New England Common Assessment Program

2007–2008

Technical Report

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Measured Progress

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Chapter 1 OVERVIEW

1.1 Purpose of the New England Common Test Program

The New England Common Test Program (NECAP) is the result of collaboration among New Hampshire (NH), Rhode Island (RI), and Vermont (VT) to build a set of tests for grades 3 through 8 and 11 to meet the requirements of the No Child Left Behind Act (NCLB). The purposes of the tests are as follows: (1) Provide data on student achievement in reading/language arts and mathematics to meet the requirements of NCLB; (2) provide information to support program evaluation and improvement; and (3) provide to parents and the public information on the performance of students and schools. The tests are constructed to meet rigorous technical criteria, include universal design elements and accommodations so that students can access test content, and gather reliable student demographic information for accurate reporting. School improvement is supported by

- providing a transparent test design through the elementary and middle school grade-level expectations (GLEs), the high school grade-span expectations (GSEs), distributions of emphasis, and practice tests
- reporting results by GLE/GSE subtopics, released items, and subgroups
- hosting test interpretation workshops to foster understanding of results

Student-level results are provided to schools and families to be used as one piece of evidence about progress and learning that occurred on the prior year's GLEs/GSEs. The results are a status report of a student's performance against GLEs/GSEs and should be used cautiously in concert with local data.

1.2 Purpose of this Report

The purpose of this report is to document the technical aspects of the 2007–08 NECAP. In October of 2007, students in grades 3 through 8 and 11 participated in the administration of the

NECAP in reading and mathematics. Students in grades 5, 8, and 11 also participated in writing. This report provides information about the technical quality of those tests, including a description of the processes used to develop, administer, and score the tests and to analyze the test results. This report is intended to serve as a guide for replicating and/or improving the procedures in subsequent years.

Though some parts of this technical report may be used by educated laypersons, the intended audience is experts in psychometrics and educational research. The report assumes a working knowledge of measurement concepts, such as "reliability" and "validity," and statistical concepts, such as "correlation" and "central tendency." In some chapters, the reader is presumed also to have basic familiarity with advanced topics in measurement and statistics.

1.3 Organization of this Report

The organization of this report is based on the conceptual flow of a test's life span; the report begins with the initial test specification and addresses all the intermediate steps that lead to final score reporting. Section I provides a description of the NECAP test. It consists of four chapters covering the test design and development process; the administration of the tests; scoring; and scaling and equating. Section II provides statistical and psychometric summaries. It consists of three chapters covering item analysis, reliability, and validity. Section III covers NECAP score reporting. Section IV contains references, and Section V contains appendices to the report.

SECTION I—DESCRIPTION OF THE 2007 NECAP TEST

Chapter 2 DEVELOPMENT AND TEST DESIGN

2.1 2006 Grade 11 Pilot Test

In preparation for the first operational administration of the grade 11 NECAP in October of 2007, a pilot test was conducted in the fall of 2006, with the following purposes:

- Field-test all newly developed reading, mathematics, and writing items to be used in the common and matrix-equating sections of the following year's operational test.
- Try out all procedures and materials of the program (e.g., the timing of test sessions, accommodations, test administrator and test coordinator manuals, mathematics reference sheets, and the like) before the first operational administration.
- Provide schools the opportunity to experience the new assessment so as to assist them in preparing for the first operational administration.
- Obtain feedback from students, test administrators, and test coordinators in order to make any necessary modifications.

The test development process for the pilot test mirrored the operational test process described in this chapter. The numbers of items developed and field-tested are listed on the following page (where FT=field-test, MC=multiple-choice, CR=constructed-response, SA1=1-point short answer, SA2=2-point short answer.)

Table 2.1. 2006 NECAP Grade 11 Pilot Items Developed and Field-Tested—Reading

	Needed to Populate First Year (not counting embedded FT)	*Initial FT*	*To be Developed*
Passages	4 long 4 short	6 long 6 short	8 long 8 short
MC	32 long 16 short	60 long 36 short	80 long 48 short
CR	8 long 4 short	18 long 12 short	24 long 16 short
Stand Alone MC	8	16	20

Table 2.2. 2006 NECAP Grade 11 Pilot Items Developed and Field-Tested—Mathematics

	Needed to Populate First Year (not counting embedded FT)	*Initial FT*	*To be Developed*
MC	48	80	96
SA1	24	32	48
SA2	12	16	24
CR	10	16	20

Table 2.3. 2006 NECAP Grade 11 Pilot Items Developed and Field-Tested—Writing

	Needed to Populate First Year (not counting embedded FT)	*Initial FT*	*To be Developed*
Stand Alone Writing Prompt	6	12	24

2.1.1 Test Design of the 2006 Grade 11 Pilot

Because one of the purposes of the pilot test administration was to give schools an opportunity to experience what the operational test would be like, the pilot test forms were constructed to mirror the intended operational test design. The only difference was that all item positions on the pilot test forms were populated with field-test items. The designs of the pilot tests are presented on the following pages. Some items received more exposure than others,

Reading: Grade 11

- 8 forms: four block A's and four block B's
- Each passage repeated in two forms – 10 unique MC and 3 unique CR for each long passage and 6 unique MC and 2 unique CR for each short passage
- Each of 4 Block A's contain 1 Long and 2 Short passages (total of 20 MC and 4 CR) plus 4 MC
- Each of 4 Block B's contain 1 Short and 2 Long passages (total of 20 MC and 5 CR)

Table 2.4. 2006 NECAP Grade 11 Reading Pilot Forms Construction

	Form/ Block 1 A	*Form/ Block 2 A*	*Form/ Block 3 A*	*Form/ Block 4 A*	*Form/ Block 5 B*	*Form/ Block 6 B*	*Form/ Block 7 B*	*Form/ Block 8 B*
Long Passage	L1	L1	L2	L2	L3	L3	L5	L5
MC#	1-8	3-10	1-8	3-10	1-8	3-10	1-8	3-10
CR#	1-2	2-3	1-2	2-3	1-2	2-3	1-2	2-3
Long Passage					L4	L4	L6	L6
MC#					1-8	3-10	1-8	3-10
CR#					1-2	2-3	1-2	2-3
Short Passage	S1	S1	S3	S3	S5	S5	S6	S6
MC#	1-4	3-6	1-4	3-6	1-4	3-6	1-4	3-6
CR#	1	2	1	2	1	2	1	2
Short Passage	S2	S2	S4	S4				
MC#	1-4	3-6	1-4	3-6				
CR#	1	2	1	2				
Stand Alone MC#	1-4	5-8	9-12	13-16				

Note: While some piloted items received exposure to more students than others, item statistics were computed on roughly equivalent samples of examinees.

Mathematics: Grade 11

- 8 forms, 2 blocks each (one Block A, one Block B)
- Block A (non-calculator) = 5 MC, 2 SA1, 1 SA2, 1 CR
- Block B (calculator) = 5 MC, 2 SA1, 1 SA2, 1 CR

Writing: Grade 11

- 12 forms, one unique prompt each

2.1.2 Administration of the 2006 Grade 11 Pilot Test

All schools and all students in grade 11 participated in the pilot test. The test administration procedures for the pilot test mirrored the procedures for the operational test to ensure an even distribution of forms among all schools and all students.

2.1.3 Scoring of the 2006 Grade 11 Pilot Test

All student responses to MC questions were scanned and analyzed to produce item statistics. All available SA, CR, and writing prompt items were benchmarked and scored on a sample of roughly 1200 students.

Because the pilot test was conducted to emulate the subsequent operational test as much as possible, readers are referred to other chapters of this report for more specific details.

2.2 Operational Development Process

2.2.1 Grade-Level Expectations

NECAP test items are directly linked to *content standards* and *performance indicators* described in the GLEs/GSEs. The content standards for each grade are grouped into content clusters for purposes of reporting results; the performance indicators are used by content specialists to help guide the development of test questions. An item may address one, several, or all of the performance indicators.

2.2.2 External Item Review

Item Review Committees (IRCs) were formed by the states to provide an external review of items. The committees are made up of teachers, curriculum supervisors, and higher-education faculty from the states, and all committee members serve rotating terms. A list of IRC member names and affiliations is included in Appendix A. The committees review test items for the NECAP, provide feedback on the items, and make recommendations on which items should be selected for program use. The 2007–08 NECAP IRCs for each content area in grade levels 3 through 8 and 11 met in the spring of 2007. Committee members reviewed the entire set of embedded field-test items proposed for the 2007–08 operational test and made recommendations about selecting, revising, or eliminating specific items from the item pool. Members reviewed each item against the following criteria:

- Grade-Level/Grade-Span Expectation Alignment
  - Is the test item aligned to the appropriate GLE/GSE?
  - If not, which GLE/GSE or grade level is more appropriate?

- Correctness

  - Are the items and distracters correct with respect to content accuracy and developmental appropriateness?
  - Are the scoring guides consistent with GLE/GSE wording and developmental appropriateness?

- Depth of Knowledge[1]

  - Are the items coded to the appropriate Depth of Knowledge?
  - If consensus cannot be reached, is there clarity around why the item might be on the borderline of two levels?

- Language

  - Is the item language clear?
  - Is the item language accurate (syntax, grammar, conventions)?

- Universal Design

  - Is there an appropriate use of simplified language (does not interfere with the construct being assessed)?
  - Are charts, tables, and diagrams easy to read and understandable?
  - Are charts, tables, and diagrams necessary to the item?
  - Are instructions easy to follow?
  - Is the item amenable to accommodations—read aloud, signed, or Braille?

2.2.3 Internal Item Review

- The lead Measured Progress test developer within the content specialty reviewed the formatted item, CR scoring guide, and any reading selections and graphics.

- The content reviewer considered item "integrity," content, and structure; appropriateness to designated content area; item format; clarity; possible ambiguity; answer cueing; appropriateness and quality of reading selections and graphics; and appropriateness of scoring guide descriptions and distinctions (in relation to each item and across all items

[1] NECAP employed the work of Dr. Norman Webb to guide the development process with respect to Depth of Knowledge. Test specification documents identified ceilings and targets for Depth of Knowledge coding.

within the guide). The item reviewer also ensured that, for each item, there was only one correct answer.

- The content reviewer also considered scorability and evaluated whether the scoring guide adequately addressed performance on the item.

- Fundamental questions that the content reviewer considered, but was not limited to, included the following:

  - What is the item asking?
  - Is the key the only possible key? (Is there only *one* correct answer?)
  - Is the CR item scorable as written (were the correct words used to elicit the response defined by the guide)?
  - Is the wording of the scoring guide appropriate and parallel to the item wording?
  - Is the item complete (e.g., with scoring guide, content codes, key, grade level, and identified contract)?
  - Is the item appropriate for the designated grade level?

2.2.4 Bias and Sensitivity Review

Bias review is an essential component of the development process. During the bias review process, NECAP items were reviewed by a committee of teachers, English language learner (ELL) specialists, special-education teachers, and other educators and members of major constituency groups who represent the interests of legally protected and/or educationally disadvantaged groups. A list of bias and sensitivity review committee member names and affiliations are included in Appendix A. Items were examined for issues that might offend or dismay students, teachers, or parents. Including such groups in the development of test items and materials can avoid many unduly controversial issues, and unfounded concerns can be allayed before the test forms are produced.

2.2.5 Item Editing

Measured Progress editors reviewed and edited the items to ensure uniform style (based on *The Chicago Manual of Style*, 14th edition) and adherence to sound testing principles. These principles included the stipulation that items

- were correct with regard to grammar, punctuation, usage, and spelling
- were written in a clear, concise style
- contained unambiguous explanations to students as to what is required to attain a maximum score
- were written at a reading level that would allow the student to demonstrate his or her knowledge of the tested subject matter, regardless of reading ability
- exhibited high technical quality regarding psychometric characteristics
- had appropriate answer options or score-point descriptors
- were free of potentially sensitive content

2.2.6 Reviewing and Refining

Test developers presented item sets to the item review committees for their recommendations on which items should be available to include in the embedded field-test portions of the test. The NH, RI, and VT Departments of Education content specialists made the final selections with the assistance of Measured Progress at a final face-to-face meeting.

2.2.7 Operational Test Assembly

At Measured Progress, test assembly is the sorting and laying out of item sets into test forms. Criteria considered during this process included the following:

- **Content coverage/match to test design**. The Measured Progress test developers completed an initial sorting of items into sets based on a balance of content categories across sessions and forms, as well as a match to the test design (e.g., number of MC, SA, and CR items).

- **Item difficulty and complexity**. Item statistics drawn from the data analysis of previously tested items were used to ensure similar levels of difficulty and complexity across forms.

- **Visual balance**. Item sets were reviewed to ensure that each reflected a similar length and "density" of selected items (e.g., length/complexity of reading selections, number of graphics).

- **Option balance**. Each item set was checked to verify that it contained a roughly equivalent number of key options (A, B, C, and D).

- **Name balance**. Item sets were reviewed to ensure that a diversity of student names was used.

- **Bias.** Each item set was reviewed to ensure fairness and balance based on gender, ethnicity, religion, socioeconomic status, and other factors.

- **Page fit.** Item placement was modified to ensure the best fit and arrangement of items on any given page.

- **Facing-page issues**. For multiple items associated with a single stimulus (a graphic or reading selection), consideration was given both to whether those items needed to begin on a left- or right-hand page and to the nature and amount of material that needed to be placed on facing pages. These considerations served to minimize the amount of "page flipping" required of students.

- **Relationship between forms**. Although embedded field-test items differ from form to form, they must take up the same number of pages in each form so that sessions and content areas begin on the same page in every form. Therefore, the number of pages needed for the longest form often determines the layout of each form.

- **Visual appeal**. The visual accessibility of each page of the form was always taken into consideration, including such aspects as the amount of "white space," the density of the text, and the number of graphics.

2.2.8 Editing Drafts of Operational Tests

Any changes made by a test construction specialist must be reviewed and approved by a test developer. After a form was laid out in what was considered its final form, it was reread to identify any final considerations, including the following:

- **Editorial changes**. All text was scrutinized for editorial accuracy, including consistency of instructional language, grammar, spelling, punctuation, and layout. Measured Progress's publishing standards are based on *The Chicago Manual of Style*, 14th edition.

- **"Keying" items**. Items were reviewed for any information that might "key" or provide information that would help to answer another item. Decisions about moving keying items are based on the severity of the "key-in" and the placement of the items in relation to each other within the form.

- **Key patterns**. The final sequence of keys was reviewed to ensure that their order appeared random (e.g., no recognizable pattern and no more than three of the same key in a row).

2.2.9 Braille and Large-Print Translation

Common items for grades 3 through 8 and 11were translated into Braille by a subcontractor that specializes in test materials for blind and visually impaired students. In addition, Form 1 for each grade was also adapted into a large-print version.

2.3 Item Types

The item types used and the functions of each are described below.

Multiple-Choice (MC) items were administered in grades 3 through 8 and 11 in reading and mathematics and in grades 5 and 8 in writing to provide breadth of coverage of the GLEs/GSEs. Because they require approximately one minute for most students to answer, these items make efficient use of limited testing time and allow coverage of a wide range of knowledge and skills, including, for example, Word Identification (Word ID) and vocabulary skills.

Short-Answer (SA) items were administered in grades 3 through 8 and 11, mathematics only, to assess students' skills and their abilities to work with brief, well-structured problems that had one solution or a very limited number of solutions. SA items require approximately two to five minutes for most students to answer. The advantage of this item type is that it requires students to demonstrate knowledge and skills by generating, rather than merely selecting, an answer.

Constructed-Response (CR) items typically require students to use higher-order thinking skills—evaluation, analysis, summarization, and so on—in constructing a satisfactory response. CR items should take most students approximately five to ten minutes to complete. These items were administered in grades 3 through 8 and 11 in reading, in grades 5 and 8 in writing, and in grades 5 through 8 and 11 in mathematics.

A single common writing prompt with three SA planning box items was administered in grades 5 and 8. A single common writing prompt and one additional matrix writing prompt per form were administered in grade 11. Students were given 45 minutes (plus limited additional time if necessary) to compose an extended response for the common prompt that was scored by two

independent readers both on the quality of the stylistic and rhetorical aspects of the writing and on the use of standard English conventions. Students were encouraged to write a rough draft and were advised by the test administrator when to begin copying their final draft into their student answer booklets.

Approximately twenty-five percent of the common NECAP items were released to the public in 2007–08. The released NECAP items are posted on a Web site hosted by Measured Progress and on the Department of Education Web sites. Schools are encouraged to incorporate the use of released items in their instructional activities so that students will be familiar with them.

2.4 Operational Test Designs and Blueprints

Since the beginning of the program, the goal of the NECAP has been to measure what students know and are able to do by using a variety of test item types. The program was structured to use both common and matrix-sampled items. (Common items are those taken by all students at a given grade level; matrix-sampled items make up a pool that is divided among the multiple forms of the test at each grade level.) This design provides reliable and valid results at the student level and breadth of coverage of a content area for school results while minimizing testing time. (Note: Only common items are counted toward students' scaled scores.)

2.4.1 Embedded Equating Items and Field Test

To ensure that NECAP scores obtained from different test forms and different years are equivalent to each other, a set of equating items is matrixed across forms of the reading and mathematics tests. Chapter 5 presents more detail on the equating process. (Note: Equating items are not counted toward students' scaled scores.)

The NECAP also includes embedded field test items in all content areas except grades 5 and 8 writing. Because the field tested items are taken by many students, the sample is sufficient to produce reliable data with which to inform the process of selecting items for future tests. Embedding field tested items achieves two other objectives. First, it creates a pool of replacement items in

reading and mathematics that are needed due to the release of common items each year. Second, embedding field-test items into the operational test ensures that students take the items under operational conditions. (Note: As with the matrixed equating items, field test items are not counted toward students' scaled scores.)

2.4.2 Test Booklet Design

To accommodate the embedded equating and field test items in the 2007–08 NECAP, there were nine unique test forms in grades 3 through 8 and eight unique forms in grade 11. In all reading and mathematics test sessions, the equating and field-test items were distributed among the common items in a way that was not evident to test takers. The grades 5 and 8 writing design called for one common test form that was made up of a single writing prompt with three SA planning box items, four CR items, and ten MC items. The grade 11 writing design called for each student to respond to two writing prompts. The first writing prompt was common for all students and the second writing prompt was either a matrix prompt or a field test prompt, depending on the particular test form.

2.5 Reading Test Designs

Table 2-5 summarizes the numbers and types of items that were used in the 2007–08 NECAP reading test for grades 3 through 8. Note that in reading, all students received the common items and one of either the equating or field test forms. Each MC item was worth one point, and each CR item was worth four points.

Table 2-5. 2007-08 NECAP Reading—Grades 3 through 8: Item Type and Numbers of Items

Common – 2 long[1] and 2 short[1] passages plus 4 stand-alone MC[2]		*Matrix – Equating Forms 1,2,3 1 long and 1 short passage plus 2 stand-alone MC*		*Matrix – FT[3] Forms 4-7 1 long and 1 short passage plus 2 stand-alone MC*		*Matrix – FT[3] Forms 8–9 3 short passages plus 2 stand-alone MC*		*Total per student – 3 long and 3 short or 2 long and 5 short passages plus 6 stand-alone MC*	
MC[2]	CR[2]	MC	CR	MC	CR	MC	CR	MC	CR
28	6	14	3	14	3	14	3	42	9

[1]Long passages have 8 MC and 2 CR items; short passages have 4 MC and 1 CR items
[2]MC = multiple choice; CR = constructed response
[3]FT = field test

Table 2-6 summarizes the numbers and types of items that were used in the 2007–08 NECAP reading test for grade 11. Note that in reading, all students received the common items and one of either the equating or field test forms. Each MC item was worth one point, and each CR item was worth four points.

Table 2-6. 2007-08 NECAP Reading—Grade 11: Item Type and Numbers of Items

Common – 2 long[1] and 2 short[1] passages plus 4 stand-alone MC[2]		*Matrix – Equating Forms 1 and 2 1 long and 1 short passage plus 2 stand-alone MC*		*Matrix – FT[3] Forms 3-8 1 long and 1 short passage plus 2 stand-alone MC*		*Total per student – 3 long and 3 short passages plus 6 stand-alone MC*	
MC[2]	CR[2]	MC	CR	MC	CR	MC	CR
28	6	14	3	14	3	42	9

[1]Long passages have 8 MC and 2 CR items; short passages have 4 MC and 1 CR items
[2]MC = multiple choice; CR = constructed response
[3]FT = field test

2.5.1 Reading Blueprint

As indicated earlier, the test framework for reading in grades 3 through 8 was based on the *NECAP Grade Level Expectations*, and all items on the NECAP test were designed to measure a specific GLE. The test framework for reading in grade 11 was based on the *NECAP Grade Span Expectations*, and all items on the NECAP test were designed to measure a specific GSE. The reading passages on all the NECAP tests are broken down into the following categories:

- Literary passages, representing a variety of forms: modern narratives; diary entries; drama; poetry; biographies; essays; excerpts from novels; short stories; and traditional narratives, such as fables, tall tales, myths, and folktales.

  Informational passages, factual text often dealing with areas of science and social studies. These passages are taken from such sources as newspapers, magazines, and book excerpts. Informational text could also be directions, manuals, and recipes, etc. The passages are authentic texts—selected from grade-level-appropriate reading sources—that students would be likely to experience in both the classroom and independent

reading. Passages are written specifically for the test; all are collected from published works.

- Reading comprehension is assessed by items on the NECAP test that are *dually*-categorized by the type of passage associated and the level of comprehension measured. The level of comprehension is designated as either "Initial Understanding" or "Analysis and Interpretation." Word identification and vocabulary skills are assessed at each grade level primarily through MC items. The distribution of emphasis for reading is shown in Table 2-7.

Table 2-7. 2007-08 NECAP Reading—Grades 3 through 8 and 11: Distribution of Emphasis by Grade (in targeted percentage of test)

	Expectation (Grade Tested)						
Emphasis	*2 (3)*	*3 (4)*	*4 (5)*	*5 (6)*	*6 (7)*	*7 (8)*	*9-11 (11)*
Word Identification Skills and Strategies	20%	15%	0%	0%	0%	0%	0%
Vocabulary Strategies/Breadth of Vocabulary	20%	20%	20%	20%	20%	20%	20%
Initial Understanding of Literary Text	20%	20%	20%	20%	15%	15%	15%
Initial Understanding of Informational Text	20%	20%	20%	20%	20%	20%	20%
Analysis and Interpretation of Literary Text	10%	15%	20%	20%	25%	25%	25%
Analysis and Interpretation of Informational Text	10%	10%	20%	20%	20%	20%	20%
Total	100%	100%	100%	100%	100%	100%	100%

Table 2-8 shows the subcategory reporting structure for reading and the maximum possible number of raw score points that students could earn. (With the exception of Word ID/Vocabulary items, reading items were reported in two ways: type of text and level of comprehension.)

Table 2-8. 2007-08 NECAP Reading—Grades 3 through 8 and 11: Reporting Subcategories and Possible Raw Score Points by Grade

		Grade Tested						
Subcategory		*3*	*4*	*5*	*6*	*7*	*8*	*11*
Word ID/ Vocabulary		22	18	9	9	10	10	10
Type of Text	Literary	15	17	22	21	22	21	21
	Informational	15	17	21	22	20	21	21
Level of Comprehension	Initial Understanding	19	20	19	19	18	19	18
	Analysis and Interpretation	11	14	24	24	24	23	24
	Total	52[1]	52	52	52	52	52	52

[1]Total possible points in reading is the points in Word ID/Vocabulary plus either Type of Text or Level of Comprehension (comprehension items are dually-categorized by type of text and level of comprehension).

Table 2-9 lists the percentage of total score points assigned to each level of Depth of Knowledge in Reading.

Table 2-9. 2007-08 NECAP Reading—Grades 3 through 8 and 11: Depth of Knowledge (DOK) by Grade (in percentage of test)

	Grade Tested						
DOK	*Grade 3*	*Grade 4*	*Grade 5*	*Grade 6*	*Grade 7*	*Grade 8*	*Grade 11*
Level 1	34%	27%	15%	17%	15%	17%	13%
Level 2	58%	65%	70%	58%	44%	52%	64%
Level 3	8%	8%	15%	25%	41%	31%	23%
Total	100%	100%	100%	100%	100%	100%	100%

2.6 Mathematics Test Design

Table 2-10 summarizes the numbers and types of items that were used in the 2007–08 NECAP mathematics test for grades 3 and 4, Table 2-11 for grades 5 through 8, and Table 2-12 for grade 11. Note that all students received the common items plus one of either the equating or field test forms. Each MC item was worth one point, each SA item either one or two points, and each CR item four points. Score points within a grade level were evenly divided, so that MC items represented approximately fifty percent of possible score points, and SA and CR items together represented approximately fifty percent of score points.

Table 2-10. 2007-08 NECAP Mathematics—Grades 3 and 4: Item Type and Numbers of Items

Common			*Matrix – Equating*			*Matrix – FT*[2]			*Total per Student*		
MC[1]	SA1[1]	SA2[1]	MC	SA1	SA2	MC	SA1	SA2	MC	SA1	SA2
35	10	10	6	2	2	3	1	1	44	13	13

[1]MC = multiple choice; SA1 = 1-point short answer; SA2 = 2-point short answer
[2]FT = field test

Table 2-11. 2007-08 NECAP Mathematics—Grades 5 through 8: Item Type and Numbers of Items

Common				*Matrix – Equating*				*Matrix – FT2*				*Total per Student*			
MC1	SA11	SA21	CR1	MC	SA1	SA2	CR	MC	SA1	SA2	CR	MC	SA1	SA2	CR
32	6	6	4	6	2	2	1	3	1	1	1	41	9	9	6

1MC = multiple choice; SA1 = 1-point short answer; SA2 = 2-point short answer; CR = constructed response
2FT = field test

Table 2-12. 2007-08 NECAP Mathematics—Grade 11: Item Type and Numbers of Items

Common				*Matrix – Equating*				*Matrix – FT2*				*Total per Student*			
MC1	SA11	SA21	CR1	MC	SA1	SA2	CR	MC	SA1	SA2	CR	MC	SA1	SA2	CR
24	12	6	4	4	2	1	1	4	2	1	1*	32	16	8	6

1MC = multiple choice; SA1 = 1-point short answer; SA2 = 2-point short answer; CR = constructed response
2FT = field test; * = 4 unique with 2 repeated

2.6.1 The Use of Calculators on the NECAP

The mathematics specialists from the NH, RI, and VT Departments of Education who designed the mathematics test acknowledge the importance of mastering arithmetic algorithms. At the same time, they understand that the use of calculators is a necessary and important skill. Calculators can save time and prevent error in the measurement of some higher-order thinking skills, allowing students to work more sophisticated and intricate problems. For these reasons, it was decided that, at grades 3 through 8, calculators should be prohibited in the first of the three sessions of the NECAP mathematics test and permitted in the remaining two sessions. At grade 11, it was decided that calculators should be prohibited in the first of the two sessions and permitted in the second session. (Test sessions are discussed in greater detail at the end of this chapter.)

2.6.2 Mathematics Blueprint

The test framework for mathematics at grades 3 through 8 was based on the *NECAP Grade Level Expectations*, and all items on the grades 3 through 8 NECAP tests were designed to measure a specific GLE. The test framework for mathematics at grade 11 was based on the *NECAP Grade Span Expectations*, and all items on the grade 11 NECAP test were designed to measure a specific GSE. The mathematics items are organized into four content standards as shown on the following list:

- Numbers and Operations: Students understand and demonstrate a sense of what numbers mean and how they are used. Students understand and demonstrate computation skills.
- Geometry and Measurement: Students understand and apply concepts from geometry. Students understand and demonstrate measurement skills.
- Functions and Algebra: Students understand that mathematics is the science of patterns, relationships, and functions. Students understand and apply algebraic concepts.
- Data, Statistics, and Probability: Students understand and apply concepts of data analysis. Students understand and apply concepts of probability.

In addition, problem solving, reasoning, connections, and communication are embedded throughout the GLEs/GSEs. The distribution of emphasis for Mathematics is shown in Table 2-13.

Table 2-13. 2007-08 NECAP Mathematics—Grades 3 through 8 and 11: Distribution of Emphasis (in targeted percentage of test)

	GLE grade (grade tested)						
Emphasis	*2 (3)*	*3 (4)*	*4 (5)*	*5 (6)*	*6 (7)*	*7 (8)*	*8-10 (11)*
Numbers and Operations	55%	50%	45%	40%	30%	20%	15%
Geometry and Measurement	15%	20%	20%	25%	25%	25%	30%
Functions and Algebra	15%	15%	20%	20%	30%	40%	40%
Data, Statistics, and Probability	15%	15%	15%	15%	15%	15%	15%
Total	100%	100%	100%	100%	100%	100%	100%

Table 2-14 shows the subcategory reporting structure for mathematics and the maximum possible number of raw score points that students could earn. It can be seen that the goal for distribution of score points, or balance of representation across the four content strands, varies from grade to grade. Note: Only common items are counted toward students' scaled scores.

Table 2-14. 2007-08 NECAP Mathematics—Grades 3 through 8 and 11: Reporting Subcategories and Possible Raw Score Points by Grade

	Grade Tested						
Subcategory	*Grade 3*	*Grade 4*	*Grade 5*	*Grade 6*	*Grade 7*	*Grade 8*	*Grade 11*
Numbers and Operations	35	32	30	26	20	13	10
Geometry and Measurement	10	13	13	17	16	16	19
Functions and Algebra	10	10	13	13	19	27	25
Data, Statistics, and Probability	10	10	10	10	11	10	10
Total	65	65	66	66	66	66	64

Table 2-15 lists the percentage of total score points assigned to each level of Depth of Knowledge in mathematics.

Table 2-15. 2007-08 NECAP Mathematics—Grades 3 through 8 and 11: Depth of Knowledge (DOK) by Grade (in percentage of test)

	Grade Tested						
DOK	*Grade 3*	*Grade 4*	*Grade 5*	*Grade 6*	*Grade 7*	*Grade 8*	*Grade 11*
Level 1	29%	24%	20%	17%	24%	20%	27%
Level 2	63%	62%	63%	70%	59%	62%	70%
Level 3	8%	14%	17%	13%	17%	18%	3%
Total	100%	100%	100%	100%	100%	100%	100%

2.7 Writing Test Design

Table 2-16 summarizes the numbers and types of items that were used in the 2007–08 NECAP writing test for grades 5 and 8. Note that all items on the grades 5 and 8 writing tests were

common. Each MC item was worth one point, each CR item four points, each SA item one point, and the writing prompt 12 points.

Table 2-16. 2007-08 NECAP Writing—Grades 5 and 8: Item Type and Numbers of Items

All Common – Total Per Student			
MC[1]	CR[1]	SA1[1]	WP[1]
10	3	3	1

[1]MC = multiple choice; CR = constructed response; SA1 = 1-point short answer; WP = Writing Prompt

Table 2-17 summarizes the test design used in the 2007-08 NECAP writing test for grade 11. Each grade 11 student responded to two different writing prompts, one common and one matrix-equating or field-test prompt. The common prompt was worth 12 points.

Table 2-17. 2007-08 NECAP Writing—Grade 11 (8 Test Forms)

Common	*Matrix Equating (5 Forms)*	*Field Test (3 Forms)*
1 Writing Prompt	1 Writing Prompt	1 Writing Prompt

2.7.1 Writing Blueprint: Grades 5, and 8

The test framework for grades 5 and 8 writing was based on the *NECAP Grade Level Expectations*, and all items on the NECAP test were designed to measure a specific GLE. The content standards for grades 5 and 8 writing identify four major genres that are assessed in the writing portion of the NECAP test each year.

- Writing in response to literary text
- Writing in response to informational text
- Narratives
- Informational writing (report/procedure for Grade 5 and persuasive at Grade 8)

The writing prompt and the three CR items each address a different genre. In addition,

structures and conventions of language are assessed through MC items and throughout the student's writing. The prompts and CR items were developed with the following criteria as guidelines:

- the prompts must be interesting to students
- the prompts must be accessible to all students (i.e., all students would have something to say about the topics)
- the prompts must generate sufficient text to be effectively scored

The subcategory reporting structure for grades 5 and 8 writing is shown in Table 2-18. Also displayed are the maximum possible number of raw score points that students could earn. The subcategory "Short Responses" lists the total raw score points from the three CR items; the subcategory "Extended Response" lists the total raw score points from the three SA items and the writing prompt.

Table 2-18. 2007-08 NECAP Writing—Grades 5 and 8: Reporting Subcategories and Possible Raw Score Points by Grade

	Grade Tested	
Subcategory	*Grade 5*	*Grade 8*
Structures of Language and Writing Conventions	10	10
Short Responses	12	12
Extended Response	15	15
Total	37	37

Table 2-19 lists the percentage of total score points assigned to each level of Depth of Knowledge in writing.

Table 2-19. 2007-08 NECAP Writing—Grades 5 and 8: Depth of Knowledge (DOK) by Grade (in percentage of test)

	Grade Tested	
DOK	*Grade 5*	*Grade 8*
Level 1	19%	22%
Level 2	41%	38%
Level 3	40%	40%
Total	100%	100%

2.7.2 Writing Blueprint: Grade 11

The test framework for grade 11 writing was based on the *NECAP Grade Span Expectations*, and all items on the NECAP test were designed to measure a specific GSE. The content standards for grade 11 writing identify six genres that are grouped into 3 major strands:

- Writing in response to text (literary and informational)
- Informational writing (report, procedure, & persuasive essay
- Expressive Writing (reflective essay)

The writing prompts (common, matrix equating, and field test) combined address each different genre. The prompts were developed with the following criteria as guidelines:

- the prompts must be interesting to students
- the prompts must be accessible to all students (i.e., all students would have something to say about the topics)
- the prompts must generate sufficient text to be effectively scored

The subcategory reporting structure for grade 11 writing is shown in Table 2-20. The subcategory "Extended Response" lists the total raw score points from the writing prompt.

Table 2-20. 2007-08 NECAP Writing—Grade 11: Reporting Subcategories and Possible Raw Score Points

Subcategory	*Grade 11*
Extended Response	12
Total	12

Table 2-21 lists the percentage of total score points assigned to each level of Depth of Knowledge in writing.

Table 2-21. 2007-08 NECAP Writing—Grade 11: Depth of Knowledge (DOK)

DOK	*Grade 11*
Level 1	0%
Level 2	0%
Level 3	100%
Total	100%

2.8 Test Sessions

The NECAP tests were administered to grades 3 through 8 and 11 during October 1–23, 2007. Schools were able to schedule testing sessions at any time during two weeks of this period, provided they followed the sequence in the scheduling guidelines detailed in test administration manuals and that all testing classes within a school were on the same schedule. A third week was reserved for make-up testing of students who were absent from initial test sessions.

The timing and scheduling guidelines for the NECAP tests were based on estimates of the time it would take an average student to respond to each type of item that makes up the test:

- multiple-choice – 1 minute
- short-answer (1 point) – 1 minute
- short-answer (2 point) – 2 minutes
- constructed-response – 10 minutes
- long writing prompt – 45 minutes

For the reading tests, the scheduling guidelines included an estimate of 10 minutes to read the stimulus material used in the test. Tables 2-22 through 2-28 show the distribution of items across the test sessions for each content area and grade levels.

Table 2-22. 2007-08 NECAP Reading—Grades 3 through 8: Test Sessions by Item Type

	Session 1	*Session 2*	*Session 3*
Item Type[1]	*1 long and 1 short passage plus 2 stand-alone MC*	*1 long and 1 short passage plus 2 stand-alone MC*	*1 long and 1 short passage plus 2 stand-alone MC*
MC	14	14	14
CR	3	3	3

[1]MC = multiple choice; CR = constructed response

Table 2-23. 2007-08 NECAP Reading—Grade 11: Test Sessions by Item Type

Item Type[1]	*Session 1*	*Session 2*
MC	22	20
CR	4	5

Table 2-24. 2007-08 NECAP Mathematics—Grades 3 and 4: Test Sessions by Item Type

Item Type[1]	*Session 1*	*Session 2*	*Session 3*
MC	15	15	14
SA1	4	3	6
SA2	4	5	4

[1]MC = multiple choice; SA1 = 1-point short answer; SA2 = 2-point short answer

Table 2-25. 2007-08 NECAP Mathematics—Grades 5 through 8: Test Sessions by Item Type

Item Type[1]	*Session 1*	*Session 2*	*Session 3*
MC	14	14	13
SA1	3	3	3
SA2	3	3	3
CR	2	2	2

[1]MC = multiple choice; SA1 = 1-point short answer; SA2 = 2-point short answer; CR = constructed response

Table 2-26. 2007-08 NECAP Mathematics—Grade 11: Test Sessions by Item Type

Item Type[1]	*Session 1*	*Session 2*
MC	16	16
SA1	6	6
SA2	6	6
CR	3	3

[1]MC = multiple choice; SA1 = 1-point short answer; SA2 = 2-point short answer; CR = constructed response

Table 2-27. 2007-08 NECAP Writing—Grades 5 and 8: Test Sessions by Item Type

Item Type[1]	*Session 1*	*Session 2*
MC	10	0
CR	3	0
SA	0	3
WP	0	1

[1]MC = multiple choice; CR = constructed response; SA1 = 1-point short answer; WP = Writing Prompt

Table 2-28. 2007-08 NECAP Writing—Grade 11: Test Sessions by Item Type

Item Type[1]	*Session 1*	*Session 2*
MC	0	0
CR	0	0
SA	0	0
WP	1	1

[1]MC = multiple choice; CR = constructed response; SA1 = 1-point short answer; WP = Writing Prompt

Though the guidelines for scheduling are based on the assumption that most students will complete the test within the estimated time, each test session was scheduled so that additional time was provided for students who needed it. Up to one-hundred percent additional time was allocated for each session (i.e., a 50-minute session could be extended by an additional 50 minutes).

If classroom space was not available for students who required additional time to complete the tests, schools were allowed to consider using another space for this purpose, such as the guidance office. If additional areas were not available, it was recommended that each classroom used for test administration be scheduled for the maximum amount of time. Detailed instructions on test administration and scheduling were provided in the test coordinators' and administrators' manuals.

Chapter 3 TEST ADMINISTRATION

3.1 Responsibility for Administration

The 2007-08 NECAP *Principal/Test Coordinator Manual* indicated that principals and/or their designated NECAP test coordinator were responsible for the proper administration of the NECAP. Manuals that contained explicit directions and scripts to be read aloud to students by test administrators were used in order to ensure the uniformity of administration procedures from school to school.

3.2 Administration Procedures

Principals and/or their school's designated NECAP coordinator were instructed to read the *Principal/Test Coordinator Manual* before testing and to be familiar with the instructions provided in the *Test Administrator Manual*. The *Principal/Test Coordinator Manual* provided each school with checklists to help them to prepare for testing. The checklists outlined tasks to be performed by school staff before, during, and after test administration. Besides these checklists, the *Principal/Test Coordinator Manual* described the testing material being sent to each school and how to inventory the material, track it during administration, and return it after testing was complete. The *Test Administrator Manual* included checklists for the administrators to prepare themselves, their classrooms, and the students for the administration of the test. The *Test Administrator Manual* contained sections that detailed the procedures to be followed for each test session, and instructions for preparing the material before the principal/test coordinator would return it to Measured Progress.

3.3 Participation Requirements and Documentation

The legislation's intent is for *all* students in grades 3 though 8 and 11 to participate in the NECAP through standard administration, administration with accommodations, or alternate test. Furthermore, any student who is absent during any session of the NECAP is expected to take a makeup test within the three-week testing window.

Schools were required to return a student answer booklet for every enrolled student in the grade level. On those occasions when it was deemed impossible to test a particular student, school personnel were required to inform their Department of Education. The states included a grid on the student answer booklets that listed the approved reasons why a student answer booklet could be returned blank for one or more sessions of the test:

- Student completed the Alternate Test for the 2006–2007 school year
- If a student completed the alternate test in the previous school year, the student was not required to participate in the NECAP in 2007-08.
- Student is new to the United States after October 1, 2006 and is LEP (reading and writing only)
- First-year LEP students that took the ACCESS test of English language proficiency, as scheduled in their states, were not required to take the reading and writing tests in 2007–08. However, these students were required to take the mathematics test in 2007–08.
- Student withdrew from school after October 1, 2007
- If a student withdrew after October 1, 2007 but before completing all of the test sessions, school personnel were instructed to code this reason on the student's answer booklet.
- Student enrolled in school after October 1, 2007
- If a student enrolled after October 1, 2007 and was unable to complete all of the test sessions before the end of the testing administration window, school personnel were instructed to code this reason on the student's answer booklet.
- State-approved special consideration

- Each state department of education had a process for documenting and approving circumstances that made it impossible or not advisable for a student to participate in testing. Schools were required to obtain state approval before beginning testing.

- Student was enrolled in school on October 1, 2007 and did not complete test for reasons other than those listed above

- If a student was not tested for a reason not stated above, school personnel were instructed to code this reason on the student's answer booklet. These "Other" categories were considered "not state-approved."

Tables 3-1, 3-2, and 3-3 list the participation rates of the three states combined in reading, mathematics, and writing.

Table 3-1. 2007-08 NECAP Participation Rates—Reading

Category	*Description*	*Enrollment*	*Not Tested State-Approved*	*Not Tested Other*	*Number Tested*	*Percent Tested*
All	All Students	236893	3066	3071	230756	0.97
Gender	Male	122269	1869	1827	118573	0.97
	Female	114514	1190	1241	112083	0.98
	Not Reported	110	7	3	100	0.91
Ethnicity	Am. Indian	1264	21	22	1221	0.97
	Asian	5540	127	108	5305	0.96
	Black	9786	230	199	9357	0.96
	Hispanic	18041	526	315	17200	0.95
	NHPI	82	0	0	82	1.00
	White	201121	2133	2396	196592	0.98
	Not Reported	1059	29	31	999	0.94
LEP	Current	6125	603	181	5341	0.87
	Monitoring Year 1	1283	7	4	1272	0.99
	Monitoring Year 2	848	2	5	841	0.99
	Other	228637	2454	2881	223302	0.98
IEP	IEP	39117	2056	1131	35930	0.92
	Other	197776	1010	1940	194826	0.99
SES	SES	66588	1325	1150	64113	0.96
	Other	170305	1741	1921	166643	0.98
Migrant	Migrant	134	5	2	127	0.95
	Other	236759	3061	3069	230629	0.97
Title 1	Title 1	31554	608	272	30674	0.97
	Other	205339	2458	2799	200082	0.97
Plan 504	Plan 504	1330	9	5	1316	0.99
	Other	235563	3057	3066	229440	0.97

Table 3-2. Participation Rates for 2007-08 NECAP—Mathematics

Category	*Description*	*Enrollment*	*Not Tested State-Approved*	*Not Tested Other*	*Number Tested*	*Percent Tested*
All	All Students	236893	2551	3173	231169	0.98
Gender	Male	122269	1589	1893	118787	0.97
	Female	114514	956	1278	112280	0.98
	Not Reported	110	6	2	102	0.93
Ethnicity	Am. Indian	1264	21	25	1218	0.96
	Asian	5540	43	97	5400	0.97
	Black	9786	143	208	9435	0.96
	Hispanic	18041	199	267	17575	0.97
	NHPI	82	0	0	82	1.00
	White	201121	2117	2546	196458	0.98
	Not Reported	1059	28	30	1001	0.95
LEP	Current	6125	47	92	5986	0.98
	Monitoring Year 1	1283	6	4	1273	0.99
	Monitoring Year 2	848	2	6	840	0.99
	Other	228637	2496	3071	223070	0.98
IEP	IEP	39117	2066	1200	35851	0.92
	Other	197776	485	1973	195318	0.99
SES	SES	66588	1037	1168	64383	0.97
	Other	170305	1514	2005	166786	0.98
Migrant	Migrant	134	4	3	127	0.95
	Other	236759	2547	3170	231042	0.98
Title 1	Title 1	28928	298	229	28401	0.98
	Other	207965	2253	2944	202768	0.98
Plan 504	Plan 504	1330	10	9	1311	0.99
	Other	235563	2541	3164	229858	0.98

Table 3-3. Participation Rates for 2007-08 NECAP—Writing

Category	*Description*	*Enrollment*	*Not Tested State-Approved*	*Not Tested Other*	*Number Tested*	*Percent Tested*
All	All Students	104892	923	2873	101096	0.96
Gender	Male	53960	529	1730	51701	0.96
	Female	50921	391	1142	49388	0.97
	Not Reported	11	3	1	7	0.64
Ethnicity	Am. Indian	521	7	18	496	0.95
	Asian	2394	47	92	2255	0.94
	Black	4199	78	159	3962	0.94
	Hispanic	7681	180	221	7280	0.95
	NHPI	42	0	0	42	1.00
	White	89667	605	2365	86697	0.97
	Not Reported	388	6	18	364	0.94
LEP	Current	2233	213	89	1931	0.86
	Monitoring Year 1	471	2	5	464	0.99
	Monitoring Year 2	341	1	3	337	0.99
	Other	101847	707	2776	98364	0.97
IEP	IEP	17588	465	1325	15798	0.90
	Other	87304	458	1548	85298	0.98
SES	SES	27107	428	961	25718	0.95
	Other	77785	495	1912	75378	0.97
Migrant	Migrant	67	2	2	63	0.94
	Other	104825	921	2871	101033	0.96
Title 1	Title 1	10216	176	135	9905	0.97
	Other	94676	747	2738	91191	0.96
Plan 504	Plan 504	630	8	4	618	0.98
	Other	104262	915	2869	100478	0.96

3.4 Administrator Training

In addition to distributing the *Principal/Test Coordinator* and *Test Administrator Manual*s, the NH, RI, and VT Departments of Education, along with Measured Progress, conducted test administration workshops in five separate regional locations in each state to inform school personnel about the NECAP and to provide training on the policies and procedures regarding administration of the NECAP tests.

3.5 Documentation of Accommodations

The *Principal/Test Coordinator* and *Test Administrator Manual* provided directions for coding the information related to accommodations and modifications on page 2 of the student answer booklet.

All accommodations used during any test session were required to be coded by authorized school personnel—not students—after testing was completed.

An *Accommodations, Guidelines, and Procedures: Administrator Training Guide* was also produced to provide detailed information on planning and implementing accommodations. This guide can be located on each state's Department of Education Web site. The states collectively made the decision that accommodations be made available to all students based on individual need regardless of disability status. Decisions regarding accommodations were to be made by the students' educational team on an individual basis and were to be consistent with those used during the students' regular classroom instruction. Making accommodations decisions on an entire-group basis rather than on an individual basis was not permitted. If the decision made by a student's educational team required an accommodation not listed in the state-approved Table of Standard Test Accommodations, schools were instructed to contact the Department of Education in advance of testing for specific instructions for coding the "Other Accommodations (E)" and/or "Modifications (F)" section.

Tables 3-4 through 3-6 show the accommodations observed for the October 2007 NECAP administration. The accommodation codes are defined in the Table of Standard Test Accommodations, which can be found in Appendix B. Information on the appropriateness and impact of accommodations may be found in Appendix C.

Table 3-4. 2007-08 NECAP Accommodation Frequencies by Subject Area, Grades 3 through 5

	Grade 3		*Grade 4*		*Grade 5*		
Accommodation	*Math*	*Reading*	*Math*	*Reading*	*Math*	*Reading*	*Writing*
A01	772	796	703	720	732	755	711
A02	3758	3587	4166	3983	4373	4262	4138
A03	1370	1372	1419	1401	1294	1292	1227
A04	309	304	275	278	209	215	207
A05	12	13	8	10	10	13	14
A06	13	17	12	11	14	12	14
A07	1380	1357	1572	1549	1588	1536	1513
A08	1525	1459	1392	1335	1247	1217	1155
A09	7	19	3	3	9	12	9
B01	227	222	248	237	244	247	240
B02	2060	2061	2211	2199	2370	2378	2234
B03	2149	2159	2484	2369	2835	2728	2485
C01	3	3	2	2	3	3	3
C02	37	37	37	36	31	24	27
C03	14	14	11	8	14	12	15
C04	3423	0	3393	0	3231	0	3018
C05	555	719	560	690	413	488	353
C06	36	16	43	13	67	19	21
C07	586	619	635	664	570	590	514
C08	9	9	11	14	10	10	12
C09	197	257	191	248	220	250	210
C10	7	16	9	13	17	16	11
C11	45	51	63	67	54	56	55
C12	8	0	22	0	21	0	6
C13	2	0	1	0	5	0	0
D01	10	10	15	19	41	89	128
D02	49	56	52	61	70	98	104
D03	6	6	1	1	5	8	4
D04	73	71	102	102	101	109	79
D05	934	1005	872	961	849	913	0
D06	11	11	10	13	15	21	0
E01	4	2	5	5	2	2	8
E02	0	0	0	0	0	0	36
F01	41	0	34	0	20	0	0
F02	0	26	0	12	0	4	0
F03	8	5	1	2	2	1	4

Table 3-5. 2007-08 NECAP Accommodation Frequencies by Subject Area, Grades 6 through 8

	Grade 6		*Grade 7*		*Grade 8*		
Accommodation	*Math*	*Reading*	*Math*	*Reading*	*Math*	*Reading*	*Writing*
A01	499	496	436	460	372	375	361
A02	3818	3790	3733	3786	3766	3741	3643
A03	912	935	703	730	532	523	508
A04	280	275	257	290	195	200	200
A05	7	9	8	17	4	3	4
A06	21	11	14	14	6	6	8
A07	1528	1538	1514	1563	1501	1493	1482
A08	788	769	545	548	434	439	421
A09	8	8	3	7	4	3	4
B01	190	174	163	161	118	114	112
B02	1883	1912	1638	1667	1408	1413	1372
B03	2465	2341	2165	2137	1798	1715	1692
C01	3	3	0	0	0	0	0
C02	31	23	19	22	20	22	18
C03	10	9	19	19	3	4	7
C04	2247	0	1817	0	1578	0	1515
C05	252	294	132	141	62	76	57
C06	36	9	37	31	24	15	13
C07	465	478	467	503	285	284	261
C08	12	4	5	9	3	4	8
C09	44	49	33	29	23	23	20
C10	9	0	7	7	1	1	1
C11	28	29	26	28	10	9	9
C12	41	0	52	0	43	0	39
C13	2	0	4	0	1	0	231
D01	69	125	77	143	82	156	41
D02	43	50	41	53	27	30	8
D03	8	4	2	4	6	5	41
D04	77	74	71	70	44	48	0
D05	464	581	296	371	186	222	0
D06	9	10	7	11	7	6	0
E01	3	4	1	1	0	0	0
E02	0	0	0	0	0	0	22
F01	50	0	35	0	53	0	0
F02	0	3	0	13	0	8	0
F03	0	0	0	0	0	0	2

Table 3-6. 2007-08 NECAP Accommodation Frequencies by Subject Area, Grade 11

Accommodation	*Math*	*Reading*	*Writing*
A01	250	246	266
A02	2500	2486	2519
A03	357	355	359
A04	93	71	70
A05	3	1	3
A06	22	4	4
A07	1364	1374	1372
A08	213	200	200
A09	18	15	13
B01	103	87	86
B02	551	563	572
B03	1692	1290	1142
C01	0	0	0
C02	32	16	20
C03	12	15	13
C04	674	0	689
C05	22	20	22
C06	78	64	62
C07	87	84	93
C08	18	4	5
C09	11	6	6
C10	19	1	2
C11	5	5	7
C12	71	0	56
C13	1	0	0
D01	33	61	97
D02	10	11	16
D03	10	1	1
D04	17	15	14
D05	47	53	0
D06	7	8	0
E01	2	2	3
E02	0	0	20
F01	146	0	0
F02	0	10	0
F03	0	0	0

3.6 Test Security

Maintaining test security is critical to the success of the New England Common Test program and the continued partnership among the three states. The *Principal/Test Coordinator Manual* and the *Test Administrator Manual*s explain in detail all test security measures and test administration procedures. School personnel were informed that any concerns about breaches in test security were to be reported to the schools' test coordinator and principal immediately. The test coordinator and/or principal were responsible for immediately reporting the concern to the district superintendent and the state director of testing at the department of education. Test Security was also strongly

emphasized at test administration workshops that were conducted in all three states. The three states also required the principal of each school that participated in testing to log on to a secure website to complete the *Principal's Certification of Proper Test Administration* form for each grade level tested. Principals were requested to provide the number of secure tests received from Measured Progress, the number of tests administered to students, and the number of secure test materials that they were returning to Measured Progress. Principals were then instructed to print off a hard copy of the form, sign it, and return it with their test materials shipment. By signing the form, the principal was certifying that the tests were administered according to the test administration procedures outlined in the *Principal/Test Coordinator* and *Test Administrator* Manuals, that they maintained the security of the tests, that no secure material was duplicated or in any way retained in the school, and that all test materials had been accounted for and returned to Measured Progress.

3.7 Test and Administration Irregularities

During the test administration, a printing error was discovered in some of the integrated grade 3 and grade 4 NECAP test booklets, across different forms. Thirteen schools called the NECAP Service Center or their state Department of Education and reported that pages were missing from one or more of their grade 3 or grade 4 test booklets. The pages missing were not the same in each test booklet; the most common error was that pages 11 through 18 were missing in a grade 3, form 7 test booklet and that pages 19 through 26 were repeated.

The print vendor determined that the errors occurred due to human error during the loading of the binding machine. The vendor explained that the signatures for the test booklets are pre-loaded by signature in groups of three to four signatures at adjacent pockets on each side of the binder. Because the pockets are loaded by hand, the potential exists for incorrect signatures to be loaded into a pocket and bound in test booklets. This would result in 10 to 50 booklets in a row having a duplicate or missing signature. The vendor also explained that, when the binding machine stops due to miss-feeds, the operator must re-collate any loose signatures in the correct pockets at the restart. If the loose signatures are re-collated incorrectly, this would results in a couple booklets having a

duplicate or missing signature.

In total, schools reported 42 defective booklets. All affected schools either replaced the defective test booklets with extra test booklets they already had available or Measured Progress immediately sent new test booklets to the school. No NECAP report was affected by these irregularities.

3.8 Test Administration Window

The test administration window was October 1–23, 2007.

3.9 NECAP Service Center

To provide additional support to schools before, during, and after testing, Measured Progress established the NECAP Service Center. The additional support that the Service Center provides is an essential element to the successful administration of any statewide test program. It provides a centralized location to which individuals in the field can call using a toll-free number and ask specific questions or report any problems they may be experiencing.

The Service Center was staffed by representatives at varying levels based on need volume and was available from 8:00 AM to 4:00 PM beginning two weeks before the start of testing and ending two weeks after testing. The representatives were responsible for receiving, responding to, and tracking calls, then routing issues to the appropriate person(s) for resolution. All calls were logged into a database that was provided to each state after testing was completed.

Chapter 4 SCORING

4.1 Imaging Process

When the 2007–08 NECAP student answer booklets arrived at Measured Progress, they were logged in, identified with pre-printed scannable school information header sheets, examined for extraneous materials, and batched. They were then moved to the scanning area for imaging. Booklets were scanned and all necessary information to produce required reports was captured and converted into an electronic format (e.g., all student identification and demographics, CR answers, and digital image clips of hand-written writing-prompt responses). Such digital image-clip information allows Measured Progress to replicate student responses, just as they appeared originally, onto readers' monitors for scoring. All remaining processes—data processing, benchmarking, scoring, data analysis, and reporting—are accomplished without further reference to original paper forms.

The first step in digitally converting student booklets was removal of booklet bindings so that individual pages could pass through the scanners one at a time. Once booklets were cut, their pages were put back into their proper boxes and placed in storage until needed for scanning and imaging.

Customized scanning programs were prepared to selectively read the 2007-08 NECAP student answer booklets and to format the scanned information electronically according to pre-determined requirements. All information (including MC response data) that had been designated time-critical or process-critical was handled first.

4.2 Quality Control

The scanning system used at Measured Progress is equipped with many built-in safeguards that prevent data errors (e.g., real-time quality control checks, duplex reading). Furthermore, scanner hardware is continually monitored automatically, and if standards are not met, an error message is displayed and scanning shuts down. Areas automatically monitored include document page and integrity checks as well as internal checks of electronic functioning.

Before each scanning shift began, Measured Progress operators performed a diagnostic routine. In the event any inconsistencies were identified, an operator calibrated the machine and performed the test again. If the machine was still not up to standard, a field service engineer was called for assistance.

As a final safeguard, bubble-by-bubble and image-by–image spot checks of scanned files were routinely made throughout scanning runs to ensure data integrity.

After data were entered and scanning logs and paperwork completed, student booklets were put into storage (where they are kept for a minimum of 180 days beyond the close of the fiscal year). Once it had been determined that the 2007-08 NECAP databases were complete and accurate, batches were uploaded to Measured Progress' local area network (LAN).These data were then available to be scored or transferred as appropriate to the Internet, CD-ROM, or optical disk.

4.3 Hand-Scoring

4.3.1 iScore

Student responses to open-ended items on the 2007-08 NECAP were accessed as stored images off the LAN by qualified readers at computer terminals for "hand-scoring." All scoring personnel are subject to the same nondisclosure requirements and supervision as is regular Measured Progress staff.

Readers evaluate each response and record each student's score via keypad or mouse entry through the Measured Progress proprietary *iScore* system. All *iScore* scoring is "anonymous." No student names or scores are associated with viewed responses. Readers can only access student responses for items they are qualified to score. When a scorer finishes evaluating a response, another random response immediately appears onscreen. In these ways, complete anonymity and randomization of student responses is ensured.

4.3.2 Scorer Qualifications

Under the Director of Scoring Services, scoring staff carried out the various scoring operations. Scoring staff included

- chief readers (CRs), who oversaw all training and scoring within particular content areas;
- quality assurance coordinators (QACs), who led range finding and training activities and monitored scoring consistency and rates;
- senior readers (SRs), who performed read-behinds of readers and assisted at scoring tables as necessary; and
- readers, who performed the bulk of the scoring.

Table 4-1 summarizes the qualifications of the 2007-08 NECAP quality assurance coordinators and readers.

Table 4-1. 2007-08 NECAP QAC[1] and Reader Qualifications

Scoring Responsibility	*Educational Credentials*				
	Doctorate	*Masters*	*Bachelors*	*Other*	*Total*
QAC	2%	36%	60%	2%	100%
Reader	4%	27%	59%	10%	100%

[1]QAC = Quality Assurance Coordinator

4.4 Benchmarking

Before the scheduled start of scoring activities, Measured Progress scoring center staff and test developers reviewed test items and scoring guides for benchmarking. One or two anchor examplars were selected for each item score point to prepare an anchor pack; an additional six to ten responses were selected to go into the training pack. Anchor papers are mid-range exemplars of a score point, while the training pack papers illustrate the range within the score point. CRs working closely with QACs for each content area facilitated the selection process. Finding a sufficient number of papers representing the highest scores is very difficult due to their rarity.

All selected materials were subsequently reviewed by the content representatives from each

state. Based on their recommendations, the anchor exemplars and training packs were modified, finalized, and approved for scorer training.

4.5 Selecting and Training Quality Assurance Coordinators and Senior Readers

Because "read-behinds" would be performed by the QACs and SRs in order to moderate the scoring process and maintain the integrity of scores, scoring accuracy was a strong criterion for selecting individuals to fill those positions. Since QACs train readers to score items in particular content areas, they were selected based also on their ability to instruct and on their content area level of expertise. QACs typically are retired teachers. The ratio of QACs and SRs to readers was approximately 1:11.

4.5.1 Selecting Readers

Reader applicants were required to demonstrate their ability by participating in a preliminary scoring evaluation. The *iScore* system enables Measured Progress to efficiently measure a prospective reader's ability to score student responses accurately. After participating in a training session, applicants are required to achieve at least eighty percent exact scoring agreement for reading and mathematics, seventy percent exact agreement for writing, on a qualifying pack consisting of ten responses to a predetermined item in their content area (or twenty responses in the case of equating items). The qualifying responses are randomly selected from a bank of approximately 150, all of which are selected by QACs and approved by the CRs, developers, and content representatives from each state.

4.5.2 Training Readers

To train readers, QACs demonstrated how to apply the language of the scoring guide to an item's anchor pack exemplars. At the conclusion of anchor pack discussion, readers scored the

training pack exemplars. QACs then reviewed the training-pack scoring by the readers and answered any questions readers had.

The optimum ratio of training to scoring hours was determined for divvying readers into content area groups trained to score different items. The resulting amount of time a reader scored a given item was thereby kept short enough to minimize "drift" but long enough to analyze the reader's scoring trends. This scheme helped reconcile the need to provide cost-effective scoring while ensuring that readers maintain or exceed quality standards.

4.5.3 Monitoring Readers

Training and hand-scoring took place over a period of approximately three weeks. Responses were randomly assigned to readers; thus, each item in a student's response booklet was more than likely scored by a different reader. By using the maximum possible number of readers for each student, the procedure effectively minimized error variance due to reader sampling.

After a reader scored a student response, *iScore* determined whether that response should be scored by a second reader, scored by a QAC or SR, or routed for special attention. QACs and SRs used *iScore* to produce daily reader accuracy and speed reports. They were also able to obtain current reader accuracy speed reports on-line at any time. All common and matrix CR items in reading and mathematics were scored once with a two-percent double-blind (scored independently by two readers) to ensure consistency among readers and accuracy of individual readers. At grades 5, 8, and 11, the common writing prompt was 100% double-blind scored with the requirement that the two scores for each writing component had to be at least adjacent. Non-adjacent scores were arbitrated. The combined scores given by the two readers resulted in the student's raw score on the writing prompt. Each of the three writing CR items at grades 5 and 8 was scored once with a two-percent read-behind, and these points were added to the points earned on the writing prompt and the points earned on the ten MC items covering the structures of language and conventions, resulting in the total raw score for writing.

Tables 4-2 and 4-3 present the weighted averages of exact, adjacent, and total percentages of agreement. The weighting was based on the number of responses that were re-scored for each question. (Note: These data underestimate scorer accuracy.) Blanks were included in both read-behind and double-blind scoring. Readers were instructed to score as a zero any "minimal" responses for which the student had made at least a mark of any kind. However, in many instances it was impossible for the reader to tell whether a mark on the page was written by the student or whether there was a crease in the paper, bleed-through from the other side of the page, or dust on the scanner's image screen. In such instances, these responses were counted as neither exact nor adjacent agreement, though the effect of blanks and zeroes on student scores was identical.

Table 4-2. 2007-08 NECAP: Percentage Scoring Consistency and Reliability Double-Blind

	Math			*Reading*			*Writing*		
Grade	*Exact*[1]	*Adjacent*[1]	*Total*[1]	*Exact*	*Adjacent*	*Total*	*Exact*	*Adjacent*	*Total*
3	94.5	1.7	96.2	88.3	9.0	97.3			
4	94.2	2.6	96.8	81.7	12.3	94.0			
5	90.9	4.3	95.2	81.4	13.5	94.9	62.0	35.0	97.0
6	92.4	4.0	96.4	78.4	12.4	90.8			
7	93.1	3.2	96.3	76.7	14.0	90.7			
8	93.4	3.0	96.4	81.9	13.5	95.4	59.6	36.7	96.3
11	96.8	0.5	97.3	81.3	5.4	86.7	58.2	38.0	96.2

[1]Exact = two readers assigned the same score; Adjacent = two readers differed by one point; Total = Exact or adjacent

Table 4-3. 2007-08 NECAP: Percentage Scoring Read-Behind

	Math			*Reading*			*Writing*		
Grade	*Exact*[1]	*Adjacent*[1]	*Total*[1]	*Exact*	*Adjacent*	*Total*	*Exact*	*Adjacent*	*Total*
3	93.8	5.2	99.0	75.8	22.3	98.1			
4	92.8	6.7	99.5	68.3	28.4	96.7			
5	84.4	14.0	98.4	75.0	23.6	98.6	77.6	21.6	99.2
6	86.0	12.7	98.7	72.3	26.6	98.9			
7	88.0	10.4	98.4	64.3	33.4	97.7			
8	86.9	11.2	98.1	75.8	23.2	99.0	72.8	26.0	98.8
11	92.7	6.2	98.9	72.6	26.3	98.9	71.4	26.9	98.3

[1]Exact = two readers assigned the same score; Adjacent = two readers differed by one point; Total = Exact or adjacent

4.6 Scoring Locations

All of the oversight and administrative controls applied to the *iScore* database were managed for scoring at Measured Progress headquarters in Dover, NH. However, student responses were scored in four locations: Dover, NH; Troy, NY; Louisville, KY; and Longmont, CO. Table 4-4 shows the locations where all content area/grade level combinations were scored. It is important to

note that no single item was scored in more than one location. The *iScore* system monitored accuracy, reliability, and consistency across all scoring locations. Constant communication and coordination were accomplished through e-mail, telephone, faxes, and secure Web sites, to ensure that critical information and scoring modifications were shared/implemented across all scoring locations.

Table 4-4. 2007-08 NECAP Content Area/Grade Level Scoring Locations

Content Area/ Grade Level	*Dover, NH*	*Troy, NY*	*Louisville, KY*	*Longmont, CO*
Reading Grade 3		X		
Reading Grade 4			X	
Reading Grade 5				X
Reading Grade 6	X			
Reading Grade 7			X	
Reading Grade 8				X
Reading Grade 11	X			
Mathematics Grade 3			X	
Mathematics Grade 4			X	
Mathematics Grade 5			X	
Mathematics Grade 6			X	
Mathematics Grade 7			X	
Mathematics Grade 8			X	
Mathematics Grade 11	X			
Writing Grade 5				X
Writing Grade 8				X
Writing Grade 11				X

4.7 External Observations

The Dover, NH and Longmont, CO scoring locations were visited by at least one representative from each of the three Departments of Education during scoring. State test directors and content specialists from the three states were present at some point at each of the locations during benchmarking, training, and live scoring throughout the scoring window. The state test directors and content specialists from the three states met with program management and scoring management staff from Measured Progress to share their observations and provide feedback. Recommendations that were a result of that meeting will be applied to the next round of scoring in 2008–09.

Chapter 5 SCALING AND EQUATING

5.1 Item Response Theory Scaling

All NECAP items were calibrated using Item Response Theory (IRT). IRT uses mathematical models to define a relationship between an unobserved measure of student performance, usually referred to as theta (θ), and the probability (p) of getting a dichotomous item correct or of getting a particular score on a polytomous item. In IRT, it is assumed that all items are independent measures of the same construct (i.e., of the same θ). Another way to think of θ is as a mathematical representation of the latent trait of interest. Several common IRT models are used to specify the relationship between θ and p (Hambleton and van der Linden, 1997; Hambleton and Swaminathan, 1985). The process of determining the specific mathematical relationship between θ and p is called item calibration. After items are calibrated, they are defined by a set of parameters that specify a nonlinear, monotonically increasing relationship between θ and p. Once the item parameters are known, $\hat{\theta}$, an estimate of θ for each student, can be calculated. ($\hat{\theta}$ is considered to be an estimate of the student's true score or a general representation of student performance. It has characteristics that may be preferable to those of raw scores for equating purposes.)

For NECAP 2007-08, the three-parameter logistic (3PL) model was used for dichotomous items (MC and SA) and the graded-response model (GRM) was used for polytomous items. The 3PL model for dichotomous items can be defined as:

$$P_i\left(1\middle|\theta_j\right) = c_i + \left(1 - c_i\right)\frac{\exp Da_i\left(\theta_j - b_i\right)}{1 + \exp Da_i\left(\theta_j - b_i\right)}$$

where i indexes the items,
j indexes students,
a represents the item discrimination parameter,
b represents the item difficulty parameter,
c is the pseudo-guessing parameter (fixed at 0 for short answer items), and
D is a normalizing constant equal to approximately 1.701.

In the GRM for polytomous items, an item is scored in k+1 graded categories that can be viewed as a set of k dichotomies. At each point of dichotomization (i.e., at each threshold), a two-

parameter model can be used. This implies that a polytomous item with k+1 categories can be characterized by k item category threshold curves (ICTC) of the two-parameter logistic form:

$$P_{ik}^{*}\left(1\middle|\theta_j\right)=\frac{\exp Da_i\left(\theta_j-b_i+d_{ik}\right)}{1+\exp Da_i\left(\theta_j-b_i+d_{ik}\right)}$$

where i indexes the items,
j indexes students,
k indexes thresholds,
a represents the item discrimination parameter,
b represents the item difficulty parameter,
d represents a category step parameter, and
D is a normalizing constant equal to approximately 1.701.

After computing k item category threshold curves in the GRM, k+1 item category characteristic curves (ICCC) are derived by subtracting adjacent ICTC curves:

$$P_{ik}(1\,|\,\theta_j)=P_{i(k-1)}^{*}(1\,|\,\theta_j)-P_{ik}^{*}(1\,|\,\theta_j)$$

where P_{ik} represents the probability that the score on item i falls in category k, and P_{ik}^{*} represents the probability that the score on item i falls above the threshold k ($P_{i0}^{*}=1$ and $P_{i(k+1)}^{*}=0$).

The GRM is also commonly expressed as:

$$P_{ik}\left(k\middle|\theta_j,\xi_i\right)=\frac{\exp\left[Da_i\left(\theta_j-b_i+d_k\right)\right]}{1+\exp\left[Da_i\left(\theta_j-b_i+d_k\right)\right]}-\frac{\exp\left[Da_i\left(\theta_j-b_i+d_{k+1}\right)\right]}{1+\exp\left[Da_i\left(\theta_j-b_i+d_{k+1}\right)\right]}$$

where ξ_i represents the set of item parameters for item i.

Finally, the ICC for polytomous items is computed as a weighted sum of ICCCs, where each ICCC is weighted by the score assigned to a corresponding category.

$$P_i(1\,|\,\theta_j)=\sum_{k}^{m+1}w_{ik}P_{ik}(1\,|\,\theta_j)$$

For more information about item calibration and determination, the reader is referred to Lord and Novick (1968) or Hambleton and Swaminathan (1985).

5.2 Equating

The purpose of equating is to ensure that scores obtained from different forms of a test are equivalent to each other. Equating may be used if multiple test forms are administered in the same year, as well as to equate one year's forms to those given in the previous year. Equating ensures that students are not given an unfair advantage or disadvantage because the test form they took is easier or harder than those taken by other students.

The 2007-08 administration of NECAP used a raw score-to-theta equating procedure in which test forms are equated every year to the theta scale of the reference test forms. This is established through the chained linking design, which means that every new form is equated back to the theta scale of the previous year's test form. Since the chain originates from the reference form, it can be assumed that the theta scale of every new test form is the same as the theta scale of the reference form—in the current case, the theta scale of the 2005-06 NECAP

Equating for NECAP uses the *anchor-test-nonequivalent-groups* design described by Petersen, Kolen, & Hoover (1989). In this equating design, no assumption is made about the equivalence of the examinee groups taking different test forms (that is, naturally occurring groups are assumed). Comparability is instead evaluated through utilizing a set of anchor items (i.e., equating items). The NECAP uses an *external* anchor test design, which means that the equating items are not counted toward students' test scores. However, the equating items are designed to mirror the common test in terms of item types and distribution of emphasis. The set of equating items is matrixed across the forms of the test.

Item parameter estimates for 2007-08 were placed on the 2006-07 scale by using the method of Stocking and Lord (1983), which is based on the IRT principle of item parameter invariance. According to this principle, the equating items for both the 2006-07 and 2007-08 NECAP tests should have the same item parameters. The equating procedure was as follows: PARSCALE was used to estimate item parameters for 2007-08 NECAP mathematics and reading tests (the three-

parameter logistic model [3PL] for dichotomous items and the graded response model [GRM] for polytomous items). The Stocking and Lord method was employed to find the linear transformation (slope and intercept) that adjusted the equating items' parameter estimates such that the test characteristic curve (TCC; see section 6.5 for a definition of TCCs) was as close as possible to the TCC based on the 2006-07 equating item parameter estimates. (The transformation constants can be found in Appendix D, Table I.d.1.) Note: Grades 5 and 8 writing were excepted from this equating process; the writing test forms were pre-equated based on pilot testing in 2004-05 (see the 2005-06 NECAP Technical Report for more details on the NECAP pilot). The same IRT models used in all other grade/contents were used for writing (i.e., 3PL and GRM). The final item parameter estimates for all grades and content areas are provided in Appendix E.

Students who took the equating items on the 2007-08 and 2006-07 NECAP tests are not equivalent groups. Item Response Theory (IRT) is particularly useful for equating scenarios that involve nonequivalent groups (Allen & Yen, 1979). The next administration of NECAP, 2008-09, will be scaled to the 2007-08 administration by the same equating method described above.

The Equating Report was submitted to the NECAP state testing directors for their approval prior to production of student reports. The Equating Report is included as Appendix D, and results are discussed more fully in Section 6.7.

5.3 Standard Setting

A standard setting meeting was conducted for the grade 11 NECAP tests in January 2008. Thus, operational 2007-08 data were used to set grade 11 standards, and all subsequent administrations of grade 11 NECAP will be equated back to the 2007-08 base-year scale.

The grade 11 standard-setting report is included as Appendix F to this document. This detailed report outlines the methods and results of the standard-setting meetings. The meetings resulted in cut scores on the θ metric. Because future equating will scale back to the 2007-08 θ metric, the grade 11 cut scores (presented later in Tables 5-1 and 5-2) will remain fixed throughout

the assessment program (unless standards are reset for any reason). After the standard-setting meetings were completed and the cut scores determined, a meeting was held for the commissioners of education from each of the three states to review and officially adopt the final cutscores.

A list of Standard-Setting Committee member names and affiliations are included in Appendix A.

5.4 Reported Scale Scores

5.4.1 Description of Scale

A scale was developed for reporting purposes for each NECAP test. These reporting scales are simple linear transformations of the underlying scale (θ) used in the IRT calibrations. The scales were developed such that they ranged from X00 through X80, where X is grade level. In other words, grade 3 scaled scores ranged from 300 to 380, grade 4 from 400 through 480, and so forth through grade 8, where scores ranged from 800 through 880. The lowest scaled score in the *Proficient* range was set at "X40" for each grade level. For example, to be classified in the *Proficient* achievement level or above, a minimum scaled score of 340 was required at grade 3, 440 at grade 4, and so forth.

Scaled scores supplement achievement-level results by providing information that is more specific about the position of a student's results within an achievement level. School- and district-level scaled scores are calculated by computing the average of student-level scaled scores. Students' raw scores (i.e., total number of points) on the 2007-08 NECAP tests were translated to scaled scores using a data analysis process called *scaling*. Scaling simply converts raw points from one scale to another through the TCC. In the same way that a given temperature can be expressed on either Fahrenheit or Celsius scales, or the same distance can be expressed in either miles or kilometers, student scores on the 2007-08 NECAP tests can be expressed in raw or scaled scores.

It is important to note that converting from raw scores to scaled scores does not change students' achievement-level classifications. Given the relative simplicity of raw scores, it is fair to

question why scaled scores for NECAP are reported instead of raw scores. Scaled scores simplify the reporting of results across content areas and across successive years. To illustrate, standard-setting typically results in different *raw* cutscores across content areas. The raw cut score between *Partially Proficient* and *Proficient* could be, for example, 35 in mathematics but 33 in reading. Both of these raw scores would be transformed to scaled scores of X40, i.e., in the *Proficient* achievement level, just beyond the range of scores associated with the *Partially Proficient* level, as noted above. The same would hold regardless of content area or grade, so one sees that scaled scores facilitate understanding how a student performed. Another advantage of scaled scores comes from their being *linear* transformations of θ. Since the θ scale is used for equating, scaled scores are comparable from one year to the next. Raw scores are not.

5.4.2 Calculations

The scaled scores are obtained by a simple translation of ability estimates ($\hat{\theta}$) using the linear relationship between threshold values on the θ metric and their equivalent values on the scaled score metric. Students' ability estimates are based on their raw scores and are found by mapping through the TCC. Scaled scores are calculated using the linear equation

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

where m is the slope and
b is the intercept.

A separate linear transformation is used for each grade/content combination. For NECAP tests, each line is determined by fixing both the *Partially Proficient/Proficient* cutscore and the bottom of the scale; that is, the X40 value (e.g., 340 for grade 3) and the X00 value (e.g., 300 for grade 3). The latter is a location on the θ scale beyond the scaling of all the items across the various grade/content combinations. To determine this location, a chance score (approximately equal to a student's expected performance by guessing) is mapped to a value of –4.0 on the θ scale. A raw score of 0 is also assigned a scaled score of X00. The maximum raw score is assigned a scaled score of X80 (e.g., 380 in the case of grade 3).

Because only two points within the θ scaled-score space are fixed, the cutscores between *Substantially Below Proficient* and *Partially Proficient* (SBP/PP) and between *Proficient* and *Proficient with Distinction* (P/PWD) vary across the grade/content combinations.

Table 5-1 represents the scaled cutscores for each grade/content combination (i.e., the minimum scaled score for getting into the next achievement level). It is important to note that the values in Table 5-1 do not change from year to year because the cutscores along the θ scale do not change. In any given year, it may not be possible to attain a particular scaled score, but the scaled score cuts will remain the same.

Table 5-1. 2007-08 NECAP Cut Scores for Each Achievement Level by Grade and Content Area

			Scale Score Cuts			
Grade	***Content***	***Min***	*SBP/PP*	*PP/P*	*P/PWD*	***Max***
3	Math	300	332	340	353	380
4		400	431	440	455	480
5		500	533	540	554	580
6		600	633	640	653	680
7		700	734	740	752	780
8		800	834	840	852	880
11		1100	1134	1140	1152	1180
3	Reading	300	331	340	357	380
4		400	431	440	456	480
5		500	530	540	556	580
6		600	629	640	659	680
7		700	729	740	760	780
8		800	828	840	859	880
11		1100	1130	1140	1154	1180
5	Writing*	500	528	540	555	580
8		800	829	840	857	880

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
*Scaled scores are not produced for grade 11 writing

Table 5-2 shows the cutscores on the θ metric resulting from standard setting (see the 2005-06 NECAP Technical Report for a description of the grades 3-8 standard-setting process and Appendix F for the grade 11 process) and the slope and intercept terms used to calculate the scaled scores. Note that no number in Table 5-2 will change unless the standards are reset.

Table 5-2. 2007/08 NECAP Cutscores (on θ Metric), Intercept, and Slope by Grade and Content Area

		θ Cuts				
Grade	*Content*	*SBP/PP*	*PP/P*	*P/PWD*	*Intercept*	*Slope*
3	Math	–1.0381	–0.2685	0.9704	342.8782	10.7195
4		–1.1504	–0.3779	0.9493	444.1727	11.0432
5		–0.9279	–0.2846	1.0313	543.0634	10.7659
6		–0.8743	–0.2237	1.0343	642.3690	10.5922
7		–0.7080	–0.0787	1.0995	740.8028	10.2007
8		–0.6444	–0.0286	1.1178	840.2881	10.0720
11		-0.1169	0.6190	2.0586	1134.640	8.6600
3	Reading	–1.3229	–0.4970	1.0307	345.6751	11.4188
4		–1.1730	–0.3142	1.1473	443.4098	10.8525
5		–1.3355	–0.4276	1.0404	544.7878	11.1970
6		–1.4780	–0.5180	1.1255	645.9499	11.4875
7		–1.4833	–0.5223	1.2058	746.0074	11.5019
8		–1.5251	–0.5224	1.1344	846.0087	11.5022
11		-1.2071	-0.3099	1.0038	1143.3600	10.8399
5	Writing	–1.2008	–0.0232	1.5163	540.2334	10.0583
8		–1.0674	–0.0914	1.8230	839.1064	9.7766

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Appendix G contains the raw score-to-scaled score conversion tables. These are the actual tables that were used to determine student scaled scores, error bands, and achievement levels.

5.4.3 Distributions

Appendix H contains the scaled score cumulative density functions. These distributions were calculated using the sparse data matrix files that were used in the IRT calibrations. For each grade/content, these distributions show the cumulative percentage of students scoring at or below a particular scaled score across the entire scaled score range.

SECTION II - STATISTICAL AND PSYCHOMETRIC SUMMARIES

Chapter 6 ITEM ANALYSES

As noted in Brown (1983), "A test is only as good as the items it contains." A complete evaluation of a test's quality must include an evaluation of each question. Both the *Standards for Educational and Psychological Testing* (AERA, 1999) and the *Code of Fair Testing Practices in Education* (Joint Committee on Testing Practices, 1988) include standards for identifying quality questions. Questions should assess only knowledge or skills that are identified as part of the domain being measured and should avoid assessing irrelevant factors. They should also be unambiguous and free of grammatical errors, potentially insensitive content or language, and other confounding characteristics. Further, questions must not unfairly disadvantage test takers from particular racial, ethnic, or gender groups.

Both qualitative and quantitative analyses were conducted to ensure that NECAP questions met these standards. Qualitative analyses were discussed in Chapter 2 ("Development and Test Design"). The following discussion focuses on several categories of quantitative evaluation of 2007-08 NECAP items: (a) difficulty indices, (b) item-test correlations, (c) subgroup differences in item performance (differential item functioning), (d) dimensionality analyses, (e) IRT analyses, and (f) equating results.

6.1 Difficulty Indices

All 2007-08 NECAP items were evaluated in terms of difficulty according to standard classical test theory (CTT) practice. The expected item difficulty, also known as the *p-value*, is the main index of item difficulty under the CTT framework. This index measures an item's difficulty by averaging the proportion of points received across all students who took the item. MC items were scored dichotomously (correct vs. incorrect), so for these items, the difficulty index is simply the proportion of students who correctly answered the item. To place all item types on the same 0–1

scale, the p-value of an OR item was computed as the average score on the item divided by its maximum possible score. Although the p-value is traditionally called a measure of difficulty, it is properly interpreted as an *easiness* index, because larger values indicate easier items. An index of 0.0 indicates that no student received credit for the item. At the opposite extreme, an index of 1.0 indicates that every student received full credit for the item.

Items that are answered correctly by almost all students provide little information about differences in student ability, but they do indicate knowledge or skills that have been mastered by most students. The converse is true of items that are incorrectly answered by most students. In general, to provide the most precise measurement, difficulty indices should range from near-chance performance (0.25 for four-option MC items, 0.00 for CR items) to 0.90. Experience has indicated that items conforming to this guideline tend to provide satisfactory statistical information for the bulk of the student population. However, on a criterion-referenced test such as NECAP, it may be appropriate to include some items with difficulty values outside this region in order to measure well, throughout the range, the skill present at a given grade. Having a range of item difficulties also helps to ensure that the test does not exhibit an excess of scores at the floor or ceiling of the distribution.

6.2 Item–Test Correlations

It is a desirable feature of an item when higher-ability students perform better on it than do lower-ability students. A commonly used measure of this characteristic is the correlation between total test score and student performance on the item. Within CTT, this item-test correlation is referred to as the item's *discrimination*, because it indicates the extent to which successful performance on an item discriminates between high and low scores on the test. For polytomous items on the 2007-08 NECAP, the *Pearson product-moment correlation* was used as the item discrimination index and the *point-biserial correlation* was used for dichotomous items.

The theoretical range of these statistics is –1.0 to +1.0, with a typical range from +0.2 to +0.6.

One can think of a discrimination index as a measure of how closely an item assesses the

same knowledge and skills as other items that contribute to the criterion total score; in other words, the discrimination index can be interpreted as a measure of construct consistency. In light of this, it is quite important that an appropriate total score criterion be selected. For the 2007-08 NECAP, raw score—the sum of student scores on the common items—was selected. Item-test correlations were computed for each common item, and results are summarized in the next section.

6.3 Summary of Item Analysis Results

Summary statistics of the difficulty and discrimination indices by grade and content area are provided in Appendix I. Table F-1 displays the means and standard deviations of p-values and discriminations by form for each grade and content area of the 2007-08 NECAP administration. p-value means ranged between 0.26 and 0.73, and their standard deviations ranged between 0.11 and 0.25 across all grades, subject areas, and forms. Discrimination (item-total correlation) means ranged between 0.36 and 0.52, standard deviations between 0.05 and 0.21.

