Spring 2015

Nebraska State Accountability (NeSA)

Reading, Mathematics and Science

Alternate Assessment

Technical Report Appendices

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Prepared by Data Recognition Corporation


DATA RECOGNITION
DRC
CORPORATION

Appendix A: NeSA-AAR Test Blueprint

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 3						
Gr3 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 3.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 3.1.5.a General Apply word structure elements, known words, and word patterns to determine meanings Extended ***Identify plural words and illustrations that show more than one***	4	0-1	1-2	1-2	1-2	3-7
LA 3.1.5.c General Apply context clues and text features to help infer meaning of unknown words Extended ***Use context clues and text features to determine meaning of unknown words***	4	0	1-2	1-2	1-2	3-6
LA 3.1.5.d General Identify semantic relationships Extended ***Categorize words or illustrations***	3	0	0-1	0-2	0	0-3
Gr3 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 3.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 3.1.6.a General Identify author's purpose(s) to support text comprehension Extended ***Recognize that authors communicate their thoughts through writing***	4	0	0-1	1-2	0-1	1-4
LA 3.1.6.b General Identify elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 3.1.6.c General Retell and summarize narrative text including characters, setting, and plot with supporting details Extended ***Recall basic facts from narrative text***	4	0	0-1	1-2	0-1	1-4
LA 3.1.6.d General Identify literary devices and explain the ways in which language is used Extended ***Identify the literary device, onomatopoeia***	4	0	0-1	1-2	0-1	1-4

LA 3.1.6.e General Retell and summarize the main idea from informational text using supporting details Extended ***Identify the main idea from an informational text***	4	0	0-1	1-2	0-1	1-4
LA 3.1.6.f General Recognize and apply knowledge of organizational patterns found in informational text Extended ***Identify the first event in a three-step organizational pattern in informational text using illustrations***	4	0	0-1	1-2	0-1	1-4
LA 3.1.6.g General Apply knowledge of text features to locate information and gain meaning from a text Extended ***Apply knowledge of text features to gain meaning***	4	0-1	0-1	1-2	0-1	1-5
LA 3.1.6.h General Describe the defining characteristics of narrative and informational genres Extended ***Recognize informational (nonfiction) genres***	4	0	0-1	0-1	0-1	1-4
LA 3.1.6.j General Generate and/or answer literal, inferential, and critical questions, supporting answers using prior knowledge and literal and inferential information from the text Extended ***Answer literal questions using information from the text***	4	0	0-1	0-1	0-1	1-4

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 4						
Gr4 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 4.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 4.1.5.a General Apply knowledge of word structure elements, known words, and word patterns to determine meanings Extended ***Identify singular and plural illustrations and words representing nouns***	4	0-1	1-2	1-2	1-2	3-7
LA 4.1.5.c General Apply context clues and text features to infer meaning of unknown words Extended ***Use context clues and text features to determine meaning of unknown words***	4	0	1-2	1-2	1-2	3-6
LA 4.1.5.d General Identify semantic relationships Extended ***Identify word patterns/families***	3	0	0-1	0-2	0	0-3
Gr4 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 4.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 4.1.6.a General Identify author's purpose(s) and recognize how author perspective influences text Extended ***Identify author's purpose through the feelings of the reader***	4	0	0-1	1-2	0-1	1-4
LA 4.1.6.b General Identify and analyze elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 4.1.6.c General Summarize narrative text including characters, setting, and plot with supporting details Extended ***Recall basic facts from narrative text***	4	0	0-1	1-2	0-1	1-4
LA 4.1.6.d General Identify literary devices and explain the ways in which language is used Extended ***Identify the literary device of imagery by matching descriptions to illustrations***	4	0	0-1	1-2	0-1	1-4
LA 4.1.6.e General Retell and summarize the main idea from informational text using supporting details Extended ***Identify the main idea from an informational text***	4	0	0-1	1-2	0-1	1-4

LA 4.1.6.f General Recognize and apply knowledge of organizational patterns found in informational text Extended ***Identify the first and last event in a three-step organizational pattern in informational text using illustrations***	4	0	0-1	1-2	0-1	1-4
LA 4.1.6.g General Apply knowledge of text features to locate information and gain meaning from a text Extended ***Apply knowledge of text features to locate information on simple maps***	4	0-1	0-1	1-2	0-1	1-5
LA 4.1.6.h General Describe the defining characteristics of narrative and informational genres Extended ***Recognize narrative (fiction) genres***	4	0	0-1	0-1	0-1	0-3
LA 4.1.6.j General Generate and/or answer literal, inferential, and critical questions, supporting answers using prior knowledge and literal and inferential information from the text Extended ***Answer literal questions using information from the text***	4	0	1-2	1-2	0-1	2-5

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 5						
Gr5 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 5.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 5.1.5.a General Apply knowledge of word structure elements, known words, and word patterns to determine meanings Extended ***Identify the illustration or word representing parts of speech and word structure***	4	0-1	1-2	1-2	1-2	3-7
LA 5.1.5.c General Select and apply context clues and text features to determine meaning of unknown words in a variety of text structures Extended ***Use context clues and text features to determine meaning of unknown words in a variety of text structures***	4	0	1-2	1-2	1-2	3-6
LA 5.1.5.d General Identify semantic relationships Extended ***Identify synonyms and antonyms using illustrations or words***	3	0	0-1	0-2	0	0-3
Gr5 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 5.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 5.1.6.a General Identify author's purpose(s) and recognize how author perspective influences text Extended ***Determine if the author's purpose is to entertain***	4	0	0-1	1-2	0-1	1-4
LA 5.1.6.b General Identify and analyze elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 5.1.6.c General Summarize narrative text including characters, setting, plot, and theme with supporting details Extended ***Recall basic facts from narrative text***	4	0	0-1	1-2	0-1	1-4
LA 5.1.6.d General Identify literary devices and explain the ways in which language is used Extended ***Identify the literary device of alliteration***	4	0	0-1	1-2	0-1	1-4

LA 5.1.6.e General Summarize and analyze the main idea from informational text using supporting details Extended ***Identify the main idea from an informational text using supporting details***	4	0	0-1	1-2	0-1	1-4
LA 5.1.6.f General Understand and apply knowledge of organizational patterns found in informational text Extended ***Sequence three events in informational text using illustrations***	4	0	0-1	1-2	0-1	1-4
LA 5.1.6.g General Apply knowledge of text features to locate information and gain meaning from a text Extended ***Apply knowledge of text features to locate information on schedule or chart***	4	0-1	0-1	1-2	0-1	1-5
LA 5.1.6.h General Describe the defining characteristics of narrative and informational genres Extended ***Discriminate between informational and narrative (fiction and nonfiction) genres***	4	0	0-1	0-1	0-1	0-3
LA 5.1.6.k General Generate and/or answer literal, inferential, and critical questions, supporting answers using prior knowledge and literal and inferential information from the text and additional sources Extended ***Answer literal questions using information from the text to support answers***	4	0	1-2	1-2	0-1	2-5

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 6						
Gr6 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 6.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 6.1.5.a General Determine the meaning of words through structural analysis, using knowledge of Greek, Latin, and Anglo Saxon roots, prefixes, and suffixes to understand complex words, including words in science, mathematics, and social studies Extended ***Determine the meaning of words using roots, prefixes, and suffixes, including words in science, mathematics, and social studies***	4	0-1	1-2	1-2	1-2	3-7
LA 6.1.5.c General Select and apply knowledge of context clues and text features to determine meaning of unknown words in a variety of text structures Extended ***Use context clues and text features to determine meaning of unknown words in a variety of text structures***	4	0	1-2	1-2	1-2	3-6
LA 6.1.5.d General Identify semantic relationships Extended ***Identify semantic relationships***	3	0	0-1	0-2	0	0-3
Gr6 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 6.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 6.1.6.a General Explain how author's purpose and perspective affect the meaning and reliability of the text Extended ***Determine if the author's purpose is to inform***	4	0	0-1	1-2	0-1	1-4
LA 6.1.6.b General Identify and analyze elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 6.1.6.c General Summarize narrative text using understanding of characters, setting, sequence of events, plot, and theme Extended ***Recall basic facts from narrative text***	4	0	0-1	1-2	0-1	1-4
LA 6.1.6.d General Interpret and explain the author's use of literary devices Extended ***Identify the use of literary devices in a narrative passage***	4	0	0-1	1-2	0-1	1-4

LA 6.1.6.e General Summarize, analyze, and synthesize informational text using main idea and supporting details Extended ***Identify and retell the main idea from informational text***	4	0	0-1	1-2	0-1	1-4
LA 6.1.6.f General Apply knowledge of organizational patterns found in informational text Extended ***Identify organizational patterns found in informational text***	4	0	0-1	1-2	0-1	1-4
LA 6.1.6.g General Apply knowledge of text features to locate information and gain meaning from a text Extended ***Use text features to locate information***	4	0-1	0-1	1-2	0-1	1-5
LA 6.1.6.h General Distinguish between the defining characteristics of different narrative and informational genres Extended ***Identify a story book, text book, and magazine***	4	0	0-1	0-1	0-1	0-3
LA 6.1.6.k General Generate and/or answer literal, inferential, critical, and interpretive questions, supporting answers using prior knowledge and information from the text and additional sources Extended ***Answer literal questions using prior knowledge and supporting information from the text***	4	0	1-2	1-2	0-1	2-5

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 7						
Gr7 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 7.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 7.1.5.a General Determine the meaning of words through structural analysis, using knowledge of Greek, Latin, and Anglo Saxon roots, prefixes, and suffixes to understand complex words, including words in science, mathematics, and social studies Extended ***Determine the meaning of words using roots, prefixes, and suffixes, including words in science, mathematics, and social studies***	4	0-1	1-2	1-2	1-2	3-7
LA 7.1.5.c General Select and apply knowledge of context clues and text features appropriate to a particular text to determine meaning of unknown words Extended ***Use context clues and text features to determine meaning of unknown words***	4	0	1-2	1-2	1-2	3-6
LA 7.1.5.d General Analyze semantic relationships Extended ***Identify semantic relationships***	3	0	0-1	0-2	0	0-3
Gr7 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 7.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 7.1.6.a General Analyze the meaning, reliability, and validity of the text considering author's purpose and perspective Extended ***Determine if the author's purpose is to entertain or inform the reader***	4	0	0-1	1-2	0-1	1-4
LA 7.1.6.b General Identify and analyze elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 7.1.6.c General Analyze author's use of literary devices Extended ***Identify the use of literary devices in a narrative passage***	4	0	0-1	1-2	0-1	1-4
LA 7.1.6.d General Summarize, analyze, and synthesize informational text using main idea and supporting details Extended ***Identify the main idea from informational text***	4	0	0-1	1-2	0-1	1-4

LA 7.1.6.e General Apply knowledge of organizational patterns found in informational text Extended ***Identify organizational patterns found in informational text***	4	0	0-1	1-2	0-1	1-4
LA 7.1.6.f General Apply knowledge of text features to locate information and gain meaning from a text Extended ***Use text features to locate information***	4	0-1	0-1	1-2	0-1	1-5
LA 7.1.6.g General Explain and make inferences based on the characteristics of narrative and informational genres Extended ***Identify narrative and informational genres***	4	0	0-1	0-1	0-1	0-3
LA 7.1.6.j General Generate and/or answer literal, inferential, critical, and interpretive questions, analyzing prior knowledge, information from the text and additional sources, to support answers Extended ***Answer literal questions using prior knowledge and supporting information from the text***	4	0	1-2	1-2	0-1	2-5

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 8						
Gr8 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 8.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 8.1.5.a General Determine the meaning of words through structural analysis, using knowledge of Greek, Latin, and Anglo Saxon roots, prefixes, and suffixes to understand complex words, including words in science, mathematics, and social studies Extended ***Determine the meaning of words using roots, prefixes, and suffixes, including words in science, mathematics, and social studies***	4	0-1	1-2	1-2	1-2	3-7
LA 8.1.5.c General Select a context clue strategy to determine meaning of unknown words appropriate to text Extended ***Use context clues and text features to determine meaning of unknown words appropriate to text***	4	0	1-2	1-2	1-2	3-6
LA 8.1.5.d General Analyze semantic relationships Extended ***Identify semantic relationships***	3	0	0-1	0-2	0	0-3
Gr8 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 8.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 8.1.6.a General Analyze the meaning, reliability, and validity of the text considering author's purpose and perspective, and information from additional sources Extended ***Determine if the author's purpose is to persuade the reader***	4	0	0-1	1-2	0-1	1-4
LA 8.1.6.b General Identify and analyze elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 8.1.6.c General Analyze author's use of literary devices Extended ***Identify the use of literary devices in a narrative passage***	4	0	0-1	1-2	0-1	1-4
LA 8.1.6.d General Summarize, analyze, and synthesize informational text using main idea and supporting details Extended ***Identify and retell the main idea and supporting details from informational text***	4	0	0-1	1-2	0-1	1-4
LA 8.1.6.e General Apply knowledge of organizational patterns found in informational text Extended ***Identify organizational patterns found in informational text***	4	0	0-1	1-2	0-1	1-4

LA 8.1.6.f General Analyze and evaluate information from text features Extended ***Use text features to locate information***	4	0-1	0-1	1-2	0-1	1-5
LA 8.1.6.g General Analyze and make inferences based on the characteristics of narrative and informational genres Extended ***Identify narrative and informational genres***	4	0	0-1	0-1	0-1	0-3
LA 8.1.6.j General Generate and/or answer literal, inferential, critical, and interpretive questions, analyzing and synthesizing prior knowledge, information from the text and additional sources, to support answers Extended ***Answer literal and inferential questions using prior knowledge and supporting information from the text***	4	0	1-2	1-2	0-1	2-5

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
High School						
Gr12 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 12.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 12.1.5.a General Determine the meaning of words through structural analysis, using knowledge of Greek, Latin, and Anglo Saxon roots, prefixes, and suffixes to understand complex words, including words in science, mathematics, and social studies Extended ***Determine the meaning of words using roots, prefixes, and suffixes, including words in science, mathematics, and social studies***	4	0-1	1-2	1-2	1-2	3-7
LA 12.1.5.c General Independently apply a context clue strategy to determine meaning of unknown words in text Extended ***Use context clues and text features to determine meaning of unknown words in text***	4	0	1-2	1-2	1-2	3-6
LA 12.1.5.d General Use semantic relationships to evaluate, defend, and make judgments Extended ***Identify semantic relationships***	3	0	0-1	0-2	0	0-3
Gr12 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 12.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 12.1.6.a General Evaluate the meaning, reliability, and validity of the text considering author's purpose, perspective, and information from additional sources Extended ***Determine if the author's purpose is to entertain, inform, or persuade***	4	0	0-1	1-2	0-1	1-4
LA 12.1.6.b General Analyze and evaluate elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 12.1.6.c General Analyze the function and critique the effects of the author's use of stylistic and literary devices Extended ***Identify the use of literary devices in a narrative passage***	4	0	0-1	1-2	0-1	1-4
LA 12.1.6.d General Summarize, analyze, synthesize, and evaluate informational text Extended ***Identify and retell the main idea and supporting details from informational text***	4	0	0-1	1-2	0-1	1-4

LA 12.1.6.e General Apply knowledge of organizational patterns found in informational text Extended ***Identify organizational patterns found in informational text***	4	0	0-1	1-2	0-1	1-4
LA 12.1.6.f General Analyze and evaluate information from text features Extended ***Use text features to locate information***	4	0-1	0-1	1-2	0-1	1-5
LA 12.1.6.g General Analyze and evaluate inferences based on the characteristics of narrative and informational genres and provide evidence from the text to support understanding Extended ***Identify narrative and informational genres***	4	0	0-1	0-1	0-1	0-3
LA 12.1.6.j General Generate and/or answer literal, inferential, critical, and interpretive questions, analyzing, synthesizing, and evaluating prior knowledge, information from the text and additional sources, to support answers Extended ***Generate/answer literal and inferential questions using prior knowledge and supporting information from the text***	4	0	1-2	1-2	0-1	2-5

Appendix B: NeSA-AAM Test Blueprint

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 3						
NUMBER SENSE						
Gr3 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.1.1 Students will represent and show relationships among positive rational numbers within the base-ten number system.						
MA 3.1.1.e General Demonstrate multiple equivalent representations for numbers up to 10,000 Extended ***Identify representations of whole numbers 0-10***	3	0-1	0-1	0-2	0	1-3
MA 3.1.1.g General Compare and order whole numbers through the thousands Extended ***Compare and order whole numbers 0-10***	4	0	0-2	0-2	0-2	1-4
MA 3.1.1.h General Use visual models to represent fractions of halves, thirds, and fourths as parts of a whole and parts of a set Extended ***Use models to represent halves as parts of a whole and parts of a set***	3	0-1	1-2	0-1	0	1-4
MA 3.1.1.i General Round a given number to tens or hundreds Extended ***Recognize basic numerical concepts of closer and farther***	4	0	0-1	0-1	0-1	1-2
Gr3 Operations	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.1.2 Students will demonstrate the meaning of multiplication and division with whole numbers.						
MA 3.1.2.a General Represent multiplication as repeated addition using objects, drawings, words, and symbols Extended ***Represent a number up to 10 in equal sized groups***	4	0	0-1	0-2	0-1	1-3
MA 3.1.2.d General Use drawings, words, and symbols to explain the meaning of multiplication using an array Extended ***Use drawings, words, and symbols to explain the meaning of multiplication***	4	0-1	0-1	0-1	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						
Gr3 Characteristics	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.2.1 Students will identify characteristics and describe properties of two dimensional shapes and three-dimensional objects.						

MA 3.2.1.a General Identify the number of sides, angles, and vertices of two-dimensional shapes Extended ***Identify two dimensional shapes (circle, square)***	3	0-1	0-1	0-2	0	1-2
Gr3 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.2.2 Students will identify distances on a number line.						
MA 3.2.2.b General Determine the distance between two whole number points on a number line Extended ***Identify a point on a number line***	3	0-1	0-1	0-2	0	1-2
Gr3 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.2.5 Students will apply appropriate procedures and tools to determine measurements using customary and metric units.						
MA 3.2.5.e General Identify the appropriate customary unit for measuring length, weight, and capacity/volume Extended ***Identify the purpose of basic tools for measuring time***	3	0-1	0-1	0-1	0	1-2
MA 3.2.5.g General Compare and order objects according to length using centimeters and meters Extended ***Compare and order objects by length***	4	0	0	0-2	0-2	1-3
ALGEBRAIC CONCEPTS						
Gr3 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.3.1 Students will represent relationships.						
MA 3.3.1.a General Identify, describe, and extend numeric and non-numeric patterns Extended ***Extend non-numeric AB patterns***	4	0	0-1	0-2	0-2	1-2
Gr3 Modeling in Context	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.3.2 Students will create and use models to represent mathematical situations.						
MA 3.3.2.a General Model situations that involve the addition and subtraction of whole numbers using objects, number lines, and symbols Extended ***Model situations that involve addition and subtraction of whole numbers 0-10 using objects and symbols***	4	0	0-2	0-3	0-2	1-3

Gr3 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.3.3 Students will identify and apply properties of whole numbers to solve equations involving addition and subtraction.						
MA 3.3.3.b General Solve simple one-step whole number equations involving addition and subtraction Extended ***Solve simple one-step single digit equations involving addition and subtraction with sums and differences 0-9***	4	0	0	0-2	0-2	1-2
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr3 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.4.1 Students will organize, display, compare, and interpret data.						
MA 3.4.1.a General Represent data using horizontal and vertical bar graphs Extended ***Represent data using vertical bar graphs***	4	0	0-1	0-3	0-2	1-3
MA 3.4.1.c General Interpret data using horizontal and vertical bar graphs Extended ***Interpret data on vertical bar graphs***	4	0	0	0-2	0-2	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 4						
NUMBER SENSE						
Gr4 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.1.1 Students will represent and show relationships among positive rational numbers within the base-ten number system.						
MA 4.1.1.b General Demonstrate multiple equivalent representations for decimal numbers through the hundredths place Extended ***Identify representations of whole numbers from 0-20***	3	0-1	0-1	0-2	0	1-3
MA 4.1.1.c General Compare and order whole numbers and decimals through the hundredths place Extended ***Compare and order whole numbers 0-20***	4	0	0-2	0-2	0-2	1-4
MA 4.1.1.e General Represent a fraction as parts of a whole and/or parts of a set Extended ***Use models to represent halves and fourths as parts of a whole and parts of a set***	3	0-1	1-2	0-1	0	1-3
MA 4.1.1.f General Use visual models to find equivalent fractions Extended ***Use models to identify equivalent fractions 1/2 and whole***	3	0-1	0-1	0-1	0	1-2
Gr4 Operations	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.1.2 Students will demonstrate the meaning of division with whole numbers.						
MA 4.1.2.a General Use drawings, words, and symbols to explain the meaning of division Extended ***Represent a number up to 20 in equal sized groups***	4	0	0-1	0-2	0-2	1-2
Gr4 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.1.2 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 4.1.3.b General Add and subtract decimals to the hundredths place Extended ***Add and subtract single digit numbers***	4	0	0	0-2	0-2	1-2

MA 4.1.3.c General Multiply two-digit whole numbers Extended ***Add equal groups with sums up to 20***	4	0	0-1	0-2	0-1	1-2
MA 4.1.3.e General Mentally compute multiplication and division involving powers of 10 Extended ***Use groups of 10 for computation up to 50***	4	0	0-1	0-2	0-1	1-2
MA 4.1.3.f General Select and apply the appropriate method of computation when problem solving Extended ***Select the appropriate method of computation (addition and subtraction) when problem solving***	4	0	0	0-2	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						
Gr4 Characteristics	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.2.1 Students will classify two-dimensional shapes and three- dimensional objects.						
MA 4.2.1.a General Identify two- and three- dimensional shapes according to their sides and angle properties Extended ***Identify two dimensional shapes (triangle, rectangle)***	3	0-1	0-1	0-2	0	1-2
MA 4.2.1.b General Classify an angle as acute, obtuse, or right Extended ***Identify the number of angles/corners of a given shape***	3	0	0-1	0-2	0	1-2
MA 4.2.1.c General Identify parallel, perpendicular, and intersecting lines Extended ***Recognize parallel and intersecting lines***	3	0-1	0-1	0-2	0	1-2
Gr4 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.2.2 Students will describe locations using coordinate geometry.						
MA 4.2.2.a General Identify the ordered pair of a plotted point in the first quadrant by its location Extended ***Determine the distance between two points on a number line***	3	0	0-1	0-2	0	1-2
Gr4 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.2.5 Students will apply appropriate procedures and tools to estimate and determine measurements using customary and metric units.						
MA 4.2.5.b General Identify time to the minute on an analog clock Extended ***Identify time to the hour on an analog clock***	3	0	0-2	0-1	0	1-2

MA 4.2.5.c General Solve problems involving elapsed time Extended *Solve problems involving elapsed time to the hour*	3	0	0-1	0-3	0	1-3
MA 4.2.5.d General Identify the appropriate metric unit for measuring length, weight, and capacity/volume Extended *Determine the appropriate tool for measuring length, capacity/volume, and weight*	3	0-1	0-2	0-2	0	1-3
MA 4.2.5.g General Compute simple unit conversions for length within a system of measurement Extended *Identify the length of an object using non-standard units*	3	0	0-2	0-2	0	1-2
ALGEBRAIC CONCEPTS						
Gr4 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.3.1 Students will represent and analyze relationships.						
MA 4.3.1.c General Use symbols to compare quantities Extended *Use objects and symbols (<, >, =) to compare quantities*	3	0-1	0-2	0-3	0	1-3
MA 4.3.1.d General Select appropriate operational and relational symbols to make a number sentence true Extended *Select appropriate operational symbols (addition and subtraction) to make a number sentence true*	3	0-1	0-2	0-3	0	1-3
Gr4 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.3.3 Students will identify and apply properties of whole numbers to solve equations involving multiplication and division.						
MA 4.3.3.c General Use symbolic representations of the commutative property of multiplication Extended *Identify the commutative property of addition using pictures and models*	4	0	0-1	0-2	0-2	1-2
MA 4.3.3.d General Solve simple one-step whole number equations Extended *Solve simple one-step single digit equations involving addition and subtraction with sums and differences 0-20*	4	0	0	0-2	0-2	1-2
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr4 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.4.1 Students will organize, display, compare, and interpret data.						

MA 4.4.1.b General Compare different representations of the same data Extended *Compare different representations of the same data*	4	0	0-1	0-3	0-2	1-3
MA 4.4.1.c General Interpret data and draw conclusions using dot/line plots Extended *Interpret data on vertical and horizontal bar graphs*	4	0	0	0-2	0-2	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 5						
NUMBER SENSE						
Gr5 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.1.1 Students will represent and show relationships among positive rational numbers.						
MA 5.1.1.a General Demonstrate multiple equivalent representations for whole numbers and decimal numbers through the thousandths place Extended ***Identify equivalent representations of whole numbers from 0-50***	3	0-1	0-1	0-2	0	1-3
MA 5.1.1.b General Compare and order whole numbers, fractions, and decimals through the thousandths place Extended ***Compare and order whole numbers 0-30***	4	0	0-2	0-2	0-2	1-4
MA 5.1.1.c General Identify and name fractions in their simplest form and find common denominators for fractions Extended ***Use models to represent halves, fourths, and thirds as parts of a whole and parts of a set***	3	0-1	1-2	0-2	0	1-3
MA 5.1.1.d General Recognize and generate equivalent forms of commonly used fractions, decimals, and percents Extended ***Use models to identify equivalent fractions 1/4, 1/2, and whole***	3	0-1	0-2	0-2	0	1-3
MA 5.1.1.e General Classify a number as prime or composite Extended ***Classify a number as even or odd***	3	0-1	0-2	0-2	0	1-3
MA 5.1.1.f General Identify factors and multiples of any whole number Extended ***Identify groups of 2, 5s, and 10s***	3	0-1	0-2	0-2	0	1-3
Gr5 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.1.3 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 5.1.3.a General Add and subtract positive rational numbers Extended ***Add and subtract 2-digit by 2-digit whole numbers without regrouping***	4	0	0	0-3	0-2	1-3
MA 5.1.3.b General Select, apply, and explain the appropriate method of computation when problem solving Extended ***Select the appropriate method of computation (addition, subtraction, and multiplication) when problem solving***	4	0	0	0-2	0-2	1-3

MA 5.1.3.c General Multiply decimals Extended ***Multiply single-digit numbers (0 to 5)***	4	0	0	0-3	0-2	1-3
MA 5.1.3.d General Divide a decimal by a whole number Extended ***Divide single digit numbers by single digit numbers resulting in a quotient that is a whole number***	4	0	0	0-3	0-2	1-3
Gr5 Estimation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.1.4 Students will estimate and check reasonableness of answers using appropriate strategies and tools.						
MA 5.1.4.a General Estimate the sums and differences of positive rational numbers to check the reasonableness of such results Extended ***Apply estimation to the nearest 10 on addition results***	4	0	0	0-3	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						
Gr5 Characteristics	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.2.1 Students will describe relationships among two-dimensional shapes and three-dimensional objects.						
MA 5.2.1.a General Identify the number of edges, faces, and vertices of triangular and rectangular prisms Extended ***Identify the number of sides of a given polygon***	3	0	0-2	0-3	0	1-3
MA 5.2.1.d General Identify degrees on a circle Extended ***Identify the radius and diameter of a circle***	3	0-1	0-3	0-2	0	1-3
Gr5 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.2.2 Students will identify locations using coordinate geometry.						
MA 5.2.2.a General Plot the location of an ordered pair in the first quadrant Extended ***Determine the location of a number on a number line***	3	0	0-1	0-3	0	1-3
Gr5 Measurement	Highest DOK Stage Tested	DOK 1 Stage 1	DOK 1 Stage 2	DOK 1 Stage 3	DOK 2 Stage 4	**Stage**
MA 5.2.5 Students will apply appropriate procedures, tools and formulas to determine measurements using customary and metric units.						

MA 5.2.5.b General Identify correct unit (customary or metric) to the measurement situation Extended ***Identify the customary units for measuring length***	3	0	0-1	0-3	0	1-3
MA 5.2.5.f General Determine the area of rectangles and squares Extended ***Identify the perimeter of an object***	3	0	0-1	0-3	0	1-3
ALGEBRAIC CONCEPTS						
Gr5 Modeling in Context	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.3.2 Students will create, use, and compare models representing mathematical situations.						
MA 5.3.2.a General Model situations that involve the addition, subtraction, and multiplication of positive rational numbers using words, graphs, and tables Extended ***Model situations that involve addition and subtraction of numbers up to 50***	4	0	0	0-2	0-2	1-3
Gr5 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.3.3 Students will apply properties of simple positive rational numbers to solve one-step equations.						
MA 5.3.3.b General Use symbolic representations of the associative property Extended ***Identify the associative property of addition using pictures and models***	4	0	0-1	0-3	0-2	1-3
MA 5.3.3.c General Evaluate numerical expressions by using parentheses with respect to order of operations Extended ***Demonstrate understanding of order of operations involving one- digit addition with parentheses***	4	0	0	0-2	0-3	1-3
MA 5.3.3.d General Evaluate simple algebraic expressions involving addition and subtraction Extended ***Evaluate simple algebraic expressions involving addition***	4	0	0	0-2	0-2	1-3
MA 5.3.3.e General Solve one-step addition and subtraction equations involving common positive rational numbers Extended ***Solve simple one-step equations involving addition***	4	0	0	0-1	1-3	1-3
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr5 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.4.1 Students will organize, display, compare, and interpret data.						
MA 5.4.1.a General Represent data using line graphs Extended ***Identify data on a line graph***	3	0-1	0-2	0-3	0	1-3

MA 5.4.1.b General Represent the same set of data in different formats Extended ***Identify the same data in different formats***	4	0	0	0	0-3	1-3
MA 5.4.1.c General Draw conclusions based on a set of data Extended ***Interpret data on a line graph***	4	0	0	0-2	0-3	1-3
GrS Probability	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.4.3 Students will organize, display, compare, and interpret data.						
MA5.4.3.b General Generate a list of possible outcomes for a simple event Extended ***Identify a possible outcome***	4	0	0-2	0-2	0-1	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 6						
NUMBER SENSE						
Gr6 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.1.1 Students will represent and show relationships among positive rational numbers and integers.						
MA 6.1.1.b General Compare and order positive and negative integers Extended ***Compare and order whole numbers up to 40***	4	0	0-2	0-2	0-2	1-4
MA 6.1.1.e General Identify the prime factorization of numbers Extended ***Identify factorization of a number up to 20***	4	0	0-2	0-2	0-2	1-3
Gr6 Operations	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.1.2 Students will demonstrate the meaning of arithmetic operations with positive fractions and decimals.						
MA 6.1.2.a General Use drawings, words, and symbols to explain the meaning of addition and subtraction of fractions Extended ***Use drawings to subtract halves, thirds, and fourths from a whole***	3	0	0-2	0-3	0	1-3
MA 6.1.2.b General Use drawings, words, and symbols to explain the meaning of addition and subtraction of decimals Extended ***Recognize decimal representation of money***	4	0-1	0-1	0-2	0-2	1-3
Gr6 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.1.3 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 6.1.3.a General Multiply and divide positive rational numbers Extended ***Multiply positive single digit numbers***	4	0	0	0-3	0-2	1-3
MA 6.1.3.b General Select and apply the appropriate method of computation when problem solving Extended ***Select the appropriate method of computation (addition, subtraction, multiplication, and division) when problem solving***	4	0	0	0-2	0-2	1-3

Gr6 Estimation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.1.4 Students will estimate and check reasonableness of answers using appropriate strategies and tools.						
MA 6.1.4.a General Use appropriate estimate methods to check the reasonableness of solutions for problems involving positive rational numbers Extended ***Apply estimation to the nearest 10 on addition and subtraction results***	4	0	0	0-3	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						
Gr6 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.2.2 Students will identify locations using coordinate geometry.						
MA 6.2.2.a General Identify the ordered pair of a plotted point in the coordinate plane Extended ***Identify the plotted point on a 4 x 4 grid***	3	0	0-2	0-3	0	1-3
Gr6 Spatial Modeling	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.2.4 Students will use visualization of geometric models to solve problems.						
MA 6.2.4.a General Identify two-dimensional drawings of three-dimensional objects Extended ***Identify a two-dimensional shape and match it to a three- dimensional object***	3	0-1	0-1	0-3	0	1-3
Gr6 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.2.5 Students will apply appropriate procedures, tools, and formulas to determine measurements.						
MA 6.2.5.d General Determine the perimeter of polygons Extended ***Determine the perimeter of polygons (triangle, rectangle, square)***	4	0	0	0-3	0-2	1-3
MA 6.2.5.e General Determine the area of parallelograms and triangles Extended ***Determine the area of a square***	4	0	0	0-3	0-2	1-3
ALGEBRAIC CONCEPTS						
Gr6 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**

MA 6.3.1 Students will represent, analyze, and use relationships to make generalizations.						
MA 6.3.1.a General Describe and create simple algebraic expressions from words and tables Extended ***Match a simple algebraic expression involving addition to given tables***	4	0	0-1	0-2	0-3	1-3
MA 6.3.1.b General Use a variable to describe a situation with an equation Extended ***Use a symbol to represent a numeric value in a simple equation***	3	0	0-2	0-3	0	1-3
Gr6 Modeling in Context	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.3.2 Students will create, use, and interpret models of quantitative relationships.						
MA 6.3.2.a General Model contextualized problems using various representations Extended ***Model representations of coin combinations up to $1.00***	4	0	0-2	0-2	0-3	1-3
Gr6 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.3.3 Students will apply properties to solve equations.						
MA 6.3.3.b General Evaluate numerical expressions containing multiple operations with respect to order of operations Extended ***Demonstrate understanding of order of operations involving one- digit addition, subtraction, and multiplication with parentheses with parentheses***	4	0	0	0-2	0-3	1-3
MA 6.3.3.c General Evaluate simple algebraic expressions involving multiplication and division Extended ***Evaluate simple algebraic expressions involving addition and subtraction***	4	0	0	0-2	0-2	1-3
MA 6.3.3.d General Solve one-step equations involving positive rational numbers Extended ***Solve simple one-step equations involving addition and subtraction***	4	0	0	0-2	0-2	1-3
MA 6.3.3.e General Identify and explain the properties of equality used in solving equations Extended ***Solve an addition problem demonstrating the commutative property of equality***	4	0	0-2	0-2	0-2	1-3
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr6 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.4.1 Students will organize, display, compare, and interpret data.						

MA 6.4.1.b General Compare and interpret data sets and their graphical representations Extended ***Interpret data on a circle graph***	4	0	0	0-2	0-3	1-3
MA 6.4.1.c General Find the mean, median, mode, and range for a set of data Extended ***Find the mode for a set of data***	4	0	0-1	0-2	0-2	1-3
Gr6 Probability	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.4.3 Students will apply basic concepts of probability.						
MA 6.4.3.b General Compute theoretical probabilities for independent events Extended ***Determine the theoretical probability of an event using given data***	4	0	0-2	0-2	0-2	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 7						
NUMBER SENSE						
Gr7 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.1.1 Students will represent and show relationships among rational numbers.						
MA 7.1.1.a General Show equivalence among fractions, decimals, and percents Extended ***Use models to identify equivalents between fractions and percents (1 and 100%, 1/2 and 50%, 1/4 and 25%)***	4	0-1	0-3	0-2	0-1	1-3
MA 7.1.1.b General Compare and order rational numbers (fractions, decimals, percents) Extended ***Compare and order numbers up to 50***	4	0	0-2	0-2	0-2	1-4
Gr7 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.1.3 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 7.1.3.a General Compute accurately with integers Extended ***Divide a positive two digit number by a single digit number***	4	0	0-1	0-3	0-2	1-3
MA 7.1.3.b General Select, apply, and explain the method of computation when problem solving using integers and positive rational numbers Extended ***Select and apply the appropriate method of computation (addition, subtraction, and multiplication) when problem solving***	4	0	0	0-2	0-2	1-3
MA 7.1.3.c General Solve problems involving percent of numbers Extended ***Compare given percents (greater than, less than, equal to)***	4	0	0-1	0-3	0-2	1-3
Gr7 Estimation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.1.4 Students will estimate and check reasonableness of answers using appropriate strategies and tools.						
MA 7.1.4.a General Use estimation methods to check the reasonableness of solutions for problems involving integers and positive rational numbers Extended ***Apply estimation to the nearest 10 on addition and subtraction results***	4	0	0	0-3	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						

Gr7 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.2.2 Students will identify locations using coordinate geometry.						
MA 7.2.2.a General Plot the location of an ordered pair in the coordinate plane Extended *Plot the location of an ordered pair on a 4 x 4 grid*	3	0	0-1	0-3	0	1-3
MA 7.2.2.c General Find the distance between points along horizontal and vertical lines of a coordinate plane Extended *Identify the distance between two given points along horizontal and vertical lines of a grid*	3	0	0-1	0-3	0	1-3
Gr7 Transformations	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.2.3 Students will use transformations and symmetry to analyze geometric shapes.						
MA 7.2.3.b General Perform and describe positions and orientation of shapes under a single transformation on an coordinate plane Extended *Identify congruent shapes*	3	0	0-2	0-2	0	1-3
Gr7 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.2.5 Students will apply appropriate procedures, tools, and formulas to determine measurements.						
MA 7.2.5.b General Determine the area of trapezoids and circles, and the circumference of circles Extended *Determine the area of a rectangle (not a square)*	4	0	0	0-3	0-2	1-3
ALGEBRAIC CONCEPTS						
Gr7 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.3.1 Students will represent and analyze relationships using algebraic symbols.						
MA 7.3.1.a General Describe and create algebraic expressions from words, tables, and graphs Extended *Match a simple algebraic expression involving addition and subtraction to a given table, chart, or illustration*	4	0	0-1	0-2	0-3	1-3
MA 7.3.1.b General Use a variable to describe a situation with an inequality Extended *Identify a correct inequality*	4	0	0-1	0-2	0-3	1-3
Gr7 Modeling in Context	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**

MA 7.3.2 Students will create, use, and interpret models of quantitative relationships.						
MA 7.3.2.a General Model contextualized problems using various representations Extended ***Recognize addition number sentences using various representations***	3	0-1	0-1	0-3	0	1-3
Gr7 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.3.3 Students will apply properties to solve equations and inequalities.						
MA 7.3.3.c General Given the value of the variable(s), evaluate algebraic expressions with respect to order of operations Extended ***Evaluate variable expressions with respect to order of operations in addition, subtraction, and multiplication with parentheses***	4	0	0	0-2	0-2	1-3
MA 7.3.3.d General Solve two-step equations involving integers and positive numbers Extended ***Solve one-step equations involving addition or subtraction***	4	0	0-1	0-3	0-1	1-3
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr7 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.4.1 Students will formulate questions that can be addressed with data, and then organize, display, and analyze the relevant data to answer their questions.						
MA 7.4.1.a General Analyze data sets and interest their graphical representations Extended ***Identify and interpret a data set***	4	0	0-2	0-3	0-2	1-3
MA 7.4.1.b General Find and interpret mean, median, mode, and range for a set of data Extended ***Find the median for a set of data***	4	0	0-1	0-2	0-2	1-3
Gr7 Probability	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.4.3 Students will apply and interpret basic concepts of probability.						
MA 7.4.3.a General Find the probability of independent compound events Extended ***Determine the probability of a given event (always, sometimes, never)***	3	0	0-1	0-3	0	1-3
MA 7.4.3.b General Compare and contracts theoretical and experimental probabilities Extended ***Compare theoretical probabilities***	4	0	0-1	0-2	0-2	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 8						
NUMBER SENSE						
Gr8 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.1.1 Students will represent and show relationships among real numbers.						
MA 8.1.1.a General Compare and order real numbers Extended ***Compare and order positive and negative integers (-50 to 50)***	4	0	0-2	0-3	0-2	1-4
MA 8.1.1.d General Classify numbers as natural, whole, integer, rational, irrational, or real Extended ***Classify numbers as natural or whole***	3	0-1	0-2	0-2	0	1-3
Gr8 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.1.3 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 8.1.3.a General Compute accurately with rational numbers Extended ***Add and subtract decimals without regrouping***	4	0	0-1	0-2	0-2	1-3
MA 8.1.3.b General Evaluate expressions involving absolute value of integers Extended ***Determine the absolute value of a given situation***	4	0	0-1	0-2	0-2	1-3
MA 8.1.3.d General Select, apply, and explain the method of computation when problem solving using rational numbers Extended ***Select and apply method of computation (addition, subtraction, multiplication, division) when problem solving***	4	0	0	0-2	0-2	1-3
MA 8.1.3.e General Solve problems involving ratios and proportions Extended ***Solve problems involving ratios***	4	0	0	0-3	0-2	1-3
Gr8 Estimation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.1.4 Students will estimate and check reasonableness of answers using appropriate strategies and tools.						
MA 8.1.4.a General Use estimation methods to check the reasonableness of solutions for problems involving rational numbers Extended ***Apply estimation to the nearest 10 on situations (story problems) involving addition and subtraction***	4	0	0	0-2	0-3	1-3

GEOMETRIC/MEASUREMENT CONCEPTS						
Gr8 Characteristics	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.2.1 Students will describe, compare, and contrast characteristics, properties, and relationships of geometric shapes and objects.						
MA 8.2.1.c General Identify geometric properties of parallel lines cut by a transversal and related angles Extended ***Identify geometric properties of parallel lines cut by a perpendicular transversal that creates right angles***	4	0-1	0-2	0-3	0-1	1-3
MA 8.2.1.d General Identify pairs of angles Extended ***Identify pairs of right angles***	4	0-1	0-2	0-3	0-1	1-3
MA 8.2.1.e General Examine the relationships of the interior angles to a triangle Extended ***Match congruent triangles based on interior angles***	3	0	0-2	0-2	0	1-3
Gr8 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.2.2 Students will specify locations and describe relationships using coordinate geometry.						
MA 8.2.2.a General Use coordinate geometry to represent and examine the properties of rectangles and squares using horizontal and vertical segments Extended ***Use coordinate geometry to determine the measurement of a side (rectangle, square)***	4	0	0-1	0-3	0-2	1-3
Gr8 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.2.5 Students will apply appropriate procedures, tools, and formulas to determine measurements.						
MA 8.2.5.c General Apply the Pythagorean theorem to find missing lengths in right triangles and to solve problems Extended ***Find the missing length and/or height in a right triangle***	4	0	0-1	0-2	0-2	1-3
MA 8.2.5.d General Use scale factors to find missing lengths in similar shapes Extended ***Match similar geometric shapes represented in different scales***	3	0	0-3	0-3	0	1-3
ALGEBRAIC CONCEPTS						
Gr8 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**

MA 8.3.1 Students will represent and analyze relationships using algebraic symbols.						
MA 8.3.1.b General Describe relationships using algebraic expressions, equations, and inequalities Extended ***Identify relationships using algebraic expressions***	3	0	0-2	0-3	0	1-3
Gr8 Modeling in Context	Highest Level DOK Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.3.2 Students will create, use, and interpret models of quantitative relationships.						
MA 8.3.2.a General Model contextualized problems using various representations Extended ***Recognize addition and subtraction number sentences using various representations***	3	0-1	0-1	0-3	0	1-3
Gr8 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.3.3 Students will apply properties to solve equations and inequalities.						
MA 8.3.3.b General Evaluate numerical expressions containing whole number exponents Extended ***Identify representations of numbers squared***	3	0	0-2	0-2	0	1-3
MA 8.3.3.c General Solve multi-step equations involving rational numbers Extended ***Solve one-step equations involving addition, subtraction, and multiplication***	4	0	0-1	0-3	0-1	1-3
MA 8.3.3.d General Solve two-step inequalities involving rational numbers Extended ***Identify values that make inequalities true***	4	0	0-1	0-3	0-2	1-3
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr8 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.4.1 Students will formulate questions that can be addressed with data, and then organize, display, and analyze the relevant data to answer their questions.						
MA 8.4.1.b General Compare characteristics between sets of data or within a given set of data Extended ***Compare characteristics in a set of data***	4	0	0-2	0-3	0-2	1-3
MA 8.4.1.d General Select the most appropriate unit of central tendency for sets of data Extended ***Find the median for a set of data***	4	0	0-1	0-2	0-2	1-3

MA 8.4.1.e General Identify misrepresentation and misinterpretation of data represented in circle graphs and box plots Extended ***Recognize accurate representation of data in a circle graph***	4	0	0	0-3	0-2	1-3
Gr8 Probability	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.4.3 Students will apply and interpret basic concepts of probability.						
MA 8.4.3.a General Identify complementary events and calculate their probabilities Extended ***Determine complementary events***	3	0	0-1	0-3	0	1-3
MA 8.4.3.b General Compute probabilities for independent compound events Extended ***Determine the probability for an independent event***	4	0	0-1	0-2	0-2	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 11						
NUMBER SENSE						
Gr11 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.1.3 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 12.1.3.a General Compute accurately with real numbers Extended ***Add and subtract two-digit by two-digit numbers with regrouping***	4	0	0-1	0-2	0-2	1-3
MA 12.1.3.b General Simplify exponential expressions Extended ***Recognize expanded forms of exponents (powers)***	3	0-1	0-2	0-3	0	1-3
Gr11 Estimation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.1.4 Students will estimate and check reasonableness of answers using appropriate strategies and tools.						
MA 12.1.4.a General Use estimation methods to check the reasonableness of real number computations and decide if the problem calls for an approximation or an exact number Extended ***Apply estimation to the nearest 10 on situations (story problems)involving addition, subtraction, and multiplication***	4	0	0	0-2	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						
Gr11 Characteristics	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.2.1 Students will analyze characteristics, properties, and relationships among geometric shapes and objects.						
MA 12.2.1.d General Apply geometric properties to solve problems Extended ***Apply the geometric property, length times width, to find the area of a rectangle***	4	0	0-1	0-2	0-2	1-3
MA 12.2.1.e General Identify and apply right triangle relationships Extended ***Identify a right triangle***	3	0-1	0-1	0-3	0	1-3
Gr11 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**

MA 12.2.2 Students will use coordinate geometry to analyze and describe relationships in the coordinate plane.						
MA 12.2.2.a General Use coordinate geometry to analyze geometric situations Extended ***Determine the coordinates for a point on a 7 x 7 or larger grid***	3	0	0-1	0-3	0	1-3
MA 12.2.2.d General Prove special types of triangles and quadrilaterals Extended ***Identify the properties of equilateral triangles***	4	0-1	0-2	0-3	0-1	1-3
Gr11 Spatial Modeling	Highest Stage DOK Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.2.4 Students will use visualization, spatial reasoning, and geometric modeling to solve problems.						
MA 12.2.4.b General Use geometric models to visualize, describe, and solve problems Extended ***Use geometric models to solve problems***	4	0	0-1	0-3	0-1	1-3
Gr11 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.2.5 Students will apply the units, systems, and formulas to solve problems.						
MA 12.2.5.c General Convert between various units of area and volume, such as square feet to square yards Extended ***Find the missing length and/or height in a right triangle***	4	0	0-1	0-2	0-2	1-3
MA 12.2.5.d General Convert equivalent rates Extended ***Convert equivalent rates using money***	4	0	0-1	0-3	0-2	1-3
ALGEBRAIC CONCEPTS						
Gr11 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.3.1 Students will generalize, represent, and analyze relationships using algebraic symbols.						
MA 12.3.1.a General Represent, interpret, and analyze functions with graphs, tables, and algebraic notation, and convert among these representations Extended ***Interpret values of a function in a table***	4	0	0-1	0-2	0-2	1-3
MA 12.3.1.c General Identify the slope and intercepts of a linear relationship from an equation or graph Extended ***Identify a linear relationship from a graph***	4	0	0-1	0-3	0-2	1-3
MA 12.3.1.d General Identify characteristics of linear and non-linear functions Extended ***Compare linear and non-linear segments and graphs***	4	0-1	0-1	0-3	0-2	1-3

MA 12.3.1.f General Compare and analyze the rate of change by using ordered pairs, tables, graphs, and equations Extended ***Analyze the effect of the rate of change in a table or graph***	4	0	0-1	0-3	0-2	1-3
Gr11 Modeling in Context	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.3.2 Students will model and analyze quantitative relationships.						
MA 12.3.2.b General Represent a variety of quantitative relationships using linear equations and one variable inequalities Extended ***Solve the quantitative relationship of one variable inequalities using addition and subtraction***	4	0	0	0-3	0-3	1-3
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr11 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.4.1 Students will formulate a question and design a survey or an experiment in which data is collected and displayed in a variety of formats, then select and use appropriate statistical methods to analyze the data.						
MA 12.4.1.d General Describe the shape and determine the center, spread, and outliers of a data set Extended ***Determine the range of a data set***	4	0	0	0-3	0-3	1-3
Gr11 Probability	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.4.3 Students will apply and interpret concepts of probability.						
MA 12.4.3.b General Identify dependent and independent events and calculate their probabilities Extended ***Differentiate between a dependent and independent event***	4	0	0-1	0-3	0-3	1-3
MA 12.4.3.c General Use the appropriate counting techniques to determine the probability of an event Extended ***Use the appropriate counting principle to determine the combinations for an event***	4	0	0-1	0-3	0-3	1-3
MA 12.4.3.d General Analyze events to determine if they are mutually exclusive Extended ***Determine if two events are mutually exclusive***	4	0	0-1	0-3	0-3	1-3

Appendix C: NeSA-AAS Test Blueprint

Nebraska State Accountability - Alternate Assessment of Science (NeSA-AAS) Tables of Specification						
Grade 5						
Inquiry, The Nature of Science, and Technology						
Grade 5 Abilities to do Scientific Inquiry	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.1.1 General Students will plan and conduct investigations that lead to the development of explanations. **Extended** ***Students will conduct investigations that lead to a final product.***	**4**	**0-1**	**0-1**	**2-5**	**1-4**	**4-7**
SC 5.1.1.a Ask testable scientific questions	4					
SC 5.1.1.b Plan and conduct investigations and identify factors that have the potential to impact an investigation	4					
SC 5.1.1.c Select and use equipment correctly and accurately	4					
SC 5.1.1.d Make relevant observations and measurements	4					
SC 5.1.1.e Collect and organize data	4					
SC 5.1.1.f Develop a reasonable explanation based on collected data	4					
SC 5.1.1.g Share information, procedures, and results with peers and/or adults	4					
SC 5.1.1.h Provide feedback on scientific investigations	4					
SC 5.1.1.i Use appropriate mathematics in all aspects of scientific inquiry	4					
Grade 5 Nature of Science	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.1.2 General Students will describe how scientists go about their work. **Extended** ***Students will observe how scientists go about their work.***	**Assessed at the local level**					
SC 5.1.2.a Recognize that scientific explanations are based on evidence and scientific knowledge						
SC 5.1.2.b Recognize that new discoveries are always being made which impact scientific knowledge						
SC 5.1.2.c Recognize many different people study science						

Grade 5 Technology	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	Item Total
SC 5.1.3 General Students will solve a simple design problem. **Extended *Students will solve a simple problem.***	**Assessed at the local level**					
SC 5.1.3.a Identify a simple problem						
SC 5.1.3.b Propose a solution to a simple problem						
SC 5.1.3.c Implement the proposed solution						
SC 5.1.3.d Evaluate the implementation						
SC 5.1.3.e Communicate the problem, design, and solution						
PHYSICAL SCIENCE						
Grade 5 Matter	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.2.1 General Students will explore and describe the physical properties of matter and its changes. **Extended *Students will explore and recognize the physical properties of matter and its changes.***	4	0-1	0-1	1-4	0-3	**2-4**
SC 5.2.1.a Identify mixtures and pure substances	4					
SC 5.2.1.b Identify physical properties of matter (color, odor, elasticity, weight, volume)	4					
SC 5.2.1.c Use appropriate metric measurements to describe physical properties	4					
SC 5.2.1.d Identify state change caused by heating and cooling solids, liquids, and gasses	4					
Grade 5 Force and Motion	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.2.2 General Students will identify the influence of forces on motion. **Extended *Students will identify the influence of forces on motion.***	4	0-1	0-1	1-3	0-2	**2-3**
SC 5.2.2.a Describe motion by tracing and measuring an object's position over a period of time (speed)	4					
SC 5.2.2.b Describe changes in motion due to outside forces (push, pull, gravity)	4					
SC 5.2.2 c Describe magnetic behavior in terms of attraction and repulsion	4					

