sensitivity Guidelines* Document Request
Test Development
Data Recognition Corporation
13490 Bass Lake Road
Maple Grove, MN 55311

3. Items have a clear format for text.
4. Stimuli and items have clear pictures and graphics.
5. Items have concise and readable text.
6. Items allow changes to format, such as Braille, without changing meaning or difficulty.
7. The arrangement of the items on the test has an overall appearance that is clean and well organized.

See Chapter Four for a more extensive description of the application of Universal Design principles.

DEPTH OF KNOWLEDGE

Important 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 dealing with content. Within the content category is a useful set of levels for evaluating depth of knowledge. According to Webb (1999, p.7–8) "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."

The four levels of cognitive complexity (depth of knowledge) are:

- Level 1: Recall
- Level 2: 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.

TEST ITEM WRITERS AND ITEM WRITER TRAINING

DRC and WestEd selected and trained item writers. 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 multiple-choice and open-ended response items. Prior to developing items for the PSSA the cadre of item writers was trained with regard to:

- Pennsylvania Academic Standards, Assessment Anchors, and Eligible Content
- 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
- 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 and WestEd professionals with classroom experience in reading/language arts. They had also undergone 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, i.e., 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. All passages acquired for the 2005 field test were "authentic" in that they were culled from published materials. Approval to reprint was secured from the publisher. 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 vocabulary and language characteristics.
- Passages are free of bias/sensitivity issues.
- Passages represent different cultures.
- Passages are from a variety of sources.
- Passages should be able to stand the test of time.
- Passages are sufficiently "rich" to generate a variety of MC and OE items.
- Passages are complete with all necessary permissions documentation.

- Passages avoid dated subject matter unless a relevant historical context is provided. (Students should not have to have extensive background knowledge in a certain discipline or area to understand a text.)

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

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 preceding section on reading passage selection. 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

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. The issue of readability was addressed for all items during the final editing of items and at the item content review. Vocabulary was also addressed at the Bias, Fairness, and Sensitivity Committee review, although the focus was on how certain words or phrases may represent a possible source of bias or issues of fairness or sensitivity.

PROCESS OF ITEM CONSTRUCTION

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). Content specialists and editors evaluated each item to make sure that it measured the intended eligible content and/or assessment anchor (Assessment Anchor Content Standards). They also assessed each item to make certain that it was appropriate to the intended grade and that it provided and cued only one correct answer. In addition, the difficulty level, Depth of Knowledge, graphics, language demand, and distractors were also evaluated. Other elements considered in this process include, but is not limited to: Universal Design, bias, source of challenge, grammar/punctuation, and PSSA style.

A flow chart summarizing the item and test development processes used appears in Appendix E.

ITEM CONTENT REVIEW IN OCTOBER 2004

Prior to field testing, all newly developed test items were submitted to content committees for review. The content committees consisted of Pennsylvania teachers and subject-area supervisors 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. 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 October 4-8, 2004. Committee members were approved by PDE, and PDE-approved invitations were sent to them by DRC. PDE also selected internal PDE 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. DRC also provided training on the procedures and forms to be used for item content review.

DRC assessment specialists in mathematics and reading 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:

1. Anchor Alignment (classified as Full, Partial, or No)
2. Content Limits (classified as Yes or No)
3. Grade-Level Appropriateness (classified as at grade level, below, or above grade level)
4. Difficulty Level (classified as Easy, Medium, or Hard)
5. Depth of Knowledge (classified as Recall, Application, Strategic Thinking)
6. Appropriate Source of Challenge (classified as Yes or No)
7. Correct Answer (classified as Yes or No)
8. Quality of Distractors (classified as Yes or No)
9. Graphics (classified as Yes or No)
10. Appropriate Language Demand (classified as Yes or No)
11. 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 the master rating sheet was collected. Committee facilitators recorded the committee consensus on the Item Review Tally Form, which may be found in Appendix F.

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 for which there were only keys assigned to DRC personnel. Secure materials that did not need to be retained after the meetings were deposited in secure barrels and their contents were shredded.

BIAS, FAIRNESS, AND SENSITIVITY REVIEWS

Prior to field testing, all newly developed test items for grades 4, 6, and 7 were also submitted to a Bias, Fairness, and Sensitivity Committee for review. This took place on October 5-8, 2004. The committee's primary responsibility was to evaluate items as to acceptability 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 director to review items for bias, fairness, and sensitivity issues. Training materials included a manual developed and updated annually by DRC (DRC, 2003-2006). Members of the committee also had expertise with special needs students and English Language Learners. PDE staff members were also trained and participated in the review. All reading and mathematics 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. 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 actions taken 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.

ITEM AUTHORING AND TRACKING

Initially, items are prepared on PSSA Item Cards and used for preliminary sorting and review. Although very similar, the PSSA Item Card for Multiple-Choice Items differs from the PSSA Item Card for Open-Ended Items in that the former has a location at the bottom of the card for comments regarding the distractors. Blank examples of these two cards are shown in Appendix G. In both instances a column against the right margin provides for codes to identify the subject area, grade, content categories, passage information (in the case of reading), item type, depth of knowledge (cognitive complexity), estimated difficulty, answer key (MC items), and calculator use (mathematics).

All items undergoing field-testing were entered into the DRC Item Viewer and Authoring Network ™ (IVAN), which is a comprehensive, secure, online item banking system. It accommodates item writing, item viewing and reviewing, and item tracking and versioning. IVAN 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 IVAN Item Card is also presented in Appendix G.

Chapter Four: Universal Design Procedures Applied in the PSSA 2006 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 2005 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)(l)]. Both Title 1 and IDEA regulations call for universally designed assessments that are accessible and valid for all students, including students with disabilities and students with limited English proficiency. 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 the team leaders. Committees involved in content review included some members who were familiar with the unique needs of students with disabilities and students with limited English proficiency. 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 2006 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 every student 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 Anchor Content Standards (Assessment Anchors) 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 that 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 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. Knowledge questions that are posed within 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 that text is maximally readable and comprehensible. These features go beyond what is measured by readability formulas. Readability and comprehensibility are affected by many characteristics, 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 results 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, 2004-2006) was utilized, with PDE approval, that 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.

1. **Items measure what they are intended to measure.** Item writing training included assuring that writers and reviewers had a clear understanding of Pennsylvania's Academic Standards 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. 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 difficulties. Color was not used to convey important information.
5. **Items have concise and readable text.** Linguistic demands of stimuli and items can interfere with a student's ability to demonstrate knowledge of the construct being assessed. During item writing and review, the following guidelines were used.
    - Simple, clear, commonly-used words were used whenever possible.
    - Extraneous text was omitted.
    - Vocabulary and sentence complexity were appropriate for the grade level assessed.

- Technical terms and abbreviations were used only if 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 for the PSSA mathematics test was available for use by English Language Learners who would benefit from this accommodation.
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 manner consistent with an academic English framework with a left-right, top-bottom flow.

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. We support the implementation of accommodations on large-scale statewide assessments for students with disabilities. 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, and State Assessment Personnel* (Allman, 2004). To this end, we embrace the following precepts:

- Test directions are carefully worded to allow for alternate responses to open-ended 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.
- DRC special education content specialists review items with the goal of ensuring that they are universally designed and accessible.
- 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, a chart or graph that extends beyond one page,

  - Reading: graphics and illustrations that are not germane to the content presented,
- Both 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; e.g. variables).

ITEM FORMATTING

For both content areas, DRC formats PSSA tests to maximize accessibility for all students by using text that is in a point size and font style that is easily readable. We limit shading, spacing, graphics, charts, and number of items per page so that there is sufficient white space on each page. Whenever possible, we ensure that graphics, pictures, diagrams, charts, and tables are positioned on the page with the associated test items. We use 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% 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 topic 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. An accommodations manual for the PSSA entitled *2006 Accommodations Guidelines* (PDE, December 2005) was developed for use with the 2006 PSSA.

Chapter Five: Field-Test Procedures

STAND-ALONE FIELD-TEST ITEMS

In 2005, the PSSA test for grade 4, 6, and 7 consisted of 14 stand-alone field test forms per grade for mathematics and 26 stand-alone field test forms per grade for reading. Each form was constructed for each grade with items distributed across the reporting categories and, as reasonably possible, across the assessment anchors. Each mathematics form contained 18 multiple-choice items and 2 open-ended items. The reading forms contained two passages with 12 multiple-choice items and 3 open-ended items.

All forms were reviewed by PDE and revisions were made to items and/or format as needed.

One Field-test Administration Manual for each content are was written and printed for the District and School Administrators and Field-test Administrators. The forms were then printed, and packets of forms were spiraled and shipped according to the sampling plan described in the following section. Each student received one form and one separate answer document. The answer document was used to respond to the multiple-choice items and to collect demographic information. The open-ended items and response areas were placed with the form booklets.

The purpose of administering field test items is to get statistics for new items which are then reviewed before becoming operational in 2006. Based on this statistical review, many of the field test items appearing in the stand-alone 2005 PSSA field test were selected for use as common or matrix items in the 2006 PSSA.

STATISTICAL ANALYSIS OF ITEM DATA

All field-tested items were analyzed statistically following conventional item analysis methods. For MC items, indices known as traditional or classical item statistics included the point-biserial correlation (Pt Bis) for the correct and incorrect responses, percent correct (P-Value), and the percent responding to incorrect responses (distractors). For OE items 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-scorable 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 would 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 (OE) 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 OE 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 a MC item to be flagged, the criteria included any of the following:

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

- Percent correct less than 30% or greater than 90%
- Percent responding to any incorrect responses greater than the percent correct

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

- Item-test correlation less than 0.40
- Percent in any score category less than 10% or greater than 40%
- Non-scorable responses greater than 10 percent

Item analysis results for multiple-choice and open-ended field test items are presented in Appendices H through S.

DIFFERENTIAL ITEM FUNCTIONING

Bias can present itself in a variety of ways in test items: through the language, the format, the content, or the behaviors required. It can result from membership in a specific subpopulation or from factors correlated with the subpopulation. It can affect all members of the subpopulation, or it may affect only those in specific ranges of ability. Understanding how bias arises and how it presents itself has an impact on how best to detect and correct 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 to organize the review so the effort is concentrated on the most problematic cases; however, no items should be automatically rejected simply because a statistical method flagged them or accepted because they were not flagged.

Statistical detection of item bias is an inexact science. There have been a variety of methods proposed for detecting bias, but no one 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 of the statistical methods used to detect differential item functioning is that all are intrinsic to the test being evaluated. If a test is unbiased overall but contains one or two biased items, any method will locate the problems. If, however, all items on the test are consistently biased against a subpopulation, a statistical analysis of the items will not be able to separate bias effects from true differences in achievement.

MANTEL-HAENSZEL PROCEDURE FOR DIFFERENTIAL ITEM FUNCTIONING

The *Mantel-Haenszel* procedure 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 total score to organize the analysis.

Differential item functioning is present when examinees of equal ability but different subgroup membership do not have the same probability of answering the item correctly. If this inequity is associated with gender or ethnic groups, the item could be described as potentially biased.

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.

The Mantel-Haenszel (MH) statistic (Mantel & Haenszel, 1959) 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 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 constructed-response items, a comparable statistic is computed based on the standardized mean difference (SMD) (Dorans, Schmitt & Bleistein, 1992), 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 differential item functioning. Items classified as B+ or B- have some indication of DIF and may not require revision. Items classified as C+ or C- have strong evidence of DIF and should be reviewed and revised if they are to be used again. The plus sign indicates that the item favors the focal group and a minus sign indicates that the item favors the reference group.

Counts of the number of items from each grade and content area that were assigned to each severity code are shown below in Table 5-1.

Table 5-1. 2006 DIF Summary

2006 Multiple Choice Item DIF Summary

Multiple Choice Item Male/Female DIF Counts						
Math	**A**	**B-**	**B+**	**C-**	**C+**	**Total**
4	127	0	1	0	0	128
6	120	4	3	1	0	128
7	119	7	0	2	0	128
Reading						
4	124	0	4	0	0	128
6	119	6	2	1	0	128
7	123	4	1	0	0	128

Multiple Choice Item White/Black DIF Counts						
Math	**A**	**B-**	**B+**	**C-**	**C+**	**Total**
4	112	9	3	4	0	128
6	127	0	1	0	0	128
7	124	3	0	1	0	128
Reading						
4	122	6	0	0	0	128
6	120	5	0	3	0	128
7	125	3	0	0	0	128

Multiple Choice Item White/Hispanic DIF Counts						
Math	**A**	**B-**	**B+**	**C-**	**C+**	**Total**
4	110	11	2	5	0	128
6	123	3	2	0	0	128
7	117	11	0	0	0	128
Reading						
4	120	3	2	3	0	128
6	118	8	0	2	0	128
7	123	3	1	1	0	128

Multiple Choice Item White/Asian DIF Counts						
Math	**A**	**B-**	**B+**	**C-**	**C+**	**Total**
4	111	6	3	5	3	128
6	112	3	6	2	5	128
7	119	1	5	2	1	128
Reading						
4	118	3	4	0	3	128
6	101	16	5	5	1	128
7	112	7	5	2	2	128

2006 Constructed Response Item DIF Summary

Constructed Response Item Male/Female DIF Counts						
Math	**A**	**B-**	**B+**	**C-**	**C+**	**Total**
4	16	0	0	0	0	16
6	16	0	0	0	0	16
7	16	0	0	0	0	16
Reading						
4	16	0	0	0	0	16
6	16	0	0	0	0	16
7	16	0	0	0	0	16

Constructed Response Item White/Black DIF Counts						
Math	**A**	**B-**	**B+**	**C-**	**C+**	**Total**
4	16	0	0	0	0	16
6	16	0	0	0	0	16
7	16	0	0	0	0	16
Reading						
4	16	0	0	0	0	16
6	16	0	0	0	0	16
7	16	0	0	0	0	16

Constructed Response Item White/Hispanic DIF Counts						
Math	**A**	**B-**	**B+**	**C-**	**C+**	**Total**
4	16	0	0	0	0	16
6	16	0	0	0	0	16
7	16	0	0	0	0	16
Reading						
4	16	0	0	0	0	16
6	16	0	0	0	0	16
7	16	0	0	0	0	16

Constructed Response Item White/Asian DIF Counts						
Math	**A**	**B-**	**B+**	**C-**	**C+**	**Total**
4	16	0	0	0	0	16
6	15	1	0	0	0	16
7	16	0	0	0	0	16
Reading						
4	16	0	0	0	0	16
6	16	0	0	0	0	16
7	15	0	1	0	0	16

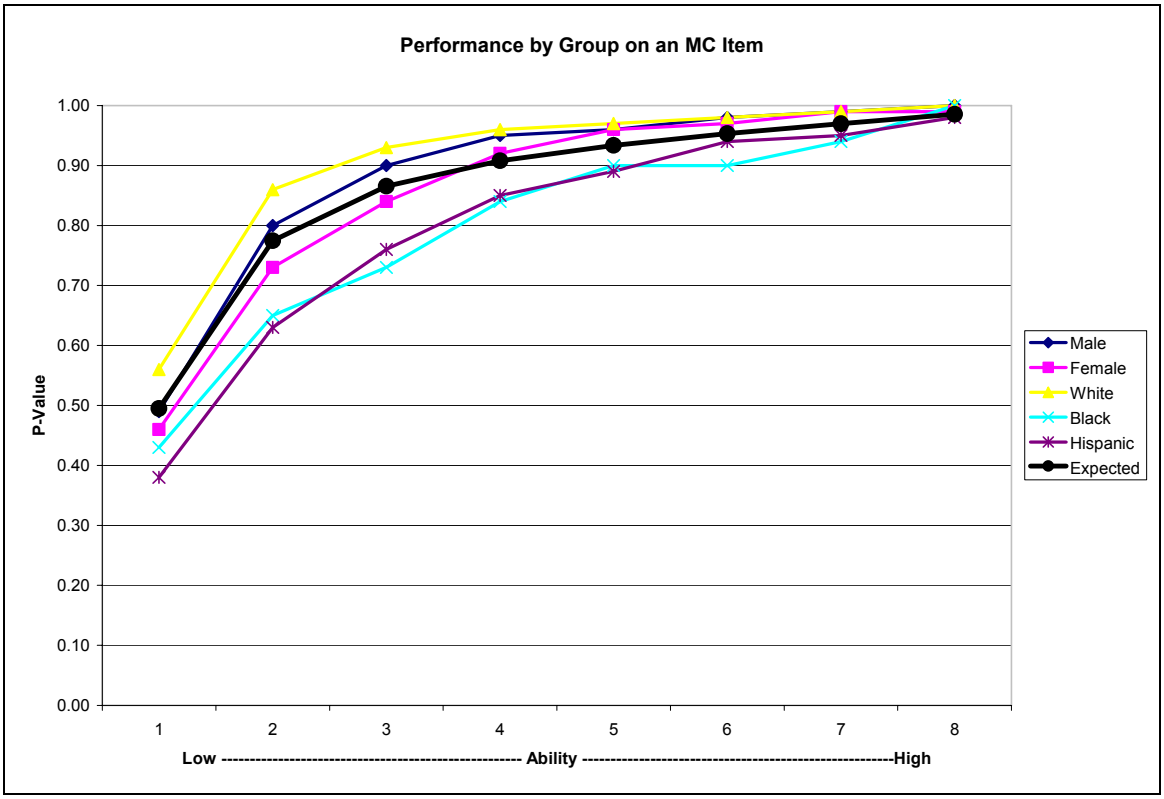
REVIEW OF ITEMS WITH DATA

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 2005 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 deemed 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 subject-area content committees composed of 14 teachers and PDE staff for reading and 11 teachers and PDE staff for mathematics. The review took place on August 8-10, 2005. In this session committee members were first trained by Dr. Ronald Mead, DRC Senior Psychometrician, 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.

A sample plot of a multiple-choice item showing possible (non-uniform) bias is shown in Figure 5.1.

Figure 5.1. Plot of a Multiple-Choice Item Showing Potential Bias



Chapter Six: Operational Forms Construction for 2006

FINAL SELECTION OF ITEMS AND 2006 PSSA FORMS CONSTRUCTION

When the final selection of items for the operational 2006 test was ready to begin, the candidate items that emerged from the Spring 2005 field test had undergone multiple reviews, including:

- Reviews by DRC and WestEd content-area test development specialists and curriculum specialists
- Formal bias, fairness, and sensitivity review by the Bias, Fairness, and Sensitivity Committee consisting of an expert, multi-ethnic group of men and women with members also having expertise with special needs students and English Language Learners.
- Formal review by the content committees consisting of Pennsylvania educators, including teachers as well as district personnel
- PDE review
- Content review by the PDE subject-area teacher advisory committee
- Item data review by members of the PDE subject-area teacher committees

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" were candidates to be selected for the 2006 PSSA. To have an item status code of "Acceptable" meant that the item met the following criteria:

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

Next, all relevant information regarding the acceptable items, including associated graphics, was entered into the IVAN system. From the IVAN system, Excel files were created for reading and mathematics at grades 4, 6, and 7. These files contained all relevant content codes and statistical characteristics. The IVAN system also created for each acceptable item a card displaying the item, any associated graphic, and all relevant content codes and item statistics for use by the content-area test development specialists and psychometric services staff.

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

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

Senior DRC content-area test development specialists reviewed all items in the operational pool to make an initial selection for common (core) and matrix sections according to test blueprint requirements and psychometric guidelines. No changes were made to any item since even slight

alterations could affect how an item performs on subsequent testing.

For the common items, this meant that the combination of MC and OE 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., math 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 the items, as a collection, had a correct answer distribution of approximately 25 percent in each of the four positions. Selected items that were psychometrically problematic 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.

The process for selecting operational matrix items was a little different. The chief consideration was that items in the matrix section of the various forms, together with the common items, would yield a greater overall pool of items from which reliable sub-category results could be generated for school-level reporting. Once again the cardinal principle was the selection of an appropriate number of items to properly cover the sub-categories. The subject-area test development specialist's task was to distribute these items in matrix sections across the 20 forms so that the OE item and set of 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.

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

Once the recommendations were finalized for the common/core, matrix, and linking items, they were submitted to PDE for review. Department staff provided feedback, which could be in the form of approval or recommendations for replacing certain items. Any item replacement was accomplished by the collective effort of the test development specialists, psychometricians, and PDE staff until final PDE approval.

SPECIAL FORMS USED IN THE 2006 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 the Pennsylvania Training and Technical Assistance

Network (PaTTAN) in Harrisburg. They could also contact PaTTAN for technical assistance regarding students with visual impairments.

School personnel were directed to transcribe all student answers (MC and OE) into scannable answer documents exactly as the student responded. No alterations or corrections of student work were permitted, and the answer document had to have the identical form designation.

SPANISH TRANSLATION OF THE MATHEMATICS ASSESSMENT

Starting with the 2005 assessment and continuing with the 2006 assessment, school personnel had the option of having their Spanish-speaking students who had been enrolled in schools in the United States for less than three years respond to a **Spanish** version of the PSSA for mathematics only. The original translation of the items and the *Directions for Test Administrators* was initialized by Second Language Testing Incorporated and completed by Data Recognition Corporation. After discussions with the PDE and Second Language Testing Incorporated, the mathematics sections of the test booklet were designed with a "side-by-side" format with the English text and Spanish translated text on facing pages. The original English text was on the right-hand side. The Spanish translated text was on the left-hand side.

The mathematics sections of the answer booklet were also presented in Spanish and English. Each open-ended item covered a total of 4 pages in the answer booklet. 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, with the highest possible score from those combinations recorded for the student.

1,406 students used a Spanish translated version at grades 4, 6, and 7 in 2006.

Instructions for the appropriate use of these special forms are detailed in the *2006 Accommodations Guidelines* (PDE, December 2005) available on the PDE website at www.pde.state.us.

Chapter Seven: Test Administration Procedures

TEST SESSIONS, TIMING, AND LAYOUT

The test window for the 2006 operational assessment was from March 20 through March 31, 2006, including make-ups. The reading and mathematics assessments consisted of six sections. Additional information concerning testing time and test layouts can be found in Chapter 3.

SHIPPING, PACKAGING, AND DELIVERY OF MATERIALS

There were two shipments sent out by Data Recognition Corporation (DRC). Shipment one was delivered by February 17, 2006, and contained the *Handbook for Assessment Coordinators and Administrators* and the *Directions for Administration* for each grade tested at a school. Shipment two was delivered by March 6, 2006, and contained the administrative materials (e.g., return shipping labels and student precode labels) and secure materials (e.g., test booklets and answer booklets). 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 district 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 the box being sealed for shipment 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 the items from the point of shipment 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.

The assessments for grades 4-8 and 11 were shipped together. DRC packed 2,036,115 assessment booklets, 139,301 manuals, and 185,145 non-secure materials for over 3,168 schools. DRC used UPS, Yellow Freight, and Diamond Transportation Group, Inc. to deliver 26,399 boxes of materials to the testing sites.

MATERIALS RETURN

The materials return window was March 31, 2006 – April 5, 2006. DRC used UPS, Yellow Freight, and Diamond Transportation Group, Inc. for all returns.

TEST SECURITY MEASURES

Test security is essential to obtaining reliable and valid scores for accountability purposes. The 2006 PSSA included a Test Security Affidavit that was to be signed and returned by every principal or director where testing materials were shipped. 3,178 of the Test Security Affidavits for the Reading and Mathematics assessments that were sent to a total of 3,201 testing sites were signed and returned to DRC. The purpose of the affidavit 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 affidavit attested that all security measures were followed concerning the handling of secure materials. Some of the security measures included:

- The contents of the test were not discussed, disseminated, described, or otherwise revealed to anyone.
- The contents of the test were not kept, copied, or reproduced.
- All booklets were kept in a locked, secure storage area at both the district and school levels.

SAMPLE MANUALS

Copies of the *Handbook for Assessment Coordinators and Administrators* and the *Directions for Administration* can be found on the Pennsylvania Department of Education website at www.pde.state.pa.us .

ASSESSMENT ACCOMMODATIONS

An accommodations manual entitled *2006 Accommodations Guidelines* (PDE, December 2005) was developed for use with the 2006 PSSA. Additional information regarding assessment accommodations can be found in Chapter 4 of this report.

Chapter Eight: Processing and Scoring

RECEIPT OF MATERIALS

Receipt of PSSA test materials began on March 31, 2006, and concluded on April 19, 2006. DRC's Operations Material Management System (Ops MMS) was utilized to securely, accurately, and efficiently receive secure materials. This system features advanced automation and cutting-edge, 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 contained on the return label and identified the district and school. If the label could not be read automatically, a floor operator entered the information into the system manually. 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. A "three way match" among the district box count, the carrier box count, and the DRC return box count was conducted to verify a box return accuracy rate of 100%.

Once the box receipt process was completed, the materials separation phase began. Warehouse personnel opened the district boxes and sorted the contents by grade, subject, and status (used/unused) into new boxes. Once filled, a sorted box's documents were loaded into an automated counter, which recorded a booklet count for each box. An on-demand DRC box label was produced that contained a description of each box's contents and quantity in both barcode and human-readable format. This count remained correlated to the box as an essential quality control step throughout secure booklet processing and provided a target number for all steps of the check-in process.

Once labeled, the sorted and counted boxes proceeded to booklet check-in. This system used streamfeeder automation to carry documents past oscillating scanners that captured data from up to two representative barcodes and stored it in the Ops MMS database.

The secure booklet check-in operator used a hand scanner to scan the counted box label. This procedure input material type and quantity parameters for what the Ops MMS should expect within a box. It then loaded the box's contents into the streamfeeder.

The documents were fed past oscillating scanners that captured either a security code or both a security code and a pre-code, depending upon material type. A human operator monitored an Ops MMS screen, which displayed scan errors, an ordered accounting of what was successfully scanned, and the document count for each box.

When all materials were scanned and the correct document count was reached, the box was sealed and placed on a pallet. If the correct document count was not reached, 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 immediate feedback to districts and schools regarding any missing materials based on actual receipts versus expected receipts.

Upon completion of secure booklet check-in, DRC produced a Missing Materials Report that listed all schools in each participating district and any booklets not returned to DRC listed by

school and security number.

After scannable materials were processed through Book Receipt, the materials became available to the DRC Document Processing Center Log-In staff for document log-in. Based on a pre-determined sampling and calibration plan, the staff prioritized answer documents using the following process:

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

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

After a quality check in 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

DRC used its image scanning system to capture constructed-response items as images. These were then loaded into the image scoring system for both the handscoring of constructed-response items and for the capture of multiple-choice and demographic data.

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 standard. 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.

Customized scanning programs for all scannable documents were prepared to read the answer documents and to electronically format the scanned information. 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 read selected-response, demographic, and identification information. The image scanners also used barcode readers to read pre-printed barcodes from a label on the booklet.

The scannable documents were automatically fed into the image scanners where pre-defined processing criteria determined which fields were to be captured electronically. Constructed-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 answer documents.

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 process and 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 pre-defined portions of the answer documents were represented in their entirety in the image files. If a page was missing, the entire answer document was flagged for resolution.

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

Experienced DRC Document Processing Center Editing staff reviewed all potential errors detected during scanning and made necessary corrections to the data file. 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 answer documents 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 answer documents assigned to the box during book receipt. Count discrepancies between book receipt and answer documents scanned were resolved at this time.

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

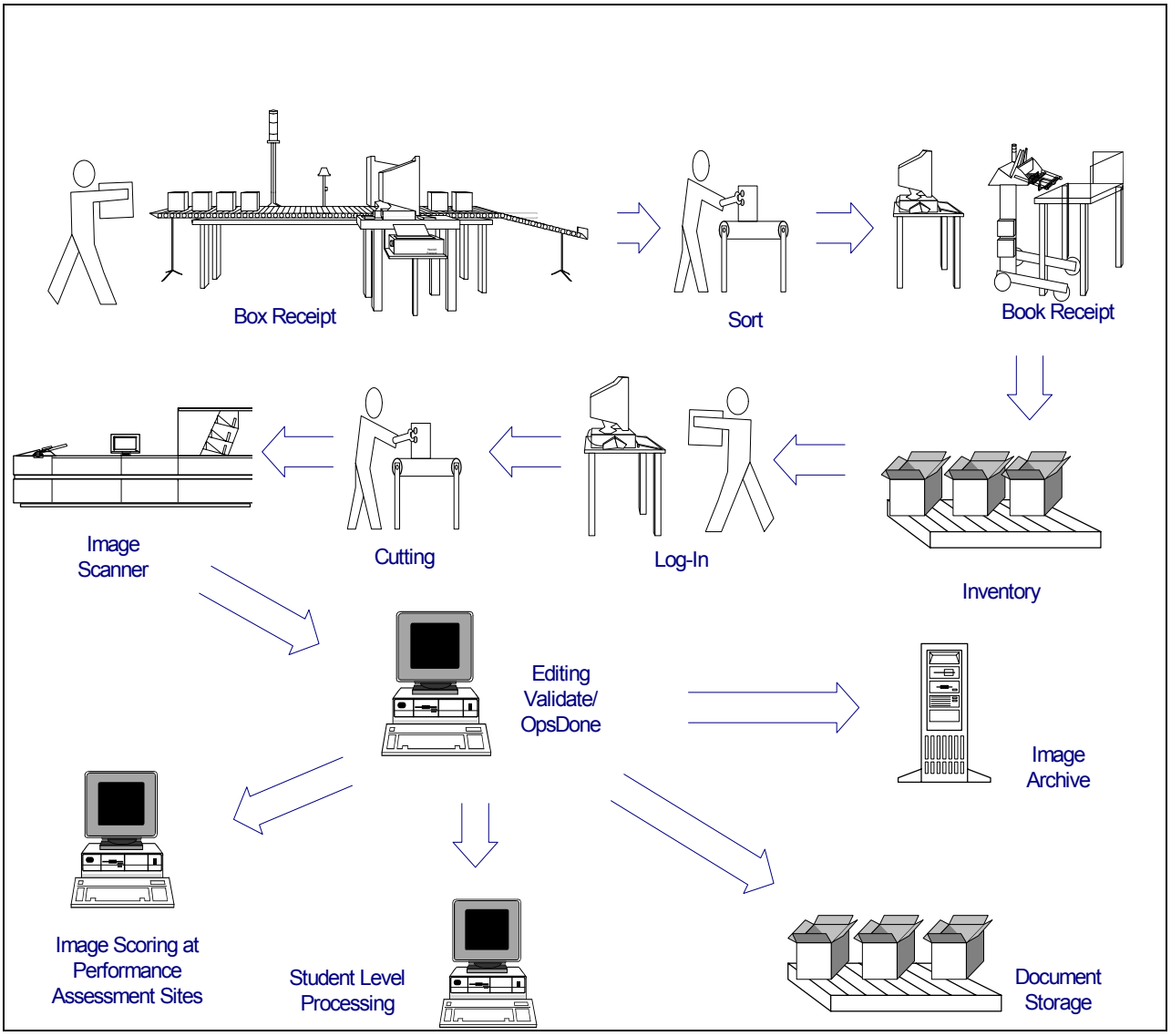
Table 8-1 shows the number of answer booklets received through booklet check in, the number of booklets that contained student responses that were scanned and scored, the number of test booklets received, and the total number of booklets received.

Table 8-1. Counts of 2006 PSSA Materials Received – Grades 4, 6, and 7

	Answer Booklets	Used Answer Booklets	Test Booklet	Total Booklet
Grade	163,744	131,700	163,642	327,386
Grade	168,075	140,537	168,073	336,148
Grade	172,187	146,365	172,168	344,355

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 answer materials are boxed for security purposes and final storage:

- Project-specific box labels were created containing unique customer and project information, materials type, batch number, pallet/box number, and the number of boxes for a given batch.
- Boxes were stacked on project-specific pallets that were labeled with a list of its contents and delivered 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 constructed 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 finalized 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 began to assemble groups of responses that exemplified the different score points represented in the 0–4 item-specific scoring guidelines for math and the 0–3 item-specific scoring guidelines for reading. Papers were pulled to supplement the training materials for the common and matrix items that were moved forward from the 2005 field test, and for all the new 2006 field test items.

Once examples for all the score points were identified, sets were put together for each item. These sets were copied for use at rangefinding, held April 11–13, 2006, at the Holiday Inn, Grantville, Pennsylvania. The rangefinding committees consisted of Pennsylvania educators, PDE staff members, DRC Test Development staff, and DRC Performance Assessment Services staff.

The joint session began with a review of the history of the 2006 assessment and then broke into mathematics and reading grade-level groups. Copies of the student example sets were presented to the committees, one item at a time. The committees reviewed and scored the student samples together to ensure that everyone was interpreting the scoring guidelines consistently. Committee members then went on to score responses independently and those scores were discussed until a consensus was reached. Only responses for which a good agreement rate was attained were used in training the readers. Discussions of the responses used the language of the scoring guidelines, assuring PDE and all involved that the score point examples clearly illustrated the specific requirements of each score level. DRC PAS staff made notes of how and why the committees arrived at score point decisions, and this information was used by the individual scoring directors in reader training.

DRC and PDE discussed scoring guideline edits that the committees suggested. Changes approved by PDE were then made by DRC Test Development and the scoring guidelines were used by PAS staff in the preparation of materials and training of readers.

READER RECRUITMENT/QUALIFICATIONS

DRC retains a number of experienced readers from year to year, and those readers made up approximately 60% of the reader pool (N=450) for 2006. To complete the reader staff for this project, DRC placed advertisements in local papers, minority publications, teacher newsletters, and at regional colleges and universities. Open houses were held and applications for reader positions were screened by the DRC recruiting staff. Candidates were personally interviewed and a mandatory, on-demand writing sample, plus a math sample for those applying to score

mathematics, were collected, along with 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 with degrees emphasizing expertise in mathematics and reading. Since readers had to have a strong content-specific background, the reader pool consisted of educators, writers, editors, and other professionals who were valued for their experience, but who were also required to set aside their own biases about student performance and accept the scoring standards. All readers on this assessment held at least a four-year degree.

LEADERSHIP RECRUITMENT/QUALIFICATIONS

Scoring directors and team leaders were chosen by the project director from a pool consisting of experienced individuals who were successful readers and leaders on previous DRC contracts and had strong backgrounds in scoring mathematics and/or reading. Those selected demonstrated organization, leadership, and management skills. The scoring directors and a majority of the team leaders had at least five years of leadership experience on the PSSA. All scoring directors, team leaders, and readers were required to sign confidentiality forms before any training or handling of secure materials began.

Each room of readers was assigned a scoring director. This individual was monitored by the project manager and project content coordinator and led the hand scoring for the duration of the project. The scoring director assisted in rangefinding, worked with supervisors to create training materials, conducted the team leader training, and was responsible for training the readers. The scoring director also made sure that reports were available and interpreted reports for the readers. The scoring director supervised the team leaders.

Team leaders assisted the scoring director with reader training and monitoring by working with their teams in small group discussions and answering individual questions that readers may not have felt comfortable asking in a large group. Once readers had qualified, the team leaders were responsible for maintaining the accuracy and workload of team members. The ongoing monitoring identified those readers who were having difficulty scoring accurately and resulted in the reader receiving one-on-one retraining or in pairing that reader with a stronger reader. This process corrected any inaccuracies in scoring and, if not, that reader was released from the project.

TRAINING

After rangefinding was completed, DRC's PAS staff compiled the approved scoring guidelines and the scored student examples from the committees into packets used for training the readers. Responses that were relevant in terms of the scoring concepts they illustrated were annotated for use in a scoring guide. The item-specific scoring guidelines served as the reader's constant reference. Readers were instructed how to apply the guidelines and were required to demonstrate a clear comprehension of each anchor set by performing well on the training materials that were presented for each grade and item. Training and qualifying sets consisted entirely of examples of student responses reviewed by the rangefinding committee.

Team leaders assisted the scoring directors with the training and monitoring of readers. The scoring director conducted the team leader training before the reader training. This training followed the same procedures as the reader training, but qualifying standards were more stringent because of the responsibilities required of the team leaders. During their training, all materials were reviewed and discussed, and anticipated reader questions and concerns were addressed. Team leaders were required to annotate all of their training responses with the

official annotations received from the content committee members at the rangefinding meetings. To facilitate scoring consistency, it was imperative that each team leader imparted the same rationale for each response that other team leaders used. Once the team leaders qualified, leadership responsibilities were reviewed and team assignments were given. A ratio of one team leader for each 8–10 readers ensured adequate monitoring of the readers.

The 2006 assessment included the opportunity for students to respond to the mathematics section in Spanish. The Scoring Director responsible for this was a bilingual Hispanic with a strong mathematics background who had also worked with the PSSA for over 8 years. All of the readers were bilingual and were hired specifically to score the Spanish portion of the assessment. They were required to meet the same stringent training and scoring standards that were set for the English readers.

Reader training began with the scoring director providing an intensive review of the scoring guidelines and anchor papers to all readers. Next, the readers "practiced" by independently scoring the responses in the training sets. Afterwards, the scoring director and team leaders led a thorough discussion of each set in either a small group or room-wide setting.

Once the scoring guidelines and all the training sets were discussed, readers were required to apply the scoring criteria by qualifying (i.e., scoring with acceptable agreement to the "true" scores) on at least one of the qualifying sets. Readers who failed to achieve the level of agreement determined by PDE were given additional training to acquire the highest degree of accuracy possible. Readers who did not perform at the required level of agreement by the end of the qualifying process were not allowed to score "live" student work and were released from the project.

HANDSCORING PROCESS

Student responses were scored independently and by multiple readers. All responses were read once with a 10% double read or read behind to ensure reliability. The 10% read behinds were randomly chosen by the imaging system at the item level. The PDE determined the required number of reads.

Readers scored the imaged student responses on PC monitors at the DRC Scoring Centers in Harrisburg, Pennsylvania; Minnetonka, Minnesota; Cincinnati, Ohio; and Woodbury, Minnesota. Readers were seated at tables with two imaging stations at each table. Image distribution was controlled, thus ensuring that they were sent to designated groups of readers qualified to score those items. Imaged student responses were electronically separated for routing to individual readers by item, and readers were only provided with student responses that they were qualified to score. Readers read each response and keyed in the scores.

To handle possible alerts (i.e., student responses indicating potential issues related to the student's safety and well-being that may require attention at the state or local level), the imaging system allowed readers to forward responses needing attention to the scoring director. These alerts were reviewed by the project director, who then notified that student's school and the PDE of this occurrence. However, PDE did not receive the student's responses or any other identifying information on that student. Also, at no time did the reader know anything about the student's personal identity.

Once handscoring was completed, PAS compiled anecdotal item reviews of the field-test for all grade levels in both subjects. This information was handed on to DRC Test Development.

QUALITY CONTROL

Reader accuracy was monitored throughout the scoring session by producing both daily and on-demand reports, ensuring that an acceptable level of scoring accuracy was maintained. Inter-reader reliability was tracked and monitored with multiple quality control reports that were reviewed by quality assurance analysts. These reports were generated at the handscoring center and were reviewed by the scoring directors, team leaders, project coordinators, and project directors. The following reports were used during the scoring of the constructed responses:

The Reader Monitor Report monitored how often readers were in exact agreement and ensured that an acceptable agreement rate was maintained. This report provided daily and cumulative exact and adjacent inter-reader agreement and the percentage of responses requiring resolution. (see Tables 8.2, 8.3, and 8.4.)

The Score Point Distribution Report monitored the percentage of responses given each of the score points. For example, the mathematics daily and cumulative report showed how many 0s, 1s, 2s, 3s, and 4s a reader had given to all the responses he or she had scored at the time the report was produced. It also indicated the number of responses read by each reader 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., "needs second reading," "complete"). This report ensured that all discrepancies were resolved by the end of the project.

The Response Read by Reader Report identified all responses scored by an individual reader. This report was useful if any responses needed rescoring because of reader drift.

The Read-Behind Log was used by the team leader/scoring director to monitor reader reliability. Student responses were randomly selected and team leaders read scored items from each team member. If the team leader disagreed with the reader'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 reader.

Recalibration sets were used throughout the scoring sessions to monitor scoring by comparing each reader's scores with the true scores and to refocus readers on Pennsylvania scoring standards. This check made sure there was no change in the scoring pattern as the project progressed. Readers failing to achieve a certain percent of agreement with the recalibration true scores were given additional training to achieve the highest degree of accuracy possible. Readers who were unable to recalibrate were released from the project. The procedure for creating and reading recalibration sets was similar to the one used for the training sets.

Tables 8-2, 8-3, and 8-4 show the exact and adjacent agreement rates of the readers for the common constructed responses of the math and reading items for grades 4, 6, and 7.

Table 8–2. Inter-rater Agreement for 2006 Grade 4 PSSA Constructed-Response Items

	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement
Reading	1	82	18	100
	2	82	18	100
	3	73	27	100
	4	79	21	100
Mathematics	1	81	18	99
	2	87	13	100
	3	83	17	100

Table 8–3. Inter-rater Agreement for 2006 Grade 6 PSSA Constructed-Response Items

	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement
Reading	1	74	25	99
	2	72	28	100
	3	72	27	99
	4	77	22	99
Mathematics	1	89	16	100
	2	87	15	100
	3	83	16	99

Table 8–4. Inter-rater Agreement for 2006 Grade 7 PSSA Constructed-Response Items

	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement
Reading	1	69	30	99
	2	72	27	99
	3	73	26	99
	4	74	26	100
Mathematics	1	84	11	100
	2	85	13	100
	3	84	16	100

MATCH-BACK RULES

In order to create a single student record in the central student file, it was necessary to establish match-back rules to combine separate student records into one student record. Match-back rules were applied to link multiple-choice and constructed responses. They were also used to merge student responses captured on different subjects and to link test results with student demographic information.

DATA EXCHANGE, STORAGE, AND RECOVERY POLICIES

DATA EXCHANGE PROCEDURES

The exchange of data between DRC, PDE, and other contractors is a critical and essential component in the success of the PSSA program. To support this process, DRC used the following data exchange procedures to ensure that all data files were successfully and accurately transferred.

- Files were posted to DRC's secure Pennsylvania FTP site with a standard and logical folder structure.
- Standard file naming conventions were established and used.
- The information necessary to perform these quality control procedures accompanied each data exchange.

Data Exchange Quality Control Procedures

Record Count Check – Confirm the expected record count and provide the record count in files sent and received.

File Count Check– Confirm that the number of files sent and received matches the number of files expected.

Duplicate File Check – Verify that duplicate files were not sent or received.

File Date – Verify that the version of the file received matches the file creation date.

File Type Verification Check – Verify that data sent and received matches the format expected (e.g., Excel, CSV, PDF, Text file [delimited/fixed field length]).

File Log – A log of files sent and received will be maintained.

Data Validation – Data checking procedures will be used to verify that the data is in the specified file layout and matches the expected values.

IMAGES

As part of the scanning process, the multi-page TIFF images were archived to tape before being separated into single page TIFFs and transmitted to the scoring centers. If any of the images were lost/deleted/corrupted at a scoring center, they could be restored from the archived multi-page TIFF images. In addition to archiving the images, the scoring center servers used RAID (Redundant Array of Independent Disks) 5 disk management technology to mirror the images to redundant disk drives. If a disk drive failed in a scoring center server, the images could be quickly restored from the redundant disk drive. In the event that the disk drive and the multi-page TIFF images could not be restored, the original documents would be rescanned. Images are stored for a PDE-specified period.

DATA

Once a reader submitted a score for a constructed-response item, the data was electronically transmitted to our SQL Servers. The log files documenting the changes were backed up hourly. Full back-ups were done nightly (Monday–Friday) and two additional full back-ups were run over the weekend on the handscoring SQL Servers with the backup tapes being rotated off-site. All data is stored for a PDE specified period.

STORAGE

All physical servers are housed in secure server rooms in DRC's corporate headquarters in Maple Grove, or the Brooklyn Park or Woodbury locations. The server rooms are constructed of concrete floors, walls, and ceilings and designed to be fire and crush proof. They have fire suppression systems to minimize the effect of any fire started within the server room. Access to the server rooms is controlled through a card access system and is restricted to authorized technology support staff only. A log is maintained documenting each time a server room is entered, by whom, and for what purpose. In case of a disaster at any of the locations, another server can take over full operations.

DRC maintains backup servers that can be used to replace a failed server within 24 hours. Every server's configuration is documented in the event a rebuild is required. Each server has an assigned primary and secondary network analyst responsible for its operation.

The servers utilize load-sharing, redundant power supplies and implement RAID subsystems to minimize the effect of a failed disk. The server rooms all have Uninterruptible Power Supply (UPS) systems. For longer periods of power failure, an on-site diesel power generate will automatically start and supply needed power. The computing environment, both servers and communications hardware, will continue to function without interruption when the utility power is disrupted.

Two copies of complete system and data backup are created each weekend. One of these copies is stored in a secure room at the Maple Grove location. The second copy is stored in a secure room at the Woodbury location. These backups are stored indefinitely. Incremental backups of all files on the network are made each day. The incremental backups are kept for 6 weeks.

DRC utilizes a storage area network (SAN) for maximum speed, flexibility, and redundancy in our data storage solution. Servers are connected to the SAN via redundant connections to ensure minimum interruptions due to hardware failures. The SAN allows disk space to be reallocated with ease for availability to those applications or servers as needed. The SAN currently houses 13 Terabytes of storage and is expandable to 26 Terabytes.

Chapter Nine: Summary Demographic, Program, and Accommodation Data for the 2006 PSSA

ASSESSED STUDENTS

The total number of answer documents processed by grade level for the 2006 PSSA is presented on the first line of Table 9-1. Also shown is the number and percent of students with PSSA scores in reading and mathematics, followed by those having a score in each subject area, those with a score in reading or in mathematics, and finally those not having a score in either subject area. As noted in the table, the vast majority of students had scores in both reading and mathematics.

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 1000 per grade level) that elected to participate. Also included were home-schooled students that numbered fewer than 100 per grade.

Table 9-1. Students Assessed on the 2006 PSSA

	Grade 4		Grade 6		Grade 7	
	Number	Percent	Number	Percent	Number	Percent
Number of answer documents processed	131,692		140,506		146,341	
Students with both reading and mathematics scores	129,410	98.3	137,684	98.0	142,772	97.6
Students with reading scores	129,503	98.3	137,826	98.1	142,980	97.7
Students with mathematics scores	130,008	98.7	138,282	98.4	143,471	98.0
Students with a reading score or a mathematics score	130,101	98.8	138,424	98.5	143,679	98.2
Number processed but not assessed in either subject area	1,591	1.2	2,082	1.5	2,662	1.8

As may be observed from Table 9-1, not all students were assessed. Although there are a variety of reasons for this, the major ones pertain to (1) excusal due to significant cognitive disability, (2) absenteeism, and (3) a situation in which there was a non-attempt on the part of the student and no exclusion code was marked by school personnel. The number of students without scores for these three reasons is presented in Table 9-2.

Students in an assessed grade who met each of the following criteria were excused from the PSSA: (1) had a significant cognitive disability, (2) required intensive instruction, (3) required adaptation and support to perform or participate meaningfully, (4) required substantial modification of the general education curriculum, (5) participation in the general education curriculum differed markedly in form and substance from that of other students (see *PSSA Handbook for Assessment Coordinators and Administrators: Grades 4-8 and 11 Reading and Mathematics*, PDE, March, 2006, p. 9). Instead, these students participated in the Pennsylvania Alternate System of Assessment (PASA). Two categories of absenteeism, (1) extended absence from school that continued beyond the assessment window and (2) being absent without makeup for at least one section of a subject area are combined to form a single absent category in Table

9-2. The non-attempt categorization pertains to a situation in which the student did not meet the criteria for having attempted one or more of the sections of a test and no exclusion code was marked.

Table 9-2. Counts of Students without Scores on the 2006 PSSA

Reason for Non-Assessment	Grade 4		Grade 6		Grade 7	
	N	Pct	N	Pct	N	Pct
Alternate Assessment (PASA)	992	62.4	1036	49.8	1107	41.6
Absent Reading	386	24.3	625	30.0	937	35.2
Absent Mathematics	270	17.0	510	24.5	831	31.2
Non-Attempt Reading	452	28.4	616	29.6	851	32.0
Non-Attempt Mathematics	276	17.3	454	21.8	650	24.4

COMPOSITION OF SAMPLE USED IN SUBSEQUENT TABLES

Rather than present data tables separately for reading and mathematics, redundancy was reduced by basing results on the group of students having a score in reading or in mathematics. Analyses were conducted using the individual student data file of July 13, 2006. Because some student file updates may occur subsequent to these analyses, there could be small differences in the counts although percentages would likely differ by only a fraction of a percentage point.

COLLECTION OF STUDENT DEMOGRAPHIC INFORMATION

Data for these analyses were obtained primarily from information supplied by school district personnel through the DRC Student Precode System, a multi-phase process by which student data may be imported, verified, corrected, and updated. Some data such as accommodation information is marked directly on the student answer document at the time the PSSA is administered.

DEMOGRAPHIC CHARACTERISTICS

Frequency data for each category is presented in Table 9-3. Percentages are based on all students with a score in reading or mathematics as shown at the bottom of the table.

Table 9-3. Demographic Characteristics of 2006 PSSA

Demographic or Educational Characteristic	Grade 4		Grade 6		Grade 7	
	Number	Percent	Number	Percent	Number	Percent
Gender						
Female	63,097	48.5	67,062	48.4	69,545	48.4
Male	66,714	51.3	71,078	51.3	73,699	51.3
Race/Ethnicity						
American Indian or Alaskan Native	173	0.1	172	0.1	202	0.1
Asian or Pacific Islander	3,482	2.7	3,410	2.5	3,319	2.3
Black/African American non-Hispanic	20,213	15.5	22,482	16.2	22,833	15.9
Latino/Hispanic	8,802	6.8	9,015	6.5	9,039	6.3
White non-Hispanic	96,164	73.9	102,264	73.9	107,101	74.5
Multi-Racial/Ethnic	909	0.7	701	0.5	661	0.5
Educational Category and Other Demographic Groups						
IEP (not gifted)	19,997	15.4	21,288	15.4	21,602	15.0
Student exited IEP in last 2 years	798	0.6	742	0.5	534	0.4
Gifted and has an IEP	5,410	4.2	7,575	5.5	8,355	5.8
504 Plan / Chapter 15	983	0.8	1,099	0.8	1,130	0.8
Title I	40,798	31.4	34,399	24.9	29,401	20.5
Title III (3 categories below)						
Served	2,347	1.8	1,881	1.4	1,796	1.3
Not Served	7,809	6.0	8,708	6.3	8,872	6.2
Formerly served (2 yr monitoring)	670	0.5	625	0.5	575	0.4
Migrant Student	392	0.3	398	0.3	373	0.3
LEP (not 1st year of enrollment)	3,281	2.5	2,676	1.9	2,448	1.7
LEP in 1st year of enrollment	494	0.4	488	0.4	524	0.4
Exited ESL/bilingual program within last 2 years	1,056	0.8	969	0.7	885	0.6
Foreign Exchange Student	12	0.0	10	0.0	13	0.0
Economically Disadvantaged	47,528	36.5	49,666	35.9	49,780	34.6
Hurricane Katrina displacement	14	0.0	9	0.0	25	0.0
Enrollment						
Current Enrollment in school of residence after Oct 1, 2005	5,673	4.4	5,567	4.0	5,641	3.9
Current Enrollment in district of residence after Oct 1, 2005	3,785	2.9	3,930	2.8	4,097	2.9
Current Enrollment as PA resident after Oct 1, 2005	1,407	1.1	1,456	1.1	1,514	1.1
Current Enrollment in district of residence after Oct 1, 2003	19,106	14.7	19,208	13.9	18,996	13.2
Enrolled in district of residence after Oct 1, 2002 but before Oct 1, 2003	6,236	4.8	5,664	4.1	5,605	3.9
Homeless as defined by McKinney-Vento Act	167	0.1	168	0.1	147	0.1
Number Scored	130,101		138,424		143,679	

EDUCATION IN NON-TRADITIONAL SETTINGS

For each category the number and percent are presented for all students with a score in reading or mathematics. Table 9-4 reveals an incidence of less than one percent for the majority of these settings. Also shown are home schooled students assessed by parental request.

Table 9-4. Participation in 2006 PSSA by Students in Non-Traditional Settings

Non-Traditional Educational Settings	Grade 4		Grade 6		Grade 7	
	Number	Percent	Number	Percent	Number	Percent
Court / agency placed	135	0.1	259	0.2	416	0.3
Homebound instruction	2	0.0	3	0.0	5	0.0
Special education student placed in program outside the district of residence	44	0.0	93	0.1	98	0.1
Special education student placed in program located in one building/site within the district of residence	358	0.3	188	0.1	89	0.1
Student placed in Approved Public Alternative Education Program	108	0.1	192	0.1	189	0.1
Special education student placed in Approved Public Alternative Education Program	6	0.0	28	0.0	41	0.0
Student placed in Approved Private School (APS)	108	0.1	182	0.1	184	0.1
Student attends an intermediate unit (IU) program/classroom	249	0.2	301	0.2	332	0.2
Home schooled student assessed by parental request	47	0.0	57	0.0	70	0.0

PRIMARY DISABILITY OF IEP STUDENTS ASSESSED ON THE PSSA

School personnel supplied the primary disability information for those students who had an IEP (not gifted) through the DRC Student Precode System. Beginning with 2006, the disability categories are presented in a sequence that matches a Department of Education numbering system and two previously separate categories were combined. In Table 9-5, for each disability category, the number and percent are presented for all students with a score in reading or mathematics who were coded with a disability. For example, if 20,000 students statewide had a coded disability and 10,000 students were classified as having a specific learning disability, the table entries will show 10,000 followed by 50%. Uniformly, specific learning disability is the category with the highest incidence of occurrence. The last row of Table 9-5 presents the percent of all assessed students who have a coded primary disability.

Table 9-5. Incidence of Primary Disabilities among IEP Students Assessed on the 2006 PSSA

Primary Disability of Students Having an IEP	Grade 4		Grade 6		Grade 7	
	Number	Percent	Number	Percent	Number	Percent
Traumatic Brain Injury	27	.1	51	0.3	27	0.1
Hearing Impairment incl. Deafness	155	0.8	176	0.9	166	0.8
Specific Learning Disability	9,981	54.4	12,993	66.6	13,830	70.4
Mental Retardation	676	3.7	943	4.8	1,015	5.2
Orthopedic Impairment	50	0.3	38	0.2	43	0.2
Emotional Disturbance	1,096	6.0	1,640	8.4	1,768	9.0
Speech or Language Impairment	4,872	26.5	2,205	11.3	1,349	6.9
Visual Impairment incl. Blindness	68	0.4	56	0.3	49	0.2
Deaf/Blind	4	0.0	3	0.0	14	0.1
Multiple Disabilities	74	0.4	104	0.5	86	0.4
Autism	424	2.3	354	1.8	295	1.5
Other Health Impairment	936	5.1	947	4.8	994	5.1
Number Scored with a Coded Primary Disability	18,363	100	19,510	100	19,636	100
Percent of Total Assessed Students with a Coded Disability		14.1		14.1		13.7

TEST ACCOMMODATIONS PROVIDED

School personnel supplied information regarding accommodations of various types that a student may have received while taking the PSSA. These included changes in test environment, modified test formats, and special arrangements and assistive devices. The frequency with which these accommodations were utilized is summarized in Tables 9-6, 9-7, and 9-8. The values in the table are based on all students with a score in reading or mathematics. Please note that a glossary of accommodation terms as applied to the PSSA is provided in Table 9-11 at the end of this chapter.

CHANGES IN TEST ENVIRONMENT

There were seven categories of test environment changes on the 2006 PSSA. As depicted in Table 9-6, the most common accommodations were small group testing, testing in a separate room, scheduled extended time and requested extended time.

Table 9-6. Incidence of Changes in Test Environment on the 2006 PSSA

Type of Change in Test Environment	Grade 4		Grade 6		Grade 7	
	Number	Percent	Number	Percent	Number	Percent
Scheduled Extended Time	10,221	7.9	8,543	6.2	7,148	5.0
Requested Extended Time	4,234	3.3	5,751	4.2	6,980	4.9
Separate Room	11,787	9.1	8,831	6.4	6,924	4.8
Hospital/Home Testing	34	0.0	46	0.0	48	0.0
Multiple Test Sessions	2,613	2.0	1,907	1.4	1,795	1.2
Small Group Testing	14,295	11.0	12,258	8.9	11,478	8.0
Other	396	0.3	245	0.2	227	0.2

MODIFIED TEST FORMATS

There were seven categories of test format modifications in the 2006 PSSA. As depicted in Table 9-7, the actual frequencies are quite low, generally representing less than a tenth of one percent of assessed students statewide. The largest frequency occurred for the use of the Spanish mathematics version utilized for LEP students whose first language is Spanish and who have been enrolled in U.S. schools for fewer than three years (see *2006 Accommodations Guidelines,* PDE, 2005, December, page 16). Also see Chapter 6 of the present technical report under the heading "Special Forms Used in the 2006 PSSA" for a description of the Spanish version of the PSSA mathematics sections.

Table 9-7. Incidence of Test Format Modifications on the 2006 PSSA

Type of Test Format Modification	Grade 4		Grade 6		Grade 7	
	Number	Percent	Number	Percent	Number	Percent
Braille Edition	11	0.0	13	0.0	13	0.0
Large Print Edition	94	0.1	86	0.1	75	0.1
Word Processor	13	0.0	38	0.0	9	0.0
Spanish Math Version	312	0.2	463	0.3	570	0.4
Signed Version	11	0.0	6	0.0	15	0.0
Audiotape	0	0.0	6	0.0	5	0.0
Other	23	0.0	68	0.0	50	0.0

SPECIAL ARRANGEMENTS/ASSISTIVE DEVICES

On the 2006 PSSA, there were twelve possible categories of accommodations in the form of special arrangements or assistive devices. The frequency with which these accommodations were utilized is summarized in Table 9-8. At all grade levels the largest frequency corresponded to the accommodation in which the test administrator read the mathematics test aloud to the student, although this tendency diminished from lower to higher grade levels. Frequencies of other accommodations are quite low, generally representing less than four-tenths of one percent of assessed students statewide.

Table 9-8. Incidence of Special Arrangements/Assistive Devices on the 2006 PSSA

Type of Arrangement or Assistive Device	Grade 4		Grade 6		Grade 7	
	Number	Percent	Number	Percent	Number	Percent
Braille Writer	6	0.0	7	0.0	7	0.0
Test Administrator transcribed illegible writing	550	0.4	255	0.2	148	0.1
Dictation to test administrator	795	0.6	251	0.2	161	0.1
Interpreter signed directions	36	0.0	43	0.0	40	0.1
Magnification device	16	0.0	11	0.0	20	0.0
Test administrator read math test aloud	8,958	6.9	5,572	4.0	2,881	2.0
Test administrator marked test at student direction (MC only)	524	0.4	231	0.2	119	0.1
Typewriter, word processor or computer	44	0.0	65	0.0	66	0.0
Qualified interpreter for LEP student	396	0.3	211	0.2	241	0.2
Translation dictionary for LEP student	195	0.1	251	0.2	337	0.2
Cranmer Abacus	1	0.0	3	0.0	3	0.0
Other	303	0.2	243	0.2	324	0.2

THE INCIDENCE OF ACCOMMODATIONS AND IEP AND LEP STATUS

It is reasonable to expect that students with an IEP would receive the majority of accommodations; however, certain accommodations are specific to particular disabilities or to students classified as limited English proficient (LEP). A cross-tabulation between each of the accommodations and IEP and LEP status revealed a much greater incidence for the categorical students. This is most clearly depicted in the frequently occurring accommodations. To illustrate, several of these results were selected for display in Table 9-9.

For the IEP analysis, the column headings refer to students classified as IEP (IEP) and non-IEP (NIEP). In each instance there is a considerably larger percent of IEP students receiving the accommodation than NIEP students. There is a general tendency to observe a decrease in the percentage of IEP and NIEP students receiving these accommodations in the progression from lower to higher grade levels.

The analysis for students with limited English proficiency was based on the formation of a new variable by combining two separate items dealing with a student's LEP status. The two items differentiated between those LEP students who were in their first year of enrollment in U.S. schools and those who were not. The constructed variable, labeled LEPC in Table 9-9, was assigned a value of one if either of the two items was marked and was zero otherwise. Non-LEP is labeled as NLEPC. The accommodations most frequently received by LEPC students are presented. In each instance there is a considerably larger percent of LEPC students receiving the

accommodation than NLEPC students. There was a decrease in the percentage of LEPC students receiving these accommodations in the progression from lower to higher grade levels, including reading the mathematics test to the student. An exception occurred with the increased use of a translation dictionary across grade levels.

Table 9-9. Percent of IEP and LEP Students Receiving Selected Accommodations

	Grade 4		Grade 6		Grade 7	
Accommodation Received	**IEP**	**NIEP**	**IEP**	**NIEP**	**IEP**	**NIEP**
Scheduled extended time	33.7	3.2	28.9	2.0	23.3	1.7
Test in separate room	40.6	3.3	32.7	1.6	25.8	1.1
Test in small group setting	50.4	3.8	46.8	2.0	44.4	1.5
Accommodation Received	**LEPC**	**NLEPC**	**LEPC**	**NLEPC**	**LEPC**	**NLEPC**
Test administrator read math test aloud	21.7	6.4	7.3	3.9	5.1	1.9
Translation dictionary	4.5	0.0	7.5	0.0	10.9	0.0
Scheduled extended time	27.2	7.3	16.4	5.9	18.9	4.7
Test in small group setting	34.6	10.3	20.6	8.6	21.0	7.7

THE INCIDENCE OF ACCOMMODATIONS AND PRIMARY DISABILITY CLASSIFICATION

To further delineate the use of commonly employed accommodations, a grade level breakdown by major primary disability is presented in Table 9-10. A selection was made based on the more frequently occurring categories of disability and accommodations rather than displaying data for all of them. As may be seen from a perusal of Tables 9-6, 9-7, and 9-8, the accommodations with the larger frequencies are those that involve a change in test environment or that necessitate special arrangements. Selected for incorporation in Table 9-10 are the five test environment accommodations with frequencies in excess of 1,000 at all grade levels and the four special arrangement accommodations with the largest frequencies at Grade 4. Accommodations concerned with test format modifications tended to be highly specific to particular and infrequent disability categories or to students classified as limited English proficient (LEP) and were not included in Table 9-10. Seven Primary Disability categories were selected that had a minimum of 100 students so classified at each grade level.

The entries for Table 9-10 represent the number and percent of students with a particular disability (columns) who received the listed accommodation (rows). For example, if 200 students out of 500 classified with a particular disability received scheduled extended time, the table entries will show 200 followed by 40%.

The most prominent and consistent findings from Table 9-10 are (1) the heavy use of scheduled extended time, a separate room, and small group settings for all disability categories except speech and language impairment and that (2) in each instance the percent of 4th grade students receiving these three accommodations exceeded that of 6th and 7th grade students by about 10 to 20 percent.

Table 9-10. Incidence of Test Accommodations Received for Selected Primary Disability Classifications on the 2006 PSSA

		Primary Disability of Assessed Student with an IEP: Number and Percent													
Type of Accommodation Received	Grade Level	Autism		Emotional Disturbance		Deafness / Hearing Impairment		Mental Retardation		Other Health Impairment		Specific Learning Disability		Speech or Language Impairment	
Scheduled extended time	4	164	39%	467	43%	47	30%	295	44%	360	38%	4200	42%	309	6%
	6	112	32%	506	31%	42	24%	349	37%	268	28%	3902	30%	120	5%
	7	79	27%	463	26%	35	21%	299	30%	199	20%	3102	22%	54	4%
Student-requested extended time	4	23	5%	78	7%	4	3%	40	6%	49	5%	590	6%	171	4%
	6	33	9%	123	8%	16	9%	55	6%	76	8%	1094	8%	86	4%
	7	26	9%	146	8%	12	7%	93	9%	87	9%	1152	8%	55	4%
Separate room	4	245	58%	466	43%	44	28%	349	52%	500	53%	5254	53%	412	8%
	6	127	36%	454	28%	33	19%	338	36%	364	38%	4843	37%	134	6%
	7	100	34%	461	26%	19	11%	308	30%	283	28%	3790	27%	53	4%
Multiple test sessions	4	73	17%	183	17%	5	3%	112	17%	100	11%	1227	12%	69	1%
	6	34	10%	181	11%	4	2%	84	9%	51	5%	808	6%	23	1%
	7	23	8%	153	9%	3	2%	87	9%	35	4%	620	4%	14	1%
Small group testing	4	261	62%	610	56%	62	40%	436	64%	603	64%	6448	65%	485	10%
	6	169	48%	767	47%	56	32%	496	53%	509	54%	6608	51%	183	8%
	7	161	55%	824	47%	41	25%	501	49%	454	46%	6304	46%	110	8%
Dictation to test administrator	4	40	9%	51	5%	4	3%	37	6%	47	5%	415	4%	23	0%
	6	11	3%	12	1%	1	1%	12	1%	15	2%	135	1%	4	0%
	7	6	2%	14	1%	4	2%	4	0%	13	1%	73	0%	1	0%
Test admin. marked test at student direction	4	38	9%	29	3%	0	0%	22	3%	32	3%	281	3%	12	0%
	6	8	2%	15	1%	1	1%	13	1%	16	2%	104	1%	3	0%
	7	10	3%	6	0%	0	0%	6	1%	10	1%	40	0%	1	0%
Test admin. read math test aloud	4	189	45%	392	36%	36	23%	343	51%	414	44%	4764	48%	231	5%
	6	62	18%	298	18%	17	10%	333	35%	231	24%	3338	26%	67	3%
	7	39	13%	169	10%	10	6%	214	21%	108	11%	1731	12%	29	2%
Test admin. transcribed illegible writing	4	24	6%	23	2%	1	1%	17	2%	35	4%	270	3%	20	0%
	6	10	3%	12	1%	0	0%	12	1%	12	1%	125	1%	9	0%
	7	8	3%	6	0%	0	0%	3	0%	10	1%	61	0%	1	0%

Note: Results displayed are for most frequently occurring accommodations and disability classifications

GLOSSARY OF ACCOMMODATIONS TERMS

Table 9-11 provides a description of accommodations terms as used in the PSSA. School personnel identified the accommodations that a student received by marking a bubble in the student answer document as seen in the left column. The right column contains an explanation from the *2006 Accommodations Guidelines* (PDE, 2005, December, pages 4-14).

Table 9-11. Glossary of Accommodations Terms as Applied in the PSSA

Type of Testing Accommodation	Explanation
Student was given the following changes in test environment *(mark all that apply)*	
Scheduled extended time	Extended time may be allotted for each section of the test to enable students to finish.
Student-requested extended time	A student may request extended time if working productively.
Tested in a separate room	A separate room may be used to reduce distraction.
Hospital/home testing	A student who is confined to a hospital or to home during the testing window may be tested in that environment.
Multiple test sessions	Multiple test sessions may be scheduled for the completion of each test section; however, a test section must be completed within one school day.
Small group testing	Some students may require a test setting with fewer students or a setting apart from all other students.
Other	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Questions may be directed to PDE.
Student used the following modified test format(s) *(mark all that apply)*	
Braille edition	Students may use a Braille edition of the test. Answers must then be transcribed into the answer booklet without alteration.
Large print edition	Students with visual impairments may use a large print edition. Answers must then be transcribed into the answer booklet without alteration.
Word processor	Students with an identified need may use a word processor or a typewriter. Answers must then be transcribed into the answer booklet without alteration.
Spanish mathematics version	This version may be taken by students whose first language is Spanish and who have been enrolled in U.S. schools for fewer than 3 years.
Signed version	Qualified interpreters may sign directions for all assessments. Mathematics questions may be signed. On the writing assessment only the writing prompt may be signed. Signing the passage and/or questions on the reading test is not permitted.

Audiotape	Students may respond to the mathematics and reading test on an audiotape, which must then be transcribed into the answer booklet without alteration.
Other	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Questions may be directed to PDE.
Student used the following special arrangements / assistive devices *(mark all that apply)*	
Braille writer *(with no thesaurus, spell- or grammar checker)*	Students using this device as part of their regular program may use it on the PSSA.
Cranmer Abacus	An adaptive calculator or a Cranmer Abacus may be used for the calculator portion of the test only.
Dictation to a test administrator	Students who are unable to use a pencil or have illegible handwriting may answer questions orally. Answers must be recorded in the answer booklet without alteration during the testing period.
Interpreter signed directions	Deaf/hearing impaired students may receive test directions from a qualified interpreter.
Magnification devices	Devices to magnify print may be used for students with visual impairments.
Test administrator read math test aloud	Mathematics test questions may be read aloud; however, words may not be defined.
Test administrator marked test at student's direction *(rewrote answers into answer booklet verbatim due to student's poor penmanship)*	A test administrator may mark an answer booklet at the direction of a student. (e.g., a student may point to a multiple-choice answer with the test administrator marking the response in the answer booklet).
Typewriter, word processor or computer *(with thesaurus, spell- or grammar-checker turned off)*	An allowable accommodation as a typing function only for students with identified need. Supports such as dictionaries, thesauri, spell checkers and grammar checkers must be turned off.
Translation dictionary for LEP student	A word-to-word dictionary that translates native language to English (or vice versa) but not word definitions or pictures is allowed on any portion of the mathematics test and open-ended section of the reading test (but not for the reading passage or multiple-choice items).
Qualified interpreter for LEP student	An interpreter may translate directions or clarify instructions for the assessments. They may translate, but not define specific words or test questions on the mathematics test. On the reading test interpreters may only translate directions and may not translate or define words in the passage or test questions.
Other	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Questions may be directed to PDE.

Chapter Ten: Form Analysis and Item Calibration

TEST FORM STATISTICS

Table 10-1 contains an overview of the form-level data based on the complete set of common items in each subject area. Test length in total number of points (L), mean number of points received (P), standard deviations (SD), test reliabilities (R), and traditional standard errors of measurement (SEM) are shown by grade and content area. These statistics are based on the total test using both multiple-choice and open-ended tasks for the common sections of each form. For each grade level, the common Reading section is comprised of 40 MC items and four (3-point) CR items for a maximum of 52 points. Mathematics is comprised of 54 MC items and three (4-point) CR items for a maximum of 66 points. Detailed item-level statistics for the common items can be found in Appendices T through EE.

Test reliability refers to the expected consistency of test scores. As indicated below, the reliability coefficient expresses the consistency of test scores as the ratio of true score variance to total score variance (true score variance plus error variance). If all test score variance were true, the index would equal 1.0. Conversely, the index will be 0.0 if none of the test score variance were true. Clearly, a larger coefficient is better as it indicates the test scores are influenced less by random sources of error.

$$R = \frac{\sigma_T^2}{\sigma_T^2 + \sigma_e^2} = \frac{\sigma_O^2 - \sigma_e^2}{\sigma_O^2}$$

Although a number of reliability indices exist, a frequently reported index for achievement tests is Coefficient Alpha. Consequently, this index is the one reported for the PSSA's. Alpha indicates the internal consistency over the responses to a set of items measuring an underlying trait, in this case Reading and Mathematics achievement. From this perspective, Alpha can be thought of as the correlation between scores if the students could be tested twice with the same instrument without the second testing being affected by the first. It can also be conceptualized as the extent to which an exchangeable set of items from the same domain would result in similar ordering of students.

While sensitive to random errors associated with content sampling variability, the index is not sensitive to other types of errors that can affect test scores, such as temporal stability or variability in performance that might occur across testing occasions. It is also not sensitive to rater error. Consequently, this index might be positively biased by these factors. In other words, because it is not sensitive to other sources of random error, it is often considered an "upper bound" estimate of reliability. On the other hand, there are also factors that might negatively bias this estimate. These include tests that are comprised of mixed item types (e.g., multiple choice and constructed response items) and tests that include strata (sub-domains) that are homogeneous enough for the average covariance within strata to exceed the average covariance between strata. Although both are potential influences for the PSSA's, the reliabilities reported in Table 10.1 are all above 0.90, indicating highly consistent test scores for these instruments.

The reliability coefficient is a "unitless" index, which can be compared from test to test. The *standard error of measurement (SEM)* is another indicator of precision. If everyone being tested had the same *true score*[2], there would still be some variation in observed scores due to

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

imperfections in the measurement process, such as random differences in attention during instruction or concentration during testing. The standard error is defined as the *standard deviation*[3] of the distribution of observed scores for students with identical true scores. Because the SEM is an index of the random variability in test scores in actual score units, it represents important information for test score users.

Generally speaking, reliabilities go up with an increase in test length and population heterogeneity and go down with shorter tests and more homogeneous populations.

Table 10-1. 2006 Summary of Common Item Performances

	Reading					Mathematics				
Grade	L	P	SD	R	SEM	L	P	SD	R	SEM
4	52	33.0	10.0	0.90	3.2	66	45.0	12.7	0.92	3.6
6	52	32.9	9.3	0.90	2.9	66	42.3	13.1	0.92	3.7
7	52	33.1	9.8	0.90	3.1	66	39.7	13.4	0.92	3.8

The standard deviation shown in the table is the standard deviation 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 $\hat{\sigma}_T = \sqrt{\sigma_x^2 - \sigma_x^2(1-\rho_{xx})}$. As an example, for grade 4 mathematics, this would be $\sqrt{12.7^2 - 3.6^2} = 12.18$. The reliability can also be computed from these data. Again, using grade 4 mathematics as an example, $R = \frac{12.7^2 - 3.6^2}{12.7^2} = .92$

The conditional standard error of measurement (CSEM) also indicates the degree of measurement error in score units, however, does so as a function of one's actual test 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. The CSEMs for Reading and Mathematics are documented in Appendix FF in the column labled "Scale Score SE."

TRADITIONAL ITEM STATISTICS

Although all items were previously reviewed for both content and statistical quality, a thorough item analysis was conducted in the spring to ensure that the items and forms performed as expected. With any psychometric model, an item analysis is a search for unexpected results. For example, *more able* [4] students are expected to pass easy items and *less able* students are expected to fail difficult items. If either of these situations does not occur, the item should be reviewed to determine the nature of the problem and the characteristics of the students affected.

The most familiar indices of item performance are *proportion correct* (P-Value) and item discrimination. Discrimination for dichotomous items is typically represented by the *point-*

[3] The standard deviation of a distribution is a measure of the dispersion of the observations. For the normal distribution about 16% of the observations are more than one standard deviation above the mean and the same percentage are more than one standard deviation below the mean. Using the data in table 10.1, about 68% of students with true scores of 70 for grade 4 math will have observed scores between 66 and 74.

[4] Following the Rasch literature, *ability* is used in this discussion as a generic term for the construct that is being measured by the exam. *Competence, achievement, learning* and *status* are among the alternatives that are sometimes used, but are all subject to some degree of misinterpretation.

biserial correlation coefficient. The correlation will have a positive value when the mean score of the students answering correctly is higher than the mean score of the students answering incorrectly. This indicates that students who did well on the total test tended to do well on this item. The index will take its maximum theoretical value of 1.0 if *every* student who answered the item correctly scored better on the test than *any* student who answered incorrectly[5].

The P-Value is a subtler indicator of item quality. If there is a *more able* way to miss an item, the item will appear more difficult than expected. Conversely, if there is a *less able* way to pass the item, it may appear surprisingly easy.

In some cases (see Appendices N, O, P, Q, R, S, Z, AA, BB, CC, DD, and EE) means for CR items were transformed to the P-value metric. These "Pseudo P-values" for constructed response items were obtained by dividing the mean points by the total number of possible points. While the CR P-values are on the same scale as the MC P-values, unlike the MC P-values, they cannot be interpreted as the proportion of students answering the item correctly. Otherwise, the interpretation of CR P-values is fairly consistent with the interpretation of MC P-values, especially with regard to higher values indicating easier items.

Table 10-2 provides some distributional indices for the P-Value and point-biserial correlation (PtBis) for the multiple-choice items on the common form in each grade and content area.

In general, with the mean P-Values in the range of .65 –.70, the PSSA was reasonably challenging to most students. With the average point biserial correlations ranging from .36 to .40, the overall item quality was good. It should be noted that rules of thumb for interpreting these statistics should be flexible relative to the purposes and uses of test scores. An average P-Value around 0.65 (or slightly higher) is considered advantageous for spreading out students. Similarly, point-biserial correlations are often grouped (e.g., above 0.20 being "adequate," above 0.30 being "good," and above 0.40 being "excellent"). However, in the context of a criterion-referenced testing program, the best items for covering content domains and depth-of-knowledge levels do not always fall within these guidelines.

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

Table 10-2. Common Form Statistics by Grade and Content for Multiple-Choice Items

	Reading		Mathematics	
Grade 4	**P-Value**	**PtBis**	**P-Value**	**PtBis**
Average	.66	.38	.70	.39
Minimum	.34	.12	.47	.23
Maximum	.84	.53	.89	.52
Median	.71	.40	.71	.39
	Reading		**Mathematics**	
Grade 6	**P-Value**	**PtBis**	**P-Value**	**PtBis**
Average	.65	.36	.67	.40
Minimum	.37	.11	.37	.20
Maximum	.90	.55	.91	.61
Median	.65	.39	.69	.40
	Reading		**Mathematics**	
Grade 7	**P-Value**	**PtBis**	**P-Value**	**PtBis**
Average	.66	.39	.65	.39
Minimum	.34	.19	.41	.16
Maximum	.89	.54	.82	.55
Median	.67	.41	.66	.41

RASCH ITEM STATISTICS AND EQUATING

WINSTEPS© software implementing the Rasch model was used to obtain estimates of logit difficulties for both dichotomously- and polytomously-scored items. The parameters estimated for polytomous items are the *step difficulties* associated with the Masters Partial Credit model. This software is capable of handling all the item types currently in use with the PSSA. WINSTEPS© version 3.54 was used for all calibrations. See Wright and Masters (1982) and Rasch (1960) for further information about the models used for these analyses.

The Rasch model expresses item difficulty (and student ability) in units referred to as *logits*, rather than in percent correct. 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 and a very easy item might have a logit of –4. However, they have no formal relationship to the normal distribution.

The logit metric has several mathematical advantages over P-Values. It is an interval scale, meaning that two items with logits of zero and one (respectively) are the *same distance* apart as items with logits of +3 and +4. Logits are not dependent on the ability level of the students. For example, a form can have a mean logit of zero, whether the average P-Value of the 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 a common 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 reading test or a high school science test, relate to an arbitrary origin defined by the center of items on that form. The average third grade reading item will have a logit of zero; the average high school science item will have a logit of zero. Logits for both item difficulties and student abilities are placed on the same scale and relate to the same mean item difficulty.

There are any 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 a common block of items. The items on all forms can then be easily adjusted to a single (but still arbitrary) origin by defining the origin as the mean of the **common** items. With this done, the origins for all the forms will be statistically equal. Items that are equally difficult will now have *statistically* equal logit difficulties.

Note that test forms were spiraled within classrooms. In effect, students are administered the exact same set of common items but different field test or matrix sets. As a result, there are cross checks that are made to ensure the calibrations and links are reasonable across forms. The goal of spiraling is to achieve randomly equivalent samples of students across forms with equal standard deviations and arbitrary means. Any differences in performance observed among the groups should be due only to differences in form difficulty. After linking, the mean of the logit abilities should be statistically equal for each sample of students.

Winsteps' Outfit (outlier-sensitive fit) index is sensitive to outliers—e.g., aberrant responses to items with difficulty far from a person's ability—and indicates overfit for imputed responses and underfit for lucky guesses and careless mistakes. Outfit values for items are reported beginning in Appendix H. Here, Outfit is expressed on a standardized metric (*t*), which is more oriented toward statistical significance. Specifically, *t* shows the degree of improbability in the data (i.e., its statistical significance) if the data actually did fit the model. The expected value is 0.0 with values significantly less than 0.0 indicating too much predictability and values significantly greater than 0.0 indicating lack of predictability.

Because of the equivalent samples, the common items should have the same P-Values regardless of which form and sample is being considered. Finally, for all items, both common and matrix, a plot of the relationship between the P-Value and the logit should fall along a single, curved line. Figure 10.1 through 10.6 plot this relationship for common multiple-choice items. The curves are nearly linear in the center, but curve towards asymptotes of one and zero, respectively, on the left and on the right. The graphs show that items with low P-values (indicating a more difficult item that fewer students answered correctly) also showed higher logit difficulty, and items with high P-values had lower logit difficulties (i.e., the two scales are inversely related). The spread of the graph points is indicative of the dispersion of item difficulties in the common items. The dispersion and coordinates of items are very similar across grades for reading (i.e., for all grades in reading a P-Value of .80 corresponded to a logit of about -1.5, and a P-Value of .40 corresponded to a logit of about +1.5). For mathematics, grades 4 and 7 have comparatively less spread across the item difficulty range than grade 6.

Figure 10.1. 2006 Grade 4 Reading Logit Difficulties versus P-Values

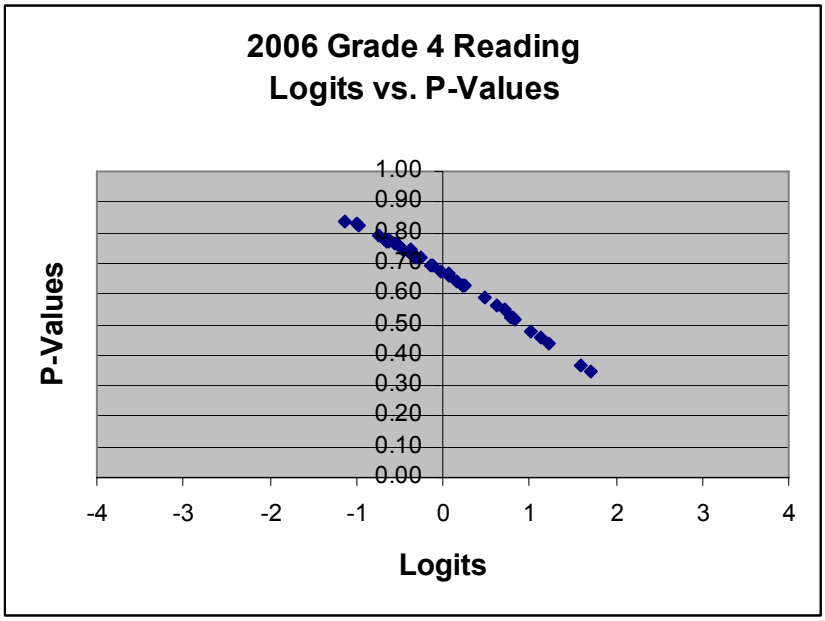


Figure 10.2. 2006 Grade 4 Mathematics Logit Difficulties versus P-Values

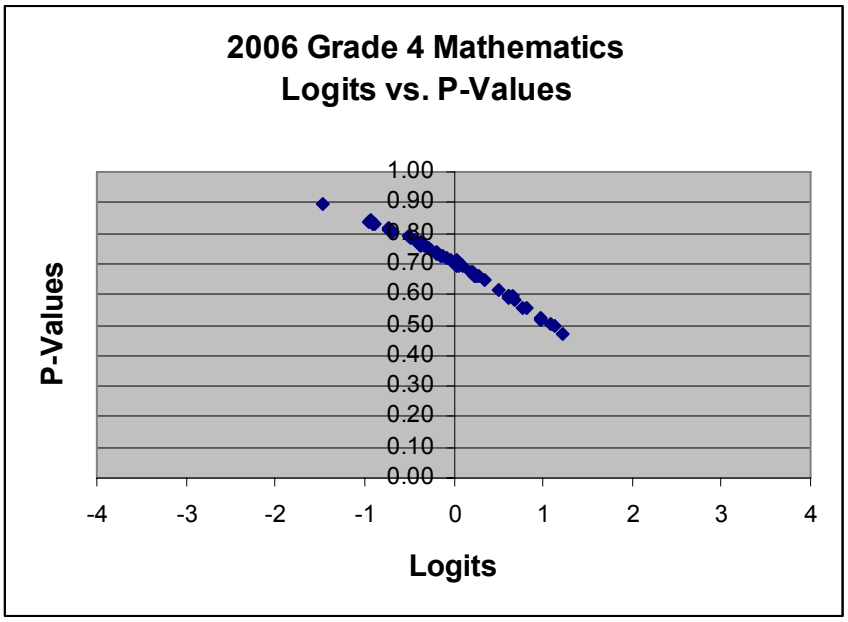


Figure 10.3. 2006 Grade 6 Reading Logit Difficulties versus P-Values

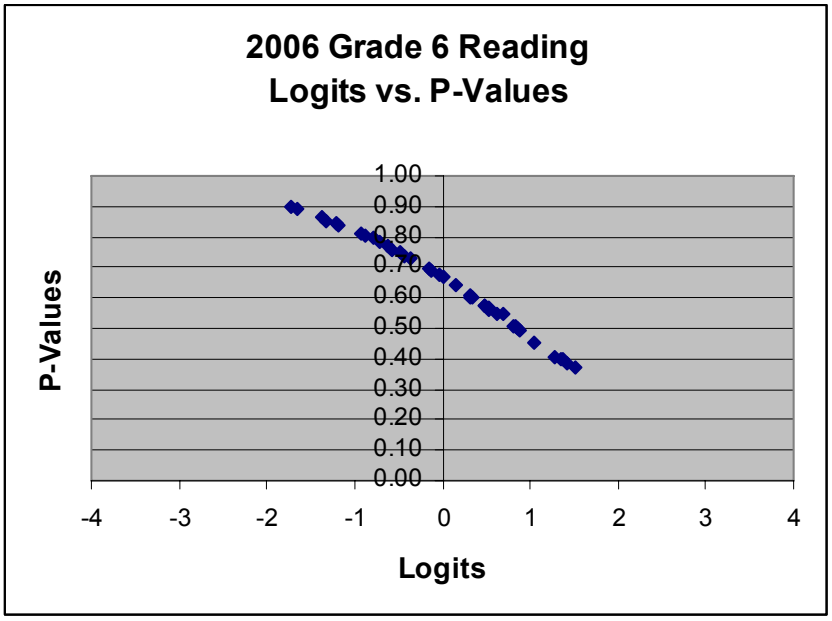


Figure 10.4. 2006 Grade 6 Mathematics Logit Difficulties versus P-Values

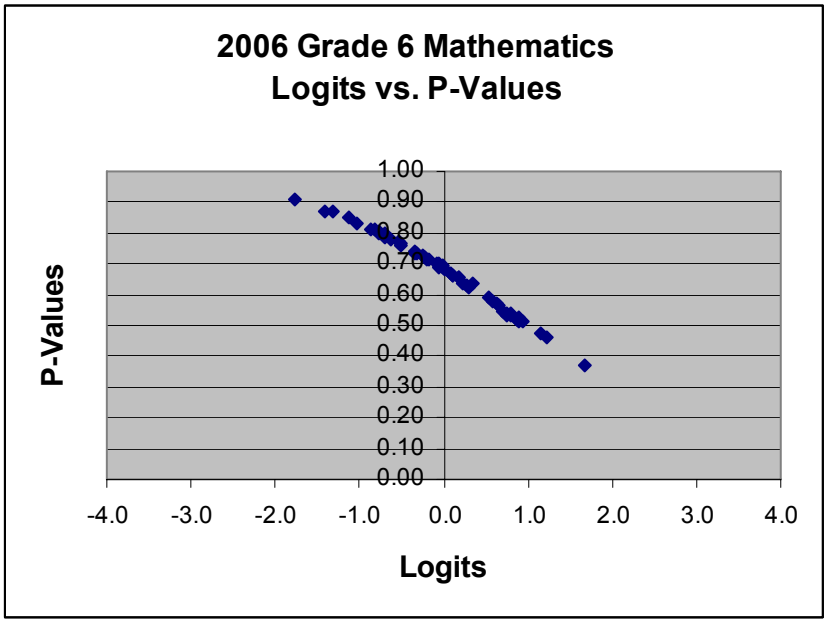


Figure 10.5. 2006 Grade 7 Reading Logit Difficulties versus P-Values

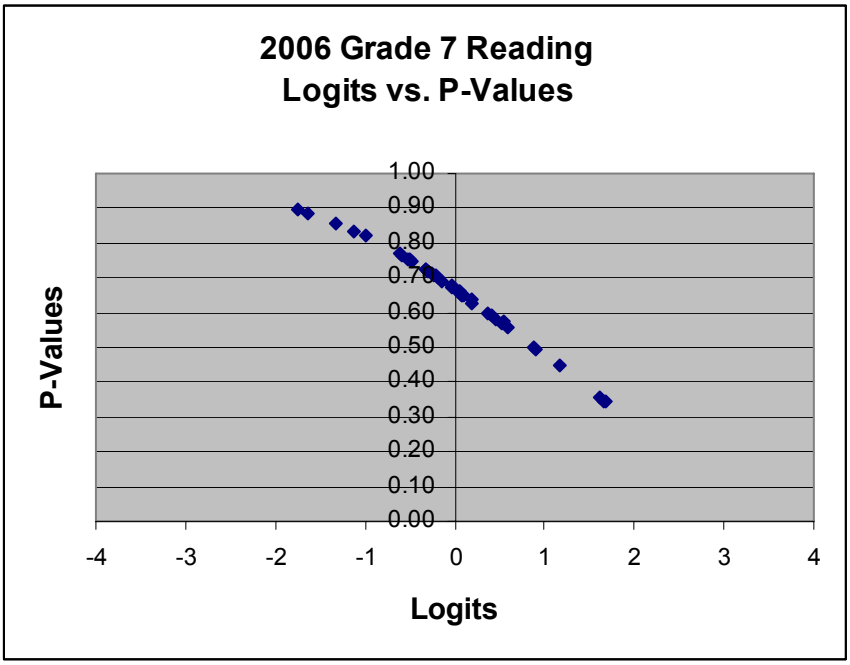
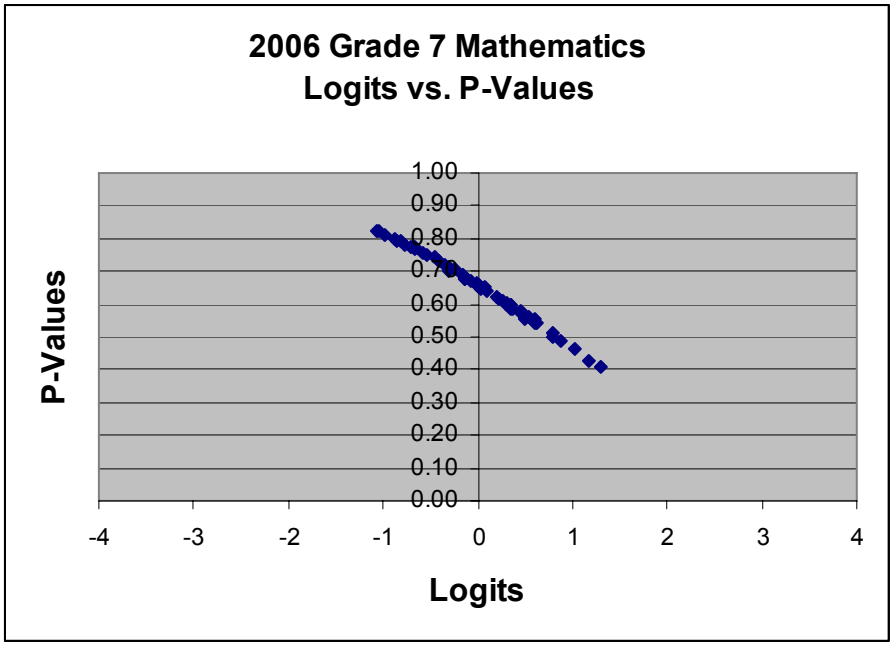


Figure 10.6. 2006 Grade 7 Mathematics Logit Difficulties versus P-Values



Below are the mean P-Values by form for the common multiple-choice items. The extent to which the mean P-values across forms are similar indicates the extent to which the student populations taking each form are of approximately equal ability. This equivalence of ability distributions across forms is the desired outcome of spiraling and allows for optimum analysis of the embedded field-test items.