Table F-2 presents summary statistics (means and standard deviations) for the p-values and discriminations by item type (MC and OR) and aggregated over both item types. Across all grades and content areas, mean p-values for MC items fell between 0.53 and 0.80, for OR items between 0.34 and 0.71, and for both item types together between 0.46 and 0.75. Mean discrimination indices for MC items ranged between 0.34 and 0.44, for OR items between 0.44 and 0.65, and for all items together between 0.38 and 0.47.

Finally, Table F-3 shows the number, relative percentages, and cumulative percentages of common items that had difficulty or discrimination values within stated ranges. p-values and discrimination indices were generally in expected ranges. Very few items were answered correctly at near-chance or near-perfect rates, and positive discrimination indices indicate that students who performed well on individual items tended to perform well overall. Though it is not inappropriate to include low discriminating items or very difficult or very easy items, to ensure that the entire ability spectrum is appropriately covered, there were very few such items on the NECAP tests.

A comparison of indices across grade levels is complicated because these indices are population-dependent. Direct comparisons would require that either the items or students were common across groups. As that was not the case, it cannot be determined whether differences in item functioning across grade levels were due to differences in student cohorts' abilities or differences in item-set difficulties or both. However, one noteworthy statistical trend in math was that p-values tended to be highest at the lower grades.

Comparing the difficulty indices between MC and OR items is also inappropriate. MC items can be answered correctly by guessing; thus, it is not surprising that the p-values for MC items were higher than those for OR items. Similarly, because of partial-credit scoring, the discrimination indices of OR items tended to be larger than those of MC items.

6.4 Differential Item Functioning

The *Code of Fair Testing Practices in Education* (Joint Committee on Testing Practices, 1988) explicitly states that subgroup differences in performance should be examined when sample sizes permit, and actions should be taken to make certain that differences in performance are due to construct-relevant, rather than construct-irrelevant, factors. The *Standards for Educational and Psychological Testing* (AERA, 1999) includes similar guidelines. As part of the effort to identify such problems, 2007-08 NECAP items were evaluated by means of DIF statistics.

DIF procedures are designed to identify items on which the performance by certain subgroups of interest differs after controlling for construct-relevant achievement. For the 2007-08 NECAP, the standardization DIF procedure (Dorans & Kulick, 1986) was employed. This procedure calculates the difference in item performance for two groups of students (at a time) matched for achievement on the total test. Specifically, average item performance is calculated for students at every total score. Then an overall average is calculated, weighting the total score distribution so that it is the same for the two groups. The criterion (matching) score for 2007-08 NECAP was computed two ways. For common items, total score was the sum of scores on common items. The total score

criterion for matrix items was the sum of item scores on both common and matrix items (excluding field-test items). Based on experience, this dual definition of criterion scores has worked well in identifying problematic common and matrix items.

Differential performances between groups may or may not be indicative of bias in the test. Group differences in course-taking patterns, interests, or school curricula can lead to DIF. If subgroup differences are related to construct-relevant factors, items should be considered for inclusion on a test.

Computed DIF indices have a theoretical range from –1.00 to 1.00 for MC items; those for OR items are adjusted to the same scale. For reporting purposes, items were categorized according to DIF index range guidelines suggested by Dorans and Holland (1993). Indices between –0.05 and 0.05 (Type A) can be considered "negligible." Most items should fall in this range. DIF indices between –0.10 and –0.05 or between 0.05 and 0.10 (Type B) can be considered "low DIF" but should be inspected to ensure that no possible effect is overlooked. Items with DIF indices outside the [–0.10, 0.10] range (Type C) can be considered "high DIF" and should trigger careful test.

The following series of three tables presents the number of 2007-08 NECAP items classified into each DIF category, broken down by grade, subject area form, and item type. Results are given, respectively, for comparisons between Male and Female, White and Black, and White and Hispanic. Note that "Form 00" contains the common items that are used in calculating reported scores for students. In addition to the DIF categories defined above (i.e., Types A, B, and C), "Type D" in the tables indicates that there were not enough students in the grouping to perform a reliable DIF analysis (i.e., fewer than 200 in at least one of the subgroups).

Table 6-1. Number of 2007-08 NECAP Items Classified into Differential Item Functioning (DIF) Categories by Grade, Subject, and Test Form—Male versus Female

Grade	*Subject*	*Form*	*All A*	*All B*	*All C*	*All D*	*MC A*	*MC B*	*MC C*	*MC D*	*OR A*	*OR B*	*OR C*	*OR D*
3	Math	00	54	1	0	0	34	1	0	0	20	0	0	0
		01	8	2	0	0	5	1	0	0	3	1	0	0
		02	10	0	0	0	6	0	0	0	4	0	0	0
		03	9	1	0	0	5	1	0	0	4	0	0	0
		04	10	0	0	0	6	0	0	0	4	0	0	0
		05	10	0	0	0	6	0	0	0	4	0	0	0
		06	10	0	0	0	6	0	0	0	4	0	0	0
		07	8	2	0	0	5	1	0	0	3	1	0	0
		08	9	1	0	0	5	1	0	0	4	0	0	0
		09	10	0	0	0	6	0	0	0	4	0	0	0
	Reading	00	34	0	0	0	28	0	0	0	6	0	0	0
		01	16	1	0	0	14	0	0	0	2	1	0	0
		02	17	0	0	0	14	0	0	0	3	0	0	0
		03	16	1	0	0	14	0	0	0	2	1	0	0
4	Math	00	53	2	0	0	33	2	0	0	20	0	0	0
		01	10	0	0	0	6	0	0	0	4	0	0	0
		02	7	2	1	0	3	2	1	0	4	0	0	0
		03	9	0	1	0	5	0	1	0	4	0	0	0
		04	10	0	0	0	6	0	0	0	4	0	0	0
		05	7	3	0	0	5	1	0	0	2	2	0	0
		06	9	1	0	0	6	0	0	0	3	1	0	0
		07	10	0	0	0	6	0	0	0	4	0	0	0
		08	6	3	1	0	3	2	1	0	3	1	0	0
		09	9	0	1	0	5	0	1	0	4	0	0	0
	Reading	00	33	1	0	0	28	0	0	0	5	1	0	0
		01	16	0	1	0	13	0	1	0	3	0	0	0
		02	16	1	0	0	13	1	0	0	3	0	0	0
		03	15	2	0	0	13	1	0	0	2	1	0	0
5	Math	00	45	3	0	0	29	3	0	0	16	0	0	0
		01	10	1	0	0	5	1	0	0	5	0	0	0
		02	10	1	0	0	6	0	0	0	4	1	0	0
		03	6	5	0	0	4	2	0	0	2	3	0	0
		04	11	0	0	0	6	0	0	0	5	0	0	0
		05	11	0	0	0	6	0	0	0	5	0	0	0
		06	11	0	0	0	6	0	0	0	5	0	0	0
		07	10	1	0	0	5	1	0	0	5	0	0	0
		08	9	2	0	0	5	1	0	0	4	1	0	0
		09	7	4	0	0	4	2	0	0	3	2	0	0
	Reading	00	31	3	0	0	25	3	0	0	6	0	0	0
		01	13	3	1	0	10	3	1	0	3	0	0	0
		02	15	2	0	0	12	2	0	0	3	0	0	0
		03	15	2	0	0	12	2	0	0	3	0	0	0
	Writing	01	17	0	0	0	10	0	0	0	7	0	0	0

(continued)

Grade	Subject	Form	All A	All B	All C	All D	MC A	MC B	MC C	MC D	OR A	OR B	OR C	OR D
6	Math	00	43	5	0	0	29	3	0	0	14	2	0	0
		01	8	3	0	0	5	1	0	0	3	2	0	0
		02	10	1	0	0	6	0	0	0	4	1	0	0
		03	9	2	0	0	5	1	0	0	4	1	0	0
		04	10	1	0	0	5	1	0	0	5	0	0	0
		05	10	1	0	0	5	1	0	0	5	0	0	0
		06	9	2	0	0	5	1	0	0	4	1	0	0
		07	8	3	0	0	5	1	0	0	3	2	0	0
		08	11	0	0	0	6	0	0	0	5	0	0	0
		09	7	4	0	0	3	3	0	0	4	1	0	0
	Reading	00	32	2	0	0	26	2	0	0	6	0	0	0
		01	13	3	1	0	10	3	1	0	3	0	0	0
		02	15	2	0	0	12	2	0	0	3	0	0	0
		03	16	1	0	0	13	1	0	0	3	0	0	0
7	Math	00	37	10	1	0	25	6	1	0	12	4	0	0
		01	10	1	0	0	5	1	0	0	5	0	0	0
		02	10	1	0	0	5	1	0	0	5	0	0	0
		03	8	3	0	0	4	2	0	0	4	1	0	0
		04	10	1	0	0	6	0	0	0	4	1	0	0
		05	11	0	0	0	6	0	0	0	5	0	0	0
		06	4	6	1	0	4	1	1	0	0	5	0	0
		07	9	2	0	0	6	0	0	0	3	2	0	0
		08	10	1	0	0	5	1	0	0	5	0	0	0
		09	7	4	0	0	4	2	0	0	3	2	0	0
	Reading	00	23	9	2	0	21	5	2	0	2	4	0	0
		01	16	1	0	0	14	0	0	0	2	1	0	0
		02	13	4	0	0	12	2	0	0	1	2	0	0
		03	12	3	2	0	10	2	2	0	2	1	0	0
8	Math	00	40	8	0	0	27	5	0	0	13	3	0	0
		01	9	2	0	0	5	1	0	0	4	1	0	0
		02	8	3	0	0	3	3	0	0	5	0	0	0
		03	7	4	0	0	4	2	0	0	3	2	0	0
		04	8	3	0	0	5	1	0	0	3	2	0	0
		05	9	2	0	0	6	0	0	0	3	2	0	0
		06	7	4	0	0	4	2	0	0	3	2	0	0
		07	10	1	0	0	6	0	0	0	4	1	0	0
		08	10	1	0	0	5	1	0	0	5	0	0	0
		09	8	3	0	0	4	2	0	0	4	1	0	0
	Reading	00	30	4	0	0	25	3	0	0	5	1	0	0
		01	16	1	0	0	14	0	0	0	2	1	0	0
		02	14	3	0	0	11	3	0	0	3	0	0	0
		03	13	4	0	0	11	3	0	0	2	1	0	0
	Writing	01	16	1	0	0	10	0	0	0	6	1	0	0

(continued)

Grade	Subject	Form	All A	All B	All C	All D	MC A	MC B	MC C	MC D	OR A	OR B	OR C	OR D
11	Math	00	41	5	0	0	21	3	0	0	20	2	0	0
		01	7	1	0	0	4	0	0	0	3	1	0	0
		02	6	2	0	0	2	2	0	0	4	0	0	0
		03	7	1	0	0	4	0	0	0	3	1	0	0
		04	7	1	0	0	3	1	0	0	4	0	0	0
		05	8	0	0	0	4	0	0	0	4	0	0	0
		06	8	0	0	0	4	0	0	0	4	0	0	0
		07	8	0	0	0	4	0	0	0	4	0	0	0
		08	6	2	0	0	2	2	0	0	4	0	0	0
		09	41	5	0	0	21	3	0	0	20	2	0	0
	Reading	00	22	9	3	0	18	7	3	0	4	2	0	0
		01	15	2	0	0	12	2	0	0	3	0	0	0
		02	11	5	1	0	8	5	1	0	3	0	0	0

All = MC and OR items; MC = Multiple-choice items; OR = Open-response items;
A = "negligible" DIF; B = "low" DIF; C = "high" DIF; D = not enough students to perform reliable DIF analysis

Table 6-2. Number of 2007-08 NECAP Items Classified into Differential Item Functioning (DIF) Categories by Grade, Subject, and Test Form—White versus Black

Grade	Subject	Form	All A	All B	All C	All D	MC A	MC B	MC C	MC D	OR A	OR B	OR C	OR D
3	Math	00	52	3	0	0	33	2	0	0	19	1	0	0
		01	0	0	0	10	0	0	0	6	0	0	0	4
		02	0	0	0	10	0	0	0	6	0	0	0	4
		03	0	0	0	10	0	0	0	6	0	0	0	4
		04	0	0	0	10	0	0	0	6	0	0	0	4
		05	0	0	0	10	0	0	0	6	0	0	0	4
		06	0	0	0	10	0	0	0	6	0	0	0	4
		07	0	0	0	10	0	0	0	6	0	0	0	4
		08	0	0	0	10	0	0	0	6	0	0	0	4
		09	0	0	0	10	0	0	0	6	0	0	0	4
	Reading	00	30	2	2	0	24	2	2	0	6	0	0	0
		01	0	0	0	17	0	0	0	14	0	0	0	3
		02	0	0	0	17	0	0	0	14	0	0	0	3
		03	0	0	0	17	0	0	0	14	0	0	0	3
4	Math	00	50	4	1	0	34	0	1	0	16	4	0	0
		01	0	0	0	10	0	0	0	6	0	0	0	4
		02	0	0	0	10	0	0	0	6	0	0	0	4
		03	0	0	0	10	0	0	0	6	0	0	0	4
		04	0	0	0	10	0	0	0	6	0	0	0	4
		05	0	0	0	10	0	0	0	6	0	0	0	4
		06	0	0	0	10	0	0	0	6	0	0	0	4
		07	0	0	0	10	0	0	0	6	0	0	0	4
		08	0	0	0	10	0	0	0	6	0	0	0	4
		09	0	0	0	10	0	0	0	6	0	0	0	4
	Reading	00	29	5	0	0	24	4	0	0	5	1	0	0
		01	0	0	0	17	0	0	0	14	0	0	0	3
		02	0	0	0	17	0	0	0	14	0	0	0	3
		03	0	0	0	17	0	0	0	14	0	0	0	3

(continued)

Grade	Subject	Form	All A	All B	All C	All D	MC A	MC B	MC C	MC D	OR A	OR B	OR C	OR D
5	Math	00	47	1	0	0	32	0	0	0	15	1	0	0
		01	0	0	0	11	0	0	0	6	0	0	0	5
		02	0	0	0	11	0	0	0	6	0	0	0	5
		03	0	0	0	11	0	0	0	6	0	0	0	5
		04	0	0	0	11	0	0	0	6	0	0	0	5
		05	0	0	0	11	0	0	0	6	0	0	0	5
		06	0	0	0	11	0	0	0	6	0	0	0	5
		07	0	0	0	11	0	0	0	6	0	0	0	5
		08	0	0	0	11	0	0	0	6	0	0	0	5
		09	0	0	0	11	0	0	0	6	0	0	0	5
	Reading	00	27	7	0	0	21	7	0	0	6	0	0	0
		01	0	0	0	17	0	0	0	14	0	0	0	3
		02	0	0	0	17	0	0	0	14	0	0	0	3
		03	0	0	0	17	0	0	0	14	0	0	0	3
	Writing	01	15	2	0	0	8	2	0	0	7	0	0	0
6	Math	00	44	4	0	0	29	3	0	0	15	1	0	0
		01	0	0	0	11	0	0	0	6	0	0	0	5
		02	0	0	0	11	0	0	0	6	0	0	0	5
		03	0	0	0	11	0	0	0	6	0	0	0	5
		04	0	0	0	11	0	0	0	6	0	0	0	5
		05	0	0	0	11	0	0	0	6	0	0	0	5
		06	0	0	0	11	0	0	0	6	0	0	0	5
		07	0	0	0	11	0	0	0	6	0	0	0	5
		08	0	0	0	11	0	0	0	6	0	0	0	5
		09	0	0	0	11	0	0	0	6	0	0	0	5
	Reading	00	25	9	0	0	19	9	0	0	6	0	0	0
		01	0	0	0	17	0	0	0	14	0	0	0	3
		02	0	0	0	17	0	0	0	14	0	0	0	3
		03	0	0	0	17	0	0	0	14	0	0	0	3
7	Math	00	43	4	1	0	27	4	1	0	16	0	0	0
		01	0	0	0	11	0	0	0	6	0	0	0	5
		02	0	0	0	11	0	0	0	6	0	0	0	5
		03	0	0	0	11	0	0	0	6	0	0	0	5
		04	0	0	0	11	0	0	0	6	0	0	0	5
		05	0	0	0	11	0	0	0	6	0	0	0	5
		06	0	0	0	11	0	0	0	6	0	0	0	5
		07	0	0	0	11	0	0	0	6	0	0	0	5
		08	0	0	0	11	0	0	0	6	0	0	0	5
		09	0	0	0	11	0	0	0	6	0	0	0	5
	Reading	00	27	7	0	0	21	7	0	0	6	0	0	0
		01	0	0	0	17	0	0	0	14	0	0	0	3
		02	0	0	0	17	0	0	0	14	0	0	0	3
		03	0	0	0	17	0	0	0	14	0	0	0	3

(continued)

Grade	Subject	Form	All A	All B	All C	All D	MC A	MC B	MC C	MC D	OR A	OR B	OR C	OR D
8	Math	00	46	2	0	0	31	1	0	0	15	1	0	0
		01	0	0	0	11	0	0	0	6	0	0	0	5
		02	0	0	0	11	0	0	0	6	0	0	0	5
		03	0	0	0	11	0	0	0	6	0	0	0	5
		04	0	0	0	11	0	0	0	6	0	0	0	5
		05	0	0	0	11	0	0	0	6	0	0	0	5
		06	0	0	0	11	0	0	0	6	0	0	0	5
		07	0	0	0	11	0	0	0	6	0	0	0	5
		08	0	0	0	11	0	0	0	6	0	0	0	5
		09	0	0	0	11	0	0	0	6	0	0	0	5
	Reading	00	27	5	2	0	21	5	2	0	6	0	0	0
		01	0	0	0	17	0	0	0	14	0	0	0	3
		02	0	0	0	17	0	0	0	14	0	0	0	3
		03	0	0	0	17	0	0	0	14	0	0	0	3
	Writing	01	13	4	0	0	6	4	0	0	7	0	0	0
11	Math	00	41	5	0	0	19	5	0	0	22	0	0	0
		01	0	0	0	8	0	0	0	4	0	0	0	4
		02	0	0	0	8	0	0	0	4	0	0	0	4
		03	0	0	0	8	0	0	0	4	0	0	0	4
		04	0	0	0	8	0	0	0	4	0	0	0	4
		05	0	0	0	8	0	0	0	4	0	0	0	4
		06	0	0	0	8	0	0	0	4	0	0	0	4
		07	0	0	0	8	0	0	0	4	0	0	0	4
		08	0	0	0	8	0	0	0	4	0	0	0	4
		09	41	5	0	0	19	5	0	0	22	0	0	0
	Reading	00	24	9	1	0	18	9	1	0	6	0	0	0
		01	0	0	0	17	0	0	0	14	0	0	0	3
		02	0	0	0	17	0	0	0	14	0	0	0	3

All = MC and OR items; MC = Multiple-choice items; OR = Open-response items;
A = "negligible" DIF; B = "low" DIF; C = "high" DIF; D = not enough students to perform reliable DIF analysis

Table 6-3. Number of 2007-08 NECAP Items Classified into Differential Item Functioning (DIF) Categories by Grade, Subject, and Test Form—White versus Hispanic

Grade	Subject	Form	All A	All B	All C	All D	MC A	MC B	MC C	MC D	OR A	OR B	OR C	OR D
3	Math	00	48	7	0	0	30	5	0	0	18	2	0	0
		01	7	1	2	0	4	0	2	0	3	1	0	0
		02	7	3	0	0	4	2	0	0	3	1	0	0
		03	10	0	0	0	6	0	0	0	4	0	0	0
		04	9	1	0	0	6	0	0	0	3	1	0	0
		05	9	1	0	0	5	1	0	0	4	0	0	0
		06	8	2	0	0	5	1	0	0	3	1	0	0
		07	7	3	0	0	5	1	0	0	2	2	0	0
		08	8	2	0	0	5	1	0	0	3	1	0	0
		09	9	1	0	0	6	0	0	0	3	1	0	0
	Reading	00	30	1	3	0	24	1	3	0	6	0	0	0
		01	13	3	1	0	11	2	1	0	2	1	0	0
		02	13	2	2	0	10	2	2	0	3	0	0	0
		03	14	3	0	0	11	3	0	0	3	0	0	0

(continued)

Grade	Subject	Form	All A	All B	All C	All D	MC A	MC B	MC C	MC D	OR A	OR B	OR C	OR D
4	Math	00	44	8	3	0	31	2	2	0	13	6	1	0
		01	9	1	0	0	5	1	0	0	4	0	0	0
		02	9	1	0	0	6	0	0	0	3	1	0	0
		03	9	1	0	0	6	0	0	0	3	1	0	0
		04	7	3	0	0	5	1	0	0	2	2	0	0
		05	8	2	0	0	4	2	0	0	4	0	0	0
		06	7	3	0	0	5	1	0	0	2	2	0	0
		07	6	4	0	0	6	0	0	0	0	4	0	0
		08	8	2	0	0	6	0	0	0	2	2	0	0
		09	9	1	0	0	5	1	0	0	4	0	0	0
	Reading	00	30	3	1	0	25	2	1	0	5	1	0	0
		01	13	4	0	0	10	4	0	0	3	0	0	0
		02	16	1	0	0	13	1	0	0	3	0	0	0
		03	15	1	1	0	12	1	1	0	3	0	0	0
5	Math	00	44	3	1	0	29	2	1	0	15	1	0	0
		01	10	1	0	0	6	0	0	0	4	1	0	0
		02	6	5	0	0	4	2	0	0	2	3	0	0
		03	8	3	0	0	5	1	0	0	3	2	0	0
		04	8	3	0	0	4	2	0	0	4	1	0	0
		05	10	1	0	0	6	0	0	0	4	1	0	0
		06	7	4	0	0	3	3	0	0	4	1	0	0
		07	9	2	0	0	5	1	0	0	4	1	0	0
		08	8	3	0	0	4	2	0	0	4	1	0	0
		09	8	3	0	0	4	2	0	0	4	1	0	0
	Reading	00	22	9	3	0	16	9	3	0	6	0	0	0
		01	11	2	4	0	8	2	4	0	3	0	0	0
		02	10	5	2	0	8	4	2	0	2	1	0	0
		03	10	5	2	0	7	5	2	0	3	0	0	0
	Writing	01	15	2	0	0	8	2	0	0	7	0	0	0
6	Math	00	43	4	1	0	28	3	1	0	15	1	0	0
		01	8	3	0	0	4	2	0	0	4	1	0	0
		02	7	3	1	0	3	3	0	0	4	0	1	0
		03	8	3	0	0	4	2	0	0	4	1	0	0
		04	9	2	0	0	5	1	0	0	4	1	0	0
		05	8	3	0	0	3	3	0	0	5	0	0	0
		06	9	2	0	0	5	1	0	0	4	1	0	0
		07	9	2	0	0	5	1	0	0	4	1	0	0
		08	7	3	1	0	4	2	0	0	3	1	1	0
		09	10	1	0	0	5	1	0	0	5	0	0	0
	Reading	00	24	5	5	0	19	4	5	0	5	1	0	0
		01	10	3	4	0	7	3	4	0	3	0	0	0
		02	12	4	1	0	9	4	1	0	3	0	0	0
		03	9	3	5	0	9	0	5	0	0	3	0	0

(continued)

Table 6-3. Number of 2007-08 NECAP Items Classified into Differential Item Functioning (DIF) Categories by Grade, Subject, and Test Form—White versus Hispanic

Grade	*Subject*	*Form*	*All A*	*All B*	*All C*	*All D*	*MC A*	*MC B*	*MC C*	*MC D*	*OR A*	*OR B*	*OR C*	*OR D*
7	Math	00	43	4	1	0	27	4	1	0	16	0	0	0
		01	10	0	1	0	5	0	1	0	5	0	0	0
		02	8	3	0	0	4	2	0	0	4	1	0	0
		03	7	3	1	0	4	1	1	0	3	2	0	0
		04	10	1	0	0	5	1	0	0	5	0	0	0
		05	9	2	0	0	4	2	0	0	5	0	0	0
		06	8	2	1	0	5	1	0	0	3	1	1	0
		07	8	2	1	0	5	0	1	0	3	2	0	0
		08	6	5	0	0	3	3	0	0	3	2	0	0
		09	8	1	2	0	3	1	2	0	5	0	0	0
	Reading	00	19	11	4	0	14	10	4	0	5	1	0	0
		01	9	6	2	0	7	5	2	0	2	1	0	0
		02	9	5	3	0	7	4	3	0	2	1	0	0
		03	14	3	0	0	12	2	0	0	2	1	0	0
8	Math	00	46	2	0	0	31	1	0	0	15	1	0	0
		01	9	2	0	0	5	1	0	0	4	1	0	0
		02	9	2	0	0	4	2	0	0	5	0	0	0
		03	11	0	0	0	6	0	0	0	5	0	0	0
		04	11	0	0	0	6	0	0	0	5	0	0	0
		05	8	3	0	0	5	1	0	0	3	2	0	0
		06	7	3	1	0	3	2	1	0	4	1	0	0
		07	9	2	0	0	5	1	0	0	4	1	0	0
		08	7	4	0	0	3	3	0	0	4	1	0	0
		09	11	0	0	0	6	0	0	0	5	0	0	0
	Reading	00	27	5	2	0	21	5	2	0	6	0	0	0
		01	14	2	1	0	11	2	1	0	3	0	0	0
		02	10	6	1	0	7	6	1	0	3	0	0	0
		03	14	2	1	0	11	2	1	0	3	0	0	0
	Writing	13	3	1	0	0	6	3	1	0	7	0	0	0
11	Math	00	43	2	1	0	22	1	1	0	21	1	0	0
		01	4	4	0	0	1	3	0	0	3	1	0	0
		02	6	1	1	0	2	1	1	0	4	0	0	0
		03	4	3	1	0	0	3	1	0	4	0	0	0
		04	7	1	0	0	3	1	0	0	4	0	0	0
		05	5	3	0	0	2	2	0	0	3	1	0	0
		06	6	2	0	0	2	2	0	0	4	0	0	0
		07	5	3	0	0	2	2	0	0	3	1	0	0
		08	6	1	1	0	3	0	1	0	3	1	0	0
		09	43	2	1	0	22	1	1	0	21	1	0	0
	Reading	00	18	12	4	0	12	12	4	0	6	0	0	0
		01	12	3	2	0	9	3	2	0	3	0	0	0
		02	11	4	2	0	10	2	2	0	1	2	0	0

All = MC and OR items; MC = Multiple-choice items; OR = Open-response items;
A = "negligible" DIF; B = "low" DIF; C = "high" DIF; D = not enough students to perform reliable DIF analysis

The tables show that the majority of DIF distinctions in the 2007-08 NECAP tests were "Type A," i.e., "negligible" DIF (Dorans and Holland , 1993). Although there were items with DIF indices in the "low" or "high" categories, this does not necessarily indicate that the items are biased.

Both the *Code of Fair Testing Practices in Education* (Joint Committee on Testing Practices, 1988) and the *Standards for Educational and Psychological Testing* (AERA, 1999) assert that test items must be free from construct-irrelevant sources of differential difficulty. If subgroup differences in performance can be plausibly attributed to construct-relevant factors, the items may be inclu1ded on a test. What is important is to determine whether the cause of this differential performance is construct-relevant.

Table 6-4 presents the number of items classified into each DIF category by direction, comparing males and females. For example, the "F_A" column denotes the total number of items classified as "negligible" DIF on which females performed better than males relative to performance on the test as a whole. The "M_A" column next to it gives the total number of "negligible" DIF items on which males performed better than females relative to performance on the test as a whole. The "N_A" and "P_A" columns display the aggregate number and proportion of "negligible" DIF items, respectively. To provide a complete summary across items, both common and matrix items are included in the tally that falls into each category. Results are broken out by grade, content area, and item type.

Table 6-4. Number and Proportion of 2007-08 NECAP Items Classified into Each DIF Category and Direction by Item Type—Male versus Female

Grade	*Subject*	*Item Type*	*F_A*	*M_A*	*N_A*	*P_A*	*F_B*	*M_B*	*N_B*	*P_B*	*F_C*	*M_C*	*N_C*	*P_C*	*N_D*	*P_D*
3	Math	MC	51	33	84	0.94	1	4	5	0.06	0	0	0	0.00	0	0
		OR	30	24	54	0.96	0	2	2	0.04	0	0	0	0.00	0	0
	Reading	MC	39	31	70	1.00	0	0	0	0.00	0	0	0	0.00	0	0
		OR	11	2	13	0.87	1	1	2	0.13	0	0	0	0.00	0	0
4	Math	MC	47	31	78	0.88	2	5	7	0.08	0	4	4	0.04	0	0
		OR	21	31	52	0.93	2	2	4	0.07	0	0	0	0.00	0	0
	Reading	MC	30	37	67	0.96	0	2	2	0.03	0	1	1	0.01	0	0
		OR	10	3	13	0.87	2	0	2	0.13	0	0	0	0.00	0	0
5	Math	MC	40	36	76	0.88	1	9	10	0.12	0	0	0	0.00	0	0
		OR	30	24	54	0.89	4	3	7	0.11	0	0	0	0.00	0	0
	Reading	MC	24	35	59	0.84	0	10	10	0.14	0	1	1	0.01	0	0
		OR	15	0	15	1.00	0	0	0	0.00	0	0	0	0.00	0	0
	Writing	MC	5	5	10	1.00	0	0	0	0.00	0	0	0	0.00	0	0
		OR	7	0	7	1.00	0	0	0	0.00	0	0	0	0.00	0	0
6	Math	MC	41	33	74	0.86	3	9	12	0.14	0	0	0	0.00	0	0
		OR	34	17	51	0.84	5	5	10	0.16	0	0	0	0.00	0	0
	Reading	MC	21	40	61	0.87	0	8	8	0.11	0	1	1	0.01	0	0
		OR	15	0	15	1.00	0	0	0	0.00	0	0	0	0.00	0	0
7	Math	MC	42	28	70	0.81	4	10	14	0.16	0	2	2	0.02	0	0
		OR	35	11	46	0.75	10	5	15	0.25	0	0	0	0.00	0	0
	Reading	MC	20	37	57	0.81	0	9	9	0.13	0	4	4	0.06	0	0
		OR	7	0	7	0.47	8	0	8	0.53	0	0	0	0.00	0	0
8	Math	MC	34	35	69	0.80	6	11	17	0.20	0	0	0	0.00	0	0
		OR	31	16	47	0.77	9	5	14	0.23	0	0	0	0.00	0	0
	Reading	MC	20	41	61	0.87	1	8	9	0.13	0	0	0	0.00	0	0
		OR	12	0	12	0.80	3	0	3	0.20	0	0	0	0.00	0	0
	Writing	MC	5	5	10	1.00	0	0	0	0.00	0	0	0	0.00	0	0
		OR	6	0	6	0.86	1	0	1	0.14	0	0	0	0.00	0	0
11	Math	MC	22	26	48	0.86	1	7	8	0.14	0	0	0	0.00	0	0
		OR	27	23	50	0.93	2	2	4	0.07	0	0	0	0.00	0	0
	Reading	MC	20	18	38	0.68	3	11	14	0.25	0	4	4	0.07	0	0
		OR	10	0	10	0.83	2	0	2	0.17	0	0	0	0.00	0	0

F_ = items on which females performed better than males (controlling for total test score); M_ = items on which males performed better than females, (controlling for total test score); N_ = number of items; P_ = proportion of items
_A = “negligible” DIF; _B = “low” DIF; _C = “high” DIF; _D = not enough students to perform a reliable DIF analysis

6.5 Dimensionality Analyses

Because tests are constructed with multiple content area subcategories, and their associated knowledge and skills, the potential exists for a large number of dimensions being invoked beyond the common primary dimension. Generally, the subcategories are highly correlated with each other; therefore, the primary dimension they share typically explains an overwhelming majority of variance in test scores. In fact, the presence of just such a dominant primary dimension is the psychometric assumption that provides the foundation for the unidimensional IRT models that are used for calibrating, linking, scaling, and equating the NECAP test forms.

The purpose of dimensionality analysis is to investigate whether violation of the assumption of test unidimensionality is statistically detectable and, if so, (a) the degree to which unidimensionality is violated and (b) the nature of the multidimensionality. Findings from dimensionality (DIM) analyses performed on the 2007-08 NECAP common items for Math, Reading, and Writing are reported below. (Note: only common items were analyzed since they are used for score reporting.)

The DIM analyses were conducted using the nonparametric IRT-based methods DIMTEST (Stout, 1987; Stout, Froelich, & Gao, 2001) and DETECT (Zhang & Stout, 1999). Both of these methods use as their basic statistical building block the estimated average conditional covariances for item pairs. A conditional covariance is the covariance between two items conditioned on total score for the rest of the test, and the average conditional covariance is obtained by averaging over all possible conditioning scores. When a test is strictly unidimensional, all conditional covariances are expected to take on values within random noise of zero, indicating statistically independent item responses for examinees with equal expected scores. Non-zero conditional covariances are essentially violations of the principle of local independence, and local *dependence* implies multidimensionality. Thus, non-random patterns of positive and negative conditional covariances are indicative of multidimensionality.

DIMTEST is a hypothesis-testing procedure for detecting violations of local independence. The data are first randomly divided into a training sample and a cross-validation sample. Then an exploratory analysis of the conditional covariances is conducted on the training sample data to find the cluster of items that displays the greatest evidence of local dependence. The cross-validation sample is then used to test whether the conditional covariances of the selected cluster of items displays local dependence, conditioning on total score on the non-clustered items. The DIMTEST statistic follows a standard normal distribution under the null hypothesis of unidimensionality.

DETECT is an effect-size measure of multidimensionality. As with DIMTEST, the data are first randomly divided into a training sample and a cross-validation sample (these samples are drawn independent of those used with DIMTEST). The training sample is used to find a set of mutually exclusive and collectively exhaustive clusters of items that best fit a systematic pattern of positive conditional covariances for pairs of items from the same cluster and negative conditional covariances from different clusters. Next, the clusters from the training sample are used with the cross-validation sample data to average the conditional covariances: within-cluster conditional covariances are summed, from this sum the between-cluster conditional covariances are subtracted, this difference is divided by the total number of item pairs, and this average is multiplied by 100 to yield an index of the average violation of local independence for an item pair. DETECT values less than 0.2 indicate very weak multidimensionality (or near unidimensionality), values of 0.2 to 0.4 weak to moderate multidimensionality; values of 0.4 to 1.0 moderate to strong multidimensionality, and values greater than 1.0 very strong multidimensionality.

DIMTEST and DETECT were applied to the 2007-08 NECAP. The data for each grade and content area were split into a training sample and a cross-validation sample. Every grade/content area combination had at least 30,000 student examinees. Because DIMTEST was limited to using 24,000 students, the training and cross-validation samples for the DIMTEST analyses used 12,000 each, randomly sampled from the total sample. DETECT, on the other hand, had an upper limit of 50,000 students, so every training sample and cross-validation sample used with DETECT had at

least 15,000 students. DIMTEST was then applied to every grade/content area. DETECT was applied to each dataset for which the DIMTEST null hypothesis was rejected in order to estimate the effect size of the multidimensionality.

The results of the DIMTEST hypothesis tests were that the null hypothesis was strongly rejected for every dataset (p-value = .01 for Writing Grade 5 and p-value < 0.00005 in all other cases). Because strict unidimensionality is an idealization that almost never holds exactly for a given dataset, these DIMTEST results were not surprising. Indeed, because of the very large sample sizes of NECAP, DIMTEST would be expected to be sensitive to even quite small violations of unidimensionality. Thus, it was important to use DETECT to estimate the effect size of the violations of local independence found by DIMTEST. Table 6.5 below displays the multidimensional effect size estimates from DETECT.

Table 6-5. 2007-08 NECAP Multidimensionality Effect Sizes by Grade and Subject

Grade	*Subject*	*Multidimensionality Effect Size*
3	Math	0.16
	Reading	0.13
4	Math	0.17
	Reading	0.24
5	Math	0.12
	Reading	0.24
	Writing	0.21
6	Math	0.11
	Reading	0.19
7	Math	0.14
	Reading	0.28
8	Math	0.20
	Reading	0.24
	Writing	0.18
11	Math	0.16
	Reading	0.23

All of the DETECT values indicated very weak to weak multidimensionality. The Reading test forms tended to show slightly greater multidimensionality than did the Math (an average DETECT value of 0.22 for Reading as compared to 0.15 for Math), but still towards the weak end of the 0.20 to 0.40 range. We also investigated how DETECT divided the tests into clusters to see if

there were any discernable patterns with respect to the item types (i.e., multiple choice, short answer, and constructed response). The Math clusters showed no discernable patterns. For both Reading and Writing, however, there was a strong tendency for the multiple-choice items to cluster separately from the remaining items. Despite this multidimensionality between the multiple-choice items and remaining items for Reading and Writing, the effect sizes were weak and did not warrant further investigation.

6.6 Item Response Theory Analyses

Chapter 5, subsection 5.1, introduced IRT and gave a thorough description of the topic. It was noted there that all 2007-08 NECAP items were calibrated using IRT and that the calibrated item parameters were ultimately used to scale both the items and students onto a common framework. The results of those analyses are presented in this subsection and Appendix E.

The tables in Appendix E give the IRT item parameters of all common items on the 2007-08 NECAP tests, broken down by grade and content area. Graphs of the corresponding Test Characteristic Curves (TCCs) and Test Information Functions (TIFs), defined below, accompany the data tables.

TCCs display the expected (average) raw score associated with each θ_j value between –4.0 and 4.0. Mathematically, the TCC is computed by summing the ICCs of all items that contribute to the raw score. Using the notation introduced in subsection 5.1, the expected raw score at a given value of θ_j is

$$E(X \mid \theta_j) = \sum_{i=1}^{n} P_i\left(1 \middle| \theta_j\right),$$

where i indexes the items (and n is the number of items contributing to the raw score),
j indexes students (here, θ_j runs from –4 to 4)
$E(X \mid \theta_j)$ is the expected raw score for a student of ability θ_j.

The expected raw score monotonically increases with θ_j, consistent with the notion that students of high ability tend to earn higher raw scores than do students of low ability. Most TCCs are

"S-shaped"—flatter at the ends of the distribution and steeper in the middle.

The TIF displays the amount of statistical information that the test provides at each value of θ_j. There is a direct relation between the information of a test and its standard error of measurement (SEM). Information functions depict test precision across the entire latent trait continuum. For long tests, the SEM at a given θ_j is approximately equal to the inverse of the square root of the statistical information at θ_j (Hambleton, Swaminathan, & Rogers, 1991):

$$SEM(\theta_j) = \frac{1}{\sqrt{I(\theta_j)}}$$

Compared to the tails, TIFs are often higher near the middle of the θ distribution, where most students are located and most items are sensitive by design.

6.7 Equating Results

As discussed in Section 5.1, a combination of IRT models was used for scaling NECAP items: 3PL for dichotomously scored items; 3PL with c=0 (i.e., 2PL) for short answer items; and GRM for polytomously scored items. As a result of conducting the IRT calibration and the equating process (see Section 5.2), an Equating Report was generated. The Equating Report is included as Appendix D to this technical report.

There were three basic steps involved in the equating and scaling activities: IRT calibrations, identification of equating items, and execution of the Stocking & Lord equating procedure. These, along with the various quality control procedures implemented within the Psychometrics Department at Measured Progress, have been reviewed with the NECAP state testing directors and the NECAP Technical Advisory Committee. An outline of the quality control activities undertaken during the IRT calibration, equating, and scaling is presented in section I.E in the Equating Report, and specific results are found throughout the report, including

- The numbers of Newton cycles required for convergence during calibration (Table I.c.1)

- Comparison plots between the 2006-07 and 2007-08 parameter estimates and TCCs, along with raw score to scaled score comparisons (Section II.A)

- Items studied during the calibration/equating process, reasons why, and any interventions undertaken (Table I.c.2)

- The Stocking & Lord transformation constants used for each grade-content used to place the estimated item parameters onto the previous year's scale (Table I.d.1, where "A" is analogous to slope and "B" to intercept)

- Results from the rescore analysis conducted on the polytomously scored equating items (Section II.B)

- Raw scores associated with cutpoints (Table I.b.1)

Chapter 7 RELIABILITY

Although an individual item's performance is an important focus for evaluation, a complete evaluation of a test must also address the way in which items function together and complement one another. Any measurement includes some amount of measurement error. No academic test can measure student performance with perfect accuracy; some students will receive scores that underestimate their true ability, and other students will receive scores that overestimate their true ability. Items that function well together produce tests that have less measurement error (i.e., the error is small on average). Such tests are described as "reliable."

There are a number of ways to estimate a test's reliability. One approach is to split all test items into two groups and then correlate students' scores on the two half-tests. This is known as a *split-half* estimate of reliability. If the two half-test scores correlate highly, items on the two half-tests are likely measuring very similar knowledge or skills. Such a correlation is evidence that the items complement one another and suggest that measurement error will be minimal.

The split-half method requires psychometricians to select items that contribute to each half-test score. This decision may have an impact on the resulting correlation. Cronbach (1951) provided a statistic, alpha (α), which avoids this concern of the split-half method. By comparing individual item variances to total test variance, Cronbach's α coefficient estimates the average of all possible split-half reliability coefficients and was used to assess the reliability of the 2007-08 NECAP tests:

$$\alpha \equiv \frac{n}{n-1}\left[1-\frac{\sum_{i=1}^{n}\sigma^2_{(Y_i)}}{\sigma^2_x}\right]$$

where i indexes the item,
n is the number of items,
$\sigma^2(Y_i)$ represents individual item variance
σ^2_x represents the total test variance.

7.1 Reliability and Standard Errors of Measurement

Table 7-1 presents descriptive statistics, Cronbach's α coefficient, and raw score standard errors of measurement (SEMs) for each content area and grade (statistics are based on common items only).

Table 7-1. 2007-08 NECAP Common Item Raw Score Descriptive Statistics, Reliabilities, and Standard Errors of Measurement by Grade and Subject Area

Grade	*Subject*	*N*	*Possible Score*	*Min Score*	*Max Score*	*Mean Score*	*Score SD*	*Reliability (α)*	*S.E.M.*
3	Math	30503	65	0	65	43.869	12.555	0.930	3.332
	Reading	30401	52	0	52	34.373	9.279	0.892	3.056
4	Math	32334	65	0	65	40.441	13.252	0.929	3.522
	Reading	32226	52	0	52	33.961	9.341	0.872	3.342
5	Math	32438	66	0	65	32.934	12.831	0.911	3.823
	Reading	32353	52	0	52	29.777	8.540	0.880	2.952
	Writing	32281	37	0	36	21.265	4.728	0.740	2.411
6	Math	32930	66	0	66	32.904	13.852	0.924	3.822
	Reading	32850	52	0	52	30.460	8.036	0.881	2.771
7	Math	33949	66	0	66	30.116	13.404	0.920	3.800
	Reading	33879	52	0	52	32.070	9.282	0.889	3.090
8	Math	35109	66	0	66	29.862	14.595	0.918	4.167
	Reading	35052	52	0	52	34.395	9.154	0.899	2.911
	Writing	34929	37	0	37	22.271	5.396	0.750	2.698
11	Math	33907	64	0	63	21.212	12.292	0.912	3.650
	Reading	33996	52	0	52	29.994	9.154	0.895	2.960

For mathematics, the reliability coefficient ranged from 0.91 to 0.93, for reading 0.87 to 0.90. For the grade 5 and grade 8 writing tests, the values were 0.74 and 0.75, respectively. Because different grades and content areas have different test designs (e.g., the number of items varies by test), it is inappropriate to make inferences about the quality of one test by comparing its reliability to that of another test from a different grade and/or content area.

7.2 Subgroup Reliability

The reliability coefficients discussed in the previous section were based on the overall population of students who took the 2007-08 NECAP tests. Appendix J presents reliabilities for various subgroups of interest. Subgroup Cronbach's α's were calculated using the formula defined above using only the members of the subgroup in question in the computations. For mathematics,

subgroup reliabilities ranged from 0.75 to 0.95, for reading from 0.84 to 0.92, and for writing from 0.63 to 0.92. The subgroup reliabilities for writing were lower than those for the other two content areas, with a range from 0.53 to 0.78.

For several reasons, the results of this subsection should be interpreted with caution. First, inherent differences between grades and content areas preclude making valid inferences about the quality of a test based on statistical comparisons with other tests. Second, reliabilities are dependent not only on the measurement properties of a test but on the statistical distribution of the studied subgroup. For example, it can be readily seen in Appendix J that subgroup sample sizes may vary considerably, which results in natural variation in reliability coefficients. Or α, which is a type of correlation coefficient, may be artificially depressed for subgroups with little variability (Draper & Smith, 1998). Third, there is no industry standard to interpret the strength of a reliability coefficient, and this is particularly true when the population of interest is a single subgroup.

7.3 Stratified Coefficient Alpha

According to Feldt and Brennan (1989), a prescribed distribution of items over categories (such as different item types) indicates the presumption that at least a small, but important, degree of unique variance is associated with the categories. In contrast, Cronbach's α coefficient is built on the assumption that there are no such local or clustered dependencies. A stratified version of coefficient α corrects for this problem.

The formula for stratified α is as follows:

$$\alpha_{strat} = 1 - \frac{\sum_{j=1}^{k} \sigma_{x_j}^2 (1-\alpha)}{\sigma_x^2}$$

where j indexes the subtests or categories,
$\sigma_{x_j}^2$ represents the variance of the k individual subtests or categories,
α is the unstratified Cronbach's α coefficient, and
σ_x^2 represents the total test variance.

Stratified α was calculated separately for each grade/content combination. The results of stratification based on item type (MC versus OR) are presented below in Table 7-2. This is directly followed by results of stratification based on form in Table 7-3.

Table 7-2. 2007-08 NECAP: Common Item α and Stratified α by Grade, Subject, and Item Type

		All	*MC*		*OR*		
Grade	*Subject*	α	α	*N*	α	*N (poss)*	*Stratified* α
3	Math	0.93	0.89	35	0.85	20 (30)	0.93
	Reading	0.89	0.87	28	0.75	6 (24)	0.90
4	Math	0.93	0.88	35	0.86	20 (30)	0.93
	Reading	0.87	0.88	28	0.68	6 (24)	0.88
5	Math	0.91	0.84	32	0.85	16 (34)	0.91
	Reading	0.88	0.84	28	0.85	6 (24)	0.90
6	Math	0.92	0.87	32	0.87	16 (34)	0.93
	Reading	0.88	0.85	28	0.83	6 (24)	0.90
7	Math	0.92	0.85	32	0.87	16 (34)	0.92
	Reading	0.89	0.85	28	0.86	6 (24)	0.91
8	Math	0.92	0.85	32	0.87	16 (34)	0.92
	Reading	0.90	0.87	28	0.88	6 (24)	0.92
11	Math	0.91	0.79	24	0.88	22 (40)	0.92
	Reading	0.90	0.85	28	0.89	6 (24)	0.92

All = MC and OR; MC = multiple-choice; OR = open response
= number of items; poss = total possible open-response points

Table 7-3. 2007-08 NECAP: Reliability by Grade, Subject, Item Type, and Form

Grade	*Subject*	*Stat*	*Form1*	*Form2*	*Form3*	*Form4*	*Form5*	*Form6*	*Form7*	*Form8*	*Form9*
3	Math	All α	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
		MC α	0.91	0.91	0.91	0.91	0.90	0.90	0.90	0.91	0.91
		OR α	0.87	0.87	0.87	0.88	0.88	0.86	0.87	0.88	0.87
		Frmt Strat	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
		Com alpha	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
	Reading	All α	0.92	0.92	0.93	0.89	0.89	0.89	0.89	0.89	0.89
		MC α	0.91	0.90	0.92	0.88	0.87	0.87	0.87	0.87	0.87
		OR α	0.82	0.82	0.83	0.75	0.74	0.75	0.75	0.77	0.75
		Frmt Strat	0.93	0.93	0.94	0.90	0.90	0.90	0.90	0.91	0.90
		Com alpha	0.89	0.88	0.90	0.89	0.89	0.89	0.89	0.89	0.89
4	Math	All α	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.93
		MC α	0.90	0.89	0.89	0.90	0.90	0.89	0.90	0.89	0.89
		OR α	0.89	0.89	0.88	0.89	0.88	0.89	0.88	0.89	0.87
		Frmt Strat	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
		Com alpha	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
	Reading	All α	0.92	0.91	0.91	0.87	0.88	0.87	0.87	0.87	0.87
		MC α	0.92	0.91	0.91	0.87	0.88	0.88	0.87	0.87	0.87
		OR α	0.79	0.77	0.77	0.68	0.70	0.68	0.68	0.68	0.67
		Frmt Strat	0.93	0.92	0.92	0.88	0.89	0.88	0.88	0.88	0.88
		Com alpha	0.88	0.87	0.87	0.87	0.88	0.87	0.87	0.87	0.87
5	Math	All α	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
		MC α	0.87	0.87	0.86	0.87	0.87	0.87	0.86	0.87	0.87
		OR α	0.88	0.87	0.88	0.89	0.89	0.88	0.88	0.87	0.88
		Frmt Strat	0.93	0.93	0.93	0.94	0.94	0.93	0.93	0.93	0.93
		Com alpha	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.91	0.91
	Reading	All α	0.93	0.92	0.92	0.88	0.88	0.88	0.88	0.88	0.88
		MC α	0.90	0.89	0.88	0.85	0.84	0.84	0.83	0.84	0.84
		OR α	0.90	0.90	0.89	0.86	0.85	0.85	0.86	0.85	0.85
		Frmt Strat	0.94	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90
		Com alpha	0.89	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
	Writing[1]	All α	0.74								
		MC α	0.65								
		OR α	0.68								
		Frmt Strat	0.76								
		Com alpha	0.74								
6	Math	All α	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
		MC α	0.89	0.89	0.89	0.89	0.88	0.88	0.89	0.89	0.90
		OR α	0.90	0.89	0.90	0.90	0.90	0.89	0.89	0.89	0.89
		Frmt Strat	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
		Com alpha	0.93	0.92	0.93	0.92	0.92	0.92	0.92	0.92	0.93
	Reading	All α	0.93	0.92	0.92	0.89	0.88	0.88	0.88	0.88	0.87
		MC α	0.90	0.90	0.89	0.86	0.84	0.85	0.84	0.84	0.84
		OR α	0.89	0.89	0.89	0.83	0.83	0.83	0.82	0.82	0.83
		Frmt Strat	0.94	0.93	0.93	0.90	0.90	0.90	0.89	0.90	0.89
		Com alpha	0.89	0.88	0.88	0.89	0.88	0.88	0.88	0.88	0.87

(continued)

Grade	Subject	Stat	Form1	Form2	Form3	Form4	Form5	Form6	Form7	Form8	Form9
7	Math	All α	0.94	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
		MC α	0.87	0.86	0.87	0.86	0.86	0.87	0.87	0.87	0.88
		OR α	0.90	0.89	0.89	0.90	0.88	0.89	0.89	0.89	0.89
		Frmt Strat	0.94	0.93	0.94	0.94	0.93	0.93	0.94	0.94	0.94
		Com alpha	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
	Reading	All α	0.92	0.92	0.92	0.89	0.89	0.89	0.89	0.88	0.89
		MC α	0.90	0.90	0.90	0.85	0.85	0.84	0.85	0.84	0.86
		OR α	0.91	0.91	0.90	0.86	0.87	0.86	0.87	0.86	0.87
		Frmt Strat	0.94	0.94	0.94	0.91	0.91	0.91	0.91	0.91	0.92
		Com alpha	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.88	0.89
8	Math	All α	0.93	0.94	0.93	0.94	0.94	0.93	0.93	0.94	0.93
		MC α	0.88	0.87	0.86	0.88	0.87	0.87	0.88	0.88	0.87
		OR α	0.89	0.90	0.89	0.89	0.90	0.89	0.89	0.90	0.89
		Frmt Strat	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
		Com alpha	0.92	0.92	0.92	0.92	0.92	0.91	0.92	0.92	0.92
	Reading	All α	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.89
		MC α	0.91	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
		OR α	0.93	0.92	0.93	0.89	0.88	0.88	0.88	0.88	0.88
		Frmt Strat	0.95	0.95	0.95	0.93	0.92	0.92	0.92	0.92	0.92
		Com alpha	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.89
	Writing[1]	All α	0.75								
		MC α	0.57								
		OR α	0.70								
		Frmt Strat	0.77								
		Com alpha	0.75								
11	Math	All α	0.92	0.92	0.93	0.92	0.93	0.92	0.92	0.92	
		MC α	0.81	0.82	0.81	0.79	0.83	0.80	0.81	0.82	
		OR α	0.89	0.89	0.90	0.90	0.90	0.89	0.89	0.89	
		Frmt Strat	0.93	0.93	0.93	0.93	0.93	0.92	0.93	0.93	
		Com alpha	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
	Reading	All α	0.93	0.93	0.90	0.90	0.90	0.89	0.90	0.90	
		MC α	0.90	0.90	0.85	0.85	0.85	0.84	0.85	0.85	
		OR α	0.92	0.92	0.89	0.88	0.88	0.89	0.89	0.89	
		Frmt Strat	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	
		Com alpha	0.90	0.89	0.90	0.90	0.90	0.89	0.90	0.90	

MC = multiple-choice; OR = open response; All = MC and OR
All α = common and matrix items; MC α = MC items only; OR α = OR items only; Frmt Strat = stratified by MC/OR;
Com alpha = common items only
1Writing tests had only one form

Not surprisingly, reliabilities were higher on the full test than on subsets of items (i.e., only MC or OR items).

7.4 Reporting Subcategories Reliability

In subsection 7.3, the reliability coefficients were calculated based on form and item type. Item type represents just one way of breaking an overall test into subtests. Of even more interest are reliabilities for the reporting subcategories within NECAP subject areas, described in Chapter 2. Cronbach's α coefficients for subcategories were calculated via the same formula defined in subsection 7.1 using just the items of a given subcategory in the computations. Results are presented in Table 7-4. Once again as expected, because they are based on a subset of items rather than the full test, computed subcategory reliabilities were lower (sometimes substantially so) than were overall test reliabilities, and interpretations should take this into account.

Table 7-4. 2007-08 NECAP Common Item α by Grade, Subject, and Reporting Subcategory

Grade	*Subject*	*Reporting Subcategory*	*Possible Points*	α
3	Math	Number & Operations	35	0.89
		Geometry & Measurement	10	0.60
		Functions & Algebra	10	0.68
		Data, Statistics, & Probability	10	0.69
	Reading	Word ID/Vocabulary	22	0.80
		Literary	15	0.71
		Informational	15	0.66
		Initial Understanding	19	0.76
		Analysis & Interpretation	11	0.54
4	Math	Number & Operations	32	0.87
		Geometry & Measurement	13	0.70
		Functions & Algebra	10	0.67
		Data, Statistics, & Probability	10	0.73
	Reading	Word ID/Vocabulary	18	0.71
		Literary	17	0.75
		Informational	17	0.66
		Initial Understanding	20	0.75
		Analysis & Interpretation	14	0.61
5	Math	Number & Operations	30	0.84
		Geometry & Measurement	13	0.57
		Functions & Algebra	13	0.65
		Data, Statistics, & Probability	10	0.62
	Reading	Word ID/Vocabulary	9	0.59
		Literary	22	0.73
		Informational	21	0.78
		Initial Understanding	19	0.74
		Analysis & Interpretation	24	0.77

(continued)

Grade	Subject	Reporting Subcategory	Possible Points	α
5	Writing	Structures of Language & Writing Conventions	10	0.65
		Short Responses	12	0.73
		Extended Responses	15	0.18
6	Math	Number & Operations	26	0.85
		Geometry & Measurement	17	0.73
		Functions & Algebra	13	0.62
		Data, Statistics, & Probability	10	0.66
	Reading	Word ID/Vocabulary	9	0.66
		Literary	21	0.73
		Informational	22	0.76
		Initial Understanding	19	0.73
		Analysis & Interpretation	24	0.76
7	Math	Number & Operations	20	0.78
		Geometry & Measurement	16	0.72
		Functions & Algebra	19	0.81
		Data, Statistics, & Probability	11	0.56
	Reading	Word ID/Vocabulary	10	0.73
		Literary	22	0.77
		Informational	20	0.76
		Initial Understanding	18	0.75
		Analysis & Interpretation	24	0.77
8	Math	Number & Operations	13	0.69
		Geometry & Measurement	16	0.68
		Functions & Algebra	27	0.82
		Data, Statistics, & Probability	10	0.67
	Reading	Word ID/Vocabulary	10	0.70
		Literary	21	0.81
		Informational	21	0.76
		Initial Understanding	19	0.76
		Analysis & Interpretation	23	0.80
	Writing	Structures of Language & Writing Conventions	10	0.57
		Short Responses	12	0.78
		Extended Responses	15	0.17
11	Math	Number & Operations	10	0.60
		Geometry & Measurement	19	0.73
		Functions & Algebra	25	0.83
		Data, Statistics, & Probability	10	0.55
	Reading	Word ID/Vocabulary	10	0.67
		Literary	21	0.76
		Informational	21	0.79
		Initial Understanding	18	0.77
		Analysis & Interpretation	24	0.79

For mathematics, subcategory reliabilities ranged from 0.55 to 0.83, for reading from 0.54 to 0.81, and for writing from 0.18 to 0.73. The subcategory reliabilities for the Extended Response writing categories were lower than those of other categories because 12 of the 15 points for the category came from a single 12-point writing prompt item. In general, the subcategory reliabilities

were lower than those based on the total test and approximately to the degree one would expect based on classical test theory. Qualitative differences between grades and content areas once again preclude valid inferences about the quality of the full test based on statistical comparisons among subtests.

7.5 Reliability of Achievement Level Categorization

All test scores contain measurement error; thus, classifications based on test scores are also subject to measurement error. After the 2007-08 NECAP achievement levels were specified and students classified into those levels, empirical analyses were conducted to determine the statistical accuracy and consistency of the classifications. For every 2007-08 NECAP grade and content area, each student was classified into one of the following achievement levels: Substantially Below Proficient (SBP), Partially Proficient (PP), Proficient (P), or Proficient With Distinction (PWD). This section of the report explains the methodologies used to assess the reliability of classification decisions and presents the results.

7.5.1 Accuracy and Consistency

Accuracy refers to the extent to which decisions based on test scores match decisions that would have been made if the scores did not contain any measurement error. Accuracy must be estimated, because errorless test scores do not exist.

Consistency measures the extent to which classification decisions based on test scores match the decisions based on scores from a second, parallel form of the same test. Consistency can be evaluated directly from actual responses to test items if two complete and parallel forms of the test are given to the same group of students. In operational test programs, however, such a design is usually impractical. Instead, techniques, such as one due to Livingston and Lewis (1995), have been developed to estimate both the accuracy and consistency of classification decisions based on a single administration of a test. The Livingston and Lewis technique was used for the 2007-08 NECAP because it is easily adaptable to tests of all kinds of formats, including mixed-format tests.

7.5.2 Calculating Accuracy

The accuracy and consistency estimates reported below make use of "true scores" in the classical test theory sense. A true score is the score that would be obtained if a test had no measurement error. Of course, true scores cannot be observed and so must be estimated. In the Livingston and Lewis method, estimated true scores are used to classify students into their "true" achievement level.

For the 2007-08 NECAP, after various technical adjustments were made (described in Livingston and Lewis, 1995), a 4 x 4 contingency table of accuracy was created for each content area and grade, where cell [i,j] represented the estimated proportion of students whose true score fell into achievement level i (where i = 1 – 4) and observed score into achievement level j (where j = 1 – 4). The sum of the diagonal entries, i.e., the proportion of students whose true and observed achievement levels matched one another, signified overall accuracy.

7.5.3 Calculating Consistency

To estimate consistency, true scores were used to estimate the joint distribution of classifications on two independent, parallel test forms. Following statistical adjustments (per Livingston and Lewis, 1995), a new 4 × 4 contingency table was created for each content area and grade and populated by the proportion of students who would be classified into each combination of achievement levels according to the two (hypothetical) parallel test forms. Cell [i,j] of this table represented the estimated proportion of students whose observed score on the first form would fall into achievement level i (where i = 1 – 4), and whose observed score on the second form would fall into achievement level j(where j = 1 – 4). The sum of the diagonal entries, i.e., the proportion of students classified by the two forms into exactly the same achievement level, signified overall consistency.

7.5.4 Calculating Kappa

Another way to measure consistency is to use Cohen's (1960) coefficient κ (kappa), which assesses the proportion of consistent classifications after removing the proportion of consistent classifications that would be expected by chance. It is calculated using the following formula:

$$\kappa = \frac{\text{(Observed agreement) - (Chance agreement)}}{\text{1 - (Chance agreement)}} = \frac{\sum_i C_{ii} - \sum_i C_{i.}C_{.i}}{1 - \sum_i C_{i.}C_{.i}},$$

where:
$C_{i.}$ is the proportion of students whose observed achievement level would be *Level i* (where *i*=1 – 4) on the first hypothetical parallel form of the test;
$C_{.i}$ is the proportion of students whose observed achievement level would be *Level i* (where *i*=1 – 4) on the second hypothetical parallel form of the test;
C_{ii} is the proportion of students whose observed achievement level would be *Level i* (where *i*=1 – 4) on both hypothetical parallel forms of the test.

Because κ is corrected for chance, its values are lower than are other consistency estimates.

7.5.5 Results of Accuracy, Consistency, and Kappa Analyses

The accuracy and consistency analyses described above are tabulated in Appendix K. The appendix includes the accuracy and consistency contingency tables described above and the overall accuracy and consistency indices, including kappa.

Accuracy and consistency values conditional upon achievement level are also given in Appendix K. For these calculations, the denominator is the proportion of students associated with a given achievement level. For example, the conditional accuracy value is 0.709 for the PP achievement level for mathematics grade 3. This figure indicates that among the students whose true scores placed them in the PP achievement level, 70.9% of them would be expected to be in the PP achievement level when categorized according to their observed score. Similarly, the corresponding consistency value of 0.614 indicates that 61.4% of students with observed scores in PP would be expected to score in the PP achievement level again if a second, parallel test form were used.

For some testing situations, the greatest concern may be decisions around level thresholds. For example, if a college gave credit to students who achieved an Advanced Placement test score of

4 or 5, but not to scores of 1, 2, or 3, one might be interested in the accuracy of the dichotomous decision below-4 versus 4-or-above. For the 2007-08 NECAP, Appendix K provides accuracy and consistency estimates at each cutpoint as well as false positive and false negative decision rates. (False positives are the proportion of students whose observed scores were above the cut and true scores below the cut. False negatives are the proportion of students whose observed scores were below the cut and true scores above the cut.)

The above indices are derived from Livingston & Lewis' (1995) method of estimating the accuracy and consistency of classifications. It should be noted that Livingston & Lewis discuss two versions of the accuracy and consistency tables. A standard version performs calculations for forms parallel to the form taken. An "adjusted" version adjusts the results of one form to match the observed score distribution obtained in the data. The tables reported in Appendix K use the standard version for two reasons: 1) this "unadjusted" version can be considered a smoothing of the data, thereby decreasing the variability of the results; and 2) for results dealing with the consistency of two parallel forms, the unadjusted tables are symmetric, indicating that the two parallel forms have the same statistical properties. This second reason is consistent with the notion of forms that are parallel, i.e., it is more intuitive and interpretable for two parallel forms to have the same statistical distribution as one another.

Descriptive statistics relating to the decision accuracy and consistency of the 2007-08 NECAP tests can be derived from Appendix K. For mathematics, overall accuracy ranged from 0.778 to 0.815; overall consistency ranged from 0.701 to 0.743; the kappa statistic ranged from 0.577 to 0.631. For reading, overall accuracy ranged from 0.781 to 0.818; overall consistency ranged from 0.704 to 0.747; the kappa statistic ranged from 0.542 to 0.622. Finally, for writing, overall accuracy was 0.617 or 0.642 in the two grades tested; overall consistency was 0.516 or 0.539; the kappa statistic was 0.343 or 0.362.

Table 7-5 below summarizes most of the results of Appendix K at a glance. As with other types of reliability, it is inappropriate when analyzing the decision accuracy and consistency of a given test to compare results between grades and content areas.

Table 7-5. 2007-08 NECAP: Summary of Decision Accuracy (and Consistency) Results

		Conditional on Level				*At Cut Point*		
Content/Grade	*Overall*	*SBP*	*PP*	*P*	*PWD*	*SBP:PP*	*PP:P*	*P:PWD*
Math/3	.82(.75)	.84(.77)	.71(.61)	.83(.78)	.89(.78)	.96(.94)	.93(.90)	.93(.91)
Math/4	.82(.75)	.84(.77)	.73(.64)	.84(.79)	.88(.77)	.95(.93)	.92(.89)	.94(.92)
Math/5	.79(.72)	.82(.75)	.56(.45)	.83(.78)	.87(.75)	.93(.91)	.92(.88)	.94(.91)
Math/6	.81(.74)	.85(.78)	.62(.51)	.84(.79)	.89(.79)	.94(.92)	.92(.89)	.94(.92)
Math/7	.79(.72)	.82(.76)	.65(.55)	.82(.76)	.88(.77)	.93(.91)	.92(.88)	.94(.92)
Math/8	.79(.72)	.81(.75)	.66(.55)	.83(.77)	.88(.77)	.93(.90)	.92(.89)	.95(.93)
Math/11	.83(.77)	.88(.85)	.72(.63)	.87(.80)	.81(.54)	.91(.88)	.93(.90)	.99(.99)
Reading/3	.80(.72)	.79(.69)	.69(.60)	.82(.77)	.87(.73)	.96(.94)	.91(.88)	.93(.90)
Reading/4	.77(.68)	.77(.66)	.67(.57)	.78(.72)	.86(.71)	.95(.93)	.90(.86)	.91(.88)
Reading/5	.80(.72)	.79(.67)	.74(.65)	.80(.75)	.87(.75)	.96(.95)	.91(.87)	.93(.90)
Reading/6	.80(.72)	.79(.68)	.72(.63)	.82(.77)	.86(.73)	.96(.94)	.91(.87)	.93(.90)
Reading/7	.82(.74)	.80(.70)	.72(.63)	.84(.80)	.87(.74)	.96(.95)	.92(.89)	.93(.91)
Reading/8	.81(.74)	.82(.74)	.76(.68)	.82(.76)	.88(.76)	.96(.94)	.92(.88)	.94(.91)
Reading/11	.81(.73)	.82(.73)	.75(.67)	.81(.75)	.88(.78)	.96(.94)	.92(.88)	.93(.91)
Writing/5	.61(.51)	.73(.61)	.53(.44)	.54(.45)	.80(.61)	.89(.84)	.83(.77)	.88(.83)
Writing/8	.66(.55)	.72(.59)	.62(.54)	.66(.56)	.78(.50)	.90(.86)	.83(.77)	.92(.89)

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Chapter 8 VALIDITY

Because interpretations of test scores, and not a test itself, are evaluated for validity, the purpose of the 2007-08 NECAP Technical Report is to describe several technical aspects of the NECAP tests in support of score interpretations (AERA, 1999). Each chapter contributes an important component in the investigation of score validation: test development and design; test administration; scoring, scaling, and equating; item analyses; reliability; and score reporting.

The NECAP tests are based on and aligned with the content standards and performance indicators in the GLEs for mathematics, reading, and writing. Inferences about student achievement on the content standards are intended from NECAP results, which in turn serve evaluation of school accountability and inform the improvement of programs and instruction.

The *Standards for Educational and Psychological Testing* (1999) provides a framework for describing sources of evidence that should be considered when evaluating validity. These sources include evidence on the following five general areas: test content, response processes, internal structure, consequences of testing, and relationship to other variables. Although each of these sources may speak to a different *aspect* of validity, they are not distinct *types* of validity. Instead, each contributes to a body of evidence about the comprehensive validity of score interpretations.

A measure of test content validity is to determine how well the test tasks represent the curriculum and standards for each subject and grade level. This is informed by the item development process, including how test blueprints and test items align with the curriculum and standards. Validation through the content lens was extensively described in Chapter 2. Item alignment with content standards; item bias; sensitivity and content appropriateness review processes; adherence to the test blueprint; use of multiple item types; use of standardized administration procedures, with accommodated options for participation; and appropriate test administration training are all components of validity evidence based on test content.

All NECAP test questions were aligned by educators with specific content standards and underwent several rounds of review for content fidelity and appropriateness. Items were presented to students in multiple formats (MC, SA, and CR). Finally, tests were administered according to mandated standardized procedures, with allowable accommodations, and all test coordinators and test administrators were required to familiarize themselves with and adhere to all of the procedures outlined in the *NECAP Test Coordinator* and *Test Administrator* manuals.

The scoring information in Chapter 4 described both the steps taken to train and monitor hand-scorers and quality control procedures related to scanning and machine-scoring. Additional studies might be helpful for evidence on student response processes. For example, think-aloud protocols could be used to investigate students' cognitive processes when confronting test items.

Evidence on internal structure was extensively detailed in discussions of scaling and equating, item analyses, and reliability in Chapters 5, 6, and 7. Technical characteristics of the internal structure of the tests were presented in terms of classical item statistics (item difficulty and item-test correlation), differential item functioning analyses, a variety of reliability coefficients, SEM, multidimensionality hypothesis testing and effect size estimation, and IRT parameters and procedures. In general, item difficulty indices were within acceptable and expected ranges; very few items were answered correctly at near-chance or near-perfect rates. Similarly, the positive discrimination indices indicated that students who performed well on individual items tended to perform well overall. Chapter 5 also described the method used to equate the 2007-08 test to the 2006-07 scales.

Evidence on the consequences of testing was addressed in information on scaled score and reporting in Chapters 5 and 9 and in the *Guide to Using the 2007 NECAP Reports*, which is a separate document referenced in the discussion of reporting. Each of these spoke to efforts undertaken for providing the public with accurate and clear test score information. Scaled scores simplify results reporting across content areas, grade levels, and successive years. Achievement levels give reference points for mastery at each grade level, another useful and simple way to

interpret scores. Several different standard reports were provided to stakeholders. Evidence on the consequences of testing could be supplemented with broader research on the impact on student learning of NECAP testing.

8.1 Questionnaire Data

A measure of external validity was provided by comparing student performance with answers to a questionnaire administered at the end of test. The grades 3–8 questionnaire contained 31 questions (9 concerned reading, 10 mathematics, and 12 writing). The grade 11 questionnaire contained 36 questions (11 concerned reading, 13 mathematics, and 12 writing) Most of the questions were designed to gather information about students and their study habits; however, a subset could be utilized in the test of external validity. One question from each content area was most expected to correlate with student performance on NECAP tests. To the extent that the answers to those questions did correlate with student performance in the anticipated manner, the external validity of score interpretations was confirmed. The three questions are now discussed one at a time.

Question 8 (grades 3–8)/21 (grade 11) concerning reading, read as follows:

How often do you choose to read in your free time?

A. almost every day
B. a few times a week
C. a few times a month
D. I almost never read.

It was anticipated that students who read more in their free time would have higher average scaled scores and achievement level designations in reading than students who did not read as much. In particular, it was expected that on average, reading performance among students who chose “A” would meet or exceed performance of students who chose “B,” whose performance would meet or exceed that of students who chose “C,” whose performance would meet or exceed that of students who chose “D.” This pattern was observed in Table 8-1 in all grades, both in terms of average scaled scores and the percentage of students in the *Proficient with Distinction* achievement level.

Table 8-1. 2007-08 NECAP: Average Scaled Score, and Counts and Percentages, within Performance Levels, of Responses to Spare-Time Reading Item[1] on Student Questionnaire—Reading

Grade	*Resp*	*Number Resp*	*Percentage Resp*	*Avg SS*	*N SBP*	*N PP*	*N P*	*N PWD*	*% SBP*	*% PP*	*% P*	*% PWD*
3	(blank)	3954	13	343	663	685	2145	461	17	17	54	12
	A	14801	49	347	1336	2171	9011	2283	9	15	61	15
	B	7520	25	346	720	1090	4768	942	10	14	63	13
	C	1689	6	343	255	312	981	141	15	18	58	8
	D	2437	8	340	497	520	1309	111	20	21	54	5
4	(blank)	3200	10	442	576	692	1460	472	18	22	46	15
	A	15521	48	447	1433	2641	8005	3442	9	17	52	22
	B	9411	29	445	932	1801	5148	1530	10	19	55	16
	C	1846	6	442	313	357	936	240	17	19	51	13
	D	2248	7	438	507	625	987	129	23	28	44	6
5	(blank)	3162	10	542	525	789	1387	461	17	25	44	15
	A	14410	45	548	983	2566	7466	3395	7	18	52	24
	B	10206	32	545	841	2308	5463	1594	8	23	54	16
	C	2193	7	542	270	601	1094	228	12	27	50	10
	D	2382	7	539	467	799	993	123	20	34	42	5
6	(blank)	3744	11	642	714	871	1727	432	19	23	46	12
	A	11347	35	649	786	1669	6420	2472	7	15	57	22
	B	11167	34	645	953	2400	6464	1350	9	21	58	12
	C	3387	10	643	384	827	1893	283	11	24	56	8
	D	3205	10	639	553	1006	1512	134	17	31	47	4
7	(blank)	3805	11	742	737	883	1763	422	19	23	46	11
	A	9501	28	751	508	1071	5548	2374	5	11	58	25
	B	11220	33	747	813	2093	6692	1622	7	19	60	14
	C	4555	13	745	436	1043	2664	412	10	23	58	9
	D	4798	14	741	734	1344	2522	198	15	28	53	4
8	(blank)	3412	10	840	825	871	1344	372	24	26	39	11
	A	8904	25	850	506	1231	4998	2169	6	14	56	24
	B	10796	31	846	970	2290	5954	1582	9	21	55	15
	C	5481	16	843	629	1454	2906	492	11	27	53	9
	D	6459	18	840	1125	2137	2888	309	17	33	45	5
11	(blank)	7890	23	1141	1532	1838	3303	1217	19	23	42	15
	A	5597	16	1147	456	883	2790	1468	8	16	50	26
	B	7303	21	1145	694	1381	3633	1595	10	19	50	22
	C	6144	18	1144	572	1342	3216	1014	9	22	52	17
	D	7062	21	1141	997	2128	3326	611	14	30	47	9

[1]Question: How often do you choose to read in your free time? A = almost every day; B = a few times a week; C = a few times a month; D = I almost never read.
SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table 8-2. 2007-08 NECAP: Average Scaled Score, and Counts and Percentages, within Performance Levels, of Responses to Kinds of School Writing Item[1] of Student Questionnaire—Writing.

Grade	*Resp*	*N Resp*	*% Resp*	*Avg SS*	*N SBP*	*N PP*	*N P*	*N PWD*	*% SBP*	*% PP*	*% P*	*% PWD*
	(blank)	3850	12	537	1095	1122	1122	511	28	29	29	13
	A	6161	19	539	1296	1959	2107	799	21	32	34	13
5	B	2860	9	538	655	941	935	329	23	33	33	12
	C	3018	9	540	632	888	1049	449	21	29	35	15
	D	16392	51	543	2503	4441	6040	3408	15	27	37	21
	(blank)	4039	12	835	1270	1430	1092	247	31	35	27	6
	A	3853	11	835	1011	1738	987	117	26	45	26	3
8	B	5700	16	838	1097	2420	1836	347	19	42	32	6
	C	4204	12	838	805	1799	1336	264	19	43	32	6
	D	17133	49	842	1960	6288	7110	1775	11	37	41	10
	(blank)	7846	23	5.3	1739	3621	2237	249	22	46	29	3
	A	1493	4	4.8	400	762	314	17	27	51	21	1
11	B	7718	23	5.8	1001	3901	2585	231	13	51	33	3
	C	4204	12	5.5	748	2064	1242	150	18	49	30	4
	D	12625	37	5.9	1589	6025	4548	463	13	48	36	4

[1]Question: What kinds of writing do you do most in school? A = I mostly write stories; B = I mostly write reports; C = I mostly write about things I've read; D = I do all kinds of writing.
SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Question 15/31, concerning mathematics, read as follows:

How often do you have mathematics homework?

A. almost every day

B. a few times a week

C. a few times a month

D. I usually don't have homework in mathematics.

As anticipated, the relationship between Question 15/31 and student performance in mathematics (see Table 8-3 below) mirrored the pattern of Question 8/21 at each grade: On average, mathematics performance among students who chose "A" met or exceeded the performance of students who chose "B," whose performance met or exceeded that of students who chose "C," whose performance met or exceeded that of students who chose "D." This pattern was again evident both in terms of average scaled scores and the percentage of students in the *Proficient with Distinction* achievement level.

Table 8-3. 2007-08 NECAP: Average Scaled Score, and Counts and Percentages, within Performance Levels, of Responses to Frequency of Mathematics-Homework Item[1] of Student Questionnaire—Mathematics

Grade	*Resp*	*N Resp*	*% Resp*	*Avg SS*	*N SBP*	*N PP*	*N P*	*N PWD*	*% SBP*	*% PP*	*% P*	*% PWD*
3	(blank)	3992	13	342	784	785	1847	576	20	20	46	14
	A	13818	45	345	1683	2490	6758	2887	12	18	49	21
	B	9139	30	345	1072	1667	4664	1736	12	18	51	19
	C	1750	6	343	268	323	863	296	15	18	49	17
	D	1804	6	340	403	398	800	203	22	22	44	11
4	(blank)	3211	10	440	759	803	1247	402	24	25	39	13
	A	16824	52	444	2241	3663	8049	2871	13	22	48	17
	B	9502	29	443	1333	2217	4522	1430	14	23	48	15
	C	1515	5	442	306	323	641	245	20	21	42	16
	D	1282	4	438	357	343	464	118	28	27	36	9
5	(blank)	3194	10	540	908	526	1343	417	28	16	42	13
	A	17978	55	544	2911	2849	8781	3437	16	16	49	19
	B	8921	28	543	1825	1655	4056	1385	20	19	45	16
	C	1355	4	542	314	245	605	191	23	18	45	14
	D	990	3	537	362	173	373	82	37	17	38	8
6	(blank)	3779	11	639	1129	710	1399	541	30	19	37	14
	A	17797	54	645	2709	2999	8146	3943	15	17	46	22
	B	9376	28	642	1927	1830	4017	1602	21	20	43	17
	C	1049	3	640	257	189	464	139	24	18	44	13
	D	929	3	634	408	183	270	68	44	20	29	7
7	(blank)	3801	11	738	1257	833	1226	485	33	22	32	13
	A	19746	58	743	3043	4178	8634	3891	15	21	44	20
	B	8671	26	741	1944	2034	3462	1231	22	23	40	14
	C	954	3	737	310	236	320	88	32	25	34	9
	D	777	2	732	406	160	171	40	52	21	22	5
8	(blank)	3495	10	836	1273	810	1038	374	36	23	30	11
	A	21216	60	842	3422	4520	9403	3871	16	21	44	18
	B	8373	24	839	2154	2248	3251	720	26	27	39	9
	C	1110	3	835	429	287	328	66	39	26	30	6
	D	915	3	831	481	189	202	43	53	21	22	5
11	(blank)	7975	24	1131	4193	1953	1732	97	53	24	22	1
	A	18051	53	1136	6572	5597	5537	345	36	31	31	2
	B	4805	14	1131	2725	1215	822	43	57	25	17	1
	C	1441	4	1128	1009	296	133	3	70	21	9	0
	D	1635	5	1126	1241	282	107	5	76	17	7	0

[1]Question: How often do you have mathematics homework? A = almost every day; B = a few times a week; C = a few times a month; D = I usually don't have homework in mathematics.
SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Question 31/12, concerning writing, read as follows:

> What kinds of writing do you do most in school?
>
> A. I mostly write stories.
>
> B. I mostly write reports.
>
> C. I mostly write about things I've read.
>
> D. I do all kinds of writing.

For this question, the only anticipated outcome was that students who selected choice "D," i.e., those who ostensibly had experience in many different kinds of writing, would tend to outperform students who selected any other answer choice. The expected outcome was realized in all three grades (see Table 8-2).

Based on the foregoing analysis, the relationship between questionnaire data and performance on the NECAP was consistent with expectations of the three questions selected for the investigation of external validity. See Appendix L for a copy of the questionnaire and complete data comparing questionnaire items and test performance.

8.2 Validity Studies Agenda

The remaining part of this chapter describes further studies of validity that are being considered for the future. These studies could enhance the investigations of validity that have already been performed. The proposed areas of validity to be examined fall into four categories: *external validity, convergent and discriminant validity, structural validity, and procedural validity*. These will be discussed in turn.

8.2.1 External Validity

In the future, investigations of external validity would involve targeted examination of variables which correlate with NECAP results. For example, data could be collected on the classroom grades of each student who took the NECAP tests. As with the analysis of student questionnaire data, cross-tabulations of NECAP achievement levels and assigned grades could be

created. The average NECAP scaled score could also be computed for each possible assigned grade (A, B, C, etc.). Analysis would focus on the relationship between NECAP scores and grades in the appropriate class (i.e., NECAP mathematics would be correlated with student grades in mathematics, not reading). NECAP scores could also be correlated with other appropriate classroom tests in addition to final grades.

Further evidence of external validity might come from correlating NECAP scores with scores on another standardized test, such as the Iowa Test of Basic Skills (ITBS). As with the study of concordance between NECAP scores and grades, this investigation would compare scores in analogous content areas (e.g., NECAP reading and ITBS reading comprehension). All tests taken by each student would be appropriate to the student's grade level.

8.2.2 Convergent and Discriminant Validity

The concepts of convergent and discriminant validity were defined by Campbell and Fiske (1959) as specific types of validity that fall under the umbrella of *construct validity*. The notion of convergent validity states that measures or variables that are intended to align with one another should actually be aligned in practice. discriminant validity, on the other hand, is the idea that measures or variables that are intended to differ from one another should not be too highly correlated. Evidence for validity comes from examining whether the correlations among variables are as expected in direction and magnitude.

Campbell and Fiske (1959) introduced the study of different *traits* and *methods* as the means of assessing convergent and discriminant validity. Traits refer to the constructs that are being measured (e.g., mathematical ability), and methods are the instruments of measuring them (e.g., a mathematics test or grade). To utilize the framework of Campbell and Fiske, it is necessary that more than one trait and more than one method be examined. Analysis is performed through the multi-trait/multi-method matrix, which gives all possible correlations of the different combinations of traits and methods. Campbell and Fiske defined four properties of the multi-trait/multi-method matrix that serve as evidence of convergent and discriminant validity:

- The correlation among different methods of measuring the same trait should be sufficiently different from zero. For example, scores on a mathematics test and grades in a mathematics class should be positively correlated.

- The correlation among different methods of measuring the same trait should be higher than that of different methods of measuring different traits. For example, scores on a mathematics test and grades in a mathematics class should be more highly correlated than are scores on a mathematics test and grades in a reading class.

- The correlation among different methods of measuring the same trait should be higher than the same method of measuring different traits. For example, scores on a mathematics test and grades in a mathematics class should be more highly correlated than scores on a mathematics test and scores on an analogous reading test.

- The pattern of correlations should be similar across comparisons of different traits and methods. For example, if the correlation between test scores in reading and writing is higher than the correlation between test scores in reading and mathematics, it is expected that the correlation between grades in reading and writing would also be higher than the correlation between grades in reading and mathematics.

For NECAP, convergent and discriminant validity could be examined by constructing a multi-trait/multi-method matrix and analyzing the four pieces of evidence described above. The traits examined would be mathematics, reading, and writing; different methods would include NECAP score and such variables as grades, teacher judgments, and/or scores on another standardized test.