Grade 5 Energy	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	Item Total
SCE 5.2.3 General Students will observe and identify signs of energy transfer. **Extended** ***Students will observe and identify signs of energy transfer.***	4	0-1	0-1	1-3	0-2	**2-3**
SC 5.2.3.a Recognize that sound is produced from vibrating objects; the sound can be changed by changing the vibration	4					
SC 5.2.3.b Recognize that light travels in a straight line and can be reflected by an object (mirror)	4					
SC 5.2.3.c Recognize that light can travel through certain materials and not others (transparent, translucent, opaque)	4					
SC 5.2.3.d Identify ways to generate heat (friction, burning, incandescent light bulb)	4					
SC 5.2.3.e Identify materials that act as thermal conductors or insulators	4					
SC 5.2.3.f Recognize that the transfer of electricity in an electrical circuit requires a closed loop	4					
LIFE SCIENCE						
Grade 5 Life Science	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.3.1 General Students will investigate and compare the characteristics of living things. **Extended** ***Students will recognize that living things grow.***	4	0-1	0-1	1-3	0-2	**2-3**
SC 5.3.1.a Compare and contrast characteristics of living and nonliving things	4					
SC 5.3.1.b Identify how parts of plants and animals function to meet basic needs (e.g., leg of an insect helps an insect move, root of a plant helps the plant obtain water)	4					
Grade 5 Heredity	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.3.2 General Students will identify variations of inherited characteristics and life cycles. **Extended** ***Students will observe inherited characteristics and life cycles.***	4	0-1	0-2	1-3	0-2	**1-3**
SC 5.3.2.a Identify inherited characteristics of plants and animals	4					
SC 5.3.2.b Identify the life cycle of an organism	4					

SCE 5.3.3 General Students will describe relationships within an ecosystem. **Extended** ***Students will recognize relationships within an ecosystem.***	4	0-1	0-2	0-3	0-2	**2-3**
SC 5.3.3.a Diagram and explain a simple food chain beginning with the Sun	4					
SC 5.3.3.b Identify the role of producers, consumers, and decomposers in an ecosystem	4					
SC 5.3.3.c Recognize the living and nonliving factors that impact the survival of organisms in an ecosystem	4					
SC 5.3.3.d Recognize all organisms cause changes, some beneficial and some detrimental, in the environment where they live	4					
SCE 5.3.4 General Students will describe changes in organisms over time. **Extended** ***Students will identify changes in organisms over time.***	4	0-1	0-1	1-2	0-1	**1-2**
SC 5.3.4.a Describe adaptations made by plants or animals to survive environmental changes	4					
EARTH AND SPACE SCIENCE						
Grade 5 Earth in Space	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.4.1 General Students will observe and describe characteristics, patterns, and changes in the sky. **Extended** ***Students will observe and recognize changes in the sky.***		0-1	0-1	1-3	0-2	**1-3**
SC 5.4.1.a Recognize that the observed shape of the Moon changes from day to day during a one month period	4					
SC 5.4.1.b Recognize the motion of objects in the sky (the Sun, the Moon, stars) change over time in recognizable patterns	4					

Grade 5 Earth Structures and Processes	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	Item Total
SCE 5.4.2 General Students will observe and describe Earth's materials, structure, and processes. **Extended** ***Students will observe and recognize Earth's materials and processes.***	4	0-1	0-2	1-4	0-2	**2-4**
SC 5.4.2.a Describe the characteristics of rocks, minerals, soil, water, and the atmosphere	4					
SC 5.4.2.b Identify weathering, erosion, and deposition as processes that build up or break down Earth's surface	4					
SC 5.4.2.c Identify how Earth materials are used (fuels, building materials, sustaining plant life)	4					
Grade 5 Energy in Earth's Systems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.4.3 General Students will observe and describe the effects of energy changes on Earth. **Extended** ***Students will observe and recognize the effects of energy changes on Earth.***	4	0-1	0-1	1-3	0-2	**2-3**
SC 5.4.3.a Describe the Sun's warming effect on the land and water	4					
SC 5.4.3.b Observe, measure, and record changes in weather (temperature, wind direction and speed, precipitation)	4					
SC 5.4.3.c Recognize the difference between weather, climate, and seasons	4					
Grade 5 Earth's History	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.4.4 General Students will describe changes in Earth. **Extended** ***Students will recognize changes occur on Earth.***	**4**	**0-1**	**0-1**	**1-3**	**0-2**	**1-3**
SC 5.4.4.a Describe how slow processes (erosion, weathering, deposition) and rapid processes (landslides, volcanic eruptions, earthquakes) change Earth's surface	4					

Nebraska State Accountability - Alternate Assessment of Science (NeSA-AAS) Tables of Specification						
Grade 8						
Inquiry, The Nature of Science, and Technology						
Grade 8 Abilities to do Scientific Inquiry	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.1.1 General Students will design and conduct investigations that will lead to descriptions of relationships between evidence and explanations. **Extended** ***Students will conduct investigations that lead to a final product.***		**0-1**	**0-1**	**2-5**	**1-4**	**4-7**
SC 8.1.1.a Formulate testable questions that lead to predictions and scientific investigations	4					
SC 8.1.1.b Design and conduct logical and sequential investigations including repeated trials	4					
SC 8.1.1.c Determine controls and use dependent (responding) and independent (manipulated) variables	4					
SC 8.1.1.d Select and use equipment appropriate to the investigation, demonstrate correct techniques	4					
SC 8.1.1.e Make qualitative and quantitative observations	4					
SC 8.1.1.f Record and represent data appropriately and review for quality, accuracy, and relevancy	4					
SC 8.1.1.g Evaluate predictions, draw logical inferences based on observed patterns/relationships, and account for non-relevant information	4					
SC 8.1.1.h Share information, procedures, results, and conclusions with appropriate audiences	4					
SC 8.1.1.i Analyze and provide appropriate critique of scientific investigations	4					
SC 8.1.1.j Use appropriate mathematics in all aspects of scientific inquiry	4					
Grade 8 Nature of Science	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.1.2 General Students will apply the nature of science to their own investigations. **Extended** ***Students will describe how scientists go about their work.***	**Assessed at the local level**					

SC 8.1.2.a Recognize science is an ongoing process and the scientific community accepts and uses explanations until they encounter new experimental evidence not matching existing explanations						
SC 8.1.2.b Describe how scientific discoveries influence and change society						
SC 8.1.2.c Recognize scientists from various cultures have made many contributions to explain the natural world						
Grade 8 Technology	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.1.3 General Students will solve a design problem which involves one or two science concepts. **Extended *Students will solve a problem using simple machines (inclined planes and wheels).***	**Assessed at the local level**					
SC 8.1.3.a Identify problems for technical design						
SC 8.1.3.b Design a solution or product						
SC 8.1.3.c Implement the proposed design						
SC 8.1.3.d Evaluate completed technological designs or products						
SC 8.1.3.e Communicate the process of technical design						
SC 8.1.3.f Distinguish between scientific inquiry (asking questions about the natural world) and technological design (using science to solve practical problems)						
SC 8.1.3.g Describe how science and technology are reciprocal						
SC 8.1.3.h Recognize that solutions have intended and unintended consequences						
SC 8.1.3.i Compare and contrast the reporting of scientific knowledge and the reporting of technological knowledge						
PHYSICAL SCIENCE						
Grade 8 Matter	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.2.1 General Students will identify and describe the particulate nature of matter including physical and chemical interactions. **Extended *Students will explore and identify the physical properties and the physical changes of matter.***		0-1	0-1	2-4	0-3	**2-4**
SC 8.2.1.a Compare and contrast elements, compounds, and mixtures	4					
SC 8.2.1.b Describe physical and chemical properties of matter	4					

SC 8.2.1.c Recognize most substances can exist as a solid, liquid, or gas depending on temperature	4					
SC 8.2.1.d Compare and contrast solids, liquids, and gasses based on properties of these states of matter	4					
SC 8.2.1.e Distinguish between physical and chemical changes (phase changes, dissolving, burning, rusting)	4					
SC 8.2.1.f Recognize conservation of matter in physical and chemical changes	4					
SC 8.2.1.g Classify substances into similar groups based on physical properties	4					
Grade 8 Force and Motion	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.2.2 General Students will investigate and describe forces and motion. **Extended** ***Students will explore and recognize forces and motion.***		0-1	0-1	1-3	0-2	**2-3**
SC 8.2.2.a Describe motion of an object by its position and velocity	4					
SC 8.2.2.b Recognize an object that is not being subjected to a force will continue to move at a constant speed in a straight line or stay at rest (Newton's 1st law)	4					
SC 8.2.2.c Compare the motion of objects related to the effects of balanced and unbalanced forces	4					
SC 8.2.2.d Recognize that everything on or around Earth is pulled towards Earth's center by gravitational force	4					
Grade 8 Energy	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.2.3 General Students will identify and describe how energy systems and matter interact. **Extended** ***Students will identify and describe how energy systems and matter interact.***		0-1	0-1	1-3	0-2	**2-3**
SC 8.2.3.a Recognize that vibrations set up wave-like disturbances that spread away from the source (sound, seismic, water waves)	4					
SC 8.2.3.b Identify that waves move at different speeds in different materials	4					
SC 8.2.3.c Recognize that light interacts with matter by transmission (including refraction), absorption, or scattering (including reflection)	4					
SC 8.2.3.d Recognize that to see an object, light from the surface of the object must enter the eye; the color seen depends on the properties of the surface and the color of the available light sources	4					

SC 8.2.3.e Recognize that heat moves from warmer objects to cooler objects until both reach the same temperature	4					
SC 8.2.3.f Describe transfer of energy from electrical and magnetic sources to different energy forms (heat, light, sound, chemical)	4					
SC 8.2.3.g Recognize all energy is neither created nor destroyed	4					
LIFE SCIENCE						
Grade 8 Structure and Function of Living Systems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.3.1 General Students will investigate and describe the structure and function of living organisms. **Extended** ***Students will explore and identify the structure and function of living things.***		0-1	0-2	1-3	0-2	**2-3**
SC 8.3.1.a Recognize the levels of organization in living organisms (cells, tissues, organs, organ systems, organisms)	4					
SC 8.3.1.b Recognize that all organisms are composed of one or many cells; that these cells must grow, divide, and use energy; and that all cells function similarly	4					
SC 8.3.1.c Recognize specialized cells perform specialized functions in multicellular organisms	4					
SC 8.3.1.d Identify the organs and functions of the major systems of the human body and describe ways that these systems interact with each other	4					
SC 8.3.1.e Describe how plants and animals respond to environmental stimuli	4					
Grade 8 Heredity	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.3.2 General Students will investigate and describe the relationship between reproduction and heredity. **Extended** ***Students will explore and identify the relationship between reproduction and heredity.***		0-1	0-1	1-3	0-2	**1-3**
SC 8.3.2.a Recognize that hereditary information is contained in genes within the chromosomes of each cell	4					
SC 8.3.2.b Compare and contrast sexual and asexual reproduction	4					
Grade 8 Flow of Matter and Energy in Ecosystems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**

SCE 8.3.3 General Students will describe populations and ecosystems. **Extended** ***Students will recognize relationships within an ecosystem.***		0-1	0-1	0-3	0-2	**2-3**
SC 8.3.3.a Diagram and explain the flow of energy through a simple food web	4					
SC 8.3.3.b Compare the roles of producers, consumers, and decomposers in an ecosystem	4					
SC 8.3.3.c Recognize that producers transform sunlight into chemical energy through photosynthesis	4					
SC 8.3.3.d Determine the biotic and abiotic factors that impact the number of organisms an ecosystem can support	4					
SC 8.3.3.e Recognize a population is all the individuals of a species at a given place and time	4					
SC 8.3.3.f Identify symbiotic relationships among organisms	4					
SC 8.3.3.g Identify positive and negative effects of natural and human activity on an ecosystem	4					
Grade 8 Biodiversity	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.3.4 General Students will identify characteristics of organisms that help them survive. **Extended** ***Students will identify survival characteristics or organisms.***		0-1	0-1	1-2	0-1	**1-2**
SC 8.3.4.a Describe how an inherited characteristic enables an organism to improve its survival rate	4					
SC 8.3.4.b Recognize the extinction of a species is caused by the inability to adapt to an environmental change	4					
SC 8.3.4.c Use anatomical features of an organism to infer similarities among other organisms	4					
EARTH AND SPACE SCIENCE						
Grade 8 Earth in Space	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.4.1 General Students will investigate and describe Earth and the solar system. **Extended** ***Students will investigate Earth and the solar system.***		0-1	0-1	1-2	0-2	**1-2**
SC 8.4.1.a Describe the components of the solar system (the Sun, planets, moons, asteroids, comets)	4					
SC 8.4.1.b Describe the relationship between motion of objects in the solar system and the phenomena of day, year, eclipses, phases of the Moon and seasons	4					

SC 8.4.1.c Describe the effects of gravity on Earth (tides) and the effect of gravity on objects in the solar system	4					
Grade 8 Earth Structures and Processes	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.4.2 General Students will investigate and describe Earth's structure, systems, and processes. **Extended** ***Students will investigate and identify Earth's structure, systems, and processes.***		0-1	0-2	1-4	0-2	**2-4**
SC 8.4.2.a Describe the layers of Earth (core, mantle, crust, atmosphere)	4					
SC 8.4.2.b Describe the physical composition of soil	4					
SC 8.4.2.c Describe the mixture of gasses in Earth's atmosphere and how the atmosphere's properties change at different elevations	4					
SC 8.4.2.d Describe evidence of Earth's magnetic field	4					
SC 8.4.2.e Compare and contrast constructive and destructive forces (deposition, erosion, weathering, plate motion causing uplift, volcanoes, earthquakes) that impact Earth's surface	4					
SC 8.4.2.f Describe the rock cycle	4					
SC 8.4.2.g Describe the water cycle (evaporation, condensation, precipitation)	4					
SC 8.4.2.h Classify Earth materials as renewable or nonrenewable	4					
Grade 8 Energy in Earth's Systems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.4.3 General Students will investigate and describe energy in Earth's systems. **Extended** ***Students will identify energy in Earth's systems.***		0-1	0-1	1-3	0-2	**2-3**
SC 8.4.3.a Describe how energy from the Sun influences the atmosphere and provides energy for plant growth	4					
SC 8.4.3.b Identify factors that influence daily and seasonal changes on Earth (tilt of the Earth, humidity, air pressure, air masses)	4					
SC 8.4.3.c Describe atmospheric movements that influence weather and climate (air masses, jet stream)	4					
Grade 8 Earth's History	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**

SCE 8.4.4 General Students will use evidence to draw conclusions about changes in Earth. **Extended** ***Students will recognize that the surface of Earth changes today, in similar ways as in the past.***		0-1	0-1	1-3	0-2	**1-3**
SC 8.4.4.a Recognize that Earth processes we see today are similar to those that occurred in the past (uniformity of processes)	4					
SC 8.4.4.b Describe how environmental conditions have changed through use of the fossil record	4					

Nebraska State Accountability - Alternate Assessment of Science (NeSA-AAS) Tables of Specification						
Grade 11						
Inquiry, The Nature of Science, and Technology						
Grade 11 Abilities to do Scientific Inquiry	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.1.1 General Students will design and conduct investigations that lead to the use of logic and evidence in the formulation of scientific explanations and models. **Extended** ***Students will conduct an investigation that leads to an answer.***		**0-1**	**0-1**	**2-5**	**2-4**	**4-7**
SC 12.1.1.a Formulate a testable hypothesis supported by prior knowledge to guide an investigation	4					
SC 12.1.1.b Design and conduct logical and sequential scientific investigations with repeated trials and apply findings to new investigations	4					
SC 12.1.1.c Identify and manage variables and constraints	4					
SC 12.1.1.d Select and use lab equipment and technology appropriately and accurately	4					
SC 12.1.1.e Use tools and technology to make detailed qualitative and quantitative observations	4					
SC 12.1.1.f Represent and review collected data in a systematic, accurate, and objective manner	4					
SC 12.1.1.g Analyze and interpret data, synthesize ideas, formulate and evaluate models, and clarify concepts and explanations	4					
SC 12.1.1.h Use results to verify or refute a hypothesis	4					
SC 12.1.1.i Propose and/or evaluate possible revisions and alternate explanations	4					
SC 12.1.1.j Share information, procedures, results, conclusions, and defend findings to a scientific community (peers, science fair audience, policy makers)	4					
SC 12.1.1.k Evaluate scientific investigations and offer revisions and new ideas as appropriate	4					
SC 12.1.1.l Use appropriate mathematics in all aspects of scientific inquiry	4					

Grade 11 Nature of Science	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	Item Total
SCE 12.1.2 General Students will apply the nature of scientific knowledge to their own investigations and in the evaluation of scientific explanations. **Extended** ***Students will apply the nature of science investigations to the world in which they live.***	**Assessed at the local level**					
SC 12.1.2.a Recognize that scientific explanations must be open to questions, possible modifications, and must be based upon historical and current scientific knowledge						
SC 12.1.2.b Describe how society influences the work of scientists and how science, technology, and current scientific discoveries influence and change society						
SC 12.1.2.c Recognize that the work of science results in incremental advances, almost always building on prior knowledge, in our understanding of the world						
SC 12.1.2.d Research and describe the difficulties experienced by scientific innovators who had to overcome commonly held beliefs of their times to reach conclusions that we now take for granted						
Grade 11 Technology	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.1.3 General Students will solve a complex design problem. **Extended** ***Students will solve a design problem.***	**Assessed at the local level**					
SC 12.1.3.a Propose designs and choose between alternative solutions of a problem						
SC 12.1.3.b Assess the limits of a technological design						
SC 12.1.3.c Implement the selected solution						
SC 12.1.3.d Evaluate the solution and its consequences						
SC 12.1.3.e Communicate the problem, process, and solution						
SC 12.1.3.f Compare and contrast the reasons for the pursuit of science and the pursuit of technology						
SC 12.1.3.g Explain how science advances with the introduction of new technology						
SC 12.1.3.h Recognize creativity, imagination, and a good knowledge base are all needed to advance the work of science and engineering						

PHYSICAL SCIENCE						
Grade 11 Matter	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.2.1 General Students will investigate and describe matter in terms of its structure, composition and conservation. **Extended** ***Students will identify changes that take place between states of matter.***		0-1	0-1	2-4	0-3	**2-4**
SC 12.2.1.a Recognize bonding occurs when outer electrons are transferred (ionic) or shared (covalent)	4					
SC 12.2.1.b Describe the energy transfer associated with phase changes between solids, liquids, and gasses	4					
SC 12.2.1.c Describe the three normal states of matter (solid, liquid, gas) in terms of energy, particle arrangement, particle motion, and strength of bond between molecules	4					
SC 12.2.1.d Recognize a large number of chemical reactions involve the transfer of either electrons (oxidation/reduction) or hydrogen ions (acid/base) between reacting ions, molecules, or atoms	4					
SC 12.2.1.e Identify factors affecting rates of chemical reactions (temperature, particle size, surface area)	4					
SC 12.2.1.f Recognize the charges and relative locations of subatomic particles (neutrons, protons, electrons)	4					
SC 12.2.1.g Describe properties of atoms, ions, and isotopes	4					
SC 12.2.1.h Describe the organization of the periodic table of elements with respect to patterns of physical and chemical properties	4					
Grade 11 Force and Motion	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.2.2 General Students will investigate and describe the nature of field forces and their interactions with matter. **Extended** ***Students will investigate and identify how forces interact with matter.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.2.2.a Describe motion with respect to displacement and acceleration	4					
SC 12.2.2.b Describe how the law of inertia (Newton's 1st law) is evident in a real-world event	4					
SC 12.2.2.c Make predictions based on relationships among net force, mass, and acceleration (Newton's 2nd law)	4					
SC 12.2.2.d Recognize that all forces occur in equal and opposite pairs (Newton's 3rd law)	4					

SC 12.2.e Describe how Newton's 3rd law of motion is evident in a real-world event	4					
SC 12.2.2.f Describe gravity as a force that each mass exerts on another mass, which is proportional to the masses and the distance between them	4					
SC 12.2.2.g Recognize that an attractive or repulsive electric force exists between two charged particles and that this force is proportional to the magnitude of the charges and the distance between them	4					
Grade 11 Energy	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.2.3 General Students will describe and investigate energy systems relating to the conservation and interaction of energy and matter. **Extended** ***Students will investigate and recognize the effects of energy transfer.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.2.3.a Describe mechanical wave properties (speed, wavelength, frequency, amplitude) and how waves travel through a medium	4					
SC 12.2.3.b. Recognize that the energy in waves can be changed into other forms of energy	4					
SC 12.2.3.c Recognize that light can behave as a wave (diffraction and interference)	4					
SC 12.2.3.d Distinguish between temperature (a measure of the average kinetic energy of atomic or molecular motion) and heat (the quantity of thermal energy that transfers due to a change in temperature)	4					
SC 12.2.3.e Compare and contrast methods of heat transfer and the interaction of heat with matter via conduction, convection, and radiation	4					
SC 12.2.3.f Recognize that the production of electromagnetic waves is a result of changes in the motion of charges or by a changing magnetic field	4					
SC 12.2.3.g Compare and contrast segments of the electromagnetic spectrum (radio, micro, infrared, visible, ultraviolet, x-rays, gamma) based on frequency and wavelength	4					
SC 12.2.3.h Recognize that nuclear reactions (fission, fusion, radioactive decay) convert a fraction of the mass of interacting particles into energy, and this amount of energy is much greater than the energy in chemical interactions	4					
SC 12.2.3.i Interpret the law of conservation of energy to make predictions for the outcome of an event	4					
SC 12.2.3.j Identify that all energy can be considered to be either kinetic, potential, or energy contained by a field (e.g. electromagnetic waves)	4					
SC 12.2.3.k Identify endothermic and exothermic reactions	4					

LIFE SCIENCE						
Grade 11 Structure and Function of Living Systems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.3.1 General Students will investigate and describe the chemical basis of the growth, development, and maintenance of cells. **Extended** ***Students will investigate and identify the factors needed for life and growth.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.3.1.a Identify the complex molecules (carbohydrates, lipids, proteins, nucleic acids) that make up living organisms	4					
SC 12.3.1.b Identify the form and function of sub-cellular structures that regulate cellular activities	4					
SC 12.3.1.c Describe the cellular functions of photosynthesis, respiration, cell division, protein synthesis, transport of materials, and energy capture/release	4					
SC 12.3.1.d Describe how an organism senses changes in its internal or external environment and responds to ensure survival	4					
Grade 11 Heredity	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.3.2 General Students will describe the molecular basis of reproduction and heredity. **Extended** ***Students will investigate and identify features of living organisms that come from their parents.***		0-1	0-1	1-3	0-2	**1-3**
SC 12.3.2.a Identify that information passed from parents to offspring is coded in DNA molecules	4					
SC 12.3.2.b Describe the basic structure of DNA and its function in genetic inheritance	4					
SC 12.3.2.c Recognize how mutations could help, harm, or have no effect on individual organisms	4					
SC 12.3.2.d Describe that sexual reproduction results in a largely predictable, variety of possible gene combinations in the offspring of any two parents	4					
Grade 11 Flow of Matter and Energy in Ecosystems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.3.3 General Students will describe, on a molecular level, the cycling of matter and the flow of energy between organisms and their environment. **Extended** ***Students will investigate and identify the cycling of matter between organisms and their environment.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.3.3.a Explain how the stability of an ecosystem is increased by biological diversity	4					

SC 12.3.3.b Recognize that atoms and molecules cycle among living and nonliving components of the biosphere	4					
SC 12.3.3.c Explain how distribution and abundance of different organisms in ecosystems are limited by the availability of matter and energy and the ability of the ecosystem to recycle materials	4					
SC 12.3.3.d Analyze factors which may influence environmental quality	4					
Grade 11 Biodiversity	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.3.4 General Students will describe the theory of biological evolution. **Extended** ***Students will explore and identify elements of evolution.***		0-1	0-1	0-2	0-2	**1-2**
SC 12.3.4.a Identify different types of adaptations necessary for survival (morphological, physiological, behavioral)	4					
SC 12.3.4.b Recognize that the concept of biological evolution is a theory which explains the consequence of the interactions of: (1) the potential for a species to increase its numbers, (2) the genetic variability of offspring due to mutation and recombination of genes, (3) a finite supply of the resources required for life, and (4) the ensuing selection by the environment of those offspring better able to survive and leave offspring	4					
SC 12.3.4.c Explain how natural selection provides a scientific explanation of the fossil record and the molecular similarities among the diverse species of living organisms	4					
SC 12.3.4.d Apply the theory of biological evolution to explain diversity of life over time	4					
EARTH AND SPACE SCIENCE						
Grade 11 Earth in Space	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.4.1 General Students will investigate and describe the known universe. **Extended** ***Students will identify the difference between man-made and natural objects in space.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.4.1.a Describe the formation of the universe using the Big Bang Theory	4					
SC 12.4.1.b Recognize that stars, like the Sun, transform matter into energy by nuclear reactions which leads to the formation of other elements	4					
SC 12.4.1.c Describe stellar evolution	4					

Grade 11 Earth Structures and Processes	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	Item Total
SCE 12.4.2 General Students will investigate the relationships among Earth's structure, systems, and processes. **Extended** ***Students will recognize that various processes cause changes on Earth.***		0-1	0-1	1-4	0-2	**2-4**
SC 12.4.2.a Recognize how Earth materials move through geochemical cycles (carbon, nitrogen, oxygen) resulting in chemical and physical changes in matter	4					
SC 12.4.2.b Describe how heat convection in the mantle propels the plates comprising Earth's surface across the face of the globe (plate tectonics)	4					
SC 12.4.2.c Evaluate the impact of human activity and natural causes on Earth's resources (groundwater, rivers, land, fossil fuels)	4					
Grade 11 Energy in Earth's Systems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.4.3 General Students will investigate and describe the relationships among the sources of energy and their efforts on Earth's systems. **Extended** ***Students will identify sources of energy in Earth's systems.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.4.3.a Describe how radiation, conduction, and convection transfer heat in Earth's systems	4					
SC 12.4.3.b Identify internal and external sources of heat energy in Earth's systems	4					
SC 12.4.3.c Compare and contrast benefits of renewable and nonrenewable energy sources	4					
SC 12.4.3.d Describe natural influences (Earth's rotation, mountain ranges, oceans, differential heating) on global climate	4					
Grade 11 Earth's History	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.4.4 General Students will explain the history and evolution of Earth. **Extended** ***Students will identify changes in Earth over time.***		**0-1**	**0-1**	**1-3**	**0-2**	**1-3**
SC 12.4.4.a Recognize that in any sequence of sediments or rocks that has not been overturned, the youngest sediments or rocks are at the top of the sequence and the oldest are at the bottom (law of superposition)	4					
SC 12.4.4.b Interpret Earth's history by observing rock sequences, using fossils to correlate the sequences at various locations, and using data from radioactive dating methods	4					
SC 12.4.4.c Compare and contrast the physical and biological differences of the early Earth with the planet we live on today	4					

Appendix D: Confidentiality Agreement

NEBRASKA DEPARTMENT OF EDUCATION

NEBRASKA STATE ACCOUNTABILITY

_____, _____
MONTH YEAR

CONFIDENTIALITY AGREEMENT

TEST SECURITY IS OF THE UTMOST IMPORTANCE TO THE NEBRASKA DEPARTMENT OF EDUCATION. AS A PARTICIPANT IN THIS _____, YOU HAVE ACCESS TO TEST ITEMS THAT MUST BE REGARDED AS CONFIDENTIAL. **DO NOT REPRODUCE ANY MATERIALS, DIRECTLY OR INDIRECTLY, DISCLOSE THE CONTENTS OF THESE MATERIALS, OR DISCUSS THE MATERIALS OR ANY ISSUES THAT ARISE DURING THE MEETINGS WITH INDIVIDUALS OUTSIDE OF THE MEETING ITSELF.**

WE ARE CERTAIN THAT YOU SHARE OUR CONCERN FOR TEST SECURITY AND ASK THAT YOU ACKNOWLEDGE YOUR ADHERENCE TO THIS AGREEMENT BY SIGNING BELOW.

LEGAL FIRST NAME *MI* *LEGAL LAST NAME*

SCHOOL

SIGNATURE *DATE*

Appendix E: Fairness in Testing Manual

FAIRNESS IN TESTING

Guidelines for Training

Bias, Fairness, and Sensitivity Issues

Table of Contents

INTRODUCTION

The most important part of the development of any new test is to ensure balanced treatment and control of potential bias, stereotyping, and insensitivity in the items or in the test-related materials. Data Recognition Corporation (DRC) understands that the presence of any type of bias in a test is undesirable not only from a civil rights point of view, but also from a measurement point of view. Issues of bias, fairness, and sensitivity in testing can have a direct impact on test scores. Our test developers are committed to the development of items and tests that are fair for all students. At every stage of the item and test development process, we employ procedures that are designed to ensure that our 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 that we believe are among some of the best in the industry. We provide 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, we also provide *external* training to our clients, including state departments of education, review panels of minority experts, teachers, and other stakeholders. DRC understands the importance of having external panels with a wide variety of expertise in reviewing items and tests for potential bias. External panels of professionals provide a review of items for subtle forms of bias that often can be perceived only by individuals who possess a wide variety of appropriate expertise and represent specific constituencies.

This manual has been prepared to summarize DRC's guidelines for bias, fairness, and sensitivity, including how to eliminate language, symbols, words, phrases, and content that might be considered offensive by members of racial, ethnic, gender, or other groups. Our guidelines may be modified to meet client's requirements and/or state-specific guidelines.

DEFINITION OF BIAS

While there are many definitions of bias, the following definition is provided on page 76 of the *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 1999):

> The term *bias* in tests and testing refers to construct-irrelevant components that result in systematically lower or higher scores for identifiable groups of examinees. In other words, **bias is the presence of some characteristic of an item and/or test that results in two individuals of the same ability but from different subgroups performing differently on the item and/or test.** Therefore, it is most important that there are no ambiguities in the test items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries.

TYPES OF BIAS

There are many types of bias. They include stereotyping and discriminating against people because of gender, regional or geographical differences, ethnicity or culture, socioeconomic or class status, religion, or age, as well as bias against other groups of people, including those with disabilities. Another form of bias involves the use of questions and/or activities in the items or on a test as a whole that are not relevant to the life experiences of the students responding to the items or test. A definition of each type of bias, along with samples, is provided below.

STEREOTYPING

"Stereotype is an image formed by ascribing certain characteristics (e.g., physical, cultural, personal, occupational, historical) to all members of a group" (National Evaluation Systems, Inc. page 2). Stereotyping in test items and tests might include physical characteristics, intellectual characteristics, emotions, careers, activities, and domestic or social roles. In writing or reviewing test items, it is very important that all groups are portrayed fairly, without stereotyping. As a result, there should be a range of characteristics, careers, and social roles across all groups, and no one group should be characterized by any one particular attribute or characteristic. Following are examples of stereotyping.

Stereotype	***Examples***
PHYSICAL CHARACTERISTICS	MALES ARE STRONG AND CAPABLE LEADERS. Females are weak.

Types of Bias

Stereotyping (continued)

	The elderly are feeble and sickly. Children are healthy and full of energy. The elderly are dependent upon others. People with disabilities are dependent upon others. Females worry about their hair.
Intellectual characteristics	Males do better in mathematics and science. Females do better in reading and language arts. Asian Americans excel in academics.
Emotions	Males are aggressive, courageous, and strong. Females are weak, weepy, tender, and fearful.
Stereotyping	***Examples***
Careers	Females are nurses, teachers, and secretaries. Males are doctors, principals, superintendents, lawyers, and skilled laborers (e.g., plumbers, construction workers, painters). African-Americans are athletes. Hispanics operate lawn care businesses. Asian-Americans own dry cleaning businesses.
Activities	Females play with dolls and read books. Females do domestic chores (e.g., clean house, cook, sew). Females spend money. Males play sports and work with tools. Boys are rowdy. Girls are quiet.
Domestic and/or Social Roles	Females are responsible for childcare. Men work outside of the home and are the breadwinners.
Community	Asian-Americans live in ethnic neighborhoods. African-Americans live in high-rise apartment buildings located in urban areas. American Indians live on reservations.

Leadership	Men are leaders and rulers. Women are followers. Women are dependent on men. Men are elected to political positions. Females in leadership roles are aggressive and pushy.

TYPES OF BIAS (CONTINUED)

GENDER BIAS

Gender bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that show members of either sex in stereotypical activities, emotions, occupations, characteristics, and/or situations. Gender bias also involves the use of demeaning labels.

Examples of gender bias

TITLES AND SPECIFIC TERMS REFERRING TO HUMANITY AT LARGE, SUCH AS

- Mankind
- Manhood
- Manpower
- Man of the hour
- Man-hours
- Man-made

Use of gender specific terms for occupations, such as

- Fireman
- Workman
- Chairman
- Policeman
- Mailman
- Salesman
- Insurance man
- Businessman
- Congressman

Use of pronouns that imply a stereotype, such as

- The nurse went to the hospital, and *she* was able to talk with the patient.
- The factory worker needed to earn more money for *his* family.
- When the lawyer delivered *his* closing remarks, the jury listened carefully.
- A politician must give a lot of speeches when *he* runs for office.

TYPES OF BIAS

GENDER BIAS (CONTINUED)

Use of phrases that identify genders in terms of their roles or occupations, such as

- Men and girls were invited to the lecture.
- The travelers took their wives and children with them.
- The happy couple was introduced as man and wife.

Use of phrases or words with an emphasis on marital status, such as

- Abraham Lincoln and Mrs. Lincoln attended the play.
- George Washington and Martha visited the new building.
- Dr. and Mrs. Jones attended the opening of the new warehouse.
- The admirable Dr. George Halstead and his wife, Maria, visited the library.

Use of words that identify genders in the salutation of a business letter, such as

- Dear Sir:
- Dear Madam:
- Dear Gentlemen:

Use of words or phases that are not parallel, such as

- The girls' restroom is down the hall, and the men's restroom is on the second floor.
- The boys' locker room door is painted green, and the women's locker room door is painted yellow.
- The men's department is on the right; the ladies' department is on the left.

Use of figures of speech, such as

- Old wives' tale
- Right-hand man
- Man versus nature
- The best man for the job
- The better half

Use of gender-specific terms or diminutive words, such as

- Sweet young thing
- Usherette
- Housewife
- Maid
- Cleaning lady
- Little woman
- Career girl
- Houseboy
- Steward

TYPES OF BIAS (CONTINUED)

Regional or Geographical Bias

Regional and/or geographical bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include terms that are not commonly used nationwide or within a particular region or state to which the test will be given. It also involves the use of terms that have different connotations in different parts of the country and/or geographical regions. It is important to note that some experiences may not be common to all students. For example, within a given geographic area not all students might be familiar with snow, so questions involving sleds and toboggans, for example, may well reflect a regional or geographical bias.

Examples of regional or geographical bias

- She ordered a new davenport (couch or sofa).
- Go get your toboggan (hat or type of sled).
- The students stood in line at the bubbler (water fountain or drinking fountain).
- Turn left at the berm (curb).
- Take the pike (road).

Ethnic or Cultural Bias

Ethnic bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include terms that are demeaning and/or offensive to a particular ethnic group or culture. In addition, no minority group should be portrayed as being uneducated or poor.

Examples of ethnic or cultural bias

- Maria was in the kitchen making tacos.
- The Chinese owned a laundry in our area.
- Native Americans are very close to nature.

Terminology

Terms that have a negative connotation or that reinforce negative judgments should also be avoided. Following is a list of **acceptable** terms.

- African-American
- Asian-American or Pacific Island American
- Latino, Mexican-American, Hispanic
- Tribal name (preferred), Native American, American Indian

- European-American

TYPES OF BIAS (CONTINUED)

Socioeconomic or Class Bias

Socioeconomic or class bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include activities, possessions, or ideas that may not be common to all students within a given area. For example, not all students in a given area own CD players or video games, nor do all students in a given area participate in certain sports activities, such as golf, snow skiing, or sailing. In addition, not all students in a given area take expensive vacations or attend expensive schools.

Examples of socioeconomic or class bias

- They were members of the country club.
- Boarding school.
- How many golf balls landed in the lake?
- The club members plan to go snow skiing over the holidays.
- My great aunt lives in a town house overlooking Lake Michigan.

Religious Bias

Religious bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include terms that are demeaning and/or offensive to a particular religious group.

Examples of religious bias

- The house on Smith Street is decorated for Halloween.
- There were several Christmas trees in the window.
- The students in the class will stand and say the *Pledge of Allegiance*.
- The high school students will be attending a rock-and-roll dance at the community center.

It is also important to note that no religious belief or practice should be portrayed as a universal norm or as inferior or superior to any other.

Ageism (Bias Against a Particular Age Group)

There are other subtle forms of bias, including bias against the elderly or ageism. Ageism involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include terms that are demeaning and/or offensive to the elderly or older persons (65 years or older). Ageism can also involve issues of bias with other age groups, including teenagers and young children.

It is important to note, however, that representing older persons or any age group fairly does not mean that the content of the items has to be revised or rewritten to seem unrealistic. Rather, as a whole, the items and the test should show older people or any age group in a variety of roles and activities whenever they appear naturally in the test content.

Examples of ageism (bias against a particular age group)

- Despite the fact that she was very old, she was able to walk down the stairs.
- The child's grandfather seemed senile.
- They were acting like typical irresponsible teenagers.

Bias Against Persons with Disabilities

Another form of subtle bias involves issues of bias related to persons with disabilities. This type of bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include terms that are demeaning and/or offensive to persons with disabilities. It is important to note, however, that representing persons with disabilities does not mean that the content of the items has to be revised or rewritten to seem unrealistic. Rather, as a whole, the items and the test should show people with disabilities in a variety of roles and activities whenever they appear naturally in the test content.

Examples of bias against persons with disabilities

- After the car accident, the student was confined to a wheelchair.
- He became a successful writer despite his disability.
- She is a blind person.
- The student is handicapped.
- The child made great strides in overcoming her disability.

TYPES OF BIAS

Bias Against Persons with Disabilities (continued)

Terminology

Terms that have a negative connotation or that reinforce negative judgments (crippled, victim, afflicted, confined, etc.) should also be avoided. It is also important that no one with a disability should be pictured as helpless or portrayed as pitiful.

Do not use	*Use*
Retarded	Developmentally delayed
Hard of hearing	Hearing impaired
Deaf and Dumb or Deaf-mute	Deaf or hard-of-hearing used accurately
Learning-disabled	Person with a learning disability
Handicap	Disability
	Visually-impaired or Blind used accurately

EXPERIENTIAL BIAS

The questions and activities reflected in the items or test, as a whole, should also be relevant to the life experiences of the students responding to the items. In other words, for a student to respond sensibly to the test questions, he or she must know what the question is about. In addition, culturally specific knowledge should be avoided, along with the use of difficult words and figures of speech.

Examples of experiential bias

- Pat knew she would win the race as she had an ace up her sleeve.
- Put the pedal to the metal and clean up your room.
- I needed change for the subway turnstile.
- The arroyos filled quickly during the storm.
- The super takes care of cleaning the foyer.

MAINTAINING BALANCE

Bias may also occur as a result of having a lack of balance through underrepresentation of a particular ethnic group and/or gender. Therefore, whenever possible, tests and test-related materials should contain content that is balanced across ethnic groups and across gender. The content of the pool of items and/or test, as a whole, should also reflect cultural diversity. In order to achieve balance, the test developers at DRC review the pool of items or the test, as a whole, to determine whether or not there is an adequate representation of

- Females and males in both traditional and nontraditional roles
- Female and male names
- Minority groups in various environments and occupations
- Minority groups, including the use of names

The issue of fairness also involves content inclusiveness. Subtle forms of bias can result from omitting certain areas of information and/or from omitting certain topics. Wherever possible, the content should show people in everyday situations and groups should be depicted as fully integrated in the society, reflecting the diverse multicultural composition of society as a whole (NES, page 9).

TOPICS TO AVOID

Because issues of bias, fairness, and sensitivity in testing can have a direct impact on the test scores, it is also important that sensitive and offensive topics be avoided. A topic might be considered offensive or controversial if it offends teachers, students, parents, or the community at large. This includes highly charged and controversial topics such as abortion, the death penalty, and evolution. Unacceptable content might also include less controversial topics, such as the use of tobacco or topics that could evoke unpleasant emotions on the part of a given student. In addition, topics that appear to promote or defend a particular set of values should be avoided. It is important to remember that the ability of the student to take the test should never be undermined. Following are examples of topics generally to be avoided.

Examples of topics to be generally avoided

- *ABORTION*
- Alcohol, including beer and wine
- Behaviors that are inappropriate, including stealing, cheating, lying, and other criminal and/or anti-social behaviors and activities
- Biographies of controversial figures whether or not they are still alive
- Birthdays
- Cancer and other diseases that might be considered fatal (HIV, AIDS)
- Criticism of democracy or capitalism
- Dangerous behavior
- Death of animals or animals dying or being mistreated
- Death, murder, and suicide
- Disasters, including tornadoes, hurricanes, etc. (unless treated as scientific subjects)
- Disrespect of any mainstream racial or religious group
- Double meanings of words that have sexually suggestive meanings
- Evolution
- Family experiences that may be upsetting, including divorce or loss of a job
- Feminist or chauvinistic topics
- Gambling
- Guns and gun control
- Holidays of religious origin (e.g., Halloween, Christmas, Easter)
- Junk food, including candy, gum, chips
- Left- or right-wing politics
- Luxuries (homes with swimming pools, expensive clothes, expensive vacations, and sports activities that typically require the purchase of expensive equipment such as snow skiing)

  - Parapsychology
  - Physical, emotional, and/or mental abuse, including animal, child, and/or spousal abuse
- Religions, except in appropriate historical context; mythology, folk tales, and fables may contain religious elements as part of appropriately presented literary excerpts.
- Sex, including kissing and dating
- Slavery (unless presented in an historical context and presented appropriately)
- Tobacco
- Violence against a particular group of people or animals
- Rock music, including rap and heavy metal
- Wars
- Witchcraft, sorcery, or magic
- Words that might be problematic to a specific ethnic group

SPECIAL CIRCUMSTANCES

In certain subject areas, a sensitive topic may be acceptable because the topic is a part of the course of study or may be required in order to measure the specific curriculum content standards and/or test objectives. For example, it may be appropriate to have test questions dealing with hurricanes. However, the questions should not focus unduly upon the destruction of property or the deaths of human beings. Other special circumstances include historical and literary contexts. A discussion of these special circumstances is provided below.

Historical Contexts

In order to measure the content curriculum standards, social studies tests often include topics that might otherwise be deemed as controversial. For example, in a history test, the topic of slavery might be used. The student would know that such a controversial topic is used to access knowledge of a particular curriculum content standard and/or set of objectives and, therefore, the topic would not reflect the views of the test developer.

Literary Contexts

Today's tests often require the use of authentic or previously published passages. As a result, sometimes a given passage or prompt might contain controversial material, including sentences, phrases, and/or words. If the overall passage or prompt is acceptable, it may be possible to edit and or delete the objectionable sentences, phrases, words, and/or references in order to eliminate the potential bias. In such cases, DRC test developers request permission from the publisher to make such edits and/or changes, and they would do so only if permission is granted.

POINTS TO REMEMBER

When reviewing items (questions and responses), passages prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries for issues of bias, fairness, and sensitivity, the following questions should be asked.

1. Do the items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries:

   Demean any religious, ethnic, cultural, or social group?
   Portray anyone or any group in a stereotypical manner?
   Contain any other forms of bias, including gender, regional or geographical, ethnic or cultural, socioeconomic or class, religious, age-related bias, or bias against persons with disabilities?

2. Are there any topics that might disadvantage a student for any reason?

3. Are there any culturally specific sets of knowledge, terms, difficult words and/or figures of speech that might disadvantage a group of students?

4. Are the questions and activities reflected in the items or test, as a whole, relevant to the life experiences of the students responding to the items?

5. As a whole, does the test or pool of items have a balance across ethnic groups and across genders, including an adequate representation of:

   Females and males in both traditional and nontraditional roles
   Female and male names
   Minority groups in various environments and occupations
   Minority groups, including the use of ethnic names

6. Wherever possible, does the content show minority groups in everyday situations and groups depicted as fully integrated in the society, reflecting the multicultural composition of society as a whole?