Table 10-3. 2006 Mean P-Values by Form for Common Multiple-Choice Items

Grade 4 Reading			Grade 4 Mathematics		
Form	Mean P-Value	Std. Dev.	Form	Mean P-Value	Std. Dev.
1[6]	0.655	0.125	1	0.684	0.100
2	0.659	0.129	2	0.691	0.098
3	0.667	0.129	3	0.706	0.102
4	0.665	0.131	4	0.698	0.104
5	0.668	0.128	5	0.700	0.101
6	0.662	0.130	6	0.700	0.101
7	0.667	0.130	7	0.702	0.101
8	0.668	0.129	8	0.701	0.102
9	0.665	0.130	9	0.696	0.100
10	0.668	0.130	10	0.693	0.101
11	0.665	0.130	11	0.698	0.102
12	0.662	0.128	12	0.696	0.100
13	0.666	0.129	13	0.696	0.101
14	0.663	0.129	14	0.697	0.101
15	0.664	0.130	15	0.695	0.098
16	0.663	0.129	16	0.693	0.100
Avg	**0.664**	**0.129**	**Avg**	**0.697**	**0.101**

Grade 6 Reading			Grade 6 Mathematics		
Form	Mean P-Value	Std. Dev.	Form	Mean P-Value	Std. Dev.
1	0.634	0.154	1	0.660	0.116
2	0.646	0.159	2	0.675	0.120
3	0.647	0.160	3	0.675	0.123
4	0.651	0.159	4	0.670	0.122
5	0.651	0.159	5	0.678	0.119
6	0.648	0.157	6	0.673	0.118
7	0.647	0.156	7	0.672	0.119
8	0.650	0.158	8	0.677	0.119
9	0.649	0.158	9	0.675	0.120
10	0.650	0.159	10	0.672	0.120
11	0.651	0.159	11	0.676	0.121
12	0.648	0.158	12	0.672	0.122
13	0.650	0.159	13	0.675	0.121
14	0.651	0.159	14	0.674	0.121
15	0.651	0.159	15	0.674	0.120
16	0.650	0.160	16	0.672	0.122
Avg	**0.648**	**0.158**	**Avg**	**0.673**	**0.120**

[6] For both reading and mathematics in all grades, form 1 was used to generate modified versions (e.g., Large Print and Braille) of the common form; thus, the mean P-Values for these forms are somewhat lower.

Grade 7 Reading			Grade 7 Mathematics		
Form	**Mean P-Value**	**Std. Dev.**	**Form**	**Mean P-Value**	**Std. Dev.**
1[7]	0.636	0.130	1	0.632	0.104
2	0.652	0.135	2	0.652	0.106
3	0.658	0.134	3	0.653	0.105
4	0.658	0.135	4	0.656	0.106
5	0.662	0.133	5	0.654	0.106
6	0.659	0.135	6	0.656	0.104
7	0.658	0.137	7	0.652	0.104
8	0.654	0.136	8	0.655	0.106
9	0.659	0.135	9	0.656	0.106
10	0.660	0.133	10	0.649	0.105
11	0.659	0.136	11	0.651	0.104
12	0.659	0.134	12	0.651	0.106
13	0.658	0.135	13	0.655	0.106
14	0.659	0.133	14	0.652	0.104
15	0.658	0.134	15	0.654	0.104
16	0.661	0.135	16	0.652	0.105
Avg	**0.657**	**0.134**	**Avg**	**0.652**	**0.105**

[7] For both reading and mathematics in all grades, form 1 was used to generate modified versions (e.g., Large Print and Braille) of the common form; thus, the mean P-Values for these forms are somewhat lower.

Chapter Eleven: Linking

Because the Mathematics and Reading tests for grade 4, 6, and 7 were new in 2006, no linking analyses were performed.

Chapter Twelve: Scaled Scores and Performance Levels

Prior to 2000, when the PSSA design was heavily matrix sampling, estimating school-level scaled scores presented some statistical and psychometric challenges. The statistically correct method to compute the school-level scaled score often gave an answer different from what would be obtained by averaging student ability estimates. To avoid this source of misunderstanding, the school-level scores were made to equal the average of the appropriate students. The matrix sampling component of the design, together with items from the common section, was used at the academic standard category level to estimate relative strengths and weaknesses for the school.

The adoption of the Pennsylvania Academic Standards in 1999 brought structural changes to the PSSA that were fully implemented in 2000. Beginning with the new reporting design in 2000, content area total scores for students and for schools were based exclusively on the common sections. Thus, greater emphasis was placed on the common sections possessing optimal balance at the content standard level and yielding reliable estimates of student-level abilities, as indicated by the standard errors. It was then possible to aggregate all scaled scores to the school, district, and state levels without resorting to any complex algorithms, making the results simpler to understand.

Because the original design of the PSSA was intended to produce school-level estimates only, the reporting metric was defined at the school level. For the 1996 base year, the mean of all schools in the *norming* sample was set at 1300 and the standard deviation at 100. The distribution to which these applied was the content area scaled score with all schools weighted equally. Consequently, the expectation in the base year was for state-level means near 1300 and standard deviations near 100. The state mean of student level scaled scores was, in general, somewhat different. This difference occurred because the mean of the school-level scores counted schools equally, regardless of size, while the mean of the student-level scores counted students equally.

A minimum scale score of 700 was implemented for all PSSA reading, mathematics, and writing exams beginning in 2002. This minimum is applied to all the PSSA scales. Although it affects very few students, many administrators believed that their schools were being penalized by the presence of extremely low scoring special needs students who took the regular assessment. The change was made to reduce the impact of these students on the overall school score. Note that there is no maximum scale score or upper bound.

Table 12-1 gives the linear transformations that were used to convert 2006 logits (X) into the scaled scores. These translation constants included the adjustments to equate 2006 to prior years as well as the rescaling needed to convert to the appropriate metric. These transformations are used for all scaled score calculations.

Table 12-1: Transformation to Scaled Scores

Grade	Reading	Mathematics
4	200X + 1156.3	200X + 1183.52
6	200X + 1168.96	200X + 1201.54
7	200X + 1194.4	200X + 1225.28

COMMON ITEMS AND MATRIX SAMPLED ITEMS

Beginning with the design changes implemented for the 2000 PSSA, student-level scores were based on the common items only. This ensures that any decision made about students will be done in the most equitable manner. School-level scaled scores for the content areas are based on the mean of the student-level scaled scores. This ensures that the scaled scores used for school accountability directly reflect the student-level results. It is a simple matter to aggregate up to the school, district, and state levels.

For the purpose of providing school-level results at the content standard (academic standards category) level, all items on all matrix forms plus the common items are utilized. This ensures that decisions about potential school-level strengths and weaknesses are based on broad sampling of the curriculum.

SCALED SCORES FOR CONTENT STANDARDS

As of 2003, school-level scaled scores are no longer reported for the academic content standards (academic standards categories). Instead, school results are presented as the percent of total points achieved as compared to district and state level results.

INTERPRETING SCALED SCORES AND PERFORMANCE LEVELS

A *Scaled Score*, in the simplest sense, is a transformed number correct score[8]. When all students take the same items, as in the common sections of the PSSA, the more points the student earns, the higher the associated scaled score. The value of switching to the more abstract scaled score metric lies in the achievement of a more general and equitable result.

To illustrate, a raw score of 30 is meaningless unless the reader is also told how many points were possible. The same score has quite different meanings if it is based on a thirty-item test as opposed to a sixty-item test. *Number correct scores are transformed to percent correct scores to remove the effect of test length.* In the same way, a score based on sixty *difficult* items is quite different from the same score based on sixty *easy* items. *Number correct scores are transformed to scaled scores to remove the effects of test length and item difficulty.* As a result, scale scores lend themselves to interpretations at what is referred to as an interval level, while raw scores do not. Interval-level scales allow one to interpret a scale score difference of 5 points the same whether the scores are 1295 vs. 1300 or 1445 vs. 1450. Raw score differences, in this context, cannot be interpreted in this manner and are thus neither generalizable nor equatable.

The PSSA scaled score metric was originally anchored to the *mean school level scaled score* for a base year and arbitrarily labeled as 1300. In the base year, the standard deviation of the school-level scaled scores was set to a value of 100. If school scores are approximately normally distributed, a scaled score of 1400, one standard deviation above the base year mean, means the school did better than about 5/6 of the schools in the base year. About two thirds of the schools will have scaled scores between 1200 and 1400. About 16% of the schools will be below 1200. Scaled scores of 1000 and 1600 are three standard deviations from the mean and so are extreme scores.

These labels of 1300, 1200, etc. are completely arbitrary; they could have been called zero and one, or 100 and 110, or any other ordered pair without affecting any of the relationships among

[8] This is done in two steps. First, there is a nonlinear transformation that converts number correct scores to logits, and then a linear transformation to convert logits to scaled scores.

schools, years, students, or items. Changing the scale would simply be changing the labels on the axis of a graph without moving any of the points.

Setting the mean at 1300 and the standard deviation at 100 was originally done so as to not produce negative scores and so that scores on the PSSA would not be confused with the results from any other testing program. Like the temperature scales of Fahrenheit and Celsius, the new scale will acquire meaning to users only with experience.

A scaled score of 1300, or any other value, should have the same absolute meaning in the current year as it had in previous years, when properly equated across years. A school with a scaled score above 1300 performed better than did the average school in the base year.

More importantly, an increase in the scaled score from last year to the current year means the students' performance has improved; it does not say anything about whether the exam is easier or harder. 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.

Raw to scale score tables for the 2006 Spring assessment can be found in Appendix FF.

PSSA PERFORMANCE LEVELS FOR READING AND MATHEMATICS

Performance levels are another way to attach meaning to the scaled score metric. They 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 current performance level descriptors, as developed by PDE and teacher panels, are given below.

- **Advanced:** The Advanced Level reflects superior academic performance. Advanced work indicates an in-depth understanding and exemplary display of the skills included in the Pennsylvania Academic Content Standards.

- **Proficient:** The Proficient Level reflects satisfactory academic performance. Proficient work indicates a solid understanding and adequate display of the skills included in the Pennsylvania Academic Content Standards.

- **Basic:** The Basic Level reflects marginal academic performance. Basic work indicates a partial understanding and limited display of the skills included in the Pennsylvania Academic Content Standards. This work is approaching satisfactory performance, but has not been reached. There is a need for additional instructional opportunities and/or increased student academic commitment to achieve the Proficient Level.

- **Below Basic:** The Below Basic Level reflects inadequate academic performance. Below Basic work indicates little understanding and minimal display of the skills included in the Pennsylvania Academic Content Standards. There is a major need for additional instructional opportunities and/or increased student academic commitment to achieve the Proficient Level.

The quantitative definition of the performance levels, established through the Performance Levels Validation process, is shown in Chapter 14.

Chapter Thirteen: Test Validity and Reliability

CALIBRATION

In order to expedite the analysis process, a sample of students was selected for use in calibrating item difficulties. The sample was aimed to cover roughly 50% of the student population while preserving ethnic representation. This was done using random sampling without replacement at the district level for approximately 85% of the sample and at the school level for Pittsburgh and Philadelphia districts for approximately 15% of the sample based on 2005-2006 enrollment counts.

VALIDITY

As noted in the *Standards for Educational and Psychological Testing*, "validity refers to the degree to which evidence and theory support the interpretation of test scores entailed by the proposed uses of the tests" (AERA, APA, & NCME, 1999, p. 9). Thus, the validity of the PSSA must be judged in relation to its primary purposes as delineated in Chapter 1. Validity evidence related to test content is presented in terms of how the 2005 PSSA assessments were assembled to reflect the state content standards (more information on this, including information about content and bias and sensitivity reviews, is presented in Chapter 3). This section is followed by a summary of item-development procedures, and a presentation of the correlations among strands.

The PDE 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 and Dickinson, 2004) and of statistical relationships of the PSSA, including convergent and discriminant validity (Thacker, Dickinson and Koger, 2004).

ITEM DEVELOPMENT

PDE commissioned Achieve, Inc. to conduct a series of reviews during the period in which PDE was in the process of developing and refining the Assessment Anchor Content Standards (Assessment Anchors) and Eligible Content for reading and mathematics. Through an iterative process of successive refinement in which each version underwent review and modification in accordance with Achieve's recommendations, final documents for reading and mathematics emerged. Similarly, PDE submitted sets of items designed to measure these anchors (see Chapter 2 for additional details). The item development process also benefited from an evaluation of how well test items aligned with the Assessment Anchors and Eligible Content. The reviews conducted by Achieve (2005) focused on:

- Assessment Anchors and Eligible Content for reading and mathematics.
- Alignment of assessments to the Assessment Anchors and Eligible Content and, subsequently, in developing items tailored toward these anchors.

Achieve, Inc. (2005). *Measuring Up 2005: A Report on Assessment Anchors and Tests in* Reading and Mathematics for Pennsylvania.

RELIABILITY

This chapter provides reliability indices and standard errors of measurement (SEM) for the 2006 PSSA assessments. For the Rasch model, raw scores are sufficient statistics for abilities and scale scores; performance levels set on scale scores are identical to those based on raw scores.

RELIABILITY INDICES

The Cronbach's Alpha reliability indices (Cronbach, 1951) were calculated using the traditional formula. Please refer to Chapter 10 for additional information about this reliability index.

Tables 13-1 through 13-6 provide reliability information on the reading and mathematics tests by strand for the total student population and for students in each gender group and the ethnicity groups of White and Black, Hispanic, Asian, and Indian. Other groups such as LEP, IEP, and Economically Disadvantaged were also included for reliability estimation. The contents of the table include total number of points (K), number of students tested (N), mean points received, standard deviation (SD), mean P-Value, reliabilities, traditional standard errors of measurement, and item type.

Across grades and subjects both overall and at the substrand level, reliabilities tended to be slightly higher for male examinees than for female examinees. Also across grades, Mathematics strand A (numbers and operations) tended to show higher reliabilities and the other substrands.

Table 13-1. GRADE 4 READING

Overall

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	129503	33.04	9.95	0.65	0.90	3.12	MC,CR
A) Comprehension and Reading Skills	35	129503	23.48	7.10	0.68	0.87	2.56	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	17	129503	9.57	3.35	0.59	0.72	1.78	MC,CR

By gender

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
Male	52	66397	32.37	10.13	0.64	0.90	3.12	MC,CR
Female	52	62826	33.78	9.70	0.67	0.90	3.10	MC,CR
A) Comprehension and Reading Skills								
Male	35	66397	23.13	7.28	0.67	0.88	2.56	MC,CR
Female	35	62826	23.86	6.89	0.69	0.86	2.55	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction								
Male	17	66397	9.24	3.36	0.58	0.72	1.79	MC,CR
Female	17	62826	9.92	3.31	0.61	0.71	1.77	MC,CR

Table 13-1. GRADE 4 READING CONTINUED

By ethnicity

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
White non-Hispanic	52	95969	34.96	9.06	0.69	0.89	3.04	MC,CR
Black/African-American non-Hispanic	52	20081	26.42	9.86	0.53	0.89	3.31	MC,CR
Latino/Hispanic	52	8604	26.52	10.19	0.53	0.89	3.30	MC,CR
Asian or Pacific Islander	52	3424	35.66	9.49	0.70	0.90	3.04	MC,CR
American Indian or Alaskan Native	52	172	31.40	10.56	0.62	0.91	3.16	MC,CR
Multi-Racial/Ethnic	52	906	31.11	10.03	0.62	0.90	3.20	MC,CR
A) Comprehension and Reading Skills								
White non-Hispanic	35	95969	24.84	6.43	0.72	0.85	2.47	MC,CR
Black/African-American non-Hispanic	35	20081	18.78	7.21	0.55	0.85	2.77	MC,CR
Latino/Hispanic	35	8604	18.87	7.40	0.55	0.86	2.76	MC,CR
Asian or Pacific Islander	35	3424	25.16	6.64	0.72	0.86	2.46	MC,CR
American Indian or Alaskan Native	35	172	22.52	7.35	0.65	0.87	2.61	MC,CR
Multi-Racial/Ethnic	35	906	22.13	7.20	0.64	0.86	2.66	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction								
White non-Hispanic	17	95969	10.12	3.17	0.63	0.69	1.76	MC,CR
Black/African-American non-Hispanic	17	20081	7.65	3.19	0.48	0.68	1.81	MC,CR
Latino/Hispanic	17	8604	7.65	3.30	0.47	0.70	1.81	MC,CR
Asian or Pacific Islander	17	3424	10.50	3.36	0.64	0.72	1.78	MC,CR
American Indian or Alaskan Native	17	172	8.88	3.65	0.56	0.76	1.79	MC,CR
Multi-Racial/Ethnic	17	906	8.97	3.34	0.56	0.72	1.78	MC,CR

Table 13-1. GRADE 4 READING CONTINUED

LEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	277	19.58	9.77	0.39	0.89	3.31	MC,CR
A) Comprehension and Reading Skills	35	277	13.98	7.07	0.41	0.85	2.76	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	17	277	5.60	3.16	0.35	0.66	1.85	MC,CR

IEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	19879	24.50	10.58	0.49	0.90	3.29	MC,CR
A) Comprehension and Reading Skills	35	19879	17.48	7.69	0.51	0.87	2.75	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	17	19879	7.02	3.38	0.44	0.71	1.81	MC,CR

ECO

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	47178	28.15	10.03	0.56	0.89	3.27	MC,CR
A) Comprehension and Reading Skills	35	47178	20.05	7.30	0.58	0.86	2.72	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	17	47178	8.11	3.26	0.50	0.69	1.81	MC,CR

Table 13-2. GRADE 4 MATH

Overall

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	130008	44.96	12.72	0.69	0.92	3.67	MC,CR
A) Numbers and Operations	30	130008	20.43	6.23	0.68	0.84	2.46	MC,CR
B) Measurement	9	130008	5.09	2.27	0.62	0.55	1.52	MC,CR
C) Geometry	9	130008	6.20	1.99	0.69	0.60	1.26	MC,CR
D) Algebra	9	130008	6.90	1.96	0.77	0.68	1.12	MC,CR
E) Data Analysis and Probability	9	130008	6.33	2.22	0.69	0.55	1.48	MC,CR

By gender

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
Male	66	66661	45.46	12.80	0.70	0.92	3.65	MC,CR
Female	66	63058	44.45	12.59	0.69	0.91	3.69	MC,CR
A) Numbers and Operations								
Male	30	66661	20.70	6.24	0.69	0.85	2.43	MC,CR
Female	30	63058	20.16	6.20	0.68	0.84	2.49	MC,CR
B) Measurement								
Male	9	66661	5.33	2.28	0.65	0.56	1.52	MC,CR
Female	9	63058	4.85	2.24	0.60	0.55	1.51	MC,CR
C) Geometry								
Male	9	66661	6.20	2.01	0.69	0.61	1.26	MC,CR
Female	9	63058	6.21	1.96	0.69	0.58	1.26	MC,CR
D) Algebra								
Male	9	66661	6.96	1.95	0.77	0.68	1.10	MC,CR
Female	9	63058	6.85	1.96	0.76	0.67	1.13	MC,CR
E) Data Analysis and Probability								
Male	9	66661	6.28	2.23	0.69	0.56	1.49	MC,CR
Female	9	63058	6.39	2.20	0.69	0.55	1.47	MC,CR

Table 13-2. GRADE 4 MATH CONTINUED

By ethnicity

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
White non-Hispanic	66	96128	47.36	11.54	0.73	0.90	3.56	MC,CR
Black/African-American non-Hispanic	66	20177	36.30	12.75	0.57	0.91	3.91	MC,CR
Latino/Hispanic	66	8786	37.23	13.05	0.58	0.91	3.88	MC,CR
Asian or Pacific Islander	66	3479	50.08	11.59	0.77	0.91	3.43	MC,CR
American Indian or Alaskan Native	66	173	41.97	13.51	0.65	0.92	3.72	MC,CR
Multi-Racial/Ethnic	66	909	41.71	13.44	0.64	0.92	3.77	MC,CR
A) Numbers and Operations								
White non-Hispanic	30	96128	21.50	5.74	0.72	0.83	2.39	MC,CR
Black/African-American non-Hispanic	30	20177	16.59	6.28	0.56	0.83	2.62	MC,CR
Latino/Hispanic	30	8786	16.91	6.43	0.57	0.84	2.60	MC,CR
Asian or Pacific Islander	30	3479	22.88	5.59	0.77	0.84	2.26	MC,CR
American Indian or Alaskan Native	30	173	18.91	6.59	0.63	0.86	2.48	MC,CR
Multi-Racial/Ethnic	30	909	19.01	6.55	0.64	0.85	2.52	MC,CR
B) Measurement								
White non-Hispanic	9	96128	5.47	2.16	0.66	0.51	1.50	MC,CR
Black/African-American non-Hispanic	9	20177	3.73	2.12	0.47	0.52	1.48	MC,CR
Latino/Hispanic	9	8786	3.86	2.14	0.49	0.53	1.46	MC,CR
Asian or Pacific Islander	9	3479	5.81	2.26	0.70	0.55	1.51	MC,CR
American Indian or Alaskan Native	9	173	4.60	2.39	0.56	0.62	1.47	MC,CR
Multi-Racial/Ethnic	9	909	4.68	2.30	0.58	0.57	1.50	MC,CR
C) Geometry								
White non-Hispanic	9	96128	6.48	1.87	0.72	0.56	1.24	MC,CR
Black/African-American non-Hispanic	9	20177	5.21	2.06	0.58	0.56	1.36	MC,CR
Latino/Hispanic	9	8786	5.34	2.12	0.59	0.60	1.34	MC,CR
Asian or Pacific Islander	9	3479	6.84	1.86	0.76	0.60	1.17	MC,CR
American Indian or Alaskan Native	9	173	6.15	2.05	0.68	0.61	1.27	MC,CR
Multi-Racial/Ethnic	9	909	5.73	2.11	0.64	0.62	1.31	MC,CR
D) Algebra								
White non-Hispanic	9	96128	7.19	1.80	0.80	0.65	1.07	MC,CR
Black/African- American non-Hispanic	9	20177	5.90	2.14	0.66	0.65	1.26	MC,CR
Latino/Hispanic	9	8786	5.96	2.15	0.66	0.66	1.25	MC,CR
Asian or Pacific Islander	9	3479	7.57	1.67	0.84	0.66	0.97	MC,CR
American Indian or Alaskan Native	9	173	6.45	1.98	0.72	0.63	1.21	MC,CR
Multi-Racial/Ethnic	9	909	6.44	2.09	0.72	0.68	1.19	MC,CR
E) Data Analysis and Probability								
White non-Hispanic	9	96128	6.73	2.00	0.73	0.52	1.39	MC,CR
Black/African-American non-Hispanic	9	20177	4.87	2.36	0.54	0.51	1.64	MC,CR
Latino/Hispanic	9	8786	5.15	2.36	0.56	0.51	1.65	MC,CR
Asian or Pacific Islander	9	3479	6.99	2.05	0.78	0.53	1.41	MC,CR
American Indian or Alaskan Native	9	173	5.86	2.41	0.65	0.61	1.52	MC,CR
Multi-Racial/Ethnic	9	909	5.86	2.34	0.64	0.56	1.56	MC,CR

Table 13-2. GRADE 4 MATH CONTINUED

LEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	494	29.60	13.65	0.47	0.92	3.94	MC,CR
A) Numbers and Operations	30	494	13.78	6.91	0.47	0.86	2.58	MC,CR
B) Measurement	9	494	2.98	2.07	0.38	0.50	1.46	MC,CR
C) Geometry	9	494	3.83	2.06	0.43	0.56	1.37	MC,CR
D) Algebra	9	494	4.99	2.28	0.55	0.67	1.32	MC,CR
E) Data Analysis and Probability	9	494	4.01	2.47	0.45	0.50	1.74	MC,CR

IEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	19979	35.35	13.93	0.55	0.92	3.90	MC,CR
A) Numbers and Operations	30	19979	15.90	6.89	0.54	0.85	2.63	MC,CR
B) Measurement	9	19979	3.78	2.21	0.48	0.56	1.48	MC,CR
C) Geometry	9	19979	5.00	2.14	0.56	0.60	1.36	MC,CR
D) Algebra	9	19979	5.59	2.29	0.62	0.69	1.28	MC,CR
E) Data Analysis and Probability	9	19979	5.07	2.40	0.54	0.55	1.61	MC,CR

ECO

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	47466	39.06	12.95	0.61	0.91	3.86	MC,CR
A) Numbers and Operations	30	47466	17.77	6.40	0.60	0.84	2.59	MC,CR
B) Measurement	9	47466	4.17	2.18	0.52	0.54	1.49	MC,CR
C) Geometry	9	47466	5.52	2.05	0.61	0.58	1.33	MC,CR
D) Algebra	9	47466	6.18	2.11	0.69	0.66	1.23	MC,CR
E) Data Analysis and Probability	9	47466	5.41	2.35	0.59	0.53	1.61	MC,CR

Table 13-3. GRADE 6 READING

Overall

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	137826	32.89	9.29	0.64	0.90	3.00	MC,CR
A) Comprehension and Reading Skills	30	137826	20.27	5.66	0.68	0.84	2.24	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	22	137826	12.62	4.14	0.57	0.77	1.98	MC,CR

By gender

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
Male	52	70739	31.93	9.58	0.63	0.90	3.01	MC,CR
Female	52	66813	33.95	8.83	0.66	0.89	2.98	MC,CR
A) Comprehension and Reading Skills								
Male	30	70739	19.92	5.87	0.67	0.85	2.25	MC,CR
Female	30	66813	20.66	5.40	0.69	0.83	2.23	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction								
Male	22	70739	12.01	4.21	0.55	0.78	2.00	MC,CR
Female	22	66813	13.29	3.95	0.60	0.75	1.96	MC,CR

Table 13-3. GRADE 6 READING CONTINUED

By ethnicity

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
White non-Hispanic	52	102082	34.76	8.37	0.68	0.88	2.93	MC,CR
Black/African-American non-Hispanic	52	22298	26.59	9.29	0.52	0.88	3.18	MC,CR
Latino/Hispanic	52	8870	26.85	9.55	0.52	0.89	3.18	MC,CR
Asian or Pacific Islander	52	3344	35.54	8.84	0.69	0.89	2.90	MC,CR
American Indian or Alaskan Native	52	169	31.67	8.86	0.62	0.88	3.06	MC,CR
Multi-Racial/Ethnic	52	696	29.99	9.46	0.59	0.89	3.13	MC,CR
A) Comprehension and Reading Skills								
White non-Hispanic	30	102082	21.41	5.09	0.72	0.82	2.18	MC,CR
Black/African-American non-Hispanic	30	22298	16.49	5.74	0.55	0.82	2.42	MC,CR
Latino/Hispanic	30	8870	16.51	5.89	0.55	0.83	2.43	MC,CR
Asian or Pacific Islander	30	3344	21.44	5.39	0.72	0.84	2.16	MC,CR
American Indian or Alaskan Native	30	169	19.75	5.31	0.66	0.81	2.29	MC,CR
Multi-Racial/Ethnic	30	696	18.65	5.87	0.63	0.84	2.34	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction								
White non-Hispanic	22	102082	13.35	3.84	0.61	0.74	1.94	MC,CR
Black/African-American non-Hispanic	22	22298	10.10	4.10	0.47	0.75	2.05	MC,CR
Latino/Hispanic	22	8870	10.34	4.19	0.47	0.76	2.05	MC,CR
Asian or Pacific Islander	22	3344	14.10	3.95	0.64	0.76	1.92	MC,CR
American Indian or Alaskan Native	22	169	11.92	4.03	0.55	0.75	2.03	MC,CR
Multi-Racial/Ethnic	22	696	11.34	4.15	0.52	0.75	2.07	MC,CR

Table 13-3. GRADE 6 READING CONTINUED

LEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	315	20.22	9.34	0.40	0.88	3.24	MC,CR
A) Comprehension and Reading Skills	30	315	12.77	5.80	0.43	0.81	2.52	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	22	315	7.45	4.05	0.35	0.75	2.03	MC,CR

IEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	21163	23.41	9.39	0.46	0.88	52	MC,CR
A) Comprehension and Reading Skills	30	21163	14.75	5.96	0.50	0.83	30	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	22	21163	8.67	4.00	0.40	0.74	22	MC,CR

ECO

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	49299	28.19	9.48	0.55	0.89	3.14	MC,CR
A) Comprehension and Reading Skills	30	49299	17.48	5.89	0.59	0.84	2.39	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	22	49299	10.71	4.14	0.49	0.76	2.04	MC,CR

Table 13-4. GRADE 6 MATH

Overall

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	138282	42.33	13.11	0.66	0.92	3.70	MC,CR
A) Numbers and Operations	20	138282	12.91	4.58	0.66	0.78	2.13	MC,CR
B) Measurement	10	138282	6.48	2.35	0.65	0.68	1.32	MC,CR
C) Geometry	12	138282	7.74	2.88	0.67	0.67	1.65	MC,CR
D) Algebra	12	138282	6.94	2.63	0.65	0.61	1.63	MC,CR
E) Data Analysis and Probability	12	138282	8.25	2.60	0.69	0.70	1.42	MC,CR

By gender

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
Male	66	70994	42.33	13.28	0.67	0.92	3.68	MC,CR
Female	66	67006	42.37	12.90	0.66	0.92	3.72	MC,CR
A) Numbers and Operations								
Male	20	70994	12.94	4.59	0.67	0.79	2.11	MC,CR
Female	20	67006	12.90	4.56	0.66	0.78	2.13	MC,CR
B) Measurement								
Male	10	70994	6.64	2.33	0.66	0.68	1.31	MC,CR
Female	10	67006	6.32	2.37	0.63	0.68	1.34	MC,CR
C) Geometry								
Male	12	70994	7.65	2.91	0.67	0.68	1.65	MC,CR
Female	12	67006	7.85	2.83	0.68	0.66	1.64	MC,CR
D) Algebra								
Male	12	70994	6.87	2.66	0.64	0.63	1.61	MC,CR
Female	12	67006	7.02	2.58	0.65	0.59	1.65	MC,CR
E) Data Analysis and Probability								
Male	12	70994	8.23	2.65	0.69	0.72	1.41	MC,CR
Female	12	67006	8.28	2.55	0.69	0.69	1.42	MC,CR

Table 13-4. GRADE 6 MATH CONTINUED

By ethnicity

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
White non-Hispanic	66	102212	44.87	12.12	0.70	0.91	3.63	MC,CR
Black/African-American non-Hispanic	66	22421	33.12	12.23	0.53	0.90	3.82	MC,CR
Latino/Hispanic	66	8993	34.94	12.62	0.55	0.91	3.83	MC,CR
Asian or Pacific Islander	66	3409	48.54	12.28	0.76	0.92	3.46	MC,CR
American Indian or Alaskan Native	66	172	39.06	12.99	0.62	0.91	3.84	MC,CR
Multi-Racial/Ethnic	66	699	37.63	13.18	0.59	0.92	3.79	MC,CR
A) Numbers and Operations								
White non-Hispanic	20	102212	13.73	4.30	0.70	0.77	2.07	MC,CR
Black/African-American non-Hispanic	20	22421	9.90	4.26	0.52	0.74	2.18	MC,CR
Latino/Hispanic	20	8993	10.57	4.36	0.55	0.75	2.20	MC,CR
Asian or Pacific Islander	20	3409	15.18	4.06	0.77	0.77	1.93	MC,CR
American Indian or Alaskan Native	20	172	11.95	4.58	0.62	0.76	2.23	MC,CR
Multi-Racial/Ethnic	20	699	11.37	4.67	0.59	0.78	2.17	MC,CR
B) Measurement								
White non-Hispanic	10	102212	6.87	2.22	0.69	0.66	1.29	MC,CR
Black/African-American non-Hispanic	10	22421	5.03	2.25	0.50	0.60	1.42	MC,CR
Latino/Hispanic	10	8993	5.34	2.30	0.53	0.62	1.42	MC,CR
Asian or Pacific Islander	10	3409	7.50	2.26	0.75	0.72	1.19	MC,CR
American Indian or Alaskan Native	10	172	5.94	2.36	0.59	0.67	1.36	MC,CR
Multi-Racial/Ethnic	10	699	5.87	2.33	0.59	0.64	1.40	MC,CR
C) Geometry								
White non-Hispanic	12	102212	8.21	2.70	0.71	0.64	1.61	MC,CR
Black/African-American non-Hispanic	12	22421	6.08	2.84	0.54	0.64	1.70	MC,CR
Latino/Hispanic	12	8993	6.36	2.89	0.56	0.67	1.67	MC,CR
Asian or Pacific Islander	12	3409	8.69	2.63	0.75	0.67	1.51	MC,CR
American Indian or Alaskan Native	12	172	6.96	2.83	0.61	0.62	1.74	MC,CR
Multi-Racial/Ethnic	12	699	6.79	2.97	0.60	0.68	1.69	MC,CR
D) Algebra								
White non-Hispanic	12	102212	7.30	2.51	0.68	0.58	1.63	MC,CR
Black/African-American non-Hispanic	12	22421	5.56	2.53	0.53	0.61	1.58	MC,CR
Latino/Hispanic	12	8993	5.94	2.60	0.56	0.61	1.61	MC,CR
Asian or Pacific Islander	12	3409	8.22	2.57	0.74	0.58	1.67	MC,CR
American Indian or Alaskan Native	12	172	6.60	2.66	0.62	0.62	1.64	MC,CR
Multi-Racial/Ethnic	12	699	6.18	2.57	0.58	0.62	1.59	MC,CR
E) Data Analysis and Probability								
White non-Hispanic	12	102212	8.75	2.40	0.73	0.67	1.37	MC,CR
Black/African-American non-Hispanic	12	22421	6.56	2.56	0.55	0.63	1.55	MC,CR
Latino/Hispanic	12	8993	6.73	2.61	0.56	0.65	1.54	MC,CR
Asian or Pacific Islander	12	3409	8.95	2.51	0.75	0.72	1.33	MC,CR
American Indian or Alaskan Native	12	172	7.60	2.56	0.63	0.68	1.46	MC,CR
Multi-Racial/Ethnic	12	699	7.42	2.64	0.62	0.68	1.49	MC,CR

Table 13-4. GRADE 6 MATH CONTINUED

LEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	487	28.18	13.93	0.45	0.93	3.76	MC,CR
A) Numbers and Operations	20	487	8.84	4.78	0.47	0.81	2.10	MC,CR
B) Measurement	10	487	4.49	2.52	0.45	0.69	1.41	MC,CR
C) Geometry	12	487	4.49	2.98	0.41	0.71	1.61	MC,CR
D) Algebra	12	487	4.81	2.82	0.46	0.67	1.63	MC,CR
E) Data Analysis and Probability	12	487	5.54	2.72	0.46	0.68	1.54	MC,CR

IEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	21233	29.78	12.55	0.47	0.91	3.83	MC,CR
A) Numbers and Operations	20	21233	8.82	4.40	0.46	0.75	2.20	MC,CR
B) Measurement	10	21233	4.74	2.26	0.47	0.60	1.42	MC,CR
C) Geometry	12	21233	5.33	2.85	0.47	0.65	1.70	MC,CR
D) Algebra	12	21233	4.85	2.57	0.46	0.63	1.56	MC,CR
E) Data Analysis and Probability	12	21233	6.03	2.62	0.50	0.65	1.56	MC,CR

ECO

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	49565	36.06	12.83	0.57	0.91	3.82	MC,CR
A) Numbers and Operations	20	49565	10.85	4.49	0.56	0.76	2.20	MC,CR
B) Measurement	10	49565	5.52	2.32	0.55	0.64	1.40	MC,CR
C) Geometry	12	49565	6.62	2.92	0.58	0.66	1.70	MC,CR
D) Algebra	12	49565	5.96	2.58	0.56	0.62	1.60	MC,CR
E) Data Analysis and Probability	12	49565	7.11	2.63	0.59	0.67	1.51	MC,CR

Table 13-5. GRADE 7 READING

Overall

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	142980	33.06	9.79	0.65	0.90	3.02	MC,CR
A) Comprehension and Reading Skills	29	142980	18.70	5.67	0.65	0.84	2.28	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	23	142980	14.36	4.57	0.65	0.81	1.98	MC,CR

By gender

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
Male	52	73318	32.06	10.17	0.63	0.91	3.02	MC,CR
Female	52	69229	34.15	9.21	0.66	0.89	2.99	MC,CR
A) Comprehension and Reading Skills								
Male	29	73318	18.24	5.90	0.64	0.85	2.28	MC,CR
Female	29	69229	19.21	5.37	0.66	0.82	2.26	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction								
Male	23	73318	13.82	4.72	0.63	0.82	1.98	MC,CR
Female	23	69229	14.95	4.32	0.67	0.79	1.96	MC,CR

Table 13-5. GRADE 7 READING CONTINUED

By ethnicity

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
White non-Hispanic	52	106875	34.89	8.98	0.68	0.89	2.95	MC,CR
Black/African-American non-Hispanic	52	22602	26.78	9.58	0.53	0.89	3.22	MC,CR
Latino/Hispanic	52	8859	26.60	9.98	0.52	0.90	3.21	MC,CR
Asian or Pacific Islander	52	3268	36.12	9.28	0.70	0.90	2.90	MC,CR
American Indian or Alaskan Native	52	201	31.98	9.56	0.63	0.90	3.07	MC,CR
Multi-Racial/Ethnic	52	657	29.56	10.52	0.58	0.91	3.16	MC,CR
A) Comprehension and Reading Skills								
White non-Hispanic	29	106875	19.71	5.28	0.68	0.82	2.22	MC,CR
Black/African-American non-Hispanic	29	22602	15.30	5.49	0.53	0.80	2.44	MC,CR
Latino/Hispanic	29	8859	15.03	5.68	0.52	0.82	2.43	MC,CR
Asian or Pacific Islander	29	3268	20.32	5.38	0.70	0.84	2.16	MC,CR
American Indian or Alaskan Native	29	201	17.91	5.59	0.62	0.83	2.31	MC,CR
Multi-Racial/Ethnic	29	657	16.82	5.99	0.59	0.84	2.37	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction								
White non-Hispanic	23	106875	15.18	4.17	0.69	0.79	1.94	MC,CR
Black/African-American non-Hispanic	23	22602	11.48	4.60	0.52	0.79	2.10	MC,CR
Latino/Hispanic	23	8859	11.58	4.79	0.52	0.81	2.09	MC,CR
Asian or Pacific Islander	23	3268	15.81	4.31	0.70	0.80	1.92	MC,CR
American Indian or Alaskan Native	23	201	14.07	4.42	0.64	0.79	2.01	MC,CR
Multi-Racial/Ethnic	23	657	12.74	5.00	0.57	0.83	2.08	MC,CR

Table 13-5. GRADE 7 READING CONTINUED

LEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	331	18.55	8.78	0.37	0.86	3.24	MC,CR
A) Comprehension and Reading Skills	29	331	10.98	4.98	0.38	0.76	2.45	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	23	331	7.57	4.32	0.35	0.76	2.11	MC,CR

IEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	21444	22.92	9.61	0.45	0.89	3.21	MC,CR
A) Comprehension and Reading Skills	29	21444	13.07	5.57	0.46	0.81	2.45	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	23	21444	9.85	4.57	0.45	0.80	2.07	MC,CR

ECO

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	52	49314	28.00	9.83	0.55	0.90	3.18	MC,CR
A) Comprehension and Reading Skills	29	49314	15.91	5.67	0.55	0.82	2.41	MC,CR
B) Interpretation and Analysis of Fiction and Nonfiction	23	49314	12.09	4.66	0.55	0.80	2.07	MC,CR

Table 13-6. GRADE 7 MATH

Overall

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	143471	39.67	13.41	0.64	0.92	3.81	MC,CR
A) Numbers and Operations	16	143471	9.47	3.99	0.65	0.75	1.98	MC,CR
B) Measurement	9	143471	4.92	2.29	0.55	0.66	1.34	MC,CR
C) Geometry	12	143471	8.31	2.63	0.69	0.70	1.43	MC,CR
D) Algebra	17	143471	9.07	3.74	0.60	0.72	1.98	MC,CR
E) Data Analysis and Probability	12	143471	7.89	2.81	0.69	0.66	1.65	MC,CR

By gender

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
Male	66	73581	39.29	13.69	0.63	0.92	3.78	MC,CR
Female	66	69463	40.13	13.07	0.64	0.91	3.83	MC,CR
A) Numbers and Operations								
Male	16	73581	9.41	4.03	0.65	0.76	1.96	MC,CR
Female	16	69463	9.55	3.95	0.66	0.74	2.00	MC,CR
B) Measurement								
Male	9	73581	4.96	2.29	0.55	0.66	1.34	MC,CR
Female	9	69463	4.89	2.29	0.54	0.66	1.34	MC,CR
C) Geometry								
Male	12	73581	8.24	2.71	0.69	0.72	1.43	MC,CR
Female	12	69463	8.39	2.54	0.70	0.68	1.43	MC,CR
D) Algebra								
Male	17	73581	8.96	3.79	0.59	0.73	1.95	MC,CR
Female	17	69463	9.21	3.68	0.60	0.70	2.00	MC,CR
E) Data Analysis and Probability								
Male	12	73581	7.71	2.87	0.69	0.67	1.64	MC,CR
Female	12	69463	8.09	2.73	0.71	0.64	1.64	MC,CR

Table 13-6. GRADE 7 MATH CONTINUED

By ethnicity

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall								
White non-Hispanic	66	107024	42.01	12.71	0.67	0.91	3.79	MC,CR
Black/African-American non-Hispanic	66	22731	30.73	11.89	0.51	0.90	3.76	MC,CR
Latino/Hispanic	66	9024	32.51	12.42	0.53	0.91	3.79	MC,CR
Asian or Pacific Islander	66	3318	47.57	12.71	0.75	0.92	3.65	MC,CR
American Indian or Alaskan Native	66	202	37.73	13.09	0.61	0.92	3.77	MC,CR
Multi-Racial/Ethnic	66	656	34.36	13.05	0.56	0.91	3.83	MC,CR
A) Numbers and Operations								
White non-Hispanic	16	107024	10.08	3.85	0.69	0.73	1.99	MC,CR
Black/African-American non-Hispanic	16	22731	7.17	3.61	0.51	0.73	1.86	MC,CR
Latino/Hispanic	16	9024	7.51	3.72	0.53	0.74	1.90	MC,CR
Asian or Pacific Islander	16	3318	11.74	3.73	0.78	0.73	1.95	MC,CR
American Indian or Alaskan Native	16	202	8.91	3.89	0.62	0.75	1.94	MC,CR
Multi-Racial/Ethnic	16	656	8.15	3.87	0.57	0.75	1.95	MC,CR
B) Measurement								
White non-Hispanic	9	107024	5.27	2.24	0.59	0.65	1.33	MC,CR
Black/African-American non-Hispanic	9	22731	3.60	1.95	0.40	0.51	1.37	MC,CR
Latino/Hispanic	9	9024	3.89	2.07	0.43	0.56	1.37	MC,CR
Asian or Pacific Islander	9	3318	6.08	2.22	0.68	0.69	1.24	MC,CR
American Indian or Alaskan Native	9	202	4.75	2.23	0.53	0.63	1.35	MC,CR
Multi-Racial/Ethnic	9	656	4.09	2.18	0.45	0.61	1.36	MC,CR
C) Geometry								
White non-Hispanic	12	107024	8.68	2.46	0.72	0.68	1.40	MC,CR
Black/African-American non-Hispanic	12	22731	6.83	2.72	0.57	0.67	1.56	MC,CR
Latino/Hispanic	12	9024	7.31	2.75	0.61	0.69	1.53	MC,CR
Asian or Pacific Islander	12	3318	9.62	2.26	0.80	0.70	1.24	MC,CR
American Indian or Alaskan Native	12	202	7.85	2.73	0.65	0.71	1.48	MC,CR
Multi-Racial/Ethnic	12	656	7.52	2.79	0.63	0.71	1.50	MC,CR
D) Algebra								
White non-Hispanic	17	107024	9.59	3.69	0.62	0.71	1.99	MC,CR
Black/African-American non-Hispanic	17	22731	7.07	3.14	0.48	0.66	1.84	MC,CR
Latino/Hispanic	17	9024	7.40	3.25	0.50	0.67	1.86	MC,CR
Asian or Pacific Islander	17	3318	11.16	3.84	0.71	0.73	2.01	MC,CR
American Indian or Alaskan Native	17	202	8.59	3.65	0.57	0.73	1.90	MC,CR
Multi-Racial/Ethnic	17	656	7.80	3.54	0.52	0.71	1.91	MC,CR
E) Data Analysis and Probability								
White non-Hispanic	12	107024	8.39	2.59	0.73	0.62	1.60	MC,CR
Black/African-American non-Hispanic	12	22731	6.06	2.80	0.55	0.64	1.68	MC,CR
Latino/Hispanic	12	9024	6.40	2.90	0.57	0.65	1.71	MC,CR
Asian or Pacific Islander	12	3318	8.97	2.56	0.78	0.64	1.54	MC,CR
American Indian or Alaskan Native	12	202	7.62	2.72	0.67	0.63	1.65	MC,CR
Multi-Racial/Ethnic	12	656	6.80	2.93	0.61	0.66	1.71	MC,CR

Table 13-6. GRADE 7 MATH CONTINUED

LEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	523	26.59	12.87	0.44	0.92	3.72	MC,CR
A) Numbers and Operations	16	523	5.98	3.73	0.43	0.76	1.85	MC,CR
B) Measurement	9	523	3.39	2.1	0.38	0.6	1.33	MC,CR
C) Geometry	12	523	6.08	2.99	0.51	0.73	1.55	MC,CR
D) Algebra	17	523	6.42	3.37	0.44	0.71	1.81	MC,CR
E) Data Analysis and Probability	12	523	4.72	2.83	0.45	0.64	1.7	MC,CR

IEP

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	21539	26.69	11.53	0.44	0.90	3.71	MC,CR
A) Numbers and Operations	16	21539	5.91	3.42	0.43	0.72	1.80	MC,CR
B) Measurement	9	21539	3.34	1.93	0.37	0.51	1.35	MC,CR
C) Geometry	12	21539	6.02	2.74	0.50	0.67	1.58	MC,CR
D) Algebra	17	21539	6.09	3.02	0.42	0.64	1.81	MC,CR
E) Data Analysis and Probability	12	21539	5.33	2.76	0.49	0.63	1.67	MC,CR

ECO

Strand	K	N	Mean	SD	Mean P-Value	Reliability	SEM	Item Types In Strand
Overall	66	49653	33.10	12.51	0.54	0.91	3.78	MC,CR
A) Numbers and Operations	16	49653	7.70	3.76	0.55	0.75	1.89	MC,CR
B) Measurement	9	49653	3.96	2.08	0.44	0.57	1.37	MC,CR
C) Geometry	12	49653	7.31	2.74	0.61	0.69	1.53	MC,CR
D) Algebra	17	49653	7.53	3.32	0.51	0.68	1.88	MC,CR
E) Data Analysis and Probability	12	49653	6.60	2.85	0.59	0.65	1.69	MC,CR

PSSA CONSTRUCT VALIDITY

Information regarding the PSSA's internal structure is an important source of construct-related evidence of validity. Correlations by reporting category were calculated using Pearson's Correlation Coefficient. These correlations are presented in Tables 13-7 through 13-9. They generally display the expected pattern and magnitude of correlations. For example, the reading total should correlate higher with the reading part or subscores than with the math total or subscores. Note that the correlation between the reading and math total scores is .777 for grade 4. When this value is squared, the resulting value of .60 translates into the shared variance between the two assessments across the student population. This is a fairly typical outcome based on recent research.

Table 13-7. Grade 4 Correlations

M	1								
MA	.957	1							
MB	.816	.721	1						
MC	.737	.622	.539	1					
MD	.83	.759	.617	.541	1				
ME	.812	.709	.599	.552	.625	1			
R	.777	.73	.622	.588	.653	.659	1		
RA	.757	.712	.605	.570	.638	.640	.978	1	
RB	.702	.658	.565	.537	.585	.599	.896	.783	1
	M	**MA**	**MB**	**MC**	**MD**	**ME**	**R**	**RA**	**RB**

Table 13-8. Grade 6 Correlations

M	1								
MA	.930	1							
MB	.842	.743	1						
MC	.839	.696	.637	1					
MD	.844	.724	.642	.657	1				
ME	.858	.748	.675	.654	.662	1			
R	.785	.728	.639	.655	.652	.709	1		
RA	.742	.688	.607	.617	.612	.676	.962	1	
RB	.745	.692	.602	.626	.624	.666	.927	.790	1
	M	**MA**	**MB**	**MC**	**MD**	**ME**	**R**	**RA**	**RB**

Table 13-9. Grade 7 Correlations

M	1								
MA	.912	1							
MB	.817	.698	1						
MC	.824	.678	.616	1					
MD	.885	.740	.663v	.654	1				
ME	.857	.737	.629	.659	.683	1			
R	.776	.702	.618	.646	.657	.719	1		
RA	.749	.677	.600	.623	.635	.691	.965	1	
RB	.733	.663	.579	.611	.621	.682	.945	.824	1
	M	**MA**	**MB**	**MC**	**MD**	**ME**	**R**	**RA**	**RB**

Below are the correlations corrected for attenuation for the non-confounding pairs; that is, those without shared items. Correcting for attenuation adjusts the correlation between the two measures to account for the unreliability of both. Although the theoretical upper bound for a correlation is 1.0, disattenuated correlations can be greater. This is often seen in practice when the correlations are relatively high and the reliabilities relatively low. However, two underlying factors should be noted. The first is that sample statistics are being used to estimate population parameters. The second, and likely more prevailing issue, is that something akin to a "design misspecification" occurs. As noted in Chapter 10, the reliability indices used for the PSSA's (Coefficient Alpha) do not capture all sources of random error, and as such, might be upper bound estimates of reliability. To complicate matters, two potential downward biases were also noted in Chapter 10. Thus, it is possible that the tabled disattenuated correlations are actually not as high, or low, as they might really be, depending on which bias prevails.

Given that none of these tests have perfect reliabilities (equal to one), the correlations are somewhat higher than those shown in Tables 13-7 to 13-9 above. Disattenuated correlations less than 1.0 suggest that the different strands are measuring slightly different aspects of the Reading and Mathematics constructs. Values around 1.0 suggest that the same or very similar constructs are being measured. Results indicate that strands generally correlate more highly within the same content area (Reading or Mathematics) than across content areas. These within content area strand correlations are close to, or exceed 1.0 in many cases.

Table 13-10. Grade 4 Disattenuated Correlations

M	-								
MA	-	-							
MB	-	1.054	-						
MC	-	.877	.937	-					
MD	-	1.006	1.009	.852	-				
ME	-	1.036	1.082	.96	1.022	-			
R	.855	.837	.881	.802	.836	.932	-		
RA	.847	.831	.872	.792	.832	.921	-	-	
RB	.866	.846	.896	.821	.840	.950	-	.991	-
	M	**MA**	**MB**	**MC**	**MD**	**ME**	**R**	**RA**	**RB**

Table 13-11. Grade 6 Disattenuated Correlations

M	-								
MA	-	-							
MB	-	1.014	-						
MC	-	.960	.940	-					
MD	-	1.044	.992	1.024	-				
ME	-	1.007	.973	.950	1.006	-			
R	.864	.869	.816	.845	.880	.893	-		
RA	.843	.846	.800	.821	.852	.877	-	-	
RB	.885	.891	.830	.871	.909	.905	-	.981	-
	M	**MA**	**MB**	**MC**	**MD**	**ME**	**R**	**RA**	**RB**

Table 13-12. Grade 7 Disattenuated Correlations

M	-								
MA	-	-							
MB	-	.991	-						
MC	-	.931	.905	-					
MD	-	1.005	.963	.919	-				
ME	-	1.047	.957	.969	.992	-			
R	.851	.850	.801	.810	.814	.932	-		
RA	.853	.852	.808	.811	.816	.930	-	-	
RB	.848	.847	.793	.808	.811	.933	-	.999	-
	M	**MA**	**MB**	**MC**	**MD**	**ME**	**R**	**RA**	**RB**

PSSA RELIABILITY OF PERFORMANCE LEVELS

In a standards-based testing program there is also interest in knowing how accurately students are classified into the various performance categories. Classification consistency refers to the degree with which the achievement level for each student can be replicated upon retesting using the same form or an equivalent form (Huynh, 1976). 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 in order to project the consistency of classifications solely using data from the available administration (Hambleton and Novick, 1973). Although a number of procedures are available, two well known methods were developed by Hanson and Brennan (1990) and Livingston and Lewis (1995) utilizing specific True Score Models.

Hanson and Brennan (1990) utilized a four parameter beta binomial and a four parameter beta compound binomial model for estimating single administration estimates of classification consistency. The models are given by:

$$\Pr(X = i) = \int_{l}^{u} \Pr(X = i \mid \tau, k) g(\tau \mid \alpha, \beta, l, u) d\tau ,$$

where l and u are, respectively, the lower and upper bounds of the distribution. If $k \leq 0$, then the conditional error distribution is binomial. If $k > 0$, then the conditional error distribution is compound binomial using Lord's (1965) two-term approximation to the compound binomial distribution. The parameters for the true score density are estimated using the method of moments.

In order to use this method, the test must be must consist of purely dichotomous items. A simple way to satisfy this requirement is to dichotomize the assessment. For any polychotomous item with a maximum score of u, create a set S of u dichotomous items to replace it. For example, $S_{1(x)} = \{u_1, u_2, u_3, u_4\}$ is a set created for a polychotomous item with a maximum score of 4 for examinee x. Then, for an examinee y with a score of 3, $S_{1(y)} = \{1,1,1,0\}$. Local independence of these newly created dichotomous items within the set is sacrificed due to the fact that to get the 3rd item in the set correct, you must get the 1st and 2nd items in the same set correct (the same

goes for getting an item incorrect). Artificial local independence cannot be manufactured for these items within each set.

To solve the problem of a complex assessment, Livingston and Lewis (1995) proposed an effective test length,

$$n = \frac{(\mu_x - X_{\min})(X_{\max} - \mu_x) - r\sigma_x^2}{\sigma_x^2(1-r)},$$

which transforms the original raw score random variable from $X = 0,...,K$ into a new random variable $X' = 0,...,n$, where n is the number of dichotomous, locally independent, equally difficult items required to produce a raw score of the same reliability. Then, using the transformed observed distribution X', parameters are estimated for a four parameter beta-binomial model where the conditional error distribution is assumed to be binomial. The X' distribution is then converted back onto the original X scale using interpolation. This method is designed only to estimate a contingency table, not a full bivariate distribution.

Stearns and Smith (2007) found that results from the Hanson and Brennan (1990) method on a dichotomized version of a complex assessment yields similar results to the Livingston and Lewis (1995) method. The results of the consistency analyses are presented in Table 13-14. The results—derived using the program *BB-Class* (Brennan, 2004)—showed that the consistency index values cross methods were very similar. It should be noted that consistency indices for the four performance levels should be lower than those based on two categories, as seen below. This is not surprising since classification using four levels would allow more opportunity to change the achievement levels. Hence there would be more classification errors in the four achievement levels, resulting in lower consistency indices.

Table 13-14. Decision Consistency

	Consistency Index			
	Overall	***Below Basic/ Basic***	***Basic/ Proficient***	***Proficient/ Advanced***
Math Grade 4				
Hanson and Brennan (1990)	0.754	0.941	0.917	0.884
Livingston and Lewis (1995)	0.739	0.937	0.911	0.875
Reading Grade 4				
Hanson and Brennan (1990)	0.677	0.930	0.889	0.857
Livingston and Lewis (1995)	0.671	0.928	0.886	0.852
Math Grade 6				
Hanson and Brennan (1990)	0.727	0.929	0.901	0.890
Livingston and Lewis (1995)	0.717	0.925	0.897	0.885
Reading Grade 6				
Hanson and Brennan (1990)	0.662	0.923	0.885	0.847
Livingston and Lewis (1995)	0.656	0.922	0.883	0.841
Math Grade 7				
Hanson and Brennan (1990)	0.715	0.914	0.894	0.895
Livingston and Lewis (1995)	0.704	0.910	0.889	0.891
Reading Grade 7				
Hanson and Brennan (1990)	0.691	0.932	0.892	0.863
Livingston and Lewis (1995)	0.686	0.930	0.890	0.860

Chapter Fourteen: Performance Level Validation Report

BACKGROUND

The initial standards setting for the PSSA was held in Grantville, Pennsylvania, in the spring of 2001. It included grades 5, 8, and 11 in reading and mathematics. Cutpoints were established for placing students into four Performance Levels: Advanced, Proficient, Basic, and Below Basic. In addition, Performance Level Descriptors (PLDs) were established at the end of the meeting, written by the panelists, and subsequently used in score reports and other state materials. The meeting was conducted by CTB/McGraw-Hill using the Bookmark procedure (see Lewis, Mitzel, & Green, 1996).

In May 2005, a Performance Level Validation for grades 5, 8, and 11 in reading and mathematics was held in Harrisburg, Pennsylvania. The 2006 Performance Level Validation—held in June in Grantville, Pennsylvania—covered grades 4, 6, and 7 for Reading and Mathematics and grades 5, 8, and 11 for Writing.

PERFORMANCE LEVEL DESCRIPTOR DEVELOPMENT AND APPROVAL

In February 2005, draft PLDs were reviewed and finalized by committees of Pennsylvania educators. The draft descriptors presented to the committees are statements that describe the knowledge and skills expected at different Performance Levels with respect to the content standards (Pennsylvania Assessment Anchor Content Standards) and Eligible Content (grade-level expectations).

The draft descriptors were initially developed by Pennsylvania educators and Pennsylvania Department of Education (PDE) staff under the direction of the Center for Assessment. The process used to develop the initial drafts involved determining what students in Pennsylvania should know and be able to do based on the Assessment Anchor Content Standards (Assessment Anchors) and how students would demonstrate this knowledge and the skills based on the Eligible Content (grade-level expectations), and the level of knowledge and skill necessary for each Performance Level. In addition, the process included making an initial determination as to:

- The necessary characteristics/concepts of performance at each Performance Level,
- The categorization of the characteristics/concepts,
- The definition in clear and easily understood language of each characteristic/concept, and
- The description of the performance continuum.

After the initial draft descriptors were developed and an editorial review by DRC was conducted, they were also reviewed by PDE and then prepared for review by committees of Pennsylvania educators during the Performance Level Descriptors Review Meeting. This review meeting took place in Pennsylvania. Educators first received a general training on how to review the descriptors. The training also included providing Pennsylvania educators with a general overview of the PSSA program. Definitions of key terms (e.g., Assessment Anchor Content Standards, Eligible Content, and performance-level descriptor) were also provided.

Following the general training session, Pennsylvania educators were organized into content committees (reading and mathematics). Content specific materials (e.g., Assessment Anchor Content Standards, the Eligible Content, and initial drafts of PLDs for all grades 3, 4, 5, 6, 7, 8, and 11) were distributed and explained. Reading and mathematics content committees of

Pennsylvania educators were first given time to familiarize themselves with the Assessment Anchor Content Standards, the Eligible Content, and the initial drafts of the performance-level descriptors for their respective content areas and grade-levels. Committee members were then asked to review the initial drafts for each Performance Level (Advanced, Proficient, Basic, and Below Basic) as follows:

- An appropriate description of the Performance Level,
- An appropriate description of the Performance Level with modifications,
- Inappropriate for the grade level because the description might be too demanding
- Inappropriate because the description might be inconsistent with the expectation of high standards for the given grade level, or
- Inappropriate because the description might be too easy.

Pennsylvania educators were also asked to comment on whether or not the PLD might be modified to more appropriately describe expectations for the given grade and level. They were also asked to compare their expectations for the given Performance Level across the grades they were evaluating.

The results of the review activity were summarized by DRC, and suggested modifications listed. The summary was presented once again to the reading and mathematics committees for their consideration and an open discussion with the educators continued. Depending on the degree of concurrence, modifications to the PLDs were proposed by the facilitators based on the evaluation results and a group consensus was reached.

DRC test development specialists provided the initial training on how to review the descriptors and then facilitated the committee process. PDE staff served as observers of the process. The role of the facilitator was to ensure that a fair and orderly consensus process followed, that committee-work product was adequately documented, and that the process stayed on schedule. The facilitators also served as resources, answering questions pertaining to the contents of the standards (Assessment Anchor Content Standards), Eligible Content (grade-level expectations), and the draft PLDs that were prepared for review.

After the review by Pennsylvania educators, the revised PLDs were then reviewed by PDE. In April 2005, the PLDs were used to help guide the spring 2005 standards validation process for grades 3, 5, 8, and 11 reading and mathematics and the spring 2006 standards validation process for grades 4, 6, and 7 reading and mathematics. PLDs for reading and mathematics grades 3, 5, 8, and 11 were finalized after standards validation of these grades in spring 2005, and PLDs for grades 4, 6, and 7 were finalized after standards validation of these grades in spring 2006. The PLDs for the respective grades were approved by the Board of Education in June 2005 and in June 2006.

Copies of the approved performance level descriptors for grades 4, 6, and 7 can be found in Appendix GG.

2006 PERFORMANCE LEVEL VALIDATION MEETING PURPOSE AND OBJECTIVES

The stated objective of the 2006 Performance Level Validation meeting was to validate cutpoints in grades 4, 6, and 7 using starting values based on previously established cutpoints for grades 5, 8, and 11. It was further stated that the results from this meeting would be presented to the State Board for review and possible adoption for application to student data in spring 2006.

MODIFIED BOOKMARK

DRC used a modified Bookmark procedure to coincide as closely as possible to the methodology used in 2005 for the previous standards validation. The Bookmark procedure, an item-mapping method, is one of several standard setting methods that focus on items rather than examinees. To begin the process, participants were asked to visualize and discuss the knowledge and skills of a student who is at the borderline between two Performance Levels based on the PLDs. Thereafter, participants were given an Ordered Item Booklet (with test items presented in order from easiest to most difficult) and asked to assess whether this borderline student had a reasonably high probability of answering each item. For multiple-choice (MC) items, the reasonably high probability was set at 2/3 or .67. For constructed-response (CR) items, the level was set such that a student displayed just enough knowledge to achieve the given score point (e.g., 3 of 4). CR items were preceded by an example of student work associated with the item scale point. In addition, an item map was presented that contained the response key, the PLD, and item difficulty (in the logit metric). Panelists were given a rating sheet to record their individual placements for all Performance Levels by round. They were also given scoring guidelines for the CR items, passage booklets for reading, and a formula page for math.

TRAINING

The performance-level descriptors for grades 3, 5, 8, and 11 were prepared for use during the May 2005 Standards Validation meeting, and the performance-level descriptors for grades 4, 6, and 7 were prepared for use during the June 2006 Standards Validation meeting. At all meetings, the panelists used the PLDs during training to guide where cuts should be placed in the Ordered Item Booklets from a content perspective. Panelists were first asked to carefully review each PLD. As a part of this review, reviewers were asked to consider the following questions:

- How did each descriptor generally address the Assessment Anchor Content Standards and the Eligible Content?
- What were the general skills implied by each PLD?
- What were the major differences involving student performance at each level (i.e., Advanced, Proficient, Basic, and Below Basic)?

After the discussion, panelists were instructed on how to use the PLDs during the standards validation activity, including how the PLDs would provide a general context for them while they were reviewing the Ordered Item Booklets. They were also trained on how to compare the content of the resulting item sets and the PLDs for congruence. Most importantly, panelists were informed that the borderline between levels was the point where hypothetical students were passing just out of the lower level and just into the next.

Training was conducted for each subject area on the first morning of the meeting. Panelists were told that they were to:

- Be responsible for all secure materials
- Verify their individual placements for each round of judgments, and
- Participate in a discussion as a large group

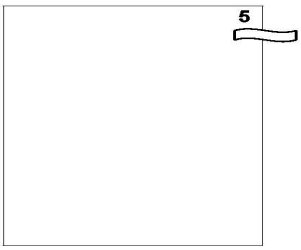
Training materials included:

- General Performance Level Descriptors (PLDs)
- Subject specific PLDs
- Ordered Item Booklets (OIB)
- Item Map

Panelists were told that the process would include iterations (rounds) of individual judgments, small group discussions and large group discussions, and opportunities to revise judgments. In addition, impact would be presented (percent of students in each Performance Level) based on the panelists' judgments; impact would also, when appropriate, be presented for other grades. A copy of the training sample is displayed below:

Bookmark Placement Method Training

If you placed the bookmark on OIB page 5 this means that Item 5 is the first item that you believe a borderline student, that is, a student not quite at the higher proficiency level, is likely to get **incorrect**. Correspondingly, you believe Item 4 is the last item this hypothetical student would most likely get **correct** (with 67 percent probability).



Bookmark Information	
OIB Page	Scale Score
1	232
2	267
3	275
4	301
5	326
6	356
7	371
8	384
9	404
10	418

Note the 25 point difference between Items 4 & 5. A borderline student could actually begin answering items correctly anywhere in this 25 point range. This means that the suggested cutpoint likely falls somewhere between 301 and 325. Therefore, the precision of your placement depends somewhat on this interval.

To determine the impact of placing the bookmark on Item 5, draw a line on the Person Raw to Scale Score Table at the location of the cut score (i.e., 301 falls between a raw score of 5 and 6). This indicates that, if implemented, 69% of examinees would fall into the lower proficiency level.

Person Raw to Scale Score Table			
Raw Score	Scale Score	Percent	Cum. Percent
10	515	3	100
9	461	4	97
8	401	5	93
7	362	8	88
6	330	11	80
5	300	12	69
4	270	14	57
3	238	12	43
2	199	11	31
1	139	8	20
0	85	12	12

Before training was completed panelists were told that their recommendations would be subject to adjustment within a bound of error based on policy considerations and the need to articulate the cuts across grades. A copy of the agenda for the meeting is provided in Appendix HH.

PERFORMANCE LEVELS VALIDATION VERSUS STANDARDS SETTING

There are key differences between establishing standards from scratch (i.e., determining cutpoints that define the border between two proficiency levels) and revisiting cutpoints that have been previously established. The former is an example of Standard Setting, and the latter is an example of Performance Levels Validation. Recognizing and understanding these differences is critical to an accurate review and evaluation of this information. As a convention, DRC uses SS for Standard Setting and PLV for Performance Levels Validation.

The SS and PLV procedures require different judgments from the panelists. In the SS procedure, panelists are not given existing cut points and so are required to set their own cut points in the context of the full range of test item difficulty. This is a less constrained cognitive task than the PLV procedure, in which panelists are asked to decide whether the existing cut points are

appropriate and, if not, to examine the items surrounding the existing cut point to establish where the cut point should be reset.

Procedurally, the formal process for SS is to have the panelists begin evaluating the items at the beginning of the Ordered Item Booklet, with the first item being the easiest. In PLV, the panelists are presented with items that represent the current cutpoints. As part of their judgments, they begin their review with the item that represents the border between Proficient and Basic. Thereafter, they are asked to review the items at the cutpoint separating Advanced and Proficient, then the items at the cutpoint separating Basic and Below Basic.

COMPOSITION OF PANEL

There were 27 panelists for mathematics and 27 panelists for reading, for a total of 54 panelists. The demographics of the panelists are displayed in the following section. They include gender, role (e.g., teacher, educator/non-teacher, or other), region of residence in the state, and years of teaching experience. The following information is based on a self-report survey completed by the panelists; note that the region categories are self-report options on the demographic surveys and are not defined for participants.

DEMOGRAPHIC DISTRIBUTION

Figure 14.1

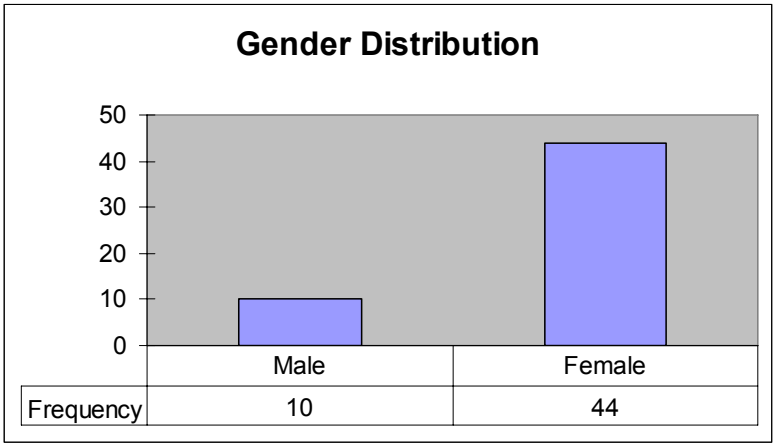


Figure 14.2

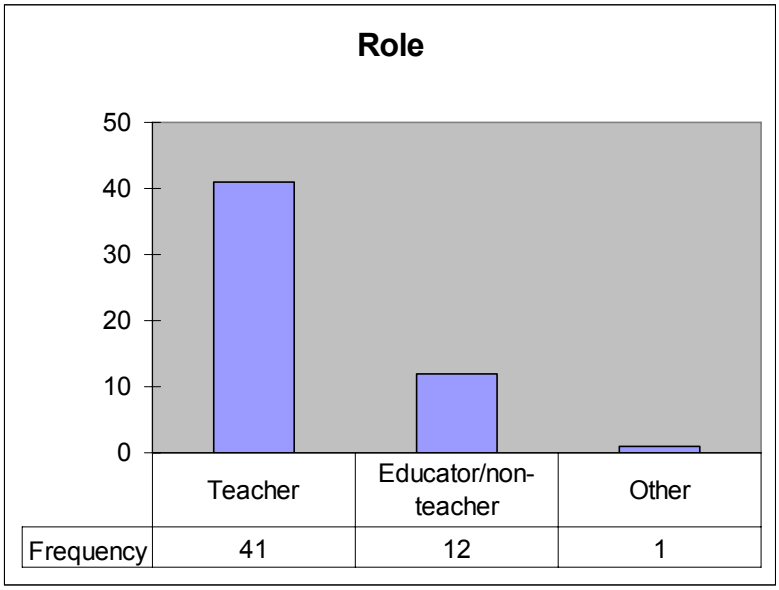


Figure 14.3

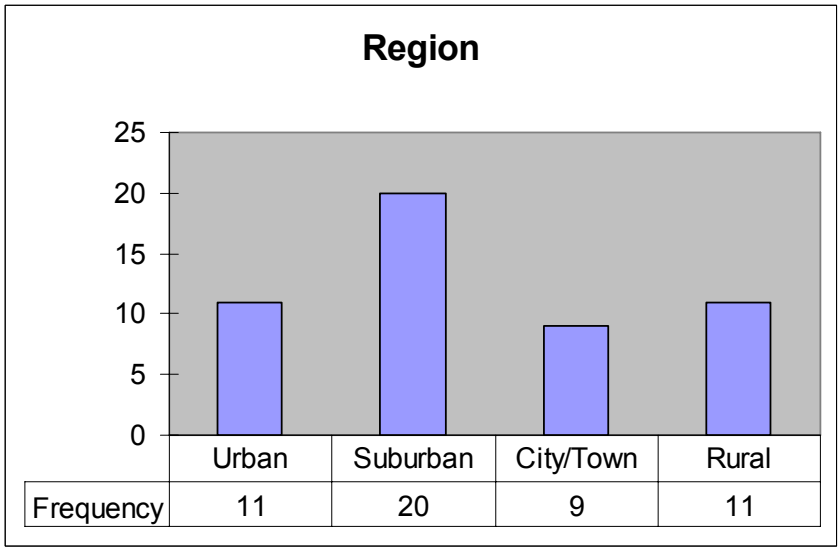


Figure 14.4

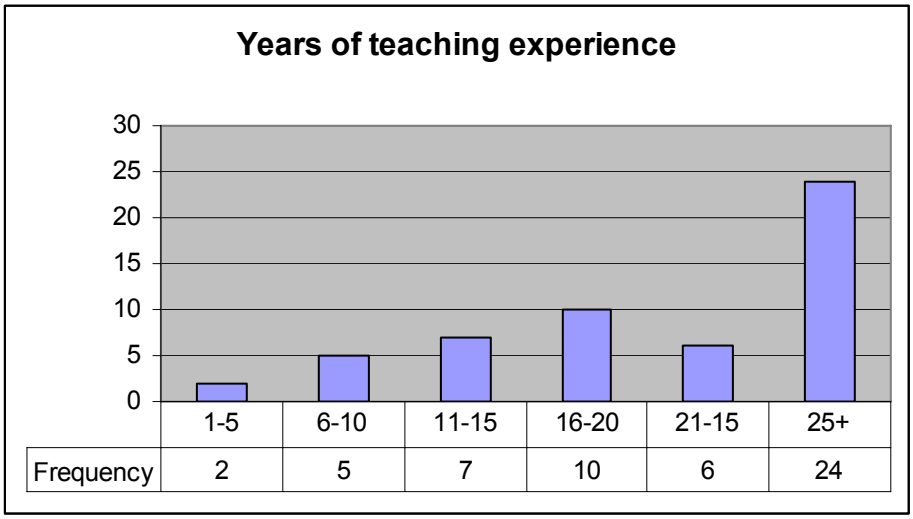


Figure 14.5

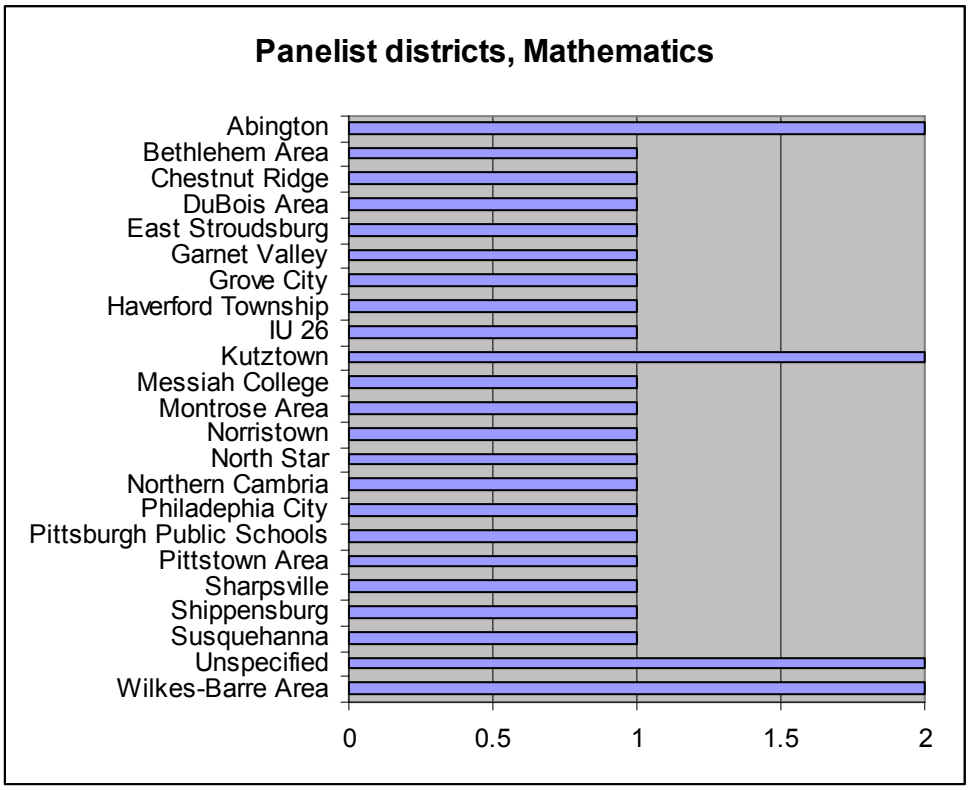
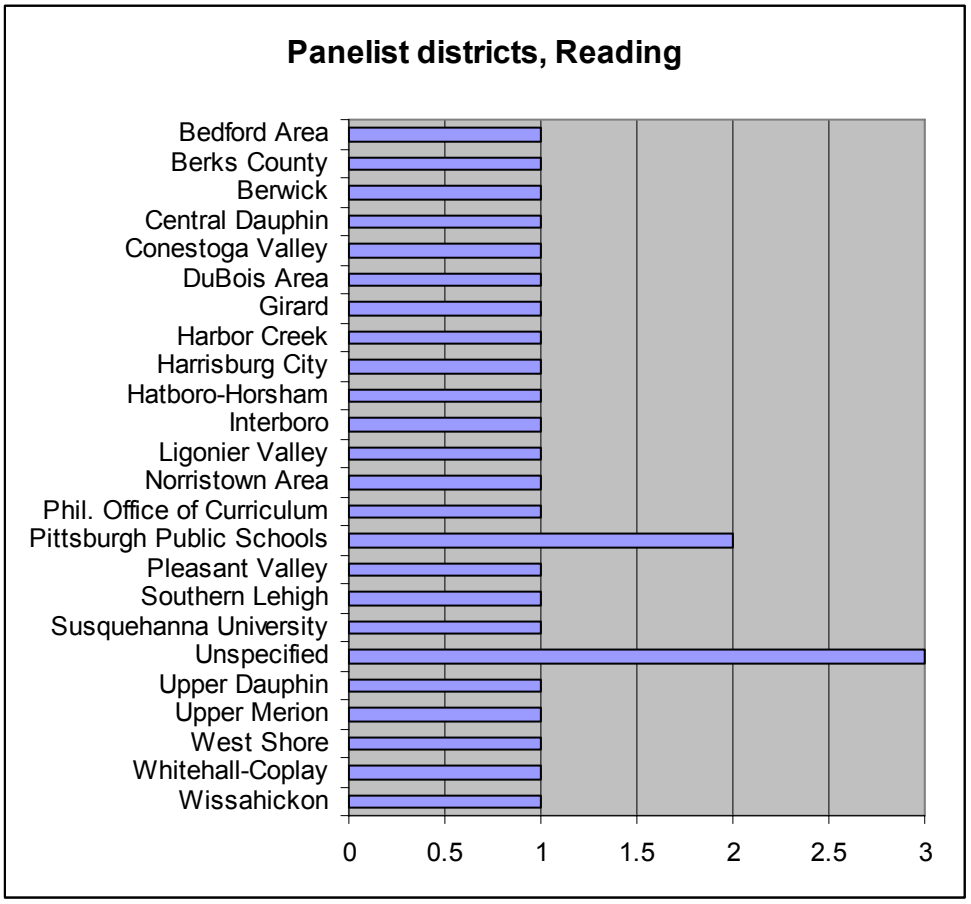


Figure 14.6



BREAKOUT OF PANELIST GROUPS

All of the participants in each subject reviewed grade 6 on day one. Thereafter, they broke into two groups and reviewed grades 4 and 7.

Before giving individual judgments on the basis of the ordered item booklet, panelists first took the operational test. Panelists then reviewed and discussed the performance level descriptors. Panelists were also reminded that the borderline between levels was the point where hypothetical students were passing just out of the lower level and just into the next. After discussion of the performance level descriptors, participants were given an ordered item booklet consisting of test items in order of difficulty and went through three rounds of judgment, discussion, and revision, placing bookmarks or revising bookmark position in each round. Information about the degree of variability in placements by round can be found in Appendix II. This appendix also illustrates the extent to which overall median placements varied from round to round, though there is no way to decompose the shift into effects produced by the presentation of impact scores and effects produced by group discussion or individual reconsideration.

Results were shown to each group (by grade) after Rounds 1 and 2. In addition, a checkpoint at the end of the final round, across all grades within subject, was added to the process. As part of this step, panelists were asked to assess whether they were confident in the resulting articulation of cutpoints across all grades.

CUTPOINTS AND STANDARD ERRORS

ESTABLISHMENT OF INITIAL CUTPOINTS

The formal calculations for placement of the initial cutpoints utilized a pre-smoothing procedure. For grades 4, 6, and 7, starting values were determined by applying a mathematical function to the across-grade 2006 data (after equating). Thus, Performance Levels Validation was used to set the new cutpoints while incorporating information from other grades.

Starting values were presented to the panelists at the beginning of the meeting. Panelists were instructed to place a post-it note in their Ordered Item Booklet to indicate the location of the cutpoints based on the starting values they were provided for their subject and grade.

These starting values (converted to the percentage of students in each of the four levels) are shown below, across grades, for each subject. Also shown is a smoothed cross-grade trend line.

Figure 14.7

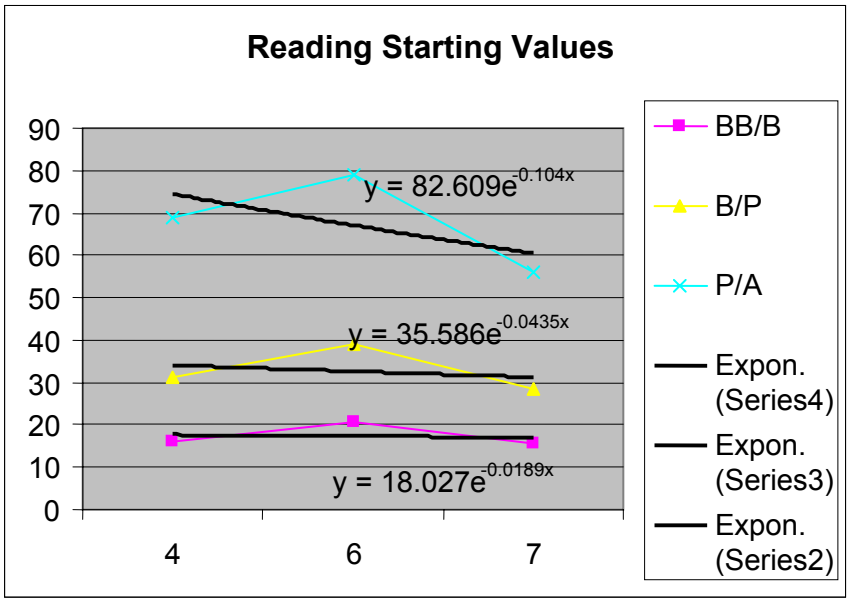
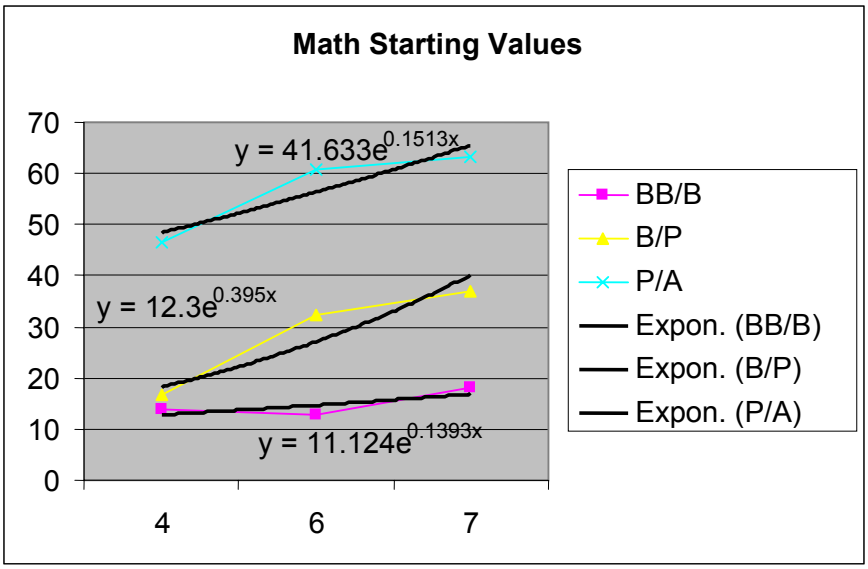


Figure 14.8



COMPUTATION OF STANDARD ERRORS

Standard errors associated with this process represent the variability around the median of all (theoretical) judgments in the pool of Pennsylvania educators and stakeholders from which the panel was chosen as a representative sample. Note that the groups of 27 for each subject were split into two groups that worked on grade 4 or 7. Therefore, the sample size for each group was approximately 13-14.

It is important to note that the calculations were based on the standard error of the median. The standard error of the median, given a normal distribution or large samples, is approximately 25 percent larger than the standard error of the mean. Thus, the standard error of the mean was multiplied by a factor of 1.25 as a reasonable estimate of the standard error of the median.

Note that the standard errors of a performance levels validation would be expected to be smaller than those for an independent standards setting due to the fact that the panelists were given starting values (initial cutpoints) rather than beginning without any prior information. Recall that the participants were instructed to either validate existing cutpoints or suggest new ones. In effect, they went into the process with the goal of articulating the cutpoints across grades in a reasonable manner and were not asked to treat this as independent of the existing cutpoints. Therefore, it was determined that the appropriate standard error of the performance levels validation should be based on the round one judgments, before group discussion. To coincide with the goal of achieving the articulation of cutpoints across grades, the standard errors were pooled across grades within subject and cutpoint.

Table 14-1 shows the standard errors in the logit (Rasch) metric for each cutpoint, by grade, within subject, before and after pooling. Table 14-2 shows the same information, but in the scale score metric. Note that the complete set of standard errors by subject and grade for each round may be found Appendix II.

Table 14-1. Standard Errors Logit Metric

	Reading			Mathematics		
	Standard Errors – Logit Metric			Standard Errors – Logit Metric		
Grade	BB/B	B/P	P/A	BB/B	B/P	P/A
4	0.045	0.055	0.106	0.010	0.051	0.067
6	0.054	0.051	0.113	0.047	0.030	0.082
7	0.085	0.047	0.078	0.040	0.093	0.053
Pooled	0.064	0.051	0.100	0.036	0.064	0.068

Table 14-2. Standard Errors Scale Score Metric

	Reading			Mathematics		
	Standard Errors – Scale Score			Standard Errors – Scale Score		
Grade	BB/B	B/P	P/A	BB/B	B/P	P/A
4	9	11	21	2	10	13
6	11	10	23	9	6	16
7	17	9	16	8	19	11
Pooled	13	10	20	7	13	14

BB- Below Basic
B- Basic
P- Proficient
A- Advanced

USE OF STANDARD ERRORS

Standard error bands are commonly used to set reasonable boundaries around point estimates. If replicated, a one standard error band would be expected to contain the point estimate 68 percent of the time. A two standard errors band would be expected to contain the point estimate 95 percent of the time.

Plots of the one standard error bands in the scale score metric, *centered at the starting value,* across grades for each subject are shown below.