8.2.3 Structural Validity

Though the previous types of validity examine the concurrence between different measures of the same content area, structural validity focuses on the relation between strands *within* a content

area, thus supporting *content validity*. Standardized tests are carefully designed to ensure that all appropriate strands of a content area are adequately covered in test, and structural validity is the degree to which related elements of a test are correlated in the intended manner. For instance, it is desired that performance on different strands of a content area be positively correlated; however, as these strands are designed to measure distinct components of the content area, it is reasonable to expect that each strand would contribute a unique component to the test. Additionally, it is desired that the correlation between different item types (MC, SA, and CR) of the same content area be positive.

As an example, an analysis of NECAP structural validity would investigate the correlation between performance in Geometry and Measurement and performance in Functions and Algebra. Additionally, the concordance between performance on MC items and OR items would be examined. Such a study would address the consistency of NECAP tests within each grade and content area. In particular, the dimensionality analyses of Chapter 6 could be expanded to include confirmatory analyses addressing these concerns.

8.2.4 Procedural Validity

As mentioned earlier, the *NECAP Test Coordinator* and *Test Administrator* manuals delineated the procedures to which all NECAP test coordinators and test administrators were required to adhere. A study of procedural validity would provide a comprehensive documentation of the procedures that were followed throughout the NECAP administration. The results of the documentation would then be compared to the manuals, and procedural validity would be confirmed to the extent that the two are in alignment. Evidence of procedural validity is important because it verifies that the actual administration practices are in accord with the intentions of the design.

Possible instances where discrepancies can exist between design and implementation include the following: A teacher may spiral test forms incorrectly within a classroom; cheating may occur among students; answer documents may be scanned incorrectly. These are examples of *administration error*. A study of procedural validity involves capturing any administration errors and

presenting them within a cohesive document for review.

All potential tests of validity that have been introduced in this chapter will be discussed as candidates for action by the NECAP Technical Advisory Committee (NECAP TAC) during 2008-09. With the advice of the NECAP TAC, the states will develop a short-term (e.g., 1-year) and longer term (e.g., 2-year to 5-year) plan for validity studies.

SECTION III —2007-08 NECAP REPORTING

Chapter 9 SCORE REPORTING

9.1 Teaching Year vs. Testing Year Reporting

The data used for the NECAP Reports are the results of the fall 2007 administration of the NECAP test. However, the NECAP tests are based on the GLEs from the prior year. For example, the Grade 7 NECAP test, administered in the fall of seventh grade, is based on the grade 6 GLEs. Many students therefore receive the instruction they need for the fall test at a different school than where they are currently enrolled. The state Departments of Education determined that access to results information would be valuable to both the school where the student was tested and the school where the student received instruction in order to improve curriculum. To achieve this goal, separate Item Analysis, School and District Results, and School and District Summary reports were created for the "testing" school and the "teaching" school. Every student who participated in the NECAP test was represented in "testing" reports, and most students were also represented in "teaching" reports. In some cases, such as a student who recently moved to the state, it is not possible to provide information about a student in "teaching" reports.

9.2 Primary Reports

There were four primary reports for the 2007–08 NECAP:

- Student Report
- Item Analysis Report
- School and District Results Report
- School and District Summary Report

With the exception of the Student Report, all reports were available for schools and districts to view or download on a password-secure website hosted by Measured Progress. Student-level data files were also available for districts to download from the secure Web site. Each of these reports is described in the following subsections. Sample reports are provided in Appendix M.

9.3 Student Report

The *NECAP Student Report* is a single-page two-sided report that is printed onto 8.5" by 14" paper. The front side of the report includes informational text about the design and uses of the assessment. This side of the report also contains text that describes the three corresponding sections of the reverse side of the student report as well as the achievement level definitions. The reverse side of the student report provides a complete picture of an individual student's performance on the NECAP, divided into three sections. The first section provides the student's overall performance for each content area. The student's achievement levels are provided and scaled scores are presented numerically as well as in a graphic that places the student's scaled score, with its standard error of measurement bar constructed about it, within the full range of possible scaled scores demarcated into the four achievement levels.

The second section of the report displays the student's achievement level in each content area relative to the percentage of students at each achievement level across the school, district, and state.

The third section of the report shows the student's performance compared to school, district, and statewide performances. Each content area is reported by subcategories. For reading, with the exception of Word ID/Vocabulary items, items are reported by Type of Text (Literary, Informational) and Level of Comprehension (Initial Understanding, Analysis and Interpretation). For mathematics, the subcategories are Numbers and Operations; Geometry and Measurement; Functions and Algebra; and Data, Statistics, and Probability. The content area subcategories for writing at grades 5 and 8 are reported on the Structures of Language and Writing Conventions and by the type of response—short or extended. Grade 11 writing only reports on the extended response as a subcategory.

Student performances by subject area are reported in the context of possible points; average points earned for the school, district, and state; and the average points earned by students at the Proficient level on the total test.

To provide a more complete picture of the student's performance on the writing test, each scorer chose up to three comments about the student's writing performance from a predetermined list produced by the writing representatives from each state department of education. Scorers' comments are presented in a box next to the writing results.

The *NECAP Student Report* is confidential and should be kept secure within the school and district. The Family Educational Rights and Privacy Act (FERPA) requires that access to individual student results be restricted to the student, the student's parents/guardians, and authorized school personnel.

9.4 Item Analysis Reports

The *NECAP Item Analysis Report* provides a roster of all the students in each school and their performances on the common items in the test that are released to the public, one report per content area. For all grades and content areas, the student names and identification numbers are listed as row headers down the left side of the report. For grades 3 through 8 and 11 in reading and mathematics and grades 5 and 8 writing, the items are listed as column headers across the top in the order they appeared in the released item documents (not the position in which they appeared on the test). For each item, seven pieces of information are shown: the released item number, the content strand for the item, the GLE code for the item, the Depth of Knowledge code for the item, the item type, the correct response letter for MC items, and the total possible points for each item. For each student, MC items are marked either with a plus sign (+), indicating that the student chose the correct MC response, or a letter (from A to D), indicating the incorrect response chosen by the student. For CR items, the number of points that the student attained is shown. All responses to released items are shown is the report, regardless of the student's participation status.

The columns on the right side of the report show Total Test Results broken into several categories. The Subcategory Points Earned columns show points earned by the student in each content area relative to total points possible. The Total Points Earned column is a summary of all points earned and total possible points in the content area. The last two columns show the Scaled Score and Achievement Level for each student. For students who are reported as Not Tested, a code appears in the Achievement Level column to indicate the reason why the student did not test. The descriptions of these codes can be found on the legend, after the last page of data on the report. It is important to note that not all items used to compute student scores are included in this report. Only those items that have been released are included. At the bottom of the report, the average percentage correct for each MC item and average scores for the SA and CR items and writing prompts is shown across the school, district, and state.

For grade 11 writing, the top portion of the *NECAP Item Analysis Report* consists of a single row of item information containing: the content stand, GSE codes, the Depth of Knowledge code, the item type – writing prompt, and total possible points. The student names and identification numbers are listed as row headers down the left side of the report. The Total Test Results section to the right includes the Total Points Earned and Achievement Level for each student. At the bottom of the last page of the report, the average points earned on the writing prompt are provided for the school, district, and state.

The *NECAP Item Analysis Report* is confidential and should be kept secure within the school and district. The FERPA requires that access to individual student results be restricted to the student, the student's parents/guardians, and authorized school personnel.

9.5 School and District Results Reports

The *NECAP School Results Report* and the *NECAP District Results Report* consist of three parts: the grade level summary report (page 2), the content area results (pages 3, 5, and 7), and the disaggregated content area results (pages 4, 6, and 8).

The grade level summary report provides a summary of participation in the NECAP and a summary of NECAP results. The participation section on the top half of the page shows the number and percentage of students who were enrolled on or after October 1, 2007-08. The total number of students enrolled is defined as the number of students tested plus the number of students not tested.

Because students who were not tested did not participate, average school scores were not affected by non-tested students. These students were included in the calculation of the percentage of students participating but not in the calculation of scores. For students who participated in some but not all sessions of the NECAP test, actual scores were reported for the content areas in which they participated. These reporting decisions were made to support the requirement that all students participate in the NECAP testing program.

Data are provided for the following groups of students who may not have completed the entire battery of NECAP tests:

- **Alternate Test**: Students in this category completed an alternate test for the 2006-07 school year.

- **First-Year LEP**: Students in this category are defined as being new to the United States after October 1, 2006 and were not required to take the NECAP tests in reading and writing. Students in this category were expected to take the mathematics portion of the NECAP.

- **Withdrew After October 1**: Students withdrawing from a school after October 1, 2007 may have taken some sessions of the NECAP tests prior to their withdrawal from the school.

- **Enrolled After October 1**: Students enrolling in a school after October 1, 2007 may not have had adequate time to participate fully in all sessions of NECAP testing.

- **Special Consideration**: Schools received state approval for special consideration for an exemption on all or part of the NECAP tests for any student whose circumstances are not described by the previous categories but for whom the school determined that taking the NECAP tests would not be possible.

- **Other**: Occasionally students will not have completed the NECAP tests for reasons other than those listed above. These "other" categories were considered not state approved.

The results section in the bottom half of the page shows the number and percentage of students performing at each achievement level in each of the three content areas across the school, district, and state. In addition, a mean scaled score is provided for each content area across school, district, and state levels except for grade 11 writing where the mean raw score is provided across the school, district, and state. For the district version of this report, the school information is blank.

The content area results pages provide information on performance in specific subcategories of the tested content areas (for example, geometry, and measurement within mathematics). The purpose of these sections is to help schools to determine the extent to which their curricula are effective in helping students to achieve the particular standards and benchmarks contained in the *Grade Level and Grade Span Expectations*. Information about each content area (reading, mathematics and writing) for school, district, and state includes

- the total number of students enrolled, not tested (state-approved reason), not tested (other reason), and tested;

- the total number and percentage of students at each achievement level (based on the number in the tested column); and

- the mean scaled score.

Information about each content area subcategory for reading mathematics and writing include the following

- The total possible points for that category. In order to provide as much information as possible for each category, the total number of points includes both the common items used to calculate scores and additional items in each category used for equating the test from year to year.

- A graphic display of the percent of total possible points for the school, state, and district. In this graphic display, there are symbols representing school, district, and state performance. In addition, there is a line representing the standard error of measurement. This statistic indicates how much a student's score could vary if the student were examined repeatedly with the same test (assuming that no learning were to occur between test administrations).

- For grade 11 writing only, a column showing the number of prompts for each subtopic (strand) is provided as well as the distribution of score points across prompts within each strand in terms of percentages for the school, district, and state.

The disaggregated content area results pages present the relationship between performance and student reporting variables (see list below) in each content area across school, district, and state levels. Each content area page shows the number of students categorized as enrolled, not tested (state-approved reason), not tested (other reason), and tested. The tables also provide the number and percentage of students within each of the four achievement levels and the mean scaled score by each reporting category.

The list of student reporting categories is as follows:

- All Students
- Gender
- Primary Race/Ethnicity
- LEP Status (Limited English Proficiency)
- IEP
- SES (socioeconomic status)
- Migrant
- Title I
- 504 Plan

The data for achievement levels and mean scaled score are based on the number shown in the tested column. The data for the reporting categories were provided by information coded on the students' answer booklets by teachers and/or data linked to the student label. Because performance is being reported by categories that can contain relatively low numbers of students, school personnel are advised, under FERPA guidelines, to treat these pages confidentially.

It should be noted that for NH and VT, no data were reported for the 504 Plan in any of the content areas. In addition, for VT, no data were reported for Title I in any of the content areas.

9.6 School and District Summary Reports

The *NECAP School Summary Report* and the *NECAP District Summary Report* provide details, broken down by content area, on student performance by grade level tested in the school. The purpose of the summary is to help schools determine the extent to which their students achieve the particular standards and benchmarks contained in the *Grade Level and Grade Span Expectations.*

Information about each content area and grade level for school, district, and state includes

- the total number of students enrolled, not tested (state-approved reason), not tested (other reason), and tested
- the total number and percentage of students at each achievement level (based on the number in the tested column) and
- the the mean scaled score (mean raw score for Grade 11 writing)

The data reported, report format, and guidelines for using the reported data are identical for both the school and district reports. The only difference between the reports is that the *NECAP District Summary Report* includes no individual school data. Separate school report and district reports were produced for each grade level tested.

9.7 Decision Rules

To ensure that reported results for the 2007–08 NECAP are accurate relative to collected data and other pertinent information, a document that delineates analysis and reporting rules was created. These decision rules were observed in the analyses of NECAP test data and in reporting the test results. Moreover, these rules are the main reference for quality assurance checks.

The decision rules document used for reporting results of the October 2007 administration of the NECAP is founded in Appendix N.

The first set of rules pertains to general issues in reporting scores. Each issue is described, and pertinent variables are identified. The actual rules applied are described by the way they impact analyses and aggregations and their specific impact on each of the reports. The general rules are further grouped into issues pertaining to test items, school type, student exclusions, and number of students for aggregations.

The second set of rules pertains to reporting student participation. These rules describe which students were counted and reported for each subgroup in the student participation report.

9.8 Quality Assurance

Quality assurance measures are embedded throughout the entire process of analysis and reporting. The data processor, data analyst, and psychometrician assigned to work on the NECAP implement quality control checks of their respective computer programs and intermediate products. Moreover, when data are handed off to different functions within the Research and Analysis division, the sending function verifies that the data are accurate before handoff. Additionally, when a function receives a data set, the first step is to verify the data for accuracy.

Another type of quality assurance measure is parallel processing. Students' scaled scores for each content area are assigned by a psychometrician through a process of equating and scaling. The scaled scores are also computed by a data analyst to verify that scaled scores and corresponding achievement levels are assigned accurately. Respective scaled scores and achievement levels assigned are compared across all students for 100% agreement. Different exclusions assigned to students that determine whether each student receives scaled scores and/or is included in different levels of aggregation are also parallel-processed. Using the decision rules document, two data analysts independently write a computer program that assigns students' exclusions. For each subject and grade combination, the exclusions assigned by each data analyst are compared across all students. Only when 100% agreement is achieved can the rest of data analysis be completed.

The third aspect of quality control involves the procedures implemented by the quality assurance group to check the veracity and accuracy of reported data. Using a sample of schools and districts, the quality assurance group verifies that reported information is correct. The step is conducted in two parts: (1) verify that the computed information was obtained correctly through appropriate application of different decision rules and (2) verify that the correct data points populate each cell in the NECAP reports. The selection of sample schools and districts for this purpose is very specific and can affect the success of the quality control efforts. There are two sets of samples selected that may not be mutually exclusive.

The first set includes those that satisfy the following criteria:

- One-school district
- Two-school district
- Multi-school district

The second set of samples includes districts or schools that have unique reporting situations as indicated by decision rules. This set is necessary to check that each rule is applied correctly. The second set includes the following criteria:

- Private school
- Small school that receives no school report
- Small district that receives no district report
- District that receives a report but all schools are too small to receive a school report
- School with excluded (not tested) students
- School with home-schooled students

The quality assurance group uses a checklist to implement its procedures. After the checklist is completed, sample reports are circulated for psychometric checks and program management review. The appropriate sample reports are then presented to the client for review and sign-off.

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SECTION V—APPENDICES

APPENDIX A—COMMITTEE MEMBERSHIP

Technical Advisory Committee

New Hampshire

Name	Association/Affiliation
Richard Hill	Center for Assessment, Board of Trustees Chair
Scott Marion	Center for Assessment, Associate Director
Charles Pugh	Moultonborough District Assessment Coordinator
Rachel Quenemoen	University of Minnesota
Stanley Rabinowitz	WestEd, Assessment & Standards Development Services Director
Christine Rath	Concord, Superintendent
Steve Sireci	University of Massachusetts Professor
Carina Wong	Consultant

Rhode Island

Name	Association/Affiliation
Sylvia Blanda	Westerly School Department
Bill Erpenbach	WJE Consulting, Ltd.
Richard Hill	Center for Assessment, Board of Trustees Chair
Jon Mickelson	Providence School Department
Joe Ryan	Consultant
Lauress Wise	HumRRO, President

Vermont

Name	Association/Affiliation
Dale Carlson	NAEP Coach, NAEO-Westat
Lizanne DeStefano	Bureau of Educational Research
Jonathan Dings	Boulder, Co. School District
Brian Gong	Center for Assessment, Executive Director
Bill Mathis	Rutland Northeast Supervisory Union, Superintendent of Schools
Bob McNamara	Washington West Supervisory Union, Superintendent of Schools
Bob Stanton	Lamoille South Supervisory Union, Assistant Superintendent of Schools
Phoebe Winter	Consultant

New Hampshire Item Review Committee
March 26, 27, & 28, 2007

First Name	Last Name	School/Association Affiliation	Position
Richard	Alan	Manadnock Regional High School	English Language Arts Teacher
Linda	Becker	Oyster River Middle School	English Language Arts and Special Education Teacher
Gina	Bell	Hillside Middle School	Mathematics Teacher
Gail	Bourn	Elm Street School	Reading/Writing Teacher
Meredith	Campbell	Nashua High School North	Geometry Teacher
Emily	Cicconi	Kearsarge Regional School District	Mathematics Special Education Teacher
Alison	Cook	Conway Elementary School	English Language Arts Teacher
Denise	Copley	Dover Middle School	Reading Specialist and Teacher
Deborah	Doscher	Pittsfield High School	Mathematics Teacher
Lisa	Dwyer	Merrimack Valley Middle School	Reading Teacher
Sarah	Eaton	Fall Mountain Regional School District	Mathematics Teacher
Linda	Ferland	Vilas Middle School	Mathematics Teacher
Judy	Filkins	Lebanon District	District Mathematics Coordinator
Jack	Finley	Franklin High School	English Language Arts Teacher
Megan	Fowler	Chesterfield School	Mathematics Teacher
Kelly	Gagnon	Gorham High School	Mathematics Teacher and Department Chair
Martha	Hardiman	Whitefield School	English Language Arts Teacher
Pam	Hopkins	North Hampton School	Mathematics Teacher
Ann	King	Hindsdale School District	Mathematics Teacher
Don	Lavalette	Unity School	English Language Arts Teacher
Leah	Macleod	Runlet Middle School	Secondary English and Adjunct Plymouth State University
Wendy	Mahoney	Barka Elementary	English Language Arts Teacher and Reading Specialist
Nancy	Monks	Amherst Middle School	Mathematics Teacher
Jeff	Nielson	Littleton High School	Mathematics Teacher
John	Potucek	Southside Middle	Mathematics Teacher
Stuart	Robertson	Pelham Elementary	Principal
Chris	Saunders	Nashua High North	English Language Arts Teacher
William	Sawyer	James Mastricola Upper Elementary School	Mathematics Teacher
Jean	Shankle	Milford High School	English Language Arts Teacher
Marilyn	St. George	Amherst Elementary School	Reading Specialist
Kim	Wheelock	Groveton High School	English Language Arts Teacher

Rhode Island Item Review Committee
March 26, 27, & 28, 2007

First Name	Last Name	School/Association Affiliation	Position
Kara	Alling	Woonsocket Middle School	English Language Arts Teacher
Brenda	Asplund	Aldrich Jr. High School	English Language Arts Teacher
Dawn	August	Barrington Middle School	Reading Teacher
Ruth Lynn	Butler	Forest Avenue School	Reading Coach
Sally	Caruso	Kickemuitt Middle School	Reaching Coach
Christina	Cipolla	William Davies Career and Technical High School	Reading Specialist
Jennifer	Cloud	South Kingstown High School	Mathematics Teacher
Ginny	Curtis	Ranger School	Classroom Teacher
Catherine	Dumsar	Coventry High School	Mathematics Teacher
Barbara	Fox	North Providence MS	Mathematics Teacher
Laurie	Fuge	Charlotte Woods Elementary	Mathematics Coach
Collette	Gagnon	Burrillville Middle	Mathematics Teacher
Meridee	Goodwin	Gallagher Middle School	Mathematics Teacher
Rosemary	Hayes	Providence School Department	Mathematics Coach
Melissa	Kerins	J.H. Gaudet Middle School	Title I Teacher, Mathematics Coach
Karen	Luth	West Glocester Elementary School	Mathematics Coach
Robert	Marley	Barrington High School	Mathematics Teacher
Cheryl Anne	McElroy	Alan Shawn Feinstein School at Broad Street	Classroom Teacher
Jeff	Miner	Toll Gate High School	Department Chair
Laurie	Mokaba	Fogary Memorial School	Mathematics Coach
Christine	Murphy	Johnston Public Schools	Mathematics Special Education Teacher
Donna	Pennacchia	Scituate High School	Mathematics Classroom Teacher
Tricia	Pora	Leo A. Savoie Elementary School	Classroom Teacher
Kathleen	Pora	Harris School	Reading Specialist
Morgan	Schatz (Nunn)	Woonsocket High School	English Language Arts Teacher
Kevin	Seekell	Knotty Oak Middle School	Mathematics Teacher
Donna	Sorensen	Westerly Middle School	English Language Arts Teacher
Diana	Tucker	Ponagansett Middle School	Mathematics Teacher
Catherine	Wallace	Flat River Middle	English Language Arts Teacher

Vermont Item Review Committee
March 26, 27, & 28, 2007

First Name	Last Name	School/Association Affiliation	Position
Carol	Amos	Twinfield Union	Teacher and Mathematics Coordinator
Judith	Augsberg	Otter Valley HS	Literacy Teacher
Julie	Bacon	Deerfield Valley	Teacher and Mathematics Leader
Renee	Berthiaume	North Country High School	Literacy Teacher
Jay	Burnell	Mt. Anthony Middle School	Literacy Teacher
Laurie	Camelio	Mt. Anthony Union High School	Mathematics Chair
Marion	Dewey	Flood Brook School	Teacher
Nancy	Disenhaus	Union 32	Literacy Teacher
Maggie	Eaton	Union 32	Literacy Leader
Kristy	Ellis	Orleans Essex North Supervisory Union	Literacy Coach
Sandy	Friezell	North Country High School	Literacy Teacher
Katherine	Gallagher	Fair Haven Union HS	Mathematics Teacher
Courtney	Giknis	Rutland City Middle School	English Language Arts Teacher
Margo	Grace	Vergennes Elementary	Teacher
Karen	Heath	Barre Supervisory Union	Literacy Coordinator
Beth	Hulburt	Barre Supervisory Union	Mathematics Coordinator
Rita	Lapier	Browns River MS	Mathematics Teacher
Julie	Longchamp	Williston Central School	Mathematics Teacher
Deb	March	Newport Town School	Teacher
Suzanne	McDevitt	Browns River Middle School	Mathematics Teacher
Carol	McNair	Camels Hump Middle School	Mathematics Teacher
Travis	Redman	Rutland Town Elementary	Mathematics Teacher
Laura	Sommariva	Colchester HS	Mathematics Teacher
Barbara	Spaulding	Hinesburg Elementary	Teacher
Penny	Sterns	Burlington Schools	Mathematics Coordinator
Cherrie	Torrey	Dothan Brook Elementary	Reading Teacher
Eric	Weiss	Lamoille Union MS	Mathematics Teacher
Loretta	Whitehead	Lynton Town School	Mathematics Teacher
Tara	Whitney	Colchester MS	Mathematics Teacher
John	Willard	Colchester HS	Mathematics Department Chair
Marilyn	Woodard	Mount Anthony High School	Literature Department Chair

Bias and Sensitivity Committee
March 26 & 27, 2007

New Hampshire

First Name	Last Name	School/Association Affiliation	Position
Eileen	Banfield	Merrimack High School	English Department Head
Diane	Bush	Jaffrey-Rindge Middle School	School Counselor
Clint	Cogswell	Concord	Elementary Principal
Sherry	Corbett	Merrimack High School	Special Education Director
Karen	Dow	Southwick School	Reading Specialist
Amanda	Eason	Alton Central School	English Teacher

Rhode Island

First Name	Last Name	School/Association Affiliation	Position
Adam	Flynn	Davies Career and Technical School	Classroom Teacher
Kim	Hicks	Kickemuitt Middle School	Mathematics Coach
Devida	Irving	Pawtucket School District	ESL Director
Karen	Lepore	George C. Calef School	Classroom Teacher
Mary	Surber	Portsmouth Middle	Special Education Teacher

Vermont

First Name	Last Name	School/Association Affiliation	Position
Jenn	Bostwick	Williston Central	Teacher for the Deaf
Maria	Lamson	Chelsea School	Librarian
Lynn	Murphy	Waits River Valley School	Science Teacher
Joyce	Roof	Woodstock Union MS	Literacy Teacher Leader
Robin	Roy	Vergennes HS	Speech-Language Pathologist

Bias and Sensitivity Committee
August 2007

New Hampshire

First Name	Last Name	School/Association Affiliation	Position
Karen	Dow	Southwick School	Reading Specialist
Christine	Leach	Nashua District	Counselor
Alexander	Markowsky	Franklin Hill District	School Psychologist
Ashley	Meehan	James Mastrocola Upper Elementary School	Teacher
Keith	Pfeiffer	Sanborn Regional District	Superintendent
Mary	Sohm	Londonderry High School	Special Education
Lisa	Witte	Pembroke Academy	Assistant Principal

Rhode Island

First Name	Last Name	School/Association Affiliation	Position
Christina	Cipolla	William Davies Career and Technical High School	Reading Specialist
Paula	Dillon	East Greenwich High School	Special Education Teacher
MariceAnn	Piquette	Thompson Middle School	English Language Literacy Teacher
Bob	Wall	Southern Rhode Island Collaborative	Director of Special Education

Vermont

First Name	Last Name	School/Association Affiliation	Position
Diane	Baker	Lothrop School	Reading Specialist
Colleen	Fiore	Long Trail School	Director of Special Services
Sharon	Hunt	Gilman Middles School	Special Education Teacher
Maria	Lamson	Chelsea	Librarian
Dan	Rosenthal	Mt. Anthony HS	Teacher
Kelly	Wedding	Bellows Falls High School	Head of Science Department

Bias and Sensitivity Committee
November 7 & 8, 2007

New Hampshire

First Name	Last Name	School/Association Affiliation	Position
Suzanne	Bergman	Winnisquam Regional Middle School	Enrichment Coordinator
Diane	Bush	Jaffrey-Rindge Middle School	School Counselor
Enchi	Chen	Farmington School District	English Language Literacy Teacher
Ashley	Meehan	James Mastrocola Upper Elementary School	Teacher
Mary	Sohm	Londonderry High School	Special Education Teacher
Lisa	Witte	Pembroke Academy	Assistant Principal

Rhode Island

First Name	Last Name	School/Association Affiliation	Position
Christina	Cipolla	William Davies Career and Technical High School	Reading Specialist
Paula	Dillon	East Greenwich High School	Special Education Teacher
Scott	Gray	Woonsocket Middle School	Special Education Teacher
Karen	Lepore	Johnston School District	Elementary Coach
MariceAnn	Piquette	Thompson Middle School	English Language Literacy Teacher
Kathleen	Pora	Harris School	Reading Specialist

Vermont

First Name	Last Name	School/Association Affiliation	Position
Maria	Lamson	Chelsea	Librarian
Todd	Mackenzie	U32	Teacher
Lynn	Murphy	Waits River Valley USD #36	Science Teacher
Robin	Roy	Vergennes HS	Speech-Language Pathologist

APPENDIX B—TABLE OF STANDARD TEST ACCOMMODATIONS

Table of Standard Test Accommodations

Any accommodation(s) utilized for the assessment of individual students shall be the result of a formal or informal team decision made at the local level. Accommodations are available to all students on the basis of individual need, regardless of disability status.

A. Alternative Settings

- A-1 Administer the test individually in a separate location
- A-2 Administer the test to a small group in a separate location
- A-3 Administer the test in locations with minimal distractions (e.g., study carrel or different room from rest of class)
- A-4 Preferential seating (e.g., front of room)
- A-5 Provide special acoustics
- A-6 Provide special lighting or furniture
- A-7 Administer the test with special education personnel
- A-8 Administer the test with other school personnel known to the student
- A-9 Administer the test with school personnel at a non-school setting

B. Scheduling and Timing

- B-1 Administer the test at the time of day that takes into account the student's medical needs or learning style
- B-2 Allow short supervised breaks during testing
- B-3 Allow extended time, beyond what is recommended, until in the administrator's judgment the student can no longer sustain the activity

C. Presentation Formats

- C-1 Braille
- C-2 Large-print version
- C-3 Sign directions to student
- C-4 Read test aloud to student (Mathematics and Session 1 Writing only) [1]
- C-5 Student reads test aloud to self
- C-6 Translate directions into other language
- C-7 Underline key information in directions
- C-8 Visual magnification devices
- C-9 Reduction of visual print by blocking or other techniques
- C-10 Acetate shield
- C-11 Auditory amplification device or noise buffers
- C-12 Word-to-word translation dictionary, non-electronic with no definitions (For ELL students in Mathematics and Writing only)
- C-13 Abacus use for student with sever visual impairment or blindness (Mathematics – Any Session)

D. Response Formats

- D-1 Student writes using word processor, typewriter, computer [2] (School personnel transcribes student responses exactly as written, into the Student Answer Booklet.)
- D-2 Student hand writes responses on separate paper. (School personnel transcribes student responses exactly as written, into the Student Answer Booklet.)
- D-3 Student writes using Brailler (School personnel transcribes student responses exactly as written, into the Student Answer Booklet.)
- D-4 Student indicates response to multiple-choice items. (School personnel records student responses into the Student Answer Booklet.)
- D-5 Student dictates constructed responses (Reading and Mathematics only) to school personnel. (School personnel transcribes student responses exactly as written, into the Student Answer Booklet.)
- D-6 Student dictates constructed responses (Reading and Mathematics only) using assistive technology. (School personnel transcribes student responses exactly as written, into the Student Answer Booklet.)

If an accommodation that is not listed above is needed for a student, please contact the state personnel for accommodations to discuss it.

E. Other Accommodations [3]

- E-1 Accommodations team requested other accommodation not on list and DOE approved as comparable
- E-2 Scribing the Writing Test (only for students requiring special consideration)

F. Modifications [4]

- F-1 Using a calculator and/or manipulatives on Session 1 of the Mathematics Test
- F-2 Reading the Reading Test
- F-3 Other

1. Reading the reading test to the student invalidates all reading sessions.
2. Spell and grammar checks must be turned off. This accommodation is intended for unique individual needs, not an entire class
3. Test coordinators must obtain approval for the accommodation from the Department of Education prior to test administration.
4. All affected sessions using these modifications are counted as incorrect.

APPENDIX C—APPROPRIATENESS OF THE ACCOMMODATIONS ALLOWED IN NECAP GENERAL ASSESSMENT AND THEIR IMPACT ON STUDENT RESULTS

The New England Common Assessment Program
New Hampshire + Rhode Island + Vermont

Appropriateness of the Accommodations Allowed in NECAP General Assessment and Their Impact on Student Results

1) Overview & Purpose:

To meet Federal peer review requirements for approval of state assessment systems, in the spring of 2006 New Hampshire, Rhode Island and Vermont submitted extensive documentation to the United States Department of Education on the design, implementation and technical adequacy of the New England Common Assessment Program (NECAP), a state level achievement testing program developed through a collaborative effort of the three states. In response to peer review finding, the states were required to submit additional documentation for a second round of peer review, including information on the use, appropriateness, and impact of NECAP accommodations. This report was prepared in response to the questions posed by the peer reviewers, and has been included in the 2007 NECAP Technical Report for other groups or individuals who may be interested in NECAP accommodation policies and procedures, and how well they have been working.

2) Report on the Appropriateness and Comparability of Accommodations allowed in statewide NECAP General Assessment

A. Who may use accommodations in NECAP assessment?

NECAP test accommodations are available to *all* students, regardless of whether or not a disability has been identified. Accommodations allowed are not group specific. For example, students in Title I reading programs, though not formally identified as "disabled" may still need extra time on assessments. Students with limited English proficiency sometimes break their arms and need to dictate multiple choice responses. Other students may need low vision accommodations even though they are not considered to be "blind". Before they are members of any subgroup, each student is first an individual with unique learning needs. NECAP assessment accommodations policy treats students in this way. The decision to allow *all* students to use accommodations, as needed, is consistent with prior research on best practice in the provision of accommodations (c.f., Elbaum, Aguelles, Campbell, & Saleh, 2004):

> "…the challenge of assigning the most effective and appropriate testing accommodations for students with disabilities, like that of designing the most

effective and appropriate instructional programs for these students, is unlikely to be successfully addressed by disability. Instead, much more attention will need to be paid to individual student's characteristics and responses to accommodations in relation to particular types of testing and testing situations." (pp. 71-87)

The NECAP management team believes strongly that a fair and valid path of access to a universally designed test should not require that a student carry a label of disability. Rather, much like differentiated instruction, accommodated conditions of test participation that *preserve the essential construct of the standard being assessed* should be supported for *any* student who has been shown to need these differentiated test conditions. This philosophy is consistent with the NECAP team's commitment to building a universally accessible test that provides an accurate measure of what each student knows in reading and mathematics content.

The following critical variables drive the process of providing NECAP accommodations:

1. The decision to use an accommodation for an individual student must be made using a valid and carefully structured team process consistent with daily instructional practice, and

2. The accommodated test condition *must preserve the essential construct being assessed*, resulting in a criterion-referenced measure of competency considered to be comparable to that produced under standard test conditions.

B. Are NECAP Accommodations Consistent with Accepted Best Practice?

NECAP provides a Table of Standard Test Accommodations that was assembled from the experience and long assessment histories of the three partner states. The NECAP Table of Standard Accommodations was created by establishing a three state cross-disciplinary consensus reached with key expert groups: special educators, ELL specialists, and reading, writing and mathematics content specialists from each of the partner states.

In addition, the work of various stakeholder and research groups with special instructional expertise was also considered. These sources included:

- Meetings with state advocacy groups for students with severe visual impairment or blindness,
- Meetings with state advocacy groups for students who with deafness or hearing impairment, and consultations with other research-based groups like:
- The American Printing House for the Blind, Accessible Tests Division,
- The National Center on Educational Outcomes (NCEO), and
- The New England Compact Group, who conducted federally-funded enhanced assessment research on accommodations, in partnership with Boston College (inTASC group) and the Center for Applied Special Technologies (CAST).

The NECAP cross-disciplinary team, consulting with these other specialists, chose accommodations that were commonly accepted as standard, well established on a national basis, and that were consistent with assessment practice across all the NECAP states. Each identified standard accommodation was chosen to support best educational practice as it is currently understood.

Examples of the impact on accommodations design resulting from consultation with the American Printing House for the Blind experts in accessible test development included the addition to our standard accommodations of the use of an abacus in place of scrap paper for students with severe visual impairment. Recent research from the American Printing House for the Blind also indicated that 20 pt. font was producing better outcomes for students using large print accommodations (Personal communication, October, 2004). Based on this input, the NECAP team decided to provide a minimum of 20 pt. instead of 18 point font for large print editions of the NECAP assessment. This, in turn, led to improved production and type setting for large print NECAP tests. Consultation with advocacy groups for the deaf and hard of hearing led to improved item design, in particular helping item developers avoid the unnecessary use of rhyming words and homophones, supporting a decreased need for sign language accommodations with this group.

Impact of WIDA Partnership on development of Accommodations for LEP students. An important relationship exists between NECAP assessment and the NECAP partner states' active membership in WIDA/ACCESS for ELL's Assessment Consortium. New understandings in the area of accommodations policy and practice are beginning to emerge. For example, we have learned that word-to-word dictionary accommodations are most effective when used by LEP students at an intermediate level of proficiency and are not advised for beginning LEP students. The NECAP Accommodations Manual reflects this. Community learning opportunities created through the WIDA partnership have set a strong and supportive context for long term benefit and mutual growth potential. A wise investment has been made by the NECAP group in this effort.

During the last 2 years, assessment leaders from all three NECAP states, as active partners in the WIDA consortium developing the new ACCESS for ELLs Test of English Language Proficiency, have collaborated in a cross-disciplinary team process to establish accommodations policy for this English language proficiency assessment. The ACCESS for ELLs accommodations team was composed of ESOL teachers, special educators, measurement specialists, and SEA assessment leaders. All three NECAP states took an active role and learned much from this process. This joint development effort opened dialog across ELL and special education accommodation groups and continues to support the ongoing review and improvement of both ACCESS and NECAP accommodations. The states are learning from each other, and with each new development cycle, are improving the accommodations system. The community of professional practice in this area is growing. Best practice understandings are expanding with our increasing experience and communication about the needs of LEP student groups. Specifically, we are learning about the

importance of academic language to English Language Learners who are attempting to take the state-level general content assessments. Accommodations specific to this academic language support issue are being explored and considered. We are finding that vocabulary lists, practice tests, computer-based read-alouds and other supports and accommodations are eliciting positive responses from our LEP students who take the state content assessments. This will be addressed in more detail in a later section.

C. How are NECAP Accommodations Structured?

Standard Accommodations: NECAP sorts standard accommodations into 4 categories (labeled A-D), which include: A) Alternative Settings, B) Scheduling and Timing, C) Presentation Formats, and D) Response Formats. School teams may choose any combination of standard (A-D) accommodations to use with any student so long as proper accommodation selection and usage procedure is followed and properly documented (see following subsection). Students who use standard accommodations on NECAP tests receive full performance credit as earned for the test items taken under these standard conditions. NECAP standard accommodations are treated as fully comparable to test conditions where no accommodation is used.

In addition, NECAP lists 2 additional categories of altered test conditions which require formal state level review and approval on a student by student basis. These special test conditions are: E) Other Accommodations and F) Modifications. (See: NECAP Accommodations, Guidelines and Procedures Training Manual, (2005), p 5, Available on state websites listed following references.)

Non-Standard Test Conditions – Review, Monitoring and Documentation of Preservation of the Intended Construct: "Other (E type) Accommodations" are accommodations without long or wide history of use that are not listed under the standard (A-D) categories. If schools wish to use accommodations that are not listed in A-D as standard, then they must send a formal written *Request for Use of Other Accommodations* to the State Department for review and approval for usage with an individual student. This request documents the team decision and describes fully the procedure to be used. Upon receipt by the SEA, these requests are thoroughly reviewed by state assessment content specialists together with special educators to determine if the accommodation proposed will allow performance of the essential constructs intended by the impacted test items. If the requested "other" accommodation is found to allow performance that will *not alter* the intended construct or criterion referenced standard to be assessed, then the school is issued a written receipt giving permission for use of this other accommodation as a standard accommodation for one test cycle. Schools are instructed on how to document the use of this approved "E) Other Accommodation" and the SEA monitors the process, ensuring that both school test booklets and state records accurately reflect the final test data. All "E) Other Accommodations" are approved in this way by the Department and, *if approved*, are treated as standard accommodations. Item responses completed under approved "E) Other" test conditions receive full credit as earned by the student.

If a requested "other" accommodation is found by the state review team to NOT preserve the intended construct, then the review team sends the school a receipt and notice that the requested change in test condition will be considered to be a test modification "F) Modification". All items completed under these test conditions will NOT receive performance credit. An example of a non-credited "F) Modification" would be any test condition where reading test passages, items, or response options are read to a student. State reading content specialists have determined that this change in a reading test condition does, in fact, alter the decoding construct being tested in all reading items. Therefore, reading items completed under this test condition would not be credited.

Use and approval of "E) Other Accommodations" are carefully monitored by the state. If any school claims use of an "E) Other Accommodation" that has not received prior state review and documented approval, then the test data documentation is similarly flagged to reflect that an F) Modification was instead provided. This flagged situation is treated as a non-credited test modification and the items impacted are invalidated. Further, any sections of the test completed under "F) Modification" conditions are later documented in student reports as not credited due to the non-standard and non-comparable test administration conditions used.

D. How does the NECAP Structure Guide Appropriate Use of Accommodations by Schools?

In 2005, New Hampshire, Rhode Island, and Vermont collaborated on the *NECAP Accommodations Guidelines and Procedures Training Manual*. The guide was disseminated through a series of regional test coordinator's workshops, as well as additional professional development opportunities provided by the individual states, and was also posted on each states website. This tool was designed to provide schools with a structured and valid process for decision making regarding the selection and use of accommodations for students on statewide assessment. Prior studies have outlined assessment guidelines that maximize the participation of students with disabilities in large-scale assessment. The National Center on Educational Outcomes (NCEO), in Synthesis Report 25 (1996), presented a set of criteria that states should meet in providing guidelines to schools for using accommodations (pp. 13-14, and 25). The NCEO recommendations figured prominently in preparation of the NECAP accommodations guide.

The *NECAP Accommodations Guidelines and Procedures Training Manual* (2005) meets all seven of the criteria established by NCEO as follows:

1. The decision about accommodations is made by a team of educators who know the student's instructional needs. NECAP goes beyond this recommendation and requires that the student's parent or guardian also be part of this decision team, (NECAP Accommodations Manual, pp. 2-3, and 20-22).

2. The decision about accommodations is based on the student's current level of functioning and learning characteristics. (Manual, pp20-22).
3. A form is used that lists the variables to consider in making the accommodations decisions, and that documents for each student the decision and reasons for it. (Manual, pp. 20-22).
4. Accommodation guidelines require alignment of instructional accommodations and assessment accommodations. (Manual, pp2 and 20-22).
5. Decisions about accommodations are not based on program setting, category of disability, percent time in the mainstream classroom (Manual, p.15, p.20-22).
6. Decisions about accommodations are documented on the student's IEP or on an additional form that is attached to the IEP. (Manual, pp.2, 15, and 20-22).
7. Parents are informed about accommodation options and about the implications for their child (1) not being allowed to use the needed accommodations, or (2) being excluded from the accountability system when certain accommodations are used, (Manual pp 3 and 20-22).

As described above**,** NECAP states use a highly structured process for the review, approval, and monitoring of requests by schools for the use of other (non-standard) accommodations for individual students. As described in section B, above, the NECAP Accommodations Manual provides a Table of Standard Accommodations each year. The manual provides two structured decision making worksheets (pp. 20-22) to guide the decision process of educational teams. One worksheet guides the selection of standard accommodations; the second provides guidance on the selection of other accommodations. The manual contains information on the entire decision making process. In addition, the manual provides detailed descriptions and research-based information on many specific accommodations.

Ongoing Teacher Training and Support: Throughout each academic year, several teacher workshops on planning and implementing accommodations are offered at multiple locations regionally in each of the three states to teams of educators. In the spring of 2005, prior to the launch of the first NECAP assessment, a series of introductory statewide 2-hour workshops in accommodations administration was offered in multiple locations. Each year thereafter, in late summer prior to the administration of the NECAP tests, a series of accommodations usage updates is offered as part of the NECAP Test Administration Workshop series; five regional workshops are offered in each state. Additionally, each state's Department of Education has consultants who are available to provide individualized support and problem solving, as well as small and large group in-service for schools. Finally, the DOE assessment consultants work directly with a variety of statewide groups and organizations to promote the use of effective accommodations, and to gather feedback on the efficacy of the NECAP accommodation policies and procedures. These include University-based Disability Centers, statewide parent advocacy organizations, organizations representing individuals with vision and hearing disabilities. Finally,

each state has systems in place to provide schools with individualized support and consultation: New Hampshire employs two distinguished special field educators who, by appointment and free of charge, provide onsite training and support in alternate assessment and accommodations strategies. Rhode Island has an IEP Network that provides on-site consultation with schools on a variety of special services topics including planning and implementing assessment accommodations. Vermont has a cadre of district-level alternate assessment mentors who provide a point of contact for disseminating information, and who are also available in schools and school districts for intensive consultation related to the assessment needs of individual students.

Monitoring of the Use of Accommodations in the Field: Each year during the NECAP test window, the DOE content specialists schedule a limited number of on-site visitations to observe test administration as it is occurring in the schools**.** State capacity to provide such direct monitoring during the test window is limited, but such monitoring is conducted during each test window and observers report observations directly to the state assessment team. Additional on-site accommodations monitoring is provided by district special education directors and the NECAP test coordinators. Both of these groups also receive training each year. Throughout each school year, program review teams from the DOEs' special education divisions conduct on-site focused monitoring of all special education programs. These comprehensive visits include on-site monitoring of the use of accommodations for students who have Individualized Educational Programs (IEPs).

E. Are NECAP Accommodations Consistent with Recent Research Findings?

The NECAP development team has attempted to learn from the research on accommodations, but this has not been a simple matter. In 2002, Thompson, Johnstone, and Thurlow concluded in their report on universal design in large scale assessments that research validating the use of standard and non-standard accommodations has yet to provide conclusive evidence about the influence of many accommodations on test scores. In 2006, Johnstone, Altman, Thurlow, & Thompson published an updated review of 49 research studies conducted between 2002 and 2004 on the use of accommodations and again found accommodations research to be inconclusive. They noted the similarity to past findings from NCEO summaries of research (Thompson, Blount & Thurlow, 2002). The authors of the 2006 review state:

> "Although accommodations research has been part of educational research for decades, it appears that it is still in its nascence. There is still much scientific disagreement on the effects, validity, and decision-making surrounding accommodations." (p 12)

However, a frequently cited research review by Sireci, Li, & Scarpati, (2005) documented evidence of support for the accommodation of providing extended time. This accommodation is one of the most frequently used standard NECAP accommodations. Extended time accommodations appeared to hold up best under the

interaction hypothesis for judging the validity of an accommodation. In a 2006 presentation addressing lessons learned from the research on assessment accommodations to date, Sireci and Pitoniak, (2006), concluded that, in general, "accommodations being used are sensible and defensible." They replicated their prior finding that the extended time accommodation seems to be a valid accommodation and noted that many other accommodations have produced less convincing results. They noted that oral or read-aloud accommodation for math appears to be valid, but that a similar read-aloud accommodation for *reading* involves consideration of specific construct changes which threaten score comparability. These findings are also consistent with and support the NECAP accommodation policy of allowing the read-aloud accommodation for mathematics, but not allowing this accommodation for reading tests. Despite the inconclusive and conflicting current state of accommodations research, findings seem to be emerging that do, in fact, provide validation for some of the most frequently used NECAP accommodations: the extended time and mathematics read-aloud accommodations.

Accommodations for English language learners. In a presentation on the validity and effectiveness of accommodations for English language learners with disabilities, Abedi (2006) reported that students who use an English or bilingual dictionary accommodation (word meanings allowed) may be advantaged over those without access to dictionaries and that this may jeopardize the validity of the assessment. Abedi argues persuasively that linguistic accommodations for English language learners should *not* be allowed to alter the construct being tested. He also argues that the language of assessment should be the same language as that used in instruction in the classroom – otherwise student performance is hindered. NECAP assessment policy is consistent with both of these findings: ELL students may use word-to-word translations as linguistic accommodation support, but may not use dictionaries with definitions provided. Abedi's research supports this decision. Also NECAP assessment items are not translated into primary languages for ELL students. This, too, is consistent with classroom practice in the NECAP states and is supported by the current literature.

At the same conference referenced just above, Frances (2006), presented findings from a meta-analysis in which he compared the results of eleven studies of the use of linguistic accommodations provided for ELL students in large scale assessments. In his presentation, given at the LEP Partnership Meeting in Washington, DC, he noted that *no significant differences in student performance were observed for 7 of the 8 most commonly provided linguistic accommodations.* Although Frances was not recommending its use, the *only* linguistic accommodation that showed any significant positive effect on the performance of ELL students was an accommodation allowing the use of an English dictionary or glossary during statewide assessment. This is the very same accommodation that Abedi (2006) recommends *against* using because it violates intended test constructs. As noted above, in NECAP assessment, the use of word-to-word translations is an allowed standard linguistic accommodation. However, the use of an English dictionary with glossary *meanings is not* an allowable standard accommodation. It is the position of the NECAP reading content team that

allowing *any* student to use a dictionary with definitions or a glossary of meanings violates the vocabulary and comprehension constructs intended in the NECAP reading test and would invalidate test results. For this reason, NECAP does not allow this linguistic accommodation.

As reported by Frances, analysis of the remaining 7 linguistic accommodations typically allowed for ELL students showed *no significant positive effect* on test performance. These included: bilingual dictionary use, dual language booklets, dual language questions and read-aloud in Spanish, extra time to test, simplified English, and offering a Spanish version of a test. Despite the lack of positive effects observed for these other linguistic accommodations to date, NECAP does provide a number of linguistic supports for ELL students. One of these linguistic supports includes: employing the universal design technique of simplifying the English in *all* test items. Review and editing of test items for language simplicity and clarity has been a formal part of the annual process of test item development and review since the inception of the NECAP. In addition to word-to-word translations, a number of other standard linguistic accommodations are allowed in NECAP testing to provide a path of access for ELL students to show what they know and can do in reading and mathematics. Standard linguistic accommodations permitted by NECAP include: allowing mathematics test items to be read aloud to the student, allowing students to read aloud to themselves (if bundled with an individual test setting), translation of test directions into primary language, underlining key information in written directions and dictation/ scribing of reading and math test responses. NECAP assessments provide linguistic access for students who are English language learners.

As noted earlier, a number of studies have shown some positive effect of the use of the extended time and read-aloud accommodations for students in general. As ELL students continue to gain proficiency in English, they may also increasingly benefit from these accommodations. More research is needed to clarify how states can most appropriately support ELL students to show us what they know and can do.

NECAP Supported Research Studies: Through the New England Compact Enhanced Assessment Project (2007), the NECAP states have completed a number of accommodations and universal design research studies. These studies have shed additional light on the appropriateness of existing standard accommodations and have helped to inform the development of new accommodations and improved universal design of assessment. Under the Enhanced Assessment Grant, in joint partnership with: the inTASC group of Boston College, the Center for Applied Special Technologies (CAST), the state of Maine, and the Educational Development Center, Inc., the NECAP states supported research studies on accommodations and universal design in four distinct areas. These studies, summarized below, are described more fully in the appendix to this report:

- **Use of computer-based read-aloud tools.** NECAP supported a study of 274 students in New Hampshire high schools. This study, Miranda, H., Russell, M., Seeley, K., Hoffman, T., (2004), provided evidence that computer–based read

aloud accommodations led to improved content access and performance of students with disabilities when taking mathematics tests.

As direct result of this study, New Hampshire was able to build and pilot a new computer-based read aloud tool that is now under development for use with NECAP assessments for all three NECAP states. Following this New Hampshire pilot of the new computer-based read aloud tool on the state high school assessment, the New Hampshire Department of Education conducted a focus group study with participating students from Nashua North High School. The results of this focus group (May 17, 2006) are available from the New Hampshire Department of Education. One of the primary findings from this focus group was the strong impact of having experienced the read-aloud in practice test format prior to actual testing. Experience with this tool *prior to testing* appeared to be very important for student performance. High school students indicated a *very strong* preference for computer-based read aloud over the same accommodation provided by a person. Both groups of students, those with limited English proficiency and those with disabilities consistently reported that they were able to focus much more clearly on the math content (not just the words) than in prior math tests they had taken without this accommodation. Based on student report, use of this read-aloud seemed to improve content access for these students. The ability to benefit from the individual work of each of the three NECAP states is a major benefit of the tri-state partnership.

- **Use of computers to improve student writing performance on tests.** Another research study conducted by Higgins, J., Russell, M., & Hoffmann, T., (2004), studied 1000 students from the three states to examine how the use of computers for writing tests affected student performance. The study found that minority girls tended to perform about the same whether using a computer or pencil-and-paper to provide written responses. However, *all other groups*, on average, tended to perform better when using a computer to produce written responses. A minimum degree of keyboarding skill correlated with improved performance. Lack of keyboarding skill produced results that did not significantly differ from pencil-and–paper responding and therefore, appeared to 'do no harm'. As a result, NECAP states entered into talks to determine how a computer based response might be more fully supported in future versions of the assessment. The study suggested that a minimum number of words typed accurately per minute of 18-20 was the recommended threshold to obtain benefit from this accommodation. This finding has been incorporated into NECAP training and support activities. At the present time, NECAP allows use of a word processor to produce written test responses as a standard accommodation on all NECAP content tests. The research supports this practice.

- **Use of Computers for Reading Tests**. A third study conducted by Miranda, H., Russell, M., & Hoffmann, T., (2004), examined how the presentation of reading passages via computer screen impacted the test performance of 219 fourth grade students from eight schools in Vermont. This study found no significant

differences in reading comprehension scores across the 3 (silent) presentation modes studied: 1. Standard presentation on paper, 2. On computer screen with use of a scrolling feature, and 3. On computer with passages divided into sections presented as whole pages without the scrolling feature. Results from this study were not conclusive, but some trend data suggested that the scrolling presentation feature may disadvantage many students, especially those with weaker computer skills. The majority of students indicated an overall preference for computer-based presentation over pencil-and-paper. As other research studies, previously cited, continue to show that read-aloud accommodations are generally effective, it can be expected that pressure to offer computer-based read-alouds involving text presentation will increase. Additional research in this area may help shed important light on the most effective ways to provide this useful accommodation. (See also: Higgins, J., Russell, M., & Hoffmann, T., (2004).)

- **Use of Computer-Based Speak-Aloud Responses to Short Answer Items**. The states' enhanced assessment grant also supported a study by Miranda, H., Russell, M., Seeley, K., Hoffman, T., (2004) that looked at the feasibility and effectiveness of using a computer to transcribe spoken responses into written text in response to short answer test items. This was considered as a possible linguistic accommodation for use with English language learners in reading and mathematics tests. Unfortunately, this study found that it is not yet feasible to use computers to record student's verbal responses to short-answer items. A variety of technical problems occurred and students were not comfortable in speaking to the computer. The researchers concluded that, with existing technology limitations, use of this kind of computer based accommodation may not be feasible for some years.

F. What evidence has the state gathered on the impact and comparability of accommodations allowed on NECAP test scores?

Direct and Immediate Score Impact. First, as a matter of policy, there is a direct and immediate impact on NECAP test scores for students when standard accommodations (accepted *and credited* as comparable) vs. non-standard accommodations (not accepted *and not credited* as comparable) are used during test administration. The student performance score is significantly reduced for each subtest where test items and the constructs they were designed to measure have been modified by use of a non-standard accommodation. Sessions with modified items receive no credit in the student total score for that content area. If the entire reading test is read to a student, the student will earn 0 points in that content area. If only certain sessions of the reading test are read to the student, then only the score of those sessions will be impacted, but this will result in a lower overall reading content score.

Empirical bases for Comparability of NECAP Test Scores Obtained from Accommodated vs. Non-Accommodated Test Conditions: During the NECAP Pilot Test in 2004, differential item functioning (DIF) analyses were conducted on the use of accommodations by various student subgroups. In December 2006, the

NECAP Technical Advisory Committee (TAC) reviewed the use of these DIF analyses and discussed long range planning for ongoing review of the use of accommodations in NECAP assessment. There was consensus among TAC members that the current use of DIF analyses for evaluation of accommodation use allows very limited inferences to be made therefore is of minimal practical value to the states. Other general methods of organizing and reviewing accommodations data and performance outcomes should be developed for states to employ.

A NECAP TAC subgroup was formed to consider and respond to the following question: What should NECAP states be doing at this stage in our development to review use, appropriateness, design, etc, of the NECAP Accommodations and related policy & guidelines? What information and processes will help us learn, clarify & communicate how, why, and when to use what accommodations? The results of this December 2006 TAC accommodations workgroup are available on each of the three states' websites. In summary, the TAC workgroup recommended 5 categories of activity for the NECAP states:

1. Given what states have learned from initial implementation and recent research, they should review, revise, describe and more fully document NECAP Accommodations Policies and Guidelines. This should be part of an ongoing review process.

2. Explore available research on questionable or controversial accommodations. Document this review and revise where indicated.

3. Transparency of reporting should be examined. There was group consensus that the use of accommodations during assessment should be fully disclosed, and thereby made transparent in the reporting process. NECAP states should work to sort out this aspect of reporting policy and determine where and how to report what aspects of accommodation usage to parents and to the public at large.

4. States need to further address monitoring of accommodation usage. Find ways to improve the quality of district/school choices in the selection and use of accommodations for students. Strategies that take limited state resource capacity into account must be considered. The issue is fundamentally one of putting improved quality control processes in place in the most efficient, cost effective ways. Several resources currently under development may assist the states in this effort. One of these resources in already being developed in the OSEP funded General Supervision Grant to one of the NECAP states. This grant will develop digitized video clips illustrating proper ways to provide certain accommodations, especially for students with severe disabilities. Creation of this video tool may enhance state capacity to provide and distribute effective training to districts and improved local monitoring of day to day use of accommodations for both instruction and assessment.

5. Available data needs to be mined and organized on the current use of accommodations in NECAP testing. Usage and outcomes for various subgroups

should be examined. DIF analyses may not be as useful in this regard as other types of carefully planned descriptive comparisons.

Some research concerns were also identified. How do states differentiate between an access issue for a student – where the student has skills they cannot show as opposed to a lack of opportunity to learn or lack of skill development? This issue appears repeatedly in a number of research studies reviewed. It is not a simple matter to differentiate between these situations. One indicates a need for an assessment design change. The other indicates a need for instructional change. Research to help sort this out should be supported.

Test Access Fairness as One Kind of Evidence for Comparability:

NECAP states have made a commitment to work with stakeholders representing various groups of students who typically use accommodations or who may benefit from improved universal assessment design. The feedback received from these stakeholder groups is a valuable source of information and ideas for continued improvement of our assessment program.

NECAP consults regularly with experts in accessible test design at the American Printing House for the Blind in Lexington, KY (Allman (2004), and Personal Communications: (October 2004), (September 2006)). This group has informed NECAP management about the recent research in the use of larger print fonts and the abacus as standard accommodations for students with severe visual impairments. This consultation has directly impacted test development and has resulted in positive feedback from the stakeholders who represent students with visual impairment in our states.

In addition, all three states work closely with stakeholders representing students with hearing impairment and deafness to help inform test item development and improved access to test items for students with vision or hearing impairments. An example of this commitment is contained in two focus group reports prepared by the New Hampshire Department of Education; a February 2006 focus group report from NH Teachers of the Visually Impaired (TVI) on NECAP Test Accessibility for Students with Severe Visual Impairment and a May 2006 report on the performance of English language learners and students with disabilities for the on the Grade 10 New Hampshire Educational Improvement & Assessment Program (NHEIAP). The latter of these two reports addressed computer-based read aloud accommodation for mathematics assessment. *(Both Focus Group Reports are available from the New Hampshire Department of Education).*

NECAP states are also pursuing other grant–funded research to support and explore development of new comparable accommodations that might provide meaningful access to general assessment at grade level for students who currently take only alternate assessments based on alternate achievement standards.

G. Summary of the Evidence - Are NECAP Accommodations Appropriate and Do They Yield Reasonably Comparable Results?

- Yes, it is clear from the evidence cited in sections 2 A, B, C and D above, that NECAP accommodations are highly consistent with established best practice.

- For accommodations with a consistent research basis available, research evidence suggests that continued use of the following accommodations in NECAP testing is valid:
    - Extended time accommodation
    - Mathematics Read-Aloud Accommodation
    - Word-to-word translation for ELL students
    - Use of Computer-Based Read-Aloud Tools (for mathematics)
    - Use of Computers to write extended test item responses (NECAP accommodation -D1)

- Preliminary research evidence from The New England Compact Enhanced Assessment Project, presented above (2004), does not appear to support improved student performance with NECAP accommodation D6- Using assistive technology (specifically speech-to-text technology) to dictate open responses via computer. However, if consistently used in classroom settings for students with severe access limitations, sufficient familiarity may be gained to make this a viable accommodation for certain students. Further review of this accommodation by the NECAP management team is recommended.

- Early focus group results (NHDOE, May 17, 2006) and trial experience with computer-based read aloud testing is very promising and merits further research.

- NECAP Focus group responses (NHDOE, February 22, 2006) from Teachers of the Visually Impaired support existing NECAP accommodations and are helping inform improvement in other aspects of universal design of items, test booklets and materials.

- Structured DIF analysis of the performance of NECAP accommodations is in an early and inconclusive phase. Currently, development of other increasingly useful accommodations data analysis designs is going forward and is supported by all NECAP states. The NECAP Technical Advisory Committee (TAC) will continue to explore this line of inquiry in the future.

- As each yearly cycle of large scale NECAP DIF item analysis allows the group to gain insight and to clarify questions, the design of future DIF data collection may be refined to more fully inform item selection to improve the fairness and accessibility of NECAP assessment items. This exploration is highly valued by the NECAP management group and will continue to be supported. Limitations in this kind of statistical analysis will continue to occur when sample sizes are too small to draw reliable or useful conclusions.

- NECAP states are developing an ongoing review and improvement process for the NECAP accommodations policy and procedures.

Concluding Comment:

NECAP Commitment to Universal Design and Continuous Improvement. The NECAP management group has made a solid commitment to continuously improve and strengthen the universal design of our assessment instruments. As the quality of universal design elements of the NECAP assessment continues to improve, it is conceivable that the number of students who need to use accommodations may decline. In fact, this is a worthy goal. Although this would cause diminishing sample sizes and challenges for accommodations analysis, declining use of accommodations due to improved universal accessibility in overall test design would be viewed as a very positive outcome.
Since its inception in 2003, the NECAP group has supported and funded research and development in accommodations policy and procedures. This is evidenced by the many research activities generated through the multiple Enhanced Assessment Grants of the three participating states referenced earlier in this report.

The NECAP group has shown leadership in obtaining funding and actively supporting accommodations and related research in a number of areas:

1. Describing the performance of students in the assessment gap and exploring alternate ways of assessing students performing below proficient levels (see: *New England Compact Enhanced Assessment Project: Task Module Assessment System- Closing the Gap in Assessments*),
2. Research in the design and use of accommodations *(New England Compact Enhanced Assessment Project: Using Computers to Improve Test Design and Support Students with Disabilities and English-Language Learners),*
3. The relationships among and between elements of English language proficiency test scores, academic language competency scores, and performance on NECAP academic content tests *(Parker, C. (2007)),*
4. Defining and developing technical adequacy in alternate assessments *(NHEAI Grant),*
5. Developing improved accommodations that will foster increased participation in general assessment for students currently alternately assessed *(Jorgensen & McSheehan, (2006)), and*
6. All three NECAP states are partners in the ongoing development of the new *ACCESS for ELLs™* Test of English Language Proficiency. The Vermont Test Director is a member of the Technical Advisory Committee

The NECAP Development Team has been very busy. These efforts are ongoing and will continue. We are committed to the long-term development of a well validated and highly accessible assessment program that meets the highest possible standards of quality. More importantly, we are committed to the establishment of an assessment system that effectively supports *the growth of each and every one* of our students.

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The New England Compact Enhanced Assessment Project: Using Computers to Improve Test Design and Support Students with Disabilities and English-Language Learners. ©1994-2007 by Education Development Center, Inc. All Rights Reserved. http://www.necompact.org/research.asp

The New England Compact Enhanced Assessment Project: Task Module Assessment System. ©1994-2007 by Education Development Center, Inc. All Rights Reserved. http://www.necompact.org/research.asp

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Additional Resources:

Rhode Island Department of Education, NECAP Assessment Website: http://www.ridoe.net/assessment/NECAP.aspx

Vermont Department of Education, NECAP Assessment Website: http://education.vermont.gov/new/html/pgm_assessment.html

New Hampshire Department of Education, NECAP Assessment Website: http://www.ed.state.nh.us/NECAP

APPENDIX D—EQUATING REPORT

EQUATING REPORT

NEW ENGLAND COMMON ASSESSMENT PROGRAM 2007-2008 EQUATING RESULTS

Final Report January 2008

NEW ENGLAND COMMON ASSESSMENT PROGRAM
2007-2008 EQUATING RESULTS

The purpose of this document is to summarize the equating results obtained from Measured Progress for NECAP. Presented in this report are various program summary statistics and specific results related to the equating study.

The results of this report are organized as follows:

I. Aggregate Results
   a. Percentage of students by performance level categories
   b. Raw Scores Associated with Cutpoints
   c. Calibration Report
   d. Equating Report
   e. Summary of Psychometric QC Activities
II. For each grade content:
   a. Δ Plot, *b* plot, *a* plot, TCCs, SS distributions, and Lookup Tables
   b. Rescore Analysis Results
   c. Content and item type distribution of equating items
   d. Classical test theory statistics and item specifications for equating item
   e. Tabled delta analysis results

The final results of this equating will be included as part of the 2007-2008 NECAP Technical Manual. If requested Measured Progress will distribute and/or present this report at the next NECAP Technical Advisory Committee Meeting.

Equating was not required for Writing Grades 5 and 8 because a pre-equated solution was used for the forms administered. Results for these two grade/contents are included in Sections I.a and I.b, and the lookup tables as well as the TCCs and Scaled Score distribution are provided in Section II.a. Additionally, the Grade 11 program is only included in part of the Calibration Report, and other results can be calculated only after standards have been set.

SECTION I.A

NECAP

PERCENTAGE OF STUDENTS BY PERFORMANCE LEVEL CATEGORIES

SECTION I.B

NECAP

RAW SCORES ASSOCIATED WITH CUTPOINTS

Table I.b.1

		SbP/PP		PP/P		P/PwD		Max Points	
Grade	Content	2007	2008	2007	2008	2007	2008	2007	2008
3	Math	26	29	38	40	54	56	65	65
4	Math	26	26	37	38	54	55	65	65
5	Math	20	21	29	28	50	47	66	66
6	Math	19	20	28	28	49	47	66	66
7	Math	19	18	26	27	44	45	66	66
8	Math	18	17	25	27	45	48	66	66
3	Reading	21	22	31	31	46	44	52	52
4	Reading	21	22	31	31	43	43	52	52
5	Reading	18	18	27	27	39	38	52	52
6	Reading	20	20	29	28	42	39	52	52
7	Reading	19	19	29	28	42	42	52	52
8	Reading	21	23	31	33	44	44	52	52
5	Writing	18	18	22	22	27	26	37	37
8	Writing	19	18	25	24	31	30	37	37

Note 1: Tan shading indicates lower raw scored needed, blue shading indicates higher raw score needed, while no shading indicated any difference between years.

Note 2: The values presented in Table I.b.1 are not the cutscores per se. The cutscores are defined on the θ metric and do not change from year to year. The values in this table represent the raw scores associated with the cutscores, and these values are found via a TCC mapping.

SECTION I.C

NECAP
Calibration Report

NECAP
Calibration Report

PARSCALE 4.1 was used for all analyses. All command files were set up in a way that all general settings were identical to last year. For example the calibration statement read:

```
CAL GRADED,LOGISTIC,CYCLE=(100,1,1,1,1),TPRIOR,SPRIOR,GPRIOR;
```

Thus, a graded response model was used for the polytomous items, and a 3PLM was used for all MC items. For dichotomously scored short answer items the lower asymptote of the ICC was set equal to 0.0 (i.e., a 2PLM was used). The logistic version of the IRT models was used, and default priors were used for all parameter estimates. Each item occupied its own unique block in the command file; thus, allowing the threshold parameters to vary across the polytomously scored items.

Table 1 shows the number of Newton cycles to conversion for each grade/content. The resulting parameters demonstrated excellent model fit.

Table I.c.1
Number of Cycles to Convergence

Grade/Content	Cycles
MAT03	59
MAT04	47
MAT05	74
MAT06	61
MAT07	62
MAT08	67
MAT11	94
REA03	57
REA04	52
REA05	50
REA06	52
REA07	47
REA08	50
REA11	50

For some items the guessing parameter was not fully estimated during the IRT calibration. This is not at all unusual as difficulty in estimating the c-parameter has been well documented in the psychometric literature. After carefully studying these items we found that fixing the lower asymptote to a value of c=0.0 resulted in stable and reasonable estimates for both the *a* and *b* parameters (relative to CTT statistics). This

technique also produced item parameters that resulted in excellent model fit (comparing theoretical ICCs to observed ICCs).

Using a delta analysis procedure to evaluate equating items very few items were removed from the equating analysis. With generally only about 1 item being removed for each grade/content these results are what we have found typically occurs. Results from this analysis are included in Section II of this report. Items were also flagged for a variety of other reasons such as: IRT statistical criteria, copy match, or actions taken during IRT calibration. This created our Table I.c.2, which includes final actions taken on these items.

Table I.c.2
Items Studied and/or Requiring Intervention
During the IRT Calibration / Equating Process

IREF	Content	Grade	Form	Pos	Reason	Action
255679	MAT	03	00	2	c parameter	c = 0.00
255902	MAT	03	00	48	c parameter	c = 0.00
205957	MAT	03	06	15	delta analysis	removed from anchor
255673	MAT	04	00	27	c parameter	c = 0.00
232594	MAT	04	04	7	CM: Name change	none
227035	MAT	04	03	55	delta analysis	removed from anchor
225307	MAT	05	00	22	c parameter	c = 0.00
255226	MAT	05	00	48	c parameter	c = 0.00
203949	MAT	05	07	61	CM: Position change	none
225345	MAT	06	01	51	delta analysis	removed from anchor
225267	MAT	06	03	28	delta analysis	removed from anchor
224793	MAT	07	05	49	c parameter	c = 0.00
199947	MAT	07	05	51	c parameter	c = 0.00
255899	MAT	07	08	19	a parameter	cslope
234459	MAT	07	02	16	delta analysis	removed from anchor
256309	MAT	08	06	36	delta analysis	removed from anchor
259808	MAT	11	00	6	ALL STATS	
255216	REA	03	00	38	c parameter	c = 0.00
225242	REA	03	03	46	ALL IRT	initial values / no EQ
255334	REA	03	02	50	delta analysis	removed from anchor
255618	REA	04	00	29	ALL IRT	initial values
230656	REA	05	00	10	c parameter	c = 0.00
201396	REA	05	00	13	c parameter	c = 0.00
230676	REA	05	00	16	c parameter	c = 0.16
256253	REA	05	00	37	c parameter	c = 0.00
256259	REA	05	00	39	c parameter	c = 0.00
256368	REA	05	02	42	CM: Position change	none
226599	REA	05	02	18	delta analysis	removed from anchor
256435	REA	06	00	32	c parameter	c = 0.00
256316	REA	06	00	36	c parameter	c = 0.00
204479	REA	06	02	18	delta analysis	removed from anchor
255924	REA	07	00	16	c parameter	c = 0.00
255962	REA	07	00	27	c parameter	c = 0.00

IREF	Content	Grade	Form	Pos	Reason	Action
201554	REA	07	00	37	c parameter	c = 0.00
201561	REA	07	00	40	c parameter	c = 0.00
255823	REA	08	00	25	c parameter	c = 0.00
255824	REA	08	00	26	c parameter	c = 0.00
255829	REA	08	00	27	c parameter	c = 0.00
199616	REA	08	00	39	c parameter	c = 0.00
199617	REA	08	00	40	c parameter	c = 0.00
204095	REA	08	01	43	delta analysis	removed from anchor
258651	REA	11	00	13	c parameter	c = 0.00
258724	REA	11	00	18	c parameter	c = 0.00
258476	REA	11	00	22	c parameter	c = 0.00
258475	REA	11	00	23	c parameter	c = 0.00
258479	REA	11	00	24	c parameter	c = 0.00
258611	REA	11	00	30	c parameter	c = 0.00
258541	REA	11	01	37	c parameter	c = 0.00
258510	REA	11	01	47	c parameter	c = 0.00

The number of items identified in Table I.c.2 is very typical for a program such as NECAP, and the actions taken are not outside of the normal routines used at Measured Progress. This list is intended to be an exhaustive list of actions taken during the IRT calibration and equating process and our recommendation is that no further action is required.

SECTION I.D

NECAP

EQUATING REPORT

NECAP
Equating Report

In order to report both student performance and to characterize items onto last year's scale a statistical equating procedure was used. Namely, the Stocking & Lord procedure was used for the NECAP program. The equating procedures done this year for NECAP were identical to those used last year, and the same software system was used. In particular the software program STUIRT was used to conduct this portion of the analysis. The STUIRT system was developed by researchers at the University of Iowa CASMA program and can be found at: http://www.education.uiowa.edu/casma/.

The resulting transformation constants using the Stocking & Lord procedure are presented in Table I.d.1. These values are very typical for this procedure and suggests that none of the equatings performed for NECAP resulted in dramatic changes in item parameters from one year to the next.

Table I.d.1
Stocking & Lord
Transformation Constants

Grade	Subject	A	B
3	Math	1.013353	0.11305
4	Math	1.034457	-0.08558
5	Math	0.990527	0.126522
6	Math	1.064973	0.130143
7	Math	0.998032	0.111462
8	Math	0.949159	0.133506
3	Reading	1.031863	-0.07915
4	Reading	0.976459	0.172988
5	Reading	0.993657	0.046554
6	Reading	1.041473	-0.04252
7	Reading	1.041472	0.06933
8	Reading	1.095715	-0.06115

In all 12 equatings conducted for NECAP the analyses finished with a termination code of 1.0 (on a 1-5 scale with 1.0 being the best and 5.0 being a less optimal solution). This indicates that for the NECAP program we were able to optimize the equating solution consistently across all grade contents. Additionally, for all grade/contents similar results were found using other equating procedures (e.g., Mean/Mean, Mean/Sigma, and Haebara methods), and this suggests that there were likely no violations to statical assumptions that are specific to the Stocking & Lord method.