Appendix E References

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Appendix F: Reading Key Verification and Foil Analysis

Grade 3

Grade 3 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	650570	A	265	.54	.54	.12	.26	.08	.00	.52	.52	-.05	-.13
OP	650577	B	265	.68	.07	.68	.16	.09	.00	.62	-.05	.62	-.21
OP	650578	B	265	.65	.12	.65	.14	.09	.00	.67	-.10	.67	-.26
OP	650579	A	265	.74	.74	.03	.13	.09	.00	.69	.69	-.12	-.23
OP	650580	B	265	.37	.21	.37	.32	.09	.00	.32	.04	.32	.08
OP	650582	C	265	.70	.08	.12	.70	.10	.00	.59	-.03	-.15	.59
OP	650583	B	265	.69	.08	.69	.16	.06	.00	.61	-.18	.61	-.26
OP	650586	A	265	.77	.77	.05	.09	.10	.00	.72	.72	-.15	-.21
OP	650627	B	265	.53	.15	.53	.23	.09	.00	.50	-.02	.50	-.10
OP	650631	C	265	.76	.06	.09	.76	.09	.00	.60	-.09	-.12	.60
OP	650716	B	265	.56	.14	.56	.21	.10	.00	.62	-.03	.62	-.20
OP	675833	C	265	.63	.07	.22	.63	.08	.00	.47	-.13	-.01	.47
OP	675835	A	265	.77	.77	.02	.12	.09	.00	.72	.72	-.15	-.27
OP	691033	A	265	.67	.67	.10	.14	.09	.00	.65	.65	-.14	-.19
OP	691034	C	265	.75	.11	.05	.75	.09	.00	.54	-.01	-.14	.54
OP	691036	A	265	.57	.57	.12	.22	.09	.00	.58	.58	-.17	-.07
OP	691039	C	265	.73	.14	.05	.73	.08	.00	.38	.11	-.19	.38
OP	691040	B	265	.60	.18	.60	.14	.08	.00	.51	.00	.51	-.20
OP	691041	A	265	.83	.83	.09	.02	.06	.00	.54	.54	-.15	-.13
OP	691042	A	265	.62	.62	.11	.19	.08	.00	.58	.58	-.05	-.20
OP	691043	B	265	.56	.12	.56	.23	.09	.00	.66	-.02	.66	-.26
OP	691044	B	265	.69	.06	.69	.16	.09	.00	.61	-.06	.61	-.18
OP	691045	C	265	.71	.06	.14	.71	.09	.00	.52	-.09	-.04	.52
OP	691046	C	265	.61	.15	.14	.61	.10	.00	.38	.02	.06	.38
OP	691048	C	265	.81	.04	.05	.81	.09	.00	.64	-.10	-.11	.64
FT	707756	A	141	.57	.57	.07	.26	.09	.00	.65	.65	-.10	-.21
FT	707757	B	124	.64	.10	.64	.18	.08	.00	.48	.10	.48	-.19
FT	707759	A	124	.72	.72	.08	.11	.09	.00	.69	.69	-.17	-.21
FT	707760	B	124	.52	.19	.52	.20	.09	.00	.35	.13	.35	-.06
FT	707761	C	124	.60	.19	.12	.60	.09	.00	.41	-.07	.07	.41
FT	707763	A	124	.51	.51	.22	.18	.10	.00	.50	.50	.03	-.14
FT	707764	B	124	.31	.17	.31	.43	.10	.00	.32	.08	.32	.06
FT	707765	C	141	.52	.23	.15	.52	.10	.00	.32	.15	-.02	.32
FT	707766	C	124	.81	.03	.07	.81	.09	.00	.64	-.17	-.08	.64

Grade 3 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
FT	707767	C	141	.69	.04	.17	.69	.10	.00	.57	-.06	-.09	.57
FT	707768	B	141	.72	.09	.72	.09	.10	.00	.57	.08	.57	-.22
FT	707769	A	141	.67	.67	.10	.13	.10	.00	.70	.70	-.07	-.27
FT	707770	A	124	.73	.73	.02	.15	.09	.00	.68	.68	-.16	-.21
FT	707771	C	141	.59	.11	.21	.59	.10	.00	.35	.01	.11	.35
FT	707772	B	141	.51	.37	.51	.02	.10	.00	.47	.00	.47	-.14
FT	708015	A	141	.55	.55	.15	.19	.11	.00	.48	.48	.16	-.21

Grade 4

Grade 4 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	650962	C	291	.73	.11	.11	.73	.05	.00	.67	-.28	-.31	.67
OP	650970	A	291	.69	.69	.11	.12	.08	.00	.66	.66	-.20	-.24
OP	650972	C	291	.68	.10	.17	.68	.05	.00	.60	-.25	-.25	.60
OP	650974	A	291	.67	.67	.12	.12	.08	.00	.65	.65	-.22	-.18
OP	650976	A	291	.68	.68	.11	.13	.08	.00	.66	.66	-.25	-.22
OP	650990	B	291	.72	.12	.72	.08	.09	.00	.65	-.20	.65	-.19
OP	675851	C	291	.73	.10	.09	.73	.09	.00	.61	-.13	-.20	.61
OP	675852	A	291	.71	.71	.08	.13	.08	.00	.73	.73	-.24	-.29
OP	675853	B	291	.79	.05	.79	.11	.05	.00	.61	-.17	.61	-.34
OP	691049	B	291	.48	.19	.48	.25	.08	.00	.50	-.05	.50	-.13
OP	691050	C	291	.54	.17	.20	.54	.09	.00	.42	-.02	-.03	.42
OP	691051	A	291	.74	.74	.10	.10	.06	.00	.65	.65	-.21	-.32
OP	691052	A	291	.70	.70	.12	.09	.09	.00	.66	.66	-.24	-.13
OP	691053	B	291	.44	.31	.44	.16	.09	.00	.46	.05	.46	-.18
OP	691054	A	291	.53	.53	.17	.23	.08	.00	.56	.56	-.08	-.19
OP	691055	C	291	.58	.15	.19	.58	.08	.00	.54	-.18	-.07	.54
OP	691056	A	291	.84	.84	.05	.03	.08	.00	.49	.49	-.02	-.12
OP	691057	B	291	.48	.20	.48	.22	.10	.00	.52	-.03	.52	-.13
OP	691058	C	291	.65	.16	.11	.65	.08	.00	.57	-.12	-.21	.57
OP	691059	B	291	.50	.16	.50	.26	.08	.00	.46	-.14	.46	-.03
OP	691060	C	291	.62	.08	.22	.62	.09	.00	.49	-.08	-.09	.49
OP	691061	C	291	.72	.10	.09	.72	.09	.00	.64	-.17	-.18	.64
OP	691062	B	291	.60	.15	.60	.15	.10	.00	.52	-.09	.52	-.07
OP	691063	B	291	.58	.18	.58	.16	.09	.00	.56	-.09	.56	-.16
OP	691064	A	291	.67	.67	.11	.13	.08	.00	.64	.64	-.13	-.25

Grade 4 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
FT	707773	C	146	.72	.08	.10	.72	.10	.00	.64	-.06	-.20	.64
FT	707774	B	146	.62	.08	.62	.20	.10	.00	.49	-.10	.49	-.01
FT	707775	A	145	.51	.51	.17	.24	.08	.00	.48	.48	.04	-.23
FT	707776	C	145	.60	.12	.20	.60	.08	.00	.56	-.19	-.14	.56
FT	707777	A	146	.71	.71	.08	.10	.10	.00	.66	.66	-.14	-.18
FT	707778	B	146	.42	.14	.42	.33	.10	.00	.37	.03	.37	.03
FT	707779	C	145	.71	.11	.10	.71	.08	.00	.52	-.09	-.14	.52
FT	707780	C	145	.63	.16	.13	.63	.08	.00	.48	-.04	-.17	.48
FT	707781	C	146	.49	.24	.16	.49	.10	.00	.51	.00	-.12	.51
FT	707782	A	146	.42	.42	.45	.01	.12	.00	.31	.31	.13	-.04
FT	707783	B	145	.32	.21	.32	.39	.09	.00	.41	.00	.41	-.03
FT	707784	B	146	.25	.34	.25	.31	.10	.00	.31	.15	.31	.01
FT	707785	B	145	.67	.09	.67	.17	.08	.00	.65	-.19	.65	-.26
FT	707786	C	145	.83	.03	.06	.83	.08	.00	.65	-.12	-.26	.65
FT	707787	A	145	.88	.88	.03	.02	.07	.00	.61	.61	-.19	-.15
FT	707789	A	146	.58	.58	.14	.18	.10	.00	.60	.60	-.18	-.07

Grade 5

Grade 5 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651121	C	332	.53	.20	.19	.53	.08	.00	.32	-.08	.14	.32
OP	651127	C	332	.67	.16	.10	.67	.07	.00	.46	-.03	-.14	.46
OP	651129	C	332	.65	.17	.10	.65	.08	.00	.46	-.01	-.13	.46
OP	651130	A	332	.63	.63	.08	.20	.08	.00	.61	.61	-.12	-.19
OP	651132	A	332	.61	.61	.16	.15	.08	.00	.56	.56	-.01	-.23
OP	651141	C	332	.60	.12	.20	.60	.08	.00	.47	-.06	-.10	.47
OP	651142	A	332	.60	.60	.09	.24	.06	.00	.59	.59	-.14	-.26
OP	651147	A	332	.64	.64	.14	.14	.08	.00	.55	.55	-.07	-.18
OP	651152	A	332	.68	.68	.12	.13	.08	.00	.65	.65	-.17	-.23
OP	651156	B	332	.71	.10	.71	.13	.07	.00	.58	-.17	.58	-.18
OP	673822	A	332	.63	.63	.09	.23	.05	.00	.53	.53	-.13	-.23
OP	673824	B	332	.53	.14	.53	.27	.06	.00	.47	-.01	.47	-.21
OP	673825	C	332	.61	.13	.19	.61	.07	.00	.38	.03	-.08	.38
OP	675879	A	332	.62	.62	.15	.15	.08	.00	.60	.60	-.06	-.23
OP	691065	B	332	.64	.11	.64	.16	.08	.00	.37	-.01	.37	.00
OP	691067	B	332	.81	.02	.81	.10	.07	.00	.64	-.09	.64	-.30
OP	691070	B	332	.57	.08	.57	.27	.08	.00	.44	-.14	.44	.01

Grade 5 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	691071	A	332	.56	.56	.14	.22	.08	.00	.59	.59	-.13	-.16
OP	691073	C	332	.77	.08	.06	.77	.09	.00	.52	-.13	-.02	.52
OP	691074	A	332	.54	.54	.14	.24	.08	.00	.52	.52	-.13	-.09
OP	691075	B	332	.63	.17	.63	.13	.08	.00	.59	-.15	.59	-.17
OP	691077	B	332	.77	.11	.77	.05	.08	.00	.40	.09	.40	-.16
OP	691078	C	332	.74	.11	.08	.74	.08	.00	.51	-.02	-.18	.51
OP	691079	B	332	.61	.11	.61	.20	.08	.00	.51	-.06	.51	-.16
OP	691080	B	332	.73	.08	.73	.11	.08	.00	.60	-.05	.60	-.21
FT	707790	A	156	.56	.56	.17	.18	.09	.00	.57	.57	-.03	-.23
FT	707791	B	176	.18	.51	.18	.23	.08	.00	.03	.41	.03	-.10
FT	707792	C	156	.37	.31	.22	.37	.10	.00	.21	.18	.04	.21
FT	707793	A	176	.43	.43	.20	.30	.07	.00	.26	.26	.10	.00
FT	707794	B	156	.22	.35	.22	.34	.10	.00	.08	.36	.08	-.01
FT	707798	B	176	.70	.07	.70	.16	.07	.00	.68	-.19	.68	-.28
FT	707799	B	176	.57	.14	.57	.22	.07	.00	.50	-.11	.50	-.13
FT	707800	C	176	.60	.18	.15	.60	.07	.00	.43	-.04	-.09	.43
FT	707801	A	176	.65	.65	.16	.13	.06	.00	.62	.62	-.21	-.22
FT	707802	B	156	.71	.09	.71	.11	.09	.00	.55	-.02	.55	-.19
FT	707803	C	176	.59	.15	.20	.59	.07	.00	.40	-.03	-.08	.40
FT	707804	A	156	.47	.47	.19	.25	.09	.00	.35	.35	.15	-.10
FT	707806	A	176	.41	.41	.11	.40	.07	.00	.47	.47	-.24	-.01
FT	707807	C	156	.80	.06	.04	.80	.10	.00	.67	-.18	-.14	.67
FT	708023	C	156	.58	.13	.21	.58	.09	.00	.36	-.05	.06	.36
FT	708027	B	156	.74	.07	.74	.10	.10	.00	.67	-.12	.67	-.22

Grade 6

Grade 6 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651187	C	331	.56	.20	.15	.56	.09	.00	.59	-.11	-.21	.59
OP	651200	C	331	.61	.15	.15	.61	.09	.00	.58	-.11	-.17	.58
OP	651248	B	331	.56	.15	.56	.21	.09	.00	.53	-.03	.53	-.17
OP	651278	C	331	.66	.13	.12	.66	.09	.00	.64	-.13	-.22	.64
OP	651285	A	331	.54	.54	.13	.24	.09	.00	.50	.50	-.11	-.06
OP	673835	A	331	.63	.63	.15	.13	.09	.00	.67	.67	-.18	-.22
OP	673839	B	331	.58	.15	.58	.18	.09	.00	.67	-.18	.67	-.21
OP	673841	B	331	.57	.21	.57	.13	.09	.00	.63	-.09	.63	-.26

Grade 6 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	673845	A	331	.65	.65	.11	.15	.09	.00	.68	.68	-.13	-.28
OP	675919	A	331	.49	.49	.15	.27	.09	.00	.54	.54	-.01	-.18
OP	675929	A	331	.57	.57	.15	.18	.09	.00	.62	.62	-.18	-.15
OP	691081	B	331	.70	.06	.70	.15	.09	.00	.68	-.12	.68	-.28
OP	691082	C	331	.73	.11	.08	.73	.09	.00	.61	-.12	-.20	.61
OP	691083	B	331	.68	.14	.68	.10	.08	.00	.58	-.06	.58	-.24
OP	691084	A	331	.68	.68	.08	.15	.09	.00	.62	.62	-.18	-.16
OP	691085	B	331	.55	.11	.55	.25	.09	.00	.56	-.09	.56	-.15
OP	691087	C	331	.69	.11	.11	.69	.09	.00	.68	-.18	-.24	.68
OP	691088	A	331	.56	.56	.09	.26	.09	.00	.54	.54	-.14	-.10
OP	691089	A	331	.81	.81	.05	.05	.09	.00	.47	.47	-.01	-.02
OP	691091	B	331	.62	.10	.62	.20	.09	.00	.59	-.10	.59	-.19
OP	691092	B	331	.40	.22	.40	.30	.09	.00	.39	.13	.39	-.13
OP	691094	C	331	.72	.16	.04	.72	.08	.00	.66	-.23	-.18	.66
OP	691095	C	331	.74	.10	.07	.74	.09	.00	.56	-.05	-.19	.56
OP	691096	A	331	.73	.73	.10	.08	.09	.00	.56	.56	-.06	-.18
OP	691097	A	331	.76	.76	.04	.12	.08	.00	.67	.67	-.16	-.27
FT	707808	B	172	.52	.23	.52	.19	.05	.01	.34	.03	.34	-.16
FT	707809	A	172	.70	.70	.07	.18	.05	.00	.61	.61	-.13	-.31
FT	707810	C	159	.51	.18	.19	.51	.13	.00	.35	-.01	.16	.35
FT	707811	B	159	.29	.52	.29	.07	.13	.00	.11	.46	.11	-.17
FT	707812	C	172	.68	.13	.14	.68	.05	.00	.43	-.10	-.12	.43
FT	707813	A	172	.46	.46	.13	.36	.05	.00	.34	.34	.02	-.11
FT	707814	C	159	.69	.09	.10	.69	.13	.00	.56	-.05	-.03	.56
FT	707815	A	159	.42	.42	.19	.26	.13	.00	.51	.51	.15	-.17
FT	707816	B	172	.59	.19	.59	.16	.05	.00	.53	-.13	.53	-.23
FT	707817	B	159	.81	.04	.81	.03	.13	.01	.64	.01	.64	-.09
FT	707819	B	159	.55	.10	.55	.22	.13	.00	.55	-.11	.55	-.01
FT	707820	A	172	.70	.70	.08	.17	.05	.00	.72	.72	-.10	-.47
FT	707821	B	159	.45	.17	.45	.25	.13	.00	.46	.06	.46	-.04
FT	707822	C	159	.45	.14	.28	.45	.13	.00	.46	-.02	.03	.46
FT	707823	A	172	.31	.31	.23	.41	.05	.00	.13	.13	.19	-.03
FT	708026	B	172	.71	.10	.71	.14	.05	.00	.56	-.23	.56	-.17

Grade 7

Grade 7 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651304	B	327	.68	.11	.68	.18	.03	.00	.57	-.19	.57	-.34
OP	651360	A	327	.55	.55	.17	.25	.03	.00	.40	.40	-.14	-.16
OP	651362	B	327	.72	.11	.72	.14	.02	.00	.55	-.21	.55	-.35
OP	651367	B	327	.69	.06	.69	.23	.03	.00	.60	-.16	.60	-.39
OP	651374	C	327	.65	.16	.17	.65	.03	.00	.19	-.03	-.02	.19
OP	651379	A	327	.62	.62	.13	.21	.04	.00	.61	.61	-.19	-.36
OP	651400	C	327	.65	.13	.19	.65	.03	.00	.31	-.07	-.11	.31
OP	651404	C	327	.72	.12	.13	.72	.03	.00	.30	-.15	-.01	.30
OP	675942	B	327	.67	.07	.67	.23	.03	.00	.53	-.05	.53	-.38
OP	675956	A	327	.50	.50	.19	.27	.04	.00	.52	.52	-.15	-.25
OP	675960	A	327	.55	.55	.15	.27	.03	.00	.47	.47	-.04	-.31
OP	691098	C	327	.66	.07	.24	.66	.03	.00	.41	-.17	-.19	.41
OP	691099	B	327	.74	.06	.74	.17	.03	.00	.50	-.11	.50	-.32
OP	691100	A	327	.74	.74	.09	.14	.03	.00	.59	.59	-.17	-.36
OP	691102	C	327	.67	.13	.17	.67	.03	.00	.37	-.12	-.15	.37
OP	691103	A	327	.60	.60	.08	.29	.03	.00	.59	.59	-.20	-.34
OP	691104	B	327	.55	.08	.55	.34	.03	.00	.58	-.21	.58	-.31
OP	691105	C	327	.83	.05	.09	.83	.03	.00	.47	-.14	-.24	.47
OP	691106	A	327	.79	.79	.06	.13	.03	.00	.61	.61	-.25	-.36
OP	691107	B	327	.79	.04	.79	.13	.03	.00	.58	-.19	.58	-.35
OP	691108	C	327	.70	.12	.15	.70	.02	.00	.40	-.21	-.14	.40
OP	691109	B	327	.70	.12	.70	.17	.02	.00	.51	-.16	.51	-.34
OP	691110	A	327	.46	.46	.26	.24	.04	.00	.51	.51	-.06	-.34
OP	691112	A	327	.85	.85	.09	.03	.03	.00	.41	.41	-.13	-.21
OP	691113	B	327	.72	.11	.72	.15	.03	.00	.60	-.12	.60	-.43
FT	707858	B	162	.35	.17	.35	.46	.02	.00	.22	.00	.22	-.07
FT	707860	B	165	.40	.10	.40	.45	.05	.00	.22	.00	.22	-.01
FT	707862	B	165	.59	.17	.59	.20	.04	.00	.54	-.02	.54	-.39
FT	707863	A	162	.72	.72	.09	.16	.02	.00	.67	.67	-.25	-.44
FT	707864	A	162	.52	.52	.26	.19	.02	.00	.49	.49	-.11	-.33
FT	707865	C	165	.66	.12	.18	.66	.04	.00	.29	.01	-.10	.29
FT	707866	B	162	.38	.21	.38	.38	.02	.00	.34	.03	.34	-.22
FT	707867	A	162	.77	.77	.10	.09	.03	.00	.61	.61	-.32	-.28
FT	707868	B	165	.47	.21	.47	.28	.04	.00	.45	.13	.45	-.39
FT	707869	A	162	.71	.71	.14	.12	.02	.00	.48	.48	-.13	-.32
FT	707870	C	162	.51	.33	.14	.51	.02	.00	.09	.20	-.20	.09
FT	707871	B	165	.27	.35	.27	.34	.04	.00	.22	.20	.22	-.23
FT	707872	C	162	.77	.09	.11	.77	.02	.00	.43	-.13	-.23	.43

Grade 7 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
FT	707873	B	165	.60	.17	.60	.19	.04	.00	.52	-.10	.52	-.33
FT	707874	C	165	.53	.09	.35	.53	.04	.00	.21	-.10	.02	.21
FT	707875	C	165	.52	.17	.27	.52	.04	.00	.08	.04	.10	.08

Grade 8

Grade 8 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651408	A	334	.67	.67	.17	.11	.04	.00	.56	.56	-.09	-.35
OP	651409	C	334	.69	.21	.06	.69	.05	.00	.42	-.05	-.24	.42
OP	651413	B	334	.70	.10	.70	.13	.07	.00	.61	-.18	.61	-.19
OP	651418	B	334	.68	.17	.68	.11	.04	.00	.61	-.23	.61	-.27
OP	651421	C	334	.63	.26	.06	.63	.04	.00	.36	-.01	-.24	.36
OP	651430	C	334	.69	.11	.13	.69	.07	.00	.52	-.14	-.11	.52
OP	651434	B	334	.57	.31	.57	.07	.04	.00	.31	.03	.31	-.25
OP	651435	B	334	.70	.10	.70	.15	.05	.00	.65	-.20	.65	-.33
OP	651436	B	334	.68	.09	.68	.17	.07	.00	.67	-.15	.67	-.29
OP	651445	C	334	.73	.08	.12	.73	.07	.00	.48	-.10	-.08	.48
OP	651455	A	334	.67	.67	.05	.22	.07	.00	.52	.52	-.03	-.18
OP	673884	A	334	.56	.56	.16	.22	.06	.00	.47	.47	-.05	-.14
OP	691114	A	334	.69	.69	.17	.10	.04	.00	.44	.44	-.09	-.19
OP	691115	B	334	.77	.07	.77	.10	.07	.00	.63	-.18	.63	-.21
OP	691117	C	334	.75	.12	.07	.75	.07	.00	.45	-.10	-.01	.45
OP	691118	C	334	.84	.06	.06	.84	.04	.00	.62	-.21	-.32	.62
OP	691119	A	334	.57	.57	.11	.25	.07	.00	.45	.45	-.09	-.08
OP	691122	B	334	.57	.13	.57	.24	.07	.00	.56	-.16	.56	-.14
OP	691123	C	334	.76	.09	.08	.76	.07	.00	.58	-.15	-.14	.58
OP	691124	C	334	.79	.09	.08	.79	.04	.00	.60	-.25	-.26	.60
OP	691125	B	334	.65	.10	.65	.18	.06	.00	.61	-.08	.61	-.30
OP	691126	A	334	.60	.60	.17	.19	.04	.00	.38	.38	-.07	-.12
OP	691127	B	334	.53	.21	.53	.19	.07	.00	.48	-.13	.48	-.05
OP	691128	C	334	.75	.12	.07	.75	.07	.00	.44	-.04	-.06	.44
OP	691129	A	334	.60	.60	.15	.18	.07	.00	.53	.53	-.02	-.23
FT	707824	C	168	.39	.29	.23	.39	.09	.00	.25	.00	.20	.25
FT	707825	C	166	.60	.18	.17	.60	.05	.00	.34	-.07	-.05	.34
FT	707826	B	168	.52	.18	.52	.21	.09	.00	.57	-.05	.57	-.14
FT	707827	A	166	.42	.42	.25	.29	.04	.00	.42	.42	.04	-.26
FT	707828	A	168	.65	.65	.10	.16	.09	.00	.61	.61	-.12	-.13

Grade 8 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
FT	707829	A	168	.48	.48	.10	.34	.09	.00	.51	.51	-.06	-.06
FT	707830	B	166	.66	.23	.66	.07	.04	.00	.42	-.18	.42	-.05
FT	707831	A	166	.64	.64	.11	.20	.04	.00	.32	.32	-.06	-.06
FT	707832	A	168	.24	.24	.26	.41	.09	.00	.22	.22	.16	.09
FT	707833	B	166	.36	.24	.36	.35	.05	.00	.32	.02	.32	-.08
FT	707834	B	168	.74	.10	.74	.08	.09	.00	.69	-.14	.69	-.20
FT	707835	C	166	.64	.20	.11	.64	.04	.00	.29	-.08	.02	.29
FT	707836	B	168	.32	.29	.32	.30	.09	.00	.31	.13	.31	.02
FT	707837	A	166	.25	.25	.25	.46	.04	.00	.22	.22	-.06	.08
FT	707838	B	168	.38	.27	.38	.26	.09	.00	.42	.20	.42	-.19
FT	707839	B	166	.48	.15	.48	.33	.05	.00	.30	.10	.30	-.13

Grade 11

Grade 11 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651356	A	309	.61	.61	.16	.17	.06	.00	.58	.58	-.19	-.20
OP	651429	C	309	.72	.15	.08	.72	.05	.00	.43	-.14	-.12	.43
OP	651437	B	309	.68	.13	.68	.13	.07	.00	.57	-.06	.57	-.27
OP	651440	A	309	.52	.52	.16	.24	.07	.00	.50	.50	-.06	-.13
OP	651448	B	309	.61	.08	.61	.25	.06	.00	.47	-.03	.47	-.21
OP	651450	C	309	.69	.16	.10	.69	.05	.00	.40	-.07	-.13	.40
OP	651456	B	309	.41	.24	.41	.28	.07	.00	.44	-.04	.44	-.07
OP	651463	B	309	.73	.06	.73	.16	.06	.00	.58	-.19	.58	-.22
OP	651466	B	309	.44	.17	.44	.32	.06	.00	.47	-.14	.47	-.06
OP	651477	A	309	.61	.61	.12	.20	.07	.00	.58	.58	-.11	-.22
OP	651478	C	309	.70	.12	.12	.70	.06	.00	.44	-.09	-.10	.44
OP	673895	C	309	.72	.02	.19	.72	.07	.00	.54	-.08	-.18	.54
OP	675981	A	309	.75	.75	.11	.08	.06	.00	.62	.62	-.20	-.20
OP	675990	C	309	.61	.22	.10	.61	.07	.00	.39	-.04	-.06	.39
OP	691130	B	309	.63	.09	.63	.21	.07	.00	.54	-.10	.54	-.17
OP	691132	C	309	.66	.19	.09	.66	.06	.00	.40	-.06	-.11	.40
OP	691133	B	309	.39	.34	.39	.20	.07	.00	.27	.14	.27	-.10
OP	691135	B	309	.72	.11	.72	.11	.07	.00	.53	-.11	.53	-.16
OP	691136	A	309	.84	.84	.04	.06	.06	.00	.60	.60	-.19	-.20
OP	691138	B	309	.66	.10	.66	.17	.07	.00	.58	-.12	.58	-.19
OP	691139	A	309	.79	.79	.05	.10	.07	.00	.66	.66	-.17	-.26

Grade 11 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	691140	A	309	.57	.57	.18	.17	.07	.00	.57	.57	-.04	-.25
OP	691141	A	309	.68	.68	.12	.14	.06	.00	.37	.37	.02	-.11
OP	691142	C	309	.78	.09	.06	.78	.07	.00	.53	-.12	-.09	.53
OP	691144	B	309	.60	.06	.60	.26	.07	.00	.49	-.14	.49	-.10
FT	707877	A	163	.57	.57	.09	.26	.08	.00	.56	.56	-.07	-.16
FT	707879	B	163	.66	.12	.66	.14	.09	.00	.50	-.01	.50	-.12
FT	707880	C	146	.47	.11	.36	.47	.07	.00	.30	-.16	.10	.30
FT	707881	C	163	.42	.25	.25	.42	.09	.00	.16	.15	.12	.16
FT	707882	B	146	.47	.12	.47	.34	.07	.00	.13	.03	.13	.15
FT	707883	A	163	.25	.25	.13	.53	.09	.00	.16	.16	-.09	.31
FT	707884	A	146	.64	.64	.14	.15	.07	.00	.57	.57	-.15	-.22
FT	707885	C	146	.52	.19	.22	.52	.07	.00	.32	.04	-.07	.32
FT	707886	C	163	.77	.07	.08	.77	.09	.00	.63	-.11	-.18	.63
FT	707887	B	146	.67	.08	.67	.18	.07	.00	.50	-.18	.50	-.11
FT	707888	C	163	.51	.20	.21	.51	.09	.00	.36	-.04	.07	.36
FT	707890	C	163	.42	.26	.23	.42	.09	.00	.21	.16	.04	.21
FT	707891	A	146	.42	.42	.15	.36	.06	.00	.30	.30	.09	-.10
FT	707892	B	146	.70	.06	.70	.18	.06	.00	.61	-.15	.61	-.30
FT	707894	B	163	.32	.25	.32	.35	.09	.00	.24	.15	.24	.03
FT	707895	A	146	.21	.21	.27	.45	.07	.00	.28	.28	.08	.00

Appendix G: Mathematics Key Verification and Foil Analysis

Grade 3

Grade 3 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	650573	C	256	.83	.04	.03	.83	.11	.00	.72	-.13	-.10	.72
OP	650590	A	256	.67	.67	.07	.16	.10	.00	.62	.62	-.06	-.13
OP	650591	C	256	.68	.15	.07	.68	.10	.00	.51	.08	-.15	.51
OP	650592	A	256	.84	.84	.04	.03	.10	.00	.77	.77	-.18	-.17
OP	650596	B	256	.50	.22	.50	.18	.10	.00	.35	.21	.35	-.09
OP	650600	C	256	.78	.07	.05	.78	.10	.00	.69	-.19	-.06	.69
OP	650603	C	256	.68	.11	.11	.68	.10	.00	.61	-.16	-.08	.61
OP	650604	B	256	.66	.07	.66	.16	.11	.00	.64	.00	.64	-.19
OP	650608	A	256	.61	.61	.11	.18	.11	.00	.59	.59	-.06	-.08
OP	650612	B	256	.62	.09	.62	.17	.11	.00	.64	-.08	.64	-.12
OP	650613	A	256	.65	.65	.10	.14	.11	.00	.61	.61	-.08	-.10
OP	650661	C	256	.57	.20	.13	.57	.10	.00	.51	-.03	-.07	.51
OP	673355	A	256	.76	.76	.06	.07	.11	.00	.72	.72	-.13	-.16
OP	676133	C	256	.82	.03	.05	.82	.10	.00	.72	-.10	-.16	.72
OP	676139	A	256	.47	.47	.13	.29	.11	.00	.48	.48	-.08	.04
OP	690920	B	256	.70	.07	.70	.12	.11	.00	.65	-.18	.65	-.04
OP	690921	B	256	.83	.07	.83	.02	.08	.00	.67	-.22	.67	-.13
OP	690922	B	256	.64	.09	.64	.17	.10	.00	.53	-.08	.53	-.03
OP	690923	A	256	.62	.62	.07	.22	.10	.00	.57	.57	-.03	-.12
OP	690924	B	256	.69	.10	.69	.11	.11	.00	.70	-.11	.70	-.19
OP	690929	B	256	.57	.15	.57	.17	.11	.00	.51	.07	.51	-.12
OP	690930	C	256	.40	.27	.22	.40	.11	.00	.31	.07	.10	.31
OP	690931	C	256	.66	.13	.11	.66	.11	.00	.62	-.07	-.11	.62
OP	690934	C	256	.68	.13	.08	.68	.11	.00	.62	-.12	-.06	.62
OP	691213	B	256	.49	.16	.49	.25	.11	.00	.47	.06	.47	-.05
FT	707612	A	136	.67	.67	.17	.06	.10	.00	.67	.67	-.16	-.12
FT	707613	A	120	.38	.38	.13	.40	.10	.00	.46	.46	.02	-.02
FT	707614	C	120	.81	.03	.08	.81	.09	.00	.74	-.13	-.22	.74
FT	707615	B	136	.58	.10	.58	.22	.10	.00	.47	.00	.47	-.01
FT	707616	A	120	.34	.34	.22	.34	.10	.00	.22	.22	.09	.17
FT	707617	A	120	.86	.86	.02	.03	.09	.00	.73	.73	-.13	-.15
FT	707618	B	120	.42	.22	.42	.27	.10	.00	.43	-.03	.43	.05
FT	707620	B	136	.26	.21	.26	.43	.11	.00	.21	.13	.21	.20
FT	707621	C	136	.70	.11	.09	.70	.10	.00	.61	-.10	-.08	.61
FT	707623	A	136	.51	.51	.12	.26	.11	.00	.54	.54	-.02	-.05
FT	707624	B	120	.60	.16	.60	.15	.09	.00	.62	-.12	.62	-.14

Grade 3 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
FT	707625	C	120	.66	.09	.15	.66	.10	.00	.63	-.11	-.13	.63
FT	707626	C	136	.68	.06	.15	.68	.11	.00	.60	-.10	-.04	.60
FT	707627	C	136	.68	.09	.13	.68	.10	.00	.66	-.18	-.09	.66
FT	707628	C	136	.55	.25	.08	.55	.12	.00	.42	.09	-.05	.42
FT	707629	B	120	.52	.07	.52	.32	.10	.00	.42	-.05	.42	.05

Grade 4

Grade 4 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	650757	C	289	.68	.09	.16	.68	.07	.00	.65	-.13	-.30	.65
OP	650759	C	289	.73	.11	.07	.73	.09	.00	.60	-.11	-.14	.60
OP	650762	C	289	.77	.08	.06	.77	.09	.00	.69	-.18	-.21	.69
OP	650766	A	289	.62	.62	.16	.13	.09	.00	.61	.61	-.18	-.10
OP	650770	C	289	.72	.12	.07	.72	.09	.00	.63	-.12	-.21	.63
OP	650772	B	289	.59	.17	.59	.16	.09	.00	.49	-.05	.49	-.07
OP	650778	A	289	.77	.77	.10	.05	.08	.00	.68	.68	-.26	-.12
OP	650779	A	289	.75	.75	.09	.07	.09	.00	.70	.70	-.22	-.16
OP	650783	B	289	.53	.15	.53	.22	.09	.00	.49	-.07	.49	-.04
OP	650784	B	289	.64	.12	.64	.16	.09	.00	.65	-.22	.65	-.13
OP	650792	A	289	.67	.67	.10	.13	.09	.00	.65	.65	-.24	-.10
OP	650931	A	289	.48	.48	.22	.19	.10	.00	.54	.54	-.07	-.06
OP	676142	C	289	.75	.06	.09	.75	.09	.00	.70	-.16	-.25	.70
OP	676143	B	289	.76	.05	.76	.10	.08	.00	.65	-.18	.65	-.20
OP	676146	B	289	.58	.13	.58	.19	.10	.00	.58	-.18	.58	-.03
OP	676155	C	289	.70	.07	.13	.70	.10	.00	.60	-.06	-.15	.60
OP	676160	A	289	.70	.70	.10	.11	.09	.00	.66	.66	-.15	-.20
OP	676163	C	289	.72	.10	.09	.72	.09	.00	.63	-.13	-.18	.63
OP	690935	A	289	.45	.45	.32	.15	.08	.00	.33	.33	.04	.00
OP	690936	B	289	.53	.16	.53	.21	.10	.00	.53	-.01	.53	-.13
OP	690937	B	289	.59	.09	.59	.21	.10	.00	.52	-.11	.52	-.01
OP	690938	B	289	.49	.20	.49	.21	.09	.00	.44	.07	.44	-.11
OP	690939	C	289	.80	.05	.05	.80	.10	.00	.70	-.17	-.16	.70
OP	690940	C	289	.67	.12	.10	.67	.10	.00	.63	-.05	-.24	.63
OP	690941	B	289	.38	.33	.38	.21	.09	.00	.25	.14	.25	.01
OP	690943	C	289	.75	.07	.08	.75	.09	.00	.70	-.16	-.22	.70
OP	690944	A	289	.57	.57	.11	.22	.09	.00	.62	.62	-.20	-.10

Grade 4 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	690946	A	289	.62	.62	.12	.17	.10	.00	.59	.59	-.18	-.06
OP	690948	C	289	.57	.19	.14	.57	.10	.00	.49	-.03	-.06	.49
OP	690950	C	289	.69	.09	.12	.69	.10	.00	.53	.01	-.12	.53
FT	707631	C	146	.53	.20	.16	.53	.10	.00	.38	.10	-.03	.38
FT	707632	B	146	.55	.14	.55	.21	.10	.00	.44	.00	.44	.01
FT	707633	C	143	.69	.06	.17	.69	.09	.00	.63	-.18	-.15	.63
FT	707634	C	146	.64	.14	.12	.64	.10	.00	.48	.05	-.08	.48
FT	707635	A	143	.51	.51	.23	.18	.08	.00	.53	.53	-.04	-.20
FT	707636	A	146	.84	.84	.05	.00	.10	.00	.68	.68	-.12	
FT	707637	C	143	.74	.07	.10	.74	.09	.00	.70	-.17	-.24	.70
FT	707638	A	143	.75	.75	.10	.06	.08	.00	.63	.63	-.15	-.19
FT	707639	A	143	.46	.46	.17	.27	.10	.00	.38	.38	-.18	.20
FT	707640	C	146	.51	.17	.22	.51	.10	.00	.43	-.01	.02	.43
FT	707641	C	143	.67	.08	.17	.67	.08	.00	.59	-.12	-.15	.59
FT	707642	A	146	.61	.61	.09	.20	.10	.00	.68	.68	-.14	-.18
FT	707643	B	146	.47	.15	.47	.27	.10	.00	.39	-.07	.39	.11
FT	707645	B	143	.78	.10	.78	.04	.08	.00	.71	-.31	.71	-.14
FT	707646	B	146	.32	.34	.32	.24	.10	.00	.26	.35	.26	-.16
FT	708810	A	143	.50	.50	.29	.13	.08	.00	.38	.38	-.10	.08

Grade 5

Grade 5 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	650955	C	334	.69	.08	.13	.69	.09	.00	.61	-.14	-.11	.61
OP	650991	A	334	.70	.70	.12	.11	.07	.00	.57	.57	-.13	-.22
OP	651002	A	334	.44	.44	.21	.27	.08	.00	.41	.41	-.02	-.02
OP	651004	A	334	.51	.51	.17	.24	.08	.00	.48	.48	.05	-.18
OP	651007	C	334	.73	.13	.06	.73	.09	.00	.55	.00	-.19	.55
OP	651009	B	334	.59	.20	.59	.12	.09	.00	.54	-.09	.54	-.10
OP	651013	C	334	.78	.05	.09	.78	.07	.00	.69	-.19	-.26	.69
OP	651022	A	334	.57	.57	.09	.25	.09	.00	.51	.51	-.14	-.02
OP	651024	C	334	.80	.05	.07	.80	.08	.00	.64	-.18	-.13	.64
OP	651025	C	334	.73	.06	.12	.73	.08	.00	.55	-.06	-.14	.55
OP	651028	B	334	.71	.10	.71	.12	.07	.00	.57	-.13	.57	-.21
OP	651030	A	334	.41	.41	.16	.34	.09	.00	.36	.36	-.01	.04
OP	651039	B	334	.70	.08	.70	.13	.09	.00	.67	-.19	.67	-.18

Grade 5 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651042	C	334	.69	.11	.11	.69	.09	.00	.49	-.03	-.07	.49
OP	673364	B	334	.75	.04	.75	.12	.09	.00	.67	-.16	.67	-.19
OP	673369	B	334	.39	.19	.39	.33	.09	.00	.36	-.06	.36	.10
OP	673371	A	334	.55	.55	.13	.22	.09	.00	.46	.46	-.07	.00
OP	676192	B	334	.79	.06	.79	.05	.09	.00	.66	-.16	.66	-.15
OP	676194	A	334	.64	.64	.13	.14	.09	.00	.61	.61	-.06	-.22
OP	676196	C	334	.56	.11	.24	.56	.09	.00	.44	-.05	-.01	.44
OP	676199	C	334	.76	.07	.07	.76	.09	.00	.62	-.09	-.15	.62
OP	676200	C	334	.69	.10	.11	.69	.09	.00	.61	-.13	-.14	.61
OP	676201	A	334	.72	.72	.12	.09	.07	.00	.66	.66	-.23	-.22
OP	690951	A	334	.60	.60	.14	.19	.07	.00	.54	.54	-.14	-.11
OP	690952	A	334	.44	.44	.23	.24	.09	.00	.42	.42	.06	-.07
OP	690957	A	334	.62	.62	.13	.15	.09	.00	.53	.53	-.05	-.09
OP	690958	C	334	.66	.11	.14	.66	.09	.00	.51	-.06	-.05	.51
OP	690960	C	334	.56	.16	.19	.56	.09	.00	.41	-.01	.01	.41
OP	690962	C	334	.64	.11	.15	.64	.10	.00	.48	-.06	-.02	.48
OP	690964	B	334	.55	.21	.55	.15	.09	.00	.55	.02	.55	-.22
FT	707649	C	178	.77	.04	.11	.77	.08	.00	.67	-.15	-.21	.67
FT	707650	B	178	.64	.12	.64	.17	.07	.00	.52	-.01	.52	-.20
FT	707651	B	156	.69	.06	.69	.14	.11	.00	.72	-.16	.72	-.18
FT	707652	C	156	.60	.09	.20	.60	.11	.00	.56	-.04	-.08	.56
FT	707653	B	156	.73	.05	.73	.11	.11	.00	.72	-.12	.72	-.20
FT	707655	C	178	.46	.08	.38	.46	.08	.00	.32	-.09	.09	.32
FT	707657	B	156	.33	.29	.33	.27	.11	.00	.21	.33	.21	-.04
FT	707658	A	156	.27	.27	.27	.35	.11	.00	.28	.28	.15	.08
FT	707659	B	178	.44	.13	.44	.34	.08	.00	.47	-.09	.47	-.04
FT	707660	A	178	.54	.54	.15	.24	.07	.00	.45	.45	-.01	-.12
FT	707661	B	156	.35	.40	.35	.14	.11	.00	.22	.38	.22	-.17
FT	707662	A	178	.50	.50	.23	.19	.08	.00	.60	.60	-.08	-.21
FT	707663	C	156	.48	.12	.29	.48	.11	.00	.37	.04	.08	.37
FT	707664	C	156	.76	.06	.06	.76	.11	.00	.76	-.19	-.19	.76
FT	707665	C	178	.80	.04	.08	.80	.08	.00	.62	-.03	-.22	.62
FT	707666	B	178	.54	.12	.54	.25	.08	.00	.47	-.06	.47	-.08

Grade 6

Grade 6 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651322	C	339	.65	.12	.14	.65	.09	.00	.50	-.14	-.03	.50
OP	651323	C	339	.73	.09	.10	.73	.08	.00	.54	-.14	-.08	.54
OP	651332	C	339	.71	.09	.12	.71	.08	.00	.52	-.16	-.04	.52
OP	651333	B	339	.56	.14	.56	.22	.08	.00	.57	-.08	.57	-.18
OP	651334	C	339	.75	.06	.11	.75	.08	.00	.53	-.14	-.06	.53
OP	651339	A	339	.45	.45	.15	.32	.08	.00	.37	.37	.04	-.05
OP	651340	C	339	.68	.18	.06	.68	.08	.00	.46	.00	-.16	.46
OP	651341	C	339	.72	.10	.09	.72	.08	.00	.56	-.13	-.14	.56
OP	651344	B	339	.50	.17	.50	.24	.08	.00	.56	.00	.56	-.23
OP	651348	B	339	.74	.06	.74	.11	.09	.00	.69	-.17	.69	-.25
OP	651353	A	339	.56	.56	.12	.23	.09	.00	.51	.51	.01	-.17
OP	651359	B	339	.63	.14	.63	.15	.09	.00	.62	-.12	.62	-.21
OP	651384	A	339	.60	.60	.19	.12	.08	.00	.58	.58	-.10	-.19
OP	651392	B	339	.64	.11	.64	.16	.09	.00	.65	-.10	.65	-.28
OP	651394	B	339	.66	.07	.66	.19	.09	.00	.67	-.11	.67	-.27
OP	651396	B	339	.54	.11	.54	.27	.09	.00	.66	-.14	.66	-.22
OP	651398	A	339	.53	.53	.19	.19	.08	.00	.54	.54	-.14	-.10
OP	673373	A	339	.51	.51	.16	.24	.09	.00	.56	.56	-.02	-.20
OP	676208	C	339	.64	.14	.14	.64	.09	.00	.44	-.01	-.07	.44
OP	676241	C	339	.71	.08	.13	.71	.08	.00	.56	-.21	-.06	.56
OP	690967	B	339	.52	.22	.52	.18	.09	.00	.48	.07	.48	-.22
OP	690968	B	339	.54	.14	.54	.23	.09	.00	.58	-.02	.58	-.23
OP	690969	A	339	.67	.67	.09	.16	.09	.00	.66	.66	-.12	-.27
OP	690972	C	339	.80	.07	.05	.80	.08	.00	.67	-.22	-.19	.67
OP	690974	B	339	.58	.09	.58	.24	.09	.00	.60	-.12	.60	-.18
OP	690976	A	339	.50	.50	.14	.28	.09	.00	.51	.51	-.10	-.09
OP	690978	A	339	.50	.50	.19	.22	.09	.00	.57	.57	-.07	-.17
OP	690979	B	339	.66	.09	.66	.16	.09	.00	.65	-.14	.65	-.24
OP	690980	B	339	.49	.13	.49	.29	.09	.00	.52	-.06	.52	-.12
OP	690981	A	339	.81	.81	.04	.06	.09	.00	.64	.64	-.14	-.17
FT	707667	A	160	.61	.61	.11	.15	.13	.00	.59	.59	-.04	-.09
FT	707668	B	179	.74	.12	.74	.09	.05	.00	.50	-.10	.50	-.23
FT	707669	A	160	.32	.32	.22	.33	.14	.00	.39	.39	.24	-.09
FT	707670	B	160	.43	.14	.43	.30	.13	.00	.50	.06	.50	-.06
FT	707671	B	179	.56	.16	.56	.23	.05	.00	.54	-.13	.54	-.24
FT	707672	C	160	.71	.06	.09	.71	.13	.00	.52	.00	.03	.52
FT	707673	B	179	.51	.16	.51	.28	.05	.00	.46	-.04	.46	-.22

Grade 6 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
FT	707674	A	179	.39	.39	.17	.39	.05	.00	.27	.27	-.11	.07
FT	707675	A	160	.50	.50	.10	.26	.14	.00	.57	.57	-.08	-.05
FT	707676	A	179	.60	.60	.15	.20	.05	.00	.56	.56	-.10	-.29
FT	707677	A	160	.49	.49	.13	.25	.13	.00	.58	.58	-.03	-.09
FT	707678	B	160	.52	.11	.52	.24	.13	.00	.60	.02	.60	-.15
FT	707679	C	179	.60	.15	.20	.60	.05	.00	.30	-.04	-.03	.30
FT	707680	A	179	.55	.55	.13	.27	.05	.00	.46	.46	-.13	-.15
FT	707683	B	160	.53	.08	.53	.26	.14	.00	.56	.01	.56	-.10
FT	707684	B	179	.60	.10	.60	.25	.05	.00	.54	-.11	.54	-.26

Grade 7

Grade 7 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651845	C	329	.66	.16	.15	.66	.04	.00	.52	-.22	-.22	.52
OP	651851	A	329	.73	.73	.07	.18	.02	.00	.63	.63	-.24	-.42
OP	651852	A	329	.74	.74	.08	.15	.03	.00	.70	.70	-.25	-.43
OP	652047	A	329	.78	.78	.05	.13	.04	.00	.65	.65	-.27	-.36
OP	652095	C	329	.60	.13	.23	.60	.03	.00	.23	-.06	-.01	.23
OP	652096	A	329	.56	.56	.17	.24	.03	.00	.52	.52	-.19	-.23
OP	652115	A	329	.87	.87	.05	.06	.02	.00	.59	.59	-.26	-.36
OP	652116	A	329	.50	.50	.14	.33	.03	.00	.50	.50	-.16	-.23
OP	652120	C	329	.65	.09	.22	.65	.04	.00	.24	-.06	-.02	.24
OP	652122	A	329	.71	.71	.10	.15	.04	.00	.63	.63	-.22	-.36
OP	652124	C	329	.59	.18	.20	.59	.04	.00	.22	-.01	-.04	.22
OP	652129	C	329	.80	.10	.07	.80	.04	.00	.51	-.22	-.20	.51
OP	652131	C	329	.73	.11	.12	.73	.03	.00	.42	-.19	-.13	.42
OP	652134	A	329	.63	.63	.14	.20	.04	.00	.58	.58	-.09	-.39
OP	652140	C	329	.69	.15	.12	.69	.04	.00	.42	-.13	-.17	.42
OP	652143	B	329	.54	.19	.54	.23	.04	.00	.41	-.02	.41	-.24
OP	652145	B	329	.72	.11	.72	.14	.03	.00	.52	-.16	.52	-.28
OP	673374	B	329	.71	.16	.71	.10	.03	.00	.64	-.29	.64	-.32
OP	676317	A	329	.77	.77	.08	.11	.04	.00	.66	.66	-.22	-.39
OP	690983	A	329	.54	.54	.19	.23	.04	.00	.44	.44	-.03	-.28
OP	690984	B	329	.64	.14	.64	.19	.03	.00	.61	-.21	.61	-.36
OP	690986	B	329	.63	.10	.63	.24	.03	.00	.63	-.20	.63	-.37
OP	690987	B	329	.52	.18	.52	.26	.03	.00	.50	-.06	.50	-.32

Grade 7 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	690988	B	329	.67	.10	.67	.19	.04	.00	.63	-.23	.63	-.34
OP	690991	B	329	.80	.10	.80	.07	.03	.00	.63	-.27	.63	-.33
OP	690992	C	329	.75	.10	.11	.75	.03	.00	.49	-.17	-.25	.49
OP	690993	B	329	.48	.15	.48	.33	.03	.00	.34	-.02	.34	-.16
OP	690995	B	329	.66	.12	.66	.19	.03	.00	.59	-.14	.59	-.37
OP	690996	A	329	.81	.81	.07	.08	.03	.00	.63	.63	-.30	-.30
OP	690997	C	329	.85	.06	.06	.85	.03	.00	.59	-.27	-.28	.59
FT	707685	B	164	.52	.16	.52	.30	.02	.00	.41	-.11	.41	-.22
FT	707686	A	164	.57	.57	.15	.26	.03	.00	.54	.54	-.17	-.31
FT	707687	B	165	.27	.21	.27	.47	.05	.00	.15	.12	.15	.00
FT	707688	A	164	.37	.37	.32	.29	.02	.00	.27	.27	.11	-.25
FT	707689	A	165	.49	.49	.18	.28	.05	.00	.52	.52	.06	-.38
FT	707690	B	164	.55	.14	.55	.29	.02	.00	.52	-.08	.52	-.36
FT	707691	C	164	.51	.21	.25	.51	.03	.00	.23	-.02	-.07	.23
FT	707692	B	164	.56	.16	.56	.25	.02	.00	.48	-.11	.48	-.30
FT	707693	A	164	.48	.48	.21	.29	.02	.00	.46	.46	-.11	-.26
FT	707694	A	165	.45	.45	.09	.41	.05	.00	.40	.40	-.13	-.09
FT	707695	C	164	.70	.16	.12	.70	.02	.00	.37	-.17	-.13	.37
FT	707697	B	165	.57	.19	.57	.19	.05	.00	.45	.02	.45	-.29
FT	707698	B	165	.46	.24	.46	.25	.05	.00	.53	.06	.53	-.40
FT	707699	C	165	.73	.08	.14	.73	.05	.00	.46	-.06	-.21	.46
FT	707701	B	165	.38	.08	.38	.50	.05	.00	.34	-.21	.34	.02
FT	708811	A	165	.41	.41	.16	.39	.05	.00	.46	.46	-.06	-.18

Grade 8

Grade 8 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	652151	A	338	.70	.70	.12	.13	.04	.00	.48	.48	-.13	-.19
OP	652152	A	338	.73	.73	.11	.11	.05	.00	.54	.54	-.21	-.18
OP	652160	C	338	.64	.12	.17	.64	.07	.00	.42	-.03	-.08	.42
OP	652162	C	338	.71	.09	.16	.71	.04	.00	.57	-.13	-.30	.57
OP	652163	A	338	.69	.69	.12	.12	.07	.00	.65	.65	-.23	-.19
OP	652166	A	338	.44	.44	.24	.25	.07	.00	.34	.34	.03	-.04
OP	652167	B	338	.75	.07	.75	.14	.05	.00	.55	-.17	.55	-.23
OP	652182	B	338	.66	.09	.66	.18	.07	.00	.62	-.07	.62	-.28
OP	652186	B	338	.43	.19	.43	.31	.07	.00	.44	-.08	.44	-.03

Grade 8 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	652188	A	338	.80	.80	.08	.05	.07	.00	.62	.62	-.20	-.15
OP	652192	B	338	.45	.23	.45	.25	.07	.00	.48	.03	.48	-.19
OP	652196	C	338	.68	.16	.09	.68	.07	.00	.50	-.08	-.14	.50
OP	652199	A	338	.49	.49	.24	.21	.07	.00	.40	.40	-.03	-.06
OP	673379	C	338	.62	.12	.20	.62	.07	.00	.43	-.16	.01	.43
OP	673380	B	338	.84	.03	.84	.07	.07	.00	.64	-.16	.64	-.19
OP	673381	C	338	.81	.09	.05	.81	.04	.00	.59	-.20	-.29	.59
OP	676323	B	338	.39	.27	.39	.26	.07	.00	.41	.00	.41	-.08
OP	676332	B	338	.59	.10	.59	.26	.05	.00	.59	-.24	.59	-.21
OP	676333	C	338	.73	.06	.16	.73	.05	.00	.53	-.12	-.24	.53
OP	690999	A	338	.72	.72	.13	.08	.07	.00	.55	.55	-.10	-.17
OP	691000	B	338	.62	.08	.62	.23	.07	.00	.59	-.15	.59	-.19
OP	691001	B	338	.51	.11	.51	.33	.05	.00	.38	-.14	.38	-.06
OP	691002	C	338	.78	.10	.08	.78	.04	.00	.53	-.18	-.21	.53
OP	691004	A	338	.55	.55	.22	.16	.07	.00	.37	.37	.00	-.05
OP	691005	B	338	.74	.05	.74	.17	.04	.00	.56	-.23	.56	-.23
OP	691006	B	338	.74	.07	.74	.12	.07	.00	.52	-.07	.52	-.15
OP	691008	C	338	.70	.12	.11	.70	.07	.00	.44	-.03	-.09	.44
OP	691011	B	338	.47	.18	.47	.28	.07	.00	.38	.03	.38	-.08
OP	691012	C	338	.63	.18	.12	.63	.07	.00	.45	-.08	-.06	.45
OP	691014	C	338	.59	.14	.20	.59	.07	.00	.45	-.11	-.05	.45
FT	707702	B	169	.48	.16	.48	.27	.09	.00	.35	.05	.35	.02
FT	707703	B	169	.50	.28	.50	.17	.05	.00	.46	-.05	.46	-.23
FT	707704	B	169	.67	.11	.67	.14	.09	.00	.70	-.16	.70	-.22
FT	707705	A	169	.35	.35	.24	.33	.09	.00	.47	.47	-.06	.01
FT	707706	C	169	.66	.08	.17	.66	.09	.00	.51	-.11	-.02	.51
FT	707707	B	169	.73	.10	.73	.12	.05	.00	.65	-.29	.65	-.25
FT	707708	A	169	.48	.48	.23	.24	.05	.00	.40	.40	-.05	-.14
FT	707709	B	169	.15	.34	.15	.41	.09	.00	.15	.13	.15	.18
FT	707710	A	169	.45	.45	.28	.22	.05	.00	.52	.52	-.06	-.26
FT	707711	B	169	.51	.11	.51	.33	.05	.00	.38	-.10	.38	-.08
FT	707713	C	169	.75	.09	.07	.75	.09	.00	.65	-.14	-.15	.65
FT	707714	A	169	.61	.61	.08	.22	.09	.00	.58	.58	-.10	-.12
FT	707715	C	169	.56	.12	.27	.56	.05	.00	.35	.01	-.12	.35
FT	707716	C	169	.53	.10	.28	.53	.09	.00	.41	-.04	.02	.41
FT	707717	A	169	.38	.38	.17	.41	.05	.00	.21	.21	-.10	.11
FT	707718	A	169	.78	.78	.15	.02	.05	.00	.53	.53	-.24	-.09

Grade 11

Grade 11 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651135	A	318	.85	.85	.05	.04	.06	.00	.64	.64	-.16	-.21
OP	651138	A	318	.80	.80	.05	.08	.07	.00	.64	.64	-.20	-.15
OP	651164	C	318	.53	.16	.23	.53	.08	.00	.34	.00	.03	.34
OP	651168	C	318	.75	.10	.08	.75	.07	.00	.60	-.15	-.16	.60
OP	651173	B	318	.77	.08	.77	.08	.07	.00	.64	-.19	.64	-.17
OP	651183	C	318	.68	.11	.13	.68	.08	.00	.53	-.05	-.14	.53
OP	651198	A	318	.58	.58	.13	.21	.08	.00	.48	.48	-.12	-.04
OP	651223	C	318	.75	.09	.10	.75	.06	.00	.51	-.11	-.16	.51
OP	651226	C	318	.78	.08	.08	.78	.06	.00	.54	-.24	-.03	.54
OP	651238	C	318	.59	.14	.21	.59	.06	.00	.40	-.01	-.08	.40
OP	651311	A	318	.70	.70	.09	.14	.07	.00	.61	.61	-.14	-.23
OP	651318	C	318	.36	.32	.25	.36	.06	.00	.14	.15	.05	.14
OP	651319	B	318	.70	.13	.70	.10	.07	.00	.56	-.13	.56	-.14
OP	651320	B	318	.54	.11	.54	.27	.08	.00	.45	-.11	.45	-.03
OP	676343	A	318	.65	.65	.11	.17	.07	.00	.52	.52	-.14	-.10
OP	676350	C	318	.76	.07	.10	.76	.07	.00	.64	-.20	-.16	.64
OP	676351	C	318	.80	.03	.09	.80	.08	.00	.65	-.17	-.18	.65
OP	676352	A	318	.86	.86	.05	.04	.05	.00	.58	.58	-.20	-.17
OP	676354	A	318	.64	.64	.13	.16	.07	.00	.57	.57	-.08	-.20
OP	676377	C	318	.49	.12	.31	.49	.07	.00	.28	-.17	.19	.28
OP	691016	A	318	.47	.47	.12	.32	.08	.00	.47	.47	-.11	-.02
OP	691021	B	318	.55	.17	.55	.22	.07	.00	.46	-.05	.46	-.10
OP	691022	B	318	.43	.21	.43	.29	.06	.00	.36	.04	.36	-.11
OP	691023	B	318	.42	.30	.42	.21	.06	.00	.40	.05	.40	-.15
OP	691024	C	318	.76	.12	.06	.76	.06	.00	.53	-.15	-.15	.53
OP	691026	C	318	.76	.09	.08	.76	.08	.00	.63	-.15	-.16	.63
OP	691027	B	318	.62	.08	.62	.21	.08	.00	.47	-.14	.47	-.01
OP	691028	B	318	.44	.16	.44	.32	.08	.00	.55	-.11	.55	-.09
OP	691029	B	318	.44	.08	.44	.41	.08	.00	.45	-.10	.45	-.03
OP	691030	B	318	.41	.24	.41	.28	.08	.00	.29	.09	.29	.01
FT	707720	C	153	.41	.29	.24	.41	.06	.00	.04	.29	-.03	.04
FT	707721	C	165	.44	.24	.22	.44	.10	.00	.37	.05	.03	.37
FT	707722	B	153	.61	.15	.61	.18	.07	.00	.49	.05	.49	-.28
FT	707723	C	153	.33	.15	.46	.33	.06	.00	.17	-.07	.17	.17
FT	707724	B	153	.51	.10	.51	.33	.06	.00	.23	-.06	.23	.09
FT	707725	C	165	.66	.10	.15	.66	.09	.00	.57	-.12	-.05	.57
FT	707727	B	165	.60	.08	.60	.22	.09	.00	.60	-.10	.60	-.12
FT	707728	A	153	.49	.49	.25	.19	.06	.01	.50	.50	-.11	-.15