Figure 14.9

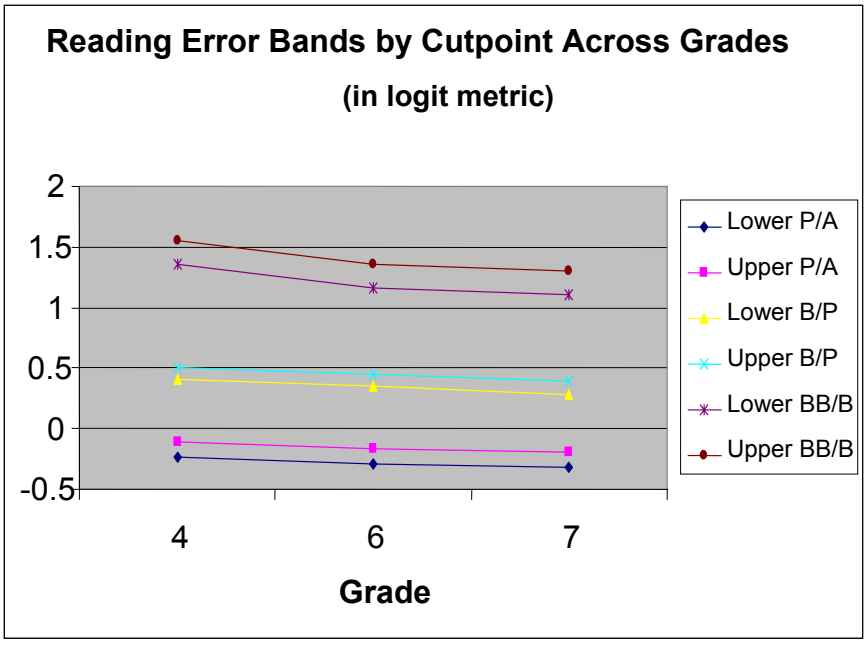
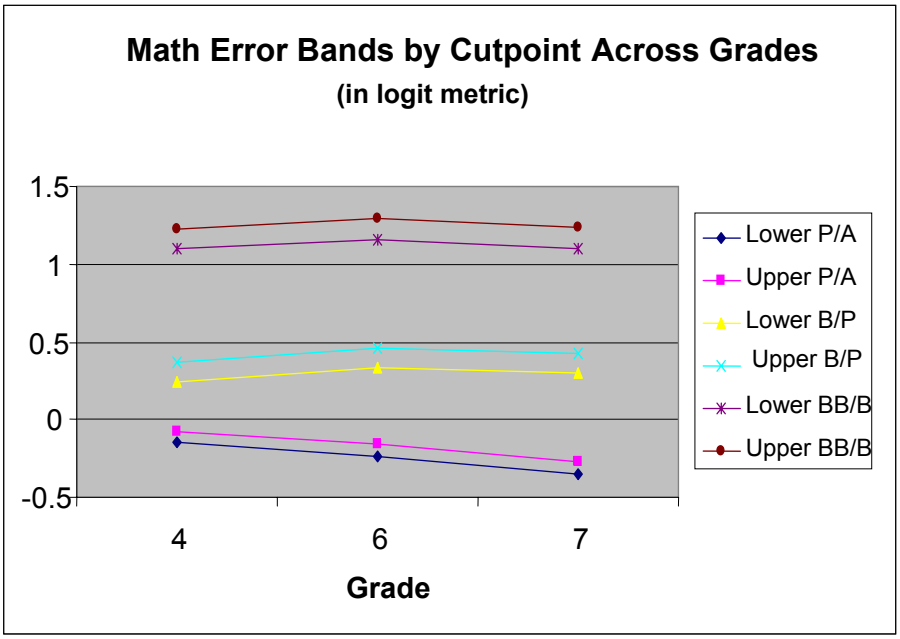


Figure 14.10



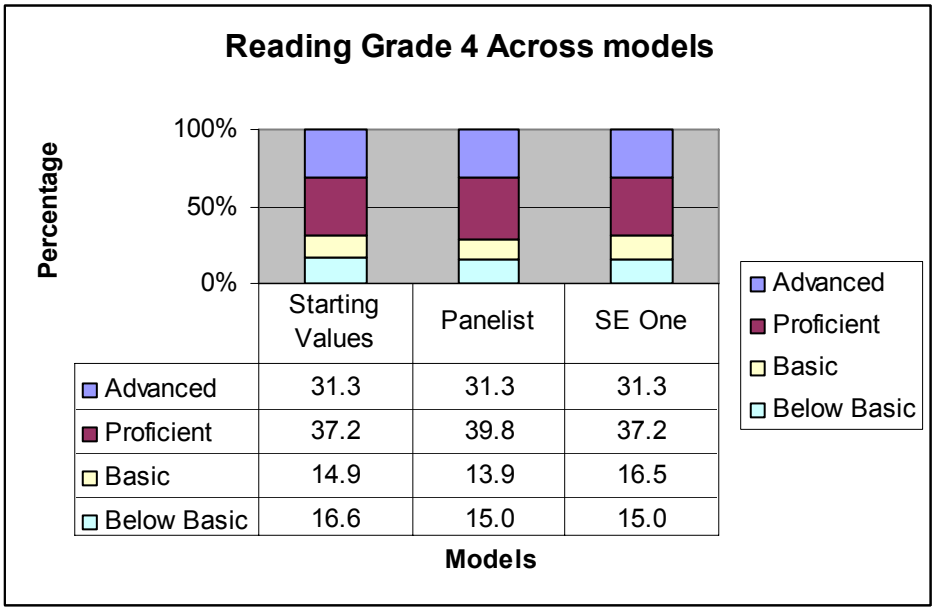
RESULTS

This section presents plots that show the recommendations taken to the State Board on June 29, 2006. Additional information is provided for comparison (a description of the labels is described just below, in bold, as they are presented on the subsequent plots):

- **Starting Values:** As described above.
- **Panelist:** Panelists' final recommendations.
- **SE One:** One standard error applied to the panelist's recommendations (presented to the State Board for approval).

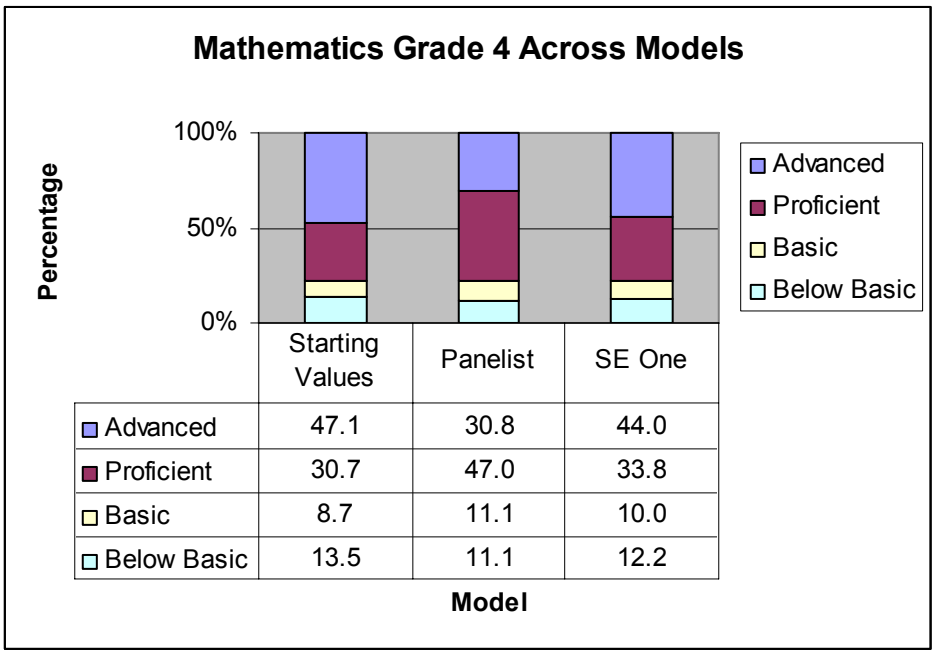
The results shown below are based on the percentage of students in each performance level.

Figure 14.11



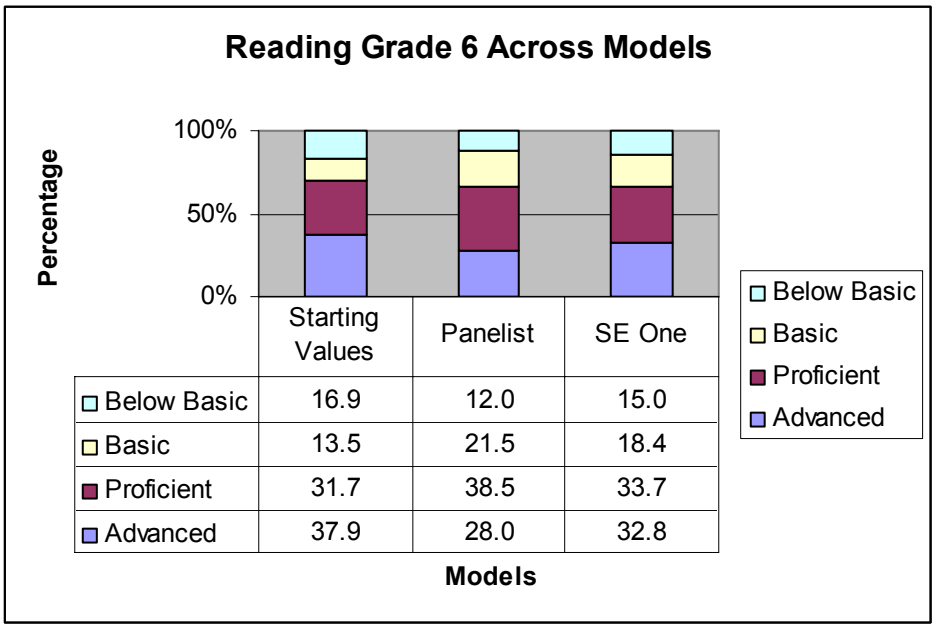
	Starting Values	Panelist	SE One
Advanced	31.3	31.3	31.3
Proficient	37.2	39.8	37.2
Basic	14.9	13.9	16.5
Below Basic	16.6	15.0	15.0

Figure 14.12



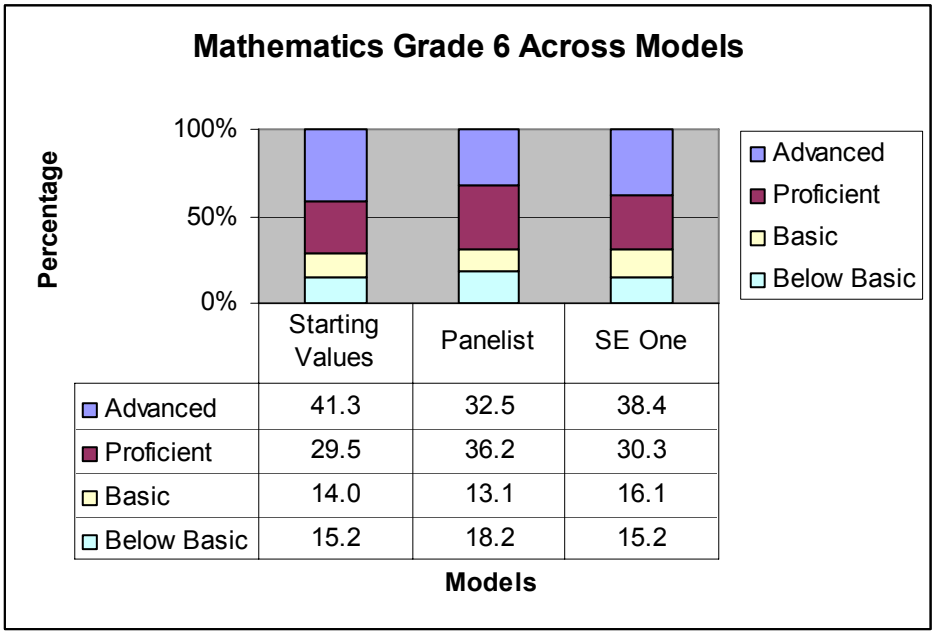
	Starting Values	Panelist	SE One
Advanced	47.1	30.8	44.0
Proficient	30.7	47.0	33.8
Basic	8.7	11.1	10.0
Below Basic	13.5	11.1	12.2

Figure 14.13



	Starting Values	Panelist	SE One
Below Basic	16.9	12.0	15.0
Basic	13.5	21.5	18.4
Proficient	31.7	38.5	33.7
Advanced	37.9	28.0	32.8

Figure 14.14



	Starting Values	Panelist	SE One
Advanced	41.3	32.5	38.4
Proficient	29.5	36.2	30.3
Basic	14.0	13.1	16.1
Below Basic	15.2	18.2	15.2

Figure 14.15

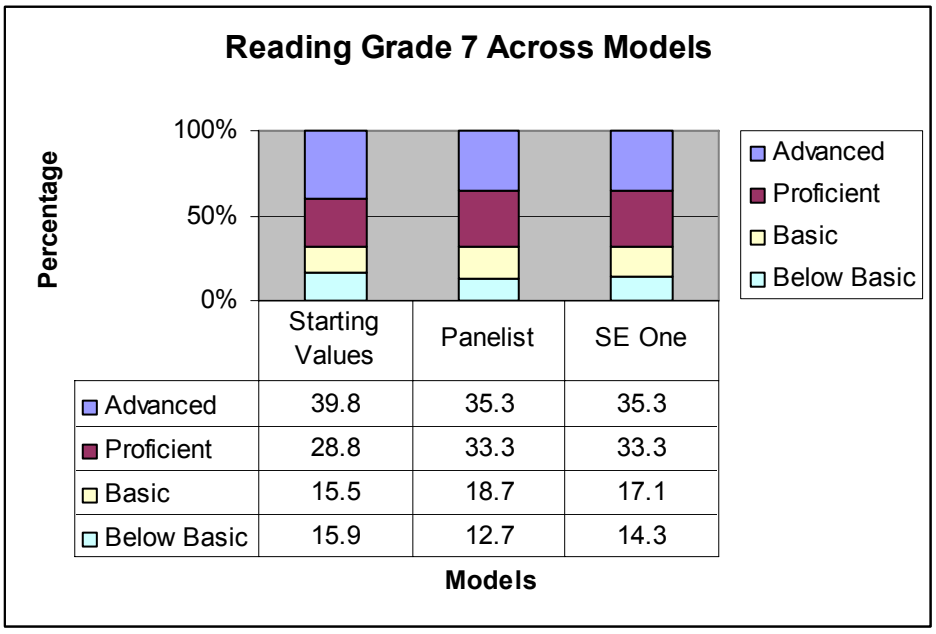
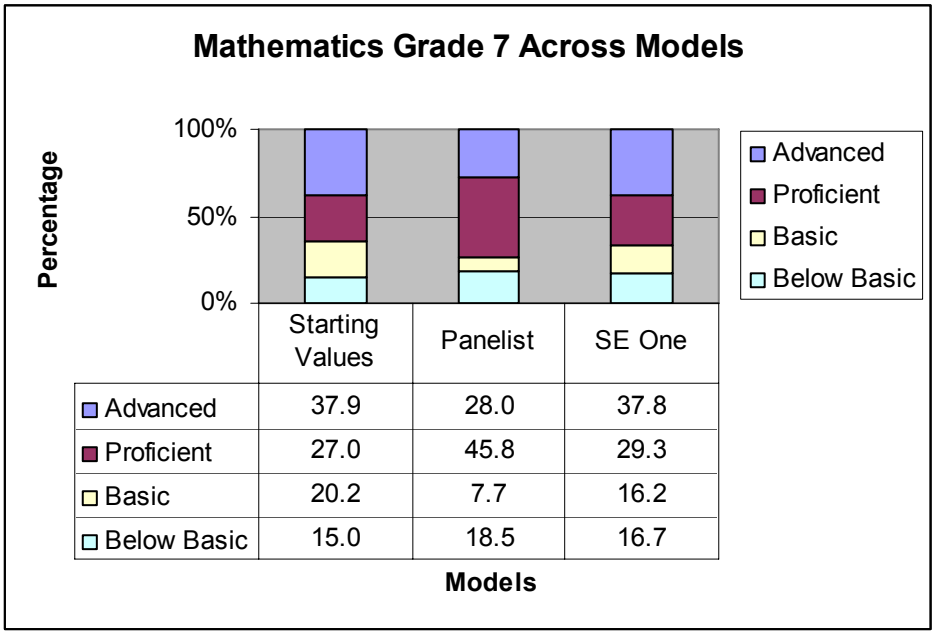


Figure 14.16



SYNTHESIS OF RESULTS

In the cases where the panelists' recommendation fell within a one standard band around the starting values, they were used as the presented value to the State Board. In cases where their recommendations fell outside the error band, the presented value to the State Board was the nearest SE value. That is, if the panelists' recommendation was above the upper SE band, it was converted to the value at the upper SE band; if the panelists' recommendation was below the

lower band, it was converted to the value at the lower band. In this way, the direction of the panelists' recommendations was maintained, if not always the magnitude.

SCALING AND TRANSFORMATIONS

Table 14-3 shows the linear equations used to convert student scores from the logit metric to the scale score metric and Table 14-4 shows the scale score cutpoints for each grade and subject.

Table 14-3. Conversion Equations

Grade	Subject	Conversion Equation
4	Reading	Y = 200X + 1156.3
4	Math	Y = 200X + 1183.52
6	Reading	Y = 200X + 1168.96
6	Math	Y = 200X + 1201.54
7	Reading	Y = 200X + 1194.4
7	Math	Y = 200X + 1225.28

Table 14-4. Scale Score Cutpoints

Reading

Performance Level	Grade 4	Grade 6	Grade 7
Advanced	1469 and up	1456 and up	1470 and up
Proficient	1255-1468	1278-1455	1279-1469
Basic	1112-1254	1121-1277	1131-1278
Below Basic	1111 and below	1120 and below	1130 and below

Mathematics

Performance Level	Grade 4	Grade 6	Grade 7
Advanced	1445 and up	1476 and up	1472 and up
Proficient	1246-1444	1298-1475	1298-1471
Basic	1156-1245	1174-1297	1183-1297
Below Basic	1155 and below	1173 and below	1182 and below

PANELIST EVALUATION SURVEY RESULTS

Summary results may be found in Appendix JJ. The appendix contains question-by-question summary ratings that reflect the panelists' level of satisfaction with the method, materials, training, process, individual and group judgments and recommendations, facilities, food, and use of time. The majority of panelists in both subjects reported being "very confident" in their final judgments and "confident" in the ability of the process to produce reliable and valid results. Panelists also reported being satisfied with the training and finding the materials provided useful.

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Appendix A:

Assessment Anchor Content Standard Integration

Pennsylvania

Assessment Anchor

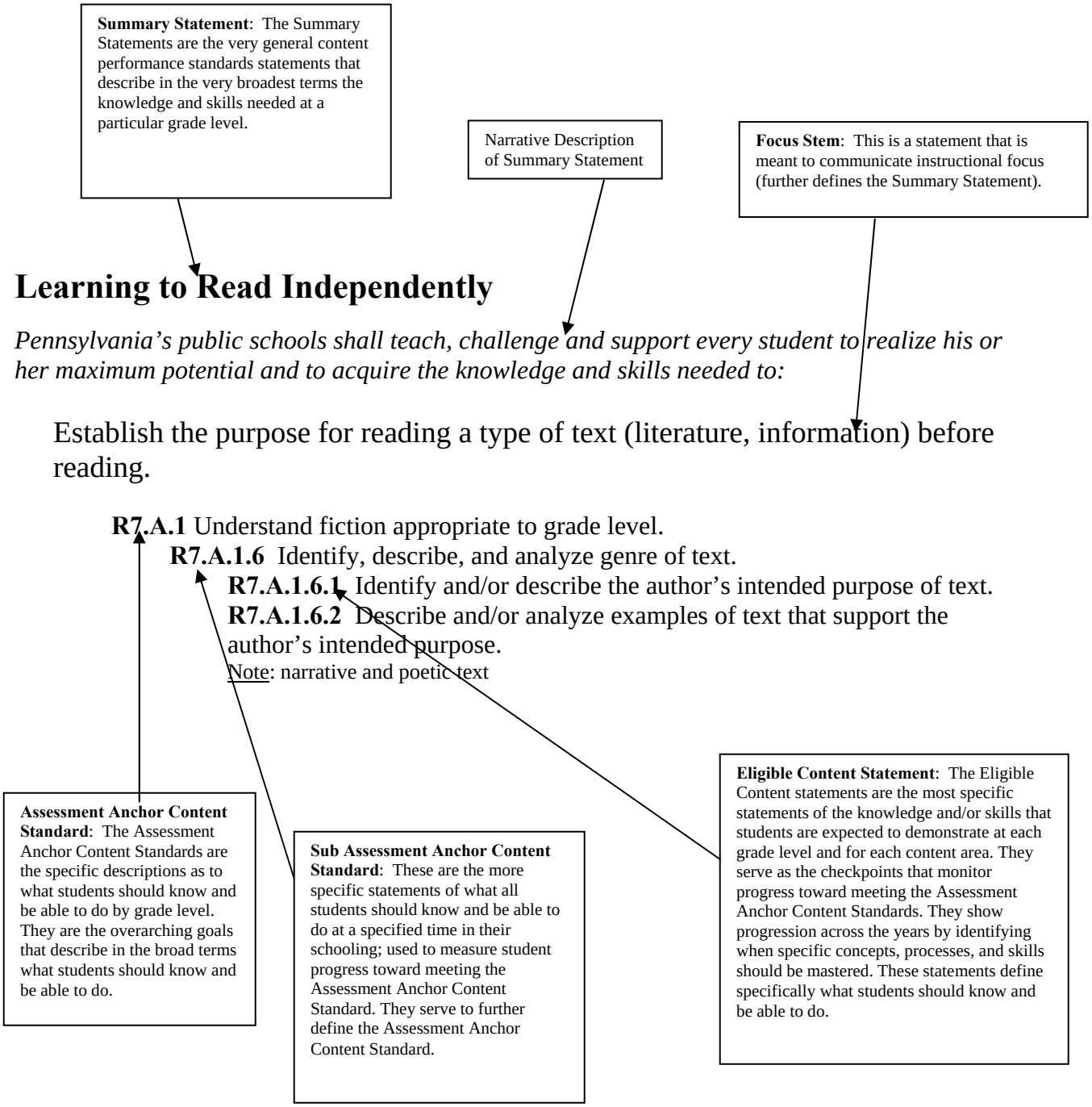
Content Standards

Grade 7

2007

** Assessed at the local level.*

Understanding the
2007 Pennsylvania Assessment Anchor Content Standards
For Grades 3-11



** Assessed at the local level.*

Grade 7

Learning to Read Independently

Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

Locate appropriate texts (literature, information, documents) for an assigned purpose before reading.

R7.A.1 Understand fiction appropriate to grade level.
- **R7.A.1.6** Identify, describe, and analyze genre of text.
  - **R7.A.1.6.1** Identify and/or describe the author's intended purpose of text.
  - **R7.A.1.6.2** Describe and/or analyze examples of text that support the author's intended purpose.
    Note: narrative and poetic text

R7.A.2 Understand nonfiction appropriate to grade level.
- **R7.A.2.6** Identify, describe, and analyze genre of text.
  - **R7.A.2.6.1** Identify and/or describe the author's intended purpose of text.
  - **R7.A.2.6.2** Describe and/or analyze examples of text that support the author's intended purpose.
    Note: informational, persuasive, biographical, instructional (practical/how-to/advertisement) and editorial/essay text

Identify and use common organizational structures and graphic features to comprehend information.

R7.B.3 Understand concepts and organization of nonfictional text.
- **R7.B.3.3** Identify, compare, explain, interpret, describe, and analyze how text organization clarifies meaning of nonfictional text.
  - **R7.B.3.3.1** Identify, interpret, and/or analyze text organization, including sequence, question/answer, comparison/contrast, cause/effect, or problem/solution.
  - **R7.B.3.3.2** Identify content that would fit in a specific section of text.
  - **R7.B.3.3.3** Interpret graphics and charts and/or make connections between text and the content of graphics and charts.
  - **R7.B.3.3.4** Identify, compare, explain, interpret, describe, and/or analyze the sequence of steps in a list of directions.

Use knowledge of root words as well as context clues and glossaries to understand specialized vocabulary in the content areas during reading. Use these words accurately in speaking and writing.

R7.A.1 Understand fiction appropriate to grade level.

** Assessed at the local level.*

R7.A.1.2 Identify and apply word recognition skills.

R7.A.1.2.1 Identify how the meaning of a word is changed when an affix is added; identify the meaning of a word from the text with an affix.

R7.A.1.2.2 Define and/or apply how the meaning of words or phrases changes when using context clues given in explanatory sentences.

R7.A.2 Understand nonfiction appropriate to grade level.

R7.A.2.2 Identify and apply word recognition skills.

R7.A.2.2.1 Identify and apply how the meaning of a word is changed when an affix is added; identify and apply the meaning of a word from the text with an affix.

R7.A.2.2.2 Define and/or apply how the meaning of words or phrases changes when using context clues given in explanatory sentences.

*Identify basic facts and ideas in text using specific strategies (e.g., recall genre characteristics, set a purpose for reading, generate essential questions as aids to comprehension and clarify understanding through rereading and discussion).

Expand a reading vocabulary by identifying and correctly using idioms and words with literal and figurative meanings. Use a dictionary or related reference.

R7.A.1 Understand fiction appropriate to grade level.

R7.A.1.1 Identify and apply the meaning of vocabulary.

R7.A.1.1.1 Identify and/or apply the meaning of multiple-meaning words used in text.

R7.A.1.1.2 Identify and/or apply a synonym or antonym of a word used in text.

R7.A.2 Understand nonfiction appropriate to grade level.

R7.A.2.1 Identify and apply the meaning of vocabulary in nonfiction.

R7.A.2.1.1 Identify and/or apply the meaning of multiple-meaning words used in text.

R7.A.2.1.2 Identify and/or apply the meaning of content-specific words used in text.

Understand the meaning of and apply key vocabulary across the various subject areas.

R7.A.1 Understand fiction appropriate to grade level.

R7.A.1.1 Identify and apply the meaning of vocabulary.

R7.A.1.1.1 Identify and/or apply the meaning of multiple-meaning words used in text.

R7.A.1.1.2 Identify and/or apply a synonym or antonym of a word used in text.

** Assessed at the local level.*

R7.A.2 Understand nonfiction appropriate to grade level.

R7.A.2.1 Identify and apply the meaning of vocabulary in nonfiction.

R7.A.2.1.1 Identify and/or apply the meaning of multiple-meaning words used in text.

R7.A.2.1.2 Identify and/or apply the meaning of content-specific words used in text.

R7.A.2.2 Identify and apply word recognition skills.

R7.A.2.2.1 Identify and apply how the meaning of a word is changed when an affix is added; identify and apply the meaning of a word from the text with an affix.

R7.A.2.2.2 Define and/or apply how the meaning of words or phrases changes when using context clues given in explanatory sentences.

Demonstrate after reading understanding and interpretation of both fiction and nonfiction text, including public documents.

Make, and support with evidence, assertions about texts. Compare and contrast texts using themes, settings, characters and ideas. Make extensions to related ideas, topics or information. Describe the context of a document. Analyze the positions, arguments and evidence in public documents.

R7.A.1 Understand fiction appropriate to grade level.

R7.A.1.3 Make inferences, draw conclusions, and make generalizations based on text.

R7.A.1.3.1 Make inferences and/or draw conclusions based on information from text.

R7.A.1.3.2 Cite evidence from text to support generalizations.

R7.A.1.4 Identify and explain main ideas and relevant details.

R7.A.1.4.1 Identify and/or explain stated or implied main ideas and relevant supporting details from text.

Note: Items may target specific paragraphs.

R7.A.1.5 Summarize a fictional text as a whole.

R7.A.1.5.1 Summarize the key details and/or events of a fictional text as a whole.

R7.A.1.6 Identify, describe, and analyze genre of text.

R7.A.1.6.1 Identify and/or describe the author's intended purpose of text.

R7.A.1.6.2 Describe and/or analyze examples of text that support the author's intended purpose.

Note: narrative and poetic text

R7.A.2 Understand nonfiction appropriate to grade level.

R7.A.2.3 Make inferences, draw conclusions, and make generalizations based on text.

R7.A.2.3.1 Make inferences and/or draw conclusions based on information from text.

R7.A.2.3.2 Cite evidence from text to support generalizations.

** Assessed at the local level.*

R7.A.2.4 Identify and explain main ideas and relevant details.

R7.A.2.4.1 Identify and/or explain stated or implied main ideas and relevant supporting details from text.

Note: Items may target specific paragraphs.

R7.A.2.5 Summarize a nonfictional text as a whole.

R7.A.2.5.1 Summarize the major points, processes, and/or events of a nonfictional text as a whole.

R7.A.2.6 Identify, describe, and analyze genre of text.

R7.A.2.6.1 Identify and/or describe the author's intended purpose of text.

R7.A.2.6.2 Describe and/or analyze examples of text that support the author's intended purpose.

Note: informational, persuasive, biographical, instructional (practical/how-to/advertisement) and editorial/essay text

R7.B.3 Understand concepts and organization of nonfictional text.

R7.B.3.1 Interpret, describe, and analyze the characteristics and uses of facts and opinions in nonfictional text.

R7.B.3.1.1 Interpret, describe, and/or analyze the use of facts and opinions to make a point or construct an argument in nonfictional text.

*Demonstrate fluency and comprehension in reading.

Read familiar materials aloud with accuracy. Self-correct mistakes. Use appropriate rhythm, flow, meter and pronunciation. Read a variety of genres and types of text. Demonstrate comprehension (Standard 1.1.8.G.). (Recommend: 25 books/year)

Reading Critically in All Content

Read and understand essential content of informational texts and documents in all academic areas.

Differentiate fact from opinion utilizing resources that go beyond traditional text (e.g., newspapers, magazines and periodicals) to electronic media. Distinguish between essential and nonessential information across texts and going beyond texts to a variety of media; identify bias and propaganda where present. Draw inferences based on a variety of information sources. Evaluate text organization and content to determine the author's purpose and effectiveness according to the author's theses, accuracy and thoroughness.

R7.A.1 Understand fiction appropriate to grade level.

R7.A.1.3 Make inferences, draw conclusions, and make generalizations based on text.

R7.A.1.3.1 Make inferences and/or draw conclusions based on information from text.

R7.A.1.3.2 Cite evidence from text to support generalizations.

R7.A.2 Understand nonfiction appropriate to grade level.

R7.A.2.3 Make inferences, draw conclusions, and make generalizations based on text.

** Assessed at the local level.*

R7.A.2.3.1 Make inferences and/or draw conclusions based on information from text.

R7.A.2.3.2 Cite evidence from text to support generalizations.

R7.A.2.4 Identify and explain main ideas and relevant details.

R7.A.2.4.1 Identify and/or explain stated or implied main ideas and relevant supporting details from text.

Note: Items may target specific paragraphs.

R7.A.2.5 Summarize a nonfictional text as a whole.

R7.A.2.5.1 Summarize the major points, processes, and/or events of a nonfictional text as a whole.

R7.B.3 Understand concepts and organization of nonfictional text.

R7.B.3.1 Interpret, describe, and analyze the characteristics and uses of facts and opinions in nonfictional text.

R7.B.3.1.1 Interpret, describe, and/or analyze the use of facts and opinions to make a point or construct an argument in nonfictional text.

R7.B.3.2 Distinguish between essential and nonessential information within or between texts.

R7.B.3.2.1 Identify, interpret, describe, and/or analyze bias and propaganda techniques in nonfictional text.

R7.B.3.3 Identify, compare, explain, interpret, describe, and analyze how text organization clarifies meaning of nonfictional text.

R7.B.3.3.1 Identify, interpret, and/or analyze text organization, including sequence, question/answer, comparison/contrast, cause/effect or problem/solution.

R7.B.3.3.2 Identify content that would fit in a specific section of text.

R7.B.3.3.3 Interpret graphics and charts and/or make connections between text and the content of graphics and charts.

R7.B.3.3.4 Identify, compare, explain, interpret, describe, and/or analyze the sequence of steps in a list of directions.

*Use and understand a variety of media and evaluate the quality of material produced.

Compare and analyze how different media offer a unique perspective on the information presented. Analyze the techniques of particular media messages and their effect on a targeted audience. Use, design and develop a media project that expands understanding (e.g., authors and works from a particular historical period).

*Produce work in at least one literary genre that follows the conventions of the genre.

Reading, Analyzing and Interpreting Literature

*Read and understand works of literature.

** Assessed at the local level.*

Analyze the use of literary elements by an author including characterization, setting, plot, theme, point of view, tone and style.

R7.B.1 Understand components within and between texts.

R7.B.1.1 Interpret, compare, describe, analyze, and evaluate components of fiction and literary nonfiction.

R7.B.1.1.1 Interpret, compare, describe, analyze, and/or evaluate the relationships among the following within fiction and literary nonfiction:

Character (may also be called narrator, speaker, subject of a biography):

- Interpret, compare, describe, analyze, and/or evaluate character actions, motives, dialogue, emotions/feelings, traits, and relationships among characters within fictional and literary nonfictional text.
- Interpret, compare, describe, analyze, and/or evaluate the relationship between characters and other components of text.

Setting:

- Interpret, compare, describe, analyze, and/or evaluate the setting of fiction or literary nonfiction.
- Interpret, compare, describe, analyze, and/or evaluate the relationship between setting and other components of text.

Plot (may also be called action):

- Interpret, compare, describe, analyze, and/or evaluate elements of the plot (conflict, rising action, climax and/or resolution).
- Interpret, compare, describe, analyze, and/or evaluate the relationship between elements of the plot and other components of text.

Theme:

- Interpret, compare, describe, analyze, and/or evaluate the theme of fiction or literary nonfiction.
- Interpret, compare, describe, analyze and/or evaluate the relationship between the theme and other components of text.

R7.B.1.2 Make connections between texts.

R7.B.1.2.1 Interpret, compare, describe, analyze, and/or evaluate connections between texts.

R7.B.2 Understand literary devices in fictional and nonfictional text.

R7.B.2.2 Identify, interpret, describe, and analyze the point of view of the narrator in fictional and nonfictional text.

R7.B.2.2.1 Identify and/or describe point of view of the narrator as first person or third person point of view.

R7.B.2.2.2 Interpret and/or describe the effectiveness of the point of view used by the author.

Analyze the effect of various literary devices.

Sound techniques (e.g., rhyme, rhythm, meter, alliteration). Figurative language (e.g., personification, simile, metaphor, hyperbole, allusion).

R7.B.2 Understand literary devices in fictional and nonfictional text.

R7.B.2.1 Identify, interpret, describe, and analyze figurative language in fiction and nonfiction.

** Assessed at the local level.*

R7.B.2.1.1 Identify, interpret, describe, and/or analyze examples of personification, simile, metaphor, hyperbole, and imagery in text.
R7.B.2.1.2 Identify, interpret, describe, and/or analyze the author's purpose for and effectiveness at using figurative language in text.

*Identify poetic forms (e.g., ballad, sonnet, couplet).

*Analyze drama to determine the reasons for a character's actions taking into account the situation and basic motivation of the character.

Read and respond to nonfiction and fiction including poetry and drama.

R7.A.1 Understand fiction appropriate to grade level.
R7.A.1.6 Identify, describe, and analyze genre of text.
R7.A.1.6.1 Identify and/or describe the author's intended purpose of text.
R7.A.1.6.2 Describe and/or analyze examples of text that support the author's intended purpose.
Note: narrative and poetic text

R7.A.2 Understand nonfiction appropriate to grade level.
R7.A.2.6 Identify, describe, and analyze genre of text.
R7.A.2.6.1 Identify and/or describe the author's intended purpose of text.
R7.A.2.6.2 Describe and/or analyze examples of text that support the author's intended purpose.
Note: informational, persuasive, biographical, instructional (practical/how-to/advertisement) and editorial/essay text

R7.B.1 Understand components within and between texts.
R7.B.1.1 Interpret, compare, describe, analyze, and evaluate components of fiction and literary nonfiction.
R7.B.1.1.1 Interpret, compare, describe, analyze, and/or evaluate the relationships among the following within fiction and literary nonfiction:
Character (may also be called narrator, speaker, subject of a biography):
- Interpret, compare, describe, analyze, and/or evaluate character actions, motives, dialogue, emotions/feelings, traits, and relationships among characters within fictional and literary nonfictional text.
- Interpret, compare, describe, analyze, and/or evaluate the relationship between characters and other components of text.

Setting:
- Interpret, compare, describe, analyze, and/or evaluate the setting of fiction or literary nonfiction.
- Interpret, compare, describe, analyze, and/or evaluate the relationship between setting and other components of text.

Plot (may also be called action):
- Interpret, compare, describe, analyze, and/or evaluate elements of the plot (conflict, rising action, climax and/or resolution).
- Interpret, compare, describe, analyze, and/or evaluate the relationship between elements of the plot and other components of text.

Theme:

** Assessed at the local level.*

- Interpret, compare, describe, analyze, and/or evaluate the theme of fiction or literary nonfiction.
- Interpret, compare, describe, analyze and/or evaluate the relationship between the theme and other components of text.

R7.B.1.2 Make connections between texts.

R7.B.1.2.1 Interpret, compare, describe, analyze, and/or evaluate connections between texts.

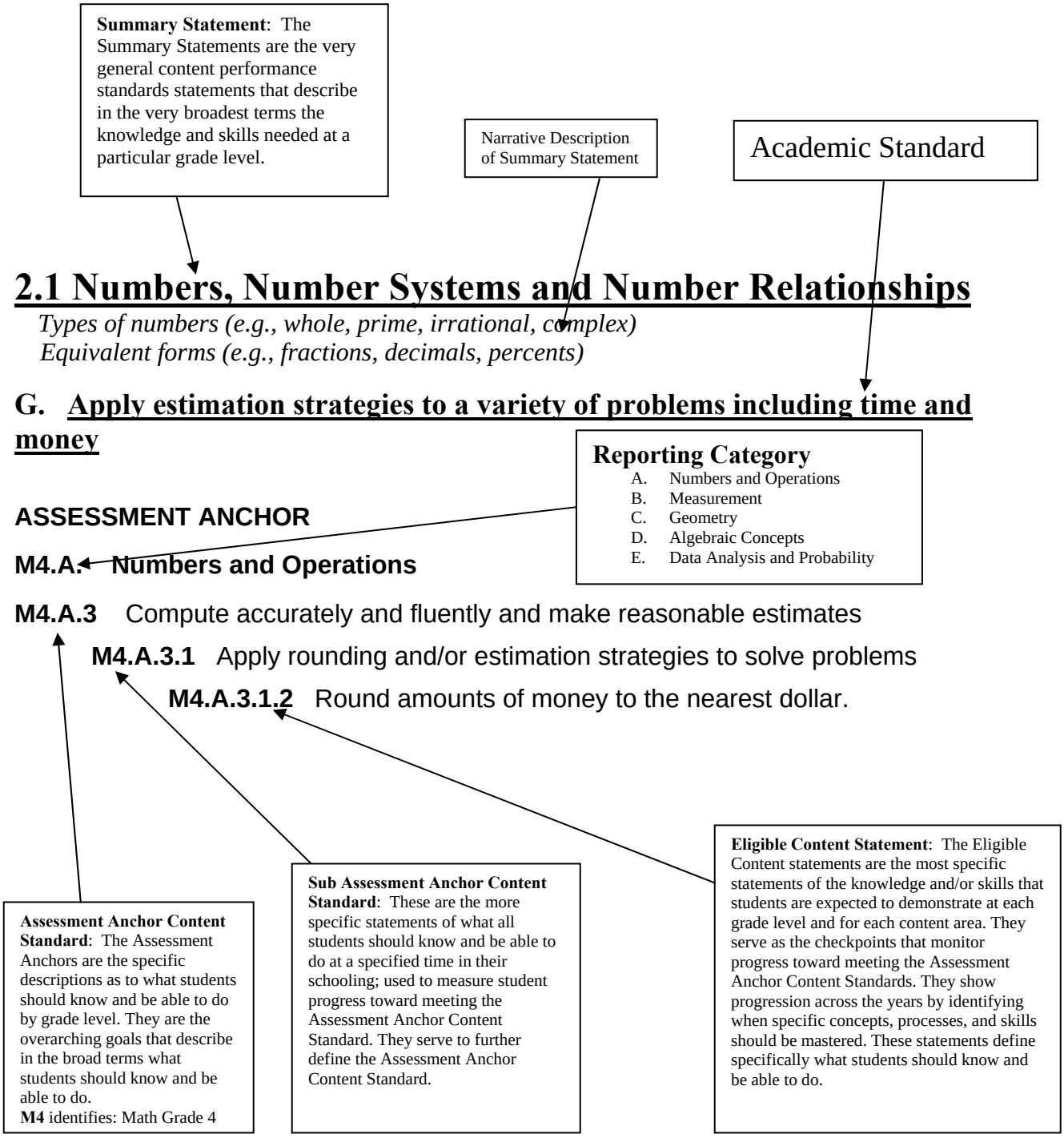
** Assessed at the local level.*

Assessment Anchor Math Content Standards

Grade 4 2007

** Assessed at the local level.*

Understanding the
2007 Pennsylvania Assessment Anchor Content Standards
For Grades 3-11



** Assessed at the local level.*

Standards / Anchor Alignment - Math Grade 4

2.1. Numbers, Number Systems and Number Relationships

C. (3rd)Represent equivalent forms of the same number through the use of concrete objects, drawings, word names, and symbols.

ASSESSMENT ANCHOR

M4.A.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems.

M4.A.1.1 Use models and/or words to represent quantities as decimals, fractions or mixed numbers.

M4.A.1.1.1 Write the fraction or decimal, including mixed numbers, which corresponds to a drawing or set – no simplification necessary.

M4.A.1.1.2 Create a drawing or set that represents a given fraction or decimal, including mixed numbers (through the tenths).

D. (3rd) Use drawings, diagrams or models to show the concept of fraction as part of a whole.

ASSESSMENT ANCHOR

M4.A.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems.

M4.A.1.1 Use models and/or words to represent quantities as decimals, fractions or mixed numbers.

M4.A.1.1.1 Write the fraction or decimal, including mixed numbers, which corresponds to a drawing or set – no simplification necessary.

M4.A.1.1.2 Create a drawing or set that represents a given fraction or decimal, including mixed numbers (through the tenths).

E. (3rd) Count, compare and make change using a collection of coins and one-dollar bills.

ASSESSMENT ANCHOR

M4.A.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems.

M4.A.1.2 Compare quantities and magnitudes of numbers.

M4.A.1.2.2 Compare and/or order whole numbers through 6 digits and amounts of money to $100 (limit sets for ordering, to no more than 4 numbers).

** Assessed at the local level.*

A. (5th) Use expanded notation to represent whole numbers or decimals.

ASSESSMENT ANCHOR

M4.A.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems.

M4.A.1.1 Use models and/or words to represent quantities as decimals, fractions or mixed numbers.

M4.A.1.1.4 Write whole numbers in expanded, standard and/or word form through 6 digits (example of standard to expanded form: 43,076 = 40,000+3000+70+6).

D. (5th) Use models to represent fractions and decimals.

ASSESSMENT ANCHOR

M4.A.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems.

M4.A.1.1 Use models and/or words to represent quantities as decimals, fractions or mixed numbers.

M4.A.1.1.1 Write the fraction or decimal, including mixed numbers, which corresponds to a drawing or set – no simplification necessary.

M4.A.1.1.2 Create a drawing or set that represents a given fraction or decimal, including mixed numbers (through the tenths).

M4.A.1.2 Compare quantities and magnitudes of numbers.

M4.A.1.2.1 Locate/identify fractions or decimals on a number line (decimals and fractions through the tenths – do not mix fractions and decimals).

F. (5th) Use simple concepts of negative numbers (e.g., on a number line, in counting, in temperature).

ASSESSMENT ANCHOR

M4.A.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems.

M4.A.1.2 Compare quantities and magnitudes of numbers.

M4.A.1.2.1 Locate/identify fractions or decimals on a number line (decimals and fractions through the tenths – do not mix fractions and decimals).

G. (5th) Develop and apply number theory concepts (e.g., primes, factors, multiples, composites) to represent numbers in various ways.

ASSESSMENT ANCHOR

M4.A.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems.

M4.A.1.3 Develop and/or apply number theory concepts to represent numbers in various ways

** Assessed at the local level.*

M4.A.1.3.1 Find/list/identify all factors through 10 of any given number.

M4.A.1.3.2 Find/list/identify multiples of a number, where the multiples do not exceed 100

** Assessed at the local level.*

2.2 Computation and Estimation

(5th) Create and solve word problems involving addition, subtraction, multiplication and division of whole numbers.

ASSESSMENT ANCHOR

M4.A.2 Understand the meanings of operations, use operations and understand how they relate to each other.

M4.A.2.1 Use operations to solve problems (may include word problems).

M4.A.2.1.1 Solve problems involving all operations with whole numbers, and/or explain the solution (limit to two-step problems; e.g., multiply then add – single digit multipliers and divisors).

(5th) Develop and apply algorithms to solve word problems that involve addition, subtraction, and/or multiplication with decimals with and without regrouping.

ASSESSMENT ANCHOR

M4.A.2 Understand the meanings of operations, use operations and understand how they relate to each other.

M4.A.2.1 Use operations to solve problems (may include word problems).

M4.A.2.1.2 Solve problems involving addition or subtraction with decimals through the tenths or money to the cent and/or explain the solution. Limit to two-step problems.

ASSESSMENT ANCHOR

M4.A.3 Compute accurately and fluently and make reasonable estimates.

M4.A.3.2 Compute using fractions or decimals (written vertically or horizontally - straight computation only).

M4.A.3.2.1 Solve addition or subtraction problems involving decimals through hundredths (decimal numbers must have the same number of places).

(5th) Develop and apply algorithms to solve word problems that involve addition, subtraction, and/or multiplication with fractions and mixed numbers that include like and unlike denominators.

ASSESSMENT ANCHOR

M4.A.3 Compute accurately and fluently and make reasonable estimates

M4.A.3.2 Compute using fractions or decimals (written vertically or horizontally - straight computation only).

** Assessed at the local level.*

M4.A.3.2.2 Solve addition or subtraction problems with fractions with like denominators (denominators to 10, no simplifying necessary).

(5th) Demonstrate the ability to round numbers.

ASSESSMENT ANCHOR

M4.A.3 Compute accurately and fluently and make reasonable estimates.

M4.A.3.1 Apply rounding and/or estimation strategies to solve problems.

M4.A.3.1.1 Round whole numbers to the nearest ten, hundred, thousand, ten-thousand or hundred-thousand.

M4.A.3.1.2 Round amounts of money to the nearest dollar.

(5th) Determine through estimations the reasonableness of answers to problems involving addition, subtraction, multiplication and division of whole numbers.

ASSESSMENT ANCHOR

M4.A.3 Compute accurately and fluently and make reasonable estimates.

M4.A.3.1 Apply rounding and/or estimation strategies to solve problems.

M4.A.3.1.3 Estimate the answer to addition, subtraction and multiplication problems using whole numbers through 6 digits (for multiplication, no more than 2 digits X 1 digit, excluding powers of 10).

G. (5th) Apply estimation strategies to a variety of problems including time and money

ASSESSMENT ANCHOR

M4.A.3 Compute accurately and fluently and make reasonable estimates.

M4.A.3.1 Apply rounding and/or estimation strategies to solve problems.

M4.A.3.1.2 Round amounts of money to the nearest dollar.

** Assessed at the local level.*

2.3 Measurement and Estimation

C. (3rd) Determine and compare elapsed times.

ASSESSMENT ANCHOR

M4.B.1 Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.

M4.B.1.1 Determine time and/or calculate elapsed time.

M4.B.1.1.2 Identify time (analog or digital) as the amount of minutes before and/or after the hour (e.g., 2:50 is the same as 10 minutes before 3:00; quarter past six is the same as 6:15).

M4.B.1.1.3 Calculate the elapsed time, to the minute, in a given situation (limited to 2 adjacent hours).

M4.B.1.1.4 Determine the beginning or ending time, given the elapsed time (limited to 2 adjacent hours).

D. (3rd) Tell time (analog and digital) to the minute.

ASSESSMENT ANCHOR

M4.B.1 Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.

M4.B.1.1 Determine time and/or calculate elapsed time.

M4.B.1.1.1 Match/construct analog time (a picture of a clock), to the same time written in digital.

G. (3rd) Demonstrate the concept of multiplication as repeated addition and arrays.

ASSESSMENT ANCHOR

M4.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

M4.B.2.2 Estimate measurements of figures.

M4.B.2.2.1 Make reasonable estimates of weights, lengths and capacities of familiar objects (measurements in the same system).

(5th) Select and use appropriate instruments and units for measuring quantities (e.g., perimeter, volume, area, weight, time, temperature).

** Assessed at the local level.*

ASSESSMENT ANCHOR

M4.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

M4.B.2.1 Select and/or use appropriate tools and/or attributes for measuring quantities.

M4.B.2.1.1 Use or read a ruler (provided) to measure to the nearest 1/4 inch or centimeter.

(5th) Select and use standard tools to measure the size of figures with specified accuracy, including length, width, perimeter and area.

ASSESSMENT ANCHOR

M4.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

M4.B.2.1 Apply appropriate techniques, tools and formulas to determine measurements.

M4.B.2.1.1 Use or read a ruler (provided) to measure to the nearest 1/4 inch or centimeter.

(5th) Estimate, refine and verify specified measurements of objects.

ASSESSMENT ANCHOR

M4.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

M4.B.2.2 Estimate measurements of figures.

M4.B.2.2.1 Make reasonable estimates of weights, lengths and capacities of familiar objects (measurements in the same system).

** Assessed at the local level.*

2.4. Mathematical Reasoning and Connections (embedded in all anchors)

2.5. Mathematical Problem Solving and Communication (embedded in all anchors)

** Assessed at the local level.*

2.6. Statistics and Data Analysis

A. (3rd) Gather, organize and display data using pictures, tallies, charts, bar graphs and pictographs.

ASSESSMENT ANCHOR

M4.E.1 Formulate questions that can be addressed with data and/or collect, organize, display and analyze data.

M4.E.1.2 Organize or display data using tables, bar graphs, line graphs or pictographs.

M4.E.1.2.1 Graph data or complete a graph given the data (bar graph or pictograph – grid is provided).

M4.E.1.2.2 Translate information from one type of display to another (table, chart, bar graph, or pictograph).

B. (3rd) Formulate and answer questions based on data shown on graphs.

ASSESSMENT ANCHOR

M4.E.1 Formulate questions that can be addressed with data and/or collect, organize, display and analyze data.

M4.E.1.1 Interpret data shown on tables, charts, line graphs, bar graphs or pictographs

M4.E.1.1.1 Describe, interpret and/or answer questions based on data shown in tables, charts, bar graphs or pictographs.

C. (3rd) Predict the likely number of times a condition will occur based on analyzed data.

ASSESSMENT ANCHOR

M4.E.3 Understand and apply basic concepts of probability or outcomes.

M4.E.3.1 Predict and/or measure the likelihood of events.

M4.E.3.1.1 Make a prediction based on data or chance (data may be shown in tables, charts, line graphs, bar graphs or pictographs).

A. (5th) Organize and display data using pictures, tallies, tables, charts, bar graphs and circle graphs.

ASSESSMENT ANCHOR

M4.E.1 Formulate questions that can be addressed with data and/or collect, organize, display and analyze data.

M4.E.1.2 Organize or display data using tables, bar graphs, line graphs or pictographs.

M4.E.1.2.1 Graph data or complete a graph given the data (bar graph or pictograph – grid is provided).

** Assessed at the local level.*

M4.E.1.2.2 Translate information from one type of display to another (table, chart, bar graph, or pictograph).

(5th) Predict the likely number of times a condition will occur based on analyzed data.

ASSESSMENT ANCHOR

M4.E.3 Understand and apply basic concepts of probability or outcomes.

M4.E.3.1 Predict and/or measure the likelihood of events.

M4.E.3.1.1 Make a prediction based on data or chance (data may be shown in tables, charts, line graphs, bar graphs or pictographs).

(5th) Construct and defend simple conclusions based on data.

ASSESSMENT ANCHOR

M4.E.1 Formulate questions that can be addressed with data and/or collect, organize, display and analyze data.

M4.E.1.1 Interpret data shown on tables, charts, line graphs, bar graphs or pictographs.

M4.E.1.1.1 Describe, interpret and/or answer questions based on data shown in tables, charts, bar graphs or pictographs.

** Assessed at the local level.*

2.7. Probability and Predictions

A. (3rd) Predict and measure the likelihood of events and recognize that the results of an experiment may not match predicted outcomes.

ASSESSMENT ANCHOR

M4.E.3 Understand and apply basic concepts of probability or outcomes.

M4.E.3.1 Predict and/or measure the likelihood of events.

M4.E.3.1.1 Make a prediction based on data or chance (data may be shown in tables, charts, line graphs, bar graphs or pictographs).

** Assessed at the local level.*

2.8. Algebra and Functions

(3rd) Recognize, describe, extend, create and replicate a variety of patterns including attribute, activity, number and geometric patterns.

ASSESSMENT ANCHOR

M4.D.1 Demonstrate an understanding of patterns, relations and functions.

M4.D.1.1 Recognize, describe, extend, create and/or replicate a variety of patterns.

M4.D.1.1.1 Extend or find a missing element in a numerical or geometric pattern (+, - or x may be used – numerical patterns must be whole numbers).

M4.D.1.1.3 Create or replicate a numerical or geometric pattern showing 3 repetitions (+, - or x may be used - numerical patterns must be whole numbers or money).

(3rd) Use concrete objects and trial and error to solve number sentences and check if solutions are sensible and accurate.

ASSESSMENT ANCHOR

M4.D.2 Represent and/or analyze mathematical situations and structures using algebraic symbols, words, tables and graphs.

M4.D.2.2 Determine the missing number or symbol in a number sentence.

M4.D.2.2.1 Solve for a missing number in an equation (using estimation, guess & check, etc.). May use +, - or single digit x or ÷.

(3rd) Substitute a missing addend in a number sentence.

ASSESSMENT ANCHOR

M4.D.2 Represent and/or analyze mathematical situations and structures using algebraic symbols, words, tables and graphs.

M4.D.2.2 Determine the missing number or symbol in a number sentence.

M4.D.2.2.2 Identify the missing symbol (+, -, x, ÷, =, <, >) that makes a number sentence true (single digit x or ÷ only).

(3rd) Create a story to match a given combination of symbols and numbers.

** Assessed at the local level.*

ASSESSMENT ANCHOR

M4.D.2 Represent and/or analyze mathematical situations and structures using algebraic symbols, words, tables and graphs.

M4.D.2.1 Use numbers and symbols to model the concepts of expressions and/or equations.

M4.D.2.1.1 Correlate story situations with expressions or equations (may use numbers and one operation +, - or x; no variables).

(5th) Recognize, reproduce, extend, create and describe patterns, sequences and relationships verbally, numerically, symbolically and graphically, using a variety of materials.

ASSESSMENT ANCHOR

M4.D.1 Demonstrate an understanding of patterns, relations and functions.

M4.D.1.1 Recognize, describe, extend, create and/or replicate a variety of patterns.

M4.D.1.1.1 Extend or find a missing element in a numerical or geometric pattern (+, - or x may be used – numerical patterns must be whole numbers).

M4.D.1.1.3 Create or replicate a numerical or geometric pattern showing 3 repetitions (+, - or x may be used - numerical patterns must be whole numbers or money).

C. (5th) Form rules based on patterns (e.g., an equation that relates pairs in a sequence).

ASSESSMENT ANCHOR

M4.D.1 Demonstrate an understanding of patterns, relations and functions.

M4.D.1.1 Recognize, describe, extend, create and/or replicate a variety of patterns

M4.D.1.1.2 Identify/describe the rule for a numerical or geometric pattern shown (+, - or x may be used - numerical patterns must be whole numbers).

ASSESSMENT ANCHOR

M4.D.1 Demonstrate an understanding of patterns, relations and functions.

M4.D.1.2 Apply simple function rules.

M4.D.1.2.1 Determine the missing elements in a function table (functions may use +, - or x and whole numbers or money).

(5th) Describe a realistic situation using information given in equations, inequalities, tables or graphs.

** Assessed at the local level.*

ASSESSMENT ANCHOR

M4.D.2 Represent and/or analyze mathematical situations and structures using algebraic symbols, words, tables and graphs.

M4.D.2.1 Use numbers and symbols to model the concepts of expressions and/or equations.

M4.D.2.1.1 Correlate story situations with expressions or equations (may use numbers and one operation +, - or x; no variables).

** Assessed at the local level.*

2.9. Geometry

(3rd) Identify and draw lines of symmetry in geometric figures.

ASSESSMENT ANCHOR

M4.C.2 Identify and/or apply concepts of transformations or symmetry.

M4.C.2.1 Apply the concepts of reflection and symmetry.

M4.C.2.1.1 Identify or create figures that have one, two or no lines of symmetry.

B. (5th) Classify and compare triangles and quadrilaterals according to sides or angles.

ASSESSMENT ANCHOR

M4.C.1 Analyze characteristics and properties of two- and three- dimensional geometric shapes and demonstrate understanding of geometric relationships.

M4.C.1.1 Identify/describe the basic properties of geometric figures in two or three dimensions.

M4.C.1.1.1 Identify, classify and/or compare two-dimensional figures (circle, triangle, square, parallelogram, trapezoid, rhombus, rectangle, pentagon, hexagon, octagon).

C. (5th) Identify and measure circles, their diameters and their radii.

ASSESSMENT ANCHOR

M4.C.1 Analyze characteristics and properties of two- and three- dimensional geometric shapes and demonstrate understanding of geometric relationships.

M4.C.1.1 Identify/describe the basic properties of geometric figures in two or three dimensions.

M4.C.1.1.1 Identify, classify and/or compare two-dimensional figures (circle, triangle, square, parallelogram, trapezoid, rhombus, rectangle, pentagon, hexagon, octagon).

I. (5th) Identify properties of geometric figures (e.g., parallel, perpendicular, similar, congruent, symmetrical).

ASSESSMENT ANCHOR

M4.C.1 Analyze characteristics and properties of two- and three- dimensional geometric shapes and demonstrate understanding of geometric relationships.

M4.C.1.2 Represent and/or use properties or relationships of points, lines, line segments, rays and angles.

M4.C.1.2.1 Identify points, lines, line segments or rays.

M4.C.1.2.2 Identify parallel and perpendicular lines.

** Assessed at the local level.*

J. (5th) Represent and use the concepts of line, point and plane.

ASSESSMENT ANCHOR

M4.C.1 Analyze characteristics and properties of two- and three- dimensional geometric shapes and demonstrate understanding of geometric relationships.

M4.C.1.1 Identify/describe the basic properties of geometric figures in two or three dimensions.

M4.C.1.1.1 Identify, classify and/or compare two-dimensional figures (circle, triangle, square, parallelogram, trapezoid, rhombus, rectangle, pentagon, hexagon, octagon).

M4.C.1.1.2 Identify or classify three-dimensional figures (cube, sphere, rectangular prism and pyramid).

L. (5th) Define the basic properties of squares, pyramids, parallelograms, quadrilaterals, trapezoids, polygons, rectangles, rhombi, circles, triangles, cubes, prisms, spheres and cylinders.

ASSESSMENT ANCHOR

M4.C.1 Analyze characteristics and properties of two- and three- dimensional geometric shapes and demonstrate understanding of geometric relationships.

M4.C.1.2 Represent and/or use properties or relationships of points, lines, line segments, rays and angles.

M4.C.1.2.2 Identify parallel and perpendicular lines.

2.10. Trigonometry

2.11. Concepts of Calculus

** Assessed at the local level.*

Appendix B:

2005-2006 Mathematics General Scoring Guideline

GENERAL DESCRIPTION OF MATHEMATICS SCORING GUIDELINES:

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 a *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 as required by the task.

0 – The response has no correct answer and *insufficient* evidence to demonstrate any understanding of the mathematical concepts and procedures as 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, entirely erased, or written refusal to respond
OT – Off task
IL – Illegible
LOE – Response in a language other than English

Appendix C:

2005-2006 Reading General Scoring Guideline

GENERAL SCORING GUIDELINES FOR OPEN-ENDED READING ITEMS

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

Appendix D:

Assessment Anchor Content Standards (Assessment Anchors) within Reporting Categories Summary

Tally Summary Sheet

Grade 4 Secure and Confidential **2006 PSSA Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Numbers and Operations	1			Understand relationships and representations of numbers and number systems		4		12		16	16		1		3		4	4
	1	1	1	Match/construct drawing to fraction, decimal, mixed number	1		3		4		4	1		3		4		4
	1	1	2	Match standard form to word form	1		4		5		5	1		4		5		5
	1	1	3	Write in expanded, standard or word form	1		3		4		4	1		3		4		4
	1	2	1	Locate/identify fractions or decimals on number line	2		4		6		6	2		4		6		6
	1	2	2	Compare/order whole numbers	2		2		4		4	2		2		4		4
	1	3	1	Find/identify/list factors	2		2		4		4	2		2		4		4
	1	3	2	Find/identify/list multiples	2		2		4		4	2		2		4		4
	Total For Assessment Anchor A.1 Understand relationships among and representations of numbers and number systems				11	4	20	12	31	16	47	11	1	20	3	31	4	35
	2			Understand meanings, uses and relations of operations				16		16	16				4		4	4
	2	1	1	Solve problems involving all operations (whole numbers)	3		2		5		5	3		2		5		5
	2	1	2	Solve problems with decimals	3		3		6		6	3		3		6		6
	Total For Assessment Anchor A.2 Understand meanings, uses of operations and how they relate to each other				6		5	16	11	16	27	6		5	4	11	4	15
	3			Compute accurately/fluently and make reasonable estimates														
	3	1	1	Round whole numbers	3		3		6		6	3		3		6		6
	3	1	2	Round to nearest dollar	2		2		4		4	2		2		4		4
	3	1	3	Estimate answers	2				2		2	2				2		2
	3	2	1	Solve addition/subtraction problems involving decimals	1				1		1	1				1		1
	3	2	2	Solve addition/subtraction problems involving fractions	1				1		1	1				1		1
	Total For Assessment Anchor A.3 Compute accurately and fluently and make reasonable estimates				9		5		14		14	9		5		14		14
Total For Reporting Category A					26	4	30	28	56	32	88	26	1	30	7	56	8	64

Tally Summary Sheet

2006 PSSA

Grade 4

Secure and Confidential

Reading

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Comprehension and Reading Skills	1	1	1	Identify meaning of multiple-meaning words			1		1		1			1		1		1
	1	1	2	Identify synonym/antonym	1		8		9		9	1		8		9		9
	1	2	1	Identify meaning of unfamiliar word/root/affix			1		1		1			1		1		1
	1	2	2	Define words from context clues	2		5		7		7	2		5		7		7
	1	3	1	Make inferences/draw conclusions	5	3	20	3	25	6	31	5	1	20	1	25	2	27
	1	4	1	Identify main ideas/relevant details	7		16		23		23	7		16		23		23
	1	5	1	Summarize main ideas/important details				6		6	6				2		2	2
	1	6	1	Identify author's purpose for writing text	1		7		8		8	1		7		8		8
	Total For Assessment Anchor A.1 Understanding fiction text appropriate to grade level.				16	3	58	9	74	12	86	16	1	58	3	74	4	78
	2	1	1	Identify meaning of multiple-meaning words														
	2	1	2	Identify meaning of content-specific words														
	2	2	1	Identify meaning of unfamiliar word/root/affix			1		1		1			1		1		1
	2	2	2	Define words from context clues	2		3		5		5	2		3		5		5
	2	3	1	Make inferences/draw conclusions	8		15	6	23	6	29	8		15	2	23	2	25
	2	4	1	Identify main ideas/relevant details	3		15	9	18	9	27	3		15	3	18	3	21
	2	5	1	Summarize main ideas/important details		3				3	3		1				1	1
	2	6	1	Identify text as informational/persuasive														
	Total For Assessment Anchor A.2 Understanding nonfiction text appropriate to grade level.				13	3	34	15	47	18	65	13	1	34	5	47	6	53
Total For Reporting Category A					29	6	92	24	121	30	151	29	2	92	8	121	10	131

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Grade 4

Secure and Confidential

Reading

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Interpretation and Analysis of Literature	1	1	1	Identify in fiction and literary nonfiction (character/narrator/ speaker/subject, setting, plot, topic); identify in nonfiction (content, topic)	8	6	14	18	22	24	46	8	2	14	6	22	8	30
	Total For Assessment Anchor B.1 Identify/compare components within and across text.				8	6	14	18	22	24	46	8	2	14	6	22	8	30
	2	1	1	Identify examples of alliteration	1				1		1	1				1		1
	2	1	2	Identify meter (poetry)														
	2	2	1	Identify examples of personification														
	2	2	2	Identify examples of simile														
	Total For Assessment Anchor B.2 Identify and describe how the author uses literary devices to convey meaning.				1				1		1	1				1		1
	3	1	1	Identify fact/opinion	2		4		6		6	2		4		6		6
	3	2	1	Identify exaggeration														
	3	3	1	Identify text organization (sequence, question/answer, comparison/contrast, cause/effect, problem/solution)														
	3	3	2	Use headings to locate information or identify content that fits into a specific section			2		2		2			2		2		2
	3	3	3	Interpret and make connections between graphics/charts/texts														
	Total For Assessment Anchor B.3 Identify and interpret concepts and organization of nonfiction text.				2		6		8		8	2		6		8		8
Total For Reporting Category B					11	6	20	18	31	24	55	11	2	20	6	31	8	39

Tally Summary Sheet

2006 PSSA

Grade 6

Secure and Confidential

Reading

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Comprehension and Reading Skills	1	1	1	Identify meaning of multiple-meaning words														
	1	1	2	Identify synonym/antonym	1				1		1	1				1		1
	1	2	1	Identify meaning of unfamiliar word/root/affix														
	1	2	2	Define words from context clues	1		3		4		4	1		3		4		4
	1	3	1	Make inferences/draw conclusions	3		7		10		10	3		7		10		10
	1	3	2	Cite evidence to support generalizations	1				1		1	1				1		1
	1	4	1	Identify and/or interpret main ideas/relevant details	1		10		11		11	1		10		11		11
	1	5	1	Summarize main ideas/themes and important details				3		3	3				1		1	1
	1	6	1	Identify text as narrative/poetic	1		1		2		2	1		1		2		2
	1	6	2	Identify text that supports narrative or poetic purpose														
	Total For Assessment Anchor A.1 Understanding fiction text appropriate to grade level.				8		21	3	29	3	32	8		21	1	29	1	30
	2	1	1	Multiple-meaning words														
	2	1	2	Identify meaning of content-specific words														
	2	2	1	Unfamiliar word/root/affix														
	2	2	2	Define words from context clues	1		4		5		5	1		4		5		5
	2	3	1	Make inferences/draw conclusions	7		13	6	20	6	26	7		13	2	20	2	22
	2	3	2	Cite evidence to support generalizations	1		3		4		4	1		3		4		4
	2	4	1	Identify and/or interpret main ideas/relevant details	7	3	23	12	30	15	45	7	1	23	4	30	5	35
	2	5	1	Summarize main ideas/important details	1				1		1	1				1		1
	2	6	1	Identify text as informational/persuasive	2		1		3		3	2		1		3		3
	2	6	2	Identify text that supports informational or persuasive purpose														
	Total For Assessment Anchor A.2 Understanding nonfiction text appropriate to grade level.				19	3	44	18	63	21	84	19	1	44	6	63	7	70
Total For Reporting Category A					27	3	65	21	92	24	116	27	1	65	7	92	8	100

Tally Summary Sheet

2006 PSSA

Grade 6

Secure and Confidential

Reading

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Interpretation and Analysis of Literature	1	1	1	Identify/compare relationships in fiction and literary nonfiction (character/narrator/speaker/subject, setting, plot, theme); identify/compare in nonfiction (content, topic)	6	9	16	15	22	24	46	6	3	16	5	22	8	30
	Total For Assessment Anchor B.1 Identify/compare components within and across text.				6	9	16	15	22	24	46	6	3	16	5	22	8	30
	2	1	1	Identify examples of alliteration	1				1		1	1				1		1
	2	1	2	Identify meter (poetry)														
	2	1	3	Describe how sound techniques add meaning														
	2	2	1	Identify/interpret examples of simile	2		1		3		3	2		1		3		3
	2	2	2	Identify/interpret examples of personification														
	2	2	3	Identify/interpret examples of metaphor	1		1		2		2	1		1		2		2
	2	3	1	Identify author's use of point of view (first/third)			3		3		3			3		3		3
	2	3	2	Describe author's point of view														
	Total For Assessment Anchor B.2 Identify and describe how the author uses literary devices to convey meaning.				4		5		9		9	4		5		9		9
	3	1	1	Identify fact/opinion	1		5		6		6	1		5		6		6
	3	2	1	Identify stereotypes														
	3	3	1	Identify text organization (sequence, question/answer, comparison/contrast, cause/effect, problem/solution)	1		4		5		5	1		4		5		5
	3	3	2	Use headings to locate information or identify content that fits into a specific section	1		1		2		2	1		1		2		2
	3	3	3	Interpret and make connections between graphics/charts/texts														
	Total For Assessment Anchor B.3 Identify and interpret concepts and organization of nonfiction text.				3		10		13		13	3		10		13		13
Total For Reporting Category B					13	9	31	15	44	24	68	13	3	31	5	44	8	52

Tally Summary Sheet

2006 PSSA

Grade 7

Secure and Confidential

Reading

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Comprehension and Reading Skills	1	1	1	Identify meaning of multiple-meaning words			1		1		1			1		1		1
	1	1	2	Identify synonym/antonym	1		3		4		4	1		3		4		4
	1	2	1	Identify meaning of unfamiliar word/root/affix														
	1	2	2	Define words from context clues	1		2		3		3	1		2		3		3
	1	3	1	Make inferences/draw conclusions	1		8	3	9	3	12	1		8	1	9	1	10
	1	3	2	Cite evidence to support generalizations														
	1	4	1	Identify and/or interpret main ideas/relevant details	6		14		20		20	6		14		20		20
	1	5	1	Summarize main ideas/themes and important details														
	1	6	1	Identify text as narrative/poetic	1		2		3		3	1		2		3		3
	1	6	2	Identify text that supports narrative or poetic purpose														
	Total For Assessment Anchor A.1 Understanding fiction text appropriate to grade level.				10		30	3	40	3	43	10		30	1	40	1	41
	2	1	1	Apply meaning of multiple-meaning words in context														
	2	1	2	Identify meaning of content-specific words														
	2	2	1	Identify meaning of unfamiliar word/root/affix														
	2	2	2	Define words from context clues	2		5		7		7	2		5		7		7
	2	3	1	Make inferences/draw conclusions	5	3	12	6	17	9	26	5	1	12	2	17	3	20
	2	3	2	Cite evidence to support generalizations	2				2		2	2				2		2
	2	4	1	Identify and/or interpret main ideas/relevant details	6		23	9	29	9	38	6		23	3	29	3	32
	2	5	1	Summarize main ideas/important details			1		1		1			1		1		1
	2	6	1	Determine author's purpose	1		2		3		3	1		2		3		3
	2	6	2	Identify text that supports narrative, informational, persuasive, or instructional purpose														
	Total For Assessment Anchor A.2 Understanding nonfiction text appropriate to grade level.				16	3	43	15	59	18	77	16	1	43	5	59	6	65
Total For Reporting Category A					26	3	73	18	99	21	120	26	1	73	6	99	7	106

Tally Summary Sheet

Secure and Confidential

2006 PSSA

Grade 7

Reading

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Interpretation and Analysis of Literature	1	1	1	Describe/interpret relationships in fiction and literary nonfiction (character/narrator/speaker/subject, setting, plot, theme); identify/compare in nonfiction (content, topic)	7	9	17	18	24	27	51	7	3	17	6	24	9	33
	Total For Assessment Anchor B.1 Identify/compare components within and across text.				7	9	17	18	24	27	51	7	3	17	6	24	9	33
	2	1	1	Interpret/analyze effect of simile, metaphor, hyperbole, and imagery	6		3		9		9	6		3		9		9
	2	1	2	Identify author's purpose/effectiveness of figurative language														
	2	2	1	Identify if poem/story is written in first or third person point of view														
	2	2	2	Analyze the effectiveness of the point of view as used by the author														
	Total For Assessment Anchor B.2 Identify and analyze how the author uses literary devices to convey meaning.				6		3		9		9	6		3		9		9
	3	1	1	Identify a fact that supports an assertion; identify an opinion			1		1		1			1		1		1
	3	1	2	Analyze positions/arguments for evidence of fact/opinion														
	3	2	1	Identify bias/propaganda techniques														
	3	3	1	Analyze text organization (sequence, question/answer, comparison/contrast, cause/effect, problem/solution)	1		2		3		3	1		2		3		3
	3	3	2	Identify content that fits into a specific section														
	3	3	3	Interpret and make connections between graphics/charts/texts														
	Total For Assessment Anchor B.3 Identify and analyze concepts and organization of nonfiction text.				1		3		4		4	1		3		4		4
Total For Reporting Category B					14	9	23	18	37	27	64	14	3	23	6	37	9	46

Tally Summary Sheet

2006 PSSA

Grade 4

Secure and Confidential

Mathematics

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Measurement	1			Understand measurable attributes and units, systems, processes of measurement		4		4		8	8		1		1		2	2
	1	1	1	Match analog time to digital time			1		1		1			1		1		1
	1	1	2	Identify time			1		1		1			1		1		1
	1	1	3	Calculate elapsed time			1		1		1			1		1		1
	1	1	4	Determine beginning or ending time			1		1		1			1		1		1
	1	2	1	Convert linear measurements	1		1		2		2	1		1		2		2
	Total For Assessment Anchor B.1 Understand measurable attributes and units, systems, processes of measurement				1	4	5	4	6	8	14	1	1	5	1	6	2	8
	2			Apply techniques, tools & formulas to determine measurements				4		4	4				1		1	1
	2	1	1	Use/read ruler to nearest 1/4 inch	1		1		2		2	1		1		2		2
	2	1	2	Find perimeter of square, rectangle	1		1		2		2	1		1		2		2
	2	1	3	Know difference between perimeter and area and when to use each	1				1		1	1				1		1
	2	2	1	Make reasonable estimates of measurement	1		1		2		2	1		1		2		2
	2	2	2	Estimate area of irregular figure			1		1		1			1		1		1
	Total For Assessment Anchor B.2 Apply appropriate techniques, tools and formulas to determine measurements				4		4	4	8	4	12	4		4	1	8	1	9
Total For Reporting Category B					5	4	9	8	14	12	26	5	1	9	2	14	3	17

Tally Summary Sheet

2006 PSSA

Grade 4

Secure and Confidential

Mathematics

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Geometry	1			Analyze characteristics & properties of 2-D & 3-D shapes														
	1	1	1	Identify/classify/compare 2-D figures	1		1		2		2	1		1		2		2
	1	1	2	Classify 3-D figures, identify characteristics	1		2		3		3	1		2		3		3
	1	1	3	Draw/identify right triangles	1		1		2		2	1		1		2		2
	1	2	1	Identify points/lines/segments/rays	1		1		2		2	1		1		2		2
	1	2	2	Identify parallel/perpendicular lines	1				1		1	1				1		1
	1	2	3	Visually classify angles	1		1		2		2	1		1		2		2
	Total For Assessment Anchor C.1 Analyze characteristics and properties of two- and three-dimensional geometric shapes				6		6		12		12	6		6		12		12
	2			Identify and/or apply concepts of transformations and symmetry				4		4	4				1		1	1
	2	1	1	Identify/draw reflection	1		1		2		2	1		1		2		2
	2	1	2	Identify/draw figures having one, two, or no lines of symmetry	1		2		3		3	1		2		3		3
	Total For Assessment Anchor C.2 Identify and/or apply concepts of transformations and symmetry				2		3	4	5	4	9	2		3	1	5	1	6
	3			Locate points/describe relationships using the coordinate plane				4		4	4				1		1	1
	3	1	1	Match or plot ordered pair	1		1		2		2	1		1		2		2
	Total For Assessment Anchor C.3 Locate points or describe relationships using the coordinate plane				1		1	4	2	4	6	1		1	1	2	1	3
Total For Reporting Category C					9		10	8	19	8	27	9		10	2	19	2	21

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Grade 4

Secure and Confidential

Mathematics

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D: Algebraic Concepts	1			Understand patterns, relations and functions				4		4	4				1		1	1
	1	1	1	Extend or find a missing element in a numerical or geometric pattern	1		2		3		3	1		2		3		3
	1	1	2	Identify/describe rule for numerical or geometric pattern	1		1		2		2	1		1		2		2
	1	1	3	Create or replicate numerical or geometric pattern	1		2		3		3	1		2		3		3
	1	2	1	Determine missing elements in function table given the rule	1		1		2		2	1		1		2		2
	1	2	2	Determine rule given a table	1		1		2		2	1		1		2		2
	Total For Assessment Anchor D.1 Understand patterns, relations and functions				5		7	4	12	4	16	5		7	1	12	1	13
	2			Represent/analyze mathematical situations				4		4	4				1		1	1
	2	1	1	Correlate story with expression or equation	2		1		3		3	2		1		3		3
	2	2	1	Solve for missing number in equation	1		1		2		2	1		1		2		2
	2	2	2	Identify the missing symbol	1				1		1	1				1		1
	Total For Assessment Anchor D.2 Represent/analyze mathematical situations using numbers, symbols, words, tables and/or graphs				4		2	4	6	4	10	4		2	1	6	1	7
Total For Reporting Category D					9		9	8	18	8	26	9		9	2	18	2	20

Tally Summary Sheet

Grade 4 Secure and Confidential **2006 PSSA Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
E: Data Analysis and Probability	1			Formulate questions; organize, display, interpret or analyze data				4		4	4				1		1	1
	1	1	1	Describe/interpret/answer questions based on data shown	1				1		1	1				1		1
	1	2	1	Graph data or complete a graph	1				1		1	1				1		1
	1	2	2	Translate data from one type of display to another	1		1		2		2	1		1		2		2
	Total For Assessment Anchor E.1 Formulate or answer questions about data and/or organize, display, interpret or analyze data				3		1	4	4	4	8	3		1	1	4	1	5
	2			Select and use appropriate statistical methods to analyze data				4		4	4				1		1	1
	2	1	1	Determine the mean	1		1		2		2	1		1		2		2
	2	1	2	Identify mode and/or median	1		1		2		2	1		1		2		2
	Total For Assessment Anchor E.2 Select and use appropriate statistical methods to analyze data				2		2	4	4	4	8	2		2	1	4	1	5
	3			Understand and apply basic concepts of probability		4		4		8	8		1		1		2	2
	3	1	1	Make a prediction based on data or chance			1		1		1			1		1		1
	3	1	2	Determine likelihood of an event			1		1		1			1		1		1
	3	2	1	Show/determine all combinations			1		1		1			1		1		1
	Total For Assessment Anchor E.3 Understand and apply basic concepts of probability					4	3	4	3	8	11		1	3	1	3	2	5
Total For Reporting Category E					5	4	6	12	11	16	27	5	1	6	3	11	4	15

Tally Summary Sheet

Grade 6 Secure and Confidential **2006 PSSA Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Numbers and Operations	1			Understand relationships and representations of numbers and number systems				8		8	8				2		2	2
	1	1	1	Represent percents as fractions and/or decimals														
	1	1	2	Convert between fractions and decimals	1		2		3		3	1		2		3		3
	1	1	3	Represent number in exponential form	2				2		2	2				2		2
	1	2	1	Compare/order integers	1		2		3		3	1		2		3		3
	1	2	2	Compare/order rational numbers	2		2		4		4	2		2		4		4
	1	3	1	Model percents	1		2		3		3	1		2		3		3
	1	4	1	Find GCF of two numbers	1		2		3		3	1		2		3		3
	1	4	2	Find LCM of two numbers	1		1		2		2	1		1		2		2
	Total For Assessment Anchor A.1 Understand relationships among and representations of numbers and number systems				9		11	8	20	8	28	9		11	2	20	2	22
	2			Understand meanings, uses and relations of operations		4		8		12	12		1		2		3	3
	2	1	1	Use order of operations	1		3		4		4	1		3		4		4
	2	2	1	Calculate unit rates and unit prices	1		3		4		4	1		3		4		4
	2	2	2	Select the "better deal"	1		3		4		4	1		3		4		4
	Total For Assessment Anchor A.2 Understand meanings, uses of operations and how they relate to each other				3	4	9	8	12	12	24	3	1	9	2	12	3	15
	3			Compute accurately/fluently and make reasonable estimates				4		4	4				1		1	1
	3	1	1	Estimate to solve	2				2		2	2				2		2
	3	2	1	Solve problems involving operations	2				2		2	2				2		2
	Total For Assessment Anchor A.3 Compute accurately and fluently and make reasonable estimates				4			4	4	4	8	4			1	4	1	5
Total For Reporting Category A					16	4	20	20	36	24	60	16	1	20	5	36	6	42

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Grade 6

Secure and Confidential

Mathematics

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Measurement	1			Understand measurable attributes and units, systems, processes of measurement														
	1	1	1	Determine/compare elapsed time	2		2		4		4	2		2		4		4
	1	2	1	Convert measurements	2		2		4		4	2		2		4		4
	Total For Assessment Anchor B.1 Understand measurable attributes and units, systems, processes of measurement				4		4		8		8	4		4		8		8
	2			Apply techniques, tools & formulas to determine measurements				8		8	8				2		2	2
	2	1	1	Use ruler to nearest 1/16 in. or mm	2				2		2	2				2		2
	2	1	2	Choose precise measurement			1		1		1			1		1		1
	2	2	1	Find perimeter of any polygon	1		1		2		2	1		1		2		2
	2	2	2	Find area of square, rectangle or triangle	1		2		3		3	1		2		3		3
	2	2	3	Find volume of cube or rectangular prism	1		1		2		2	1		1		2		2
	2	3	1	Define/label/identify angles	1		1		2		2	1		1		2		2
	Total For Assessment Anchor B.2 Apply appropriate techniques, tools and formulas to determine measurements				6		6	8	12	8	20	6		6	2	12	2	14
Total For Reporting Category B					10		10	8	20	8	28	10		10	2	20	2	22

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Grade 6

Secure and Confidential

Mathematics

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Geometry	1			Analyze characteristics & properties of 2-D & 3-D shapes				12		12	12				3		3	3
	1	1	1	Identify parts of circles	2		2		4		4	2		2		4		4
	1	1	2	Solve radius/diameter problems	1		2		3		3	1		2		3		3
	1	1	3	Identify polygons	1		2		3		3	1		2		3		3
	1	1	4	Identify/use polygon/circle degrees	1		1		2		2	1		1		2		2
	1	1	5	Identify similar/congruent polygons														
	1	2	1	Identify/describe/label lines	2		1		3		3	2		1		3		3
	Total For Assessment Anchor C.1 Analyze characteristics and properties of two- and three-dimensional geometric shapes				7		8	12	15	12	27	7		8	3	15	3	18
	Total For Assessment Anchor C.2 Identify and/or apply concepts of transformations and symmetry				Not assessed at grade 6													
	3			Locate points/describe relationships using the coordinate plane		4				4	4		1				1	1
	3	1	1	Plot points in Quadrant I & on axes	1		3		4		4	1		3		4		4
	Total For Assessment Anchor C.3 Locate points or describe relationships using the coordinate plane				1	4	3		4	4	8	1	1	3		4	1	5
Total For Reporting Category C					8	4	11	12	19	16	35	8	1	11	3	19	4	23

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Grade 6

Secure and Confidential

Mathematics

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D: Algebraic Concepts	1			Understand patterns, relations and functions				8		8	8				2		2	2
	1	1	1	Create/extend/complete pattern	2		3		5		5	2		3		5		5
	1	2	1	Determine or illustrate pattern rule	1		3		4		4	1		3		4		4
	Total For Assessment Anchor D.1 Understand patterns, relations and functions				3		6	8	9	8	17	3		6	2	9	2	11
	2			Represent/analyze mathematical situations		4		4		8	8		1		1		2	2
	2	1	1	Use substitution to simplify	1		3		4		4	1		3		4		4
	2	1	2	Solve one-step equation	1		1		2		2	1		1		2		2
	2	2	1	Match equation/expression to situation	1		2		3		3	1		2		3		3
	Total For Assessment Anchor D.2 Represent/analyze mathematical situations using numbers, symbols, words, tables and/or graphs				3	4	6	4	9	8	17	3	1	6	1	9	2	11
	3			Analyze change in various contexts														
	3	1	1	Explain relationship between data on axes	2				2		2	2				2		2
	Total For Assessment Anchor D.3 Analyze change in various contexts				2				2		2	2				2		2
Total For Reporting Category D					8	4	12	12	20	16	36	8	1	12	3	20	4	24

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Grade 6

Secure and Confidential

Mathematics

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
E: Data Analysis and Probability	1			Formulate/answer questions; organize, display, interpret or analyze data				4		4	4				1		1	1
	1	1	1	Analyze data	3		1		4		4	3		1		4		4
	1	1	2	Choose appropriate data representation	1		2		3		3	1		2		3		3
	Total For Assessment Anchor E.1 Formulate or answer questions about data and/or organize, display, interpret or analyze data				4		3	4	7	4	11	4		3	1	7	1	8
	2			Select/use appropriate statistical methods to analyze data				4		4	4				1		1	1
	2	1	1	Determine/calculate mean, median, mode, range	2		4		6		6	2		4		6		6
	Total For Assessment Anchor E.2 Select and/or use appropriate statistical methods to analyze data				2		4	4	6	4	10	2		4	1	6	1	7
	3			Understand/apply basic concepts of probability or outcomes				4		4	4				1		1	1
	3	1	1	Define/find probability	3		4		7		7	3		4		7		7
	3	1	2	Determine/show combinations	3				3		3	3				3		3
	Total For Assessment Anchor E.3 Understand and/or apply basic concepts of probability or outcomes				6		4	4	10	4	14	6		4	1	10	1	11
Total For Reporting Category E					12		11	12	23	12	35	12		11	3	23	3	26

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Grade 7 Secure and Confidential **2006 PSSA Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Numbers and Operations	1			Understand relationships and representations of numbers and number systems				8		8	8				2		2	2
	1	1	1	Convert between fractions, decimals, percents	1				1		1	1				1		1
	1	2	1	Compare/order rational numbers	1		1		2		2	1		1		2		2
	1	3	1	Find/use GCF	1		2		3		3	1		2		3		3
	1	3	2	Calculate/use LCM	1		2		3		3	1		2		3		3
	1	3	3	Find squares and square roots														
	Total For Assessment Anchor A.1 Understand relationships among and representations of numbers and number systems				4		5	8	9	8	17	4		5	2	9	2	11
	2			Understand meanings, uses and relations of operations				4		4	4				1		1	1
	2	1	1	Use order of operations	1		2		3		3	1		2		3		3
	2	2	1	Write ratios to compare quantities	2		2		4		4	2		2		4		4
	2	2	2	Solve proportions	1		2		3		3	1		2		3		3
	2	2	3	Use proportions to test equivalency	1		3		4		4	1		3		4		4
	Total For Assessment Anchor A.2 Understand meanings, uses of operations and how they relate to each other				5		9	4	14	4	18	5		9	1	14	1	15
	3			Compute accurately/fluently and make reasonable estimates		4		4		8	8		1		1		2	2
	3	1	1	Solve problems involving operations	1				1		1	1				1		1
	3	2	1	Estimate answers	2				2		2	2				2		2
	Total For Assessment Anchor A.3 Compute accurately and fluently and make reasonable estimates				3	4		4	3	8	11	3	1		1	3	2	5
Total For Reporting Category A					12	4	14	16	26	20	46	12	1	14	4	26	5	31

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Grade 7

Secure and Confidential

Mathematics

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Measurement	1			Understand measurable attributes and units, systems, processes of measurement				4		4	4				1		1	1
	1	1	1	Add/subtract/convert measurements	2		2		4		4	2		2		4		4
	Total For Assessment Anchor B.1 Understand measurable attributes and units, systems, processes of measurement				2		2	4	4	4	8	2		2	1	4	1	5
	2			Apply techniques, tools & formulas to determine measurements				4		4	4				1		1	1
	2	1	1	Find perimeter and/or area	2		1		3		3	2		1		3		3
	2	1	2	Calculate volume	1		1		2		2	1		1		2		2
	2	1	3	Find circumference/area of circles	1		1		2		2	1		1		2		2
	2	1	4	Find area of triangles, parallelograms, trapezoids	1		2		3		3	1		2		3		3
	2	2	1	Understand complementary & supplementary angles	1		1		2		2	1		1		2		2
	2	2	2	Use protractor to measure angles	1		2		3		3	1		2		3		3
	Total For Assessment Anchor B.2 Apply appropriate techniques, tools and formulas to determine measurements				7		8	4	15	4	19	7		8	1	15	1	16
Total For Reporting Category B					9		10	8	19	8	27	9		10	2	19	2	21

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Grade 7 Secure and Confidential **2006 PSSA Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Geometry	1			Analyze characteristics & properties of 2-D & 3-D shapes				8		8	8				2		2	2
	1	1	1	Classify/compare plane figures	2		2		4		4	2		2		4		4
	1	1	2	Match 3-D figure with net	2		2		4		4	2		2		4		4
	1	2	1	Identify similar/congruent polygons	2		3		5		5	2		3		5		5
	1	2	2	Identify corresponding sides/angles	3		2		5		5	3		2		5		5
	Total For Assessment Anchor C.1 Analyze characteristics and properties of two- and three-dimensional geometric shapes				9		9	8	18	8	26	9		9	2	18	2	20
	Total For Assessment Anchor C.2 Identify and/or apply concepts of transformations and symmetry				Not assessed at grade 7													
	3			Locate points/describe relationships using the coordinate plane				4		4	4				1		1	1
	3	1	1	Plot/identify ordered pairs	3		3		6		6	3		3		6		6
	Total For Assessment Anchor C.3 Locate points or describe relationships using the coordinate plane				3		3	4	6	4	10	3		3	1	6	1	7
Total For Reporting Category C					12		12	12	24	12	36	12		12	3	24	3	27