SECTION I.E

NECAP

Summary of Psychometric QC Activities

NECAP
Summary of Psychometric QC Activities

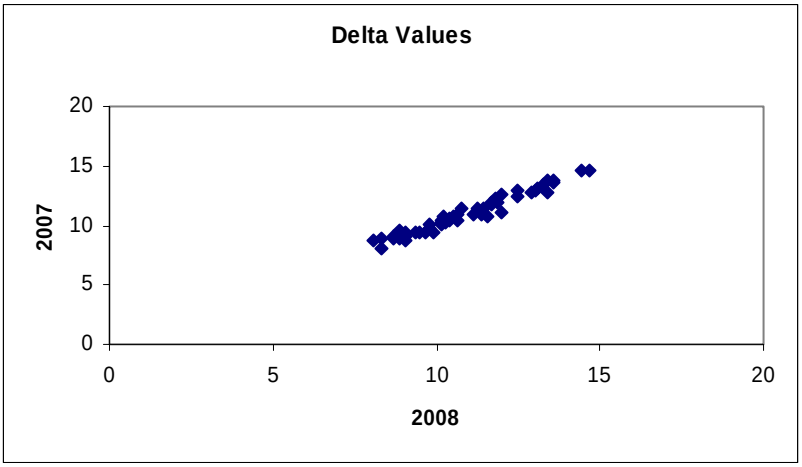
1) Copy match of equating items
2) Key verification process
3) Delta analysis
    a. Crit > 3 removed
4) Equating Analysis
    a. Reasonableness of item parameters
    b. Low a, high SE on B, c parameter not fully estimated
    c. Fit files
    d. Normal end evaluation – over 48 executable programs were run
    e. Delta plot
    f. *a*-plot, *b*-plots
    g. TCCs
    h. Proficiency levels and scaled score distributions
    i. Internal parallel processing procedures
5) Table I.c.1 – items were continuously evaluated
    a. Statistical values
    b. Content
6) Parallel processing of SS calculation

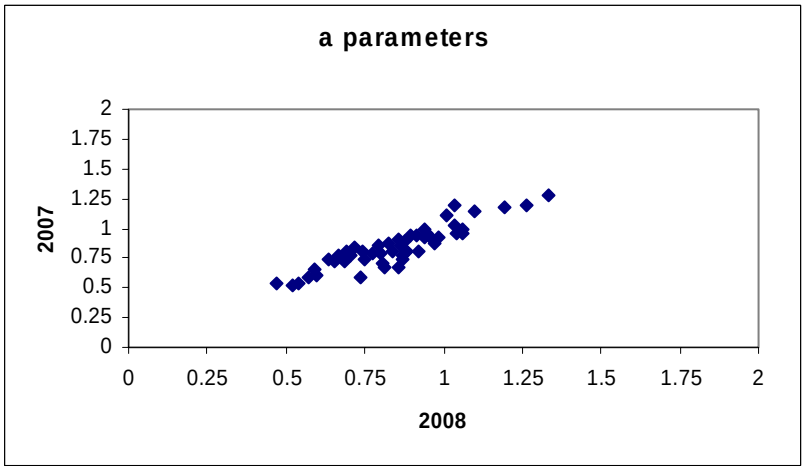
SECTION II.A

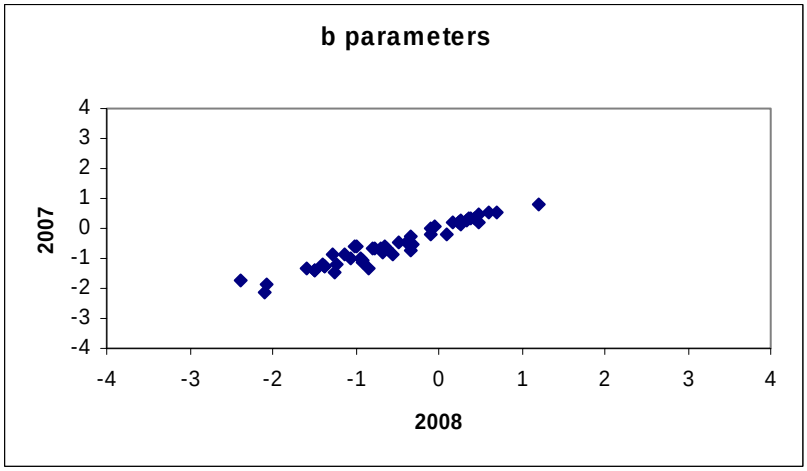
NECAP

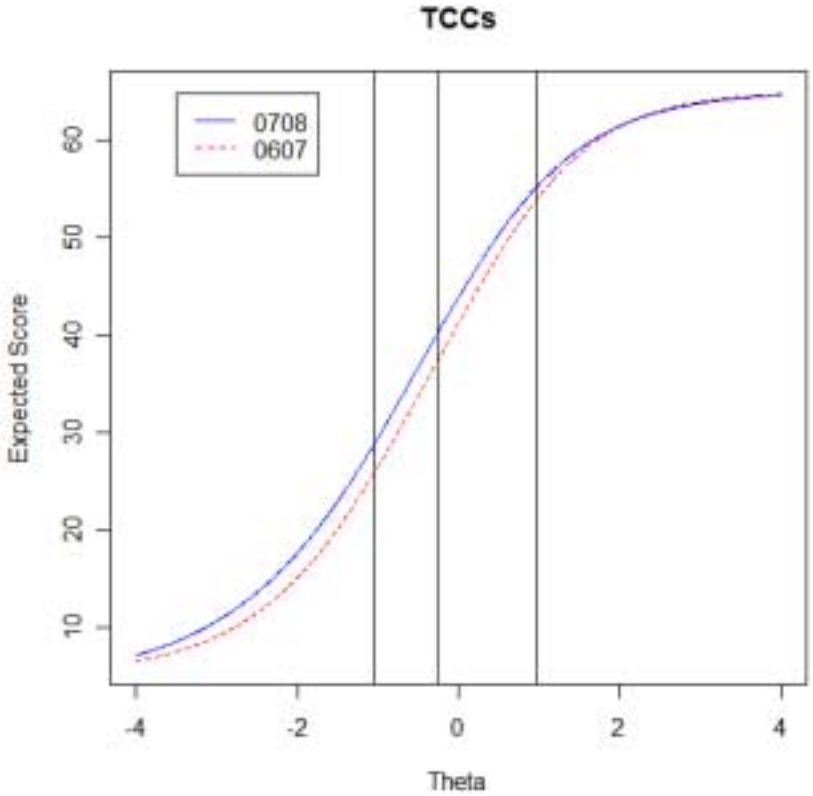
RESULTS FOR EACH GRADE CONTENT

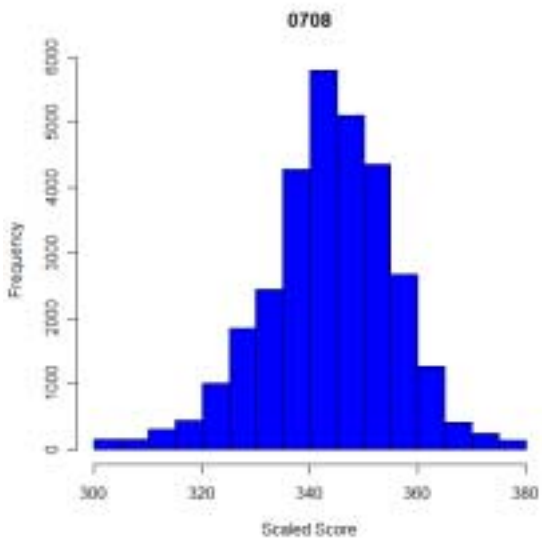
MATH GRADE 03
EQUATING ITEM EVALUATION

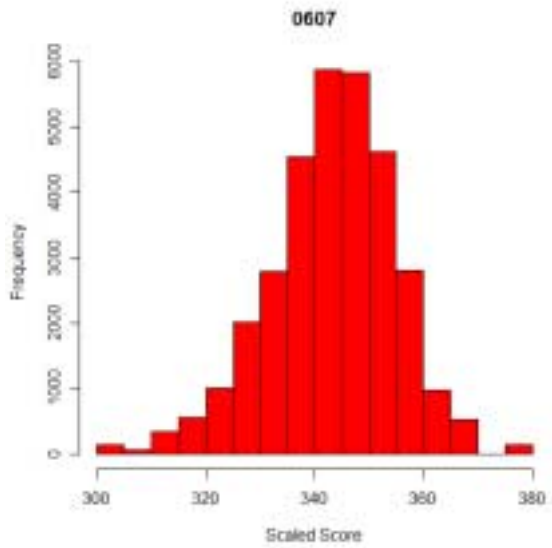







TCCs
0708
0607
Expected Score
10
20
30
40
50
60
-4
-2
0
2
4
Theta

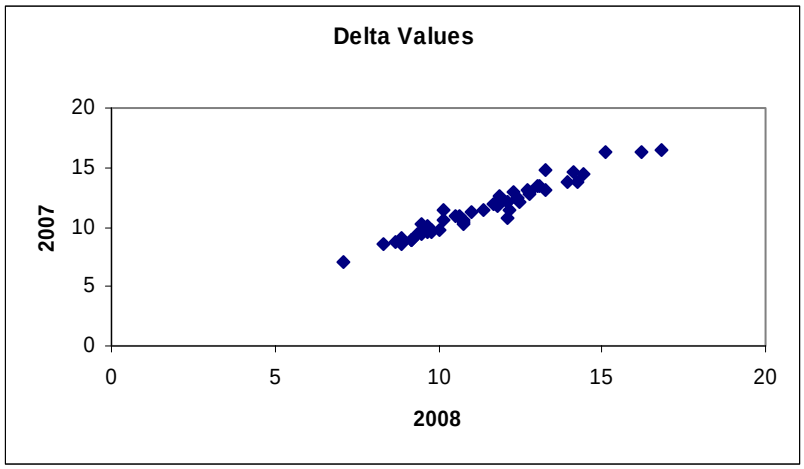

0708
Frequency
0
1000
2000
3000
4000
5000
6000
300
320
340
360
380
Scaled Score

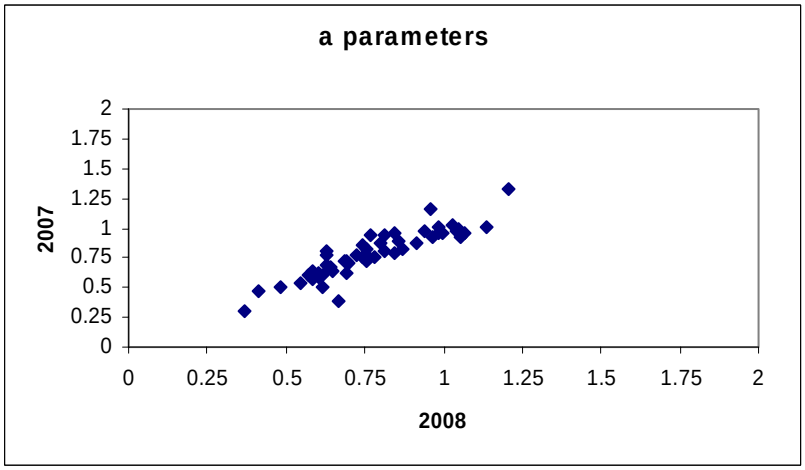

0607
Frequency
0
1000
2000
3000
4000
5000
6000
300
320
340
360
380
Scaled Score

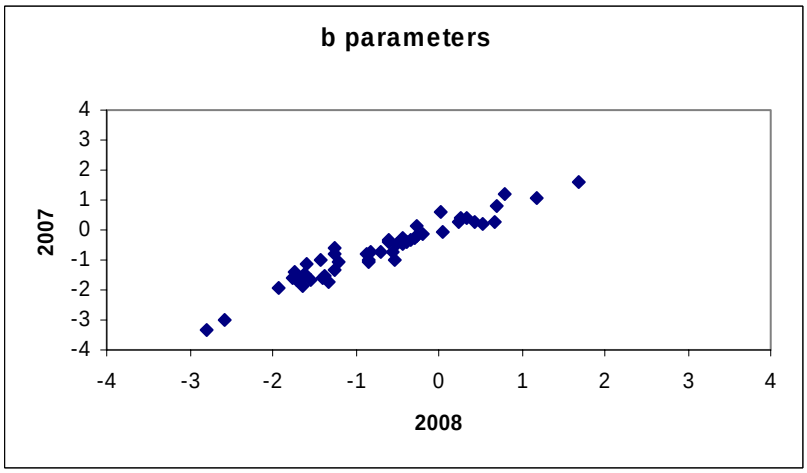
Math Grade 3

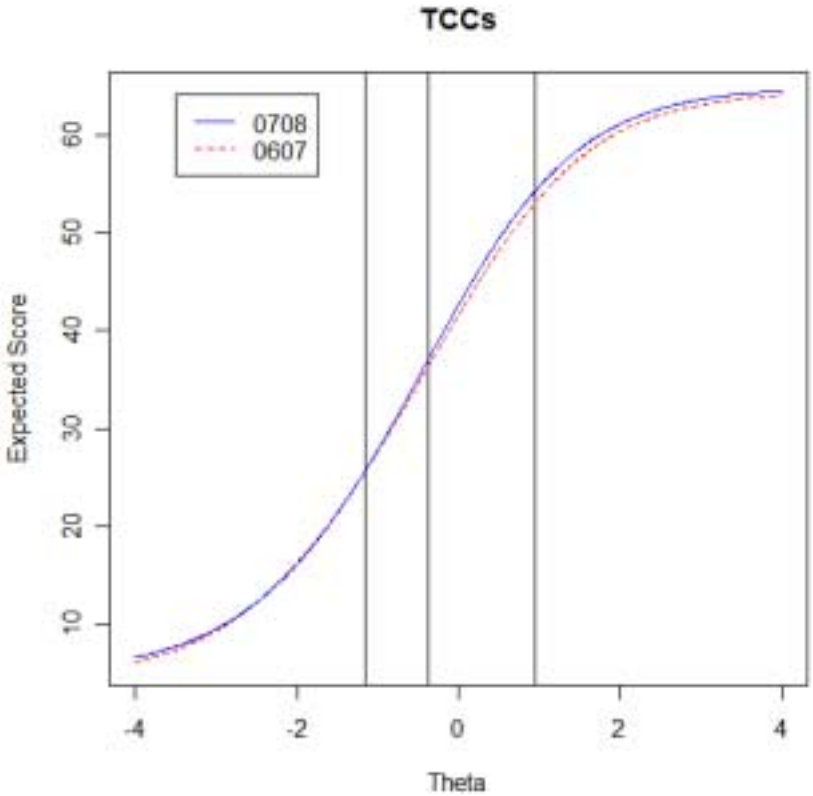
Raw	2008	2007
0	300	300
1	300	300
2	300	300
3	300	300
4	300	300
5	300	300
6	300	300
7	300	303
8	304	307
9	307	311
10	309	313
11	312	315
12	313	317
13	315	319
14	317	320
15	318	321
16	320	323
17	321	324
18	322	325
19	323	326
20	324	327
21	325	328
22	326	329
23	327	329
24	328	330
25	329	331
26	329	332
27	330	333
28	331	333
29	332	334
30	333	335
31	333	336
32	334	336
33	335	337
34	336	338
35	336	338
36	337	339
37	338	339
38	339	341
39	339	341
40	340	342
41	341	343
42	342	343
43	342	344
44	343	345
45	344	346
46	345	346
47	345	347
48	346	348
49	347	349
50	348	350
51	349	351
52	350	352
53	351	352
54	352	353
55	352	355
56	354	356
57	356	357
58	357	358
59	359	360
60	361	361
61	363	364
62	366	366
63	371	370
64	378	376
65	380	380

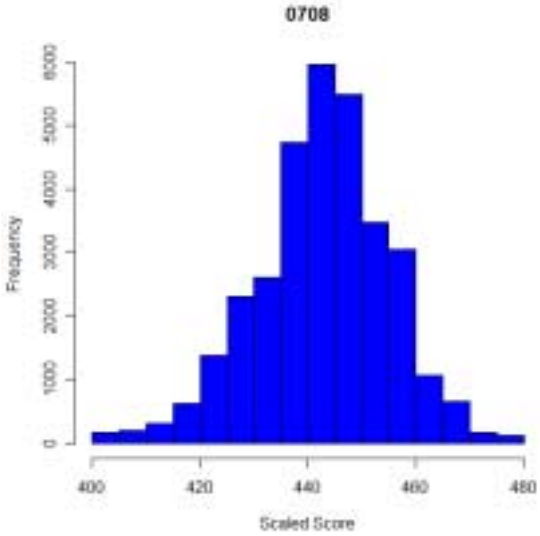
MATH GRADE 04
EQUATING ITEM EVALUATION

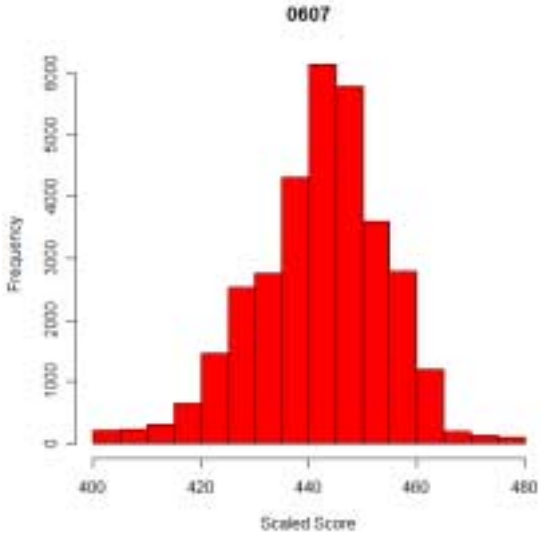







TCCs
0708
0607
Expected Score
10
20
30
40
50
60
-4
-2
0
2
4
Theta

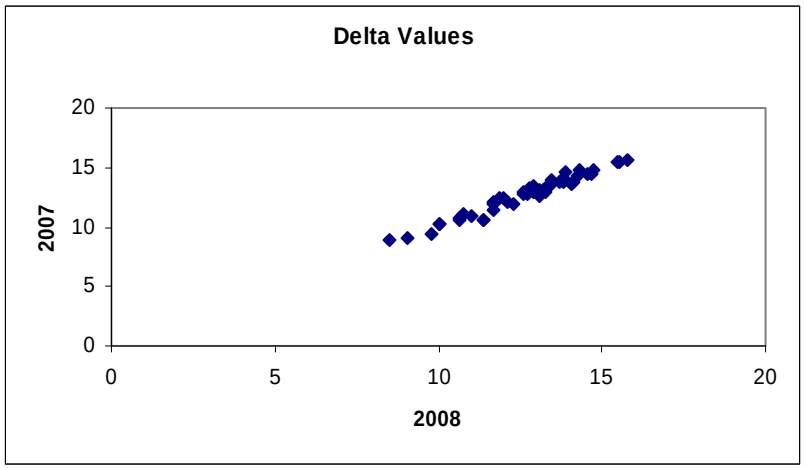

0708
Frequency
0
1000
2000
3000
4000
5000
6000
400
420
440
460
480
Scaled Score

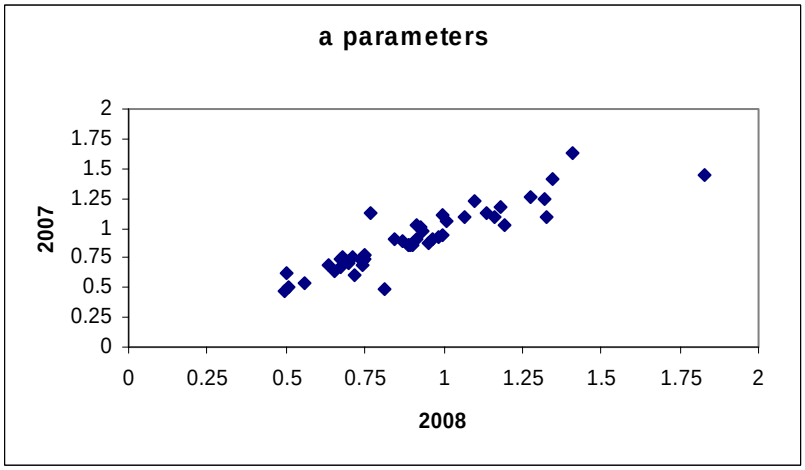

0607
Frequency
0
1000
2000
3000
4000
5000
6000
400
420
440
460
480
Scaled Score

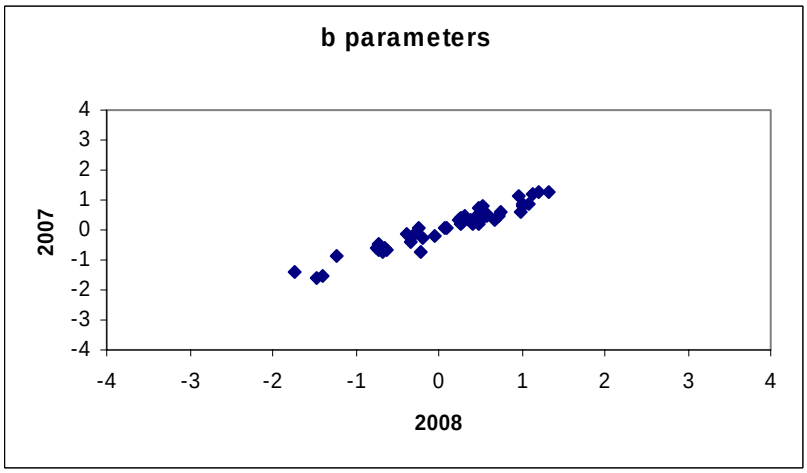
Math Grade 4

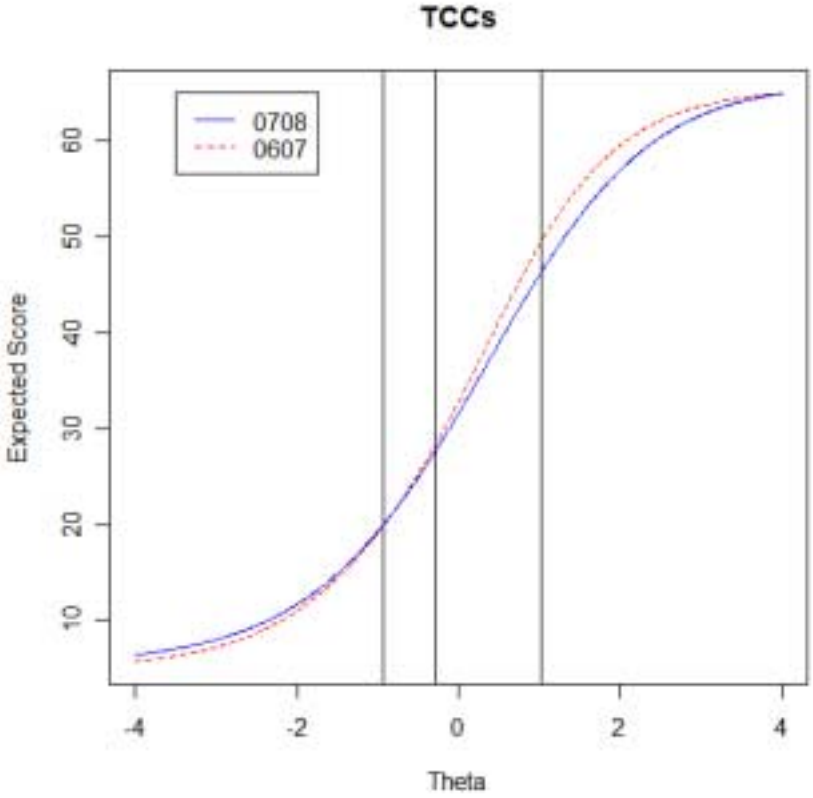
Raw	2008	2007
	400	400
1	400	400
2	400	400
3	400	400
4	400	400
5	400	400
6	400	400
7	402	404
8	406	408
9	410	410
10	412	412
11	414	414
12	416	416
13	418	418
14	419	419
15	421	421
16	422	422
17	423	423
18	424	424
19	425	425
20	426	426
21	427	427
22	428	428
23	429	429
24	430	430
25	430	430
26	432	432
27	432	433
28	433	433
29	434	434
30	435	435
31	436	436
32	436	437
33	437	437
34	438	438
35	439	439
36	439	439
37	439	441
38	441	441
39	441	442
40	442	443
41	443	444
42	444	444
43	444	445
44	445	446
45	446	447
46	447	448
47	448	449
48	448	450
49	449	450
50	450	451
51	451	452
52	452	453
53	453	454
54	454	456
55	456	457
56	457	458
57	458	460
58	460	461
59	462	463
60	464	465
61	466	468
62	469	472
63	473	477
64	480	480
65	480	480

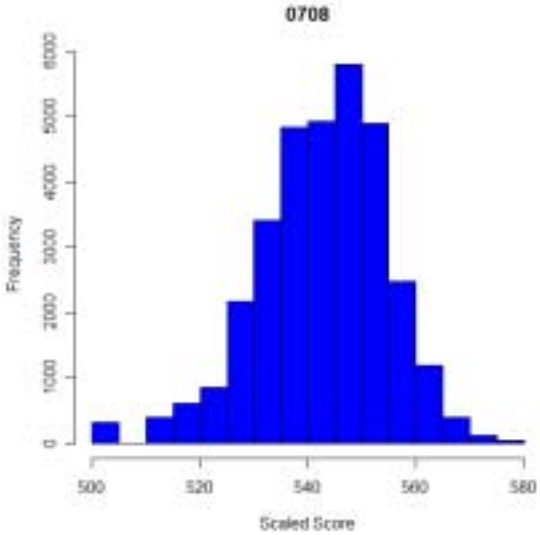
MATH GRADE 05
EQUATING ITEM EVALUATION

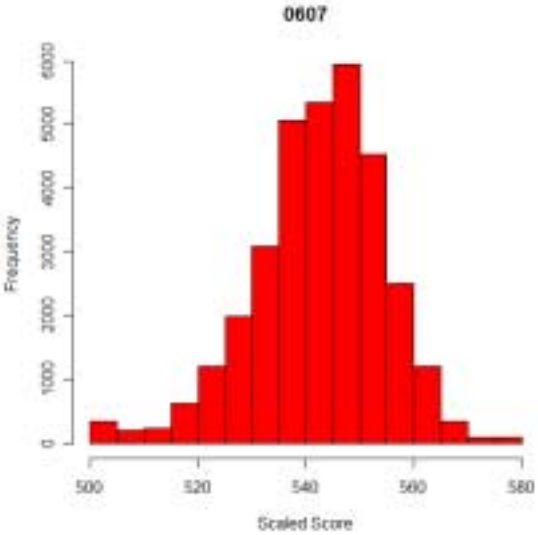







TCCs
0708
0607
Expected Score
10
20
30
40
50
60
-4
-2
0
2
4
Theta

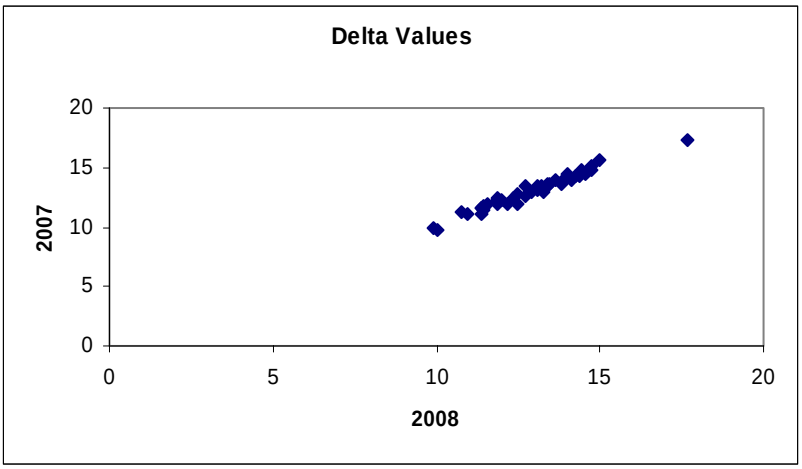

0708
Frequency
0
1000
2000
3000
4000
5000
6000
500
520
540
560
580
Scaled Score

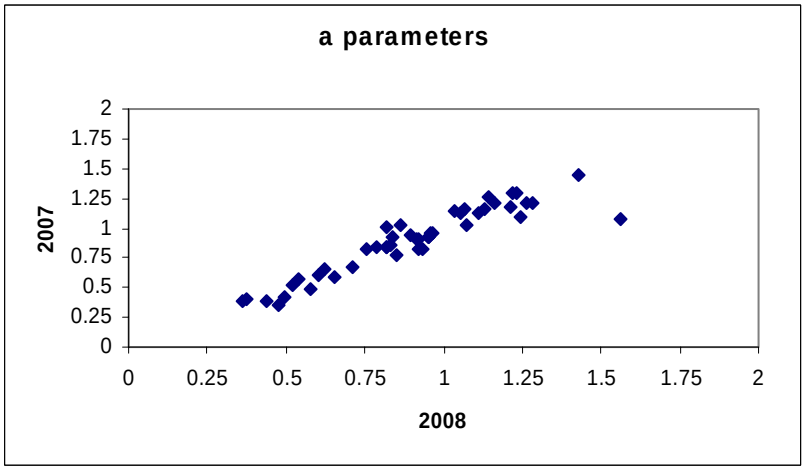

0607
Frequency
0
1000
2000
3000
4000
5000
6000
500
520
540
560
580
Scaled Score

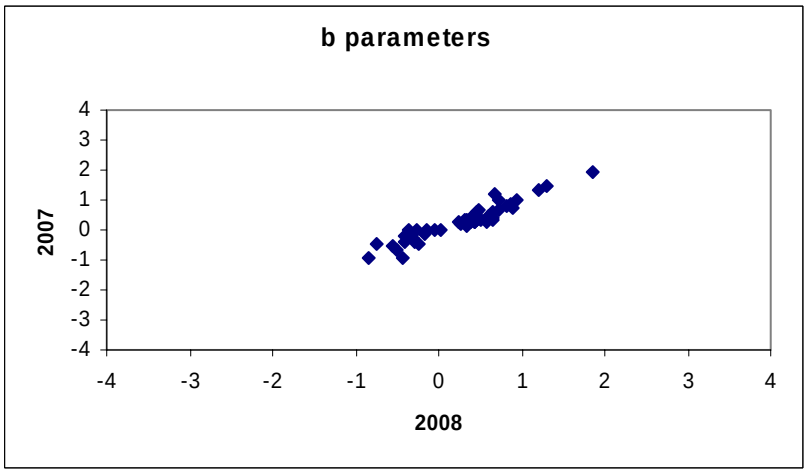
Math Grade 5

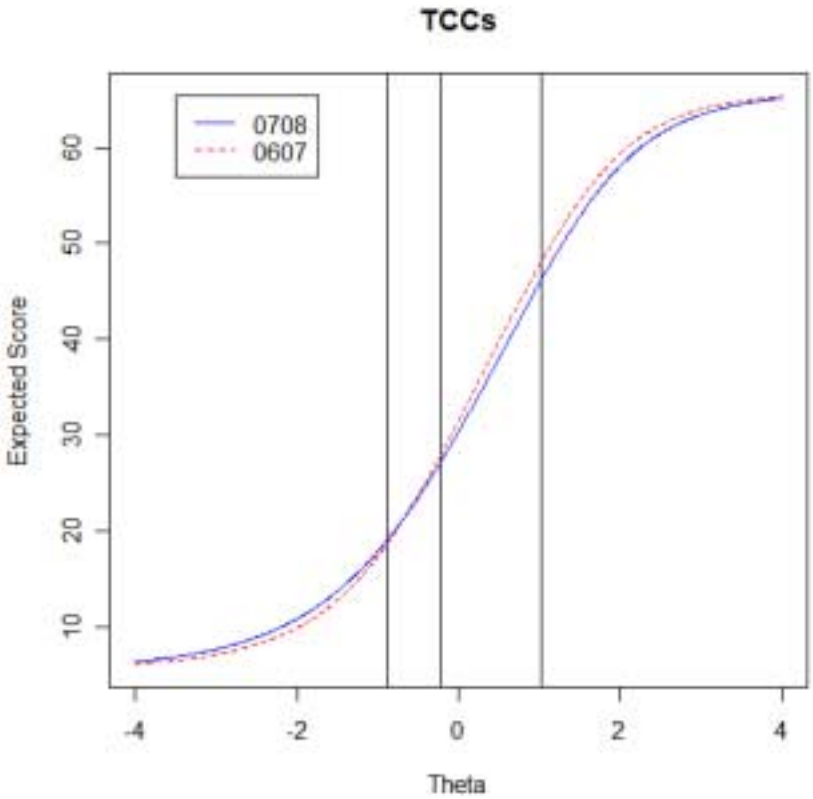
Raw	2008	2007
0	500	500
1	500	500
2	500	500
3	500	500
4	500	500
5	500	500
6	500	503
7	505	510
8	511	514
9	515	517
10	518	520
11	520	522
12	522	523
13	524	525
14	526	526
15	527	528
16	528	529
17	530	530
18	531	531
19	532	532
20	532	533
21	534	534
22	535	535
23	536	536
24	537	537
25	538	537
26	539	538
27	539	539
28	540	539
29	541	540
30	542	541
31	543	542
32	543	543
33	544	543
34	545	544
35	546	544
36	546	545
37	547	546
38	548	546
39	549	547
40	549	548
41	550	548
42	551	549
43	552	550
44	552	550
45	553	551
46	553	552
47	555	552
48	555	553
49	556	553
50	557	555
51	558	555
52	559	556
53	560	557
54	561	558
55	562	559
56	563	560
57	565	561
58	566	562
59	568	564
60	569	565
61	571	567
62	574	570
63	576	573
64	580	577
65	580	580
66	580	580

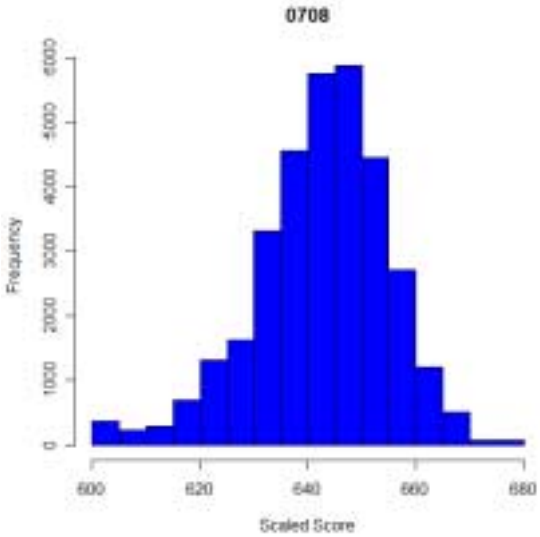
MATH GRADE 06
EQUATING ITEM EVALUATION

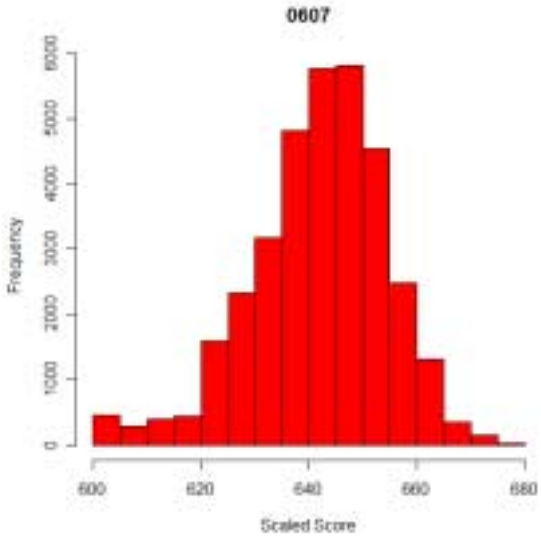







TCCs
0708
0607
Expected Score
10
20
30
40
50
60
-4
-2
0
2
4
Theta

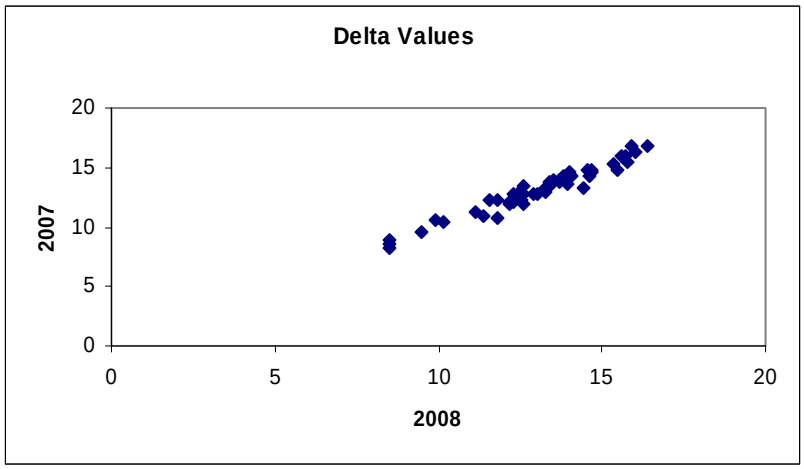

0708
Frequency
0
1000
2000
3000
4000
5000
6000
600
620
640
660
680
Scaled Score

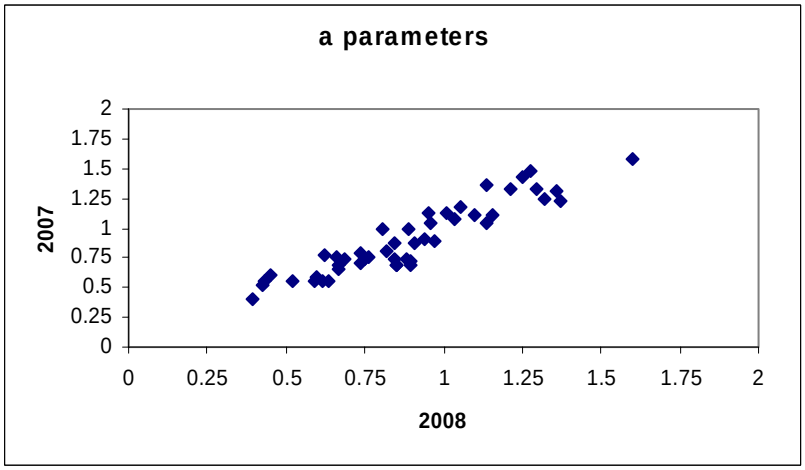

0607
Frequency
0
1000
2000
3000
4000
5000
6000
600
620
640
660
680
Scaled Score

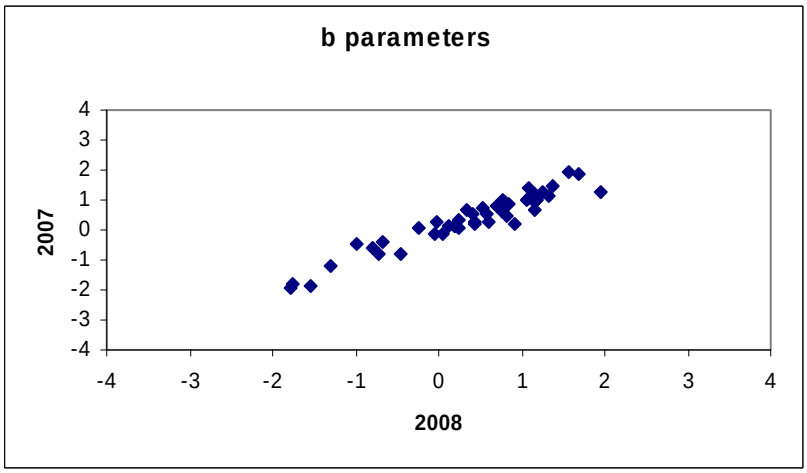
Math Grade 6

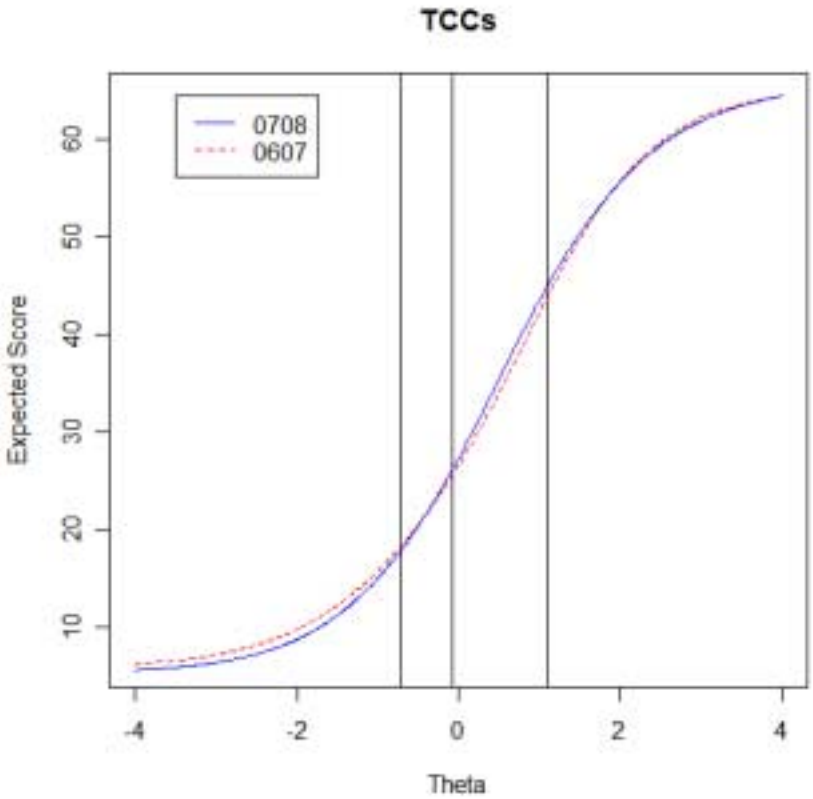
Raw	2008	2007
0	600	600
1	600	600
2	600	600
3	600	600
4	600	600
5	600	600
6	600	600
7	606	609
8	612	615
9	616	619
10	619	621
11	621	623
12	623	625
13	625	627
14	627	628
15	628	629
16	630	630
17	631	631
18	632	632
19	632	633
20	634	634
21	635	635
22	636	636
23	637	636
24	637	637
25	638	638
26	639	639
27	639	639
28	641	640
29	641	641
30	642	641
31	643	642
32	644	643
33	644	643
34	645	644
35	646	645
36	646	645
37	647	646
38	648	647
39	648	647
40	649	648
41	650	648
42	650	649
43	651	650
44	652	650
45	652	651
46	652	652
47	654	652
48	655	652
49	655	654
50	656	655
51	657	655
52	658	656
53	658	657
54	659	658
55	660	659
56	661	660
57	662	661
58	663	662
59	665	663
60	666	665
61	668	666
62	670	668
63	673	671
64	677	674
65	680	680
66	680	680

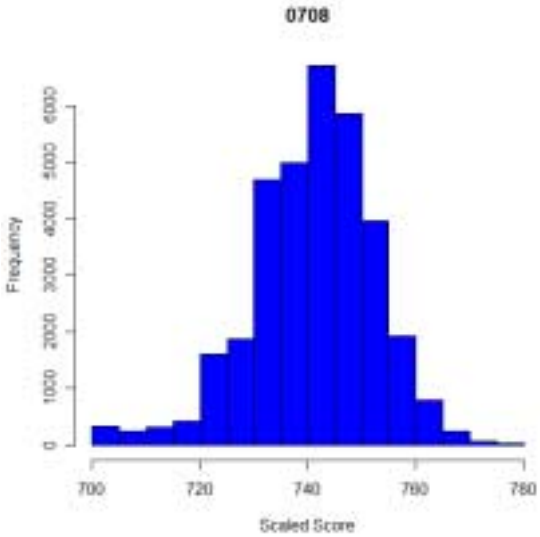
MATH GRADE 07
EQUATING ITEM EVALUATION

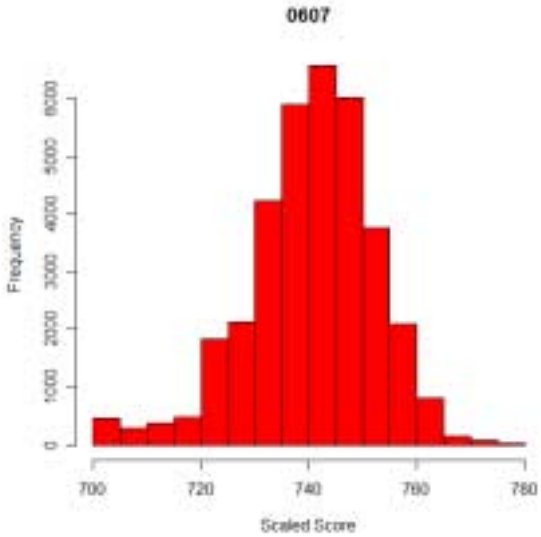







TCCs
0708
0607
Expected Score
10
20
30
40
50
60
-4
-2
0
2
4
Theta

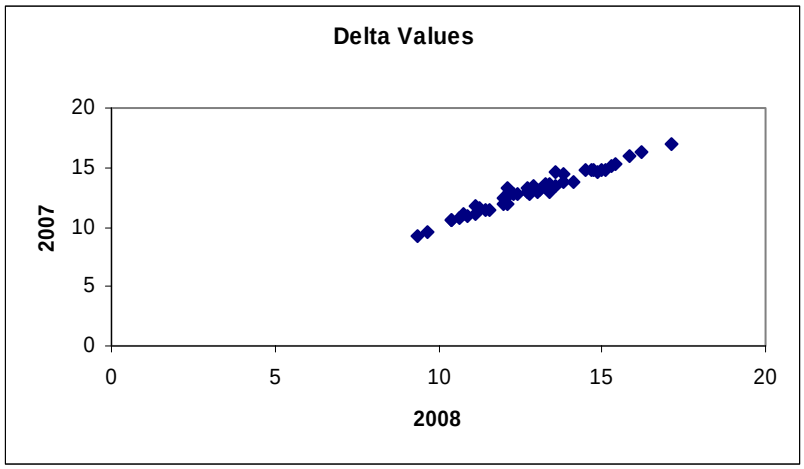

0708
Frequency
0
1000
2000
3000
4000
5000
6000
700
720
740
760
780
Scaled Score

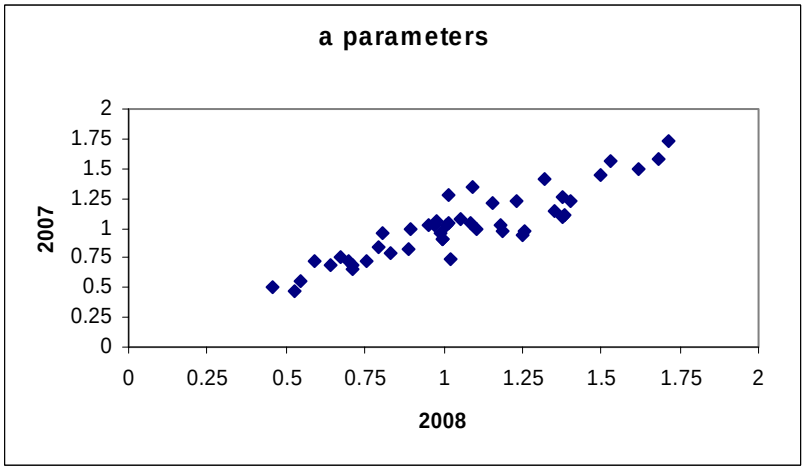

0607
Frequency
0
1000
2000
3000
4000
5000
6000
700
720
740
760
780
Scaled Score

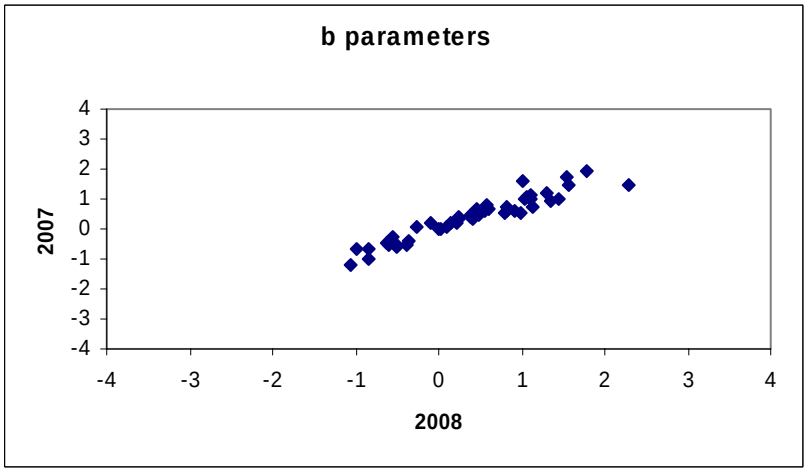
Math Grade 7

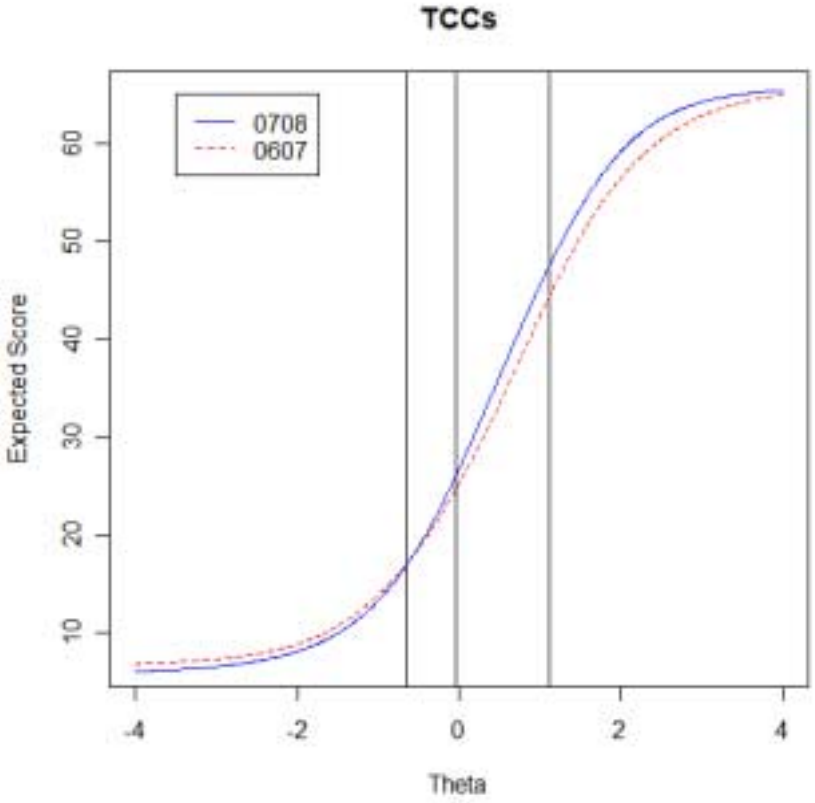
Raw	2008	2007
0	700	700
1	700	700
2	700	700
3	700	700
4	700	700
5	700	700
6	707	700
7	714	709
8	718	715
9	721	718
10	723	721
11	725	723
12	727	725
13	728	727
14	729	728
15	731	730
16	732	731
17	733	732
18	734	733
19	735	734
20	735	735
21	736	736
22	737	737
23	738	738
24	739	739
25	739	739
26	739	740
27	741	741
28	741	742
29	742	743
30	743	743
31	743	744
32	744	745
33	744	745
34	745	746
35	746	747
36	746	747
37	747	748
38	748	748
39	748	749
40	749	750
41	749	750
42	750	751
43	751	751
44	751	752
45	752	753
46	753	753
47	754	754
48	754	755
49	755	756
50	756	756
51	757	757
52	758	758
53	759	759
54	760	760
55	761	761
56	762	762
57	763	763
58	764	764
59	766	765
60	768	767
61	770	769
62	772	771
63	775	774
64	779	779
65	780	780
66	780	780

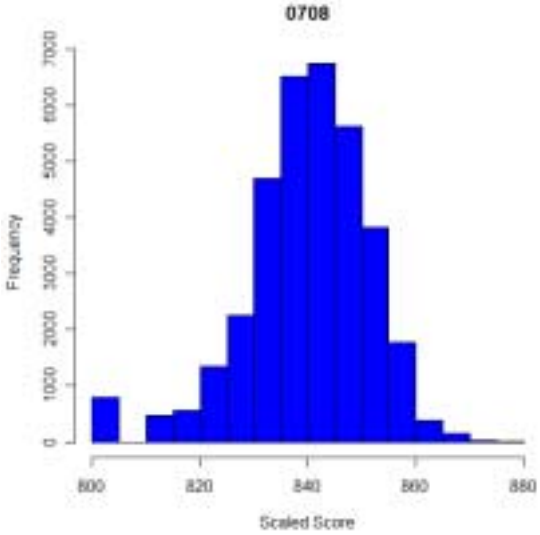
MATH GRADE 08
EQUATING ITEM EVALUATION

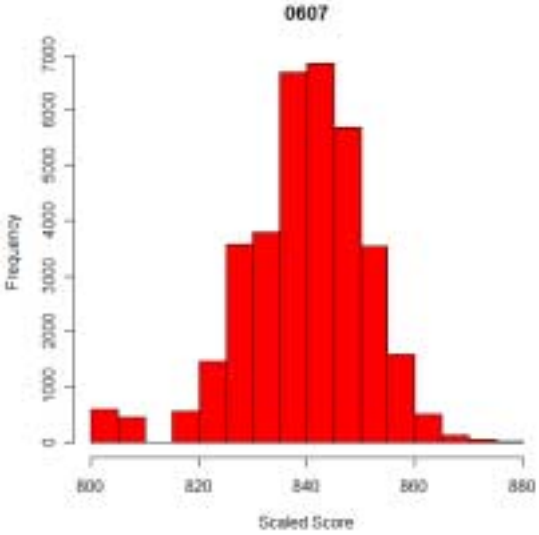







TCCs
0708
0607
Expected Score
10
20
30
40
50
60
-4
-2
0
2
4
Theta

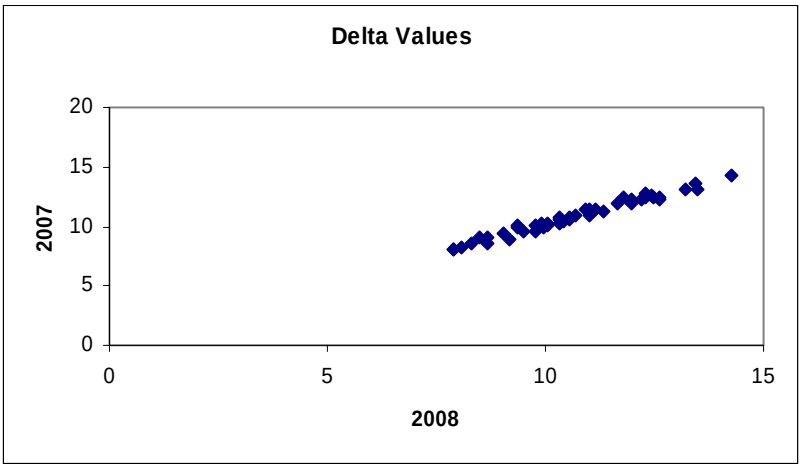

0708
Frequency
0
1000
2000
3000
4000
5000
6000
7000
800
820
840
860
880
Scaled Score

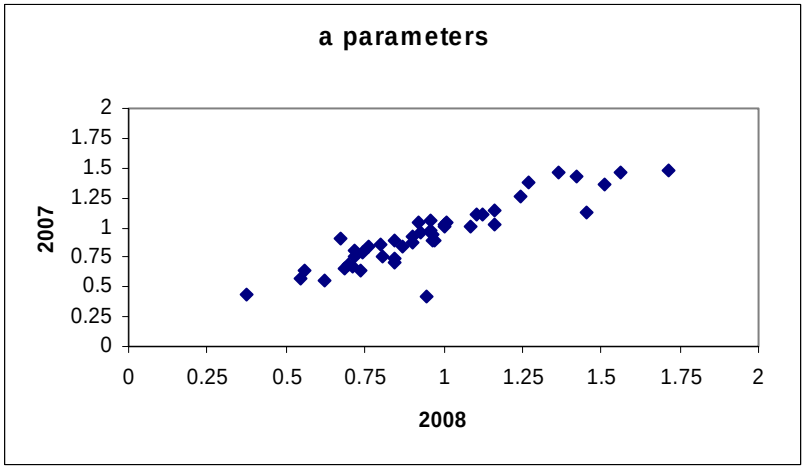

0607
Frequency
0
1000
2000
3000
4000
5000
6000
7000
800
820
840
860
880
Scaled Score

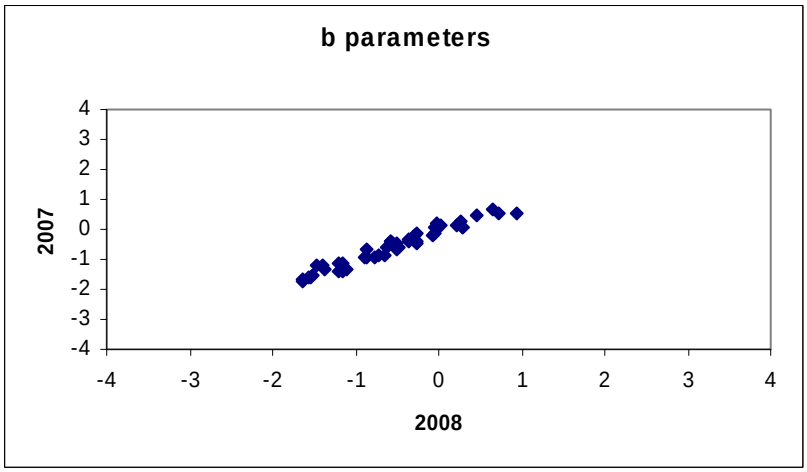
Math Grade 8

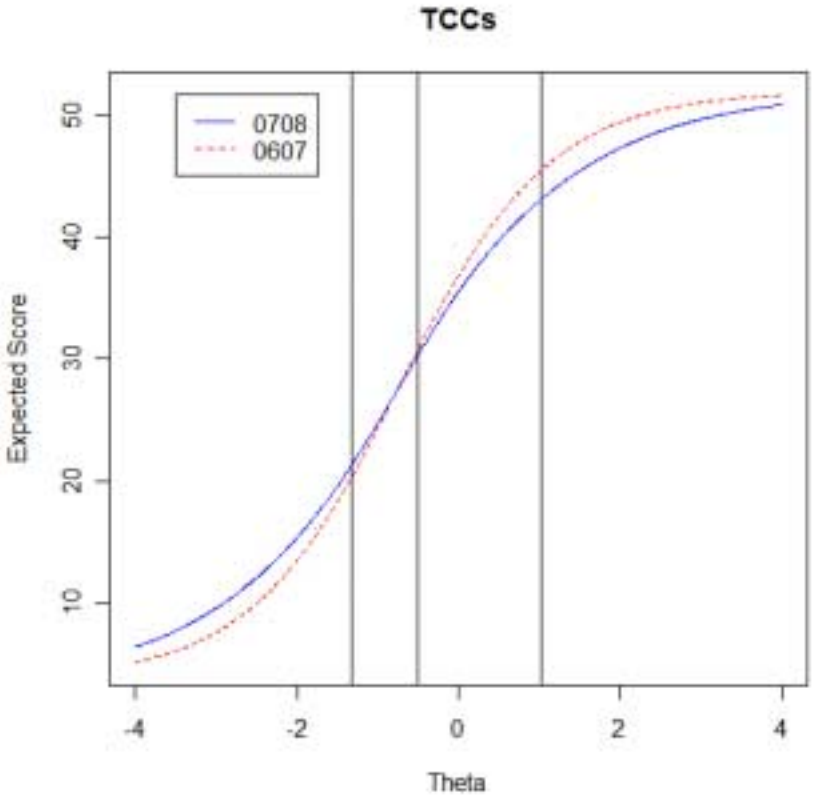
Raw	2008	2007
0	800	800
1	800	800
2	800	800
3	800	800
4	800	800
5	800	800
6	802	800
7	815	807
8	820	817
9	823	821
10	825	824
11	827	826
12	829	828
13	830	829
14	831	830
15	832	832
16	833	833
17	834	833
18	835	835
19	835	836
20	836	836
21	837	837
22	837	838
23	838	839
24	839	839
25	839	840
26	839	841
27	840	842
28	841	842
29	842	843
30	842	843
31	843	844
32	843	845
33	844	845
34	844	846
35	845	846
36	845	847
37	846	847
38	846	848
39	847	849
40	847	849
41	848	850
42	848	850
43	849	851
44	850	851
45	850	852
46	851	853
47	851	853
48	852	854
49	852	854
50	853	855
51	854	856
52	854	857
53	855	857
54	856	858
55	857	859
56	857	860
57	858	861
58	859	862
59	860	863
60	861	865
61	863	867
62	865	869
63	867	871
64	870	875
65	875	880
66	880	880

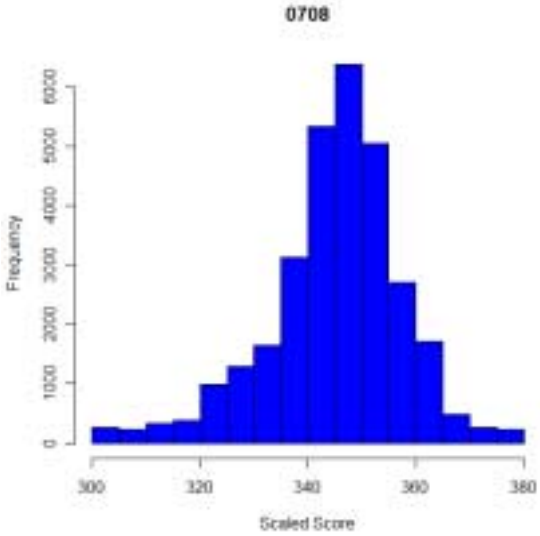
READING GRADE 03
EQUATING ITEM EVALUATION

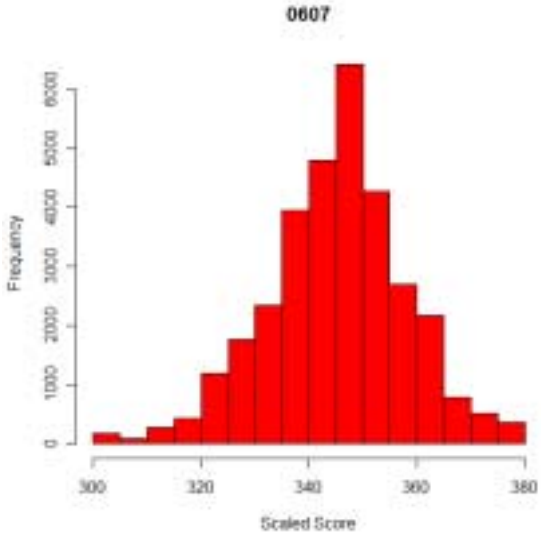







TCCs
0708
0607
Expected Score
10
20
30
40
50
-4
-2
0
2
4
Theta

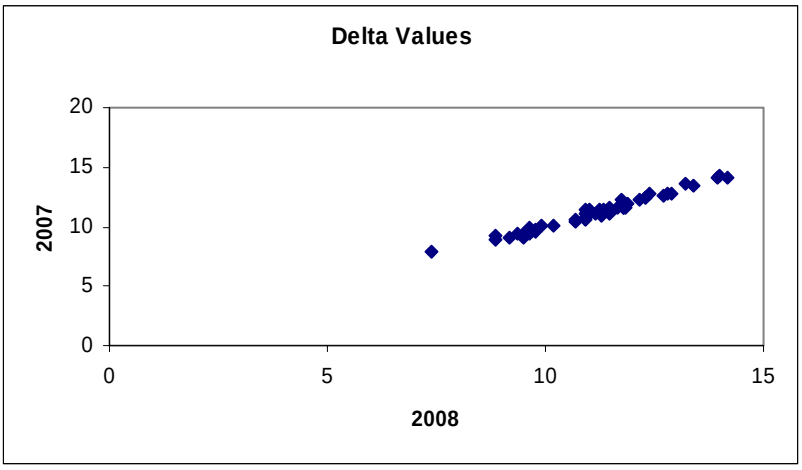

0708
Frequency
0
1000
2000
3000
4000
5000
6000
300
320
340
360
380
Scaled Score

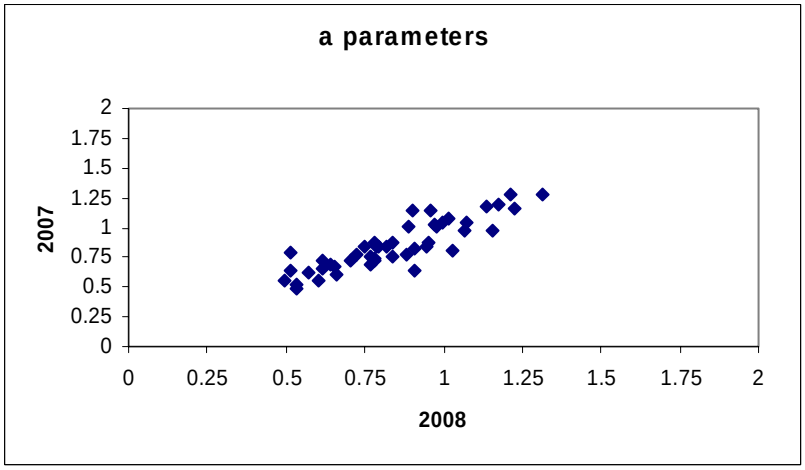

0607
Frequency
0
1000
2000
3000
4000
5000
6000
300
320
340
360
380
Scaled Score

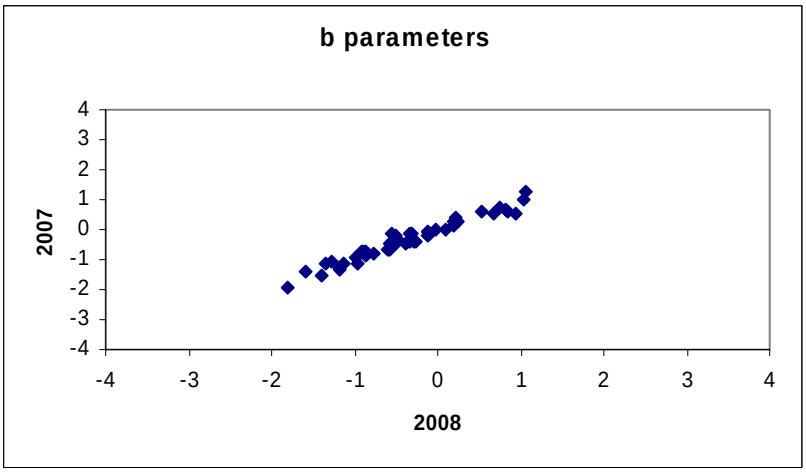
Reading Grade 3

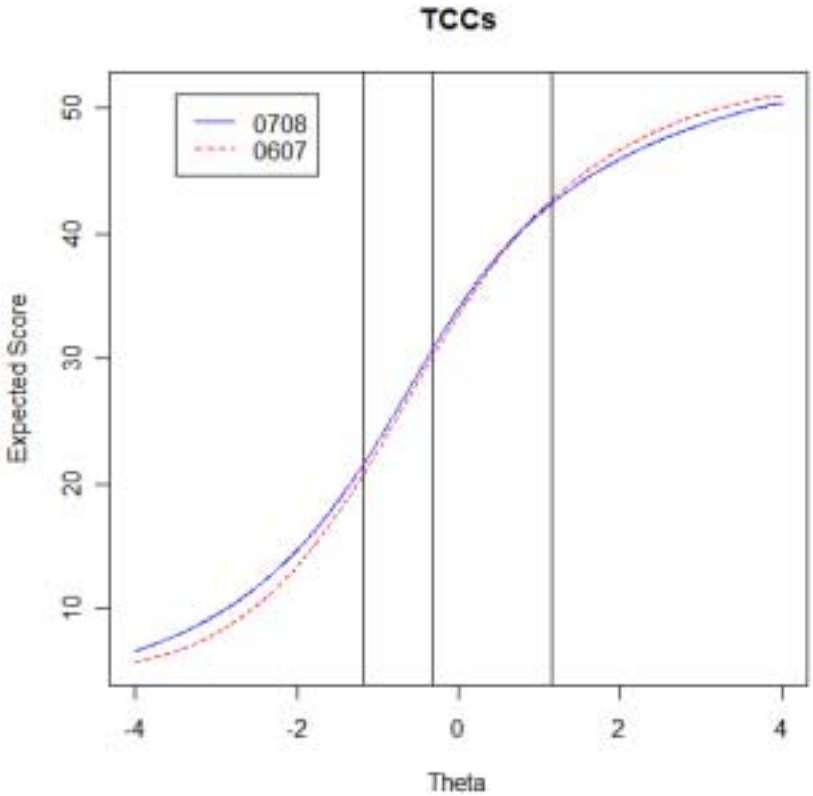
Raw	2008	2007
0	300	300
1	300	300
2	300	300
3	300	300
4	300	300
5	300	300
6	300	305
7	303	309
8	307	313
9	310	315
10	312	317
11	315	319
12	317	321
13	319	322
14	321	323
15	322	325
16	324	326
17	325	327
18	327	328
19	328	329
20	329	330
21	330	331
22	331	332
23	332	333
24	333	334
25	335	335
26	336	336
27	337	337
28	338	337
29	339	338
30	339	339
31	341	340
32	342	341
33	343	342
34	344	343
35	345	344
36	346	345
37	348	346
38	349	347
39	350	348
40	352	349
41	353	350
42	355	352
43	356	353
44	359	355
45	362	356
46	364	358
47	367	361
48	371	363
49	376	367
50	380	372
51	380	380
52	380	380

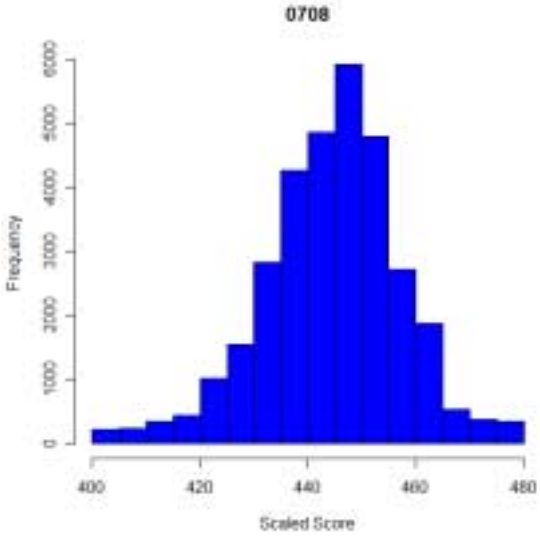
READING GRADE 04
EQUATING ITEM EVALUATION

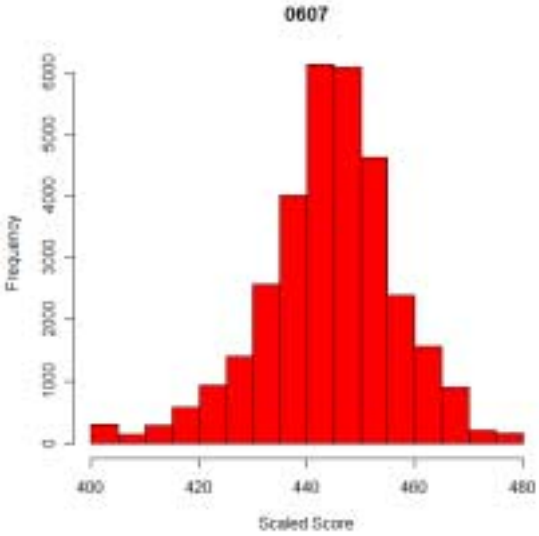







TCCs
0708
0607
Expected Score
10
20
30
40
50
-4
-2
0
2
4
Theta

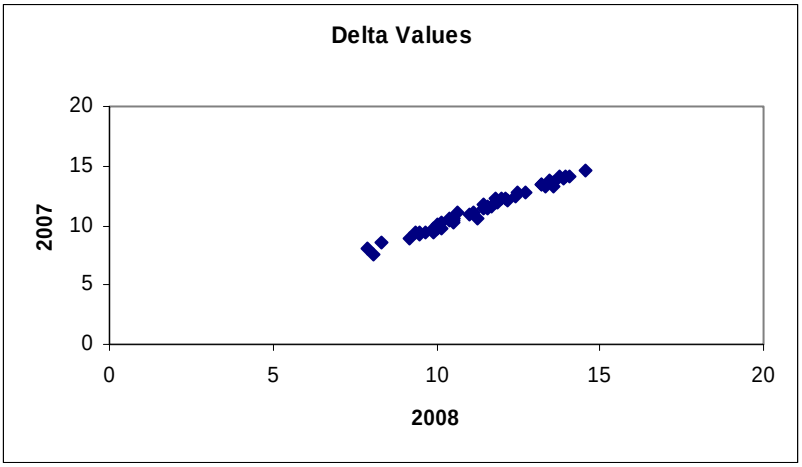

0708
Frequency
0
1000
2000
3000
4000
5000
6000
400
420
440
460
480
Scaled Score

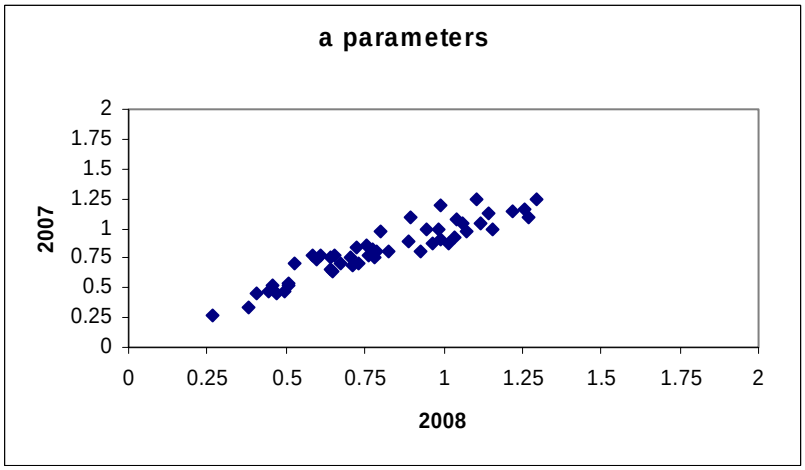

0607
Frequency
0
1000
2000
3000
4000
5000
6000
400
420
440
460
480
Scaled Score

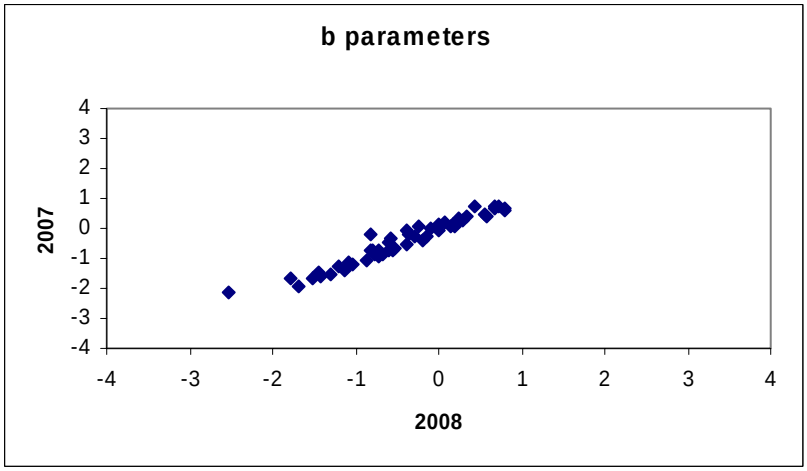
Reading Grade 4

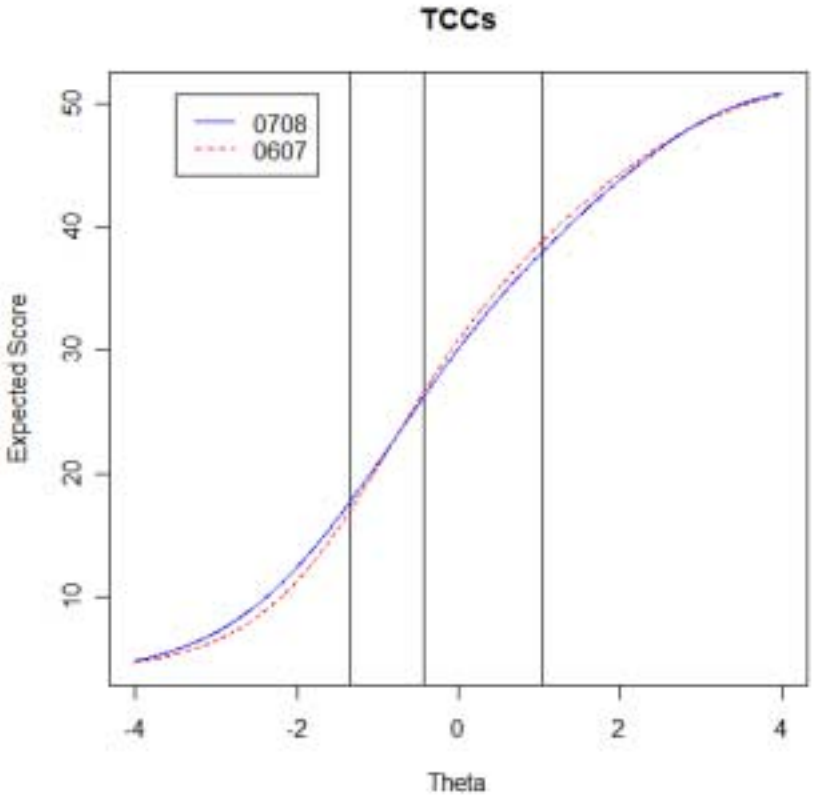
Raw	2008	2007
0	400	400
1	400	400
2	400	400
3	400	400
4	400	400
5	400	400
6	400	402
7	402	407
8	406	411
9	409	413
10	412	416
11	415	418
12	417	419
13	419	421
14	421	423
15	422	424
16	424	425
17	425	426
18	426	428
19	428	429
20	429	430
21	430	431
22	431	432
23	432	433
24	433	434
25	434	435
26	435	436
27	436	437
28	437	438
29	438	439
30	439	439
31	440	441
32	441	442
33	442	443
34	443	444
35	445	445
36	446	446
37	447	447
38	448	449
39	450	450
40	451	452
41	453	453
42	455	455
43	457	457
44	460	458
45	462	461
46	465	463
47	469	466
48	473	469
49	477	473
50	480	478
51	480	480
52	480	480

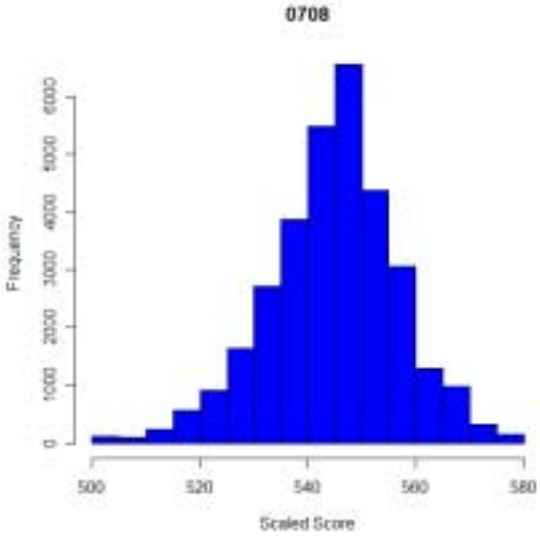
READING GRADE 05
EQUATING ITEM EVALUATION

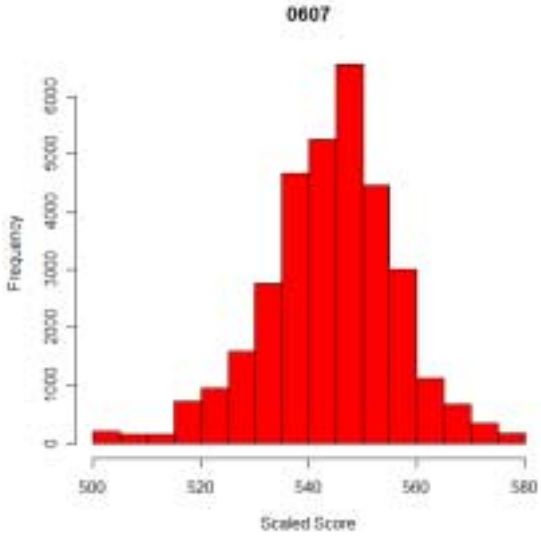







TCCs
0708
0607
Expected Score
10
20
30
40
50
-4
-2
0
2
4
Theta

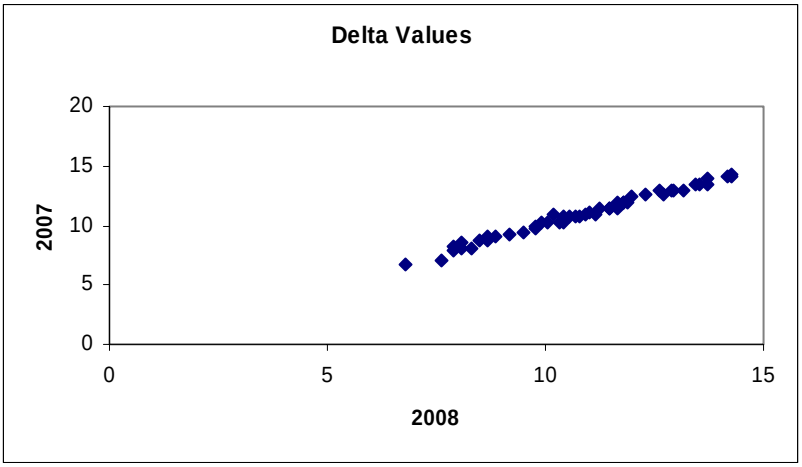

0708
Frequency
0
1000
2000
3000
4000
5000
6000
500
520
540
560
580
Scaled Score

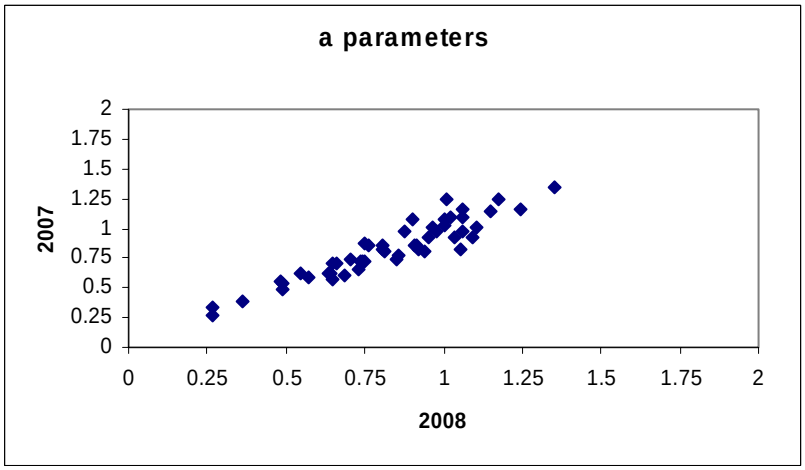

0607
Frequency
0
1000
2000
3000
4000
5000
6000
500
520
540
560
580
Scaled Score

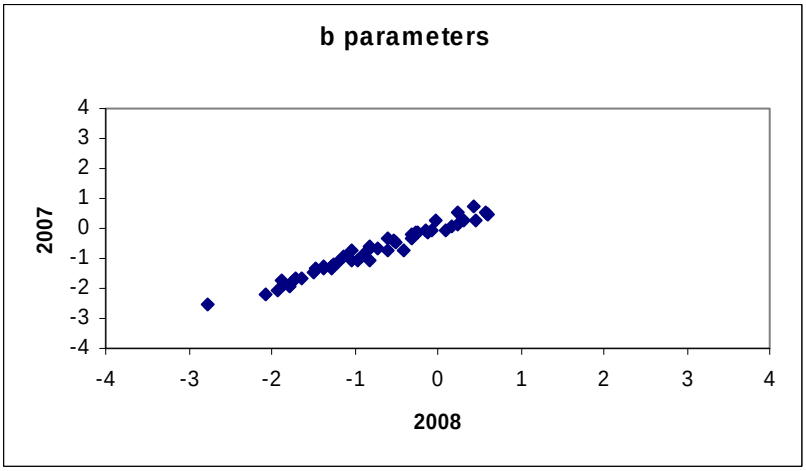
Reading Grade 5

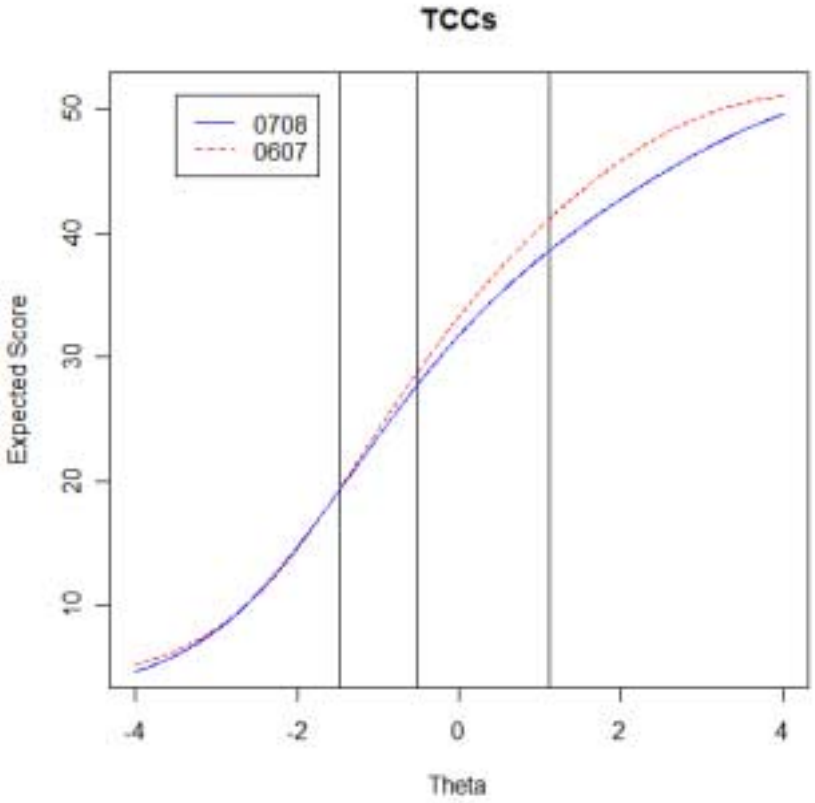
Raw	2008	2007
0	500	500
1	500	500
2	500	500
3	500	500
4	500	500
5	502	503
6	507	509
7	511	513
8	514	516
9	516	518
10	518	520
11	520	522
12	522	524
13	523	525
14	525	526
15	526	527
16	528	529
17	529	529
18	530	531
19	531	532
20	533	533
21	534	534
22	535	535
23	536	536
24	537	537
25	539	538
26	539	539
27	541	540
28	542	542
29	543	543
30	545	544
31	546	545
32	547	546
33	549	548
34	550	549
35	552	550
36	553	552
37	555	553
38	557	555
39	558	557
40	560	559
41	562	560
42	564	562
43	566	564
44	568	567
45	570	569
46	572	571
47	574	574
48	577	577
49	580	580
50	580	580
51	580	580
52	580	580

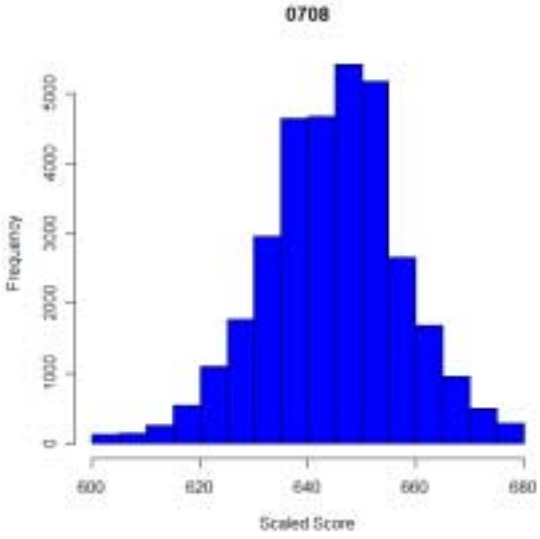
READING GRADE 06
EQUATING ITEM EVALUATION

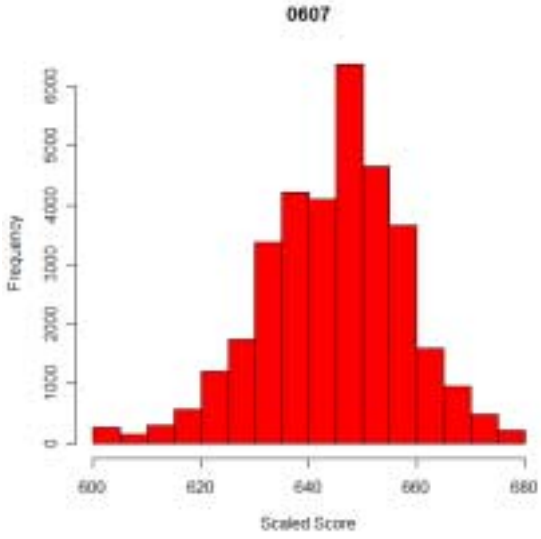







TCCs
0708
0607
Expected Score
10
20
30
40
50
-4
-2
0
2
4
Theta

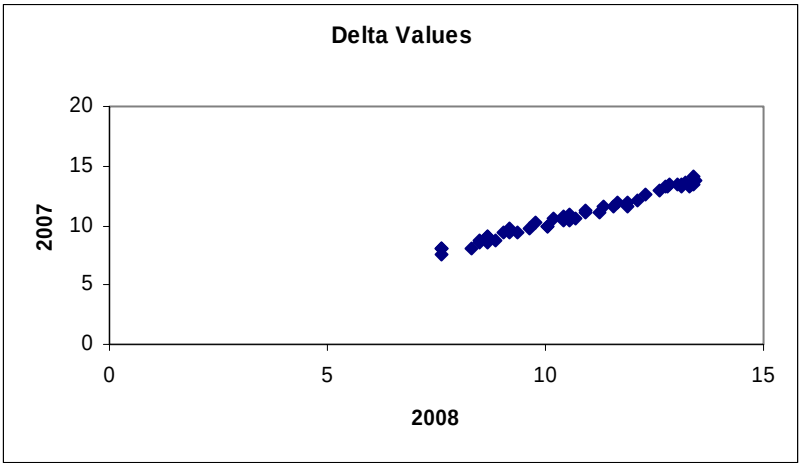

0708
Frequency
0
1000
2000
3000
4000
5000
600
620
640
660
680
Scaled Score

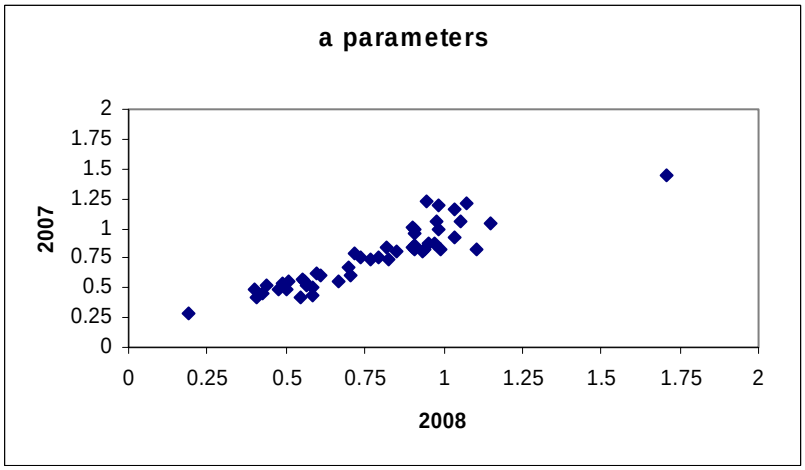

0607
Frequency
0
1000
2000
3000
4000
5000
6000
600
620
640
660
680
Scaled Score

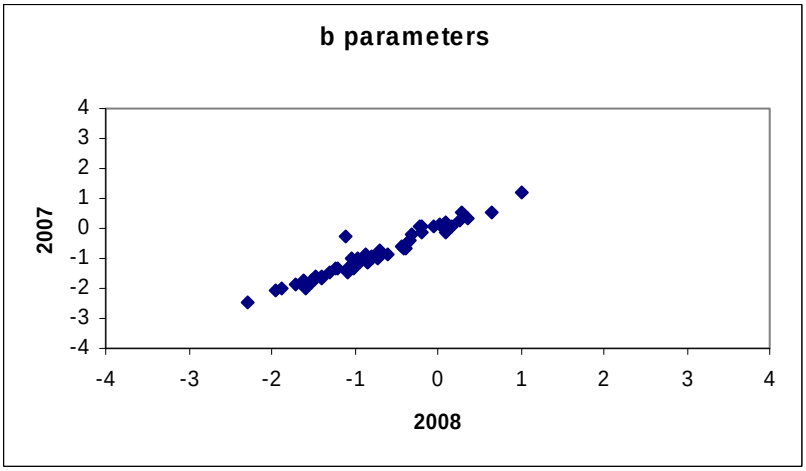
Reading Grade 6

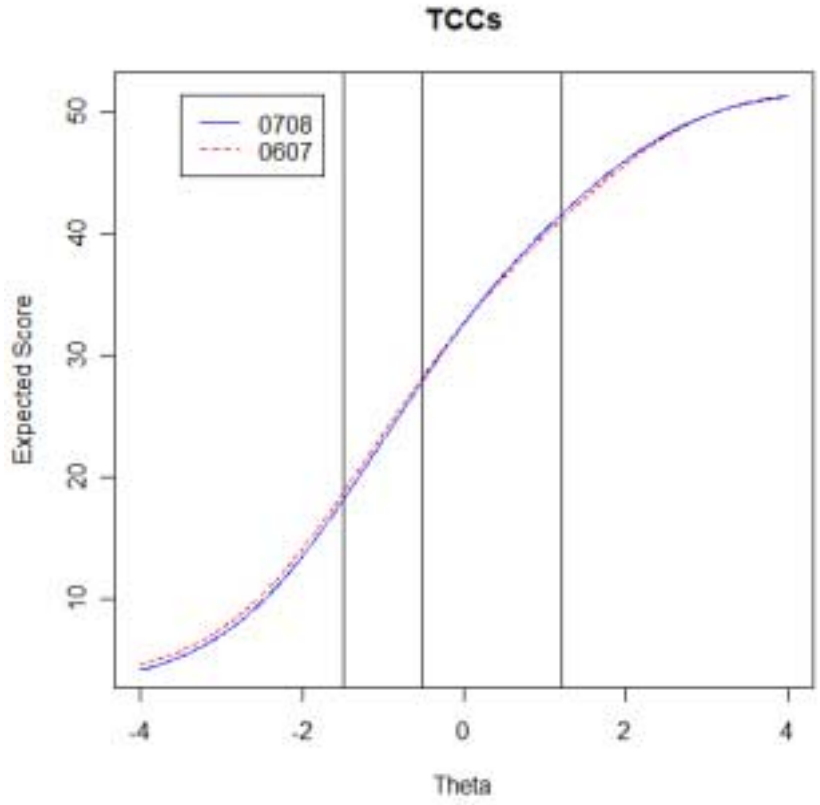
Raw	2008	2007
0	600	600
1	600	600
2	600	600
3	600	600
4	600	600
5	602	600
6	606	604
7	609	608
8	611	611
9	614	614
10	616	616
11	617	617
12	619	619
13	621	621
14	622	622
15	623	624
16	625	625
17	626	626
18	627	627
19	628	628
20	630	630
21	631	631
22	632	632
23	634	633
24	635	634
25	636	635
26	638	637
27	639	638
28	640	639
29	642	640
30	643	642
31	645	643
32	646	644
33	648	646
34	650	647
35	651	648
36	653	650
37	655	652
38	657	653
39	660	655
40	662	657
41	664	658
42	667	660
43	670	662
44	672	665
45	675	667
46	678	669
47	680	672
48	680	675
49	680	679
50	680	680
51	680	680
52	680	680