Grade 11 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
FT	707729	B	153	.49	.16	.49	.29	.06	.00	.43	-.10	.43	-.09
FT	707731	B	165	.39	.13	.39	.39	.09	.00	.35	.12	.35	.00
FT	707732	B	165	.47	.19	.47	.25	.09	.00	.52	.01	.52	-.11
FT	707733	B	165	.33	.13	.33	.45	.09	.00	.46	-.10	.46	.07
FT	707734	C	165	.44	.31	.16	.44	.09	.00	.26	.19	.00	.26
FT	707735	A	153	.38	.38	.14	.41	.07	.00	.48	.48	-.15	-.05
FT	707736	B	153	.35	.27	.35	.31	.07	.00	.26	.29	.26	-.21
FT	707737	C	165	.32	.21	.39	.32	.09	.00	.17	.17	.14	.17

Appendix H: Science Key Verification and Foil Analysis

Grade 5

Grade 5 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651050	B	325	.56	.10	.56	.25	.09	.00	.54	-.08	.54	-.10
OP	651053	B	325	.50	.09	.50	.32	.09	.00	.49	-.14	.49	-.01
OP	651058	B	325	.53	.14	.53	.24	.09	.00	.50	.10	.50	-.21
OP	651078	C	325	.47	.18	.29	.47	.07	.00	.33	.03	-.02	.33
OP	651107	A	325	.61	.61	.09	.22	.09	.00	.57	.57	-.11	-.11
OP	651113	A	325	.64	.64	.07	.20	.09	.00	.67	.67	-.14	-.20
OP	651114	C	325	.74	.08	.08	.74	.09	.00	.60	-.07	-.15	.60
OP	676456	C	325	.72	.06	.14	.72	.09	.00	.53	-.12	-.04	.53
OP	676460	C	325	.62	.13	.17	.62	.09	.00	.46	-.05	-.04	.46
OP	676461	C	325	.67	.06	.17	.67	.09	.00	.48	-.07	-.03	.48
OP	691146	B	325	.58	.11	.58	.22	.08	.00	.55	.03	.55	-.22
OP	691147	B	325	.69	.05	.69	.17	.09	.00	.71	-.11	.71	-.27
OP	691148	A	325	.67	.67	.13	.12	.08	.00	.62	.62	-.16	-.17
OP	691149	C	325	.62	.16	.15	.62	.07	.00	.33	-.01	.02	.33
OP	691150	B	325	.50	.17	.50	.25	.09	.00	.48	-.07	.48	-.03
OP	691151	A	325	.74	.74	.07	.10	.09	.00	.67	.67	-.17	-.17
OP	691152	C	325	.54	.31	.06	.54	.09	.00	.21	.30	-.19	.21
OP	691154	A	325	.71	.71	.06	.13	.09	.00	.75	.75	-.17	-.28
OP	691155	B	325	.60	.20	.60	.11	.09	.00	.56	.01	.56	-.25
OP	691156	C	325	.65	.13	.14	.65	.09	.00	.47	.01	-.08	.47
OP	691157	A	325	.64	.64	.12	.18	.06	.00	.59	.59	-.07	-.29
OP	691158	A	325	.49	.49	.31	.11	.09	.00	.48	.48	.09	-.26
OP	691159	A	325	.72	.72	.08	.11	.09	.00	.74	.74	-.25	-.22
OP	691160	C	325	.82	.04	.06	.82	.09	.00	.67	-.08	-.21	.67
OP	691212	A	325	.86	.86	.04	.03	.07	.00	.58	.58	-.09	-.17
FT	707414	A	150	.76	.76	.07	.07	.11	.00	.70	.70	-.08	-.17
FT	707416	B	150	.71	.02	.71	.16	.11	.00	.61	-.10	.61	-.07
FT	707417	B	175	.56	.18	.56	.18	.07	.00	.53	-.06	.53	-.19
FT	707418	C	175	.73	.10	.10	.73	.07	.00	.53	-.08	-.15	.53
FT	707419	C	150	.71	.09	.09	.71	.11	.00	.60	-.07	-.05	.60
FT	707420	C	150	.50	.16	.23	.50	.11	.00	.32	.12	.08	.32
FT	707421	B	150	.49	.19	.49	.21	.11	.00	.42	.08	.42	.00
FT	707422	A	175	.78	.78	.06	.09	.07	.00	.73	.73	-.26	-.27
FT	707423	A	175	.23	.23	.22	.47	.07	.00	.22	.22	.08	.08
FT	707425	A	175	.33	.33	.23	.36	.08	.00	.39	.39	-.05	.03
FT	707426	A	175	.51	.51	.19	.22	.07	.00	.45	.45	-.01	-.13

Grade 5 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
FT	707427	A	150	.23	.23	.29	.38	.11	.00	.24	.24	.13	.16
FT	707428	C	175	.77	.05	.11	.77	.08	.00	.56	-.06	-.15	.56
FT	707429	B	150	.77	.04	.77	.08	.11	.00	.74	-.15	.74	-.15
FT	707430	C	175	.69	.14	.09	.69	.08	.00	.49	-.02	-.15	.49
FT	707431	A	150	.79	.79	.05	.05	.11	.00	.73	.73	-.15	-.11

Grade 8

Grade 8 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651233	B	327	.70	.17	.70	.08	.05	.00	.52	-.13	.52	-.25
OP	651236	A	327	.68	.68	.06	.18	.08	.00	.62	.62	-.12	-.19
OP	651258	B	327	.51	.22	.51	.21	.05	.00	.43	-.09	.43	-.12
OP	651261	A	327	.70	.70	.15	.10	.05	.00	.53	.53	-.15	-.20
OP	651263	C	327	.61	.06	.27	.61	.05	.00	.39	-.21	-.01	.39
OP	673796	A	327	.57	.57	.21	.15	.07	.00	.56	.56	-.12	-.13
OP	673797	B	327	.63	.09	.63	.22	.05	.00	.52	-.22	.52	-.15
OP	676474	A	327	.69	.69	.08	.18	.05	.00	.52	.52	-.13	-.23
OP	676475	B	327	.59	.20	.59	.16	.06	.00	.45	-.04	.45	-.18
OP	676476	C	327	.80	.07	.08	.80	.06	.00	.67	-.24	-.26	.67
OP	676477	C	327	.61	.09	.23	.61	.08	.00	.42	-.17	.07	.42
OP	676478	C	327	.59	.10	.23	.59	.08	.00	.43	-.12	.02	.43
OP	676479	B	327	.45	.26	.45	.22	.07	.00	.38	-.07	.38	.05
OP	691162	A	327	.69	.69	.10	.13	.07	.00	.56	.56	-.12	-.13
OP	691163	C	327	.63	.16	.13	.63	.08	.00	.51	-.08	-.09	.51
OP	691165	A	327	.56	.56	.14	.22	.07	.00	.49	.49	-.04	-.11
OP	691166	B	327	.57	.27	.57	.09	.07	.00	.44	.01	.44	-.18
OP	691167	C	327	.81	.08	.04	.81	.07	.00	.67	-.23	-.13	.67
OP	691168	B	327	.58	.20	.58	.17	.05	.00	.44	-.06	.44	-.17
OP	691170	C	327	.81	.06	.06	.81	.07	.00	.69	-.23	-.16	.69
OP	691171	B	327	.84	.04	.84	.05	.07	.00	.70	-.24	.70	-.16
OP	691172	C	327	.62	.14	.16	.62	.08	.00	.42	-.13	.07	.42
OP	691173	C	327	.79	.08	.06	.79	.07	.00	.59	-.11	-.14	.59
OP	691174	C	327	.69	.12	.12	.69	.07	.00	.45	-.02	-.08	.45
OP	691176	A	327	.85	.85	.08	.02	.05	.00	.58	.58	-.26	-.16
FT	707432	A	163	.54	.54	.10	.26	.10	.00	.55	.55	-.08	-.08
FT	707433	A	163	.76	.76	.06	.09	.10	.00	.66	.66	-.13	-.13

Grade 8 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
FT	707434	C	164	.54	.26	.14	.54	.05	.00	.19	.18	-.07	.19
FT	707435	C	163	.66	.11	.13	.66	.10	.00	.62	.06	-.28	.62
FT	707436	A	164	.83	.83	.03	.09	.05	.00	.57	.57	-.07	-.23
FT	707437	B	163	.69	.08	.69	.13	.10	.00	.68	-.23	.68	-.11
FT	707438	C	163	.73	.10	.07	.73	.10	.00	.58	-.18	.05	.58
FT	707440	C	163	.53	.10	.26	.53	.10	.00	.34	-.06	.15	.34
FT	707441	B	164	.26	.29	.26	.40	.05	.00	.28	.10	.28	-.03
FT	707442	A	163	.70	.70	.13	.07	.10	.00	.61	.61	-.06	-.17
FT	707443	B	163	.23	.47	.23	.20	.10	.00	.07	.45	.07	-.10
FT	707445	A	164	.79	.79	.05	.12	.05	.00	.42	.42	-.08	-.06
FT	707446	C	164	.42	.32	.20	.42	.05	.00	.26	-.07	.14	.26
FT	707447	C	164	.60	.21	.15	.60	.05	.00	.30	-.04	.02	.30
FT	707448	A	164	.79	.79	.10	.06	.05	.00	.47	.47	-.05	-.18
FT	708809	A	164	.60	.60	.14	.21	.05	.00	.40	.40	.08	-.22

Grade 11

Grade 11 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	651746	A	307	.59	.59	.13	.21	.07	.00	.59	.59	-.09	-.21
OP	651769	A	307	.64	.64	.15	.12	.08	.00	.62	.62	-.06	-.29
OP	651772	B	307	.58	.23	.58	.13	.06	.00	.45	.01	.45	-.25
OP	651774	B	307	.56	.14	.56	.23	.07	.00	.63	-.12	.63	-.24
OP	651785	C	307	.68	.12	.14	.68	.06	.00	.47	-.08	-.16	.47
OP	651790	C	307	.71	.09	.12	.71	.08	.00	.52	-.07	-.11	.52
OP	651792	A	307	.78	.78	.09	.07	.07	.00	.69	.69	-.25	-.25
OP	651793	B	307	.63	.13	.63	.16	.08	.00	.65	-.05	.65	-.32
OP	651798	B	307	.64	.10	.64	.20	.07	.00	.61	-.13	.61	-.25
OP	651819	B	307	.69	.11	.69	.13	.07	.00	.63	-.11	.63	-.29
OP	651822	A	307	.63	.63	.05	.25	.07	.00	.54	.54	-.13	-.16
OP	673804	A	307	.77	.77	.08	.09	.07	.00	.66	.66	-.17	-.28
OP	673806	B	307	.61	.17	.61	.15	.07	.00	.61	-.20	.61	-.16
OP	673807	A	307	.70	.70	.08	.15	.07	.00	.60	.60	-.11	-.23
OP	673808	A	307	.50	.50	.19	.24	.07	.00	.36	.36	.09	-.09
OP	676484	B	307	.69	.11	.69	.13	.08	.00	.62	-.11	.62	-.23
OP	676494	B	307	.77	.06	.77	.12	.06	.00	.69	-.15	.69	-.36
OP	676495	B	307	.76	.07	.76	.09	.07	.00	.60	-.06	.60	-.23

Grade 11 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	*N*	*p*-value	A	B	C	-	*	Total	A	B	C
OP	691177	A	307	.59	.59	.16	.18	.07	.00	.51	.51	-.08	-.14
OP	691178	C	307	.82	.09	.04	.82	.05	.00	.55	-.17	-.22	.55
OP	691179	C	307	.66	.07	.20	.66	.08	.00	.45	-.10	-.02	.45
OP	691180	B	307	.71	.10	.71	.10	.08	.00	.67	-.16	.67	-.26
OP	691183	A	307	.54	.54	.30	.09	.06	.00	.53	.53	-.15	-.17
OP	691184	A	307	.63	.63	.07	.22	.07	.00	.63	.63	-.08	-.27
OP	691185	C	307	.71	.14	.09	.71	.07	.00	.57	-.13	-.19	.57
OP	691187	C	307	.75	.06	.12	.75	.07	.00	.67	-.20	-.25	.67
OP	691189	B	307	.51	.23	.51	.18	.07	.00	.51	.01	.51	-.22
OP	691190	A	307	.67	.67	.12	.13	.07	.00	.64	.64	-.17	-.22
OP	691191	C	307	.81	.03	.08	.81	.08	.00	.59	-.05	-.17	.59
OP	691192	A	307	.87	.87	.05	.01	.07	.00	.66	.66	-.25	-.13
FT	707449	A	159	.83	.83	.04	.04	.09	.00	.73	.73	-.12	-.24
FT	707450	A	148	.24	.24	.49	.20	.07	.00	.30	.30	.30	-.32
FT	707451	A	159	.80	.80	.04	.08	.09	.00	.64	.64	-.11	-.12
FT	707452	A	159	.84	.84	.04	.03	.09	.00	.65	.65	-.01	-.19
FT	707453	A	148	.70	.70	.07	.16	.06	.00	.58	.58	-.04	-.33
FT	707454	C	148	.71	.09	.13	.71	.07	.00	.39	-.03	-.06	.39
FT	707456	C	148	.47	.31	.16	.47	.07	.00	.36	-.02	-.09	.36
FT	707457	B	159	.51	.19	.51	.21	.09	.00	.47	.19	.47	-.26
FT	707458	A	148	.63	.63	.12	.18	.07	.00	.61	.61	-.12	-.28
FT	707459	A	159	.69	.69	.09	.13	.09	.00	.68	.68	-.16	-.20
FT	707461	B	148	.52	.17	.52	.25	.06	.00	.60	-.03	.60	-.35
FT	707462	C	159	.47	.25	.19	.47	.09	.00	.32	.06	.05	.32
FT	707463	C	159	.57	.21	.14	.57	.09	.00	.43	.13	-.19	.43
FT	707464	A	148	.72	.72	.03	.18	.06	.00	.59	.59	-.09	-.29
FT	707465	A	159	.27	.27	.06	.58	.09	.00	.26	.26	-.10	.22
FT	707466	C	148	.84	.06	.03	.84	.06	.00	.48	-.18	.03	.48

APPENDIX I: OVERVIEW OF RASCH MEASUREMENT

Most psychometricians agree that, when possible, the Rasch model is the preferred approach to manage the assessment and reporting processes (Rasch, 1960; Wright & Stone, 1979; Smith & Smith, 2004; Mead, 2008). For non-statisticians, the most compelling reasons may be that the Rasch model:

- is simple to apply, and
- preserves the number-correct ordering.

Simplicity makes the methods (relatively) easy to explain and the results to interpret. The results are straightforward and readily defended in front of administrators, parents, educators, and courts. And nontrivially, the simplicity helps meet the increasingly demanding time lines for reporting.

With number-correct scoring, students with more correct responses are always considered more proficient than students with fewer correct. This is intuitively obvious, based on more than a century of experience using and interpreting such scores.

For statisticians, the attractions of the Rasch model are more esoteric, including:

- an interval scale of measurement,
- meaningful estimates of the standard errors at each raw score, and,
- simple sufficient statistics for person and item parameters.

The interval scale makes it possible to construct a ruler and place the students and the items on the same ruler, along with any performance expectations or normative information. A difference of, say, 10 scale score units will have the same meaning at any point along the scale and will have the same implications when comparing a student to earlier assessments, to an item, to normative information, to expectations, to a growth target, or to another student.

The sufficient statistics are essential to the simplicity. They make it possible to derive estimation equations for person parameters that do not involve the item parameters and for the item parameters that do not involve person parameters. It does not matter which items are used for the assessment or which students are used for the calibration, given the items are appropriate for the students.

Still more compelling, once the sufficient statistics have been extracted, there is nothing remaining in the data that is directly relevant to the measurement. Any residual information can be used to control and monitor the model. The residuals contain diagnostic information about the student's performance on specific items or clusters of items.

The model does, however, place special demands on the item development and test construction processes. In essence, the model requires that all items, while imperfect, be equally valid and reliable instances of the construct. When sufficient care is taken in item and test development, most achievement test data can adequately satisfy the demands of the model and help realize its advantages of valid measurement, quality control, and effective, timely reporting.

The Rasch Philosophy of Measurement

George Rasch (1960), to derive data that he considered worthy of the name measurement, reasoned that the interaction between the person and the item must be governed by a single person parameter (ability) and a single item parameter (difficulty). If person *A* has more ability than person *B*, then *A* is more likely than *B* to answer any item correctly. If item *i* is more difficult than item *j*, then any person is less likely to answer item *i* correctly. These two common sense assertions are axiomatic to Rasch Measurement and must hold regardless of any other characteristics of the people or the items.

This reasoning led Rasch to the simple logistic model, which had several very useful and closely related properties touched on above (Rasch, 1960, 1977):

- *Simplicity*, which allows straightforward calculations, ready communication, and interpretation of the measures (Wright & Stone, 1979),
- *Separability* of the model parameters (Rasch, 1960),
- *Sufficiency* that does not involve the parameters (Andersen, 1977),
- *Specific objectivity*, sometimes called *person-free[d]* calibration and *item-free[d]* measurement (Wright, 1968), and

Specific objectivity means that the estimation equations for ability do not involve the difficulty parameters, and the equations for difficulty do not involve the ability parameters. Specific objectivity is possible when *sufficient statistics* for the parameters exist. The sufficient statistics exist because the parameters are *separable* in the model.

In practical terms, the students can be ordered on the measurement continuum by their number correct scores and the items can be ordered on the same continuum by the number of correct responses. No other information is necessary for the measurement and anything remaining in the data can be used to control and monitor fit to the model. Specific objectivity is the cornerstone of the Rasch family of measurement models (Wright & Mok, 1980).

THE MODEL FOR MEASUREMENT

Dichotomous Items

Multiple-choice items (MC) are calibrated using the most familiar form of the model (Rasch, 1960; Wright & Panchapakesan, 1969; Wright & Stone 1979; Andrich, 1988; Fischer & Molenaar, 1995; Smith & Smith, 2004). The Rasch model applicable to dichotomously scored items, given person ability and item difficulty, can be seen in the basic statement of the model.

The probability of success for a person with ability β_v on an item with difficulty δ_i is a function of the difference between the ability of the person and the difficulty of the item; mathematically:

1. $$P(right \mid \beta_v, \delta_i) = \frac{e^{\beta_v - \delta_i}}{1 + e^{\beta_v - \delta_i}} = \frac{B_v}{B_v + \Delta_i}, \text{ where } B_v = e^{\beta_v} \text{ and } \Delta_i = e^{\delta_i}.$$

This is the probability of scoring one rather than zero on an item for which those are the only possibilities. This expression results in the familiar S-shaped curve relating the ability-difficulty metric to number correct score. Its simplicity makes it especially suited for educational assessment by drawing a clear distinction between the information (captured in the parameter estimates by the sufficient statistics) relevant to estimating the ability property that all examinees share and the information relevant to describing unique characteristics of individuals.

The model returns the identical estimated ability for every student with the same number correct score on a form. In the estimation phase, there is no distinction between the student who passes the easy item and misses the difficult items and the student who misses the easy items and passes the difficult ones. At the control and diagnostic stage, there is a great deal of difference between the two situations. In the first, there is a very clear statement of the person's true location on the construct; in the second, there are two very different statements when the two halves of the test are viewed separately.

This is the stage at which Rasch focuses his concern for the control of the model. The model itself provides a probability statement about any outcome. Typically, one examines the residuals, which can be expressed as the odds against the observed response. When these are collected and dissected, the conclusion for the first student would be nothing surprising occurred; for the second student, most of the responses were surprising. This diagnostic information can be put to good use when reporting and interpreting the test scores.

The strong measurement model is the instrument for understanding the scores, whether it concludes the student was accurately and validly measured or not. It will help lead the teacher and students to the most appropriate next steps.

CALIBRATION: ESTIMATING ITEM DIFFICULTIES

DRC uses the Rasch measurement model to estimate the student proficiencies and to control the assessment process. The model provides straightforward algorithms to compute ability estimates on a unidimensional, equal-interval scale of measurement from the number correct scores.

WINSTEPS (2015) implements the joint maximum likelihood estimation procedure (Linacre, 2015) for estimating item difficulties. This calibration software is commercially available and widely used in the testing industry. In addition to performing item calibration and ability estimation, the capabilities of the WINSTEPS program will be utilized to assess unidimensionality, item interdependence, and other deviations from the model. The program also has several options for exploring the person-item residual matrix (Mead, 1976, 2008; Ludlow 1986; Smith, 2000).

In the simplest formulation, estimating either the item difficulty or the person ability involves solving the fundamental equation that states the observed score must equal the expected score. For example, the ability estimate for a person who scores *r* on a set of *L* items is derived from:

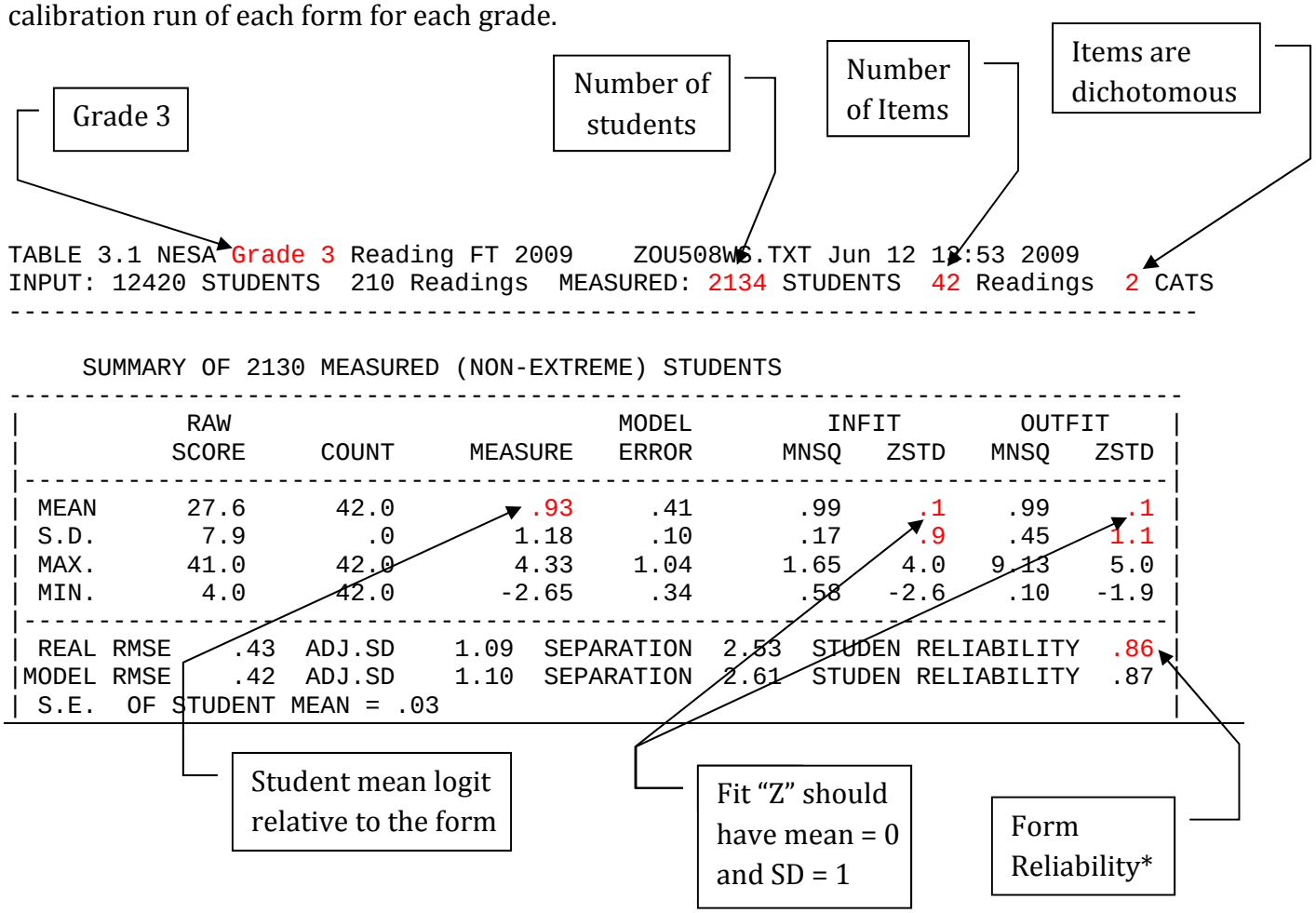
2. $r_v = \sum_{i=1}^{L} \sum_{k=0}^{m_i} k\hat{P}_{vik}$, where $\hat{P}_{vik}$ is defined by (1) with estimates replacing the parameters.

Rasch calibration and scaling have become relatively routine operations. Members of the DRC psychometric staff have been instrumental in the development of the Rasch model and its application over several decades and are intimately familiar with the software for its application.

Appendix J: Reading, Mathematics, and Science Operational Form Calibration Summaries

Winsteps Table 3.1 Interpretation Guide

Tables in this Appendix are taken directly from the Winsteps output file and summarize calibration run of each form for each grade.



*Form Reliability run in Winsteps is run on an anchored file

Reading

Grade 3

TABLE 3.1 State NE READING Spring 2015 RE03_TR_Fixed_OUT.txt Sep 4 2015 8:41
INPUT: 2189 Student 25 READ REPORTED: 265 Student 25 READ 2 CATS WINSTEPS 3.90.0

SUMMARY OF 233 MEASURED (NON-EXTREME) Student

	TOTAL			MODEL		INFIT		OUTFIT	
	SCORE	COUNT	MEASURE	S.E.	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	17.0	25.0	1.0518	.5721	.99	.1	.96	.1
P.SD	5.8	.0	1.4383	.1804	.14	.7	.33	.8
S.SD	5.8	.0	1.4414	.1808	.14	.7	.33	.8
MAX.	24.0	25.0	3.4331	1.0372	1.50	2.9	2.57	2.9
MIN.	1.0	25.0	-3.3903	.4220	.70	-2.3	.23	-2.1

REAL RMSE	.6115	TRUE SD	1.3018	SEPARATION	2.13	Studen RELIABILITY .82
MODEL RMSE	.5999	TRUE SD	1.3072	SEPARATION	2.18	Studen RELIABILITY .83
S.E. OF Student MEAN = .0944						

Grade 4

TABLE 3.1 State NE READING Spring 2015 RE04_TR_Fixed_OUT.txt Sep 4 2015 8:42
INPUT: 2189 Student 25 READ REPORTED: 291 Student 25 READ 2 CATS WINSTEPS 3.90.0

SUMMARY OF 255 MEASURED (NON-EXTREME) Student

	TOTAL			MODEL		INFIT		OUTFIT	
	SCORE	COUNT	MEASURE	S.E.	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	16.2	25.0	.8892	.5690	.99	.1	.98	.1
P.SD	6.2	.0	1.5271	.1824	.13	.7	.41	.8
S.SD	6.3	.0	1.5301	.1828	.13	.7	.42	.8
MAX.	24.0	25.0	3.4251	1.0338	1.39	2.1	4.93	2.6
MIN.	1.0	25.0	-3.3796	.4221	.71	-1.8	.35	-1.8

REAL RMSE	.6086	TRUE SD	1.4006	SEPARATION	2.30	Studen RELIABILITY .84
MODEL RMSE	.5975	TRUE SD	1.4054	SEPARATION	2.35	Studen RELIABILITY .85
S.E. OF Student MEAN = .0958						

Grade 5

TABLE 3.1 State NE READING Spring 2015 RE05_TR_Fixed_OUT.txt Sep 4 2015 8:42
INPUT: 2189 Student 25 READ REPORTED: 332 Student 25 READ 2 CATS WINSTEPS 3.90.0

SUMMARY OF 304 MEASURED (NON-EXTREME) Student

	TOTAL			MODEL		INFIT		OUTFIT	
	SCORE	COUNT	MEASURE	S.E.	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	16.8	25.0	1.1213	.5502	1.01	.2	1.03	.2
P.SD	5.5	.0	1.3097	.1838	.09	.6	.27	.7
S.SD	5.5	.0	1.3118	.1841	.09	.6	.27	.7
MAX.	24.0	25.0	3.4361	1.0292	1.37	3.3	2.98	3.3
MIN.	1.0	25.0	-3.1870	.4136	.73	-2.9	.53	-2.8

REAL RMSE	.5896	TRUE SD	1.1694	SEPARATION	1.98	Studen RELIABILITY .80
MODEL RMSE	.5801	TRUE SD	1.1742	SEPARATION	2.02	Studen RELIABILITY .80
S.E. OF Student MEAN = .0752						

Grade 6

```
TABLE 3.1 State NE READING Spring 2015  RE06_TR_Fixed_OUT.txt  Sep  4 2015  8:42
INPUT: 2189 Student  25 READ  REPORTED: 331 Student  25 READ  2 CATS WINSTEPS 3.90.0
-------------------------------------------------------------------------------

     SUMMARY OF 280 MEASURED (NON-EXTREME) Student
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE    S.E.      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      16.5      25.0      1.2882   .5548       .99     .1   1.01     .1 |
| P.SD       5.8        .0      1.3749   .1773       .12     .7    .39     .8 |
| S.SD       5.8        .0      1.3774   .1776       .12     .7    .39     .8 |
| MAX.      24.0      25.0      3.6948  1.0320      1.33    2.8   3.48    2.9 |
| MIN.       1.0      25.0     -3.0118   .4169       .71   -2.8    .32   -2.5 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5943 TRUE SD  1.2398  SEPARATION  2.09  Studen RELIABILITY  .81 |
|MODEL RMSE  .5824 TRUE SD  1.2455  SEPARATION  2.14  Studen RELIABILITY  .82 |
| S.E. OF Student MEAN = .0823                                                |
-------------------------------------------------------------------------------
```

Grade 7

```
TABLE 3.1 State NE READING Spring 2015  RE07_TR_Fixed_OUT.txt  Sep  4 2015  8:43
INPUT: 2189 Student  25 READ  REPORTED: 327 Student  25 READ  2 CATS WINSTEPS 3.90.0
-------------------------------------------------------------------------------

     SUMMARY OF 296 MEASURED (NON-EXTREME) Student
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE    S.E.      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      16.5      25.0      1.0132   .5454      1.00     .1   1.02     .1 |
| P.SD       5.5        .0      1.3103   .1743       .12     .8    .40     .9 |
| S.SD       5.5        .0      1.3126   .1746       .12     .8    .40     .9 |
| MAX.      24.0      25.0      3.4241  1.0309      1.39    3.1   4.49    3.3 |
| MIN.       2.0      25.0     -2.5486   .4181       .70   -2.5    .48   -2.2 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5841 TRUE SD  1.1729  SEPARATION  2.01  Studen RELIABILITY  .80 |
|MODEL RMSE  .5726 TRUE SD  1.1786  SEPARATION  2.06  Studen RELIABILITY  .81 |
| S.E. OF Student MEAN = .0763                                                |
-------------------------------------------------------------------------------
```

Grade 8

```
TABLE 3.1 State NE READING Spring 2015  RE08_TR_Fixed_OUT.txt  Sep  4 2015  8:43
INPUT: 2189 Student  25 READ  REPORTED: 334 Student  25 READ  2 CATS WINSTEPS 3.90.0
-------------------------------------------------------------------------------

     SUMMARY OF 304 MEASURED (NON-EXTREME) Student
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE    S.E.      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      17.2      25.0      1.6505   .5587      1.00     .1   1.00     .1 |
| P.SD       5.5        .0      1.3191   .1809       .11     .7    .30     .8 |
| S.SD       5.5        .0      1.3213   .1812       .11     .7    .30     .8 |
| MAX.      24.0      25.0      3.8963  1.0295      1.40    3.1   2.39    3.2 |
| MIN.       1.0      25.0     -2.7361   .4140       .74   -2.3    .32   -2.1 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5971 TRUE SD  1.1762  SEPARATION  1.97  Studen RELIABILITY  .80 |
|MODEL RMSE  .5872 TRUE SD  1.1812  SEPARATION  2.01  Studen RELIABILITY  .80 |
| S.E. OF Student MEAN = .0758                                                |
-------------------------------------------------------------------------------
```

Grade 11

```
TABLE 3.1 State NE READING Spring 2015  RE11_TR_Fixed_OUT.txtd Sep  4 2015  8:43
INPUT: 2189 Student  25 READ  REPORTED: 309 Student  25 READ  2 CATS WINSTEPS 3.90.0
-------------------------------------------------------------------------------

     SUMMARY OF 289 MEASURED (NON-EXTREME) Student
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE    S.E.      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      16.6      25.0      1.0998   .5558      1.00     .1    .99     .1 |
| P.SD       5.5         .0      1.3687   .1816       .15     .8    .33     .8 |
| S.SD       5.5         .0      1.3711   .1819       .15     .8    .33     .8 |
| MAX.      24.0      25.0      3.5674  1.0364      1.59    4.2   2.58    4.2 |
| MIN.       1.0      25.0     -3.2594   .4223       .62   -2.1    .28   -1.9 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5999 TRUE SD  1.2302  SEPARATION  2.05  Studen RELIABILITY  .81 |
|MODEL RMSE  .5847 TRUE SD  1.2375  SEPARATION  2.12  Studen RELIABILITY  .82 |
| S.E. OF Student MEAN = .0807                                                |
-------------------------------------------------------------------------------
```

Mathematics

Grade 3

```
TABLE 3.1 State NE MATH Spring 2015 Gra MA03_TR_fixed_OUT.txt  Aug 31 2015  9:21
INPUT: 2203 Student  25 MATH  REPORTED: 256 Student  25 MATH  2 CATS WINSTEPS 3.90.0
-------------------------------------------------------------------------------

     SUMMARY OF 230 MEASURED (NON-EXTREME) Student
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE    S.E.      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      17.5      25.0       .9593   .5889      1.00     .1    .95     .1 |
| P.SD       5.6         .0      1.4847   .1817       .16     .8    .53     .8 |
| S.SD       5.7         .0      1.4879   .1821       .16     .8    .53     .8 |
| MAX.      24.0      25.0      3.2488  1.0456      1.60    2.9   6.44    3.0 |
| MIN.       1.0      25.0     -3.8367   .4340       .74   -1.9    .34   -1.7 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .6306 TRUE SD  1.3441  SEPARATION  2.13  Studen RELIABILITY  .82 |
|MODEL RMSE  .6163 TRUE SD  1.3507  SEPARATION  2.19  Studen RELIABILITY  .83 |
| S.E. OF Student MEAN = .0981                                                |
-------------------------------------------------------------------------------
```

Grade 4

```
TABLE 3.1 State NE MATH Spring 2015 Gra MA04_TR_fixed_OUT.txt  Aug 31 2015  9:22
INPUT: 2203 Student  30 MATH  REPORTED: 289 Student  30 MATH  2 CATS WINSTEPS 3.90.0
-------------------------------------------------------------------------------

     SUMMARY OF 257 MEASURED (NON-EXTREME) Student
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE    S.E.      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      20.4      30.0      1.1077   .5378      1.00     .2    .94     .1 |
| P.SD       6.8         .0      1.4860   .1998       .16     .9    .36    1.0 |
| S.SD       6.8         .0      1.4889   .2002       .16     .9    .36    1.0 |
| MAX.      29.0      30.0      3.6449  1.0307      1.67    4.4   2.51    4.3 |
| MIN.       1.0      30.0     -3.6252   .3893       .66   -2.0    .33   -2.0 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5850 TRUE SD  1.3660  SEPARATION  2.33  Studen RELIABILITY  .85 |
|MODEL RMSE  .5737 TRUE SD  1.3708  SEPARATION  2.39  Studen RELIABILITY  .85 |
| S.E. OF Student MEAN = .0929                                                |
```

Grade 5

TABLE 3.1 State NE MATH Spring 2013 Gra MA05_TR_fixed_OUT.txt Aug 31 2015 9:22
INPUT: 2203 Student 30 MATH REPORTED: 334 Student 30 MATH 2 CATS WINSTEPS 3.90.0

SUMMARY OF 305 MEASURED (NON-EXTREME) Student

	TOTAL			MODEL		INFIT		OUTFIT	
	SCORE	COUNT	MEASURE	S.E.	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	20.1	30.0	.8754	.5007	1.00	.1	.97	.1
P.SD	6.4	.0	1.3135	.1539	.16	.9	.33	1.0
S.SD	6.4	.0	1.3157	.1542	.16	.9	.33	1.0
MAX.	29.0	30.0	3.5269	1.0309	1.53	3.8	2.83	3.5
MIN.	1.0	30.0	-3.7130	.3877	.66	-2.7	.26	-2.5
REAL RMSE	.5362	TRUE SD	1.1991	SEPARATION	2.24	Studen RELIABILITY	.83	
MODEL RMSE	.5239	TRUE SD	1.2045	SEPARATION	2.30	Studen RELIABILITY	.84	
S.E. OF Student MEAN = .0753								

Grade 6

TABLE 3.1 State NE MATH Spring 2015 Gra MA06_TR_fixed_OUT.txt Aug 31 2015 9:23
INPUT: 2203 Student 30 MATH REPORTED: 339 Student 30 MATH 2 CATS WINSTEPS 3.90.0

SUMMARY OF 301 MEASURED (NON-EXTREME) Student

	TOTAL			MODEL		INFIT		OUTFIT	
	SCORE	COUNT	MEASURE	S.E.	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	19.9	30.0	1.0908	.4994	1.00	.1	.98	.0
P.SD	6.6	.0	1.3026	.1597	.12	.8	.28	.9
S.SD	6.7	.0	1.3047	.1600	.12	.8	.28	.9
MAX.	29.0	30.0	3.6590	1.0257	1.40	3.0	3.20	2.8
MIN.	6.0	30.0	-1.3977	.3830	.71	-2.2	.54	-2.2
REAL RMSE	.5329	TRUE SD	1.1886	SEPARATION	2.23	Studen RELIABILITY	.83	
MODEL RMSE	.5244	TRUE SD	1.1924	SEPARATION	2.27	Studen RELIABILITY	.84	
S.E. OF Student MEAN = .0752								

Grade 7

TABLE 3.1 State NE MATH Spring 2015 Gra MA07_TR_fixed_OUT.txt Aug 31 2015 9:23
INPUT: 2203 Student 30 MATH REPORTED: 329 Student 30 MATH 2 CATS WINSTEPS 3.90.0

SUMMARY OF 308 MEASURED (NON-EXTREME) Student

	TOTAL			MODEL		INFIT		OUTFIT	
	SCORE	COUNT	MEASURE	S.E.	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	20.6	30.0	.9861	.5294	1.02	.2	.97	.1
P.SD	6.7	.0	1.3989	.1797	.14	.8	.31	.9
S.SD	6.7	.0	1.4012	.1800	.14	.8	.31	.9
MAX.	29.0	30.0	3.4490	1.0294	1.65	3.4	3.22	3.7
MIN.	2.0	30.0	-3.0575	.3892	.68	-2.2	.37	-2.0
REAL RMSE	.5718	TRUE SD	1.2767	SEPARATION	2.23	Studen RELIABILITY	.83	
MODEL RMSE	.5591	TRUE SD	1.2824	SEPARATION	2.29	Studen RELIABILITY	.84	
S.E. OF Student MEAN = .0798								

Grade 8

TABLE 3.1 State NE MATH Spring 2015 Gra MA08_TR_fixed_OUT.txt Aug 31 2015 9:23
INPUT: 2203 Student 30 MATH REPORTED: 338 Student 30 MATH 2 CATS WINSTEPS 3.90.0

SUMMARY OF 313 MEASURED (NON-EXTREME) Student

	TOTAL			MODEL		INFIT		OUTFIT	
	SCORE	COUNT	MEASURE	S.E.	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	19.9	30.0	.7883	.4908	1.00	.1	.97	.1
P.SD	6.2	.0	1.2686	.1422	.15	.8	.30	.9
S.SD	6.2	.0	1.2706	.1424	.15	.8	.30	.9
MAX.	29.0	30.0	3.5202	1.0320	1.51	3.7	2.38	3.7
MIN.	1.0	30.0	-3.7715	.3894	.66	-2.0	.31	-1.9

REAL RMSE	.5229	TRUE SD	1.1558	SEPARATION	2.21	Studen RELIABILITY	.83
MODEL RMSE	.5110	TRUE SD	1.1611	SEPARATION	2.27	Studen RELIABILITY	.84
S.E. OF Student MEAN = .0718							

Grade 11

TABLE 3.1 State NE MATH Spring 2015 Gra MA11_TR_fixed_OUT.txt Aug 31 2015 9:24
INPUT: 2203 Student 30 MATH REPORTED: 318 Student 30 MATH 2 CATS WINSTEPS 3.90.0

SUMMARY OF 301 MEASURED (NON-EXTREME) Student

	TOTAL			MODEL		INFIT		OUTFIT	
	SCORE	COUNT	MEASURE	S.E.	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	19.9	30.0	.6419	.4955	1.01	.1	.96	.1
P.SD	6.1	.0	1.2905	.1447	.18	.9	.39	1.0
S.SD	6.1	.0	1.2927	.1449	.18	.9	.39	1.0
MAX.	29.0	30.0	3.4213	1.0355	1.67	3.4	3.34	3.5
MIN.	1.0	30.0	-4.0851	.4014	.68	-2.2	.34	-2.1

REAL RMSE	.5301	TRUE SD	1.1766	SEPARATION	2.22	Studen RELIABILITY	.83
MODEL RMSE	.5162	TRUE SD	1.1828	SEPARATION	2.29	Studen RELIABILITY	.84
S.E. OF Student MEAN = .0745							

Science

Grade 5

TABLE 3.1 State NE SCIENCE Spring 2015 SC05_TR_fixed_OUT.txt Sep 4 2015 9: 0
INPUT: 959 Student 25 SCIE REPORTED: 325 Student 25 SCIE 2 CATS WINSTEPS 3.90.0

SUMMARY OF 291 MEASURED (NON-EXTREME) Student

	TOTAL			MODEL		INFIT		OUTFIT	
	SCORE	COUNT	MEASURE	S.E.	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	16.8	25.0	-.1603	.5447	1.01	.2	1.01	.2
P.SD	5.4	.0	1.3053	.1582	.14	.7	.39	.8
S.SD	5.4	.0	1.3076	.1585	.14	.7	.39	.8
MAX.	24.0	25.0	2.2730	1.0430	1.44	3.0	3.40	2.9
MIN.	1.0	25.0	-4.6352	.4254	.70	-2.4	.20	-1.9

REAL RMSE	.5810	TRUE SD	1.1689	SEPARATION	2.01	Studen RELIABILITY	.80
MODEL RMSE	.5672	TRUE SD	1.1756	SEPARATION	2.07	Studen RELIABILITY	.81
S.E. OF Student MEAN = .0767							

Grade 8

```
TABLE 3.1 State NE SCIENCE Spring 2015  SC08_TR_fixed_OUT.txt  Sep  4 2015  9: 1
INPUT: 959 Student  25 SCIE  REPORTED: 327 Student  25 SCIE  2 CATS WINSTEPS 3.90.0
-------------------------------------------------------------------------------

     SUMMARY OF 302 MEASURED (NON-EXTREME) Student
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE    S.E.      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      17.3      25.0      -.1326   .5612      1.00     .1    .97     .0 |
| P.SD       5.2        .0      1.3127   .1859       .12     .7    .31     .8 |
| S.SD       5.3        .0      1.3149   .1862       .12     .7    .31     .8 |
| MAX.      24.0      25.0      2.1386  1.0363      1.53    3.3   3.19    3.4 |
| MIN.       1.0      25.0     -4.6753   .4219       .79   -1.8    .37   -1.6 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .6025 TRUE SD  1.1663  SEPARATION  1.94  Studen RELIABILITY  .79 |
|MODEL RMSE  .5912 TRUE SD  1.1721  SEPARATION  1.98  Studen RELIABILITY  .80 |
| S.E. OF Student MEAN = .0757                                                |
-------------------------------------------------------------------------------
```

Grade 11

```
TABLE 3.1 State NE SCIENCE Spring 2015  SC11_TR_fixed_OUT.txtd Sep  4 2015  9: 1
INPUT: 959 Student  30 SCIE  REPORTED: 307 Student  30 SCIE  2 CATS WINSTEPS 3.90.0
-------------------------------------------------------------------------------

     SUMMARY OF 267 MEASURED (NON-EXTREME) Student
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE    S.E.      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      20.6      30.0      -.0192   .5434      1.00     .1    .94     .1 |
| P.SD       6.9        .0      1.4813   .2060       .11     .7    .35     .7 |
| S.SD       6.9        .0      1.4841   .2064       .11     .7    .35     .7 |
| MAX.      29.0      30.0      2.3984  1.0344      1.48    2.8   4.81    2.5 |
| MIN.       1.0      30.0     -4.8213   .3850       .74   -2.6    .35   -2.2 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5891 TRUE SD  1.3592  SEPARATION  2.31  Studen RELIABILITY  .84 |
|MODEL RMSE  .5811 TRUE SD  1.3626  SEPARATION  2.34  Studen RELIABILITY  .85 |
| S.E. OF Student MEAN = .0908                                                |
-------------------------------------------------------------------------------
```

Appendix K: Reading Item Bank Difficulties

Grade 3 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	READ
1	142	265	.7082A	.1525	1.02	.4	1.08	.6	.52	.54	72.6	73.1	.1650	650570_OP
2	181	265	-.0853A	.1657	.88	-1.4	.83	-1.0	.63	.57	80.9	77.9	.0002	650577_OP
3	173	265	.1927A	.1596	.80	-2.9	.66	-2.6	.66	.56	82.2	75.9	-.0650	650578_OP
4	197	265	-.5533A	.1799	.79	-2.3	.62	-2.0	.69	.58	85.9	81.8	-.0068	650579_OP
5	98	265	1.8540A	.1538	1.32	4.3	1.38	2.0	.32	.46	60.6	73.7	.0253	650580_OP
6	186	265	-.0420A	.1646	.93	-.9	.76	-1.6	.59	.57	78.8	77.6	-.1848	650582_OP
7	184	265	-.0952A	.1659	.91	-1.1	1.02	.2	.61	.57	83.0	78.0	-.0738	650583_OP
8	203	265	-.8265A	.1908	.77	-2.3	.64	-1.6	.73	.59	85.9	84.5	.0639	650586_OP
9	140	265	1.0660A	.1505	1.00	.0	.98	-.1	.51	.52	72.2	72.3	-.1444	650627_OP
10	201	265	-.4722A	.1770	.90	-1.0	.71	-1.5	.60	.58	82.2	81.1	-.2233	650631_OP
11	148	265	.8543A	.1514	.84	-2.5	.81	-1.5	.61	.53	78.4	72.7	-.1175	650716_OP
12	166	265	.1278A	.1609	1.21	2.6	1.14	.9	.47	.56	71.0	76.4	.1781	675833_OP
13	204	265	-.7495A	.1875	.74	-2.6	.46	-2.8	.72	.59	87.6	83.7	-.0496	675835_OP
14	178	265	.2478A	.1586	.77	-3.3	.61	-3.0	.67	.56	81.7	75.6	-.2527	691033_OP
15	199	265	-.3661A	.1735	.98	-.2	.90	-.5	.54	.58	80.1	80.2	-.2623	691034_OP
16	151	265	.4598A	.1553	.96	-.5	1.03	.3	.59	.55	78.4	74.3	.2059	691036_OP
17	194	265	-.6751A	.1845	1.44	3.8	1.74	2.8	.39	.58	78.8	83.0	.2119	691039_OP
18	159	265	.4759A	.1551	1.06	.9	1.01	.1	.51	.55	71.0	74.2	.0005	691040_OP
19	219	265	-1.0105A	.1993	.96	-.3	1.41	1.5	.53	.59	88.0	86.1	-.4166	691041_OP
20	164	265	-.1145A	.1664	1.11	1.3	1.00	.1	.59	.57	75.5	78.1	.4706	691042_OP
21	148	265	.4143A	.1560	.82	-2.7	.71	-2.3	.67	.55	79.3	74.5	.3212	691043_OP
22	182	265	-.1661A	.1678	.94	-.7	.76	-1.5	.61	.57	78.8	78.5	.0538	691044_OP
23	188	265	-.3102A	.1718	1.12	1.3	1.08	.5	.52	.58	77.2	79.7	.0271	691045_OP
24	162	265	.6998A	.1526	1.28	3.8	1.33	2.3	.38	.54	62.7	73.2	-.2949	691046_OP
25	215	265	-1.4316A	.2227	.99	.0	.76	-.7	.66	.60	88.8	89.5	.1950	691048_OP
26	81	141	.6079	.2096	.79	-2.4	.70	-1.8	.65	.54	82.4	74.0	.0013	707756_FT
27	79	124	.2659	.2323	1.14	1.3	1.02	.2	.48	.56	64.5	74.9	-.0004	707757_FT
28	89	124	-.3155	.2524	.77	-1.9	.59	-1.6	.70	.57	82.7	79.3	-.0007	707759_FT
29	64	124	1.0279	.2215	1.34	3.4	1.48	2.3	.35	.53	60.0	71.7	.0001	707760_FT
30	74	124	.5287	.2267	1.24	2.3	1.31	1.5	.42	.55	61.8	73.4	-.0002	707761_FT
31	63	124	1.0769	.2213	1.03	.4	.99	.0	.51	.52	71.8	71.7	.0002	707763_FT
32	38	124	2.3595	.2394	1.25	2.0	1.45	1.5	.32	.44	70.0	76.9	.0008	707764_FT
33	73	141	.9521	.2058	1.36	3.7	1.46	2.3	.33	.52	60.3	73.0	.0014	707765_FT
34	100	124	-1.1451	.3044	.92	-.3	1.00	.1	.63	.59	88.2	87.2	-.0008	707766_FT
35	97	141	-.1497	.2287	.98	-.1	.77	-1.0	.59	.57	78.6	78.8	.0010	707767_FT
36	102	141	-.4229	.2395	1.01	.1	.98	.0	.57	.58	80.2	81.0	.0009	707768_FT
37	95	141	-.0468	.2252	.78	-2.1	.60	-2.0	.69	.57	84.7	78.0	.0010	707769_FT
38	91	124	-.4460	.2586	.79	-1.6	.57	-1.6	.70	.58	82.7	80.5	-.0007	707770_FT
39	83	141	.5195	.2111	1.35	3.4	1.49	2.4	.36	.54	63.4	74.4	.0013	707771_FT
40	72	141	.9944	.2055	1.06	.7	.99	.0	.49	.52	68.7	72.9	.0014	707772_FT
41	78	141	.7385	.2079	1.10	1.1	.99	.0	.49	.53	69.5	73.5	.0013	708015_FT
MEAN	138.1	213.3	.1646	.1930	1.01	.1	.97	-.2			76.4	77.5		
P.SD	52.1	64.9	.7734	.0363	.19	2.1	.31	1.6			8.4	4.5		