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Grade 7 Secure and Confidential **2006 PSSA Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D: Algebraic Concepts	1			Understand patterns, relations and functions				4		4	4				1		1	1
	1	1	1	Describe/extend/complete pattern	4		5		9		9	4		5		9		9
	Total For Assessment Anchor D.1 Understand patterns, relations and functions				4		5	4	9	4	13	4		5	1	9	1	10
	2			Represent/analyze mathematical situations		4		8		12	12		1		2		3	3
	2	1	1	Solve one- or two-step equations	2		3		5		5	2		3		5		5
	2	1	2	Graph inequalities on number line	2		2		4		4	2		2		4		4
	2	2	1	Identify mathematical models	3		2		5		5	3		2		5		5
	Total For Assessment Anchor D.2 Represent/analyze mathematical situations using numbers, symbols, words, tables and/or graphs				7	4	7	8	14	12	26	7	1	7	2	14	3	17
	3			Analyze change in various contexts				4		4	4				1		1	1
	3	1	1	Graph linear values from table	2		4		6		6	2		4		6		6
	Total For Assessment Anchor D.3 Analyze change in various contexts				2		4	4	6	4	10	2		4	1	6	1	7
Total For Reporting Category D					13	4	16	16	29	20	49	13	1	16	4	29	5	34

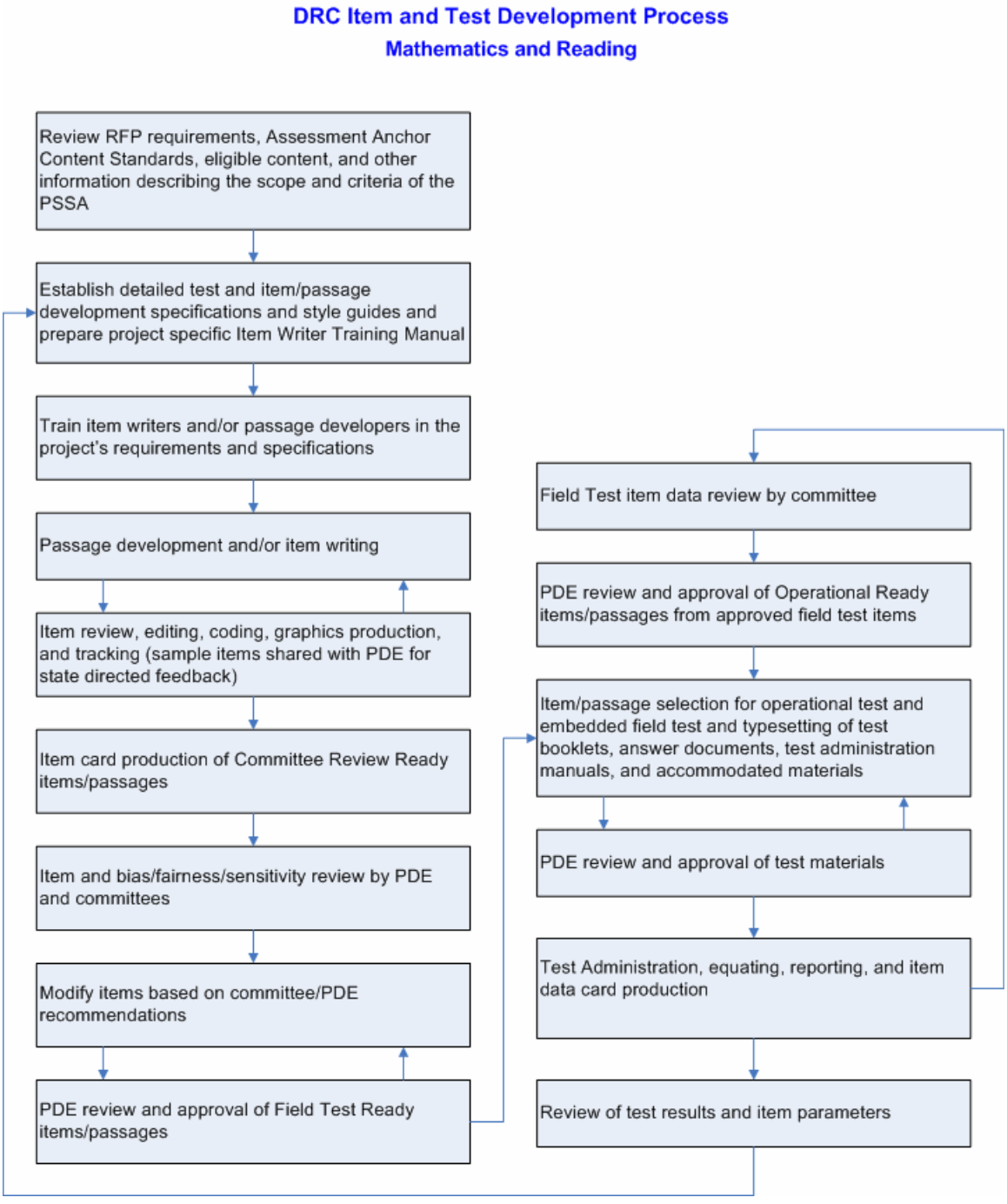
Tally Summary Sheet

Grade 7 Secure and Confidential **2006 PSSA Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Student Score (Core Points)		District Level Scores (Matrix Points)		Total Points (Core & Matrix)			Number of Items Core		Number of Items Matrix		Total Number of Items (Core & Matrix)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
E: Data Analysis and Probability	1			Formulate/answer questions; organize, display, interpret or analyze data		4				4	4		1				1	1
	1	1	1	Analyze data	1		3		4		4	1		3		4		4
	Total For Assessment Anchor E.1 Formulate or answer questions about data and/or organize, display, interpret or analyze data				1	4	3		4	4	8	1	1	3		4	1	5
	2			Select and/or use appropriate statistical methods to analyze data				4		4	4				1		1	1
	2	1	1	Identify data in box-and-whisker plots	1		1		2		2	1		1		2		2
	2	1	2	Compare data in two box-and-whisker plots	1		1		2		2	1		1		2		2
	2	2	1	Choose appropriate measure of central tendency			1		1		1			1		1		1
	Total For Assessment Anchor E.2 Select and/or use appropriate statistical methods to analyze data				2		3	4	5	4	9	2		3	1	5	1	6
	3			Understand/apply basic concepts of probability or outcomes				4		4	4				1		1	1
	3	1	1	Find theoretical probability of event	1		1		2		2	1		1		2		2
	3	1	2	Find theoretical probability of event **not** occurring	2				2		2	2				2		2
	3	1	3	Find experimental probability	1		1		2		2	1		1		2		2
	Total For Assessment Anchor E.3 Understand and/or apply basic concepts of probability or outcomes				4		2	4	6	4	10	4		2	1	6	1	7
	4			Develop/evaluate inferences and predictions based on data displays				4		4	4				1		1	1
	4	1	1	Predict/draw conclusions from displays or probability	1		4		5		5	1		4		5		5
	Total For Assessment Anchor E.4 Develop/evaluate inferences and predictions based on data displays				1		4	4	5	4	9	1		4	1	5	1	6
Total For Reporting Category E					8	4	12	12	20	16	36	8	1	12	3	20	4	24

Appendix E:

Item and Test Development Processes


DRC Item and Test Development Process
Mathematics and Reading
Review RFP requirements, Assessment Anchor Content Standards, eligible content, and other information describing the scope and criteria of the PSSA
Establish detailed test and item/passage development specifications and style guides and prepare project specific Item Writer Training Manual
Train item writers and/or passage developers in the project's requirements and specifications
Passage development and/or item writing
Item review, editing, coding, graphics production, and tracking (sample items shared with PDE for state directed feedback)
Item card production of Committee Review Ready items/passages
Item and bias/fairness/sensitivity review by PDE and committees
Modify items based on committee/PDE recommendations
PDE review and approval of Field Test Ready items/passages
Field Test item data review by committee
PDE review and approval of Operational Ready items/passages from approved field test items
Item/passage selection for operational test and embedded field test and typesetting of test booklets, answer documents, test administration manuals, and accommodated materials
PDE review and approval of test materials
Test Administration, equating, reporting, and item data card production
Review of test results and item parameters

Appendix F:

Item Review Tally Form

PSSA Item Review Tally Form: 2004/2005 Item Content Review

Grade: 4

Content: Reading

Passage Title:

Record actual edits and comments on Item Card		**Status** A = Accepted as is AR = Accepted w/revisions R = Rejected	**Specify Change Location** T = Textual edit D = Distractor edit C = Item characteristic edit	**Reason for Edit/Rejection** A = Content Alignment R = Rigor Level T = Technical Design
ID #	**Type**	*Record appropriate code	*Record appropriate code	*Record appropriate code
Passage	P		T D C	
52-1001	MC		T D C	
52-1002	MC		T D C	
52-1003	MC		T D C	
52-1004	MC		T D C	
52-1005	MC		T D C	
52-1006	MC		T D C	
52-1007	MC		T D C	
52-1008	MC		T D C	
52-1009	MC		T D C	
52-1010	MC		T D C	
52-1011	MC		T D C	
52-1012	MC		T D C	
52-1013	MC		T D C	
52-1014	MC		T D C	
52-1015	MC		T D C	
52-1016	MC		T D C	
54-1017	OE		T D C	
54-1018	OE		T D C	
54-1019	OE		T D C	

Required Signatures

		Date
DRC Signature		
WestEd Signature		
PDE Signature		

PSSA Item Review Tally Form: 2004/2005 Item Content Review

Grade: 4

Content: Mathematics

Record actual edits and comments on Item Card		Status	Specify Change Location	Reason for Edit/Rejection
		A = Accepted as is AR = Accepted w/revisions R = Rejected	T = Text edit G = Graphic edit D = Distracter edit	A = Content Alignment R = Rigor Level T = Technical Design
ID #	**Page #**	*Record appropriate code	C = Item characteristic edit	*Record appropriate code
51-1001	1		T G D C	
51-1002	2		T G D C	
51-1003	3		T G D C	
51-1004	4		T G D C	
51-1005	5		T G D C	
51-1006	6		T G D C	
51-1007	7		T G D C	
51-1008	8		T G D C	
51-1009	9		T G D C	
51-1010	10		T G D C	
51-1011	11		T G D C	
51-1012	12		T G D C	
51-1013	13		T G D C	
51-1014	14		T G D C	
51-1015	15		T G D C	
51-1016	16		T G D C	
51-1017	17		T G D C	
51-1018	18		T G D C	
51-1019	19		T G D C	
51-1020	20		T G D C	
51-1021	21		T G D C	
51-1022	22		T G D C	
51-1023	23		T G D C	
51-1024	24		T G D C	
51-1025	25		T G D C	
51-1026	26		T G D C	

Required Signatures

Date

DRC Signature

WestEd Signature

PDE Signature

Appendix G:

PSSA New Item Review Cards and IVAN Card

PSSA New Item Review	
Item	51-3174
Content Area	
Grade Level	
Rpt Category	
Asmt Anchor	
Sub-Anchor	
Eligible Content	
Primary Code	
Passage Title	
Passage ID	
Focus	
Item Type	
Points	
Depth of Knldg	
Est Difficulty	
Answer Key	
Calculator Use	

Distractor Analysis-A:

Distractor Analysis-B:

Distractor Analysis-C:

Distractor Analysis-D:

PSSA New Item Review
Item
51-3173
Content Area
Grade Level
Rpt Category
Asmt Anchor
Sub-Anchor
Eligible Content
Primary Code
Passage Title
Passage ID
Focus
Item Type
Points
Depth of Knldg
Est Difficulty
Answer Key
Calculator Use

IVAN Item Card

DATA RECOGNITION DRC CORPORATION

Released: No **Item Status:** accepted

Item Name	Item Type	Key	Grade	Subject	Report Category	Asmt Anchor	Sub - Anchor	Eligible Content	Content Difficulty	DRP	Item Calculator
[illegible]	MC	1	08	Math	A	3	3	1			No

Depth of Knowledge: 1

2. [illegible]

A -5

B -2

C -1

D 0

Administration

Form Grade	Form Subject	Form Name	Sequence	Form Type	Month	Year	Report Category	Asmt Anchor	Sub-Anchor	Eligible Content	Day	Session	Calculator
08	Math	A	[illegible]	Field Test	May	2004	A	3	3	1	0		No

Statistics Detail

Label	P-Value	Pt. Bis. Corr.
A*	0.696	0.449
B	0.145	-0.375
C	0.084	-0.315
D	0.069	-0.259
Omits	0.005	

Label	Value
N	928
Outfit t	-3.900
Logit	-1.260
Logit SE	0.079

DIF Analysis	Value
White/Black	A-
Eco Disad	A-
Male/Female	B-

Notes:

Accepted by Data Review Committee, August 04

Appendix H:

2006 Uncommon Grade 4 Multiple Choice Statistics for Reading

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02850	A	M	8446	0.8760	0.8760	0.0931	0.0142	0.0166	0.0001	0.3578	0.3578	-0.2703	-0.2441	-0.2226	-1.5568	0.0365	-1.00
02851	A	M	8446	0.7176	0.7176	0.1135	0.0857	0.0826	0.0005	0.4728	0.4728	-0.4456	-0.3683	-0.2505	-0.3189	0.0276	-5.30
02852	A	M	8446	0.4776	0.4776	0.1974	0.2836	0.0404	0.0011	0.4468	0.4468	-0.4990	-0.3529	-0.4834	0.9785	0.0248	-0.70
02853	C	M	8446	0.6905	0.1534	0.0472	0.6905	0.1073	0.0015	0.5152	-0.4546	-0.4280	0.5152	-0.3565	-0.1540	0.0269	-8.50
02854	A	M	8446	0.8492	0.8492	0.0884	0.0464	0.0154	0.0006	0.3951	0.3951	-0.2530	-0.3330	-0.2611	-1.3002	0.0340	-1.50
02855	D	M	8446	0.7928	0.0614	0.0433	0.1009	0.7928	0.0015	0.5133	-0.3809	-0.3608	-0.3952	0.5133	-0.8448	0.0305	-7.50
02856	D	M	8446	0.6041	0.1203	0.1006	0.1719	0.6041	0.0031	0.3435	-0.3328	-0.3831	-0.1810	0.3435	0.3295	0.0255	7.40
02857	C	M	8446	0.8191	0.0556	0.0946	0.8191	0.0274	0.0033	0.4451	-0.2971	-0.3531	0.4451	-0.2955	-1.0443	0.0319	-4.60
02858	C	F	8446	0.8125	0.0558	0.0780	0.8125	0.0516	0.0021	0.5684	-0.4071	-0.4470	0.5684	-0.3805	-0.9909	0.0315	-9.90
02859	D	F	8446	0.8329	0.0607	0.0461	0.0583	0.8329	0.0020	0.5184	-0.3727	-0.3782	-0.3490	0.5184	-1.1595	0.0328	-9.90
02860	D	F	8446	0.7517	0.0928	0.0760	0.0748	0.7517	0.0046	0.3693	-0.1726	-0.3115	-0.3362	0.3693	-0.5370	0.0287	2.70
02861	B	F	8446	0.8145	0.0461	0.8145	0.0727	0.0638	0.0030	0.5579	-0.4094	0.5579	-0.3864	-0.4186	-1.0069	0.0316	-9.90
02862	B	F	8446	0.7336	0.0646	0.7336	0.0977	0.1008	0.0033	0.5256	-0.4598	0.5256	-0.3941	-0.3666	-0.4144	0.0281	-9.20
02863	C	F	8446	0.7109	0.0532	0.0799	0.7109	0.1524	0.0037	0.4063	-0.3512	-0.4035	0.4063	-0.2278	-0.2687	0.0274	-0.10
02864	C	F	8446	0.8764	0.0503	0.0350	0.8764	0.0353	0.0030	0.5025	-0.3669	-0.2988	0.5025	-0.3491	-1.5756	0.0367	-9.90
02865	A	F	8446	0.7144	0.7144	0.0644	0.1356	0.0811	0.0045	0.4557	0.4557	-0.3208	-0.3913	-0.3223	-0.3059	0.0276	-4.40
02866	B	M	8082	0.7749	0.0421	0.7749	0.1386	0.0437	0.0007	0.3818	-0.3709	0.3818	-0.2223	-0.3209	-0.6532	0.0299	1.10
02867	B	M	8082	0.9092	0.0354	0.9092	0.0369	0.0181	0.0005	0.3901	-0.2457	0.3901	-0.2672	-0.2480	-1.9365	0.0425	-6.10
02868	D	M	8082	0.6095	0.2439	0.0584	0.0867	0.6095	0.0015	0.2948	-0.0911	-0.3850	-0.4361	0.2948	0.3345	0.0258	9.80
02869	C	M	8082	0.6130	0.0376	0.2899	0.6130	0.0582	0.0014	0.3359	-0.3879	-0.2672	0.3359	-0.2447	0.3137	0.0259	3.40
02870	D	M	8082	0.4760	0.0896	0.2854	0.1476	0.4760	0.0014	0.2850	-0.4239	-0.1870	-0.2695	0.2850	0.9946	0.0252	9.90
02871	B	M	8082	0.8841	0.0393	0.8841	0.0469	0.0286	0.0011	0.4484	-0.3344	0.4484	-0.2746	-0.2945	-1.6276	0.0385	-7.80
02872	C	M	8082	0.4724	0.1700	0.1376	0.4724	0.2180	0.0020	0.2493	-0.2924	-0.2591	0.2493	-0.1558	1.0232	0.0252	9.90
02873	A	M	8082	0.7475	0.7475	0.0814	0.0578	0.1091	0.0042	0.2447	0.2447	-0.1775	-0.2139	-0.1612	-0.4593	0.0288	9.90
02874	A	F	8082	0.8607	0.8607	0.0585	0.0548	0.0231	0.0028	0.4129	0.4129	-0.3250	-0.2747	-0.2032	-1.3521	0.0355	-6.70
02875	B	F	8082	0.7205	0.1648	0.7205	0.0568	0.0544	0.0035	0.2776	-0.1918	0.2776	-0.3414	-0.0942	-0.2988	0.0280	8.80
02876	A	F	8082	0.9013	0.9013	0.0454	0.0247	0.0245	0.0041	0.3926	0.3926	-0.2449	-0.2666	-0.2525	-1.7999	0.0406	-4.60
02877	D	F	8082	0.8245	0.0646	0.0470	0.0588	0.8245	0.0051	0.4952	-0.3280	-0.3046	-0.4057	0.4952	-1.0280	0.0325	-8.60
02878	B	F	8082	0.8440	0.0490	0.8440	0.0393	0.0634	0.0043	0.4722	-0.3457	0.4722	-0.2644	-0.3492	-1.2115	0.0341	-9.60
02879	C	F	8082	0.7575	0.0449	0.0875	0.7575	0.1063	0.0038	0.5508	-0.4086	-0.4172	0.5508	-0.4207	-0.5411	0.0292	-9.90
02880	B	F	8082	0.6851	0.1642	0.6851	0.0685	0.0771	0.0051	0.4828	-0.4302	0.4828	-0.3286	-0.3486	-0.0972	0.0271	-8.30
02881	C	F	8082	0.8059	0.0791	0.0484	0.8059	0.0609	0.0058	0.5182	-0.3967	-0.3479	0.5182	-0.3677	-0.8924	0.0315	-9.90
02882	D	M	8101	0.9342	0.0470	0.0085	0.0102	0.9342	0.0000	0.3848	-0.3286	-0.1861	-0.1685	0.3848	-2.2497	0.0483	-8.00
02883	B	M	8101	0.7003	0.1797	0.7003	0.0676	0.0516	0.0007	0.4080	-0.2923	0.4080	-0.3061	-0.4045	-0.1450	0.0274	-2.30
02884	A	M	8101	0.7710	0.7710	0.0759	0.1328	0.0194	0.0009	0.4270	0.4270	-0.3523	-0.3147	-0.2829	-0.5832	0.0296	-4.70
02885	B	M	8101	0.5582	0.3423	0.5582	0.0604	0.0380	0.0011	0.2689	-0.1541	0.2689	-0.3842	-0.3931	0.6258	0.0253	9.90
02886	C	M	8101	0.6691	0.0295	0.2275	0.6691	0.0727	0.0012	0.2087	-0.3005	-0.1125	0.2087	-0.1886	0.0389	0.0267	9.90
02887	D	M	8101	0.5519	0.1941	0.0380	0.2139	0.5519	0.0021	0.4327	-0.3593	-0.4561	-0.3838	0.4327	0.6514	0.0253	-3.30
02888	C	M	8101	0.6692	0.1232	0.0755	0.6692	0.1307	0.0014	0.3359	-0.2612	-0.3123	0.3359	-0.2386	0.0489	0.0267	5.40
02889	D	M	8101	0.8056	0.0858	0.0580	0.0490	0.8056	0.0016	0.5613	-0.4485	-0.3902	-0.3900	0.5613	-0.8398	0.0314	-9.90
02890	C	F	8101	0.8285	0.0541	0.0560	0.8285	0.0601	0.0012	0.4971	-0.4017	-0.3392	0.4971	-0.3133	-1.0187	0.0327	-9.90
02891	B	F	8101	0.6520	0.2529	0.6520	0.0722	0.0209	0.0020	0.3293	-0.2454	0.3293	-0.3043	-0.3331	0.1489	0.0263	4.10
02892	D	F	8101	0.5167	0.3089	0.1213	0.0506	0.5167	0.0025	0.3174	-0.2075	-0.3876	-0.4171	0.3174	0.8336	0.0251	7.50
02893	D	F	8101	0.8373	0.0801	0.0500	0.0286	0.8373	0.0040	0.4671	-0.3221	-0.3532	-0.3040	0.4671	-1.0887	0.0333	-9.30
02894	A	F	8101	0.6152	0.6152	0.2591	0.0789	0.0444	0.0023	0.4741	0.4741	-0.4192	-0.3597	-0.4146	0.3389	0.0258	-7.20
02895	B	F	8101	0.4729	0.0453	0.4729	0.3151	0.1639	0.0027	0.2270	-0.2548	0.2270	-0.1539	-0.2758	1.0558	0.0250	9.90
02896	C	F	8101	0.7671	0.0704	0.0871	0.7671	0.0733	0.0021	0.4582	-0.3049	-0.3757	0.4582	-0.3269	-0.5535	0.0295	-6.80
02897	A	F	8101	0.8635	0.8635	0.0293	0.0395	0.0658	0.0020	0.5019	0.5019	-0.2897	-0.3322	-0.3992	-1.3375	0.0357	-9.90
02898	B	M	8092	0.8275	0.0847	0.8275	0.0342	0.0526	0.0010	0.4400	-0.3852	0.4400	-0.2139	-0.2853	-0.9988	0.0324	-6.40
02899	D	M	8092	0.7664	0.0660	0.0801	0.0869	0.7664	0.0006	0.4128	-0.3745	-0.3103	-0.2256	0.4128	-0.5517	0.0293	-5.40

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02900	B	M	8092	0.5693	0.0468	0.5693	0.1317	0.2504	0.0017	0.4234	-0.3014	0.4234	-0.4473	-0.3439	0.5646	0.0254	-3.10
02901	A	M	8092	0.6358	0.6358	0.1160	0.1647	0.0828	0.0006	0.4189	0.4189	-0.4695	-0.2707	-0.2935	0.2115	0.0261	-2.50
02902	C	M	8092	0.5602	0.1588	0.1762	0.5602	0.1029	0.0019	0.3629	-0.3538	-0.2751	0.3629	-0.2991	0.6008	0.0254	1.80
02903	A	M	8092	0.7432	0.7432	0.1288	0.0619	0.0645	0.0016	0.5330	0.5330	-0.3903	-0.4191	-0.4497	-0.4131	0.0286	-9.90
02904	C	M	8092	0.5184	0.2574	0.0744	0.5184	0.1483	0.0015	0.3861	-0.3497	-0.3462	0.3861	-0.3407	0.8135	0.0252	0.80
02905	C	M	8092	0.7468	0.0706	0.1002	0.7468	0.0793	0.0031	0.4052	-0.2411	-0.3376	0.4052	-0.3084	-0.4238	0.0286	-5.20
02906	C	F	8092	0.8144	0.0606	0.0938	0.8144	0.0285	0.0027	0.4609	-0.4145	-0.3158	0.4609	-0.2355	-0.8969	0.0316	-6.40
02907	D	F	8092	0.6556	0.2543	0.0585	0.0287	0.6556	0.0030	0.4438	-0.3483	-0.4551	-0.3354	0.4438	0.1160	0.0264	-4.90
02908	D	F	8092	0.3655	0.1357	0.1406	0.3542	0.3655	0.0040	0.1617	-0.1761	-0.2253	-0.1225	0.1617	1.5862	0.0258	9.90
02909	B	F	8092	0.8607	0.0232	0.8607	0.0645	0.0481	0.0035	0.4850	-0.2808	0.4850	-0.3501	-0.3546	-1.3022	0.0352	-9.70
02910	A	F	8092	0.7337	0.7337	0.0751	0.1242	0.0630	0.0040	0.4826	0.4826	-0.3684	-0.4154	-0.2932	-0.3428	0.0282	-8.70
02911	B	F	8092	0.7192	0.0948	0.7192	0.0640	0.1186	0.0033	0.4917	-0.4128	0.4917	-0.4076	-0.3255	-0.2593	0.0278	-9.90
02912	C	F	8092	0.5649	0.0433	0.1377	0.5649	0.2494	0.0048	0.4073	-0.4335	-0.3397	0.4073	-0.3381	0.5808	0.0254	-2.20
02913	C	F	8092	0.6191	0.1002	0.0376	0.6191	0.2381	0.0049	0.4059	-0.3814	-0.3910	0.4059	-0.3043	0.3085	0.0259	-1.40
02914	A	M	8092	0.8804	0.8804	0.0418	0.0536	0.0242	0.0000	0.3854	0.3854	-0.2382	-0.2960	-0.2241	-1.4902	0.0374	-5.10
02915	C	M	8092	0.4780	0.2415	0.0824	0.4780	0.1971	0.0010	0.2236	-0.0043	-0.2847	0.2236	-0.3927	1.0347	0.0250	9.90
02916	D	M	8092	0.8790	0.0184	0.0610	0.0413	0.8790	0.0002	0.4029	-0.2314	-0.3468	-0.2092	0.4029	-1.4707	0.0372	-4.80
02917	C	M	8092	0.6102	0.2810	0.0277	0.6102	0.0803	0.0007	0.3882	-0.3504	-0.3510	0.3882	-0.2770	0.3657	0.0257	-0.20
02918	C	M	8092	0.4268	0.2573	0.2680	0.4268	0.0465	0.0014	0.2545	-0.3338	-0.1093	0.2545	-0.4140	1.2660	0.0252	9.90
02919	D	M	8092	0.6933	0.1719	0.0980	0.0357	0.6933	0.0011	0.4571	-0.3653	-0.3774	-0.3353	0.4571	-0.0939	0.0271	-7.50
02920	D	M	8092	0.7485	0.0686	0.0560	0.1263	0.7485	0.0006	0.5204	-0.4243	-0.3817	-0.3949	0.5204	-0.4335	0.0287	-9.90
02921	A	M	8092	0.7379	0.7379	0.1167	0.0779	0.0652	0.0023	0.4366	0.4366	-0.3102	-0.3176	-0.3785	-0.3456	0.0283	-4.50
02922	D	F	8092	0.3826	0.1739	0.1744	0.2667	0.3826	0.0025	0.2840	-0.4035	-0.3727	-0.1432	0.2840	1.5000	0.0255	8.20
02923	B	F	8092	0.3857	0.2693	0.3857	0.1070	0.2346	0.0035	0.1653	-0.1523	0.1653	-0.2448	-0.1215	1.4850	0.0255	9.90
02924	C	F	8092	0.5875	0.2761	0.0589	0.5875	0.0733	0.0042	0.3615	-0.2119	-0.4294	0.3615	-0.4264	0.4708	0.0255	2.20
02925	A	F	8092	0.6472	0.6472	0.1416	0.0792	0.1275	0.0044	0.4232	0.4232	-0.3395	-0.3995	-0.3010	0.1639	0.0262	-3.50
02926	C	F	8092	0.7514	0.0813	0.0961	0.7514	0.0677	0.0035	0.5224	-0.4152	-0.3892	0.5224	-0.3762	-0.4526	0.0288	-9.90
02927	D	F	8092	0.6555	0.1370	0.0896	0.1138	0.6555	0.0041	0.5080	-0.4020	-0.4082	-0.4437	0.5080	0.1069	0.0264	-9.90
02928	B	F	8092	0.6613	0.1165	0.6613	0.0898	0.1288	0.0036	0.4730	-0.2729	0.4730	-0.4561	-0.4238	0.0887	0.0265	-7.70
02929	C	F	8092	0.6132	0.1471	0.0716	0.6132	0.1645	0.0037	0.4459	-0.3654	-0.4257	0.4459	-0.3523	0.3379	0.0258	-5.60
02930	C	M	8073	0.7402	0.0645	0.0829	0.7402	0.1119	0.0005	0.5204	-0.4239	-0.4332	0.5204	-0.3506	-0.3996	0.0285	-9.90
02931	A	M	8073	0.7583	0.7583	0.0611	0.1067	0.0731	0.0009	0.3480	0.3480	-0.3279	-0.2200	-0.2224	-0.5065	0.0290	0.20
02932	C	M	8073	0.8213	0.0936	0.0400	0.8213	0.0435	0.0016	0.4784	-0.3717	-0.3327	0.4784	-0.2897	-0.9696	0.0322	-9.90
02933	A	M	8073	0.4521	0.4521	0.1203	0.2086	0.2180	0.0010	0.2657	0.2657	-0.2864	-0.2149	-0.2543	1.1276	0.0251	9.90
02934	A	M	8073	0.7124	0.7124	0.0562	0.0913	0.1390	0.0011	0.5820	0.5820	-0.4298	-0.4146	-0.5188	-0.2347	0.0277	-9.90
02935	B	M	8073	0.2899	0.4940	0.2899	0.1327	0.0819	0.0016	0.1451	-0.0999	0.1451	-0.2601	-0.2351	1.9860	0.0271	9.90
02936	C	M	8073	0.7951	0.0338	0.0959	0.7951	0.0731	0.0021	0.4904	-0.3383	-0.3743	0.4904	-0.3543	-0.7668	0.0307	-9.90
02937	A	M	8073	0.8422	0.8422	0.0491	0.0358	0.0700	0.0030	0.5135	0.5135	-0.3598	-0.3310	-0.3887	-1.1467	0.0337	-9.90
02938	C	F	8073	0.2850	0.4203	0.1001	0.2850	0.1926	0.0020	0.1696	-0.2055	-0.3276	0.1696	-0.0414	2.0148	0.0272	9.90
02939	D	F	8073	0.4634	0.0451	0.2690	0.2199	0.4634	0.0026	0.4215	-0.4881	-0.3690	-0.3999	0.4215	1.0694	0.0251	-3.90
02940	A	F	8073	0.6577	0.6577	0.1320	0.0855	0.1209	0.0038	0.4004	0.4004	-0.2689	-0.3162	-0.3699	0.0916	0.0264	-0.90
02941	A	F	8073	0.5112	0.5112	0.1595	0.2508	0.0744	0.0040	0.2667	0.2667	-0.2767	-0.1517	-0.3538	0.8441	0.0251	9.90
02942	C	F	8073	0.6678	0.1114	0.1330	0.6678	0.0841	0.0037	0.4229	-0.2977	-0.3454	0.4229	-0.3632	0.0266	0.0266	-2.80
02943	B	F	8073	0.4146	0.3149	0.4146	0.1662	0.1007	0.0036	0.2463	-0.1436	0.2463	-0.3649	-0.2721	1.3221	0.0253	9.90
02944	D	F	8073	0.4544	0.2760	0.1486	0.1162	0.4544	0.0048	0.2796	-0.1494	-0.3668	-0.3371	0.2796	1.1181	0.0251	9.90
02945	B	F	8073	0.7822	0.0372	0.7822	0.1071	0.0691	0.0043	0.4680	-0.3576	0.4680	-0.3585	-0.3246	-0.6663	0.0300	-7.40
02946	A	M	8073	0.9259	0.9259	0.0159	0.0147	0.0435	0.0000	0.3011	0.3011	-0.2151	-0.2015	-0.1795	-2.0459	0.0452	-1.00
02947	B	M	8073	0.6981	0.2046	0.6981	0.0229	0.0738	0.0005	0.3911	-0.3133	0.3911	-0.2948	-0.3233	-0.1139	0.0272	-1.40
02948	A	M	8073	0.7421	0.7421	0.1042	0.0746	0.0784	0.0007	0.4642	0.4642	-0.2566	-0.3775	-0.4393	-0.3728	0.0284	-5.80
02949	D	M	8073	0.4688	0.1132	0.2547	0.1624	0.4688	0.0009	0.2265	-0.2826	-0.1431	-0.2363	0.2265	1.0730	0.0250	9.90

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02950	D	M	8073	0.7312	0.0669	0.0461	0.1542	0.7312	0.0016	0.4821	-0.4206	-0.3800	-0.3450	0.4821	-0.3089	0.0281	-8.00
02951	C	M	8073	0.6399	0.2170	0.0705	0.6399	0.0720	0.0006	0.2874	-0.2023	-0.2400	0.2874	-0.2977	0.2163	0.0261	9.90
02952	B	M	8073	0.7280	0.0325	0.7280	0.0748	0.1638	0.0010	0.3322	-0.3233	0.3322	-0.2815	-0.2140	-0.2853	0.0280	2.70
02953	A	M	8073	0.8514	0.8514	0.0595	0.0389	0.0486	0.0017	0.4540	0.4540	-0.3102	-0.3062	-0.3282	-1.1763	0.0342	-7.90
02954	C	F	8073	0.6054	0.1864	0.1682	0.6054	0.0379	0.0021	0.4147	-0.3947	-0.3109	0.4147	-0.3270	0.3830	0.0256	-4.10
02955	B	F	8073	0.7395	0.1612	0.7395	0.0602	0.0364	0.0027	0.3483	-0.2366	0.3483	-0.3220	-0.2372	-0.3559	0.0283	0.60
02956	A	F	8073	0.6716	0.6716	0.1102	0.1280	0.0867	0.0035	0.3961	0.3961	-0.3423	-0.3204	-0.2556	0.0284	0.0266	-2.20
02957	C	F	8073	0.4256	0.1123	0.0514	0.4256	0.4057	0.0050	0.2057	-0.1372	-0.3843	0.2057	-0.1681	1.2888	0.0252	9.90
02958	D	F	8073	0.4178	0.2459	0.1038	0.2277	0.4178	0.0048	0.2473	-0.2929	-0.3294	-0.1278	0.2473	1.3220	0.0252	9.90
02959	C	F	8073	0.6440	0.0362	0.1593	0.6440	0.1567	0.0038	0.4140	-0.2807	-0.3581	0.4140	-0.3391	0.1923	0.0261	-4.10
02960	B	F	8073	0.6372	0.0569	0.6372	0.1322	0.1696	0.0042	0.3743	-0.3399	0.3743	-0.2408	-0.3392	0.2299	0.0260	0.50
02961	D	F	8073	0.5957	0.2222	0.1068	0.0715	0.5957	0.0038	0.4206	-0.2919	-0.3725	-0.4686	0.4206	0.4361	0.0255	-3.60
02962	A	M	8097	0.8822	0.8822	0.0219	0.0856	0.0104	0.0000	0.4190	0.4190	-0.2342	-0.3552	-0.2017	-1.4992	0.0376	-8.90
02963	B	M	8097	0.7891	0.0566	0.7891	0.1287	0.0254	0.0002	0.4032	-0.3214	0.4032	-0.2808	-0.2954	-0.6946	0.0303	-5.50
02964	C	M	8097	0.5090	0.1659	0.0690	0.5090	0.2549	0.0012	0.2202	-0.0367	-0.2756	0.2202	-0.2773	0.8784	0.0250	9.90
02965	B	M	8097	0.5575	0.2208	0.5575	0.1819	0.0379	0.0019	0.4531	-0.4194	0.4531	-0.3977	-0.3991	0.6226	0.0252	-5.70
02966	D	M	8097	0.7147	0.0745	0.1565	0.0534	0.7147	0.0010	0.4999	-0.3472	-0.4278	-0.3853	0.4999	-0.2179	0.0276	-9.80
02967	A	M	8097	0.3688	0.3688	0.3021	0.2389	0.0883	0.0020	0.0580	0.0580	-0.0051	-0.0507	-0.2073	1.5776	0.0256	9.90
02968	D	M	8097	0.5544	0.2135	0.0471	0.1836	0.5544	0.0014	0.2171	-0.1443	-0.3146	-0.1869	0.2171	0.6486	0.0252	9.90
02969	D	M	8097	0.8658	0.0364	0.0358	0.0593	0.8658	0.0027	0.4847	-0.3323	-0.3382	-0.3346	0.4847	-1.3417	0.0358	-9.90
02970	C	F	8097	0.7900	0.0496	0.0472	0.7900	0.1112	0.0020	0.3947	-0.3878	-0.3062	0.3947	-0.2110	-0.7039	0.0304	-2.40
02971	D	F	8097	0.8246	0.0216	0.0608	0.0905	0.8246	0.0025	0.4021	-0.2443	-0.3352	-0.2657	0.4021	-0.9662	0.0323	-4.10
02972	C	F	8097	0.8307	0.0611	0.0650	0.8307	0.0396	0.0036	0.4740	-0.3182	-0.3597	0.4740	-0.3038	-1.0214	0.0328	-9.40
02973	B	F	8097	0.7196	0.0861	0.7196	0.1049	0.0855	0.0040	0.5081	-0.3798	0.5081	-0.3888	-0.4061	-0.2487	0.0278	-9.90
02974	C	F	8097	0.2670	0.4127	0.0727	0.2670	0.2438	0.0037	0.0827	-0.0153	-0.3836	0.0827	-0.0916	2.1359	0.0276	9.90
02975	B	F	8097	0.7274	0.1625	0.7274	0.0504	0.0558	0.0038	0.3864	-0.2643	0.3864	-0.3272	-0.3323	-0.2931	0.0280	0.80
02976	D	F	8097	0.6129	0.0545	0.1812	0.1471	0.6129	0.0043	0.3788	-0.3709	-0.2259	-0.3833	0.3788	0.3556	0.0257	-0.10
02977	D	F	8097	0.5818	0.1571	0.1360	0.1207	0.5818	0.0044	0.3541	-0.3865	-0.2633	-0.2220	0.3541	0.5091	0.0254	1.50
02978	B	M	8066	0.8241	0.0903	0.8241	0.0472	0.0381	0.0004	0.4663	-0.3211	0.4663	-0.3709	-0.3098	-0.9980	0.0326	-7.90
02979	A	M	8066	0.8325	0.8325	0.0482	0.0811	0.0372	0.0010	0.4873	0.4873	-0.3773	-0.3306	-0.3355	-1.0621	0.0332	-9.50
02980	D	M	8066	0.7865	0.0409	0.0315	0.1403	0.7865	0.0007	0.4415	-0.3629	-0.3438	-0.3105	0.4415	-0.7120	0.0305	-5.40
02981	B	M	8066	0.7110	0.0877	0.7110	0.0624	0.1371	0.0019	0.3651	-0.2820	0.3651	-0.3011	-0.2635	-0.2073	0.0278	2.30
02982	D	M	8066	0.8297	0.1079	0.0408	0.0201	0.8297	0.0016	0.5161	-0.4026	-0.3799	-0.3177	0.5161	-1.0434	0.0330	-9.90
02983	D	M	8066	0.6599	0.1728	0.0976	0.0689	0.6599	0.0007	0.3066	-0.2240	-0.1819	-0.3499	0.3066	0.0885	0.0266	6.40
02984	C	M	8066	0.7597	0.0824	0.0632	0.7597	0.0934	0.0012	0.5015	-0.3700	-0.3888	0.5015	-0.3683	-0.5174	0.0293	-9.90
02985	A	M	8066	0.7756	0.7756	0.1079	0.0563	0.0579	0.0024	0.3971	0.3971	-0.3064	-0.2593	-0.2946	-0.6222	0.0299	-2.30
02986	B	F	8066	0.7454	0.0420	0.7454	0.0307	0.1798	0.0021	0.3223	-0.3451	0.3223	-0.2467	-0.2015	-0.4193	0.0288	3.60
02987	C	F	8066	0.4081	0.1204	0.0565	0.4081	0.4120	0.0030	0.1600	-0.4345	-0.3795	0.1600	0.0090	1.3694	0.0254	9.90
02988	D	F	8066	0.8825	0.0330	0.0471	0.0347	0.8825	0.0027	0.4990	-0.3076	-0.3536	-0.3388	0.4990	-1.5700	0.0383	-9.90
02989	D	F	8066	0.8491	0.0378	0.0703	0.0391	0.8491	0.0037	0.4053	-0.3051	-0.2630	-0.2740	0.4053	-1.2159	0.0345	-1.60
02990	C	F	8066	0.5263	0.1837	0.1369	0.5263	0.1495	0.0036	0.3139	-0.2626	-0.2611	0.3139	-0.3013	0.7808	0.0252	9.00
02991	B	F	8066	0.7549	0.0859	0.7549	0.0671	0.0885	0.0036	0.5654	-0.4512	0.5654	-0.4065	-0.4258	-0.4933	0.0292	-9.90
02992	A	F	8066	0.8011	0.8011	0.0533	0.1081	0.0319	0.0056	0.4044	0.4044	-0.3352	-0.2450	-0.3250	-0.8123	0.0312	-2.90
02993	C	F	8066	0.7910	0.0593	0.0398	0.7910	0.1043	0.0057	0.5217	-0.3757	-0.3711	0.5217	-0.4019	-0.7374	0.0307	-9.90
02994	D	M	8056	0.9345	0.0453	0.0097	0.0106	0.9345	0.0000	0.3776	-0.3116	-0.2281	-0.1469	0.3776	-2.2545	0.0485	-6.40
02995	B	M	8056	0.6940	0.1819	0.6940	0.0708	0.0531	0.0002	0.4063	-0.2860	0.4063	-0.2938	-0.4309	-0.0952	0.0275	-2.20
02996	A	M	8056	0.7591	0.7591	0.0869	0.1337	0.0192	0.0011	0.4130	0.4130	-0.3532	-0.3037	-0.2527	-0.5095	0.0295	-2.40
02997	B	M	8056	0.5590	0.3447	0.5590	0.0595	0.0355	0.0014	0.2791	-0.1720	0.2791	-0.3883	-0.3918	0.6341	0.0255	9.90
02998	C	M	8056	0.6661	0.0267	0.2357	0.6661	0.0704	0.0011	0.2130	-0.2865	-0.1238	0.2130	-0.1961	0.0652	0.0269	9.90
02999	D	M	8056	0.5416	0.1935	0.0376	0.2263	0.5416	0.0010	0.4479	-0.3540	-0.4771	-0.4254	0.4479	0.7185	0.0254	-3.60

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03000	C	M	8056	0.6785	0.1231	0.0710	0.6785	0.1256	0.0017	0.3451	-0.2739	-0.2926	0.3451	-0.2559	-0.0020	0.0271	6.40
03001	D	M	8056	0.8008	0.0873	0.0613	0.0475	0.8008	0.0031	0.5447	-0.4355	-0.3855	-0.3637	0.5447	-0.8074	0.0314	-9.90
03002	A	F	8056	0.9008	0.9008	0.0273	0.0299	0.0396	0.0024	0.4351	0.4351	-0.2750	-0.2946	-0.2826	-1.7632	0.0409	-9.60
03003	D	F	8056	0.8479	0.0386	0.0627	0.0478	0.8479	0.0030	0.5123	-0.2768	-0.4174	-0.3572	0.5123	-1.1867	0.0345	-9.90
03004	B	F	8056	0.8517	0.0555	0.8517	0.0499	0.0391	0.0038	0.5048	-0.3619	0.5048	-0.3596	-0.3219	-1.2276	0.0349	-9.90
03005	A	F	8056	0.8062	0.8062	0.0557	0.0314	0.1025	0.0041	0.4642	0.4642	-0.3261	-0.3467	-0.3416	-0.8493	0.0317	-6.20
03006	C	F	8056	0.8565	0.0494	0.0451	0.8565	0.0454	0.0036	0.5255	-0.3623	-0.3526	0.5255	-0.3734	-1.2645	0.0352	-9.90
03007	B	F	8056	0.8132	0.0570	0.8132	0.0470	0.0796	0.0032	0.3959	-0.3694	0.3959	-0.3493	-0.1536	-0.8837	0.0319	1.30
03008	D	F	8056	0.8378	0.0339	0.0623	0.0619	0.8378	0.0041	0.4215	-0.3511	-0.2469	-0.2995	0.4215	-1.0925	0.0336	-4.60
03009	C	F	8056	0.5685	0.1683	0.1548	0.5685	0.1032	0.0052	0.3732	-0.3191	-0.3224	0.3732	-0.3094	0.5870	0.0256	1.70
03010	B	M	8048	0.8253	0.0849	0.8253	0.0378	0.0517	0.0004	0.4662	-0.4109	0.4662	-0.2531	-0.2867	-0.9819	0.0324	-7.80
03011	D	M	8048	0.7688	0.0688	0.0736	0.0883	0.7688	0.0005	0.4247	-0.3760	-0.3379	-0.2252	0.4247	-0.5672	0.0294	-6.20
03012	B	M	8048	0.5737	0.0465	0.5737	0.1267	0.2522	0.0009	0.4259	-0.3152	0.4259	-0.4567	-0.3404	0.5391	0.0253	-4.20
03013	A	M	8048	0.6465	0.6465	0.1121	0.1535	0.0867	0.0012	0.4363	0.4363	-0.4804	-0.2820	-0.3007	0.1463	0.0262	-5.50
03014	C	M	8048	0.5554	0.1540	0.1814	0.5554	0.1080	0.0012	0.3608	-0.3367	-0.2904	0.3608	-0.2906	0.6190	0.0252	1.70
03015	A	M	8048	0.7476	0.7476	0.1236	0.0570	0.0706	0.0011	0.5214	0.5214	-0.3659	-0.4150	-0.4407	-0.4436	0.0287	-9.90
03016	C	M	8048	0.5277	0.2489	0.0741	0.5277	0.1474	0.0020	0.3853	-0.3440	-0.3407	0.3853	-0.3419	0.7657	0.0250	0.80
03017	C	M	8048	0.7460	0.0690	0.1021	0.7460	0.0798	0.0031	0.4112	-0.2604	-0.3358	0.4112	-0.3087	-0.4140	0.0286	-6.00
03018	B	F	8048	0.6074	0.0947	0.6074	0.1378	0.1581	0.0021	0.3635	-0.4709	0.3635	-0.1813	-0.2924	0.3597	0.0256	1.30
03019	C	F	8048	0.7506	0.0405	0.0578	0.7506	0.1492	0.0019	0.3816	-0.3441	-0.3660	0.3816	-0.2204	-0.4452	0.0287	0.20
03020	B	F	8048	0.5304	0.1095	0.5304	0.2005	0.1552	0.0043	0.2731	-0.2641	0.2731	-0.2844	-0.1619	0.7506	0.0251	9.90
03021	B	F	8048	0.6065	0.2065	0.6065	0.1323	0.0523	0.0024	0.4310	-0.3607	0.4310	-0.3436	-0.4194	0.3676	0.0256	-4.80
03022	A	F	8048	0.8418	0.8418	0.0593	0.0490	0.0468	0.0031	0.3786	0.3786	-0.2870	-0.2528	-0.2349	-1.1216	0.0336	-3.30
03023	D	F	8048	0.4991	0.1659	0.1956	0.1358	0.4991	0.0036	0.3285	-0.2846	-0.3185	-0.2849	0.3285	0.8937	0.0250	3.90
03024	D	F	8048	0.4645	0.1641	0.0497	0.3186	0.4645	0.0031	0.1353	-0.2850	-0.3170	0.0268	0.1353	1.0815	0.0250	9.90
03025	D	F	8048	0.7510	0.1374	0.0552	0.0522	0.7510	0.0042	0.3673	-0.2164	-0.2986	-0.3656	0.3673	-0.4436	0.0287	2.80
03026	D	M	8067	0.7906	0.1116	0.0421	0.0555	0.7906	0.0001	0.4859	-0.4112	-0.3167	-0.3160	0.4859	-0.7411	0.0304	-7.40
03027	C	M	8067	0.6832	0.2089	0.0941	0.6832	0.0135	0.0004	0.2310	-0.1185	-0.2888	0.2310	-0.2328	-0.0488	0.0268	9.90
03028	C	M	8067	0.5405	0.1680	0.1169	0.5405	0.1734	0.0012	0.2581	-0.1978	-0.3170	0.2581	-0.1713	0.6895	0.0251	9.90
03029	B	M	8067	0.4101	0.2085	0.4101	0.2065	0.1729	0.0020	0.2548	-0.1921	0.2548	-0.3511	-0.1915	1.3279	0.0253	9.90
03030	B	M	8067	0.7360	0.0646	0.7360	0.0705	0.1281	0.0009	0.3595	-0.3100	0.3595	-0.3490	-0.1815	-0.3760	0.0282	-0.20
03031	B	M	8067	0.5055	0.3369	0.5055	0.0505	0.1057	0.0014	0.3269	-0.2660	0.3269	-0.3573	-0.3283	0.8496	0.0250	5.60
03032	C	M	8067	0.7598	0.1090	0.0337	0.7598	0.0967	0.0009	0.3612	-0.3366	-0.3051	0.3612	-0.1692	-0.5280	0.0291	-1.70
03033	D	M	8067	0.7603	0.1195	0.0822	0.0359	0.7603	0.0021	0.4264	-0.3670	-0.2682	-0.2934	0.4264	-0.5348	0.0291	-5.90
03034	B	F	8067	0.7756	0.0847	0.7756	0.0993	0.0383	0.0021	0.4686	-0.3837	0.4686	-0.3572	-0.2646	-0.6263	0.0296	-8.00
03035	C	F	8067	0.4151	0.2177	0.1747	0.4151	0.1892	0.0033	0.3395	-0.2689	-0.3147	0.3395	-0.4082	1.3036	0.0252	5.00
03036	A	F	8067	0.4866	0.4866	0.4340	0.0445	0.0316	0.0033	0.2024	0.2024	-0.1162	-0.3831	-0.3662	0.9466	0.0250	9.90
03037	A	F	8067	0.5961	0.5961	0.0280	0.3364	0.0361	0.0033	0.3196	0.3196	-0.3220	-0.2546	-0.3322	0.4015	0.0255	3.90
03038	C	F	8067	0.2235	0.3643	0.2752	0.2235	0.1329	0.0041	0.0729	-0.0555	-0.0500	0.0729	-0.2137	2.3845	0.0292	9.90
03039	C	F	8067	0.7166	0.0771	0.1412	0.7166	0.0611	0.0040	0.4692	-0.2861	-0.4276	0.4692	-0.3302	-0.2541	0.0276	-8.70
03040	D	F	8067	0.9429	0.0162	0.0161	0.0202	0.9429	0.0046	0.3691	-0.2369	-0.2147	-0.2444	0.3691	-2.4355	0.0519	-6.80
03041	C	F	8067	0.6348	0.1727	0.1486	0.6348	0.0388	0.0051	0.3274	-0.2539	-0.2630	0.3274	-0.3096	0.1964	0.0260	5.10
03042	D	M	8075	0.8583	0.0438	0.0249	0.0721	0.8583	0.0009	0.5260	-0.3776	-0.3094	-0.4018	0.5260	-1.2916	0.0354	-9.90
03043	B	M	8075	0.4736	0.0198	0.4736	0.4643	0.0412	0.0011	0.1167	-0.2691	0.1167	-0.0356	-0.4001	1.0643	0.0251	9.90
03044	D	M	8075	0.2537	0.1864	0.0495	0.5096	0.2537	0.0007	0.1349	-0.3342	-0.4120	-0.0400	0.1349	2.2225	0.0281	9.90
03045	D	M	8075	0.8703	0.0552	0.0461	0.0259	0.8703	0.0025	0.4774	-0.3108	-0.3497	-0.3334	0.4774	-1.4043	0.0365	-9.70
03046	B	M	8075	0.8904	0.0414	0.8904	0.0339	0.0329	0.0014	0.4900	-0.3669	0.4900	-0.2855	-0.3312	-1.6256	0.0391	-9.90
03047	B	M	8075	0.5548	0.1394	0.5548	0.0997	0.2041	0.0020	0.2813	-0.2438	0.2813	-0.3804	-0.1488	0.6607	0.0253	9.90
03048	C	M	8075	0.6848	0.1527	0.0453	0.6848	0.1147	0.0025	0.4901	-0.4949	-0.3513	0.4901	-0.2877	-0.0505	0.0271	-7.90
03049	C	M	8075	0.7611	0.0562	0.1304	0.7611	0.0482	0.0041	0.4479	-0.3190	-0.3457	0.4479	-0.3457	-0.5166	0.0293	-5.80

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03050	D	F	8075	0.8297	0.0698	0.0593	0.0390	0.8297	0.0021	0.5196	-0.3747	-0.3651	-0.3789	0.5196	-1.0239	0.0329	-9.90
03051	B	F	8075	0.6374	0.1386	0.6374	0.1576	0.0640	0.0024	0.3838	-0.3213	0.3838	-0.2904	-0.3169	0.2298	0.0261	-1.00
03052	A	F	8075	0.7133	0.7133	0.0731	0.0612	0.1492	0.0032	0.4593	0.4593	-0.2306	-0.4432	-0.3901	-0.2153	0.0278	-6.20
03053	B	F	8075	0.6416	0.0863	0.6416	0.1458	0.1217	0.0046	0.3632	-0.2589	0.3632	-0.2739	-0.3316	0.1906	0.0262	2.30
03054	A	F	8075	0.7960	0.7960	0.0557	0.0939	0.0508	0.0036	0.4557	0.4557	-0.4127	-0.2826	-0.3098	-0.7575	0.0309	-5.80
03055	D	F	8075	0.7425	0.0528	0.1496	0.0509	0.7425	0.0042	0.5262	-0.3709	-0.4502	-0.3707	0.5262	-0.3937	0.0286	-9.90
03056	A	F	8075	0.3512	0.3512	0.3381	0.1723	0.1347	0.0037	0.2829	0.2829	-0.1659	-0.4457	-0.3548	1.6571	0.0259	9.90
03057	C	F	8075	0.5349	0.3683	0.0617	0.5349	0.0320	0.0032	0.2718	-0.1762	-0.3819	0.2718	-0.3730	0.7424	0.0252	9.90
03058	D	M	8079	0.7896	0.0636	0.0500	0.0965	0.7896	0.0002	0.3553	-0.3277	-0.2148	-0.2196	0.3553	-0.7153	0.0302	-0.60
03059	C	M	8079	0.7964	0.1249	0.0293	0.7964	0.0491	0.0002	0.5222	-0.4507	-0.3492	0.5222	-0.3154	-0.7773	0.0306	-9.90
03060	B	M	8079	0.8315	0.0947	0.8315	0.0364	0.0359	0.0015	0.4156	-0.2963	0.4156	-0.2948	-0.2901	-1.0401	0.0326	-6.10
03061	B	M	8079	0.4530	0.4255	0.4530	0.0359	0.0843	0.0012	0.2115	-0.1354	0.2115	-0.4072	-0.2783	1.1132	0.0250	9.90
03062	A	M	8079	0.7149	0.7149	0.1890	0.0412	0.0537	0.0011	0.4483	0.4483	-0.3305	-0.3603	-0.4146	-0.2401	0.0275	-6.10
03063	C	M	8079	0.8287	0.0293	0.0477	0.8287	0.0928	0.0015	0.4215	-0.3064	-0.3212	0.4215	-0.2776	-1.0221	0.0325	-5.90
03064	B	M	8079	0.6279	0.2409	0.6279	0.0443	0.0854	0.0015	0.3275	-0.2135	0.3275	-0.3668	-0.3298	0.2379	0.0258	7.20
03065	C	M	8079	0.7014	0.1457	0.0795	0.7014	0.0686	0.0048	0.3871	-0.2678	-0.3610	0.3871	-0.2876	-0.1673	0.0272	-2.00
03066	D	F	8079	0.4164	0.2120	0.2036	0.1661	0.4164	0.0019	0.2853	-0.2269	-0.2818	-0.3307	0.2853	1.2942	0.0252	8.10
03067	B	F	8079	0.8482	0.0718	0.8482	0.0364	0.0413	0.0022	0.3368	-0.2230	0.3368	-0.2197	-0.2321	-1.1683	0.0338	-2.80
03068	C	F	8079	0.4874	0.2097	0.1396	0.4874	0.1598	0.0035	0.2588	-0.1629	-0.2600	0.2588	-0.2844	0.9595	0.0249	9.90
03069	A	F	8079	0.5389	0.5389	0.1199	0.1555	0.1817	0.0040	0.2702	0.2702	-0.2417	-0.2012	-0.2473	0.6824	0.0251	9.70
03070	C	F	8079	0.3773	0.3216	0.1864	0.3773	0.1110	0.0037	0.2007	-0.1542	-0.1856	0.2007	-0.3248	1.4847	0.0255	9.90
03071	D	F	8079	0.4692	0.2724	0.1534	0.1010	0.4692	0.0040	0.2323	-0.1999	-0.1869	-0.2896	0.2323	1.0250	0.0250	9.90
03072	B	F	8079	0.3065	0.2008	0.3065	0.0432	0.4447	0.0048	0.1553	-0.2672	0.1553	-0.4669	-0.0599	1.8682	0.0266	9.90
03073	C	F	8079	0.5332	0.0623	0.1218	0.5332	0.2773	0.0054	0.3238	-0.3771	-0.3323	0.3238	-0.2254	0.7113	0.0250	4.60
03074	C	M	8042	0.8172	0.0701	0.0793	0.8172	0.0330	0.0004	0.4241	-0.3186	-0.3192	0.4241	-0.2440	-0.9433	0.0320	-4.90
03075	D	M	8042	0.7494	0.0853	0.1340	0.0298	0.7494	0.0014	0.4608	-0.3957	-0.3665	-0.2261	0.4608	-0.4556	0.0288	-7.10
03076	B	M	8042	0.4161	0.1435	0.4161	0.0614	0.3771	0.0019	0.2130	-0.1727	0.2130	-0.4353	-0.1606	1.3037	0.0253	9.90
03077	C	M	8042	0.6696	0.1119	0.1102	0.6696	0.1057	0.0026	0.2530	-0.1336	-0.1850	0.2530	-0.2556	0.0206	0.0267	6.70
03078	B	M	8042	0.6084	0.2077	0.6084	0.0844	0.0980	0.0015	0.3469	-0.2315	0.3469	-0.2988	-0.3581	0.3383	0.0258	1.00
03079	D	M	8042	0.5675	0.1331	0.0976	0.1992	0.5675	0.0026	0.3059	-0.2961	-0.3242	-0.1889	0.3059	0.5595	0.0254	6.50
03080	B	M	8042	0.6151	0.0827	0.6151	0.1200	0.1797	0.0025	0.3428	-0.2986	0.3428	-0.3240	-0.2375	0.3055	0.0258	4.30
03081	D	M	8042	0.7206	0.1042	0.0874	0.0849	0.7206	0.0029	0.5470	-0.4582	-0.3880	-0.4339	0.5470	-0.2896	0.0279	-9.90
03082	D	F	8042	0.8301	0.1046	0.0292	0.0346	0.8301	0.0015	0.4018	-0.2715	-0.2995	-0.3089	0.4018	-1.0499	0.0329	-2.90
03083	C	F	8042	0.8584	0.0397	0.0602	0.8584	0.0390	0.0027	0.4994	-0.3298	-0.3970	0.4994	-0.2906	-1.3015	0.0352	-9.90
03084	B	F	8042	0.7457	0.1533	0.7457	0.0558	0.0429	0.0022	0.3333	-0.1839	0.3333	-0.4057	-0.2077	-0.4276	0.0286	3.00
03085	D	F	8042	0.7364	0.0427	0.0256	0.1911	0.7364	0.0042	0.2644	-0.3552	-0.3186	-0.1065	0.2644	-0.3505	0.0282	9.60
03086	A	F	8042	0.4969	0.4969	0.0982	0.2186	0.1832	0.0031	0.3736	0.3736	-0.3031	-0.2778	-0.4259	0.9042	0.0251	3.50
03087	C	F	8042	0.7802	0.0630	0.1016	0.7802	0.0519	0.0034	0.5167	-0.3524	-0.4201	0.5167	-0.3533	-0.6679	0.0301	-9.90
03088	B	F	8042	0.8116	0.0334	0.8116	0.1145	0.0373	0.0031	0.4641	-0.3474	0.4641	-0.3139	-0.3857	-0.8855	0.0316	-6.50
03089	A	F	8042	0.7926	0.7926	0.0822	0.0428	0.0780	0.0045	0.3992	0.3992	-0.2436	-0.3392	-0.2972	-0.7500	0.0306	-3.00
03090	D	M	8014	0.8992	0.0505	0.0245	0.0258	0.8992	0.0000	0.3827	-0.2795	-0.2812	-0.1838	0.3827	-1.7870	0.0410	-4.10
03091	C	M	8014	0.7783	0.1608	0.0368	0.7783	0.0236	0.0005	0.3699	-0.2637	-0.3379	0.3699	-0.2671	-0.6567	0.0302	0.90
03092	B	M	8014	0.5741	0.1685	0.5741	0.1434	0.1126	0.0015	0.3968	-0.2358	0.3968	-0.3972	-0.4130	0.5332	0.0256	1.50
03093	D	M	8014	0.6416	0.1159	0.0958	0.1451	0.6416	0.0015	0.4409	-0.4470	-0.3740	-0.2853	0.4409	0.1700	0.0265	-1.70
03094	C	M	8014	0.6320	0.0287	0.2452	0.6320	0.0932	0.0009	0.4021	-0.3745	-0.2683	0.4021	-0.4658	0.2396	0.0263	0.40
03095	B	M	8014	0.6109	0.1227	0.6109	0.1057	0.1588	0.0019	0.3745	-0.4237	0.3745	-0.3469	-0.1826	0.3416	0.0260	2.60
03096	C	M	8014	0.6935	0.0614	0.1470	0.6935	0.0962	0.0019	0.5460	-0.4268	-0.4922	0.5460	-0.3781	-0.1232	0.0275	-9.90
03097	B	M	8014	0.7766	0.1064	0.7766	0.0411	0.0729	0.0030	0.4530	-0.3546	0.4530	-0.3075	-0.3391	-0.6329	0.0301	-4.80
03098	D	F	8014	0.8827	0.0493	0.0372	0.0289	0.8827	0.0019	0.5125	-0.3783	-0.3476	-0.3096	0.5125	-1.5646	0.0382	-9.90
03099	C	F	8014	0.8553	0.0258	0.0696	0.8553	0.0468	0.0025	0.4192	-0.3109	-0.3046	0.4192	-0.2458	-1.2862	0.0352	-5.10

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03100	D	F	8014	0.6854	0.0393	0.1028	0.1697	0.6854	0.0027	0.4946	-0.3336	-0.5392	-0.3259	0.4946	-0.0587	0.0272	-8.40
03101	B	F	8014	0.8377	0.0485	0.8377	0.0789	0.0312	0.0037	0.4518	-0.3243	0.4518	-0.2990	-0.3369	-1.1242	0.0337	-5.20
03102	A	F	8014	0.2935	0.2935	0.0846	0.5276	0.0907	0.0036	0.2205	0.2205	-0.5709	-0.1202	-0.3995	1.9786	0.0272	9.90
03103	B	F	8014	0.8158	0.0844	0.8158	0.0480	0.0479	0.0039	0.4497	-0.3247	0.4497	-0.3172	-0.3032	-0.9371	0.0322	-6.30
03104	C	F	8014	0.8700	0.0594	0.0260	0.8700	0.0411	0.0036	0.5078	-0.3679	-0.3185	0.5078	-0.3466	-1.4272	0.0367	-9.90
03105	A	F	8014	0.6834	0.6834	0.1512	0.0631	0.0980	0.0042	0.3862	0.3862	-0.3285	-0.2857	-0.2829	-0.0557	0.0272	2.00

Appendix I:

2006 Uncommon Grade 6 Multiple Choice Statistics for Reading

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03106	A	M	9079	0.8609	0.8609	0.1019	0.0222	0.0146	0.0003	0.3586	0.3586	-0.2564	-0.2720	-0.2355	-1.4653	0.0336	-1.80
03107	B	M	9079	0.8874	0.0577	0.8874	0.0289	0.0256	0.0004	0.4645	-0.3370	0.4645	-0.3005	-0.2882	-1.7541	0.0365	-9.90
03108	A	M	9079	0.5429	0.5429	0.3019	0.0511	0.1029	0.0012	0.3306	0.3306	-0.2498	-0.4282	-0.3016	0.5413	0.0238	7.60
03109	B	M	9079	0.8933	0.0215	0.8933	0.0307	0.0536	0.0009	0.4332	-0.2694	0.4332	-0.2793	-0.3075	-1.8183	0.0372	-9.90
03110	C	M	9079	0.8471	0.0634	0.0334	0.8471	0.0546	0.0014	0.5081	-0.3669	-0.3458	0.5081	-0.3458	-1.3421	0.0324	-9.90
03111	A	M	9079	0.8435	0.8435	0.0376	0.0808	0.0370	0.0011	0.4276	0.4276	-0.2786	-0.2947	-0.3157	-1.3035	0.0321	-6.00
03112	A	M	9079	0.8745	0.8745	0.0333	0.0515	0.0379	0.0028	0.5194	0.5194	-0.3735	-0.3466	-0.3593	-1.6182	0.0351	-9.90
03113	C	M	9079	0.9084	0.0180	0.0419	0.9084	0.0291	0.0028	0.3602	-0.2336	-0.2225	0.3602	-0.2571	-1.9928	0.0394	-4.30
03114	A	F	9079	0.3001	0.3001	0.4497	0.1222	0.1259	0.0021	0.1883	0.1883	-0.1210	-0.2811	-0.3416	1.7806	0.0252	9.90
03115	D	F	9079	0.6329	0.0717	0.1209	0.1724	0.6329	0.0021	0.3600	-0.3043	-0.3475	-0.2470	0.3600	0.1007	0.0246	1.90
03116	A	F	9079	0.3073	0.3073	0.2593	0.3811	0.0496	0.0028	0.1305	0.1305	-0.2001	-0.0548	-0.3311	1.7483	0.0251	9.90
03117	A	F	9079	0.3405	0.3405	0.2683	0.0897	0.2987	0.0029	0.2388	0.2388	-0.1556	-0.4010	-0.2609	1.5642	0.0245	9.90
03118	D	F	9079	0.4705	0.0571	0.2821	0.1870	0.4705	0.0033	0.2773	-0.3742	-0.2635	-0.2058	0.2773	0.9149	0.0236	9.90
03119	D	F	9079	0.4344	0.0855	0.0506	0.4271	0.4344	0.0024	0.2452	-0.4042	-0.4772	-0.1308	0.2452	1.0797	0.0237	9.90
03120	B	F	9079	0.4923	0.3408	0.4923	0.0584	0.1061	0.0024	0.3577	-0.2910	0.3577	-0.4380	-0.3344	0.8019	0.0236	3.20
03121	C	F	9079	0.5359	0.0699	0.1629	0.5359	0.2279	0.0034	0.3323	-0.3637	-0.2548	0.3323	-0.2783	0.5827	0.0238	4.70
03122	B	M	8605	0.9008	0.0339	0.9008	0.0575	0.0077	0.0001	0.4157	-0.3076	0.4157	-0.3091	-0.1783	-1.8314	0.0394	-5.40
03123	A	M	8605	0.8869	0.8869	0.0343	0.0516	0.0267	0.0005	0.4429	0.4429	-0.2880	-0.3178	-0.2771	-1.6492	0.0372	-9.60
03124	B	M	8605	0.7180	0.1940	0.7180	0.0458	0.0414	0.0009	0.4107	-0.2878	0.4107	-0.3549	-0.3759	-0.3186	0.0270	-4.20
03125	C	M	8605	0.8234	0.0875	0.0394	0.8234	0.0493	0.0005	0.4392	-0.2734	-0.3272	0.4392	-0.3487	-1.0297	0.0313	-6.90
03126	A	M	8605	0.7901	0.7901	0.0489	0.1316	0.0282	0.0012	0.2990	0.2990	-0.3566	-0.1226	-0.2604	-0.7733	0.0295	6.50
03127	C	M	8605	0.7127	0.0836	0.1279	0.7127	0.0740	0.0017	0.4581	-0.3826	-0.2973	0.4581	-0.3984	-0.2880	0.0269	-8.20
03128	D	M	8605	0.7825	0.0444	0.0612	0.1107	0.7825	0.0012	0.4828	-0.3325	-0.3586	-0.3729	0.4828	-0.7361	0.0293	-9.20
03129	C	M	8605	0.7569	0.0621	0.0731	0.7569	0.1068	0.0012	0.4413	-0.3379	-0.3439	0.4413	-0.3148	-0.5619	0.0283	-4.50
03130	A	F	8605	0.6770	0.6770	0.2035	0.0834	0.0334	0.0027	0.3533	0.3533	-0.2708	-0.3061	-0.2560	-0.0738	0.0261	1.20
03131	B	F	8605	0.6956	0.1326	0.6956	0.1034	0.0652	0.0031	0.4532	-0.3933	0.4532	-0.3421	-0.3007	-0.1922	0.0265	-7.60
03132	D	F	8605	0.7955	0.0995	0.0489	0.0523	0.7955	0.0038	0.4982	-0.3312	-0.3709	-0.4092	0.4982	-0.8397	0.0300	-9.40
03133	B	F	8605	0.8610	0.0356	0.8610	0.0374	0.0628	0.0033	0.3834	-0.2979	0.3834	-0.2851	-0.2101	-1.3972	0.0345	-2.70
03134	C	F	8605	0.5298	0.1041	0.2658	0.5298	0.0960	0.0043	0.2936	-0.3750	-0.1373	0.2936	-0.3673	0.6969	0.0244	9.90
03135	D	F	8605	0.4688	0.1400	0.0800	0.3073	0.4688	0.0040	0.3888	-0.4313	-0.4828	-0.2874	0.3888	0.9839	0.0243	1.90
03136	C	F	8605	0.6440	0.1765	0.1226	0.6440	0.0522	0.0046	0.3633	-0.2338	-0.3526	0.3633	-0.3004	0.1103	0.0255	0.40
03137	D	F	8605	0.3660	0.1378	0.1786	0.3126	0.3660	0.0050	0.2260	-0.3133	-0.2506	-0.1617	0.2260	1.5118	0.0249	9.90
03138	D	M	8614	0.8783	0.0294	0.0166	0.0756	0.8783	0.0001	0.3309	-0.2549	-0.2522	-0.1990	0.3309	-1.5185	0.0361	-2.20
03139	A	M	8614	0.8245	0.8245	0.0621	0.0688	0.0445	0.0001	0.5152	0.5152	-0.3815	-0.4123	-0.3023	-1.0390	0.0314	-9.90
03140	C	M	8614	0.8426	0.0474	0.0769	0.8426	0.0326	0.0006	0.3425	-0.2456	-0.2141	0.3425	-0.2532	-1.1609	0.0325	-2.80
03141	B	M	8614	0.6622	0.0353	0.6622	0.0145	0.2873	0.0007	0.1355	-0.2839	0.1355	-0.2297	-0.0471	0.0301	0.0254	9.90
03142	B	M	8614	0.7717	0.0693	0.7717	0.0558	0.1027	0.0005	0.2394	-0.1554	0.2394	-0.1275	-0.2102	-0.6213	0.0285	7.50
03143	D	M	8614	0.6044	0.1455	0.1463	0.1030	0.6044	0.0009	0.2889	-0.2733	-0.2668	-0.1653	0.2889	0.3240	0.0246	7.30
03144	D	M	8614	0.7443	0.0205	0.1457	0.0881	0.7443	0.0014	0.2831	-0.2734	-0.1122	-0.3316	0.2831	-0.4557	0.0275	6.70
03145	C	M	8614	0.8423	0.0590	0.0573	0.8423	0.0396	0.0017	0.5139	-0.3795	-0.3520	0.5139	-0.3611	-1.1885	0.0327	-9.90
03146	A	F	8614	0.5370	0.5370	0.0965	0.1845	0.1799	0.0021	0.3472	0.3472	-0.3896	-0.2417	-0.3077	0.6519	0.0241	2.60
03147	C	F	8614	0.7550	0.1076	0.0502	0.7550	0.0849	0.0023	0.4498	-0.3305	-0.3702	0.4498	-0.3112	-0.5234	0.0279	-8.90
03148	C	F	8614	0.7138	0.1015	0.0563	0.7138	0.1251	0.0033	0.4766	-0.4488	-0.3268	0.4766	-0.3229	-0.2701	0.0266	-9.90
03149	B	F	8614	0.7544	0.0620	0.7544	0.0665	0.1137	0.0035	0.3087	-0.1923	0.3087	-0.3127	-0.1785	-0.5094	0.0278	3.80
03150	D	F	8614	0.4487	0.4254	0.0834	0.0401	0.4487	0.0026	0.0986	0.0294	-0.3452	-0.3845	0.0986	1.0877	0.0240	9.90
03151	C	F	8614	0.3281	0.1896	0.3211	0.3281	0.1577	0.0036	0.0417	-0.0774	0.0041	0.0417	-0.0813	1.6829	0.0251	9.90
03152	D	F	8614	0.3305	0.1535	0.0938	0.4185	0.3305	0.0037	0.2498	-0.5074	-0.4503	-0.1072	0.2498	1.6640	0.0250	8.50
03153	A	F	8614	0.6190	0.6190	0.2225	0.0450	0.1098	0.0036	0.2740	0.2740	-0.2065	-0.2987	-0.2112	0.2483	0.0248	6.90
03154	B	M	8589	0.7393	0.0662	0.7393	0.1390	0.0547	0.0007	0.3770	-0.3369	0.3770	-0.2648	-0.2462	-0.4215	0.0275	-3.20
03155	B	M	8589	0.7455	0.0451	0.7455	0.0580	0.1511	0.0003	0.4391	-0.3090	0.4391	-0.2678	-0.3796	-0.4744	0.0278	-6.20

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03156	D	M	8589	0.6352	0.2551	0.0307	0.0782	0.6352	0.0007	0.4743	-0.4025	-0.4289	-0.3881	0.4743	0.1580	0.0253	-9.90
03157	B	M	8589	0.6540	0.1007	0.6540	0.1796	0.0651	0.0006	0.3999	-0.3445	0.3999	-0.2820	-0.3718	0.0632	0.0256	-3.10
03158	C	M	8589	0.7196	0.1209	0.0943	0.7196	0.0642	0.0010	0.4345	-0.3493	-0.3037	0.4345	-0.3475	-0.3075	0.0270	-4.90
03159	D	M	8589	0.7164	0.1140	0.0717	0.0970	0.7164	0.0009	0.5474	-0.4390	-0.3958	-0.4485	0.5474	-0.2892	0.0269	-9.90
03160	C	M	8589	0.6243	0.1810	0.1103	0.6243	0.0834	0.0010	0.4298	-0.3583	-0.3482	0.4298	-0.3526	0.2218	0.0251	-5.20
03161	D	M	8589	0.8098	0.0817	0.0508	0.0564	0.8098	0.0014	0.5232	-0.3679	-0.3911	-0.3821	0.5232	-0.9277	0.0307	-9.90
03162	C	F	8589	0.6690	0.1028	0.0580	0.6690	0.1678	0.0024	0.2506	-0.2194	-0.3389	0.2506	-0.1049	-0.0076	0.0258	9.90
03163	B	F	8589	0.6463	0.1828	0.6463	0.0784	0.0896	0.0029	0.3531	-0.2787	0.3531	-0.3065	-0.2533	0.0940	0.0255	0.40
03164	B	F	8589	0.3574	0.2017	0.3574	0.4023	0.0353	0.0034	0.2549	-0.2853	0.2549	-0.2046	-0.4632	1.5585	0.0250	9.90
03165	D	F	8589	0.8309	0.0746	0.0462	0.0449	0.8309	0.0033	0.5009	-0.3339	-0.3790	-0.3534	0.5009	-1.0926	0.0320	-9.90
03166	A	F	8589	0.6910	0.6910	0.1664	0.0746	0.0655	0.0024	0.4320	0.4320	-0.2993	-0.3985	-0.3450	-0.1438	0.0263	-5.60
03167	B	F	8589	0.5905	0.2773	0.5905	0.0931	0.0360	0.0030	0.3864	-0.2953	0.3864	-0.3805	-0.3709	0.3964	0.0248	-1.40
03168	C	F	8589	0.5145	0.1015	0.0612	0.5145	0.3185	0.0042	0.2701	-0.2816	-0.3535	0.2701	-0.1863	0.7910	0.0243	9.90
03169	C	F	8589	0.5864	0.1365	0.0694	0.5864	0.2039	0.0038	0.2694	-0.2429	-0.3033	0.2694	-0.1785	0.4240	0.0247	9.90
03170	B	M	8593	0.8572	0.0607	0.8572	0.0324	0.0496	0.0001	0.3417	-0.3153	0.3417	-0.1974	-0.1586	-1.3394	0.0343	-1.30
03171	C	M	8593	0.8080	0.0850	0.0339	0.8080	0.0725	0.0007	0.4190	-0.2887	-0.2591	0.4190	-0.3318	-0.9246	0.0308	-5.50
03172	D	M	8593	0.4369	0.2965	0.0703	0.1950	0.4369	0.0013	0.3635	-0.3202	-0.4805	-0.3250	0.3635	1.1737	0.0245	5.10
03173	C	M	8593	0.6607	0.0413	0.2502	0.6607	0.0470	0.0008	0.4822	-0.3789	-0.4096	0.4822	-0.4023	0.0338	0.0259	-8.60
03174	A	M	8593	0.7628	0.7628	0.0357	0.1194	0.0811	0.0009	0.3441	0.3441	-0.2713	-0.2141	-0.2828	-0.5772	0.0286	-0.80
03175	D	M	8593	0.6971	0.1008	0.0260	0.1751	0.6971	0.0010	0.3978	-0.2781	-0.3600	-0.3306	0.3978	-0.1758	0.0267	-1.40
03176	D	M	8593	0.8633	0.0395	0.0477	0.0477	0.8633	0.0019	0.5343	-0.3485	-0.3727	-0.3932	0.5343	-1.4017	0.0349	-9.90
03177	B	M	8593	0.8264	0.0857	0.8264	0.0365	0.0496	0.0019	0.4344	-0.2923	0.4344	-0.2872	-0.3505	-1.0615	0.0319	-6.10
03178	A	F	8593	0.9313	0.9313	0.0265	0.0158	0.0243	0.0020	0.3381	0.3381	-0.2304	-0.2045	-0.1878	-2.2689	0.0462	-6.00
03179	D	F	8593	0.8486	0.0472	0.0427	0.0591	0.8486	0.0023	0.5591	-0.3640	-0.3721	-0.4359	0.5591	-1.2756	0.0337	-9.90
03180	D	F	8593	0.7216	0.0826	0.1025	0.0903	0.7216	0.0029	0.4522	-0.3865	-0.3035	-0.3482	0.4522	-0.3366	0.0274	-5.20
03181	B	F	8593	0.4304	0.2885	0.4304	0.2307	0.0476	0.0029	0.1766	-0.0355	0.1766	-0.2978	-0.2149	1.1983	0.0245	9.90
03182	C	F	8593	0.8008	0.0596	0.0683	0.8008	0.0682	0.0031	0.4737	-0.3342	-0.3528	0.4737	-0.3234	-0.8729	0.0305	-9.50
03183	D	F	8593	0.6492	0.1315	0.0927	0.1229	0.6492	0.0036	0.4401	-0.3029	-0.4136	-0.3658	0.4401	0.0938	0.0257	-4.30
03184	C	F	8593	0.6928	0.0462	0.1323	0.6928	0.1249	0.0038	0.4530	-0.3195	-0.3631	0.4530	-0.3644	-0.1559	0.0266	-6.30
03185	B	F	8593	0.7961	0.1151	0.7961	0.0545	0.0305	0.0038	0.4724	-0.3633	0.4724	-0.3453	-0.3149	-0.8322	0.0302	-7.60
03186	A	M	8621	0.8729	0.8729	0.1007	0.0150	0.0113	0.0002	0.2928	0.2928	-0.2174	-0.2205	-0.1774	-1.4755	0.0355	1.30
03187	B	M	8621	0.9080	0.0452	0.9080	0.0235	0.0227	0.0005	0.4201	-0.2788	0.4201	-0.2801	-0.2698	-1.9204	0.0409	-8.80
03188	A	M	8621	0.5666	0.5666	0.2876	0.0458	0.0991	0.0009	0.3294	0.3294	-0.2520	-0.4041	-0.2973	0.5170	0.0245	6.90
03189	B	M	8621	0.9037	0.0203	0.9037	0.0288	0.0466	0.0006	0.4460	-0.2707	0.4460	-0.2956	-0.3133	-1.8247	0.0396	-9.90
03190	C	M	8621	0.8616	0.0573	0.0349	0.8616	0.0452	0.0009	0.4728	-0.3139	-0.3568	0.4728	-0.3101	-1.3868	0.0346	-9.90
03191	A	M	8621	0.8646	0.8646	0.0281	0.0782	0.0281	0.0010	0.4012	0.4012	-0.2546	-0.2823	-0.2833	-1.4002	0.0348	-5.60
03192	A	M	8621	0.9023	0.9023	0.0239	0.0376	0.0334	0.0028	0.4632	0.4632	-0.3154	-0.2998	-0.3165	-1.8455	0.0399	-9.90
03193	C	M	8621	0.9258	0.0138	0.0365	0.9258	0.0210	0.0029	0.3101	-0.2170	-0.1908	0.3101	-0.2070	-2.1615	0.0444	-0.90
03194	B	F	8621	0.6873	0.2322	0.6873	0.0699	0.0086	0.0020	0.3179	-0.2966	0.3179	-0.1899	-0.1956	-0.1153	0.0262	3.50
03195	A	F	8621	0.6873	0.6873	0.0650	0.2133	0.0317	0.0028	0.3382	0.3382	-0.2977	-0.2567	-0.2699	-0.1201	0.0262	1.00
03196	C	F	8621	0.2726	0.0860	0.3218	0.2726	0.3164	0.0032	0.0686	-0.3230	-0.0615	0.0686	-0.0019	2.0071	0.0264	9.90
03197	C	F	8621	0.7403	0.0966	0.0519	0.7403	0.1086	0.0027	0.3730	-0.2487	-0.3155	0.3730	-0.2803	-0.4423	0.0277	-0.60
03198	B	F	8621	0.5583	0.2969	0.5583	0.0609	0.0808	0.0030	0.3844	-0.3031	0.3844	-0.3945	-0.3633	0.5637	0.0244	-0.30
03199	A	F	8621	0.7221	0.7221	0.1169	0.0625	0.0957	0.0028	0.4116	0.4116	-0.3788	-0.2959	-0.2393	-0.3371	0.0271	-5.10
03200	C	F	8621	0.6430	0.0971	0.1218	0.6430	0.1350	0.0031	0.3771	-0.3802	-0.3208	0.3771	-0.2224	0.1278	0.0254	-0.60
03201	D	F	8621	0.5092	0.3024	0.0469	0.1386	0.5092	0.0029	0.3364	-0.2634	-0.3761	-0.3546	0.3364	0.7901	0.0242	4.40
03202	B	M	8622	0.8950	0.0365	0.8950	0.0579	0.0106	0.0000	0.4126	-0.2944	0.4126	-0.3152	-0.1778	-1.7649	0.0386	-4.20
03203	A	M	8622	0.8913	0.8913	0.0322	0.0500	0.0263	0.0001	0.4414	0.4414	-0.2753	-0.3293	-0.2616	-1.7165	0.0380	-9.90
03204	B	M	8622	0.7183	0.1981	0.7183	0.0452	0.0372	0.0012	0.4097	-0.2977	0.4097	-0.3540	-0.3490	-0.3247	0.0271	-4.60
03205	C	M	8622	0.8230	0.0914	0.0362	0.8230	0.0488	0.0006	0.4163	-0.2522	-0.3185	0.4163	-0.3341	-1.0431	0.0314	-5.10

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03206	A	M	8622	0.7845	0.7845	0.0540	0.1349	0.0260	0.0006	0.3142	0.3142	-0.3756	-0.1505	-0.2240	-0.7604	0.0294	5.70
03207	C	M	8622	0.7135	0.0827	0.1268	0.7135	0.0752	0.0019	0.4656	-0.3893	-0.3153	0.4656	-0.3801	-0.3020	0.0270	-9.10
03208	D	M	8622	0.7736	0.0485	0.0622	0.1141	0.7736	0.0016	0.4773	-0.3165	-0.3650	-0.3725	0.4773	-0.6870	0.0290	-7.30
03209	C	M	8622	0.7584	0.0610	0.0721	0.7584	0.1075	0.0009	0.4434	-0.3445	-0.3738	0.4434	-0.2899	-0.5866	0.0284	-4.40
03210	B	F	8622	0.7341	0.1178	0.7341	0.0963	0.0486	0.0032	0.4459	-0.4408	0.4459	-0.2316	-0.3041	-0.4315	0.0276	-6.80
03211	C	F	8622	0.6126	0.1790	0.1151	0.6126	0.0904	0.0030	0.4016	-0.3921	-0.3190	0.4016	-0.2550	0.2675	0.0251	-0.30
03212	A	F	8622	0.8572	0.8572	0.0743	0.0346	0.0302	0.0037	0.4871	0.4871	-0.3751	-0.3105	-0.3023	-1.3686	0.0342	-9.90
03213	B	F	8622	0.3979	0.0230	0.3979	0.1442	0.4309	0.0041	0.3825	-0.3935	0.3825	-0.3472	-0.3823	1.3382	0.0246	3.30
03214	A	F	8622	0.5202	0.5202	0.1744	0.1806	0.1206	0.0042	0.2895	0.2895	-0.2299	-0.2747	-0.2509	0.7341	0.0244	9.90
03215	C	F	8622	0.5159	0.1574	0.1591	0.5159	0.1633	0.0043	0.3463	-0.3658	-0.2988	0.3463	-0.2499	0.7519	0.0243	4.90
03216	C	F	8622	0.5540	0.1797	0.1279	0.5540	0.1335	0.0049	0.3318	-0.2444	-0.3075	0.3318	-0.2997	0.5612	0.0245	6.10
03217	D	F	8622	0.5173	0.2120	0.1666	0.0987	0.5173	0.0055	0.3991	-0.3125	-0.3596	-0.4363	0.3991	0.7442	0.0243	-0.50
03218	D	M	8588	0.8759	0.0248	0.0186	0.0805	0.8759	0.0002	0.3330	-0.2530	-0.2595	-0.2040	0.3330	-1.5173	0.0362	-1.10
03219	A	M	8588	0.8193	0.8193	0.0651	0.0703	0.0445	0.0008	0.5375	0.5375	-0.3888	-0.4377	-0.3332	-0.9996	0.0314	-9.90
03220	C	M	8588	0.8544	0.0432	0.0750	0.8544	0.0268	0.0006	0.3520	-0.2516	-0.2269	0.3520	-0.2511	-1.2858	0.0338	-2.30
03221	B	M	8588	0.6646	0.0368	0.6646	0.0148	0.2825	0.0013	0.1459	-0.2990	0.1459	-0.2344	-0.0518	0.0247	0.0257	9.90
03222	B	M	8588	0.7717	0.0693	0.7717	0.0522	0.1057	0.0012	0.2279	-0.1496	0.2279	-0.1184	-0.1995	-0.6341	0.0288	9.60
03223	D	M	8588	0.6054	0.1463	0.1411	0.1062	0.6054	0.0010	0.2969	-0.2887	-0.2802	-0.1516	0.2969	0.3415	0.0248	8.70
03224	D	M	8588	0.7396	0.0238	0.1514	0.0841	0.7396	0.0012	0.2862	-0.2971	-0.1067	-0.3420	0.2862	-0.4144	0.0276	7.70
03225	C	M	8588	0.8402	0.0597	0.0596	0.8402	0.0385	0.0019	0.5292	-0.3874	-0.3855	0.5292	-0.3559	-1.1757	0.0328	-9.90
03226	B	F	8588	0.8924	0.0383	0.8924	0.0272	0.0406	0.0014	0.3837	-0.2225	0.3837	-0.2394	-0.2857	-1.7004	0.0383	-6.10
03227	B	F	8588	0.8596	0.0524	0.8596	0.0536	0.0328	0.0016	0.4812	-0.3658	0.4812	-0.3338	-0.2831	-1.3419	0.0344	-9.70
03228	C	F	8588	0.8435	0.0459	0.0562	0.8435	0.0522	0.0022	0.4591	-0.3114	-0.3414	0.4591	-0.2978	-1.2020	0.0331	-9.20
03229	D	F	8588	0.5318	0.1214	0.2170	0.1270	0.5318	0.0027	0.3043	-0.3656	-0.1968	-0.2699	0.3043	0.6912	0.0242	6.90
03230	A	F	8588	0.8478	0.8478	0.0572	0.0537	0.0389	0.0024	0.4764	0.4764	-0.3179	-0.3479	-0.3268	-1.2239	0.0332	-9.90
03231	C	F	8588	0.8801	0.0218	0.0431	0.8801	0.0523	0.0028	0.4875	-0.3084	-0.3500	0.4875	-0.3306	-1.5519	0.0365	-9.90
03232	B	F	8588	0.4432	0.0392	0.4432	0.1352	0.3798	0.0026	0.2074	-0.3583	0.2074	-0.2547	-0.1328	1.1319	0.0242	9.90
03233	A	F	8588	0.3232	0.3232	0.0601	0.4665	0.1471	0.0031	0.0032	0.0032	-0.2161	0.0513	-0.0361	1.7460	0.0253	9.90
03234	A	M	8594	0.8785	0.8785	0.0334	0.0549	0.0330	0.0001	0.3281	0.3281	-0.2424	-0.2788	-0.1083	-1.5432	0.0364	-0.90
03235	B	M	8594	0.6649	0.0617	0.6649	0.2234	0.0499	0.0001	0.4000	-0.3784	0.4000	-0.3034	-0.3240	0.0000	0.0258	-2.30
03236	B	M	8594	0.8451	0.0457	0.8451	0.0222	0.0862	0.0007	0.4078	-0.3317	0.4078	-0.2768	-0.2603	-1.2103	0.0330	-4.80
03237	D	M	8594	0.7353	0.0652	0.0925	0.1065	0.7353	0.0006	0.3425	-0.3528	-0.1966	-0.2396	0.3425	-0.3972	0.0275	2.30
03238	D	M	8594	0.7424	0.0305	0.1947	0.0306	0.7424	0.0019	0.2733	-0.2951	-0.1435	-0.3386	0.2733	-0.4299	0.0276	7.80
03239	B	M	8594	0.6157	0.2776	0.6157	0.0400	0.0660	0.0007	0.1936	-0.0784	0.1936	-0.3156	-0.2598	0.2787	0.0250	9.90
03240	D	M	8594	0.7983	0.0607	0.0584	0.0810	0.7983	0.0015	0.5375	-0.4011	-0.3458	-0.4279	0.5375	-0.8469	0.0302	-9.90
03241	A	M	8594	0.8735	0.8735	0.0593	0.0333	0.0316	0.0022	0.4080	0.4080	-0.2548	-0.2950	-0.2875	-1.4883	0.0358	-5.80
03242	B	F	8594	0.8390	0.1057	0.8390	0.0372	0.0164	0.0017	0.3654	-0.2743	0.3654	-0.2589	-0.2211	-1.1682	0.0327	-1.40
03243	C	F	8594	0.7149	0.0503	0.1700	0.7149	0.0625	0.0023	0.3711	-0.3007	-0.2976	0.3711	-0.2348	-0.2823	0.0269	-2.50
03244	D	F	8594	0.7729	0.0635	0.0959	0.0649	0.7729	0.0028	0.5493	-0.4097	-0.3845	-0.4505	0.5493	-0.6547	0.0289	-9.90
03245	B	F	8594	0.6166	0.1045	0.6166	0.1093	0.1670	0.0027	0.4239	-0.3351	0.4239	-0.3176	-0.3847	0.2706	0.0250	-5.00
03246	C	F	8594	0.5030	0.2324	0.1878	0.5030	0.0740	0.0028	0.3779	-0.3400	-0.3298	0.3779	-0.3488	0.8379	0.0242	1.90
03247	D	F	8594	0.5263	0.1320	0.1688	0.1699	0.5263	0.0030	0.2707	-0.3899	-0.1056	-0.2373	0.2707	0.7266	0.0243	9.90
03248	D	F	8594	0.6011	0.0924	0.2227	0.0801	0.6011	0.0037	0.3220	-0.3668	-0.1820	-0.3375	0.3220	0.3460	0.0248	5.70
03249	A	F	8594	0.6678	0.6678	0.0652	0.1591	0.1043	0.0037	0.3848	0.3848	-0.4075	-0.2016	-0.3898	0.0006	0.0258	3.70
03250	C	M	8586	0.8783	0.0558	0.0284	0.8783	0.0372	0.0003	0.3686	-0.3419	-0.2239	0.3686	-0.1421	-1.5309	0.0364	-3.10
03251	A	M	8586	0.8724	0.8724	0.0624	0.0448	0.0201	0.0002	0.3936	0.3936	-0.2452	-0.2980	-0.2724	-1.4824	0.0359	-4.50
03252	C	M	8586	0.6677	0.0388	0.1702	0.6677	0.1226	0.0007	0.3604	-0.2725	-0.3117	0.3604	-0.2660	0.0071	0.0259	2.20
03253	C	M	8586	0.7731	0.0351	0.1783	0.7731	0.0129	0.0006	0.3551	-0.3673	-0.2487	0.3551	-0.2588	-0.6331	0.0289	1.50
03254	D	M	8586	0.7317	0.0574	0.0543	0.1554	0.7317	0.0013	0.4206	-0.3531	-0.3219	-0.3031	0.4206	-0.3727	0.0275	-5.30
03255	D	M	8586	0.7964	0.0352	0.0502	0.1173	0.7964	0.0009	0.4339	-0.3523	-0.3754	-0.2701	0.4339	-0.8254	0.0302	-4.60