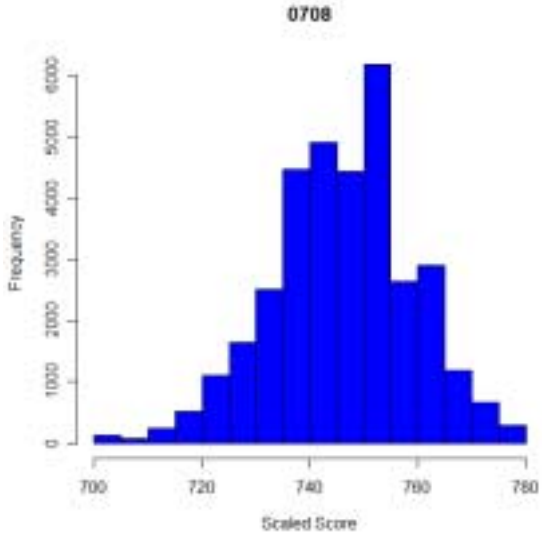
READING GRADE 07
EQUATING ITEM EVALUATION

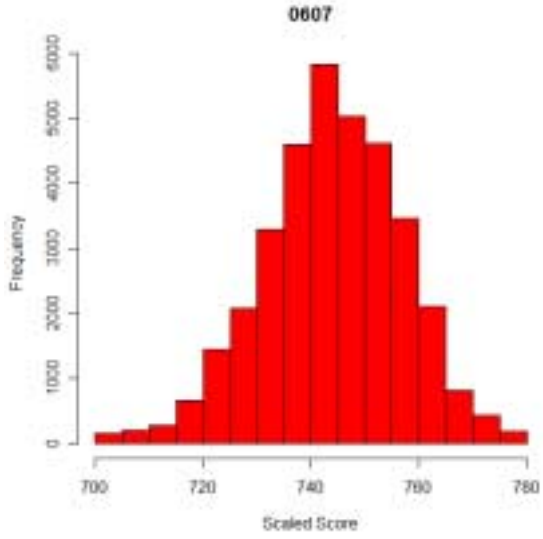







TCCs
0708
0607
Expected Score
Theta
10
20
30
40
50
-4
-2
0
2
4

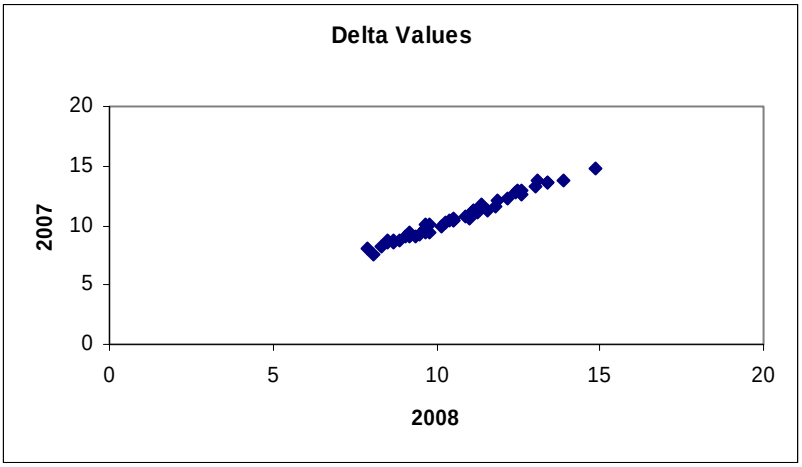

0708
Frequency
Scaled Score
0
1000
2000
3000
4000
5000
6000
700
720
740
760
780

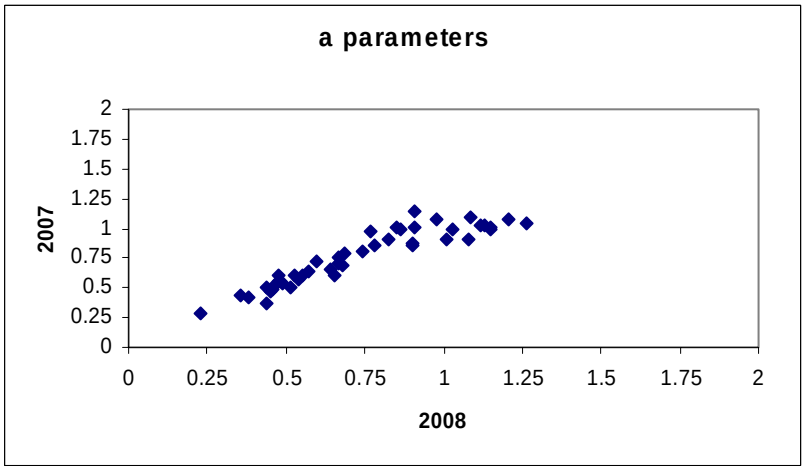

0607
Frequency
Scaled Score
0
1000
2000
3000
4000
5000
6000
700
720
740
760
780

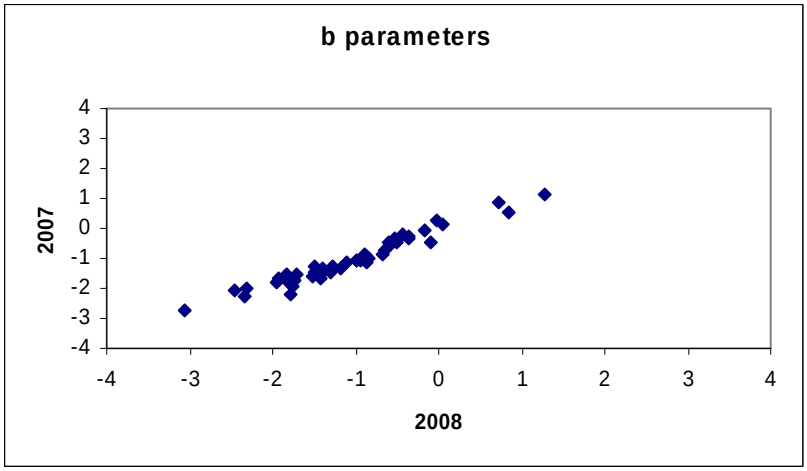
Reading Grade 7

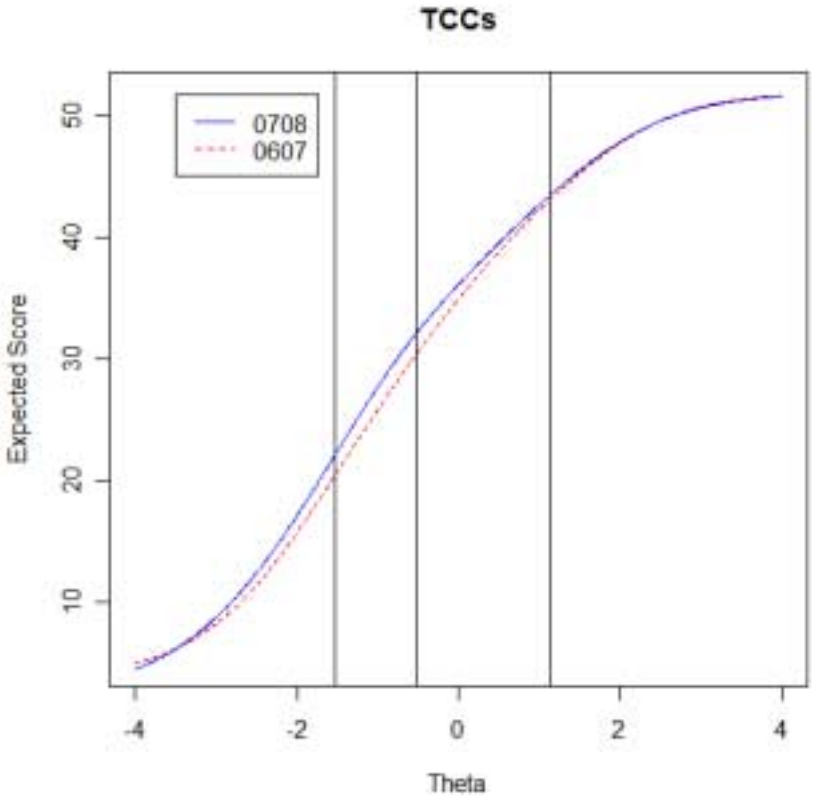
Raw	2008	2007
0	700	700
1	700	700
2	700	700
3	700	700
4	700	700
5	704	702
6	708	707
7	711	710
8	714	712
9	716	715
10	718	717
11	719	718
12	721	720
13	722	721
14	724	723
15	725	724
16	726	725
17	727	727
18	728	728
19	730	729
20	731	730
21	732	731
22	733	733
23	734	734
24	736	735
25	737	736
26	738	737
27	739	739
28	740	739
29	741	741
30	743	742
31	744	744
32	745	745
33	746	746
34	748	748
35	749	749
36	751	751
37	752	753
38	754	754
39	755	756
40	757	758
41	759	759
42	761	761
43	763	763
44	765	765
45	767	768
46	769	770
47	772	772
48	774	775
49	778	778
50	780	780
51	780	780
52	780	780

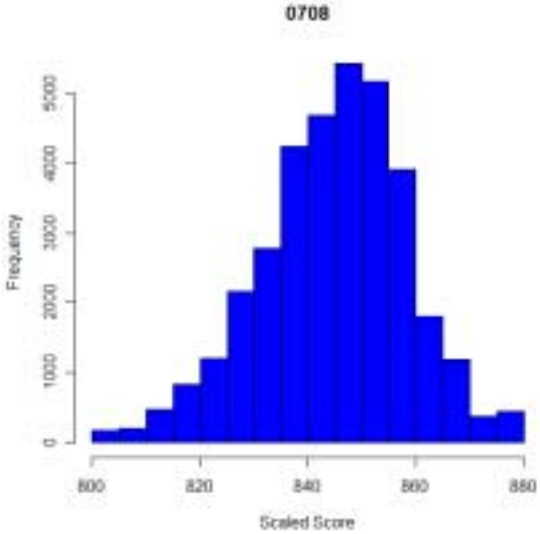
READING GRADE 08
EQUATING ITEM EVALUATION

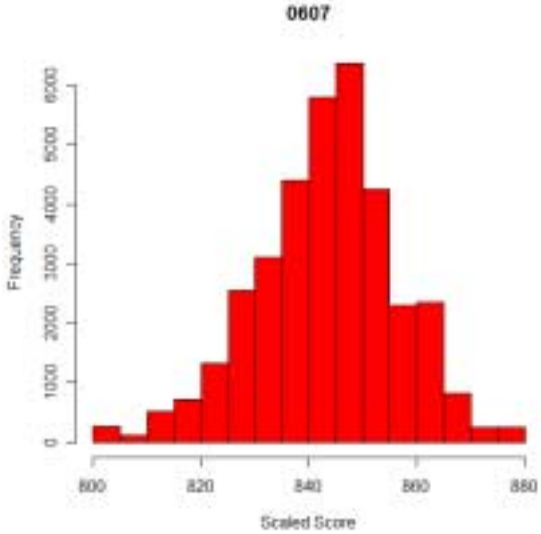







TCCs
0708
0607
Expected Score
10
20
30
40
50
-4
-2
0
2
4
Theta


0708
Frequency
0
1000
2000
3000
4000
5000
800
820
840
860
880
Scaled Score


0607
Frequency
0
1000
2000
3000
4000
5000
6000
800
820
840
860
880
Scaled Score

Reading Grade 8

Raw	2008	2007
0	800	800
1	800	800
2	800	800
3	800	800
4	800	800
5	802	800
6	805	805
7	808	808
8	810	811
9	812	813
10	814	815
11	815	817
12	817	818
13	818	819
14	819	821
15	820	822
16	822	823
17	823	824
18	824	826
19	825	827
20	826	827
21	827	829
22	827	830
23	829	831
24	830	832
25	831	833
26	833	835
27	834	836
28	835	837
29	836	838
30	837	839
31	838	841
32	839	842
33	841	843
34	843	845
35	844	846
36	846	847
37	847	849
38	849	850
39	851	852
40	853	854
41	854	855
42	856	857
43	858	858
44	860	861
45	862	863
46	864	865
47	867	867
48	869	870
49	873	873
50	877	876
51	880	880
52	880	880

SECTION II.B

NECAP
Rescore Analysis Results

NECAP
Rescore Analysis Results

For Mathematics and Reading, a rescore analysis was conducted to evaluate potential constructed-response equating items. For each potential equating item, a sample of approximately 200 papers from the 2007-08 test was randomly selected and rescored by this year's scorers. The scores for the two years were compared, and any items found to have a large difference between the average scores would be excluded as equating items.

The results of the rescore analysis are shown in the tables below. As can be seen in the tables, no constructed-response items were excluded for use as equating items as a result of the rescore analysis.

MATH GRADE 3								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
201754	2	1.3676	1.3873	0.6839	0.6583	0.0287	0.0196	NO
198517	2	1.4341	1.4634	0.7662	0.7618	0.0382	0.0293	NO
202089	2	0.9507	0.9458	0.9508	0.9427	-0.0052	0.0049	NO
231017	2	0.7073	0.7561	0.5693	0.6317	0.0857	0.0488	NO
227127	2	0.8537	0.8927	0.7379	0.738	0.0529	0.039	NO
223923	2	0.7304	0.7402	0.7988	0.8379	0.0123	0.0098	NO
198636	2	1.3805	1.3707	0.7065	0.7048	-0.0138	0.0098	NO
242779	2	0.9415	0.9756	0.9194	0.8968	0.0371	0.0341	NO
242782	2	1.3756	1.4634	0.7125	0.6735	0.1232	0.0878	NO
198521	2	1.0439	0.9854	0.874	0.8638	-0.067	0.0585	NO

MATH GRADE 4								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
232429	2	0.9854	1	0.9395	0.9318	0.0156	0.0146	NO
224096	2	0.9415	0.9707	0.8419	0.8199	0.0348	0.0293	NO
224099	2	1.5874	1.5874	0.7566	0.7566	0	0	NO
198442	2	1.1171	1.0976	0.8358	0.8441	-0.0233	0.0195	NO
202368	2	1.2573	1.1699	0.6586	0.7473	-0.1327	0.0874	NO
202489	2	1.299	1.2843	0.8188	0.809	-0.018	0.0147	NO
198431	2	0.7024	0.7512	0.817	0.8214	0.0597	0.0488	NO
227096	2	0.761	0.7707	0.8003	0.797	0.0122	0.0098	NO
202377	2	1.5268	1.4683	0.7428	0.7747	-0.0788	0.0585	NO
227082	2	1.3317	1.3317	0.5736	0.582	0	0	NO
227082	2	1.3317	1.3317	0.5736	0.582	0	0	NO

MATH GRADE 5								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
234368	2	1.0196	0.9853	0.8798	0.9366	-0.039	0.0343	NO
241932	4	1.7892	1.8186	1.4685	1.5183	0.02	0.0294	NO
203949	2	0.6585	0.6537	0.778	0.7976	-0.0063	0.0049	NO
225025	2	0.8209	0.8308	0.8568	0.8646	0.0116	0.01	NO
230748	4	0.9055	0.9502	1.2681	1.2726	0.0353	0.0448	NO
198603	2	1.2956	1.3498	0.8371	0.819	0.0647	0.0542	NO
225453	4	1.2709	1.33	1.1954	1.2134	0.0494	0.0591	NO
225346	2	1.1078	1.1029	0.8956	0.8989	-0.0055	0.0049	NO
225028	4	1.5025	1.4926	1.4934	1.526	-0.0066	0.0099	NO
225389	2	0.6158	0.5567	0.7879	0.7819	-0.075	0.0591	NO
225389	2	0.6158	0.5567	0.7879	0.7819	-0.075	0.0591	NO

MATH GRADE 6								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
198727	2	0.5833	0.598	0.7592	0.7574	0.0194	0.0147	NO
234406	2	1.2195	1.2049	0.7812	0.7945	-0.0187	0.0146	NO
234417	4	1.7794	1.6667	1.7194	1.691	-0.0656	0.1127	NO
198632	2	0.8137	0.7941	0.8937	0.8838	-0.0219	0.0196	NO
225381	4	1.2976	1.3756	1.3913	1.4484	0.0561	0.078	NO
198716	2	0.8916	0.9015	0.7005	0.6878	0.0141	0.0099	NO
225334	4	1.7171	1.5659	1.4842	1.4855	-0.1019	0.1512	NO
233588	4	1.4412	1.4118	1.3867	1.3674	-0.0212	0.0294	NO
203279	2	1.4585	1.4195	0.8112	0.8083	-0.0481	0.039	NO
198726	2	0.8146	0.7854	0.9078	0.9175	-0.0322	0.0293	NO

MATH GRADE 7								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
224856	2	0.5294	0.4902	0.8484	0.8194	-0.0462	0.0392	NO
224876	4	0.8676	0.8971	1.3602	1.3912	0.0216	0.0294	NO
206195	4	2.0683	2.0976	1.6395	1.6469	0.0179	0.0293	NO
206213	2	1.0296	0.9507	0.9307	0.9245	-0.0847	0.0788	NO
206127	4	1.5833	1.652	1.0972	1.1296	0.0625	0.0686	NO
206127	4	1.5833	1.652	1.0972	1.1296	0.0625	0.0686	NO
206152	2	0.3073	0.3366	0.5394	0.575	0.0543	0.0293	NO
234455	2	0.561	0.5707	0.6028	0.6256	0.0162	0.0098	NO
234455	2	0.561	0.5707	0.6028	0.6256	0.0162	0.0098	NO
225135	2	0.722	0.6488	0.8239	0.8166	-0.0888	0.0732	NO
206189	2	0.9559	0.8627	0.8928	0.8916	-0.1043	0.0931	NO
206189	2	0.9559	0.8627	0.8928	0.8916	-0.1043	0.0931	NO
224924	4	1.2976	1.2634	1.2704	1.2874	-0.0269	0.0341	NO

MATH GRADE 8								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
199783	2	0.6049	0.6878	0.5631	0.5588	0.1473	0.0829	NO
233609	4	1.2451	1.2402	0.9439	0.9373	-0.0052	0.0049	NO
206245	4	1.0829	1.0439	1.3608	1.304	-0.0287	0.039	NO
234148	2	0.6878	0.678	0.6478	0.6353	-0.0151	0.0098	NO
199747	2	0.3122	0.4146	0.5927	0.6543	0.1728	0.1024	NO
206240	2	1.2562	1.2857	0.8785	0.8862	0.0336	0.0296	NO
206240	2	1.2562	1.2857	0.8785	0.8862	0.0336	0.0296	NO
206331	4	2.0537	1.961	1.14	1.1554	-0.0813	0.0927	NO
233719	2	1.3805	1.3659	0.8391	0.8368	-0.0174	0.0146	NO
233719	2	1.3805	1.3659	0.8391	0.8368	-0.0174	0.0146	NO
260926	4	1.3088	1.3333	1.1323	1.1827	0.0216	0.0245	NO
260926	4	1.3088	1.3333	1.1323	1.1827	0.0216	0.0245	NO
199780	2	1.0293	1.1659	0.8259	0.7726	0.1654	0.1366	NO

READING GRADE 3								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
205940	4	2.3268	2.2829	1.2119	1.2329	-0.0362	0.0439	NO
230980	4	1.6275	1.549	1.0565	1.1257	-0.0742	0.0784	NO
230973	4	1.8098	1.8634	0.9965	1.0869	0.0538	0.0537	NO
255338	4	3.1024	3.0439	1.3808	1.3733	-0.0424	0.0585	NO
255336	4	2.039	2.2146	1.2449	1.2426	0.1411	0.1756	NO
201764	4	2.2146	2.2634	1.3225	1.3754	0.0369	0.0488	NO
225242	4	3.478	3.5122	0.9137	0.8645	0.0374	0.0341	NO
225253	4	2.0343	1.9608	1.1219	1.1107	-0.0655	0.0735	NO

READING GRADE 4								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
200843	4	2.0098	2.3578	1.372	1.4018	0.2537	0.348	NO
225776	4	2.1902	2.2098	0.9515	1.0169	0.0205	0.0195	NO
225778	4	1.4878	1.4732	0.9505	1.0663	-0.0154	0.0146	NO
203810	4	2.761	2.7463	1.2674	1.2353	-0.0115	0.0146	NO
232528	4	2.6341	2.5659	1.5548	1.6295	-0.0439	0.0683	NO
203873	4	2.6078	2.5343	0.9768	0.9771	-0.0753	0.0735	NO
232595	4	2.1512	2.2488	1.032	1.0599	0.0945	0.0976	NO
203768	4	1.4341	1.5659	1.0601	1.1095	0.1242	0.1317	NO

READING GRADE 5								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
201937	4	1.6585	1.7902	1.0594	0.9525	0.1243	0.1317	NO
202072	4	1.5463	1.6146	0.9495	0.9842	0.0719	0.0683	NO
202075	4	1.7206	1.6765	0.8719	0.9305	-0.0506	0.0441	NO
201769	4	1.8818	1.7783	1.1123	1.0147	-0.093	0.1034	NO
256415	4	1.5266	1.6135	0.9721	0.9456	0.0895	0.087	NO
256370	4	1.6098	1.561	0.9127	0.8793	-0.0534	0.0488	NO
201911	4	1.6502	1.8128	0.9047	0.9121	0.1797	0.1626	NO
226515	4	1.3202	1.2956	0.9474	0.9371	-0.026	0.0246	NO
226517	4	1.5805	1.5805	0.9726	0.8721	0	0	NO

READING GRADE 6								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
226669	4	1.8571	1.6847	0.7905	0.7422	-0.2181	0.1724	NO
204294	4	1.5025	1.4286	0.9994	0.9616	-0.0739	0.0739	NO
204298	4	1.5074	1.532	1.0615	1.0376	0.0232	0.0246	NO
200348	4	1.9655	1.8966	1.08	0.9696	-0.0639	0.069	NO
204026	4	1.9388	1.8061	0.849	0.7581	-0.1563	0.1327	NO
204022	4	1.7941	1.7353	0.9003	0.8334	-0.0653	0.0588	NO
256347	4	1.6634	1.6829	0.9312	0.7535	0.021	0.0195	NO
226730	4	1.9212	1.6601	1.014	0.9193	-0.2575	0.2611	NO
226735	4	1.5854	1.5805	0.997	0.8665	-0.0049	0.0049	NO

READING GRADE 7								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
201535	4	1.8333	1.951	0.9608	0.9889	0.1224	0.1176	NO
199609	4	1.7317	1.7268	0.9059	0.8285	-0.0054	0.0049	NO
199608	4	1.8732	1.9366	1.0516	1.0269	0.0603	0.0634	NO
256108	4	1.6488	1.8439	1.0376	1.0569	0.188	0.1951	NO
199535	4	1.8829	1.7756	0.8812	0.8195	-0.1218	0.1073	NO
199536	4	1.9659	2.0927	0.891	0.8646	0.1423	0.1268	NO
199569	4	2.0539	2.1618	0.8867	0.8902	0.1216	0.1078	NO
201492	4	1.7931	1.8522	0.9606	0.9085	0.0615	0.0591	NO
201490	4	1.9415	2.1073	0.9141	0.8544	0.1814	0.1659	NO

READING GRADE 8								
IREF	MAXIMUM	OLDMEAN	NEWMEAN	OLDSTDEV	NEWSTDEV	EFF_SIZE	ABS_DIFF	DISCARD
204155	4	2.0049	2.0882	1.0122	0.9812	0.0823	0.0833	NO
204128	4	1.8732	1.9366	0.9441	1.055	0.0672	0.0634	NO
204133	4	2.3707	2.2829	0.9774	0.9412	-0.0898	0.0878	NO
226247	4	2.2732	2.2829	0.9944	0.9667	0.0098	0.0098	NO
255976	4	1.8049	1.9122	0.9632	0.9888	0.1114	0.1073	NO
255965	4	1.9512	2.0341	0.9964	0.9896	0.0832	0.0829	NO
199674	4	1.9707	2.078	1.0069	1.0091	0.1066	0.1073	NO
199675	4	2.1961	2.2549	1.1029	0.987	0.0533	0.0588	NO

SECTION II.C

NECAP

Content and Item Type of Equating Items

Reporting Category	Grade 3								Grade 4							
	Common				Matrix Equating				Common				Matrix Equating			
	MC	SA1	SA2	CR	MC	SA1	SA2	CR	MC	SA1	SA2	CR	MC	SA1	SA2	CR
Number & Operations	19	6	5		17	5	6		15	6	5		17	5	6	
Geometry & Measurement	5	1	2		5	1	2		9	1	2		8	1	2	
Functions & Algebra	6	2	1		6	3	0		4	2	1		1	3	0	
Data, Statistics, & Probability	5	1	2		3	1	2		7	1	2		5	1	2	

Reporting Category	Grade 5								Grade 6							
	Common				Matrix Equating				Common				Matrix Equating			
	MC	SA1	SA2	CR	MC	SA1	SA2	CR	MC	SA1	SA2	CR	MC	SA1	SA2	CR
Number & Operations	18	2	3	1	17	3	3	1	14	2	3	1	12	1	2	2
Geometry & Measurement	6	1	1	1	4	1	1	1	9	2	1	1	9	1	1	1
Functions & Algebra	6	1	1	1	10	1	2	0	6	1	1	1	5	1	1	1
Data, Statistics, & Probability	2	2	1	1	1	1	0	2	3	1	1	1	5	3	2	0

Reporting Category	Grade 7								Grade 8							
	Common				Matrix Equating				Common				Matrix Equating			
	MC	SA1	SA2	CR	MC	SA1	SA2	CR	MC	SA1	SA2	CR	MC	SA1	SA2	CR
Number & Operations	12	2	1	1	11	2	2	1	6	1	1	1	6	1	1	1
Geometry & Measurement	7	1	2	1	10	1	2	1	7	1	2	1	10	1	2	1
Functions & Algebra	9	2	2	1	8	2	2	1	16	3	2	1	12	3	1	2
Data, Statistics, & Probability	4	1	1	1	3	1	1	1	3	1	1	1	4	1	2	0

Reporting Category	Grade 3				Grade 4				Grade 5			
	Common		Matrix Equating		Common		Matrix Equating		Common		Matrix Equating	
	MC	CR	MC	CR	MC	CR	MC	CR	MC	CR	MC	CR
Word ID / Vocabulary	14	2	16	3	10	2	15	3	9	0	15	0
Initial Understanding - Literary	6	1	9	2	6	1	5	1	5	1	6	1
Analysis & Interpretation - Literary	1	1	2	0	3	1	4	1	5	2	9	4
Initial Understanding - Informational	5	1	8	1	6	1	10	1	6	1	6	3
Analysis & Interpretation - Informational	2	1	3	2	3	1	4	2	3	2	6	1

Reporting Category	Grade 6				Grade 7				Grade 8			
	Common		Matrix Equating		Common		Matrix Equating		Common		Matrix Equating	
	MC	CR	MC	CR	MC	CR	MC	CR	MC	CR	MC	CR
Word ID / Vocabulary	9	0	14	0	10	0	14	0	10	0	13	0
Initial Understanding - Literary	4	1	10	0	4	1	2	0	5	1	2	0
Analysis & Interpretation - Literary	5	2	4	4	6	2	13	5	4	2	13	5
Initial Understanding - Informational	7	1	9	2	6	1	10	2	6	1	7	1
Analysis & Interpretation - Informational	3	2	5	3	2	2	2	2	3	2	3	2

SECTION II.D

NECAP
Classical Test Theory Statistics and
Item Specifications for Equating Items

Equating Math Grade 03

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
198283	6	55	0.82	0.39	0.42	4	32	0.84	0.37	0.4	1	1364	'06-07
198292	6	32	0.74	0.44	0.35	5	7	0.76	0.43	0.36	1	1364	'06-07
198465	3	53	0.59	0.49	0.42	6	30	0.61	0.49	0.44	1	1364	'06-07
198465	9	53	0.6	0.49	0.43	6	30	0.61	0.49	0.44	1	1364	'06-07
198468	0	50	0.79	0.41	0.5	5	30	0.79	0.41	0.55	1	1364	'06-07
198517	0	23	1.46	0.76	0.39	2	19	1.44	0.78	0.39	2	1364	'06-07
198517	0	23	1.46	0.76	0.39	8	19	1.48	0.76	0.42	2	1364	'06-07
198521	5	46	0.83	0.83	0.53	6	69	0.89	0.86	0.52	2	1364	'06-07
198551	0	49	0.85	0.36	0.44	4	53	0.85	0.36	0.48	1	1364	'06-07
198557	0	28	0.85	0.36	0.47	3	53	0.87	0.34	0.5	1	1364	'06-07
198557	0	28	0.85	0.36	0.47	9	53	0.86	0.35	0.47	1	1364	'06-07
198573	5	30	0.81	0.39	0.4	4	55	0.81	0.39	0.44	1	1364	'06-07
198577	0	66	0.89	0.31	0.34	3	65	0.88	0.33	0.39	1	1364	'06-07
198577	0	66	0.89	0.31	0.34	9	65	0.88	0.32	0.34	1	1364	'06-07
198582	0	59	0.49	0.5	0.41	1	55	0.51	0.5	0.45	1	1363	'05-06
198582	0	59	0.49	0.5	0.41	7	55	0.49	0.5	0.46	1	1363	'05-06
198636	0	20	1.4	0.69	0.54	4	69	1.36	0.7	0.55	2	1364	'06-07
201312	0	25	0.84	0.37	0.45	3	30	0.85	0.36	0.46	1	1364	'06-07
201312	0	25	0.84	0.37	0.45	9	30	0.86	0.35	0.44	1	1364	'06-07
201401	5	5	0.86	0.34	0.38	1	7	0.83	0.38	0.4	1	1364	'06-07
201401	5	5	0.86	0.34	0.38	7	7	0.84	0.36	0.37	1	1364	'06-07
201404	0	11	0.74	0.44	0.55	3	7	0.76	0.43	0.55	1	1364	'06-07
201404	0	11	0.74	0.44	0.55	9	7	0.74	0.44	0.55	1	1364	'06-07
201416	0	3	0.71	0.45	0.47	2	7	0.65	0.48	0.51	1	1364	'06-07
201416	0	3	0.71	0.45	0.47	8	7	0.64	0.48	0.5	1	1364	'06-07
201446	0	4	0.52	0.5	0.49	3	5	0.52	0.5	0.48	1	1364	'06-07
201446	0	4	0.52	0.5	0.49	9	5	0.51	0.5	0.5	1	1364	'06-07
201459	6	5	0.51	0.5	0.45	1	5	0.49	0.5	0.46	1	1364	'06-07
201459	6	5	0.51	0.5	0.45	7	5	0.5	0.5	0.46	1	1364	'06-07
201477	0	13	0.74	0.44	0.46	2	15	0.73	0.45	0.47	1	1364	'06-07
201477	0	13	0.74	0.44	0.46	8	15	0.72	0.45	0.45	1	1364	'06-07
201481	0	67	0.77	0.42	0.52	1	65	0.78	0.41	0.52	1	1364	'06-07
201481	0	67	0.77	0.42	0.52	7	65	0.79	0.41	0.51	1	1364	'06-07
201520	5	42	0.7	0.46	0.49	2	65	0.68	0.47	0.44	1	1364	'06-07
201520	5	42	0.7	0.46	0.49	8	65	0.66	0.47	0.47	1	1364	'06-07
201581	5	55	0.69	0.46	0.37	5	32	0.6	0.49	0.36	1	1364	'06-07
201604	9	7	0.57	0.5	0.43	3	32	0.55	0.5	0.44	1	1364	'06-07
201604	3	7	0.56	0.5	0.46	9	32	0.55	0.5	0.41	1	1364	'06-07
201614	9	30	0.81	0.39	0.34	3	55	0.82	0.39	0.33	1	1364	'06-07
201614	3	30	0.81	0.39	0.33	9	55	0.82	0.38	0.38	1	1364	'06-07
201619	6	42	0.8	0.4	0.34	3	42	0.85	0.35	0.29	1	1364	'06-07
201619	6	42	0.8	0.4	0.34	9	42	0.85	0.36	0.3	1	1364	'06-07
201754	0	45	1.32	0.71	0.42	1	46	1.36	0.7	0.44	2	1364	'06-07

Equating Math Grade 03

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
201754	0	45	1.32	0.71	0.42	7	46	1.34	0.71	0.42	2	1364	'06-07
201800	0	56	0.85	0.36	0.32	5	55	0.88	0.32	0.31	1	1364	'06-07
201811	8	30	0.77	0.42	0.42	1	53	0.75	0.43	0.43	1	1364	'06-07
201811	2	30	0.77	0.42	0.43	7	53	0.76	0.43	0.44	1	1364	'06-07
201851	6	65	0.65	0.48	0.55	5	65	0.65	0.48	0.59	1	1364	'06-07
201890	6	53	0.86	0.35	0.44	1	30	0.88	0.32	0.44	1	1364	'06-07
201890	6	53	0.86	0.35	0.44	7	30	0.89	0.32	0.41	1	1364	'06-07
202089	4	46	0.83	0.94	0.51	2	69	0.93	0.94	0.53	2	1364	'06-07
202089	4	46	0.83	0.94	0.51	8	69	0.92	0.94	0.51	2	1364	'06-07
205957	0	14	0.34	0.47	0.46	6	15	0.53	0.5	0.51	1	1364	'06-07
223879	0	9	0.84	0.36	0.42	5	5	0.84	0.37	0.45	1	1364	'06-07
223883	9	5	0.76	0.43	0.38	6	7	0.75	0.43	0.38	1	1364	'06-07
223883	3	5	0.76	0.43	0.38	6	7	0.75	0.43	0.38	1	1364	'06-07
223892	0	59	0.82	0.39	0.4	4	30	0.78	0.42	0.41	1	1364	'06-07
223896	4	55	0.82	0.39	0.4	6	53	0.8	0.4	0.43	1	1364	'06-07
223920	0	17	0.65	0.48	0.43	1	15	0.68	0.47	0.51	1	1364	'06-07
223920	0	17	0.65	0.48	0.43	7	15	0.71	0.46	0.52	1	1364	'06-07
223923	0	18	0.68	0.78	0.52	4	19	0.72	0.8	0.52	2	1364	'06-07
226696	4	5	0.71	0.46	0.47	4	7	0.73	0.44	0.5	1	1364	'06-07
226937	0	29	0.6	0.49	0.49	1	32	0.63	0.48	0.48	1	1364	'06-07
226937	0	29	0.6	0.49	0.49	7	32	0.63	0.48	0.5	1	1364	'06-07
226943	7	55	0.69	0.46	0.44	6	32	0.72	0.45	0.43	1	1364	'06-07
226943	1	55	0.7	0.46	0.42	6	32	0.72	0.45	0.43	1	1364	'06-07
226945	0	37	0.58	0.49	0.46	2	32	0.62	0.49	0.43	1	1364	'06-07
226945	0	37	0.58	0.49	0.46	8	32	0.62	0.49	0.46	1	1364	'06-07
226965	0	16	0.62	0.48	0.46	4	15	0.63	0.48	0.46	1	1364	'06-07
226979	0	51	0.54	0.5	0.29	5	53	0.6	0.49	0.28	1	1364	'06-07
227039	0	60	0.52	0.5	0.48	6	55	0.46	0.5	0.45	1	1364	'06-07
227127	9	69	0.87	0.75	0.55	3	69	0.94	0.75	0.56	2	1364	'06-07
227127	3	69	0.88	0.75	0.58	9	69	0.88	0.73	0.55	2	1364	'06-07
231017	6	19	0.68	0.59	0.44	3	19	0.71	0.63	0.43	2	1364	'06-07
231017	6	19	0.68	0.59	0.44	9	19	0.68	0.6	0.42	2	1364	'06-07
242779	0	68	0.9	0.91	0.55	5	46	0.95	0.91	0.56	2	1364	'06-07
242782	0	70	1.42	0.71	0.58	5	69	1.51	0.71	0.61	2	1364	'06-07
255686	9	6	0.76	0.43	0.48	4	5	0.76	0.43	0.48	1	1364	'06-07
255686	3	6	0.75	0.43	0.48	4	5	0.76	0.43	0.48	1	1364	'06-07
255983	2	42	0.5	0.5	0.48	5	42	0.55	0.5	0.52	1	1364	'06-07

Equating Math Grade 04

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
198327	0	24	0.93	0.26	0.26	3	5	0.92	0.27	0.29	1	1364	'06-07
198327	0	24	0.93	0.26	0.26	9	5	0.93	0.26	0.25	1	1364	'06-07
198328	0	4	0.35	0.48	0.38	3	7	0.4	0.49	0.38	1	1364	'06-07
198328	0	4	0.35	0.48	0.38	9	7	0.39	0.49	0.38	1	1364	'06-07
198381	8	5	0.69	0.46	0.47	4	5	0.72	0.45	0.45	1	1364	'06-07
198381	2	5	0.7	0.46	0.5	4	5	0.72	0.45	0.45	1	1364	'06-07
198384	5	7	0.52	0.5	0.34	6	7	0.52	0.5	0.29	1	1364	'06-07
198400	0	3	0.74	0.44	0.46	1	7	0.7	0.46	0.49	1	1364	'06-07
198400	0	3	0.74	0.44	0.46	7	7	0.71	0.45	0.5	1	1364	'06-07
198401	0	40	0.76	0.43	0.33	2	65	0.7	0.46	0.35	1	1364	'06-07
198401	0	40	0.76	0.43	0.33	8	65	0.71	0.45	0.35	1	1364	'06-07
198411	6	15	0.32	0.47	0.48	6	15	0.47	0.5	0.56	1	1364	'06-07
198426	1	15	0.77	0.42	0.39	5	15	0.8	0.4	0.38	1	1364	'06-07
198426	7	15	0.77	0.42	0.39	5	15	0.8	0.4	0.38	1	1364	'06-07
198430	0	35	0.87	0.34	0.43	3	30	0.86	0.35	0.49	1	1364	'06-07
198430	0	35	0.87	0.34	0.43	9	30	0.85	0.36	0.45	1	1364	'06-07
198431	0	20	0.84	0.83	0.48	5	19	0.76	0.82	0.46	2	1364	'06-07
198442	0	44	1.29	0.8	0.37	3	69	1.17	0.83	0.33	2	1364	'06-07
198442	0	44	1.29	0.8	0.37	9	69	1.17	0.83	0.35	2	1364	'06-07
202322	8	55	0.86	0.35	0.39	4	55	0.85	0.36	0.38	1	1364	'06-07
202322	2	55	0.85	0.35	0.39	4	55	0.85	0.36	0.38	1	1364	'06-07
202331	6	30	0.8	0.4	0.35	2	30	0.8	0.4	0.37	1	1364	'06-07
202331	6	30	0.8	0.4	0.35	8	30	0.8	0.4	0.35	1	1364	'06-07
202347	0	9	0.7	0.46	0.44	5	5	0.73	0.45	0.43	1	1364	'06-07
202354	6	5	0.5	0.5	0.48	6	5	0.52	0.5	0.46	1	1364	'06-07
202368	6	19	1.19	0.68	0.6	4	19	1.11	0.76	0.56	2	1364	'06-07
202377	0	18	1.58	0.73	0.48	6	19	1.54	0.76	0.47	2	1364	'06-07
202384	6	55	0.79	0.41	0.33	4	32	0.79	0.41	0.32	1	1364	'06-07
202388	0	50	0.73	0.44	0.48	2	32	0.7	0.46	0.47	1	1364	'06-07
202388	0	50	0.73	0.44	0.48	8	32	0.71	0.45	0.44	1	1364	'06-07
202396	4	53	0.86	0.34	0.17	6	30	0.86	0.35	0.21	1	1364	'06-07
202484	4	15	0.21	0.41	0.38	2	15	0.28	0.45	0.43	1	1364	'06-07
202484	4	15	0.21	0.41	0.38	8	15	0.3	0.46	0.44	1	1364	'06-07
202489	5	69	1.23	0.83	0.56	4	69	1.23	0.83	0.59	2	1364	'06-07
202500	0	48	0.85	0.36	0.38	3	53	0.83	0.37	0.4	1	1364	'06-07
202500	0	48	0.85	0.36	0.38	9	53	0.83	0.38	0.39	1	1364	'06-07
223956	0	48	0.76	0.43	0.51	1	53	0.8	0.4	0.5	1	1363	'05-06
223956	0	48	0.76	0.43	0.51	7	53	0.81	0.39	0.49	1	1363	'05-06
223960	0	12	0.84	0.36	0.4	2	7	0.85	0.35	0.4	1	1364	'06-07
223960	0	12	0.84	0.36	0.4	8	7	0.85	0.35	0.39	1	1364	'06-07
223966	0	52	0.51	0.5	0.39	4	53	0.57	0.5	0.44	1	1364	'06-07
223968	7	7	0.2	0.4	0.27	1	5	0.2	0.4	0.27	1	1364	'06-07

Equating Math Grade 04

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
223968	1	7	0.2	0.4	0.28	7	5	0.21	0.41	0.26	1	1364	'06-07
224032	0	26	0.61	0.49	0.47	4	30	0.63	0.48	0.48	1	1364	'06-07
224096	4	46	0.99	0.81	0.61	2	69	1.05	0.81	0.63	2	1363	'05-06
224096	4	46	0.99	0.81	0.61	8	69	1.06	0.82	0.64	2	1363	'05-06
224099	9	46	1.59	0.73	0.42	3	46	1.55	0.73	0.44	2	1364	'06-07
224099	3	46	1.6	0.72	0.41	9	46	1.58	0.72	0.43	2	1364	'06-07
227035	7	32	0.73	0.44	0.45	3	55	0.85	0.36	0.47	1	1364	'06-07
227035	1	32	0.72	0.45	0.45	9	55	0.85	0.36	0.46	1	1364	'06-07
227058	0	28	0.87	0.34	0.39	5	32	0.88	0.33	0.39	1	1364	'06-07
227060	0	51	0.85	0.35	0.46	5	53	0.83	0.38	0.47	1	1364	'06-07
227070	0	8	0.36	0.48	0.28	2	5	0.36	0.48	0.26	1	1364	'06-07
227070	0	8	0.36	0.48	0.28	8	5	0.36	0.48	0.28	1	1364	'06-07
227082	9	69	1.37	0.58	0.59	6	69	1.38	0.56	0.61	2	1364	'06-07
227082	3	69	1.35	0.56	0.55	6	69	1.38	0.56	0.61	2	1364	'06-07
227088	0	29	0.19	0.39	0.09	3	32	0.19	0.39	0.1	1	1364	'06-07
227088	0	29	0.19	0.39	0.09	9	32	0.17	0.38	0.05	1	1364	'06-07
227089	6	32	0.66	0.47	0.41	2	55	0.76	0.43	0.4	1	1364	'06-07
227089	6	32	0.66	0.47	0.41	8	55	0.76	0.43	0.39	1	1364	'06-07
227096	0	68	0.83	0.81	0.4	5	69	0.81	0.8	0.46	2	1364	'06-07
227098	0	33	0.65	0.48	0.51	5	30	0.66	0.47	0.53	1	1364	'06-07
227107	0	57	0.81	0.39	0.49	1	55	0.8	0.4	0.49	1	1364	'06-07
227107	0	57	0.81	0.39	0.49	7	55	0.82	0.39	0.49	1	1364	'06-07
232429	0	21	1.18	0.92	0.59	1	19	1.17	0.89	0.57	2	1364	'06-07
232429	0	21	1.18	0.92	0.59	7	19	1.18	0.9	0.55	2	1364	'06-07
232445	7	30	0.81	0.39	0.45	6	32	0.81	0.39	0.36	1	1364	'06-07
232445	1	30	0.81	0.39	0.44	6	32	0.81	0.39	0.36	1	1364	'06-07
232534	0	64	0.55	0.5	0.53	3	65	0.57	0.5	0.53	1	1364	'06-07
232534	0	64	0.55	0.5	0.53	9	65	0.56	0.5	0.54	1	1364	'06-07
232535	0	13	0.56	0.5	0.47	1	15	0.56	0.5	0.49	1	1364	'06-07
232535	0	13	0.56	0.5	0.47	7	15	0.56	0.5	0.49	1	1364	'06-07
232537	5	30	0.72	0.45	0.48	1	30	0.74	0.44	0.43	1	1363	'05-06
232537	5	30	0.72	0.45	0.48	7	30	0.76	0.43	0.44	1	1363	'05-06
232543	0	67	0.71	0.45	0.49	4	65	0.59	0.49	0.44	1	1364	'06-07
232594	8	7	0.48	0.5	0.39	4	7	0.49	0.5	0.39	1	1364	'06-07
232594	2	7	0.46	0.5	0.4	4	7	0.49	0.5	0.39	1	1364	'06-07
232599	5	65	0.49	0.5	0.42	5	65	0.47	0.5	0.4	1	1364	'06-07
232604	4	5	0.46	0.5	0.43	5	7	0.5	0.5	0.46	1	1364	'06-07
255732	4	42	0.59	0.49	0.43	6	65	0.59	0.49	0.44	1	1364	'06-07
255739	1	42	0.54	0.5	0.43	1	65	0.6	0.49	0.41	1	1364	'06-07
255739	1	42	0.54	0.5	0.43	7	65	0.61	0.49	0.4	1	1364	'06-07

Equating Math Grade 05

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
198487	8	7	0.73	0.44	0.46	5	9	0.72	0.45	0.48	1	1364	'06-07
198487	2	7	0.73	0.45	0.47	5	9	0.72	0.45	0.48	1	1364	'06-07
198548	9	38	0.5	0.5	0.48	2	36	0.49	0.5	0.47	1	1364	'06-07
198548	3	38	0.49	0.5	0.49	8	36	0.51	0.5	0.47	1	1364	'06-07
198585	3	51	0.65	0.48	0.44	1	49	0.63	0.48	0.46	1	1364	'06-07
198585	9	51	0.66	0.47	0.47	7	49	0.63	0.48	0.42	1	1364	'06-07
198603	3	61	1.39	0.79	0.47	3	39	1.32	0.85	0.47	2	1364	'06-07
198603	9	61	1.44	0.79	0.48	9	39	1.31	0.86	0.46	2	1364	'06-07
203258	0	46	0.85	0.36	0.35	1	51	0.87	0.34	0.33	1	1364	'06-07
203258	0	46	0.85	0.36	0.35	7	51	0.87	0.34	0.29	1	1364	'06-07
203280	0	32	0.7	0.46	0.48	4	28	0.69	0.46	0.49	1	1364	'06-07
203293	5	49	0.49	0.5	0.57	3	51	0.51	0.5	0.53	1	1364	'06-07
203293	5	49	0.49	0.5	0.57	9	51	0.51	0.5	0.56	1	1364	'06-07
203298	4	9	0.35	0.48	0.34	3	7	0.42	0.49	0.35	1	1364	'06-07
203298	4	9	0.35	0.48	0.34	9	7	0.41	0.49	0.33	1	1364	'06-07
203299	6	9	0.46	0.5	0.36	2	7	0.52	0.5	0.4	1	1364	'06-07
203299	6	9	0.46	0.5	0.36	8	7	0.51	0.5	0.4	1	1364	'06-07
203356	4	7	0.5	0.5	0.46	1	9	0.52	0.5	0.42	1	1364	'06-07
203356	4	7	0.5	0.5	0.46	7	9	0.54	0.5	0.47	1	1364	'06-07
203358	0	2	0.71	0.45	0.41	5	7	0.72	0.45	0.41	1	1364	'06-07
203367	2	9	0.4	0.49	0.26	4	7	0.42	0.49	0.22	1	1364	'06-07
203367	8	9	0.43	0.49	0.24	4	7	0.42	0.49	0.22	1	1364	'06-07
203378	6	26	0.61	0.49	0.36	4	51	0.63	0.48	0.38	1	1364	'06-07
203556	5	36	0.59	0.49	0.33	4	38	0.63	0.48	0.35	1	1364	'06-07
203559	6	16	0.55	0.5	0.46	6	16	0.6	0.49	0.46	1	1364	'06-07
203584	0	30	0.53	0.5	0.44	6	49	0.54	0.5	0.44	1	1364	'06-07
203606	2	28	0.45	0.5	0.43	5	49	0.46	0.5	0.44	1	1364	'06-07
203606	8	28	0.45	0.5	0.44	5	49	0.46	0.5	0.44	1	1364	'06-07
203893	6	49	0.75	0.43	0.35	2	26	0.76	0.43	0.31	1	1364	'06-07
203893	6	49	0.75	0.43	0.35	8	26	0.77	0.42	0.29	1	1364	'06-07
203898	4	51	0.6	0.49	0.42	6	9	0.57	0.5	0.41	1	1364	'06-07
203914	2	51	0.55	0.5	0.23	3	49	0.54	0.5	0.37	1	1364	'06-07
203914	8	51	0.52	0.5	0.26	9	49	0.53	0.5	0.37	1	1364	'06-07
203933	0	22	0.84	0.36	0.36	5	26	0.84	0.37	0.35	1	1364	'06-07
203938	8	26	0.71	0.45	0.49	4	26	0.66	0.47	0.46	1	1364	'06-07
203938	2	26	0.72	0.45	0.47	4	26	0.66	0.47	0.46	1	1364	'06-07
203941	0	37	0.81	0.39	0.37	4	36	0.79	0.4	0.4	1	1364	'06-07
203949	0	65	0.66	0.78	0.58	1	61	0.74	0.83	0.58	2	1364	'06-07
203949	0	65	0.66	0.78	0.58	7	61	0.74	0.84	0.57	2	1364	'06-07
203977	5	28	0.51	0.5	0.38	6	28	0.49	0.5	0.37	1	1364	'06-07
203997	4	16	0.38	0.49	0.46	1	36	0.38	0.49	0.44	1	1364	'06-07
203997	4	16	0.38	0.49	0.46	7	36	0.38	0.49	0.41	1	1364	'06-07

Equating Math Grade 05

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
225011	0	29	0.42	0.49	0.49	5	28	0.43	0.5	0.53	1	1364	'06-07
225025	0	41	0.8	0.85	0.39	2	39	0.9	0.87	0.4	2	1364	'06-07
225025	0	41	0.8	0.85	0.39	8	39	0.91	0.87	0.38	2	1364	'06-07
225028	0	62	1.58	1.46	0.67	5	64	1.67	1.45	0.69	4	1364	'06-07
225032	9	26	0.48	0.5	0.49	4	49	0.52	0.5	0.5	1	1364	'06-07
225032	3	26	0.48	0.5	0.48	4	49	0.52	0.5	0.5	1	1364	'06-07
225295	0	52	0.48	0.5	0.34	3	26	0.47	0.5	0.32	1	1364	'06-07
225295	0	52	0.48	0.5	0.34	9	26	0.47	0.5	0.37	1	1364	'06-07
225298	8	49	0.57	0.5	0.44	3	28	0.59	0.49	0.46	1	1364	'06-07
225298	2	49	0.56	0.5	0.45	9	28	0.61	0.49	0.46	1	1364	'06-07
225316	0	48	0.54	0.5	0.44	6	51	0.49	0.5	0.37	1	1364	'06-07
225333	0	11	0.5	0.5	0.44	2	9	0.5	0.5	0.49	1	1364	'06-07
225333	0	11	0.5	0.5	0.44	8	9	0.51	0.5	0.46	1	1364	'06-07
225346	0	63	1.18	0.86	0.56	4	61	1.18	0.88	0.58	2	1364	'06-07
225389	2	39	0.55	0.76	0.56	6	61	0.54	0.77	0.53	2	1364	'06-07
225389	8	39	0.54	0.74	0.57	6	61	0.54	0.77	0.53	2	1364	'06-07
225404	6	28	0.69	0.46	0.32	1	26	0.7	0.46	0.34	1	1364	'06-07
225404	6	28	0.69	0.46	0.32	7	26	0.71	0.45	0.33	1	1364	'06-07
225408	0	4	0.36	0.48	0.3	1	28	0.36	0.48	0.32	1	1364	'06-07
225408	0	4	0.36	0.48	0.3	7	28	0.35	0.48	0.3	1	1364	'06-07
225453	6	20	1.08	1.27	0.66	4	20	1.06	1.27	0.64	4	1364	'06-07
226715	8	8	0.34	0.47	0.33	4	9	0.33	0.47	0.38	1	1364	'06-07
226715	2	8	0.33	0.47	0.35	4	9	0.33	0.47	0.38	1	1364	'06-07
226814	7	49	0.36	0.48	0.42	6	26	0.34	0.48	0.4	1	1364	'06-07
226814	1	49	0.36	0.48	0.43	6	26	0.34	0.48	0.4	1	1364	'06-07
230748	0	40	1.01	1.35	0.59	3	20	1.02	1.35	0.58	4	1364	'06-07
230748	0	40	1.01	1.35	0.59	9	20	0.98	1.35	0.59	4	1364	'06-07
234368	4	19	0.88	0.88	0.58	1	19	0.77	0.9	0.55	2	1364	'06-07
234368	4	19	0.88	0.88	0.58	7	19	0.79	0.9	0.54	2	1364	'06-07
234370	0	24	0.75	0.43	0.42	2	49	0.77	0.42	0.41	1	1364	'06-07
234370	0	24	0.75	0.43	0.42	8	49	0.77	0.42	0.41	1	1364	'06-07
234393	5	9	0.49	0.5	0.44	1	7	0.47	0.5	0.45	1	1364	'06-07
234393	5	9	0.49	0.5	0.44	7	7	0.48	0.5	0.47	1	1364	'06-07
241932	0	18	1.96	1.42	0.59	1	20	1.93	1.43	0.61	4	1364	'06-07
241932	0	18	1.96	1.42	0.59	7	20	1.97	1.43	0.61	4	1364	'06-07
255763	9	50	0.51	0.5	0.41	5	51	0.47	0.5	0.4	1	1364	'06-07
255763	3	50	0.5	0.5	0.4	5	51	0.47	0.5	0.4	1	1364	'06-07
260931	7	36	0.42	0.49	0.45	6	36	0.39	0.49	0.44	1	1364	'06-07
260931	1	36	0.42	0.49	0.46	6	36	0.39	0.49	0.44	1	1364	'06-07

Equating Math Grade 06

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
198609	5	7	0.48	0.5	0.48	4	7	0.48	0.5	0.5	1	1364	'06-07
198610	0	6	0.78	0.41	0.46	1	7	0.78	0.42	0.46	1	1364	'06-07
198610	0	6	0.78	0.41	0.46	7	7	0.78	0.41	0.44	1	1364	'06-07
198612	0	11	0.38	0.48	0.43	6	7	0.38	0.49	0.44	1	1364	'06-07
198632	8	19	0.82	0.89	0.68	3	19	0.79	0.89	0.66	2	1364	'06-07
198632	2	19	0.8	0.88	0.69	9	19	0.87	0.9	0.67	2	1364	'06-07
198649	0	55	0.47	0.5	0.39	4	51	0.49	0.5	0.44	1	1364	'06-07
198650	0	32	0.63	0.48	0.36	6	28	0.66	0.47	0.35	1	1364	'06-07
198713	0	14	0.61	0.49	0.55	1	16	0.58	0.49	0.55	1	1364	'06-07
198713	0	14	0.61	0.49	0.55	7	16	0.61	0.49	0.56	1	1364	'06-07
198716	0	41	0.89	0.67	0.49	3	61	0.92	0.68	0.5	2	1364	'06-07
198716	0	41	0.89	0.67	0.49	9	61	0.91	0.67	0.45	2	1364	'06-07
198722	9	49	0.62	0.48	0.51	3	51	0.63	0.48	0.49	1	1364	'06-07
198722	3	49	0.63	0.48	0.5	9	51	0.65	0.48	0.5	1	1364	'06-07
198726	4	61	0.75	0.9	0.56	6	61	0.73	0.89	0.54	2	1364	'06-07
198727	5	19	0.52	0.74	0.57	1	39	0.63	0.78	0.57	2	1364	'06-07
198727	5	19	0.52	0.74	0.57	7	39	0.62	0.78	0.56	2	1364	'06-07
203167	5	9	0.4	0.49	0.47	3	9	0.39	0.49	0.48	1	1364	'06-07
203167	5	9	0.4	0.49	0.47	9	9	0.41	0.49	0.49	1	1364	'06-07
203173	4	7	0.46	0.5	0.45	2	26	0.46	0.5	0.46	1	1364	'06-07
203173	4	7	0.46	0.5	0.45	8	26	0.48	0.5	0.46	1	1364	'06-07
203188	9	26	0.63	0.48	0.51	2	7	0.64	0.48	0.48	1	1364	'06-07
203188	3	26	0.63	0.48	0.5	8	7	0.66	0.47	0.48	1	1364	'06-07
203204	0	13	0.62	0.49	0.5	2	9	0.64	0.48	0.47	1	1364	'06-07
203204	0	13	0.62	0.49	0.5	8	9	0.65	0.48	0.47	1	1364	'06-07
203217	0	12	0.65	0.48	0.37	5	9	0.65	0.48	0.35	1	1364	'06-07
203279	0	21	1.37	0.85	0.54	6	19	1.39	0.81	0.53	2	1364	'06-07
203350	5	26	0.61	0.49	0.26	5	26	0.64	0.48	0.31	1	1364	'06-07
203379	0	53	0.33	0.47	0.32	5	28	0.33	0.47	0.37	1	1364	'06-07
203381	0	33	0.79	0.4	0.25	5	51	0.77	0.42	0.28	1	1364	'06-07
203393	0	30	0.5	0.5	0.49	1	26	0.48	0.5	0.49	1	1364	'06-07
203393	0	30	0.5	0.5	0.49	7	26	0.47	0.5	0.49	1	1364	'06-07
203452	4	28	0.52	0.5	0.46	1	28	0.54	0.5	0.43	1	1364	'06-07
203452	4	28	0.52	0.5	0.46	7	28	0.55	0.5	0.44	1	1364	'06-07
203453	8	9	0.59	0.49	0.36	1	9	0.57	0.5	0.38	1	1364	'06-07
203453	2	9	0.6	0.49	0.37	7	9	0.58	0.49	0.36	1	1364	'06-07
203457	2	51	0.68	0.46	0.5	4	26	0.66	0.47	0.47	1	1364	'06-07
203457	8	51	0.69	0.46	0.49	4	26	0.66	0.47	0.47	1	1364	'06-07
203526	7	51	0.57	0.5	0.28	4	28	0.61	0.49	0.26	1	1364	'06-07
203526	1	51	0.58	0.49	0.29	4	28	0.61	0.49	0.26	1	1364	'06-07
203543	7	38	0.46	0.5	0.4	1	36	0.47	0.5	0.39	1	1364	'06-07
203543	1	38	0.44	0.5	0.42	7	36	0.46	0.5	0.4	1	1364	'06-07

Equating Math Grade 06

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
225180	9	51	0.46	0.5	0.47	3	26	0.42	0.49	0.48	1	1364	'06-07
225180	3	51	0.46	0.5	0.47	9	26	0.46	0.5	0.47	1	1364	'06-07
225267	0	31	0.6	0.49	0.46	3	28	0.52	0.5	0.45	1	1364	'06-07
225267	0	31	0.6	0.49	0.46	9	28	0.55	0.5	0.42	1	1364	'06-07
225300	0	54	0.14	0.34	0.26	6	49	0.12	0.32	0.28	1	1364	'06-07
225318	0	25	0.46	0.5	0.53	3	49	0.48	0.5	0.54	1	1364	'06-07
225318	0	25	0.46	0.5	0.53	9	49	0.49	0.5	0.57	1	1364	'06-07
225334	5	20	1.41	1.47	0.71	4	20	1.4	1.46	0.73	4	1364	'06-07
225345	7	49	0.41	0.49	0.25	1	51	0.49	0.5	0.31	1	1364	'06-07
225345	1	49	0.4	0.49	0.25	7	51	0.51	0.5	0.31	1	1364	'06-07
225351	0	24	0.5	0.5	0.27	3	7	0.49	0.5	0.25	1	1364	'06-07
225351	0	24	0.5	0.5	0.27	9	7	0.51	0.5	0.25	1	1364	'06-07
225363	0	60	0.36	0.48	0.29	6	16	0.4	0.49	0.32	1	1364	'06-07
225376	0	5	0.49	0.5	0.38	6	9	0.49	0.5	0.38	1	1364	'06-07
225377	2	36	0.58	0.49	0.5	6	36	0.6	0.49	0.49	1	1364	'06-07
225377	8	36	0.58	0.49	0.54	6	36	0.6	0.49	0.49	1	1364	'06-07
225381	0	18	1.33	1.38	0.63	3	20	1.41	1.45	0.65	4	1364	'06-07
225381	0	18	1.33	1.38	0.63	9	20	1.45	1.49	0.64	4	1364	'06-07
225427	8	49	0.4	0.49	0.25	4	49	0.39	0.49	0.28	1	1364	'06-07
225427	2	49	0.4	0.49	0.23	4	49	0.39	0.49	0.28	1	1364	'06-07
228669	0	37	0.67	0.47	0.61	3	36	0.67	0.47	0.58	1	1364	'06-07
228669	0	37	0.67	0.47	0.61	9	36	0.71	0.45	0.59	1	1364	'06-07
233588	0	40	1.59	1.39	0.7	5	64	1.63	1.41	0.69	4	1364	'06-07
234406	3	39	1.09	0.8	0.59	2	19	1.13	0.8	0.57	2	1364	'06-07
234406	9	39	1.1	0.79	0.6	8	19	1.13	0.81	0.58	2	1364	'06-07
234411	6	51	0.54	0.5	0.43	5	49	0.53	0.5	0.47	1	1364	'06-07
234416	6	9	0.45	0.5	0.21	2	28	0.52	0.5	0.26	1	1364	'06-07
234416	6	9	0.45	0.5	0.21	8	28	0.53	0.5	0.28	1	1364	'06-07
234417	3	64	1.69	1.72	0.69	2	64	1.66	1.7	0.65	4	1364	'06-07
234417	9	64	1.73	1.73	0.67	8	64	1.68	1.72	0.66	4	1364	'06-07
242302	0	47	0.57	0.5	0.53	1	49	0.58	0.49	0.5	1	1364	'06-07
242302	0	47	0.57	0.5	0.53	7	49	0.61	0.49	0.5	1	1364	'06-07
255359	4	50	0.3	0.46	0.47	2	49	0.31	0.46	0.5	1	1364	'06-07
255359	4	50	0.3	0.46	0.47	8	49	0.33	0.47	0.5	1	1364	'06-07
255569	1	16	0.56	0.5	0.55	4	36	0.61	0.49	0.55	1	1364	'06-07

Equating Math Grade 07

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
199870	0	25	0.52	0.5	0.37	2	26	0.51	0.5	0.38	1	1364	'06-07
199870	0	25	0.52	0.5	0.37	8	26	0.51	0.5	0.38	1	1364	'06-07
199898	6	28	0.87	0.33	0.25	4	51	0.87	0.33	0.29	1	1364	'06-07
199918	4	51	0.57	0.5	0.42	4	26	0.64	0.48	0.38	1	1364	'06-07
199925	0	47	0.51	0.5	0.36	5	28	0.55	0.5	0.36	1	1364	'06-07
199947	0	48	0.7	0.46	0.39	5	51	0.66	0.47	0.39	1	1364	'06-07
199950	0	60	0.71	0.46	0.42	5	36	0.62	0.48	0.41	1	1364	'06-07
206097	8	9	0.51	0.5	0.29	5	7	0.47	0.5	0.27	1	1364	'06-07
206097	2	9	0.5	0.5	0.26	5	7	0.47	0.5	0.27	1	1364	'06-07
206098	6	9	0.8	0.4	0.22	2	7	0.8	0.4	0.24	1	1364	'06-07
206098	6	9	0.8	0.4	0.22	8	7	0.81	0.39	0.2	1	1364	'06-07
206102	4	9	0.34	0.47	0.45	6	7	0.4	0.49	0.46	1	1364	'06-07
206103	6	7	0.59	0.49	0.45	1	7	0.56	0.5	0.45	1	1364	'06-07
206103	6	7	0.59	0.49	0.45	7	7	0.57	0.49	0.46	1	1364	'06-07
206104	4	7	0.53	0.5	0.46	3	7	0.54	0.5	0.47	1	1364	'06-07
206104	4	7	0.53	0.5	0.46	9	7	0.54	0.5	0.46	1	1364	'06-07
206127	3	20	1.51	1.12	0.69	4	20	1.59	1.17	0.71	4	1364	'06-07
206127	9	20	1.52	1.15	0.69	4	20	1.59	1.17	0.71	4	1364	'06-07
206135	4	26	0.4	0.49	0.26	4	28	0.45	0.5	0.29	1	1364	'06-07
206141	1	51	0.52	0.5	0.52	3	49	0.5	0.5	0.52	1	1364	'06-07
206141	7	51	0.53	0.5	0.51	9	49	0.5	0.5	0.5	1	1364	'06-07
206144	2	49	0.56	0.5	0.36	6	28	0.62	0.49	0.36	1	1364	'06-07
206144	8	49	0.57	0.49	0.36	6	28	0.62	0.49	0.36	1	1364	'06-07
206152	5	61	0.34	0.59	0.49	5	39	0.47	0.68	0.51	2	1364	'06-07
206158	0	44	0.74	0.44	0.45	1	49	0.74	0.44	0.47	1	1364	'06-07
206158	0	44	0.74	0.44	0.45	7	49	0.76	0.43	0.44	1	1364	'06-07
206164	6	51	0.61	0.49	0.34	1	26	0.55	0.5	0.31	1	1364	'06-07
206164	6	51	0.61	0.49	0.34	7	26	0.54	0.5	0.27	1	1364	'06-07
206172	5	7	0.52	0.5	0.4	1	9	0.56	0.5	0.43	1	1364	'06-07
206172	5	7	0.52	0.5	0.4	7	9	0.57	0.5	0.4	1	1364	'06-07
206177	0	55	0.73	0.44	0.44	2	28	0.77	0.42	0.45	1	1364	'06-07
206177	0	55	0.73	0.44	0.44	8	28	0.78	0.41	0.42	1	1364	'06-07
206181	5	36	0.48	0.5	0.38	1	38	0.34	0.47	0.34	1	1364	'06-07
206181	5	36	0.48	0.5	0.38	7	38	0.36	0.48	0.35	1	1364	'06-07
206189	2	61	0.86	0.89	0.44	6	61	0.81	0.89	0.42	2	1364	'06-07
206189	8	61	0.87	0.9	0.45	6	61	0.81	0.89	0.42	2	1364	'06-07
206195	0	62	2.27	1.66	0.51	2	64	2.18	1.63	0.53	4	1364	'06-07
206195	0	62	2.27	1.66	0.51	8	64	2.18	1.64	0.54	4	1364	'06-07
206203	3	7	0.24	0.43	0.41	3	9	0.25	0.44	0.43	1	1364	'06-07
206203	9	7	0.23	0.42	0.45	9	9	0.26	0.44	0.46	1	1364	'06-07
206213	7	61	0.94	0.93	0.36	3	39	0.98	0.94	0.32	2	1363	'05-06
206213	1	61	0.93	0.94	0.39	9	39	0.94	0.95	0.32	2	1363	'05-06

Equating Math Grade 07

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
224761	0	31	0.59	0.49	0.38	3	28	0.57	0.49	0.39	1	1364	'06-07
224761	0	31	0.59	0.49	0.38	9	28	0.58	0.49	0.38	1	1364	'06-07
224764	0	2	0.88	0.33	0.31	4	7	0.87	0.34	0.35	1	1364	'06-07
224777	6	49	0.43	0.49	0.39	5	9	0.46	0.5	0.35	1	1364	'06-07
224781	4	28	0.33	0.47	0.46	1	28	0.28	0.45	0.44	1	1364	'06-07
224781	4	28	0.33	0.47	0.46	7	28	0.27	0.44	0.41	1	1364	'06-07
224793	9	51	0.67	0.47	0.37	5	49	0.68	0.47	0.29	1	1364	'06-07
224793	3	51	0.67	0.47	0.34	5	49	0.68	0.47	0.29	1	1364	'06-07
224801	0	13	0.36	0.48	0.36	2	9	0.38	0.49	0.35	1	1364	'06-07
224801	0	13	0.36	0.48	0.36	8	9	0.4	0.49	0.33	1	1364	'06-07
224827	0	15	0.4	0.49	0.44	6	16	0.43	0.5	0.45	1	1364	'06-07
224856	7	61	0.54	0.85	0.47	1	61	0.49	0.83	0.49	2	1364	'06-07
224856	1	61	0.54	0.85	0.48	7	61	0.49	0.83	0.46	2	1364	'06-07
224876	0	40	0.84	1.3	0.63	1	64	0.86	1.32	0.65	4	1364	'06-07
224876	0	40	0.84	1.3	0.63	7	64	0.9	1.31	0.62	4	1364	'06-07
224924	5	64	1.4	1.28	0.67	6	64	1.36	1.28	0.66	4	1364	'06-07
225078	0	52	0.38	0.49	0.17	2	51	0.41	0.49	0.21	1	1364	'06-07
225078	0	52	0.38	0.49	0.17	8	51	0.42	0.49	0.23	1	1364	'06-07
225135	5	19	0.75	0.82	0.53	6	19	0.69	0.86	0.47	2	1364	'06-07
228094	0	53	0.61	0.49	0.34	6	49	0.58	0.49	0.36	1	1364	'06-07
228103	5	51	0.32	0.46	0.22	1	51	0.33	0.47	0.24	1	1364	'06-07
228103	5	51	0.32	0.46	0.22	7	51	0.34	0.48	0.22	1	1364	'06-07
233831	0	32	0.33	0.47	0.48	6	9	0.35	0.48	0.52	1	1364	'06-07
234445	5	28	0.46	0.5	0.4	3	51	0.45	0.5	0.43	1	1364	'06-07
234445	5	28	0.46	0.5	0.4	9	51	0.46	0.5	0.44	1	1364	'06-07
234452	8	28	0.85	0.36	0.4	2	49	0.88	0.33	0.42	1	1364	'06-07
234452	2	28	0.85	0.36	0.42	8	49	0.87	0.34	0.41	1	1364	'06-07
234455	7	39	0.56	0.56	0.38	5	61	0.56	0.56	0.41	2	1364	'06-07
234455	1	39	0.56	0.57	0.4	5	61	0.56	0.56	0.41	2	1364	'06-07
234459	9	16	0.31	0.46	0.29	2	16	0.55	0.5	0.31	1	1364	'06-07
234459	3	16	0.31	0.46	0.29	8	16	0.56	0.5	0.34	1	1364	'06-07
255899	1	19	0.46	0.68	0.64	8	19	0.5	0.7	0.65	2	1364	'06-07
255974	9	27	0.42	0.49	0.31	3	26	0.44	0.5	0.29	1	1364	'06-07
255974	3	27	0.42	0.49	0.31	9	26	0.43	0.5	0.3	1	1364	'06-07
255994	1	16	0.17	0.38	0.5	4	16	0.2	0.4	0.48	1	1364	'06-07
256055	4	8	0.34	0.47	0.29	4	9	0.34	0.47	0.31	1	1364	'06-07
256091	4	16	0.46	0.5	0.57	3	16	0.53	0.5	0.56	1	1364	'06-07
256091	4	16	0.46	0.5	0.57	9	16	0.54	0.5	0.55	1	1364	'06-07

Equating Math Grade 08

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
199729	6	26	0.44	0.5	0.49	1	26	0.46	0.5	0.49	1	1364	'06-07
199729	6	26	0.44	0.5	0.49	7	26	0.47	0.5	0.5	1	1364	'06-07
199743	4	9	0.53	0.5	0.44	4	7	0.58	0.49	0.45	1	1364	'06-07
199744	8	51	0.44	0.5	0.38	2	7	0.5	0.5	0.36	1	1364	'06-07
199744	2	51	0.46	0.5	0.35	8	7	0.51	0.5	0.37	1	1364	'06-07
199747	0	41	0.33	0.59	0.35	3	61	0.35	0.6	0.34	2	1364	'06-07
199747	0	41	0.33	0.59	0.35	9	61	0.3	0.59	0.34	2	1364	'06-07
199755	0	44	0.8	0.4	0.47	4	49	0.8	0.4	0.5	1	1364	'06-07
199756	4	26	0.61	0.49	0.32	6	51	0.6	0.49	0.32	1	1364	'06-07
199761	1	7	0.59	0.49	0.5	2	9	0.59	0.49	0.5	1	1364	'06-07
199761	7	7	0.6	0.49	0.5	8	9	0.59	0.49	0.52	1	1364	'06-07
199762	4	16	0.68	0.47	0.51	1	16	0.64	0.48	0.52	1	1364	'06-07
199762	4	16	0.68	0.47	0.51	7	16	0.68	0.47	0.51	1	1364	'06-07
199767	8	36	0.62	0.48	0.61	5	36	0.65	0.48	0.59	1	1364	'06-07
199767	2	36	0.65	0.48	0.59	5	36	0.65	0.48	0.59	1	1364	'06-07
199780	0	43	0.95	0.85	0.5	6	39	1.18	0.82	0.49	2	1364	'06-07
199783	4	39	0.64	0.55	0.43	1	61	0.71	0.52	0.41	2	1364	'06-07
199783	4	39	0.64	0.55	0.43	7	61	0.71	0.53	0.36	2	1364	'06-07
206221	8	28	0.52	0.5	0.36	6	49	0.5	0.5	0.34	1	1364	'06-07
206221	2	28	0.51	0.5	0.37	6	49	0.5	0.5	0.34	1	1364	'06-07
206224	3	7	0.49	0.5	0.36	3	7	0.49	0.5	0.41	1	1364	'06-07
206224	9	7	0.48	0.5	0.37	9	7	0.51	0.5	0.39	1	1364	'06-07
206225	4	7	0.43	0.5	0.21	5	9	0.42	0.49	0.2	1	1364	'06-07
206229	0	5	0.44	0.5	0.27	3	9	0.45	0.5	0.24	1	1364	'06-07
206229	0	5	0.44	0.5	0.27	9	9	0.46	0.5	0.23	1	1364	'06-07
206237	9	16	0.63	0.48	0.45	4	16	0.67	0.47	0.47	1	1364	'06-07
206237	3	16	0.64	0.48	0.46	4	16	0.67	0.47	0.47	1	1364	'06-07
206240	8	19	1.25	0.9	0.57	4	19	1.36	0.87	0.56	2	1364	'06-07
206240	2	19	1.25	0.89	0.59	4	19	1.36	0.87	0.56	2	1364	'06-07
206245	0	18	1.19	1.42	0.67	2	20	1.12	1.36	0.65	4	1364	'06-07
206245	0	18	1.19	1.42	0.67	8	20	1.14	1.36	0.65	4	1364	'06-07
206256	3	51	0.33	0.47	0.37	4	28	0.3	0.46	0.41	1	1364	'06-07
206256	9	51	0.32	0.47	0.38	4	28	0.3	0.46	0.41	1	1364	'06-07
206266	3	49	0.41	0.49	0.36	1	49	0.39	0.49	0.33	1	1364	'06-07
206266	9	49	0.42	0.49	0.34	7	49	0.39	0.49	0.32	1	1364	'06-07
206270	1	26	0.21	0.41	0.22	3	49	0.22	0.42	0.28	1	1364	'06-07
206270	7	26	0.2	0.4	0.22	9	49	0.21	0.41	0.28	1	1364	'06-07
206284	0	23	0.52	0.5	0.52	2	28	0.54	0.5	0.55	1	1364	'06-07
206284	0	23	0.52	0.5	0.52	8	28	0.56	0.5	0.54	1	1364	'06-07
206293	5	28	0.72	0.45	0.36	1	28	0.73	0.45	0.4	1	1364	'06-07
206293	5	28	0.72	0.45	0.36	7	28	0.74	0.44	0.36	1	1364	'06-07
206295	0	22	0.83	0.38	0.38	6	26	0.82	0.38	0.4	1	1364	'06-07

Equating Math Grade 08

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
206296	6	9	0.69	0.46	0.52	5	51	0.71	0.46	0.54	1	1364	'06-07
206310	5	49	0.46	0.5	0.38	5	26	0.44	0.5	0.39	1	1364	'06-07
206313	0	37	0.36	0.48	0.52	6	38	0.42	0.49	0.47	1	1364	'06-07
206331	6	20	2.02	1.11	0.63	5	20	2.1	1.16	0.61	4	1364	'06-07
206337	4	51	0.56	0.5	0.35	5	7	0.6	0.49	0.36	1	1364	'06-07
224853	0	24	0.33	0.47	0.18	3	26	0.35	0.48	0.21	1	1364	'06-07
224853	0	24	0.33	0.47	0.18	9	26	0.33	0.47	0.22	1	1364	'06-07
224878	0	2	0.34	0.47	0.24	1	7	0.42	0.49	0.33	1	1364	'06-07
224878	0	2	0.34	0.47	0.24	7	7	0.44	0.5	0.32	1	1364	'06-07
224881	0	53	0.48	0.5	0.26	3	28	0.52	0.5	0.27	1	1364	'06-07
224881	0	53	0.48	0.5	0.26	9	28	0.53	0.5	0.28	1	1364	'06-07
224891	0	29	0.33	0.47	0.43	4	26	0.31	0.46	0.43	1	1364	'06-07
224919	7	9	0.5	0.5	0.49	6	7	0.58	0.49	0.49	1	1364	'06-07
224919	1	9	0.5	0.5	0.49	6	7	0.58	0.49	0.49	1	1364	'06-07
225437	9	38	0.23	0.42	0.52	2	36	0.25	0.43	0.49	1	1364	'06-07
225437	3	38	0.23	0.42	0.49	8	36	0.24	0.43	0.48	1	1364	'06-07
226556	7	28	0.64	0.48	0.49	6	28	0.64	0.48	0.51	1	1364	'06-07
226556	1	28	0.65	0.48	0.47	6	28	0.64	0.48	0.51	1	1364	'06-07
226573	8	49	0.52	0.5	0.41	3	51	0.56	0.5	0.44	1	1364	'06-07
226573	2	49	0.53	0.5	0.39	9	51	0.58	0.49	0.42	1	1364	'06-07
233602	5	51	0.53	0.5	0.4	2	51	0.52	0.5	0.42	1	1364	'06-07
233602	5	51	0.53	0.5	0.4	8	51	0.52	0.5	0.42	1	1364	'06-07
233609	9	64	1.13	0.94	0.6	1	64	1.08	0.96	0.57	4	1364	'06-07
233609	3	64	1.16	0.95	0.6	7	64	1.1	0.92	0.56	4	1364	'06-07
233719	9	61	1.37	0.87	0.54	5	61	1.4	0.84	0.54	2	1364	'06-07
233719	3	61	1.4	0.86	0.52	5	61	1.4	0.84	0.54	2	1364	'06-07
234148	6	61	0.65	0.65	0.61	2	61	0.67	0.6	0.55	2	1364	'06-07
234148	6	61	0.65	0.65	0.61	8	61	0.67	0.6	0.55	2	1364	'06-07
234523	5	7	0.73	0.45	0.45	6	9	0.74	0.44	0.46	1	1364	'06-07
234524	7	49	0.53	0.5	0.37	2	49	0.46	0.5	0.29	1	1364	'06-07
234524	1	49	0.5	0.5	0.36	8	49	0.46	0.5	0.28	1	1364	'06-07
242395	5	26	0.49	0.5	0.43	5	28	0.49	0.5	0.48	1	1364	'06-07
242401	6	51	0.53	0.5	0.43	1	51	0.55	0.5	0.44	1	1364	'06-07
242401	6	51	0.53	0.5	0.43	7	51	0.57	0.5	0.46	1	1364	'06-07
256309	1	16	0.16	0.37	0.4	6	36	0.35	0.48	0.49	1	1364	'06-07
256511	5	27	0.71	0.45	0.28	2	26	0.72	0.45	0.27	1	1364	'06-07
256511	5	27	0.71	0.45	0.28	8	26	0.72	0.45	0.26	1	1364	'06-07
260926	8	64	1.35	1.23	0.69	6	20	1.29	1.19	0.67	4	1364	'06-07
260926	2	64	1.37	1.2	0.69	6	20	1.29	1.19	0.67	4	1364	'06-07