Grade 4 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	READ
1	211	291	-.8372A	.1766	1.00	.0	1.05	.3	.66	.58	81.8	83.1	.2812	650962_OP
2	202	291	-.4458A	.1651	.91	-1.1	.68	-1.8	.66	.58	81.4	79.8	.1329	650970_OP
3	197	291	-.0954A	.1574	.93	-.9	.90	-.6	.61	.58	81.4	77.5	-.0906	650972_OP
4	195	291	-.1212A	.1579	.90	-1.4	.74	-1.7	.64	.58	80.7	77.7	-.0139	650974_OP
5	199	291	-.3899A	.1637	.92	-.9	.80	-1.1	.65	.58	78.8	79.4	.1549	650976_OP
6	210	291	-.4052A	.1641	.86	-1.7	.66	-2.1	.64	.58	79.9	79.5	-.1270	650990_OP
7	211	291	-.2183A	.1598	.86	-1.9	.70	-1.9	.62	.58	79.9	78.3	-.3448	675851_OP
8	207	291	-.1137A	.1577	.66	-5.0	.48	-4.0	.73	.58	85.2	77.7	-.3377	675852_OP
9	229	291	-1.1208A	.1870	1.04	.4	.69	-1.2	.61	.58	82.2	85.3	.0001	675853_OP
10	141	291	1.3157A	.1472	1.03	.5	1.15	1.1	.51	.53	73.9	73.9	-.2230	691049_OP
11	157	291	.5161A	.1492	1.29	3.9	1.44	3.0	.43	.57	64.8	74.8	.2232	691050_OP
12	215	291	-.3386A	.1625	.81	-2.4	.72	-1.7	.64	.58	83.0	79.0	-.3402	691051_OP
13	203	291	-.3069A	.1617	.85	-1.9	.72	-1.7	.65	.58	83.7	78.8	-.0339	691052_OP
14	128	291	1.3658A	.1474	1.09	1.4	1.25	1.6	.46	.53	74.2	74.0	.0016	691053_OP
15	153	291	.6215A	.1484	1.02	.3	1.01	.2	.56	.56	73.1	74.5	.2044	691054_OP
16	168	291	.1144A	.1539	1.15	2.0	1.24	1.6	.54	.58	73.5	76.4	.3838	691055_OP
17	245	291	-1.3814A	.1984	.87	-1.1	1.14	.5	.52	.57	90.2	87.2	-.3964	691056_OP
18	141	291	1.0000A	.1468	1.00	.0	.97	-.1	.53	.55	75.4	73.8	.0852	691057_OP
19	190	291	-.0913A	.1573	1.02	.2	1.01	.1	.58	.58	78.0	77.5	.0800	691058_OP
20	146	291	1.0757A	.1468	1.15	2.2	1.17	1.2	.48	.54	68.9	73.8	-.0950	691059_OP
21	180	291	-.1678A	.1588	1.25	3.0	1.40	2.2	.50	.58	72.0	78.0	.3946	691060_OP
22	209	291	-.6670A	.1712	.91	-.9	.83	-.8	.65	.58	83.7	81.7	.1660	691061_OP
23	174	291	.5517A	.1489	1.06	.8	.98	-.1	.53	.57	70.5	74.7	-.1875	691062_OP
24	168	291	.5870A	.1486	.99	-.1	.88	-.9	.56	.56	72.7	74.6	-.0883	691063_OP
25	196	291	-.0858A	.1572	.86	-1.9	.68	-2.3	.65	.58	80.3	77.5	-.0748	691064_OP
26	105	146	-.6093	.2357	.90	-.8	.77	-.8	.63	.58	82.6	81.4	.0022	707773_FT
27	91	146	.0865	.2133	1.12	1.2	.97	-.1	.50	.56	67.4	76.3	.0026	707774_FT
28	74	145	1.0668	.2134	1.18	1.8	1.40	1.9	.47	.57	68.3	73.9	-.0006	707775_FT
29	87	145	.4681	.2172	1.02	.2	.89	-.5	.58	.59	72.2	75.2	-.0010	707776_FT
30	104	146	-.5544	.2334	.88	-1.0	.72	-1.1	.65	.58	83.3	80.9	.0022	707777_FT
31	62	146	1.3061	.2026	1.24	2.5	1.26	1.2	.38	.50	65.2	73.7	.0034	707778_FT
32	103	145	-.3373	.2345	1.10	.9	1.55	1.9	.52	.59	74.6	79.0	-.0015	707779_FT
33	92	145	.2287	.2208	1.19	1.7	1.13	.7	.50	.59	71.4	76.1	-.0012	707780_FT
34	72	146	.8971	.2026	1.02	.2	.91	-.4	.52	.53	71.7	73.8	.0031	707781_FT
35	62	146	1.3061	.2026	1.40	4.0	1.49	2.1	.30	.50	58.0	73.7	.0034	707782_FT
36	46	145	2.4211	.2343	1.21	1.7	1.69	1.9	.40	.50	73.8	79.1	-.0001	707783_FT
37	37	146	2.3987	.2206	1.20	1.8	1.28	.9	.30	.40	76.1	78.2	.0039	707784_FT
38	97	145	-.0202	.2259	.89	-1.0	1.04	.3	.65	.59	77.0	77.3	-.0013	707785_FT
39	120	145	-1.4548	.2876	.79	-1.3	.63	-.8	.65	.56	90.5	86.9	-.0021	707786_FT
40	127	145	-2.1391	.3436	.77	-1.0	.46	-.9	.63	.54	92.9	91.5	-.0023	707787_FT
41	85	146	.3522	.2082	.92	-.9	.88	-.6	.60	.55	77.5	75.0	.0027	707789_FT
MEAN	147.3	234.2	.1409	.1876	1.01	.1	.98	-.1			76.9	78.1		
P.SD	56.8	71.0	.9406	.0423	.16	1.8	.30	1.5			7.2	4.1		

Grade 5 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL CORR.	EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	READ
1	177	332	.8160A	.1304	1.25	4.4	1.24	2.4	.32	.48	60.3	71.1	.0007	651121_OP
2	223	332	-.3779A	.1495	1.25	3.1	1.41	2.3	.46	.52	72.9	79.3	.3691	651127_OP
3	215	332	.4045A	.1339	1.05	.8	.98	-.1	.45	.50	67.1	72.5	-.2675	651129_OP
4	210	332	.4268A	.1336	.82	-3.4	.71	-3.0	.61	.50	80.3	72.4	-.1945	651130_OP
5	203	332	.3658A	.1344	.91	-1.5	.85	-1.4	.56	.50	78.1	72.7	-.0027	651132_OP
6	200	332	.0860A	.1387	1.15	2.4	1.15	1.2	.47	.51	69.0	74.7	.3344	651141_OP
7	200	332	.6380A	.1316	.84	-3.0	.81	-2.1	.58	.49	76.8	71.5	-.2232	651142_OP
8	212	332	.0156A	.1400	1.00	.0	1.02	.2	.54	.51	75.5	75.3	.1847	651147_OP
9	225	332	-.1884A	.1445	.86	-2.1	.69	-2.3	.64	.52	80.6	77.3	.1374	651152_OP
10	236	332	-.1302A	.1431	.86	-2.1	.76	-1.8	.59	.52	79.7	76.7	-.1547	651156_OP
11	208	332	.1065A	.1383	1.01	.1	1.13	1.1	.54	.51	73.5	74.6	.1677	673822_OP
12	176	332	.9229A	.1300	1.00	.0	.93	-.7	.48	.48	68.4	71.0	-.0892	673824_OP
13	201	332	.3946A	.1340	1.20	3.3	1.38	3.2	.37	.50	65.2	72.5	.0046	673825_OP
14	205	332	.6382A	.1316	.83	-3.3	.73	-3.1	.60	.49	77.1	71.5	-.3149	675879_OP
15	214	332	.3358A	.1347	1.16	2.6	1.25	2.2	.39	.50	68.7	72.9	-.1784	691065_OP
16	268	332	-1.1087A	.1776	.86	-1.3	.55	-2.2	.65	.54	86.1	86.8	.0108	691067_OP
17	189	332	.9038A	.1301	1.06	1.1	1.01	.1	.45	.48	68.1	71.0	-.2942	691070_OP
18	187	332	.3786A	.1342	.88	-2.2	.76	-2.3	.61	.50	76.1	72.6	.2688	691071_OP
19	254	332	-.8622A	.1664	1.07	.7	1.23	1.1	.53	.53	83.5	84.4	.1623	691073_OP
20	180	332	.6660A	.1313	.96	-.7	.89	-1.1	.52	.49	72.6	71.4	.1001	691074_OP
21	208	332	.1194A	.1381	.89	-1.8	.75	-2.2	.61	.51	77.1	74.5	.1546	691075_OP
22	254	332	-.7033A	.1602	1.14	1.5	1.97	4.0	.41	.53	82.6	82.7	.0005	691077_OP
23	245	332	-.4835A	.1527	1.00	.0	.87	-.7	.52	.52	80.0	80.4	.0006	691078_OP
24	204	332	.3358A	.1347	.98	-.4	.98	-.1	.52	.50	73.2	72.9	.0094	691079_OP
25	242	332	-.3392A	.1484	.85	-2.1	.74	-1.7	.60	.52	82.3	78.9	-.0765	691080_OP
26	87	156	.6033	.1902	.89	-1.6	.82	-1.4	.56	.48	76.2	70.2	-.0001	707790_FT
27	31	176	3.1743	.2237	1.46	3.2	2.46	3.5	.03	.33	79.0	83.3	.0023	707791_FT
28	58	156	1.6330	.1915	1.30	3.6	1.50	3.1	.20	.42	62.9	70.9	-.0001	707792_FT
29	75	176	1.4963	.1809	1.34	3.8	1.35	2.2	.27	.47	59.3	72.8	.0018	707793_FT
30	34	156	2.6236	.2209	1.33	2.6	2.11	3.6	.09	.34	74.8	79.9	.0000	707794_FT
31	123	176	-.1330	.1978	.75	-2.9	.55	-2.5	.68	.51	81.4	77.2	.0013	707798_FT
32	101	176	.6496	.1824	.98	-.2	.96	-.3	.51	.50	71.3	72.8	.0015	707799_FT
33	105	176	.5154	.1840	1.13	1.6	1.14	.9	.42	.51	67.7	73.1	.0015	707800_FT
34	115	176	.1669	.1900	.82	-2.2	.67	-2.1	.63	.51	80.2	74.7	.0014	707801_FT
35	111	156	-.3616	.2166	.95	-.4	1.09	.5	.56	.53	83.2	78.8	-.0002	707802_FT
36	103	176	.5828	.1832	1.14	1.8	1.10	.7	.41	.50	62.9	72.9	.0015	707803_FT
37	74	156	1.0638	.1872	1.17	2.3	1.41	3.1	.34	.45	61.5	68.7	-.0001	707804_FT
38	73	176	1.5619	.1814	.94	-.7	.91	-.5	.49	.47	73.7	72.8	.0018	707806_FT
39	125	156	-1.1430	.2623	.81	-1.1	.60	-1.3	.68	.57	88.8	87.1	-.0002	707807_FT
40	90	156	.4939	.1918	1.20	2.5	1.18	1.3	.36	.49	60.8	70.8	-.0002	708023_FT
41	115	156	-.5568	.2257	.78	-1.9	.56	-2.1	.69	.54	81.8	81.0	-.0002	708027_FT
MEAN	164.8	267.2	.3837	.1642	1.02	.2	1.05	.0			74.2	75.3		
P.SD	66.2	81.2	.8621	.0336	.18	2.2	.41	2.0			7.6	4.7		

Grade 6 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	READ
1	186	331	.3400A	.1435	1.07	1.0	1.28	1.9	.59	.57	74.0	76.0	.4873	651187_OP
2	202	331	.6088A	.1399	.96	-.6	.83	-1.5	.58	.56	75.7	74.8	-.0989	651200_OP
3	185	331	.5800A	.1402	1.11	1.6	1.22	1.7	.52	.56	74.0	74.9	.2643	651248_OP
4	217	331	.1017A	.1478	.94	-.8	.73	-1.8	.63	.58	77.0	77.3	.1047	651278_OP
5	178	331	.7960A	.1381	1.10	1.5	1.07	.6	.51	.56	70.0	74.1	.1786	651285_OP
6	209	331	.1565A	.1467	.86	-2.1	.82	-1.2	.67	.57	83.0	77.0	.2186	673835_OP
7	193	331	.7696A	.1383	.78	-3.7	.66	-3.4	.67	.56	81.7	74.2	-.0825	673839_OP
8	189	331	.5363A	.1408	.90	-1.6	.78	-1.9	.64	.57	78.0	75.1	.2318	673841_OP
9	215	331	.4713A	.1416	.77	-3.8	.63	-3.3	.68	.57	80.7	75.4	-.2315	673845_OP
10	161	331	1.6703A	.1361	1.00	.1	1.00	.0	.54	.51	75.0	73.1	-.3762	675919_OP
11	190	331	.7041A	.1389	.89	-1.7	.78	-2.0	.62	.56	76.7	74.4	.0425	675929_OP
12	232	331	-.0360A	.1508	.83	-2.4	.87	-.8	.66	.58	82.0	78.3	-.0977	691081_OP
13	241	331	-.3933A	.1605	1.00	.1	.78	-1.1	.61	.58	79.0	81.3	.0456	691082_OP
14	226	331	.3337A	.1436	.96	-.6	.88	-.8	.57	.57	76.7	76.0	-.3382	691083_OP
15	225	331	.3780A	.1429	.83	-2.6	.76	-1.9	.64	.57	82.0	75.8	-.3607	691084_OP
16	182	331	.7626A	.1384	1.00	.1	.98	-.2	.56	.56	75.3	74.2	.1368	691085_OP
17	229	331	-.5610A	.1661	1.06	.7	.94	-.2	.69	.59	80.3	82.8	.5096	691087_OP
18	184	331	.7246A	.1387	1.04	.6	1.07	.6	.55	.56	74.7	74.4	.1371	691088_OP
19	268	331	-.7601A	.1739	.99	-.1	1.71	2.4	.48	.59	87.7	84.8	-.4264	691089_OP
20	204	331	.4205A	.1423	.96	-.6	.83	-1.3	.60	.57	76.3	75.6	.0524	691091_OP
21	131	331	1.7470A	.1364	1.15	2.4	1.13	1.2	.41	.50	68.0	73.2	.0944	691092_OP
22	237	331	-.8177A	.1763	1.22	2.0	1.16	.7	.65	.59	79.7	85.4	.5774	691094_OP
23	245	331	-.0360A	.1508	.93	-.9	.81	-1.1	.56	.58	81.0	78.3	-.4372	691095_OP
24	241	331	.0571A	.1487	.93	-1.0	.78	-1.4	.57	.58	80.3	77.6	-.4255	691096_OP
25	252	331	-.1601A	.1538	.74	-3.6	.61	-2.4	.67	.58	86.3	79.2	-.5113	691097_OP
26	90	172	1.3554	.1878	1.37	3.8	1.44	3.1	.34	.53	62.5	74.2	.0021	707808_FT
27	120	172	.2185	.2061	.91	-.9	1.13	.7	.60	.56	80.6	78.6	.0017	707809_FT
28	81	159	.8308	.1965	1.35	3.9	1.54	3.0	.37	.55	57.9	72.0	-.0006	707810_FT
29	46	159	2.2174	.2094	1.64	5.3	2.15	4.2	.12	.45	60.7	76.2	-.0006	707811_FT
30	117	172	.3438	.2028	1.26	2.4	1.46	2.1	.41	.56	69.4	77.9	.0018	707812_FT
31	79	172	1.7399	.1867	1.33	3.6	1.54	3.7	.34	.51	65.6	73.3	.0023	707813_FT
32	109	159	-.3647	.2248	1.08	.7	.98	.0	.57	.60	77.9	79.4	-.0006	707814_FT
33	67	159	1.3671	.1961	.95	-.5	.90	-.6	.53	.52	73.6	71.9	-.0006	707815_FT
34	102	172	.9243	.1920	1.02	.2	.93	-.4	.53	.55	71.9	75.4	.0020	707816_FT
35	128	159	-1.6525	.3169	.95	-.2	1.76	1.3	.64	.65	92.1	91.5	-.0005	707817_FT
36	88	159	.5570	.1994	1.02	.3	.94	-.3	.55	.56	72.1	72.8	-.0006	707819_FT
37	120	172	.2185	.2061	.71	-3.1	.51	-2.7	.73	.56	84.4	78.6	.0017	707820_FT
38	72	159	1.1756	.1955	1.11	1.3	1.13	.9	.46	.53	67.1	71.5	-.0006	707821_FT
39	71	159	1.2138	.1955	1.11	1.4	1.12	.8	.47	.53	68.6	71.6	-.0006	707822_FT
40	54	172	2.6369	.1951	1.49	4.9	2.19	5.0	.13	.43	63.1	75.2	.0026	707823_FT
41	122	172	.1327	.2085	.98	-.1	.87	-.5	.57	.56	79.4	79.0	.0017	708026_FT
MEAN	163.1	266.4	.5197	.1706	1.03	.2	1.07	.1			75.7	76.6		
P.SD	64.0	80.8	.8197	.0359	.19	2.2	.38	2.0			7.4	4.0		

Grade 7 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	READ
1	223	327	-.2590A	.1443	.95	-.7	.84	-1.1	.58	.45	79.7	77.5	.3158	651304_OP
2	180	327	.9711A	.1302	1.09	1.7	1.06	.7	.40	.47	68.0	71.9	-.1538	651360_OP
3	237	327	.0418A	.1384	.81	-3.1	.72	-2.3	.56	.46	79.7	75.3	-.2772	651362_OP
4	224	327	.1965A	.1360	.79	-3.7	.67	-3.1	.60	.47	83.2	74.3	-.1692	651367_OP
5	211	327	.4099A	.1334	1.36	5.6	1.46	3.7	.20	.47	59.2	73.3	-.1381	651374_OP
6	203	327	.2732A	.1350	.84	-2.8	.71	-2.7	.61	.47	79.4	73.9	.1474	651379_OP
7	214	327	.0714A	.1379	1.25	3.8	1.25	1.8	.31	.46	66.8	75.1	.1510	651400_OP
8	236	327	-.0632A	.1402	1.17	2.6	1.31	2.1	.30	.46	71.2	76.0	-.1472	651404_OP
9	219	327	-.2320A	.1437	1.05	.8	.97	-.1	.52	.46	77.2	77.3	.3648	675942_OP
10	164	327	1.4030A	.1310	.89	-2.1	.90	-1.1	.54	.46	77.8	72.3	-.3107	675956_OP
11	180	327	.6984A	.1312	.99	-.1	.93	-.7	.48	.47	72.2	72.3	.1201	675960_OP
12	216	327	.4513A	.1330	1.04	.7	1.05	.5	.42	.47	70.3	73.1	-.2746	691098_OP
13	241	327	-.1253A	.1414	.89	-1.7	.86	-1.0	.50	.46	80.4	76.5	-.1910	691099_OP
14	243	327	-.3171A	.1457	.81	-2.8	.61	-2.7	.59	.45	83.5	77.9	-.0367	691100_OP
15	219	327	.3610A	.1340	1.07	1.2	1.02	.2	.39	.47	68.0	73.5	-.2400	691102_OP
16	195	327	.4014A	.1335	.86	-2.5	.76	-2.3	.59	.47	78.8	73.3	.1598	691103_OP
17	180	327	.6376A	.1315	.87	-2.3	.84	-1.6	.57	.47	80.4	72.5	.1814	691104_OP
18	273	327	-1.3543A	.1850	1.12	1.0	.96	.0	.46	.41	85.4	88.3	.2622	691105_OP
19	257	327	-.7332A	.1578	.83	-2.0	.59	-2.3	.59	.44	83.9	82.0	.0638	691106_OP
20	259	327	-.4673A	.1496	.73	-3.9	.61	-2.5	.58	.45	87.0	79.2	-.2636	691107_OP
21	230	327	-.0862A	.1407	1.09	1.3	1.06	.5	.40	.46	71.8	76.2	.0010	691108_OP
22	228	327	-.0674A	.1403	.92	-1.3	.88	-.9	.53	.46	78.8	76.0	.0221	691109_OP
23	152	327	1.0131A	.1302	.96	-.7	.96	-.4	.50	.47	73.1	71.9	.2795	691110_OP
24	279	327	-1.2866A	.1815	.99	-.1	1.43	1.5	.41	.42	87.3	87.7	.0008	691112_OP
25	234	327	-.3171A	.1457	.86	-2.1	.79	-1.3	.60	.45	82.0	77.9	.1557	691113_OP
26	56	162	1.9401	.1933	1.34	3.4	1.55	3.1	.21	.43	67.1	74.7	-.0006	707858_FT
27	66	165	1.6946	.1871	1.28	3.2	1.42	2.6	.25	.45	64.6	72.9	.0033	707860_FT
28	97	165	.6381	.1863	.90	-1.3	.81	-1.4	.55	.48	73.4	72.3	.0030	707862_FT
29	117	162	-.2293	.2011	.71	-3.4	.51	-2.7	.67	.44	83.5	76.3	-.0008	707863_FT
30	85	162	.9253	.1845	.97	-.3	.90	-.8	.48	.46	70.9	72.4	-.0007	707864_FT
31	109	165	.2081	.1933	1.26	2.8	1.22	1.3	.30	.48	64.6	74.8	.0029	707865_FT
32	62	162	1.7205	.1896	1.12	1.4	1.13	.9	.35	.44	67.7	73.7	-.0006	707866_FT
33	125	162	-.5714	.2132	.78	-2.2	.52	-2.1	.61	.42	80.4	79.4	-.0008	707867_FT
34	77	165	1.3171	.1840	1.01	.2	1.07	.5	.45	.46	70.3	71.7	.0032	707868_FT
35	115	162	-.1493	.1989	.94	-.6	1.19	.9	.48	.44	77.2	75.7	-.0008	707869_FT
36	83	162	.9933	.1844	1.57	6.1	1.76	5.0	.08	.46	51.3	72.4	-.0007	707870_FT
37	45	165	2.4866	.2042	1.29	2.7	1.47	2.0	.24	.40	71.5	78.1	.0036	707871_FT
38	125	162	-.5714	.2132	1.01	.2	.86	-.5	.43	.42	76.6	79.4	-.0008	707872_FT
39	99	165	.5685	.1871	.92	-1.1	.84	-1.1	.54	.48	74.7	72.7	.0030	707873_FT
40	87	165	.9797	.1839	1.34	4.0	1.55	3.7	.23	.47	59.5	71.4	.0031	707874_FT
41	86	165	1.0135	.1838	1.56	6.3	1.69	4.5	.10	.47	50.0	71.4	.0031	707875_FT
MEAN	169.0	263.2	.3557	.1619	1.03	.2	1.02	.0			73.9	75.5		
P.SD	69.7	79.8	.8245	.0278	.21	2.7	.32	2.1			8.8	3.8		

Grade 8 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL CORR.	EXP.	EXACT MATCH OBS%	EXP%	DISPLACE	READ
1	225	333	.5785A	.1404	.94	-.9	.87	-1.0	.55	.50	78.9	76.4	.0526	651408_OP
2	230	333	.6916A	.1382	1.12	1.8	1.24	1.8	.39	.50	70.3	75.5	-.1613	651409_OP
3	234	333	.6000A	.1400	.82	-2.8	.94	-.4	.59	.50	83.0	76.2	-.1508	651413_OP
4	226	333	.6102A	.1398	.86	-2.2	.74	-2.1	.60	.50	80.8	76.1	.0010	651418_OP
5	211	333	.8000A	.1363	1.21	3.2	1.26	2.1	.37	.49	69.7	74.7	.0940	651421_OP
6	232	333	.4700A	.1428	.98	-.3	.82	-1.3	.53	.50	75.1	77.3	.0221	651430_OP
7	191	333	1.2443A	.1308	1.26	4.3	1.50	4.3	.30	.48	63.4	72.2	.0011	651434_OP
8	235	333	.4593A	.1430	.79	-3.2	.62	-3.1	.64	.50	82.0	77.3	-.0291	651435_OP
9	227	333	.4593A	.1430	.82	-2.7	.71	-2.3	.65	.50	79.5	77.3	.1336	651436_OP
10	245	333	.2154A	.1493	1.03	.5	1.00	.0	.48	.50	77.6	79.6	.0009	651445_OP
11	223	333	.6516A	.1390	.98	-.3	.89	-.8	.52	.50	76.0	75.8	.0178	651455_OP
12	186	333	1.2878A	.1305	1.01	.1	.92	-.7	.48	.48	70.3	72.1	.0426	673884_OP
13	230	333	.7410A	.1373	1.02	.3	1.02	.2	.45	.50	72.6	75.1	-.2113	691114_OP
14	257	333	.0796A	.1534	.75	-3.2	.56	-3.0	.64	.51	86.4	81.0	-.1487	691115_OP
15	249	333	-.0184A	.1566	1.13	1.5	1.21	1.1	.45	.51	79.2	82.0	.1459	691117_OP
16	281	333	-.7802A	.1904	.90	-.8	.58	-1.7	.60	.51	89.3	89.1	.0008	691118_OP
17	192	333	1.4495A	.1294	1.02	.4	1.04	.5	.46	.47	70.3	71.5	-.2201	691119_OP
18	191	333	1.0399A	.1329	.91	-1.6	.83	-1.6	.57	.49	75.1	73.2	.2057	691122_OP
19	253	333	.0306A	.1549	.90	-1.1	.72	-1.7	.58	.51	82.3	81.5	.0009	691123_OP
20	263	333	-.1769A	.1623	.89	-1.2	.67	-1.9	.59	.51	84.2	83.7	-.0460	691124_OP
21	218	333	.7632A	.1369	.83	-2.9	.68	-2.9	.62	.50	78.2	75.0	.0010	691125_OP
22	200	333	1.1535A	.1317	1.14	2.5	1.49	4.2	.38	.48	66.6	72.6	-.0639	691126_OP
23	178	333	1.4439A	.1294	.97	-.5	.94	-.6	.49	.47	73.5	71.5	.0211	691127_OP
24	249	333	-.1718A	.1621	1.26	2.6	1.84	3.5	.42	.51	79.2	83.7	.3007	691128_OP
25	201	333	1.0710A	.1326	.94	-1.1	.82	-1.7	.53	.49	73.8	73.0	.0010	691129_OP
26	66	167	2.3409	.1870	1.36	4.1	1.44	2.1	.26	.45	59.9	72.3	.0031	707824_FT
27	99	166	1.0613	.1823	1.14	1.8	1.14	1.1	.34	.44	68.8	71.4	-.0004	707825_FT
28	87	167	1.6176	.1862	.83	-2.2	.73	-1.9	.59	.50	78.3	72.2	.0029	707826_FT
29	69	166	2.0258	.1799	.98	-.3	.93	-.5	.43	.41	71.9	70.5	-.0004	707827_FT
30	109	167	.8136	.1990	.88	-1.3	.75	-1.4	.61	.54	80.3	76.4	.0026	707828_FT
31	80	167	1.8585	.1852	.93	-.9	.90	-.6	.52	.49	74.5	71.8	.0030	707829_FT
32	110	166	.6826	.1894	1.04	.5	1.18	1.2	.41	.45	74.4	73.9	-.0004	707830_FT
33	107	166	.7889	.1871	1.16	1.8	1.11	.8	.33	.45	65.6	73.1	-.0004	707831_FT
34	41	167	3.2912	.2074	1.22	2.0	1.70	2.2	.22	.37	75.8	78.6	.0035	707832_FT
35	60	166	2.3224	.1836	1.12	1.5	1.14	1.0	.30	.39	69.4	71.8	-.0004	707833_FT
36	124	167	.1587	.2218	.79	-1.8	.66	-1.4	.67	.56	86.0	81.8	.0023	707834_FT
37	106	166	.8238	.1863	1.23	2.7	1.41	2.6	.27	.45	63.8	72.9	-.0004	707835_FT
38	54	167	2.7731	.1933	1.09	1.0	1.31	1.3	.33	.42	75.8	74.3	.0033	707836_FT
39	41	166	3.0160	.2012	1.18	1.7	1.30	1.4	.23	.34	74.4	77.4	-.0004	707837_FT
40	63	167	2.4464	.1881	1.01	.2	1.00	.1	.43	.44	72.0	72.6	.0032	707838_FT
41	79	166	1.7057	.1783	1.17	2.3	1.15	1.3	.30	.42	64.4	69.9	-.0004	707839_FT
MEAN	168.8	268.0	1.0346	.1619	1.01	.1	1.02	.0			74.9	75.7		
P.SD	74.9	81.2	.9014	.0265	.15	2.0	.31	1.9			6.7	4.2		

Grade 11 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	READ
1	189	309	.2170A	.1397	.92	-1.3	.82	-1.7	.57	.48	76.3	73.8	.1733	651356_OP
2	224	309	-.5842A	.1601	1.24	2.5	1.71	3.4	.42	.50	76.9	81.7	.2558	651429_OP
3	209	309	-.2375A	.1495	.96	-.4	.82	-1.3	.58	.49	76.9	78.0	.2359	651437_OP
4	161	309	1.1711A	.1321	.95	-.9	.92	-.8	.49	.44	71.5	70.3	-.2718	651440_OP
5	190	309	.7339A	.1336	.95	-.9	1.06	.6	.49	.46	73.2	71.1	-.3630	651448_OP
6	212	309	.1906A	.1401	1.05	.8	1.14	1.2	.41	.48	73.2	74.1	-.2596	651450_OP
7	127	309	1.3954A	.1327	.96	-.7	.91	-.9	.44	.43	69.5	70.5	.0950	651456_OP
8	225	309	-.1657A	.1476	.83	-2.5	.72	-2.2	.58	.49	81.7	77.2	-.1911	651463_OP
9	137	309	1.3954A	.1327	.92	-1.4	.87	-1.2	.48	.43	74.2	70.5	-.0783	651466_OP
10	189	309	.5272A	.1354	.83	-3.1	.73	-2.9	.58	.47	77.3	72.0	-.1380	651477_OP
11	217	309	-.1680A	.1477	1.06	.9	1.02	.2	.45	.49	74.9	77.2	-.0057	651478_OP
12	223	309	-.2977A	.1511	.94	-.8	.85	-1.0	.54	.49	79.0	78.6	-.0103	673895_OP
13	231	309	-.3855A	.1537	.79	-2.8	.65	-2.5	.62	.50	83.7	79.6	-.1143	675981_OP
14	189	309	.2493A	.1392	1.14	2.3	1.13	1.1	.40	.48	67.5	73.6	.1408	675990_OP
15	195	309	.2917A	.1385	.90	-1.6	.84	-1.5	.55	.48	75.3	73.3	-.0164	691130_OP
16	205	309	.1677A	.1405	1.11	1.7	1.12	1.0	.39	.48	69.5	74.2	-.0902	691132_OP
17	121	309	1.7574A	.1354	1.22	3.7	1.36	2.6	.29	.40	64.4	71.8	-.1545	691133_OP
18	221	309	-.4190A	.1547	1.00	.0	.92	-.5	.54	.50	79.0	79.9	.1583	691135_OP
19	261	309	-1.1819A	.1862	.76	-2.1	.56	-2.1	.60	.51	89.8	87.5	-.2380	691136_OP
20	203	309	.0659A	.1425	.88	-1.9	.77	-2.0	.58	.49	79.7	75.1	.0530	691138_OP
21	243	309	-.9722A	.1758	.84	-1.5	.60	-2.1	.67	.50	85.8	85.6	.1579	691139_OP
22	176	309	.2917A	.1385	.95	-.7	.89	-1.0	.56	.48	74.9	73.3	.3378	691140_OP
23	209	309	-.0041A	.1439	1.17	2.4	1.30	2.2	.37	.49	70.8	75.7	.0005	691141_OP
24	242	309	-.7030A	.1645	.92	-.9	.68	-1.9	.55	.50	83.4	82.9	-.0860	691142_OP
25	186	309	.0497A	.1428	1.11	1.6	1.03	.3	.49	.49	71.9	75.2	.3976	691144_OP
26	93	163	.6121	.1858	.88	-1.6	.83	-1.2	.55	.47	77.9	71.6	.0013	707877_FT
27	107	163	.1049	.1963	1.01	.2	.96	-.2	.49	.50	71.4	74.7	.0011	707879_FT
28	68	146	1.2041	.1925	1.18	2.2	1.18	1.2	.31	.44	61.0	70.7	.0003	707880_FT
29	68	163	1.4469	.1826	1.43	5.2	1.63	3.7	.15	.42	54.5	70.0	.0017	707881_FT
30	69	146	1.1671	.1924	1.49	5.5	1.59	3.4	.13	.44	48.9	70.7	.0003	707882_FT
31	40	163	2.4584	.2028	1.27	2.6	1.44	1.7	.16	.34	70.8	77.0	.0020	707883_FT
32	94	146	.2144	.2021	.87	-1.5	.74	-1.6	.57	.47	78.0	73.9	-.0001	707884_FT
33	76	146	.9080	.1928	1.15	1.8	1.13	1.0	.33	.45	63.8	70.8	.0002	707885_FT
34	125	163	-.6897	.2289	.82	-1.4	.58	-1.8	.65	.53	85.1	83.2	.0009	707886_FT
35	98	146	.0479	.2062	.96	-.4	.91	-.4	.50	.47	80.1	75.3	-.0001	707887_FT
36	83	163	.9500	.1825	1.13	1.8	1.12	.9	.36	.46	64.9	70.3	.0015	707888_FT
37	69	163	1.4136	.1824	1.33	4.2	1.34	2.2	.21	.42	53.9	70.0	.0017	707890_FT
38	62	146	1.4274	.1937	1.22	2.6	1.42	2.3	.28	.43	65.2	71.2	.0004	707891_FT
39	102	146	-.1264	.2115	.83	-1.7	.67	-1.9	.60	.47	82.3	76.8	-.0002	707892_FT
40	52	163	1.9983	.1901	1.19	2.2	1.27	1.4	.25	.38	64.3	72.6	.0019	707894_FT
41	31	146	2.7386	.2271	1.02	.2	1.17	.7	.29	.34	82.3	80.5	.0007	707895_FT
MEAN	151.8	248.7	.4698	.1665	1.03	.3	1.01	.0			73.3	75.2		
P.SD	67.0	75.6	.9013	.0287	.17	2.2	.29	1.8			8.8	4.5		

Appendix L: Mathematics Item Bank Difficulties

Grade 3 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	MATH
1	213	256	-1.8299A	.2483	.77	-1.4	.65	-.9	.72	.65	92.8	91.6	-.0593	650573_OP
2	171	256	-.0768A	.1667	.91	-1.1	.73	-1.7	.62	.58	78.7	77.7	-.1321	650590_OP
3	175	256	-.8407A	.1911	1.41	3.4	1.77	2.7	.52	.62	77.0	83.8	.5164	650591_OP
4	214	256	-2.2120A	.2799	.90	-.4	.37	-1.7	.77	.66	93.2	93.6	.2538	650592_OP
5	129	256	.7658A	.1540	1.38	5.0	1.53	3.1	.35	.53	60.9	73.2	.0947	650596_OP
6	199	256	-1.4362A	.2215	1.04	.3	.71	-.9	.69	.64	87.7	88.8	.2674	650600_OP
7	175	256	-.3470A	.1737	.97	-.3	1.04	.3	.61	.60	79.6	79.6	.0211	650603_OP
8	170	256	-.4383A	.1765	1.00	.1	.81	-1.0	.64	.60	80.0	80.4	.2596	650604_OP
9	155	256	.2947A	.1595	.92	-1.1	.85	-1.0	.60	.56	75.7	75.3	-.0681	650608_OP
10	159	256	-.2023A	.1697	.96	-.4	.90	-.5	.65	.59	79.6	78.6	.3249	650612_OP
11	167	256	-.0275A	.1655	.92	-.9	.81	-1.2	.61	.58	81.3	77.4	-.0676	650613_OP
12	146	256	.4829A	.1568	1.08	1.1	1.06	.5	.51	.55	69.8	74.3	-.0294	650661_OP
13	195	256	-.5754A	.1810	.68	-3.6	.44	-3.4	.72	.61	87.2	81.5	-.4337	673355_OP
14	210	256	-1.4892A	.2248	.75	-1.8	.40	-2.3	.72	.64	91.5	89.2	-.2182	676133_OP
15	121	256	.6726A	.1548	1.09	1.3	1.12	.8	.49	.54	70.2	73.5	.3727	676139_OP
16	179	256	.1377A	.1622	.79	-2.8	.65	-2.5	.66	.57	81.7	76.3	-.5875	690920_OP
17	212	256	-1.8283A	.2482	1.16	.9	.69	-.7	.66	.65	88.9	91.5	.0011	690921_OP
18	164	256	.0263A	.1644	1.10	1.3	1.61	3.2	.52	.58	74.9	77.0	-.0385	690922_OP
19	158	256	.5460A	.1560	.93	-1.0	.86	-1.0	.58	.54	76.6	74.0	-.3941	690923_OP
20	177	256	-.5685A	.1807	.85	-1.6	.65	-1.8	.71	.61	83.8	81.5	.1829	690924_OP
21	147	256	.5460A	.1560	1.06	.8	1.00	.1	.51	.54	71.9	74.0	-.1164	690929_OP
22	102	256	1.2386A	.1524	1.31	4.4	1.51	2.6	.32	.49	63.4	72.4	.2474	690930_OP
23	168	256	.2338A	.1604	.87	-1.7	.79	-1.4	.62	.57	79.6	75.7	-.3563	690931_OP
24	175	256	-.1619A	.1687	.94	-.7	.77	-1.4	.61	.59	77.0	78.3	-.1649	690934_OP
25	125	256	.8318A	.1535	1.03	.4	.95	-.3	.49	.52	70.2	73.0	.1219	691213_OP
26	91	136	-.3283	.2322	.88	-1.1	.70	-1.4	.66	.59	80.8	78.4	.0002	707612_FT
27	45	120	1.8022	.2271	.90	-1.1	.90	-.3	.47	.46	80.0	73.4	.0037	707613_FT
28	97	120	-1.4051	.3291	.82	-.9	.39	-1.4	.74	.64	90.0	88.9	.0025	707614_FT
29	79	136	.2655	.2148	1.14	1.5	1.05	.3	.47	.55	68.8	74.0	.0002	707615_FT
30	41	120	2.0109	.2298	1.40	3.6	2.02	3.1	.22	.44	60.0	73.9	.0037	707616_FT
31	103	120	-2.2238	.4234	.84	-.4	.33	-1.0	.72	.66	94.5	94.1	.0023	707617_FT
32	50	120	1.5466	.2253	1.15	1.5	1.18	.7	.43	.49	70.0	73.1	.0037	707618_FT
33	35	136	2.2234	.2246	1.35	3.1	1.55	1.7	.20	.37	69.6	76.5	-.0003	707620_FT
34	95	136	-.5524	.2416	.98	-.1	.78	-.8	.62	.60	80.0	80.6	.0002	707621_FT
35	69	136	.7107	.2081	.94	-.6	.87	-.6	.53	.51	76.8	72.3	.0002	707623_FT
36	72	120	.4020	.2362	.89	-.9	.74	-1.2	.62	.57	78.2	76.3	.0033	707624_FT
37	79	120	-.0058	.2477	.92	-.6	.69	-1.3	.64	.59	77.3	78.9	.0031	707625_FT
38	93	136	-.4381	.2366	1.03	.3	.88	-.4	.58	.59	74.4	79.5	.0002	707626_FT
39	93	136	-.4381	.2366	.84	-1.4	.71	-1.2	.68	.59	82.4	79.5	.0002	707627_FT
40	75	136	.4470	.2115	1.22	2.2	1.21	1.0	.42	.53	65.6	73.2	.0002	707628_FT
41	62	120	.9360	.2274	1.18	1.7	1.12	.6	.44	.54	68.2	73.7	.0035	707629_FT
MEAN	131.3	206.0	-.0318	.2068	1.01	.2	.92	-.3			77.8	79.0		
P.SD	53.1	62.6	1.0590	.0533	.18	1.8	.38	1.5			8.6	6.2		

Grade 4 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL CORR.	EXP.	EXACT MATCH OBS%	EXP%	DISPLACE	MATH
1	197	289	.2099A	.1518	.81	-3.0	.83	-1.1	.64	.57	80.5	74.8	-.4308	650757_OP
2	210	289	-.6110A	.1716	1.01	.1	.89	-.4	.60	.59	82.1	81.8	.0509	650759_OP
3	223	289	-1.1606A	.1945	.96	-.3	.62	-1.3	.69	.61	85.1	86.7	.1944	650762_OP
4	178	289	.2814A	.1508	.92	-1.2	.91	-.6	.60	.57	79.0	74.5	-.0337	650766_OP
5	209	289	-.4676A	.1670	.92	-.9	.82	-.8	.62	.59	82.1	80.4	-.0664	650770_OP
6	170	289	.3913A	.1494	1.13	2.0	1.03	.3	.49	.56	67.9	74.0	.0378	650772_OP
7	222	289	-.8284A	.1796	.82	-1.8	.52	-2.2	.68	.60	85.9	83.8	-.1091	650778_OP
8	217	289	-.5542A	.1697	.74	-3.2	.55	-2.4	.70	.59	87.8	81.2	-.2236	650779_OP
9	154	289	1.0369A	.1457	1.09	1.4	1.13	1.0	.50	.53	69.8	72.8	-.2625	650783_OP
10	185	289	.0776A	.1540	.87	-2.0	.68	-2.2	.65	.57	77.9	75.7	.0082	650784_OP
11	195	289	-.4648A	.1669	1.00	.0	1.19	.9	.64	.59	79.0	80.4	.3113	650792_OP
12	140	289	1.0955A	.1458	.98	-.3	.92	-.6	.54	.53	75.6	72.9	-.0210	650931_OP
13	218	289	-.8530A	.1806	.82	-1.8	.57	-1.8	.70	.60	85.9	84.0	.0504	676142_OP
14	221	289	-.5058A	.1681	.81	-2.3	.75	-1.2	.65	.59	85.1	80.8	-.4078	676143_OP
15	168	289	.1309A	.1530	1.04	.7	.93	-.4	.58	.57	74.4	75.3	.3460	676146_OP
16	202	289	-.6465A	.1728	1.10	1.0	1.08	.4	.60	.59	80.5	82.1	.3117	676155_OP
17	202	289	-.3401A	.1633	.86	-1.8	.67	-1.8	.66	.59	80.9	79.2	.0006	676160_OP
18	209	289	-.8453A	.1803	1.09	.9	.98	.0	.63	.60	81.7	83.9	.3175	676163_OP
19	131	289	1.2654A	.1461	1.42	5.8	1.44	3.0	.32	.52	57.6	73.3	.0008	690935_OP
20	152	289	.8203A	.1462	1.00	.1	1.02	.2	.54	.55	74.4	72.7	-.0010	690936_OP
21	171	289	.3191A	.1503	1.11	1.6	1.13	.9	.52	.57	67.2	74.3	.0885	690937_OP
22	143	289	1.4628A	.1471	1.17	2.5	1.28	1.9	.46	.51	68.3	73.9	-.4503	690938_OP
23	232	289	-1.4844A	.2125	.90	-.7	.54	-1.4	.70	.61	89.3	89.3	.1811	690939_OP
24	195	289	-.3183A	.1627	.95	-.6	.92	-.4	.63	.59	81.3	79.0	.1630	690940_OP
25	109	289	1.2888A	.1462	1.45	6.1	1.64	4.1	.26	.52	61.8	73.3	.4546	690941_OP
26	218	289	-.4597A	.1667	.70	-3.9	.53	-2.6	.70	.59	87.8	80.4	-.3542	690943_OP
27	164	289	.5268A	.1480	.88	-1.9	.92	-.5	.62	.56	80.2	73.5	.0342	690944_OP
28	178	289	.4532A	.1487	.94	-1.0	.93	-.5	.59	.56	74.8	73.8	-.2089	690946_OP
29	166	289	.4373A	.1489	1.10	1.5	1.04	.3	.51	.56	67.2	73.8	.0806	690948_OP
30	199	289	-.2611A	.1612	1.08	1.1	1.44	2.1	.54	.58	77.1	78.5	.0006	690950_OP
31	78	146	.6828	.2034	1.27	3.1	1.32	1.7	.40	.54	61.1	71.8	.0019	707631_FT
32	81	146	.5579	.2048	1.16	1.8	1.14	.9	.45	.54	66.4	72.2	.0019	707632_FT
33	98	143	-.1589	.2277	.90	-.9	.66	-1.3	.64	.58	77.1	78.2	-.0008	707633_FT
34	93	146	.0319	.2155	1.13	1.3	1.24	1.1	.50	.57	71.0	75.1	.0018	707634_FT
35	73	143	1.0101	.2109	1.01	.1	1.06	.4	.53	.56	73.3	74.2	-.0006	707635_FT
36	123	146	-2.0531	.3646	.91	-.2	1.24	.6	.67	.66	93.9	93.3	.0019	707636_FT
37	106	143	-.6015	.2441	.81	-1.5	.51	-1.6	.69	.58	83.2	81.8	-.0008	707637_FT
38	107	143	-.6617	.2468	.92	-.6	.65	-1.0	.64	.58	82.4	82.3	-.0008	707638_FT
39	66	143	1.3220	.2117	1.34	3.2	1.46	2.1	.38	.54	64.9	75.0	-.0005	707639_FT
40	74	146	.8472	.2022	1.16	1.9	1.12	.8	.44	.53	60.3	71.4	.0019	707640_FT
41	96	143	-.0566	.2248	.99	-.1	.74	-1.0	.59	.58	72.5	77.5	-.0007	707641_FT
42	89	146	.2135	.2109	.80	-2.3	.66	-1.9	.67	.56	80.9	73.7	.0019	707642_FT
43	69	146	1.0508	.2017	1.16	1.9	1.21	1.2	.41	.51	67.9	71.4	.0019	707643_FT
44	112	143	-.9866	.2639	.81	-1.3	.47	-1.4	.70	.59	86.3	85.0	-.0008	707645_FT
45	47	146	1.9751	.2118	1.40	3.6	1.62	2.4	.26	.45	61.1	74.9	.0020	707646_FT
46	71	143	1.0990	.2109	1.31	3.0	1.30	1.5	.40	.55	66.4	74.4	-.0005	708810_FT
MEAN	151.3	238.7	.0928	.1849	1.02	.2	.96	-.1			76.0	77.7		
P.SD	54.7	68.8	.8538	.0414	.18	2.2	.31	1.5			8.8	5.1		

Grade 5 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	MATH
1	231	335	-.1999A	.1409	.84	-2.5	.68	-2.7	.62	.54	77.7	75.8	-.2306	650955_OP
2	234	335	-.2225A	.1414	.90	-1.6	.84	-1.2	.58	.54	79.3	76.0	-.2735	650991_OP
3	147	335	1.0293A	.1305	1.08	1.4	1.28	2.6	.41	.48	69.6	70.8	.0659	651002_OP
4	173	335	.6017A	.1312	1.04	.7	1.10	1.0	.48	.51	72.2	71.6	.0509	651004_OP
5	244	335	-.7191A	.1540	1.01	.1	.98	.0	.55	.56	81.9	80.7	.0005	651007_OP
6	198	335	.1053A	.1359	1.00	.0	.91	-.8	.54	.53	71.2	73.6	.1095	651009_OP
7	263	335	-1.1876A	.1712	.85	-1.5	.56	-2.3	.68	.57	85.4	85.4	-.0331	651013_OP
8	192	335	.1897A	.1348	1.04	.7	1.05	.5	.51	.53	71.2	73.1	.1325	651022_OP
9	268	335	-1.3755A	.1798	.90	-.9	.89	-.4	.64	.58	87.1	87.0	.0003	651024_OP
10	245	335	-.9017A	.1600	1.09	1.1	1.53	2.5	.55	.57	81.2	82.6	.1615	651025_OP
11	238	335	-.5881A	.1501	.99	-.1	.86	-.9	.58	.56	77.7	79.3	.0080	651028_OP
12	138	335	.9270A	.1304	1.19	3.3	1.32	3.0	.36	.49	65.7	70.9	.3208	651030_OP
13	234	335	-.9016A	.1600	1.01	.2	.73	-1.5	.68	.57	77.7	82.6	.4137	651039_OP
14	232	335	-.3932A	.1451	1.08	1.1	1.17	1.2	.49	.55	78.6	77.4	-.0562	651042_OP
15	251	335	-1.1097A	.1679	.96	-.3	.66	-1.7	.67	.57	82.8	84.6	.2221	673364_OP
16	129	335	1.6006A	.1343	1.17	2.8	1.33	2.4	.36	.44	66.7	72.9	-.1894	673369_OP
17	186	335	.4175A	.1324	1.08	1.5	1.07	.7	.47	.52	68.6	72.1	.0101	673371_OP
18	265	335	-.7931A	.1563	.68	-4.2	.51	-3.3	.67	.56	85.8	81.5	-.4996	676192_OP
19	216	335	-.1937A	.1408	.90	-1.6	.98	-.1	.61	.54	81.2	75.8	.0718	676194_OP
20	189	335	.3519A	.1330	1.12	2.1	1.02	.2	.45	.52	63.8	72.4	.0230	676196_OP
21	254	335	-.8439A	.1580	.87	-1.5	.74	-1.5	.61	.56	84.8	82.0	-.1267	676199_OP
22	232	335	-.6804A	.1528	.99	-.1	.88	-.7	.61	.56	80.6	80.3	.2345	676200_OP
23	242	335	-.3782A	.1448	.74	-3.9	.57	-3.5	.67	.55	81.9	77.3	-.2988	676201_OP
24	201	335	.4028A	.1326	.92	-1.5	.94	-.6	.55	.52	72.8	72.2	-.2439	690951_OP
25	146	335	1.1117A	.1307	1.07	1.3	1.10	1.0	.42	.47	68.6	70.8	.0012	690952_OP
26	209	335	.1416A	.1354	.98	-.4	.98	-.2	.53	.53	75.4	73.4	-.1312	690957_OP
27	220	335	-.6032A	.1505	1.20	2.5	1.39	2.2	.52	.56	74.4	79.5	.4054	690958_OP
28	188	335	.5465A	.1315	1.18	3.1	1.21	2.0	.41	.51	64.4	71.7	-.1539	690960_OP
29	213	335	.1416A	.1354	1.05	.9	.96	-.4	.49	.53	68.9	73.4	-.2079	690962_OP
30	184	335	.3339A	.1332	.95	-.8	.87	-1.3	.55	.52	75.7	72.5	.1289	690964_OP
31	138	179	-1.0288	.2207	.80	-1.6	.60	-1.6	.66	.54	87.3	83.1	-.0004	707649_FT
32	114	179	-.0615	.1871	1.00	.0	1.01	.1	.52	.52	77.1	74.0	-.0003	707650_FT
33	108	156	-.4757	.2199	.78	-2.1	.57	-2.4	.71	.58	81.1	79.3	.0017	707651_FT
34	94	156	.1363	.2007	.98	-.1	.87	-.9	.56	.54	71.3	74.2	.0021	707652_FT
35	114	156	-.7834	.2339	.78	-1.8	.61	-1.7	.72	.60	83.2	82.4	.0015	707653_FT
36	82	179	.9858	.1792	1.28	3.5	1.25	1.6	.31	.49	62.0	71.2	-.0002	707655_FT
37	51	156	1.7363	.1960	1.36	4.0	1.75	3.6	.21	.41	58.0	72.2	.0031	707657_FT
38	42	156	2.0951	.2041	1.11	1.2	1.36	1.6	.27	.37	74.1	75.0	.0033	707658_FT
39	78	179	1.1147	.1799	.99	-.2	1.03	.3	.47	.48	72.9	71.5	-.0001	707659_FT
40	97	179	.5055	.1796	1.07	.9	1.02	.2	.46	.51	69.3	71.5	-.0002	707660_FT
41	54	156	1.6222	.1941	1.36	4.1	1.53	2.8	.22	.42	60.1	71.5	.0030	707661_FT
42	89	179	.7619	.1787	.82	-2.6	.73	-2.0	.60	.50	79.5	71.1	-.0002	707662_FT
43	75	156	.8550	.1907	1.24	2.9	1.31	2.2	.35	.49	60.1	70.9	.0026	707663_FT
44	119	156	-1.0752	.2503	.73	-1.9	.48	-2.1	.75	.61	88.8	85.2	.0014	707664_FT
45	143	179	-1.2878	.2351	.86	-1.0	.72	-.9	.61	.54	88.0	85.6	-.0004	707665_FT
46	97	179	.5055	.1796	1.06	.8	1.01	.1	.47	.51	70.5	71.5	-.0002	707666_FT
MEAN	170.8	276.7	.0525	.1644	1.00	.2	.98	-.1			75.1	76.3		
P.SD	66.5	80.1	.8764	.0323	.16	2.0	.29	1.8			8.0	5.0		