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03256	C	M	8586	0.5127	0.2124	0.0539	0.5127	0.2193	0.0016	0.1609	-0.0318	-0.2885	0.1609	-0.1945	0.8022	0.0243	9.90
03257	A	M	8586	0.8909	0.8909	0.0215	0.0153	0.0708	0.0015	0.3507	0.3507	-0.2351	-0.2086	-0.2573	-1.6811	0.0381	-2.80
03258	B	F	8586	0.7402	0.1303	0.7402	0.0494	0.0779	0.0022	0.3186	-0.2500	0.3186	-0.2591	-0.1851	-0.4309	0.0278	2.60
03259	D	F	8586	0.4708	0.0949	0.0681	0.3637	0.4708	0.0024	0.2617	-0.3650	-0.4076	-0.1471	0.2617	1.0078	0.0243	9.90
03260	A	F	8586	0.8493	0.8493	0.0552	0.0392	0.0536	0.0027	0.4014	0.4014	-0.3102	-0.3177	-0.1931	-1.2486	0.0336	-2.70
03261	A	F	8586	0.6771	0.6771	0.0580	0.0563	0.2055	0.0031	0.4942	0.4942	-0.4146	-0.4300	-0.3859	-0.0664	0.0262	-9.90
03262	C	F	8586	0.8428	0.0847	0.0352	0.8428	0.0348	0.0026	0.3944	-0.2975	-0.2333	0.3944	-0.2647	-1.1996	0.0331	-4.80
03263	D	F	8586	0.7154	0.0698	0.1435	0.0685	0.7154	0.0029	0.5413	-0.2867	-0.4920	-0.4601	0.5413	-0.2801	0.0271	-9.90
03264	C	F	8586	0.6931	0.1389	0.0657	0.6931	0.0995	0.0028	0.4928	-0.4397	-0.3388	0.4928	-0.3672	-0.1380	0.0265	-9.60
03265	D	F	8586	0.4769	0.1349	0.2590	0.1263	0.4769	0.0029	0.3288	-0.3982	-0.2318	-0.3199	0.3288	0.9823	0.0243	7.10
03266	A	M	8560	0.7294	0.7294	0.0349	0.1498	0.0855	0.0004	0.3428	0.3428	-0.2720	-0.2086	-0.3277	-0.3565	0.0275	3.40
03267	C	M	8560	0.8393	0.0472	0.0765	0.8393	0.0369	0.0001	0.4890	-0.3276	-0.3735	0.4890	-0.3207	-1.1569	0.0328	-9.90
03268	D	M	8560	0.8376	0.0390	0.0928	0.0300	0.8376	0.0006	0.5077	-0.3552	-0.3778	-0.3495	0.5077	-1.1537	0.0328	-9.90
03269	C	M	8560	0.8444	0.0861	0.0452	0.8444	0.0237	0.0006	0.4132	-0.3080	-0.2588	0.4132	-0.3007	-1.2105	0.0332	-4.60
03270	A	M	8560	0.8908	0.8908	0.0243	0.0551	0.0291	0.0007	0.4158	0.4158	-0.2256	-0.2865	-0.3129	-1.6965	0.0382	-6.50
03271	C	M	8560	0.4673	0.2463	0.1588	0.4673	0.1266	0.0011	0.3295	-0.3253	-0.3556	0.3295	-0.2100	1.0384	0.0244	8.30
03272	D	M	8560	0.7293	0.1019	0.0544	0.1134	0.7293	0.0009	0.5148	-0.3832	-0.2979	-0.4764	0.5148	-0.3595	0.0276	-9.90
03273	B	M	8560	0.7525	0.1042	0.7525	0.0507	0.0909	0.0018	0.4708	-0.4427	0.4708	-0.2738	-0.3088	-0.5008	0.0283	-8.70
03274	B	F	8560	0.6554	0.2189	0.6554	0.0496	0.0741	0.0020	0.3970	-0.3748	0.3970	-0.2979	-0.2218	0.0757	0.0258	-1.00
03275	D	F	8560	0.8939	0.0276	0.0494	0.0264	0.8939	0.0027	0.4674	-0.3028	-0.3258	-0.2997	0.4674	-1.7201	0.0385	-9.90
03276	B	F	8560	0.2292	0.4993	0.2292	0.1535	0.1145	0.0035	0.0073	0.0798	0.0073	-0.2660	-0.0060	2.3412	0.0281	9.90
03277	D	F	8560	0.7828	0.0617	0.1143	0.0377	0.7828	0.0035	0.4729	-0.3362	-0.3586	-0.3472	0.4729	-0.7271	0.0296	-8.60
03278	B	F	8560	0.3703	0.0734	0.3703	0.2771	0.2763	0.0029	0.1830	-0.4461	0.1830	-0.0787	-0.2002	1.5184	0.0249	9.90
03279	C	F	8560	0.7379	0.0746	0.0710	0.7379	0.1132	0.0033	0.4849	-0.3480	-0.4677	0.4849	-0.3009	-0.4165	0.0278	-9.00
03280	A	F	8560	0.8771	0.8771	0.0544	0.0394	0.0254	0.0037	0.4674	0.4674	-0.3373	-0.3299	-0.2690	-1.5454	0.0365	-9.80
03281	C	F	8560	0.6960	0.0560	0.1373	0.6960	0.1061	0.0047	0.4432	-0.3140	-0.4013	0.4432	-0.3009	-0.1537	0.0266	-6.30
03282	A	M	8535	0.8845	0.8845	0.0320	0.0527	0.0306	0.0002	0.3323	0.3323	-0.2439	-0.2744	-0.1125	-1.6221	0.0373	-2.90
03283	B	M	8535	0.6528	0.0542	0.6528	0.2369	0.0557	0.0004	0.4030	-0.3516	0.4030	-0.3156	-0.3475	0.0755	0.0256	-2.60
03284	B	M	8535	0.8437	0.0451	0.8437	0.0193	0.0908	0.0011	0.3758	-0.2956	0.3758	-0.2361	-0.2542	-1.1961	0.0330	-2.10
03285	D	M	8535	0.7425	0.0617	0.0849	0.1104	0.7425	0.0005	0.3499	-0.3383	-0.2067	-0.2493	0.3499	-0.4518	0.0278	1.90
03286	D	M	8535	0.7385	0.0332	0.1948	0.0318	0.7385	0.0018	0.2719	-0.3119	-0.1369	-0.3247	0.2719	-0.4048	0.0276	7.30
03287	B	M	8535	0.6217	0.2669	0.6217	0.0396	0.0702	0.0016	0.1876	-0.0653	0.1876	-0.3121	-0.2503	0.2386	0.0252	9.90
03288	D	M	8535	0.7978	0.0579	0.0616	0.0807	0.7978	0.0020	0.5301	-0.3685	-0.3703	-0.4184	0.5301	-0.8364	0.0301	-9.90
03289	A	M	8535	0.8743	0.8743	0.0593	0.0278	0.0362	0.0025	0.3944	0.3944	-0.2474	-0.2921	-0.2751	-1.5140	0.0361	-5.90
03290	B	F	8535	0.5271	0.1877	0.5271	0.0767	0.2062	0.0022	0.3059	-0.2975	0.3059	-0.3011	-0.2306	0.7189	0.0244	9.60
03291	A	F	8535	0.7547	0.7547	0.1052	0.0654	0.0724	0.0023	0.3468	0.3468	-0.3767	-0.2702	-0.0748	-0.5218	0.0282	2.80
03292	B	F	8535	0.6405	0.0705	0.6405	0.1522	0.1338	0.0029	0.4554	-0.3859	0.4554	-0.3905	-0.3322	0.1312	0.0255	-8.90
03293	C	F	8535	0.7610	0.0733	0.1285	0.7610	0.0341	0.0030	0.4407	-0.2627	-0.3667	0.4407	-0.3385	-0.5807	0.0285	-7.40
03294	A	F	8535	0.5644	0.5644	0.1036	0.2846	0.0443	0.0032	0.3462	0.3462	-0.3433	-0.2520	-0.3851	0.5203	0.0246	1.60
03295	D	F	8535	0.7932	0.0819	0.0589	0.0629	0.7932	0.0030	0.5003	-0.3138	-0.3654	-0.4219	0.5003	-0.8146	0.0300	-9.10
03296	C	F	8535	0.6500	0.0436	0.0578	0.6500	0.2450	0.0036	0.3661	-0.3776	-0.3064	0.3661	-0.2689	0.0906	0.0256	-1.60
03297	B	F	8535	0.8218	0.0801	0.8218	0.0393	0.0546	0.0042	0.4824	-0.3542	0.4824	-0.3155	-0.3504	-1.0232	0.0315	-9.90
03298	B	M	8540	0.8027	0.0528	0.8027	0.0619	0.0821	0.0005	0.4663	-0.3685	0.4663	-0.3412	-0.3023	-0.8551	0.0302	-9.90
03299	A	M	8540	0.7900	0.7900	0.0443	0.0715	0.0934	0.0007	0.3660	0.3660	-0.2646	-0.2422	-0.2780	-0.7532	0.0295	-1.80
03300	A	M	8540	0.7056	0.7056	0.0760	0.1139	0.1040	0.0005	0.4784	0.4784	-0.4145	-0.3762	-0.3355	-0.2305	0.0267	-9.90
03301	D	M	8540	0.7057	0.0837	0.0877	0.1213	0.7057	0.0015	0.5054	-0.3461	-0.4050	-0.4286	0.5054	-0.2248	0.0267	-9.90
03302	B	M	8540	0.5737	0.1241	0.5737	0.2525	0.0485	0.0013	0.3580	-0.3529	0.3580	-0.2842	-0.2973	0.4789	0.0246	3.00
03303	D	M	8540	0.6957	0.1105	0.1185	0.0735	0.6957	0.0018	0.4783	-0.3369	-0.3625	-0.4451	0.4783	-0.1726	0.0264	-9.90
03304	B	M	8540	0.6234	0.1262	0.6234	0.0857	0.1630	0.0016	0.4509	-0.4221	0.4509	-0.3577	-0.3477	0.2228	0.0251	-8.00
03305	C	M	8540	0.8011	0.0349	0.0423	0.8011	0.1204	0.0014	0.4885	-0.3883	-0.3741	0.4885	-0.3449	-0.8496	0.0302	-9.90

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03306	B	F	8540	0.8571	0.0493	0.8571	0.0778	0.0132	0.0026	0.3834	-0.3483	0.3834	-0.2168	-0.2258	-1.3270	0.0342	-5.30
03307	C	F	8540	0.3356	0.3035	0.1396	0.3356	0.2181	0.0032	0.1028	-0.1028	-0.0821	0.1028	-0.1195	1.6776	0.0253	9.90
03308	C	F	8540	0.5600	0.1118	0.2584	0.5600	0.0664	0.0034	0.2205	-0.3800	-0.0395	0.2205	-0.2836	0.5490	0.0245	9.90
03309	C	F	8540	0.3365	0.4177	0.2166	0.3365	0.0254	0.0037	0.1998	-0.1578	-0.2381	0.1998	-0.4252	1.6667	0.0253	9.90
03310	D	F	8540	0.5977	0.2786	0.0645	0.0554	0.5977	0.0039	0.2751	-0.1592	-0.3540	-0.2968	0.2751	0.3683	0.0248	9.30
03311	D	F	8540	0.4066	0.2463	0.1953	0.1477	0.4066	0.0042	0.2629	-0.1854	-0.1867	-0.4448	0.2629	1.3016	0.0245	9.90
03312	B	F	8540	0.4502	0.1710	0.4502	0.1049	0.2704	0.0035	0.3226	-0.2901	0.3226	-0.4396	-0.2363	1.0803	0.0243	5.90
03313	A	F	8540	0.7789	0.7789	0.0615	0.0885	0.0672	0.0039	0.4099	0.4099	-0.3104	-0.2644	-0.3271	-0.6844	0.0291	-3.60
03314	B	M	8573	0.7518	0.0709	0.7518	0.1257	0.0512	0.0003	0.4304	-0.3697	0.4304	-0.2858	-0.3377	-0.5057	0.0280	-5.20
03315	C	M	8573	0.5821	0.3418	0.0464	0.5821	0.0293	0.0005	0.2462	-0.1458	-0.3915	0.2462	-0.3176	0.4481	0.0246	9.90
03316	C	M	8573	0.6392	0.2290	0.0807	0.6392	0.0505	0.0006	0.3658	-0.3149	-0.2647	0.3658	-0.3026	0.1445	0.0253	0.10
03317	A	M	8573	0.6213	0.6213	0.1916	0.0299	0.1567	0.0006	0.3159	0.3159	-0.1436	-0.3384	-0.3721	0.2487	0.0250	5.90
03318	D	M	8573	0.8636	0.0471	0.0462	0.0420	0.8636	0.0010	0.5360	-0.4009	-0.3822	-0.3345	0.5360	-1.3903	0.0348	-9.90
03319	B	M	8573	0.5826	0.1698	0.5826	0.1886	0.0581	0.0008	0.2922	-0.1898	0.2922	-0.2733	-0.3156	0.4492	0.0246	9.30
03320	A	M	8573	0.6908	0.6908	0.1229	0.1422	0.0420	0.0021	0.3939	0.3939	-0.2945	-0.3062	-0.3608	-0.1290	0.0263	-2.40
03321	C	M	8573	0.8144	0.0547	0.0630	0.8144	0.0663	0.0016	0.4933	-0.3582	-0.4181	0.4933	-0.2934	-0.9502	0.0309	-9.90
03322	A	F	8573	0.7540	0.7540	0.1765	0.0296	0.0371	0.0028	0.1933	0.1933	-0.0611	-0.2590	-0.2610	-0.4986	0.0280	9.90
03323	D	F	8573	0.6478	0.0209	0.0469	0.2823	0.6478	0.0021	0.3196	-0.3198	-0.3803	-0.2234	0.3196	0.1019	0.0255	6.10
03324	C	F	8573	0.7394	0.0811	0.0918	0.7394	0.0845	0.0033	0.5042	-0.3990	-0.4076	0.5042	-0.3378	-0.4273	0.0276	-9.90
03325	D	F	8573	0.8837	0.0241	0.0560	0.0334	0.8837	0.0028	0.3629	-0.2635	-0.2087	-0.2646	0.3629	-1.5833	0.0369	-1.70
03326	C	F	8573	0.6674	0.1294	0.1491	0.6674	0.0513	0.0028	0.3155	-0.3114	-0.1949	0.3155	-0.2295	0.0006	0.0258	4.00
03327	A	F	8573	0.6671	0.6671	0.1035	0.1226	0.1038	0.0030	0.5399	0.5399	-0.4016	-0.4706	-0.4496	-0.0081	0.0258	-9.90
03328	D	F	8573	0.6320	0.2308	0.0749	0.0590	0.6320	0.0033	0.2975	-0.1868	-0.3062	-0.3117	0.2975	0.1982	0.0252	7.60
03329	B	F	8573	0.6295	0.1157	0.6295	0.1422	0.1095	0.0030	0.3973	-0.2887	0.3973	-0.3535	-0.3286	0.2052	0.0252	-3.20
03330	D	M	8589	0.8634	0.0313	0.0388	0.0662	0.8634	0.0002	0.4722	-0.3297	-0.3063	-0.3396	0.4722	-1.4064	0.0349	-9.50
03331	B	M	8589	0.8574	0.0211	0.8574	0.1124	0.0087	0.0005	0.4325	-0.2928	0.4325	-0.3629	-0.2011	-1.3264	0.0341	-8.50
03332	D	M	8589	0.7037	0.0254	0.0935	0.1769	0.7037	0.0006	0.3508	-0.3089	-0.2968	-0.2525	0.3508	-0.2052	0.0267	3.40
03333	D	M	8589	0.4184	0.1330	0.1813	0.2657	0.4184	0.0016	0.2469	-0.4131	-0.3157	-0.0755	0.2469	1.2638	0.0245	9.90
03334	B	M	8589	0.8793	0.0327	0.8793	0.0550	0.0324	0.0007	0.2987	-0.1829	0.2987	-0.2046	-0.1993	-1.5516	0.0364	2.30
03335	C	M	8589	0.8151	0.0661	0.0442	0.8151	0.0729	0.0016	0.4990	-0.3439	-0.3254	0.4990	-0.3893	-0.9671	0.0311	-9.90
03336	B	M	8589	0.5438	0.0814	0.5438	0.3222	0.0518	0.0008	0.3197	-0.3841	0.3197	-0.2329	-0.3144	0.6485	0.0245	8.60
03337	B	M	8589	0.7790	0.0219	0.7790	0.0377	0.1599	0.0015	0.4897	-0.3096	0.4897	-0.3028	-0.4299	-0.6922	0.0292	-9.30
03338	A	F	8589	0.7450	0.7450	0.1626	0.0517	0.0376	0.0030	0.3554	0.3554	-0.2754	-0.1922	-0.3273	-0.4601	0.0279	0.10
03339	C	F	8589	0.7415	0.0520	0.0625	0.7415	0.1405	0.0034	0.5310	-0.3431	-0.4408	0.5310	-0.4210	-0.4569	0.0279	-9.90
03340	B	F	8589	0.8370	0.0291	0.8370	0.0740	0.0569	0.0029	0.4610	-0.2824	0.4610	-0.3305	-0.3388	-1.1752	0.0328	-8.50
03341	C	F	8589	0.6498	0.1025	0.0998	0.6498	0.1441	0.0038	0.4413	-0.3368	-0.4485	0.4413	-0.2877	0.0909	0.0257	-4.20
03342	D	F	8589	0.7642	0.1342	0.0483	0.0489	0.7642	0.0043	0.4917	-0.3628	-0.3884	-0.3737	0.4917	-0.6063	0.0287	-9.20
03343	B	F	8589	0.8465	0.0614	0.8465	0.0523	0.0357	0.0041	0.5122	-0.3637	0.5122	-0.3572	-0.3420	-1.2420	0.0334	-9.90
03344	B	F	8589	0.6483	0.1476	0.6483	0.0954	0.1041	0.0047	0.4142	-0.2990	0.4142	-0.3694	-0.3319	0.1041	0.0256	-3.80
03345	A	F	8589	0.7352	0.7352	0.1280	0.0687	0.0635	0.0047	0.3582	0.3582	-0.2427	-0.2608	-0.3113	-0.4066	0.0277	1.20
03346	C	M	8538	0.7307	0.1653	0.0627	0.7307	0.0409	0.0005	0.3550	-0.2651	-0.2671	0.3550	-0.2873	-0.3747	0.0274	-0.90
03347	A	M	8538	0.8011	0.8011	0.0840	0.0647	0.0497	0.0006	0.4424	0.4424	-0.3543	-0.2996	-0.2934	-0.8654	0.0303	-7.00
03348	B	M	8538	0.8453	0.0196	0.8453	0.0524	0.0815	0.0013	0.3981	-0.2706	0.3981	-0.2673	-0.2913	-1.2200	0.0332	-4.40
03349	D	M	8538	0.6818	0.0512	0.1148	0.1509	0.6818	0.0014	0.4242	-0.3419	-0.3169	-0.3504	0.4242	-0.0890	0.0262	-5.60
03350	D	M	8538	0.7713	0.0650	0.0582	0.1041	0.7713	0.0014	0.3699	-0.3484	-0.3132	-0.1765	0.3699	-0.6488	0.0289	-0.30
03351	C	M	8538	0.6121	0.2068	0.0820	0.6121	0.0979	0.0012	0.3315	-0.2599	-0.3640	0.3315	-0.2172	0.2846	0.0251	5.10
03352	B	M	8538	0.6869	0.0361	0.6869	0.1409	0.1345	0.0016	0.3333	-0.2711	0.3333	-0.2587	-0.2585	-0.1146	0.0263	2.60
03353	C	M	8538	0.8139	0.0487	0.0651	0.8139	0.0699	0.0023	0.4269	-0.3202	-0.3250	0.4269	-0.2694	-0.9452	0.0309	-4.80
03354	B	F	8538	0.4740	0.2052	0.4740	0.2195	0.0984	0.0029	0.3218	-0.3374	0.3218	-0.1797	-0.4218	0.9662	0.0243	7.60
03355	A	F	8538	0.7895	0.7895	0.1181	0.0341	0.0559	0.0025	0.4830	0.4830	-0.3511	-0.3913	-0.3439	-0.7769	0.0297	-9.00

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03356	C	F	8538	0.7040	0.0543	0.1935	0.7040	0.0453	0.0028	0.3784	-0.3777	-0.2639	0.3784	-0.2799	-0.2150	0.0267	-0.70
03357	B	F	8538	0.5572	0.1175	0.5572	0.2346	0.0877	0.0030	0.4024	-0.4683	0.4024	-0.2327	-0.4426	0.5725	0.0245	-1.80
03358	A	F	8538	0.3500	0.3500	0.0949	0.2708	0.2797	0.0047	0.2878	0.2878	-0.4401	-0.2990	-0.2292	1.6027	0.0251	9.90
03359	C	F	8538	0.4685	0.0950	0.2859	0.4685	0.1471	0.0035	0.3338	-0.4486	-0.2805	0.3338	-0.2432	1.0047	0.0243	5.80
03360	D	F	8538	0.7164	0.1613	0.0806	0.0381	0.7164	0.0036	0.5651	-0.5222	-0.3723	-0.3973	0.5651	-0.3004	0.0271	-9.90
03361	B	F	8538	0.4717	0.1375	0.4717	0.3448	0.0431	0.0029	0.3286	-0.2683	0.3286	-0.2844	-0.4473	0.9964	0.0243	6.20

Appendix J:

2006 Uncommon Grade 7 Multiple Choice Statistics for Reading

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03362	C	M	9464	0.8878	0.0390	0.0280	0.8878	0.0445	0.0007	0.3005	-0.2143	-0.2532	0.3005	-0.1272	-1.8176	0.0360	1.10
03363	A	M	9464	0.8582	0.8582	0.0276	0.0539	0.0596	0.0007	0.3001	0.3001	-0.2561	-0.2101	-0.1529	-1.5013	0.0328	3.10
03364	B	M	9464	0.6591	0.0620	0.6591	0.2550	0.0226	0.0013	0.2640	-0.2680	0.2640	-0.1712	-0.3132	-0.0885	0.0248	9.90
03365	A	M	9464	0.8358	0.8358	0.0302	0.0393	0.0931	0.0016	0.5278	0.5278	-0.3403	-0.3099	-0.4349	-1.3025	0.0312	-9.90
03366	C	M	9464	0.8366	0.0459	0.0595	0.8366	0.0572	0.0008	0.5689	-0.3503	-0.4167	0.5689	-0.4365	-1.3122	0.0313	-9.90
03367	A	M	9464	0.4408	0.4408	0.0711	0.2447	0.2420	0.0014	0.2186	0.2186	-0.3379	-0.2265	-0.1283	1.0269	0.0236	9.90
03368	D	M	9464	0.7318	0.0461	0.1867	0.0347	0.7318	0.0007	0.3968	-0.3387	-0.2911	-0.3257	0.3968	-0.5185	0.0264	1.60
03369	D	M	9464	0.5986	0.0529	0.0565	0.2903	0.5986	0.0017	0.3115	-0.3461	-0.3736	-0.1971	0.3115	0.2355	0.0241	8.80
03370	B	F	9464	0.5130	0.2039	0.5130	0.1424	0.1362	0.0044	0.3693	-0.3402	0.3693	-0.3177	-0.3215	0.6789	0.0235	6.40
03371	C	F	9464	0.7686	0.0290	0.0349	0.7686	0.1636	0.0040	0.4215	-0.2931	-0.2776	0.4215	-0.3373	-0.7872	0.0278	-4.30
03372	B	F	9464	0.8458	0.0751	0.8458	0.0344	0.0403	0.0043	0.4362	-0.3033	0.4362	-0.2908	-0.2900	-1.3982	0.0320	-6.20
03373	A	F	9464	0.6684	0.6684	0.1493	0.0652	0.1119	0.0052	0.5018	0.5018	-0.3577	-0.3589	-0.4828	-0.1666	0.0251	-9.40
03374	D	F	9464	0.7837	0.1320	0.0283	0.0510	0.7837	0.0050	0.4766	-0.3591	-0.3398	-0.3521	0.4766	-0.8865	0.0283	-6.20
03375	B	F	9464	0.6660	0.0755	0.6660	0.2242	0.0292	0.0051	0.3544	-0.3573	0.3544	-0.2404	-0.3112	-0.1321	0.0250	9.50
03376	A	F	9464	0.7550	0.7550	0.0565	0.1172	0.0663	0.0051	0.4352	0.4352	-0.3955	-0.2649	-0.3219	-0.6857	0.0272	-4.70
03377	D	F	9464	0.5738	0.1680	0.0786	0.1734	0.5738	0.0062	0.4842	-0.3782	-0.4844	-0.4076	0.4842	0.3602	0.0238	-7.80
03378	C	M	8956	0.9002	0.0382	0.0209	0.9002	0.0401	0.0007	0.2612	-0.2029	-0.2001	0.2612	-0.1065	-1.8188	0.0384	0.00
03379	A	M	8956	0.8749	0.8749	0.0212	0.0490	0.0545	0.0003	0.2723	0.2723	-0.2089	-0.1995	-0.1413	-1.5417	0.0352	1.60
03380	B	M	8956	0.6776	0.0460	0.6776	0.2618	0.0133	0.0012	0.2133	-0.1855	0.2133	-0.1590	-0.2267	-0.0876	0.0255	9.90
03381	A	M	8956	0.8613	0.8613	0.0215	0.0346	0.0813	0.0012	0.4824	0.4824	-0.2821	-0.3003	-0.3870	-1.4138	0.0339	-9.90
03382	C	M	8956	0.8637	0.0354	0.0519	0.8637	0.0476	0.0015	0.5147	-0.3157	-0.3720	0.5147	-0.3642	-1.4334	0.0341	-9.90
03383	A	M	8956	0.4495	0.4495	0.0623	0.2382	0.2487	0.0013	0.1997	0.1997	-0.3239	-0.2090	-0.1137	1.0580	0.0239	9.90
03384	D	M	8956	0.7614	0.0362	0.1720	0.0291	0.7614	0.0013	0.3485	-0.2994	-0.2398	-0.2947	0.3485	-0.5951	0.0277	0.60
03385	D	M	8956	0.5971	0.0464	0.0523	0.3020	0.5971	0.0021	0.3330	-0.3385	-0.3689	-0.2385	0.3330	0.3287	0.0244	4.60
03386	C	F	8956	0.8114	0.0469	0.0275	0.8114	0.1115	0.0027	0.2984	-0.3449	-0.2645	0.2984	-0.1063	-0.9545	0.0300	5.00
03387	D	F	8956	0.7694	0.0649	0.1166	0.0460	0.7694	0.0031	0.4340	-0.3066	-0.3553	-0.2743	0.4340	-0.6576	0.0281	-6.20
03388	B	F	8956	0.7346	0.1575	0.7346	0.0494	0.0552	0.0033	0.4701	-0.3643	0.4701	-0.3684	-0.3452	-0.4460	0.0270	-8.80
03389	B	F	8956	0.8703	0.0374	0.8703	0.0490	0.0406	0.0027	0.4687	-0.3108	0.4687	-0.3139	-0.3274	-1.4939	0.0347	-9.90
03390	A	F	8956	0.5851	0.5851	0.0767	0.1435	0.1910	0.0037	0.2975	0.2975	-0.3915	-0.1838	-0.2234	0.3949	0.0242	8.60
03391	D	F	8956	0.7992	0.0883	0.0651	0.0433	0.7992	0.0040	0.4521	-0.3385	-0.3016	-0.3350	0.4521	-0.8669	0.0294	-7.20
03392	A	F	8956	0.6055	0.6055	0.1412	0.0377	0.2117	0.0038	0.1870	0.1870	-0.1301	-0.3500	-0.1084	0.3001	0.0244	9.90
03393	C	F	8956	0.6881	0.0804	0.1637	0.6881	0.0638	0.0040	0.4046	-0.3108	-0.3092	0.4046	-0.3362	-0.1798	0.0258	-3.30
03394	B	M	8949	0.8106	0.1628	0.8106	0.0115	0.0150	0.0001	0.0723	-0.0335	0.0723	-0.0690	-0.1241	-0.9009	0.0298	9.90
03395	C	M	8949	0.7926	0.0593	0.0817	0.7926	0.0659	0.0004	0.3670	-0.2156	-0.2122	0.3670	-0.3523	-0.7843	0.0290	-1.40
03396	D	M	8949	0.8667	0.0266	0.0288	0.0776	0.8667	0.0003	0.4897	-0.3239	-0.2932	-0.3775	0.4897	-1.4067	0.0341	-9.90
03397	C	M	8949	0.6421	0.2283	0.0929	0.6421	0.0356	0.0011	0.3708	-0.2207	-0.4291	0.3708	-0.3414	0.1399	0.0248	1.50
03398	C	M	8949	0.7541	0.0954	0.0881	0.7541	0.0611	0.0013	0.3639	-0.2565	-0.3105	0.3639	-0.2117	-0.5255	0.0275	-2.30
03399	B	M	8949	0.7472	0.0603	0.7472	0.0256	0.1653	0.0016	0.4025	-0.4119	0.4025	-0.2903	-0.2603	-0.4909	0.0273	-1.20
03400	D	M	8949	0.5874	0.0535	0.0936	0.2629	0.5874	0.0025	0.3751	-0.3842	-0.3919	-0.2637	0.3751	0.4124	0.0242	0.00
03401	A	M	8949	0.7260	0.7260	0.0624	0.0854	0.1241	0.0021	0.3697	0.3697	-0.2821	-0.3560	-0.2148	-0.3457	0.0266	-0.30
03402	B	F	8949	0.5850	0.2580	0.5850	0.0616	0.0930	0.0025	0.3869	-0.3191	0.3869	-0.3814	-0.2855	0.4083	0.0242	-1.50
03403	D	F	8949	0.8198	0.0558	0.0869	0.0348	0.8198	0.0028	0.3628	-0.2336	-0.2316	-0.3298	0.3628	-0.9937	0.0305	3.60
03404	B	F	8949	0.4871	0.1812	0.4871	0.1667	0.1605	0.0045	0.1325	-0.2120	0.1325	-0.0296	-0.1027	0.9205	0.0238	9.90
03405	A	F	8949	0.2758	0.2758	0.0706	0.2475	0.4022	0.0039	0.2515	0.2515	-0.3923	-0.2501	-0.2522	2.0089	0.0261	9.90
03406	B	F	8949	0.5915	0.0714	0.5915	0.1808	0.1530	0.0034	0.3071	-0.3275	0.3071	-0.3571	-0.0868	0.3900	0.0243	8.50
03407	C	F	8949	0.5009	0.0601	0.2176	0.5009	0.2170	0.0044	0.3110	-0.2925	-0.2602	0.3110	-0.2873	0.8472	0.0238	6.90
03408	B	F	8949	0.4735	0.2327	0.4735	0.2071	0.0831	0.0037	0.2857	-0.3000	0.2857	-0.2180	-0.2555	0.9791	0.0238	9.90
03409	D	F	8949	0.5149	0.0488	0.0588	0.3730	0.5149	0.0045	0.3756	-0.4923	-0.3474	-0.3015	0.3756	0.7709	0.0238	0.30
03410	B	M	8924	0.8049	0.1682	0.8049	0.0122	0.0142	0.0004	0.0356	0.0108	0.0356	-0.1118	-0.1039	-0.8584	0.0295	9.90
03411	C	M	8924	0.7912	0.0576	0.0830	0.7912	0.0678	0.0003	0.3520	-0.1981	-0.1925	0.3520	-0.3535	-0.7812	0.0290	-0.30

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03412	D	M	8924	0.8674	0.0266	0.0235	0.0817	0.8674	0.0008	0.4778	-0.3076	-0.2727	-0.3772	0.4778	-1.4235	0.0343	-9.90
03413	C	M	8924	0.6463	0.2233	0.0911	0.6463	0.0374	0.0018	0.3704	-0.2139	-0.4290	0.3704	-0.3431	0.1229	0.0249	1.20
03414	C	M	8924	0.7657	0.0922	0.0828	0.7657	0.0588	0.0004	0.3635	-0.2387	-0.3158	0.3635	-0.2194	-0.6056	0.0280	-2.90
03415	B	M	8924	0.7453	0.0602	0.7453	0.0230	0.1712	0.0003	0.3802	-0.4291	0.3802	-0.2734	-0.2299	-0.4757	0.0273	0.80
03416	D	M	8924	0.5918	0.0529	0.0948	0.2596	0.5918	0.0009	0.3887	-0.3990	-0.3917	-0.2756	0.3887	0.3921	0.0243	-0.90
03417	A	M	8924	0.7366	0.7366	0.0629	0.0797	0.1189	0.0020	0.3756	0.3756	-0.2843	-0.3473	-0.2225	-0.4175	0.0270	-1.10
03418	A	F	8924	0.7249	0.7249	0.1374	0.0808	0.0536	0.0034	0.3204	0.3204	-0.1375	-0.2884	-0.3487	-0.3490	0.0267	6.30
03419	C	F	8924	0.4237	0.1463	0.2228	0.4237	0.2034	0.0038	0.1941	-0.3212	-0.0290	0.1941	-0.2413	1.2298	0.0241	9.90
03420	A	F	8924	0.6670	0.6670	0.1054	0.1090	0.1152	0.0034	0.3835	0.3835	-0.3359	-0.3683	-0.1953	-0.0282	0.0254	-1.30
03421	A	F	8924	0.5866	0.5866	0.1723	0.0782	0.1582	0.0046	0.3405	0.3405	-0.3509	-0.3043	-0.1907	0.4265	0.0243	3.60
03422	C	F	8924	0.6665	0.0249	0.1604	0.6665	0.1443	0.0039	0.3796	-0.3121	-0.2884	0.3796	-0.3121	-0.0095	0.0253	-0.30
03423	D	F	8924	0.7200	0.0541	0.1581	0.0638	0.7200	0.0040	0.5521	-0.3504	-0.5114	-0.3599	0.5521	-0.3264	0.0265	-9.90
03424	D	F	8924	0.5923	0.1467	0.1234	0.1328	0.5923	0.0048	0.4453	-0.4325	-0.3743	-0.3193	0.4453	0.3797	0.0244	-5.10
03425	C	F	8924	0.3195	0.1562	0.2470	0.3195	0.2735	0.0038	0.1435	-0.2476	-0.1679	0.1435	-0.0677	1.7918	0.0253	9.90
03426	D	M	8934	0.6989	0.2271	0.0219	0.0520	0.6989	0.0000	0.3147	-0.2357	-0.3256	-0.2571	0.3147	-0.1824	0.0261	7.00
03427	C	M	8934	0.4863	0.3964	0.0434	0.4863	0.0723	0.0016	0.1878	-0.1074	-0.2426	0.1878	-0.3184	0.9502	0.0239	9.90
03428	D	M	8934	0.4608	0.1424	0.2924	0.1038	0.4608	0.0007	0.2770	-0.3293	-0.1929	-0.3040	0.2770	1.0643	0.0239	9.90
03429	A	M	8934	0.8163	0.8163	0.1066	0.0386	0.0375	0.0010	0.4024	0.4024	-0.2728	-0.3068	-0.2960	-0.9570	0.0304	-3.50
03430	B	M	8934	0.7934	0.0935	0.7934	0.0291	0.0834	0.0007	0.3380	-0.2757	0.3380	-0.2791	-0.1893	-0.7876	0.0292	1.30
03431	C	M	8934	0.9239	0.0375	0.0168	0.9239	0.0210	0.0008	0.3903	-0.3025	-0.2362	0.3903	-0.2017	-2.1221	0.0434	-6.40
03432	D	M	8934	0.7163	0.0748	0.0583	0.1485	0.7163	0.0021	0.4014	-0.3619	-0.3354	-0.2549	0.4014	-0.2744	0.0265	-3.70
03433	A	M	8934	0.8225	0.8225	0.0743	0.0856	0.0156	0.0020	0.3109	0.3109	-0.2095	-0.2306	-0.2287	-1.0059	0.0308	2.30
03434	C	F	8934	0.6362	0.0863	0.2184	0.6362	0.0552	0.0039	0.3856	-0.3448	-0.3152	0.3856	-0.2666	0.1812	0.0249	-2.00
03435	B	F	8934	0.6131	0.1811	0.6131	0.1623	0.0404	0.0031	0.2591	-0.1926	0.2591	-0.2023	-0.2786	0.2940	0.0246	9.90
03436	D	F	8934	0.7234	0.1235	0.0623	0.0875	0.7234	0.0032	0.4746	-0.3915	-0.3400	-0.3408	0.4746	-0.3268	0.0267	-8.40
03437	B	F	8934	0.7032	0.1300	0.7032	0.0668	0.0969	0.0031	0.4232	-0.2761	0.4232	-0.3598	-0.3561	-0.1967	0.0261	-3.50
03438	B	F	8934	0.5985	0.3140	0.5985	0.0498	0.0344	0.0034	0.4053	-0.3157	0.4053	-0.4251	-0.4162	0.3658	0.0245	-0.90
03439	A	F	8934	0.6697	0.6697	0.0947	0.1152	0.1158	0.0046	0.4012	0.4012	-0.3346	-0.3264	-0.2915	-0.0252	0.0255	-2.50
03440	C	F	8934	0.8404	0.0367	0.0629	0.8404	0.0565	0.0035	0.5025	-0.3557	-0.3954	0.5025	-0.3013	-1.1571	0.0320	-9.90
03441	D	F	8934	0.7861	0.1069	0.0673	0.0365	0.7861	0.0032	0.4197	-0.2738	-0.3245	-0.3447	0.4197	-0.7267	0.0289	-3.30
03442	D	M	8896	0.7009	0.2245	0.0225	0.0515	0.7009	0.0007	0.2971	-0.2267	-0.2978	-0.2201	0.2971	-0.1926	0.0261	6.10
03443	C	M	8896	0.5021	0.3889	0.0407	0.5021	0.0674	0.0008	0.1956	-0.1064	-0.2615	0.1956	-0.3393	0.8578	0.0240	9.90
03444	D	M	8896	0.4643	0.1479	0.2838	0.1031	0.4643	0.0009	0.2766	-0.3229	-0.2072	-0.2692	0.2766	1.0362	0.0240	9.90
03445	A	M	8896	0.8150	0.8150	0.1058	0.0386	0.0399	0.0008	0.3973	0.3973	-0.2635	-0.3012	-0.2996	-0.9531	0.0304	-3.30
03446	B	M	8896	0.8001	0.0899	0.8001	0.0263	0.0827	0.0009	0.3064	-0.2717	0.3064	-0.2551	-0.1393	-0.8386	0.0296	3.30
03447	C	M	8896	0.9223	0.0381	0.0152	0.9223	0.0229	0.0015	0.3719	-0.2748	-0.2317	0.3719	-0.1998	-2.1172	0.0432	-6.30
03448	D	M	8896	0.7123	0.0751	0.0606	0.1503	0.7123	0.0017	0.4205	-0.3786	-0.3573	-0.2660	0.4205	-0.2744	0.0265	-4.90
03449	A	M	8896	0.8239	0.8239	0.0771	0.0804	0.0157	0.0029	0.3146	0.3146	-0.2037	-0.2328	-0.2389	-1.0352	0.0310	1.60
03450	B	F	8896	0.7748	0.0373	0.7748	0.0961	0.0903	0.0015	0.3994	-0.3093	0.3994	-0.2883	-0.2803	-0.6648	0.0285	-3.40
03451	C	F	8896	0.7280	0.1042	0.0661	0.7280	0.0998	0.0019	0.4500	-0.3474	-0.4046	0.4500	-0.2935	-0.3498	0.0268	-5.10
03452	C	F	8896	0.6346	0.1540	0.1235	0.6346	0.0850	0.0029	0.4130	-0.3658	-0.3137	0.4130	-0.3131	0.1761	0.0249	-3.80
03453	B	F	8896	0.7984	0.0746	0.7984	0.0806	0.0445	0.0018	0.4372	-0.2842	0.4372	-0.3061	-0.3622	-0.8386	0.0296	-5.00
03454	D	F	8896	0.5472	0.0502	0.2607	0.1393	0.5472	0.0026	0.3887	-0.4404	-0.2504	-0.4370	0.3887	0.6184	0.0241	0.50
03455	A	F	8896	0.7239	0.7239	0.1189	0.1017	0.0525	0.0029	0.3712	0.3712	-0.2017	-0.3641	-0.2829	-0.3282	0.0267	0.70
03456	D	F	8896	0.5319	0.1277	0.1034	0.2333	0.5319	0.0037	0.3535	-0.3668	-0.3245	-0.2703	0.3535	0.6812	0.0240	4.00
03457	A	F	8896	0.6412	0.6412	0.1007	0.1784	0.0763	0.0034	0.4588	0.4588	-0.3669	-0.3573	-0.4304	0.1443	0.0250	-6.40
03458	A	M	8885	0.8802	0.8802	0.0524	0.0366	0.0301	0.0007	0.4630	0.4630	-0.3562	-0.3226	-0.2364	-1.5573	0.0359	-9.90
03459	B	M	8885	0.8756	0.0837	0.8756	0.0214	0.0190	0.0002	0.1747	-0.0198	0.1747	-0.2335	-0.2221	-1.4939	0.0352	9.90
03460	B	M	8885	0.8432	0.0648	0.8432	0.0595	0.0317	0.0007	0.4231	-0.3350	0.4231	-0.2318	-0.3156	-1.1914	0.0323	-5.30
03461	A	M	8885	0.8905	0.8905	0.0326	0.0374	0.0383	0.0012	0.4628	0.4628	-0.2887	-0.3061	-0.3214	-1.6630	0.0371	-9.90

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03462	B	M	8885	0.2675	0.0813	0.2675	0.3324	0.3175	0.0014	0.2083	-0.4230	0.2083	-0.2614	-0.1328	2.0702	0.0264	9.90
03463	B	M	8885	0.8095	0.0200	0.8095	0.1247	0.0446	0.0012	0.2722	-0.1799	0.2722	-0.2221	-0.1542	-0.8976	0.0299	5.60
03464	D	M	8885	0.6873	0.1067	0.0638	0.1406	0.6873	0.0016	0.3134	-0.1788	-0.2693	-0.2756	0.3134	-0.1280	0.0258	5.00
03465	D	M	8885	0.7263	0.0712	0.0262	0.1746	0.7263	0.0017	0.3336	-0.3499	-0.2515	-0.2081	0.3336	-0.3459	0.0267	3.50
03466	B	F	8885	0.7438	0.1371	0.7438	0.0597	0.0583	0.0011	0.2438	-0.1310	0.2438	-0.2405	-0.1936	-0.4419	0.0272	9.90
03467	C	F	8885	0.4219	0.2862	0.0415	0.4219	0.2482	0.0021	0.2662	-0.1964	-0.3349	0.2662	-0.2882	1.2290	0.0240	9.90
03468	C	F	8885	0.7670	0.0298	0.0473	0.7670	0.1543	0.0016	0.3880	-0.3250	-0.3615	0.3880	-0.2392	-0.5926	0.0280	-3.30
03469	D	F	8885	0.5101	0.0604	0.1313	0.2956	0.5101	0.0026	0.2437	-0.3585	-0.1353	-0.2080	0.2437	0.8110	0.0239	9.90
03470	B	F	8885	0.5832	0.0998	0.5832	0.1419	0.1723	0.0027	0.4666	-0.4279	0.4666	-0.3410	-0.4215	0.4321	0.0243	-9.30
03471	A	F	8885	0.6145	0.6145	0.0751	0.1007	0.2066	0.0030	0.4201	0.4201	-0.4033	-0.4316	-0.2663	0.2744	0.0246	-5.40
03472	D	F	8885	0.4588	0.2628	0.1243	0.1505	0.4588	0.0037	0.3089	-0.1973	-0.3901	-0.3589	0.3089	1.0530	0.0239	7.20
03473	C	F	8885	0.4279	0.2337	0.2366	0.4279	0.0985	0.0034	0.2166	-0.1539	-0.1573	0.2166	-0.4041	1.1989	0.0240	9.90
03474	A	M	8894	0.8723	0.8723	0.0551	0.0381	0.0342	0.0003	0.4539	0.4539	-0.3441	-0.3163	-0.2417	-1.4894	0.0350	-9.90
03475	B	M	8894	0.8774	0.0814	0.8774	0.0193	0.0211	0.0007	0.2020	-0.0411	0.2020	-0.2256	-0.2547	-1.5128	0.0352	9.70
03476	B	M	8894	0.8448	0.0623	0.8448	0.0584	0.0340	0.0006	0.4190	-0.3157	0.4190	-0.2327	-0.3238	-1.2167	0.0323	-6.10
03477	A	M	8894	0.8852	0.8852	0.0344	0.0410	0.0383	0.0010	0.4608	0.4608	-0.2895	-0.3277	-0.3021	-1.6090	0.0363	-9.90
03478	B	M	8894	0.2745	0.0901	0.2745	0.3254	0.3089	0.0012	0.1946	-0.4317	0.1946	-0.2440	-0.0996	1.9966	0.0261	9.90
03479	B	M	8894	0.7999	0.0166	0.7999	0.1345	0.0485	0.0006	0.3021	-0.1866	0.3021	-0.2557	-0.1740	-0.8471	0.0294	3.00
03480	D	M	8894	0.6814	0.1085	0.0643	0.1436	0.6814	0.0022	0.3225	-0.2108	-0.2735	-0.2672	0.3225	-0.0997	0.0255	3.40
03481	D	M	8894	0.7214	0.0777	0.0315	0.1685	0.7214	0.0009	0.3511	-0.3536	-0.2681	-0.2192	0.3511	-0.3285	0.0265	1.20
03482	A	F	8894	0.6271	0.6271	0.0284	0.3109	0.0316	0.0020	0.1340	0.1340	-0.2789	-0.0478	-0.2115	0.2082	0.0246	9.90
03483	B	F	8894	0.6616	0.0585	0.6616	0.1769	0.1011	0.0020	0.3037	-0.3526	0.3037	-0.2078	-0.1975	0.0180	0.0251	3.60
03484	D	F	8894	0.6504	0.1767	0.1283	0.0421	0.6504	0.0025	0.2751	-0.2669	-0.0854	-0.3718	0.2751	0.0721	0.0250	9.90
03485	C	F	8894	0.2589	0.1175	0.1468	0.2589	0.4736	0.0031	0.1265	-0.1801	-0.1868	0.1265	-0.1055	2.0713	0.0265	9.90
03486	A	F	8894	0.6481	0.6481	0.0415	0.0377	0.2692	0.0036	0.2921	0.2921	-0.3523	-0.3380	-0.1741	0.0859	0.0249	4.30
03487	C	F	8894	0.3285	0.1024	0.2255	0.3285	0.3397	0.0038	-0.0292	-0.1336	-0.0856	-0.0292	0.1727	1.7155	0.0250	9.90
03488	B	F	8894	0.5433	0.0934	0.5433	0.3081	0.0518	0.0034	0.3192	-0.3725	0.3192	-0.2189	-0.3446	0.6143	0.0239	6.00
03489	D	F	8894	0.6796	0.1506	0.1073	0.0595	0.6796	0.0031	0.4198	-0.3015	-0.3447	-0.3529	0.4198	-0.0893	0.0255	-6.80
03490	B	M	8886	0.6796	0.1850	0.6796	0.0180	0.1166	0.0008	0.5043	-0.4170	0.5043	-0.2570	-0.4664	-0.0959	0.0259	-8.80
03491	B	M	8886	0.8330	0.0191	0.8330	0.1245	0.0232	0.0002	0.3820	-0.2440	0.3820	-0.3034	-0.2386	-1.1174	0.0316	-3.00
03492	A	M	8886	0.7880	0.7880	0.1020	0.0466	0.0627	0.0008	0.3927	0.3927	-0.2908	-0.2697	-0.2763	-0.7750	0.0292	-3.60
03493	C	M	8886	0.6738	0.0293	0.2349	0.6738	0.0616	0.0006	0.4121	-0.3258	-0.3254	0.4121	-0.3499	-0.0504	0.0257	-2.90
03494	D	M	8886	0.6672	0.0897	0.0663	0.1760	0.6672	0.0008	0.4634	-0.3885	-0.4283	-0.3273	0.4634	-0.0088	0.0256	-7.20
03495	D	M	8886	0.7074	0.0919	0.1266	0.0729	0.7074	0.0011	0.3561	-0.2287	-0.2435	-0.3585	0.3561	-0.2489	0.0265	4.90
03496	B	M	8886	0.8356	0.0637	0.8356	0.0576	0.0420	0.0011	0.4194	-0.2938	0.4194	-0.2675	-0.3097	-1.1436	0.0318	-3.90
03497	D	M	8886	0.8742	0.0429	0.0189	0.0628	0.8742	0.0012	0.4251	-0.2839	-0.2435	-0.3166	0.4251	-1.5153	0.0353	-7.50
03498	A	F	8886	0.7995	0.7995	0.0668	0.0396	0.0897	0.0044	0.3687	0.3687	-0.2801	-0.2297	-0.2512	-0.8548	0.0297	-2.90
03499	B	F	8886	0.7546	0.0459	0.7546	0.1025	0.0933	0.0037	0.4501	-0.2610	0.4501	-0.3688	-0.3320	-0.5397	0.0278	-7.40
03500	D	F	8886	0.7388	0.0948	0.0700	0.0927	0.7388	0.0037	0.4671	-0.3779	-0.3788	-0.2966	0.4671	-0.4407	0.0273	-6.00
03501	C	F	8886	0.5925	0.2053	0.1227	0.5925	0.0757	0.0038	0.3610	-0.2523	-0.2847	0.3610	-0.4073	0.3850	0.0246	1.90
03502	A	F	8886	0.6014	0.6014	0.1831	0.1577	0.0540	0.0038	0.3511	0.3511	-0.2509	-0.3064	-0.3558	0.3472	0.0247	4.20
03503	B	F	8886	0.6668	0.0962	0.6668	0.0950	0.1375	0.0045	0.4420	-0.3888	0.4420	-0.3775	-0.2947	-0.0147	0.0256	-3.00
03504	C	F	8886	0.7717	0.0831	0.0564	0.7717	0.0851	0.0038	0.4662	-0.3725	-0.3205	0.4662	-0.3175	-0.6692	0.0285	-7.70
03505	B	F	8886	0.4222	0.1291	0.4222	0.2256	0.2190	0.0041	0.2687	-0.3498	0.2687	-0.2041	-0.2274	1.2441	0.0243	9.90
03506	D	M	8846	0.5821	0.3616	0.0194	0.0363	0.5821	0.0006	0.4283	-0.3896	-0.3593	-0.3429	0.4283	0.4424	0.0245	-5.30
03507	B	M	8846	0.6487	0.0867	0.6487	0.1773	0.0873	0.0001	0.2318	-0.2457	0.2318	-0.0981	-0.2653	0.1064	0.0253	9.90
03508	C	M	8846	0.6972	0.1009	0.0965	0.6972	0.1039	0.0015	0.2943	-0.2886	-0.2610	0.2943	-0.1188	-0.1621	0.0262	8.30
03509	B	M	8846	0.6739	0.0676	0.6739	0.1273	0.1301	0.0011	0.4445	-0.2951	0.4445	-0.3774	-0.3625	-0.0471	0.0258	-6.70
03510	D	M	8846	0.7603	0.0471	0.1412	0.0509	0.7603	0.0005	0.4361	-0.3740	-0.3118	-0.3156	0.4361	-0.5698	0.0281	-6.70
03511	B	M	8846	0.8042	0.0489	0.8042	0.1029	0.0431	0.0009	0.4047	-0.2532	0.4047	-0.3015	-0.2987	-0.8711	0.0299	-6.30

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03512	D	M	8846	0.7568	0.0635	0.0563	0.1217	0.7568	0.0016	0.4253	-0.3616	-0.3802	-0.2529	0.4253	-0.5454	0.0280	-2.00
03513	D	M	8846	0.6320	0.1415	0.0423	0.1823	0.6320	0.0018	0.3849	-0.2985	-0.3841	-0.3062	0.3849	0.1827	0.0251	-1.90
03514	D	F	8846	0.6539	0.2158	0.0648	0.0627	0.6539	0.0028	0.3929	-0.2414	-0.4343	-0.3998	0.3929	0.0775	0.0254	3.00
03515	C	F	8846	0.8300	0.0702	0.0735	0.8300	0.0235	0.0028	0.4052	-0.2594	-0.3169	0.4052	-0.2610	-1.0920	0.0316	-5.60
03516	B	F	8846	0.8087	0.0982	0.8087	0.0528	0.0371	0.0032	0.4860	-0.3520	0.4860	-0.3610	-0.3309	-0.9203	0.0303	-9.90
03517	C	F	8846	0.7731	0.1006	0.0670	0.7731	0.0554	0.0038	0.4702	-0.3476	-0.3576	0.4702	-0.3204	-0.6420	0.0285	-8.50
03518	C	F	8846	0.7978	0.0738	0.0723	0.7978	0.0525	0.0036	0.4879	-0.3276	-0.3934	0.4879	-0.3229	-0.8257	0.0296	-9.60
03519	A	F	8846	0.7814	0.7814	0.0627	0.0543	0.0983	0.0033	0.5250	0.5250	-0.3747	-0.3797	-0.4030	-0.7148	0.0289	-9.90
03520	D	F	8846	0.5839	0.0866	0.1324	0.1934	0.5839	0.0037	0.3670	-0.2804	-0.3763	-0.2689	0.3670	0.4376	0.0245	1.20
03521	A	F	8846	0.6516	0.6516	0.0717	0.1019	0.1710	0.0038	0.3952	0.3952	-0.3507	-0.3372	-0.2753	0.0903	0.0253	-1.80
03522	A	M	8890	0.8358	0.8358	0.0436	0.0551	0.0643	0.0011	0.4465	0.4465	-0.3415	-0.2627	-0.3258	-1.1405	0.0319	-9.30
03523	A	M	8890	0.7902	0.7902	0.0307	0.0571	0.1214	0.0006	0.4552	0.4552	-0.3124	-0.3604	-0.3265	-0.7790	0.0292	-7.10
03524	C	M	8890	0.6595	0.1036	0.1155	0.6595	0.1199	0.0015	0.5127	-0.4414	-0.4279	0.5127	-0.3823	0.0314	0.0254	-9.90
03525	B	M	8890	0.6360	0.0342	0.6360	0.0667	0.2620	0.0011	0.3048	-0.3217	0.3048	-0.2780	-0.2192	0.1713	0.0251	7.70
03526	A	M	8890	0.6906	0.6906	0.1708	0.0478	0.0901	0.0008	0.2848	0.2848	-0.1442	-0.3844	-0.2250	-0.1365	0.0260	9.30
03527	A	M	8890	0.6234	0.6234	0.0823	0.1745	0.1187	0.0011	0.4244	0.4244	-0.3012	-0.3095	-0.4382	0.2338	0.0249	-3.70
03528	B	M	8890	0.4883	0.1969	0.4883	0.2402	0.0722	0.0025	0.1755	-0.1596	0.1755	-0.1345	-0.1944	0.9275	0.0241	9.90
03529	C	M	8890	0.6982	0.1001	0.1040	0.6982	0.0960	0.0017	0.4781	-0.3651	-0.3664	0.4781	-0.3786	-0.1857	0.0262	-9.90
03530	C	F	8890	0.7468	0.1641	0.0439	0.7468	0.0421	0.0031	0.5070	-0.4603	-0.3403	0.5070	-0.2601	-0.4856	0.0276	-9.90
03531	D	F	8890	0.5969	0.1211	0.0847	0.1934	0.5969	0.0039	0.3627	-0.3181	-0.3504	-0.2612	0.3627	0.3762	0.0246	4.50
03532	B	F	8890	0.7227	0.0703	0.7227	0.1066	0.0961	0.0043	0.4069	-0.2993	0.4069	-0.2910	-0.3195	-0.3208	0.0268	-2.80
03533	D	F	8890	0.9013	0.0318	0.0325	0.0294	0.9013	0.0049	0.4427	-0.3019	-0.2579	-0.2929	0.4427	-1.8118	0.0389	-9.90
03534	C	F	8890	0.6759	0.0817	0.1813	0.6759	0.0568	0.0043	0.5250	-0.4347	-0.4535	0.5250	-0.3271	-0.0546	0.0257	-9.90
03535	B	F	8890	0.5916	0.1385	0.5916	0.1182	0.1476	0.0042	0.4485	-0.3626	0.4485	-0.4928	-0.2896	0.3937	0.0246	-5.50
03536	A	F	8890	0.4786	0.4786	0.1486	0.2063	0.1611	0.0054	0.2918	0.2918	-0.3087	-0.1897	-0.3062	0.9693	0.0241	9.90
03537	B	F	8890	0.5787	0.2615	0.5787	0.1141	0.0408	0.0048	0.3592	-0.2599	0.3592	-0.3383	-0.4153	0.4796	0.0244	5.00
03538	C	M	8900	0.7901	0.0731	0.0496	0.7901	0.0858	0.0013	0.3318	-0.2970	-0.2379	0.3318	-0.1745	-0.7915	0.0292	2.90
03539	C	M	8900	0.9103	0.0262	0.0515	0.9103	0.0117	0.0003	0.3002	-0.2149	-0.2064	0.3002	-0.1494	-1.9193	0.0401	-1.40
03540	A	M	8900	0.5928	0.5928	0.1709	0.0526	0.1829	0.0008	0.4061	0.4061	-0.3573	-0.2381	-0.3701	0.3902	0.0246	-3.10
03541	D	M	8900	0.7063	0.1761	0.0437	0.0725	0.7063	0.0015	0.3749	-0.2991	-0.3021	-0.2565	0.3749	-0.2309	0.0263	-1.10
03542	C	M	8900	0.5007	0.2362	0.0999	0.5007	0.1621	0.0011	0.4035	-0.3569	-0.4949	0.4035	-0.2777	0.8417	0.0241	3.70
03543	D	M	8900	0.5800	0.0593	0.1971	0.1621	0.5800	0.0015	0.4138	-0.4121	-0.3719	-0.3000	0.4138	0.4443	0.0245	-3.80
03544	B	M	8900	0.4011	0.3340	0.4011	0.1760	0.0851	0.0038	0.2242	-0.1767	0.2242	-0.2438	-0.3002	1.3501	0.0244	9.90
03545	C	M	8900	0.7817	0.0343	0.1052	0.7817	0.0756	0.0033	0.3691	-0.2903	-0.2902	0.3691	-0.2327	-0.7274	0.0288	0.60
03546	A	F	8900	0.8071	0.8071	0.0735	0.0743	0.0427	0.0025	0.4624	0.4624	-0.3565	-0.3304	-0.2826	-0.9236	0.0301	-9.20
03547	C	F	8900	0.7978	0.0248	0.1154	0.7978	0.0599	0.0021	0.4222	-0.3214	-0.3010	0.4222	-0.3070	-0.8425	0.0295	-5.40
03548	C	F	8900	0.5284	0.2625	0.1218	0.5284	0.0851	0.0022	0.4759	-0.4343	-0.4226	0.4759	-0.3840	0.6994	0.0242	-6.60
03549	D	F	8900	0.6975	0.1108	0.0726	0.1157	0.6975	0.0034	0.5059	-0.4147	-0.3958	-0.3795	0.5059	-0.1964	0.0262	-9.90
03550	A	F	8900	0.7853	0.7853	0.0752	0.0704	0.0664	0.0027	0.5294	0.5294	-0.3960	-0.4090	-0.3533	-0.7593	0.0290	-9.90
03551	D	F	8900	0.4812	0.1548	0.2473	0.1124	0.4812	0.0043	0.3954	-0.3417	-0.3224	-0.4716	0.3954	0.9458	0.0241	1.20
03552	B	F	8900	0.5474	0.1236	0.5474	0.0721	0.2528	0.0040	0.3231	-0.3281	0.3231	-0.4104	-0.1986	0.6260	0.0242	8.70
03553	A	F	8900	0.7346	0.7346	0.0958	0.0838	0.0812	0.0045	0.4406	0.4406	-0.3316	-0.3258	-0.3272	-0.4096	0.0271	-5.80
03554	A	M	8852	0.8666	0.8666	0.0294	0.0699	0.0336	0.0006	0.3591	0.3591	-0.2605	-0.2739	-0.1717	-1.4069	0.0343	-3.40
03555	D	M	8852	0.6830	0.0761	0.0650	0.1752	0.6830	0.0007	0.4397	-0.2815	-0.4572	-0.3352	0.4397	-0.0937	0.0258	-3.50
03556	D	M	8852	0.6509	0.2224	0.0819	0.0425	0.6509	0.0023	0.3995	-0.3031	-0.3718	-0.3270	0.3995	0.0887	0.0252	-1.60
03557	A	M	8852	0.5341	0.5341	0.0291	0.3859	0.0498	0.0010	0.5047	0.5047	-0.4319	-0.4882	-0.3567	0.6814	0.0241	-9.90
03558	C	M	8852	0.6839	0.1333	0.0473	0.6839	0.1344	0.0010	0.3115	-0.3207	-0.2922	0.3115	-0.1375	-0.1037	0.0258	7.00
03559	B	M	8852	0.5959	0.1661	0.5959	0.1726	0.0645	0.0009	0.3180	-0.3035	0.3180	-0.1938	-0.3099	0.3704	0.0245	4.20
03560	D	M	8852	0.7015	0.0932	0.1008	0.1031	0.7015	0.0014	0.4566	-0.2462	-0.4509	-0.3595	0.4566	-0.2110	0.0262	-6.30
03561	D	M	8852	0.7520	0.0539	0.1390	0.0532	0.7520	0.0019	0.4852	-0.3641	-0.3459	-0.4168	0.4852	-0.5074	0.0276	-9.20

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03562	B	F	8852	0.7422	0.1335	0.7422	0.0631	0.0583	0.0028	0.2760	-0.1634	0.2760	-0.2747	-0.1927	-0.4522	0.0273	9.10
03563	C	F	8852	0.4021	0.2923	0.0417	0.4021	0.2602	0.0038	0.2688	-0.2051	-0.3724	0.2688	-0.2864	1.3383	0.0244	9.90
03564	C	F	8852	0.7519	0.0347	0.0479	0.7519	0.1620	0.0035	0.4085	-0.3385	-0.3687	0.4085	-0.2656	-0.5074	0.0276	-3.40
03565	D	F	8852	0.5181	0.0647	0.1413	0.2726	0.5181	0.0033	0.2802	-0.4004	-0.1713	-0.2342	0.2802	0.7704	0.0241	9.90
03566	B	F	8852	0.5991	0.0962	0.5991	0.1390	0.1621	0.0036	0.4709	-0.4157	0.4709	-0.3365	-0.4328	0.3607	0.0246	-9.40
03567	A	F	8852	0.6143	0.6143	0.0712	0.1021	0.2087	0.0037	0.4381	0.4381	-0.4182	-0.4627	-0.2853	0.2742	0.0247	-5.40
03568	D	F	8852	0.4666	0.2686	0.1169	0.1429	0.4666	0.0050	0.2893	-0.1614	-0.4051	-0.3344	0.2893	1.0156	0.0241	9.90
03569	C	F	8852	0.4339	0.2298	0.2318	0.4339	0.0993	0.0052	0.2361	-0.1934	-0.1591	0.2361	-0.4081	1.1786	0.0242	9.90
03570	B	M	8893	0.7848	0.1209	0.7848	0.0711	0.0228	0.0004	0.3597	-0.3005	0.3597	-0.2272	-0.2316	-0.7124	0.0287	-2.50
03571	B	M	8893	0.8639	0.0280	0.8639	0.0313	0.0764	0.0004	0.4275	-0.2320	0.4275	-0.2590	-0.3462	-1.3612	0.0339	-8.40
03572	A	M	8893	0.6314	0.6314	0.1732	0.0999	0.0940	0.0016	0.3237	0.3237	-0.2417	-0.2717	-0.2666	0.1974	0.0248	3.50
03573	B	M	8893	0.6260	0.2060	0.6260	0.0993	0.0677	0.0010	0.4206	-0.3334	0.4206	-0.3670	-0.3519	0.2219	0.0247	-4.40
03574	B	M	8893	0.7762	0.0894	0.7762	0.0806	0.0526	0.0011	0.4597	-0.2807	0.4597	-0.3680	-0.3696	-0.6722	0.0285	-7.50
03575	D	M	8893	0.8617	0.0370	0.0631	0.0365	0.8617	0.0017	0.4629	-0.3227	-0.3253	-0.3026	0.4629	-1.3510	0.0338	-9.90
03576	B	M	8893	0.7289	0.0919	0.7289	0.0965	0.0816	0.0011	0.4576	-0.4206	0.4576	-0.3660	-0.2393	-0.3545	0.0268	-7.00
03577	C	M	8893	0.8459	0.0387	0.0328	0.8459	0.0816	0.0009	0.4922	-0.3362	-0.3267	0.4922	-0.3667	-1.1964	0.0323	-9.90
03578	A	F	8893	0.6641	0.6641	0.0269	0.2766	0.0292	0.0031	0.1449	0.1449	-0.2516	-0.0555	-0.2183	0.0442	0.0252	9.90
03579	B	F	8893	0.6761	0.0575	0.6761	0.1736	0.0894	0.0034	0.3139	-0.3313	0.3139	-0.2240	-0.1991	-0.0324	0.0255	2.40
03580	D	F	8893	0.6490	0.1746	0.1351	0.0377	0.6490	0.0036	0.2651	-0.2601	-0.0803	-0.3734	0.2651	0.1080	0.0250	9.90
03581	C	F	8893	0.2903	0.1230	0.1483	0.2903	0.4342	0.0042	0.1434	-0.1560	-0.1945	0.1434	-0.1310	1.9250	0.0257	9.90
03582	A	F	8893	0.6506	0.6506	0.0405	0.0388	0.2663	0.0038	0.3336	0.3336	-0.3646	-0.3674	-0.2217	0.1030	0.0250	1.40
03583	C	F	8893	0.3231	0.1112	0.2198	0.3231	0.3416	0.0043	-0.0239	-0.1344	-0.0750	-0.0239	0.1610	1.7548	0.0251	9.90
03584	B	F	8893	0.5529	0.0852	0.5529	0.3149	0.0430	0.0040	0.2982	-0.3737	0.2982	-0.1976	-0.3237	0.6000	0.0240	9.20
03585	D	F	8893	0.7000	0.1442	0.1015	0.0506	0.7000	0.0037	0.4296	-0.3034	-0.3464	-0.3684	0.4296	-0.1721	0.0260	-6.40
03586	B	M	8906	0.9223	0.0359	0.9223	0.0310	0.0106	0.0002	0.3026	-0.1901	0.3026	-0.2174	-0.1667	-2.1090	0.0426	-1.00
03587	A	M	8906	0.9059	0.9059	0.0579	0.0247	0.0109	0.0006	0.3599	0.3599	-0.2863	-0.1941	-0.1970	-1.8956	0.0396	-4.60
03588	A	M	8906	0.6203	0.6203	0.1863	0.1069	0.0858	0.0008	0.4829	0.4829	-0.3917	-0.4295	-0.3961	0.2292	0.0249	-7.40
03589	C	M	8906	0.7877	0.0476	0.0375	0.7877	0.1261	0.0011	0.4343	-0.2864	-0.2840	0.4343	-0.3482	-0.7804	0.0291	-6.40
03590	C	M	8906	0.7916	0.0192	0.1651	0.7916	0.0238	0.0003	0.4463	-0.2784	-0.3896	0.4463	-0.2477	-0.8156	0.0293	-6.40
03591	D	M	8906	0.8667	0.0451	0.0615	0.0262	0.8667	0.0004	0.4427	-0.3368	-0.2957	-0.2598	0.4427	-1.4333	0.0343	-9.40
03592	C	M	8906	0.8180	0.0364	0.0652	0.8180	0.0790	0.0013	0.4724	-0.2684	-0.3380	0.4724	-0.3719	-1.0172	0.0307	-9.60
03593	A	M	8906	0.8028	0.8028	0.1309	0.0118	0.0527	0.0018	0.2012	0.2012	-0.1030	-0.2032	-0.1899	-0.8760	0.0297	9.90
03594	C	F	8906	0.7861	0.0961	0.0691	0.7861	0.0463	0.0025	0.4619	-0.3895	-0.3486	0.4619	-0.2311	-0.7719	0.0291	-7.30
03595	B	F	8906	0.7773	0.0312	0.7773	0.1166	0.0728	0.0021	0.4170	-0.3027	0.4170	-0.3192	-0.2844	-0.7068	0.0287	-5.60
03596	D	F	8906	0.4826	0.3608	0.0913	0.0627	0.4826	0.0027	0.3558	-0.2795	-0.4779	-0.3119	0.3558	0.9436	0.0241	6.70
03597	D	F	8906	0.7118	0.0364	0.2050	0.0444	0.7118	0.0025	0.4678	-0.3306	-0.3850	-0.3612	0.4678	-0.2901	0.0266	-7.30
03598	B	F	8906	0.5125	0.4340	0.5125	0.0243	0.0264	0.0029	0.3031	-0.2486	0.3031	-0.3539	-0.3700	0.7982	0.0241	9.90
03599	B	F	8906	0.7378	0.0386	0.7378	0.1566	0.0633	0.0036	0.5066	-0.3333	0.5066	-0.4026	-0.4064	-0.4477	0.0273	-9.90
03600	A	F	8906	0.6405	0.6405	0.0669	0.1399	0.1486	0.0042	0.4665	0.4665	-0.4342	-0.4028	-0.3228	0.1271	0.0251	-7.50
03601	C	F	8906	0.7531	0.0702	0.1039	0.7531	0.0693	0.0036	0.4523	-0.3484	-0.3245	0.4523	-0.3374	-0.5379	0.0277	-6.50
03602	C	M	8905	0.8958	0.0300	0.0536	0.8958	0.0202	0.0004	0.3949	-0.2873	-0.2948	0.3949	-0.1715	-1.7456	0.0380	-6.60
03603	A	M	8905	0.7413	0.7413	0.1492	0.0311	0.0780	0.0003	0.3993	0.3993	-0.3382	-0.3231	-0.2303	-0.4313	0.0273	-4.60
03604	D	M	8905	0.5856	0.0966	0.0555	0.2612	0.5856	0.0011	0.3584	-0.3068	-0.4078	-0.2688	0.3584	0.4345	0.0245	3.00
03605	C	M	8905	0.6070	0.2518	0.1173	0.6070	0.0219	0.0020	0.4053	-0.3428	-0.3484	0.4053	-0.3329	0.3390	0.0246	-2.30
03606	A	M	8905	0.7019	0.7019	0.1099	0.1074	0.0798	0.0010	0.3434	0.3434	-0.3254	-0.3124	-0.1079	-0.1915	0.0262	2.20
03607	D	M	8905	0.6086	0.0764	0.2746	0.0399	0.6086	0.0006	0.1858	-0.1889	-0.0919	-0.3282	0.1858	0.3201	0.0247	9.90
03608	C	M	8905	0.7277	0.1583	0.0319	0.7277	0.0804	0.0017	0.4029	-0.2985	-0.3220	0.4029	-0.3145	-0.3504	0.0269	-4.60
03609	A	M	8905	0.8551	0.8551	0.0486	0.0450	0.0490	0.0022	0.4932	0.4932	-0.3194	-0.3210	-0.3784	-1.3116	0.0334	-9.90
03610	A	F	8905	0.9272	0.9272	0.0296	0.0234	0.0175	0.0022	0.4101	0.4101	-0.3011	-0.2689	-0.1974	-2.1895	0.0443	-9.90
03611	D	F	8905	0.7013	0.1487	0.0810	0.0665	0.7013	0.0026	0.4910	-0.3474	-0.3772	-0.4556	0.4910	-0.1936	0.0262	-9.80

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03612	D	F	8905	0.7881	0.0463	0.0764	0.0860	0.7881	0.0033	0.5452	-0.3637	-0.4196	-0.4122	0.5452	-0.7771	0.0292	-9.90
03613	A	F	8905	0.7303	0.7303	0.1595	0.0728	0.0341	0.0034	0.3328	0.3328	-0.2066	-0.2466	-0.3688	-0.3745	0.0270	3.10
03614	C	F	8905	0.2544	0.1736	0.4920	0.2544	0.0759	0.0042	0.1162	-0.0998	-0.1087	0.1162	-0.2469	2.1893	0.0270	9.90
03615	B	F	8905	0.5854	0.0627	0.5854	0.2213	0.1272	0.0034	0.3701	-0.2983	0.3701	-0.3338	-0.2771	0.4308	0.0245	1.10
03616	C	F	8905	0.8061	0.0841	0.0560	0.8061	0.0499	0.0039	0.4782	-0.3436	-0.3436	0.4782	-0.3321	-0.8931	0.0300	-9.20
03617	A	F	8905	0.6803	0.6803	0.1405	0.0567	0.1190	0.0035	0.4727	0.4727	-0.3509	-0.4183	-0.3774	-0.0737	0.0258	-8.10

Appendix K:

2006 Uncommon Grade 4 Multiple Choice Statistics for Mathematics

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03618	B	M	8583	0.5952	0.1195	0.5952	0.0731	0.2106	0.0015	0.3531	-0.3278	0.3531	-0.2817	-0.2740	0.5402	0.0249	4.60
03619	A	M	8583	0.6534	0.6534	0.1689	0.0743	0.1017	0.0016	0.4068	0.4068	-0.3427	-0.3435	-0.2752	0.2275	0.0256	-2.90
03620	C	M	8583	0.4695	0.1497	0.2584	0.4695	0.1212	0.0012	0.3685	-0.3183	-0.2974	0.3685	-0.4403	1.1503	0.0245	3.50
03621	D	M	8583	0.4359	0.1565	0.1677	0.2385	0.4359	0.0015	0.3088	-0.3336	-0.3074	-0.2399	0.3088	1.3353	0.0246	9.50
03622	A	F	8583	0.5455	0.5455	0.0595	0.1995	0.1942	0.0013	0.3949	0.3949	-0.3252	-0.3338	-0.3535	0.7812	0.0246	-1.50
03623	C	F	8583	0.8718	0.0479	0.0346	0.8718	0.0440	0.0016	0.3558	-0.2623	-0.2482	0.3558	-0.1999	-1.3263	0.0355	-0.10
03624	A	F	8583	0.9266	0.9266	0.0271	0.0241	0.0210	0.0012	0.3146	0.3146	-0.1836	-0.1974	-0.2120	-2.0063	0.0446	-2.90
03625	B	F	8583	0.7396	0.0988	0.7396	0.1236	0.0369	0.0010	0.4656	-0.3454	0.4656	-0.3454	-0.3927	-0.2799	0.0276	-7.80
03626	C	F	8583	0.6749	0.0394	0.0451	0.6749	0.2391	0.0015	0.5136	-0.3741	-0.3833	0.5136	-0.4538	0.0999	0.0260	-9.90
03627	B	F	8583	0.8866	0.0376	0.8866	0.0368	0.0379	0.0010	0.3875	-0.3076	0.3875	-0.2083	-0.2512	-1.4756	0.0371	-4.00
03628	C	F	8583	0.8686	0.0278	0.0326	0.8686	0.0694	0.0015	0.4129	-0.2667	-0.2934	0.4129	-0.2805	-1.2669	0.0348	-5.80
03629	C	F	8583	0.8290	0.0432	0.0219	0.8290	0.1021	0.0038	0.4351	-0.3568	-0.2536	0.4351	-0.3105	-0.9316	0.0318	-7.30
03630	C	M	8108	0.6460	0.1268	0.0990	0.6460	0.1263	0.0019	0.3328	-0.1528	-0.4019	0.3328	-0.2484	0.2972	0.0261	4.80
03631	A	M	8108	0.9098	0.9098	0.0255	0.0512	0.0128	0.0006	0.3428	0.3428	-0.1831	-0.2819	-0.1653	-1.7292	0.0422	-4.10
03632	B	M	8108	0.8192	0.0618	0.8192	0.0836	0.0344	0.0010	0.5117	-0.3713	0.5117	-0.3910	-0.3220	-0.8239	0.0321	-9.90
03633	A	M	8108	0.8620	0.8620	0.0465	0.0159	0.0738	0.0019	0.4661	0.4661	-0.2059	-0.2452	-0.4474	-1.1861	0.0354	-7.00
03634	D	F	8108	0.8685	0.0232	0.0788	0.0282	0.8685	0.0012	0.4309	-0.2625	-0.3403	-0.2518	0.4309	-1.2487	0.0361	-5.80
03635	C	F	8108	0.7716	0.0347	0.0998	0.7716	0.0923	0.0017	0.3858	-0.2672	-0.2386	0.3858	-0.3391	-0.4583	0.0295	-0.50
03636	B	F	8108	0.7056	0.1978	0.7056	0.0274	0.0676	0.0016	0.4012	-0.3787	0.4012	-0.1831	-0.2633	-0.0442	0.0273	-1.10
03637	D	F	8108	0.5868	0.1428	0.0707	0.1983	0.5868	0.0014	0.2270	-0.1704	-0.1787	-0.1957	0.2270	0.6129	0.0254	9.90
03638	D	F	8108	0.5432	0.3312	0.0571	0.0664	0.5432	0.0022	0.2906	-0.1794	-0.3679	-0.3547	0.2906	0.8188	0.0251	9.20
03639	C	F	8108	0.7745	0.0519	0.0498	0.7745	0.1212	0.0025	0.5088	-0.2991	-0.3355	0.5088	-0.4528	-0.4819	0.0296	-9.10
03640	C	F	8108	0.3666	0.3630	0.1586	0.3666	0.1087	0.0032	0.2798	-0.2345	-0.3313	0.2798	-0.3327	1.7058	0.0258	9.90
03641	D	F	8108	0.8014	0.1436	0.0266	0.0243	0.8014	0.0041	0.3628	-0.2915	-0.2379	-0.2590	0.3628	-0.6703	0.0309	0.40
03642	D	M	8123	0.7950	0.0792	0.0454	0.0794	0.7950	0.0010	0.4815	-0.3787	-0.3559	-0.3224	0.4815	-0.5415	0.0306	-8.30
03643	C	M	8123	0.8265	0.0297	0.1104	0.8265	0.0326	0.0007	0.4651	-0.3504	-0.3607	0.4651	-0.2868	-0.7693	0.0323	-6.00
03644	D	M	8123	0.5705	0.0478	0.0963	0.2834	0.5705	0.0021	0.3548	-0.3852	-0.3991	-0.2399	0.3548	0.7740	0.0253	3.30
03645	D	M	8123	0.8988	0.0121	0.0238	0.0646	0.8988	0.0007	0.2760	-0.1810	-0.1585	-0.2020	0.2760	-1.4960	0.0401	1.80
03646	B	F	8123	0.7839	0.1034	0.7839	0.0929	0.0195	0.0002	0.3362	-0.3275	0.3362	-0.1861	-0.1818	-0.4523	0.0300	3.20
03647	C	F	8123	0.8710	0.0325	0.0251	0.8710	0.0704	0.0010	0.3049	-0.2778	-0.2108	0.3049	-0.1573	-1.1552	0.0360	1.90
03648	B	F	8123	0.6890	0.1307	0.6890	0.0879	0.0904	0.0020	0.4682	-0.2809	0.4682	-0.3635	-0.4949	0.1401	0.0269	-5.40
03649	C	F	8123	0.9147	0.0149	0.0358	0.9147	0.0336	0.0010	0.3328	-0.2380	-0.1863	0.3328	-0.2277	-1.6854	0.0428	-2.40
03650	B	F	8123	0.7148	0.0893	0.7148	0.0831	0.1108	0.0021	0.4630	-0.3142	0.4630	-0.4182	-0.3414	-0.0107	0.0275	-7.40
03651	B	F	8123	0.7162	0.2289	0.7162	0.0212	0.0319	0.0018	0.2622	-0.1962	0.2622	-0.2563	-0.2051	-0.0160	0.0276	7.80
03652	A	F	8123	0.4857	0.4857	0.1195	0.1013	0.2914	0.0021	0.2272	0.2272	-0.2522	-0.3326	-0.1223	1.1923	0.0250	9.90
03653	D	F	8123	0.5985	0.0721	0.1669	0.1587	0.5985	0.0037	0.4191	-0.4252	-0.2378	-0.4298	0.4191	0.6332	0.0255	-3.30
03654	D	M	8110	0.3684	0.2951	0.2185	0.1164	0.3684	0.0016	0.3511	-0.3747	-0.3099	-0.3741	0.3511	1.7371	0.0258	4.10
03655	B	M	8110	0.7792	0.0575	0.7792	0.1417	0.0203	0.0014	0.3533	-0.2130	0.3533	-0.2822	-0.2873	-0.4480	0.0295	-0.90
03656	B	M	8110	0.6157	0.2513	0.6157	0.1138	0.0171	0.0021	0.3361	-0.2403	0.3361	-0.3526	-0.2886	0.4978	0.0256	1.80
03657	C	M	8110	0.7428	0.2010	0.0298	0.7428	0.0252	0.0012	0.4413	-0.4134	-0.2130	0.4413	-0.2443	-0.2320	0.0283	-5.60
03658	B	F	8110	0.9364	0.0237	0.9364	0.0153	0.0239	0.0007	0.3041	-0.1992	0.3041	-0.1617	-0.2042	-2.0785	0.0488	-3.10
03659	B	F	8110	0.9159	0.0166	0.9159	0.0292	0.0367	0.0015	0.3598	-0.2195	0.3598	-0.1770	-0.2884	-1.7390	0.0430	-4.50
03660	C	F	8110	0.8403	0.0713	0.0243	0.8403	0.0628	0.0014	0.3615	-0.2553	-0.1872	0.3615	-0.2792	-0.9092	0.0331	-1.50
03661	C	F	8110	0.6423	0.0367	0.2868	0.6423	0.0330	0.0011	0.3291	-0.3066	-0.2568	0.3291	-0.3001	0.3680	0.0259	1.40
03662	D	F	8110	0.7774	0.0845	0.0264	0.1099	0.7774	0.0018	0.3217	-0.2524	-0.2700	-0.2010	0.3217	-0.4436	0.0295	2.10
03663	A	F	8110	0.8795	0.8795	0.0238	0.0554	0.0395	0.0018	0.4217	0.4217	-0.2630	-0.3273	-0.2429	-1.2801	0.0369	-7.70
03664	C	F	8110	0.4211	0.5387	0.0222	0.4211	0.0162	0.0018	0.4201	-0.4111	-0.3484	0.4201	-0.3691	1.4672	0.0252	-3.20
03665	B	F	8110	0.7171	0.0377	0.7171	0.2215	0.0190	0.0047	0.2983	-0.3196	0.2983	-0.1979	-0.2821	-0.0661	0.0275	5.90
03666	B	M	8115	0.7266	0.1029	0.7266	0.0578	0.1118	0.0010	0.4406	-0.3513	0.4406	-0.3141	-0.3324	-0.1075	0.0278	-5.60
03667	C	M	8115	0.8394	0.0238	0.0625	0.8394	0.0736	0.0007	0.3953	-0.2580	-0.3404	0.3953	-0.2292	-0.9007	0.0332	-3.70