Equating Reading Grade 03

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
201747	3	21	0.8	0.4	0.53	3	21	0.79	0.41	0.53	1	1364	'06-07
201748	3	23	0.71	0.45	0.47	3	23	0.73	0.44	0.44	1	1364	'06-07
201763	3	22	0.84	0.37	0.53	3	22	0.87	0.34	0.53	1	1364	'06-07
201764	3	24	2.07	1.34	0.58	3	24	2.28	1.39	0.61	4	1364	'06-07
201825	1	42	0.56	0.5	0.53	1	42	0.62	0.49	0.53	1	1364	'06-07
201830	1	44	0.66	0.47	0.52	1	44	0.68	0.47	0.5	1	1364	'06-07
201831	1	45	0.88	0.32	0.47	1	45	0.89	0.31	0.46	1	1364	'06-07
201836	1	48	0.66	0.47	0.36	1	48	0.69	0.46	0.36	1	1364	'06-07
202178	2	21	0.76	0.43	0.56	2	21	0.75	0.43	0.54	1	1364	'06-07
202179	2	20	0.82	0.38	0.4	2	20	0.84	0.37	0.4	1	1364	'06-07
202180	2	22	0.71	0.45	0.45	2	22	0.75	0.44	0.43	1	1364	'06-07
202183	2	23	0.77	0.42	0.39	2	23	0.79	0.41	0.39	1	1364	'06-07
202194	3	18	0.89	0.31	0.46	3	18	0.9	0.3	0.5	1	1364	'06-07
205940	1	46	2.29	1.27	0.61	1	46	2.41	1.29	0.57	4	1364	'06-07
225214	3	42	0.7	0.46	0.32	3	42	0.72	0.45	0.32	1	1364	'06-07
225216	3	43	0.75	0.43	0.57	3	43	0.78	0.42	0.6	1	1364	'06-07
225218	3	44	0.8	0.4	0.5	3	44	0.81	0.39	0.53	1	1364	'06-07
225220	3	45	0.77	0.42	0.49	3	45	0.77	0.42	0.52	1	1364	'06-07
225230	3	47	0.49	0.5	0.31	3	47	0.48	0.5	0.32	1	1364	'06-07
225233	3	49	0.73	0.45	0.5	3	49	0.73	0.44	0.5	1	1364	'06-07
225237	3	48	0.7	0.46	0.46	3	48	0.69	0.46	0.44	1	1364	'06-07
225240	3	50	0.67	0.47	0.5	3	50	0.66	0.47	0.52	1	1364	'06-07
225242	3	46	3.47	0.94	0.58	3	46	3.52	0.88	0.58	4	1364	'06-07
225253	3	51	1.93	1.11	0.58	3	51	1.81	1.07	0.58	4	1364	'06-07
226283	3	19	0.84	0.37	0.37	3	19	0.86	0.35	0.41	1	1364	'06-07
226289	2	19	0.85	0.35	0.48	2	19	0.83	0.38	0.49	1	1364	'06-07
226290	1	19	0.87	0.34	0.55	1	19	0.86	0.35	0.56	1	1364	'06-07
230973	2	24	1.77	1.13	0.53	2	24	1.83	1.12	0.51	4	1364	'06-07
230976	1	43	0.6	0.49	0.36	1	43	0.63	0.48	0.38	1	1364	'06-07
230977	1	47	0.58	0.49	0.36	1	47	0.58	0.49	0.36	1	1364	'06-07
230978	1	49	0.56	0.5	0.28	1	49	0.55	0.5	0.27	1	1364	'06-07
230979	1	50	0.77	0.42	0.4	1	50	0.82	0.38	0.41	1	1364	'06-07
230980	1	51	1.48	1.06	0.6	1	51	1.51	1.09	0.58	4	1364	'06-07
230988	3	20	0.74	0.44	0.54	3	20	0.74	0.44	0.52	1	1364	'06-07
255324	6	42	0.73	0.45	0.27	2	42	0.75	0.43	0.24	1	1364	'06-07
255326	6	43	0.66	0.47	0.46	2	43	0.7	0.46	0.47	1	1364	'06-07
255326	4	43	0.65	0.48	0.45	2	43	0.7	0.46	0.47	1	1364	'06-07
255327	6	44	0.76	0.43	0.4	2	44	0.77	0.42	0.35	1	1364	'06-07
255328	6	47	0.79	0.41	0.47	2	47	0.82	0.39	0.45	1	1364	'06-07
255328	4	47	0.78	0.41	0.49	2	47	0.82	0.39	0.45	1	1364	'06-07
255331	6	48	0.6	0.49	0.32	2	48	0.6	0.49	0.3	1	1364	'06-07
255333	6	49	0.57	0.5	0.37	2	49	0.54	0.5	0.33	1	1364	'06-07

Equating Reading Grade 03

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
255334	6	50	0.76	0.43	0.43	2	50	0.69	0.46	0.37	1	1364	'06-07
255334	4	50	0.75	0.44	0.48	2	50	0.69	0.46	0.37	1	1364	'06-07
255335	6	45	0.9	0.3	0.5	2	45	0.9	0.3	0.51	1	1364	'06-07
255335	4	44	0.89	0.31	0.51	2	45	0.9	0.3	0.51	1	1364	'06-07
255336	6	51	2.16	1.2	0.56	2	51	2.22	1.2	0.53	4	1364	'06-07
255338	4	46	3.13	1.33	0.66	2	46	3.11	1.27	0.65	4	1364	'06-07
255536	8	19	0.55	0.5	0.39	1	18	0.57	0.5	0.42	1	1364	'06-07
255545	7	19	0.55	0.5	0.21	2	18	0.54	0.5	0.21	1	1364	'06-07

Equating Reading Grade 04

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
200820	1	20	0.74	0.44	0.46	1	20	0.72	0.45	0.49	1	1364	'06-07
200822	1	21	0.81	0.39	0.41	1	21	0.82	0.39	0.43	1	1364	'06-07
200830	1	22	0.72	0.45	0.5	1	22	0.7	0.46	0.49	1	1364	'06-07
200843	1	24	2.27	1.35	0.56	1	24	2.5	1.32	0.58	4	1364	'06-07
203740	3	42	0.63	0.48	0.47	3	42	0.65	0.48	0.45	1	1364	'06-07
203743	3	44	0.55	0.5	0.39	3	43	0.57	0.49	0.46	1	1364	'06-07
203758	3	48	0.64	0.48	0.4	3	48	0.62	0.48	0.43	1	1364	'06-07
203768	3	51	1.54	1.1	0.48	3	51	1.63	1.14	0.42	4	1364	'06-07
203801	2	20	0.82	0.39	0.35	2	20	0.81	0.39	0.39	1	1364	'06-07
203806	2	22	0.77	0.42	0.46	2	22	0.76	0.43	0.43	1	1364	'06-07
203810	2	24	2.77	1.28	0.61	2	24	2.78	1.26	0.6	4	1364	'06-07
203858	2	43	0.52	0.5	0.28	2	43	0.52	0.5	0.27	1	1364	'06-07
203862	2	42	0.83	0.37	0.53	2	42	0.85	0.36	0.47	1	1364	'06-07
203871	2	50	0.54	0.5	0.3	2	50	0.53	0.5	0.26	1	1364	'06-07
203873	2	51	2.54	0.96	0.53	2	51	2.45	0.94	0.5	4	1364	'06-07
203890	1	23	0.9	0.3	0.4	1	23	0.92	0.28	0.44	1	1364	'06-07
203906	2	18	0.84	0.37	0.43	1	18	0.81	0.39	0.33	1	1364	'06-07
203922	1	18	0.8	0.4	0.34	1	19	0.79	0.4	0.34	1	1364	'06-07
203925	3	19	0.65	0.48	0.37	3	19	0.67	0.47	0.38	1	1364	'06-07
225764	1	42	0.79	0.41	0.5	1	42	0.79	0.41	0.48	1	1364	'06-07
225765	1	43	0.79	0.41	0.41	1	43	0.8	0.4	0.41	1	1364	'06-07
225766	1	44	0.64	0.48	0.38	1	44	0.62	0.48	0.42	1	1364	'06-07
225767	1	45	0.6	0.49	0.53	1	45	0.61	0.49	0.49	1	1364	'06-07
225769	1	47	0.63	0.48	0.51	1	47	0.63	0.48	0.54	1	1364	'06-07
225770	1	48	0.46	0.5	0.35	1	48	0.46	0.5	0.34	1	1364	'06-07
225772	1	49	0.72	0.45	0.51	1	49	0.72	0.45	0.52	1	1364	'06-07
225773	1	50	0.66	0.47	0.42	1	50	0.69	0.46	0.43	1	1364	'06-07
225776	1	46	2.29	1.05	0.43	1	46	2.34	1.07	0.47	4	1364	'06-07
225778	1	51	1.56	0.94	0.58	1	51	1.53	1	0.57	4	1364	'06-07
232524	2	21	0.37	0.48	0.31	2	21	0.4	0.49	0.3	1	1364	'06-07
232526	2	44	0.69	0.46	0.45	2	44	0.7	0.46	0.43	1	1364	'06-07
232528	2	46	2.82	1.42	0.48	2	46	2.67	1.5	0.45	4	1364	'06-07
232529	2	47	0.81	0.39	0.42	2	47	0.8	0.4	0.42	1	1364	'06-07
232530	2	48	0.66	0.47	0.48	2	48	0.66	0.47	0.46	1	1364	'06-07
232542	2	49	0.77	0.42	0.52	2	49	0.78	0.42	0.48	1	1364	'06-07
232569	2	19	0.85	0.35	0.53	2	19	0.85	0.36	0.49	1	1364	'06-07
232589	3	43	0.56	0.5	0.37	3	44	0.57	0.5	0.42	1	1364	'06-07
232592	3	45	0.44	0.5	0.23	3	47	0.48	0.5	0.27	1	1364	'06-07
232595	3	46	2.11	1.16	0.39	3	46	2.25	1.17	0.42	4	1364	'06-07
232647	3	47	0.53	0.5	0.33	3	45	0.51	0.5	0.32	1	1364	'06-07
232657	3	49	0.71	0.45	0.39	3	50	0.7	0.46	0.37	1	1364	'06-07
232664	3	50	0.84	0.37	0.5	3	49	0.83	0.37	0.49	1	1364	'06-07

Equating Reading Grade 04

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
234353	2	23	0.69	0.46	0.42	2	23	0.68	0.46	0.42	1	1364	'06-07
243661	2	45	0.78	0.41	0.41	2	45	0.8	0.4	0.38	1	1364	'06-07
255633	6	18	0.65	0.48	0.36	3	18	0.7	0.46	0.4	1	1364	'06-07
255637	7	19	0.68	0.47	0.36	2	18	0.65	0.48	0.4	1	1364	'06-07

Equating Reading Grade 05

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
201746	1	20	0.89	0.31	0.34	2	20	0.9	0.3	0.26	1	1364	'06-07
201752	1	22	0.46	0.5	0.27	2	22	0.48	0.5	0.26	1	1364	'06-07
201757	1	23	0.64	0.48	0.36	2	23	0.63	0.48	0.37	1	1364	'06-07
201760	1	21	0.48	0.5	0.31	2	21	0.44	0.5	0.33	1	1364	'06-07
201769	1	24	1.9	1.06	0.64	2	24	1.86	1.04	0.66	4	1364	'06-07
201902	3	20	0.64	0.48	0.3	3	20	0.64	0.48	0.28	1	1364	'06-07
201904	3	22	0.77	0.42	0.22	3	22	0.77	0.42	0.24	1	1364	'06-07
201906	3	21	0.74	0.44	0.55	3	21	0.74	0.44	0.48	1	1364	'06-07
201911	3	24	1.68	0.97	0.66	3	24	1.83	0.95	0.66	4	1364	'06-07
201923	2	20	0.81	0.39	0.37	1	20	0.8	0.4	0.37	1	1364	'06-07
201924	2	21	0.76	0.43	0.49	1	21	0.76	0.43	0.49	1	1364	'06-07
201928	2	22	0.65	0.48	0.49	1	22	0.65	0.48	0.47	1	1364	'06-07
201937	2	24	1.75	1.13	0.64	1	24	1.78	1.07	0.65	4	1364	'06-07
202056	1	43	0.68	0.47	0.36	1	43	0.72	0.45	0.36	1	1364	'06-07
202059	1	44	0.72	0.45	0.45	1	44	0.73	0.45	0.44	1	1364	'06-07
202061	1	47	0.52	0.5	0.43	1	47	0.53	0.5	0.44	1	1364	'06-07
202063	1	45	0.74	0.44	0.55	1	45	0.73	0.44	0.51	1	1364	'06-07
202065	1	49	0.61	0.49	0.47	1	49	0.61	0.49	0.46	1	1364	'06-07
202069	1	50	0.56	0.5	0.43	1	50	0.56	0.5	0.4	1	1364	'06-07
202072	1	46	1.56	1	0.68	1	46	1.62	1.01	0.66	4	1364	'06-07
202075	1	51	1.73	0.87	0.59	1	51	1.79	0.91	0.58	4	1364	'06-07
226477	3	42	0.82	0.38	0.42	3	42	0.82	0.39	0.39	1	1364	'06-07
226487	3	43	0.6	0.49	0.41	3	43	0.62	0.49	0.42	1	1364	'06-07
226490	3	44	0.57	0.49	0.19	3	44	0.6	0.49	0.19	1	1364	'06-07
226498	3	45	0.83	0.38	0.38	3	45	0.81	0.39	0.35	1	1364	'06-07
226500	3	47	0.75	0.43	0.48	3	47	0.73	0.44	0.48	1	1364	'06-07
226502	3	48	0.82	0.38	0.54	3	48	0.81	0.39	0.5	1	1364	'06-07
226508	3	50	0.68	0.47	0.34	3	50	0.68	0.47	0.31	1	1364	'06-07
226510	3	49	0.57	0.5	0.27	3	49	0.59	0.49	0.26	1	1364	'06-07
226515	3	46	1.4	1.02	0.66	3	46	1.39	0.99	0.67	4	1364	'06-07
226517	3	51	1.64	0.96	0.63	3	51	1.66	0.91	0.59	4	1364	'06-07
226597	3	19	0.79	0.41	0.43	3	19	0.77	0.42	0.38	1	1364	'06-07
226598	2	19	0.73	0.44	0.37	2	19	0.74	0.44	0.39	1	1364	'06-07
226599	2	18	0.72	0.45	0.44	2	18	0.8	0.4	0.46	1	1364	'06-07
226600	3	18	0.81	0.39	0.42	3	18	0.78	0.41	0.34	1	1364	'06-07
227093	1	42	0.62	0.49	0.33	1	42	0.65	0.48	0.31	1	1364	'06-07
230632	2	23	0.85	0.36	0.44	1	23	0.83	0.38	0.47	1	1364	'06-07
230723	3	23	0.46	0.5	0.34	3	23	0.48	0.5	0.33	1	1364	'06-07
233190	1	48	0.72	0.45	0.48	1	48	0.73	0.44	0.48	1	1364	'06-07
256354	5	44	0.59	0.49	0.25	2	44	0.58	0.49	0.27	1	1364	'06-07
256359	7	45	0.91	0.29	0.4	2	45	0.89	0.31	0.44	1	1364	'06-07
256368	7	49	0.72	0.45	0.41	2	42	0.67	0.47	0.44	1	1364	'06-07

Equating Reading Grade 05

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
256370	5	51	1.55	0.95	0.56	2	51	1.58	0.88	0.61	4	1364	'06-07
256397	5	48	0.7	0.46	0.37	2	47	0.69	0.46	0.41	1	1364	'06-07
256403	5	49	0.58	0.49	0.36	2	48	0.62	0.48	0.36	1	1364	'06-07
256409	7	48	0.79	0.41	0.47	2	49	0.76	0.42	0.48	1	1364	'06-07
256411	7	50	0.65	0.48	0.37	2	50	0.64	0.48	0.35	1	1364	'06-07
256415	7	46	1.53	0.93	0.58	2	46	1.7	1	0.62	4	1364	'06-07
256829	9	18	0.53	0.5	0.4	1	19	0.55	0.5	0.41	1	1364	'06-07
256837	7	19	0.79	0.41	0.31	1	18	0.78	0.42	0.32	1	1364	'06-07
257391	5	43	0.87	0.34	0.37	2	43	0.88	0.32	0.37	1	1364	'06-07

Equating Reading Grade 06

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
200339	1	21	0.51	0.5	0.34	2	21	0.54	0.5	0.33	1	1364	'06-07
200342	1	22	0.65	0.48	0.4	2	22	0.65	0.48	0.38	1	1364	'06-07
200345	1	23	0.76	0.43	0.47	2	23	0.75	0.43	0.44	1	1364	'06-07
200348	1	24	2.03	1.03	0.64	2	24	2.02	1.02	0.64	4	1364	'06-07
204009	2	43	0.85	0.36	0.52	2	43	0.86	0.34	0.52	1	1364	'06-07
204011	2	49	0.9	0.3	0.5	2	49	0.9	0.3	0.46	1	1364	'06-07
204013	2	44	0.76	0.43	0.5	2	44	0.78	0.42	0.48	1	1364	'06-07
204014	2	45	0.86	0.35	0.52	2	45	0.87	0.34	0.48	1	1364	'06-07
204017	2	50	0.93	0.26	0.41	2	50	0.91	0.28	0.4	1	1364	'06-07
204020	2	48	0.75	0.43	0.43	2	48	0.74	0.44	0.44	1	1364	'06-07
204021	2	47	0.55	0.5	0.38	2	47	0.6	0.49	0.36	1	1364	'06-07
204022	2	51	1.85	0.96	0.62	2	51	1.83	0.95	0.64	4	1364	'06-07
204026	2	46	2.05	0.93	0.58	2	46	1.94	0.91	0.65	4	1364	'06-07
204262	1	42	0.65	0.48	0.45	1	42	0.63	0.48	0.43	1	1364	'06-07
204266	1	45	0.71	0.45	0.4	1	45	0.72	0.45	0.4	1	1364	'06-07
204271	1	43	0.5	0.5	0.46	1	43	0.51	0.5	0.42	1	1364	'06-07
204274	1	44	0.71	0.45	0.5	1	44	0.73	0.44	0.52	1	1364	'06-07
204278	1	47	0.65	0.48	0.41	1	47	0.65	0.48	0.39	1	1364	'06-07
204283	1	48	0.61	0.49	0.46	1	48	0.62	0.49	0.45	1	1364	'06-07
204284	1	49	0.71	0.46	0.47	1	49	0.71	0.45	0.46	1	1364	'06-07
204287	1	50	0.6	0.49	0.49	1	50	0.61	0.49	0.49	1	1364	'06-07
204294	1	46	1.53	0.96	0.62	1	46	1.51	0.93	0.66	4	1364	'06-07
204298	1	51	1.47	1.03	0.67	1	51	1.5	1.01	0.64	4	1364	'06-07
204474	3	18	0.7	0.46	0.18	1	18	0.68	0.47	0.19	1	1364	'06-07
204479	1	19	0.57	0.49	0.21	2	18	0.64	0.48	0.19	1	1364	'06-07
204491	3	19	0.6	0.49	0.39	1	19	0.63	0.48	0.41	1	1364	'06-07
226657	3	23	0.69	0.46	0.4	1	23	0.69	0.46	0.43	1	1364	'06-07
226659	3	20	0.7	0.46	0.37	1	20	0.7	0.46	0.39	1	1364	'06-07
226667	3	22	0.94	0.23	0.36	1	22	0.94	0.23	0.29	1	1364	'06-07
226669	3	24	1.83	0.87	0.58	1	24	1.79	0.89	0.61	4	1364	'06-07
226697	3	42	0.7	0.46	0.47	3	42	0.76	0.43	0.46	1	1364	'06-07
226699	3	43	0.87	0.34	0.43	3	43	0.89	0.31	0.4	1	1364	'06-07
226702	3	44	0.79	0.41	0.43	3	44	0.79	0.41	0.39	1	1364	'06-07
226719	3	45	0.84	0.37	0.5	3	45	0.86	0.35	0.47	1	1364	'06-07
226722	3	47	0.66	0.47	0.42	3	47	0.67	0.47	0.37	1	1364	'06-07
226723	3	48	0.89	0.31	0.51	3	48	0.89	0.32	0.45	1	1364	'06-07
226725	3	50	0.76	0.43	0.49	3	50	0.77	0.42	0.48	1	1364	'06-07
226728	3	49	0.78	0.41	0.44	3	49	0.79	0.41	0.43	1	1364	'06-07
226730	3	46	1.8	1	0.62	3	46	1.72	0.99	0.61	4	1364	'06-07
226735	3	51	1.56	1.05	0.63	3	51	1.53	0.95	0.64	4	1364	'06-07
226737	2	18	0.88	0.32	0.42	2	19	0.9	0.3	0.42	1	1364	'06-07
227775	1	20	0.83	0.38	0.41	2	20	0.83	0.38	0.43	1	1364	'06-07

Equating Reading Grade 06

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
227780	2	42	0.84	0.37	0.53	2	42	0.85	0.36	0.53	1	1364	'06-07
230176	3	21	0.89	0.32	0.38	1	21	0.88	0.33	0.37	1	1364	'06-07
256334	5	20	0.71	0.45	0.39	3	20	0.74	0.44	0.41	1	1364	'06-07
256337	7	21	0.86	0.34	0.39	3	21	0.86	0.35	0.37	1	1364	'06-07
256342	5	23	0.82	0.38	0.32	3	22	0.81	0.39	0.31	1	1364	'06-07
256346	7	23	0.54	0.5	0.2	3	23	0.53	0.5	0.2	1	1364	'06-07
256347	5	24	1.62	0.89	0.53	3	24	1.72	0.82	0.55	4	1364	'06-07
256651	7	19	0.54	0.5	0.34	3	19	0.57	0.5	0.31	1	1364	'06-07
256674	4	18	0.61	0.49	0.26	3	18	0.62	0.49	0.26	1	1364	'06-07

Equating Reading Grade 07

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
199526	2	42	0.64	0.48	0.21	2	42	0.66	0.47	0.14	1	1364	'06-07
199527	2	43	0.67	0.47	0.31	2	43	0.7	0.46	0.29	1	1364	'06-07
199528	2	44	0.68	0.47	0.45	2	44	0.67	0.47	0.41	1	1364	'06-07
199529	2	47	0.78	0.42	0.48	2	47	0.77	0.42	0.46	1	1364	'06-07
199530	2	45	0.48	0.5	0.38	2	45	0.52	0.5	0.4	1	1364	'06-07
199531	2	48	0.71	0.45	0.45	2	48	0.74	0.44	0.45	1	1364	'06-07
199532	2	49	0.72	0.45	0.5	2	49	0.76	0.43	0.49	1	1364	'06-07
199533	2	50	0.84	0.37	0.5	2	50	0.86	0.34	0.49	1	1364	'06-07
199535	2	46	1.83	0.96	0.69	2	46	1.86	0.93	0.63	4	1364	'06-07
199536	2	51	1.84	0.92	0.62	2	51	2.07	0.92	0.59	4	1364	'06-07
199562	3	21	0.76	0.43	0.42	3	21	0.79	0.41	0.42	1	1364	'06-07
199563	3	20	0.69	0.46	0.35	3	20	0.7	0.46	0.29	1	1364	'06-07
199565	3	22	0.87	0.33	0.41	3	22	0.87	0.33	0.45	1	1364	'06-07
199568	3	23	0.59	0.49	0.29	3	23	0.59	0.49	0.26	1	1364	'06-07
199569	3	24	2.01	0.91	0.61	3	24	2.16	1	0.6	4	1364	'06-07
199597	1	42	0.45	0.5	0.23	1	42	0.46	0.5	0.25	1	1364	'06-07
199598	1	44	0.85	0.36	0.43	1	43	0.86	0.35	0.42	1	1364	'06-07
199599	1	45	0.86	0.35	0.4	1	44	0.87	0.34	0.41	1	1364	'06-07
199603	1	48	0.54	0.5	0.37	1	47	0.57	0.5	0.35	1	1364	'06-07
199604	1	49	0.81	0.39	0.45	1	48	0.82	0.39	0.51	1	1364	'06-07
199605	1	50	0.78	0.42	0.49	1	49	0.77	0.42	0.51	1	1364	'06-07
199608	1	51	1.81	1.07	0.58	1	51	1.98	1.07	0.61	4	1364	'06-07
199609	1	46	1.71	0.94	0.64	1	46	1.82	0.95	0.63	4	1364	'06-07
201466	3	49	0.7	0.46	0.35	3	49	0.73	0.44	0.4	1	1364	'06-07
201468	3	42	0.82	0.38	0.5	3	42	0.84	0.37	0.5	1	1364	'06-07
201470	3	48	0.89	0.31	0.39	3	48	0.91	0.28	0.42	1	1364	'06-07
201472	3	43	0.79	0.4	0.38	3	43	0.83	0.38	0.4	1	1364	'06-07
201476	3	44	0.84	0.37	0.56	3	44	0.86	0.35	0.55	1	1364	'06-07
201479	3	47	0.74	0.44	0.47	3	47	0.74	0.44	0.49	1	1364	'06-07
201482	3	45	0.6	0.49	0.38	3	45	0.61	0.49	0.35	1	1364	'06-07
201487	3	50	0.89	0.32	0.39	3	50	0.91	0.29	0.41	1	1364	'06-07
201490	3	51	1.86	1	0.68	3	51	2.1	0.93	0.64	4	1364	'06-07
201492	3	46	1.75	1.04	0.69	3	46	1.92	1.01	0.6	4	1364	'06-07
201523	1	20	0.73	0.44	0.4	1	20	0.72	0.45	0.38	1	1364	'06-07
201529	1	21	0.61	0.49	0.37	1	21	0.63	0.48	0.36	1	1364	'06-07
201530	1	23	0.48	0.5	0.35	1	23	0.49	0.5	0.36	1	1364	'06-07
201532	1	22	0.79	0.41	0.43	1	22	0.8	0.4	0.41	1	1364	'06-07
201535	1	24	1.79	1.02	0.7	1	24	1.96	1.02	0.64	4	1364	'06-07
201648	2	18	0.72	0.45	0.31	3	18	0.73	0.45	0.36	1	1364	'06-07
226905	2	19	0.72	0.45	0.36	3	19	0.73	0.45	0.36	1	1364	'06-07
226906	3	18	0.63	0.48	0.35	2	18	0.64	0.48	0.39	1	1364	'06-07
233750	1	47	0.64	0.48	0.35	1	45	0.61	0.49	0.35	1	1364	'06-07

Equating Reading Grade 07

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
256093	4	20	0.74	0.44	0.41	2	20	0.73	0.45	0.44	1	1364	'06-07
256096	4	21	0.87	0.34	0.37	2	21	0.86	0.35	0.4	1	1364	'06-07
256099	4	22	0.86	0.34	0.43	2	22	0.85	0.35	0.44	1	1364	'06-07
256100	6	22	0.47	0.5	0.29	2	23	0.47	0.5	0.29	1	1364	'06-07
256108	4	24	1.56	1.02	0.65	2	24	1.84	1.05	0.64	4	1364	'06-07
256172	6	19	0.89	0.31	0.37	1	19	0.88	0.32	0.41	1	1364	'06-07
256176	5	19	0.82	0.39	0.26	2	19	0.83	0.38	0.34	1	1364	'06-07
256189	5	18	0.91	0.28	0.29	1	18	0.91	0.29	0.34	1	1364	'06-07

Equating Reading Grade 08

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
199665	3	47	0.67	0.47	0.51	3	47	0.68	0.47	0.5	1	1364	'06-07
199666	3	44	0.72	0.45	0.37	3	44	0.69	0.46	0.33	1	1364	'06-07
199668	3	45	0.84	0.37	0.44	3	45	0.84	0.37	0.41	1	1364	'06-07
199670	3	49	0.69	0.46	0.39	3	49	0.67	0.47	0.37	1	1364	'06-07
199671	3	50	0.44	0.5	0.27	3	50	0.46	0.5	0.27	1	1364	'06-07
199674	3	46	2.01	1.05	0.64	3	46	2.2	1.03	0.67	4	1364	'06-07
199675	3	51	2.27	1.05	0.67	3	51	2.33	0.98	0.71	4	1364	'06-07
204093	2	44	0.84	0.37	0.47	1	44	0.82	0.38	0.49	1	1364	'06-07
204095	2	43	0.5	0.5	0.45	1	43	0.4	0.49	0.36	1	1364	'06-07
204100	2	45	0.67	0.47	0.29	1	45	0.68	0.47	0.35	1	1364	'06-07
204102	2	49	0.76	0.43	0.39	1	49	0.75	0.44	0.39	1	1364	'06-07
204106	2	47	0.67	0.47	0.32	1	47	0.64	0.48	0.32	1	1364	'06-07
204122	2	50	0.78	0.41	0.39	1	50	0.76	0.43	0.44	1	1364	'06-07
204128	2	46	1.76	0.99	0.63	1	46	1.85	1.12	0.67	4	1364	'06-07
204133	2	51	2.14	0.98	0.64	1	51	2.15	0.98	0.7	4	1364	'06-07
204140	1	20	0.71	0.46	0.48	1	20	0.7	0.46	0.48	1	1364	'06-07
204144	1	22	0.74	0.44	0.52	1	22	0.73	0.44	0.54	1	1364	'06-07
204147	1	23	0.74	0.44	0.5	1	23	0.74	0.44	0.53	1	1364	'06-07
204155	1	24	1.9	1.05	0.67	1	24	1.98	1.09	0.7	4	1364	'06-07
226240	2	22	0.82	0.39	0.52	2	22	0.8	0.4	0.51	1	1364	'06-07
226244	2	20	0.86	0.35	0.51	2	20	0.87	0.34	0.49	1	1364	'06-07
226246	2	21	0.89	0.31	0.45	2	21	0.9	0.3	0.43	1	1364	'06-07
226247	2	24	2.12	0.93	0.64	2	24	2.24	0.9	0.66	4	1364	'06-07
230175	2	23	0.81	0.39	0.51	2	23	0.79	0.41	0.47	1	1364	'06-07
233566	2	42	0.91	0.29	0.41	1	42	0.89	0.31	0.46	1	1364	'06-07
233567	2	48	0.84	0.36	0.41	1	48	0.83	0.38	0.43	1	1364	'06-07
233690	3	42	0.82	0.38	0.5	3	42	0.83	0.38	0.49	1	1364	'06-07
233691	3	43	0.77	0.42	0.44	3	43	0.79	0.4	0.43	1	1364	'06-07
233958	3	18	0.83	0.37	0.39	3	18	0.81	0.39	0.38	1	1364	'06-07
234521	3	48	0.74	0.44	0.49	3	48	0.73	0.44	0.48	1	1364	'06-07
243072	1	18	0.59	0.49	0.35	1	19	0.61	0.49	0.34	1	1364	'06-07
255934	6	42	0.64	0.48	0.18	2	42	0.62	0.49	0.16	1	1364	'06-07
255938	6	43	0.79	0.41	0.29	2	43	0.8	0.4	0.33	1	1364	'06-07
255939	6	44	0.78	0.42	0.37	2	44	0.8	0.4	0.36	1	1364	'06-07
255939	4	44	0.79	0.41	0.37	2	44	0.8	0.4	0.36	1	1364	'06-07
255942	4	45	0.73	0.44	0.4	2	45	0.73	0.44	0.41	1	1364	'06-07
255944	6	45	0.84	0.36	0.34	2	47	0.85	0.35	0.31	1	1364	'06-07
255944	4	47	0.86	0.34	0.3	2	47	0.85	0.35	0.31	1	1364	'06-07
255946	6	48	0.77	0.42	0.33	2	48	0.8	0.4	0.32	1	1364	'06-07
255947	4	48	0.43	0.49	0.32	2	49	0.41	0.49	0.32	1	1364	'06-07
255960	6	50	0.84	0.37	0.44	2	50	0.87	0.34	0.41	1	1364	'06-07
255960	4	50	0.87	0.33	0.43	2	50	0.87	0.34	0.41	1	1364	'06-07

Equating Reading Grade 08

Item number	oldform	Old position	oldmean	oldstd	oldcorrwtotal	form	position	mean	std	corrwtotal	MAX	Old Contract	Old TestYear
255965	6	51	2.04	1	0.62	2	51	2.16	1	0.65	4	1364	'06-07
255976	4	46	1.7	0.99	0.62	2	46	1.96	0.98	0.66	4	1364	'06-07
256257	5	19	0.62	0.48	0.33	2	19	0.66	0.47	0.32	1	1364	'06-07
256279	7	18	0.86	0.35	0.34	3	19	0.86	0.35	0.31	1	1364	'06-07
256280	4	18	0.87	0.34	0.25	1	18	0.86	0.35	0.23	1	1364	'06-07
256287	7	19	0.88	0.33	0.36	2	18	0.88	0.32	0.35	1	1364	'06-07
260013	1	21	0.32	0.47	0.3	1	21	0.32	0.47	0.31	1	1364	'06-07

SECTION II.E

NECAP
Tabled Delta Analysis Results

Delta Analysis Math Grade 03

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
198283	0.82	0.84	9.3385	9.0222	9.0756	1	FALSE	-0.1005
198292	0.74	0.76	10.4266	10.1748	10.2567	1	FALSE	-0.433
198465	0.59	0.61	12.0898	11.8827	12.0068	1	FALSE	-0.7437
198465	0.6	0.61	11.9866	11.8827	12.0068	1	FALSE	-0.9678
198468	0.79	0.79	9.7743	9.7743	9.8463	1	FALSE	-0.7829
198517	1.46	1.44	10.5487	10.6686	10.7627	2	FALSE	-0.2756
198517	1.46	1.48	10.5487	10.4266	10.5147	2	FALSE	-0.9186
198521	0.83	0.89	13.8588	13.5532	13.7187	2	FALSE	-0.5394
198551	0.85	0.85	8.8543	8.8543	8.9035	1	FALSE	-0.8642
198557	0.85	0.87	8.8543	8.4944	8.5348	1	FALSE	0.1014
198557	0.85	0.86	8.8543	8.6787	8.7236	1	FALSE	-0.5733
198573	0.81	0.81	9.4884	9.4884	9.5533	1	FALSE	-0.8082
198577	0.89	0.88	8.0939	8.3001	8.3356	1	FALSE	-0.1766
198577	0.89	0.88	8.0939	8.3001	8.3356	1	FALSE	-0.1766
198582	0.49	0.51	13.1003	12.8997	13.049	1	FALSE	-0.8569
198582	0.49	0.49	13.1003	13.1003	13.2545	1	FALSE	-0.4891
198636	1.4	1.36	10.9024	11.1292	11.2347	2	FALSE	0.1471
201312	0.84	0.85	9.0222	8.8543	8.9035	1	FALSE	-0.6161
201312	0.84	0.86	9.0222	8.6787	8.7236	1	FALSE	0.0266
201401	0.86	0.83	8.6787	9.1833	9.2407	1	FALSE	0.9678
201401	0.86	0.84	8.6787	9.0222	9.0756	1	FALSE	0.3777
201404	0.74	0.76	10.4266	10.1748	10.2567	1	FALSE	-0.433
201404	0.74	0.74	10.4266	10.4266	10.5147	1	FALSE	-0.7253
201416	0.71	0.65	10.7865	11.4587	11.5724	1	FALSE	1.7678
201416	0.71	0.64	10.7865	11.5662	11.6825	1	FALSE	2.1612
201446	0.52	0.52	12.7994	12.7994	12.9462	1	FALSE	-0.5156
201446	0.52	0.51	12.7994	12.8997	13.049	1	FALSE	-0.1483
201459	0.51	0.49	12.8997	13.1003	13.2545	1	FALSE	0.2275
201459	0.51	0.5	12.8997	13	13.1518	1	FALSE	-0.1396
201477	0.74	0.73	10.4266	10.5487	10.6399	1	FALSE	-0.2781
201477	0.74	0.72	10.4266	10.6686	10.7627	1	FALSE	0.1608
201481	0.77	0.78	10.0446	9.9112	9.9866	1	FALSE	-0.8329
201481	0.77	0.79	10.0446	9.7743	9.8463	1	FALSE	-0.3316
201520	0.7	0.68	10.9024	11.1292	11.2347	1	FALSE	0.1471
201520	0.7	0.66	10.9024	11.3501	11.4611	1	FALSE	0.9561
201581	0.69	0.6	11.0166	11.9866	12.1133	1	FALSE	2.8783
201604	0.57	0.55	12.2945	12.4974	12.6367	1	FALSE	0.1824
201604	0.56	0.55	12.3961	12.4974	12.6367	1	FALSE	-0.1806
201614	0.81	0.82	9.4884	9.3385	9.3998	1	FALSE	-0.7233
201614	0.81	0.82	9.4884	9.3385	9.3998	1	FALSE	-0.7233
201619	0.8	0.85	9.6335	8.8543	8.9035	1	FALSE	1.5682
201619	0.8	0.85	9.6335	8.8543	8.9035	1	FALSE	1.5682
201754	1.32	1.36	11.3501	11.1292	11.2347	2	FALSE	-0.6276
201754	1.32	1.34	11.3501	11.2403	11.3486	2	FALSE	-1.0346

Delta Analysis Math Grade 03

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
201800	0.85	0.88	8.8543	8.3001	8.3356	1	FALSE	0.8131
201811	0.77	0.75	10.0446	10.302	10.3871	1	FALSE	0.1835
201811	0.77	0.76	10.0446	10.1748	10.2567	1	FALSE	-0.2824
201851	0.65	0.65	11.4587	11.4587	11.5724	1	FALSE	-0.6341
201890	0.86	0.88	8.6787	8.3001	8.3356	1	FALSE	0.1859
201890	0.86	0.89	8.6787	8.0939	8.1243	1	FALSE	0.9407
202089	0.83	0.93	13.8588	13.3514	13.5118	2	FALSE	0.1996
202089	0.83	0.92	13.8588	13.4017	13.5634	2	FALSE	0.0152
205957	0.34	0.53	14.6499	12.6989	12.8432	1	TRUE	5.4148
223879	0.84	0.84	9.0222	9.0222	9.0756	1	FALSE	-0.8494
223883	0.76	0.75	10.1748	10.302	10.3871	1	FALSE	-0.2816
223883	0.76	0.75	10.1748	10.302	10.3871	1	FALSE	-0.2816
223892	0.82	0.78	9.3385	9.9112	9.9866	1	FALSE	1.2753
223896	0.82	0.8	9.3385	9.6335	9.702	1	FALSE	0.2586
223920	0.65	0.68	11.4587	11.1292	11.2347	1	FALSE	-0.2397
223920	0.65	0.71	11.4587	10.7865	10.8835	1	FALSE	1.0152
223923	0.68	0.72	14.6499	14.4338	14.621	2	FALSE	-0.9372
226696	0.71	0.73	10.7865	10.5487	10.6399	1	FALSE	-0.5164
226937	0.6	0.63	11.9866	11.6726	11.7915	1	FALSE	-0.3431
226937	0.6	0.63	11.9866	11.6726	11.7915	1	FALSE	-0.3431
226943	0.69	0.72	11.0166	10.6686	10.7627	1	FALSE	-0.1331
226943	0.7	0.72	10.9024	10.6686	10.7627	1	FALSE	-0.5411
226945	0.58	0.62	12.1924	11.7781	11.8996	1	FALSE	0.0061
226945	0.58	0.62	12.1924	11.7781	11.8996	1	FALSE	0.0061
226965	0.62	0.63	11.7781	11.6726	11.7915	1	FALSE	-0.9921
226979	0.54	0.6	12.5983	11.9866	12.1133	1	FALSE	0.6926
227039	0.52	0.46	12.7994	13.4017	13.5634	1	FALSE	1.6897
227127	0.87	0.94	13.6546	13.3011	13.4603	2	FALSE	-0.3457
227127	0.88	0.88	13.6039	13.6039	13.7706	2	FALSE	-0.4446
231017	0.68	0.71	14.6499	14.4874	14.676	2	FALSE	-0.9468
231017	0.68	0.68	14.6499	14.6499	14.8424	2	FALSE	-0.3522
242779	0.9	0.95	13.5026	13.2508	13.4088	2	FALSE	-0.7048
242782	1.42	1.51	10.7865	10.2388	10.3222	2	FALSE	0.6185
255686	0.76	0.76	10.1748	10.1748	10.2567	1	FALSE	-0.7475
255686	0.75	0.76	10.302	10.1748	10.2567	1	FALSE	-0.8781
255983	0.5	0.55	13	12.4974	12.6367	1	FALSE	0.258

Delta Analysis Math Grade 04

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
198327	0.93	0.92	7.0968	7.3797	7.3697	1	FALSE	-0.2553
198327	0.93	0.93	7.0968	7.0968	7.0776	1	FALSE	-0.9445
198328	0.35	0.4	14.5413	14.0134	14.2201	1	FALSE	-0.1239
198328	0.35	0.39	14.5413	14.1173	14.3274	1	FALSE	-0.4155
198381	0.69	0.72	11.0166	10.6686	10.7661	1	FALSE	-0.316
198381	0.7	0.72	10.9024	10.6686	10.7661	1	FALSE	-0.6263
198384	0.52	0.52	12.7994	12.7994	12.9664	1	FALSE	-0.5429
198400	0.74	0.7	10.4266	10.9024	11.0075	1	FALSE	0.5817
198400	0.74	0.71	10.4266	10.7865	10.8877	1	FALSE	0.2563
198401	0.76	0.7	10.1748	10.9024	11.0075	1	FALSE	1.266
198401	0.76	0.71	10.1748	10.7865	10.8877	1	FALSE	0.9407
198411	0.32	0.47	14.8708	13.3011	13.4845	1	FALSE	2.7705
198426	0.77	0.8	10.0446	9.6335	9.6971	1	FALSE	-0.0525
198426	0.77	0.8	10.0446	9.6335	9.6971	1	FALSE	-0.0525
198430	0.87	0.86	8.4944	8.6787	8.7112	1	FALSE	-0.4079
198430	0.87	0.85	8.4944	8.8543	8.8924	1	FALSE	0.0847
198431	0.84	0.76	13.8076	14.2219	14.4354	2	FALSE	0.7094
198442	1.29	1.17	11.5126	12.1412	12.2867	2	FALSE	1.107
198442	1.29	1.17	11.5126	12.1412	12.2867	2	FALSE	1.107
202322	0.86	0.85	8.6787	8.8543	8.8924	1	FALSE	-0.4161
202322	0.85	0.85	8.8543	8.8543	8.8924	1	FALSE	-0.8931
202331	0.8	0.8	9.6335	9.6335	9.6971	1	FALSE	-0.824
202331	0.8	0.8	9.6335	9.6335	9.6971	1	FALSE	-0.824
202347	0.7	0.73	10.9024	10.5487	10.6423	1	FALSE	-0.2899
202354	0.5	0.52	13	12.7994	12.9664	1	FALSE	-0.9056
202368	1.19	1.11	12.0383	12.4468	12.6023	2	FALSE	0.5359
202377	1.58	1.54	9.7743	10.0446	10.1217	2	FALSE	-0.0529
202384	0.79	0.79	9.7743	9.7743	9.8425	1	FALSE	-0.8115
202388	0.73	0.7	10.5487	10.9024	11.0075	1	FALSE	0.2498
202388	0.73	0.71	10.5487	10.7865	10.8877	1	FALSE	-0.0756
202396	0.86	0.86	8.6787	8.6787	8.7112	1	FALSE	-0.9087
202484	0.21	0.28	16.2257	15.3314	15.5811	1	FALSE	0.7549
202484	0.21	0.3	16.2257	15.0976	15.3397	1	FALSE	1.4109
202489	1.23	1.23	11.8305	11.8305	11.9659	2	FALSE	-0.6289
202500	0.85	0.83	8.8543	9.1833	9.2323	1	FALSE	0.0304
202500	0.85	0.83	8.8543	9.1833	9.2323	1	FALSE	0.0304
223956	0.76	0.8	10.1748	9.6335	9.6971	1	FALSE	0.3012
223956	0.76	0.81	10.1748	9.4884	9.5473	1	FALSE	0.7084
223960	0.84	0.85	9.0222	8.8543	8.8924	1	FALSE	-0.6443
223960	0.84	0.85	9.0222	8.8543	8.8924	1	FALSE	-0.6443
223966	0.51	0.57	12.8997	12.2945	12.445	1	FALSE	0.2388
223968	0.2	0.2	16.3665	16.3665	16.65	1	FALSE	-0.2263
223968	0.2	0.21	16.3665	16.2257	16.5046	1	FALSE	-0.6214

Delta Analysis Math Grade 04

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
224032	0.61	0.63	11.8827	11.6726	11.8028	1	FALSE	-0.7797
224096	0.99	1.05	13.0501	12.7492	12.9146	2	FALSE	-0.6284
224096	0.99	1.06	13.0501	12.6989	12.8627	2	FALSE	-0.4874
224099	1.59	1.55	9.7044	9.9783	10.0532	2	FALSE	-0.049
224099	1.6	1.58	9.6335	9.7743	9.8425	2	FALSE	-0.4288
227035	0.73	0.85	10.5487	8.8543	8.8924	1	TRUE	3.5044
227035	0.72	0.85	10.6686	8.8543	8.8924	1	TRUE	3.8302
227058	0.87	0.88	8.4944	8.3001	8.3201	1	FALSE	-0.5231
227060	0.85	0.83	8.8543	9.1833	9.2323	1	FALSE	0.0304
227070	0.36	0.36	14.4338	14.4338	14.6543	1	FALSE	-0.3978
227070	0.36	0.36	14.4338	14.4338	14.6543	1	FALSE	-0.3978
227082	1.37	1.38	11.0731	11.0166	11.1254	2	FALSE	-0.8547
227082	1.35	1.38	11.185	11.0166	11.1254	2	FALSE	-0.835
227088	0.19	0.19	16.5116	16.5116	16.7999	1	FALSE	-0.2134
227088	0.19	0.17	16.5116	16.8167	17.1149	1	FALSE	0.6428
227089	0.66	0.76	11.3501	10.1748	10.2561	1	FALSE	1.9764
227089	0.66	0.76	11.3501	10.1748	10.2561	1	FALSE	1.9764
227096	0.83	0.81	13.8588	13.9617	14.1667	2	FALSE	-0.1601
227098	0.65	0.66	11.4587	11.3501	11.4698	1	FALSE	-0.9666
227107	0.81	0.8	9.4884	9.6335	9.6971	1	FALSE	-0.4296
227107	0.81	0.82	9.4884	9.3385	9.3925	1	FALSE	-0.7362
232429	1.18	1.17	12.0898	12.1412	12.2867	2	FALSE	-0.4617
232429	1.18	1.18	12.0898	12.0898	12.2337	2	FALSE	-0.6059
232445	0.81	0.81	9.4884	9.4884	9.5473	1	FALSE	-0.8368
232445	0.81	0.81	9.4884	9.4884	9.5473	1	FALSE	-0.8368
232534	0.55	0.57	12.4974	12.2945	12.445	1	FALSE	-0.8547
232534	0.55	0.56	12.4974	12.3961	12.55	1	FALSE	-0.8538
232535	0.56	0.56	12.3961	12.3961	12.55	1	FALSE	-0.5787
232535	0.56	0.56	12.3961	12.3961	12.55	1	FALSE	-0.5787
232537	0.72	0.74	10.6686	10.4266	10.5161	1	FALSE	-0.5824
232537	0.72	0.76	10.6686	10.1748	10.2561	1	FALSE	0.1243
232543	0.71	0.59	10.7865	12.0898	12.2337	1	FALSE	2.9361
232594	0.48	0.49	13.2006	13.1003	13.2771	1	FALSE	-0.7889
232594	0.46	0.49	13.4017	13.1003	13.2771	1	FALSE	-0.6582
232599	0.49	0.47	13.1003	13.3011	13.4845	1	FALSE	0.0473
232604	0.46	0.5	13.4017	13	13.1736	1	FALSE	-0.3768
255732	0.59	0.59	12.0898	12.0898	12.2337	1	FALSE	-0.6059

Delta Analysis Math Grade 05

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
198487	0.73	0.72	10.5487	10.6686	10.6945	1	FALSE	-0.566
198487	0.73	0.72	10.5487	10.6686	10.6945	1	FALSE	-0.566
198548	0.5	0.49	13	13.1003	13.1362	1	FALSE	-0.6169
198548	0.49	0.51	13.1003	12.8997	12.9348	1	FALSE	-0.4606
198585	0.65	0.63	11.4587	11.6726	11.7026	1	FALSE	-0.0413
198585	0.66	0.63	11.3501	11.6726	11.7026	1	FALSE	0.539
198603	1.39	1.32	10.9597	11.3501	11.3788	2	FALSE	0.8953
198603	1.44	1.31	10.6686	11.4046	11.4335	2	FALSE	2.7434
203258	0.85	0.87	8.8543	8.4944	8.5113	1	FALSE	0.4885
203258	0.85	0.87	8.8543	8.4944	8.5113	1	FALSE	0.4885
203280	0.7	0.69	10.9024	11.0166	11.0439	1	FALSE	-0.5887
203293	0.49	0.51	13.1003	12.8997	12.9348	1	FALSE	-0.4606
203293	0.49	0.51	13.1003	12.8997	12.9348	1	FALSE	-0.4606
203298	0.35	0.42	14.5413	13.8076	13.8464	1	FALSE	2.3691
203298	0.35	0.41	14.5413	13.9102	13.9495	1	FALSE	1.8184
203299	0.46	0.52	13.4017	12.7994	12.8341	1	FALSE	1.6894
203299	0.46	0.51	13.4017	12.8997	12.9348	1	FALSE	1.1508
203356	0.5	0.52	13	12.7994	12.8341	1	FALSE	-0.4581
203356	0.5	0.54	13	12.5983	12.6321	1	FALSE	0.6215
203358	0.71	0.72	10.7865	10.6686	10.6945	1	FALSE	-0.8533
203367	0.4	0.42	14.0134	13.8076	13.8464	1	FALSE	-0.4526
203367	0.43	0.42	13.7055	13.8076	13.8464	1	FALSE	-0.5915
203378	0.61	0.63	11.8827	11.6726	11.7026	1	FALSE	-0.3821
203556	0.59	0.63	12.0898	11.6726	11.7026	1	FALSE	0.7249
203559	0.55	0.6	12.4974	11.9866	12.0179	1	FALSE	1.2177
203584	0.53	0.54	12.6989	12.5983	12.6321	1	FALSE	-0.9879
203606	0.45	0.46	13.5026	13.4017	13.4389	1	FALSE	-1.0044
203606	0.45	0.46	13.5026	13.4017	13.4389	1	FALSE	-1.0044
203893	0.75	0.76	10.302	10.1748	10.1986	1	FALSE	-0.792
203893	0.75	0.77	10.302	10.0446	10.0679	1	FALSE	-0.0932
203898	0.6	0.57	11.9866	12.2945	12.3271	1	FALSE	0.475
203914	0.55	0.54	12.4974	12.5983	12.6321	1	FALSE	-0.6246
203914	0.52	0.53	12.7994	12.6989	12.7332	1	FALSE	-0.9912
203933	0.84	0.84	9.0222	9.0222	9.0412	1	FALSE	-1.2434
203938	0.71	0.66	10.7865	11.3501	11.3788	1	FALSE	1.8214
203938	0.72	0.66	10.6686	11.3501	11.3788	1	FALSE	2.4512
203941	0.81	0.79	9.4884	9.7743	9.7964	1	FALSE	0.3016
203949	0.66	0.74	14.7597	14.3274	14.3684	2	FALSE	0.7462
203949	0.66	0.74	14.7597	14.3274	14.3684	2	FALSE	0.7462
203977	0.51	0.49	12.8997	13.1003	13.1362	1	FALSE	-0.0809
203997	0.38	0.38	14.2219	14.2219	14.2625	1	FALSE	-1.128
203997	0.38	0.38	14.2219	14.2219	14.2625	1	FALSE	-1.128
225011	0.42	0.43	13.8076	13.7055	13.7439	1	FALSE	-1.0049

Delta Analysis Math Grade 05

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
225025	0.8	0.9	14.0134	13.5026	13.5403	2	FALSE	1.1841
225025	0.8	0.91	14.0134	13.4522	13.4896	2	FALSE	1.4551
225028	1.58	1.67	14.0652	13.8332	13.8722	4	FALSE	-0.3129
225032	0.48	0.52	13.2006	12.7994	12.8341	1	FALSE	0.6143
225032	0.48	0.52	13.2006	12.7994	12.8341	1	FALSE	0.6143
225295	0.48	0.47	13.2006	13.3011	13.3379	1	FALSE	-0.6114
225295	0.48	0.47	13.2006	13.3011	13.3379	1	FALSE	-0.6114
225298	0.57	0.59	12.2945	12.0898	12.1216	1	FALSE	-0.4206
225298	0.56	0.61	12.3961	11.8827	11.9136	1	FALSE	1.2342
225316	0.54	0.49	12.5983	13.1003	13.1362	1	FALSE	1.5305
225333	0.5	0.5	13	13	13.0355	1	FALSE	-1.1551
225333	0.5	0.51	13	12.8997	12.9348	1	FALSE	-0.9966
225346	1.18	1.18	12.0898	12.0898	12.1216	2	FALSE	-1.1753
225389	0.55	0.54	15.391	15.4513	15.4969	2	FALSE	-0.7789
225389	0.54	0.54	15.4513	15.4513	15.4969	2	FALSE	-1.1007
225404	0.69	0.7	11.0166	10.9024	10.9292	1	FALSE	-0.8779
225404	0.69	0.71	11.0166	10.7865	10.8128	1	FALSE	-0.2556
225408	0.36	0.36	14.4338	14.4338	14.4753	1	FALSE	-1.1233
225408	0.36	0.35	14.4338	14.5413	14.5832	1	FALSE	-0.5466
225453	1.08	1.06	15.4513	15.512	15.558	4	FALSE	-0.7745
226715	0.34	0.33	14.6499	14.7597	14.8025	1	FALSE	-0.5291
226715	0.33	0.33	14.7597	14.7597	14.8025	1	FALSE	-1.116
226814	0.36	0.34	14.4338	14.6499	14.6922	1	FALSE	0.0362
226814	0.36	0.34	14.4338	14.6499	14.6922	1	FALSE	0.0362
230748	1.01	1.02	15.6666	15.6354	15.6818	4	FALSE	-1.2635
230748	1.01	0.98	15.6666	15.7612	15.8082	4	FALSE	-0.5878
234368	0.88	0.77	13.6039	14.1695	14.2099	2	FALSE	1.8943
234368	0.88	0.79	13.6039	14.0652	14.1052	2	FALSE	1.3347
234370	0.75	0.77	10.302	10.0446	10.0679	1	FALSE	-0.0932
234370	0.75	0.77	10.302	10.0446	10.0679	1	FALSE	-0.0932
234393	0.49	0.47	13.1003	13.3011	13.3379	1	FALSE	-0.075
234393	0.49	0.48	13.1003	13.2006	13.237	1	FALSE	-0.6143
241932	1.96	1.93	13.1003	13.1755	13.2118	4	FALSE	-0.749
241932	1.96	1.97	13.1003	13.0752	13.111	4	FALSE	-1.2874
255763	0.51	0.47	12.8997	13.3011	13.3379	1	FALSE	0.997
255763	0.5	0.47	13	13.3011	13.3379	1	FALSE	0.461
260931	0.42	0.39	13.8076	14.1173	14.1574	1	FALSE	0.5252
260931	0.42	0.39	13.8076	14.1173	14.1574	1	FALSE	0.5252

Delta Analysis Math Grade 06

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
198609	0.48	0.48	13.2006	13.2006	13.3175	1	FALSE	-0.5691
198610	0.78	0.78	9.9112	9.9112	9.9725	1	FALSE	-0.8387
198610	0.78	0.78	9.9112	9.9112	9.9725	1	FALSE	-0.8387
198612	0.38	0.38	14.2219	14.2219	14.3561	1	FALSE	-0.4854
198632	0.82	0.79	13.9102	14.0652	14.1968	2	FALSE	0.253
198632	0.8	0.87	14.0134	13.6546	13.7792	2	FALSE	-0.0009
198649	0.47	0.49	13.3011	13.1003	13.2155	1	FALSE	-0.7207
198650	0.63	0.66	11.6726	11.3501	11.4357	1	FALSE	0.012
198713	0.61	0.58	11.8827	12.1924	12.2923	1	FALSE	0.8487
198713	0.61	0.61	11.8827	11.8827	11.9773	1	FALSE	-0.6771
198716	0.89	0.92	13.5532	13.4017	13.522	2	FALSE	-0.9844
198716	0.89	0.91	13.5532	13.4522	13.5733	2	FALSE	-1.0381
198722	0.62	0.63	11.7781	11.6726	11.7636	1	FALSE	-1.0655
198722	0.63	0.65	11.6726	11.4587	11.5461	1	FALSE	-0.5229
198726	0.75	0.73	14.2746	14.3805	14.5174	2	FALSE	0.0409
198727	0.52	0.63	15.5734	14.9269	15.073	2	FALSE	1.2888
198727	0.52	0.62	15.5734	14.9834	15.1305	2	FALSE	1.0104
203167	0.4	0.39	14.0134	14.1173	14.2497	1	FALSE	0.0094
203167	0.4	0.41	14.0134	13.9102	14.0391	1	FALSE	-1.0109
203173	0.46	0.46	13.4017	13.4017	13.522	1	FALSE	-0.5526
203173	0.46	0.48	13.4017	13.2006	13.3175	1	FALSE	-0.7274
203188	0.63	0.64	11.6726	11.5662	11.6554	1	FALSE	-1.0522
203188	0.63	0.66	11.6726	11.3501	11.4357	1	FALSE	0.012
203204	0.62	0.64	11.7781	11.5662	11.6554	1	FALSE	-0.5411
203204	0.62	0.65	11.7781	11.4587	11.5461	1	FALSE	-0.0118
203217	0.65	0.65	11.4587	11.4587	11.5461	1	FALSE	-0.7118
203279	1.37	1.39	11.0731	10.9597	11.0387	2	FALSE	-0.9688
203350	0.61	0.64	11.8827	11.5662	11.6554	1	FALSE	-0.0341
203379	0.33	0.33	14.7597	14.7597	14.9029	1	FALSE	-0.4413
203381	0.79	0.77	9.7743	10.0446	10.1081	1	FALSE	0.4818
203393	0.5	0.48	13	13.2006	13.3175	1	FALSE	0.4029
203393	0.5	0.47	13	13.3011	13.4197	1	FALSE	0.8978
203452	0.52	0.54	12.7994	12.5983	12.705	1	FALSE	-0.678
203452	0.52	0.55	12.7994	12.4974	12.6024	1	FALSE	-0.1809
203453	0.59	0.57	12.0898	12.2945	12.3961	1	FALSE	0.3483
203453	0.6	0.58	11.9866	12.1924	12.2923	1	FALSE	0.3454
203457	0.68	0.66	11.1292	11.3501	11.4357	1	FALSE	0.3497
203457	0.69	0.66	11.0166	11.3501	11.4357	1	FALSE	0.8952
203526	0.57	0.61	12.2945	11.8827	11.9773	1	FALSE	0.4012
203526	0.58	0.61	12.1924	11.8827	11.9773	1	FALSE	-0.0933
203543	0.46	0.47	13.4017	13.3011	13.4197	1	FALSE	-1.0485
203543	0.44	0.46	13.6039	13.4017	13.522	1	FALSE	-0.7389
225180	0.46	0.42	13.4017	13.8076	13.9347	1	FALSE	1.4469

Delta Analysis Math Grade 06

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
225180	0.46	0.46	13.4017	13.4017	13.522	1	FALSE	-0.5526
225267	0.6	0.52	11.9866	12.7994	12.9095	1	TRUE	3.3357
225267	0.6	0.55	11.9866	12.4974	12.6024	1	TRUE	1.8477
225300	0.14	0.12	17.3213	17.6999	17.893	1	FALSE	1.6343
225318	0.46	0.48	13.4017	13.2006	13.3175	1	FALSE	-0.7274
225318	0.46	0.49	13.4017	13.1003	13.2155	1	FALSE	-0.233
225334	1.41	1.4	14.5143	14.5413	14.6809	4	FALSE	-0.3286
225345	0.41	0.49	13.9102	13.1003	13.2155	1	FALSE	2.2303
225345	0.4	0.51	14.0134	12.8997	13.0115	1	TRUE	3.7183
225351	0.5	0.49	13	13.1003	13.2155	1	FALSE	-0.0915
225351	0.5	0.51	13	12.8997	13.0115	1	FALSE	-1.0795
225363	0.36	0.4	14.4338	14.0134	14.144	1	FALSE	0.2686
225376	0.49	0.49	13.1003	13.1003	13.2155	1	FALSE	-0.5773
225377	0.58	0.6	12.1924	11.9866	12.083	1	FALSE	-0.6051
225377	0.58	0.6	12.1924	11.9866	12.083	1	FALSE	-0.6051
225381	1.33	1.41	14.7321	14.5143	14.6534	4	FALSE	-0.7544
225381	1.33	1.45	14.7321	14.4071	14.5444	4	FALSE	-0.2264
225427	0.4	0.39	14.0134	14.1173	14.2497	1	FALSE	0.0094
225427	0.4	0.39	14.0134	14.1173	14.2497	1	FALSE	0.0094
228669	0.67	0.67	11.2403	11.2403	11.3241	1	FALSE	-0.7297
228669	0.67	0.71	11.2403	10.7865	10.8625	1	FALSE	0.6951
233588	1.59	1.63	14.0393	13.9359	14.0653	4	FALSE	-1.0096
234406	1.09	1.13	12.5478	12.3454	12.4478	2	FALSE	-0.6507
234406	1.1	1.13	12.4974	12.3454	12.4478	2	FALSE	-0.8953
234411	0.54	0.53	12.5983	12.6989	12.8073	1	FALSE	-0.1225
234416	0.45	0.52	13.5026	12.7994	12.9095	1	FALSE	1.7382
234416	0.45	0.53	13.5026	12.6989	12.8073	1	FALSE	2.2332
234417	1.69	1.66	13.782	13.8588	13.9868	4	FALSE	-0.1431
234417	1.73	1.68	13.6801	13.8076	13.9347	4	FALSE	0.0985
242302	0.57	0.58	12.2945	12.1924	12.2923	1	FALSE	-1.1246
242302	0.57	0.61	12.2945	11.8827	11.9773	1	FALSE	0.4012
255359	0.3	0.31	15.0976	14.9834	15.1305	1	FALSE	-0.9762
255359	0.3	0.33	15.0976	14.7597	14.9029	1	FALSE	-0.1923
255569	0.56	0.61	12.3961	11.8827	11.9773	1	FALSE	0.8935

Delta Analysis Math Grade 07

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
199870	0.52	0.51	12.7994	12.8997	12.9991	1	FALSE	-0.4174
199870	0.52	0.51	12.7994	12.8997	12.9991	1	FALSE	-0.4174
199898	0.87	0.87	8.4944	8.4944	8.561	1	FALSE	-0.7195
199918	0.57	0.64	12.2945	11.5662	11.6556	1	FALSE	0.5786
199925	0.51	0.55	12.8997	12.4974	12.5938	1	FALSE	-0.1765
199947	0.7	0.66	10.9024	11.3501	11.438	1	FALSE	0.3443
199950	0.71	0.62	10.7865	11.7781	11.8691	1	FALSE	1.5852
206097	0.51	0.47	12.8997	13.3011	13.4035	1	FALSE	0.2721
206097	0.5	0.47	13	13.3011	13.4035	1	FALSE	0.0447
206098	0.8	0.8	9.6335	9.6335	9.7086	1	FALSE	-0.7003
206098	0.8	0.81	9.6335	9.4884	9.5624	1	FALSE	-0.7092
206102	0.34	0.4	14.6499	14.0134	14.1211	1	FALSE	0.3288
206103	0.59	0.56	12.0898	12.3961	12.4918	1	FALSE	0.0412
206103	0.59	0.57	12.0898	12.2945	12.3894	1	FALSE	-0.191
206104	0.53	0.54	12.6989	12.5983	12.6954	1	FALSE	-0.8626
206104	0.53	0.54	12.6989	12.5983	12.6954	1	FALSE	-0.8626
206127	1.51	1.59	14.2482	14.0393	14.1472	4	FALSE	-0.6414
206127	1.52	1.59	14.2219	14.0393	14.1472	4	FALSE	-0.701
206135	0.4	0.45	14.0134	13.5026	13.6066	1	FALSE	0.0523
206141	0.52	0.5	12.7994	13	13.1002	1	FALSE	-0.1883
206141	0.53	0.5	12.6989	13	13.1002	1	FALSE	0.0396
206144	0.56	0.62	12.3961	11.7781	11.8691	1	FALSE	0.3248
206144	0.57	0.62	12.2945	11.7781	11.8691	1	FALSE	0.0943
206152	0.34	0.47	16.8167	15.8899	16.0116	2	FALSE	0.9554
206158	0.74	0.74	10.4266	10.4266	10.5076	1	FALSE	-0.6869
206158	0.74	0.76	10.4266	10.1748	10.2539	1	FALSE	-0.4787
206164	0.61	0.55	11.8827	12.4974	12.5938	1	FALSE	0.7423
206164	0.61	0.54	11.8827	12.5983	12.6954	1	FALSE	0.9728
206172	0.52	0.56	12.7994	12.3961	12.4918	1	FALSE	-0.1728
206172	0.52	0.57	12.7994	12.2945	12.3894	1	FALSE	0.0594
206177	0.73	0.77	10.5487	10.0446	10.1227	1	FALSE	0.0958
206177	0.73	0.78	10.5487	9.9112	9.9884	1	FALSE	0.4006
206181	0.48	0.34	13.2006	14.6499	14.7623	1	FALSE	2.6717
206181	0.48	0.36	13.2006	14.4338	14.5447	1	FALSE	2.1781
206189	0.86	0.81	13.7055	13.9617	14.069	2	FALSE	-0.0459
206189	0.87	0.81	13.6546	13.9617	14.069	2	FALSE	0.0694
206195	2.27	2.18	12.3199	12.5478	12.6446	4	FALSE	-0.1341
206195	2.27	2.18	12.3199	12.5478	12.6446	4	FALSE	-0.1341
206203	0.24	0.25	15.8252	15.698	15.8182	1	FALSE	-0.8547
206203	0.23	0.26	15.9554	15.5734	15.6927	1	FALSE	-0.2748
206213	0.94	0.98	13.3011	13.1003	13.2012	2	FALSE	-0.6439
206213	0.93	0.94	13.3514	13.3011	13.4035	2	FALSE	-0.7523
224761	0.59	0.57	12.0898	12.2945	12.3894	1	FALSE	-0.191

Delta Analysis Math Grade 07

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
224761	0.59	0.58	12.0898	12.1924	12.2866	1	FALSE	-0.4243
224764	0.88	0.87	8.3001	8.4944	8.561	1	FALSE	-0.2786
224777	0.43	0.46	13.7055	13.4017	13.5049	1	FALSE	-0.4155
224781	0.33	0.28	14.7597	15.3314	15.4489	1	FALSE	0.6928
224781	0.33	0.27	14.7597	15.4513	15.5697	1	FALSE	0.9668
224793	0.67	0.68	11.2403	11.1292	11.2154	1	FALSE	-0.8139
224793	0.67	0.68	11.2403	11.1292	11.2154	1	FALSE	-0.8139
224801	0.36	0.38	14.4338	14.2219	14.3312	1	FALSE	-0.6377
224801	0.36	0.4	14.4338	14.0134	14.1211	1	FALSE	-0.1612
224827	0.4	0.43	14.0134	13.7055	13.8109	1	FALSE	-0.4113
224856	0.54	0.49	15.4513	15.7612	15.882	2	FALSE	0.1065
224856	0.54	0.49	15.4513	15.7612	15.882	2	FALSE	0.1065
224876	0.84	0.86	16.2257	16.1568	16.2805	4	FALSE	-0.7462
224876	0.84	0.9	16.2257	16.0217	16.1444	4	FALSE	-0.686
224924	1.4	1.36	14.5413	14.6499	14.7623	4	FALSE	-0.3692
225078	0.38	0.41	14.2219	13.9102	14.0171	1	FALSE	-0.406
225078	0.38	0.42	14.2219	13.8076	13.9138	1	FALSE	-0.1715
225135	0.75	0.69	14.2746	14.5954	14.7075	2	FALSE	0.1114
228094	0.61	0.58	11.8827	12.1924	12.2866	1	FALSE	0.0455
228103	0.32	0.33	14.8708	14.7597	14.8729	1	FALSE	-0.8657
228103	0.32	0.34	14.8708	14.6499	14.7623	1	FALSE	-0.6245
233831	0.33	0.35	14.7597	14.5413	14.6529	1	FALSE	-0.6285
234445	0.46	0.45	13.4017	13.5026	13.6066	1	FALSE	-0.4059
234445	0.46	0.46	13.4017	13.4017	13.5049	1	FALSE	-0.6365
234452	0.85	0.88	8.8543	8.3001	8.3652	1	FALSE	0.2389
234452	0.85	0.87	8.8543	8.4944	8.561	1	FALSE	-0.2053
234455	0.56	0.56	15.3314	15.3314	15.4489	2	FALSE	-0.6039
234455	0.56	0.56	15.3314	15.3314	15.4489	2	FALSE	-0.6039
234459	0.31	0.55	14.9834	12.4974	12.5938	1	TRUE	4.5496
234459	0.31	0.56	14.9834	12.3961	12.4918	1	TRUE	4.7809
255899	0.46	0.5	15.9554	15.698	15.8182	2	FALSE	-0.5594
255974	0.42	0.44	13.8076	13.6039	13.7085	1	FALSE	-0.6459
255974	0.42	0.43	13.8076	13.7055	13.8109	1	FALSE	-0.8629
255994	0.17	0.2	16.8167	16.3665	16.4918	1	FALSE	-0.1336
256055	0.34	0.34	14.6499	14.6499	14.7623	1	FALSE	-0.6154
256091	0.46	0.53	13.4017	12.6989	12.7968	1	FALSE	0.5015
256091	0.46	0.54	13.4017	12.5983	12.6954	1	FALSE	0.7315

Delta Analysis Math Grade 08

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
199729	0.44	0.46	13.6039	13.4017	13.6116	1	FALSE	-0.8805
199729	0.44	0.47	13.6039	13.3011	13.5083	1	FALSE	-0.6404
199743	0.53	0.58	12.6989	12.1924	12.3708	1	FALSE	-0.0051
199744	0.44	0.5	13.6039	13	13.1994	1	FALSE	0.2035
199744	0.46	0.51	13.4017	12.8997	13.0965	1	FALSE	-0.0677
199747	0.33	0.35	16.8965	16.7384	17.0351	2	FALSE	-0.5227
199747	0.33	0.3	16.8965	17.1457	17.4531	2	FALSE	0.6191
199755	0.8	0.8	9.6335	9.6335	9.7452	1	FALSE	-0.5964
199756	0.61	0.6	11.8827	11.9866	12.1596	1	FALSE	-0.1452
199761	0.59	0.59	12.0898	12.0898	12.2655	1	FALSE	-0.4216
199761	0.6	0.59	11.9866	12.0898	12.2655	1	FALSE	-0.1397
199762	0.68	0.64	11.1292	11.5662	11.7282	1	FALSE	0.7347
199762	0.68	0.68	11.1292	11.1292	11.2798	1	FALSE	-0.49
199767	0.62	0.65	11.7781	11.4587	11.6179	1	FALSE	-0.4641
199767	0.65	0.65	11.4587	11.4587	11.6179	1	FALSE	-0.4665
199780	0.95	1.18	13.2508	12.0898	12.2655	2	FALSE	1.7901
199783	0.64	0.71	14.8708	14.4874	14.7256	2	FALSE	-0.5047
199783	0.64	0.71	14.8708	14.4874	14.7256	2	FALSE	-0.5047
206221	0.52	0.5	12.7994	13	13.1994	1	FALSE	0.1911
206221	0.51	0.5	12.8997	13	13.1994	1	FALSE	-0.0829
206224	0.49	0.49	13.1003	13.1003	13.3023	1	FALSE	-0.3497
206224	0.48	0.51	13.2006	12.8997	13.0965	1	FALSE	-0.6171
206225	0.43	0.42	13.7055	13.8076	14.028	1	FALSE	-0.0206
206229	0.44	0.45	13.6039	13.5026	13.7151	1	FALSE	-0.5976
206229	0.44	0.46	13.6039	13.4017	13.6116	1	FALSE	-0.8805
206237	0.63	0.67	11.6726	11.2403	11.3939	1	FALSE	-0.1402
206237	0.64	0.67	11.5662	11.2403	11.3939	1	FALSE	-0.4309
206240	1.25	1.36	11.7254	11.1292	11.2798	2	FALSE	0.3157
206240	1.25	1.36	11.7254	11.1292	11.2798	2	FALSE	0.3157
206245	1.19	1.12	15.1264	15.3314	15.5915	4	FALSE	0.3689
206245	1.19	1.14	15.1264	15.2722	15.5308	4	FALSE	0.2031
206256	0.33	0.3	14.7597	15.0976	15.3516	1	FALSE	0.7156
206256	0.32	0.3	14.8708	15.0976	15.3516	1	FALSE	0.412
206266	0.41	0.39	13.9102	14.1173	14.3458	1	FALSE	0.2884
206266	0.42	0.39	13.8076	14.1173	14.3458	1	FALSE	0.5686
206270	0.21	0.22	16.2257	16.0888	16.3686	1	FALSE	-0.5111
206270	0.2	0.21	16.3665	16.2257	16.5091	1	FALSE	-0.5119
206284	0.52	0.54	12.7994	12.5983	12.7872	1	FALSE	-0.8682
206284	0.52	0.56	12.7994	12.3961	12.5798	1	FALSE	-0.3016
206293	0.72	0.73	10.6686	10.5487	10.6843	1	FALSE	-0.8588
206293	0.72	0.74	10.6686	10.4266	10.559	1	FALSE	-0.6019
206295	0.83	0.82	9.1833	9.3385	9.4425	1	FALSE	-0.1935
206296	0.69	0.71	11.0166	10.7865	10.9282	1	FALSE	-0.66

Delta Analysis Math Grade 08

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
206310	0.46	0.44	13.4017	13.6039	13.819	1	FALSE	0.2383
206313	0.36	0.42	14.4338	13.8076	14.028	1	FALSE	0.2071
206331	2.02	2.1	12.9499	12.7492	12.942	4	FALSE	-0.8801
206337	0.56	0.6	12.3961	11.9866	12.1596	1	FALSE	-0.2554
224853	0.33	0.35	14.7597	14.5413	14.7808	1	FALSE	-0.8437
224853	0.33	0.33	14.7597	14.7597	15.0049	1	FALSE	-0.2316
224878	0.34	0.42	14.6499	13.8076	14.028	1	FALSE	0.7972
224878	0.34	0.44	14.6499	13.6039	13.819	1	FALSE	1.3681
224881	0.48	0.52	13.2006	12.7994	12.9935	1	FALSE	-0.3358
224881	0.48	0.53	13.2006	12.6989	12.8905	1	FALSE	-0.0543
224891	0.33	0.31	14.7597	14.9834	15.2344	1	FALSE	0.3955
224919	0.5	0.58	13	12.1924	12.3708	1	FALSE	0.8174
224919	0.5	0.58	13	12.1924	12.3708	1	FALSE	0.8174
225437	0.23	0.25	15.9554	15.698	15.9676	1	FALSE	-0.8681
225437	0.23	0.24	15.9554	15.8252	16.0982	1	FALSE	-0.5114
226556	0.64	0.64	11.5662	11.5662	11.7282	1	FALSE	-0.4589
226556	0.65	0.64	11.4587	11.5662	11.7282	1	FALSE	-0.1654
226573	0.52	0.56	12.7994	12.3961	12.5798	1	FALSE	-0.3016
226573	0.53	0.58	12.6989	12.1924	12.3708	1	FALSE	-0.0051
233602	0.53	0.52	12.6989	12.7994	12.9935	1	FALSE	-0.0967
233602	0.53	0.52	12.6989	12.7994	12.9935	1	FALSE	-0.0967
233609	1.13	1.08	15.3017	15.4513	15.7145	4	FALSE	0.226
233609	1.16	1.1	15.2135	15.391	15.6527	4	FALSE	0.2982
233719	1.37	1.4	11.0731	10.9024	11.0471	2	FALSE	-0.8306
233719	1.4	1.4	10.9024	10.9024	11.0471	2	FALSE	-0.5061
234148	0.65	0.67	14.815	14.7046	14.9484	2	FALSE	-0.5373
234148	0.65	0.67	14.815	14.7046	14.9484	2	FALSE	-0.5373
234523	0.73	0.74	10.5487	10.4266	10.559	1	FALSE	-0.8736
234524	0.53	0.46	12.6989	13.4017	13.6116	1	FALSE	1.5916
234524	0.5	0.46	13	13.4017	13.6116	1	FALSE	0.7691
242395	0.49	0.49	13.1003	13.1003	13.3023	1	FALSE	-0.3497
242401	0.53	0.55	12.6989	12.4974	12.6836	1	FALSE	-0.8598
242401	0.53	0.57	12.6989	12.2945	12.4755	1	FALSE	-0.2912
256309	0.16	0.35	16.9778	14.5413	14.7808	1	TRUE	5.1
256309	0.16	0.35	16.9778	14.5413	14.7808	1	TRUE	5.1
256511	0.71	0.72	10.7865	10.6686	10.8073	1	FALSE	-0.8446
256511	0.71	0.72	10.7865	10.6686	10.8073	1	FALSE	-0.8446
260926	1.35	1.29	14.6772	14.8429	15.0903	4	FALSE	0.2269
260926	1.37	1.29	14.6226	14.8429	15.0903	4	FALSE	0.376

Delta Analysis Reading Grade 03

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
201747	0.8	0.79	9.6335	9.7743	9.9206	1	FALSE	0.2602
201748	0.71	0.73	10.7865	10.5487	10.6766	1	FALSE	-0.6465
201763	0.84	0.87	9.0222	8.4944	8.6711	1	FALSE	0.5877
201764	2.07	2.28	12.8245	12.2945	12.381	4	FALSE	1.0606
201825	0.56	0.62	12.3961	11.7781	11.8768	1	FALSE	1.4484
201830	0.66	0.68	11.3501	11.1292	11.2433	1	FALSE	-0.6619
201831	0.88	0.89	8.3001	8.0939	8.28	1	FALSE	-1.106
201836	0.66	0.69	11.3501	11.0166	11.1334	1	FALSE	-0.0995
202178	0.76	0.75	10.1748	10.302	10.4358	1	FALSE	0.1268
202179	0.82	0.84	9.3385	9.0222	9.1863	1	FALSE	-0.4295
202180	0.71	0.75	10.7865	10.302	10.4358	1	FALSE	0.5856
202183	0.77	0.79	10.0446	9.7743	9.9206	1	FALSE	-0.5739
202194	0.89	0.9	8.0939	7.8738	8.0652	1	FALSE	-1.0615
205940	2.29	2.41	12.269	11.9607	12.0551	4	FALSE	-0.1139
225214	0.7	0.72	10.9024	10.6686	10.7937	1	FALSE	-0.6522
225216	0.75	0.78	10.302	9.9112	10.0543	1	FALSE	0.0593
225218	0.8	0.81	9.6335	9.4884	9.6415	1	FALSE	-1.1676
225220	0.77	0.77	10.0446	10.0446	10.1845	1	FALSE	-0.4929
225230	0.49	0.48	13.1003	13.2006	13.2656	1	FALSE	-0.3628
225233	0.73	0.73	10.5487	10.5487	10.6766	1	FALSE	-0.5541
225237	0.7	0.69	10.9024	11.0166	11.1334	1	FALSE	-0.0267
225240	0.67	0.66	11.2403	11.3501	11.459	1	FALSE	-0.0897
225242	3.47	3.52	8.5414	8.3001	8.4813	4	FALSE	-0.901
225253	1.93	1.81	13.1755	13.4774	13.5358	4	FALSE	0.6346
226283	0.84	0.86	9.0222	8.6787	8.851	1	FALSE	-0.3327
226289	0.85	0.83	8.8543	9.1833	9.3436	1	FALSE	1.2951
226290	0.87	0.86	8.4944	8.6787	8.851	1	FALSE	0.6157
230973	1.77	1.83	13.5785	13.4269	13.4865	4	FALSE	-0.7376
230976	0.6	0.63	11.9866	11.6726	11.7738	1	FALSE	-0.1197
230977	0.58	0.58	12.1924	12.1924	12.2813	1	FALSE	-0.7537
230978	0.56	0.55	12.3961	12.4974	12.579	1	FALSE	-0.2728
230979	0.77	0.82	10.0446	9.3385	9.4952	1	FALSE	1.6025
230980	1.48	1.51	14.3274	14.2482	14.2883	4	FALSE	-1.0082
230988	0.74	0.74	10.4266	10.4266	10.5574	1	FALSE	-0.5393
255324	0.73	0.75	10.5487	10.302	10.4358	1	FALSE	-0.6305
255326	0.66	0.7	11.3501	10.9024	11.0219	1	FALSE	0.4709
255326	0.65	0.7	11.4587	10.9024	11.0219	1	FALSE	1.0263
255327	0.76	0.77	10.1748	10.0446	10.1845	1	FALSE	-1.1588
255328	0.79	0.82	9.7743	9.3385	9.4952	1	FALSE	0.2197
255328	0.78	0.82	9.9112	9.3385	9.4952	1	FALSE	0.9201
255331	0.6	0.6	11.9866	11.9866	12.0804	1	FALSE	-0.7287
255333	0.57	0.54	12.2945	12.5983	12.6775	1	FALSE	0.751
255334	0.76	0.69	10.1748	11.0166	11.1334	1	TRUE	3.6955

Delta Analysis Reading Grade 03

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
255334	0.75	0.69	10.302	11.0166	11.1334	1	TRUE	3.0446
255335	0.9	0.9	7.8738	7.8738	8.0652	1	FALSE	-0.2293
255335	0.89	0.9	8.0939	7.8738	8.0652	1	FALSE	-1.0615
255336	2.16	2.22	12.5983	12.4468	12.5296	4	FALSE	-0.8572
255338	3.13	3.11	9.8773	9.9449	10.0871	4	FALSE	-0.1352
255536	0.55	0.57	12.4974	12.2945	12.381	1	FALSE	-0.6129
255545	0.55	0.54	12.4974	12.5983	12.6775	1	FALSE	-0.2867

Delta Analysis Reading Grade 04

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
200820	0.74	0.72	10.4266	10.6686	10.6968	1	FALSE	0.4799
200822	0.81	0.82	9.4884	9.3385	9.3405	1	FALSE	-0.3707
200830	0.72	0.7	10.6686	10.9024	10.9352	1	FALSE	0.4545
200843	2.27	2.5	12.3199	11.7254	11.7745	4	FALSE	2.3941
203740	0.63	0.65	11.6726	11.4587	11.5025	1	FALSE	-0.2163
203743	0.55	0.57	12.4974	12.2945	12.3547	1	FALSE	-0.4075
203758	0.64	0.62	11.5662	11.7781	11.8281	1	FALSE	0.4226
203768	1.54	1.63	14.1695	13.9359	14.0285	4	FALSE	-0.4187
203801	0.82	0.81	9.3385	9.4884	9.4934	1	FALSE	-0.3226
203806	0.77	0.76	10.0446	10.1748	10.1933	1	FALSE	-0.3655
203810	2.77	2.78	10.9882	10.9597	10.9936	4	FALSE	-1.3614
203858	0.52	0.52	12.7994	12.7994	12.8696	1	FALSE	-0.9111
203862	0.83	0.85	9.1833	8.8543	8.8467	1	FALSE	0.9418
203871	0.54	0.53	12.5983	12.6989	12.7671	1	FALSE	-0.2249
203873	2.54	2.45	11.6195	11.8566	11.9082	4	FALSE	0.6088
203890	0.9	0.92	7.8738	7.3797	7.3431	1	FALSE	2.2913
203906	0.84	0.81	9.0222	9.4884	9.4934	1	FALSE	1.8775
203922	0.8	0.79	9.6335	9.7743	9.7849	1	FALSE	-0.3465
203925	0.65	0.67	11.4587	11.2403	11.2798	1	FALSE	-0.1551
225764	0.79	0.79	9.7743	9.7743	9.7849	1	FALSE	-1.3257
225765	0.79	0.8	9.7743	9.6335	9.6413	1	FALSE	-0.4743
225766	0.64	0.62	11.5662	11.7781	11.8281	1	FALSE	0.4226
225767	0.6	0.61	11.9866	11.8827	11.9348	1	FALSE	-1.0392
225769	0.63	0.63	11.6726	11.6726	11.7206	1	FALSE	-1.0655
225770	0.46	0.46	13.4017	13.4017	13.4838	1	FALSE	-0.8285
225772	0.72	0.72	10.6686	10.6686	10.6968	1	FALSE	-1.2031
225773	0.66	0.69	11.3501	11.0166	11.0517	1	FALSE	0.6766
225776	2.29	2.34	12.269	12.1412	12.1984	4	FALSE	-0.9081
225778	1.56	1.53	14.1173	14.1957	14.2934	4	FALSE	-0.1745
232524	0.37	0.4	14.3274	14.0134	14.1075	1	FALSE	0.1301
232526	0.69	0.7	11.0166	10.9024	10.9352	1	FALSE	-0.8331
232528	2.82	2.67	10.8447	11.2679	11.3079	4	FALSE	1.8224
232529	0.81	0.8	9.4884	9.6335	9.6413	1	FALSE	-0.3359
232530	0.66	0.66	11.3501	11.3501	11.3918	1	FALSE	-1.1097
232542	0.77	0.78	10.0446	9.9112	9.9245	1	FALSE	-0.5639
232569	0.85	0.85	8.8543	8.8543	8.8467	1	FALSE	-1.3466
232589	0.56	0.57	12.3961	12.2945	12.3547	1	FALSE	-1.1114
232592	0.44	0.48	13.6039	13.2006	13.2787	1	FALSE	0.862
232595	2.11	2.25	12.7241	12.3708	12.4325	4	FALSE	0.6283
232647	0.53	0.51	12.6989	12.8997	12.9719	1	FALSE	0.4991
232657	0.71	0.7	10.7865	10.9024	10.9352	1	FALSE	-0.3648
232664	0.84	0.83	9.0222	9.1833	9.1823	1	FALSE	-0.2859
234353	0.69	0.68	11.0166	11.1292	11.1665	1	FALSE	-0.3569