Grade 6 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	MATH
1	220	339	-.0371A	.1417	1.12	1.8	1.21	1.5	.49	.56	72.6	75.8	-.0042	651322_OP
2	247	339	-.9579A	.1667	1.23	2.3	1.31	1.3	.54	.58	79.8	83.6	.3364	651323_OP
3	242	339	-.3968A	.1491	1.06	.8	1.10	.6	.52	.57	75.9	78.4	-.1211	651332_OP
4	191	339	.3638A	.1362	.98	-.4	.90	-.9	.58	.55	72.0	73.9	.1482	651333_OP
5	253	339	-.8940A	.1643	1.13	1.4	1.25	1.1	.53	.57	80.1	82.9	.1179	651334_OP
6	154	339	.8917A	.1330	1.29	4.6	1.49	4.8	.38	.53	62.2	72.4	.2762	651339_OP
7	230	339	-.2479A	.1457	1.21	2.9	1.35	2.1	.45	.57	70.4	77.2	.0004	651340_OP
8	244	339	-.3878A	.1489	1.00	.0	.88	-.7	.55	.57	75.9	78.3	-.1796	651341_OP
9	169	339	.8281A	.1332	.94	-1.1	.87	-1.4	.57	.54	74.3	72.6	.0756	651344_OP
10	252	339	-.8940A	.1643	.89	-1.3	.59	-2.1	.69	.57	83.1	82.9	.1443	651348_OP
11	191	339	.6168A	.1342	1.07	1.2	1.12	1.2	.51	.55	69.4	73.1	-.1081	651353_OP
12	212	339	.1599A	.1387	.87	-2.2	.80	-1.6	.63	.56	80.1	74.7	-.0444	651359_OP
13	205	339	.3908A	.1360	.95	-.8	.99	.0	.57	.55	75.9	73.8	-.1432	651384_OP
14	217	339	.3908A	.1360	.81	-3.4	.74	-2.5	.65	.55	81.8	73.8	-.3828	651392_OP
15	224	339	.1576A	.1387	.78	-3.7	.64	-3.3	.66	.56	82.1	74.7	-.2895	651394_OP
16	182	339	.1179A	.1392	.94	-1.0	.77	-1.9	.66	.56	75.6	74.9	.5593	651396_OP
17	181	339	.6557A	.1339	1.00	.0	.95	-.5	.55	.54	73.9	73.0	.0349	651398_OP
18	174	339	.9465A	.1329	.92	-1.4	.84	-1.8	.58	.53	74.9	72.3	-.1317	673373_OP
19	216	339	-.1011A	.1428	1.28	3.9	1.30	1.9	.43	.57	67.4	76.2	.1431	676208_OP
20	240	339	-.4578A	.1506	1.04	.5	1.05	.3	.55	.57	77.9	78.9	-.0096	676241_OP
21	175	339	.6663A	.1339	1.12	2.0	1.23	2.2	.48	.54	70.0	72.9	.1317	690967_OP
22	184	339	.4266A	.1356	.96	-.7	.96	-.4	.59	.55	74.3	73.7	.2122	690968_OP
23	226	339	.0675A	.1400	.77	-3.9	.62	-3.3	.68	.56	79.2	75.2	-.2393	690969_OP
24	271	339	-1.1235A	.1736	.80	-2.1	.51	-2.3	.66	.58	88.3	85.2	-.1873	690972_OP
25	198	339	.4598A	.1353	.90	-1.7	.87	-1.2	.61	.55	80.1	73.6	-.0796	690974_OP
26	169	339	.5766A	.1344	1.06	1.0	1.09	.9	.52	.55	69.7	73.2	.3286	690976_OP
27	169	339	.9206A	.1329	.90	-1.7	.87	-1.5	.58	.53	74.9	72.4	-.0171	690978_OP
28	223	339	.1799A	.1384	.79	-3.6	.68	-2.9	.66	.56	81.8	74.6	-.2912	690979_OP
29	166	339	1.1859A	.1329	1.01	.1	.99	-.1	.53	.52	73.0	72.3	-.2281	690980_OP
30	276	339	-1.2248A	.1783	.76	-2.4	.50	-2.2	.65	.58	89.3	86.2	-.2648	690981_OP
31	97	160	-.0035	.2056	1.00	.0	.91	-.4	.59	.59	71.9	74.3	-.0007	707667_FT
32	132	179	-.4392	.2069	1.02	.2	1.59	2.1	.50	.53	83.3	79.6	.0013	707668_FT
33	51	160	1.8129	.2046	1.18	1.9	1.18	1.2	.39	.48	67.6	74.6	-.0004	707669_FT
34	68	160	1.1363	.1962	1.08	1.0	1.07	.6	.50	.53	66.9	71.8	-.0005	707670_FT
35	100	179	.7350	.1824	.97	-.4	.91	-.7	.55	.52	76.8	73.7	.0015	707671_FT
36	114	160	-.8078	.2340	1.21	1.7	1.35	1.2	.50	.61	78.4	81.1	-.0007	707672_FT
37	92	179	.9984	.1808	1.02	.2	.94	-.4	.50	.52	68.5	72.9	.0016	707673_FT
38	70	179	1.7197	.1830	1.25	2.8	1.50	3.3	.29	.48	67.3	73.4	.0017	707674_FT
39	80	160	.6760	.1963	.96	-.5	.95	-.3	.58	.56	74.1	71.8	-.0006	707675_FT
40	108	179	.4651	.1853	.92	-.9	.80	-1.4	.58	.53	74.4	74.5	.0015	707676_FT
41	78	160	.7529	.1960	.94	-.8	.85	-1.1	.59	.55	71.2	71.7	-.0006	707677_FT
42	83	160	.5599	.1971	.92	-.9	1.13	.9	.61	.56	76.3	72.0	-.0006	707678_FT
43	107	179	.4994	.1849	1.39	4.1	1.63	3.7	.29	.53	62.5	74.4	.0015	707679_FT
44	98	179	.8013	.1818	1.10	1.2	1.30	2.2	.47	.52	68.5	73.4	.0015	707680_FT
45	84	160	.5210	.1974	.98	-.2	1.00	.1	.58	.56	77.0	72.1	-.0006	707683_FT
46	108	179	.4651	.1853	.94	-.6	1.00	.1	.56	.53	73.2	74.5	.0015	707684_FT
MEAN	168.9	280.0	.2864	.1613	1.01	.0	1.01	.0			74.9	75.4		
P.SD	63.4	80.9	.6931	.0278	.15	2.0	.27	1.8			5.9	3.7		

Grade 7 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	MATH
1	218	330	-.0860A	.1406	1.02	.3	.89	-.8	.52	.51	75.2	76.5	.0877	651845_OP
2	242	330	-.5127A	.1488	.81	-2.6	.75	-1.5	.63	.50	83.5	78.8	.0196	651851_OP
3	245	330	-.9423A	.1609	.89	-1.2	.61	-2.1	.69	.49	81.3	82.3	.3912	651852_OP
4	258	330	-1.1108A	.1669	.92	-.9	.82	-.8	.63	.48	81.9	84.0	.2498	652047_OP
5	200	330	-.1676A	.1419	1.63	7.8	2.14	6.3	.22	.51	60.6	76.9	.5113	652095_OP
6	186	330	.7218A	.1329	.93	-1.2	.86	-1.6	.55	.51	74.9	73.4	-.1297	652096_OP
7	286	330	-1.5171A	.1848	.77	-2.2	.39	-2.7	.58	.46	88.6	87.8	-.2130	652115_OP
8	166	330	.9416A	.1323	.91	-1.5	.87	-1.4	.54	.50	76.2	73.0	.0025	652116_OP
9	214	330	.0889A	.1381	1.44	5.9	1.65	4.5	.23	.51	62.2	75.7	-.0121	652120_OP
10	234	330	-.5296A	.1492	.87	-1.8	.73	-1.7	.64	.50	82.2	78.9	.2130	652122_OP
11	195	330	.2787A	.1360	1.47	6.5	1.67	5.1	.24	.52	57.5	74.9	.1524	652124_OP
12	263	330	-.8939A	.1593	.94	-.6	.82	-.9	.49	.49	83.8	81.9	-.1087	652129_OP
13	242	330	-.3521A	.1453	1.09	1.3	1.13	.9	.42	.51	76.2	77.9	-.1468	652131_OP
14	208	330	.5109A	.1340	.86	-2.3	.82	-1.8	.59	.51	79.0	74.0	-.3229	652134_OP
15	229	330	-.0982A	.1408	1.11	1.6	1.10	.8	.43	.51	71.1	76.6	-.1238	652140_OP
16	178	330	.7190A	.1329	1.15	2.3	1.21	2.1	.42	.51	67.3	73.4	.0144	652143_OP
17	238	330	-.7439A	.1548	1.12	1.5	1.17	.9	.52	.49	77.8	80.5	.3453	652145_OP
18	235	330	-.1900A	.1423	.78	-3.5	.64	-2.9	.63	.51	84.1	77.0	-.1579	673374_OP
19	253	330	-.7513A	.1550	.77	-3.2	.59	-2.5	.65	.49	84.4	80.6	.0053	676317_OP
20	178	330	.9853A	.1322	1.05	.9	1.05	.6	.47	.50	73.7	72.9	-.2488	690983_OP
21	210	330	.2960A	.1358	.83	-2.9	.78	-2.2	.61	.52	81.3	74.8	-.1449	690984_OP
22	208	330	-.2995A	.1443	.96	-.5	.93	-.4	.64	.51	79.7	77.6	.4961	690986_OP
23	173	330	1.1265A	.1323	.97	-.5	.95	-.6	.52	.50	73.7	72.9	-.2998	690987_OP
24	222	330	.2138A	.1367	.77	-3.9	.71	-2.8	.64	.52	84.8	75.2	-.2981	690988_OP
25	264	330	-1.0981A	.1664	.83	-1.9	.68	-1.5	.61	.48	85.7	83.9	.0766	690991_OP
26	249	330	-.6154A	.1513	1.03	.4	.88	-.6	.48	.50	77.5	79.5	-.0379	690992_OP
27	159	330	.9204A	.1323	1.21	3.4	1.26	2.7	.37	.50	67.0	73.0	.1447	690993_OP
28	217	330	.3706A	.1351	.85	-2.5	.77	-2.3	.59	.51	79.7	74.5	-.3566	690995_OP
29	268	330	-1.1379A	.1679	.81	-2.1	.51	-2.5	.62	.48	83.8	84.2	.0038	690996_OP
30	281	330	-1.5301A	.1855	.87	-1.1	.51	-2.0	.56	.46	88.3	87.9	-.0078	690997_OP
31	86	165	.8839	.1874	1.11	1.3	1.10	.8	.44	.51	67.7	73.5	.0015	707685_FT
32	94	165	.6018	.1885	.92	-.9	.85	-1.1	.56	.51	76.6	73.8	.0015	707686_FT
33	45	165	2.2781	.2021	1.45	4.2	1.98	3.8	.14	.40	68.8	76.7	.0041	707687_FT
34	61	165	1.7766	.1931	1.23	2.5	1.40	2.2	.31	.47	67.7	74.8	.0017	707688_FT
35	81	165	.9642	.1868	.95	-.6	.90	-.7	.53	.50	77.1	72.5	.0035	707689_FT
36	91	165	.7080	.1879	.97	-.3	.99	.0	.52	.51	75.3	73.6	.0015	707690_FT
37	84	165	.9540	.1873	1.43	4.5	1.65	4.2	.23	.50	62.0	73.4	.0016	707691_FT
38	93	165	.6373	.1883	1.06	.7	1.19	1.4	.47	.51	72.2	73.7	.0015	707692_FT
39	79	165	1.1295	.1875	1.01	.2	.95	-.3	.48	.50	70.9	73.3	.0016	707693_FT
40	75	165	1.1732	.1867	1.16	1.9	1.19	1.5	.40	.49	68.2	72.6	.0036	707694_FT
41	115	165	-.1807	.1999	1.22	2.2	1.30	1.4	.34	.49	70.3	76.4	.0013	707695_FT
42	94	165	.5050	.1899	1.09	1.0	1.03	.3	.47	.52	71.3	74.0	.0032	707697_FT
43	76	165	1.1384	.1867	.90	-1.2	.91	-.7	.54	.49	76.4	72.5	.0035	707698_FT
44	120	165	-.5215	.2122	1.15	1.3	1.02	.2	.44	.53	75.8	79.3	.0027	707699_FT
45	62	165	1.6318	.1897	1.16	1.9	1.20	1.3	.36	.46	66.9	73.3	.0038	707701_FT
46	67	165	1.4536	.1880	1.02	.3	.97	-.1	.46	.47	68.2	73.0	.0037	708811_FT
MEAN	174.8	272.6	.2115	.1626	1.03	.3	1.01	.0			75.2	76.7		
P.SD	73.5	78.6	.9028	.0246	.20	2.6	.36	2.2			7.5	4.1		

Grade 8 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL CORR.	EXP.	EXACT MATCH OBS%	EXP%	DISPLACE	MATH
1	238	338	-.4771A	.1421	1.04	.5	1.08	.6	.48	.50	76.4	77.1	-.0004	652151_OP
2	247	338	-.1619A	.1358	.88	-2.1	.92	-.6	.52	.50	81.8	74.3	-.5156	652152_OP
3	217	338	.1116A	.1319	1.09	1.6	1.05	.5	.42	.49	68.9	72.5	-.1921	652160_OP
4	240	338	-.5082A	.1428	.91	-1.3	.71	-2.2	.57	.50	76.4	77.4	-.0102	652162_OP
5	233	338	-.3843A	.1400	.79	-3.4	.65	-2.9	.65	.50	82.4	76.2	.0063	652163_OP
6	150	338	1.3575A	.1306	1.22	3.7	1.31	2.6	.35	.44	64.8	72.3	-.3039	652166_OP
7	254	338	-.8205A	.1515	.96	-.4	.87	-.7	.55	.51	80.2	80.6	-.0004	652167_OP
8	225	338	-.5336A	.1435	.95	-.7	.83	-1.2	.61	.50	77.7	77.6	.3123	652182_OP
9	145	338	1.3931A	.1310	1.04	.7	1.11	1.0	.45	.44	74.5	72.5	-.2573	652186_OP
10	272	338	-1.2620A	.1681	.85	-1.6	.64	-1.8	.61	.51	86.5	85.3	-.0170	652188_OP
11	152	338	.7397A	.1281	.96	-.8	.91	-.9	.49	.47	72.6	70.5	.2748	652192_OP
12	232	338	-.5304A	.1434	1.08	1.2	1.05	.4	.49	.50	74.8	77.6	.1743	652196_OP
13	165	338	.9074A	.1281	1.08	1.6	1.11	1.1	.41	.47	68.2	70.6	-.1051	652199_OP
14	208	338	-.0639A	.1342	1.13	2.1	1.16	1.3	.43	.50	68.9	73.6	.1474	673379_OP
15	284	338	-1.6572A	.1878	.83	-1.3	.67	-1.3	.61	.51	89.9	88.9	-.0004	673380_OP
16	274	338	-1.1261A	.1624	.81	-2.1	.58	-2.4	.58	.51	86.5	83.9	-.2153	673381_OP
17	134	338	1.2350A	.1296	1.03	.5	1.07	.7	.41	.45	72.0	71.7	.0799	676323_OP
18	201	338	.2033A	.1309	.82	-3.5	.77	-2.4	.61	.49	78.3	72.0	-.0002	676332_OP
19	249	338	-.5898A	.1449	.95	-.7	.90	-.6	.52	.50	77.7	78.2	-.1215	676333_OP
20	242	338	-.2212A	.1368	.86	-2.4	.79	-1.8	.55	.50	81.4	74.8	-.3456	690999_OP
21	211	338	.1613A	.1313	.84	-3.0	.72	-2.9	.59	.49	75.2	72.2	-.1336	691000_OP
22	174	338	.5516A	.1285	1.17	3.1	1.24	2.3	.38	.48	66.4	70.8	.1026	691001_OP
23	263	338	-1.2319A	.1668	1.08	.8	1.01	.1	.53	.51	83.0	85.0	.1974	691002_OP
24	186	338	.4561A	.1290	1.17	3.1	1.20	1.9	.38	.48	64.2	71.1	-.0001	691004_OP
25	250	338	-.8340A	.1520	1.00	.0	.94	-.3	.54	.51	80.8	80.7	.1050	691005_OP
26	250	338	-.7351A	.1489	1.01	.1	1.38	2.1	.49	.51	81.4	79.7	.0044	691006_OP
27	239	338	-.4610A	.1417	1.05	.8	1.13	.9	.46	.50	74.2	76.9	-.0375	691008_OP
28	160	338	.5848A	.1284	1.18	3.2	1.20	2.0	.37	.48	63.8	70.7	.2988	691011_OP
29	214	338	-.3026A	.1383	1.16	2.4	1.07	.6	.46	.50	68.9	75.5	.2816	691012_OP
30	200	338	.0192A	.1330	1.09	1.5	.99	.0	.47	.50	67.9	73.1	.2027	691014_OP
31	81	168	.8765	.1835	1.22	2.9	1.21	1.3	.34	.48	56.8	70.3	.0011	707702_FT
32	86	170	.6674	.1785	.96	-.6	.92	-.6	.48	.46	72.4	70.5	-.0011	707703_FT
33	113	168	-.2659	.2004	.74	-2.9	.63	-2.2	.69	.54	85.2	76.5	.0007	707704_FT
34	59	168	1.6343	.1901	.92	-.9	.87	-.6	.47	.44	76.8	73.2	.0014	707705_FT
35	112	168	-.2260	.1992	1.05	.6	1.08	.5	.50	.53	74.8	76.2	.0007	707706_FT
36	123	170	-.5971	.1990	.77	-2.6	.58	-2.3	.64	.46	81.0	77.1	-.0013	707707_FT
37	82	170	.7948	.1786	1.03	.5	1.02	.2	.42	.45	69.3	70.7	-.0011	707708_FT
38	26	168	3.1231	.2509	1.33	2.0	2.00	2.3	.14	.33	85.2	86.6	.0017	707709_FT
39	76	170	.9869	.1795	.87	-1.8	.80	-1.8	.53	.45	76.1	71.2	-.0010	707710_FT
40	87	170	.6355	.1785	1.09	1.3	1.10	.9	.38	.46	66.9	70.5	-.0011	707711_FT
41	126	168	-.8411	.2228	.82	-1.5	.88	-.4	.65	.55	85.2	81.9	.0006	707713_FT
42	103	168	.1154	.1910	.89	-1.4	.77	-1.5	.59	.52	76.8	73.4	.0008	707714_FT
43	95	170	.3796	.1795	1.18	2.4	1.23	1.7	.33	.46	63.8	70.7	-.0012	707715_FT
44	90	168	.5720	.1848	1.15	1.9	1.18	1.2	.42	.50	69.7	71.1	.0010	707716_FT
45	65	170	1.3477	.1833	1.34	3.8	1.52	3.5	.22	.43	62.6	72.9	-.0010	707717_FT
46	133	170	-1.0268	.2170	.90	-.8	.72	-1.1	.54	.46	84.0	81.9	-.0013	707718_FT
MEAN	173.2	279.2	.0869	.1600	1.01	.1	.99	-.1			75.0	75.6		
P.SD	70.4	80.5	.9139	.0302	.15	2.0	.27	1.6			7.6	4.9		

Grade 11 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	MATH
1	270	318	-1.5986A	.1817	.71	-2.7	.44	-2.9	.62	.52	89.7	87.3	-.3993	651135_OP
2	255	318	-1.1449A	.1611	.71	-3.5	.49	-3.4	.64	.51	86.4	82.7	-.3199	651138_OP
3	169	318	.3105A	.1303	1.16	3.0	1.19	1.8	.35	.46	61.6	69.7	.0257	651164_OP
4	238	318	-1.5773A	.1806	1.28	2.2	1.02	.2	.59	.52	81.1	87.1	.5803	651168_OP
5	246	318	-1.1449A	.1611	.82	-2.0	.60	-2.4	.62	.51	85.4	82.7	-.0591	651173_OP
6	216	318	-.5340A	.1423	.94	-.9	.86	-1.0	.54	.49	78.5	76.0	.0176	651183_OP
7	186	318	.6205A	.1294	1.00	.0	.98	-.2	.48	.44	68.9	69.2	-.5769	651198_OP
8	238	318	-.9439A	.1539	.95	-.5	1.08	.5	.50	.50	82.8	80.5	-.0567	651223_OP
9	248	318	-.7783A	.1487	.80	-2.8	.84	-1.0	.53	.50	87.1	78.6	-.4879	651226_OP
10	187	318	.4324A	.1298	1.09	1.7	1.18	1.8	.39	.45	66.9	69.4	-.4076	651238_OP
11	224	318	-.3777A	.1390	.78	-3.8	.71	-2.5	.60	.48	81.8	74.4	-.3088	651311_OP
12	116	318	.9566A	.1304	1.33	5.8	1.49	4.1	.15	.42	57.0	69.9	.2766	651318_OP
13	223	318	-.1986A	.1358	.81	-3.5	.77	-2.1	.57	.48	81.1	72.7	-.4689	651319_OP
14	173	318	.3291A	.1302	.98	-.3	.96	-.4	.47	.46	70.2	69.7	-.0611	651320_OP
15	207	318	-.8273A	.1502	1.19	2.3	1.11	.7	.52	.50	72.8	79.2	.4902	676343_OP
16	242	318	-1.0405A	.1572	.78	-2.7	.56	-2.9	.65	.50	84.8	81.6	-.0594	676350_OP
17	255	318	-1.8174A	.1940	1.06	.5	1.17	.7	.63	.53	87.1	89.1	.3599	676351_OP
18	272	318	-1.8751A	.1975	.96	-.3	.61	-1.5	.56	.53	88.7	89.6	-.2060	676352_OP
19	204	318	-.1924A	.1357	.87	-2.3	.74	-2.4	.56	.48	75.5	72.7	-.0916	676354_OP
20	156	318	.2642A	.1306	1.30	5.4	1.60	5.2	.26	.46	59.6	69.9	.2910	676377_OP
21	151	318	.4982A	.1296	.94	-1.3	.90	-1.0	.48	.45	72.5	69.3	.1403	691016_OP
22	174	318	.0766A	.1322	1.01	.2	.97	-.2	.47	.47	70.2	70.7	.1751	691021_OP
23	138	318	1.1535A	.1320	1.12	2.1	1.18	1.6	.37	.41	69.5	71.0	-.2925	691022_OP
24	135	318	1.0053A	.1307	1.03	.6	1.09	.8	.41	.42	69.9	70.1	-.0966	691023_OP
25	243	318	-1.3974A	.1718	1.16	1.5	.97	-.1	.53	.51	81.5	85.4	.2751	691024_OP
26	241	318	-1.6754A	.1859	1.29	2.2	.96	-.1	.61	.52	82.5	88.0	.6042	691026_OP
27	198	318	-.2028A	.1359	1.00	.1	1.06	.5	.48	.48	72.2	72.7	.0313	691027_OP
28	140	318	.6022A	.1294	.78	-4.7	.70	-3.4	.58	.44	78.8	69.2	.2204	691028_OP
29	139	318	.3891A	.1299	.97	-.5	.93	-.7	.48	.45	70.5	69.5	.4506	691029_OP
30	130	318	1.0425A	.1310	1.16	2.9	1.26	2.2	.30	.42	67.5	70.3	-.0493	691030_OP
31	63	153	1.0176	.1873	1.53	6.1	1.66	3.3	.04	.42	49.7	70.7	.0031	707720_FT
32	73	165	.7679	.1809	1.08	1.2	1.08	.6	.39	.44	68.6	68.5	.0005	707721_FT
33	93	153	-.0300	.1912	.94	-.7	.97	-.1	.50	.45	75.2	71.9	.0028	707722_FT
34	51	153	1.4515	.1938	1.25	2.8	1.40	1.8	.18	.39	69.8	73.1	.0032	707723_FT
35	78	153	.4989	.1858	1.30	3.8	1.33	2.1	.23	.44	59.1	70.1	.0030	707724_FT
36	109	165	-.4659	.1970	.91	-.9	.82	-1.0	.57	.51	75.8	74.9	.0004	707725_FT
37	99	165	-.0978	.1876	.90	-1.4	.81	-1.3	.56	.49	75.8	71.4	.0004	707727_FT
38	75	153	.6023	.1855	.91	-1.3	.88	-.8	.50	.44	74.5	70.0	.0030	707728_FT
39	75	153	.6023	.1855	.99	-.1	.99	.0	.42	.44	74.5	70.0	.0030	707729_FT
40	64	165	1.0658	.1833	1.04	.6	1.11	.8	.37	.42	68.6	70.0	.0005	707731_FT
41	78	165	.6047	.1806	.88	-1.8	.81	-1.6	.52	.45	71.9	68.4	.0005	707732_FT
42	54	165	1.4115	.1891	.88	-1.5	.81	-1.2	.46	.40	78.4	72.8	.0005	707733_FT
43	73	165	.7679	.1809	1.27	3.7	1.27	2.0	.27	.44	55.6	68.5	.0005	707734_FT
44	58	153	1.1949	.1894	.86	-1.9	.82	-1.0	.49	.41	77.2	71.5	.0031	707735_FT
45	53	153	1.3769	.1923	1.17	2.0	1.23	1.1	.26	.39	67.1	72.7	.0032	707736_FT
46	52	165	1.4836	.1907	1.32	3.4	1.56	2.9	.17	.39	66.0	73.4	.0005	707737_FT
MEAN	155.7	262.7	.0567	.1615	1.03	.3	1.00	.0			73.7	74.5		
P.SD	72.5	75.8	.9714	.0259	.19	2.6	.28	1.9			9.2	6.4		

Appendix M: Science Item Bank Difficulties

Grade 5 Science

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	SCIE
1	182	327	-.6959A	.1362	.97	-.5	.95	-.4	.55	.53	72.1	73.1	.0968	651050_OP
2	163	327	-.1854A	.1330	.99	-.2	.99	-.1	.50	.49	72.1	71.4	-.0721	651053_OP
3	173	327	-.5697A	.1350	1.00	.0	1.00	.1	.52	.52	73.4	72.6	.1333	651058_OP
4	152	327	-.2053A	.1330	1.27	4.5	1.74	5.5	.33	.50	61.8	71.4	.1408	651078_OP
5	197	327	-.6346A	.1356	.89	-2.0	.81	-1.7	.58	.52	74.8	72.8	-.2462	651107_OP
6	210	327	-.8963A	.1387	.75	-4.4	.63	-3.4	.67	.54	82.4	74.3	-.2421	651113_OP
7	241	327	-2.2890A	.1790	1.22	1.9	1.05	.3	.61	.59	82.4	86.3	.4551	651114_OP
8	234	327	-1.6721A	.1555	1.06	.8	.98	-.1	.54	.57	77.1	80.3	.0085	676456_OP
9	201	327	-.8716A	.1383	1.12	1.9	1.05	.4	.46	.54	68.1	74.1	-.0861	676460_OP
10	219	327	-1.7000A	.1564	1.27	3.0	1.63	2.9	.49	.57	76.1	80.5	.3802	676461_OP
11	190	327	-1.0292A	.1407	1.03	.5	.98	-.1	.56	.54	74.8	75.2	.2835	691146_OP
12	226	327	-1.4451A	.1493	.77	-3.4	.64	-2.6	.69	.56	84.4	78.3	-.0328	691147_OP
13	218	327	-1.1906A	.1436	.82	-2.8	.78	-1.6	.64	.55	82.1	76.3	-.1133	691148_OP
14	201	327	-.6072A	.1353	1.29	4.6	1.53	4.0	.35	.52	59.5	72.7	-.3515	691149_OP
15	162	327	-.1301A	.1329	1.01	.2	1.00	.1	.48	.49	72.4	71.3	-.1093	691150_OP
16	242	327	-1.5991A	.1534	.74	-3.6	.57	-2.9	.68	.57	86.4	79.6	-.2711	691151_OP
17	174	327	-.1088A	.1328	1.50	8.0	1.61	4.6	.23	.49	51.2	71.3	-.3428	691152_OP
18	233	327	-1.4313A	.1489	.62	-5.9	.46	-4.2	.75	.56	88.7	78.2	-.2124	691154_OP
19	195	327	-1.2196A	.1442	1.06	.8	.93	-.5	.58	.55	73.8	76.5	.3805	691155_OP
20	210	327	-1.5991A	.1534	1.35	4.0	1.39	2.1	.47	.57	71.1	79.6	.4669	691156_OP
21	207	327	-1.0680A	.1414	.90	-1.5	1.03	.3	.60	.55	79.7	75.4	-.0075	691157_OP
22	158	327	-.1706A	.1329	1.01	.2	.95	-.4	.49	.49	67.8	71.4	.0011	691158_OP
23	235	327	-1.6723A	.1555	.68	-4.4	.53	-3.1	.75	.57	86.0	80.3	-.0159	691159_OP
24	267	327	-2.5078A	.1900	.82	-1.5	.53	-2.0	.67	.60	89.4	88.2	-.1462	691160_OP
25	279	327	-3.2102A	.2369	1.10	.6	1.10	.4	.61	.62	91.7	93.0	.0006	691212_OP
26	114	151	-2.0118	.2551	.81	-1.2	.67	-1.0	.72	.62	84.7	85.1	.0013	707414_FT
27	107	151	-1.6002	.2317	.92	-.6	.74	-1.0	.64	.60	82.5	80.7	.0013	707416_FT
28	99	176	-.6633	.1843	.99	.0	.93	-.5	.52	.52	72.6	73.2	.0006	707417_FT
29	127	176	-1.7153	.2088	1.07	.7	.95	-.1	.52	.55	75.0	79.7	.0001	707418_FT
30	106	151	-1.5472	.2292	1.01	.1	.92	-.2	.59	.59	77.4	80.2	.0013	707419_FT
31	75	151	-.2163	.1955	1.35	4.2	1.49	2.4	.31	.49	56.2	70.6	.0014	707420_FT
32	74	151	-.1781	.1953	1.11	1.4	1.19	1.0	.43	.49	67.2	70.5	.0014	707421_FT
33	137	176	-2.1936	.2305	.72	-2.3	.42	-2.3	.72	.55	86.6	84.1	.0000	707422_FT
34	42	176	1.3244	.2043	1.32	2.9	1.99	3.5	.20	.38	76.2	78.7	.0013	707423_FT
35	59	176	.6771	.1881	1.12	1.3	1.11	.7	.36	.44	71.3	74.2	.0011	707425_FT
36	89	176	-.3290	.1818	1.09	1.1	1.05	.4	.45	.50	68.9	72.4	.0007	707426_FT
37	34	151	1.4659	.2239	1.14	1.2	1.71	2.3	.24	.35	78.8	79.5	.0013	707427_FT
38	134	176	-2.0397	.2226	.96	-.3	.89	-.3	.57	.55	82.9	82.5	.0001	707428_FT
39	116	151	-2.1464	.2643	.76	-1.5	.50	-1.6	.75	.63	87.6	86.4	.0013	707429_FT
40	122	176	-1.5051	.2016	1.11	1.1	1.15	.7	.48	.54	74.4	78.0	.0002	707430_FT
41	119	151	-2.3691	.2814	.81	-1.0	.47	-1.6	.75	.64	88.3	88.4	.0013	707431_FT
MEAN	164.0	263.2	-1.0672	.1763	1.01	.2	1.00	.0			76.3	77.8		
P.SD	62.4	80.1	.9833	.0421	.20	2.7	.38	2.1			9.1	5.6		

Grade 8 Science

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	SCIE
1	228	326	-1.0569A	.1377	.91	-1.4	1.01	.2	.51	.49	76.5	74.6	-.3362	651233_OP
2	221	326	-1.4027A	.1453	.90	-1.4	.76	-1.9	.61	.51	78.2	77.9	.1558	651236_OP
3	168	326	-.5047A	.1305	1.05	.9	1.05	.5	.43	.46	66.8	70.3	.2054	651258_OP
4	228	326	-1.2597A	.1419	.93	-1.0	.93	-.5	.53	.50	78.8	76.5	-.1324	651261_OP
5	200	326	-.9706A	.1362	1.18	2.9	1.21	1.8	.38	.49	64.2	73.7	.1208	651263_OP
6	186	326	-.7282A	.1327	.87	-2.3	.80	-2.0	.56	.48	76.9	71.6	.1247	673796_OP
7	207	326	-1.1161A	.1388	1.00	.0	.89	-.9	.52	.50	72.6	75.1	.1385	673797_OP
8	227	326	-1.0208A	.1370	.88	-1.9	1.08	.7	.53	.49	79.5	74.2	-.3513	676474_OP
9	193	326	-.8909A	.1349	1.09	1.5	1.07	.7	.44	.49	70.0	73.0	.1657	676475_OP
10	261	326	-2.5405A	.1913	1.03	.3	.67	-1.4	.67	.56	87.3	88.9	.3311	676476_OP
11	199	326	-1.3540A	.1441	1.28	3.6	1.58	3.8	.44	.51	71.3	77.4	.5232	676477_OP
12	194	326	-.7543A	.1330	1.08	1.3	.98	-.1	.43	.48	65.8	71.8	.0114	676478_OP
13	146	326	.0265A	.1289	1.10	1.9	1.11	1.0	.36	.43	65.8	69.8	.0401	676479_OP
14	226	326	-.9540A	.1359	.84	-2.8	.77	-2.2	.56	.49	79.5	73.5	-.3973	691162_OP
15	205	326	-1.1539A	.1396	1.04	.7	.97	-.2	.51	.50	70.7	75.5	.2134	691163_OP
16	184	326	-.9150A	.1353	1.05	.9	1.04	.4	.49	.49	71.0	73.2	.3461	691165_OP
17	187	326	-.6486A	.1318	1.06	1.2	1.04	.4	.44	.47	67.8	71.1	.0279	691166_OP
18	264	326	-2.3478A	.1810	.81	-1.7	.58	-2.1	.68	.55	88.6	87.3	.0441	691167_OP
19	191	326	-.4303A	.1300	1.02	.4	1.05	.6	.44	.46	69.1	70.0	-.2584	691168_OP
20	266	326	-2.0501A	.1672	.67	-3.7	.45	-3.6	.68	.54	90.2	84.5	-.3216	691170_OP
21	276	326	-2.3815A	.1827	.59	-4.0	.36	-3.7	.71	.55	92.5	87.6	-.3581	691171_OP
22	203	326	-.6586A	.1319	1.05	.9	1.00	.1	.43	.47	69.1	71.1	-.2454	691172_OP
23	257	326	-1.9900A	.1647	.86	-1.4	.93	-.3	.59	.54	86.6	83.9	-.1035	691173_OP
24	225	326	-1.1465A	.1394	1.05	.8	1.16	1.3	.44	.50	75.2	75.4	-.1834	691174_OP
25	278	326	-2.8206A	.2084	.92	-.5	.92	-.2	.60	.56	91.5	91.0	-.0014	691176_OP
26	88	162	-.4048	.1903	.91	-1.1	.84	-1.0	.55	.51	73.5	71.9	.0008	707432_FT
27	124	162	-1.9649	.2402	.86	-.9	.77	-.8	.66	.59	86.1	84.5	-.0013	707433_FT
28	89	164	-.4881	.1781	1.29	4.1	1.44	3.4	.20	.41	54.5	68.2	-.0014	707434_FT
29	108	162	-1.1811	.2069	.87	-1.3	.81	-1.0	.63	.56	81.5	77.9	-.0003	707435_FT
30	136	164	-2.3897	.2522	.88	-.7	1.09	.4	.56	.49	87.8	87.4	-.0016	707436_FT
31	113	162	-1.4025	.2145	.78	-2.0	.63	-2.0	.69	.57	83.4	79.7	-.0006	707437_FT
32	119	162	-1.6933	.2266	1.00	.1	1.06	.3	.57	.58	82.1	82.2	-.0010	707438_FT
33	87	162	-.3687	.1899	1.29	3.3	1.32	1.9	.34	.50	62.3	71.7	.0008	707440_FT
34	43	164	1.0358	.1971	1.04	.5	1.15	.8	.27	.32	75.0	76.0	-.0011	707441_FT
35	114	162	-1.4488	.2163	.95	-.4	.92	-.3	.59	.57	78.8	80.1	-.0007	707442_FT
36	37	162	1.5017	.2130	1.44	3.7	2.25	3.1	.08	.34	74.2	78.8	.0006	707443_FT
37	129	164	-1.9935	.2253	1.03	.3	1.52	2.0	.42	.47	82.1	83.1	-.0017	707445_FT
38	69	164	.1406	.1783	1.13	1.8	1.20	1.5	.25	.37	64.1	68.8	-.0011	707446_FT
39	98	164	-.7783	.1816	1.16	2.2	1.14	1.1	.30	.42	62.2	69.6	-.0016	707447_FT
40	129	164	-1.9935	.2253	.97	-.2	.93	-.2	.49	.47	83.3	83.1	-.0017	707448_FT
41	98	164	-.7783	.1816	1.02	.3	1.13	1.1	.41	.42	73.7	69.6	-.0016	708809_FT
MEAN	170.8	262.4	-1.1043	.1707	1.00	.1	1.01	.1			75.9	76.9		
P.SD	65.9	79.5	.8837	.0366	.16	1.9	.32	1.6			9.0	6.3		

Grade 11 Science

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	SCIE
1	181	307	-.5491A	.1448	.92	-1.3	.79	-1.6	.60	.56	76.6	74.9	-.0013	651746_OP
2	198	307	-.9474A	.1499	.92	-1.1	.83	-1.1	.61	.57	77.7	76.7	.0306	651769_OP
3	177	307	-.9231A	.1495	1.33	4.3	1.67	3.7	.45	.57	68.1	76.6	.4593	651772_OP
4	171	307	-.3918A	.1435	.85	-2.4	.73	-2.3	.62	.55	79.8	74.5	.0488	651774_OP
5	209	307	-1.1989A	.1545	1.21	2.6	1.28	1.5	.47	.58	73.8	78.2	.0296	651785_OP
6	218	307	-1.2251A	.1550	1.07	.9	1.03	.2	.52	.58	76.6	78.4	-.1687	651790_OP
7	240	307	-1.8700A	.1731	.75	-2.8	.47	-2.6	.69	.58	88.3	83.3	-.1408	651792_OP
8	193	307	-.5491A	.1448	.82	-2.9	.69	-2.6	.64	.56	80.1	74.9	-.2609	651793_OP
9	195	307	-1.1730A	.1540	1.02	.4	.91	-.5	.61	.58	76.6	78.0	.3262	651798_OP
10	213	307	-.9847A	.1505	.83	-2.5	.92	-.5	.64	.57	84.0	76.9	-.2878	651819_OP
11	194	307	-.4655A	.1441	1.01	.2	1.00	.1	.55	.56	73.8	74.7	-.3675	651822_OP
12	236	307	-1.5667A	.1634	.75	-3.2	.63	-1.9	.66	.58	87.9	80.8	-.3270	673804_OP
13	186	307	-.7074A	.1465	.93	-1.0	.82	-1.3	.60	.56	77.0	75.5	.0519	673806_OP
14	214	307	-1.1563A	.1536	.94	-.8	.74	-1.6	.60	.58	78.4	77.9	-.1371	673807_OP
15	152	307	-.2143A	.1425	1.37	5.2	1.48	3.3	.37	.55	60.6	74.0	.2556	673808_OP
16	211	307	-1.1384A	.1533	.89	-1.4	.74	-1.6	.62	.57	80.9	77.8	-.0809	676484_OP
17	235	307	-1.7987A	.1706	.79	-2.5	.51	-2.4	.69	.58	85.5	82.7	-.0558	676494_OP
18	233	307	-1.6616A	.1662	.91	-1.1	.82	-.8	.60	.58	84.8	81.6	-.1365	676495_OP
19	180	307	-.5305A	.1446	1.08	1.2	1.19	1.4	.52	.56	69.9	74.9	.0010	691177_OP
20	252	307	-2.1806A	.1855	.96	-.3	.87	-.4	.57	.58	86.5	86.0	-.2541	691178_OP
21	202	307	-.8985A	.1491	1.18	2.4	1.02	.2	.47	.57	69.9	76.5	-.1109	691179_OP
22	219	307	-1.6361A	.1655	.92	-1.0	.68	-1.6	.67	.58	81.9	81.4	.2256	691180_OP
23	167	307	-.2834A	.1428	1.01	.2	.99	.0	.53	.55	73.4	74.2	.0220	691183_OP
24	194	307	-1.2445A	.1554	1.04	.5	.81	-1.1	.62	.58	74.5	78.5	.4203	691184_OP
25	217	307	-1.3651A	.1582	1.05	.7	.82	-.9	.56	.58	74.5	79.3	.0007	691185_OP
26	231	307	-2.1093A	.1824	1.04	.4	.82	-.6	.67	.58	81.9	85.3	.3791	691187_OP
27	156	307	-.0437A	.1419	1.08	1.2	1.20	1.5	.51	.54	71.6	73.7	.0048	691189_OP
28	206	307	-.8160A	.1479	.83	-2.6	.72	-2.1	.64	.57	81.9	76.1	-.2891	691190_OP
29	249	307	-2.5661A	.2049	1.12	.9	1.11	.4	.60	.59	87.2	89.0	.2577	691191_OP
30	268	307	-3.1977A	.2482	.85	-.8	.36	-1.8	.68	.59	92.9	93.1	.0010	691192_OP
31	132	159	-2.6647	.3043	.78	-1.1	.54	-.9	.73	.64	91.0	90.7	.0015	707449_FT
32	35	148	1.8856	.2414	1.22	1.6	1.91	2.3	.30	.43	81.9	82.5	.0026	707450_FT
33	127	159	-2.2556	.2704	.93	-.4	.77	-.5	.65	.63	88.9	87.5	.0014	707451_FT
34	133	159	-2.7600	.3135	.91	-.4	1.19	.5	.66	.64	91.7	91.3	.0015	707452_FT
35	104	148	-1.3069	.2237	.96	-.3	.96	.0	.58	.56	78.3	78.6	-.0001	707453_FT
36	105	148	-1.3573	.2252	1.27	2.3	1.71	2.2	.40	.56	76.1	78.9	-.0002	707454_FT
37	69	148	.2543	.2075	1.33	3.1	1.46	2.1	.35	.54	65.9	75.1	.0012	707456_FT
38	81	159	-.0734	.1952	1.12	1.4	1.15	.9	.47	.52	66.0	72.4	.0017	707457_FT
39	93	148	-.7865	.2127	.91	-.9	.90	-.4	.61	.57	78.3	76.3	.0002	707458_FT
40	110	159	-1.2754	.2188	.82	-1.7	.70	-1.3	.68	.59	82.6	79.0	.0014	707459_FT
41	77	148	-.0883	.2070	.96	-.4	.96	-.2	.59	.55	77.5	75.2	.0008	707461_FT
42	75	159	.1541	.1945	1.39	4.2	1.57	2.8	.31	.51	55.6	72.2	.0017	707462_FT
43	90	159	-.4210	.1984	1.23	2.5	1.32	1.7	.43	.55	66.7	73.7	.0016	707463_FT
44	107	148	-1.4600	.2283	.93	-.6	1.41	1.3	.59	.56	81.9	79.6	-.0002	707464_FT
45	43	159	1.4404	.2134	1.31	2.7	1.76	2.6	.26	.40	72.9	78.0	.0016	707465_FT
46	125	148	-2.6040	.2873	1.01	.1	1.52	1.0	.48	.53	90.6	88.4	-.0002	707466_FT
MEAN	167.5	253.6	-1.0589	.1854	1.01	.1	1.01	-.1			78.3	79.2		
P.SD	60.6	73.2	.9991	.0453	.17	2.0	.36	1.6			8.2	5.2		

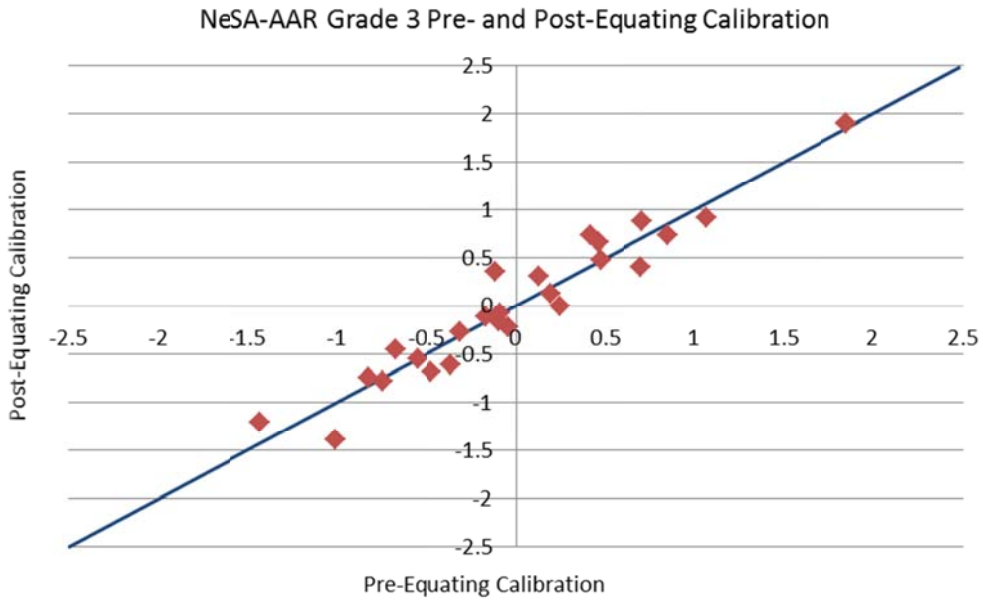
Appendix N: Reading Pre- and Post-Equating Summary

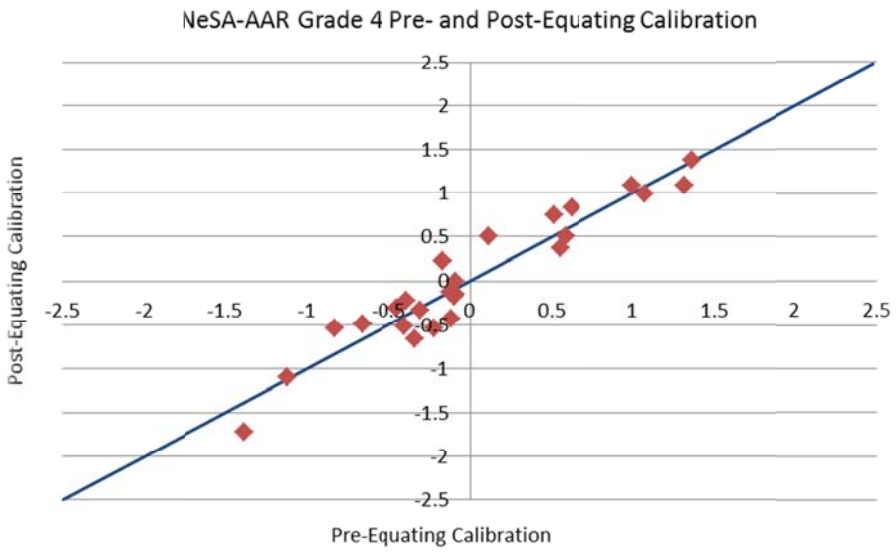
The Pre- values were taken from the calibrated item and used to create the Raw-to-Scale Conversion Tables. The Post- values were taken directly from unanchored calibration runs.

The statistics of Mean, Shift, Corr, SD, and Ratio are computed from the items that have both Pre and Post *logit* values.