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03668	A	M	8115	0.6896	0.6896	0.0712	0.1020	0.1347	0.0025	0.4301	0.4301	-0.2733	-0.2917	-0.4075	0.1088	0.0269	-4.80
03669	C	M	8115	0.7959	0.0574	0.0524	0.7959	0.0930	0.0012	0.3520	-0.2647	-0.2321	0.3520	-0.2456	-0.5570	0.0304	-1.10
03670	B	F	8115	0.7725	0.0516	0.7725	0.0943	0.0797	0.0018	0.4826	-0.3571	0.4826	-0.3346	-0.3873	-0.3955	0.0294	-7.50
03671	A	F	8115	0.3990	0.3990	0.3533	0.1272	0.1194	0.0011	0.1920	0.1920	-0.0749	-0.2764	-0.3370	1.6028	0.0254	9.90
03672	B	F	8115	0.6329	0.2256	0.6329	0.1187	0.0211	0.0017	0.3892	-0.2450	0.3892	-0.4659	-0.2767	0.4062	0.0259	-0.70
03673	D	F	8115	0.5535	0.3349	0.0588	0.0506	0.5535	0.0021	0.3886	-0.3373	-0.3910	-0.2941	0.3886	0.8235	0.0251	-1.20
03674	D	F	8115	0.8249	0.0435	0.0161	0.1131	0.8249	0.0023	0.4356	-0.3144	-0.2579	-0.3404	0.4356	-0.7860	0.0322	-6.90
03675	C	F	8115	0.5657	0.2975	0.0393	0.5657	0.0960	0.0015	0.2968	-0.2173	-0.4066	0.2968	-0.2768	0.7752	0.0252	9.90
03676	A	F	8115	0.6009	0.6009	0.1643	0.0965	0.1363	0.0021	0.3137	0.3137	-0.2444	-0.1814	-0.3302	0.5855	0.0255	5.10
03677	D	F	8115	0.8322	0.1094	0.0260	0.0292	0.8322	0.0032	0.3946	-0.2908	-0.2841	-0.2710	0.3946	-0.8440	0.0327	-3.90
03678	D	M	8091	0.6092	0.1064	0.0706	0.2126	0.6092	0.0012	0.3204	-0.3046	-0.3073	-0.2192	0.3204	0.5532	0.0256	5.90
03679	C	M	8091	0.3631	0.0613	0.4486	0.3631	0.1266	0.0004	0.2147	-0.3284	-0.1354	0.2147	-0.3686	1.7729	0.0258	9.90
03680	C	M	8091	0.8725	0.0335	0.0745	0.8725	0.0184	0.0011	0.4316	-0.3004	-0.3126	0.4316	-0.2713	-1.2149	0.0364	-6.70
03681	A	M	8091	0.5956	0.5956	0.2200	0.1128	0.0706	0.0010	0.3705	0.3705	-0.2861	-0.4656	-0.1587	0.6133	0.0255	1.50
03682	B	F	8091	0.7353	0.0819	0.7353	0.0457	0.1358	0.0012	0.4323	-0.3097	0.4323	-0.2322	-0.3858	-0.1715	0.0282	-5.10
03683	D	F	8091	0.6835	0.1891	0.0435	0.0823	0.6835	0.0016	0.4313	-0.3781	-0.3172	-0.3101	0.4313	0.1433	0.0268	-3.80
03684	D	F	8091	0.8039	0.0428	0.0620	0.0899	0.8039	0.0015	0.4270	-0.3991	-0.3263	-0.2277	0.4270	-0.6359	0.0311	-6.00
03685	B	F	8091	0.9218	0.0172	0.9218	0.0262	0.0341	0.0007	0.3090	-0.2296	0.3090	-0.1959	-0.1716	-1.8298	0.0447	-2.00
03686	C	F	8091	0.6799	0.0703	0.1649	0.6799	0.0827	0.0022	0.3639	-0.2769	-0.2041	0.3639	-0.4111	0.1591	0.0267	1.20
03687	A	F	8091	0.7785	0.7785	0.1514	0.0440	0.0248	0.0012	0.3783	0.3783	-0.2778	-0.3124	-0.2632	-0.4620	0.0299	-0.60
03688	D	F	8091	0.8598	0.0949	0.0200	0.0240	0.8598	0.0012	0.5415	-0.4935	-0.2545	-0.2869	0.5415	-1.0996	0.0352	-9.90
03689	D	F	8091	0.7885	0.0510	0.1209	0.0372	0.7885	0.0023	0.3149	-0.2342	-0.1698	-0.3386	0.3149	-0.5099	0.0302	5.00
03690	D	M	8101	0.5841	0.1533	0.1487	0.1120	0.5841	0.0019	0.3312	-0.3067	-0.2345	-0.2975	0.3312	0.6904	0.0254	6.30
03691	B	M	8101	0.7692	0.2122	0.7692	0.0111	0.0067	0.0009	0.3162	-0.2965	0.3162	-0.1257	-0.1595	-0.3835	0.0294	2.80
03692	A	M	8101	0.7026	0.7026	0.1041	0.1342	0.0578	0.0014	0.5406	0.5406	-0.4321	-0.4558	-0.3973	0.0321	0.0273	-9.90
03693	D	M	8101	0.6350	0.1536	0.1121	0.0965	0.6350	0.0028	0.3806	-0.2741	-0.3271	-0.3207	0.3806	0.4202	0.0260	-0.80
03694	C	F	8101	0.7550	0.0098	0.1146	0.7550	0.1196	0.0011	0.4259	-0.1731	-0.3027	0.4259	-0.3922	-0.2664	0.0287	-5.00
03695	C	F	8101	0.8875	0.0284	0.0497	0.8875	0.0333	0.0010	0.3929	-0.2187	-0.2724	0.3929	-0.2881	-1.3670	0.0382	-4.00
03696	A	F	8101	0.6616	0.6616	0.0683	0.0952	0.1731	0.0019	0.5675	0.5675	-0.4271	-0.3597	-0.5601	0.2728	0.0264	-9.90
03697	A	F	8101	0.6973	0.6973	0.0784	0.0576	0.1653	0.0014	0.3070	0.3070	-0.3038	-0.2931	-0.1588	0.0759	0.0271	5.20
03698	D	F	8101	0.8105	0.0412	0.0560	0.0902	0.8105	0.0020	0.5012	-0.2906	-0.3643	-0.4082	0.5012	-0.6631	0.0313	-9.20
03699	D	F	8101	0.7010	0.0704	0.1604	0.0663	0.7010	0.0020	0.4129	-0.4357	-0.2694	-0.2862	0.4129	0.0537	0.0272	-2.40
03700	B	F	8101	0.8953	0.0260	0.8953	0.0546	0.0222	0.0019	0.2856	-0.2617	0.2856	-0.1440	-0.1699	-1.4465	0.0392	1.30
03701	B	F	8101	0.8641	0.1099	0.8641	0.0137	0.0099	0.0025	0.3790	-0.3464	0.3790	-0.1555	-0.1670	-1.1346	0.0355	-3.80
03702	A	M	8115	0.7777	0.7777	0.1136	0.0766	0.0308	0.0012	0.4178	0.4178	-0.2943	-0.3204	-0.3209	-0.4325	0.0297	-4.20
03703	D	M	8115	0.7633	0.1710	0.0450	0.0193	0.7633	0.0014	0.5385	-0.4965	-0.3414	-0.2877	0.5385	-0.3447	0.0292	-9.90
03704	B	M	8115	0.8053	0.0822	0.8053	0.0850	0.0262	0.0012	0.4256	-0.3715	0.4256	-0.2850	-0.2247	-0.6074	0.0309	-4.70
03705	A	M	8115	0.5993	0.5993	0.1315	0.1007	0.1665	0.0021	0.3919	0.3919	-0.2687	-0.3174	-0.3810	0.5997	0.0256	-1.30
03706	B	F	8115	0.5317	0.0414	0.5317	0.3060	0.1199	0.0010	0.3664	-0.2032	0.3664	-0.2886	-0.4661	0.9421	0.0251	4.30
03707	C	F	8115	0.6068	0.2159	0.1096	0.6068	0.0653	0.0025	0.4788	-0.4410	-0.3606	0.4788	-0.3922	0.5621	0.0257	-8.10
03708	B	F	8115	0.7779	0.0918	0.7779	0.0839	0.0450	0.0014	0.4244	-0.2900	0.4244	-0.3163	-0.3303	-0.4459	0.0298	-4.50
03709	B	F	8115	0.9646	0.0085	0.9646	0.0157	0.0101	0.0011	0.2398	-0.1066	0.2398	-0.1533	-0.1693	-2.7277	0.0637	-2.50
03710	A	F	8115	0.6632	0.6632	0.0763	0.1331	0.1247	0.0027	0.5119	0.5119	-0.3582	-0.3364	-0.5382	0.2639	0.0264	-9.90
03711	D	F	8115	0.8046	0.0530	0.0331	0.1081	0.8046	0.0012	0.4622	-0.3296	-0.3550	-0.3329	0.4622	-0.6199	0.0310	-7.40
03712	C	F	8115	0.5565	0.2099	0.0287	0.5565	0.2038	0.0011	0.3633	-0.2751	-0.3189	0.3633	-0.3465	0.8211	0.0252	1.50
03713	D	F	8115	0.8959	0.0344	0.0274	0.0389	0.8959	0.0035	0.4158	-0.3389	-0.2670	-0.2281	0.4158	-1.4671	0.0394	-3.20
03714	D	M	8100	0.8326	0.0309	0.0937	0.0419	0.8326	0.0010	0.4493	-0.2669	-0.3381	-0.3402	0.4493	-0.8591	0.0327	-5.40
03715	B	M	8100	0.5126	0.2227	0.5126	0.1540	0.1098	0.0010	0.3878	-0.2894	0.3878	-0.3624	-0.4225	1.0094	0.0250	-1.30
03716	A	M	8100	0.6316	0.6316	0.0853	0.1902	0.0919	0.0010	0.4539	0.4539	-0.3391	-0.3518	-0.4487	0.4112	0.0259	-5.10
03717	D	M	8100	0.8530	0.0640	0.0332	0.0479	0.8530	0.0020	0.3693	-0.2967	-0.2135	-0.2150	0.3693	-1.0429	0.0344	-3.00

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03718	B	F	8100	0.4952	0.4414	0.4952	0.0373	0.0257	0.0005	0.3538	-0.3308	0.3538	-0.2568	-0.3122	1.0975	0.0250	3.00
03719	C	F	8100	0.9291	0.0133	0.0384	0.9291	0.0181	0.0010	0.3696	-0.2091	-0.2956	0.3696	-0.1739	-1.9778	0.0470	-5.80
03720	C	F	8100	0.8116	0.0538	0.0681	0.8116	0.0652	0.0012	0.4367	-0.3159	-0.3599	0.4367	-0.2444	-0.7055	0.0315	-5.90
03721	B	F	8100	0.8347	0.0557	0.8347	0.0622	0.0462	0.0012	0.4414	-0.3268	0.4414	-0.2901	-0.3094	-0.8894	0.0330	-5.40
03722	C	F	8100	0.6217	0.0978	0.0667	0.6217	0.2119	0.0020	0.3740	-0.3458	-0.2621	0.3740	-0.3012	0.4594	0.0258	1.80
03723	B	F	8100	0.8790	0.0258	0.8790	0.0800	0.0141	0.0011	0.3609	-0.2194	0.3609	-0.2909	-0.1752	-1.3293	0.0375	-3.70
03724	D	F	8100	0.7341	0.0791	0.1047	0.0811	0.7341	0.0010	0.4741	-0.3696	-0.3736	-0.3407	0.4741	-0.1822	0.0281	-7.10
03725	B	F	8100	0.3704	0.2704	0.3704	0.2686	0.0874	0.0032	0.2161	-0.1904	0.2161	-0.2161	-0.2692	1.7273	0.0258	9.90
03726	C	M	8075	0.4581	0.1051	0.1923	0.4581	0.2430	0.0015	0.3900	-0.3693	-0.1947	0.3900	-0.4948	1.2783	0.0251	0.90
03727	C	M	8075	0.5107	0.0689	0.2357	0.5107	0.1841	0.0006	0.2900	-0.2988	-0.1996	0.2900	-0.3072	1.0327	0.0251	9.90
03728	B	M	8075	0.5978	0.2583	0.5978	0.0838	0.0589	0.0011	0.1620	-0.0555	0.1620	-0.2616	-0.1724	0.5921	0.0256	9.90
03729	C	M	8075	0.8099	0.0581	0.0731	0.8099	0.0587	0.0002	0.4668	-0.3553	-0.3955	0.4668	-0.2358	-0.6805	0.0313	-7.90
03730	A	F	8075	0.9064	0.9064	0.0572	0.0204	0.0150	0.0010	0.3829	0.3829	-0.3004	-0.2391	-0.1934	-1.6177	0.0413	-6.00
03731	D	F	8075	0.5819	0.1268	0.1272	0.1616	0.5819	0.0025	0.4322	-0.3047	-0.3974	-0.4063	0.4322	0.6580	0.0254	-3.20
03732	A	F	8075	0.8292	0.8292	0.0136	0.0270	0.1287	0.0015	0.4106	0.4106	-0.1793	-0.2112	-0.3749	-0.8630	0.0328	-4.40
03733	C	F	8075	0.7563	0.0670	0.1221	0.7563	0.0530	0.0016	0.5277	-0.3815	-0.4610	0.5277	-0.3269	-0.3126	0.0289	-9.90
03734	A	F	8075	0.6035	0.6035	0.0978	0.1622	0.1346	0.0019	0.4691	0.4691	-0.3828	-0.3439	-0.4495	0.5724	0.0256	-8.80
03735	C	F	8075	0.8503	0.0542	0.0504	0.8503	0.0441	0.0010	0.4673	-0.3335	-0.2903	0.4673	-0.3450	-1.0326	0.0344	-9.30
03736	B	F	8075	0.7328	0.0998	0.7328	0.0814	0.0835	0.0026	0.4541	-0.3269	0.4541	-0.3649	-0.3488	-0.1617	0.0281	-4.30
03737	C	F	8075	0.7453	0.0440	0.0467	0.7453	0.1598	0.0043	0.4941	-0.3533	-0.2789	0.4941	-0.4432	-0.2406	0.0285	-8.90
03738	A	M	8075	0.6163	0.6163	0.1241	0.0931	0.1658	0.0006	0.3473	0.3473	-0.4133	-0.3607	-0.1295	0.4955	0.0257	6.30
03739	C	M	8075	0.7370	0.0224	0.1897	0.7370	0.0498	0.0011	0.4185	-0.2833	-0.4046	0.4185	-0.1667	-0.1874	0.0282	-2.10
03740	A	M	8075	0.8559	0.8559	0.0420	0.0201	0.0795	0.0026	0.3163	0.3163	-0.2590	-0.2135	-0.1850	-1.0818	0.0349	-1.20
03741	C	M	8075	0.6857	0.0762	0.1017	0.6857	0.1342	0.0022	0.4383	-0.2686	-0.2563	0.4383	-0.4558	0.1165	0.0269	-6.00
03742	D	F	8075	0.6577	0.0355	0.1869	0.1176	0.6577	0.0022	0.4714	-0.3886	-0.4300	-0.3320	0.4714	0.2678	0.0264	-8.30
03743	A	F	8075	0.8535	0.8535	0.0333	0.0637	0.0477	0.0019	0.3770	0.3770	-0.1886	-0.3047	-0.2518	-1.0527	0.0346	-3.60
03744	D	F	8075	0.7698	0.0936	0.0894	0.0452	0.7698	0.0020	0.3998	-0.2726	-0.3302	-0.2504	0.3998	-0.4118	0.0295	-4.10
03745	B	F	8075	0.5419	0.0560	0.5419	0.1183	0.2819	0.0020	0.2924	-0.3235	0.2924	-0.2471	-0.2279	0.8791	0.0251	8.30
03746	C	F	8075	0.9063	0.0386	0.0234	0.9063	0.0292	0.0025	0.3523	-0.2039	-0.2535	0.3523	-0.2385	-1.6187	0.0413	-2.60
03747	D	F	8075	0.8856	0.0173	0.0326	0.0632	0.8856	0.0014	0.2621	-0.2395	-0.1931	-0.1270	0.2621	-1.3743	0.0381	4.40
03748	D	F	8075	0.5934	0.0615	0.1739	0.1693	0.5934	0.0019	0.4398	-0.4808	-0.4067	-0.2816	0.4398	0.6015	0.0255	-4.70
03749	B	F	8075	0.7661	0.1054	0.7661	0.0534	0.0712	0.0040	0.4166	-0.3267	0.4166	-0.3228	-0.2697	-0.3651	0.0292	-3.60
03750	B	M	8098	0.5501	0.0853	0.5501	0.1567	0.2072	0.0006	0.3638	-0.2197	0.3638	-0.4143	-0.2774	0.8196	0.0251	0.50
03751	D	M	8098	0.6688	0.1192	0.0793	0.1310	0.6688	0.0017	0.4311	-0.3873	-0.3400	-0.3000	0.4311	0.2016	0.0264	-4.60
03752	A	M	8098	0.8775	0.8775	0.0498	0.0409	0.0303	0.0016	0.3786	0.3786	-0.2733	-0.2262	-0.2503	-1.2723	0.0368	-5.70
03753	D	M	8098	0.8424	0.0352	0.0325	0.0889	0.8424	0.0010	0.3735	-0.2419	-0.2888	-0.2599	0.3735	-0.9479	0.0334	-0.10
03754	C	F	8098	0.7692	0.1029	0.0909	0.7692	0.0357	0.0014	0.4155	-0.2968	-0.3065	0.4155	-0.3216	-0.3938	0.0292	-3.70
03755	A	F	8098	0.9079	0.9079	0.0172	0.0338	0.0403	0.0009	0.3642	0.3642	-0.2403	-0.2290	-0.2475	-1.6495	0.0416	-3.80
03756	D	F	8098	0.5972	0.1495	0.0373	0.2144	0.5972	0.0016	0.3954	-0.3799	-0.3358	-0.3019	0.3954	0.5806	0.0254	-1.10
03757	C	F	8098	0.6674	0.0801	0.1847	0.6674	0.0662	0.0015	0.4180	-0.3757	-0.2984	0.4180	-0.3663	0.2163	0.0264	-2.70
03758	C	F	8098	0.8156	0.0441	0.0677	0.8156	0.0714	0.0012	0.4752	-0.3114	-0.3591	0.4752	-0.3320	-0.7310	0.0316	-9.60
03759	A	F	8098	0.7748	0.7748	0.0667	0.0551	0.1021	0.0014	0.4066	0.4066	-0.3502	-0.3096	-0.2474	-0.4423	0.0295	-1.70
03760	C	F	8098	0.8064	0.0389	0.0563	0.8064	0.0963	0.0021	0.3265	-0.2303	-0.2305	0.3265	-0.2255	-0.6553	0.0310	0.80
03761	C	F	8098	0.5840	0.3002	0.0398	0.5840	0.0724	0.0037	0.3674	-0.3297	-0.3132	0.3674	-0.2752	0.6497	0.0253	3.40
03762	A	M	8091	0.6178	0.6178	0.1369	0.1952	0.0491	0.0010	0.4090	0.4090	-0.3665	-0.3513	-0.2619	0.4620	0.0258	-2.00
03763	C	M	8091	0.8289	0.0591	0.0447	0.8289	0.0664	0.0009	0.4347	-0.3150	-0.2991	0.4347	-0.3012	-0.8478	0.0326	-4.10
03764	B	M	8091	0.8575	0.0592	0.8575	0.0487	0.0334	0.0012	0.3423	-0.2364	0.3423	-0.2125	-0.2403	-1.0818	0.0348	-0.80
03765	B	M	8091	0.6396	0.0912	0.6396	0.1699	0.0971	0.0021	0.3138	-0.1673	0.3138	-0.3270	-0.2084	0.3678	0.0260	6.00
03766	D	F	8091	0.6811	0.1042	0.0807	0.1327	0.6811	0.0012	0.4934	-0.3636	-0.3608	-0.4455	0.4934	0.1360	0.0268	-8.80
03767	A	F	8091	0.7434	0.7434	0.1028	0.0575	0.0949	0.0014	0.5341	0.5341	-0.4237	-0.3662	-0.4364	-0.2375	0.0284	-9.90

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03768	B	F	8091	0.6181	0.1828	0.6181	0.1273	0.0703	0.0015	0.4100	-0.3263	0.4100	-0.3459	-0.3375	0.4854	0.0257	-4.50
03769	D	F	8091	0.7793	0.0651	0.0534	0.1000	0.7793	0.0022	0.4331	-0.3630	-0.3151	-0.2840	0.4331	-0.4639	0.0297	-4.50
03770	B	F	8091	0.6537	0.0552	0.6537	0.2396	0.0494	0.0020	0.4451	-0.2496	0.4451	-0.4245	-0.3081	0.2758	0.0263	-5.60
03771	D	F	8091	0.7178	0.0413	0.0702	0.1685	0.7178	0.0022	0.3322	-0.2307	-0.3069	-0.2271	0.3322	-0.0600	0.0276	1.80
03772	B	F	8091	0.4039	0.1460	0.4039	0.3990	0.0487	0.0025	0.2303	-0.4774	0.2303	-0.0871	-0.3004	1.5454	0.0254	9.90
03773	B	F	8091	0.5097	0.2358	0.5097	0.0691	0.1809	0.0044	0.2148	-0.2631	0.2148	-0.1649	-0.1031	1.0240	0.0251	9.90
03774	B	M	8108	0.3309	0.4736	0.3309	0.1333	0.0612	0.0010	0.2021	-0.1548	0.2021	-0.2862	-0.3331	1.9219	0.0263	9.90
03775	C	M	8108	0.6635	0.1592	0.1368	0.6635	0.0392	0.0012	0.4093	-0.3992	-0.3007	0.4093	-0.2058	0.2261	0.0264	-2.20
03776	B	M	8108	0.6294	0.0630	0.6294	0.2724	0.0348	0.0004	0.2585	-0.1909	0.2585	-0.1979	-0.2770	0.4125	0.0258	8.80
03777	C	M	8108	0.7595	0.1016	0.0824	0.7595	0.0549	0.0016	0.4750	-0.3909	-0.3379	0.4750	-0.3246	-0.3315	0.0289	-8.30
03778	D	F	8108	0.9218	0.0244	0.0229	0.0301	0.9218	0.0007	0.3592	-0.2661	-0.2265	-0.2020	0.3592	-1.8305	0.0443	-4.20
03779	C	F	8108	0.7308	0.0837	0.1066	0.7308	0.0772	0.0017	0.3398	-0.2500	-0.1853	0.3398	-0.3364	-0.1459	0.0279	3.20
03780	A	F	8108	0.3830	0.3830	0.1226	0.0892	0.4040	0.0012	0.2180	0.2180	-0.3655	-0.3348	-0.1151	1.6669	0.0256	9.90
03781	A	F	8108	0.8106	0.8106	0.0757	0.0623	0.0506	0.0009	0.4005	0.4005	-0.1776	-0.2816	-0.4175	-0.6886	0.0312	-1.80
03782	C	F	8108	0.6363	0.2692	0.0486	0.6363	0.0449	0.0010	0.4274	-0.3493	-0.3948	0.4274	-0.3724	0.3695	0.0259	-1.80
03783	C	F	8108	0.6565	0.0855	0.1744	0.6565	0.0823	0.0014	0.3704	-0.3086	-0.3150	0.3704	-0.2387	0.2677	0.0262	0.70
03784	B	F	8108	0.8410	0.0461	0.8410	0.0881	0.0229	0.0019	0.4472	-0.3655	0.4472	-0.3104	-0.2641	-0.9467	0.0334	-6.00
03785	D	F	8108	0.3302	0.0409	0.4468	0.1776	0.3302	0.0044	0.3937	-0.4522	-0.4410	-0.3113	0.3937	1.9309	0.0263	-0.70
03786	C	M	8072	0.5638	0.1587	0.1266	0.5638	0.1500	0.0009	0.4576	-0.5313	-0.3608	0.4576	-0.3069	0.7680	0.0253	-4.50
03787	D	M	8072	0.8195	0.0126	0.1355	0.0317	0.8195	0.0006	0.3205	-0.1761	-0.2538	-0.2378	0.3205	-0.7748	0.0320	2.70
03788	D	M	8072	0.7000	0.1068	0.0684	0.1230	0.7000	0.0019	0.2457	-0.2295	-0.1376	-0.1689	0.2457	0.0303	0.0272	8.60
03789	C	M	8072	0.8201	0.0819	0.0483	0.8201	0.0492	0.0005	0.4418	-0.4056	-0.2624	0.4418	-0.2334	-0.7924	0.0322	-5.40
03790	C	F	8072	0.3340	0.0866	0.2661	0.3340	0.3113	0.0020	0.1885	-0.3457	-0.1007	0.1885	-0.2170	1.9289	0.0264	9.90
03791	D	F	8072	0.8111	0.1127	0.0404	0.0343	0.8111	0.0015	0.4014	-0.3214	-0.2456	-0.2614	0.4014	-0.7110	0.0315	-4.70
03792	A	F	8072	0.6433	0.6433	0.2590	0.0404	0.0557	0.0015	0.4122	0.4122	-0.3315	-0.3839	-0.3312	0.3319	0.0262	-4.10
03793	B	F	8072	0.8412	0.0265	0.8412	0.0328	0.0981	0.0014	0.5324	-0.2532	0.5324	-0.3416	-0.4684	-0.9843	0.0338	-9.90
03794	D	F	8072	0.8748	0.0308	0.0302	0.0634	0.8748	0.0007	0.4053	-0.2701	-0.3111	-0.2572	0.4053	-1.2977	0.0370	-4.20
03795	C	F	8072	0.8751	0.0680	0.0232	0.8751	0.0316	0.0021	0.3636	-0.2753	-0.2485	0.3636	-0.1926	-1.2936	0.0370	-3.00
03796	C	F	8072	0.8520	0.0194	0.0535	0.8520	0.0726	0.0025	0.5116	-0.2807	-0.3074	0.5116	-0.4523	-1.0690	0.0346	-7.90
03797	D	F	8072	0.7567	0.0202	0.1694	0.0492	0.7567	0.0046	0.3038	-0.2868	-0.2133	-0.2404	0.3038	-0.3199	0.0289	5.20
03798	B	M	8043	0.8271	0.0307	0.8271	0.0291	0.1119	0.0012	0.3388	-0.1952	0.3388	-0.1464	-0.3019	-0.8422	0.0325	1.20
03799	D	M	8043	0.9198	0.0295	0.0200	0.0297	0.9198	0.0010	0.2868	-0.1842	-0.1894	-0.1733	0.2868	-1.8528	0.0445	0.00
03800	A	M	8043	0.9082	0.9082	0.0382	0.0312	0.0214	0.0010	0.2684	0.2684	-0.2474	-0.0804	-0.1731	-1.6692	0.0417	1.00
03801	C	M	8043	0.7056	0.1724	0.0695	0.7056	0.0515	0.0010	0.5328	-0.5459	-0.3350	0.5328	-0.2446	-0.0205	0.0275	-9.90
03802	D	F	8043	0.7273	0.0490	0.1287	0.0939	0.7273	0.0011	0.4643	-0.2848	-0.4211	-0.3201	0.4643	-0.1502	0.0280	-7.00
03803	C	F	8043	0.7673	0.0669	0.0901	0.7673	0.0751	0.0006	0.4233	-0.2606	-0.3161	0.4233	-0.3458	-0.4105	0.0295	-3.80
03804	D	F	8043	0.9472	0.0128	0.0184	0.0206	0.9472	0.0010	0.2761	-0.1978	-0.1271	-0.1902	0.2761	-2.3364	0.0534	-1.30
03805	B	F	8043	0.8322	0.0494	0.8322	0.0729	0.0441	0.0015	0.4496	-0.2889	0.4496	-0.3386	-0.3129	-0.8905	0.0329	-5.70
03806	A	F	8043	0.9465	0.9465	0.0204	0.0173	0.0139	0.0019	0.3140	0.3140	-0.1660	-0.2183	-0.1941	-2.3053	0.0528	-4.10
03807	A	F	8043	0.9187	0.9187	0.0158	0.0380	0.0265	0.0010	0.3653	0.3653	-0.1920	-0.2811	-0.2163	-1.8332	0.0442	-4.60
03808	D	F	8043	0.8773	0.0219	0.0826	0.0167	0.8773	0.0016	0.3225	-0.1788	-0.2504	-0.1898	0.3225	-1.3150	0.0372	-1.60
03809	B	F	8043	0.7157	0.0517	0.7157	0.1683	0.0609	0.0034	0.3679	-0.2302	0.3679	-0.3169	-0.2557	-0.0747	0.0277	0.00

Appendix L:

2006 Uncommon Grade 6 Multiple Choice Statistics for Mathematics

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03810	B	M	9187	0.4982	0.0508	0.4982	0.2434	0.2063	0.0013	0.4843	-0.3706	0.4843	-0.5382	-0.3602	0.9044	0.0239	-5.00
03811	D	M	9187	0.8065	0.0340	0.0777	0.0809	0.8065	0.0010	0.5390	-0.3325	-0.4260	-0.3875	0.5390	-0.8835	0.0295	-9.90
03812	B	M	9187	0.8238	0.0356	0.8238	0.0591	0.0805	0.0010	0.4041	-0.2808	0.4041	-0.3007	-0.2641	-1.0232	0.0305	-2.10
03813	D	M	9187	0.4663	0.1000	0.0652	0.3677	0.4663	0.0008	0.4383	-0.4027	-0.3107	-0.4223	0.4383	1.0702	0.0240	0.10
03814	A	F	9187	0.8817	0.8817	0.0567	0.0349	0.0255	0.0012	0.3534	0.3534	-0.2492	-0.2248	-0.2133	-1.5537	0.0352	-1.60
03815	B	F	9187	0.6580	0.0427	0.6580	0.2685	0.0296	0.0012	0.4186	-0.3093	0.4186	-0.3658	-0.2812	0.0646	0.0251	-0.20
03816	A	F	9187	0.8476	0.8476	0.0494	0.0804	0.0213	0.0012	0.3119	0.3119	-0.2310	-0.1915	-0.2239	-1.2064	0.0319	5.10
03817	A	F	9187	0.4433	0.4433	0.0495	0.2536	0.2523	0.0012	0.2927	0.2927	-0.3490	-0.1595	-0.3583	1.2028	0.0241	9.90
03818	D	F	9187	0.7364	0.1000	0.0989	0.0624	0.7364	0.0023	0.5442	-0.4454	-0.4166	-0.3658	0.5442	-0.4076	0.0268	-9.90
03819	B	F	9187	0.7526	0.0746	0.7526	0.0543	0.1164	0.0022	0.4139	-0.2430	0.4139	-0.3459	-0.3199	-0.4986	0.0273	-1.40
03820	B	F	9187	0.6324	0.2094	0.6324	0.0960	0.0606	0.0015	0.6148	-0.6058	0.6148	-0.4860	-0.3309	0.2013	0.0248	-9.90
03821	D	F	9187	0.8200	0.1299	0.0219	0.0248	0.8200	0.0035	0.4436	-0.3532	-0.2716	-0.2963	0.4436	-0.9807	0.0302	-6.40
03822	C	M	8629	0.5573	0.1075	0.2511	0.5573	0.0832	0.0008	0.3177	-0.3911	-0.1348	0.3177	-0.4284	0.6917	0.0246	9.90
03823	A	M	8629	0.7770	0.7770	0.1325	0.0626	0.0270	0.0009	0.4832	0.4832	-0.3947	-0.3382	-0.2985	-0.5529	0.0288	-9.10
03824	C	M	8629	0.3843	0.1989	0.1401	0.3843	0.2756	0.0012	0.4153	-0.5251	-0.3135	0.4153	-0.3921	1.5551	0.0250	-0.10
03825	D	M	8629	0.5016	0.2296	0.1449	0.1212	0.5016	0.0028	0.4044	-0.3210	-0.4045	-0.3729	0.4044	0.9696	0.0245	-1.40
03826	C	F	8629	0.9189	0.0107	0.0423	0.9189	0.0271	0.0010	0.3491	-0.1489	-0.2687	0.3491	-0.2221	-1.9136	0.0424	-3.50
03827	D	F	8629	0.6075	0.1904	0.1517	0.0493	0.6075	0.0012	0.5155	-0.4133	-0.4602	-0.4471	0.5155	0.4328	0.0250	-9.90
03828	D	F	8629	0.7736	0.1721	0.0214	0.0309	0.7736	0.0020	0.4877	-0.4297	-0.2738	-0.3038	0.4877	-0.5421	0.0287	-8.60
03829	A	F	8629	0.6851	0.6851	0.1059	0.1833	0.0242	0.0014	0.6146	0.6146	-0.4781	-0.5621	-0.3702	-0.0004	0.0262	-9.90
03830	D	F	8629	0.5515	0.1188	0.1255	0.2023	0.5515	0.0019	0.4749	-0.4932	-0.3797	-0.3857	0.4749	0.7093	0.0246	-7.30
03831	D	F	8629	0.6609	0.0692	0.0636	0.2054	0.6609	0.0009	0.5271	-0.3297	-0.4048	-0.4826	0.5271	0.1420	0.0257	-9.90
03832	B	F	8629	0.9039	0.0356	0.9039	0.0461	0.0131	0.0013	0.3343	-0.2080	0.3343	-0.2433	-0.1869	-1.7040	0.0395	-1.60
03833	C	F	8629	0.7503	0.0151	0.1883	0.7503	0.0445	0.0019	0.3896	-0.2580	-0.3408	0.3896	-0.2306	-0.3897	0.0279	-0.30
03834	C	M	8634	0.6646	0.1298	0.1222	0.6646	0.0817	0.0017	0.4814	-0.3687	-0.3670	0.4814	-0.4036	0.1257	0.0256	-9.00
03835	D	M	8634	0.8264	0.0255	0.1106	0.0366	0.8264	0.0009	0.4045	-0.2231	-0.3715	-0.1682	0.4045	-0.9217	0.0313	-4.50
03836	C	M	8634	0.5205	0.0598	0.3197	0.5205	0.0986	0.0015	0.3900	-0.4719	-0.2547	0.3900	-0.4903	0.8604	0.0243	2.70
03837	A	M	8634	0.7929	0.7929	0.1115	0.0199	0.0748	0.0008	0.3671	0.3671	-0.3749	-0.2290	-0.1388	-0.6621	0.0294	1.00
03838	A	F	8634	0.7871	0.7871	0.0441	0.0756	0.0910	0.0021	0.3554	0.3554	-0.2159	-0.2539	-0.2681	-0.6311	0.0292	-1.30
03839	D	F	8634	0.6700	0.0537	0.0404	0.2347	0.6700	0.0012	0.4041	-0.2824	-0.2847	-0.3498	0.4041	0.0940	0.0257	-1.70
03840	B	F	8634	0.5563	0.2580	0.5563	0.0820	0.1023	0.0014	0.2872	-0.2313	0.2872	-0.3234	-0.1936	0.6928	0.0244	9.90
03841	B	F	8634	0.5892	0.1994	0.5892	0.0594	0.1506	0.0014	0.4522	-0.4521	0.4522	-0.3640	-0.2903	0.5027	0.0247	-6.10
03842	D	F	8634	0.8399	0.0387	0.0354	0.0841	0.8399	0.0019	0.3675	-0.2477	-0.2299	-0.2632	0.3675	-1.0413	0.0323	-2.70
03843	B	F	8634	0.7902	0.1259	0.7902	0.0376	0.0448	0.0014	0.3448	-0.1987	0.3448	-0.2839	-0.3113	-0.6508	0.0293	3.60
03844	C	F	8634	0.7173	0.1389	0.0580	0.7173	0.0840	0.0019	0.2946	-0.1212	-0.3176	0.2946	-0.2672	-0.1708	0.0267	6.50
03845	A	F	8634	0.7981	0.7981	0.0934	0.0518	0.0539	0.0029	0.4567	0.4567	-0.3186	-0.3220	-0.3451	-0.7147	0.0297	-6.30
03846	A	M	8622	0.6117	0.6117	0.1695	0.1115	0.1047	0.0027	0.5115	0.5115	-0.4138	-0.4134	-0.4410	0.3850	0.0251	-9.90
03847	A	M	8622	0.7752	0.7752	0.0618	0.1429	0.0195	0.0006	0.3010	0.3010	-0.3393	-0.1510	-0.2255	-0.5743	0.0288	6.60
03848	B	M	8622	0.9055	0.0626	0.9055	0.0141	0.0164	0.0014	0.2677	-0.1915	0.2677	-0.1514	-0.1696	-1.7448	0.0399	1.10
03849	D	M	8622	0.8658	0.0412	0.0509	0.0406	0.8658	0.0015	0.3633	-0.2305	-0.2309	-0.2589	0.3633	-1.3039	0.0347	-2.40
03850	D	F	8622	0.5647	0.0471	0.3219	0.0646	0.5647	0.0017	0.5632	-0.3631	-0.5528	-0.4037	0.5632	0.6081	0.0247	-9.90
03851	C	F	8622	0.7770	0.1598	0.0296	0.7770	0.0315	0.0021	0.4681	-0.4112	-0.3030	0.4681	-0.2327	-0.5911	0.0289	-7.00
03852	D	F	8622	0.8529	0.1066	0.0255	0.0137	0.8529	0.0013	0.4273	-0.3848	-0.2000	-0.1967	0.4273	-1.1918	0.0336	-7.10
03853	A	F	8622	0.6493	0.6493	0.1641	0.1035	0.0807	0.0024	0.4589	0.4589	-0.3921	-0.3451	-0.3523	0.1851	0.0256	-5.30
03854	B	F	8622	0.5865	0.1383	0.5865	0.1341	0.1383	0.0029	0.3980	-0.3192	0.3980	-0.3424	-0.3143	0.5225	0.0248	-0.40
03855	A	F	8622	0.7564	0.7564	0.1189	0.0596	0.0627	0.0023	0.4131	0.4131	-0.3122	-0.3277	-0.2584	-0.4355	0.0281	-1.90
03856	D	F	8622	0.8855	0.0205	0.0290	0.0633	0.8855	0.0016	0.2718	-0.1709	-0.1892	-0.1745	0.2718	-1.5035	0.0368	1.70
03857	B	F	8622	0.6196	0.0924	0.6196	0.1045	0.1800	0.0035	0.4233	-0.3669	0.4233	-0.3769	-0.3078	0.3394	0.0252	-0.60
03858	B	M	8619	0.8972	0.0678	0.8972	0.0253	0.0092	0.0006	0.3333	-0.2471	0.3333	-0.2252	-0.1749	-1.5973	0.0384	-1.90
03859	C	M	8619	0.6375	0.1861	0.0767	0.6375	0.0990	0.0007	0.4791	-0.4934	-0.3104	0.4791	-0.2858	0.2760	0.0254	-7.80

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03860	D	M	8619	0.5977	0.0390	0.0417	0.3212	0.5977	0.0005	0.5072	-0.3660	-0.2733	-0.4935	0.5072	0.4982	0.0249	-9.90
03861	D	M	8619	0.6761	0.2033	0.0975	0.0224	0.6761	0.0008	0.4635	-0.4724	-0.2610	-0.2130	0.4635	0.0655	0.0260	-7.40
03862	C	F	8619	0.7871	0.0362	0.1393	0.7871	0.0365	0.0008	0.5352	-0.3280	-0.4592	0.5352	-0.3457	-0.6383	0.0295	-9.90
03863	B	F	8619	0.4866	0.0985	0.4866	0.2852	0.1284	0.0013	0.4931	-0.4147	0.4931	-0.4408	-0.5094	1.0463	0.0244	-7.60
03864	D	F	8619	0.8856	0.0388	0.0193	0.0558	0.8856	0.0006	0.3896	-0.2648	-0.2475	-0.2636	0.3896	-1.5013	0.0372	-4.80
03865	A	F	8619	0.7269	0.7269	0.0542	0.1950	0.0230	0.0009	0.4727	0.4727	-0.3520	-0.4019	-0.2865	-0.2277	0.0272	-8.30
03866	C	F	8619	0.6199	0.1135	0.1868	0.6199	0.0783	0.0015	0.4402	-0.3761	-0.3665	0.4402	-0.3303	0.3701	0.0252	-2.80
03867	D	F	8619	0.8531	0.0302	0.0563	0.0594	0.8531	0.0010	0.3498	-0.2747	-0.2318	-0.2115	0.3498	-1.1394	0.0334	-1.10
03868	B	F	8619	0.5734	0.1790	0.5734	0.1984	0.0484	0.0008	0.4926	-0.4257	0.4926	-0.4307	-0.4264	0.6153	0.0247	-9.00
03869	A	F	8619	0.8491	0.8491	0.0200	0.0994	0.0303	0.0013	0.3862	0.3862	-0.2501	-0.2654	-0.3066	-1.1051	0.0331	-1.20
03870	A	M	8653	0.6516	0.6516	0.1099	0.1820	0.0556	0.0009	0.4296	0.4296	-0.2943	-0.3717	-0.3585	0.1822	0.0257	-2.30
03871	A	M	8653	0.8699	0.8699	0.0548	0.0381	0.0369	0.0003	0.5176	0.5176	-0.3601	-0.3550	-0.3474	-1.3715	0.0354	-9.90
03872	C	M	8653	0.7734	0.0450	0.1093	0.7734	0.0715	0.0008	0.4265	-0.2734	-0.4080	0.4265	-0.2071	-0.5507	0.0288	-2.80
03873	A	M	8653	0.8543	0.8543	0.0521	0.0299	0.0628	0.0009	0.4421	0.4421	-0.3127	-0.2859	-0.3011	-1.1834	0.0336	-6.60
03874	D	F	8653	0.5801	0.0526	0.1361	0.2294	0.5801	0.0017	0.3960	-0.3999	-0.4174	-0.2587	0.3960	0.5712	0.0248	2.90
03875	C	F	8653	0.4396	0.0780	0.2145	0.4396	0.2663	0.0016	0.3443	-0.3253	-0.4255	0.3443	-0.2391	1.2650	0.0246	8.30
03876	A	F	8653	0.7441	0.7441	0.1440	0.0723	0.0374	0.0021	0.5145	0.5145	-0.3801	-0.4300	-0.3743	-0.3675	0.0278	-9.20
03877	C	F	8653	0.5878	0.0582	0.0934	0.5878	0.2596	0.0010	0.4703	-0.3268	-0.2844	0.4703	-0.4763	0.5153	0.0249	-4.70
03878	D	F	8653	0.7541	0.1002	0.0707	0.0736	0.7541	0.0014	0.5726	-0.4941	-0.3863	-0.4088	0.5726	-0.4511	0.0283	-9.90
03879	D	F	8653	0.3913	0.3643	0.0670	0.1757	0.3913	0.0017	0.4628	-0.5347	-0.4435	-0.3141	0.4628	1.5262	0.0250	-3.30
03880	A	F	8653	0.7581	0.7581	0.1113	0.0786	0.0502	0.0018	0.4883	0.4883	-0.3811	-0.3594	-0.3383	-0.4567	0.0283	-8.00
03881	C	F	8653	0.7499	0.2145	0.0161	0.7499	0.0168	0.0028	0.3643	-0.3102	-0.2518	0.3643	-0.2493	-0.4082	0.0280	-0.10
03882	A	M	8644	0.5171	0.5171	0.1883	0.1458	0.1472	0.0016	0.3637	0.3637	-0.2987	-0.3136	-0.3620	0.8802	0.0244	5.00
03883	D	M	8644	0.7281	0.1289	0.0538	0.0878	0.7281	0.0014	0.5336	-0.4124	-0.4241	-0.4011	0.5336	-0.2655	0.0272	-9.90
03884	A	M	8644	0.7779	0.7779	0.1999	0.0124	0.0089	0.0009	0.3090	0.3090	-0.2759	-0.1580	-0.1756	-0.5860	0.0289	0.20
03885	C	M	8644	0.8791	0.0215	0.0511	0.8791	0.0467	0.0015	0.4343	-0.2203	-0.3062	0.4343	-0.3159	-1.4475	0.0362	-7.30
03886	A	F	8644	0.7761	0.7761	0.0569	0.1317	0.0332	0.0021	0.3720	0.3720	-0.3177	-0.2483	-0.2641	-0.5710	0.0288	0.60
03887	D	F	8644	0.7383	0.0597	0.1283	0.0723	0.7383	0.0014	0.4659	-0.3957	-0.3629	-0.2942	0.4659	-0.3375	0.0275	-5.50
03888	D	F	8644	0.3864	0.3960	0.1283	0.0869	0.3864	0.0024	0.5722	-0.6419	-0.4867	-0.4304	0.5722	1.5268	0.0249	-9.90
03889	B	F	8644	0.7885	0.1015	0.7885	0.0500	0.0589	0.0012	0.3557	-0.2221	0.3557	-0.3180	-0.2288	-0.6636	0.0294	1.60
03890	C	F	8644	0.6318	0.1362	0.1358	0.6318	0.0946	0.0016	0.4015	-0.2718	-0.3914	0.4015	-0.2834	0.2877	0.0252	-1.00
03891	C	F	8644	0.5213	0.2978	0.0721	0.5213	0.1065	0.0023	0.5015	-0.4415	-0.4128	0.5015	-0.5027	0.8473	0.0244	-7.20
03892	A	F	8644	0.9378	0.9378	0.0148	0.0326	0.0135	0.0013	0.3092	0.3092	-0.1755	-0.2500	-0.1247	-2.2747	0.0485	-4.20
03893	D	F	8644	0.7426	0.0442	0.1142	0.0961	0.7426	0.0029	0.2575	-0.2288	-0.1859	-0.1504	0.2575	-0.3482	0.0276	8.10
03894	C	M	8609	0.7916	0.0616	0.1235	0.7916	0.0224	0.0009	0.4714	-0.3901	-0.3704	0.4714	-0.2173	-0.6641	0.0296	-5.60
03895	D	M	8609	0.5196	0.1196	0.2364	0.1227	0.5196	0.0017	0.5033	-0.4680	-0.4721	-0.4117	0.5033	0.8906	0.0246	-6.80
03896	A	M	8609	0.3905	0.3905	0.3183	0.2453	0.0448	0.0010	0.4086	0.4086	-0.5484	-0.2192	-0.3781	1.5394	0.0250	1.00
03897	B	M	8609	0.4913	0.2726	0.4913	0.0858	0.1487	0.0015	0.5254	-0.6029	0.5254	-0.3447	-0.3659	1.0187	0.0245	-9.80
03898	D	F	8609	0.5547	0.0788	0.1978	0.1675	0.5547	0.0013	0.4134	-0.3733	-0.3783	-0.3007	0.4134	0.7071	0.0247	-0.70
03899	A	F	8609	0.3450	0.3450	0.2065	0.2276	0.2170	0.0039	0.2399	0.2399	-0.2298	-0.2265	-0.2851	1.7940	0.0256	9.90
03900	B	F	8609	0.4843	0.1043	0.4843	0.2781	0.1318	0.0015	0.4662	-0.4434	0.4662	-0.4673	-0.3494	1.0574	0.0245	-4.10
03901	D	F	8609	0.4948	0.0950	0.2416	0.1666	0.4948	0.0020	0.2426	-0.2285	-0.1971	-0.2223	0.2426	1.0121	0.0245	9.90
03902	B	F	8609	0.5189	0.1653	0.5189	0.0893	0.2249	0.0016	0.3736	-0.3332	0.3736	-0.4097	-0.2819	0.8894	0.0246	3.20
03903	D	F	8609	0.8714	0.0302	0.0599	0.0375	0.8714	0.0009	0.4516	-0.3070	-0.3133	-0.2873	0.4516	-1.3271	0.0351	-8.90
03904	D	F	8609	0.8597	0.0470	0.0594	0.0324	0.8597	0.0015	0.3047	-0.2129	-0.1429	-0.2694	0.3047	-1.2135	0.0340	3.00
03905	B	F	8609	0.7458	0.1172	0.7458	0.0460	0.0885	0.0024	0.3627	-0.2377	0.3627	-0.2597	-0.3067	-0.3647	0.0278	2.40
03906	B	M	8618	0.9058	0.0370	0.9058	0.0178	0.0392	0.0002	0.3064	-0.3073	0.3064	-0.1482	-0.1201	-1.7519	0.0401	1.20
03907	D	M	8618	0.6889	0.0905	0.1712	0.0485	0.6889	0.0009	0.5602	-0.4841	-0.4641	-0.3700	0.5602	-0.0399	0.0264	-9.90
03908	B	M	8618	0.4728	0.2743	0.4728	0.1489	0.1013	0.0027	0.4328	-0.4288	0.4328	-0.3347	-0.4169	1.0906	0.0245	-1.30
03909	C	M	8618	0.7731	0.0752	0.1201	0.7731	0.0302	0.0014	0.5172	-0.3673	-0.4401	0.5172	-0.2866	-0.5657	0.0289	-9.90

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03910	A	F	8618	0.6911	0.6911	0.1121	0.0934	0.1018	0.0016	0.4860	0.4860	-0.3906	-0.4483	-0.2926	-0.0294	0.0264	-7.90
03911	D	F	8618	0.6839	0.0479	0.1989	0.0681	0.6839	0.0012	0.2343	-0.2019	-0.1391	-0.2453	0.2343	0.0218	0.0262	9.90
03912	D	F	8618	0.6139	0.0512	0.2052	0.1276	0.6139	0.0021	0.4369	-0.3616	-0.3490	-0.3781	0.4369	0.3853	0.0252	-1.90
03913	C	F	8618	0.5460	0.2799	0.0839	0.5460	0.0883	0.0020	0.3546	-0.2726	-0.3744	0.3546	-0.3065	0.7431	0.0246	6.90
03914	A	F	8618	0.4486	0.4486	0.2603	0.1605	0.1282	0.0024	0.3759	0.3759	-0.2818	-0.3730	-0.4371	1.2402	0.0246	4.70
03915	C	F	8618	0.5766	0.2470	0.0652	0.5766	0.1086	0.0026	0.5405	-0.4655	-0.4746	0.5405	-0.4831	0.5732	0.0248	-9.00
03916	D	F	8618	0.8862	0.0107	0.0406	0.0603	0.8862	0.0022	0.3096	-0.1948	-0.2829	-0.1509	0.3096	-1.5013	0.0370	1.10
03917	D	F	8618	0.6982	0.0614	0.1814	0.0559	0.6982	0.0031	0.3935	-0.3869	-0.2746	-0.2862	0.3935	-0.0722	0.0265	1.60
03918	B	M	8601	0.5844	0.0820	0.5844	0.0330	0.2997	0.0009	0.2128	0.0104	0.2128	-0.1669	-0.2491	0.5278	0.0248	9.90
03919	B	M	8601	0.6253	0.1017	0.6253	0.2342	0.0380	0.0008	0.4682	-0.4367	0.4682	-0.4109	-0.2139	0.3266	0.0252	-8.00
03920	A	M	8601	0.8129	0.8129	0.0413	0.0365	0.1084	0.0009	0.4379	0.4379	-0.3084	-0.2818	-0.3294	-0.8233	0.0307	-7.20
03921	D	M	8601	0.4438	0.4970	0.0333	0.0253	0.4438	0.0006	0.3021	-0.2744	-0.2923	-0.3284	0.3021	1.2610	0.0246	9.90
03922	B	F	8601	0.7339	0.0352	0.7339	0.1487	0.0814	0.0008	0.4876	-0.3689	0.4876	-0.4285	-0.2962	-0.2885	0.0274	-6.60
03923	A	F	8601	0.6379	0.6379	0.1221	0.1113	0.1268	0.0019	0.4631	0.4631	-0.3462	-0.3595	-0.4131	0.2661	0.0254	-5.70
03924	C	F	8601	0.3836	0.1052	0.2114	0.3836	0.2982	0.0016	0.3204	-0.4260	-0.3288	0.3204	-0.2706	1.5644	0.0250	8.10
03925	D	F	8601	0.4211	0.1227	0.1329	0.3218	0.4211	0.0015	0.4519	-0.4955	-0.4130	-0.4151	0.4519	1.3671	0.0247	-3.10
03926	D	F	8601	0.7346	0.1264	0.0817	0.0552	0.7346	0.0021	0.3506	-0.2567	-0.2892	-0.2168	0.3506	-0.2862	0.0274	4.50
03927	A	F	8601	0.9406	0.9406	0.0300	0.0178	0.0105	0.0012	0.3376	0.3376	-0.2356	-0.2063	-0.1782	-2.2941	0.0493	-6.40
03928	D	F	8601	0.1799	0.0608	0.4626	0.2948	0.1799	0.0019	0.0976	-0.2069	-0.0333	-0.2166	0.0976	2.8454	0.0310	9.90
03929	C	F	8601	0.6833	0.0383	0.2215	0.6833	0.0535	0.0035	0.3605	-0.2847	-0.2279	0.3605	-0.4300	0.0166	0.0262	2.90
03930	A	M	8580	0.8893	0.8893	0.0466	0.0305	0.0328	0.0008	0.3926	0.3926	-0.2587	-0.2545	-0.2556	-1.5436	0.0377	-6.20
03931	D	M	8580	0.7479	0.0832	0.0950	0.0731	0.7479	0.0008	0.4514	-0.2806	-0.3466	-0.3744	0.4514	-0.3677	0.0278	-5.20
03932	D	M	8580	0.7152	0.0514	0.1091	0.1231	0.7152	0.0013	0.4008	-0.1703	-0.3519	-0.3256	0.4008	-0.1516	0.0268	-2.20
03933	B	M	8580	0.7568	0.1269	0.7568	0.0393	0.0754	0.0016	0.2215	-0.1295	0.2215	-0.1841	-0.1745	-0.3974	0.0280	8.70
03934	C	F	8580	0.9062	0.0613	0.0157	0.9062	0.0162	0.0006	0.3609	-0.3179	-0.2157	0.3609	-0.1069	-1.7221	0.0400	-3.70
03935	C	F	8580	0.5443	0.1633	0.1481	0.5443	0.1422	0.0021	0.4358	-0.4646	-0.3769	0.4358	-0.2881	0.7528	0.0245	-1.60
03936	B	F	8580	0.8664	0.0645	0.8664	0.0245	0.0436	0.0010	0.2051	-0.1908	0.2051	-0.0950	-0.0880	-1.2692	0.0346	4.10
03937	D	F	8580	0.6397	0.2193	0.0882	0.0516	0.6397	0.0010	0.5081	-0.4705	-0.3131	-0.4114	0.5081	0.2653	0.0254	-9.90
03938	B	F	8580	0.7121	0.1514	0.7121	0.0296	0.1059	0.0009	0.3328	-0.2806	0.3328	-0.1719	-0.2502	-0.1422	0.0268	2.90
03939	D	F	8580	0.9235	0.0179	0.0309	0.0267	0.9235	0.0009	0.3181	-0.2392	-0.1467	-0.2312	0.3181	-1.9940	0.0441	-2.30
03940	B	F	8580	0.6844	0.1139	0.6844	0.1635	0.0361	0.0021	0.3485	-0.3554	0.3485	-0.2108	-0.2317	0.0260	0.0261	1.40
03941	C	F	8580	0.8536	0.0692	0.0564	0.8536	0.0177	0.0030	0.4669	-0.3710	-0.3372	0.4669	-0.2079	-1.1676	0.0336	-9.50
03942	B	M	8568	0.7718	0.0507	0.7718	0.0476	0.1292	0.0007	0.5573	-0.3467	0.5573	-0.4308	-0.4551	-0.5531	0.0289	-9.90
03943	C	M	8568	0.7393	0.0110	0.1942	0.7393	0.0549	0.0007	0.3099	-0.2244	-0.2002	0.3099	-0.3464	-0.3247	0.0277	7.60
03944	C	M	8568	0.4422	0.2752	0.1641	0.4422	0.1165	0.0020	0.3976	-0.4574	-0.3389	0.3976	-0.2592	1.2517	0.0247	3.00
03945	D	M	8568	0.6731	0.0479	0.1066	0.1710	0.6731	0.0015	0.3932	-0.2398	-0.3559	-0.2964	0.3932	0.0512	0.0261	-1.10
03946	D	F	8568	0.9251	0.0481	0.0107	0.0148	0.9251	0.0013	0.3449	-0.2734	-0.1753	-0.1777	0.3449	-2.0292	0.0443	-6.00
03947	C	F	8568	0.6964	0.0891	0.0886	0.6964	0.1250	0.0009	0.4592	-0.3038	-0.3665	0.4592	-0.3831	-0.0763	0.0266	-4.40
03948	B	F	8568	0.8520	0.0483	0.8520	0.0771	0.0212	0.0013	0.3731	-0.2293	0.3731	-0.2946	-0.2069	-1.1639	0.0335	-3.30
03949	B	F	8568	0.6375	0.1422	0.6375	0.0930	0.1255	0.0019	0.4506	-0.2860	0.4506	-0.3838	-0.4297	0.2546	0.0255	-1.30
03950	D	F	8568	0.8377	0.0257	0.0825	0.0532	0.8377	0.0009	0.3952	-0.2445	-0.2400	-0.3390	0.3952	-1.0420	0.0324	-1.50
03951	B	F	8568	0.3455	0.1038	0.3455	0.3452	0.2045	0.0011	0.2846	-0.3290	0.2846	-0.2170	-0.3681	1.7749	0.0257	9.90
03952	C	F	8568	0.8954	0.0139	0.0792	0.8954	0.0107	0.0007	0.3467	-0.1865	-0.2840	0.3467	-0.1789	-1.5983	0.0382	-3.30
03953	D	F	8568	0.6429	0.0237	0.0608	0.2702	0.6429	0.0025	0.5399	-0.3158	-0.3716	-0.5141	0.5399	0.2112	0.0257	-9.90
03954	B	M	8555	0.6070	0.0450	0.6070	0.0290	0.3182	0.0008	0.2088	-0.0894	0.2088	-0.1651	-0.1935	0.4039	0.0251	9.90
03955	B	M	8555	0.7773	0.2088	0.7773	0.0078	0.0058	0.0002	0.3450	-0.3219	0.3450	-0.1601	-0.1576	-0.5686	0.0290	-3.50
03956	A	M	8555	0.7070	0.7070	0.1098	0.0573	0.1248	0.0012	0.4401	0.4401	-0.2282	-0.3942	-0.4038	-0.1216	0.0267	-3.30
03957	B	M	8555	0.7951	0.1217	0.7951	0.0566	0.0259	0.0007	0.4326	-0.3016	0.4326	-0.3528	-0.2996	-0.6817	0.0297	-3.80
03958	D	F	8555	0.4998	0.3757	0.0771	0.0463	0.4998	0.0011	0.3733	-0.3530	-0.2352	-0.3987	0.3733	0.9679	0.0245	5.50
03959	D	F	8555	0.4745	0.3337	0.0748	0.1158	0.4745	0.0012	0.5126	-0.5525	-0.4148	-0.3440	0.5126	1.0936	0.0246	-9.90

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
03960	C	F	8555	0.5198	0.1590	0.1972	0.5198	0.1214	0.0026	0.3564	-0.3921	-0.2779	0.3564	-0.2553	0.8682	0.0246	5.60
03961	B	F	8555	0.9174	0.0192	0.9174	0.0480	0.0145	0.0009	0.3102	-0.1989	0.3102	-0.2017	-0.2055	-1.8776	0.0422	-1.60
03962	C	F	8555	0.6894	0.0539	0.0417	0.6894	0.2125	0.0025	0.3939	-0.2999	-0.2970	0.3939	-0.3169	-0.0173	0.0263	-1.50
03963	D	F	8555	0.6186	0.0318	0.2811	0.0673	0.6186	0.0012	0.5027	-0.3450	-0.5370	-0.1555	0.5027	0.3626	0.0252	-5.10
03964	B	F	8555	0.7366	0.0231	0.7366	0.2008	0.0386	0.0008	0.3994	-0.2890	0.3994	-0.3194	-0.3119	-0.3173	0.0276	-4.30
03965	D	F	8555	0.7718	0.0656	0.0679	0.0930	0.7718	0.0016	0.4490	-0.3251	-0.3220	-0.3212	0.4490	-0.5319	0.0287	-7.20
03966	A	M	8590	0.4854	0.4854	0.1707	0.2374	0.1051	0.0014	0.3894	0.3894	-0.3195	-0.3811	-0.3566	1.0419	0.0245	1.10
03967	B	M	8590	0.8318	0.0510	0.8318	0.0494	0.0669	0.0009	0.4220	-0.3114	0.4220	-0.2968	-0.2652	-1.0015	0.0320	-4.00
03968	D	M	8590	0.5973	0.0261	0.1766	0.1991	0.5973	0.0009	0.3569	-0.1944	-0.4537	-0.1787	0.3569	0.4714	0.0250	4.30
03969	C	M	8590	0.7407	0.1338	0.0956	0.7407	0.0282	0.0017	0.4083	-0.3745	-0.2665	0.4083	-0.1916	-0.3400	0.0277	-4.60
03970	D	F	8590	0.3213	0.2590	0.1342	0.2836	0.3213	0.0019	0.3626	-0.3376	-0.3623	-0.4389	0.3626	1.8941	0.0259	5.50
03971	C	F	8590	0.6708	0.0803	0.2047	0.6708	0.0427	0.0015	0.5628	-0.3529	-0.5525	0.5628	-0.3352	0.0736	0.0260	-9.90
03972	C	F	8590	0.6871	0.1725	0.0609	0.6871	0.0781	0.0014	0.4036	-0.3217	-0.3635	0.4036	-0.2416	-0.0036	0.0262	-2.10
03973	D	F	8590	0.7200	0.0360	0.2013	0.0414	0.7200	0.0013	0.4582	-0.3953	-0.3566	-0.3504	0.4582	-0.2300	0.0272	-6.60
03974	B	F	8590	0.8006	0.0930	0.8006	0.0377	0.0672	0.0015	0.5122	-0.3693	0.5122	-0.3040	-0.4292	-0.7359	0.0300	-7.20
03975	D	F	8590	0.9275	0.0147	0.0180	0.0385	0.9275	0.0013	0.3801	-0.2187	-0.2252	-0.2696	0.3801	-2.0752	0.0451	-7.80
03976	B	F	8590	0.6070	0.1455	0.6070	0.2113	0.0348	0.0014	0.3707	-0.3951	0.3707	-0.2530	-0.2512	0.4206	0.0251	2.20
03977	A	F	8590	0.7311	0.7311	0.1515	0.0682	0.0456	0.0036	0.4017	0.4017	-0.2919	-0.3071	-0.3254	-0.2671	0.0273	-1.50
03978	A	M	8607	0.7600	0.7600	0.1650	0.0401	0.0343	0.0007	0.3736	0.3736	-0.2854	-0.2935	-0.2460	-0.4565	0.0282	-3.50
03979	D	M	8607	0.6017	0.2915	0.0675	0.0387	0.6017	0.0006	0.2832	-0.2022	-0.3050	-0.2405	0.2832	0.4620	0.0250	9.20
03980	A	M	8607	0.6071	0.6071	0.0888	0.0974	0.2044	0.0024	0.4718	0.4718	-0.3996	-0.3679	-0.3991	0.4238	0.0250	-9.30
03981	B	M	8607	0.5216	0.2718	0.5216	0.1058	0.0989	0.0020	0.5039	-0.5809	0.5039	-0.2894	-0.3077	0.8491	0.0245	-8.80
03982	B	F	8607	0.5774	0.2505	0.5774	0.0696	0.1012	0.0013	0.5697	-0.5578	0.5697	-0.3432	-0.4854	0.5594	0.0248	-9.90
03983	D	F	8607	0.6925	0.1306	0.0916	0.0839	0.6925	0.0015	0.4898	-0.4649	-0.3484	-0.3099	0.4898	-0.0382	0.0263	-5.80
03984	C	F	8607	0.7585	0.0898	0.1000	0.7585	0.0501	0.0016	0.3167	-0.2456	-0.2479	0.3167	-0.1705	-0.4335	0.0281	7.30
03985	A	F	8607	0.3452	0.3452	0.1733	0.2758	0.2040	0.0016	0.1769	0.1769	-0.3979	-0.0483	-0.1552	1.7728	0.0256	9.90
03986	D	F	8607	0.4859	0.1660	0.0949	0.2513	0.4859	0.0019	0.2784	-0.2897	-0.3968	-0.1504	0.2784	1.0381	0.0245	9.90
03987	B	F	8607	0.6660	0.1900	0.6660	0.0763	0.0652	0.0026	0.3224	-0.2002	0.3224	-0.3428	-0.2494	0.1196	0.0258	5.00
03988	D	F	8607	0.7640	0.1335	0.0525	0.0475	0.7640	0.0024	0.4904	-0.4080	-0.3205	-0.3308	0.4904	-0.4944	0.0284	-8.00
03989	D	F	8607	0.7639	0.0426	0.0805	0.1096	0.7639	0.0034	0.5344	-0.3371	-0.4091	-0.4245	0.5344	-0.4718	0.0283	-9.90
03990	D	M	8566	0.4047	0.4516	0.1079	0.0348	0.4047	0.0011	0.3914	-0.3345	-0.4910	-0.3873	0.3914	1.4612	0.0250	5.90
03991	B	M	8566	0.6062	0.0419	0.6062	0.1809	0.1704	0.0005	0.4518	-0.2668	0.4518	-0.3260	-0.4605	0.4290	0.0251	-4.80
03992	B	M	8566	0.7344	0.0558	0.7344	0.1250	0.0834	0.0014	0.4671	-0.2976	0.4671	-0.3605	-0.3882	-0.2950	0.0275	-5.00
03993	A	M	8566	0.5767	0.5767	0.2215	0.1528	0.0477	0.0013	0.5334	0.5334	-0.4683	-0.4867	-0.3804	0.5649	0.0249	-9.90
03994	D	F	8566	0.6066	0.0390	0.2853	0.0679	0.6066	0.0012	0.5236	-0.4045	-0.4881	-0.3684	0.5236	0.4113	0.0251	-9.90
03995	D	F	8566	0.5693	0.1073	0.1334	0.1867	0.5693	0.0033	0.4135	-0.3390	-0.3104	-0.3948	0.4135	0.6231	0.0248	-0.90
03996	B	F	8566	0.7599	0.1277	0.7599	0.0319	0.0792	0.0014	0.3747	-0.3216	0.3747	-0.2555	-0.2191	-0.4689	0.0283	-0.90
03997	C	F	8566	0.4988	0.3456	0.0572	0.4988	0.0977	0.0007	0.5537	-0.5987	-0.3573	0.5537	-0.3477	0.9684	0.0246	-9.90
03998	D	F	8566	0.7555	0.0941	0.0546	0.0939	0.7555	0.0019	0.4922	-0.3974	-0.3503	-0.3408	0.4922	-0.4504	0.0282	-8.30
03999	C	F	8566	0.7749	0.0064	0.0402	0.7749	0.1771	0.0014	0.3615	-0.1682	-0.2730	0.3615	-0.3024	-0.5784	0.0290	-1.30
04000	C	F	8566	0.7407	0.0686	0.1558	0.7407	0.0332	0.0016	0.3762	-0.3121	-0.2594	0.3762	-0.3019	-0.3338	0.0276	3.30
04001	A	F	8566	0.7112	0.7112	0.1474	0.0420	0.0969	0.0025	0.3845	0.3845	-0.2952	-0.3246	-0.2764	-0.1626	0.0269	2.10

Appendix M:

2006 Uncommon Grade 7 Multiple Choice Statistics for Mathematics

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
04002	A	M	9602	0.4251	0.4251	0.1147	0.3769	0.0825	0.0008	0.2170	0.2170	-0.3421	-0.1409	-0.2208	1.0890	0.0234	9.90
04003	D	M	9602	0.4772	0.1291	0.2405	0.1522	0.4772	0.0010	0.4803	-0.5108	-0.4043	-0.4357	0.4803	0.8174	0.0232	-9.60
04004	A	M	9602	0.4787	0.4787	0.1115	0.2834	0.1254	0.0010	0.3034	0.3034	-0.3935	-0.1388	-0.4229	0.8066	0.0232	9.90
04005	C	M	9602	0.3913	0.1165	0.0779	0.3913	0.4132	0.0010	0.2108	-0.2394	-0.1984	0.2108	-0.1927	1.2533	0.0236	9.90
04006	B	F	9602	0.6334	0.0342	0.6334	0.1101	0.2213	0.0010	0.5528	-0.2476	0.5528	-0.5220	-0.4768	0.0185	0.0239	-9.90
04007	C	F	9602	0.3993	0.1047	0.1124	0.3993	0.3824	0.0012	0.2478	-0.3860	-0.3845	0.2478	-0.1219	1.2120	0.0235	9.90
04008	A	F	9602	0.3614	0.3614	0.1951	0.2282	0.2137	0.0017	0.2349	0.2349	-0.3359	-0.1570	-0.2099	1.4132	0.0239	9.90
04009	A	F	9602	0.5283	0.5283	0.1700	0.1587	0.1410	0.0020	0.4022	0.4022	-0.3806	-0.3086	-0.3478	0.5566	0.0232	1.50
04010	B	F	9602	0.4167	0.0905	0.4167	0.2183	0.2731	0.0015	0.2666	-0.4955	0.2666	-0.2833	-0.1220	1.1175	0.0234	9.90
04011	A	F	9602	0.7570	0.7570	0.0919	0.1138	0.0365	0.0008	0.3536	0.3536	-0.2865	-0.1958	-0.3302	-0.6709	0.0264	2.60
04012	A	F	9602	0.4650	0.4650	0.2586	0.1698	0.1042	0.0024	0.1223	0.1223	-0.0642	-0.1061	-0.1958	0.8939	0.0232	9.90
04013	C	F	9602	0.7178	0.0596	0.1907	0.7178	0.0292	0.0028	0.3637	-0.3008	-0.2679	0.3637	-0.2698	-0.4306	0.0253	-0.30
04014	B	M	8980	0.5565	0.1049	0.5565	0.2051	0.1314	0.0021	0.3909	-0.3290	0.3909	-0.3415	-0.3075	0.5249	0.0240	-0.20
04015	D	M	8980	0.4207	0.1626	0.1772	0.2367	0.4207	0.0028	0.3539	-0.3368	-0.3992	-0.2743	0.3539	1.1964	0.0242	4.80
04016	A	M	8980	0.6695	0.6695	0.1643	0.1257	0.0393	0.0012	0.3984	0.3984	-0.3081	-0.3332	-0.2826	-0.0766	0.0253	-0.20
04017	A	M	8980	0.7452	0.7452	0.0886	0.0793	0.0847	0.0021	0.4471	0.4471	-0.2913	-0.3444	-0.3504	-0.5059	0.0270	-5.30
04018	D	F	8980	0.7385	0.1455	0.0539	0.0604	0.7385	0.0017	0.5630	-0.4851	-0.3477	-0.4024	0.5630	-0.4855	0.0269	-9.90
04019	B	F	8980	0.2618	0.3156	0.2618	0.2640	0.1572	0.0013	-0.0383	0.1816	-0.0383	-0.0488	-0.0741	2.1001	0.0268	9.90
04020	D	F	8980	0.5939	0.0766	0.1492	0.1785	0.5939	0.0018	0.4421	-0.3786	-0.3652	-0.3585	0.4421	0.3305	0.0243	-5.90
04021	C	F	8980	0.7814	0.0576	0.0636	0.7814	0.0955	0.0019	0.4241	-0.3212	-0.2946	0.4241	-0.2902	-0.7654	0.0284	-5.60
04022	B	F	8980	0.5479	0.2570	0.5479	0.1340	0.0578	0.0033	0.4371	-0.4162	0.4371	-0.3245	-0.3259	0.5603	0.0240	-5.60
04023	A	F	8980	0.5707	0.5707	0.1602	0.0904	0.1769	0.0017	0.4195	0.4195	-0.4017	-0.3827	-0.2935	0.4429	0.0241	-1.10
04024	C	F	8980	0.5042	0.0754	0.0844	0.5042	0.3333	0.0027	0.2695	-0.3255	-0.3217	0.2695	-0.1692	0.7870	0.0239	9.90
04025	D	F	8980	0.4086	0.0597	0.1782	0.3507	0.4086	0.0029	0.3167	-0.4823	-0.2381	-0.2969	0.3167	1.2599	0.0243	9.90
04026	B	M	8975	0.8841	0.0372	0.8841	0.0423	0.0353	0.0010	0.3996	-0.2816	0.3996	-0.2473	-0.2556	-1.6136	0.0359	-6.10
04027	D	M	8975	0.8699	0.0485	0.0396	0.0403	0.8699	0.0018	0.2945	-0.2305	-0.1957	-0.1459	0.2945	-1.4560	0.0342	0.90
04028	D	M	8975	0.3914	0.2107	0.1947	0.2014	0.3914	0.0018	0.3597	-0.3435	-0.3222	-0.3815	0.3597	1.3704	0.0244	4.40
04029	B	M	8975	0.8251	0.0906	0.8251	0.0445	0.0387	0.0012	0.4430	-0.3141	0.4430	-0.2665	-0.3437	-1.0592	0.0306	-7.90
04030	C	F	8975	0.6365	0.1385	0.0874	0.6365	0.1367	0.0009	0.5109	-0.4949	-0.2952	0.5109	-0.4172	0.1249	0.0247	-9.90
04031	C	F	8975	0.4624	0.1129	0.1218	0.4624	0.3016	0.0013	0.1072	-0.1939	-0.1345	0.1072	-0.0213	1.0241	0.0239	9.90
04032	D	F	8975	0.1894	0.2540	0.1715	0.3831	0.1894	0.0020	-0.0779	0.0621	-0.0860	0.2010	-0.0779	2.6212	0.0298	9.90
04033	B	F	8975	0.4780	0.3930	0.4780	0.0772	0.0496	0.0022	0.2820	-0.2002	0.2820	-0.3663	-0.3315	0.9393	0.0239	9.90
04034	A	F	8975	0.6960	0.6960	0.0771	0.1448	0.0806	0.0014	0.5010	0.5010	-0.3831	-0.3718	-0.4100	-0.2034	0.0257	-9.90
04035	A	F	8975	0.7594	0.7594	0.0421	0.0283	0.1682	0.0019	0.3758	0.3758	-0.2420	-0.2779	-0.2948	-0.5952	0.0275	-1.60
04036	C	F	8975	0.5614	0.1695	0.1897	0.5614	0.0771	0.0022	0.4385	-0.4109	-0.3998	0.4385	-0.2471	0.5086	0.0240	-4.50
04037	A	F	8975	0.5462	0.5462	0.2001	0.1485	0.1013	0.0039	0.4259	0.4259	-0.3689	-0.3613	-0.3493	0.5855	0.0240	-4.80
04038	D	M	8957	0.7355	0.0886	0.0968	0.0776	0.7355	0.0015	0.3800	-0.2413	-0.2703	-0.3372	0.3800	-0.4328	0.0268	3.10
04039	A	M	8957	0.9111	0.9111	0.0319	0.0252	0.0310	0.0007	0.2048	0.2048	-0.1523	-0.0951	-0.1299	-1.9405	0.0402	3.90
04040	D	M	8957	0.5909	0.1760	0.0899	0.1415	0.5909	0.0018	0.4367	-0.3821	-0.3290	-0.3664	0.4367	0.3720	0.0244	-4.70
04041	B	M	8957	0.5154	0.2974	0.5154	0.1173	0.0680	0.0019	0.2883	-0.2192	0.2883	-0.3070	-0.2513	0.7542	0.0240	9.90
04042	B	F	8957	0.6111	0.1266	0.6111	0.1794	0.0796	0.0032	0.4648	-0.3494	0.4648	-0.4038	-0.3660	0.2710	0.0246	-7.80
04043	A	F	8957	0.3529	0.3529	0.1387	0.2671	0.2384	0.0030	0.3552	0.3552	-0.4014	-0.3408	-0.3578	1.5840	0.0250	5.50
04044	C	F	8957	0.7028	0.1041	0.1509	0.7028	0.0395	0.0027	0.5249	-0.4523	-0.4229	0.5249	-0.2884	-0.2418	0.0260	-9.90
04045	D	F	8957	0.7862	0.0219	0.0649	0.1258	0.7862	0.0012	0.4733	-0.2619	-0.4578	-0.3131	0.4733	-0.7744	0.0287	-6.10
04046	B	F	8957	0.7612	0.0377	0.7612	0.1442	0.0554	0.0015	0.4475	-0.2901	0.4475	-0.3297	-0.3710	-0.5995	0.0277	-6.90
04047	B	F	8957	0.2829	0.0719	0.2829	0.5264	0.1163	0.0025	0.3019	-0.3227	0.3019	-0.3295	-0.2234	1.9810	0.0263	9.90
04048	B	F	8957	0.6863	0.1360	0.6863	0.0827	0.0939	0.0011	0.4890	-0.4207	0.4890	-0.3123	-0.3857	-0.1493	0.0257	-8.10
04049	D	F	8957	0.8338	0.0569	0.0643	0.0428	0.8338	0.0022	0.4053	-0.2398	-0.2795	-0.3178	0.4053	-1.1162	0.0311	-2.40
04050	C	M	8975	0.5619	0.1463	0.1079	0.5619	0.1819	0.0020	0.5364	-0.5855	-0.4521	0.5364	-0.3626	0.4959	0.0242	-9.90
04051	D	M	8975	0.6322	0.1503	0.1142	0.1018	0.6322	0.0014	0.4626	-0.4577	-0.3193	-0.3290	0.4626	0.1484	0.0248	-3.40

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
04052	A	M	8975	0.8202	0.8202	0.0303	0.0801	0.0682	0.0012	0.3586	0.3586	-0.2116	-0.2725	-0.2389	-1.0303	0.0303	-2.20
04053	A	M	8975	0.5148	0.5148	0.1379	0.1889	0.1565	0.0019	0.4403	0.4403	-0.4228	-0.4029	-0.3348	0.7399	0.0241	-2.90
04054	B	F	8975	0.5549	0.1650	0.5549	0.1676	0.1111	0.0014	0.2878	-0.2248	0.2878	-0.2336	-0.2619	0.5442	0.0242	9.90
04055	C	F	8975	0.3821	0.3728	0.1656	0.3821	0.0764	0.0031	0.3241	-0.2976	-0.3885	0.3241	-0.2346	1.4162	0.0246	9.30
04056	C	F	8975	0.5256	0.0701	0.2974	0.5256	0.1056	0.0013	0.4842	-0.3776	-0.4681	0.4842	-0.3613	0.6840	0.0241	-7.70
04057	D	F	8975	0.8447	0.0583	0.0335	0.0613	0.8447	0.0022	0.5124	-0.3770	-0.3015	-0.3713	0.5124	-1.2521	0.0322	-9.90
04058	B	F	8975	0.5586	0.1149	0.5586	0.2859	0.0392	0.0014	0.5218	-0.3245	0.5218	-0.5364	-0.3668	0.5183	0.0242	-9.90
04059	C	F	8975	0.8098	0.0587	0.0616	0.8098	0.0687	0.0011	0.4226	-0.2999	-0.3421	0.4226	-0.2363	-0.9559	0.0298	-6.90
04060	B	F	8975	0.5983	0.1110	0.5983	0.1876	0.1022	0.0009	0.5778	-0.3926	0.5778	-0.5760	-0.4480	0.3071	0.0245	-9.90
04061	B	F	8975	0.7172	0.1975	0.7172	0.0340	0.0492	0.0020	0.4585	-0.4098	0.4585	-0.2508	-0.3059	-0.3445	0.0264	-5.70
04062	A	M	8907	0.5620	0.5620	0.0318	0.1905	0.2147	0.0010	0.3661	0.3661	-0.2809	-0.2143	-0.4106	0.5286	0.0242	3.50
04063	B	M	8907	0.6472	0.1352	0.6472	0.1228	0.0925	0.0022	0.2814	-0.2244	0.2814	-0.2501	-0.1637	0.0794	0.0250	9.80
04064	D	M	8907	0.7042	0.0844	0.0580	0.1515	0.7042	0.0019	0.4434	-0.3619	-0.3352	-0.3247	0.4434	-0.2535	0.0261	-5.30
04065	C	M	8907	0.4861	0.1753	0.1600	0.4861	0.1762	0.0025	0.3634	-0.3481	-0.3380	0.3634	-0.2859	0.9039	0.0240	4.10
04066	C	F	8907	0.4883	0.1728	0.3029	0.4883	0.0340	0.0020	0.4214	-0.5049	-0.3209	0.4214	-0.2877	0.8848	0.0240	-2.10
04067	B	F	8907	0.7902	0.0538	0.7902	0.1367	0.0187	0.0006	0.4768	-0.3594	0.4768	-0.3829	-0.2649	-0.7886	0.0289	-7.60
04068	D	F	8907	0.4371	0.1544	0.2308	0.1757	0.4371	0.0020	0.2920	-0.2925	-0.1544	-0.4054	0.2920	1.1522	0.0242	9.90
04069	D	F	8907	0.4848	0.1070	0.1225	0.2828	0.4848	0.0029	0.3955	-0.3456	-0.4053	-0.3319	0.3955	0.9085	0.0240	1.40
04070	A	F	8907	0.2335	0.2335	0.0428	0.6448	0.0777	0.0012	0.1954	0.1954	-0.3348	-0.1789	-0.2866	2.2911	0.0278	9.90
04071	C	F	8907	0.7358	0.0467	0.1037	0.7358	0.1119	0.0018	0.4072	-0.2764	-0.3838	0.4072	-0.2292	-0.4302	0.0269	-3.10
04072	C	F	8907	0.7266	0.1405	0.0832	0.7266	0.0476	0.0021	0.5286	-0.4717	-0.3801	0.5286	-0.3032	-0.3827	0.0267	-9.90
04073	B	F	8907	0.6887	0.1608	0.6887	0.0479	0.0991	0.0035	0.4101	-0.2123	0.4101	-0.3582	-0.4406	-0.1510	0.0257	1.00
04074	A	M	8916	0.6466	0.6466	0.1057	0.1672	0.0776	0.0029	0.4940	0.4940	-0.4450	-0.3553	-0.4032	0.0608	0.0250	-8.70
04075	D	M	8916	0.8313	0.0559	0.0566	0.0551	0.8313	0.0011	0.3499	-0.2172	-0.3131	-0.1795	0.3499	-1.1295	0.0312	0.00
04076	A	M	8916	0.7462	0.7462	0.1002	0.1152	0.0376	0.0009	0.4273	0.4273	-0.3197	-0.3251	-0.2885	-0.5183	0.0272	-5.60
04077	C	M	8916	0.7602	0.1839	0.0470	0.7602	0.0086	0.0002	0.3559	-0.3389	-0.1665	0.3559	-0.1574	-0.6034	0.0276	0.00
04078	C	F	8916	0.4788	0.1335	0.3054	0.4788	0.0810	0.0013	0.5192	-0.6079	-0.4785	0.5192	-0.2797	0.9081	0.0240	-9.90
04079	B	F	8916	0.4467	0.2052	0.4467	0.3093	0.0377	0.0010	0.3868	-0.3398	0.3868	-0.3638	-0.3903	1.0773	0.0241	1.90
04080	D	F	8916	0.4214	0.2968	0.1189	0.1606	0.4214	0.0024	0.3162	-0.2312	-0.4389	-0.2997	0.3162	1.2013	0.0242	8.40
04081	B	F	8916	0.5173	0.0839	0.5173	0.2299	0.1660	0.0029	0.2987	-0.2524	0.2987	-0.3252	-0.1777	0.7305	0.0240	9.90
04082	B	F	8916	0.6625	0.1689	0.6625	0.1265	0.0406	0.0015	0.4888	-0.4262	0.4888	-0.3791	-0.2984	-0.0269	0.0252	-9.90
04083	C	F	8916	0.6883	0.0720	0.1366	0.6883	0.1005	0.0026	0.4140	-0.3568	-0.3168	0.4140	-0.2741	-0.1637	0.0257	-3.20
04084	B	F	8916	0.2842	0.1311	0.2842	0.1641	0.4182	0.0024	0.1444	-0.0345	0.1444	-0.2012	-0.1801	1.9492	0.0262	9.90
04085	C	F	8916	0.5539	0.1644	0.0929	0.5539	0.1853	0.0035	0.3209	-0.3144	-0.3452	0.3209	-0.1834	0.5375	0.0241	8.90
04086	D	M	8910	0.8760	0.0193	0.0657	0.0383	0.8760	0.0008	0.2590	-0.1557	-0.1648	-0.1860	0.2590	-1.5128	0.0349	2.50
04087	C	M	8910	0.8499	0.0447	0.0680	0.8499	0.0360	0.0013	0.4901	-0.3154	-0.3801	0.4901	-0.2959	-1.2757	0.0326	-9.90
04088	C	M	8910	0.8996	0.0233	0.0231	0.8996	0.0531	0.0009	0.3014	-0.2065	-0.1772	0.3014	-0.1951	-1.7876	0.0382	-2.40
04089	D	M	8910	0.7973	0.0352	0.1065	0.0602	0.7973	0.0008	0.4021	-0.3004	-0.2966	-0.2560	0.4021	-0.8478	0.0292	-4.00
04090	A	F	8910	0.8760	0.8760	0.0663	0.0235	0.0338	0.0004	0.3907	0.3907	-0.2894	-0.2782	-0.2055	-1.5399	0.0352	-4.60
04091	C	F	8910	0.7181	0.0694	0.1585	0.7181	0.0527	0.0013	0.5176	-0.4190	-0.4110	0.5176	-0.3464	-0.3374	0.0264	-9.90
04092	B	F	8910	0.3332	0.1019	0.3332	0.4224	0.1412	0.0012	0.1389	0.0239	0.1389	-0.1483	-0.2365	1.6962	0.0253	9.90
04093	C	F	8910	0.8599	0.0629	0.0503	0.8599	0.0258	0.0011	0.3382	-0.2432	-0.2011	0.3382	-0.2232	-1.3653	0.0334	-2.40
04094	B	F	8910	0.4599	0.0755	0.4599	0.4213	0.0413	0.0019	0.4620	-0.4386	0.4620	-0.4347	-0.3298	1.0179	0.0241	-4.80
04095	B	F	8910	0.4485	0.0975	0.4485	0.3103	0.1415	0.0021	0.1746	-0.2673	0.1746	-0.0051	-0.3392	1.0885	0.0241	9.90
04096	D	F	8910	0.5761	0.0526	0.3056	0.0643	0.5761	0.0013	0.4900	-0.4731	-0.4179	-0.4225	0.4900	0.4266	0.0243	-7.50
04097	B	F	8910	0.6584	0.2031	0.6584	0.0780	0.0586	0.0019	0.4530	-0.3432	0.4530	-0.4264	-0.3297	-0.0014	0.0252	-4.30
04098	B	M	8901	0.6781	0.1017	0.6781	0.1181	0.1003	0.0018	0.3574	-0.3193	0.3574	-0.2362	-0.2601	-0.0764	0.0254	1.30
04099	D	M	8901	0.6096	0.1639	0.0755	0.1503	0.6096	0.0007	0.3443	-0.1881	-0.3208	-0.3478	0.3443	0.2886	0.0245	5.30
04100	B	M	8901	0.5989	0.1871	0.5989	0.0927	0.1193	0.0020	0.4149	-0.2986	0.4149	-0.3445	-0.3935	0.3281	0.0244	-2.70
04101	C	M	8901	0.6904	0.0599	0.0537	0.6904	0.1946	0.0015	0.3720	-0.3050	-0.3449	0.3720	-0.2499	-0.1523	0.0257	-1.70