Delta Analysis Reading Grade 04

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
243661	0.78	0.8	9.9112	9.6335	9.6413	1	FALSE	0.4778
255633	0.65	0.7	11.4587	10.9024	10.9352	1	FALSE	2.2414
255637	0.68	0.65	11.1292	11.4587	11.5025	1	FALSE	1.1966

Delta Analysis Reading Grade 05

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
201746	0.89	0.9	8.0939	7.8738	7.7302	1	FALSE	0.8949
201752	0.46	0.48	13.4017	13.2006	13.3135	1	FALSE	-0.5563
201757	0.64	0.63	11.5662	11.6726	11.7119	1	FALSE	-0.253
201760	0.48	0.44	13.2006	13.6039	13.7362	1	FALSE	1.8008
201769	1.9	1.86	13.2508	13.3514	13.4716	4	FALSE	0.142
201902	0.64	0.64	11.5662	11.5662	11.6004	1	FALSE	-0.8406
201904	0.77	0.77	10.0446	10.0446	10.0056	1	FALSE	-0.8152
201906	0.74	0.74	10.4266	10.4266	10.406	1	FALSE	-0.9121
201911	1.68	1.83	13.8076	13.4269	13.5508	4	FALSE	0.332
201923	0.81	0.8	9.4884	9.6335	9.5747	1	FALSE	-0.5665
201924	0.76	0.76	10.1748	10.1748	10.142	1	FALSE	-0.8482
201928	0.65	0.65	11.4587	11.4587	11.4878	1	FALSE	-0.8679
201937	1.75	1.78	13.6292	13.5532	13.6831	4	FALSE	-0.7371
202056	0.68	0.72	11.1292	10.6686	10.6596	1	FALSE	1.4528
202059	0.72	0.73	10.6686	10.5487	10.534	1	FALSE	-0.3115
202061	0.52	0.53	12.7994	12.6989	12.7877	1	FALSE	-0.9593
202063	0.74	0.73	10.4266	10.5487	10.534	1	FALSE	-0.4553
202065	0.61	0.61	11.8827	11.8827	11.9322	1	FALSE	-0.7603
202069	0.56	0.56	12.3961	12.3961	12.4703	1	FALSE	-0.6301
202072	1.56	1.62	14.1173	13.9617	14.1113	4	FALSE	-0.9893
202075	1.73	1.79	13.6801	13.5279	13.6566	4	FALSE	-0.8974
226477	0.82	0.82	9.3385	9.3385	9.2655	1	FALSE	-0.6361
226487	0.6	0.62	11.9866	11.7781	11.8225	1	FALSE	-0.1564
226490	0.57	0.6	12.2945	11.9866	12.0411	1	FALSE	0.3142
226498	0.83	0.81	9.1833	9.4884	9.4226	1	FALSE	0.2395
226500	0.75	0.73	10.302	10.5487	10.534	1	FALSE	0.201
226502	0.82	0.81	9.3385	9.4884	9.4226	1	FALSE	-0.5781
226508	0.68	0.68	11.1292	11.1292	11.1424	1	FALSE	-0.9515
226510	0.57	0.59	12.2945	12.0898	12.1493	1	FALSE	-0.2557
226515	1.4	1.39	14.5413	14.5683	14.7471	4	FALSE	0.0634
226517	1.64	1.66	13.9102	13.8588	14.0034	4	FALSE	-0.5297
226597	0.79	0.77	9.7743	10.0446	10.0056	1	FALSE	0.1974
226598	0.73	0.74	10.5487	10.4266	10.406	1	FALSE	-0.2687
226599	0.72	0.8	10.6686	9.6335	9.5747	1	TRUE	4.7422
226600	0.81	0.78	9.4884	9.9112	9.8658	1	FALSE	0.967
227093	0.62	0.65	11.7781	11.4587	11.4878	1	FALSE	0.5085
230632	0.85	0.83	8.8543	9.1833	9.1028	1	FALSE	0.2885
230723	0.46	0.48	13.4017	13.2006	13.3135	1	FALSE	-0.5563
233190	0.72	0.73	10.6686	10.5487	10.534	1	FALSE	-0.3115
256354	0.59	0.58	12.0898	12.1924	12.2568	1	FALSE	-0.1412
256359	0.91	0.89	7.637	8.0939	7.9609	1	FALSE	0.6856
256368	0.72	0.67	10.6686	11.2403	11.2589	1	FALSE	2.0886
256370	1.55	1.58	14.1434	14.0652	14.2198	4	FALSE	-0.6182

Delta Analysis Reading Grade 05

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
256397	0.7	0.69	10.9024	11.0166	11.0244	1	FALSE	-0.3784
256403	0.58	0.62	12.1924	11.7781	11.8225	1	FALSE	0.9279
256409	0.79	0.76	9.7743	10.1748	10.142	1	FALSE	0.9162
256411	0.65	0.64	11.4587	11.5662	11.6004	1	FALSE	-0.2746
256415	1.53	1.7	14.1957	13.7565	13.8962	4	FALSE	0.557
256829	0.53	0.55	12.6989	12.4974	12.5764	1	FALSE	-0.3755
256837	0.79	0.78	9.7743	9.9112	9.8658	1	FALSE	-0.5391
257391	0.87	0.88	8.4944	8.3001	8.177	1	FALSE	0.6514

Delta Analysis Reading Grade 06

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
200339	0.51	0.54	12.8997	12.5983	12.6801	1	FALSE	0.2474
200342	0.65	0.65	11.4587	11.4587	11.5411	1	FALSE	-0.6403
200345	0.76	0.75	10.1748	10.302	10.3849	1	FALSE	0.1859
200348	2.03	2.02	12.9248	12.9499	13.0316	4	FALSE	-0.4824
204009	0.85	0.86	8.8543	8.6787	8.7623	1	FALSE	-0.578
204011	0.9	0.9	7.8738	7.8738	7.9577	1	FALSE	-0.6301
204013	0.76	0.78	10.1748	9.9112	9.9942	1	FALSE	-0.0053
204014	0.86	0.87	8.6787	8.4944	8.5781	1	FALSE	-0.5219
204017	0.93	0.91	7.0968	7.637	7.721	1	FALSE	2.8634
204020	0.75	0.74	10.302	10.4266	10.5094	1	FALSE	0.1682
204021	0.55	0.6	12.4974	11.9866	12.0687	1	FALSE	1.599
204022	1.85	1.83	13.3765	13.4269	13.5084	4	FALSE	-0.32
204026	2.05	1.94	12.8746	13.1504	13.232	4	FALSE	1.1383
204262	0.65	0.63	11.4587	11.6726	11.7548	1	FALSE	0.7421
204266	0.71	0.72	10.7865	10.6686	10.7513	1	FALSE	-0.9455
204271	0.5	0.51	13	12.8997	12.9814	1	FALSE	-1.0527
204274	0.71	0.73	10.7865	10.5487	10.6315	1	FALSE	-0.1706
204278	0.65	0.65	11.4587	11.4587	11.5411	1	FALSE	-0.6403
204283	0.61	0.62	11.8827	11.7781	11.8603	1	FALSE	-1.0276
204284	0.71	0.71	10.7865	10.7865	10.8691	1	FALSE	-0.6384
204287	0.6	0.61	11.9866	11.8827	11.9649	1	FALSE	-1.0322
204294	1.53	1.51	14.1957	14.2482	14.3293	4	FALSE	-0.3085
204298	1.47	1.5	14.3539	14.2746	14.3557	4	FALSE	-1.1615
204474	0.7	0.68	10.9024	11.1292	11.2117	1	FALSE	0.8273
204479	0.57	0.64	12.2945	11.5662	11.6485	1	TRUE	3.0049
204491	0.6	0.63	11.9866	11.6726	11.7548	1	FALSE	0.326
226657	0.69	0.69	11.0166	11.0166	11.0991	1	FALSE	-0.639
226659	0.7	0.7	10.9024	10.9024	10.985	1	FALSE	-0.6387
226667	0.94	0.94	6.7809	6.7809	6.8653	1	FALSE	-0.627
226669	1.83	1.79	13.4269	13.5279	13.6094	4	FALSE	0.0069
226697	0.7	0.76	10.9024	10.1748	10.2577	1	FALSE	2.9962
226699	0.87	0.89	8.4944	8.0939	8.1777	1	FALSE	0.8754
226702	0.79	0.79	9.7743	9.7743	9.8574	1	FALSE	-0.6355
226719	0.84	0.86	9.0222	8.6787	8.7623	1	FALSE	0.5078
226722	0.66	0.67	11.3501	11.2403	11.3228	1	FALSE	-0.9958
226723	0.89	0.89	8.0939	8.0939	8.1777	1	FALSE	-0.6307
226725	0.76	0.77	10.1748	10.0446	10.1276	1	FALSE	-0.8675
226728	0.78	0.79	9.9112	9.7743	9.8574	1	FALSE	-0.8247
226730	1.8	1.72	13.5026	13.7055	13.7869	4	FALSE	0.6651
226735	1.56	1.53	14.1173	14.1957	14.2768	4	FALSE	-0.141
226737	0.88	0.9	8.3001	7.8738	7.9577	1	FALSE	1.041
227775	0.83	0.83	9.1833	9.1833	9.2667	1	FALSE	-0.6338
227780	0.84	0.85	9.0222	8.8543	8.9378	1	FALSE	-0.6269

Delta Analysis Reading Grade 06

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
230176	0.89	0.88	8.0939	8.3001	8.3838	1	FALSE	0.7018
256334	0.71	0.74	10.7865	10.4266	10.5094	1	FALSE	0.6188
256337	0.86	0.86	8.6787	8.6787	8.7623	1	FALSE	-0.6324
256342	0.82	0.81	9.3385	9.4884	9.5716	1	FALSE	0.3345
256346	0.54	0.53	12.5983	12.6989	12.7807	1	FALSE	0.0071
256347	1.62	1.72	13.9617	13.7055	13.7869	4	FALSE	-0.0421
256651	0.54	0.57	12.5983	12.2945	12.3765	1	FALSE	0.2614
256674	0.61	0.62	11.8827	11.7781	11.8603	1	FALSE	-1.0276

Delta Analysis Reading Grade 07

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
199526	0.64	0.66	11.5662	11.3501	11.5619	1	FALSE	-1.4816
199527	0.67	0.7	11.2403	10.9024	11.0986	1	FALSE	-0.4252
199528	0.68	0.67	11.1292	11.2403	11.4483	1	FALSE	0.9376
199529	0.78	0.77	9.9112	10.0446	10.2111	1	FALSE	0.7897
199530	0.48	0.52	13.2006	12.7994	13.0614	1	FALSE	-0.4446
199531	0.71	0.74	10.7865	10.4266	10.6063	1	FALSE	-0.1301
199532	0.72	0.76	10.6686	10.1748	10.3458	1	FALSE	0.9668
199533	0.84	0.86	9.0222	8.6787	8.7978	1	FALSE	0.2099
199535	1.83	1.86	13.4269	13.3514	13.6325	4	FALSE	0.0656
199536	1.84	2.07	13.4017	12.8245	13.0874	4	FALSE	0.9014
199562	0.76	0.79	10.1748	9.7743	9.9314	1	FALSE	0.356
199563	0.69	0.7	11.0166	10.9024	11.0986	1	FALSE	-0.8843
199565	0.87	0.87	8.4944	8.4944	8.6071	1	FALSE	-0.6486
199568	0.59	0.59	12.0898	12.0898	12.3272	1	FALSE	0.3099
199569	2.01	2.16	12.9749	12.5983	12.8533	4	FALSE	-0.5798
199597	0.45	0.46	13.5026	13.4017	13.6846	1	FALSE	-0.1158
199598	0.85	0.86	8.8543	8.6787	8.7978	1	FALSE	-1.0804
199599	0.86	0.87	8.6787	8.4944	8.6071	1	FALSE	-0.9641
199603	0.54	0.57	12.5983	12.2945	12.539	1	FALSE	-1.0591
199604	0.81	0.82	9.4884	9.3385	9.4805	1	FALSE	-1.4536
199605	0.78	0.77	9.9112	10.0446	10.2111	1	FALSE	0.7897
199608	1.81	1.98	13.4774	13.0501	13.3208	4	FALSE	-0.3115
199609	1.71	1.82	13.731	13.4522	13.7368	4	FALSE	-1.4696
201466	0.7	0.73	10.9024	10.5487	10.7327	1	FALSE	-0.2103
201468	0.82	0.84	9.3385	9.0222	9.1531	1	FALSE	-0.0898
201470	0.89	0.91	8.0939	7.637	7.7199	1	FALSE	1.3595
201472	0.79	0.83	9.7743	9.1833	9.3199	1	FALSE	1.9776
201476	0.84	0.86	9.0222	8.6787	8.7978	1	FALSE	0.2099
201479	0.74	0.74	10.4266	10.4266	10.6063	1	FALSE	-0.1335
201482	0.6	0.61	11.9866	11.8827	12.1129	1	FALSE	-0.5437
201487	0.89	0.91	8.0939	7.637	7.7199	1	FALSE	1.3595
201490	1.86	2.1	13.3514	12.7492	13.0094	4	FALSE	1.1132
201492	1.75	1.92	13.6292	13.2006	13.4765	4	FALSE	-0.341
201523	0.73	0.72	10.5487	10.6686	10.8567	1	FALSE	0.8523
201529	0.61	0.63	11.8827	11.6726	11.8955	1	FALSE	-1.4162
201530	0.48	0.49	13.2006	13.1003	13.3727	1	FALSE	-0.1918
201532	0.79	0.8	9.7743	9.6335	9.7857	1	FALSE	-1.427
201535	1.79	1.96	13.5279	13.1003	13.3727	4	FALSE	-0.3218
201648	0.72	0.73	10.6686	10.5487	10.7327	1	FALSE	-1.0222
226905	0.72	0.73	10.6686	10.5487	10.7327	1	FALSE	-1.0222
226906	0.63	0.64	11.6726	11.5662	11.7854	1	FALSE	-0.6475
233750	0.64	0.61	11.5662	11.8827	12.1129	1	FALSE	2.6874
256093	0.74	0.73	10.4266	10.5487	10.7327	1	FALSE	0.8376
256096	0.87	0.86	8.4944	8.6787	8.7978	1	FALSE	0.8167
256099	0.86	0.85	8.6787	8.8543	8.9794	1	FALSE	0.7963
256100	0.47	0.47	13.3011	13.3011	13.5805	1	FALSE	0.6328
256108	1.56	1.84	14.1173	13.4017	13.6846	4	FALSE	1.8102

Delta Analysis Reading Grade 07

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
256172	0.89	0.88	8.0939	8.3001	8.406	1	FALSE	0.8839
256176	0.82	0.83	9.3385	9.1833	9.3199	1	FALSE	-1.3713
256189	0.91	0.91	7.637	7.637	7.7199	1	FALSE	-0.8772

Delta Analysis Reading Grade 08

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
199665	0.67	0.68	11.2403	11.1292	11.1521	1	FALSE	-0.7521
199666	0.72	0.69	10.6686	11.0166	11.0373	1	FALSE	0.7544
199668	0.84	0.84	9.0222	9.0222	9.0028	1	FALSE	-1.1218
199670	0.69	0.67	11.0166	11.2403	11.2655	1	FALSE	0.1112
199671	0.44	0.46	13.6039	13.4017	13.4703	1	FALSE	-0.5085
199674	2.01	2.2	12.9749	12.4974	12.5478	4	FALSE	1.0688
199675	2.27	2.33	12.3199	12.1668	12.2106	4	FALSE	-0.6386
204093	0.84	0.82	9.0222	9.3385	9.3255	1	FALSE	0.4036
204095	0.5	0.4	13	14.0134	14.0943	1	TRUE	4.6526
204100	0.67	0.68	11.2403	11.1292	11.1521	1	FALSE	-0.7521
204102	0.76	0.75	10.1748	10.302	10.3084	1	FALSE	-0.5084
204106	0.67	0.64	11.2403	11.5662	11.5979	1	FALSE	0.6947
204122	0.78	0.76	9.9112	10.1748	10.1786	1	FALSE	0.2101
204128	1.76	1.85	13.6039	13.3765	13.4446	4	FALSE	-0.3705
204133	2.14	2.15	12.6486	12.6235	12.6764	4	FALSE	-1.0768
204140	0.71	0.7	10.7865	10.9024	10.9208	1	FALSE	-0.5044
204144	0.74	0.73	10.4266	10.5487	10.56	1	FALSE	-0.5093
204147	0.74	0.74	10.4266	10.4266	10.4354	1	FALSE	-1.1786
204155	1.9	1.98	13.2508	13.0501	13.1117	4	FALSE	-0.4783
226240	0.82	0.8	9.3385	9.6335	9.6264	1	FALSE	0.3205
226244	0.86	0.87	8.6787	8.4944	8.4644	1	FALSE	-0.0748
226246	0.89	0.9	8.0939	7.8738	7.8313	1	FALSE	0.1845
226247	2.12	2.24	12.6989	12.3961	12.4445	4	FALSE	0.1408
230175	0.81	0.79	9.4884	9.7743	9.77	1	FALSE	0.2869
233566	0.91	0.89	7.637	8.0939	8.0558	1	FALSE	1.0243
233567	0.84	0.83	9.0222	9.1833	9.1672	1	FALSE	-0.4469
233690	0.82	0.83	9.3385	9.1833	9.1672	1	FALSE	-0.3054
233691	0.77	0.79	10.0446	9.7743	9.77	1	FALSE	0.2491
233958	0.83	0.81	9.1833	9.4884	9.4784	1	FALSE	0.3591
234521	0.74	0.73	10.4266	10.5487	10.56	1	FALSE	-0.5093
243072	0.59	0.61	12.0898	11.8827	11.9208	1	FALSE	-0.318
255934	0.64	0.62	11.5662	11.7781	11.814	1	FALSE	0.1057
255938	0.79	0.8	9.7743	9.6335	9.6264	1	FALSE	-0.4314
255939	0.78	0.8	9.9112	9.6335	9.6264	1	FALSE	0.3041
255939	0.79	0.8	9.7743	9.6335	9.6264	1	FALSE	-0.4314
255942	0.73	0.73	10.5487	10.5487	10.56	1	FALSE	-1.1654
255944	0.84	0.85	9.0222	8.8543	8.8315	1	FALSE	-0.2017
255944	0.86	0.85	8.6787	8.8543	8.8315	1	FALSE	-0.4052
255946	0.77	0.8	10.0446	9.6335	9.6264	1	FALSE	1.0207
255947	0.43	0.41	13.7055	13.9102	13.989	1	FALSE	0.2969
255960	0.84	0.87	9.0222	8.4944	8.4644	1	FALSE	1.7702
255960	0.87	0.87	8.4944	8.4944	8.4644	1	FALSE	-1.0649
255965	2.04	2.16	12.8997	12.5983	12.6507	4	FALSE	0.1118
255976	1.7	1.96	13.7565	13.1003	13.1628	4	FALSE	1.9633
256257	0.62	0.66	11.7781	11.3501	11.3775	1	FALSE	0.9259
256279	0.86	0.86	8.6787	8.6787	8.6524	1	FALSE	-1.0848
256280	0.87	0.86	8.4944	8.6787	8.6524	1	FALSE	-0.3772

Delta Analysis Reading Grade 08

IREF	OLDP	NEWP	OLDDELTA	NEWDELTA	LINE	MAX	DISCARD	STDEV_FROM_LINE
256287	0.88	0.88	8.3001	8.3001	8.2662	1	FALSE	-1.0439
260013	0.32	0.32	14.8708	14.8708	14.9689	1	FALSE	-0.699

APPENDIX E—ITEM RESPONSE THEORY CALIBRATION RESULTS

Table E-1. IRT Item Parameters for 2007-08 NECAP: Math Grade 3 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
255681	0.7589	-1.6639	0.0319
255679	0.5947	-1.9336	0.0000
255672	0.6028	-0.0720	0.0831
255648	0.9561	-0.6915	0.1518
255925	0.9699	0.6908	0.1236
198315	0.5779	-2.1149	0.0000
255663	1.1534	-1.1318	0.2377
198282	1.4877	0.3570	0.2102
201410	0.4958	-0.5632	0.2011
255911	0.7640	-2.0247	0.1239
201893	0.8192	-1.2513	0.1077
255895	0.6666	0.5125	0.2352
201438	1.0476	-0.9270	0.1704
201806	0.9077	0.3132	0.2095
226954	1.0012	-0.6404	0.1095
226981	0.7826	-1.1244	0.1348
198586	0.7813	0.6477	0.1272
198463	0.8433	-0.5708	0.0849
201289	0.4928	-1.8333	0.0798
198533	0.5661	-1.9921	0.1556
255650	0.8225	-0.5126	0.1489
255905	0.5326	-1.2210	0.0000
255902	0.5391	-2.5929	0.0000
201294	0.8835	-0.5542	0.3373
255693	1.1127	-0.7454	0.1899
255890	0.5021	-0.7201	0.1459
255617	0.8287	-1.3107	0.0800
255697	0.9234	-1.4744	0.2055
255900	1.1574	0.6147	0.0762
201951	1.1799	-0.7368	0.0494
201807	0.8509	0.0842	0.1707
255915	0.8357	-0.5766	0.1070
226962	1.0411	0.2575	0.1023
201302	1.1171	-0.8046	0.1329
227014	0.8205	-0.8833	0.0880

a = discrimination; b = difficulty; c = guessing

Table E-2. IRT Item Parameters for 2007-08 NECAP: Math Grade 3 Open-Response Items.

Item Number	Parameters			
	a	b	D1	D2
255932	1.0336	0.3379	N/A	N/A
201500	0.5518	0.0900	N/A	N/A
201510	0.8184	-1.0141	N/A	N/A
201465	0.5361	-1.4245	N/A	N/A
223926	0.7483	0.0456	1.7705	-1.7705
242311	0.6795	-0.7151	1.2309	-1.2309
198505	0.6136	-1.2539	0.6384	-0.6384
256001	1.0457	0.3209	0.6288	-0.6288
198504	0.5159	-2.0441	0.9536	-0.9536
202010	0.6051	-0.1595	N/A	N/A
255929	0.6150	-2.1296	N/A	N/A
255964	0.9702	0.1829	N/A	N/A
231019	0.8133	-0.7694	0.4670	-0.4670
223935	0.6428	1.3332	0.5434	-0.5434
223936	0.8781	-0.9100	0.9158	-0.9158
227024	0.8980	0.2763	N/A	N/A
255943	0.4213	-2.1981	N/A	N/A
231020	0.8997	-0.1894	N/A	N/A
256016	0.5995	-2.1725	1.1293	-1.1293
256021	0.7294	0.1688	0.0957	-0.0957

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter

Figure E-1. Test Characteristic Curve (TCC) for 2007-08 NECAP: Math Grade 3.

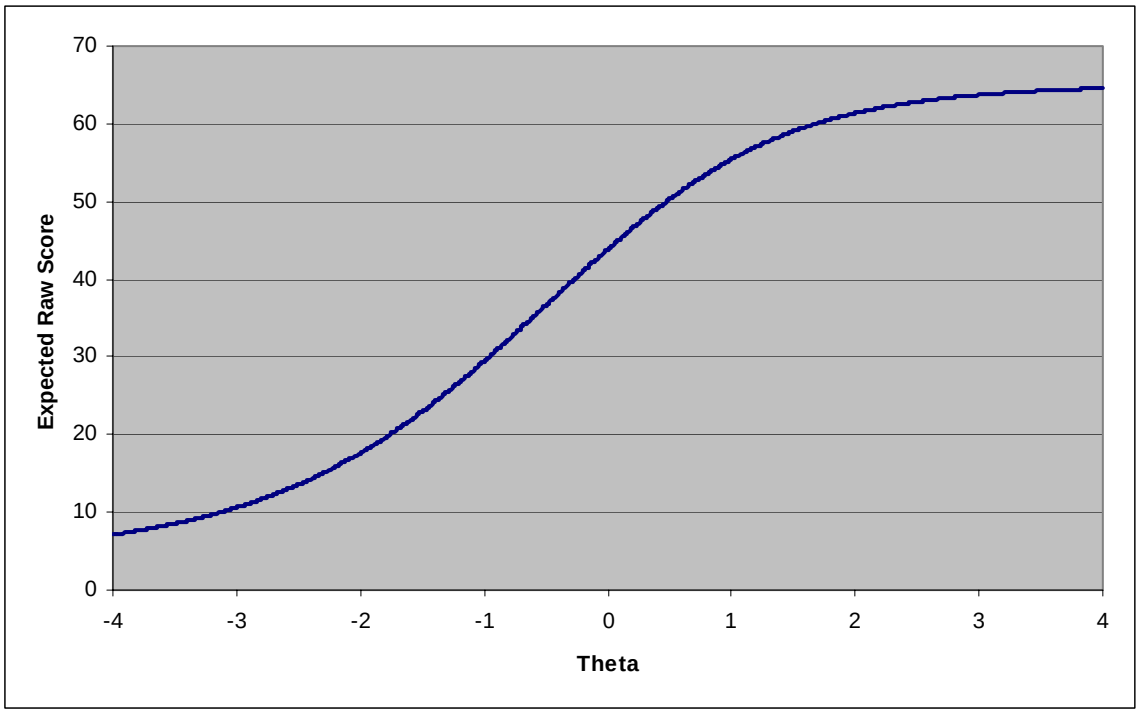


Figure E-2. Test Information Function (TIF) for 2007-08 NECAP: Math Grade 3.

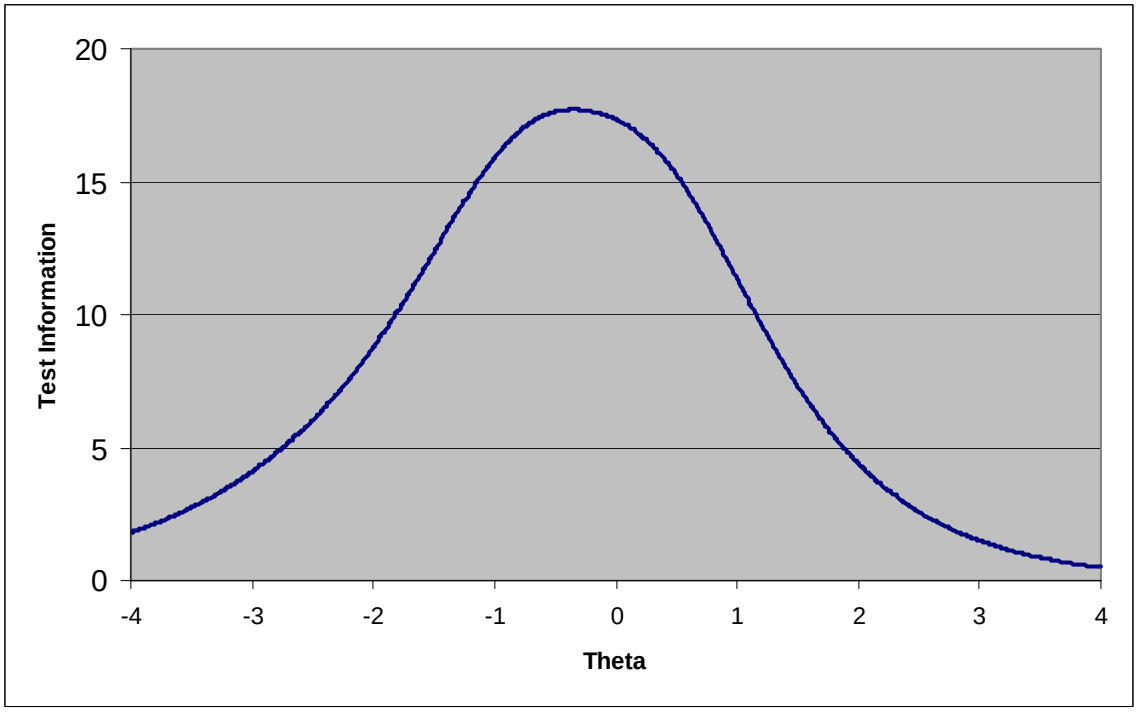


Table E-3. IRT Item Parameters for 2007-08 NECAP: Math Grade 4 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
198387	0.8242	-1.5415	0.0560
255682	0.6695	-0.9324	0.2077
202336	0.4959	0.2484	0.1857
255687	0.4927	-1.6019	0.1287
202348	0.8190	-0.5661	0.1675
198396	0.8808	-0.0770	0.1961
255653	1.3533	-0.1816	0.2557
227853	0.5828	0.3807	0.2453
255685	0.8282	-1.2698	0.0459
255696	0.9655	-1.6721	0.1161
255664	0.9913	-0.8173	0.1888
223963	0.5174	-0.4957	0.2864
255673	0.3971	-1.3571	0.0000
223987	1.0636	0.5064	0.0633
199240	0.5401	-1.1687	0.0519
255717	0.6342	0.6269	0.1426
255694	0.5587	-1.3643	0.0000
242669	0.8604	-0.2742	0.0792
255670	0.5940	-0.8331	0.2981
202501	0.8361	-1.4661	0.0257
227099	1.1199	0.7155	0.0586
227090	0.5259	-2.0615	0.1300
202498	0.7606	-1.4756	0.0376
202326	1.0104	-0.9052	0.1769
255692	0.7067	-1.1885	0.1577
198385	0.5466	-0.0244	0.0828
255705	1.3361	-0.2732	0.1625
202504	0.7283	-0.7251	0.0362
255698	0.7440	1.0606	0.1534
202383	0.7389	-1.0990	0.1617
224038	0.9879	0.3243	0.2538
255666	0.9194	-1.1504	0.1132
198482	0.8061	0.3746	0.2265
202403	0.8792	-0.5318	0.1416
255660	0.7608	-1.7771	0.0513

a = discrimination; b = difficulty; c = guessing

Table E-4. IRT Item Parameters for 2007-08 NECAP: Math Grade 4 Open-Response Items.

Item Number	Parameters			
	a	b	D1	D2
198404	1.0137	0.0130	N/A	N/A
227080	0.6713	-1.2564	N/A	N/A
227073	0.5204	-0.3817	N/A	N/A
255728	0.8740	-0.1460	N/A	N/A
227116	0.7902	-0.2113	0.7938	-0.7938
224093	0.7464	0.5673	0.9165	-0.9165
255743	0.7279	-0.5496	0.8644	-0.8644
202370	0.9327	-0.0609	0.3172	-0.3172
232607	0.8018	0.0814	0.5666	-0.5666
232631	0.8779	-0.3827	N/A	N/A
224040	0.5055	-2.6621	N/A	N/A
255737	0.4639	0.2755	N/A	N/A
198445	0.5167	-1.0585	0.6663	-0.6663
255741	0.8932	-0.6301	1.6614	-1.6614
198427	0.6134	-1.4125	0.6527	-0.6527
255730	0.5919	-0.0291	N/A	N/A
224090	0.9374	-0.5917	N/A	N/A
202355	0.9899	-0.2805	N/A	N/A
198439	0.7530	-0.2126	0.5923	-0.5923
227102	0.6062	-0.6426	1.1884	-1.1884

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter

Figure E-3. Test Characteristic Curve (TCC) for 2007-08 NECAP: Math Grade 4.

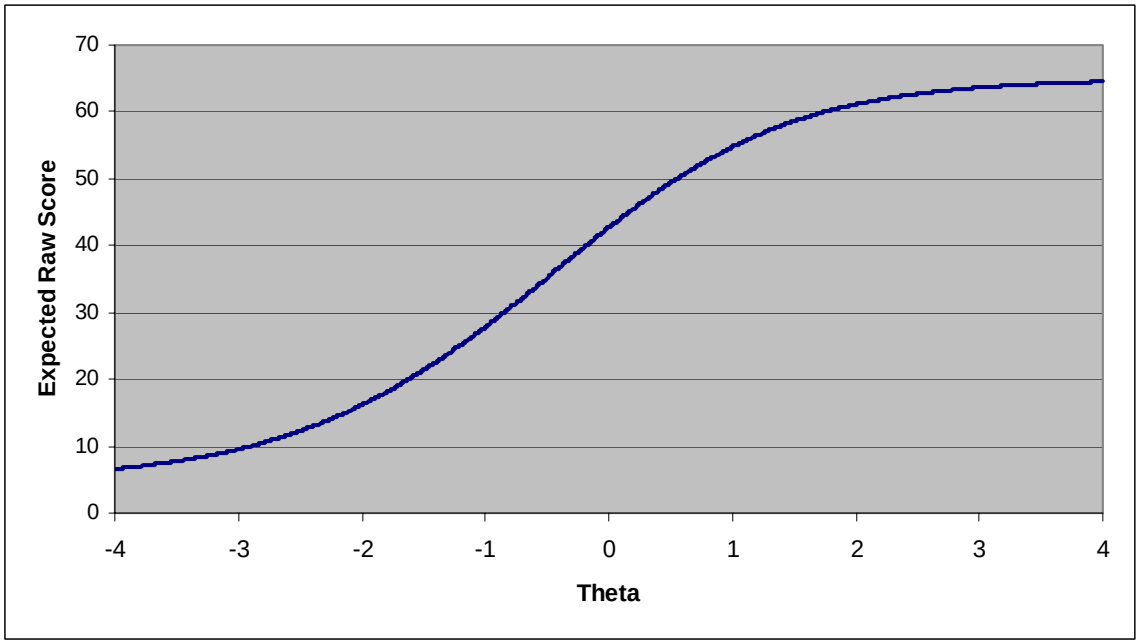


Figure E-4. Test Information Function (TIF) for 2007-08 NECAP: Math Grade 4.

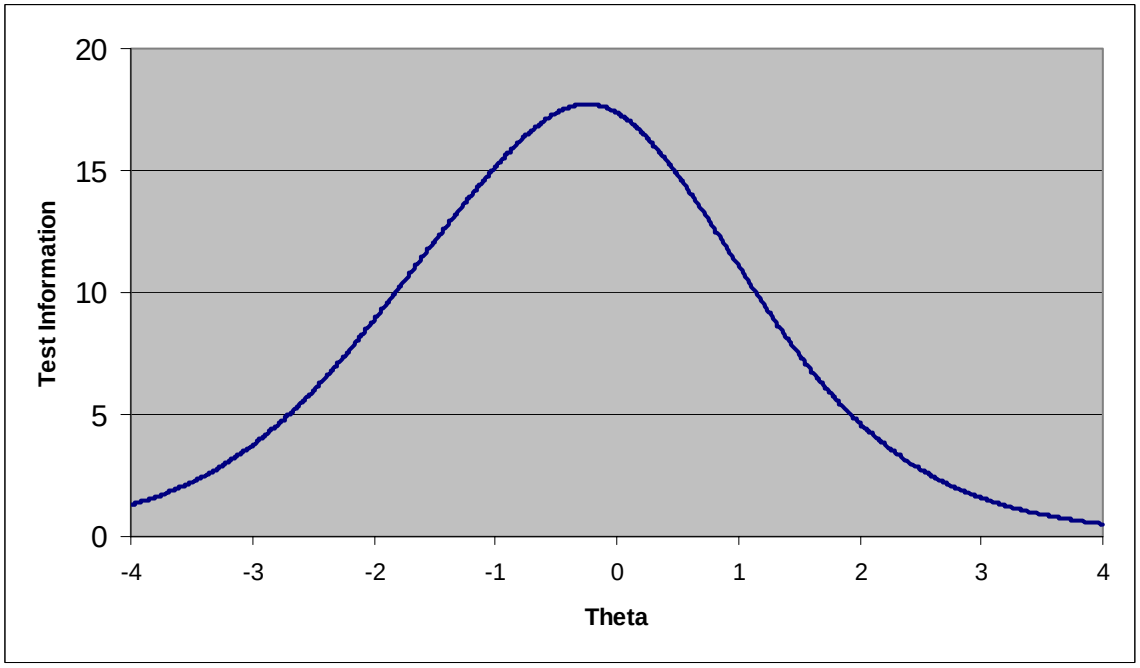


Table E-5. IRT Item Parameters for 2007-08 NECAP: Math Grade 5 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
255127	0.9611	-1.4904	0.0397
230682	0.5807	-1.0274	0.0421
198500	0.9462	0.7098	0.2028
198516	0.8403	0.8860	0.2600
255130	0.7630	-0.0653	0.0807
203365	0.4609	-2.1110	0.0000
255104	1.5150	0.1304	0.1451
255144	1.3561	0.7645	0.1439
255134	1.4874	0.4917	0.1527
203368	1.1953	-0.0790	0.1619
225307	0.4740	-2.3490	0.0000
230968	0.7389	-0.2640	0.2286
198492	1.1266	0.5052	0.2476
230820	0.7985	-0.4224	0.2348
203935	1.2201	0.0054	0.4507
198371	0.7526	1.8065	0.1182
203911	0.9032	0.4244	0.3017
203928	0.4645	0.2464	0.0937
255116	0.7511	-0.5049	0.1853
203588	0.5903	0.6973	0.3119
255760	0.6880	-0.9703	0.0440
255761	0.4872	-1.8895	0.0000
255796	0.5226	-0.2061	0.0525
255802	0.9749	-0.3821	0.1329
255232	1.3786	1.7848	0.1358
255226	0.3712	-2.2305	0.0000
225378	0.6886	0.8451	0.2122
227026	0.7645	1.2584	0.1795
255762	1.0349	1.3867	0.3619
226810	1.1468	1.3511	0.1054
198494	0.6700	-1.5890	0.0878
230754	0.7684	0.3669	0.3065

a = discrimination; b = difficulty; c = guessing

Table E-6. IRT Item Parameters for 2007-08 NECAP: Math Grade 5 Open-Response Items.

Item Number	Parameters					
	a	b	D1	D2	D3	D4
255145	0.6093	0.6154	N/A	N/A	N/A	N/A
258391	0.6803	-1.1930	N/A	N/A	N/A	N/A
228544	0.9704	1.2944	0.2954	-0.2954	0.0000	0.0000
230712	0.5454	0.5978	1.3198	-1.3198	0.0000	0.0000
225023	0.7307	0.6341	N/A	N/A	N/A	N/A
255178	0.9460	-0.1271	0.5931	-0.5931	0.0000	0.0000
272113	0.7302	0.3451	0.9109	-0.9109	0.0000	0.0000
203612	0.3286	-0.1603	N/A	N/A	N/A	N/A
255818	0.8425	-0.1095	N/A	N/A	N/A	N/A
255765	0.6240	-1.2716	N/A	N/A	N/A	N/A
204019	0.9410	1.2300	0.3044	-0.3044	0.0000	0.0000
230969	0.8300	0.2233	0.8989	-0.8989	0.0000	0.0000
230971	1.0507	-0.0249	0.9926	0.3687	-0.3601	-1.0012
255265	1.0013	1.5448	1.5412	0.7463	-0.6927	-1.5947
198655	1.0132	0.1590	1.1374	0.4747	-0.5951	-1.0170
225430	1.0125	0.7957	2.2470	0.7092	-1.0696	-1.8866

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-5. Test Characteristic Curve (TCC) for 2007-08 NECAP: Math Grade 5.

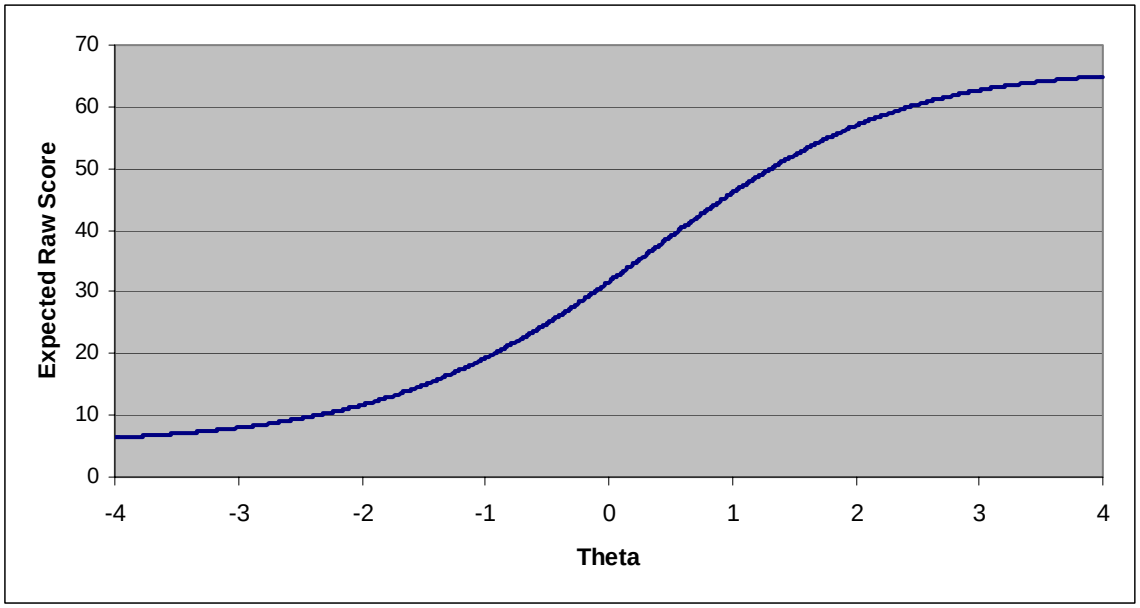


Figure E-6. Test Information Function (TIF) for 2007-08 NECAP: Math Grade 5.

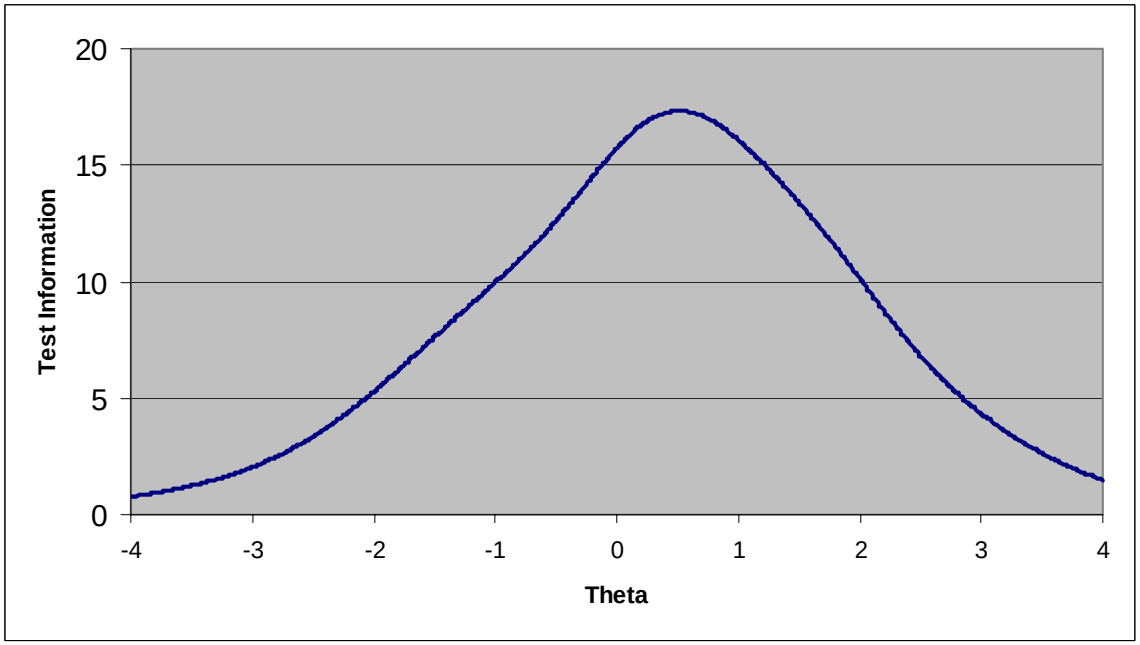


Table E-7. IRT Item Parameters for 2007-08 NECAP: Math Grade 6 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
255360	0.7637	-1.3533	0.0466
203201	1.0836	0.2195	0.1462
255301	1.4381	1.4057	0.0519
255293	1.0338	1.6021	0.0581
203216	1.2516	-0.2698	0.2427
203388	0.5749	-1.6911	0.0000
225177	0.9637	1.1676	0.2102
203202	1.0176	0.3884	0.1676
255508	1.0697	1.6007	0.1940
255369	1.5270	0.6232	0.1653
203364	0.4107	-1.4200	0.1383
255468	0.8701	0.4178	0.2270
255554	0.8803	0.2084	0.1413
198593	1.0053	0.2779	0.0743
255347	0.7290	-0.0087	0.2620
228068	0.5499	-0.4324	0.1059
255551	0.9391	1.3752	0.1546
198709	0.6662	-0.6833	0.1626
203197	0.9179	0.3070	0.3133
255426	0.7513	0.3746	0.1387
255423	0.6228	-0.7010	0.2064
256905	1.0349	0.5678	0.1480
198597	0.4891	-0.2240	0.4490
203461	0.6434	0.4055	0.2618
228071	0.8658	-0.7557	0.0533
225347	0.8974	1.2930	0.2276
255343	0.9391	-0.1038	0.2027
255424	0.8638	0.2123	0.3564
255498	1.0594	1.4725	0.2203
225313	1.3257	0.1616	0.1392
234402	0.8221	0.6890	0.1689
255421	0.7348	0.2560	0.2368

a = discrimination; b = difficulty; c = guessing

Table E-8. IRT Item Parameters for 2007-08 NECAP: Math Grade 6 Open-Response Items.

Item Number	Parameters					
	a	b	D1	D2	D3	D4
255989	0.7247	1.2123	N/A	N/A	N/A	N/A
256092	0.8387	-0.2645	N/A	N/A	N/A	N/A
234461	1.0091	0.1696	0.1729	-0.1729	0.0000	0.0000
256095	0.6163	1.4709	1.7188	-1.7188	0.0000	0.0000
272157	0.7980	0.3788	N/A	N/A	N/A	N/A
199933	1.1921	0.5597	0.1256	-0.1256	0.0000	0.0000
256004	0.8627	0.7039	0.4814	-0.4814	0.0000	0.0000
233782	0.9148	0.4020	N/A	N/A	N/A	N/A
206112	0.8333	0.9090	N/A	N/A	N/A	N/A
225091	0.7683	-0.7079	N/A	N/A	N/A	N/A
206215	1.0560	0.4055	0.1487	-0.1487	0.0000	0.0000
225137	1.2546	1.1435	0.2858	-0.2858	0.0000	0.0000
199892	1.0476	0.7440	1.6849	0.7798	-0.9820	-1.4827
234453	0.8456	-0.0620	1.4232	0.5086	-0.5000	-1.4318
256118	0.8857	1.7261	2.2105	1.2607	-1.2652	-2.2060
256015	1.1400	1.2769	1.0895	0.2217	-0.3799	-0.9313

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-7. Test Characteristic Curve (TCC) for 2007-08 NECAP: Math Grade 6.

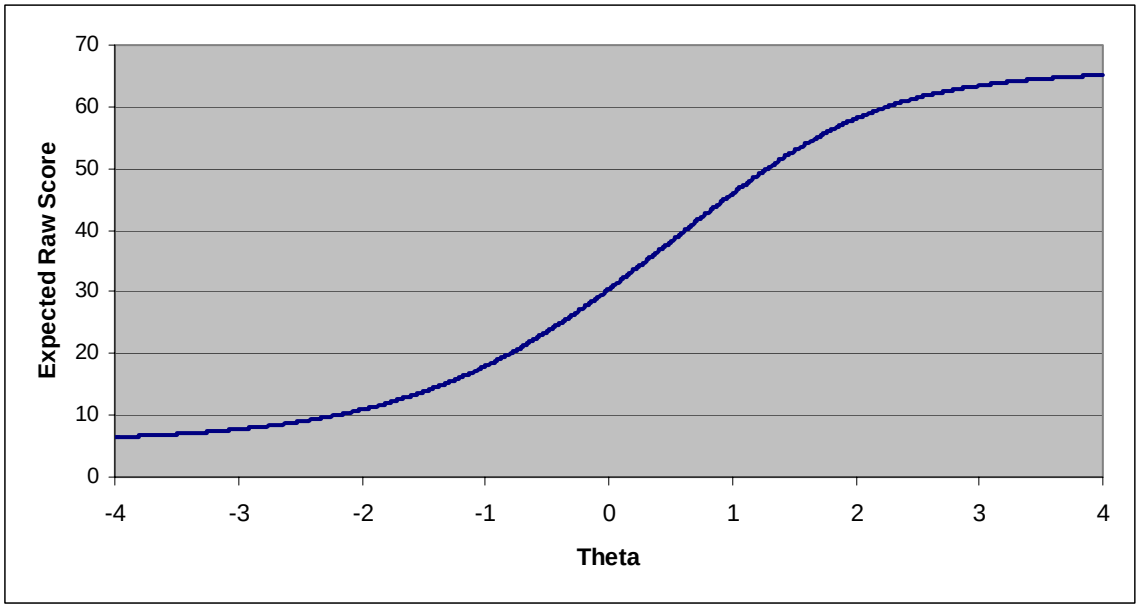


Figure E-8. Test Information Function (TIF) for 2007-08 NECAP: Math Grade 6.

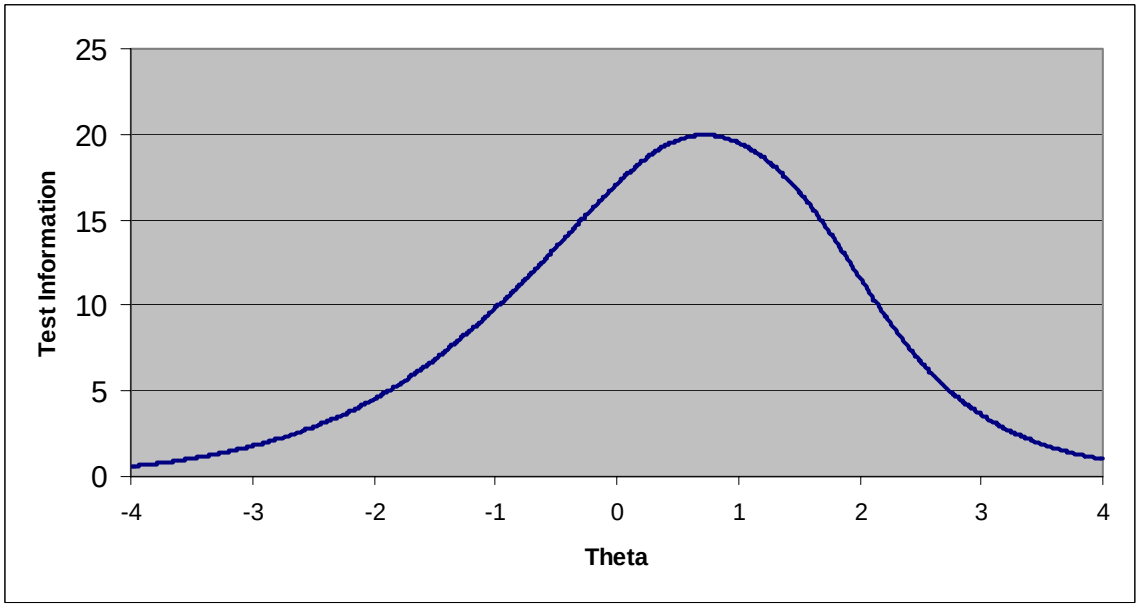


Table E-9. IRT Item Parameters for 2007-08 NECAP: Math Grade 7 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
199875	0.8516	0.0032	0.1653
206096	0.8225	-1.6370	0.1060
224768	1.0859	0.7968	0.1856
255866	1.4572	2.0969	0.1794
228083	0.6656	0.5544	0.1946
255958	0.6700	1.1890	0.2504
206099	1.4357	0.4444	0.2406
255858	0.8873	1.5467	0.1446
256017	0.7048	-0.2178	0.0593
228085	0.7984	0.8195	0.3329
199868	0.8437	-1.0371	0.1968
199894	0.3674	-0.3698	0.1331
256070	1.0310	-0.3776	0.1998
256152	0.8749	1.4583	0.0937
224789	0.8428	-1.0510	0.0948
255948	0.8843	0.9300	0.1963
255855	0.7529	0.0699	0.1555
256124	0.4926	1.7123	0.1867
199920	0.7393	1.0683	0.1326
206140	0.4166	-0.9743	0.1251
224796	1.3764	0.8359	0.2238
256024	0.8990	0.2338	0.1266
206205	0.7571	2.0285	0.1753
255986	1.1052	-0.3548	0.1677
224799	1.3792	0.3472	0.1358
228093	0.7320	-0.9997	0.0000
228089	0.7491	0.5132	0.1892
256141	0.9563	0.4923	0.1862
206169	1.4562	0.7434	0.2615
199921	0.8661	-0.5203	0.1024
255857	1.0051	-0.2229	0.1271
228091	0.7441	-0.5568	0.1077

a = discrimination; b = difficulty; c = guessing

Table E-10. IRT Item Parameters for 2007-08 NECAP: Math Grade 7 Open-Response Items.

Item Number	Parameters					
	a	b	D1	D2	D3	D4
255989	0.7247	1.2123	N/A	N/A	N/A	N/A
256092	0.8387	-0.2645	N/A	N/A	N/A	N/A
234461	1.0091	0.1696	0.173	-0.173	N/A	N/A
256095	0.6163	1.4709	1.719	-1.719	N/A	N/A
272157	0.7980	0.3788	N/A	N/A	N/A	N/A
199933	1.1921	0.5597	0.126	-0.126	N/A	N/A
256004	0.8627	0.7039	0.481	-0.481	N/A	N/A
233782	0.9148	0.4020	N/A	N/A	N/A	N/A
206112	0.8333	0.9090	N/A	N/A	N/A	N/A
225091	0.7683	-0.7079	N/A	N/A	N/A	N/A
206215	1.0560	0.4055	0.149	-0.149	N/A	N/A
225137	1.2546	1.1435	0.286	-0.286	N/A	N/A
199892	1.0476	0.7440	1.685	0.780	-0.982	-1.483
234453	0.8456	-0.0620	1.423	0.509	-0.500	-1.432
256118	0.8857	1.7261	2.211	1.261	-1.265	-2.206
256015	1.1400	1.2769	1.090	0.222	-0.380	-0.931

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-9. Test Characteristic Curve (TCC) for 2007-08 NECAP: Math Grade 7.

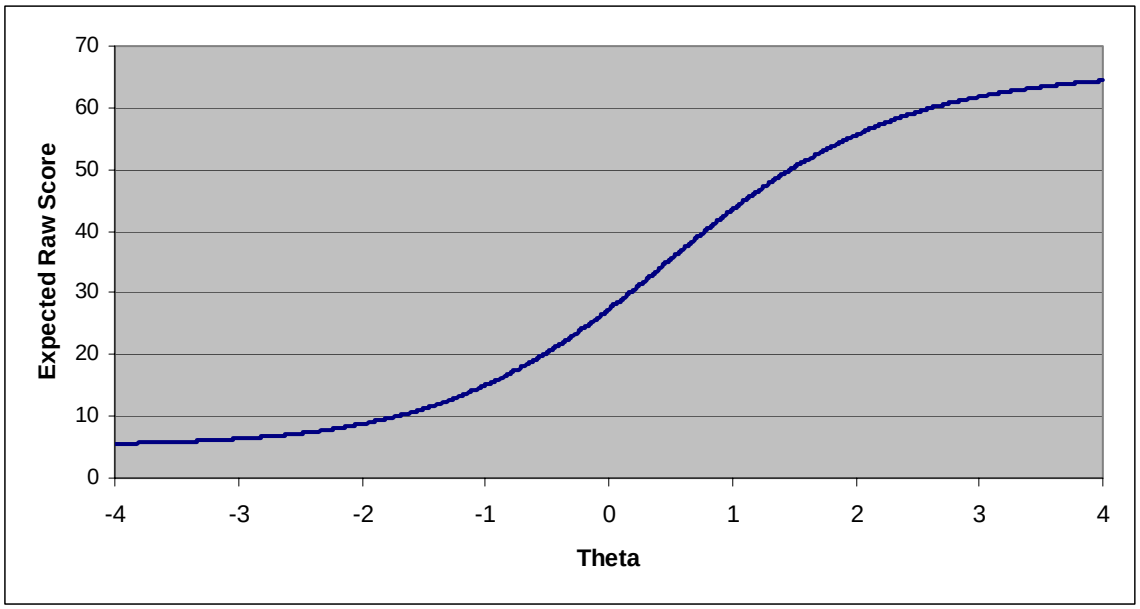


Figure E-10. Test Information Function (TIF) for 2007-08 NECAP: Math Grade 7.

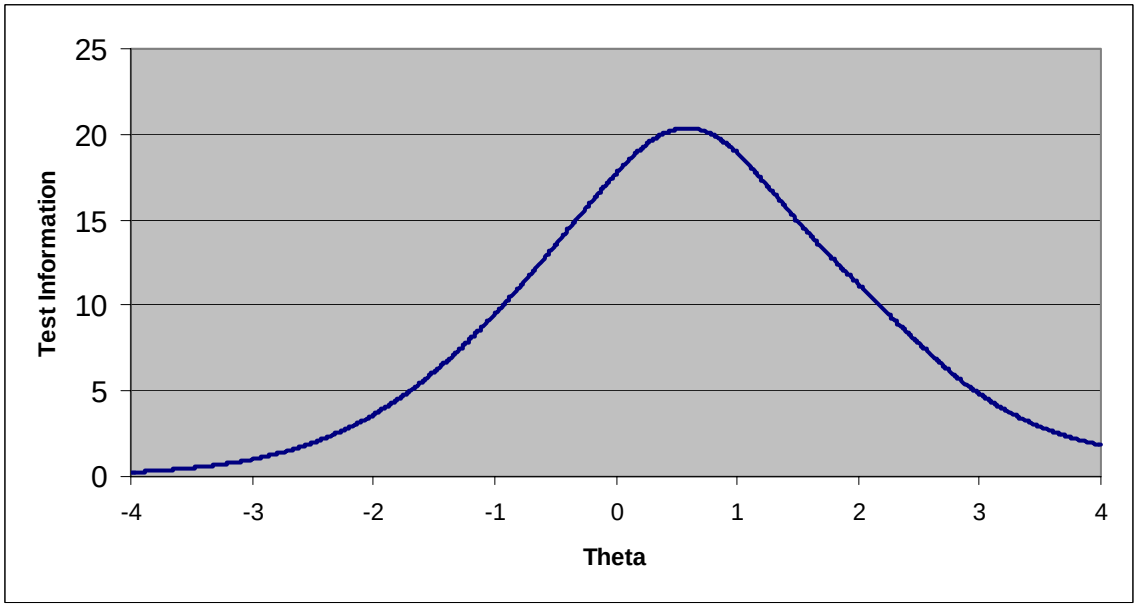


Table E-11. IRT Item Parameters for 2007-08 NECAP: Math Grade 8 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
256401	0.7792	-1.3419	0.0597
256061	1.2889	0.3811	0.1397
206288	1.4115	0.1481	0.2570
199732	1.3699	0.4764	0.0817
256046	0.7562	1.4396	0.0360
206248	1.0553	0.0775	0.1614
256391	0.4596	-0.3504	0.0782
256058	1.1072	1.0382	0.1824
206304	1.1453	1.0067	0.3138
226527	0.8734	1.7754	0.2182
256408	0.7271	0.2127	0.2589
233717	1.3322	-0.1478	0.1387
206257	0.7701	-0.7932	0.0473
224880	1.1293	1.2446	0.1889
226521	0.7934	-0.3756	0.1800
206301	1.1783	-0.1730	0.1606
206307	0.6671	-0.1585	0.1630
224888	1.0231	0.8900	0.1522
256297	1.6242	1.8048	0.2035
206283	1.2490	0.9494	0.3099
256423	0.3661	-0.9681	0.0000
256507	0.8223	0.2581	0.1153
206298	0.7813	-0.0172	0.1286
256299	1.6550	1.4373	0.1046
256425	1.1373	1.1181	0.2354
199730	1.0908	0.1168	0.3053
256121	1.4134	1.1181	0.1916
199759	1.4260	1.6828	0.1145
256414	0.5017	-0.6649	0.0505
242375	1.1426	-0.2930	0.2610
206309	1.1188	0.3531	0.2345
206223	1.0295	0.5871	0.4978

a = discrimination; b = difficulty; c = guessing

Table E-12. IRT Item Parameters for 2007-08 NECAP: Math Grade 8 Open-Response Items.

Item Number	Parameters					
	a	b	D1	D2	D3	D4
246387	1.0065	0.6595	N/A	N/A	N/A	N/A
256530	0.7359	-0.1350	N/A	N/A	N/A	N/A
224956	1.0640	0.9317	0.5581	-0.5581	N/A	N/A
256314	1.2202	0.5849	0.0835	-0.0835	N/A	N/A
206312	1.4075	0.3690	0.0000	0.0000	N/A	N/A
256064	1.0864	0.1505	0.5842	-0.5842	N/A	N/A
224947	1.1719	0.7939	0.3522	-0.3522	N/A	N/A
206317	1.0272	0.2469	N/A	N/A	N/A	N/A
256305	0.3399	2.0061	N/A	N/A	N/A	N/A
224952	0.7058	1.4554	N/A	N/A	N/A	N/A
256320	1.3281	1.4975	0.1638	-0.1638	N/A	N/A
242380	0.9967	0.0673	0.2509	-0.2509	N/A	N/A
256107	0.9520	0.3065	0.7784	0.3690	-0.3795	-0.7679
256379	1.1343	0.3902	0.5412	0.4522	-0.2806	-0.7128
206352	1.2163	0.9072	1.2980	0.5273	-0.5511	-1.2742
224977	1.2601	-0.2392	0.6036	0.2703	-0.1667	-0.7072

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-11. Test Characteristic Curve (TCC) for 2007-08 NECAP: Math Grade 8.

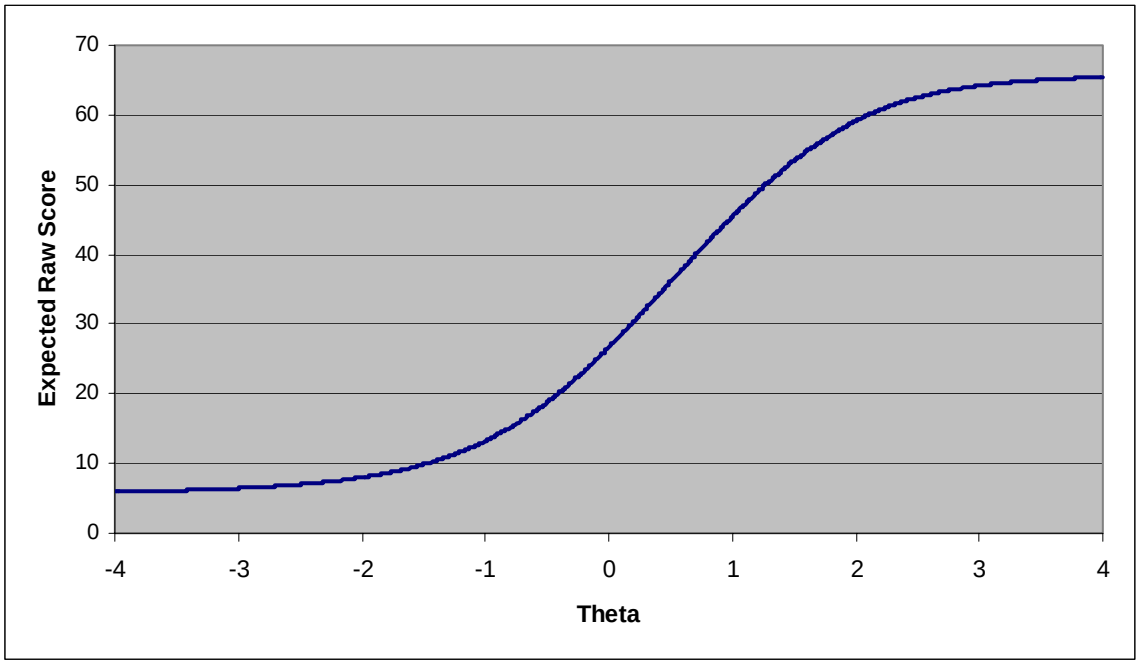


Figure E-12. Test Information Function (TIF) for 2007-08 NECAP: Math Grade 8.

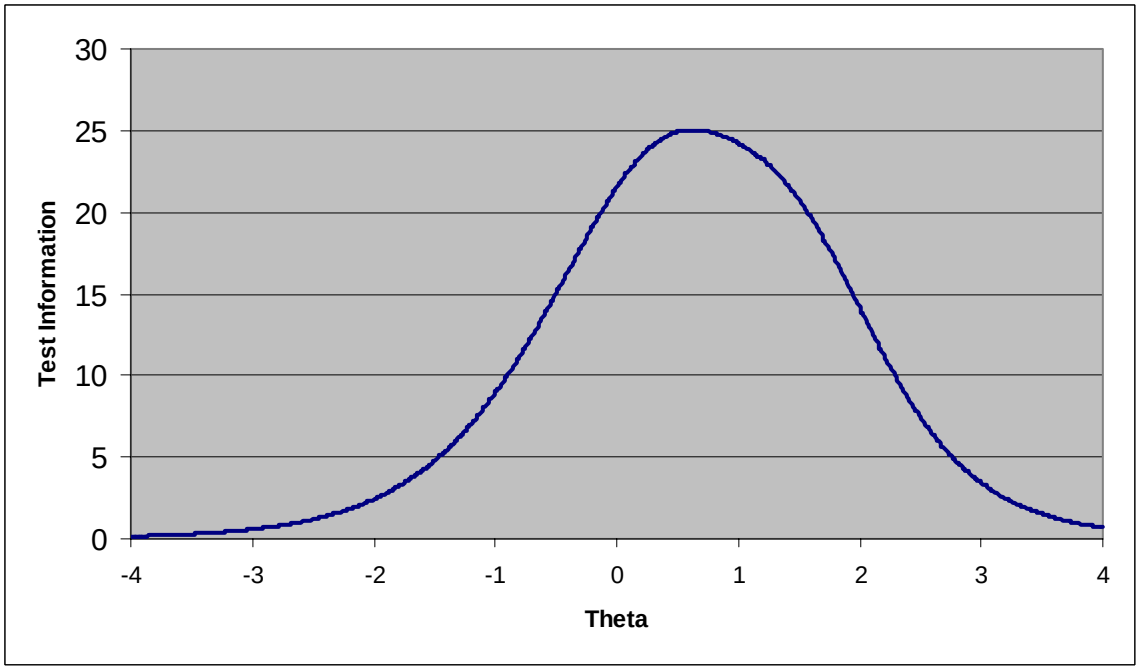


Table E-13. IRT Item Parameters for 2007-08 NECAP: Math Grade 11 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
259949	0.7293	-0.3058	0.2299
259823	0.8278	0.1788	0.0965
259779	0.8810	1.3020	0.1228
259836	2.2585	1.7289	0.1747
259798	0.7866	0.3371	0.2479
259808	0.0493	0.0000	0.0000
259868	1.1589	1.0895	0.2803
259796	0.8963	0.8859	0.2543
259872	1.4605	1.4756	0.1741
259840	0.6817	-0.5986	0.0262
259917	1.6844	0.5513	0.2696
259805	1.0314	-0.0767	0.1531
259934	1.2805	0.0052	0.2320
259837	0.9915	1.0740	0.1176
259829	1.3066	1.2470	0.2914
259843	1.1431	0.4064	0.1777
259946	0.8836	0.9030	0.1306
259802	1.0459	0.6450	0.1938
259828	1.3038	0.5725	0.1873
259851	1.8865	1.1494	0.1635
259850	0.7914	-0.5524	0.0711
259848	1.5502	1.3971	0.2800
259777	1.0847	1.7371	0.2782
259812	0.9723	0.6822	0.2119

a = discrimination; b = difficulty; c = guessing

Table E-14. IRT Item Parameters for 2007-08 NECAP: Math Grade 11 Open-Response Items.

Item Number	Parameters					
	a	b	D1	D2	D3	D4
259855	0.8441	0.3216	N/A	N/A	N/A	N/A
259989	0.8735	0.5667	N/A	N/A	N/A	N/A
259803	1.1391	1.3934	N/A	N/A	N/A	N/A
259881	1.1523	2.0972	N/A	N/A	N/A	N/A
259991	0.9065	-0.2652	N/A	N/A	N/A	N/A
259814	1.1866	0.8141	N/A	N/A	N/A	N/A
260008	0.9903	0.8844	0.6784	-0.6784	N/A	N/A
259831	1.0424	2.2781	0.1377	-0.1377	N/A	N/A
259895	0.7438	1.8367	1.2228	-1.2228	N/A	N/A
259867	1.0777	0.5801	N/A	N/A	N/A	N/A
259995	0.9734	-1.2121	N/A	N/A	N/A	N/A
259876	1.6017	1.1428	N/A	N/A	N/A	N/A
259860	0.6825	-0.0175	N/A	N/A	N/A	N/A
272970	0.8747	1.2949	N/A	N/A	N/A	N/A
259965	0.7879	2.1600	N/A	N/A	N/A	N/A
259928	0.9592	1.8850	0.5375	-0.5375	N/A	N/A
260010	0.9365	0.6155	0.2240	-0.2240	N/A	N/A
260002	1.3104	1.2208	0.3452	-0.3452	N/A	N/A
259849	1.4147	1.0495	0.9260	0.4431	-0.4945	-0.8746
259942	1.1618	0.9559	0.5334	0.3246	-0.3144	-0.5437
260009	1.1977	0.2071	1.3075	0.6660	-0.4619	-1.5116
272064	0.8355	1.0145	1.4015	0.6781	-0.6820	-1.3976

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-13. Test Characteristic Curve (TCC) for 2007-08 NECAP: Math Grade 11.

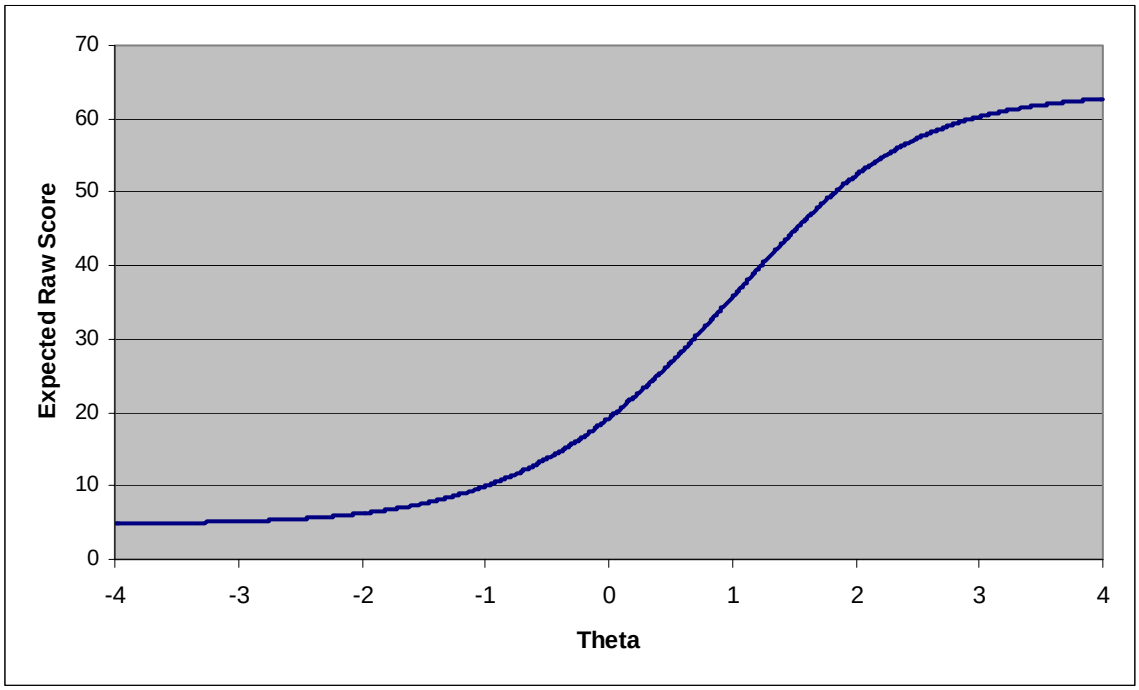


Figure E-14. Test Information Function (TIF) for 2007-08 NECAP: Math Grade 11.

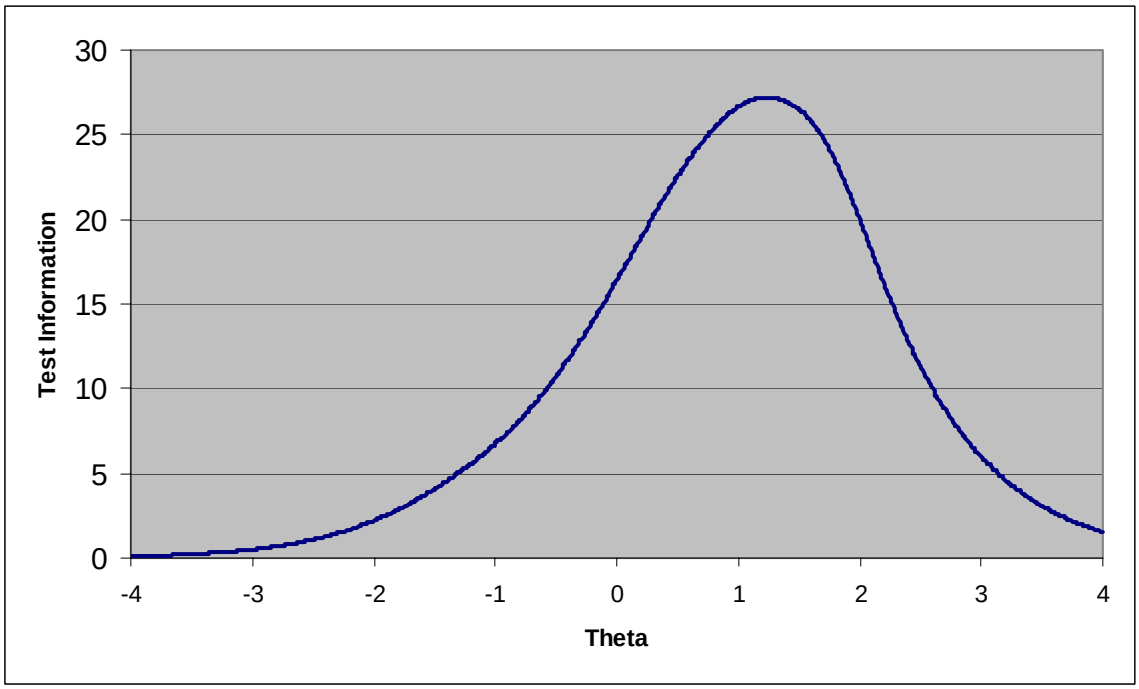


Table E-15. IRT Item Parameters for 2007-08 NECAP: Reading Grade 3 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
255534	1.0063	-1.2255	0.0864
202197	0.7252	-1.4294	0.2642
255394	1.2056	-1.1755	0.2158
255395	1.2083	-0.8753	0.1917
255398	0.7948	0.5004	0.2566
255401	0.6684	-1.9148	0.1083
255450	0.7837	-0.2598	0.1375
255455	0.8541	0.6761	0.2253
255461	0.6841	-1.6060	0.0982
255465	0.9818	0.4917	0.1927
255472	0.9096	-0.7642	0.0929
255474	1.0424	-0.3163	0.2594
255475	0.7626	0.9051	0.1251
255476	1.0593	-1.2562	0.1226
242317	0.4280	0.7930	0.1187
201691	1.4116	-0.3048	0.1288
201692	0.9348	0.0594	0.1297
201694	1.3542	-1.1694	0.2045
201698	0.9334	-0.3600	0.1782
201704	0.4777	-0.6326	0.0854
201702	1.2137	-0.3442	0.1658
242318	1.1243	-0.3606	0.2078
202195	0.6941	-0.8921	0.0000
255549	0.5471	-1.6561	0.0940
255208	1.7321	-0.5938	0.3319
255216	0.4184	-1.6118	0.0000
255221	1.4273	-0.7481	0.1392
255230	1.1671	-1.5220	0.1217

a = discrimination; b = difficulty; c = guessing

Table E-16. IRT Item Parameters for 2007-08 NECAP: Reading Grade 3 Open-Response Items.

Item Number	Parameters					
	a	b	D1	D2	D3	D4
255405	0.6734	-0.0163	1.9375	0.5629	-0.6131	-1.8874
255485	0.8831	-2.4959	1.2459	0.7815	-0.4501	-1.5773
255482	0.7396	1.4963	2.9537	1.0014	-1.0252	-2.9300
201708	1.0169	-0.3527	1.9832	0.4793	-0.5334	-1.9291
201707	0.7508	-0.2512	2.5570	0.8350	-1.1971	-2.1948
255269	0.7217	-1.8694	1.1632	0.6053	-0.2752	-1.4932

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-15. Test Characteristic Curve (TCC) for 2007-08 NECAP: Reading Grade 3.

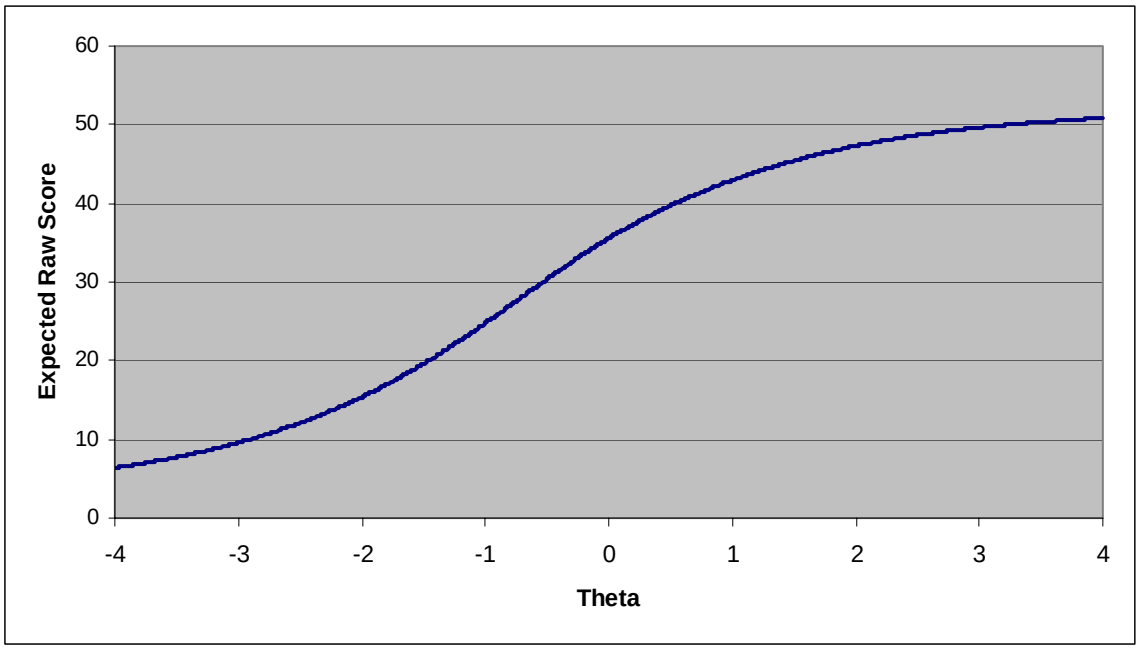


Figure E-16. Test Information Function (TIF) for 2007-08 NECAP: Reading Grade 3.

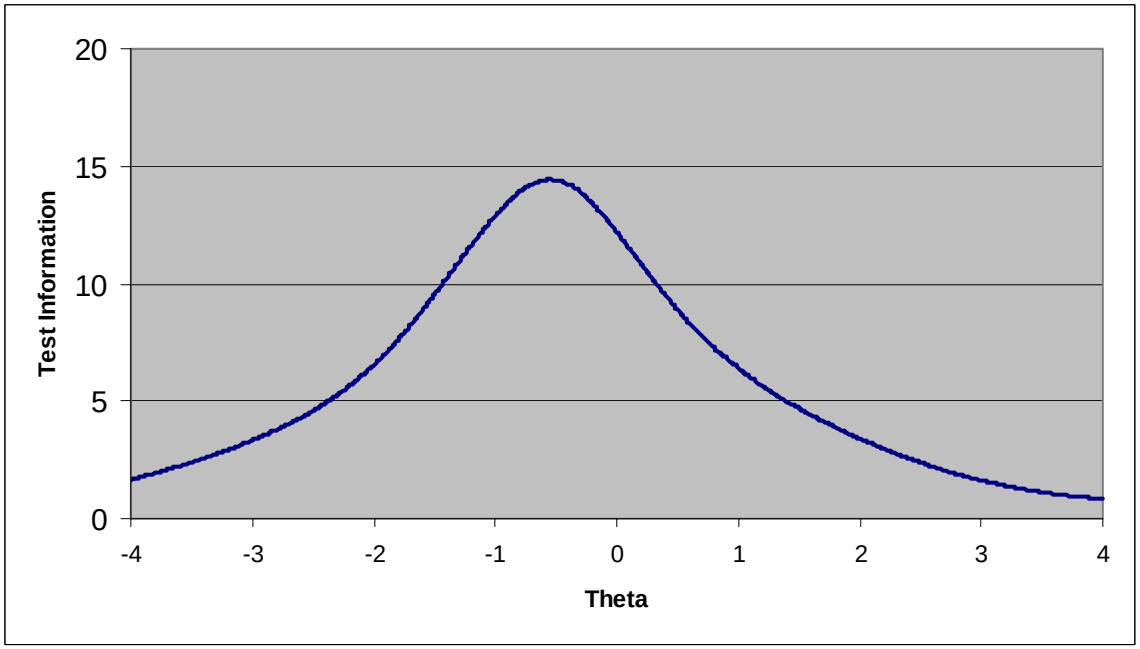


Table E-17. IRT Item Parameters for 2007-08 NECAP: Reading Grade 4 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
255622	0.9147	-2.1086	0.0000
255634	0.8986	-0.4906	0.1610
225610	0.7374	-0.5753	0.0542
225611	0.7837	-0.6371	0.2186
225612	0.6717	-2.3876	0.0000
225614	0.5315	-0.0793	0.1083
255236	0.5507	-2.1931	0.0000
255247	1.0505	-1.2635	0.1506
255231	0.7239	-0.1888	0.2331
255239	1.1770	-0.2361	0.1749
255250	1.2246	-0.2986	0.2029
255258	1.2569	-0.7074	0.2704
255254	1.1090	-1.1968	0.1327
255262	0.6160	-2.4049	0.0000
255593	0.9424	-0.6787	0.2425
255595	0.6256	-0.4444	0.1356
255598	0.9009	-0.6669	0.1621
255600	0.7766	-0.9137	0.1587
255602	0.9849	-0.3423	0.2380
255606	0.4116	-0.3371	0.0539
255609	1.1150	-0.6173	0.1799
255613	0.7624	-2.2619	0.0000
226232	0.7373	-0.8549	0.2044
226208	0.4449	-0.3065	0.0485
255493	1.2016	-0.3479	0.2432
255486	1.2921	-0.9333	0.1674
255487	0.8766	-1.0726	0.1016
255505	0.7080	-0.4134	0.1295

a = discrimination; b = difficulty; c = guessing

Table E-18. IRT Item Parameters for 2007-08 NECAP: Reading Grade 4 Open-Response Items.