	3			4			5			6			7			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
1	0.71	0.88	-0.67	-0.84	-0.55	-1.27	0.82	0.81	0.05	0.34	0.84	-1.10	-0.26	0.04	-1.23	0.58	0.63	-0.66	0.22	0.39	-0.87
2	-0.09	-0.08	0.00	-0.45	-0.30	-0.63	-0.38	-0.02	-1.53	0.61	0.52	0.36	0.97	0.83	0.59	0.69	0.53	2.27	-0.58	-0.34	-1.24
3	0.19	0.13	0.27	-0.10	-0.18	0.32	0.40	0.14	1.15	0.58	0.86	-0.55	0.04	-0.23	1.12	0.60	0.45	2.11	-0.24	-0.01	-1.15
4	-0.55	-0.55	0.00	-0.12	-0.13	0.00	0.43	0.23	0.85	0.10	0.20	-0.11	0.20	0.02	0.70	0.61	0.61	0.05	1.17	0.90	1.19
5	1.85	1.90	-0.18	-0.39	-0.23	-0.72	0.37	0.35	0.05	0.80	1.00	-0.36	0.41	0.27	0.56	0.80	0.89	-1.23	0.73	0.37	1.65
6	-0.04	-0.22	0.73	-0.41	-0.52	0.45	0.09	0.41	-1.37	0.16	0.37	-0.40	0.27	0.42	-0.58	0.47	0.49	-0.25	0.19	-0.07	1.16
7	-0.10	-0.17	0.29	-0.22	-0.55	1.36	0.64	0.41	0.98	0.77	0.70	0.31	0.07	0.21	-0.58	1.24	1.24	0.03	1.40	1.52	-0.65
8	-0.83	-0.75	-0.30	-0.11	-0.44	1.35	0.02	0.19	-0.74	0.54	0.78	-0.47	-0.06	-0.21	0.61	0.46	0.43	0.44	-0.17	-0.36	0.84
9	1.07	0.92	0.59	-1.12	-1.09	-0.14	-0.19	-0.06	-0.56	0.47	0.25	0.70	-0.23	0.12	-1.43	0.46	0.59	-1.78	1.40	1.34	0.21
10	-0.47	-0.68	0.86	1.32	1.09	0.91	-0.13	-0.28	0.65	1.67	1.33	0.99	1.40	1.11	1.19	0.22	0.22	0.00	0.53	0.39	0.59
11	0.85	0.74	0.48	0.52	0.75	-1.00	0.11	0.26	-0.67	0.70	0.76	0.00	0.70	0.83	-0.52	0.65	0.67	-0.18	-0.17	-0.18	-0.02
12	0.13	0.31	-0.71	-0.34	-0.66	1.33	0.92	0.82	0.43	-0.04	-0.14	0.39	0.45	0.18	1.11	1.29	1.33	-0.56	-0.30	-0.31	0.00
13	-0.75	-0.78	0.15	-0.31	-0.33	0.07	0.39	0.39	0.02	-0.39	-0.36	0.06	-0.13	-0.32	0.78	0.74	0.53	2.95	-0.39	-0.50	0.48
14	0.25	0.00	1.02	1.37	1.38	-0.09	0.64	0.32	1.36	0.33	0.00	0.96	-0.32	-0.36	0.18	0.08	-0.06	1.98	0.25	0.39	-0.72
15	-0.37	-0.62	1.02	0.62	0.83	-0.93	0.34	0.15	0.78	0.38	0.03	1.02	0.36	0.12	0.97	-0.02	0.13	-2.00	0.29	0.27	0.02
16	0.46	0.67	-0.83	0.11	0.50	-1.68	-1.11	-1.08	-0.13	0.76	0.92	-0.25	0.40	0.56	-0.64	-0.78	-0.76	-0.32	0.17	0.07	0.37
17	-0.68	-0.46	-0.87	-1.38	-1.72	1.41	0.90	0.60	1.29	-0.56	-0.07	-1.08	0.64	0.83	-0.76	1.45	1.23	3.12	1.76	1.63	0.52
18	0.48	0.48	0.00	1.00	1.09	-0.43	0.38	0.64	-1.09	0.72	0.88	-0.24	-1.35	-1.10	-1.02	1.04	1.24	-2.81	-0.42	-0.27	-0.78
19	-1.01	-1.39	1.54	-0.09	-0.01	-0.39	-0.86	-0.69	-0.72	-0.76	-1.17	1.16	-0.73	-0.68	-0.22	0.03	0.04	-0.04	-1.18	-1.40	0.97
20	-0.11	0.36	-1.89	1.08	0.99	0.36	0.67	0.76	-0.38	0.42	0.48	0.00	-0.47	-0.73	1.05	-0.18	-0.21	0.53	0.07	0.11	-0.30
21	0.41	0.74	-1.30	-0.17	0.23	-1.72	0.12	0.26	-0.61	1.75	1.92	-0.28	-0.09	-0.09	0.03	0.76	0.76	0.06	-0.97	-0.82	-0.81
22	-0.17	-0.11	-0.22	-0.67	-0.49	-0.78	-0.70	-0.69	-0.04	-0.82	-0.26	-1.24	-0.07	-0.05	-0.06	1.15	1.09	0.95	0.29	0.63	-1.66

	3			4			5			6			7			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
23	-0.31	-0.28	-0.12	0.55	0.37	0.76	-0.48	-0.48	-0.02	-0.04	-0.46	1.20	1.01	1.32	-1.25	1.44	1.47	-0.29	0.00	-0.01	-0.05
24	0.70	0.40	1.20	0.59	0.50	0.33	0.34	0.34	0.00	0.06	-0.36	1.17	-1.29	-1.29	0.00	-0.17	0.13	-4.13	-0.70	-0.79	0.33
25	-1.43	-1.21	-0.89	-0.09	-0.15	0.26	-0.34	-0.41	0.31	-0.16	-0.65	1.37	-0.32	-0.17	-0.58	1.07	1.07	0.05	0.05	0.44	-1.92
Mean	0.01	0.01		0.01	0.02		0.13	0.13		0.34	0.34		0.06	0.06		0.59	0.59		0.14	0.14	
Shift		0.00			0.00			0.00			0.00			0.00			0.00			0.00	
Corr		0.96			0.96			0.94			0.89			0.95			0.98			0.96	
SD	0.72	0.75		0.71	0.75		0.55	0.50		0.63	0.69		0.65	0.64		0.56	0.54		0.73	0.72	
Ratio		0.97			0.95			1.10			0.90			1.01			1.03			1.02	

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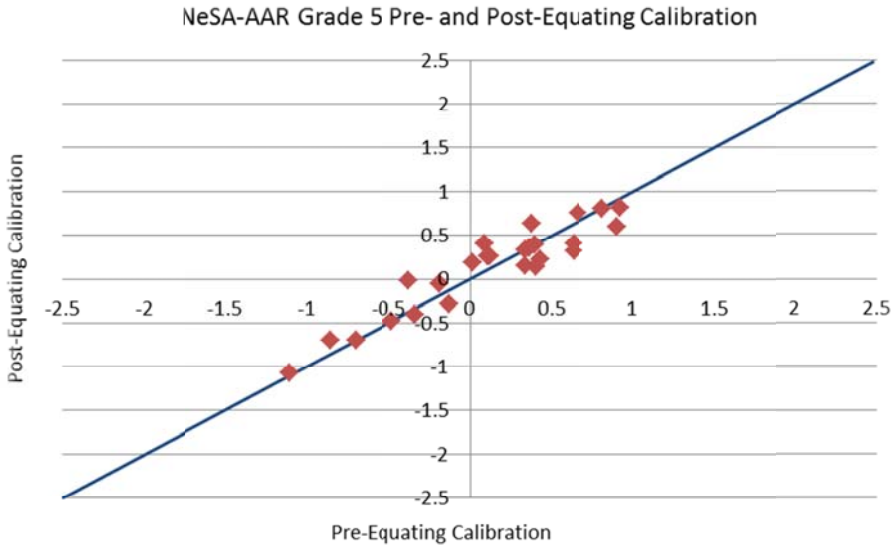
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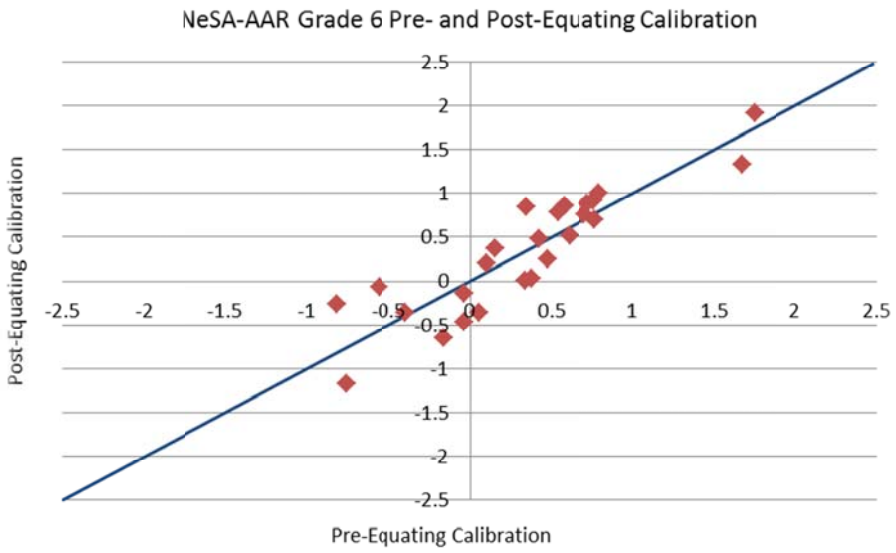
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1.5
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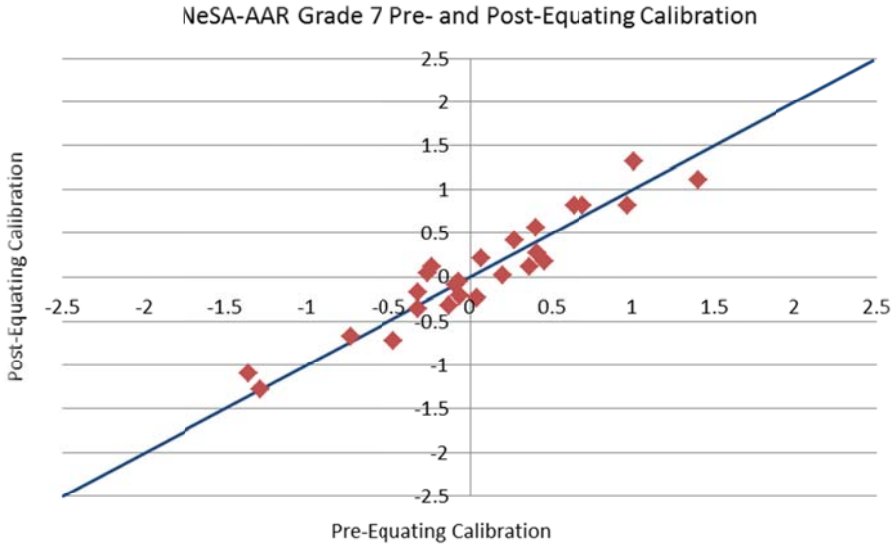
2.5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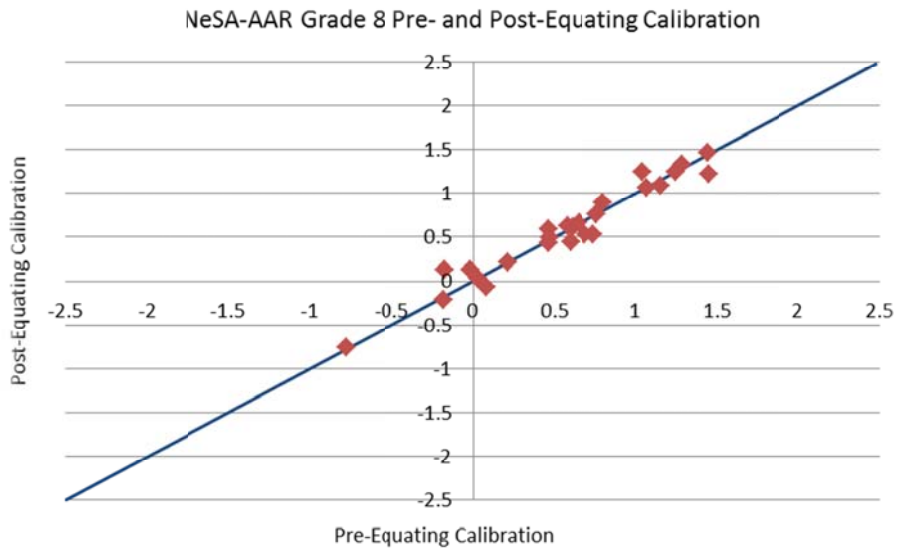
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-1.5
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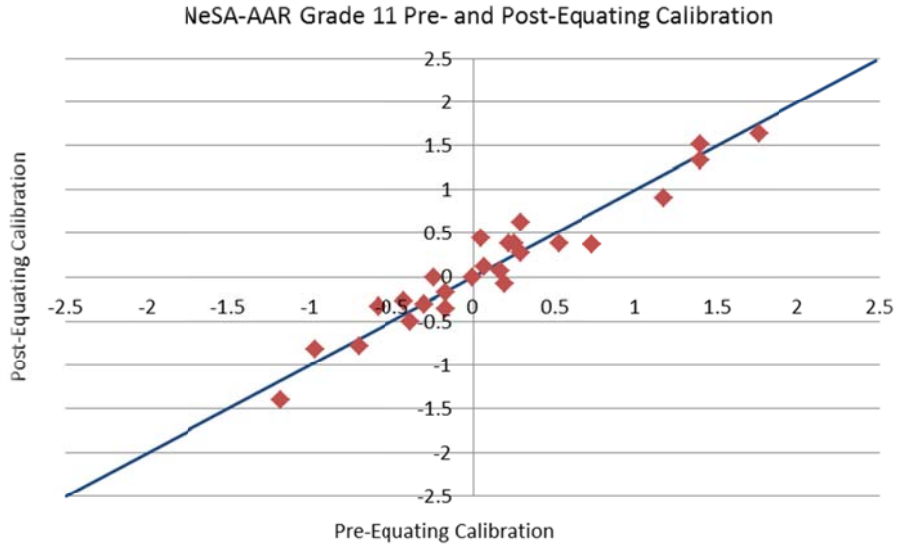
2.5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-1
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0
0.5
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1.5
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2.5

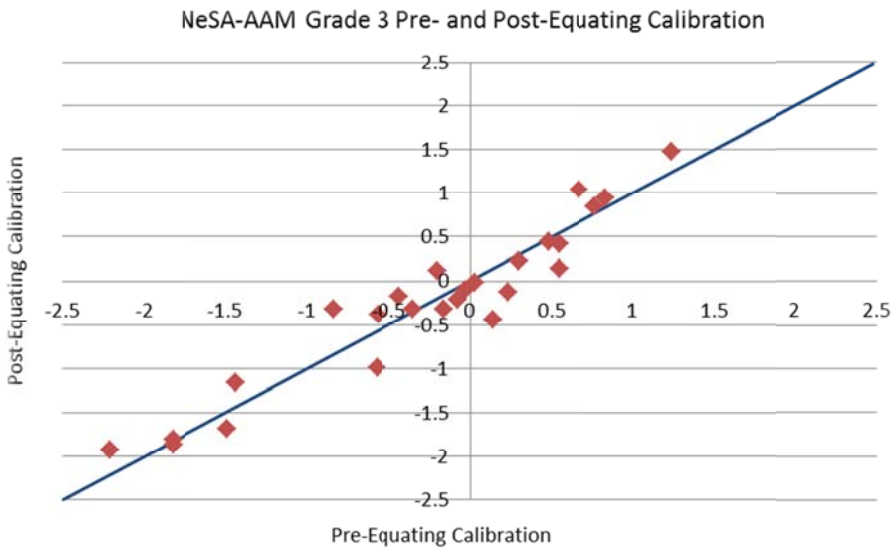
Appendix O: Mathematics Pre- and Post-Equating Summary

The Pre- values were taken from the calibrated item and used to create the Raw-to-Scale Conversion Tables. The Post- values were taken directly from unanchored calibration runs.

The statistics of Mean, Shift, Corr, SD, and Ratio are computed from the items that have both Pre and Post *logit* values.

	3			4			5			6			7			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
1	-1.83	-1.86	0.00	0.21	-0.21	1.74	-0.20	-0.42	1.04	-0.04	-0.04	-0.04	-0.09	-0.01	-0.36	-0.48	-0.47	0.02	-1.60	-1.98	0.78
2	-0.08	-0.21	0.34	-0.61	-0.56	-0.20	-0.22	-0.48	1.22	-0.96	-0.62	-1.53	-0.51	-0.50	-0.06	-0.16	-0.65	2.36	-1.14	-1.46	0.61
3	-0.84	-0.33	-1.89	-1.16	-0.97	-0.80	1.03	1.08	-0.16	-0.40	-0.50	0.44	-0.94	-0.57	-1.68	0.11	-0.08	0.95	0.31	0.34	-0.18
4	-2.21	-1.93	-1.09	0.28	0.24	0.16	0.60	0.64	-0.11	0.36	0.51	-0.69	-1.11	-0.87	-1.07	-0.51	-0.51	0.06	-1.58	-1.00	-1.47
5	0.77	0.85	-0.40	-0.47	-0.53	0.28	-0.72	-0.70	0.00	-0.89	-0.77	-0.60	-0.17	0.33	-2.24	-0.38	-0.37	0.00	-1.14	-1.21	0.02
6	-1.44	-1.16	-1.08	0.39	0.42	-0.13	0.11	0.21	-0.39	0.89	1.17	-1.28	0.72	0.59	0.59	1.36	1.03	1.60	-0.53	-0.52	-0.16
7	-0.35	-0.33	-0.19	-0.83	-0.93	0.43	-1.19	-1.19	0.08	-0.25	-0.24	-0.06	-1.52	-1.71	0.86	-0.82	-0.80	-0.02	0.62	0.04	1.23
8	-0.44	-0.18	-1.00	-0.55	-0.77	0.90	0.19	0.32	-0.49	-0.39	-0.55	0.69	0.94	0.95	-0.02	-0.53	-0.22	-1.40	-0.94	-1.00	0.01
9	0.29	0.22	0.14	1.04	0.77	1.10	-1.38	-1.34	-0.08	0.83	0.91	-0.38	0.09	0.07	0.08	1.39	1.11	1.39	-0.78	-1.26	1.00
10	-0.20	0.12	-1.21	0.08	0.08	-0.01	-0.90	-0.73	-0.70	-0.89	-0.74	-0.71	-0.53	-0.33	-0.90	-1.26	-1.25	0.00	0.43	0.02	0.83
11	-0.03	-0.10	0.12	-0.46	-0.16	-1.24	-0.59	-0.57	-0.02	0.62	0.51	0.43	0.28	0.43	-0.66	0.74	1.00	-1.14	-0.38	-0.69	0.60
12	0.48	0.44	0.01	1.10	1.07	0.12	0.93	1.23	-1.28	0.16	0.12	0.14	-0.89	-1.00	0.47	-0.53	-0.35	-0.77	0.96	1.24	-0.78
13	-0.58	-1.00	1.33	-0.85	-0.80	-0.20	-0.90	-0.48	-1.78	0.39	0.25	0.58	-0.35	-0.50	0.66	0.91	0.79	0.63	-0.20	-0.66	0.97
14	-1.49	-1.69	0.56	-0.51	-0.90	1.63	-0.39	-0.44	0.28	0.39	0.02	1.60	0.51	0.19	1.45	-0.06	0.08	-0.61	0.33	0.27	0.02
15	0.67	1.03	-1.36	0.13	0.47	-1.38	-1.11	-0.87	-0.98	0.16	-0.12	1.19	-0.10	-0.23	0.57	-1.66	-1.62	-0.13	-0.83	-0.34	-1.26
16	0.14	-0.45	1.89	-0.65	-0.34	-1.25	1.60	1.39	1.00	0.12	0.67	-2.51	0.72	0.73	-0.06	-1.13	-1.30	0.90	-1.04	-1.10	0.02
17	-1.83	-1.80	-0.21	-0.34	-0.34	0.01	0.42	0.42	0.06	0.66	0.69	-0.20	-0.74	-0.41	-1.48	1.24	1.29	-0.21	-1.82	-1.46	-0.96
18	0.03	-0.02	0.03	-0.85	-0.53	-1.28	-0.79	-1.25	2.08	0.95	0.82	0.54	-0.19	-0.35	0.71	0.20	0.20	0.09	-1.88	-2.07	0.33
19	0.55	0.14	1.27	1.27	1.26	0.03	-0.19	-0.12	-0.25	-0.10	0.04	-0.67	-0.75	-0.75	0.00	-0.59	-0.69	0.55	-0.19	-0.29	0.10
20	-0.57	-0.39	-0.75	0.82	0.81	0.03	0.35	0.37	0.00	-0.46	-0.46	-0.03	0.99	0.73	1.13	-0.22	-0.55	1.60	0.26	0.56	-0.81
21	0.55	0.42	0.32	0.32	0.40	-0.33	-0.84	-0.95	0.52	0.67	0.80	-0.63	0.30	0.15	0.66	0.16	0.03	0.69	0.50	0.64	-0.46
22	1.24	1.47	-0.92	1.46	1.00	1.89	-0.68	-0.44	-0.99	0.43	0.64	-0.98	-0.30	0.19	-2.16	0.55	0.64	-0.36	0.08	0.25	-0.53
23	0.23	-0.13	1.12	-1.48	-1.30	-0.76	-0.38	-0.66	1.30	0.07	-0.16	0.97	1.13	0.82	1.36	-1.23	-1.01	-0.96	1.15	0.86	0.57

	3			4			5			6			7			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
24	-0.16	-0.33	0.45	-0.32	-0.16	-0.64	0.40	0.16	1.16	-1.12	-1.28	0.65	0.21	-0.08	1.33	0.46	0.45	0.11	1.01	0.91	0.10
25	0.83	0.94	-0.49	1.29	1.74	-1.85	1.11	1.10	0.13	0.46	0.38	0.30	-1.10	-1.03	-0.32	-0.83	-0.72	-0.49	-1.40	-1.13	-0.76
26				-0.46	-0.80	1.42	0.14	0.01	0.65	0.58	0.91	-1.50	-0.62	-0.66	0.19	-0.74	-0.72	-0.03	-1.68	-1.08	-1.53
27				0.53	0.55	-0.11	-0.60	-0.20	-1.72	0.92	0.91	0.03	0.92	1.07	-0.67	-0.46	-0.49	0.19	-0.20	-0.17	-0.19
28				0.45	0.24	0.87	0.55	0.38	0.78	0.18	-0.10	1.20	0.37	0.01	1.59	0.58	0.87	-1.26	0.60	0.82	-0.65
29				0.44	0.51	-0.30	0.14	-0.06	0.98	1.19	0.96	0.97	-1.14	-1.13	-0.02	-0.30	-0.02	-1.24	0.39	0.84	-1.18
30				-0.26	-0.26	0.01	0.33	0.45	-0.46	-1.22	-1.45	0.96	-1.53	-1.53	0.00	0.02	0.21	-0.86	1.04	0.99	-0.01
Mean	-0.25	-0.25		0.00	0.00		-0.11	-0.11		0.11	0.11		-0.18	-0.18		-0.14	-0.14		-0.32	-0.32	
Shift		0.00			0.00			0.00			0.00			0.00			0.00			0.00	
Corr		0.96			0.95			0.96			0.95			0.95			0.97			0.94	
SD	0.92	0.92		0.77	0.76		0.75	0.74		0.66	0.69		0.77	0.72		0.79	0.77		0.95	0.95	
Ratio		1.00			1.02			1.01			0.95			1.06			1.02			1.00	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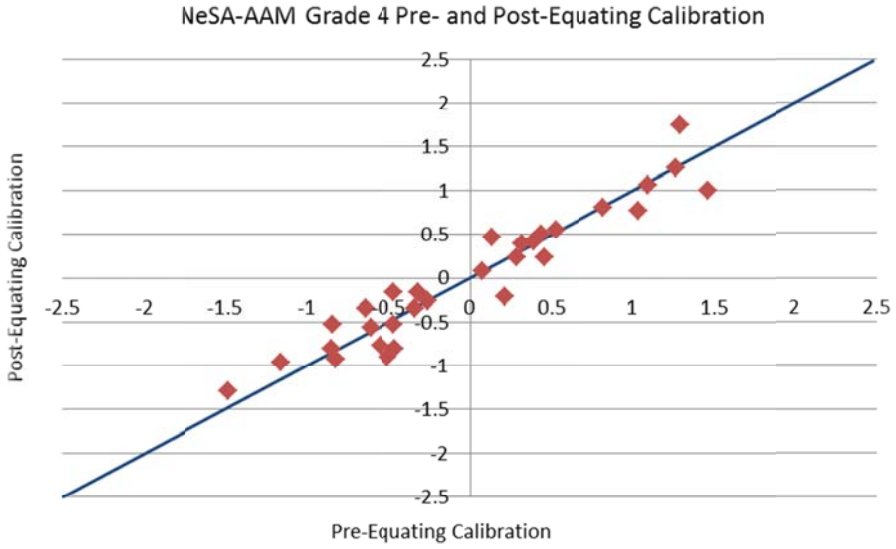
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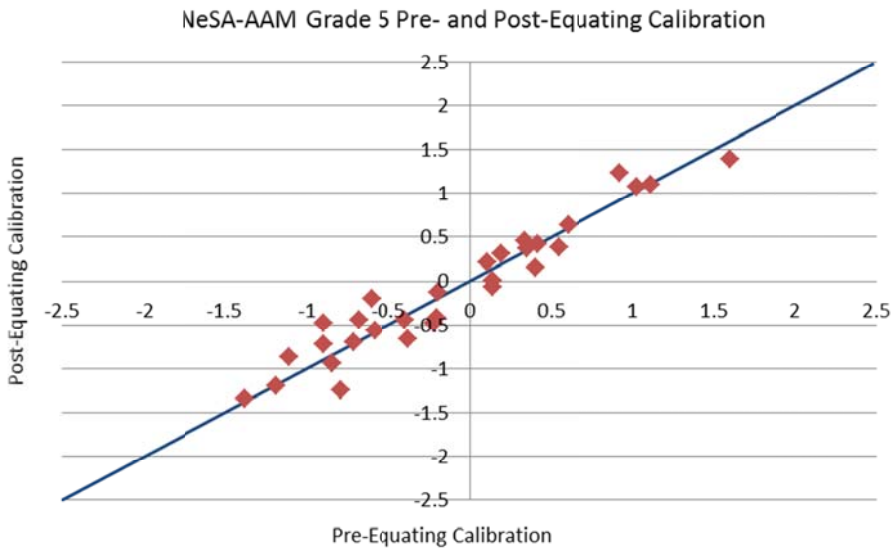
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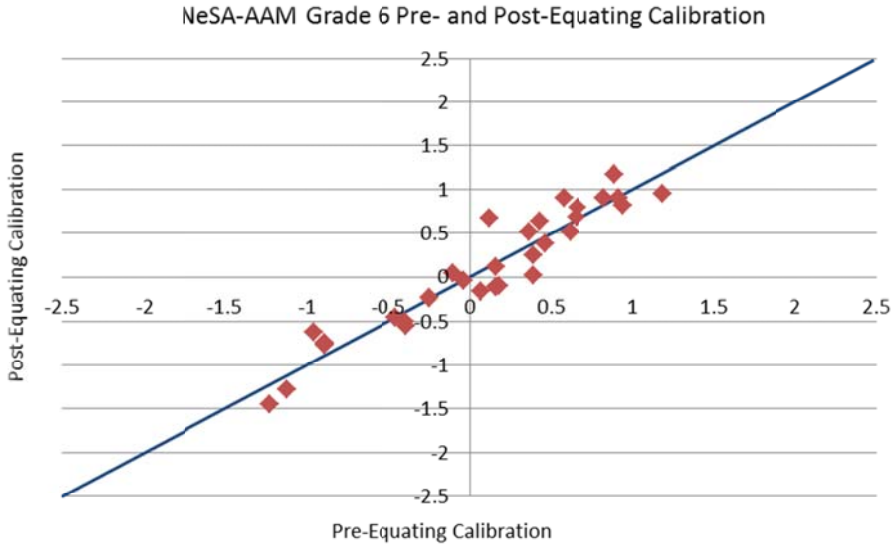
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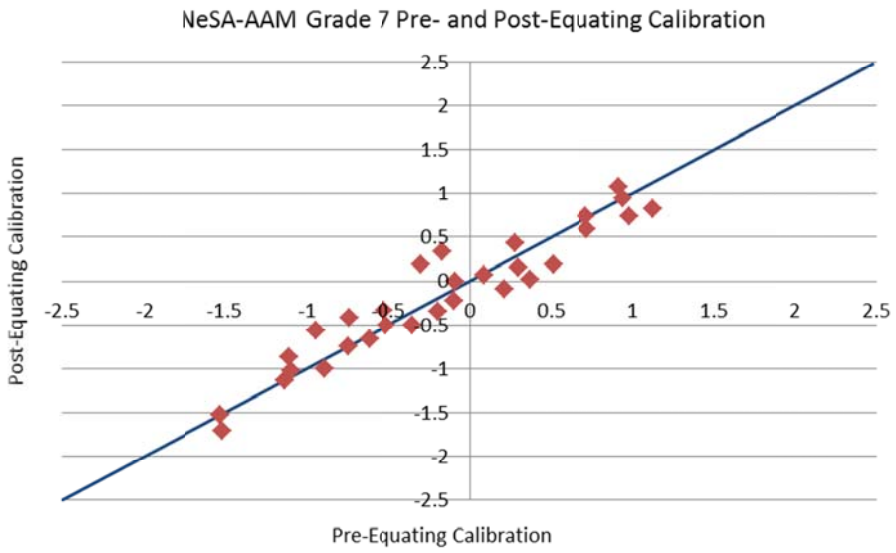
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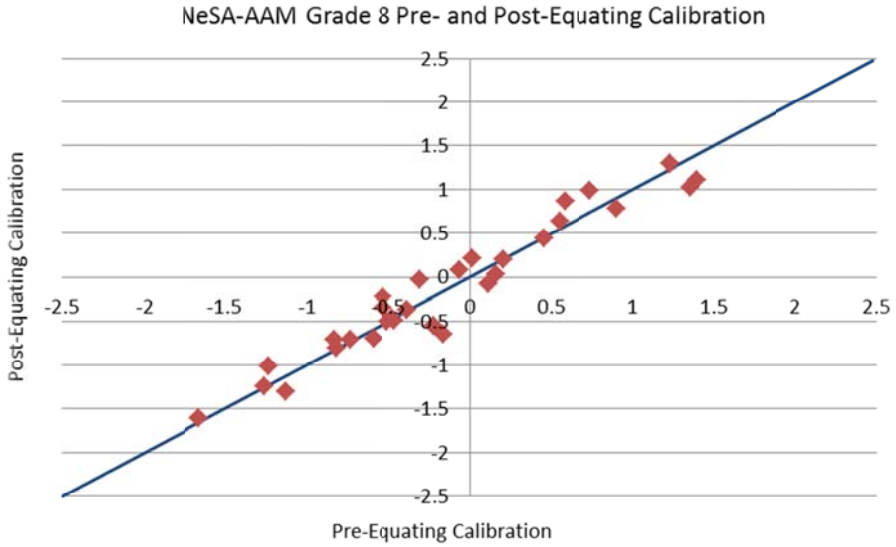
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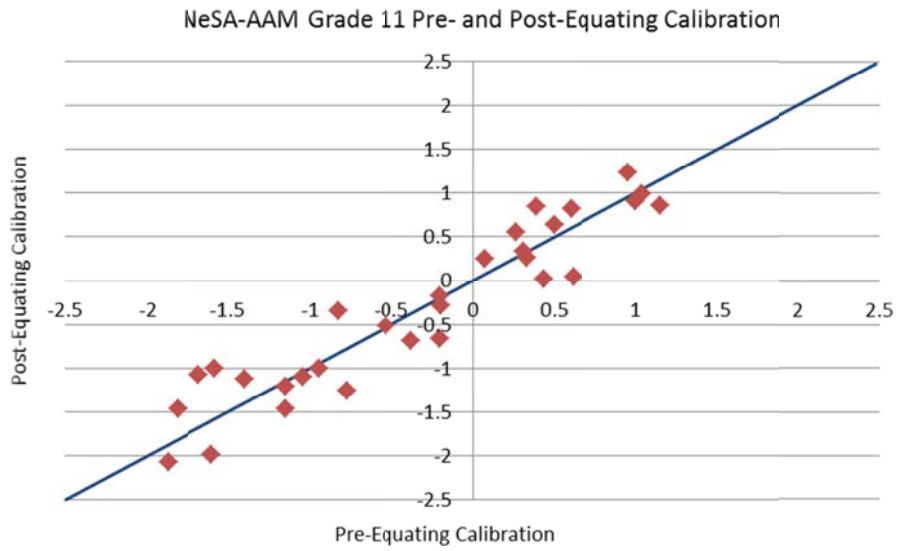
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Post-Equating Calibration
Pre-Equating Calibration
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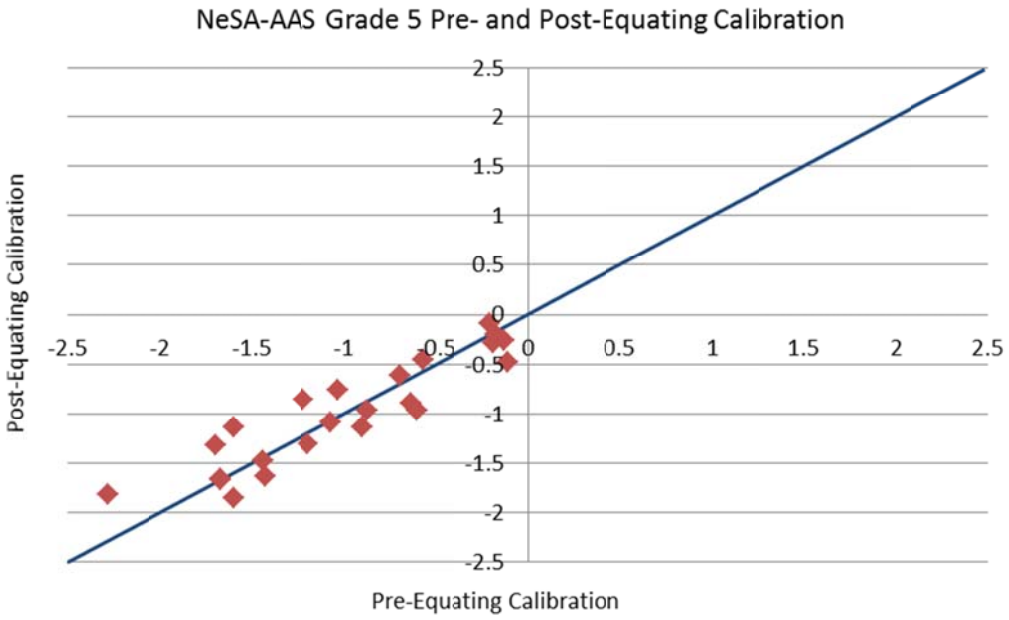
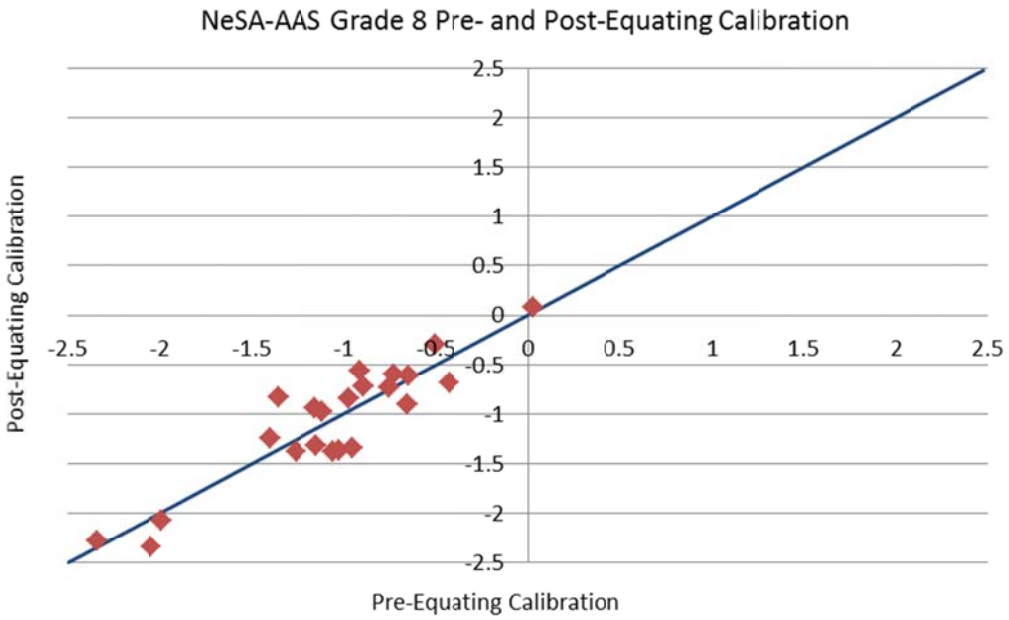
Appendix P: Science Pre- and Post-Equating Summary

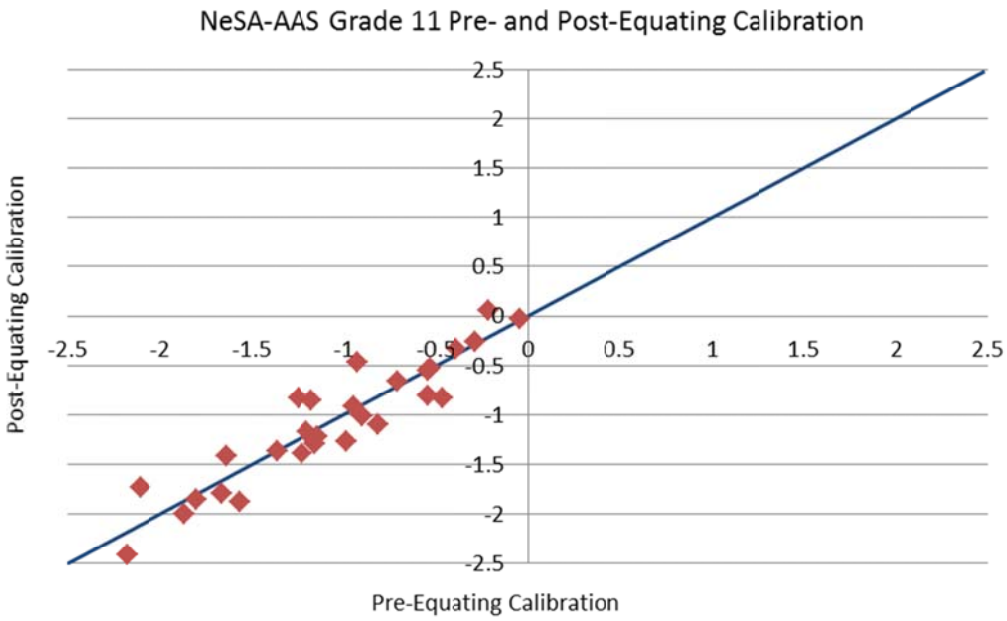
The Pre- values were taken from the calibrated item and used to create the Raw-to-Scale Conversion Tables. The Post- values were taken directly from unanchored calibration runs. The statistics of Mean, Shift, Corr, SD, and Ratio are computed from the items that have both Pre and Post *logit* values.

	5			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
1	-0.70	-0.62	-0.50	-1.06	-1.38	1.21	-0.55	-0.55	0.01
2	-0.19	-0.28	0.35	-1.40	-1.24	-0.38	-0.95	-0.92	-0.13
3	-0.57	-0.46	-0.66	-0.50	-0.29	-0.56	-0.92	-0.46	-2.15
4	-0.21	-0.09	-0.67	-1.26	-1.38	0.55	-0.39	-0.34	-0.25
5	-0.63	-0.89	1.12	-0.97	-0.85	-0.27	-1.20	-1.17	-0.12
6	-0.90	-1.14	1.06	-0.73	-0.60	-0.28	-1.23	-1.39	0.78
7	-2.29	-1.82	-2.37	-1.12	-0.97	-0.32	-1.87	-2.00	0.61
8	-1.67	-1.65	-0.21	-1.02	-1.36	1.26	-0.55	-0.81	1.23
9	-0.87	-0.97	0.34	-0.89	-0.72	-0.41	-1.17	-0.85	-1.50
10	-1.70	-1.32	-1.94	-2.54	-2.19	-1.01	-0.98	-1.27	1.34
11	-1.03	-0.76	-1.41	-1.35	-0.83	-1.58	-0.47	-0.83	1.72
12	-1.45	-1.47	0.01	-0.75	-0.74	0.09	-1.57	-1.88	1.47
13	-1.19	-1.30	0.42	0.03	0.08	-0.03	-0.71	-0.66	-0.24
14	-0.61	-0.97	1.62	-0.95	-1.34	1.41	-1.16	-1.29	0.64
15	-0.13	-0.27	0.53	-1.15	-0.94	-0.57	-0.21	0.06	-1.27
16	-1.60	-1.85	1.08	-0.92	-0.56	-1.00	-1.14	-1.22	0.39
17	-0.11	-0.48	1.65	-0.65	-0.62	0.04	-1.80	-1.85	0.24
18	-1.43	-1.63	0.84	-2.35	-2.28	-0.09	-1.66	-1.79	0.61
19	-1.22	-0.85	-1.89	-0.43	-0.69	0.98	-0.53	-0.53	-0.01
20	-1.60	-1.14	-2.33	-2.05	-2.34	1.09	-2.18	-2.41	1.08
21	-1.07	-1.08	-0.05	-2.38	-2.70	1.17	-0.90	-1.01	0.53
22	-0.17	-0.20	0.00	-0.66	-0.90	0.93	-1.64	-1.42	-1.03
23	-1.67	-1.68	-0.10	-1.99	-2.07	0.41	-0.28	-0.25	-0.13
24	-2.51	-2.60	0.34	-1.15	-1.32	0.72	-1.24	-0.83	-1.94
25	-3.21	-3.13	-0.49	-2.82	-2.78	0.00	-1.37	-1.37	0.01
26							-2.11	-1.73	-1.76
27							-0.04	-0.03	-0.08
28							-0.82	-1.10	1.35
29							-2.57	-2.30	-1.26
30							-3.20	-3.15	-0.22
Mean	-1.15	-1.15		-1.24	-1.24		-1.18	-1.18	
Shift		0.00			0.00			0.00	
Corr		0.95			0.95			0.95	

	5			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
SD	0.79	0.74		0.72	0.76		0.73	0.74	
Ratio		1.07			0.95			0.99	






NeSA-AAS Grade 11 Pre- and Post-Equating Calibration
Post-Equating Calibration
Pre-Equating Calibration
2.5
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1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5

Appendix Q: Reading Raw-to-Scale Conversion Tables and Distributions of Ability

The charts are simple displays of Scale Score, Raw Score, and percentile rank. The raw score and percentile rank for any Scale Score can be read directly from chart.

The proformance levels *Meets Standards* begins at a Scale Score of 85 and *Exceeds Standards* begins at 135. *Below Standards* is a Scale Score of 84 and below.

The table is a traditional table that was used to create the chart. This table would be used to retrieve the Scale Score or percentile rank for a given raw score. It also includes counts and percentages at each score.

Grade 3

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	3	Read	0	15	5.7	15	5.7	3	1	58
Spr 2015	3	Read	1	3	1.1	18	6.8	6	1	32
Spr 2015	3	Read	2	5	1.9	23	8.7	8	1	24
Spr 2015	3	Read	3	0	0.0	23	8.7	9	8	20
Spr 2015	3	Read	4	0	0.0	23	8.7	9	19	18
Spr 2015	3	Read	5	4	1.5	27	10.2	9	28	16
Spr 2015	3	Read	6	1	0.4	28	10.6	10	36	15
Spr 2015	3	Read	7	0	0.0	28	10.6	11	44	15
Spr 2015	3	Read	8	7	2.6	35	13.2	12	50	14
Spr 2015	3	Read	9	6	2.3	41	15.5	14	56	14
Spr 2015	3	Read	10	11	4.2	52	19.6	18	62	14
Spr 2015	3	Read	11	11	4.2	63	23.8	22	68	13
Spr 2015	3	Read	12	7	2.6	70	26.4	25	74	13
Spr 2015	3	Read	13	7	2.6	77	29.1	28	79	13
Spr 2015	3	Read	14	10	3.8	87	32.8	31	85	13
Spr 2015	3	Read	15	9	3.4	96	36.2	35	91	14
Spr 2015	3	Read	16	12	4.5	108	40.8	38	97	14
Spr 2015	3	Read	17	11	4.2	119	44.9	43	103	14
Spr 2015	3	Read	18	13	4.9	132	49.8	47	110	15
Spr 2015	3	Read	19	14	5.3	146	55.1	52	117	15
Spr 2015	3	Read	20	18	6.8	164	61.9	58	125	16
Spr 2015	3	Read	21	23	8.7	187	70.6	66	135	18
Spr 2015	3	Read	22	15	5.7	202	76.2	73	146	20
Spr 2015	3	Read	23	29	10.9	231	87.2	82	161	24
Spr 2015	3	Read	24	17	6.4	248	93.6	90	185	32
Spr 2015	3	Read	25	17	6.4	265	100.0	97	200	58

Grade 4

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	4	Read	0	14	4.8	14	4.8	2	1	59
Spr 2015	4	Read	1	3	1.0	17	5.8	5	1	33
Spr 2015	4	Read	2	5	1.7	22	7.6	7	1	24
Spr 2015	4	Read	3	2	0.7	24	8.2	8	6	20
Spr 2015	4	Read	4	6	2.1	30	10.3	9	18	18
Spr 2015	4	Read	5	2	0.7	32	11.0	11	27	17
Spr 2015	4	Read	6	6	2.1	38	13.1	12	36	16
Spr 2015	4	Read	7	4	1.4	42	14.4	14	43	15
Spr 2015	4	Read	8	5	1.7	47	16.2	15	50	14
Spr 2015	4	Read	9	13	4.5	60	20.6	18	56	14
Spr 2015	4	Read	10	8	2.7	68	23.4	22	62	14
Spr 2015	4	Read	11	9	3.1	77	26.5	25	68	14
Spr 2015	4	Read	12	7	2.4	84	28.9	28	74	14
Spr 2015	4	Read	13	13	4.5	97	33.3	31	80	14
Spr 2015	4	Read	14	8	2.7	105	36.1	35	86	14
Spr 2015	4	Read	15	11	3.8	116	39.9	38	92	14
Spr 2015	4	Read	16	14	4.8	130	44.7	42	98	14
Spr 2015	4	Read	17	16	5.5	146	50.2	47	104	15
Spr 2015	4	Read	18	7	2.4	153	52.6	51	111	15
Spr 2015	4	Read	19	16	5.5	169	58.1	55	118	16
Spr 2015	4	Read	20	12	4.1	181	62.2	60	126	17
Spr 2015	4	Read	21	28	9.6	209	71.8	67	136	18
Spr 2015	4	Read	22	13	4.5	222	76.3	74	147	20
Spr 2015	4	Read	23	26	8.9	248	85.2	81	162	24
Spr 2015	4	Read	24	21	7.2	269	92.4	89	187	33
Spr 2015	4	Read	25	22	7.6	291	100.0	96	200	59

Grade 5

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	5	Read	0	19	5.7	19	5.7	3	1	72
Spr 2015	5	Read	1	2	0.6	21	6.3	6	1	40
Spr 2015	5	Read	2	2	0.6	23	6.9	7	1	29
Spr 2015	5	Read	3	2	0.6	25	7.5	7	1	24
Spr 2015	5	Read	4	1	0.3	26	7.8	8	11	22
Spr 2015	5	Read	5	0	0.0	26	7.8	8	23	20
Spr 2015	5	Read	6	3	0.9	29	8.7	8	32	19
Spr 2015	5	Read	7	5	1.5	34	10.2	9	41	18
Spr 2015	5	Read	8	11	3.3	45	13.6	12	49	17
Spr 2015	5	Read	9	4	1.2	49	14.8	14	56	17
Spr 2015	5	Read	10	14	4.2	63	19.0	17	63	16
Spr 2015	5	Read	11	16	4.8	79	23.8	21	70	16
Spr 2015	5	Read	12	16	4.8	95	28.6	26	77	16
Spr 2015	5	Read	13	13	3.9	108	32.5	31	83	16
Spr 2015	5	Read	14	15	4.5	123	37.0	35	90	16
Spr 2015	5	Read	15	12	3.6	135	40.7	39	97	16
Spr 2015	5	Read	16	17	5.1	152	45.8	43	104	17
Spr 2015	5	Read	17	13	3.9	165	49.7	48	111	17
Spr 2015	5	Read	18	21	6.3	186	56.0	53	119	18
Spr 2015	5	Read	19	18	5.4	204	61.4	59	127	19
Spr 2015	5	Read	20	19	5.7	223	67.2	64	136	20
Spr 2015	5	Read	21	22	6.6	245	73.8	70	147	22
Spr 2015	5	Read	22	25	7.5	270	81.3	78	161	24
Spr 2015	5	Read	23	26	7.8	296	89.2	85	179	29
Spr 2015	5	Read	24	27	8.1	323	97.3	93	200	40
Spr 2015	5	Read	25	9	2.7	332	100.0	99	200	72

Grade 6

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	6	Read	0	27	8.2	27	8.2	4	1	55
Spr 2015	6	Read	1	1	0.3	28	8.5	8	1	31
Spr 2015	6	Read	2	1	0.3	29	8.8	9	4	22
Spr 2015	6	Read	3	0	0.0	29	8.8	9	18	19
Spr 2015	6	Read	4	2	0.6	31	9.4	9	29	17
Spr 2015	6	Read	5	2	0.6	33	10.0	10	37	15
Spr 2015	6	Read	6	6	1.8	39	11.8	11	45	14
Spr 2015	6	Read	7	11	3.3	50	15.1	13	51	14
Spr 2015	6	Read	8	12	3.6	62	18.7	17	57	13
Spr 2015	6	Read	9	15	4.5	77	23.3	21	63	13
Spr 2015	6	Read	10	11	3.3	88	26.6	25	69	13
Spr 2015	6	Read	11	10	3.0	98	29.6	28	74	13
Spr 2015	6	Read	12	13	3.9	111	33.5	32	79	12
Spr 2015	6	Read	13	5	1.5	116	35.0	34	84	12
Spr 2015	6	Read	14	12	3.6	128	38.7	37	90	13
Spr 2015	6	Read	15	9	2.7	137	41.4	40	95	13
Spr 2015	6	Read	16	8	2.4	145	43.8	43	101	13
Spr 2015	6	Read	17	19	5.7	164	49.5	47	106	13
Spr 2015	6	Read	18	14	4.2	178	53.8	52	112	14
Spr 2015	6	Read	19	12	3.6	190	57.4	56	119	15
Spr 2015	6	Read	20	20	6.0	210	63.4	60	127	15
Spr 2015	6	Read	21	25	7.6	235	71.0	67	135	17
Spr 2015	6	Read	22	22	6.6	257	77.6	74	146	19
Spr 2015	6	Read	23	27	8.2	284	85.8	82	160	22
Spr 2015	6	Read	24	23	6.9	307	92.7	89	182	31
Spr 2015	6	Read	25	24	7.3	331	100.0	96	200	55

Grade 7

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	7	Read	0	7	2.1	7	2.1	1	1	69
Spr 2015	7	Read	1	0	0.0	7	2.1	2	1	39
Spr 2015	7	Read	2	3	0.9	10	3.1	3	1	28
Spr 2015	7	Read	3	1	0.3	11	3.4	3	1	24
Spr 2015	7	Read	4	0	0.0	11	3.4	3	4	21
Spr 2015	7	Read	5	1	0.3	12	3.7	4	15	19
Spr 2015	7	Read	6	5	1.5	17	5.2	4	24	18
Spr 2015	7	Read	7	10	3.1	27	8.3	7	33	17
Spr 2015	7	Read	8	7	2.1	34	10.4	9	40	17
Spr 2015	7	Read	9	18	5.5	52	15.9	13	48	16
Spr 2015	7	Read	10	7	2.1	59	18.0	17	55	16
Spr 2015	7	Read	11	8	2.4	67	20.5	19	61	16
Spr 2015	7	Read	12	13	4.0	80	24.5	22	68	16
Spr 2015	7	Read	13	18	5.5	98	30.0	27	75	16
Spr 2015	7	Read	14	18	5.5	116	35.5	33	81	16
Spr 2015	7	Read	15	8	2.4	124	37.9	37	88	16
Spr 2015	7	Read	16	21	6.4	145	44.3	41	95	16
Spr 2015	7	Read	17	14	4.3	159	48.6	46	102	17
Spr 2015	7	Read	18	15	4.6	174	53.2	51	110	17
Spr 2015	7	Read	19	15	4.6	189	57.8	56	118	18
Spr 2015	7	Read	20	21	6.4	210	64.2	61	128	19
Spr 2015	7	Read	21	21	6.4	231	70.6	67	139	21
Spr 2015	7	Read	22	25	7.6	256	78.3	74	152	24
Spr 2015	7	Read	23	23	7.0	279	85.3	82	169	28
Spr 2015	7	Read	24	24	7.3	303	92.7	89	198	39
Spr 2015	7	Read	25	24	7.3	327	100.0	96	200	69

Grade 8

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	8	Read	0	14	4.2	14	4.2	2	1	56
Spr 2015	8	Read	1	3	0.9	17	5.1	4	1	31
Spr 2015	8	Read	2	2	0.6	19	5.7	5	3	23
Spr 2015	8	Read	3	1	0.3	20	6.0	6	17	19
Spr 2015	8	Read	4	2	0.6	22	6.6	6	28	17
Spr 2015	8	Read	5	3	0.9	25	7.5	7	37	16
Spr 2015	8	Read	6	1	0.3	26	7.8	7	44	15
Spr 2015	8	Read	7	2	0.6	28	8.4	8	51	14
Spr 2015	8	Read	8	8	2.4	36	10.8	9	57	14
Spr 2015	8	Read	9	12	3.6	48	14.4	12	63	13
Spr 2015	8	Read	10	10	3.0	58	17.4	16	69	13
Spr 2015	8	Read	11	9	2.7	67	20.1	18	74	13
Spr 2015	8	Read	12	11	3.3	78	23.4	21	79	13
Spr 2015	8	Read	13	13	3.9	91	27.2	25	84	13
Spr 2015	8	Read	14	11	3.3	102	30.5	29	90	13
Spr 2015	8	Read	15	18	5.4	120	35.9	33	95	13
Spr 2015	8	Read	16	16	4.8	136	40.7	38	101	13
Spr 2015	8	Read	17	16	4.8	152	45.5	43	106	13
Spr 2015	8	Read	18	12	3.6	164	49.1	47	113	14
Spr 2015	8	Read	19	23	6.9	187	56.0	52	119	15
Spr 2015	8	Read	20	19	5.7	206	61.7	59	127	16
Spr 2015	8	Read	21	26	7.8	232	69.5	65	135	17
Spr 2015	8	Read	22	32	9.6	264	79.0	74	146	19
Spr 2015	8	Read	23	29	8.7	293	87.7	83	160	23
Spr 2015	8	Read	24	25	7.5	318	95.2	91	183	31
Spr 2015	8	Read	25	16	4.8	334	100.0	98	200	56

Grade 11

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	11	Read	0	13	4.2	13	4.2	2	1	58
Spr 2015	11	Read	1	3	1.0	16	5.2	5	1	33
Spr 2015	11	Read	2	3	1.0	19	6.1	6	1	24
Spr 2015	11	Read	3	0	0.0	19	6.1	6	12	20
Spr 2015	11	Read	4	1	0.3	20	6.5	6	24	18
Spr 2015	11	Read	5	3	1.0	23	7.4	7	33	16
Spr 2015	11	Read	6	1	0.3	24	7.8	8	41	15
Spr 2015	11	Read	7	8	2.6	32	10.4	9	48	15
Spr 2015	11	Read	8	5	1.6	37	12.0	11	55	14
Spr 2015	11	Read	9	8	2.6	45	14.6	13	61	14
Spr 2015	11	Read	10	11	3.6	56	18.1	16	67	14
Spr 2015	11	Read	11	13	4.2	69	22.3	20	73	13
Spr 2015	11	Read	12	17	5.5	86	27.8	25	78	13
Spr 2015	11	Read	13	12	3.9	98	31.7	30	84	13
Spr 2015	11	Read	14	14	4.5	112	36.2	34	90	13
Spr 2015	11	Read	15	11	3.6	123	39.8	38	95	14
Spr 2015	11	Read	16	16	5.2	139	45.0	42	101	14
Spr 2015	11	Read	17	16	5.2	155	50.2	48	108	14
Spr 2015	11	Read	18	21	6.8	176	57.0	54	114	15
Spr 2015	11	Read	19	16	5.2	192	62.1	60	122	16
Spr 2015	11	Read	20	16	5.2	208	67.3	65	130	17
Spr 2015	11	Read	21	29	9.4	237	76.7	72	139	18
Spr 2015	11	Read	22	25	8.1	262	84.8	81	151	20
Spr 2015	11	Read	23	15	4.9	277	89.6	87	166	24
Spr 2015	11	Read	24	25	8.1	302	97.7	94	190	33
Spr 2015	11	Read	25	7	2.3	309	100.0	99	200	58

Appendix R: Mathematics Raw-to-Scale Conversion Tables and Distributions of Ability

The charts are simple displays of Scale Score, Raw Score, and percentile rank. The raw score and percentile rank for any Scale Score can be read directly from chart.