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
04102	A	F	8901	0.8575	0.8575	0.0613	0.0544	0.0256	0.0011	0.3918	0.3918	-0.3171	-0.2236	-0.2317	-1.3127	0.0330	-5.50
04103	D	F	8901	0.1700	0.4537	0.1595	0.2145	0.1700	0.0024	0.0650	0.0088	-0.2276	-0.1706	0.0650	2.7681	0.0309	9.90
04104	D	F	8901	0.2667	0.2842	0.3066	0.1414	0.2667	0.0010	0.2430	-0.0530	-0.3753	-0.4263	0.2430	2.0616	0.0266	9.90
04105	C	F	8901	0.5758	0.0865	0.1252	0.5758	0.2110	0.0016	0.4457	-0.4493	-0.4237	0.4457	-0.2972	0.4442	0.0242	-6.00
04106	D	F	8901	0.6718	0.1765	0.0481	0.1021	0.6718	0.0015	0.3750	-0.1911	-0.3591	-0.3898	0.3750	-0.0647	0.0254	0.80
04107	B	F	8901	0.2935	0.0692	0.2935	0.1511	0.4850	0.0012	0.0031	-0.2671	0.0031	-0.1505	0.0988	1.9304	0.0260	9.90
04108	A	F	8901	0.5084	0.5084	0.1805	0.2545	0.0548	0.0018	0.3528	0.3528	-0.3654	-0.2589	-0.3607	0.7825	0.0239	5.80
04109	C	F	8901	0.8184	0.0855	0.0545	0.8184	0.0392	0.0024	0.3439	-0.1821	-0.3196	0.3439	-0.2206	-0.9714	0.0301	1.00
04110	D	M	8872	0.6047	0.0956	0.1781	0.1202	0.6047	0.0015	0.5208	-0.3963	-0.4976	-0.3711	0.5208	0.2924	0.0247	-9.90
04111	C	M	8872	0.6944	0.0470	0.1587	0.6944	0.0976	0.0023	0.3742	-0.2656	-0.2972	0.3742	-0.2821	-0.1935	0.0260	1.10
04112	C	M	8872	0.7628	0.0538	0.0303	0.7628	0.1521	0.0010	0.3899	-0.2981	-0.3002	0.3899	-0.2787	-0.6174	0.0279	-1.90
04113	A	M	8872	0.5126	0.5126	0.1585	0.1430	0.1845	0.0014	0.4823	0.4823	-0.3804	-0.3436	-0.5386	0.7604	0.0242	-7.30
04114	D	F	8872	0.6195	0.0846	0.1483	0.1466	0.6195	0.0009	0.3794	-0.3876	-0.2072	-0.3525	0.3794	0.2083	0.0248	3.80
04115	B	F	8872	0.7643	0.1748	0.7643	0.0232	0.0370	0.0007	0.4717	-0.3796	0.4717	-0.2940	-0.3817	-0.6213	0.0279	-6.80
04116	D	F	8872	0.7146	0.1060	0.0571	0.1215	0.7146	0.0008	0.4791	-0.3949	-0.3889	-0.3258	0.4791	-0.3191	0.0265	-7.30
04117	D	F	8872	0.5176	0.1202	0.1208	0.2399	0.5176	0.0016	0.6054	-0.5941	-0.5059	-0.5628	0.6054	0.7311	0.0242	-9.90
04118	B	F	8872	0.7694	0.1514	0.7694	0.0546	0.0230	0.0017	0.4850	-0.4104	0.4850	-0.3240	-0.2854	-0.6465	0.0281	-9.90
04119	A	F	8872	0.4824	0.4824	0.1847	0.2406	0.0904	0.0018	0.3062	0.3062	-0.2692	-0.2710	-0.2852	0.9259	0.0242	9.90
04120	C	F	8872	0.4743	0.3522	0.1119	0.4743	0.0606	0.0009	0.4344	-0.3681	-0.4355	0.4344	-0.4757	0.9523	0.0242	-1.50
04121	C	F	8872	0.9152	0.0125	0.0366	0.9152	0.0331	0.0025	0.3050	-0.1574	-0.1341	0.3050	-0.2888	-1.9967	0.0411	-0.50
04122	A	M	8912	0.5638	0.5638	0.1202	0.2123	0.1014	0.0022	0.3423	0.3423	-0.3487	-0.2524	-0.2698	0.4802	0.0242	6.50
04123	C	M	8912	0.3695	0.3036	0.2840	0.3695	0.0396	0.0033	0.4115	-0.5100	-0.3447	0.4115	-0.2845	1.4637	0.0247	0.00
04124	A	M	8912	0.7895	0.7895	0.0698	0.0659	0.0726	0.0022	0.5334	0.5334	-0.3705	-0.3810	-0.3982	-0.8214	0.0289	-9.90
04125	D	M	8912	0.6856	0.2375	0.0443	0.0312	0.6856	0.0013	0.4860	-0.4272	-0.3948	-0.2761	0.4860	-0.1694	0.0257	-7.30
04126	B	F	8912	0.4206	0.2571	0.4206	0.2029	0.1161	0.0034	0.2574	-0.1876	0.2574	-0.3723	-0.1387	1.2084	0.0243	9.90
04127	C	F	8912	0.3551	0.1945	0.2489	0.3551	0.1995	0.0020	0.1952	-0.0874	-0.1518	0.1952	-0.3531	1.5453	0.0249	9.90
04128	B	F	8912	0.4195	0.2281	0.4195	0.0720	0.2785	0.0018	0.4561	-0.5145	0.4561	-0.3087	-0.4096	1.2043	0.0243	-3.30
04129	D	F	8912	0.3481	0.1428	0.3031	0.2043	0.3481	0.0017	0.2951	-0.3884	-0.2749	-0.2709	0.2951	1.5909	0.0250	9.90
04130	D	F	8912	0.8485	0.0382	0.0382	0.0736	0.8485	0.0016	0.4747	-0.2345	-0.3107	-0.3949	0.4747	-1.2714	0.0324	-9.50
04131	C	F	8912	0.8315	0.0257	0.1072	0.8315	0.0336	0.0021	0.4506	-0.2776	-0.3565	0.4506	-0.2810	-1.1356	0.0312	-8.00
04132	C	F	8912	0.8402	0.0736	0.0477	0.8402	0.0366	0.0019	0.4721	-0.3362	-0.3440	0.4721	-0.2840	-1.2226	0.0320	-9.80
04133	D	F	8912	0.4771	0.1250	0.1653	0.2291	0.4771	0.0035	0.3333	-0.3395	-0.1920	-0.3546	0.3333	0.9252	0.0240	8.70
04134	D	M	8910	0.3758	0.1056	0.2958	0.2209	0.3758	0.0019	0.3277	-0.3938	-0.3625	-0.2197	0.3277	1.4383	0.0246	9.10
04135	A	M	8910	0.7245	0.7245	0.0788	0.1203	0.0746	0.0018	0.4931	0.4931	-0.3783	-0.3852	-0.3431	-0.3813	0.0265	-9.90
04136	D	M	8910	0.3846	0.1642	0.1572	0.2924	0.3846	0.0016	0.4147	-0.5140	-0.4560	-0.3150	0.4147	1.3785	0.0245	-3.00
04137	B	M	8910	0.5021	0.2751	0.5021	0.0805	0.1409	0.0015	0.2264	-0.0784	0.2264	-0.3818	-0.2747	0.7952	0.0239	9.90
04138	C	F	8910	0.6346	0.0752	0.1429	0.6346	0.1458	0.0016	0.5114	-0.3313	-0.4445	0.5114	-0.4362	0.1175	0.0248	-9.90
04139	B	F	8910	0.6176	0.2163	0.6176	0.0815	0.0837	0.0009	0.3828	-0.2697	0.3828	-0.3649	-0.3345	0.2054	0.0246	0.80
04140	A	F	8910	0.5086	0.5086	0.2943	0.1514	0.0439	0.0018	0.4885	0.4885	-0.3911	-0.5316	-0.4327	0.7584	0.0239	-9.90
04141	D	F	8910	0.5024	0.1499	0.0899	0.2553	0.5024	0.0025	0.4623	-0.4766	-0.4131	-0.3799	0.4623	0.7871	0.0239	-7.20
04142	A	F	8910	0.6291	0.6291	0.0565	0.2746	0.0384	0.0015	0.2459	0.2459	-0.3606	-0.1088	-0.3250	0.1628	0.0247	9.90
04143	C	F	8910	0.6982	0.0835	0.1237	0.6982	0.0929	0.0017	0.4402	-0.3269	-0.3300	0.4402	-0.3410	-0.2165	0.0258	-6.50
04144	A	F	8910	0.4321	0.4321	0.0604	0.4485	0.0576	0.0015	0.1664	0.1664	-0.3310	-0.0869	-0.3085	1.1595	0.0241	9.90
04145	D	F	8910	0.4718	0.0471	0.2045	0.2742	0.4718	0.0024	0.0949	-0.1005	-0.0281	-0.1222	0.0949	0.9521	0.0240	9.90
04146	B	M	8882	0.8633	0.0763	0.8633	0.0396	0.0203	0.0005	0.3903	-0.3126	0.3903	-0.2296	-0.2188	-1.3920	0.0338	-5.90
04147	C	M	8882	0.6413	0.0791	0.1523	0.6413	0.1265	0.0007	0.4398	-0.4647	-0.3839	0.4398	-0.2221	0.0973	0.0250	-5.30
04148	A	M	8882	0.5567	0.5567	0.1380	0.1974	0.1065	0.0014	0.5108	0.5108	-0.3533	-0.4457	-0.5463	0.5320	0.0242	-9.90
04149	B	M	8882	0.5299	0.1640	0.5299	0.1706	0.1339	0.0016	0.4175	-0.3491	0.4175	-0.4000	-0.3134	0.6717	0.0241	-2.20
04150	D	F	8882	0.7949	0.0491	0.1008	0.0543	0.7949	0.0010	0.5021	-0.3583	-0.3897	-0.3220	0.5021	-0.8386	0.0292	-9.90
04151	B	F	8882	0.4946	0.2881	0.4946	0.1290	0.0874	0.0009	0.4236	-0.4480	0.4236	-0.3149	-0.3034	0.8378	0.0240	-0.50

Item Detail				Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	Item Status	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
04152	D	F	8882	0.7702	0.0942	0.0840	0.0504	0.7702	0.0011	0.4352	-0.2933	-0.3343	-0.3186	0.4352	-0.6603	0.0281	-5.70
04153	A	F	8882	0.4622	0.4622	0.1461	0.1410	0.2495	0.0012	0.4232	0.4232	-0.4753	-0.3859	-0.3337	1.0132	0.0241	-2.10
04154	C	F	8882	0.6613	0.2695	0.0424	0.6613	0.0257	0.0010	0.4316	-0.3682	-0.3573	0.4316	-0.3065	-0.0033	0.0253	-4.00
04155	B	F	8882	0.3145	0.0767	0.3145	0.4836	0.1242	0.0011	-0.0073	-0.2135	-0.0073	0.0581	-0.0069	1.8061	0.0257	9.90
04156	D	F	8882	0.6027	0.1363	0.1188	0.1405	0.6027	0.0017	0.4287	-0.3753	-0.3412	-0.3427	0.4287	0.3042	0.0245	-2.90
04157	C	F	8882	0.7892	0.0552	0.0735	0.7892	0.0802	0.0019	0.4364	-0.2720	-0.3320	0.4364	-0.3179	-0.7930	0.0289	-6.00
04158	B	M	8922	0.4498	0.0593	0.4498	0.1723	0.3174	0.0012	0.2649	-0.3560	0.2649	-0.3811	-0.1187	1.0659	0.0242	9.90
04159	B	M	8922	0.8788	0.0290	0.8788	0.0681	0.0225	0.0015	0.3793	-0.2173	0.3793	-0.2897	-0.2250	-1.5754	0.0354	-4.70
04160	C	M	8922	0.7553	0.1009	0.0345	0.7553	0.1079	0.0013	0.2979	-0.2203	-0.2109	0.2979	-0.2134	-0.5735	0.0275	5.40
04161	B	M	8922	0.4070	0.3840	0.4070	0.0650	0.1420	0.0020	0.3783	-0.3887	0.3783	-0.3897	-0.2599	1.2860	0.0244	5.50
04162	D	F	8922	0.5888	0.0676	0.0912	0.2513	0.5888	0.0011	0.4204	-0.3248	-0.4012	-0.3410	0.4204	0.3663	0.0244	-1.50
04163	C	F	8922	0.7330	0.0695	0.1384	0.7330	0.0573	0.0018	0.5025	-0.3423	-0.4059	0.5025	-0.3684	-0.4555	0.0269	-9.90
04164	A	F	8922	0.6871	0.6871	0.1191	0.1038	0.0873	0.0027	0.4961	0.4961	-0.3954	-0.3383	-0.4239	-0.1618	0.0257	-9.50
04165	C	F	8922	0.5383	0.2541	0.1203	0.5383	0.0861	0.0012	0.3802	-0.3153	-0.3803	0.3802	-0.2830	0.6196	0.0241	3.50
04166	A	F	8922	0.8838	0.8838	0.0742	0.0241	0.0168	0.0011	0.3948	0.3948	-0.3048	-0.2385	-0.2154	-1.6109	0.0358	-8.00
04167	C	F	8922	0.6512	0.0475	0.2105	0.6512	0.0885	0.0022	0.4538	-0.3055	-0.4313	0.4538	-0.2677	0.0268	0.0251	-6.80
04168	C	F	8922	0.6993	0.1400	0.1083	0.6993	0.0510	0.0015	0.4998	-0.4447	-0.3381	0.4998	-0.3691	-0.2437	0.0260	-7.50
04169	B	F	8922	0.7640	0.0733	0.7640	0.0472	0.1138	0.0018	0.4969	-0.3804	0.4969	-0.3426	-0.3672	-0.6426	0.0279	-9.70
04170	C	M	8919	0.6162	0.0864	0.2398	0.6162	0.0564	0.0011	0.4540	-0.3879	-0.3917	0.4540	-0.2923	0.2229	0.0247	-5.50
04171	C	M	8919	0.8658	0.0281	0.0431	0.8658	0.0619	0.0011	0.4183	-0.2705	-0.2837	0.4183	-0.2841	-1.4269	0.0339	-7.50
04172	B	M	8919	0.6833	0.0713	0.6833	0.1903	0.0546	0.0006	0.3046	-0.3424	0.3046	-0.2097	-0.1547	-0.1463	0.0257	6.30
04173	C	M	8919	0.4863	0.0733	0.3558	0.4863	0.0833	0.0013	0.5143	-0.5310	-0.5185	0.5143	-0.2448	0.8793	0.0241	-9.90
04174	C	F	8919	0.5963	0.1710	0.1171	0.5963	0.1143	0.0015	0.5565	-0.5020	-0.3654	0.5565	-0.5380	0.3242	0.0245	-9.90
04175	B	F	8919	0.5313	0.1534	0.5313	0.0931	0.2204	0.0018	0.4293	-0.4789	0.4293	-0.3676	-0.2909	0.6596	0.0241	-2.50
04176	B	F	8919	0.5570	0.1245	0.5570	0.1553	0.1612	0.0020	0.4269	-0.2636	0.4269	-0.3848	-0.4199	0.5306	0.0242	-2.00
04177	D	F	8919	0.8418	0.0838	0.0342	0.0394	0.8418	0.0009	0.4256	-0.2956	-0.3049	-0.2785	0.4256	-1.2170	0.0319	-6.20
04178	B	F	8919	0.6169	0.0899	0.6169	0.2001	0.0903	0.0028	0.4328	-0.4026	0.4328	-0.3853	-0.2303	0.2309	0.0247	-4.90
04179	B	F	8919	0.5440	0.0878	0.5440	0.3060	0.0612	0.0010	0.4811	-0.4046	0.4811	-0.4169	-0.4528	0.5864	0.0242	-7.30
04180	A	F	8919	0.6673	0.6673	0.1358	0.1851	0.0099	0.0019	0.4880	0.4880	-0.3889	-0.4497	-0.2148	-0.0594	0.0254	-7.90
04181	C	F	8919	0.7929	0.0641	0.0727	0.7929	0.0656	0.0047	0.3574	-0.2572	-0.2256	0.3574	-0.2586	-0.8326	0.0290	-0.50
04182	D	M	8931	0.9095	0.0193	0.0418	0.0287	0.9095	0.0008	0.3892	-0.2120	-0.2853	-0.2430	0.3892	-1.9387	0.0400	-8.00
04183	B	M	8931	0.7390	0.1461	0.7390	0.0831	0.0297	0.0021	0.4300	-0.3125	0.4300	-0.3823	-0.2505	-0.4828	0.0270	-3.20
04184	B	M	8931	0.5922	0.1343	0.5922	0.1017	0.1702	0.0017	0.4092	-0.3804	0.4092	-0.3326	-0.2979	0.3406	0.0244	-1.10
04185	A	M	8931	0.5104	0.5104	0.0870	0.3353	0.0662	0.0011	0.4676	0.4676	-0.2794	-0.4548	-0.4546	0.7493	0.0240	-4.60
04186	B	F	8931	0.3530	0.3050	0.3530	0.2237	0.1171	0.0011	0.3411	-0.3765	0.3411	-0.2948	-0.3415	1.5617	0.0249	7.50
04187	C	F	8931	0.5170	0.1781	0.1307	0.5170	0.1715	0.0027	0.4216	-0.3443	-0.3492	0.4216	-0.4014	0.7233	0.0240	-3.10
04188	B	F	8931	0.7793	0.0839	0.7793	0.0712	0.0634	0.0022	0.3986	-0.1639	0.3986	-0.3575	-0.3430	-0.7397	0.0284	0.60
04189	B	F	8931	0.4582	0.2251	0.4582	0.1893	0.1254	0.0020	0.3605	-0.2072	0.3605	-0.4361	-0.3708	1.0178	0.0241	5.60
04190	A	F	8931	0.8943	0.8943	0.0432	0.0301	0.0314	0.0010	0.4416	0.4416	-0.2814	-0.2893	-0.2967	-1.7356	0.0373	-9.90
04191	A	F	8931	0.8703	0.8703	0.0339	0.0746	0.0198	0.0013	0.3382	0.3382	-0.1859	-0.2574	-0.2196	-1.4773	0.0344	-0.10
04192	D	F	8931	0.8488	0.0367	0.0593	0.0533	0.8488	0.0018	0.3745	-0.2217	-0.2690	-0.2603	0.3745	-1.2825	0.0325	-0.30
04193	B	F	8931	0.4862	0.1027	0.4862	0.2271	0.1811	0.0030	0.3795	-0.2613	0.3795	-0.3039	-0.4335	0.8661	0.0240	2.40

Appendix N:

2006 Uncommon Grade 4 Constructed Response Statistics for Reading

Item Detail				Proportions					Point Biserials					Rasch Statistics		
Item ID	Max Score Points	Item Status	N	P-Value	0	1	2	3	Item Total Corr	0	1	2	3	Logit	SE	Outfit t
04194	3	M	8446	0.5049	0.1063	0.3358	0.4948	0.0631	0.5201	-0.4262	-0.4423	-0.1976	0.1976	0.9875	0.0179	2.20
04195	3	F	4452	0.5439	0.1195	0.3221	0.3657	0.1927	0.6186	-0.5041	-0.5425	-0.3545	0.3545	0.5952	0.0211	-4.00
04196	3	M	8082	0.4564	0.1524	0.3784	0.4169	0.0523	0.5700	-0.5003	-0.4662	-0.1993	0.1993	1.2965	0.0174	-3.50
04197	3	F	4154	0.6113	0.0818	0.2378	0.4449	0.2354	0.5753	-0.4602	-0.4908	-0.3553	0.3553	0.3157	0.0224	-2.10
04198	3	M	8101	0.5568	0.1489	0.2503	0.3824	0.2184	0.6341	-0.5491	-0.5588	-0.3646	0.3646	0.6472	0.0150	-6.80
04199	3	F	4187	0.4059	0.1617	0.4841	0.3291	0.0251	0.4870	-0.4976	-0.3330	-0.1067	0.1067	1.7703	0.0249	0.60
04200	3	M	8092	0.5718	0.1059	0.3080	0.3508	0.2353	0.4026	-0.2592	-0.3604	-0.2869	0.2869	0.4673	0.0154	9.90
04201	3	F	4179	0.3740	0.2570	0.3951	0.3168	0.0311	0.5319	-0.4977	-0.4147	-0.1421	0.1421	1.9178	0.0229	-1.80
04202	3	M	8092	0.4529	0.1369	0.4209	0.3887	0.0535	0.4809	-0.4491	-0.3575	-0.1952	0.1952	1.2900	0.0175	4.00
04203	3	F	4173	0.5507	0.2854	0.1740	0.1438	0.3968	0.5330	-0.5062	-0.4831	-0.4150	0.4150	0.7871	0.0171	9.10
04204	3	M	8073	0.5978	0.0902	0.2986	0.3389	0.2723	0.6489	-0.4246	-0.6044	-0.4393	0.4393	0.2997	0.0154	-9.90
04205	3	F	4161	0.4607	0.3514	0.1800	0.2038	0.2648	0.5465	-0.5244	-0.4847	-0.3855	0.3855	1.1347	0.0175	7.10
04206	3	M	8073	0.6352	0.0486	0.2209	0.5070	0.2236	0.5153	-0.3201	-0.4643	-0.3220	0.3220	0.0712	0.0174	0.50
04207	3	F	4168	0.5089	0.1130	0.3680	0.3983	0.1207	0.4797	-0.3768	-0.4236	-0.2308	0.2308	0.9250	0.0224	3.10
04208	3	M	8097	0.4672	0.1733	0.3125	0.4537	0.0605	0.6062	-0.5052	-0.5311	-0.2240	0.2240	1.3008	0.0166	-8.60
04209	3	F	4175	0.3333	0.2671	0.5023	0.1943	0.0364	0.3996	-0.4140	-0.2552	-0.1105	0.1105	1.9426	0.0237	7.40
04210	3	M	8066	0.4829	0.0735	0.5347	0.2613	0.1304	0.5077	-0.3591	-0.4347	-0.3121	0.3121	0.7284	0.0170	-0.80
04211	3	F	4134	0.6500	0.0963	0.2177	0.3258	0.3602	0.6009	-0.4670	-0.5207	-0.4365	0.4365	0.2217	0.0207	-2.20
04212	3	M	8056	0.5510	0.1590	0.2474	0.3751	0.2185	0.6378	-0.5508	-0.5633	-0.3723	0.3723	0.6956	0.0150	-7.30
04213	3	F	4120	0.6076	0.1075	0.2483	0.3580	0.2862	0.5608	-0.4266	-0.4976	-0.3791	0.3791	0.4269	0.0210	1.40
04214	3	M	8048	0.5629	0.1108	0.3139	0.3510	0.2243	0.3756	-0.2406	-0.3513	-0.2496	0.2496	0.5154	0.0152	9.90
04215	3	F	4115	0.3744	0.2877	0.3849	0.2437	0.0836	0.4743	-0.4158	-0.3958	-0.2292	0.2292	1.5940	0.0210	3.30
04216	3	M	8067	0.5139	0.0895	0.3778	0.4341	0.0985	0.5024	-0.3928	-0.4230	-0.2476	0.2476	0.7736	0.0173	1.30
04217	3	F	4134	0.4457	0.1592	0.4504	0.2845	0.1060	0.4972	-0.4082	-0.4071	-0.2721	0.2721	1.1718	0.0219	0.10
04218	3	M	8075	0.6492	0.0572	0.2687	0.3432	0.3309	0.5801	-0.4046	-0.5223	-0.4004	0.4004	-0.0329	0.0159	-2.50
04219	3	F	4145	0.4588	0.2533	0.2926	0.2784	0.1756	0.5115	-0.4802	-0.4289	-0.2950	0.2950	1.1734	0.0193	5.90
04220	3	M	8079	0.4719	0.1693	0.3629	0.3505	0.1172	0.5201	-0.4564	-0.4319	-0.2584	0.2584	1.0436	0.0156	1.30
04221	3	F	4180	0.5018	0.1478	0.3373	0.3766	0.1383	0.5396	-0.4664	-0.4555	-0.2782	0.2782	0.9512	0.0212	-0.80
04222	3	M	8042	0.4803	0.2528	0.2506	0.2997	0.1970	0.5832	-0.5171	-0.5167	-0.3552	0.3552	0.9917	0.0140	0.40
04223	3	F	4170	0.4061	0.3247	0.2583	0.2911	0.1259	0.4407	-0.4100	-0.3742	-0.2403	0.2403	1.4479	0.0193	9.90
04224	3	M	8014	0.5817	0.0898	0.3108	0.3637	0.2356	0.5187	-0.3616	-0.4400	-0.3690	0.3690	0.3671	0.0158	5.70
04225	3	F	4134	0.6492	0.0648	0.1834	0.4913	0.2605	0.5465	-0.4051	-0.4963	-0.3265	0.3265	0.1330	0.0233	-0.50

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix O:

2006 Uncommon Grade 6 Constructed Response Statistics for Reading

Item Detail				Proportions					Point Biserials					Rasch Statistics		
Item ID	Max Score Points	Item Status	N	P-Value	0	1	2	3	Item Total Corr	0	1	2	3	Logit	SE	Outfit t
04226	3	M	9079	0.5603	0.0680	0.3671	0.3809	0.1841	0.4984	-0.3784	-0.4124	-0.3188	0.3188	0.2459	0.0155	4.80
04227	3	F	4891	0.4923	0.1286	0.3809	0.3756	0.1149	0.5480	-0.4476	-0.4661	-0.2741	0.2741	0.7661	0.0208	0.10
04228	3	M	8605	0.5866	0.1349	0.2717	0.2920	0.3013	0.6268	-0.5028	-0.5686	-0.4200	0.4200	0.3861	0.0140	-5.90
04229	3	F	4338	0.6608	0.0643	0.1886	0.4474	0.2997	0.5521	-0.3301	-0.4925	-0.3964	0.3964	0.0197	0.0221	0.10
04230	3	M	8614	0.5957	0.0484	0.2561	0.5554	0.1401	0.5159	-0.3398	-0.4592	-0.2778	0.2778	0.2078	0.0176	-3.70
04231	3	F	4442	0.6027	0.0581	0.2999	0.4181	0.2240	0.5234	-0.4056	-0.4350	-0.3370	0.3370	0.2199	0.0213	-2.20
04232	3	M	8589	0.6245	0.0448	0.2585	0.4750	0.2217	0.5336	-0.3126	-0.4636	-0.3617	0.3617	-0.0105	0.0167	-1.80
04233	3	F	4368	0.4592	0.1561	0.3981	0.3576	0.0881	0.5733	-0.5182	-0.4608	-0.2491	0.2491	1.1682	0.0217	-5.60
04234	3	M	8593	0.6181	0.0688	0.2781	0.3830	0.2701	0.5490	-0.3744	-0.4829	-0.3762	0.3762	0.1005	0.0156	1.60
04235	3	F	4305	0.6146	0.0532	0.2423	0.5120	0.1926	0.5852	-0.3599	-0.5464	-0.3346	0.3346	0.1894	0.0236	-4.60
04236	3	M	8621	0.5662	0.0581	0.3744	0.3783	0.1892	0.4624	-0.3476	-0.3879	-0.2931	0.2931	0.2570	0.0159	6.90
04237	3	F	4426	0.4609	0.1383	0.4428	0.3168	0.1021	0.5372	-0.4555	-0.4543	-0.2430	0.2430	1.0522	0.0215	-2.50
04238	3	M	8622	0.5857	0.1383	0.2664	0.2954	0.2999	0.6216	-0.4929	-0.5658	-0.4196	0.4196	0.3814	0.0141	-4.00
04239	3	F	4338	0.4801	0.0802	0.5136	0.2918	0.1143	0.4666	-0.3636	-0.3758	-0.2786	0.2786	0.7982	0.0228	1.50
04240	3	M	8588	0.5950	0.0504	0.2580	0.5477	0.1438	0.5320	-0.3627	-0.4648	-0.2938	0.2938	0.2095	0.0177	-3.70
04241	3	F	4470	0.6911	0.0380	0.1362	0.5400	0.2857	0.6028	-0.3470	-0.5356	-0.4096	0.4096	-0.2179	0.0239	-8.30
04242	3	M	8594	0.6856	0.0495	0.2174	0.3603	0.3729	0.5845	-0.3922	-0.5147	-0.4242	0.4242	-0.2650	0.0157	-3.40
04243	3	F	4439	0.5974	0.0633	0.2789	0.4600	0.1978	0.5520	-0.3941	-0.4787	-0.3373	0.3373	0.2992	0.0221	-2.90
04244	3	M	8586	0.7128	0.0493	0.1301	0.4535	0.3671	0.5712	-0.3814	-0.5146	-0.3928	0.3928	-0.3490	0.0169	-4.30
04245	3	F	4192	0.6300	0.0499	0.2419	0.4766	0.2316	0.5775	-0.3659	-0.5183	-0.3656	0.3656	0.0759	0.0233	-5.10
04246	3	M	8560	0.6264	0.0436	0.2447	0.5006	0.2111	0.6283	-0.3942	-0.5866	-0.3597	0.3597	-0.0174	0.0172	-9.90
04247	3	F	4433	0.6003	0.0753	0.2865	0.4002	0.2380	0.5832	-0.4085	-0.5296	-0.3634	0.3634	0.3079	0.0213	-4.00
04248	3	M	8535	0.6861	0.0439	0.2219	0.3661	0.3680	0.5929	-0.3770	-0.5241	-0.4331	0.4331	-0.3012	0.0159	-5.40
04249	3	F	4137	0.6054	0.0955	0.2661	0.3652	0.2731	0.5476	-0.3698	-0.4863	-0.3894	0.3894	0.3437	0.0209	0.30
04250	3	M	8540	0.5084	0.1582	0.3164	0.3673	0.1581	0.5887	-0.4607	-0.5120	-0.3537	0.3537	0.7951	0.0148	-6.00
04251	3	F	4385	0.6597	0.0536	0.2267	0.4068	0.3129	0.5283	-0.3602	-0.4572	-0.3712	0.3712	-0.0200	0.0215	1.00
04252	3	M	8573	0.5489	0.0554	0.3752	0.4365	0.1329	0.5226	-0.3761	-0.4479	-0.2906	0.2906	0.3921	0.0169	-2.50
04253	3	F	4298	0.6449	0.0423	0.2275	0.4832	0.2469	0.5814	-0.3642	-0.5271	-0.3656	0.3656	-0.0130	0.0231	-6.10
04254	3	M	8589	0.6196	0.0643	0.2230	0.5024	0.2104	0.5919	-0.4230	-0.5212	-0.3559	0.3559	0.1378	0.0167	-6.60
04255	3	F	4382	0.6381	0.0881	0.1543	0.5128	0.2449	0.6216	-0.4979	-0.5653	-0.3555	0.3555	0.2505	0.0222	-7.00
04256	3	M	8538	0.5166	0.1560	0.2751	0.4321	0.1368	0.5194	-0.3434	-0.4850	-0.3181	0.3181	0.8291	0.0152	4.90
04257	3	F	4370	0.6758	0.0400	0.2121	0.4281	0.3197	0.5543	-0.3709	-0.4986	-0.3680	0.3680	-0.1748	0.0224	-2.40

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix P:

2006 Uncommon Grade 7 Constructed Response Statistics for Reading

Item Detail				Proportions					Point Biserials					Rasch Statistics		
Item ID	Max Score Points	Item Status	N	P-Value	0	1	2	3	Item Total Corr	0	1	2	3	Logit	SE	Outfit t
04258	3	M	9464	0.4196	0.2744	0.3182	0.2818	0.1256	0.5135	-0.3997	-0.4607	-0.3217	0.3217	1.1509	0.0138	9.20
04259	3	F	4873	0.5721	0.1112	0.2961	0.3579	0.2348	0.5899	-0.4473	-0.5143	-0.3889	0.3889	0.3161	0.0199	0.80
04260	3	M	8956	0.4362	0.2546	0.3174	0.2928	0.1352	0.4739	-0.3611	-0.4256	-0.3052	0.3052	1.1361	0.0139	9.90
04261	3	F	4476	0.7083	0.0335	0.1593	0.4560	0.3512	0.5715	-0.3127	-0.4969	-0.4210	0.4210	-0.3609	0.0230	-4.80
04262	3	M	8949	0.6445	0.0691	0.1419	0.5755	0.2135	0.6370	-0.4346	-0.5765	-0.3883	0.3883	0.1157	0.0167	-9.90
04263	3	F	4667	0.5293	0.0932	0.3636	0.4052	0.1380	0.5626	-0.3816	-0.4990	-0.3269	0.3269	0.7059	0.0214	-4.10
04264	3	M	8924	0.6449	0.0685	0.1370	0.5857	0.2088	0.6343	-0.4420	-0.5745	-0.3784	0.3784	0.1143	0.0169	-9.90
04265	3	F	4267	0.5106	0.1371	0.3023	0.4523	0.1083	0.5699	-0.4412	-0.4981	-0.2935	0.2935	0.9581	0.0222	-2.80
04266	3	M	8934	0.6417	0.0479	0.2293	0.4725	0.2503	0.5694	-0.3525	-0.5107	-0.3708	0.3708	-0.0455	0.0163	-4.10
04267	3	F	4390	0.5074	0.0977	0.4251	0.3344	0.1428	0.5879	-0.4128	-0.5177	-0.3466	0.3466	0.7762	0.0218	-6.90
04268	3	M	8896	0.6426	0.0461	0.2246	0.4847	0.2446	0.5542	-0.3432	-0.4856	-0.3687	0.3687	-0.0658	0.0165	-2.30
04269	3	F	4708	0.6582	0.1005	0.1421	0.4399	0.3175	0.6534	-0.4958	-0.5819	-0.4464	0.4464	0.2026	0.0202	-9.60
04270	3	M	8885	0.6408	0.0476	0.2171	0.5006	0.2347	0.5950	-0.3847	-0.5471	-0.3570	0.3570	-0.0426	0.0166	-8.20
04271	3	F	4408	0.6478	0.0837	0.2307	0.3439	0.3417	0.5796	-0.3844	-0.4971	-0.4509	0.4509	0.1815	0.0201	-2.80
04272	3	M	8894	0.6334	0.0515	0.2278	0.4897	0.2311	0.6089	-0.3873	-0.5507	-0.3798	0.3798	-0.0173	0.0163	-9.90
04273	3	F	4397	0.6808	0.0901	0.1753	0.3366	0.3980	0.5331	-0.3369	-0.4808	-0.4205	0.4205	0.0434	0.0201	3.40
04274	3	M	8886	0.5983	0.0824	0.2217	0.5146	0.1813	0.6455	-0.4327	-0.6044	-0.3618	0.3618	0.3333	0.0163	-9.90
04275	3	F	4508	0.5780	0.1238	0.2689	0.3569	0.2504	0.6579	-0.5092	-0.5783	-0.4361	0.4361	0.5212	0.0200	-8.50
04276	3	M	8846	0.5700	0.0557	0.3269	0.4689	0.1484	0.5617	-0.3857	-0.4828	-0.3293	0.3293	0.3243	0.0169	-5.20
04277	3	F	4310	0.7269	0.0710	0.1362	0.3339	0.4589	0.6120	-0.4360	-0.5365	-0.4690	0.4690	-0.1853	0.0216	-4.90
04278	3	M	8890	0.6100	0.0775	0.2476	0.4422	0.2327	0.6148	-0.4159	-0.5535	-0.3928	0.3928	0.2151	0.0157	-7.40
04279	3	F	4213	0.5775	0.0833	0.3359	0.3458	0.2350	0.6024	-0.4584	-0.5188	-0.3938	0.3938	0.4095	0.0214	-5.00
04280	3	M	8900	0.5378	0.1274	0.2922	0.4199	0.1604	0.6087	-0.4808	-0.5335	-0.3410	0.3410	0.6528	0.0153	-6.00
04281	3	F	4407	0.5478	0.1284	0.2821	0.4073	0.1822	0.6208	-0.4973	-0.5397	-0.3645	0.3645	0.6901	0.0209	-5.40
04282	3	M	8852	0.6261	0.0679	0.2255	0.4670	0.2396	0.5517	-0.3693	-0.4712	-0.3779	0.3779	0.1211	0.0159	-0.40
04283	3	F	4305	0.6599	0.0748	0.2179	0.3600	0.3473	0.5610	-0.3414	-0.4752	-0.4526	0.4526	0.0972	0.0209	0.30
04284	3	M	8893	0.5948	0.0982	0.2659	0.3891	0.2468	0.6248	-0.4283	-0.5670	-0.4147	0.4147	0.3075	0.0148	-9.60
04285	3	F	4340	0.6890	0.0795	0.1825	0.3295	0.4085	0.4861	-0.2953	-0.4164	-0.4055	0.4055	0.0146	0.0205	7.70
04286	3	M	8906	0.6864	0.0460	0.1527	0.4972	0.3041	0.5553	-0.3436	-0.4906	-0.3816	0.3816	-0.2559	0.0168	-2.50
04287	3	F	4531	0.6631	0.0433	0.1936	0.4937	0.2695	0.5861	-0.3704	-0.5065	-0.3983	0.3983	-0.0917	0.0230	-5.10
04288	3	M	8905	0.5535	0.0979	0.2931	0.4596	0.1494	0.6225	-0.4826	-0.5396	-0.3397	0.3397	0.5640	0.0160	-9.80
04289	3	F	4441	0.6052	0.1245	0.2389	0.3330	0.3035	0.6218	-0.5021	-0.5465	-0.4246	0.4246	0.4167	0.0197	-3.60

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix Q:

2006 Uncommon Grade 4 Constructed Response Statistics for Mathematics

Item Detail				Proportions						Point Biserials						Rasch Statistics		
Item ID	Max Score Points	Item Status	N	P-Value	0	1	2	3	4	Item Total Corr	0	1	2	3	4	Logit	SE	Outfit t
04290	4	M	8583	0.6295	0.0510	0.0810	0.2486	0.5377	0.0817	0.5847	-0.3894	-0.4576	-0.5216	-0.2007	0.2007	0.5294	0.0152	1.50
04291	4	F	4572	0.3529	0.2332	0.4311	0.1575	0.0475	0.1308	0.5728	-0.4716	-0.5199	-0.4048	-0.3620	0.3620	1.5226	0.0166	1.80
04292	4	M	8108	0.2321	0.5375	0.1962	0.1219	0.0893	0.0551	0.5688	-0.5489	-0.4990	-0.4023	-0.2753	0.2753	2.2204	0.0129	-0.40
04293	4	F	4165	0.5045	0.1825	0.1633	0.2905	0.1813	0.1825	0.5987	-0.5231	-0.5383	-0.4488	-0.3371	0.3371	1.0908	0.0164	7.00
04294	4	M	8123	0.6286	0.1238	0.1032	0.2894	0.1019	0.3816	0.6451	-0.4625	-0.5361	-0.5495	-0.5192	0.5192	0.5565	0.0117	2.90
04295	4	F	3918	0.5696	0.1371	0.1320	0.1708	0.4359	0.1243	0.6510	-0.5581	-0.5837	-0.5504	-0.2508	0.2508	1.0597	0.0180	1.60
04296	4	M	8110	0.3786	0.1529	0.4751	0.1170	0.2148	0.0402	0.5548	-0.3719	-0.5075	-0.4438	-0.2131	0.2131	1.7117	0.0136	3.40
04297	4	F	3789	0.7155	0.0245	0.0897	0.2135	0.3436	0.3286	0.4557	-0.1697	-0.3524	-0.3916	-0.3329	0.3329	-0.0122	0.0201	9.90
04298	4	M	8115	0.5598	0.1071	0.2614	0.1689	0.2106	0.2520	0.6533	-0.4886	-0.5912	-0.5445	-0.4173	0.4173	0.7364	0.0118	2.70
04299	4	F	4179	0.6489	0.1570	0.0876	0.1654	0.1831	0.4070	0.5563	-0.4519	-0.4966	-0.4750	-0.4243	0.4243	0.5960	0.0155	9.90
04300	4	M	8091	0.4883	0.1137	0.3368	0.2183	0.1451	0.1861	0.5845	-0.4314	-0.5256	-0.4535	-0.3739	0.3739	0.9805	0.0121	8.70
04301	4	F	3817	0.4855	0.1590	0.1850	0.3670	0.1328	0.1561	0.6068	-0.4894	-0.5061	-0.4589	-0.3697	0.3697	1.1847	0.0177	1.60
04302	4	M	8101	0.6346	0.0811	0.1260	0.2240	0.3112	0.2576	0.6870	-0.4816	-0.6024	-0.5838	-0.4055	0.4055	0.4749	0.0129	-3.10
04303	4	F	3779	0.5062	0.2233	0.1323	0.2032	0.2786	0.1625	0.4929	-0.3381	-0.4392	-0.4379	-0.3266	0.3266	1.2519	0.0167	9.90
04304	4	M	8115	0.6930	0.0211	0.0864	0.2306	0.4234	0.2386	0.5738	-0.2676	-0.4324	-0.4779	-0.3790	0.3790	-0.0505	0.0151	3.40
04305	4	F	3933	0.6236	0.1017	0.1508	0.2309	0.1848	0.3318	0.5906	-0.3901	-0.5093	-0.4916	-0.4526	0.4526	0.6034	0.0169	7.60
04306	4	M	8100	0.4426	0.1128	0.3672	0.2591	0.1584	0.1025	0.5571	-0.3347	-0.5052	-0.4323	-0.3144	0.3144	1.2254	0.0132	5.30
04307	4	F	4042	0.4644	0.1524	0.2843	0.2204	0.2390	0.1039	0.5655	-0.4124	-0.4962	-0.4454	-0.3060	0.3060	1.3221	0.0175	6.20
04308	4	M	8075	0.5336	0.0545	0.3193	0.2507	0.1886	0.1870	0.4714	-0.2815	-0.4275	-0.3533	-0.3255	0.3255	0.6638	0.0128	9.90
04309	4	F	3960	0.4050	0.3470	0.1295	0.2462	0.1111	0.1662	0.5939	-0.5525	-0.5458	-0.4540	-0.3539	0.3539	1.5321	0.0157	4.60
04310	4	M	8075	0.5296	0.1157	0.2767	0.2103	0.1683	0.2291	0.6294	-0.5038	-0.5564	-0.5014	-0.4012	0.4012	0.8281	0.0120	5.60
04311	4	F	3807	0.2723	0.3612	0.3417	0.1823	0.0764	0.0384	0.4881	-0.4225	-0.4313	-0.2972	-0.1923	0.1923	2.2587	0.0197	5.50
04312	4	M	8098	0.4123	0.3838	0.1213	0.1757	0.1003	0.2189	0.4842	-0.4205	-0.4539	-0.3996	-0.3612	0.3612	1.3745	0.0106	9.90
04313	4	F	3840	0.5483	0.1526	0.1219	0.2229	0.3849	0.1177	0.5556	-0.4325	-0.4637	-0.4807	-0.2762	0.2762	1.0834	0.0179	9.30
04314	4	M	8091	0.6846	0.0980	0.1073	0.1865	0.1745	0.4337	0.6292	-0.4380	-0.5430	-0.5526	-0.4832	0.4832	0.2738	0.0121	6.80
04315	4	F	3906	0.3843	0.2901	0.2709	0.2038	0.0822	0.1531	0.6116	-0.5929	-0.5457	-0.4175	-0.3573	0.3573	1.5518	0.0165	1.70
04316	4	M	8108	0.4563	0.1605	0.2810	0.2378	0.2145	0.1063	0.5887	-0.4831	-0.5164	-0.4470	-0.2797	0.2797	1.2660	0.0126	7.10
04317	4	F	3787	0.6244	0.1769	0.0716	0.2572	0.0658	0.4286	0.5748	-0.5138	-0.5277	-0.4669	-0.4372	0.4372	0.6590	0.0159	9.90
04318	4	M	8072	0.5722	0.0696	0.1840	0.3162	0.2485	0.1817	0.5846	-0.3723	-0.4971	-0.4675	-0.3575	0.3575	0.6294	0.0133	7.00
04319	4	F	3932	0.5808	0.1605	0.0488	0.2922	0.3039	0.1946	0.6486	-0.5276	-0.5126	-0.5542	-0.4003	0.4003	0.9058	0.0176	1.60
04320	4	M	8043	0.4817	0.0359	0.3526	0.3075	0.2566	0.0474	0.5096	-0.2261	-0.4614	-0.3993	-0.2008	0.2008	1.0323	0.0151	8.20
04321	4	F	3753	0.3951	0.3269	0.1383	0.2497	0.1977	0.0874	0.6599	-0.5829	-0.5867	-0.5145	-0.3230	0.3230	1.6739	0.0173	-2.00

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix R:

2006 Uncommon Grade 6 Constructed Response Statistics for Mathematics

Item Detail				Proportions						Point Biserials						Rasch Statistics		
Item ID	Max Score Points	Item Status	N	P-Value	0	1	2	3	4	Item Total Corr	0	1	2	3	4	Logit	SE	Outfit t
04322	4	M	9187	0.4383	0.1307	0.3251	0.2832	0.1822	0.0787	0.6219	-0.3953	-0.5332	-0.5136	-0.2983	0.2983	1.1982	0.0130	2.80
04323	4	F	4903	0.5516	0.2427	0.0777	0.2452	0.0993	0.3351	0.6755	-0.5777	-0.6251	-0.5516	-0.5161	0.5161	0.6747	0.0146	9.30
04324	4	M	8629	0.4200	0.1917	0.3652	0.1728	0.1122	0.1582	0.6214	-0.4620	-0.5544	-0.4923	-0.4162	0.4162	1.2129	0.0119	5.70
04325	4	F	4501	0.4495	0.1746	0.2204	0.3350	0.1724	0.0975	0.5205	-0.3492	-0.4720	-0.4012	-0.2807	0.2807	1.3080	0.0171	9.90
04326	4	M	8634	0.2691	0.4163	0.2877	0.1498	0.0959	0.0504	0.5428	-0.4768	-0.4704	-0.3852	-0.2545	0.2545	2.0410	0.0128	7.20
04327	4	F	4496	0.4548	0.3069	0.1606	0.2000	0.0714	0.2611	0.6379	-0.5459	-0.5896	-0.5254	-0.4765	0.4765	1.1507	0.0143	4.50
04328	4	M	8622	0.4585	0.1142	0.3779	0.1931	0.1892	0.1256	0.5792	-0.3777	-0.5033	-0.4807	-0.3444	0.3444	1.0260	0.0126	9.90
04329	4	F	4436	0.7484	0.0624	0.0394	0.1168	0.4046	0.3767	0.5794	-0.3644	-0.4382	-0.5068	-0.4292	0.4292	-0.0683	0.0187	7.00
04330	4	M	8619	0.5350	0.1556	0.2562	0.0832	0.3026	0.2025	0.4672	-0.4632	-0.3501	-0.3756	-0.3185	0.3185	0.8386	0.0115	9.90
04331	4	F	4479	0.6899	0.0507	0.0931	0.1250	0.5081	0.2230	0.5934	-0.3733	-0.5172	-0.5211	-0.3201	0.3201	0.1643	0.0191	1.90
04332	4	M	8653	0.2623	0.4756	0.2057	0.1571	0.1175	0.0441	0.5793	-0.5466	-0.4909	-0.4229	-0.2513	0.2513	2.1674	0.0127	7.10
04333	4	F	4490	0.5993	0.0693	0.0661	0.3886	0.3501	0.1258	0.5711	-0.3937	-0.4375	-0.4652	-0.3019	0.3019	0.6066	0.0194	4.70
04334	4	M	8644	0.4241	0.4456	0.0604	0.0789	0.1820	0.2331	0.5854	-0.5302	-0.5346	-0.5429	-0.4555	0.4555	1.2734	0.0102	9.90
04335	4	F	4480	0.3672	0.2286	0.3833	0.1748	0.1174	0.0960	0.6529	-0.5324	-0.5674	-0.4839	-0.3593	0.3593	1.5840	0.0171	-4.00
04336	4	M	8609	0.3698	0.2076	0.3105	0.3043	0.1502	0.0274	0.6577	-0.5156	-0.5896	-0.4294	-0.1910	0.1910	1.8537	0.0139	-6.60
04337	4	F	4478	0.4357	0.2285	0.1778	0.3502	0.1099	0.1338	0.6567	-0.5557	-0.6157	-0.4339	-0.3726	0.3726	1.3484	0.0165	1.00
04338	4	M	8618	0.3437	0.1601	0.4800	0.2173	0.1098	0.0327	0.5295	-0.3678	-0.4591	-0.3676	-0.2134	0.2134	1.8050	0.0146	5.50
04339	4	F	4288	0.3720	0.3738	0.2297	0.1089	0.1098	0.1777	0.6179	-0.5258	-0.5600	-0.5140	-0.4519	0.4519	1.5069	0.0153	4.40
04340	4	M	8601	0.3990	0.3588	0.2443	0.0752	0.0855	0.2363	0.6413	-0.5615	-0.5695	-0.5605	-0.5029	0.5029	1.2916	0.0106	7.90
04341	4	F	4462	0.5255	0.0896	0.2468	0.2008	0.3976	0.0652	0.6598	-0.4469	-0.6054	-0.5362	-0.2336	0.2336	1.0512	0.0181	-2.60
04342	4	M	8580	0.4990	0.1202	0.2182	0.3210	0.2270	0.1136	0.5780	-0.4316	-0.4816	-0.4512	-0.3059	0.3059	0.9835	0.0128	9.60
04343	4	F	4364	0.3327	0.3210	0.3123	0.1794	0.0894	0.0978	0.5992	-0.5430	-0.5142	-0.4223	-0.3324	0.3324	1.7279	0.0168	1.60
04344	4	M	8568	0.4381	0.1499	0.2501	0.3303	0.2374	0.0323	0.6182	-0.4545	-0.5308	-0.4570	-0.2220	0.2220	1.5287	0.0138	1.10
04345	4	F	4273	0.4905	0.1198	0.2864	0.2857	0.1280	0.1800	0.6979	-0.4597	-0.6423	-0.5412	-0.4464	0.4464	0.9692	0.0172	-4.90
04346	4	M	8555	0.5852	0.0351	0.1543	0.3800	0.2962	0.1344	0.6309	-0.3268	-0.5023	-0.5198	-0.3532	0.3532	0.3940	0.0144	-3.20
04347	4	F	4453	0.7018	0.1053	0.0784	0.1473	0.2416	0.4274	0.6402	-0.4766	-0.5362	-0.5469	-0.5000	0.5000	0.2064	0.0162	3.80
04348	4	M	8590	0.4224	0.1241	0.5314	0.0496	0.1204	0.1745	0.5040	-0.3574	-0.4093	-0.4316	-0.4152	0.4152	1.0633	0.0119	9.90
04349	4	F	4407	0.3689	0.1282	0.3710	0.4023	0.0939	0.0045	0.4749	-0.3880	-0.4136	-0.2042	-0.0872	0.0872	2.2436	0.0220	6.20
04350	4	M	8607	0.3937	0.2695	0.3038	0.1555	0.1247	0.1465	0.6843	-0.5558	-0.6131	-0.5449	-0.4357	0.4357	1.3674	0.0116	-5.90
04351	4	F	4469	0.3104	0.4314	0.0609	0.3994	0.0512	0.0571	0.6318	-0.5802	-0.6149	-0.3593	-0.2803	0.2803	2.0031	0.0172	-1.00
04352	4	M	8566	0.5763	0.1964	0.0527	0.3122	0.1272	0.3116	0.6880	-0.5725	-0.5931	-0.5631	-0.5142	0.5142	0.6591	0.0114	1.60
04353	4	F	4470	0.5191	0.1850	0.1770	0.2043	0.2443	0.1895	0.6342	-0.4770	-0.5682	-0.5423	-0.3833	0.3833	0.9741	0.0159	6.50

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix S:

2006 Uncommon Grade 7 Constructed Response Statistics for Mathematics

Item Detail				Proportions						Point Biserials						Rasch Statistics		
Item ID	Max Score Points	Item Status	N	P-Value	0	1	2	3	4	Item Total Corr	0	1	2	3	4	Logit	SE	Outfit t
04354	4	M	9602	0.3649	0.2018	0.4028	0.1969	0.1308	0.0676	0.6927	-0.5841	-0.6005	-0.4837	-0.2973	0.2973	1.3108	0.0123	-8.80
04355	4	F	5338	0.1784	0.5470	0.2889	0.0963	0.0392	0.0287	0.5896	-0.5525	-0.4773	-0.3554	-0.2477	0.2477	2.2916	0.0185	-5.70
04356	4	M	8980	0.3354	0.3394	0.2822	0.1493	0.1555	0.0736	0.6850	-0.5952	-0.6003	-0.5219	-0.3419	0.3419	1.5695	0.0119	-6.60
04357	4	F	4724	0.3974	0.2661	0.2511	0.2079	0.1772	0.0978	0.6558	-0.5449	-0.5642	-0.5171	-0.3547	0.3547	1.3813	0.0159	0.60
04358	4	M	8975	0.4063	0.2414	0.2675	0.2562	0.0943	0.1406	0.6598	-0.5266	-0.5930	-0.4858	-0.4170	0.4170	1.1664	0.0116	-0.30
04359	4	F	4733	0.4323	0.2673	0.1747	0.3108	0.0560	0.1912	0.6411	-0.5733	-0.5715	-0.4610	-0.4278	0.4278	1.1275	0.0150	4.70
04360	4	M	8957	0.4339	0.2758	0.1982	0.1867	0.1936	0.1458	0.7169	-0.5973	-0.6398	-0.5888	-0.4270	0.4270	1.1360	0.0112	-5.60
04361	4	F	4720	0.4945	0.1519	0.1614	0.4464	0.0371	0.2032	0.6324	-0.4271	-0.5273	-0.4980	-0.4819	0.4819	0.8590	0.0161	1.60
04362	4	M	8975	0.3638	0.2062	0.4050	0.1795	0.1456	0.0636	0.6430	-0.4345	-0.5909	-0.5029	-0.3037	0.3037	1.4677	0.0128	-3.60
04363	4	F	4730	0.4820	0.2727	0.1622	0.1567	0.1812	0.2273	0.6789	-0.5645	-0.6056	-0.5840	-0.4758	0.4758	0.9943	0.0146	3.80
04364	4	M	8907	0.3073	0.3387	0.3007	0.1914	0.1310	0.0382	0.6590	-0.5365	-0.5772	-0.4867	-0.2653	0.2653	1.8629	0.0128	-6.90
04365	4	F	4679	0.3500	0.3454	0.2783	0.1464	0.0910	0.1389	0.6562	-0.5563	-0.5829	-0.5262	-0.4256	0.4256	1.4740	0.0155	-0.10
04366	4	M	8916	0.3930	0.1751	0.3459	0.2616	0.1670	0.0505	0.6274	-0.4822	-0.5535	-0.4433	-0.2453	0.2453	1.3928	0.0130	0.00
04367	4	F	4690	0.4321	0.4900	0.0365	0.0682	0.0659	0.3394	0.6411	-0.6088	-0.6227	-0.6008	-0.5545	0.5545	1.1320	0.0131	9.80
04368	4	M	8910	0.3492	0.1180	0.5365	0.2019	0.1180	0.0257	0.5508	-0.3897	-0.4793	-0.3602	-0.2049	0.2049	1.6299	0.0149	3.40
04369	4	F	4670	0.6362	0.0507	0.1347	0.2047	0.4385	0.1713	0.6264	-0.3377	-0.4981	-0.5474	-0.3747	0.3747	0.2572	0.0181	-1.20
04370	4	M	8901	0.5547	0.1368	0.1877	0.2008	0.2691	0.2056	0.6983	-0.4627	-0.5948	-0.6131	-0.4644	0.4644	0.5941	0.0115	-6.40
04371	4	F	4387	0.5821	0.1071	0.2475	0.1712	0.1580	0.3162	0.7202	-0.4346	-0.6416	-0.6367	-0.5526	0.5526	0.4369	0.0156	-4.40
04372	4	M	8872	0.3216	0.2340	0.4646	0.1535	0.0766	0.0712	0.5765	-0.4645	-0.4939	-0.4045	-0.3053	0.3053	1.5804	0.0132	5.80
04373	4	F	4449	0.2851	0.2344	0.4698	0.2261	0.0602	0.0094	0.5212	-0.4398	-0.4257	-0.2540	-0.1146	0.1146	2.3340	0.0216	3.60
04374	4	M	8912	0.3581	0.2728	0.3234	0.1814	0.1435	0.0789	0.6661	-0.4988	-0.5882	-0.5373	-0.3540	0.3540	1.4551	0.0121	-5.60
04375	4	F	4555	0.2999	0.4215	0.1495	0.3166	0.0327	0.0797	0.6186	-0.5585	-0.5506	-0.4042	-0.3444	0.3444	1.7758	0.0168	1.60
04376	4	M	8910	0.3403	0.2859	0.3579	0.1497	0.1222	0.0843	0.6234	-0.4751	-0.5351	-0.5039	-0.3670	0.3670	1.4845	0.0121	-0.70
04377	4	F	4534	0.3374	0.3434	0.2199	0.2715	0.0741	0.0911	0.6218	-0.5215	-0.5428	-0.4539	-0.3591	0.3591	1.5816	0.0164	0.60
04378	4	M	8882	0.3037	0.3607	0.2937	0.1675	0.1261	0.0519	0.5654	-0.4554	-0.5160	-0.4167	-0.2628	0.2628	1.7809	0.0124	8.70
04379	4	F	4404	0.5555	0.2137	0.1133	0.1067	0.3701	0.1962	0.6645	-0.5388	-0.5828	-0.5885	-0.4306	0.4306	0.7726	0.0155	2.30
04380	4	M	8922	0.3691	0.1487	0.4413	0.2325	0.1398	0.0378	0.5775	-0.4213	-0.4882	-0.4142	-0.2326	0.2326	1.5045	0.0139	4.00
04381	4	F	4462	0.4836	0.2313	0.2134	0.1726	0.1553	0.2275	0.6966	-0.5733	-0.6340	-0.5769	-0.4671	0.4671	0.9357	0.0152	0.90
04382	4	M	8919	0.2891	0.2931	0.4403	0.1414	0.0677	0.0575	0.6054	-0.4585	-0.5188	-0.4522	-0.3222	0.3222	1.7829	0.0134	-4.10
04383	4	F	4705	0.6573	0.0789	0.1156	0.1231	0.4625	0.2200	0.6163	-0.3927	-0.5145	-0.5512	-0.3798	0.3798	0.2396	0.0172	2.60
04384	4	M	8931	0.4510	0.1617	0.2824	0.2430	0.2160	0.0970	0.6736	-0.5048	-0.6065	-0.5118	-0.3347	0.3347	1.0550	0.0123	-3.80
04385	4	F	4700	0.3987	0.2236	0.2334	0.3111	0.1885	0.0434	0.6249	-0.4850	-0.5502	-0.4587	-0.2440	0.2440	1.5580	0.0173	0.40

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix T:

2006 Common Grade 4 Multiple Choice Statistics for Reading

Item Detail			Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02547	A	129503	0.7645	0.7645	0.0200	0.1317	0.0833	0.0005	0.3405	0.3405	-0.2630	-0.2699	-0.2258	-0.5300	0.0073	3.30
02548	B	129503	0.8320	0.0167	0.8320	0.0165	0.1342	0.0005	0.1964	-0.1787	0.1964	-0.1925	-0.1180	-0.9869	0.0081	9.90
02549	A	129503	0.4567	0.4567	0.1568	0.1214	0.2640	0.0012	0.3413	0.3413	-0.4079	-0.3809	-0.2271	1.1320	0.0063	9.90
02550	A	129503	0.7808	0.7808	0.1093	0.0538	0.0548	0.0013	0.3881	0.3881	-0.2526	-0.2945	-0.3084	-0.6693	0.0075	-4.30
02551	B	129503	0.5488	0.3286	0.5488	0.0862	0.0352	0.0013	0.1197	0.0009	0.1197	-0.2364	-0.3383	0.7264	0.0063	9.90
02552	D	129503	0.8218	0.0409	0.0751	0.0604	0.8218	0.0018	0.3886	-0.2888	-0.2103	-0.3269	0.3886	-0.9750	0.0081	-5.50
02553	B	129503	0.6299	0.0514	0.6299	0.0633	0.2539	0.0016	0.3984	-0.4228	0.3984	-0.3307	-0.3039	0.2277	0.0065	-0.30
02554	B	129503	0.7912	0.1187	0.7912	0.0405	0.0467	0.0030	0.4601	-0.3704	0.4601	-0.2802	-0.3456	-0.7462	0.0076	-9.90
02555	B	129503	0.7618	0.0594	0.7618	0.1425	0.0356	0.0008	0.4389	-0.3746	0.4389	-0.3104	-0.3179	-0.5488	0.0073	-9.90
02556	A	129503	0.6754	0.6754	0.0424	0.2054	0.0756	0.0012	0.4546	0.4546	-0.3274	-0.4210	-0.2829	-0.0215	0.0067	-9.90
02557	D	129503	0.5253	0.0285	0.0814	0.3629	0.5253	0.0019	0.2920	-0.3693	-0.3570	-0.2112	0.2920	0.7925	0.0063	9.90
02558	D	129503	0.3443	0.2044	0.3570	0.0920	0.3443	0.0023	0.1751	-0.2027	-0.1546	-0.2089	0.1751	1.7005	0.0065	9.90
02559	C	129503	0.4357	0.2799	0.0784	0.4357	0.2035	0.0025	0.3162	-0.3125	-0.3292	0.3162	-0.2807	1.2316	0.0063	9.90
02560	D	129503	0.7190	0.0823	0.0993	0.0964	0.7190	0.0030	0.3783	-0.2915	-0.2895	-0.2697	0.3783	-0.2620	0.0070	-5.20
02561	D	129503	0.6259	0.1535	0.1084	0.1081	0.6259	0.0041	0.5212	-0.3709	-0.4726	-0.4936	0.5212	0.2257	0.0065	-9.90
02562	B	129503	0.7216	0.0242	0.7216	0.1962	0.0513	0.0067	0.4701	-0.3276	0.4701	-0.3760	-0.4197	-0.3129	0.0070	-9.90
02563	B	129503	0.7761	0.0941	0.7761	0.0623	0.0634	0.0041	0.3920	-0.3328	0.3920	-0.2848	-0.2110	-0.6249	0.0074	-0.60
02564	C	129503	0.7736	0.0574	0.0539	0.7736	0.1108	0.0043	0.4593	-0.3744	-0.3330	0.4593	-0.3151	-0.6417	0.0075	-9.90
02565	A	129503	0.5223	0.5223	0.1023	0.1656	0.2046	0.0052	0.2862	0.2862	-0.3635	-0.2424	-0.1810	0.7994	0.0063	9.90
02566	C	129503	0.4800	0.2102	0.1744	0.4800	0.1297	0.0057	0.2546	-0.3008	-0.1265	0.2546	-0.2523	1.0112	0.0063	9.90
02567	A	129503	0.7706	0.7706	0.0713	0.0994	0.0531	0.0056	0.5016	0.5016	-0.3763	-0.4076	-0.3047	-0.6163	0.0074	-9.90
02568	C	129503	0.5180	0.1745	0.1861	0.5180	0.1160	0.0053	0.3299	-0.3246	-0.2214	0.3299	-0.3333	0.8229	0.0063	9.90
02569	B	129503	0.7374	0.1179	0.7374	0.0460	0.0928	0.0059	0.5258	-0.4158	0.5258	-0.3954	-0.3958	-0.3961	0.0071	-9.90
02570	D	129503	0.7762	0.0524	0.0776	0.0873	0.7762	0.0064	0.5024	-0.4098	-0.3315	-0.3795	0.5024	-0.6689	0.0075	-9.90
02571	C	129503	0.8376	0.0311	0.0593	0.8376	0.0715	0.0004	0.4893	-0.3015	-0.3934	0.4893	-0.3289	-1.1342	0.0084	-9.90
02572	C	129503	0.5616	0.0537	0.3061	0.5616	0.0777	0.0010	0.1977	-0.3301	-0.0265	0.1977	-0.4084	0.6149	0.0063	9.90
02573	D	129503	0.6929	0.0336	0.1423	0.1300	0.6929	0.0013	0.4634	-0.3806	-0.3820	-0.3541	0.4634	-0.1281	0.0068	-9.90
02574	D	129503	0.6267	0.0890	0.0922	0.1903	0.6267	0.0017	0.3835	-0.3658	-0.4112	-0.2310	0.3835	0.2563	0.0065	9.90
02575	A	129503	0.7354	0.7354	0.1116	0.0603	0.0904	0.0023	0.4305	0.4305	-0.3639	-0.3449	-0.2655	-0.3758	0.0071	-9.90
02576	A	129503	0.7433	0.7433	0.0777	0.1506	0.0270	0.0014	0.2769	0.2769	-0.2187	-0.1678	-0.2755	-0.3712	0.0071	9.90
02577	D	129503	0.7461	0.1261	0.0750	0.0507	0.7461	0.0021	0.4319	-0.2904	-0.3512	-0.3622	0.4319	-0.4562	0.0072	-7.40
02578	B	129503	0.6943	0.1035	0.6943	0.0933	0.1061	0.0028	0.4059	-0.2544	0.4059	-0.3064	-0.3749	-0.1123	0.0068	-4.10
02579	B	129503	0.6634	0.1752	0.6634	0.0490	0.1097	0.0026	0.3486	-0.1598	0.3486	-0.3795	-0.3687	0.0724	0.0066	9.90
02580	B	129503	0.7196	0.0930	0.7196	0.1053	0.0792	0.0030	0.4939	-0.3702	0.4939	-0.4017	-0.3609	-0.3022	0.0070	-9.90
02581	D	129503	0.6616	0.1419	0.0851	0.1082	0.6616	0.0032	0.4403	-0.3443	-0.3187	-0.4055	0.4403	0.0630	0.0066	-6.80
02582	D	129503	0.7733	0.0697	0.0840	0.0691	0.7733	0.0038	0.5109	-0.3606	-0.4171	-0.3591	0.5109	-0.6397	0.0075	-9.90
02583	C	129503	0.5884	0.0747	0.0515	0.5884	0.2817	0.0036	0.3145	-0.4510	-0.4117	0.3145	-0.1482	0.4768	0.0064	9.90
02584	D	129503	0.7314	0.0890	0.1423	0.0333	0.7314	0.0040	0.4475	-0.2470	-0.4124	-0.3588	0.4475	-0.3746	0.0071	-9.90
02585	A	129503	0.3638	0.3638	0.1308	0.3823	0.1179	0.0052	0.3007	0.3007	-0.3389	-0.2680	-0.3595	1.5855	0.0064	9.90
02586	B	129503	0.6428	0.0853	0.6428	0.0834	0.1832	0.0053	0.4325	-0.4077	0.4325	-0.4033	-0.2996	0.1559	0.0066	-7.60

Appendix U:

2006 Common Grade 6 Multiple Choice Statistics for Reading

Item Detail			Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02587	A	137826	0.8042	0.8042	0.0785	0.0190	0.0978	0.0006	0.4082	0.4082	-0.2686	-0.2665	-0.3274	-0.8768	0.0076	-9.90
02588	D	137826	0.6971	0.0243	0.0680	0.2100	0.6971	0.0006	0.3847	-0.2003	-0.2927	-0.3400	0.3847	-0.1638	0.0066	-5.40
02589	C	137826	0.7332	0.0937	0.0905	0.7332	0.0816	0.0011	0.4686	-0.3554	-0.3024	0.4686	-0.4136	-0.4369	0.0069	-9.90
02590	B	137826	0.8447	0.0623	0.8447	0.0614	0.0306	0.0010	0.4624	-0.3262	0.4624	-0.3301	-0.3031	-1.2197	0.0083	-9.90
02591	D	137826	0.6426	0.0737	0.2133	0.0691	0.6426	0.0013	0.3657	-0.2761	-0.3002	-0.2985	0.3657	0.1437	0.0063	-1.50
02592	C	137826	0.5741	0.1151	0.2565	0.5741	0.0532	0.0011	0.3871	-0.4637	-0.2519	0.3871	-0.3599	0.4884	0.0061	0.60
02593	A	137826	0.7304	0.7304	0.0607	0.1924	0.0154	0.0012	0.3153	0.3153	-0.3587	-0.1891	-0.2775	-0.3528	0.0068	9.90
02594	A	137826	0.8386	0.8386	0.0476	0.0517	0.0604	0.0017	0.5223	0.5223	-0.3487	-0.3643	-0.3924	-1.1862	0.0082	-9.90
02595	C	137826	0.8977	0.0385	0.0297	0.8977	0.0321	0.0020	0.3651	-0.2239	-0.2651	0.3651	-0.2148	-1.7289	0.0096	-9.90
02596	B	137826	0.4902	0.0634	0.4902	0.0335	0.4105	0.0024	0.2664	-0.2506	0.2664	-0.2900	-0.2282	0.8891	0.0061	9.90
02597	D	137826	0.8652	0.0417	0.0261	0.0644	0.8652	0.0026	0.4465	-0.3471	-0.3226	-0.2588	0.4465	-1.3813	0.0086	-9.90
02598	B	137826	0.6775	0.1751	0.6775	0.0667	0.0780	0.0027	0.2683	-0.1371	0.2683	-0.3027	-0.2394	-0.0403	0.0065	9.90
02599	D	137826	0.5016	0.0555	0.1735	0.2660	0.5016	0.0033	0.2529	-0.3542	-0.2404	-0.1695	0.2529	0.8609	0.0061	9.90
02600	D	137826	0.7940	0.0624	0.0561	0.0836	0.7940	0.0039	0.3680	-0.2324	-0.3184	-0.2383	0.3680	-0.7819	0.0074	0.90
02601	D	137826	0.6870	0.0476	0.2192	0.0413	0.6870	0.0049	0.5338	-0.4707	-0.4373	-0.4165	0.5338	-0.1365	0.0066	-9.90
02602	B	137826	0.5658	0.0575	0.5658	0.2081	0.1634	0.0052	0.4015	-0.3691	0.4015	-0.2612	-0.4305	0.5230	0.0061	-3.10
02603	D	137826	0.7706	0.1029	0.0531	0.0677	0.7706	0.0057	0.5179	-0.4631	-0.3323	-0.3204	0.5179	-0.6320	0.0072	-9.90
02604	C	137826	0.5481	0.1395	0.2051	0.5481	0.1009	0.0064	0.3640	-0.3305	-0.2666	0.3640	-0.3500	0.6148	0.0061	9.90
02605	B	137826	0.5597	0.2350	0.5597	0.1278	0.0711	0.0065	0.3580	-0.2491	0.3580	-0.3451	-0.3742	0.5374	0.0061	9.90
02606	A	137826	0.3733	0.3733	0.2152	0.3518	0.0531	0.0066	0.1299	0.1299	-0.1686	-0.0258	-0.4038	1.5039	0.0062	9.90
02607	C	137826	0.5728	0.1033	0.0768	0.5728	0.2404	0.0066	0.4008	-0.2756	-0.4233	0.4008	-0.3403	0.4754	0.0061	-2.00
02608	B	137826	0.7850	0.0449	0.7850	0.0815	0.0816	0.0071	0.3911	-0.3065	0.3911	-0.3182	-0.2184	-0.7229	0.0073	-4.80
02609	C	137826	0.8455	0.0372	0.0575	0.8455	0.0595	0.0003	0.4113	-0.2976	-0.2608	0.4113	-0.2926	-1.2168	0.0082	-9.90
02610	A	137826	0.8886	0.8886	0.0386	0.0266	0.0456	0.0006	0.4097	0.4097	-0.2881	-0.2627	-0.2631	-1.6582	0.0094	-9.90
02611	D	137826	0.5041	0.0583	0.3852	0.0517	0.5041	0.0007	0.2191	-0.2832	-0.1328	-0.3755	0.2191	0.8415	0.0061	9.90
02612	D	137826	0.7591	0.1610	0.0456	0.0334	0.7591	0.0009	0.4851	-0.3536	-0.4074	-0.3995	0.4851	-0.5764	0.0071	-9.90
02613	C	137826	0.4078	0.1958	0.0962	0.4078	0.2988	0.0014	0.3379	-0.3468	-0.3214	0.3379	-0.3308	1.2849	0.0061	9.90
02614	A	137826	0.7479	0.7479	0.0933	0.0968	0.0606	0.0015	0.4484	0.4484	-0.3346	-0.3333	-0.3456	-0.4756	0.0070	-9.90
02615	A	137826	0.8136	0.8136	0.0880	0.0371	0.0601	0.0013	0.4104	0.4104	-0.2997	-0.3364	-0.2396	-0.9297	0.0077	-9.90
02616	D	137826	0.5055	0.0762	0.2666	0.1502	0.5055	0.0014	0.3327	-0.4191	-0.2290	-0.3476	0.3327	0.8086	0.0061	9.90
02617	D	137826	0.8518	0.0383	0.0509	0.0570	0.8518	0.0021	0.5496	-0.3499	-0.3901	-0.4037	0.5496	-1.3266	0.0085	-9.90
02618	D	137826	0.5450	0.0252	0.3247	0.1029	0.5450	0.0021	0.1121	-0.3279	0.0299	-0.2909	0.1121	0.6824	0.0061	9.90
02619	B	137826	0.5982	0.1662	0.5982	0.1614	0.0716	0.0026	0.4179	-0.4228	0.4179	-0.3053	-0.3097	0.3429	0.0062	-9.90
02620	B	137826	0.6090	0.0918	0.6090	0.2367	0.0596	0.0030	0.3290	-0.3478	0.3290	-0.1894	-0.3943	0.3192	0.0062	9.90
02621	D	137826	0.5996	0.0822	0.2136	0.1005	0.5996	0.0041	0.4124	-0.4673	-0.2702	-0.3879	0.4124	0.3259	0.0062	-5.40
02622	A	137826	0.4556	0.4556	0.1735	0.1477	0.2190	0.0042	0.3327	0.3327	-0.2469	-0.3890	-0.2962	1.0519	0.0061	9.90
02623	D	137826	0.3987	0.1231	0.3811	0.0920	0.3987	0.0052	0.1868	-0.2729	-0.0711	-0.3783	0.1868	1.3448	0.0061	9.90
02624	A	137826	0.3834	0.3834	0.3129	0.1531	0.1448	0.0058	0.1882	0.1882	-0.0970	-0.2937	-0.2369	1.4310	0.0062	9.90
02625	B	137826	0.4020	0.2122	0.4020	0.3039	0.0757	0.0062	0.1829	-0.1702	0.1829	-0.1190	-0.3380	1.3718	0.0061	9.90
02626	B	137826	0.6667	0.1152	0.6667	0.1262	0.0855	0.0063	0.4094	-0.3002	0.4094	-0.3512	-0.3163	0.0020	0.0064	-9.70

Appendix V:

2006 Common Grade 7 Multiple Choice Statistics for Reading

Item Detail			Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02627	D	142980	0.8580	0.0455	0.0233	0.0728	0.8580	0.0005	0.4277	-0.3011	-0.2485	-0.3134	0.4277	-1.3237	0.0083	-9.90
02628	A	142980	0.6466	0.6466	0.0639	0.0369	0.2518	0.0008	0.2885	0.2885	-0.2918	-0.3242	-0.1842	0.1083	0.0063	9.90
02629	D	142980	0.7249	0.0909	0.1322	0.0507	0.7249	0.0013	0.3574	-0.2941	-0.2198	-0.3252	0.3574	-0.3230	0.0066	9.90
02630	C	142980	0.5727	0.1087	0.1001	0.5727	0.2169	0.0016	0.2024	-0.3498	-0.2739	0.2024	0.0068	0.5448	0.0060	9.90
02631	C	142980	0.7058	0.0215	0.0792	0.7058	0.1919	0.0015	0.4838	-0.3471	-0.3925	0.4838	-0.3991	-0.2253	0.0065	-9.90
02632	B	142980	0.5581	0.2949	0.5581	0.0488	0.0968	0.0015	0.3725	-0.3322	0.3725	-0.3201	-0.3035	0.5907	0.0060	9.70
02633	A	142980	0.8942	0.8942	0.0359	0.0369	0.0321	0.0009	0.4273	0.4273	-0.2591	-0.2884	-0.2947	-1.7472	0.0094	-9.90
02634	D	142980	0.8869	0.0185	0.0374	0.0557	0.8869	0.0016	0.4603	-0.2671	-0.3337	-0.3167	0.4603	-1.6346	0.0091	-9.90
02635	A	142980	0.8208	0.8208	0.0467	0.0786	0.0523	0.0017	0.4140	0.4140	-0.3252	-0.2669	-0.2812	-1.0015	0.0076	-9.90
02636	A	142980	0.5933	0.5933	0.0994	0.0359	0.2694	0.0019	0.2740	0.2740	-0.3542	-0.3603	-0.1346	0.4158	0.0061	9.90
02637	D	142980	0.4956	0.2656	0.0493	0.1870	0.4956	0.0025	0.3151	-0.2614	-0.3519	-0.2980	0.3151	0.9034	0.0060	9.90
02638	B	142980	0.6403	0.2819	0.6403	0.0461	0.0294	0.0024	0.1982	-0.0706	0.1982	-0.3345	-0.3331	0.1806	0.0062	9.90
02639	D	142980	0.6671	0.1897	0.1102	0.0300	0.6671	0.0029	0.4132	-0.3554	-0.3129	-0.2950	0.4132	0.0093	0.0063	-9.90
02640	D	142980	0.6506	0.0765	0.2089	0.0580	0.6506	0.0060	0.5259	-0.4827	-0.4423	-0.3562	0.5259	0.0877	0.0063	-9.90
02641	B	142980	0.6702	0.1210	0.6702	0.1432	0.0593	0.0063	0.5277	-0.4120	0.5277	-0.4234	-0.4365	-0.0290	0.0064	-9.90
02642	D	142980	0.5826	0.1526	0.0723	0.1841	0.5826	0.0083	0.4312	-0.3886	-0.4288	-0.3105	0.4312	0.4512	0.0061	-9.60
02643	B	142980	0.6505	0.0554	0.6505	0.2398	0.0470	0.0073	0.4684	-0.4019	0.4684	-0.3862	-0.3564	0.0878	0.0063	-9.90
02644	D	142980	0.7030	0.1244	0.0750	0.0901	0.7030	0.0075	0.3997	-0.3174	-0.2795	-0.3010	0.3997	-0.1890	0.0065	-1.20
02645	D	142980	0.3426	0.2357	0.1537	0.2595	0.3426	0.0085	0.1879	-0.1395	-0.3077	-0.1605	0.1879	1.6663	0.0062	9.90
02646	C	142980	0.7540	0.1388	0.0331	0.7540	0.0662	0.0079	0.4967	-0.3828	-0.3656	0.4967	-0.3702	-0.5125	0.0069	-9.90
02647	C	142980	0.7517	0.0661	0.1040	0.7517	0.0777	0.0005	0.4110	-0.3397	-0.2984	0.4110	-0.2749	-0.5190	0.0069	-9.90
02648	B	142980	0.7108	0.0951	0.7108	0.0758	0.1177	0.0006	0.4500	-0.3656	0.4500	-0.3822	-0.2976	-0.2519	0.0066	-9.90
02649	C	142980	0.6583	0.0284	0.1482	0.6583	0.1642	0.0010	0.3655	-0.3093	-0.2259	0.3655	-0.3544	0.0548	0.0063	8.10
02650	A	142980	0.7633	0.7633	0.0308	0.0641	0.1410	0.0008	0.4650	0.4650	-0.3094	-0.3664	-0.3565	-0.5931	0.0070	-9.90
02651	B	142980	0.6919	0.0863	0.6919	0.0836	0.1372	0.0010	0.4094	-0.2996	0.4094	-0.3654	-0.2914	-0.1378	0.0065	-9.90
02652	A	142980	0.7218	0.7218	0.1935	0.0247	0.0584	0.0015	0.3344	0.3344	-0.2054	-0.3184	-0.3462	-0.3150	0.0066	9.90
02653	B	142980	0.6789	0.0765	0.6789	0.0913	0.1514	0.0018	0.2978	-0.2190	0.2978	-0.2904	-0.1807	-0.0331	0.0064	9.90
02654	B	142980	0.3577	0.1222	0.3577	0.3471	0.1713	0.0016	0.2230	-0.3351	0.2230	-0.1679	-0.2406	1.6088	0.0062	9.90
02655	B	142980	0.4455	0.0235	0.4455	0.0901	0.4386	0.0023	0.2584	-0.3894	0.2584	-0.3331	-0.1954	1.1642	0.0060	9.90
02656	A	142980	0.7480	0.7480	0.0717	0.1210	0.0571	0.0022	0.4036	0.4036	-0.3712	-0.2126	-0.3596	-0.4753	0.0068	-1.60
02657	C	142980	0.7181	0.0833	0.0401	0.7181	0.1563	0.0022	0.4418	-0.3854	-0.3811	0.4418	-0.2939	-0.3041	0.0066	-9.90
02658	C	142980	0.3450	0.4421	0.1297	0.3450	0.0790	0.0042	0.2773	-0.2205	-0.3991	0.2773	-0.3358	1.6716	0.0062	9.90
02659	C	142980	0.7061	0.0670	0.1157	0.7061	0.1066	0.0046	0.4236	-0.3898	-0.2530	0.4236	-0.3548	-0.2115	0.0065	-9.90
02660	D	142980	0.7688	0.0437	0.0380	0.1443	0.7688	0.0051	0.3862	-0.4022	-0.2885	-0.2289	0.3862	-0.6064	0.0070	-0.50
02661	A	142980	0.5698	0.5698	0.0845	0.1382	0.2020	0.0056	0.4228	0.4228	-0.3537	-0.4252	-0.3178	0.5184	0.0060	-8.10
02662	B	142980	0.5959	0.1958	0.5959	0.0892	0.1129	0.0061	0.3500	-0.2242	0.3500	-0.3111	-0.3516	0.3776	0.0061	9.90
02663	D	142980	0.6598	0.0604	0.1634	0.1102	0.6598	0.0062	0.4736	-0.4233	-0.3788	-0.3554	0.4736	0.0482	0.0063	-9.90
02664	D	142980	0.6280	0.0604	0.1331	0.1723	0.6280	0.0062	0.5387	-0.4747	-0.4355	-0.4546	0.5387	0.1926	0.0062	-9.90
02665	C	142980	0.4978	0.3394	0.0926	0.4978	0.0637	0.0065	0.3622	-0.2725	-0.4163	0.3622	-0.3834	0.8802	0.0060	9.90
02666	C	142980	0.8347	0.0591	0.0620	0.8347	0.0378	0.0064	0.4996	-0.3721	-0.3324	0.4996	-0.3415	-1.1295	0.0079	-9.90

Appendix W:

2006 Common Grade 4 Multiple Choice Statistics for Mathematics

Item Detail			Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02667	C	130008	0.5921	0.0373	0.3107	0.5921	0.0595	0.0004	0.3123	-0.2314	-0.2458	0.3123	-0.3607	0.6092	0.0064	9.90
02668	B	130008	0.5528	0.0414	0.5528	0.1919	0.2131	0.0008	0.3651	-0.3023	0.3651	-0.3131	-0.3302	0.8197	0.0063	9.90
02669	C	130008	0.6157	0.1108	0.2355	0.6157	0.0370	0.0010	0.3908	-0.4788	-0.2644	0.3908	-0.2605	0.5068	0.0064	9.90
02670	D	130008	0.7031	0.0585	0.0571	0.1801	0.7031	0.0011	0.4428	-0.3451	-0.2750	-0.3812	0.4428	0.0039	0.0068	-9.90
02671	D	130008	0.6924	0.0648	0.0825	0.1590	0.6924	0.0013	0.4093	-0.2987	-0.3501	-0.3078	0.4093	0.0505	0.0068	-9.90
02672	C	130008	0.8046	0.0529	0.1004	0.8046	0.0410	0.0011	0.4323	-0.3035	-0.2999	0.4323	-0.3379	-0.6843	0.0078	-9.90
02673	D	130008	0.4720	0.2396	0.2311	0.0549	0.4720	0.0023	0.4286	-0.4529	-0.3572	-0.3936	0.4286	1.2259	0.0063	-9.90
02674	C	130008	0.7811	0.1379	0.0590	0.7811	0.0211	0.0009	0.3766	-0.2729	-0.3212	0.3766	-0.2239	-0.4732	0.0074	-8.80
02675	D	130008	0.6640	0.2732	0.0386	0.0229	0.6640	0.0012	0.3727	-0.2956	-0.3718	-0.2972	0.3727	0.2222	0.0066	2.30
02676	B	130008	0.5008	0.0351	0.5008	0.3777	0.0842	0.0022	0.3101	-0.3299	0.3101	-0.2350	-0.3912	1.0978	0.0063	9.90
02677	D	130008	0.6740	0.2096	0.0318	0.0830	0.6740	0.0016	0.4054	-0.2694	-0.3109	-0.4474	0.4054	0.1869	0.0066	-4.80
02678	B	130008	0.7264	0.1175	0.7264	0.0777	0.0764	0.0020	0.3383	-0.2626	0.3383	-0.2044	-0.2759	-0.1222	0.0070	5.10
02679	D	130008	0.4951	0.1931	0.1219	0.1882	0.4951	0.0017	0.2908	-0.1483	-0.2641	-0.3671	0.2908	1.1230	0.0063	9.90
02680	C	130008	0.5188	0.1926	0.0436	0.5188	0.2434	0.0017	0.3762	-0.3145	-0.2459	0.3762	-0.3851	0.9796	0.0063	9.90
02681	C	130008	0.6606	0.1122	0.1442	0.6606	0.0817	0.0014	0.3435	-0.2758	-0.2923	0.3435	-0.2203	0.2623	0.0066	7.90
02682	B	130008	0.7879	0.1286	0.7879	0.0263	0.0558	0.0014	0.4316	-0.3462	0.4316	-0.2294	-0.3303	-0.5154	0.0075	-9.90
02683	B	130008	0.7262	0.0727	0.7262	0.1283	0.0711	0.0017	0.3758	-0.3061	0.3758	-0.2697	-0.2772	-0.1495	0.0070	2.80
02684	D	130008	0.6924	0.2319	0.0296	0.0444	0.6924	0.0018	0.4405	-0.3896	-0.2691	-0.3341	0.4405	0.0907	0.0067	-9.90
02685	C	130008	0.7145	0.1002	0.0985	0.7145	0.0850	0.0018	0.3993	-0.2578	-0.3256	0.3993	-0.3208	-0.0414	0.0069	-9.50
02686	C	130008	0.7620	0.1063	0.0840	0.7620	0.0459	0.0018	0.5145	-0.4738	-0.3276	0.5145	-0.3277	-0.3771	0.0073	-9.90
02687	B	130008	0.7747	0.0565	0.7747	0.0804	0.0863	0.0021	0.3798	-0.2897	0.3798	-0.2848	-0.2526	-0.4434	0.0074	0.10
02688	C	130008	0.5902	0.2074	0.1241	0.5902	0.0744	0.0040	0.3985	-0.3849	-0.2799	0.3985	-0.3157	0.6143	0.0064	-2.20
02689	B	130008	0.5794	0.0605	0.5794	0.0725	0.2867	0.0009	0.3872	-0.2392	0.3872	-0.2907	-0.3737	0.6775	0.0063	-0.60
02690	B	130008	0.8080	0.0291	0.8080	0.0598	0.1027	0.0005	0.5209	-0.1878	0.5209	-0.3682	-0.4792	-0.7287	0.0079	-9.90
02691	D	130008	0.7693	0.0149	0.2001	0.0149	0.7693	0.0009	0.2722	-0.2477	-0.2083	-0.2269	0.2722	-0.3715	0.0073	9.90
02692	A	130008	0.7667	0.7667	0.0652	0.1062	0.0610	0.0008	0.3082	0.3082	-0.2629	-0.1934	-0.2195	-0.3538	0.0073	9.90
02693	B	130008	0.6736	0.1949	0.6736	0.0645	0.0658	0.0011	0.2941	-0.1944	0.2941	-0.2802	-0.2447	0.2130	0.0066	9.90
02694	C	130008	0.6584	0.0380	0.0578	0.6584	0.2449	0.0009	0.2996	-0.2559	-0.3045	0.2996	-0.2131	0.2757	0.0066	9.90
02695	B	130008	0.8405	0.0440	0.8405	0.0432	0.0712	0.0010	0.4746	-0.2878	0.4746	-0.2553	-0.4193	-0.9375	0.0083	-9.90
02696	C	130008	0.5937	0.3156	0.0321	0.5937	0.0577	0.0009	0.2309	-0.1428	-0.3156	0.2309	-0.2765	0.6709	0.0063	9.90
02697	C	130008	0.5258	0.2033	0.2555	0.5258	0.0144	0.0009	0.3472	-0.4129	-0.2348	0.3472	-0.2990	0.9769	0.0063	9.90
02698	B	130008	0.7332	0.1455	0.7332	0.0674	0.0524	0.0014	0.4757	-0.4228	0.4757	-0.2894	-0.3336	-0.1858	0.0070	-9.90
02699	B	130008	0.7096	0.2498	0.7096	0.0261	0.0143	0.0002	0.2387	-0.2122	0.2387	-0.1567	-0.1291	0.0310	0.0068	9.90
02700	C	130008	0.8380	0.0910	0.0269	0.8380	0.0438	0.0003	0.5065	-0.4732	-0.2974	0.5065	-0.2325	-0.9432	0.0083	-9.90
02701	B	130008	0.7482	0.1279	0.7482	0.0625	0.0605	0.0009	0.3072	-0.2041	0.3072	-0.2247	-0.2534	-0.2619	0.0071	9.90
02702	A	130008	0.8316	0.8316	0.0540	0.0505	0.0629	0.0010	0.3894	0.3894	-0.3565	-0.2304	-0.2243	-0.8753	0.0082	-1.20
02703	B	130008	0.5920	0.0753	0.5920	0.0913	0.2406	0.0008	0.3469	-0.3834	0.3469	-0.3300	-0.2347	0.6180	0.0064	9.90
02704	C	130008	0.8120	0.0729	0.0642	0.8120	0.0499	0.0010	0.4785	-0.3507	-0.3531	0.4785	-0.3156	-0.7095	0.0079	-9.90
02705	D	130008	0.8949	0.0121	0.0525	0.0398	0.8949	0.0007	0.3210	-0.2019	-0.2411	-0.1866	0.3210	-1.4742	0.0098	-5.70
02706	D	130008	0.7020	0.0858	0.0868	0.1245	0.7020	0.0009	0.4705	-0.3365	-0.3172	-0.4291	0.4705	0.0051	0.0068	-9.90
02707	A	130008	0.7544	0.7544	0.0744	0.1154	0.0544	0.0013	0.3772	0.3772	-0.3346	-0.2709	-0.2146	-0.2861	0.0072	-5.60
02708	B	130008	0.7380	0.0767	0.7380	0.1574	0.0270	0.0010	0.4292	-0.2437	0.4292	-0.3892	-0.3134	-0.1855	0.0070	-9.90
02709	C	130008	0.7181	0.0319	0.1883	0.7181	0.0608	0.0009	0.3489	-0.2108	-0.3019	0.3489	-0.2382	-0.0712	0.0069	5.90
02710	C	130008	0.7005	0.0538	0.1752	0.7005	0.0695	0.0010	0.3407	-0.2789	-0.1931	0.3407	-0.3732	0.0270	0.0068	9.90
02711	B	130008	0.6616	0.0625	0.6616	0.1184	0.1557	0.0018	0.4813	-0.3350	0.4813	-0.4038	-0.4104	0.2364	0.0066	-9.90

Item Detail			Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02712	C	130008	0.7615	0.0458	0.1582	0.7615	0.0334	0.0011	0.4342	-0.3064	-0.3327	0.4342	-0.3536	-0.3569	0.0073	-9.90
02713	B	130008	0.8138	0.0727	0.8138	0.0592	0.0530	0.0013	0.4472	-0.3238	0.4472	-0.2919	-0.3325	-0.7243	0.0079	-9.90
02714	A	130008	0.5555	0.5555	0.1660	0.1138	0.1633	0.0013	0.2789	0.2789	-0.1831	-0.2631	-0.2643	0.7691	0.0063	9.90
02715	B	130008	0.6453	0.3203	0.6453	0.0184	0.0149	0.0011	0.3856	-0.3437	0.3856	-0.2991	-0.3055	0.3395	0.0065	-2.70
02716	A	130008	0.7594	0.7594	0.2185	0.0152	0.0057	0.0013	0.2737	0.2737	-0.2241	-0.2637	-0.1709	-0.3345	0.0072	9.90
02717	B	130008	0.6606	0.1117	0.6606	0.1866	0.0397	0.0015	0.4881	-0.4706	0.4881	-0.3774	-0.3436	0.2275	0.0066	-9.90
02718	B	130008	0.8330	0.0455	0.8330	0.0416	0.0784	0.0014	0.5179	-0.3247	0.5179	-0.3305	-0.4245	-0.9102	0.0083	-9.90
02719	D	130008	0.6938	0.1056	0.0796	0.1190	0.6938	0.0020	0.4699	-0.3781	-0.3741	-0.3490	0.4699	0.0322	0.0068	-9.90
02720	D	130008	0.7602	0.1024	0.0636	0.0709	0.7602	0.0030	0.5037	-0.4320	-0.3636	-0.3217	0.5037	-0.3758	0.0073	-9.90