The proformance levels *Meets Standards* begins at a Scale Score of 85 and *Exceeds Standards* begins at 135. *Below Standards* is a Scale Score of 84 and below.

The table is a traditional table that was used to create the chart. This table would be used to retrieve the Scale Score or percentile rank for a given raw score. It also includes counts and percentages at each score.

Grade 3

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	3	Math	0	19	7.4	19	7.4	4	1	55
Spr 2015	3	Math	1	7	2.7	26	10.2	9	1	31
Spr 2015	3	Math	2	0	0.0	26	10.2	10	1	23
Spr 2015	3	Math	3	0	0.0	26	10.2	10	11	19
Spr 2015	3	Math	4	0	0.0	26	10.2	10	22	17
Spr 2015	3	Math	5	1	0.4	27	10.5	10	31	16
Spr 2015	3	Math	6	2	0.8	29	11.3	11	39	15
Spr 2015	3	Math	7	4	1.6	33	12.9	12	47	14
Spr 2015	3	Math	8	5	2.0	38	14.8	14	53	14
Spr 2015	3	Math	9	3	1.2	41	16.0	15	60	13
Spr 2015	3	Math	10	8	3.1	49	19.1	18	66	13
Spr 2015	3	Math	11	9	3.5	58	22.7	21	72	13
Spr 2015	3	Math	12	10	3.9	68	26.6	25	77	13
Spr 2015	3	Math	13	4	1.6	72	28.1	27	83	13
Spr 2015	3	Math	14	7	2.7	79	30.9	29	89	13
Spr 2015	3	Math	15	6	2.3	85	33.2	32	94	13
Spr 2015	3	Math	16	15	5.9	100	39.1	36	100	13
Spr 2015	3	Math	17	10	3.9	110	43.0	41	106	14
Spr 2015	3	Math	18	17	6.6	127	49.6	46	113	14
Spr 2015	3	Math	19	15	5.9	142	55.5	53	120	15
Spr 2015	3	Math	20	11	4.3	153	59.8	58	128	16
Spr 2015	3	Math	21	20	7.8	173	67.6	64	136	17
Spr 2015	3	Math	22	32	12.5	205	80.1	74	147	19
Spr 2015	3	Math	23	28	10.9	233	91.0	86	161	22
Spr 2015	3	Math	24	16	6.3	249	97.3	94	184	31
Spr 2015	3	Math	25	7	2.7	256	100.0	99	200	55

Grade 4

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	4	Math	0	21	7.3	21	7.3	4	1	68
Spr 2015	4	Math	1	2	0.7	23	8.0	8	1	38
Spr 2015	4	Math	2	2	0.7	25	8.7	8	1	27
Spr 2015	4	Math	3	0	0.0	25	8.7	9	1	23
Spr 2015	4	Math	4	3	1.0	28	9.7	9	1	20
Spr 2015	4	Math	5	1	0.3	29	10.0	10	2	19
Spr 2015	4	Math	6	3	1.0	32	11.1	11	11	18
Spr 2015	4	Math	7	1	0.3	33	11.4	11	19	17
Spr 2015	4	Math	8	5	1.7	38	13.1	12	26	16
Spr 2015	4	Math	9	3	1.0	41	14.2	14	33	15
Spr 2015	4	Math	10	5	1.7	46	15.9	15	39	15
Spr 2015	4	Math	11	6	2.1	52	18.0	17	45	15
Spr 2015	4	Math	12	6	2.1	58	20.1	19	51	15
Spr 2015	4	Math	13	5	1.7	63	21.8	21	57	14
Spr 2015	4	Math	14	9	3.1	72	24.9	23	63	14
Spr 2015	4	Math	15	9	3.1	81	28.0	26	68	14
Spr 2015	4	Math	16	11	3.8	92	31.8	30	74	14
Spr 2015	4	Math	17	12	4.2	104	36.0	34	80	15
Spr 2015	4	Math	18	5	1.7	109	37.7	37	85	15
Spr 2015	4	Math	19	10	3.5	119	41.2	39	91	15
Spr 2015	4	Math	20	19	6.6	138	47.8	44	97	15
Spr 2015	4	Math	21	13	4.5	151	52.2	50	104	16
Spr 2015	4	Math	22	12	4.2	163	56.4	54	111	16
Spr 2015	4	Math	23	10	3.5	173	59.9	58	118	17
Spr 2015	4	Math	24	15	5.2	188	65.1	62	126	18
Spr 2015	4	Math	25	16	5.5	204	70.6	68	135	19
Spr 2015	4	Math	26	17	5.9	221	76.5	74	146	21
Spr 2015	4	Math	27	12	4.2	233	80.6	79	159	23
Spr 2015	4	Math	28	19	6.6	252	87.2	84	176	28
Spr 2015	4	Math	29	26	9.0	278	96.2	92	200	38
Spr 2015	4	Math	30	11	3.8	289	100.0	98	200	68

Grade 5

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	5	Math	0	22	6.6	22	6.6	3	1	68
Spr 2015	5	Math	1	1	0.3	23	6.9	7	1	38
Spr 2015	5	Math	2	3	0.9	26	7.8	7	1	27
Spr 2015	5	Math	3	0	0.0	26	7.8	8	1	23
Spr 2015	5	Math	4	2	0.6	28	8.4	8	5	20
Spr 2015	5	Math	5	2	0.6	30	9.0	9	15	19
Spr 2015	5	Math	6	3	0.9	33	9.9	9	24	17
Spr 2015	5	Math	7	2	0.6	35	10.5	10	32	17
Spr 2015	5	Math	8	4	1.2	39	11.7	11	39	16
Spr 2015	5	Math	9	4	1.2	43	12.9	12	46	15
Spr 2015	5	Math	10	3	0.9	46	13.8	13	52	15
Spr 2015	5	Math	11	6	1.8	52	15.6	15	58	15
Spr 2015	5	Math	12	11	3.3	63	18.9	17	64	15
Spr 2015	5	Math	13	12	3.6	75	22.5	21	70	14
Spr 2015	5	Math	14	13	3.9	88	26.3	24	75	14
Spr 2015	5	Math	15	10	3.0	98	29.3	28	81	14
Spr 2015	5	Math	16	13	3.9	111	33.2	31	86	14
Spr 2015	5	Math	17	14	4.2	125	37.4	35	92	14
Spr 2015	5	Math	18	9	2.7	134	40.1	39	98	15
Spr 2015	5	Math	19	15	4.5	149	44.6	42	103	15
Spr 2015	5	Math	20	9	2.7	158	47.3	46	110	15
Spr 2015	5	Math	21	16	4.8	174	52.1	50	116	16
Spr 2015	5	Math	22	12	3.6	186	55.7	54	123	16
Spr 2015	5	Math	23	26	7.8	212	63.5	60	130	17
Spr 2015	5	Math	24	25	7.5	237	71.0	67	138	18
Spr 2015	5	Math	25	21	6.3	258	77.2	74	147	19
Spr 2015	5	Math	26	17	5.1	275	82.3	80	157	20
Spr 2015	5	Math	27	15	4.5	290	86.8	85	170	23
Spr 2015	5	Math	28	25	7.5	315	94.3	91	187	27
Spr 2015	5	Math	29	12	3.6	327	97.9	96	200	38
Spr 2015	5	Math	30	7	2.1	334	100.0	99	200	68

Grade 6

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	6	Math	0	28	8.3	28	8.3	4	1	52
Spr 2015	6	Math	1	0	0.0	28	8.3	8	1	29
Spr 2015	6	Math	2	0	0.0	28	8.3	8	1	21
Spr 2015	6	Math	3	0	0.0	28	8.3	8	11	18
Spr 2015	6	Math	4	0	0.0	28	8.3	8	21	16
Spr 2015	6	Math	5	0	0.0	28	8.3	8	29	14
Spr 2015	6	Math	6	1	0.3	29	8.6	8	36	13
Spr 2015	6	Math	7	7	2.1	36	10.6	10	42	13
Spr 2015	6	Math	8	7	2.1	43	12.7	12	48	12
Spr 2015	6	Math	9	8	2.4	51	15.0	14	53	12
Spr 2015	6	Math	10	13	3.8	64	18.9	17	58	12
Spr 2015	6	Math	11	16	4.7	80	23.6	21	62	11
Spr 2015	6	Math	12	8	2.4	88	26.0	25	67	11
Spr 2015	6	Math	13	6	1.8	94	27.7	27	71	11
Spr 2015	6	Math	14	10	2.9	104	30.7	29	75	11
Spr 2015	6	Math	15	11	3.2	115	33.9	32	79	11
Spr 2015	6	Math	16	13	3.8	128	37.8	36	84	11
Spr 2015	6	Math	17	7	2.1	135	39.8	39	88	11
Spr 2015	6	Math	18	9	2.7	144	42.5	41	92	11
Spr 2015	6	Math	19	13	3.8	157	46.3	44	97	11
Spr 2015	6	Math	20	14	4.1	171	50.4	48	101	11
Spr 2015	6	Math	21	11	3.2	182	53.7	52	106	12
Spr 2015	6	Math	22	15	4.4	197	58.1	56	111	12
Spr 2015	6	Math	23	16	4.7	213	62.8	60	116	13
Spr 2015	6	Math	24	19	5.6	232	68.4	66	122	13
Spr 2015	6	Math	25	9	2.7	241	71.1	70	129	14
Spr 2015	6	Math	26	23	6.8	264	77.9	74	137	16
Spr 2015	6	Math	27	26	7.7	290	85.5	82	146	18
Spr 2015	6	Math	28	24	7.1	314	92.6	89	159	21
Spr 2015	6	Math	29	15	4.4	329	97.1	95	180	29
Spr 2015	6	Math	30	10	2.9	339	100.0	99	200	52

Grade 7

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	7	Math	0	10	3.0	10	3.0	2	1	63
Spr 2015	7	Math	1	0	0.0	10	3.0	3	1	35
Spr 2015	7	Math	2	1	0.3	11	3.3	3	1	26
Spr 2015	7	Math	3	0	0.0	11	3.3	3	1	21
Spr 2015	7	Math	4	0	0.0	11	3.3	3	1	19
Spr 2015	7	Math	5	0	0.0	11	3.3	3	7	17
Spr 2015	7	Math	6	4	1.2	15	4.6	4	15	16
Spr 2015	7	Math	7	2	0.6	17	5.2	5	23	16
Spr 2015	7	Math	8	3	0.9	20	6.1	6	29	15
Spr 2015	7	Math	9	10	3.0	30	9.1	8	36	14
Spr 2015	7	Math	10	11	3.3	41	12.5	11	42	14
Spr 2015	7	Math	11	12	3.6	53	16.1	14	47	14
Spr 2015	7	Math	12	17	5.2	70	21.3	19	53	14
Spr 2015	7	Math	13	9	2.7	79	24.0	23	58	13
Spr 2015	7	Math	14	7	2.1	86	26.1	25	63	13
Spr 2015	7	Math	15	5	1.5	91	27.7	27	68	13
Spr 2015	7	Math	16	7	2.1	98	29.8	29	73	13
Spr 2015	7	Math	17	7	2.1	105	31.9	31	79	13
Spr 2015	7	Math	18	11	3.3	116	35.3	33	84	14
Spr 2015	7	Math	19	5	1.5	121	36.8	36	89	14
Spr 2015	7	Math	20	14	4.3	135	41.0	39	95	14
Spr 2015	7	Math	21	24	7.3	159	48.3	45	101	14
Spr 2015	7	Math	22	10	3.0	169	51.4	50	107	15
Spr 2015	7	Math	23	14	4.3	183	55.6	53	114	15
Spr 2015	7	Math	24	14	4.3	197	59.9	58	121	16
Spr 2015	7	Math	25	18	5.5	215	65.3	62	129	17
Spr 2015	7	Math	26	25	7.6	240	72.9	69	139	19
Spr 2015	7	Math	27	24	7.3	264	80.2	76	151	21
Spr 2015	7	Math	28	31	9.4	295	89.7	85	166	26
Spr 2015	7	Math	29	23	7.0	318	96.7	93	192	35
Spr 2015	7	Math	30	11	3.3	329	100.0	98	200	63

Grade 8

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	8	Math	0	16	4.7	16	4.7	2	1	70
Spr 2015	8	Math	1	1	0.3	17	5.0	5	1	39
Spr 2015	8	Math	2	3	0.9	20	5.9	5	1	28
Spr 2015	8	Math	3	2	0.6	22	6.5	6	1	24
Spr 2015	8	Math	4	0	0.0	22	6.5	6	1	21
Spr 2015	8	Math	5	0	0.0	22	6.5	6	1	19
Spr 2015	8	Math	6	1	0.3	23	6.8	6	3	18
Spr 2015	8	Math	7	2	0.6	25	7.4	7	11	17
Spr 2015	8	Math	8	3	0.9	28	8.3	8	18	16
Spr 2015	8	Math	9	8	2.4	36	10.7	9	25	16
Spr 2015	8	Math	10	6	1.8	42	12.4	11	32	16
Spr 2015	8	Math	11	9	2.7	51	15.1	13	38	15
Spr 2015	8	Math	12	6	1.8	57	16.9	16	44	15
Spr 2015	8	Math	13	9	2.7	66	19.5	18	50	15
Spr 2015	8	Math	14	18	5.3	84	24.9	22	56	15
Spr 2015	8	Math	15	13	3.8	97	28.7	26	62	15
Spr 2015	8	Math	16	9	2.7	106	31.4	30	68	15
Spr 2015	8	Math	17	12	3.6	118	34.9	33	73	15
Spr 2015	8	Math	18	23	6.8	141	41.7	38	79	15
Spr 2015	8	Math	19	10	3.0	151	44.7	43	85	15
Spr 2015	8	Math	20	16	4.7	167	49.4	47	92	16
Spr 2015	8	Math	21	21	6.2	188	55.6	52	98	16
Spr 2015	8	Math	22	23	6.8	211	62.4	59	105	17
Spr 2015	8	Math	23	7	2.1	218	64.5	63	113	17
Spr 2015	8	Math	24	20	5.9	238	70.4	67	121	18
Spr 2015	8	Math	25	18	5.3	256	75.7	73	131	19
Spr 2015	8	Math	26	26	7.7	282	83.4	80	141	21
Spr 2015	8	Math	27	18	5.3	300	88.8	86	155	24
Spr 2015	8	Math	28	20	5.9	320	94.7	92	172	28
Spr 2015	8	Math	29	9	2.7	329	97.3	96	200	39
Spr 2015	8	Math	30	9	2.7	338	100.0	99	200	70

Grade 11

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	11	Math	0	16	5.0	16	5.0	3	1	94
Spr 2015	11	Math	1	2	0.6	18	5.7	5	1	52
Spr 2015	11	Math	2	2	0.6	20	6.3	6	1	38
Spr 2015	11	Math	3	0	0.0	20	6.3	6	1	32
Spr 2015	11	Math	4	0	0.0	20	6.3	6	1	29
Spr 2015	11	Math	5	2	0.6	22	6.9	7	1	26
Spr 2015	11	Math	6	3	0.9	25	7.9	7	1	25
Spr 2015	11	Math	7	2	0.6	27	8.5	8	1	24
Spr 2015	11	Math	8	1	0.3	28	8.8	9	1	23
Spr 2015	11	Math	9	7	2.2	35	11.0	10	2	22
Spr 2015	11	Math	10	6	1.9	41	12.9	12	11	21
Spr 2015	11	Math	11	7	2.2	48	15.1	14	20	21
Spr 2015	11	Math	12	7	2.2	55	17.3	16	28	21
Spr 2015	11	Math	13	10	3.1	65	20.4	19	37	21
Spr 2015	11	Math	14	7	2.2	72	22.6	22	45	20
Spr 2015	11	Math	15	9	2.8	81	25.5	24	53	20
Spr 2015	11	Math	16	17	5.3	98	30.8	28	62	20
Spr 2015	11	Math	17	20	6.3	118	37.1	34	70	21
Spr 2015	11	Math	18	12	3.8	130	40.9	39	78	21
Spr 2015	11	Math	19	13	4.1	143	45.0	43	87	21
Spr 2015	11	Math	20	16	5.0	159	50.0	47	96	21
Spr 2015	11	Math	21	24	7.5	183	57.5	54	105	22
Spr 2015	11	Math	22	18	5.7	201	63.2	60	114	23
Spr 2015	11	Math	23	19	6.0	220	69.2	66	125	23
Spr 2015	11	Math	24	11	3.5	231	72.6	71	136	25
Spr 2015	11	Math	25	26	8.2	257	80.8	77	149	26
Spr 2015	11	Math	26	21	6.6	278	87.4	84	163	28
Spr 2015	11	Math	27	14	4.4	292	91.8	90	181	32
Spr 2015	11	Math	28	14	4.4	306	96.2	94	200	38
Spr 2015	11	Math	29	11	3.5	317	99.7	98	200	52
Spr 2015	11	Math	30	1	0.3	318	100.0	99	200	94

Appendix S: Science Raw-to-Scale Conversion Tables and Distributions of Ability

The charts are simple displays of Scale Score, Raw Score, and percentile rank. The raw score and percentile rank for any Scale Score can be read directly from chart.

The proformance levels *Meets Standards* begins at a Scale Score of 85 and *Exceeds Standards* begins at 135. *Below Standards* is a Scale Score of 84 and below.

The table is a traditional table that was used to create the chart. This table would be used to retrieve the Scale Score or percentile rank for a given raw score. It also includes counts and percentages at each score.

Grade 5

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	5	Science	0	23	7.1	23	7.1	4	1	65
Spr 2015	5	Science	1	4	1.2	27	8.3	8	1	37
Spr 2015	5	Science	2	0	0.0	27	8.3	9	1	27
Spr 2015	5	Science	3	0	0.0	27	8.3	9	4	23
Spr 2015	5	Science	4	3	0.9	30	9.2	9	17	20
Spr 2015	5	Science	5	2	0.6	32	9.8	10	28	19
Spr 2015	5	Science	6	2	0.6	34	10.5	10	37	17
Spr 2015	5	Science	7	5	1.5	39	12.0	11	45	17
Spr 2015	5	Science	8	7	2.2	46	14.2	13	53	16
Spr 2015	5	Science	9	7	2.2	53	16.3	15	60	16
Spr 2015	5	Science	10	18	5.5	71	21.8	19	66	15
Spr 2015	5	Science	11	12	3.7	83	25.5	24	73	15
Spr 2015	5	Science	12	7	2.2	90	27.7	27	79	15
Spr 2015	5	Science	13	14	4.3	104	32.0	30	85	15
Spr 2015	5	Science	14	8	2.5	112	34.5	34	92	15
Spr 2015	5	Science	15	16	4.9	128	39.4	37	98	15
Spr 2015	5	Science	16	16	4.9	144	44.3	42	105	15
Spr 2015	5	Science	17	12	3.7	156	48.0	46	112	16
Spr 2015	5	Science	18	25	7.7	181	55.7	52	119	16
Spr 2015	5	Science	19	23	7.1	204	62.8	59	127	17
Spr 2015	5	Science	20	17	5.2	221	68.0	66	136	18
Spr 2015	5	Science	21	24	7.4	245	75.4	72	146	20
Spr 2015	5	Science	22	30	9.2	275	84.6	80	158	22
Spr 2015	5	Science	23	25	7.7	300	92.3	89	174	26
Spr 2015	5	Science	24	14	4.3	314	96.6	94	200	36
Spr 2015	5	Science	25	11	3.4	325	100.0	98	200	65

Grade 8

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	8	Science	0	17	5.2	17	5.2	2	1	72
Spr 2015	8	Science	1	2	0.6	19	5.8	5	1	40
Spr 2015	8	Science	2	3	0.9	22	6.7	6	1	30
Spr 2015	8	Science	3	1	0.3	23	7.0	7	1	25
Spr 2015	8	Science	4	2	0.6	25	7.6	7	1	22
Spr 2015	8	Science	5	1	0.3	26	8.0	8	4	21
Spr 2015	8	Science	6	3	0.9	29	8.9	8	14	19
Spr 2015	8	Science	7	3	0.9	32	9.8	9	23	18
Spr 2015	8	Science	8	5	1.5	37	11.3	10	32	18
Spr 2015	8	Science	9	6	1.8	43	13.1	12	40	17
Spr 2015	8	Science	10	10	3.1	53	16.2	14	47	17
Spr 2015	8	Science	11	13	4.0	66	20.2	18	55	17
Spr 2015	8	Science	12	9	2.8	75	22.9	21	62	17
Spr 2015	8	Science	13	4	1.2	79	24.2	23	69	17
Spr 2015	8	Science	14	14	4.3	93	28.4	26	76	17
Spr 2015	8	Science	15	21	6.4	114	34.9	31	83	17
Spr 2015	8	Science	16	25	7.6	139	42.5	38	90	17
Spr 2015	8	Science	17	15	4.6	154	47.1	45	98	18
Spr 2015	8	Science	18	23	7.0	177	54.1	50	106	18
Spr 2015	8	Science	19	13	4.0	190	58.1	56	115	19
Spr 2015	8	Science	20	26	8.0	216	66.1	62	125	20
Spr 2015	8	Science	21	34	10.4	250	76.5	71	136	22
Spr 2015	8	Science	22	18	5.5	268	82.0	79	150	24
Spr 2015	8	Science	23	21	6.4	289	88.4	85	168	29
Spr 2015	8	Science	24	30	9.2	319	97.6	93	197	40
Spr 2015	8	Science	25	8	2.4	327	100.0	99	200	72

Grade 11

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum. Count	Cum. Percent	Percentile	Scale Score	*S.E.*
Spr 2015	11	Science	0	17	5.5	17	5.5	3	1	62
Spr 2015	11	Science	1	2	0.7	19	6.2	6	1	35
Spr 2015	11	Science	2	2	0.7	21	6.8	7	1	25
Spr 2015	11	Science	3	0	0.0	21	6.8	7	1	21
Spr 2015	11	Science	4	0	0.0	21	6.8	7	2	19
Spr 2015	11	Science	5	0	0.0	21	6.8	7	12	17
Spr 2015	11	Science	6	4	1.3	25	8.1	7	20	16
Spr 2015	11	Science	7	4	1.3	29	9.4	9	27	15
Spr 2015	11	Science	8	3	1.0	32	10.4	10	34	15
Spr 2015	11	Science	9	8	2.6	40	13.0	12	40	14
Spr 2015	11	Science	10	5	1.6	45	14.7	14	46	14
Spr 2015	11	Science	11	5	1.6	50	16.3	15	52	14
Spr 2015	11	Science	12	9	2.9	59	19.2	18	57	13
Spr 2015	11	Science	13	6	2.0	65	21.2	20	62	13
Spr 2015	11	Science	14	7	2.3	72	23.5	22	67	13
Spr 2015	11	Science	15	11	3.6	83	27.0	25	72	13
Spr 2015	11	Science	16	10	3.3	93	30.3	29	77	13
Spr 2015	11	Science	17	10	3.3	103	33.6	32	83	13
Spr 2015	11	Science	18	13	4.2	116	37.8	36	88	13
Spr 2015	11	Science	19	6	2.0	122	39.7	39	93	13
Spr 2015	11	Science	20	8	2.6	130	42.3	41	98	14
Spr 2015	11	Science	21	13	4.2	143	46.6	44	104	14
Spr 2015	11	Science	22	13	4.2	156	50.8	49	110	14
Spr 2015	11	Science	23	8	2.6	164	53.4	52	117	15
Spr 2015	11	Science	24	21	6.8	185	60.3	57	124	16
Spr 2015	11	Science	25	10	3.3	195	63.5	62	132	17
Spr 2015	11	Science	26	18	5.9	213	69.4	66	141	19
Spr 2015	11	Science	27	22	7.2	235	76.5	73	152	21
Spr 2015	11	Science	28	19	6.2	254	82.7	80	168	25
Spr 2015	11	Science	29	30	9.8	284	92.5	88	193	34
Spr 2015	11	Science	30	23	7.5	307	100.0	96	200	62

Appendix T: Reading, Mathematics, and Science Demographic Summary Sheets

Reading : Grade 3

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		265	16.5	7.0	110.0	53.9	29.1	32.8	38.1
Gender	Male	177	16.8	6.7	111.2	51.8	27.1	36.7	36.2
	Female	88	16.1	7.7	107.6	58.2	33.0	25.0	42.0
Ethnicity*	AM	8	21.1	3.7	148.1	42.7	0.0	37.5	62.5
	AS	7	17.0	5.1	108.4	36.3	28.6	42.9	28.6
	BL	26	12.6	7.2	77.2	46.9	46.2	38.5	15.4
	PI	0							
	WH	170	16.7	7.1	112.0	54.8	29.4	30.0	40.6
	HI	44	16.8	6.5	110.1	48.7	25.0	40.9	34.1
	MU	10	18.5	8.0	131.9	65.3	20.0	20.0	60.0
Special Ed	No	2	16.0	0.0	97.0	0.0	0.0	100.0	0.0
	Yes	263	16.5	7.1	110.1	54.1	29.3	32.3	38.4
ELL	No	259	16.5	7.1	109.5	54.3	29.7	32.0	38.2
	Yes	6	20.2	2.5	132.2	29.5	0.0	66.7	33.3
FLS	No	111	15.8	6.9	103.6	50.9	33.3	36.0	30.6
	Yes	154	17.1	7.1	114.6	55.8	26.0	30.5	43.5

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 4

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		291	16.1	7.3	107.9	56.7	33.3	28.9	37.8
Gender	Male	185	16.7	7.0	112.6	55.6	30.3	29.2	40.5
	Female	106	15.0	7.7	99.7	58.0	38.7	28.3	33.0
Ethnicity*	AM	10	17.5	6.6	124.5	60.0	40.0	20.0	40.0
	AS	6	15.3	9.0	98.2	60.8	33.3	16.7	50.0
	BL	22	16.1	7.3	107.1	57.1	22.7	50.0	27.3
	PI	0							
	WH	176	16.3	6.9	109.7	54.8	33.0	28.4	38.6
	HI	62	14.4	8.3	96.2	61.4	40.3	25.8	33.9
	MU	15	18.8	6.7	128.7	52.3	20.0	26.7	53.3
Special Ed	No	2	13.5	4.9	83.0	29.7	50.0	50.0	0.0
	Yes	289	16.1	7.3	108.1	56.8	33.2	28.7	38.1
ELL	No	288	16.0	7.3	107.2	56.5	33.7	29.2	37.2
	Yes	3	23.7	2.3	178.7	37.0	0.0	0.0	100.0
FLS	No	105	15.0	7.2	98.8	55.0	39.0	33.3	27.6
	Yes	186	16.7	7.3	113.1	57.2	30.1	26.3	43.5

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 5

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		332	16.1	6.7	113.3	55.5	32.5	28.9	38.6
Gender	Male	223	16.3	6.6	114.9	54.8	31.8	27.4	40.8
	Female	109	15.6	7.0	110.1	57.1	33.9	32.1	33.9
Ethnicity*	AM	9	16.3	5.0	111.9	41.9	33.3	33.3	33.3
	AS	3	14.7	5.0	96.3	36.9	33.3	33.3	33.3
	BL	31	19.1	5.4	138.7	47.4	9.7	35.5	54.8
	PI	0							
	WH	211	16.1	6.7	113.5	56.1	34.1	26.1	39.8
	HI	69	14.2	7.1	97.1	54.6	42.0	31.9	26.1
	MU	9	20.0	4.4	151.4	50.2	0.0	44.4	55.6
Special Ed	No	0							
	Yes	332	16.1	6.7	113.3	55.5	32.5	28.9	38.6
ELL	No	329	16.1	6.7	113.7	55.6	31.9	29.2	38.9
	Yes	3	11.7	1.5	74.3	10.3	100.0	0.0	0.0
FLS	No	137	15.1	6.5	104.3	53.9	38.7	29.9	31.4
	Yes	195	16.8	6.8	119.6	55.9	28.2	28.2	43.6

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 6

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		331	15.8	7.5	108.0	54.6	35.0	28.4	36.6
Gender	Male	219	15.6	7.2	106.3	52.7	35.2	31.5	33.3
	Female	112	16.1	7.9	111.4	58.2	34.8	22.3	42.9
Ethnicity*	AM	4	12.3	9.5	80.5	61.6	50.0	25.0	25.0
	AS	4	11.8	10.4	77.0	65.0	50.0	25.0	25.0
	BL	40	15.7	8.1	107.4	59.7	30.0	35.0	35.0
	PI	0							
	WH	213	15.7	7.7	107.8	56.3	36.6	25.8	37.6
	HI	56	16.4	6.2	110.4	45.0	32.1	35.7	32.1
	MU	14	17.6	6.2	120.4	47.0	28.6	21.4	50.0
Special Ed	No	2	19.5	7.8	145.0	77.8	0.0	50.0	50.0
	Yes	329	15.8	7.5	107.8	54.5	35.3	28.3	36.5
ELL	No	328	15.7	7.5	107.8	54.8	35.4	28.0	36.6
	Yes	3	20.3	2.5	133.0	24.6	0.0	66.7	33.3
FLS	No	139	14.7	8.0	100.7	57.5	42.4	25.2	32.4
	Yes	192	16.6	7.0	113.3	51.9	29.7	30.7	39.6

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 7

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		327	16.8	6.2	111.9	54.8	35.5	28.7	35.8
Gender	Male	203	16.7	6.0	110.5	52.6	36.5	28.1	35.5
	Female	124	16.9	6.5	114.2	58.3	33.9	29.8	36.3
Ethnicity*	AM	5	11.0	10.1	68.0	61.5	40.0	60.0	0.0
	AS	4	17.3	6.6	116.0	63.6	50.0	25.0	25.0
	BL	37	16.6	6.2	108.6	52.6	32.4	32.4	35.1
	PI	0							
	WH	204	16.5	6.1	109.7	54.7	38.7	27.9	33.3
	HI	61	17.8	5.8	119.2	52.2	27.9	32.8	39.3
	MU	16	18.8	7.2	131.5	62.9	25.0	6.3	68.8
Special Ed	No	1	21.0	0.0	139.0	0.0	0.0	0.0	100.0
	Yes	326	16.8	6.2	111.8	54.8	35.6	28.8	35.6
ELL	No	321	16.7	6.2	111.2	54.9	36.1	28.7	35.2
	Yes	6	21.3	2.7	148.3	33.9	0.0	33.3	66.7
FLS	No	146	16.0	6.1	105.2	53.1	42.5	29.5	28.1
	Yes	181	17.4	6.2	117.3	55.6	29.8	28.2	42.0

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 8

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		334	16.8	6.5	113.8	48.3	27.2	34.4	38.3
Gender	Male	208	16.8	6.6	114.3	49.5	27.4	35.1	37.5
	Female	126	16.9	6.4	112.8	46.5	27.0	33.3	39.7
Ethnicity*	AM	7	18.0	9.0	131.6	68.4	28.6	0.0	71.4
	AS	8	10.6	6.9	67.3	45.0	62.5	37.5	0.0
	BL	41	17.9	5.8	120.3	45.6	17.1	41.5	41.5
	PI	0							
	WH	212	16.8	6.6	113.6	48.8	28.8	32.1	39.2
	HI	52	16.8	6.2	111.8	44.0	25.0	42.3	32.7
	MU	14	18.0	6.0	123.0	46.6	21.4	35.7	42.9
Special Ed	No	0							
	Yes	334	16.8	6.5	113.8	48.3	27.2	34.4	38.3
ELL	No	331	16.8	6.5	113.5	48.3	27.5	34.4	38.1
	Yes	3	21.3	3.1	147.3	35.0	0.0	33.3	66.7
FLS	No	154	15.4	7.2	104.0	51.2	35.7	29.2	35.1
	Yes	180	18.1	5.7	122.1	44.2	20.0	38.9	41.1

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 11

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		309	16.1	6.4	109.6	48.8	31.7	35.6	32.7
Gender	Male	207	16.3	6.3	111.6	48.9	30.9	34.8	34.3
	Female	102	15.7	6.7	105.6	48.6	33.3	37.3	29.4
Ethnicity*	AM	8	14.5	6.1	96.4	40.5	50.0	25.0	25.0
	AS	9	10.7	5.6	68.7	35.5	55.6	44.4	0.0
	BL	32	16.1	6.0	107.8	45.4	28.1	46.9	25.0
	PI	0							
	WH	210	16.5	6.6	112.8	50.1	31.0	31.9	37.1
	HI	42	15.8	5.8	105.7	44.1	31.0	45.2	23.8
	MU	8	16.5	7.6	112.5	58.5	25.0	37.5	37.5
Special Ed	No	1	24.0	0.0	190.0	0.0	0.0	0.0	100.0
	Yes	308	16.1	6.4	109.4	48.6	31.8	35.7	32.5
ELL	No	309	16.1	6.4	109.6	48.8	31.7	35.6	32.7
	Yes	0							
FLS	No	135	15.7	6.6	106.7	49.6	31.1	40.7	28.1
	Yes	174	16.5	6.3	111.9	48.2	32.2	31.6	36.2

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Mathematics

Grade 3

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		256	16.4	7.2	110.1	52.1	28.1	31.6	40.2
Gender	Male	169	16.7	6.8	111.7	49.6	27.8	30.2	42.0
	Female	87	16.0	7.9	107.1	56.9	28.7	34.5	36.8
Ethnicity*	AM	8	21.6	2.6	148.6	25.4	0.0	25.0	75.0
	AS	6	18.5	6.0	126.2	47.2	16.7	33.3	50.0
	BL	26	12.8	8.3	83.4	55.9	50.0	23.1	26.9
	PI	0							
	WH	163	16.5	7.3	111.4	53.2	27.6	31.3	41.1
	HI	43	16.8	6.3	111.0	45.9	25.6	39.5	34.9
	MU	10	17.5	6.9	114.2	46.3	20.0	30.0	50.0
Special Ed	No	1	20.0	0.0	128.0	0.0	0.0	100.0	0.0
	Yes	255	16.4	7.2	110.1	52.2	28.2	31.4	40.4
ELL	No	251	16.4	7.3	109.9	52.6	28.7	31.1	40.2
	Yes	5	19.0	2.4	121.2	17.2	0.0	60.0	40.0
FLS	No	108	15.8	6.9	105.3	48.9	30.6	38.9	30.6
	Yes	148	16.9	7.4	113.7	54.3	26.4	26.4	47.3

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 4

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		289	19.3	8.6	105.7	59.9	36.0	29.1	34.9
Gender	Male	183	20.2	8.3	112.1	59.8	32.8	27.9	39.3
	Female	106	17.8	8.9	94.7	58.8	41.5	31.1	27.4
Ethnicity*	AM	10	19.6	8.0	105.8	61.2	40.0	20.0	40.0
	AS	6	17.8	11.0	96.5	67.5	33.3	33.3	33.3
	BL	22	19.8	8.5	108.0	56.4	31.8	31.8	36.4
	PI	0							
	WH	176	19.6	8.0	106.4	57.5	36.4	29.5	34.1
	HI	60	17.7	10.5	100.2	71.5	43.3	21.7	35.0
	MU	15	22.1	6.8	119.6	42.8	6.7	53.3	40.0
Special Ed	No	2	16.0	4.2	74.0	24.0	50.0	50.0	0.0
	Yes	287	19.3	8.6	105.9	60.1	35.9	28.9	35.2
ELL	No	287	19.2	8.6	105.1	59.7	36.2	29.3	34.5
	Yes	2	28.5	0.7	188.0	17.0	0.0	0.0	100.0
FLS	No	103	17.9	8.5	94.4	58.3	42.7	29.1	28.2
	Yes	186	20.1	8.6	111.9	60.1	32.3	29.0	38.7

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 5

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		334	19.0	8.1	111.2	54.3	29.3	34.1	36.5
Gender	Male	219	19.1	8.0	112.2	54.5	29.2	34.2	36.5
	Female	115	18.7	8.2	109.2	54.2	29.6	33.9	36.5
Ethnicity*	AM	9	17.9	8.2	99.6	46.8	22.2	66.7	11.1
	AS	3	19.7	6.7	110.7	40.6	33.3	33.3	33.3
	BL	32	21.9	6.4	128.3	43.3	15.6	28.1	56.3
	PI	0							
	WH	211	19.0	8.1	111.3	55.4	31.8	31.3	37.0
	HI	69	17.2	8.7	100.1	56.5	33.3	39.1	27.5
	MU	10	23.5	4.3	141.8	37.4	0.0	50.0	50.0
Special Ed	No	0							
	Yes	334	19.0	8.1	111.2	54.3	29.3	34.1	36.5
ELL	No	331	19.0	8.1	111.5	54.4	29.3	33.8	36.9
	Yes	3	15.3	4.0	82.3	22.7	33.3	66.7	0.0
FLS	No	141	18.1	8.2	105.1	54.7	35.5	34.8	29.8
	Yes	193	19.7	8.0	115.7	53.7	24.9	33.7	41.5

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 6

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		339	18.6	8.6	101.1	48.8	37.8	33.3	28.9
Gender	Male	219	18.2	8.5	98.7	48.0	38.8	36.1	25.1
	Female	120	19.3	8.7	105.6	50.0	35.8	28.3	35.8
Ethnicity*	AM	4	14.8	11.7	77.8	59.9	50.0	25.0	25.0
	AS	4	13.3	8.9	68.5	45.3	50.0	50.0	0.0
	BL	39	18.2	9.3	98.3	52.0	35.9	35.9	28.2
	PI	0							
	WH	222	18.5	8.9	101.5	51.3	39.2	31.1	29.7
	HI	57	19.5	7.2	104.2	38.8	33.3	36.8	29.8
	MU	13	20.5	5.5	107.6	29.4	30.8	46.2	23.1
Special Ed	No	2	17.0	9.9	90.0	45.3	50.0	50.0	0.0
	Yes	337	18.6	8.6	101.2	48.8	37.7	33.2	29.1
ELL	No	336	18.5	8.6	100.8	48.9	38.1	33.0	28.9
	Yes	3	25.7	1.2	134.7	9.8	0.0	66.7	33.3
FLS	No	146	17.2	9.0	94.1	50.9	46.6	28.1	25.3
	Yes	193	19.6	8.1	106.5	46.5	31.1	37.3	31.6

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 7

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		329	20.3	7.6	108.0	52.4	35.3	30.1	34.7
Gender	Male	200	20.8	7.5	111.0	52.3	34.0	30.0	36.0
	Female	129	19.7	7.8	103.3	52.2	37.2	30.2	32.6
Ethnicity*	AM	5	14.6	12.6	72.6	66.7	40.0	40.0	20.0
	AS	4	21.3	9.2	121.5	73.1	50.0	0.0	50.0
	BL	37	20.6	7.4	107.6	49.1	35.1	29.7	35.1
	PI	0							
	WH	209	20.1	7.5	106.4	51.6	35.9	32.1	32.1
	HI	58	21.2	7.1	113.4	51.1	32.8	31.0	36.2
	MU	16	20.6	10.3	116.6	65.6	31.3	6.3	62.5
Special Ed	No	1	27.0	0.0	151.0	0.0	0.0	0.0	100.0
	Yes	328	20.3	7.6	107.8	52.4	35.4	30.2	34.5
ELL	No	323	20.2	7.7	107.3	52.4	35.6	30.3	34.1
	Yes	6	25.3	4.0	142.2	37.3	16.7	16.7	66.7
FLS	No	154	19.7	7.6	103.3	51.6	38.3	33.1	28.6
	Yes	175	20.9	7.7	112.1	52.8	32.6	27.4	40.0

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 8

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		338	19.2	7.5	96.2	51.7	41.7	34.0	24.3
Gender	Male	211	19.3	7.5	97.5	51.8	41.7	33.6	24.6
	Female	127	19.0	7.6	94.2	51.7	41.7	34.6	23.6
Ethnicity*	AM	7	19.9	9.9	104.3	66.6	28.6	42.9	28.6
	AS	8	12.9	9.5	58.0	49.5	75.0	12.5	12.5
	BL	41	19.0	6.8	91.8	45.5	43.9	41.5	14.6
	PI	0							
	WH	213	19.0	7.6	95.4	52.4	43.2	32.4	24.4
	HI	54	20.5	7.3	104.6	51.3	35.2	35.2	29.6
	MU	15	20.9	7.0	107.7	49.1	26.7	40.0	33.3
Special Ed	No	0							
	Yes	338	19.2	7.5	96.2	51.7	41.7	34.0	24.3
ELL	No	335	19.1	7.5	95.7	51.5	42.1	33.7	24.2
	Yes	3	26.7	2.9	154.0	39.8	0.0	66.7	33.3
FLS	No	152	17.6	8.3	86.4	53.1	48.7	28.9	22.4
	Yes	186	20.5	6.6	104.3	49.2	36.0	38.2	25.8

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 11

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		318	18.9	7.4	97.9	59.7	40.9	28.3	30.8
Gender	Male	214	19.1	7.4	99.3	61.6	40.2	27.1	32.7
	Female	104	18.6	7.5	95.0	55.6	42.3	30.8	26.9
Ethnicity*	AM	8	16.8	8.2	76.9	74.2	62.5	0.0	37.5
	AS	9	12.9	7.1	49.1	39.4	77.8	22.2	0.0
	BL	33	19.2	6.6	98.0	49.3	33.3	45.5	21.2
	PI	0							
	WH	215	19.2	7.4	100.4	61.1	40.9	25.6	33.5
	HI	42	19.0	7.2	97.5	55.8	33.3	40.5	26.2
	MU	11	19.4	8.6	106.5	67.1	45.5	9.1	45.5
Special Ed	No	1	26.0	0.0	163.0	0.0	0.0	0.0	100.0
	Yes	317	18.9	7.4	97.7	59.6	41.0	28.4	30.6
ELL	No	318	18.9	7.4	97.9	59.7	40.9	28.3	30.8
	Yes	0							
FLS	No	141	18.6	7.6	96.5	62.1	45.4	23.4	31.2
	Yes	177	19.1	7.2	99.1	57.8	37.3	32.2	30.5

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Science
Grade 5

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		325	15.9	6.9	110.9	53.4	27.7	35.1	37.2
Gender	Male	216	16.1	6.9	113.1	53.9	27.3	31.9	40.7
	Female	109	15.4	6.9	106.5	52.5	28.4	41.3	30.3
Ethnicity*	AM	8	15.8	7.3	107.8	52.3	25.0	37.5	37.5
	AS	3	14.0	4.0	91.7	26.0	33.3	66.7	0.0
	BL	30	19.0	4.9	131.9	38.5	10.0	30.0	60.0
	PI								
	WH	204	15.9	7.0	112.0	55.1	30.9	31.4	37.7
	HI	71	14.1	7.0	95.7	51.4	29.6	45.1	25.4
	MU	9	19.4	4.7	143.8	49.6	0.0	44.4	55.6
Special Ed	No	0							
	Yes	325	15.9	6.9	110.9	53.4	27.7	35.1	37.2
ELL	No	322	15.9	6.9	111.1	53.6	27.6	34.8	37.6
	Yes	3	13.7	3.2	89.3	20.4	33.3	66.7	0.0
FLS	No	136	15.0	6.9	105.0	53.8	34.6	35.3	30.1
	Yes	189	16.5	6.8	115.1	52.9	22.8	34.9	42.3

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 8

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		327	16.6	6.5	105.7	54.4	34.9	31.2	33.9
Gender	Male	202	16.6	6.6	106.5	55.2	33.7	30.2	36.1
	Female	125	16.5	6.3	104.3	53.4	36.8	32.8	30.4
Ethnicity*	AM	7	17.4	9.4	124.1	79.5	28.6	0.0	71.4
	AS	8	11.5	7.7	65.1	45.5	62.5	37.5	0.0
	BL	42	17.0	5.6	105.4	45.9	28.6	45.2	26.2
	PI	0							
	WH	206	16.5	6.5	105.5	54.6	35.9	30.6	33.5
	HI	51	16.8	6.5	108.0	57.8	37.3	21.6	41.2
	MU	13	17.9	6.0	115.6	51.5	15.4	46.2	38.5
Special Ed	No	0							
	Yes	327	16.6	6.5	105.7	54.4	34.9	31.2	33.9
ELL	No	325	16.6	6.5	105.5	54.5	35.1	31.1	33.8
	Yes	2	20.5	0.7	129.5	7.8	0.0	50.0	50.0
FLS	No	149	15.1	7.0	93.0	53.3	45.0	31.5	23.5
	Yes	178	17.8	5.8	116.3	53.2	26.4	30.9	42.7

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Grade 11

Group	Subgroup	Valid *N*	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	*SD*	Mean	*SD*	Below	Meets	Exceeds
Overall		307	20.2	8.5	112.9	57.2	33.6	30.0	36.5
Gender	Male	205	20.3	8.5	114.2	58.8	35.6	25.9	38.5
	Female	102	20.0	8.4	110.2	54.0	29.4	38.2	32.4
Ethnicity*	AM	7	17.9	7.4	97.4	54.1	71.4	0.0	28.6
	AS	9	14.2	8.9	70.7	48.0	55.6	33.3	11.1
	BL	32	20.5	7.9	111.5	50.8	25.0	43.8	31.3
	PI	0							
	WH	208	20.6	8.4	116.1	57.9	32.7	28.4	38.9
	HI	42	20.0	8.7	110.8	56.8	31.0	33.3	35.7
	MU	9	18.9	10.4	107.2	69.5	44.4	22.2	33.3
Special Ed	No	1	29.0	0.0	193.0	0.0	0.0	0.0	100.0
	Yes	306	20.2	8.5	112.6	57.1	33.7	30.1	36.3
ELL	No	307	20.2	8.5	112.9	57.2	33.6	30.0	36.5
	Yes	0							
FLS	No	134	19.5	8.5	108.6	57.5	39.6	27.6	32.8
	Yes	173	20.7	8.4	116.2	56.9	28.9	31.8	39.3

* AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities

Appendix U: Reading, Mathematics, and Science Strand Reliability and SEM

***L*=Total Number of Items per Strand, Reliability=Coefficient Alpha, *SEM*= Standard Error of Measurement in raw score metric**

Content	Code	Strand
Reading	R.1	Vocabulary
	R.2	Comprehension
Mathematics	M.1	Number Sense
	M.2	Geometric/Measurement
	M.3	Algebraic
	M.4	Data Analysis/Probability
Science	S.1	Inquiry, the Nature of Science, and Technology
	S.2	Physical Science
	S.3	Life Science
	S.4	Earth and Space Science

Grade 3:

Grade 3	*L*	Reliability	*SEM*
R.1	8	0.80	1.05
R.2	17	0.91	1.53
M.1	9	0.84	1.11
M.2	8	0.86	0.93
M.3	4	0.69	0.78
M.4	4	0.64	0.81

Grade 4:

Grade 4	*L*	Reliability	*SEM*
R.1	8	0.84	1.04
R.2	17	0.90	1.57
M.1	13	0.87	1.40
M.2	10	0.86	1.14
M.3	4	0.63	0.78
M.4	3	0.71	0.59

Grade 5:

Grade 5	*L*	Reliability	*SEM*
R.1	9	0.79	1.18
R.2	16	0.87	1.62
M.1	11	0.85	1.27
M.2	9	0.83	1.09
M.3	5	0.55	0.98
M.4	5	0.69	0.89
S.1	5	0.69	0.86
S.2	6	0.79	0.93
S.3	7	0.70	1.09
S.4	7	0.78	1.00

Grade 6:

Grade 6	*L*	Reliability	*SEM*
R.1	9	0.84	1.14
R.2	16	0.91	1.50
M.1	9	0.82	1.17
M.2	7	0.81	0.97
M.3	9	0.80	1.22
M.4	5	0.75	0.82

Grade 7:

Grade 7	*L*	Reliability	*SEM*
R.1	10	0.78	1.21
R.2	15	0.84	1.57
M.1	7	0.72	1.05
M.2	8	0.79	1.05
M.3	8	0.74	1.16
M.4	7	0.78	0.92

Grade 8:

Grade 8	*L*	Reliability	*SEM*
R.1	8	0.81	1.06
R.2	17	0.86	1.64
M.1	8	0.73	1.15
M.2	9	0.80	1.12
M.3	7	0.71	1.07
M.4	6	0.68	1.01
S.1	4	0.60	0.79
S.2	7	0.68	1.11
S.3	9	0.80	1.15
S.4	5	0.72	0.80

Grade 11:

Grade 11	*L*	Reliability	*SEM*
R.1	8	0.76	1.15
R.2	17	0.86	1.62
M.1	4	0.48	0.87
M.2	12	0.85	1.29
M.3	10	0.77	1.24
M.4	4	0.55	0.86
S.1	5	0.70	0.85
S.2	9	0.83	1.11
S.3	8	0.85	1.00
S.4	8	0.81	1.07


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