Appendix X:

2006 Common Grade 6 Multiple Choice Statistics for Mathematics

Item Detail			Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02721	C	138282	0.7241	0.0896	0.1169	0.7241	0.0681	0.0013	0.3554	-0.3242	-0.2042	0.3554	-0.2756	-0.2415	0.0068	9.90
02722	A	138282	0.6234	0.6234	0.0527	0.0550	0.2681	0.0008	0.5062	0.5062	-0.2700	-0.3506	-0.4950	0.2940	0.0063	-9.90
02723	B	138282	0.6619	0.0385	0.6619	0.1326	0.1663	0.0007	0.3346	-0.2490	0.3346	-0.3353	-0.2097	0.1147	0.0064	9.90
02724	C	138282	0.8024	0.0321	0.1081	0.8024	0.0566	0.0008	0.3758	-0.2496	-0.2688	0.3758	-0.2750	-0.7674	0.0075	0.30
02725	D	138282	0.7336	0.1009	0.1386	0.0256	0.7336	0.0013	0.4817	-0.4784	-0.3342	-0.2266	0.4817	-0.3092	0.0069	-9.90
02726	D	138282	0.7125	0.1093	0.1257	0.0511	0.7125	0.0013	0.4793	-0.3664	-0.3913	-0.3279	0.4793	-0.2024	0.0067	-9.90
02727	A	138282	0.7018	0.7018	0.2298	0.0369	0.0306	0.0009	0.2855	0.2855	-0.1789	-0.3364	-0.2667	-0.0848	0.0066	9.90
02728	D	138282	0.5120	0.1050	0.1811	0.2012	0.5120	0.0006	0.3525	-0.4313	-0.2639	-0.2809	0.3525	0.9259	0.0061	9.90
02729	C	138282	0.6316	0.1387	0.1045	0.6316	0.1238	0.0015	0.4655	-0.3268	-0.3882	0.4655	-0.4225	0.2721	0.0063	-9.90
02730	B	138282	0.4739	0.3468	0.4739	0.0709	0.1070	0.0014	0.3224	-0.3301	0.3224	-0.2408	-0.2168	1.1461	0.0061	9.90
02731	A	138282	0.5099	0.5099	0.1691	0.2180	0.0998	0.0033	0.4743	0.4743	-0.3978	-0.4554	-0.4310	0.8983	0.0061	-9.90
02732	C	138282	0.6361	0.0106	0.0279	0.6361	0.3244	0.0010	0.2104	-0.1740	-0.1154	0.2104	-0.1885	0.3394	0.0063	9.90
02733	D	138282	0.6666	0.1588	0.0932	0.0801	0.6666	0.0014	0.4474	-0.3667	-0.3257	-0.3621	0.4474	0.0851	0.0065	-9.90
02734	A	138282	0.7357	0.7357	0.0410	0.0537	0.1680	0.0016	0.5286	0.5286	-0.2405	-0.3370	-0.5052	-0.3457	0.0069	-9.90
02735	C	138282	0.6590	0.1180	0.1516	0.6590	0.0696	0.0018	0.3061	-0.2735	-0.2058	0.3061	-0.2336	0.1796	0.0064	9.90
02736	D	138282	0.6536	0.0790	0.2158	0.0500	0.6536	0.0015	0.3562	-0.4121	-0.2186	-0.2926	0.3562	0.1704	0.0064	9.90
02737	C	138282	0.8004	0.0821	0.0716	0.8004	0.0446	0.0013	0.3769	-0.2259	-0.2583	0.3769	-0.3217	-0.7696	0.0075	-0.20
02738	B	138282	0.7002	0.0426	0.7002	0.1523	0.1031	0.0018	0.4092	-0.3012	0.4092	-0.2917	-0.3480	-0.0553	0.0066	-9.90
02739	C	138282	0.6627	0.1479	0.1383	0.6627	0.0494	0.0018	0.3934	-0.3556	-0.2928	0.3934	-0.2461	0.1146	0.0064	6.00
02740	C	138282	0.6363	0.2603	0.0293	0.6363	0.0725	0.0016	0.5784	-0.5786	-0.3765	0.5784	-0.3208	0.2254	0.0064	-9.90
02741	A	138282	0.9084	0.9084	0.0312	0.0519	0.0068	0.0016	0.3634	0.3634	-0.2284	-0.2803	-0.1680	-1.7688	0.0101	-9.90
02742	A	138282	0.7696	0.7696	0.1887	0.0283	0.0104	0.0029	0.3349	0.3349	-0.2895	-0.2075	-0.1941	-0.5226	0.0071	9.90
02743	D	138282	0.7955	0.0056	0.0109	0.1880	0.7955	0.0001	0.2940	-0.1504	-0.1740	-0.2626	0.2940	-0.6916	0.0074	-3.10
02744	C	138282	0.7628	0.0937	0.0514	0.7628	0.0914	0.0008	0.5664	-0.4508	-0.3489	0.5664	-0.4497	-0.5202	0.0071	-9.90
02745	A	138282	0.5222	0.5222	0.3815	0.0746	0.0208	0.0009	0.2774	0.2774	-0.2106	-0.3414	-0.2718	0.8669	0.0061	9.90
02746	D	138282	0.3692	0.0795	0.1055	0.4450	0.3692	0.0009	0.3674	-0.5091	-0.5615	-0.2801	0.3674	1.6662	0.0063	9.90
02747	B	138282	0.6955	0.1761	0.6955	0.0920	0.0357	0.0008	0.4586	-0.4301	0.4586	-0.3113	-0.2468	-0.0485	0.0066	-9.90
02748	B	138282	0.7645	0.1176	0.7645	0.0705	0.0458	0.0015	0.3893	-0.3470	0.3893	-0.2610	-0.1836	-0.5081	0.0071	-9.90
02749	C	138282	0.6907	0.1247	0.0392	0.6907	0.1445	0.0010	0.2738	-0.1894	-0.2916	0.2738	-0.1835	-0.0181	0.0066	9.90
02750	A	138282	0.5305	0.5305	0.0340	0.3236	0.1112	0.0008	0.5352	0.5352	-0.3415	-0.5756	-0.3189	0.7890	0.0061	-9.90
02751	D	138282	0.5390	0.2732	0.0772	0.1094	0.5390	0.0012	0.5559	-0.5968	-0.4045	-0.3629	0.5559	0.7452	0.0061	-9.90
02752	D	138282	0.6839	0.2471	0.0232	0.0447	0.6839	0.0011	0.4988	-0.4492	-0.2452	-0.4060	0.4988	0.0021	0.0065	-9.90
02753	C	138282	0.6924	0.0522	0.0149	0.6924	0.2403	0.0001	0.2462	-0.3486	-0.1673	0.2462	-0.1436	-0.0147	0.0066	9.90
02754	C	138282	0.7867	0.1274	0.0523	0.7867	0.0333	0.0003	0.5140	-0.4110	-0.4030	0.5140	-0.2753	-0.6936	0.0074	-9.90
02755	A	138282	0.5258	0.5258	0.0895	0.1306	0.2527	0.0015	0.2149	0.2149	-0.2913	-0.1433	-0.1514	0.8810	0.0061	9.90
02756	C	138282	0.8484	0.0218	0.0447	0.8484	0.0846	0.0006	0.4019	-0.2596	-0.2912	0.4019	-0.2806	-1.1271	0.0082	-9.90
02757	C	138282	0.8696	0.0093	0.0173	0.8696	0.1034	0.0004	0.2830	-0.1627	-0.1554	0.2830	-0.2321	-1.3167	0.0087	9.90
02758	B	138282	0.5460	0.0549	0.5460	0.3107	0.0871	0.0013	0.4474	-0.3904	0.4474	-0.4559	-0.2077	0.7103	0.0061	-9.90
02759	B	138282	0.8729	0.0672	0.8729	0.0346	0.0245	0.0007	0.3939	-0.2965	0.3939	-0.2620	-0.2093	-1.4070	0.0089	-9.90
02760	D	138282	0.7160	0.0390	0.0446	0.1997	0.7160	0.0007	0.4754	-0.3469	-0.3572	-0.3931	0.4754	-0.1889	0.0067	-9.90
02761	B	138282	0.5404	0.2210	0.5404	0.1243	0.1128	0.0014	0.4176	-0.3766	0.4176	-0.3365	-0.3679	0.7873	0.0061	-3.80
02762	D	138282	0.7789	0.0310	0.1294	0.0600	0.7789	0.0007	0.4347	-0.3101	-0.3163	-0.3306	0.4347	-0.6280	0.0073	-9.90
02763	D	138282	0.7421	0.2165	0.0228	0.0180	0.7421	0.0006	0.4201	-0.3625	-0.2889	-0.2753	0.4201	-0.3353	0.0069	-7.60
02764	B	138282	0.4614	0.0957	0.4614	0.2357	0.2058	0.0014	0.2046	-0.2974	0.2046	-0.1356	-0.1685	1.2180	0.0061	9.90
02765	A	138282	0.5319	0.5319	0.1979	0.0391	0.2300	0.0010	0.6104	0.6104	-0.4808	-0.4425	-0.6579	0.7586	0.0061	-9.90

Item Detail			Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02766	C	138282	0.5889	0.1044	0.1325	0.5889	0.1725	0.0016	0.2901	-0.2171	-0.2319	0.2901	-0.2544	0.5335	0.0062	9.90
02767	B	138282	0.8114	0.0589	0.8114	0.0873	0.0416	0.0008	0.3276	-0.2380	0.3276	-0.2312	-0.2008	-0.8206	0.0076	8.60
02768	A	138282	0.5697	0.5697	0.0727	0.0935	0.2629	0.0011	0.4624	0.4624	-0.3515	-0.3791	-0.4192	0.6207	0.0062	-9.90
02769	B	138282	0.8101	0.0719	0.8101	0.0357	0.0808	0.0014	0.4781	-0.3225	0.4781	-0.2708	-0.3915	-0.8646	0.0077	-9.90
02770	C	138282	0.7237	0.1031	0.0766	0.7237	0.0946	0.0020	0.4126	-0.3032	-0.3013	0.4126	-0.3101	-0.2297	0.0068	-9.90
02771	B	138282	0.5781	0.1242	0.5781	0.2292	0.0668	0.0017	0.3088	-0.3562	0.3088	-0.1915	-0.2497	0.5896	0.0062	9.90
02772	B	138282	0.8312	0.0356	0.8312	0.1044	0.0276	0.0013	0.4253	-0.2562	0.4253	-0.3351	-0.2824	-1.0324	0.0080	-8.10
02773	D	138282	0.5622	0.1983	0.1328	0.1045	0.5622	0.0022	0.5721	-0.5886	-0.4491	-0.4354	0.5721	0.6433	0.0062	-9.90
02774	D	138282	0.6902	0.1247	0.1355	0.0471	0.6902	0.0024	0.4029	-0.4285	-0.1900	-0.3317	0.4029	-0.0651	0.0066	9.20

Appendix Y:

2006 Common Grade 7 Multiple Choice Statistics for Mathematics

Item Detail			Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02775	D	143471	0.8227	0.0734	0.0250	0.0785	0.8227	0.0005	0.3482	-0.2439	-0.2174	-0.2515	0.3482	-1.0404	0.0076	-0.40
02776	D	143471	0.6773	0.1384	0.0581	0.1255	0.6773	0.0007	0.5527	-0.5167	-0.3524	-0.4083	0.5527	-0.1363	0.0064	-9.90
02777	A	143471	0.5577	0.5577	0.1128	0.1585	0.1700	0.0011	0.5106	0.5106	-0.4313	-0.4917	-0.4118	0.4987	0.0060	-9.90
02778	C	143471	0.6879	0.0183	0.1782	0.6879	0.1150	0.0007	0.4009	-0.2268	-0.3463	0.4009	-0.3151	-0.1561	0.0064	4.90
02779	A	143471	0.6914	0.6914	0.0846	0.0119	0.2114	0.0007	0.3138	0.3138	-0.3444	-0.2203	-0.2026	-0.1653	0.0064	9.90
02780	D	143471	0.5946	0.0709	0.0913	0.2412	0.5946	0.0019	0.4692	-0.4014	-0.2740	-0.4473	0.4692	0.3140	0.0061	-9.90
02781	C	143471	0.4277	0.1392	0.3634	0.4277	0.0680	0.0017	0.4560	-0.5048	-0.4525	0.4560	-0.2305	1.1709	0.0060	-9.90
02782	B	143471	0.4890	0.1206	0.4890	0.2559	0.1333	0.0012	0.2470	-0.3188	0.2470	-0.1842	-0.1669	0.8690	0.0060	9.90
02783	C	143471	0.5870	0.1077	0.2053	0.5870	0.0989	0.0011	0.3860	-0.3828	-0.3130	0.3860	-0.2653	0.3714	0.0061	7.80
02784	A	143471	0.5777	0.5777	0.1236	0.2670	0.0298	0.0019	0.2049	0.2049	-0.3071	-0.0800	-0.2183	0.4621	0.0060	9.90
02785	C	143471	0.4114	0.1700	0.2130	0.4114	0.2040	0.0016	0.2468	-0.1964	-0.2885	0.2468	-0.2006	1.2940	0.0061	9.90
02786	C	143471	0.6476	0.1626	0.1421	0.6476	0.0465	0.0012	0.4528	-0.3289	-0.4327	0.4528	-0.2812	0.0360	0.0062	-9.90
02787	D	143471	0.6111	0.0999	0.1785	0.1072	0.6111	0.0033	0.4003	-0.2783	-0.3133	-0.3759	0.4003	0.2676	0.0061	-5.70
02788	A	143471	0.6732	0.6732	0.2659	0.0348	0.0248	0.0013	0.3511	0.3511	-0.2802	-0.3024	-0.2830	-0.0654	0.0063	9.90
02789	B	143471	0.5523	0.1832	0.5523	0.0831	0.1784	0.0030	0.1605	-0.1472	0.1605	-0.2216	-0.0649	0.6003	0.0060	9.90
02790	C	143471	0.6160	0.0521	0.1093	0.6160	0.2211	0.0016	0.4915	-0.3473	-0.4629	0.4915	-0.3955	0.2159	0.0061	-9.90
02791	B	143471	0.5415	0.1372	0.5415	0.1339	0.1845	0.0029	0.3721	-0.3998	0.3721	-0.2861	-0.2659	0.6162	0.0060	5.70
02792	D	143471	0.6646	0.0778	0.0636	0.1923	0.6646	0.0018	0.3052	-0.2416	-0.2595	-0.2185	0.3052	-0.0121	0.0063	9.90
02793	B	143471	0.5733	0.2757	0.5733	0.1137	0.0341	0.0031	0.3873	-0.3081	0.3873	-0.3798	-0.2811	0.4607	0.0060	-2.70
02794	B	143471	0.6841	0.0959	0.6841	0.0978	0.1202	0.0020	0.3934	-0.2708	0.3934	-0.2245	-0.3805	-0.1420	0.0064	-6.00
02795	D	143471	0.6420	0.0589	0.0303	0.2665	0.6420	0.0023	0.4229	-0.3027	-0.3323	-0.3689	0.4229	0.0923	0.0062	-7.20
02796	B	143471	0.6243	0.2808	0.6243	0.0655	0.0255	0.0040	0.4241	-0.4202	0.4241	-0.2069	-0.2771	0.1991	0.0062	-5.70
02797	A	143471	0.7306	0.7306	0.0712	0.1546	0.0434	0.0002	0.4193	0.4193	-0.1409	-0.4263	-0.2871	-0.4212	0.0067	-9.90
02798	B	143471	0.5009	0.0855	0.5009	0.0848	0.3271	0.0017	0.5056	-0.3183	0.5056	-0.3360	-0.5425	0.7899	0.0060	-9.90
02799	B	143471	0.7063	0.1405	0.7063	0.0954	0.0563	0.0016	0.3640	-0.3560	0.3640	-0.2237	-0.1913	-0.2398	0.0065	0.60
02800	A	143471	0.7767	0.7767	0.0763	0.0953	0.0509	0.0008	0.4132	0.4132	-0.3274	-0.3177	-0.2197	-0.6986	0.0070	-9.90
02801	A	143471	0.4622	0.4622	0.1927	0.2336	0.1101	0.0013	0.2575	0.2575	-0.1751	-0.2857	-0.2123	1.0327	0.0060	9.90
02802	D	143471	0.7492	0.0373	0.1620	0.0505	0.7492	0.0010	0.4431	-0.2062	-0.4103	-0.2760	0.4431	-0.5483	0.0068	-9.90
02803	A	143471	0.7694	0.7694	0.1352	0.0448	0.0493	0.0014	0.4133	0.4133	-0.2963	-0.3037	-0.3107	-0.6615	0.0070	-9.90
02804	D	143471	0.6497	0.0491	0.0456	0.2548	0.6497	0.0008	0.3046	-0.2552	-0.3527	-0.2089	0.3046	0.0793	0.0062	9.90
02805	B	143471	0.5963	0.2048	0.5963	0.0982	0.0988	0.0020	0.4166	-0.2551	0.4166	-0.3888	-0.4416	0.3382	0.0061	-4.80
02806	A	143471	0.5954	0.5954	0.0834	0.1966	0.1236	0.0010	0.4365	0.4365	-0.3965	-0.3406	-0.3617	0.3382	0.0061	-9.90
02807	A	143471	0.7931	0.7931	0.1040	0.0666	0.0345	0.0018	0.4041	0.4041	-0.2837	-0.3086	-0.2679	-0.8527	0.0073	-9.90
02808	D	143471	0.6798	0.1831	0.0435	0.0929	0.6798	0.0006	0.5218	-0.4261	-0.3775	-0.4249	0.5218	-0.1378	0.0064	-9.90
02809	B	143471	0.6537	0.0801	0.6537	0.2023	0.0618	0.0020	0.4664	-0.3570	0.4664	-0.4028	-0.3142	0.0115	0.0063	-9.90
02810	B	143471	0.5824	0.3305	0.5824	0.0575	0.0285	0.0010	0.4515	-0.4550	0.4515	-0.2199	-0.2636	0.3555	0.0061	-9.90
02811	C	143471	0.7561	0.0450	0.0997	0.7561	0.0986	0.0007	0.4260	-0.2734	-0.3197	0.4260	-0.3242	-0.5757	0.0069	-9.90
02812	A	143471	0.5639	0.5639	0.0965	0.1510	0.1872	0.0014	0.3727	0.3727	-0.3373	-0.3862	-0.2326	0.4862	0.0060	5.60
02813	B	143471	0.6061	0.1912	0.6061	0.1072	0.0936	0.0020	0.3854	-0.3881	0.3854	-0.2609	-0.2474	0.3007	0.0061	7.10
02814	A	143471	0.7730	0.7730	0.1312	0.0304	0.0646	0.0008	0.3778	0.3778	-0.2695	-0.2862	-0.2767	-0.6755	0.0070	-0.70
02815	B	143471	0.7928	0.0276	0.7928	0.0297	0.1492	0.0006	0.4062	-0.2306	0.4062	-0.3030	-0.3240	-0.8211	0.0072	-9.90
02816	C	143471	0.7038	0.1012	0.1193	0.7038	0.0745	0.0011	0.3527	-0.3563	-0.1550	0.3527	-0.2960	-0.3123	0.0065	9.90
02817	D	143471	0.7424	0.0609	0.0617	0.1342	0.7424	0.0008	0.2928	-0.2665	-0.2414	-0.1634	0.2928	-0.4633	0.0067	9.90
02818	C	143471	0.5399	0.1460	0.0689	0.5399	0.2441	0.0011	0.4907	-0.2902	-0.3630	0.4907	-0.5445	0.6013	0.0060	-9.90
02819	D	143471	0.5592	0.1333	0.1188	0.1868	0.5592	0.0019	0.3138	-0.2531	-0.3299	-0.2218	0.3138	0.5281	0.0060	9.90

Item Detail			Proportions						Point Biserials					Rasch Statistics		
Item ID	Answer Key	N	P-Value	A	B	C	D	Other	Item Total Corr	A	B	C	D	Logit	SE	Outfit t
02820	D	143471	0.8016	0.0979	0.0516	0.0478	0.8016	0.0011	0.4092	-0.2925	-0.2897	-0.2824	0.4092	-0.8824	0.0073	-9.90
02821	A	143471	0.7117	0.7117	0.1384	0.0989	0.0497	0.0014	0.4117	0.4117	-0.2968	-0.3395	-0.2945	-0.2978	0.0065	-9.90
02822	C	143471	0.5126	0.2389	0.1761	0.5126	0.0706	0.0018	0.2508	-0.1708	-0.2950	0.2508	-0.1920	0.7863	0.0060	9.90
02823	C	143471	0.6586	0.1623	0.0691	0.6586	0.1081	0.0020	0.4212	-0.2733	-0.3624	0.4212	-0.3807	0.0009	0.0063	-9.40
02824	B	143471	0.7719	0.0743	0.7719	0.1060	0.0462	0.0016	0.3995	-0.2987	0.3995	-0.2652	-0.2962	-0.6717	0.0070	-9.90
02825	C	143471	0.8205	0.0917	0.0523	0.8205	0.0338	0.0017	0.4658	-0.3576	-0.2951	0.4658	-0.3128	-1.0580	0.0076	-9.90
02826	C	143471	0.7172	0.1402	0.0711	0.7172	0.0701	0.0014	0.3915	-0.2544	-0.3118	0.3915	-0.3304	-0.3446	0.0066	-1.50
02827	D	143471	0.8092	0.0524	0.1017	0.0346	0.8092	0.0021	0.4123	-0.2515	-0.3143	-0.2908	0.4123	-0.9714	0.0075	-9.90
02828	C	143471	0.7815	0.0541	0.0976	0.7815	0.0636	0.0032	0.4752	-0.3169	-0.3685	0.4752	-0.3218	-0.7656	0.0071	-9.90

Appendix Z:

2006 Common Grade 4 Constructed Response Statistics for Reading

Item Detail			Proportions					Point Biserials					Rasch Statistics		
Item ID	Max Score Points	N	P-Value	0	1	2	3	Item Total Corr	0	1	2	3	Logit	SE	Outfit t
02829	3	129503	0.6446	0.1236	0.1744	0.3465	0.3555	0.6108	-0.4642	-0.5426	-0.4510	0.4510	0.2200	0.0037	-5.10
02830	3	129503	0.5887	0.1636	0.1539	0.4355	0.2471	0.6106	-0.4870	-0.5559	-0.3985	0.3985	0.5689	0.0038	-0.30
02831	3	129503	0.4694	0.1400	0.4213	0.3295	0.1093	0.5179	-0.4126	-0.4403	-0.2689	0.2689	1.1068	0.0041	5.00
02832	3	129503	0.4545	0.1117	0.5465	0.2084	0.1335	0.4990	-0.4535	-0.3829	-0.2924	0.2924	1.1068	0.0041	3.00

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix AA:

2006 Common Grade 6 Constructed Response Statistics for Reading

Item Detail			Proportions					Point Biserials					Rasch Statistics		
Item ID	Max Score Points	N	P-Value	0	1	2	3	Item Total Corr	0	1	2	3	Logit	SE	Outfit t
02833	3	137826	0.6041	0.0517	0.2907	0.4511	0.2064	0.4935	-0.3623	-0.4422	-0.2804	0.2804	0.1012	0.0041	9.90
02834	3	137826	0.5811	0.0799	0.2795	0.4579	0.1826	0.6177	-0.4189	-0.5569	-0.3672	0.3672	0.2714	0.0040	-9.90
02835	3	137826	0.5457	0.0603	0.3784	0.4253	0.1361	0.5881	-0.3671	-0.5483	-0.3065	0.3065	0.4218	0.0042	-9.90
02836	3	137826	0.5880	0.0936	0.1718	0.6117	0.1229	0.6393	-0.4640	-0.6032	-0.3020	0.3020	0.4658	0.0043	-9.90

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix BB:

2006 Common Grade 7 Constructed Response Statistics for Reading

Item Detail			Proportions					Point Biserials					Rasch Statistics		
Item ID	Max Score Points	N	P-Value	0	1	2	3	Item Total Corr	0	1	2	3	Logit	SE	Outfit t
02837	3	142980	0.5363	0.0643	0.3662	0.4660	0.1035	0.5286	-0.3879	-0.4539	-0.2643	0.2643	0.5456	0.0042	-9.90
02838	3	142980	0.5988	0.0794	0.2532	0.4590	0.2084	0.5366	-0.4099	-0.4422	-0.3489	0.3489	0.2207	0.0039	-1.00
02839	3	142980	0.5839	0.0902	0.2606	0.4563	0.1929	0.6037	-0.4460	-0.5350	-0.3567	0.3567	0.3278	0.0039	-9.90
02840	3	142980	0.5430	0.1020	0.3133	0.4386	0.1462	0.6118	-0.4616	-0.5376	-0.3340	0.3340	0.3278	0.0039	-9.90

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix CC:

2006 Common Grade 4 Constructed Response Statistics for Mathematics

Item Detail			Proportions						Point Biserials						Rasch Statistics		
Item ID	Max Score Points	N	P-Value	0	1	2	3	4	Item Total Corr	0	1	2	3	4	Logit	SE	Outfit t
02841	4	130008	0.4530	0.1745	0.2669	0.3015	0.0867	0.1705	0.6018	-0.4935	-0.5517	-0.4217	-0.3686	0.3686	1.1846	0.0031	9.90
02842	4	130008	0.6509	0.0953	0.1522	0.1949	0.1692	0.3885	0.6510	-0.4143	-0.5610	-0.5754	-0.5048	0.5048	0.3741	0.0030	9.90
02843	4	130008	0.7264	0.0613	0.1271	0.1195	0.2290	0.4631	0.5575	-0.2920	-0.4687	-0.5096	-0.4491	0.4491	0.0418	0.0032	9.90

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix DD:

2006 Common Grade 6 Constructed Response Statistics for Mathematics

Item Detail			Proportions						Point Biserials						Rasch Statistics		
Item ID	Max Score Points	N	P-Value	0	1	2	3	4	Item Total Corr	0	1	2	3	4	Logit	SE	Outfit t
02844	4	138282	0.3777	0.1882	0.4608	0.1253	0.1033	0.1224	0.5179	-0.4777	-0.3910	-0.3838	-0.3494	0.3494	1.3499	0.0031	9.90
02845	4	138282	0.5620	0.1149	0.2164	0.1481	0.3470	0.1736	0.5799	-0.3798	-0.4841	-0.5330	-0.3459	0.3459	0.7016	0.0031	9.90
02846	4	138282	0.5548	0.1786	0.1766	0.1699	0.1966	0.2782	0.6285	-0.5049	-0.5533	-0.5338	-0.4403	0.4403	0.7730	0.0028	9.90

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix EE:

2006 Common Grade 7 Constructed Response Statistics for Mathematics

Item Detail			Proportions						Point Biserials						Rasch Statistics		
Item ID	Max Score Points	N	P-Value	0	1	2	3	4	Item Total Corr	0	1	2	3	4	Logit	SE	Outfit t
02847	4	143471	0.3194	0.4775	0.1960	0.0624	0.0999	0.1642	0.6447	-0.6006	-0.5854	-0.5470	-0.4607	0.4607	1.4603	0.0027	9.90
02848	4	143471	0.2460	0.5251	0.2173	0.0891	0.0854	0.0831	0.5902	-0.5067	-0.5392	-0.4837	-0.3638	0.3638	1.8500	0.0030	3.70
02849	4	143471	0.5457	0.1106	0.2143	0.2873	0.1576	0.2303	0.6480	-0.4456	-0.5760	-0.5128	-0.4416	0.4416	0.5163	0.0029	9.90

NOTE: Overall P-value is an indicator of item difficulty, with higher values indicating easier items. Category proportion values are the percentage of students attaining each score category.

Appendix FF:

2006 Raw to Scale Score Tables

Reading Grade 4

Raw Score	Measure	Scale Score	Logit SE	Scale Score SE	Freq	Freq %	Cum Freq	Cum Freq %	Percentile
0	-5.2582	700	1.8335	367	0	0	0	0	0
1	-4.0343	700	1.0143	203	0	0	0	0	0
2	-3.3122	700	0.7274	145	5	0	5	0	1
3	-2.8775	700	0.6023	120	10	0	15	0	1
4	-2.5601	700	0.529	106	32	0	47	0	1
5	-2.3069	700	0.4798	96	67	0.1	114	0.1	1
6	-2.0941	737	0.4442	89	136	0.1	250	0.2	1
7	-1.9091	774	0.4171	83	286	0.2	536	0.4	1
8	-1.7442	807	0.3957	79	392	0.3	928	0.7	1
9	-1.5946	837	0.3784	76	646	0.5	1574	1.2	1
10	-1.4569	865	0.3642	73	906	0.7	2480	1.9	2
11	-1.3286	891	0.3523	70	1035	0.8	3515	2.7	2
12	-1.2081	915	0.3423	68	1263	1	4778	3.7	3
13	-1.0939	938	0.3338	67	1350	1	6128	4.7	4
14	-0.985	959	0.3265	65	1497	1.2	7625	5.9	5
15	-0.8804	980	0.3203	64	1498	1.2	9123	7	6
16	-0.7795	1000	0.3151	63	1699	1.3	10822	8.4	8
17	-0.6817	1020	0.3107	62	1703	1.3	12525	9.7	9
18	-0.5863	1039	0.307	61	1768	1.4	14293	11	10
19	-0.4931	1058	0.3039	61	1826	1.4	16119	12.4	12
20	-0.4015	1076	0.3015	60	1971	1.5	18090	14	13
21	-0.3112	1094	0.2996	60	1991	1.5	20081	15.5	15
22	-0.2218	1112	0.2983	60	2150	1.7	22231	17.2	16
23	-0.1331	1130	0.2974	59	2277	1.8	24508	18.9	18
24	-0.0448	1147	0.2971	59	2379	1.8	26887	20.8	20
25	0.0435	1165	0.2972	59	2525	1.9	29412	22.7	22
26	0.132	1183	0.2978	60	2829	2.2	32241	24.9	24
27	0.2209	1200	0.2988	60	2896	2.2	35137	27.1	26
28	0.3107	1218	0.3003	60	3125	2.4	38262	29.5	28
29	0.4014	1237	0.3023	60	3391	2.6	41653	32.2	31
30	0.4935	1255	0.3047	61	3638	2.8	45291	35	34
31	0.5872	1274	0.3075	62	3826	3	49117	37.9	36
32	0.6828	1293	0.3109	62	4180	3.2	53297	41.2	40
33	0.7806	1312	0.3147	63	4299	3.3	57596	44.5	43
34	0.8809	1332	0.3191	64	4783	3.7	62379	48.2	46
35	0.9843	1353	0.324	65	4991	3.9	67370	52	50
36	1.091	1375	0.3295	66	5282	4.1	72652	56.1	54
37	1.2017	1397	0.3358	67	5469	4.2	78121	60.3	58
38	1.3167	1420	0.3428	69	5694	4.4	83815	64.7	63
39	1.4369	1444	0.3506	70	5731	4.4	89546	69.1	67
40	1.5629	1469	0.3595	72	5897	4.6	95443	73.7	71
41	1.6957	1495	0.3696	74	5531	4.3	100974	78	76
42	1.8366	1524	0.3813	76	5558	4.3	106532	82.3	80
43	1.987	1554	0.3949	79	5191	4	111723	86.3	84
44	2.1494	1586	0.4113	82	4627	3.6	116350	89.8	88
45	2.3266	1622	0.4313	86	3942	3	120292	92.9	91
46	2.5234	1661	0.4568	91	3377	2.6	123669	95.5	94
47	2.747	1706	0.4904	98	2477	1.9	126146	97.4	96
48	3.0098	1758	0.5374	107	1642	1.3	127788	98.7	98
49	3.3354	1823	0.6085	122	1006	0.8	128794	99.5	99
50	3.7769	1912	0.7316	146	487	0.4	129281	99.8	99
51	4.5044	2057	1.0167	203	188	0.1	129469	100	99
52	5.7317	2303	1.8347	367	34	0	129503	100	99

Reading Grade 6

Raw Score	Measure	Scale Score	Logit SE	Scale Score SE	Freq	Freq %	Cum Freq	Cum Freq %	Percentile
0	-5.5981	700	1.8366	367	0	0	0	0	0
1	-4.3662	700	1.0198	204	4	0	4	0	1
2	-3.6329	700	0.735	147	1	0	5	0	1
3	-3.1871	700	0.6114	122	8	0	13	0	1
4	-2.8587	700	0.5392	108	23	0	36	0	1
5	-2.5946	700	0.491	98	63	0	99	0.1	1
6	-2.3711	700	0.4561	91	114	0.1	213	0.2	1
7	-2.1755	734	0.4295	86	193	0.1	406	0.3	1
8	-2.0001	769	0.4087	82	362	0.3	768	0.6	1
9	-1.8401	801	0.3918	78	478	0.3	1246	0.9	1
10	-1.6922	831	0.3779	76	691	0.5	1937	1.4	1
11	-1.5538	858	0.3664	73	914	0.7	2851	2.1	2
12	-1.4232	884	0.3566	71	1061	0.8	3912	2.8	2
13	-1.2991	909	0.3484	70	1282	0.9	5194	3.8	3
14	-1.1801	933	0.3414	68	1365	1	6559	4.8	4
15	-1.0657	956	0.3354	67	1627	1.2	8186	5.9	5
16	-0.9549	978	0.3304	66	1645	1.2	9831	7.1	7
17	-0.8472	1000	0.3261	65	1729	1.3	11560	8.4	8
18	-0.7421	1021	0.3225	65	1853	1.3	13413	9.7	9
19	-0.6391	1041	0.3195	64	1913	1.4	15326	11.1	10
20	-0.5378	1061	0.3171	63	2021	1.5	17347	12.6	12
21	-0.4379	1081	0.3152	63	2131	1.5	19478	14.1	13
22	-0.3391	1101	0.3137	63	2282	1.7	21760	15.8	15
23	-0.2409	1121	0.3127	63	2440	1.8	24200	17.6	17
24	-0.1434	1140	0.3121	62	2588	1.9	26788	19.4	18
25	-0.0461	1160	0.3118	62	2785	2	29573	21.5	20
26	0.0511	1179	0.312	62	2882	2.1	32455	23.5	23
27	0.1486	1199	0.3125	63	3273	2.4	35728	25.9	25
28	0.2464	1218	0.3133	63	3599	2.6	39327	28.5	27
29	0.345	1238	0.3146	63	3879	2.8	43206	31.3	30
30	0.4445	1258	0.3163	63	4201	3	47407	34.4	33
31	0.5452	1278	0.3183	64	4413	3.2	51820	37.6	36
32	0.6473	1298	0.3208	64	4892	3.5	56712	41.1	39
33	0.7511	1319	0.3238	65	5229	3.8	61941	44.9	43
34	0.8571	1340	0.3273	65	5731	4.2	67672	49.1	47
35	0.9656	1362	0.3314	66	5975	4.3	73647	53.4	51
36	1.077	1384	0.3362	67	6190	4.5	79837	57.9	56
37	1.1918	1407	0.3417	68	6736	4.9	86573	62.8	60
38	1.3108	1431	0.3481	70	6903	5	93476	67.8	65
39	1.4345	1456	0.3555	71	6525	4.7	100001	72.6	70
40	1.5639	1482	0.3642	73	6540	4.7	106541	77.3	75
41	1.7002	1509	0.3743	75	6380	4.6	112921	81.9	80
42	1.8446	1538	0.3862	77	5795	4.2	118716	86.1	84
43	1.9992	1569	0.4005	80	5305	3.8	124021	90	88
44	2.1664	1602	0.4177	84	4403	3.2	128424	93.2	92
45	2.3495	1639	0.4389	88	3410	2.5	131834	95.7	94
46	2.5537	1680	0.4658	93	2543	1.8	134377	97.5	97
47	2.7866	1726	0.5009	100	1687	1.2	136064	98.7	98
48	3.061	1781	0.5493	110	979	0.7	137043	99.4	99
49	3.4009	1849	0.6214	124	518	0.4	137561	99.8	99
50	3.8598	1941	0.7444	149	194	0.1	137755	99.9	99
51	4.6078	2091	1.0274	205	65	0	137820	100	99
52	5.8512	2339	1.8413	368	6	0	137826	100	99

Reading Grade 7

Raw Score	Measure	Scale Score	Logit SE	Scale Score SE	Freq	Freq %	Cum Freq	Cum Freq %	Percentile
0	-5.4763	700	1.8359	367	1	0	1	0	1
1	-4.2462	700	1.0184	204	1	0	2	0	1
2	-3.5158	700	0.7329	147	2	0	4	0	1
3	-3.0732	700	0.6087	122	14	0	18	0	1
4	-2.7484	700	0.5358	107	29	0	47	0	1
5	-2.4882	700	0.487	97	67	0	114	0.1	1
6	-2.2686	741	0.4515	90	148	0.1	262	0.2	1
7	-2.0772	779	0.4245	85	271	0.2	533	0.4	1
8	-1.9062	813	0.4032	81	429	0.3	962	0.7	1
9	-1.7508	844	0.3859	77	644	0.5	1606	1.1	1
10	-1.6075	873	0.3717	74	860	0.6	2466	1.7	1
11	-1.4738	900	0.3598	72	1083	0.8	3549	2.5	2
12	-1.3481	925	0.3497	70	1221	0.9	4770	3.3	3
13	-1.2288	949	0.3412	68	1421	1	6191	4.3	4
14	-1.1149	971	0.3339	67	1484	1	7675	5.4	5
15	-1.0056	993	0.3277	66	1661	1.2	9336	6.5	6
16	-0.9	1014	0.3224	64	1741	1.2	11077	7.7	7
17	-0.7976	1035	0.3178	64	1809	1.3	12886	9	8
18	-0.6978	1055	0.314	63	1934	1.4	14820	10.4	10
19	-0.6002	1074	0.3109	62	2018	1.4	16838	11.8	11
20	-0.5043	1094	0.3083	62	2123	1.5	18961	13.3	13
21	-0.41	1112	0.3062	61	2289	1.6	21250	14.9	14
22	-0.3167	1131	0.3047	61	2448	1.7	23698	16.6	16
23	-0.2242	1150	0.3036	61	2597	1.8	26295	18.4	17
24	-0.1323	1168	0.3029	61	2701	1.9	28996	20.3	19
25	-0.0406	1186	0.3027	61	2951	2.1	31947	22.3	21
26	0.0511	1205	0.3029	61	3236	2.3	35183	24.6	23
27	0.143	1223	0.3036	61	3431	2.4	38614	27	26
28	0.2355	1242	0.3047	61	3555	2.5	42169	29.5	28
29	0.3287	1260	0.3062	61	3894	2.7	46063	32.2	31
30	0.423	1279	0.3081	62	4147	2.9	50210	35.1	34
31	0.5187	1298	0.3105	62	4322	3	54532	38.1	37
32	0.616	1318	0.3134	63	4746	3.3	59278	41.5	40
33	0.7153	1337	0.3169	63	5037	3.5	64315	45	43
34	0.8169	1358	0.3209	64	5214	3.6	69529	48.6	47
35	0.9213	1379	0.3255	65	5591	3.9	75120	52.5	51
36	1.029	1400	0.3308	66	5878	4.1	80998	56.6	55
37	1.1405	1423	0.3369	67	6091	4.3	87089	60.9	59
38	1.2563	1446	0.3439	69	6307	4.4	93396	65.3	63
39	1.3773	1470	0.3519	70	6489	4.5	99885	69.9	68
40	1.5043	1495	0.3611	72	6353	4.4	106238	74.3	72
41	1.6386	1522	0.3718	74	6343	4.4	112581	78.7	77
42	1.7814	1551	0.3843	77	5974	4.2	118555	82.9	81
43	1.9346	1581	0.3991	80	5440	3.8	123995	86.7	85
44	2.1009	1615	0.4167	83	4954	3.5	128949	90.2	88
45	2.2833	1651	0.4384	88	4218	3	133167	93.1	92
46	2.4872	1692	0.4655	93	3486	2.4	136653	95.6	94
47	2.7199	1738	0.5009	100	2519	1.8	139172	97.3	96
48	2.9944	1793	0.5494	110	1742	1.2	140914	98.6	98
49	3.3345	1861	0.6215	124	1175	0.8	142089	99.4	99
50	3.7934	1953	0.7444	149	622	0.4	142711	99.8	99
51	4.5413	2103	1.0273	205	227	0.2	142938	100	99
52	5.7845	2351	1.8412	368	42	0	142980	100	99

Mathematics Grade 4

Raw Score	Measure	Scale Score	Logit SE	Scale Score SE	Freq	Freq %	Cum Freq	Cum Freq %	Percentile
0	-5.4481	700	1.832	366	0	0	0	0	0
1	-4.2281	700	1.0114	202	0	0	0	0	0
2	-3.512	700	0.7232	145	0	0	0	0	0
3	-3.0834	700	0.5971	119	0	0	0	0	0
4	-2.7725	700	0.5228	105	2	0	2	0	1
5	-2.526	700	0.4727	95	4	0	6	0	1
6	-2.3202	719	0.4362	87	26	0	32	0	1
7	-2.1423	755	0.4082	82	35	0	67	0.1	1
8	-1.9849	787	0.386	77	42	0	109	0.1	1
9	-1.843	815	0.3678	74	96	0.1	205	0.2	1
10	-1.7134	841	0.3527	71	146	0.1	351	0.3	1
11	-1.5936	865	0.3398	68	205	0.2	556	0.4	1
12	-1.4819	887	0.3288	66	301	0.2	857	0.7	1
13	-1.377	908	0.3193	64	416	0.3	1273	1	1
14	-1.2777	928	0.3109	62	515	0.4	1788	1.4	1
15	-1.1834	947	0.3036	61	619	0.5	2407	1.9	2
16	-1.0932	965	0.2971	59	704	0.5	3111	2.4	2
17	-1.0067	982	0.2913	58	805	0.6	3916	3	3
18	-0.9233	999	0.2861	57	834	0.6	4750	3.7	3
19	-0.8428	1015	0.2815	56	919	0.7	5669	4.4	4
20	-0.7648	1031	0.2773	55	925	0.7	6594	5.1	5
21	-0.6889	1046	0.2736	55	1027	0.8	7621	5.9	5
22	-0.615	1061	0.2702	54	1112	0.9	8733	6.7	6
23	-0.5429	1075	0.2672	53	1240	1	9973	7.7	7
24	-0.4722	1089	0.2645	53	1170	0.9	11143	8.6	8
25	-0.4029	1103	0.2621	52	1258	1	12401	9.5	9
26	-0.3347	1117	0.26	52	1353	1	13754	10.6	10
27	-0.2676	1130	0.2582	52	1498	1.2	15252	11.7	11
28	-0.2014	1143	0.2566	51	1539	1.2	16791	12.9	12
29	-0.1359	1156	0.2553	51	1634	1.3	18425	14.2	14
30	-0.071	1169	0.2542	51	1727	1.3	20152	15.5	15
31	-0.0067	1182	0.2533	51	1695	1.3	21847	16.8	16
32	0.0574	1195	0.2528	51	1928	1.5	23775	18.3	18
33	0.1212	1208	0.2524	50	1931	1.5	25706	19.8	19
34	0.1848	1220	0.2523	50	2076	1.6	27782	21.4	21
35	0.2485	1233	0.2525	51	2200	1.7	29982	23.1	22
36	0.3124	1246	0.2529	51	2288	1.8	32270	24.8	24
37	0.3765	1259	0.2536	51	2376	1.8	34646	26.6	26
38	0.441	1272	0.2545	51	2569	2	37215	28.6	28
39	0.5061	1285	0.2557	51	2609	2	39824	30.6	30
40	0.5718	1298	0.2572	51	2798	2.2	42622	32.8	32
41	0.6385	1311	0.259	52	2911	2.2	45533	35	34
42	0.7061	1325	0.2612	52	3045	2.3	48578	37.4	36
43	0.7749	1339	0.2636	53	3146	2.4	51724	39.8	39
44	0.8452	1353	0.2664	53	3406	2.6	55130	42.4	41
45	0.917	1367	0.2696	54	3536	2.7	58666	45.1	44
46	0.9906	1382	0.2732	55	3734	2.9	62400	48	47
47	1.0663	1397	0.2772	55	3621	2.8	66021	50.8	49
48	1.1444	1412	0.2817	56	3837	3	69858	53.7	52
49	1.2252	1429	0.2867	57	3932	3	73790	56.8	55
50	1.3089	1445	0.2923	58	4140	3.2	77930	59.9	58
51	1.3962	1463	0.2985	60	4234	3.3	82164	63.2	62
52	1.4873	1481	0.3054	61	4259	3.3	86423	66.5	65
53	1.5829	1500	0.3132	63	4286	3.3	90709	69.8	68
54	1.6838	1520	0.3221	64	4327	3.3	95036	73.1	71
55	1.7908	1542	0.3322	66	4448	3.4	99484	76.5	75
56	1.9049	1565	0.3439	69	4205	3.2	103689	79.8	78
57	2.0278	1589	0.3577	72	4176	3.2	107865	83	81
58	2.1616	1616	0.3744	75	3959	3	111824	86	84
59	2.3094	1645	0.3951	79	3788	2.9	115612	88.9	87
60	2.4757	1679	0.4215	84	3546	2.7	119158	91.7	90
61	2.6678	1717	0.4567	91	3201	2.5	122359	94.1	93
62	2.8983	1763	0.506	101	2656	2	125015	96.2	95
63	3.1907	1822	0.5803	116	2115	1.6	127130	97.8	97
64	3.5983	1903	0.7079	142	1524	1.2	128654	99	98
65	4.2917	2042	0.9996	200	973	0.7	129627	99.7	99
66	5.4948	2282	1.8253	365	381	0.3	130008	100	99

Mathematics Grade 6

Raw Score	Measure	Scale Score	Logit SE	Scale Score SE	Freq	Freq %	Cum Freq	Cum Freq %	Percentile
0	-5.522	700	1.8335	367	0	0	0	0	0
1	-4.2981	700	1.0141	203	0	0	0	0	0
2	-3.5767	700	0.7269	145	0	0	0	0	0
3	-3.1429	700	0.6014	120	1	0	1	0	1
4	-2.8267	700	0.5277	106	4	0	5	0	1
5	-2.5751	700	0.478	96	11	0	16	0	1
6	-2.3642	729	0.4419	88	18	0	34	0	1
7	-2.1814	765	0.4143	83	36	0	70	0.1	1
8	-2.0191	798	0.3923	78	79	0.1	149	0.1	1
9	-1.8722	827	0.3744	75	150	0.1	299	0.2	1
10	-1.7377	854	0.3595	72	205	0.1	504	0.4	1
11	-1.6131	879	0.3469	69	323	0.2	827	0.6	1
12	-1.4965	902	0.3362	67	446	0.3	1273	0.9	1
13	-1.3866	924	0.3268	65	628	0.5	1901	1.4	1
14	-1.2826	945	0.3187	64	721	0.5	2622	1.9	2
15	-1.1833	965	0.3116	62	860	0.6	3482	2.5	2
16	-1.0882	984	0.3053	61	1028	0.7	4510	3.3	3
17	-0.9968	1002	0.2996	60	1140	0.8	5650	4.1	4
18	-0.9085	1020	0.2946	59	1261	0.9	6911	5	5
19	-0.823	1037	0.2902	58	1365	1	8276	6	5
20	-0.74	1054	0.2862	57	1374	1	9650	7	6
21	-0.6591	1070	0.2826	57	1496	1.1	11146	8.1	8
22	-0.5802	1086	0.2793	56	1650	1.2	12796	9.3	9
23	-0.503	1101	0.2764	55	1667	1.2	14463	10.5	10
24	-0.4273	1116	0.2738	55	1781	1.3	16244	11.7	11
25	-0.353	1131	0.2715	54	1874	1.4	18118	13.1	12
26	-0.2799	1146	0.2694	54	1961	1.4	20079	14.5	14
27	-0.2078	1160	0.2676	54	2101	1.5	22180	16	15
28	-0.1366	1174	0.266	53	2098	1.5	24278	17.6	17
29	-0.0663	1188	0.2646	53	2181	1.6	26459	19.1	18
30	0.0035	1202	0.2634	53	2259	1.6	28718	20.8	20
31	0.0726	1216	0.2625	53	2317	1.7	31035	22.4	22
32	0.1413	1230	0.2618	52	2484	1.8	33519	24.2	23
33	0.2097	1243	0.2612	52	2652	1.9	36171	26.2	25
34	0.2778	1257	0.2609	52	2680	1.9	38851	28.1	27
35	0.3459	1271	0.2609	52	2917	2.1	41768	30.2	29
36	0.414	1284	0.2611	52	2910	2.1	44678	32.3	31
37	0.4823	1298	0.2615	52	2905	2.1	47583	34.4	33
38	0.5508	1312	0.2622	52	3029	2.2	50612	36.6	36
39	0.6198	1326	0.2631	53	3132	2.3	53744	38.9	38
40	0.6893	1339	0.2644	53	3256	2.4	57000	41.2	40
41	0.7596	1353	0.266	53	3352	2.4	60352	43.6	42
42	0.8309	1368	0.2678	54	3488	2.5	63840	46.2	45
43	0.9032	1382	0.2701	54	3609	2.6	67449	48.8	47
44	0.9768	1397	0.2726	55	3669	2.7	71118	51.4	50
45	1.0519	1412	0.2756	55	3707	2.7	74825	54.1	53
46	1.1287	1427	0.2789	56	3786	2.7	78611	56.8	55
47	1.2076	1443	0.2826	57	3863	2.8	82474	59.6	58
48	1.2886	1459	0.2868	57	3874	2.8	86348	62.4	61
49	1.3721	1476	0.2914	58	4090	3	90438	65.4	64
50	1.4585	1493	0.2964	59	3930	2.8	94368	68.2	67
51	1.548	1511	0.3021	60	3966	2.9	98334	71.1	70
52	1.6412	1530	0.3084	62	3858	2.8	102192	73.9	73
53	1.7384	1549	0.3155	63	3883	2.8	106075	76.7	75
54	1.8405	1570	0.3236	65	3877	2.8	109952	79.5	78
55	1.9482	1591	0.333	67	3818	2.8	113770	82.3	81
56	2.0627	1614	0.3442	69	3656	2.6	117426	84.9	84
57	2.1858	1639	0.3579	72	3475	2.5	120901	87.4	86
58	2.3198	1666	0.3748	75	3354	2.4	124255	89.9	89
59	2.468	1695	0.3962	79	3012	2.2	127267	92	91
60	2.6358	1729	0.424	85	2740	2	130007	94	93
61	2.831	1768	0.4611	92	2425	1.8	132432	95.8	95
62	3.0668	1815	0.5128	103	1962	1.4	134394	97.2	96
63	3.3679	1875	0.5895	118	1666	1.2	136060	98.4	98
64	3.7886	1959	0.7187	144	1166	0.8	137226	99.2	99
65	4.4999	2102	1.0099	202	759	0.5	137985	99.8	99
66	5.7187	2345	1.8319	366	297	0.2	138282	100	99

Mathematics Grade 7

Raw Score	Measure	Scale Score	Logit SE	Scale Score SE	Freq	Freq %	Cum Freq	Cum Freq %	Percentile
0	-5.3983	700	1.8321	366	0	0	0	0	0
1	-4.1781	700	1.0116	202	0	0	0	0	0
2	-3.4614	700	0.7236	145	0	0	0	0	0
3	-3.0322	700	0.5977	120	1	0	1	0	1
4	-2.7204	700	0.5237	105	1	0	2	0	1
5	-2.4729	731	0.4739	95	6	0	8	0	1
6	-2.2658	772	0.4377	88	22	0	30	0	1
7	-2.0866	808	0.41	82	44	0	74	0.1	1
8	-1.9277	840	0.3881	78	107	0.1	181	0.1	1
9	-1.7841	868	0.3702	74	162	0.1	343	0.2	1
10	-1.6526	895	0.3554	71	319	0.2	662	0.5	1
11	-1.5307	919	0.343	69	429	0.3	1091	0.8	1
12	-1.4167	942	0.3324	66	677	0.5	1768	1.2	1
13	-1.3093	963	0.3233	65	861	0.6	2629	1.8	2
14	-1.2074	984	0.3154	63	1091	0.8	3720	2.6	2
15	-1.1101	1003	0.3085	62	1239	0.9	4959	3.5	3
16	-1.0168	1022	0.3025	61	1471	1	6430	4.5	4
17	-0.927	1040	0.2972	59	1658	1.2	8088	5.6	5
18	-0.84	1057	0.2926	59	1760	1.2	9848	6.9	6
19	-0.7556	1074	0.2885	58	1852	1.3	11700	8.2	8
20	-0.6735	1091	0.2849	57	1891	1.3	13591	9.5	9
21	-0.5932	1107	0.2818	56	2131	1.5	15722	11	10
22	-0.5145	1122	0.2791	56	2268	1.6	17990	12.5	12
23	-0.4373	1138	0.2767	55	2326	1.6	20316	14.2	13
24	-0.3613	1153	0.2746	55	2316	1.6	22632	15.8	15
25	-0.2864	1168	0.2729	55	2514	1.8	25146	17.5	17
26	-0.2123	1183	0.2714	54	2576	1.8	27722	19.3	18
27	-0.139	1197	0.2702	54	2721	1.9	30443	21.2	20
28	-0.0663	1212	0.2692	54	2824	2	33267	23.2	22
29	0.0059	1226	0.2684	54	2838	2	36105	25.2	24
30	0.0778	1241	0.2678	54	2920	2	39025	27.2	26
31	0.1494	1255	0.2674	53	2960	2.1	41985	29.3	28
32	0.2209	1269	0.2672	53	3224	2.2	45209	31.5	30
33	0.2923	1284	0.2671	53	3414	2.4	48623	33.9	33
34	0.3636	1298	0.2672	53	3320	2.3	51943	36.2	35
35	0.435	1312	0.2673	53	3401	2.4	55344	38.6	37
36	0.5066	1327	0.2676	54	3350	2.3	58694	40.9	40
37	0.5783	1341	0.2679	54	3468	2.4	62162	43.3	42
38	0.6501	1355	0.2683	54	3425	2.4	65587	45.7	45
39	0.7222	1370	0.2687	54	3459	2.4	69046	48.1	47
40	0.7945	1384	0.2692	54	3538	2.5	72584	50.6	49
41	0.8671	1399	0.2697	54	3655	2.5	76239	53.1	52
42	0.94	1413	0.2702	54	3613	2.5	79852	55.7	54
43	1.0132	1428	0.2708	54	3514	2.4	83366	58.1	57
44	1.0867	1443	0.2715	54	3631	2.5	86997	60.6	59
45	1.1607	1457	0.2723	54	3544	2.5	90541	63.1	62
46	1.2351	1472	0.2733	55	3552	2.5	94093	65.6	64
47	1.3101	1487	0.2746	55	3492	2.4	97585	68	67
48	1.386	1502	0.2763	55	3389	2.4	100974	70.4	69
49	1.4629	1518	0.2786	56	3365	2.3	104339	72.7	72
50	1.5413	1534	0.2815	56	3384	2.4	107723	75.1	74
51	1.6216	1550	0.2852	57	3336	2.3	111059	77.4	76
52	1.7042	1566	0.2898	58	3260	2.3	114319	79.7	79
53	1.7898	1583	0.2957	59	3119	2.2	117438	81.9	81
54	1.8793	1601	0.3031	61	3048	2.1	120486	84	83
55	1.9739	1620	0.3122	62	3048	2.1	123534	86.1	85
56	2.0748	1640	0.3235	65	2875	2	126409	88.1	87
57	2.1839	1662	0.3375	68	2814	2	129223	90.1	89
58	2.3037	1686	0.3552	71	2663	1.9	131886	91.9	91
59	2.4376	1713	0.3776	76	2488	1.7	134374	93.7	93
60	2.5909	1743	0.4065	81	2213	1.5	136587	95.2	94
61	2.7715	1780	0.445	89	1944	1.4	138531	96.6	96
62	2.9926	1824	0.4981	100	1733	1.2	140264	97.8	97
63	3.2787	1881	0.5765	115	1441	1	141705	98.8	98
64	3.684	1962	0.7077	142	974	0.7	142679	99.4	99
65	4.3794	2101	1.0018	200	580	0.4	143259	99.9	99
66	5.5868	2343	1.8274	365	212	0.1	143471	100	99

Appendix GG:

Performance Level Descriptors for Grades 4, 6, and 7

Pennsylvania Department of Education
Grade 4 Reading
Performance Level Descriptors

Below Basic
A student scoring at the below basic level demonstrates competency with below grade-level text only and requires extensive support to comprehend and interpret fiction and nonfiction.

Basic
A student scoring at the basic level generally utilizes some reading strategies to comprehend grade-level appropriate fiction and nonfiction:

- Identifies some word meanings, including synonyms and antonyms, using context clues
- Identifies details in support of a conclusion
- Identifies stated main ideas and relevant details
- Attempts to summarize text and/or to make within or among text-to-text connections
- Identifies purpose of text (e.g., narrative) and some literary elements (e.g., character)
- Identifies features and subsections of text
- Describes specific text elements and simple organizational patterns (e.g., sequencing, comparison/contrast)
- Identifies factual statements and explicitly stated opinions
- Identifies the purpose of graphics and charts
- Identifies some sequence of steps in a list of directions

Proficient
A student scoring at the proficient level routinely utilizes a variety of reading strategies to comprehend and interpret grade-level appropriate fiction and nonfiction:

- Identifies word meanings, including synonyms and antonyms, using context clues and word parts
- Makes inferences and draws conclusions, using textual support
- Identifies stated and implied main ideas and relevant details
- Summarizes text
- Makes within and among text-to-text connections
- Identifies purpose of text (narrative, informational, poetic)
- Identifies literary elements (character, setting, plot)
- Identifies figurative language (personification, simile, alliteration)
- Identifies fact and opinion and the use of exaggeration (bias) in nonfiction
- Identifies organizational patterns of text (e.g., sequencing, comparison/contrast) and the proper sequence of steps in a list of directions
- Interprets graphics, charts, and headings

Advanced
A student scoring at the advanced level consistently utilizes sophisticated strategies to comprehend and interpret complex fiction and nonfiction:

- Identifies word meanings and shades of meaning, using context as support
- Makes inferences and draws conclusions based on textual support
- Explains main ideas and themes, using textual support
- Effectively summarizes all ideas within text
- Describes within and among text-to-text connections
- Explains the relationship between text organization (e.g., sequencing, comparison/contrast) and purpose of text (e.g., narrative)
- Explains the use of figurative language (e.g., personification, simile) and literary elements (e.g., character)
- Explains the use of fact and opinion and exaggeration (bias) in nonfiction
- Explains the proper sequence of steps in a list of directions
- Explains how graphics, charts, and headings support text

Pennsylvania Department of Education
Grade 4 Mathematics Performance Level Descriptors

Below Basic	Basic	Proficient	Advanced
A fourth-grade student performing at the Below Basic Level demonstrates limited understanding of the concepts and ineffective application of the mathematical skills in the five Pennsylvania Mathematics Reporting Categories.	A fourth-grade student performing at the Basic Level solves simple or routine problems by applying skills and procedures in the five Pennsylvania Mathematics Reporting Categories. A student performing at the Basic Level: A. matches word forms of numbers and drawings of simple decimals or fractions with like denominators to numbers; identifies factors and multiples of simple numbers. B. matches digital and analog time; calculates elapsed time without crossing hours; uses a ruler to measure segments to the nearest $\frac{1}{4}$ inch or centimeter. C. identifies basic properties of geometric figures in two- and three-dimensions; recognizes symmetry in figures; matches ordered pairs with points on a simple grid. D. extends or completes a numerical or geometrical pattern; completes simple number sentences with a missing element. E. completes a display of data; answers basic questions about displayed data; recognizes equivalent displays of information.	A fourth-grade student performing at the Proficient Level solves practical and real-world problems. A student performing at the Proficient Level: A. locates fractions and decimals on a number line; solves problems involving whole numbers, fractions and decimals; adds/subtracts fractions with like denominators; uses estimation and rounding in problems. B. uses elapsed time to determine beginning or ending time; estimates measurements of familiar objects. C. uses mathematical names to classify basic one-, two- and three-dimensional geometric figures; describes the symmetry in figures; plots ordered pairs on a simple grid. D. identifies rule for numeric or geometric patterns; applies function rules to complete tables or lists; uses informal methods to solve number sentences; matches story situations to expressions or number sentences. E. describes data shown in displays; translates information from one type of display to another; makes predictions, including chance, based on data.	A fourth-grade student performing at the Advanced Level solves complex problems and demonstrates in-depth understanding of the skills, concepts and procedures in the five Pennsylvania Mathematics Reporting Categories. A student performing at the Advanced Level: A. creates models to represent decimals and fractions with like denominators; translates among decimals, fractions with like denominators and different forms of a number; explains and justifies solution strategies involving whole numbers and decimals. B. explains and justifies a process used to determine time; communicates descriptions of familiar objects using reasonable estimates of measurement. C. compares properties of basic geometric figures; uses properties of points, lines, line segments, rays or parallel and perpendicular lines to solve problems; describes coordinates of a point on a simple grid. D. creates, replicates, or describes the rule for a numeric or geometric pattern; uses mathematical notation to write or generalize pattern rules; solves for a missing number in a number sentence. E. creates a display from information provided in context; makes and justifies predictions based on displays of data.

Pennsylvania Department of Education
Mathematics Problem Solving – Grade 4
Performance Level Descriptors

Within the context of grade-level appropriate settings and content, a fourth grade student performing at the **Basic** level of problem solving skills will:

> apply basic procedures and reasoning to solve routine problems; differentiate between necessary and unnecessary information; translate simple scenarios into mathematical statements; confirm solutions by "checking" work.

Within the context of grade-level appropriate settings and content, a fourth grade student performing at the **Proficient** level of problem solving skills will:

> select and use appropriate solution techniques; use appropriate grade level mathematical language to communicate procedures and results; represent data and concepts in different forms; use informal proof to justify solutions; summarize solutions and conclusions.

Within the context of grade-level appropriate settings and content, a fourth grade student performing at the **Advanced** level of problem solving skills will:

> make connections across areas of mathematics; use formal reasoning and proof to justify solutions; devise and communicate complex problem solving strategies; evaluate validity of solutions.

Pennsylvania Department of Education
Grade 6 Reading
Performance Level Descriptors

Below Basic
A student scoring at the below basic level demonstrates competency with below grade-level text only and requires extensive support to comprehend and interpret fiction and nonfiction.

Basic
A student scoring at the basic level generally utilizes some reading strategies to comprehend grade-level appropriate fiction and nonfiction:

- Differentiates among word meanings, including synonyms and antonyms, using context clues and/or word parts
- Identifies details in support of a conclusion
- Identifies stated or implied main idea and relevant details
- Attempts to summarize text and/or to make within or among text-to-text connections
- Identifies purpose of text (e.g., narrative) and features of text (e.g., headings), including content appropriate to subsections
- Describes specific text elements and simple organizational patterns (e.g., sequencing, comparison/contrast, cause/effect)
- Identifies simple figurative language (e.g., personification, simile), literary elements (e.g., character) and recognizes point of view
- Locates factual statements and explicitly stated opinions in nonfiction
- Understands the use of exaggeration (bias) in nonfiction
- Identifies the proper sequence of steps in a list of directions
- Identifies and describes the purpose of graphics and charts

Proficient
A student scoring at the proficient level routinely utilizes a variety of reading strategies to comprehend and interpret grade-level appropriate fiction and nonfiction:

- Applies a variety of strategies to determine meanings of words, including synonyms and antonyms, using context clues and word parts
- Makes inferences, draws conclusions, and generalizes, using textual support
- Identifies stated and implied main ideas and relevant details
- Summarizes text and makes within and among text-to-text connections
- Identifies and interprets purpose of text (narrative, informational, poetic, persuasive, biographical)
- Identifies and interprets literary elements (characterization, setting, plot, theme) and point of view
- Identifies and explains figurative language (personification, simile, alliteration, metaphor)
- Identifies and interprets fact and opinion in nonfiction
- Describes how the author uses exaggeration (bias) in nonfiction
- Identifies and interprets organizational patterns of texts (e.g., sequencing, comparison/contrast)
- Compares and explains the sequence of steps in a list of directions
- Interprets and explains graphics, charts, and headings

Advanced
A student scoring at the advanced level consistently utilizes sophisticated strategies to comprehend and interpret complex fiction and nonfiction:

- Identifies shades of meaning in words, using context as support
- Makes inferences, draws conclusions, generalizes, and analyzes textual support
- Effectively summarizes all ideas within text
- Analyzes themes
- Analyzes purpose of text (e.g., narrative, informational)
- Describes and explains connections within and among texts
- Analyzes the relationships among text elements, organizational patterns (e.g., sequencing, comparison/contrast), and purpose of text (e.g., narrative)
- Explains the effectiveness of author's use of figurative language (e.g., simile, metaphor), literary elements (e.g., character), and point of view
- Identifies, explains, and analyzes textual evidence in support of arguments in nonfiction
- Describes the sequence of steps in a list of directions
- Analyzes the use of graphics, charts, and headings

Pennsylvania Department of Education

Grade 6 Mathematics Performance Level Descriptors

A sixth-grade student performing at the Below Basic Level demonstrates limited understanding of the concepts and ineffective application of the mathematical skills in the five Pennsylvania Mathematics Reporting Categories.	A sixth-grade student performing at the Basic Level solves simple or routine problems by applying skills and procedures in the five Pennsylvania Mathematics Reporting Categories. A student performing at the Basic Level: A. writes simplified forms of fractions and decimals in order; recognizes or selects common percents when presented as drawings, graphs, etc.; uses operations on fractions, decimals and whole numbers to solve basic problems. B. determines elapsed times in non-complex settings; classifies angles in basic categories (acute, right, etc.); uses a ruler to make measurements to the nearest $\frac{1}{16}$ inch or millimeter. C. identifies basic characteristics and properties of polygons including number of sides, number of angles and relative lengths of sides; uses angle and side relationships within triangles to solve simple problems; recognizes basic relationships (parallel, perpendicular and intersecting) between pairs of lines or segments in a plane. D. recognizes simple whole number patterns found in charts, tables, graphs or lists; identifies inverse relationships between addition and subtraction and between multiplication and division. E. identifies and draws conclusions from basic displays of data; recognizes the mean, median, mode or range calculated from groups of data; finds probability of simple events.	A sixth-grade student performing at the Proficient Level solves practical and real-world problems. A student performing at the Proficient Level: A. writes or recognizes percents, fractions and decimals in equivalent forms; uses divisibility tests and determines factors and multiples of numbers; solves multi-step problems with fractions, decimals and whole numbers; uses estimation to solve problems. B. determines and compares elapsed times in problem-solving situations; uses a protractor to measure angles; determines the perimeters of polygons. C. determines the diameter or radius of a circle when one or the other is given; uses basic properties of sides and angles to identify or classify polygons; labels drawings of two- and three-dimensional models illustrating relationships of lines or line segments; plots points on the coordinate plane. D. determines a rule to describe a pattern; uses inverse-operation strategies to solve one-step equations; recognizes expressions, equations or inequalities that model verbal mathematics situations. E. analyzes data displayed in a variety of forms; shows data in graphs, tables or line plots; determines mean, median, mode and range using data of up to two digits; determines combinations from sets of data.	A sixth-grade student performing at the Advanced Level solves complex problems and demonstrates in-depth understanding of the skills, concepts and procedures in the five Pennsylvania Mathematics Reporting Categories. A student performing at the Advanced Level: A. creates models to represent percents; analyzes and uses properties of equations; justifies solution techniques and solutions to complex problems involving rational numbers. B. solves problems involving measurements of geometric figures; describes, identifies and selects geometric figures based on their angle and linear measures. C. uses geometric properties to describe characteristics of polygons; draws or describes basic geometric figures on a coordinate plane; solves and justifies solutions to problems involving geometric properties of circles and polygons. D. creates a rule-based pattern in a visual display; uses mathematical language to describe a rule for a pattern; develops mathematical representations of complex problem settings. E. creates and defends appropriate representations for sets of data; evaluates data based on graphical displays and measures of central tendency; creates and describes strategies used to analyze simple events.

Pennsylvania Department of Education
Mathematics Problem Solving – Grade 6
Performance Level Descriptors

Within the context of grade-level appropriate settings and content, a sixth grade student performing at the **Basic** level of problem solving skills will:

> apply basic procedures and reasoning to solve routine problems; differentiate between necessary and unnecessary information; translate simple scenarios into mathematical statements; confirm solutions by "checking" work.

Within the context of grade-level appropriate settings and content, a sixth grade student performing at the **Proficient** level of problem solving skills will:

> select and use appropriate solution techniques; use appropriate grade level mathematical language to communicate procedures and results; represent data and concepts in different forms; use informal proof to justify solutions; summarize solutions and conclusions.

Within the context of grade-level appropriate settings and content, a sixth grade student performing at the **Advanced** level of problem solving skills will:

> make connections across areas of mathematics; use formal reasoning and proof to justify solutions; devise and communicate complex problem solving strategies; evaluate validity of solutions.

Pennsylvania Department of Education
Grade 7 Reading
Performance Level Descriptors

Below Basic
A student scoring at the below basic level demonstrates competency with below grade-level text only and requires extensive support to comprehend and interpret fiction and nonfiction.

Basic
A student scoring at the basic level generally utilizes some reading strategies to comprehend grade-level appropriate fiction and nonfiction:

- Differentiates among word meanings, including synonyms and antonyms, using context clues and word parts
- Identifies details in support of a conclusion
- Identifies stated and implied main idea and relevant details
- Attempts to summarize text and/or to make within or among text-to-text connections
- Identifies and describes purpose of text (e.g., narrative), including text features (e.g., headings) and subsections
- Describes text elements and common organizational patterns (e.g., sequencing, comparison/contrast)
- Distinguishes between literal and figurative language (e.g., simile, metaphor)
- Identifies literary elements (e.g., character) and point of view
- Locates factual statements and explicitly stated opinions in nonfiction
- Identifies some types of bias in nonfiction
- Identifies and/or compares the sequence of steps in a list of directions
- Identifies and interprets the purpose of graphics and charts

Proficient
A student scoring at the proficient level routinely utilizes a variety of reading strategies to comprehend and interpret grade-level appropriate fiction and nonfiction:

- Applies a variety of strategies to determine meanings of words, including synonyms and antonyms, using context clues and word parts
- Makes inferences, draws conclusions, and generalizes, using textual support
- Identifies or explains stated and implied main ideas
- Summarizes text
- Makes within and among text-to-text connections
- Describes and interprets: purpose of text (narrative, informational, poetic, persuasive); organizational patterns (e.g., sequencing, comparison/contrast); and relationships among literary elements (character, setting, plot, theme)
- Identifies and explains the effect of figurative language (e.g., simile, metaphor) and point of view
- Describes and interprets the use of fact and opinion in nonfiction
- Identifies and analyzes bias and propaganda in nonfiction
- Compares and explains the sequence of steps in a list of directions
- Interprets and analyzes graphics, charts, and headings

Advanced
A student scoring at the advanced level consistently utilizes sophisticated strategies to comprehend and interpret complex fiction and nonfiction:

- Explains word meanings and shades of meaning, using context as support
- Makes inferences, draws conclusions, generalizes, and analyzes use of textual support
- Effectively summarizes all ideas within text
- Identifies and analyzes universal themes
- Explains within and among text-to-text connections
- Analyzes and explains: the relationships among text elements, organizational patterns (e.g., sequencing, comparison/contrast), and purpose of text (e.g., narrative)
- Extends text by making text-to-text connections
- Analyzes the effectiveness of figurative language (e.g., simile, metaphor), literary elements (e.g., character) and point of view
- Identifies, analyzes, and justifies arguments and the use of bias and propaganda in nonfiction
- Describes and/or analyzes the sequence of steps in a list of directions
- Analyzes information in graphics, charts, and headings

Pennsylvania Department of Education
Grade 7 Mathematics Performance Level Descriptors

A seventh-grade student performing at the Below Basic Level demonstrates limited understanding of the concepts and ineffective application of the mathematical skills in the five Pennsylvania Mathematics Reporting Categories.	A seventh-grade student performing at the Basic Level solves simple or routine problems by applying skills and procedures in the five Pennsylvania Mathematics Reporting Categories. A student performing at the Basic Level: A. converts between and orders pairs of common fractions, decimals, percents, integers and mixed numbers; solves simple problems involving rational numbers, including proportions. B. adds and subtracts common measurements; converts simple measurements of length, weight and time; applies scales shown in maps and other models. C. identifies properties of circles and basic three-dimensional figures; recognizes properties of similarity; applies simple plotting techniques with ordered pairs. D. extends or completes a one-operation pattern of whole numbers; selects appropriate strategies to solve simple one-step equations. E. calculates basic measures of central tendency; determines experimental probabilities based on simple sets of data and events.	A seventh-grade student performing at the Proficient Level solves practical and real-world problems. A student performing at the Proficient Level: A. converts among and orders rational numbers; uses the order of operations to simplify numeric expressions involving whole numbers; solves problems involving proportions; uses operations on rational numbers to solve and simplify multi-step problems. B. uses problem-solving strategies and formulas to find measures of compound figures; converts measurements within a system; determines and applies scale factors in interpretations or conversions. C. uses properties of circles and relationships among line segments within three-dimensional figures to solve problems; solves problems involving similar polygons; plots points on the coordinate plane. D. extends or completes rational number patterns; identifies expressions, equations or inequalities that model problem situations; uses substitution to simplify algebraic expressions; solves one-step equations and problems involving constant rate of change. E. determines theoretical probability of occurrence of an event; analyzes and interprets graphical representations of data; evaluates problem situations to select appropriate measures of central tendency; draws conclusions from data displays or probability.	A seventh-grade student performing at the Advanced Level solves complex problems and demonstrates in-depth understanding of the skills, concepts and procedures in the five Pennsylvania Mathematics Reporting Categories. A student performing at the Advanced Level: A. uses rational number properties to evaluate and support solutions to complex problems; explains problem-solving techniques used in problems involving multiple operations and proportional reasoning. B. develops strategies, including non-routine methods, to find measures of complex figures; explains results of solutions using scale factors and conversion techniques. C. describes properties and relationships of parts of a circle; uses similarity and congruence to describe polygons and justify conclusions; describes relationships using the coordinate plane. D. uses mathematical terms to describe a pattern involving rational numbers; interprets expressions, equations or inequalities that model problem situations; explains the rate of change relationship of data displayed in a graph. E. generalizes and describes data shown in data displays; justifies strategies and solutions involved in calculating probability from sets of data; analyzes data from different sources in order to formulate predictions.

Pennsylvania Department of Education
Mathematics Problem Solving – Grade 7
Performance Level Descriptors

Within the context of grade-level appropriate settings and content, a seventh grade student performing at the **Basic** level of problem solving skills will:

> apply basic procedures and reasoning to solve routine problems; differentiate between necessary and unnecessary information; translate simple scenarios into mathematical statements; confirm solutions by "checking" work.

Within the context of grade-level appropriate settings and content, a seventh grade student performing at the **Proficient** level of problem solving skills will:

> select and use appropriate solution techniques; use appropriate grade level mathematical language to communicate procedures and results; represent data and concepts in different forms; use informal proof to justify solutions; summarize solutions and conclusions.

Within the context of grade-level appropriate settings and content, a seventh grade student performing at the **Advanced** level of problem solving skills will:

> make connections across areas of mathematics; use formal reasoning and proof to justify solutions; devise and communicate complex problem solving strategies; evaluate validity of solutions.

Appendix HH:

Standards Validation Meeting Agendas

Pennsylvania Mathematics Standards Validation Meeting
June 22 – 23, 2006
Grantville, Pennsylvania

Thursday, June 22, 2006

7:30 am – 8:00 am	Breakfast – Restaurant
8:00 am – 8:30 am	Check-in – *Grande Foyer*
8:30 am – 9:00 am	Introduction to Standards Validation. Shula Nedley and Ray Young – PDE introduction. Richard Smith – DRC introduction. John Born – Reimbursement and other administrative procedures. – *Royale III*
9:00 am – 9:30 am	Overview of Method
9:30 am – 10:15 am	Training using sample materials.
10:15 am – 10:30 am	Morning Break
10:30 am – 11:30 am	Take the Operational Test
11:30 am – 12:00 am	Presentation and Discussion of Performance Level Descriptors
12:00 pm – 1:00 pm	Lunch – Restaurant
1:00 pm – 2:30 pm	Round 1 – Individual Placements (grade 6)
2:30 pm – 3:00 pm	Break/Analysis
3:00 pm – 4:00 pm	Round 2 – Group Discussion of Impacts and Revisions (grade 6)
4:00 pm – 4:30 pm	Break/Analysis
4:30 pm – 5:00 pm	Round 3 – Group Discussion of Impacts and Final Revisions (grade 6)

Friday, June 23, 2006

7:30 am – 8:00 am	Breakfast – Restaurant
8:00 am – 8:30 am	Check-in – *Grande Foyer*
8:30 am – 9:45 am	*Take the Operational Test*
9:45 am – 10:15 am	Presentation and Discussion of Performance Level Descriptors - (grade 4 –*Grande I* or grade 7 – *Grande II*)
10:15 am – 10:30 am	Break
10:30 am – 12:00 pm	Round 1 – Individual Placements
12:00 pm – 1:00 pm	Lunch – Restaurant
1:00 pm – 2:30 pm	Round 2 – Group Discussion of Impacts and Revisions (grade 4 or 7)
2:30 pm – 3:00 pm	Break/Analysis
3:00 pm – 4:00 pm	Round 3 – Group Discussion of Impacts and Final Revisions (grade 4 or 7)
4:00 pm – 4:30 pm	Break/Analysis
4:30 pm – 5:00 pm	Large Group Discussion (all mathematics panelists) of Impacts for Grades 4, 6, 7 and 5, 8, and 11

Pennsylvania Reading Standards Validation Meeting
June 20 – 21, 2006
Grantville, Pennsylvania

Tuesday, June 20, 2006

7:30 am – 8:00 am	Breakfast – Restaurant
8:00 am – 8:30 am	Check-in – *Grande Foyer*
8:30 am – 9:00 am	Introduction to Standards Validation. Shula Nedley and Ray Young – PDE introduction. Everett Smith – DRC introduction. John Born – Reimbursement and other administrative procedures. – *Grande I*
9:00 am – 9:30 am	Overview of Method
9:30 am – 10:15 am	Training using sample materials.
10:15 am – 10:30 am	Morning Break
10:30 am – 11:30 am	Take the Operational Test
11:30 am – 12:00 am	Presentation and Discussion of Performance Level Descriptors
12:00 pm – 1:00 pm	Lunch – Restaurant
1:00 pm – 2:30 pm	Round 1 – Individual Placements (grade 6)
2:30 pm – 3:00 pm	Break/Analysis
3:00 pm – 4:00 pm	Round 2 – Group Discussion of Impacts and Revisions (grade 6)
4:00 pm – 4:30 pm	Break/Analysis
4:30 pm – 5:00 pm	Round 3 – Group Discussion of Impacts and Final Revisions (grade 6)

Wednesday, June 21, 2006

7:30 am – 8:00 am	Breakfast – Restaurant
8:00 am – 8:30 am	Check-in – *Grande Foyer*
8:30 am – 9:45 am	Take the Operational Test
9:45 am – 10:15 am	Presentation and Discussion of Performance Level Descriptors – (grade 4 –*Grande I* or grade 7 – *Royale III*)
10:15 am – 10:30 am	Break
10:30 am – 12:00 pm	Round 1 – Individual Placements
12:00 pm – 1:00 pm	Lunch – Restaurant
1:00 pm – 2:30 pm	Round 2 – Group Discussion of Impacts and Revisions (grade 4 or 7)
2:30 pm – 3:00 pm	Break/Analysis
3:00 pm – 4:00 pm	Round 3 – Group Discussion of Impacts and Final Revisions (grade 4 or 7)
4:00 pm – 4:30 pm	Break/Analysis
4:30 pm – 5:00 pm	Large Group Discussion (all reading panelists) of Impacts for Grades 4, 6, 7 and 5, 8, and 11

Appendix II:

Standard Errors by Round

		Round 1 Levels					
Subject	**Grade**	**Basic**	**RID**	**Proficient**	**RID**	**Advanced**	**RID**
Mathematics	4	5	-0.25	12	0.009	57	1.462
Mathematics	4	7	-0.217	18	0.316	47	0.969
Mathematics	4	6	-0.244	17	0.25	51	1.302
Mathematics	4	8	-0.182	20	0.322	51	1.302
Mathematics	4	6	-0.244	12	0.009	51	1.302
Mathematics	4	5	-0.25	18	0.316	52	1.307
Mathematics	4	8	-0.182	17	0.25	52	1.307
Mathematics	4	7	-0.217	17	0.25	51	1.302
Mathematics	4	8	-0.182	17	0.25	59	1.67
Mathematics	4	8	-0.182	25	0.431	55	1.371
Mathematics	4	6	-0.244	12	0.009	51	1.302
Mathematics	4	7	-0.217	18	0.316	60	1.673
	Median	7	-0.217	17	0.250	52	1.307
	SE		0.010		0.051		0.067

		Round 2 Levels					
Subject	**Grade**	**BB/B**	**RID**	**B/P**	**RID**	**P/A**	**RID**
Mathematics	4	7	-0.217	17	0.25	60	1.673
Mathematics	4	7	-0.217	17	0.25	59	1.67
Mathematics	4	7	-0.217	17	0.25	60	1.673
Mathematics	4	7	-0.217	17	0.25	60	1.673
Mathematics	4	7	-0.217	18	0.316	60	1.673
Mathematics	4	7	-0.217	18	0.316	60	1.673
Mathematics	4	7	-0.217	17	0.25	59	1.67
Mathematics	4	7	-0.217	17	0.25	59	1.67
Mathematics	4	7	-0.217	17	0.25	59	1.67
Mathematics	4	8	-0.182	17	0.25	59	1.67
Mathematics	4	7	-0.217	17	0.25	60	1.673
Mathematics	4	7	-0.217	17	0.25	60	1.673
	Median	7	-0.217	17	0.250	60	1.673
	SE		0.004		0.009		0.001

		Round 3 Levels					
Subject	**Grade**	**BB/B**	**RID**	**B/P**	**RID**	**P/A**	**RID**
Mathematics	4	7	-0.217	17	0.25	60	1.673
Mathematics	4	7	-0.217	17	0.25	59	1.67
Mathematics	4	7	-0.217	18	0.316	60	1.673
Mathematics	4	7	-0.217	17	0.25	60	1.673
Mathematics	4	7	-0.217	18	0.316	60	1.673
Mathematics	4	7	-0.217	17	0.25	60	1.673
Mathematics	4	7	-0.217	17	0.25	60	1.673
Mathematics	4	7	-0.217	17	0.25	59	1.67
Mathematics	4	7	-0.217	17	0.25	60	1.673
Mathematics	4	8	-0.182	17	0.25	61	1.791
Mathematics	4	7	-0.217	17	0.25	60	1.673
Mathematics	4	7	-0.217	17	0.25	60	1.673
	Median	7	-0.217	17	0.250	60	1.673
	SE		0.004		0.009		0.012

*NOTE: RID = Revised Item Difficulty. This value represents the trait level at which a student is expected to answer the item onthe indicated page correctly 67% of the time. Numbers in the BB/B, B/P, and P/A columns are Ordered Item Booklet page numbers. Each line of data represents one panelist.

Appendix JJ:

Panelists' Survey Evaluation Results Summary

Pennsylvania Standards Validation
June 22-23, 2006

Math Evaluation Form

The purpose of this Evaluation Form is to obtain your opinions about the standards validation. Your opinions will provide a basis for evaluating both the materials and the training. We request that you **not** put your name on this form. We want your opinions to remain anonymous.

1. Check the column that most accurately reflects your opinion regarding the usefulness of the following materials used in the standards validation: **N=25**

Materials	Not Useful	Partially Useful	Useful	Very Useful
Performance Level Descriptors	0%	12.0%	20.0%	**68.0%**
Item Map	0%	16.0%	32.0%	**52.0%**
Items	0%	0%	24.0%	**76.0%**
Samples of Student Responses	4%	12.0%	32.0%	**52.0%**
Rubrics	8.0%	20.0%	**44.0%**	28.0%

2. Indicate the importance of the following factors in your classifications: **N=25**

Factor	Not Important	Somewhat Important	Important	Very Important
Descriptions of Below Basic, Basic, Proficient and Advanced	0%	0%	20.0%	**80.0%**
Your perceptions of the difficulty of the items	0%	8.0%	**56.0%**	36.0%
Your own classroom experience	4.0%	4.0%	**48.0%**	44.0%
Initial cut point placement	0%	28.0%	**40.0%**	32.0%
Panel discussions	0%	8.0%	44.0%	**48.0%**
The initial cut point placement of the other panelists	4.0%	16.0%	**40.0%**	**40.0%**

3. Check the column that reflects your confidence in your final judgment for the four performance levels: **N=25**

Performance Level	Not Confident	Partially Confident	Confident	Very Confident
Below Basic/Basic	0%	12.0%	24.0%	**64.0%**
Basic/Proficient	0%	12.0%	28.0%	**60.0%**
Proficient/ Advanced	0%	16.0%	24.0%	**60.0%**

3. How adequate was the training provided on the ordered item booklet and tasks to prepare you for your subsequent judgments? **N=24**

a. Not Adequate
b. Partially Adequate 12.5%
c. Adequate 50.0%
d. Very Adequate 37.5%

4. How would you rate the amount of time used for training? **N=25**

a. Too little time 36.0%
b. About right 64.0%
c. Too much time 0%

5. How would you rate the amount of time allotted for your judgements **after** the training? **N=25**

a. Too little time 0%
b. About right 72.0%
c. Too much time 28.0%

6. How confident are you that the processes and methods used for the standards validation will produce a reliable and valid result? **N=25**

a. Not Confident 0%
b. Partially Confident 16.0%
c. Confident 48.0%
d. Very Confident 36.0%

7. How would you rate the facilities? **N=17 **Many did not rate this question due to the power failure**
a. Not Suitable 29.4%
b. Somewhat Suitable 29.4%
c. Highly Suitable 41.2%

Please provide us with your suggestions for ways to improve the standards validation in the space provided (if you need additional space, you may continue on the back of this page):

Pennsylvania Standards Validation
June 20-21, 2006

Reading Evaluation Form

The purpose of this Evaluation Form is to obtain your opinions about the standards validation. Your opinions will provide a basis for evaluating both the materials and the training. We request that you **not** put your name on this form. We want your opinions to remain anonymous.

8. Check the column that most accurately reflects your opinion regarding the usefulness of the following materials used in the standards validation: **N=26**

Materials	Not Useful	Partially Useful	Useful	Very Useful
Performance Level Descriptors	0%	0%	7.7%	**92.3%**
Item Map	0%	11.5%	19.2%	**69.2%**
Items	0%	0%	7.7%	**92.3%**
Samples of Student Responses	3.8%	11.5%	30.8%	**53.8%**
Rubrics	7.7%	26.9%	26.9%	**38.5%**

9. Indicate the importance of the following factors in your classifications: **N=26**

Factor	Not Important	Somewhat Important	Important	Very Important
Descriptions of Below Basic, Basic, Proficient and Advanced	0%	0%	0%	**100%**
Your perceptions of the difficulty of the items	0%	3.8%	34.6%	**61.5%**
Your own classroom experience	7.7%	11.5%	19.2%	**61.5%**
Initial cut point placement	0%	15.4%	34.6%	**50.0%**
Panel discussions	0%	3.8%	42.3%	**53.8%**
The initial cut point placement of the other panelists	0%	19.2%	**46.2%**	34.6%

3. Check the column that reflects your confidence in your final judgment for the four performance levels: **N=25**

Performance Level	Not Confident	Partially Confident	Confident	Very Confident
Below Basic/Basic	0%	8.0%	36.0%	**56.0%**
Basic/Proficient	0%	4.0%	32.0%	**64.0%**
Proficient/ Advanced	0%	8.0%	40.0%	**52.0%**

10. How adequate was the training provided on the ordered item booklet and tasks to prepare you for your subsequent judgments? **N=26**

e. Not Adequate 0%
f. Partially Adequate 3.8%
g. Adequate 23.1%
h. Very Adequate 73.1%

11. How would you rate the amount of time used for training? **N=26**

d. Too little time 3.8%
e. About right 84.6%
f. Too much time 11.5%

12. How would you rate the amount of time allotted for your judgements **after** the training? **N=25**

d. Too little time 0%
e. About right 56.0%
f. Too much time 44.0%

13. How confident are you that the processes and methods used for the standards validation will produce a reliable and valid result? **N=26**

e. Not Confident 0%
f. Partially Confident 7.7%
g. Confident 53.8%
h. Very Confident 38.5%

14. How would you rate the facilities? **N=26**

d. Not Suitable 0%
e. Somewhat Suitable 38.5%
f. Highly Suitable 61.5%

Please provide us with your suggestions for ways to improve the standards validation in the space provided (if you need additional space, you may continue on the back of this page):