Item Number	Parameters					
	a	b	D1	D2	D3	D4
225615	0.6442	0.1827	3.1467	1.0105	-1.2305	-2.9266
255272	0.5764	0.0473	2.2158	0.8530	-0.7677	-2.3012
255264	0.9487	1.1841	2.0130	0.5854	-0.6749	-1.9235
255618	0.4618	0.4622	4.9069	3.7514	2.7138	1.7174
255614	0.8766	0.0140	0.5666	0.1229	-0.1847	-0.5048
255520	0.4783	0.7202	3.2003	0.8530	-1.1404	-2.9129

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-17. Test Characteristic Curve (TCC) for 2007-08 NECAP: Reading Grade 4.

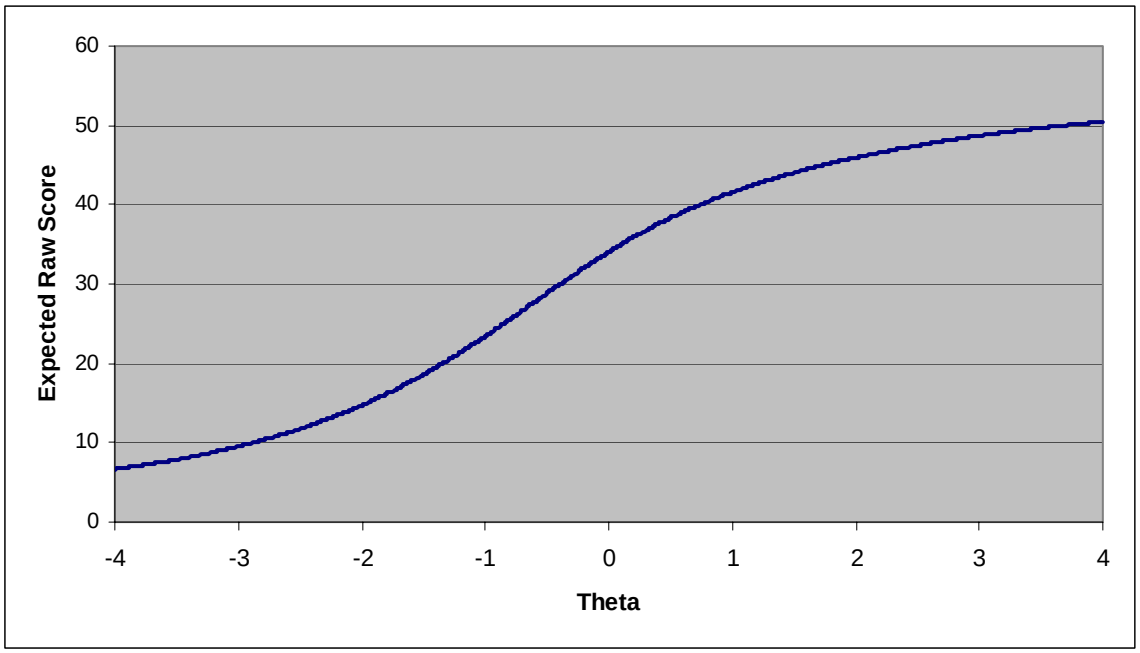


Figure E-18. Test Information Function (TIF) for 2007-08 NECAP: Reading Grade 4.

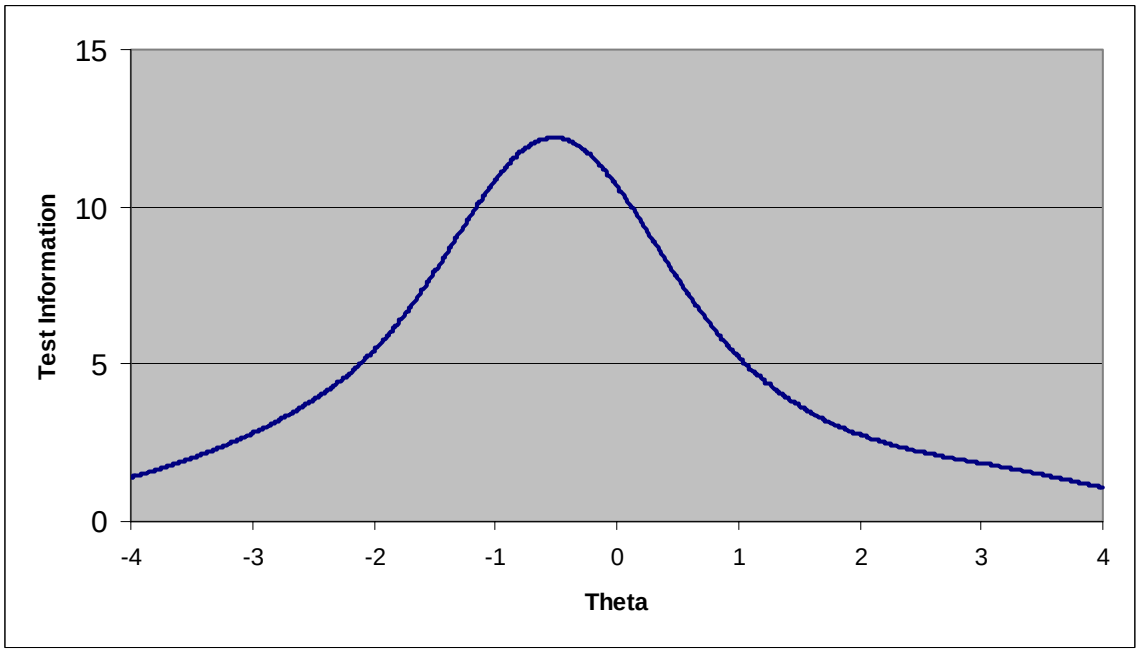


Table E-19. IRT Item Parameters for 2007-08 NECAP: Reading Grade 5 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
256839	0.811	-1.290	0.319
256832	0.693	-0.812	0.092
256628	0.934	-1.345	0.128
256629	0.811	-1.451	0.089
256637	0.998	-1.202	0.119
256640	0.740	0.041	0.162
230654	0.453	-0.184	0.099
230645	0.916	-1.395	0.067
230656	0.293	-1.942	0.000
201392	0.309	0.570	0.168
201396	0.520	-2.359	0.000
201397	0.566	0.012	0.074
201649	0.937	-0.736	0.151
230676	0.547	-0.246	0.160
256647	0.659	-1.494	0.000
256649	0.595	-0.433	0.105
256652	0.701	-0.203	0.084
256655	0.536	0.523	0.177
256657	0.889	-0.359	0.298
256669	1.029	-0.945	0.147
256666	1.019	-0.369	0.127
256664	0.732	0.383	0.180
256826	0.688	-0.367	0.181
256820	0.555	-1.003	0.098
256253	0.323	-1.517	0.000
256254	0.695	-1.225	0.093
256259	0.266	-0.371	0.000
256264	0.660	-1.922	0.000

a = discrimination; b = difficulty; c = guessing

Table E-20. IRT Item Parameters for 2007-08 NECAP: Reading Grade 5 Open-Response Items.

Item Number	Parameters					
	a	b	D1	D2	D3	D4
256642	0.926	0.694	2.1221	0.7851	-0.8903	-2.0168
230671	0.921	0.152	2.9169	0.6476	-1.0973	-2.4672
233132	1.029	0.581	2.2890	0.6874	-0.9596	-2.0168
256671	1.021	0.365	2.6092	0.6632	-0.9273	-2.3450
256675	1.092	0.590	2.3522	0.6355	-0.9639	-2.0238
256265	0.926	0.414	2.5818	0.6152	-0.9948	-2.2022

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-19. Test Characteristic Curve (TCC) for 2007-08 NECAP: Reading Grade 5.

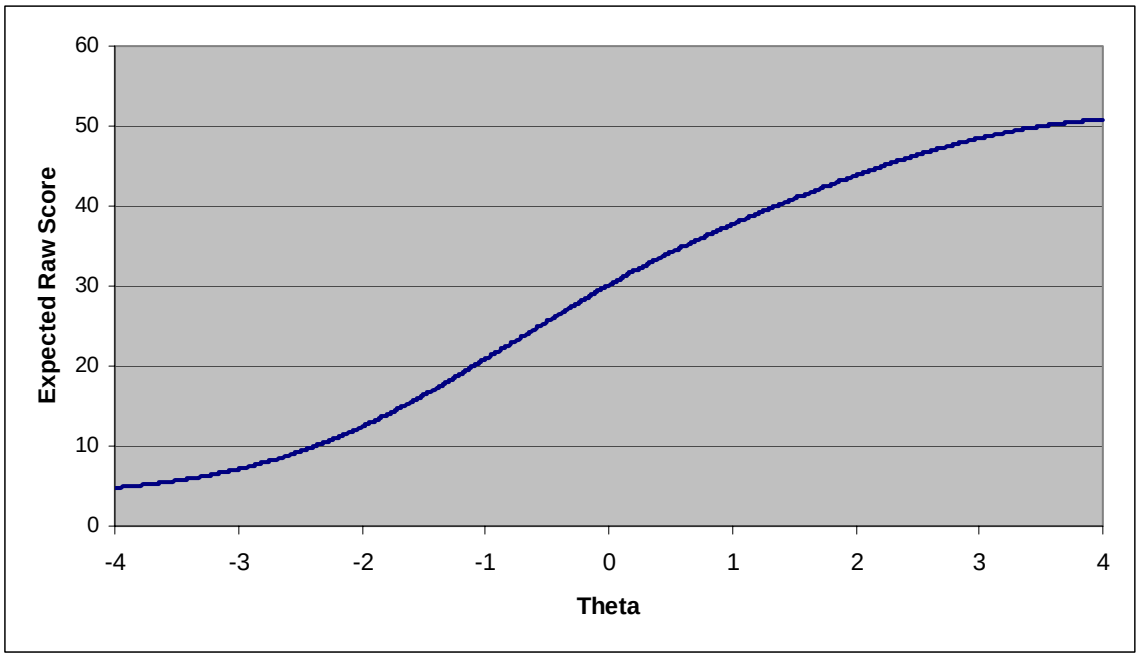


Figure E-20. Test Information Function (TIF) for 2007-08 NECAP: Reading Grade 5.

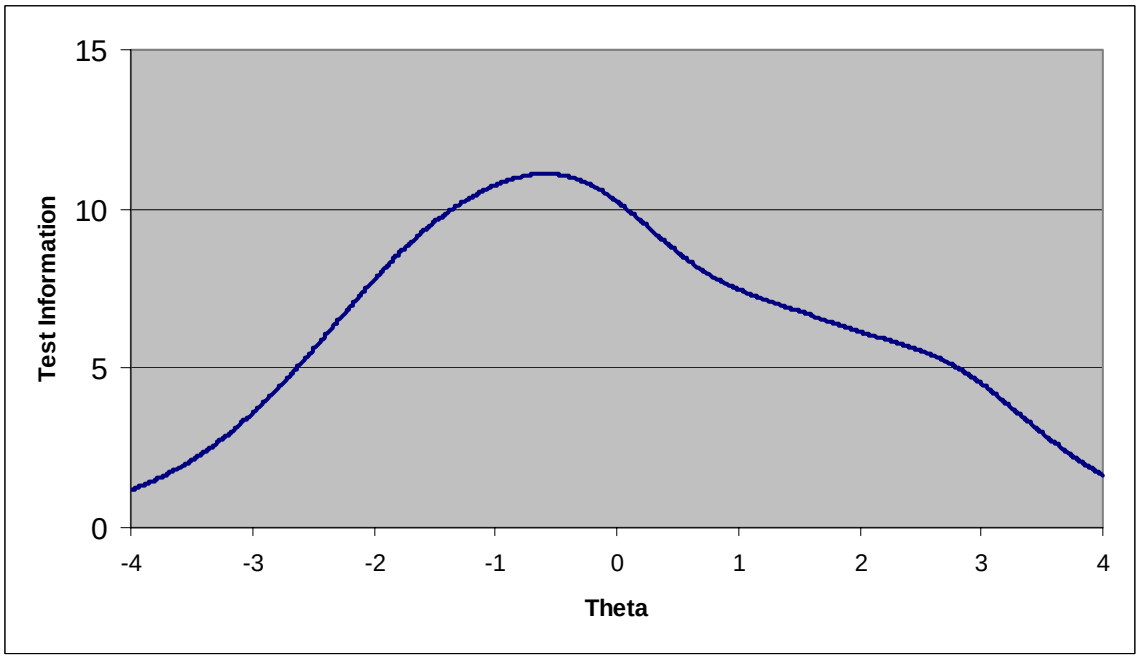


Table E-21. IRT Item Parameters for 2007-08 NECAP: Reading Grade 6 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
256667	0.6749	-1.3755	0.3350
256656	0.6531	-1.0603	0.1316
256355	0.8636	-2.0068	0.0919
256358	0.6032	-1.3592	0.0769
256364	0.7568	-0.3558	0.1218
256367	1.1362	-1.3003	0.2029
256613	0.4980	-1.2273	0.0904
256614	0.4207	-0.4169	0.0933
256616	0.6943	-1.7242	0.1219
256619	0.5741	-1.1507	0.0811
256624	1.0182	-2.1577	0.0000
256622	0.7448	-1.9525	0.0682
256623	0.7150	-2.0877	0.0000
256625	0.6724	-1.0260	0.0597
256426	0.4777	-0.5071	0.0442
256428	0.6237	-0.5207	0.0986
256429	0.5444	-1.8090	0.0866
256431	0.4220	-0.4874	0.0556
256433	0.8953	-1.5983	0.0659
256437	0.4436	-0.7690	0.0661
256435	0.4774	-2.1056	0.0000
256439	0.3893	-2.4966	0.0000
256658	0.6276	-1.5448	0.0718
256316	0.4341	-2.3981	0.0000
256488	0.9471	-1.1462	0.0980
256489	0.7850	0.1876	0.2064
256494	0.8173	-0.4235	0.1613
256496	0.6362	-1.2023	0.0458

a = discrimination; b = difficulty; c = guessing

Table E-22. IRT Item Parameters for 2007-08 NECAP: Reading Grade 6 Open-Response Items.

Item Number	Parameters					
	a	b	D1	D2	D3	D4
256373	0.9713	0.4162	2.5119	0.9436	-0.9574	-2.4980
256626	0.7813	0.6694	3.3902	0.8825	-1.2084	-3.0643
256633	0.8452	0.8337	3.2359	0.6356	-1.1814	-2.6901
256440	0.8963	1.0986	2.8048	0.8755	-0.9794	-2.7008
256445	0.8255	1.1493	2.9855	0.9134	-1.0413	-2.8576
256497	0.9253	0.4355	2.3543	0.8393	-0.8114	-2.3822

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-21. Test Characteristic Curve (TCC) for 2007-08 NECAP: Reading Grade 6.

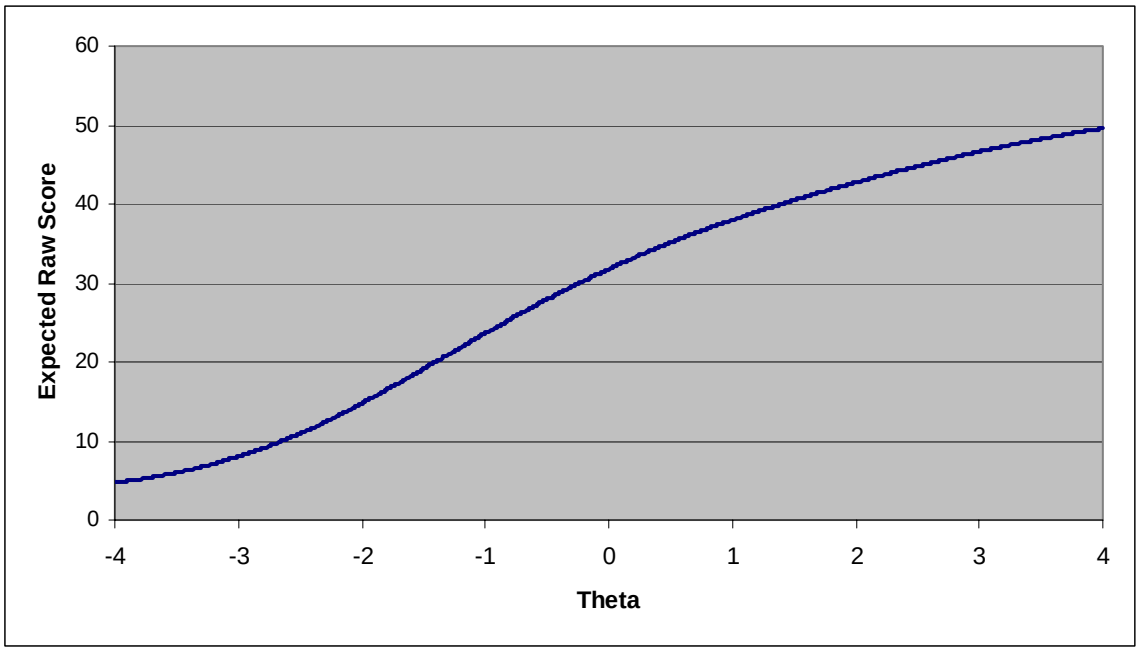


Figure E-22. Test Information Function (TIF) for 2007-08 NECAP: Reading Grade 6.

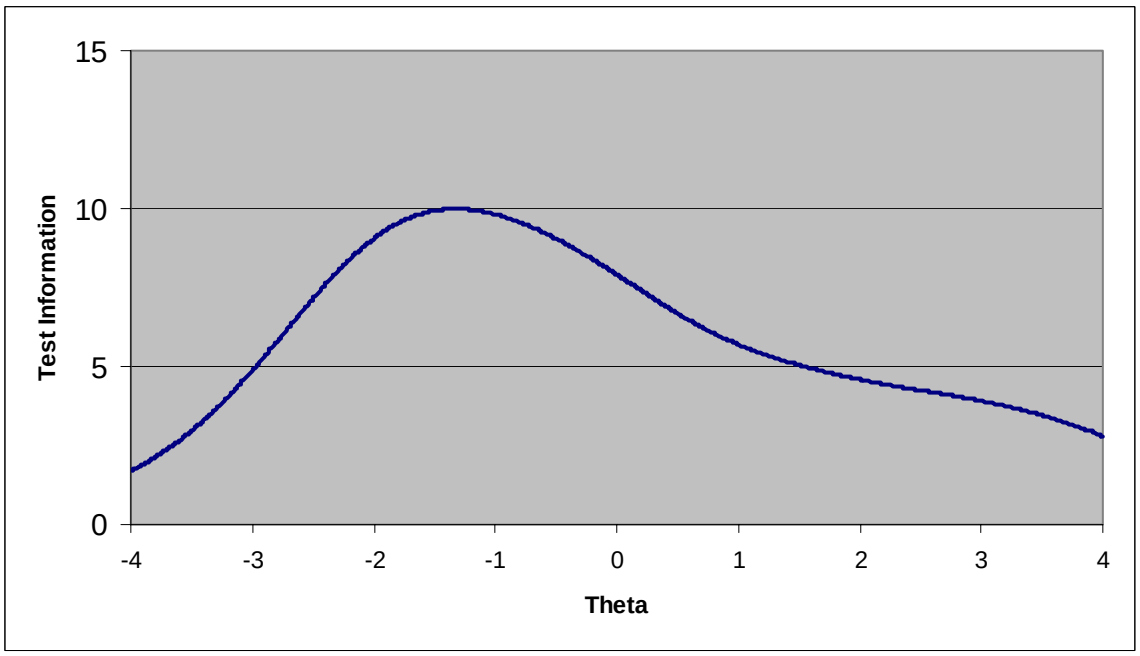


Table E-23. IRT Item Parameters for 2007-08 NECAP: Reading Grade 7 Multiple-Choice Items.

Item Number	Parameters a	b	c
256193	0.5567	-2.0690	0.0000
256206	0.6797	-1.2678	0.0811
226158	0.8867	-1.8443	0.0643
226160	0.5417	-1.9205	0.0896
226162	0.7840	-0.9328	0.0836
226164	0.6217	-0.2611	0.0956
255908	0.4020	-0.9199	0.0628
255909	0.6854	-2.1539	0.0000
255912	0.7544	-1.4965	0.0938
255916	0.7931	-0.4727	0.1888
255920	1.0040	-0.3880	0.2079
255918	0.6969	-1.4222	0.0995
255922	0.3241	0.2833	0.0410
255924	0.3165	-1.8065	0.0000
255952	0.8705	-1.7194	0.0000
255961	0.4150	-0.3369	0.0558
255962	0.3629	-0.7445	0.0000
255966	0.7596	-1.2893	0.1141
255967	0.6648	0.2104	0.1503
255972	0.6784	-0.4089	0.0911
255975	0.7881	-0.4075	0.1359
255956	0.3180	-0.3264	0.1453
226919	0.6640	-2.3175	0.0000
201633	0.9625	-1.6087	0.1032
201554	0.4205	-1.4141	0.0000
201556	1.0069	-0.7361	0.1660
234444	0.6031	-0.9009	0.1022
201561	0.5962	-1.4812	0.0000

a = discrimination; b = difficulty; c = guessing

Table E-24. IRT Item Parameters for 2007-08 NECAP: Reading Grade 7 Open-Response Items.

Item Number	Parameters a	b	D1	D2	D3	D4
226169	0.8479	0.1168	2.8054	0.6680	-1.0538	-2.4197
255933	1.0610	-0.0126	2.1678	0.6781	-0.8057	-2.0402
255928	1.0172	0.2106	1.7805	0.5584	-0.5687	-1.7702
255979	0.9671	0.4510	2.3236	0.5385	-0.9122	-1.9498
255981	1.1357	0.6057	2.1143	0.7793	-0.8237	-2.0698
201564	1.0347	-0.4735	1.5270	0.7190	-0.5496	-1.6964

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-23. Test Characteristic Curve (TCC) for 2007-08 NECAP: Reading Grade 7.

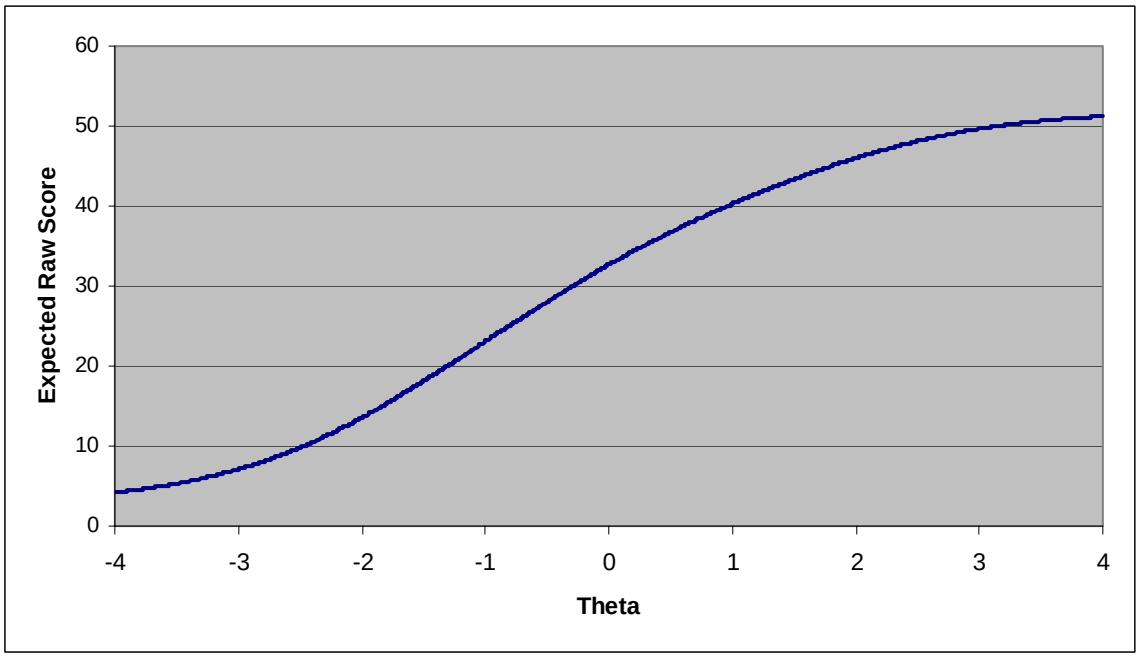


Figure E-24. Test Information Function (TIF) for 2007-08 NECAP: Reading Grade 7.

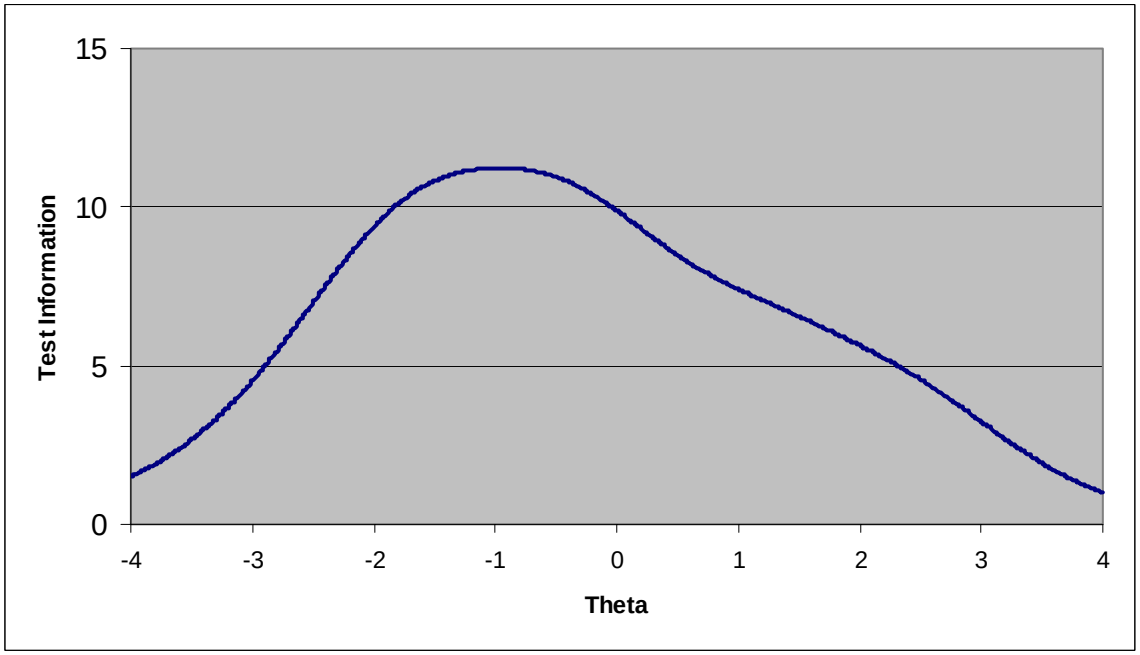


Table E-25. IRT Item Parameters for 2007-08 NECAP: Reading Grade 8 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
204046	0.5514	-0.7212	0.1346
256289	0.4542	-1.7083	0.0561
256188	0.7482	-1.5508	0.0616
256194	0.5141	-1.5248	0.0409
256200	0.4407	-1.8230	0.0864
256196	0.6351	-2.4540	0.0000
256136	0.6271	-2.5562	0.1055
256140	0.3999	-1.0052	0.0565
256142	0.4766	-0.5430	0.1137
256145	0.7897	-2.2684	0.0000
256147	0.7692	-0.9595	0.1131
256151	0.4548	-0.9050	0.1076
256155	0.4700	-1.0661	0.0385
256157	0.6983	-1.5877	0.0942
255823	0.4230	-0.9543	0.0000
255824	0.6903	-2.1986	0.0000
255829	0.5205	-1.7168	0.0000
255830	1.1440	-1.6735	0.0925
255833	1.1166	-1.5192	0.0746
255834	0.8530	-1.5675	0.0459
255836	0.6816	-1.6051	0.0000
255838	1.0742	-1.4289	0.0630
256306	0.5239	-2.8699	0.0930
226356	0.4505	-1.8273	0.1062
199611	0.9041	-1.8238	0.0844
199614	0.5378	0.4523	0.1513
199616	0.5240	-2.3221	0.0000
199617	0.6305	-1.8335	0.0000

a = discrimination; b = difficulty; c = guessing

Table E-26. IRT Item Parameters for 2007-08 NECAP: Reading Grade 8 Open-Response Items.

Item Number	Parameters					
	a	b	D1	D2	D3	D4
256209	0.9223	-0.0839	2.5968	0.9899	-1.0887	-2.4980
256160	1.0828	-0.1118	1.8037	0.7753	-0.7307	-1.8483
256167	1.0514	-0.2258	2.4832	0.8826	-0.9747	-2.3911
255842	1.1941	-0.2821	2.0136	0.7810	-0.8204	-1.9742
255845	1.3930	-0.2685	1.6146	0.6700	-0.6365	-1.6481
199619	1.0145	-0.4974	2.4685	0.8234	-0.9527	-2.3392

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-25. Test Characteristic Curve (TCC) for 2007-08 NECAP: Reading Grade 8.

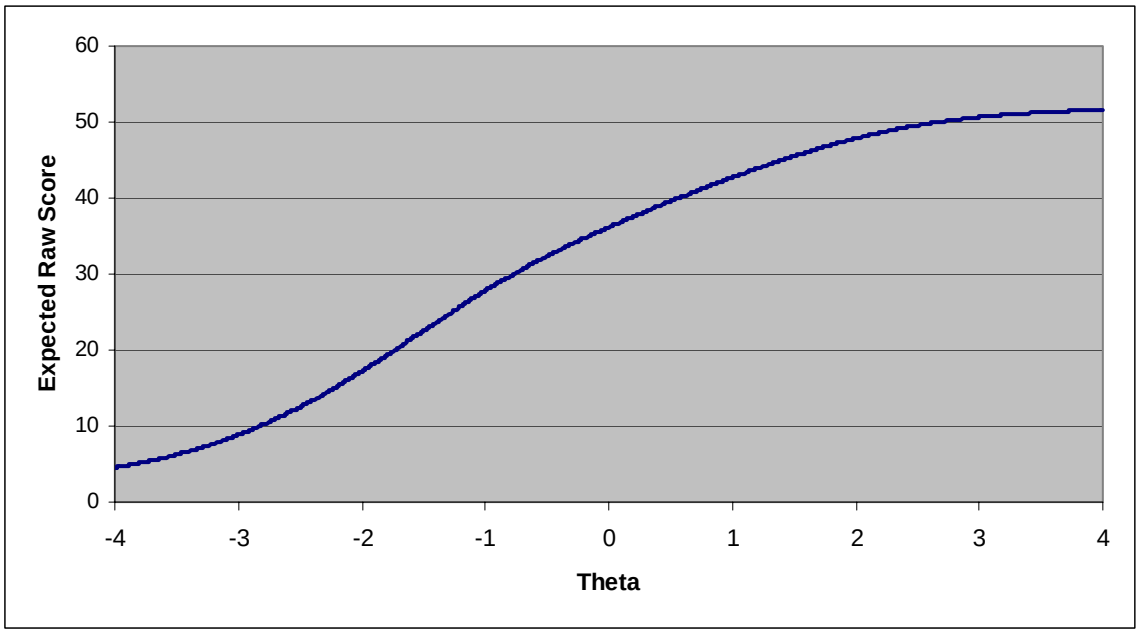


Figure E-26. Test Information Function (TIF) for 2007-08 NECAP: Reading Grade 8.

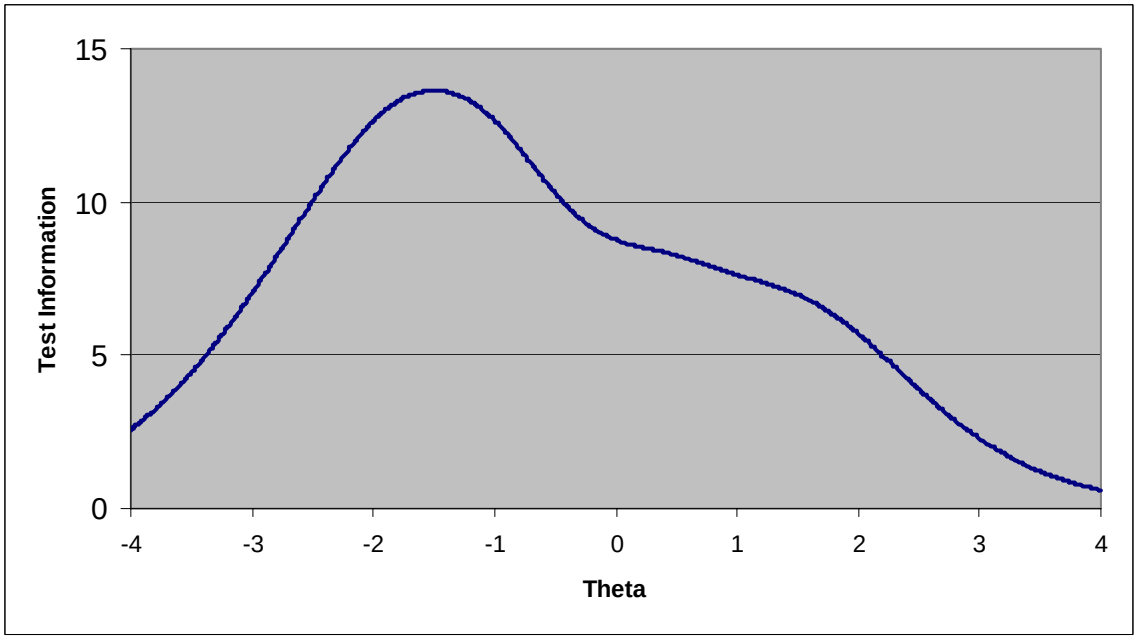


Table E-27. IRT Item Parameters for 2007-08 NECAP: Reading Grade 11 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
258765	0.8091	-1.3125	0.3302
259528	0.6136	-1.1517	0.2505
258762	0.5825	-0.1417	0.1388
258751	0.4950	0.4432	0.3117
258630	0.6359	-1.7488	0.0818
258633	1.0922	-1.0944	0.1799
258634	1.1161	-1.2985	0.1842
258637	0.8965	0.6450	0.3235
258644	0.4096	-0.2210	0.1466
258651	0.4230	-1.4643	0.0000
258657	0.7955	-0.3579	0.1668
258655	0.5888	-1.0067	0.0639
258725	0.9412	-1.3521	0.0000
258724	0.5824	-1.0311	0.0000
258728	0.4922	-0.5529	0.0475
258737	0.4869	-0.3670	0.0896
258476	0.8667	-1.4219	0.0000
258475	0.8018	-1.7281	0.0000
258479	0.5257	-1.2432	0.0000
258478	0.1969	2.7778	0.0945
258607	0.8220	-0.6888	0.0367
258608	0.7678	-1.4359	0.0604
258610	0.5550	-0.2119	0.1320
258611	0.3665	-1.5010	0.0000
258612	0.9126	-0.0019	0.1938
258614	1.0417	-0.7143	0.1428
258618	0.6833	-0.8610	0.0367
258622	0.6449	-0.6928	0.0653

a = discrimination; b = difficulty; c = guessing

Table E-28. IRT Item Parameters for 2007-08 NECAP: Reading Grade 11 Open-Response Items.

Item Number	Parameters					
	a	b	D1	D2	D3	D4
258663	1.1683	0.1760	1.8227	0.8637	-0.6288	-2.0575
258660	1.2615	0.6792	1.8842	0.7729	-0.7486	-1.9085
258742	1.1800	0.0713	2.2034	0.9026	-0.7859	-2.3201
258481	1.2286	0.7687	1.9587	0.7002	-0.7253	-1.9336
258627	1.2319	0.5704	1.9356	0.7847	-0.7014	-2.0189
258629	1.3396	0.3427	2.0022	0.7364	-0.8216	-1.9170

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter

Figure E-27. Test Characteristic Curve (TCC) for 2007-08 NECAP: Reading Grade 11.

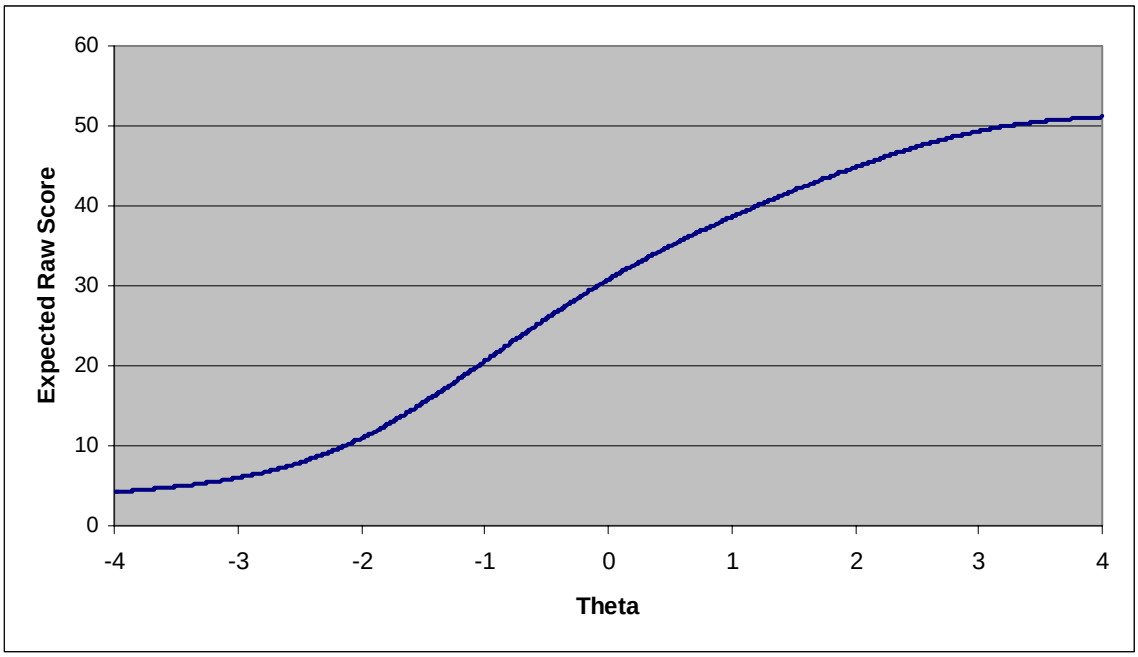


Figure E-28. Test Information Function (TIF) for 2007-08 NECAP: Reading Grade 11.

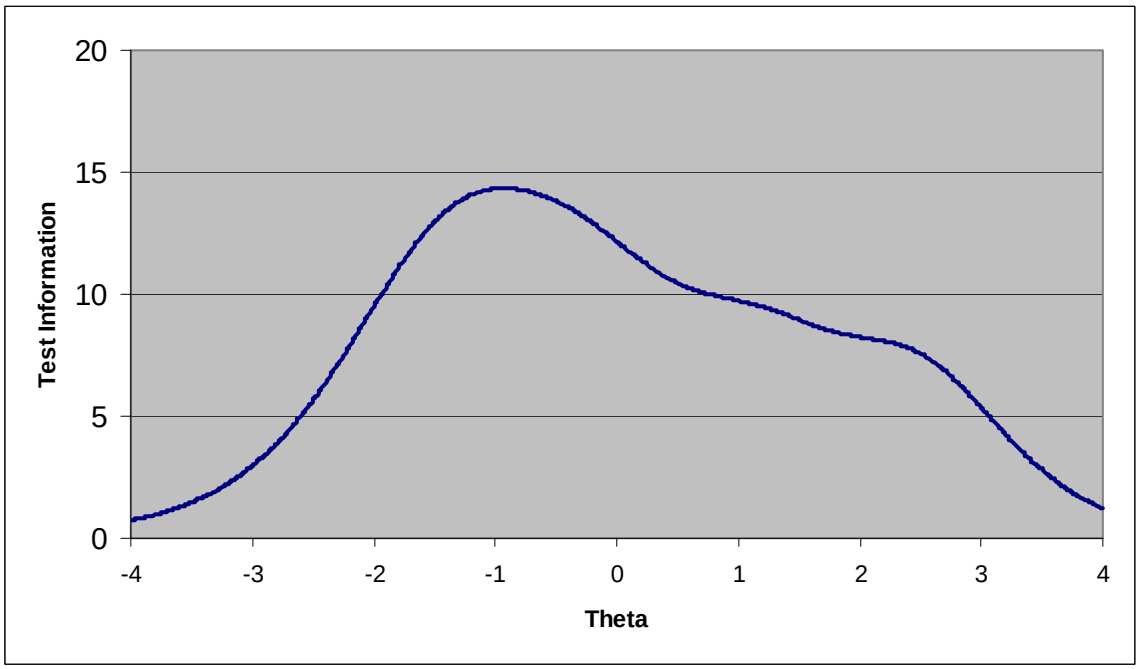


Table E-29. IRT Item Parameters for 2007-08 NECAP: Writing Grade 5 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
213159	0.6576	-2.1667	0.0844
213385	0.7233	-1.6980	0.0823
202753	0.5223	-1.6258	0.0964
213390	0.8025	-1.5398	0.0500
213407	0.3265	1.1143	0.0868
202850	0.4976	-1.1826	0.0660
213158	0.5566	-1.9768	0.0834
213149	1.0137	-2.2105	0.0738
202822	0.3365	-2.1086	0.1101
213147	0.3291	-0.0536	0.0891

a = discrimination; b = difficulty; c = guessing

Table E-30. IRT Item Parameters for 2007-08 NECAP: Writing Grade 5 Open-Response Items.

Item Number	Parameters											
	a	b	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
201759	0.6767	0.0000	3.6803	1.7538	-1.2088	-3.5918	N/A	N/A	N/A	N/A	N/A	N/A
201956	0.7156	0.0000	4.0032	1.5031	-1.2287	-3.8333	N/A	N/A	N/A	N/A	N/A	N/A
201885	0.7086	0.0000	3.9538	1.2924	-1.0529	-2.8970	N/A	N/A	N/A	N/A	N/A	N/A
213655	0.4657	0.0000	2.5247	1.6720	-0.6274	-1.3918	-3.7713	-4.5134	-6.5205	-7.0577	-8.5472	-9.6320

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter; …; D10 = 10th category step parameter

Note: Short-answer items are not included in this table because they were not part of the final calibration.

Figure E-29. Test Characteristic Curve (TCC) for 2007-08 NECAP: Writing Grade 5.

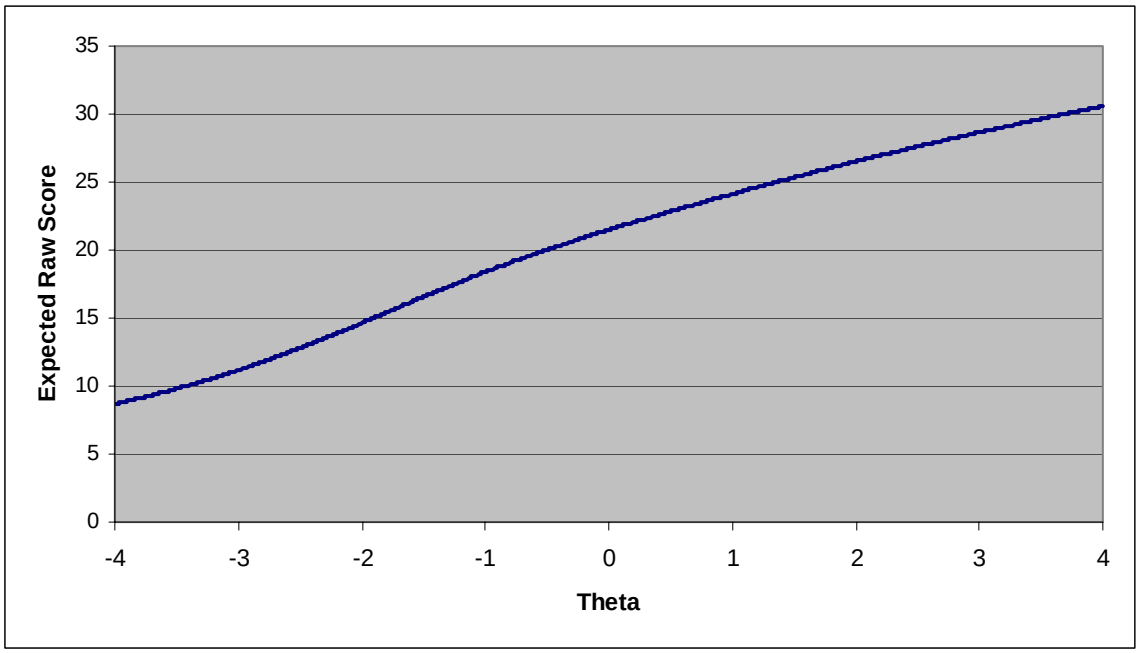


Figure E-30. Test Information Function (TIF) for 2007-08 NECAP: Writing Grade 5.

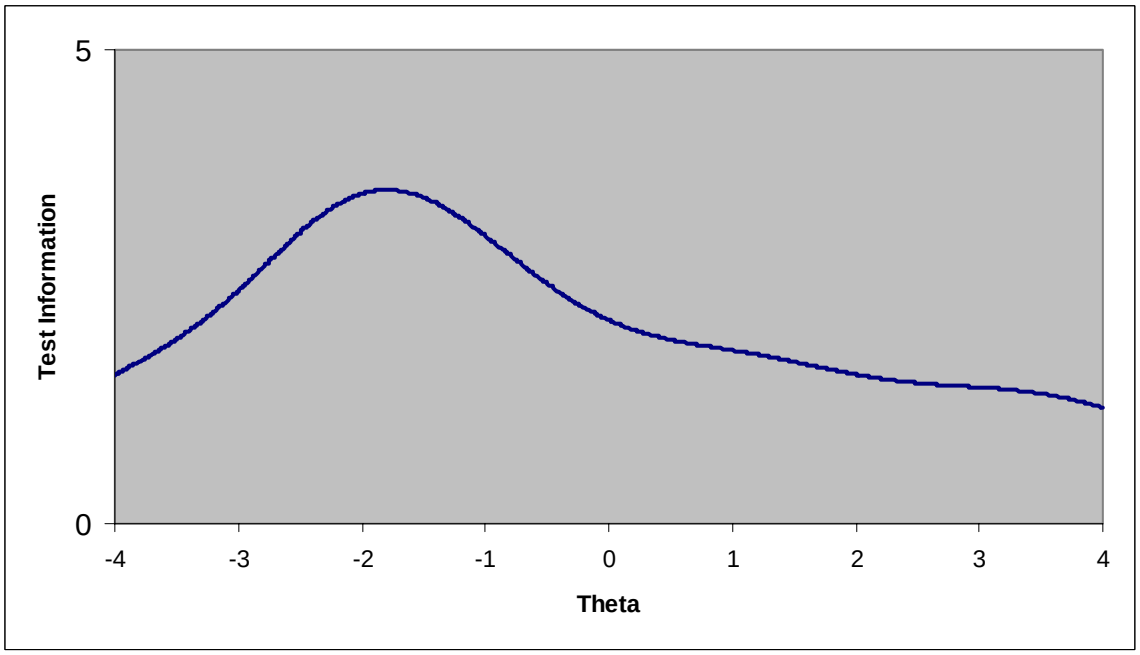


Table E-31. IRT Item Parameters for 2007-08 NECAP: Writing Grade 8 Multiple-Choice Items.

Item Number	Parameters		
	a	b	c
212972	1.0467	-1.2662	0.0729
213031	0.5423	-2.2060	0.0000
212973	0.7552	-1.2751	0.2200
202649	0.5718	-0.7907	0.0385
202601	0.4685	-1.5190	0.1290
212977	0.9481	-1.1532	0.0281
212950	0.2071	1.2797	0.1078
202644	0.4193	0.3191	0.1071
202633	0.6001	-0.2479	0.0740
202600	0.3571	0.4299	0.1051

a = discrimination; b = difficulty; c = guessing

Table E-32. IRT Item Parameters for 2007-08 NECAP: Writing Grade 8 Open-Response Items.

Item Number	Parameters											
	a	b	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
202431	1.1115	0.0000	2.7115	1.4330	-0.5509	-2.1302	N/A	N/A	N/A	N/A	N/A	N/A
202475	1.1216	0.0000	2.5398	1.6010	-0.7291	-3.0394	N/A	N/A	N/A	N/A	N/A	N/A
201892	0.9982	0.0000	2.5141	0.7807	-0.7853	-2.2983	N/A	N/A	N/A	N/A	N/A	N/A
213706	0.6042	0.0000	2.7912	2.2536	1.1666	0.6750	-0.2718	-0.7907	-2.1105	-2.9594	-5.1264	-5.8296

a = discrimination; b = difficulty; D1 = 1st category step parameter; D2 = 2nd category step parameter; D3 = 3rd category step parameter; D4 = 4th category step parameter; …; D10 = 10th category step parameter

Note: Short-answer items are not included in this table because they were not part of the final calibration.

Figure E-31. Test Characteristic Curve (TCC) for 2007-08 NECAP: Writing Grade 8.

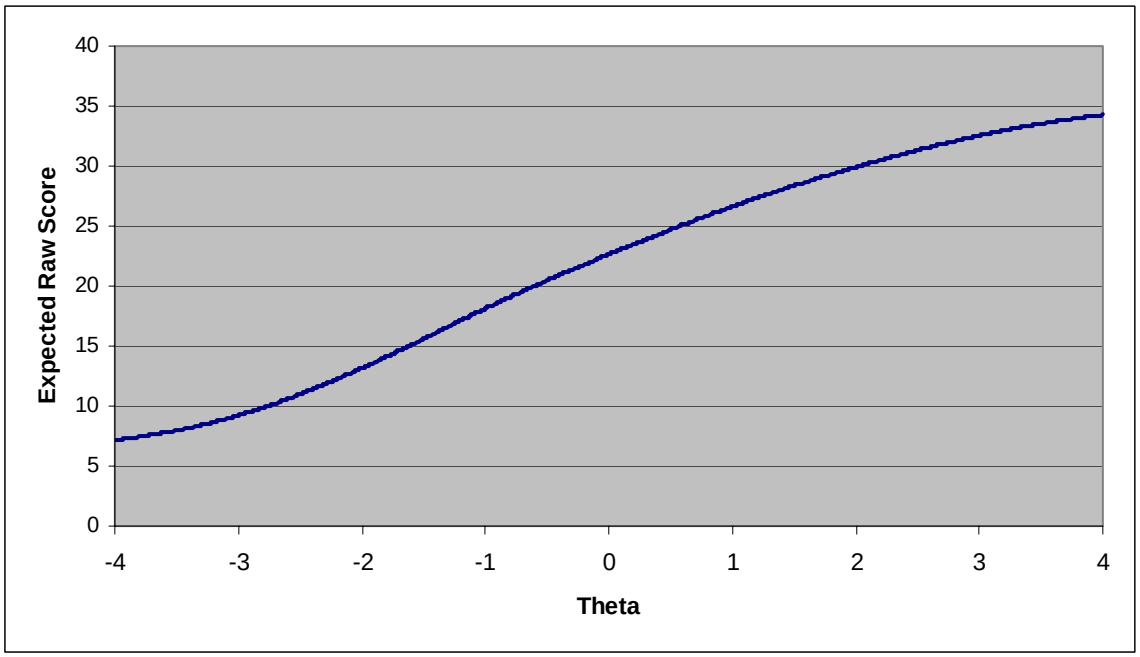
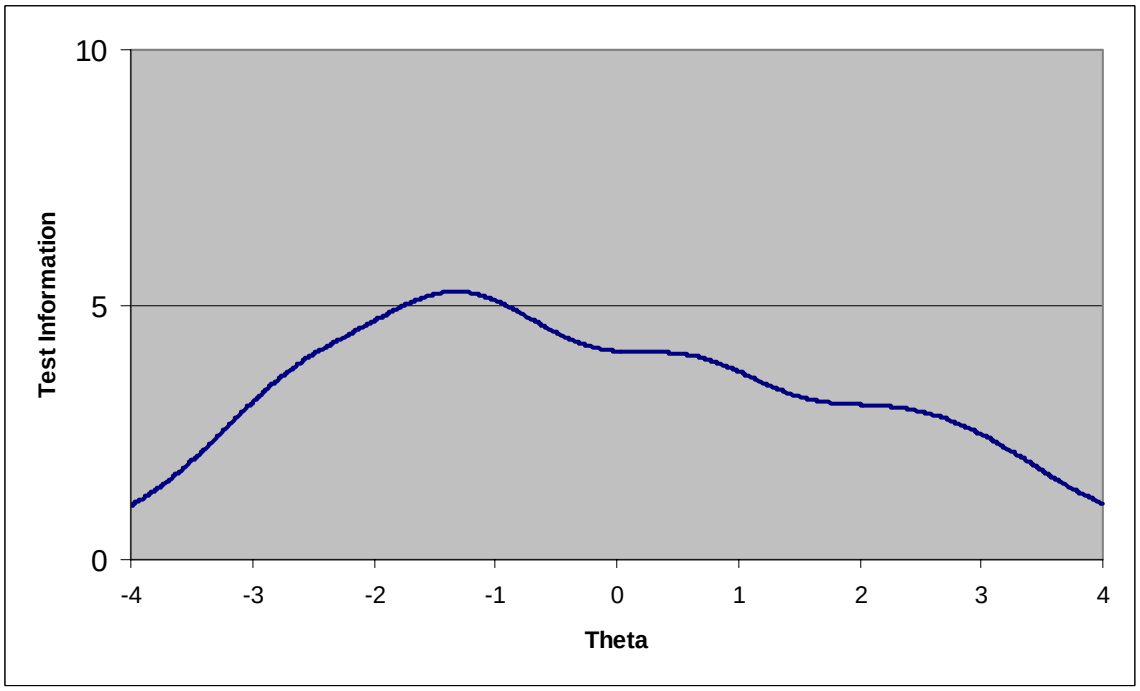


Figure E-32. Test Information Function (TIF) for 2007-08 NECAP: Writing Grade 8.



APPENDIX F—STANDARD SETTING REPORT

2008

New England Common Assessment Program

Grade 11 Standard-Setting Report

January 9 & 10, 2008
Portsmouth, New Hampshire

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Standard-Setting Process

The standard-setting meeting, to establish cut scores for the grade 11 *NECAP* in reading, writing, and mathematics, was held on Wednesday and Thursday, January 9 & 10. Each content area panel consisted of 16 or 17 participants.

A modified version of the Bookmark standard-setting method was implemented for all grades in mathematics and reading. A modified version of the Body of Work method was used for writing. An overview of the methods is described below.

To help ensure consistency of procedures between panels, each panel was led through the standard-setting process by a trained facilitator from Measured Progress.

OVERVIEW OF PROCESS

This section of the report provides an overview of the standard-setting process as implemented for *NECAP*. The process was divided into three stages, each with a number of constituent tasks.

1. Tasks completed prior to the standard-setting meeting
    - Creation of achievement level descriptions
    - Collection and analysis of existing performance data
    - Calculation of starting cut-points for writing
    - Preparation of materials for panelists
    - Preparation of presentation materials
    - Preparation of *Instructions for Facilitators Documents*
    - Preparation of systems and materials for analysis during the meeting
    - Selection of panelists
2. Tasks completed during the standard-setting meeting
    - Orientation
    - Reading and mathematics:
        - Review of assessment materials
        - Completion of item map
        - Review of achievement level descriptions (ALDs) and definition of borderline students
        - Round 1 judgments—mathematics
        - Tabulation of Round 1 results—mathematics
        - Round 2 judgments—mathematics
        - Tabulation of Round 2 results—mathematics
        - Round 3 judgments—mathematics
        - Round 1 judgments—Reading
        - Tabulation of Round 1 results—Reading
        - Round 2 judgments—Reading

- Writing
    - Discussion of writing scoring rubrics and anchor papers
    - Review of general achievement level descriptions
    - Review and discussion of starting cut-points
    - Writing to the common prompt
    - Round 1 judgments—common prompt
    - Tabulation of Round 1 results
    - Round 2 judgments—common prompt
    - Repeat Rounds 1 and 2 for each matrix prompt
    - Round 3 judgments
    - Evaluation

3. Tasks completed after the standard-setting meeting
    - Analysis and review of panelists' feedback
    - Preparation of recommended cut scores
    - Preparation of standard-setting report

1. TASKS COMPLETED PRIOR TO THE STANDARD-SETTING MEETING

1.1 Creation of Achievement Level Descriptions (ALDs)

The ALDs presented to panelists provided the official description of the set of knowledge, skills, and abilities that students are expected to display in order to be classified into each achievement level. The descriptions are provided as Appendix A of this document.

1.2 Collection and Analysis of Existing Performance Data

Prior to standard setting, a variety of data was gathered and examined for possible use in establishing starting cut-points for reading and mathematics. (A different method was used for writing; see the section that follows.) These data sources included:

- Teacher judgment data, collected from the students' grade 10 teachers prior to the administration of the assessment in the fall;
- Performance of students on the reading and mathematics tests in grades 6 through 8 and
- Performance on high school-level tests given in prior years

Teacher Judgment Data. In the spring of 2007, teachers of grade 10 students were asked to review the descriptions of the four achievement levels and to rate their students based on classroom performance. A web site was created for teachers to enter their ratings. While this method of collecting the data is not ideal, it was not feasible to record the ratings directly on the students' test booklets, as was done in 2006 for grades 3 through 8, primarily because grade 11 teachers would not have been familiar enough with the students to rate them accurately. Because of this data collection method and because of difficulties encountered in matching teacher judgment data to students' test scores, data were only obtained for approximately 10% of the students tested. This amount of data was considered too sparse for starting cut-points, and so was not used.

Existing Test Data. Two categories of existing test data were examined: 1) fall 2007 scores in grades 6 through 8 and 2) historical performance on other high school-level tests (for example, NAEP).

For reading, starting cut-points were calculated from the existing test data as follows: the pattern of performance on the fall 2007 *NECAP* reading tests in grades 6, 7, and 8, was determined (specifically, the percentage of students in each achievement level category). Predicted grade 11 scores were then calculated by extrapolation. The resulting cuts were found to be in line with other high school-level testing data and to represent reasonable starting points. Therefore, they were adopted as starting cuts for standard setting. The starting cuts were presented to panelists as placements in the ordered item booklet (see below for complete details), and panelists were asked to either validate the placements or recommend modifications.

For mathematics, potential starting cuts were calculated in the same way as for reading, but were not used for standard setting. The purposes of using starting cuts are to streamline and simplify the standard-setting process and to make use of any other relevant sources of available information. However, the grade 11 mathematics test was quite difficult for the students, and the extrapolated starting placements for the lower two cuts appeared very early in the ordered item booklet (specifically, between ordered items 1 and 2 and between ordered items 6 and 7). This anomaly

suggested that differences between the grade 11 mathematics test and the previously existing data rendered the use of those data, and the resulting cuts, inappropriate. In addition, it was feared that the use of such low starting cuts would complicate the process for the panelists and possibly impact the validity of the results negatively. For these reasons, a standard-setting, rather than a standards-validation, approach was adopted for mathematics.

1.3 Establishing Starting Cut-points for Writing

Reading consultants from each of the three state departments met to discuss starting cut-points for standard setting. It was determined that the starting cut-points would be established based on the scoring rubric and its relationship to the achievement level definitions. The states set the following score ranges as best representing the language of the achievement level definitions and these were used as starting cut-points:

Achievement Level	Raw Score Cuts
Proficient/Proficient with Distinction	9/10
Partially Proficient/Proficient	6/7
Substantially Below Proficient/Partially Proficient	3/4

1.4 Preparation of Materials for Panelists

The following materials were assembled for presentation to the panelists at the standard-setting meeting:

- Meeting agenda
- Confidentiality agreement
- ALDs
- Assessment booklet
- Answer key/scoring rubrics
- Ordered item booklet (reading and mathematics)
- Item maps (reading and mathematics)
- Bodies of Work (writing)
- Rating forms
- Evaluation form

1.5 Preparation of Presentation Materials

The PowerPoint presentation used in the opening session was prepared prior to the meeting. A copy of the PowerPoint slides is included as Appendix B of this document

1.6 Preparation of Instructions for Facilitators Documents

For each content area, a document was created for the group facilitator to refer to while working through the process. The version for reading is included as Appendix C, the version for mathematics as Appendix D, and the version for writing as Appendix E.

1.7 Preparation of Systems and Materials for Analysis During the Meeting

The computational programming to carry out all analyses during the standard-setting meeting was completed and thoroughly tested prior to the standard-setting meeting.

1.8 Selection of Panelists

Panelists were selected prior to the standard-setting meeting by the client states. The goal was to recruit 18 teachers for each panel, six from each state. Because *NECAP* is administered in the fall and is designed to measure grade level expectations for the end of the previous grade, it was decided that four of the six from each state should be from grade 11 and two should be from grade 10. These criteria were followed as closely as possible in recruiting and selecting the panelists. The majority of the panelists were general education teachers, but some special education and ESL teachers were recruited as well.

The actual number of panelists who participated was 49, 16 each in the reading and writing groups, and 17 in the mathematics group. Of these, 18 were from New Hampshire, 17 were from Vermont, and 14 were from Rhode Island. Panelists from each state were distributed fairly uniformly across the different panels. (List of panelists is included as Appendix K.)

2. TASKS COMPLETED DURING THE STANDARD-SETTING MEETING

2.1 Orientation

The standard-setting meeting began with a general orientation session that was attended by all panelists. The purpose of the orientation was to provide background information, an introduction to the issues of standard setting, and a brief overview of the activities that would occur during the standard-setting meeting. Once the general orientation was complete, the writing panelists reconvened into their breakout room, where they received training specific to the Body of Work method and began the rating process. The reading and mathematics groups remained together and were given an overview of the bookmark process, after which they reconvened in their breakout rooms.

Because the process followed by writing was somewhat different than that followed by reading and mathematics, the remainder of this section of the report is presented by content area. In addition, there are some differences between the processes followed by the reading and mathematics groups, so some subsections are further broken out by the two areas.

2.2 Mathematics and Reading

2.2.1 Review of Assessment Materials

Once the reading and mathematics panels convened in their breakout rooms, the first step was to take the test for their content area. The purpose of this step was to make sure the panelists were thoroughly familiar with what the assessment asks of students. Once panelists completed the test an answer key was distributed. At this point, panelists were encouraged to discuss any issues that came to mind regarding items or scoring.

2.2.2 Completion of Item Map

The purpose of the next step was to ensure that panelists became very familiar with the ordered item booklet and understood the relationships among the ordered items. The ordered item booklet contained one item (or item-score category) per page, ordered from the easiest to the most difficult. The ordered item booklet was created by sorting items by their IRT-based difficulty values (b corresponding to $RP_{0.67}$ was used). A three-parameter logistic IRT model was used for the dichotomous items and the graded response IRT model was used for the polytomous items. The group facilitators explained to the panelists that each open-response item would appear multiple times in the ordered item booklet, once for each possible score point.

The item map listed the items in the same order they were presented in the ordered item booklet and had spaces for the panelists to write in the knowledge, skills, and abilities required to answer correctly (or earn a particular score point). There was also a space for the panelists to write in why they felt the current ordered item was more difficult than the previous one.

Because starting cuts were used for reading, and because the item mapping process can be very time-consuming, the task was narrowed for reading panelists by instructing them to start approximately five ordered items prior to each starting cut-point and stop approximately five ordered items after the cut. The range of plus or minus five ordered items was a guideline only, and panelists were free to expand that range as appropriate. For the mathematics panel, where no starting cuts were used, it was necessary for panelists to complete the item map for the full item set.

Each panelist stepped through the ordered item booklet, item by item, considering the knowledge, skills, and abilities students needed to complete each one. They recorded this information onto the item map along with reasons why an item was more difficult than the previous one. After they were finished working individually, panelists had an opportunity to discuss the item map as a group and make necessary additions or adjustments.

2.2.3 Review of ALDs and Definition of Borderline Students

Next, panelists reviewed the ALDs. This important step of the process was designed to ensure that panelists thoroughly understood the needed knowledge, skills, and abilities to be classified as *Partially Proficient*, *Proficient*, and *Proficient with Distinction*. Panelists began individually then discussed the descriptions as a group, clarifying each level. Afterwards, panelists developed consensus definitions of borderline students, i.e., students who are "just able enough" to be categorized into an achievement level. Bulleted lists of characteristics for each level were generated based on the whole group discussion and posted in the room for reference throughout the bookmark process.

2.2.4 Round 1 Judgments—Mathematics

In the first round, panelists worked individually with the ALDs, the item map they completed earlier, and the ordered item booklet. Beginning with the first ordered item, and considering the skills and abilities needed to complete it, they asked themselves the question, "Would at least 2 out of 3 students performing at the borderline of *Partially Proficient* answer this question correctly (or earn this score point)?" Panelists considered each ordered item in turn, asking themselves the same question until their answer changed from "yes" (or predominantly "yes") to "no" (or predominantly "no"). A bookmark was placed there. Panelists then repeated the process for the other two cuts and used the provided rating form to record his/her ratings for each cut (see Appendix F).

2.2.5 Tabulation of Round 1 Results—Mathematics

After the Round 1 ratings were complete, Measured Progress staff calculated the average cut-points for the room based on Round 1 bookmark placements. This information was shared with the group to assist them in Round 2.

2.2.6 Round 2 Judgments—Mathematics

The purpose of Round 2 was for panelists to discuss their Round 1 placements and revise their ratings, if necessary. Panelists shared their individual rationales for their bookmark placements in terms of the necessary knowledge and skills for each classification. Panelists were asked to pay particular attention to how their individual ratings compared to those of the others and get a sense for

whether they were unusually stringent or lenient within the group. Room average cut-points were to be considered as well.

Although the panelists worked as a group, the facilitators made sure it was understood that they should set the bookmark according to their *individual* best judgments, and that they need *not* come to consensus. They were encouraged to listen to the points made by their colleagues but not feel compelled to change their bookmark placements.

Finally, panelists were given the opportunity to revise their Round 1 ratings on the rating form.

2.2.7 Tabulation of Round 2 Results—Mathematics

When Round 2 ratings were complete, Measured Progress staff calculated the average cut-points for the room and associated *impact* data. Impact data gave the percentage of students across the three states that would fall into each achievement level category according to the cut-points. This information was shared with the group to assist them in Round 3.

2.2.8 Round 3 Judgments—Mathematics

The purpose of Round 3 was to give panelists a final opportunity to discuss and, if necessary, modify their bookmark placements. Panelists were asked to consider all Round 2 results and the input of their colleagues. Once again, facilitators made sure panelists understood they were providing individual bookmark placements and not coming to consensus.

After the group discussions, panelists once again recorded bookmark placements on the rating form.

2.2.9 Round 1 Judgments—Reading

For reading, starting cut-points were provided to panelists, This effectively took the place of the final, individual, round of ratings as implemented for mathematics. Reading panelists worked as a group in their first round, evaluating and (if necessary) revising the starting cut-points. Using the ALDs, the item map they completed in the previous step, and the ordered item booklet, they began with the ordered item approximately five items before the *Partially Proficient* starting cut-point, and considering the skills and abilities needed to complete it, asked themselves the question, “Would at least 2 out of 3 students performing at the borderline of *Partially Proficient* answer this question correctly (or earn this score point)?” Panelists considered each ordered item in turn, asking themselves the same question until their answer changed from “yes” (or predominantly “yes”) to “no” (or predominantly “no”). A bookmark was placed there. Panelists then repeated the process for the other two cuts and used the provided rating form to record his/her ratings for each cut (see Appendix F).

Although the panelists worked as a group, the facilitators made sure it was understood that they should set the bookmark according to their *individual* best judgments, and that they need *not* come to consensus. They were encouraged to listen to the points made by their colleagues but not feel compelled to change their bookmark placements.

2.2.10 Tabulation of Round 1 Results—Reading

When Round 1 ratings were complete, Measured Progress staff calculated the average cut-points for the room and associated *impact* data. Impact data gave the percentage of students across the three states that would fall into each achievement level category according to the cut-points. This information was shared with the group to assist them in Round 2.

2.2.11 Round 2 Judgments—Reading

The purpose of Round 2 was to give panelists an opportunity to discuss and, if necessary, modify their Round 1 bookmark placements. Panelists shared their individual rationales for their bookmark placements in terms of the necessary knowledge and skills for each classification. Panelists were asked to pay particular attention to how their individual ratings compared to those of the others and get a sense for whether they were unusually stringent or lenient within the group. Room average cut-points were to be considered as well.

Finally, panelists were given the opportunity to revise their Round 1 ratings on the rating form.

2.3 Writing

2.3.1 Discussion of Writing Scoring Rubrics and Anchor Papers

The writing panelists began by reviewing the five writing scoring rubrics: Response to Literary or Informational Text, Reflective Essay, Persuasive Essay, Report, and Procedure (see Appendix G). Particular attention was paid to the rubric for Response to Informational Text, since that was the genre for the common prompt.

2.3.2 Review of General ALDs

Next, panelists reviewed the general ALDs. This important step of the process was designed to ensure that panelists thoroughly understood the needed knowledge, skills, and abilities to be classified as *Partially Proficient*, *Proficient*, and *Proficient with Distinction*. Panelists began individually and afterwards discussed the descriptions as a group, clarifying each level. Consensus definitions of students at each level were made into bulleted lists that were kept posted in the room for reference throughout the process.

2.3.3 Review and Discussion of Starting Cut-Points

Next, the facilitator described the process used to determine the starting cut-points, after which panelists discussed then and provided feedback or proposed alternatives.

2.3.4 Writing to the Common Prompt

Next, panelists wrote to the common prompt. The purpose of this step was to make sure they were thoroughly familiar with what the prompt asked students to do.

2.3.5 Round 1 Judgments—Common Prompt

The panelists were given a set of 16 student papers (responses to the common prompt) to for making their ratings. The papers were presented in order (from lowest scoring to highest), but the scores themselves were not revealed during the Round. Working individually, panelists reviewed each paper for the skills and abilities demonstrated and their relationship to the ALDs. Panelists categorized each paper into one of the four levels, recording them on the rating sheet. (A sample of the rating sheets used for writing Rounds 1 and 2 is included as Appendix H.)

2.3.6 Tabulation of Round 1 Results

When Round 1 ratings were complete, Measured Progress staff calculated the average cut-points for the room. This information was shared with the group to assist them in Round 2.

2.3.7 Round 2 Judgments—Common Prompt

The purpose of Round 2 was for the panelists to discuss and, if necessary, revise their Round 1 ratings. They were provided with the room average cut-points from Round 1 and the scores awarded to each paper. Prior to beginning the Round 2 discussions, using a show of hands, the room facilitator indicated on chart paper how many panelists assigned each paper to the achievement levels. The facilitator also indicated on the chart paper how each paper would be categorized based on the Round 1 room average cut-points.

Beginning with the first paper for which there was disagreement on categorization, panelists shared their individual rationales for categorization. The panelists were asked to pay particular attention to how their ratings compared to those of the others and get a sense for whether they were unusually stringent or lenient within the group.

After the discussion, panelists were given the opportunity to revise their Round 1 ratings in the Round 2 column on the rating form. Facilitators reminded panelists that their best individual judgment was wanted, and that no one should feel compelled to change their ratings.

2.3.8 Repeat Rounds 1 and 2 for Each Matrix Prompt

After completing Rounds 1 and 2 for the common prompt, the panel followed virtually the same process for each of the five matrix prompts one by one, completing both rounds of ratings for one before proceeding to the next. The process differed from that used for the common prompt in two ways: first, panelists were asked to rate a set of 11 papers (one per score point, from 2 through 12) rather than the 16 used for the common prompt; and, second, the panelists knew the score awarded to each paper prior to doing their Round 1 ratings.

2.3.9 Round 3 Judgments

After Rounds 1 and 2 were complete for the common and all five matrix prompts, panelists were given one last opportunity to discuss the placement of the cuts or any remaining issues. Then they were asked to recommend a single set of raw score cut-points to be used for all prompts on the Round 3 rating form (See Appendix I).

2.4 Evaluation

As the last step in the standard-setting process, panelists in all three groups anonymously completed an evaluation form. The results of the evaluations are presented as Appendix J.

3. TASKS COMPLETED AFTER THE STANDARD-SETTING MEETING

Upon conclusion of the standard-setting meeting, several important tasks were completed. These tasks centered on reviewing the standard-setting meeting and addressing anomalies that may have occurred in the process or in the results.

3.1 Analysis and Review of Panelists' Feedback

Upon completion of the evaluation forms, panelists' responses were reviewed. This review did not reveal any anomalies in the standard-setting process or indicate any reason that a particular panelist's data should not be included when the final cut-points were calculated. It appeared that all panelists understood the rating task and attended to it appropriately.

3.2 Preparation of Recommended Cut Scores

After the standard setting was completed, the cut-points on the ordered item scale and on the theta (θ) scale were calculated for mathematics based on the panelists' Round 3 ratings, and for reading based on the Round 2 ratings. In addition, the percentages of students who would be classified into each achievement level were determined. These results are presented in Tables 1 and 2 below in the columns labeled "Standard Setting Recommended Cuts." Table 1 also shows the corresponding information for the starting cuts used for reading.

Table 1: Summary of *NECAP* Standard-Setting Results—Reading

Achievement Level	Starting Cut Points		Standard Setting Recommended Cuts		
	Raw Score Range	% in Category	Raw Score Range	Theta Cut	% in Category
Proficient with Distinction	40-52	13.7	39-52	1.0038	17.4
Proficient	29-39	47.8	28-38	-0.3099	47.8
Partially Proficient	19-28	25.9	19-27	-1.2071	22.3
Substantially Below Proficient	0-18	12.5	0-18		12.5

Table 2: Summary of *NECAP* Standard-Setting Results—Mathematics

Achievement Level	Standard Setting Recommended Cuts		
	Raw Score Range	Theta Cut	% in Category
Proficient with Distinction	53-64	2.0586	1.5
Proficient	29-52	0.6190	24.5
Partially Proficient	18-28	-0.1169	27.5
Substantially Below Proficient	0-17		46.5

For writing, the final recommended cuts, based on the panelists' Round 3 ratings, are shown in Table 3. The table also shows the corresponding percentages in each category. Note that the cuts recommended by the panelists were the same as those recommended by the content experts and used as starting cuts.

Table 3: Summary of *NECAP* Standard-Setting Results—Writing

Achievement Level	Standard Setting Recommended Cuts	
	Raw Score Range	% in Category
Proficient with Distinction	10-12	3.3
Proficient	7-9	32.2
Partially Proficient	4-6	48.3
Substantially Below Proficient	0-3	16.1

3.3 Preparation of Standard-Setting Report

Following final compilation of standard-setting results, Measured Progress prepared this report, which documents the procedures and results of the 2008 standard-setting meeting in order to establish performance standards for the Grade 11 New England Common Assessment Program (*NECAP*) in reading, mathematics and writing.

APPENDICES

APPENDIX A: NECAP STANDARD SETTING ACHIEVEMENT LEVEL DESCTRIPTIONS (ALDS)

NECAP Grade 11 General Achievement Level Descriptions	
Substantially Below Proficient	Students performing at this level demonstrate extensive and significant gaps in the prerequisite knowledge and skills needed to participate and perform successfully in instructional activities aligned with the grade 9-10 GSEs. Additional instruction and support is necessary for these students to meet the grade 9-10 GSEs.
Partially Proficient	Students performing at this level demonstrate gaps in the knowledge and skills needed to participate and perform successfully in instructional activities aligned with the grade 9-10 GSEs. Additional instructional support may be necessary for these students to perform successfully in courses aligned with grade 11-12 expectations.
Proficient	Students performing at this level demonstrate minor gaps in the knowledge and skills needed to participate and perform successfully in instructional activities aligned with the grade 9-10 GSEs. It is likely that any gaps in the prerequisite knowledge and skills demonstrated by these students can be addressed by the classroom teacher during the course of classroom instruction aligned with grade 11-12 expectations.
Proficient with Distinction	Students performing at this level demonstrate the prerequisite knowledge and skills needed to participate and excel in instructional activities aligned with the grade 9-10 GSEs. Errors made by these students are few and minor and do not reflect gaps in prerequisite knowledge and skills. These students are prepared to perform successfully in classroom instruction aligned with grade 11-12 expectations.

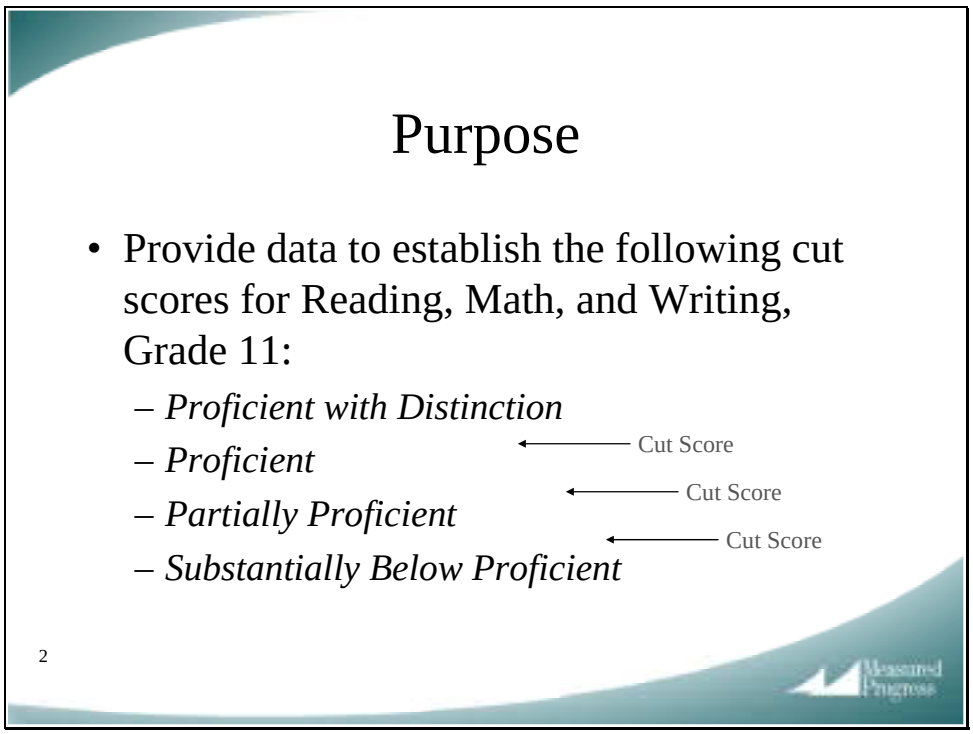
Mathematics Achievement Level Descriptions	
Substantially Below Proficient	Student's problem solving is often incomplete, lacks logical reasoning and accuracy, and shows little conceptual understanding in most aspects of the grade span expectations. Student is able to start some problems but computational errors and lack of conceptual understanding interfere with solving problems successfully.
Partially Proficient	Student's problem solving demonstrates logical reasoning and conceptual understanding in some, but not all, aspects of the grade span expectations. Many problems are started correctly, but computational errors may get in the way of completing some aspects of the problem. Student uses some effective strategies. Student's work demonstrates that he or she is generally stronger with concrete than abstract situations.
Proficient	Student's problem solving demonstrates logical reasoning with appropriate explanations that include both words and proper mathematical notation. Student uses a variety of strategies that are often systematic. Computational errors do not interfere with communicating understanding. Student demonstrates conceptual understanding of most aspects of the grade span expectations.
Proficient with Distinction	Student's problem solving demonstrates logical reasoning with strong explanations that include both words and proper mathematical notation. Student's work exhibits a high level of accuracy, effective use of a variety of strategies, and an understanding of mathematical concepts within and across grade span expectations. Student demonstrates the ability to move from concrete to abstract representations.

Reading Achievement Level Descriptions	
Substantially Below Proficient	Student's performance demonstrates minimal ability to derive/construct meaning from grade-appropriate text. Student may be able to recognize story elements and text features. Student's limited vocabulary knowledge and use of strategies impacts the ability to read and comprehend text.
Partially Proficient	Student's performance demonstrates an inconsistent ability to read and comprehend grade-appropriate text. Student attempts to analyze and interpret literary and informational text. Student may make and/or support assertions by referencing text. Student's vocabulary knowledge and use of strategies may be limited and may impact the ability to read and comprehend text.
Proficient	Student's performance demonstrates an ability to read and comprehend grade-appropriate text. Student is able to analyze and interpret literary and informational text. Student makes and supports relevant assertions by referencing text. Student uses vocabulary strategies and breadth of vocabulary knowledge to read and comprehend text.
Proficient with Distinction	Student's performance demonstrates an ability to read and comprehend grade-appropriate text. Student is able to analyze and interpret literary and informational text. Student offers insightful observations/assertions that are well supported by references to the text. Student uses range of vocabulary strategies and breadth of vocabulary knowledge to read and comprehend a wide variety of texts.

APPENDIX B: NECAP STANDARD SETTING OPENING SESSION POWERPOINT

Slide 1

Slide 2



Slide 3

What is Standard Setting?

- Set of activities that result in the determination of threshold or cut scores on an assessment
- We are trying to answer the question:
  - How much is enough?

3

Slide 4

What is Standard Setting

- Data collection phase
  - Collection of other performance data
  - Standard-setting meeting
- Policy/Decision making phase
  - Review of data collected and final decision about placement of cut points

4

Slide 5

Many Standard Setting Methods

- Angoff
- Body of Work
- Bookmark

5

Slide 6

Choice of Method is Based on Many Factors

- Prior usage/history
- Recommendation/requirement by some policy making authority
- Type of assessment

6

Slide 7

Choice of Method is Based on Many Factors

- Weighing all these factors, it was determined that the methods to be used are:
  - Reading & Math: Bookmark Method
  - Writing: modified Body of Work Method
- Both Bookmark and Body of Work are well-established procedures that have been successfully used on many assessments
- Both have produced defensible results

7

Slide 8

Choice of Method is Based on Many Factors

- Bookmark is appropriate for assessments that consist primarily of multiple-choice items but also include some constructed-response items
- Body of Work method works well for assessments that consist primarily or entirely of constructed-response items

8

Slide 9

What Next?

- Writing group will move to their breakout room; Reading and Math groups will stay here (for now)
  - Writing group will receive specific training on BOW method
  - Reading & Math groups will receive training on Bookmark method

9

Slide 10

What Next?

- Then, Reading and Math groups will move to their breakout rooms, and all three groups will begin standard-setting activities:
  - Take the test
  - Complete the item map (Reading & Math)
  - Discuss Achievement Level Descriptions (Reading & Math) or Rubric (Writing)
  - Do ratings
  - Complete evaluation

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Slide 11

Details for Standard Setting using the Bookmark Procedure

11

Slide 12

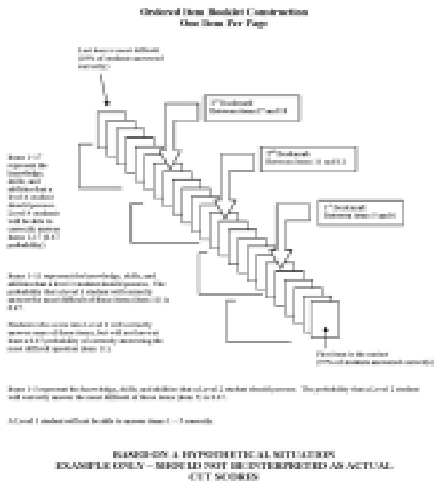
What is the bookmark procedure?

- A standard setting procedure that uses a book of items (ordered from easiest to hardest)
- Panelists place bookmarks in that book of items

12

Slide 13

What is the bookmark procedure?



13

Slide 14

A Technical Detail regarding the Bookmark Procedure

- What you need to know is that **the ordered item cut point for a given cut does not equal the raw score a student must obtain to be categorized into the higher achievement level**
- For example, if the *Substantially Below Proficient/ Partially Proficient* cut is set between ordered items 3 and 4, this **does not** mean that a student only needs to get 4 points on the test in order to be classified into the *Partially Proficient* level

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Slide 15

How to Place a Bookmark

- A few concepts you will need to know:
  - The achievement level descriptions
  - 'Borderline' students
  - What knowledge, skills, and abilities (KSAs) are needed to answer each question

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Slide 16

How to Place a Bookmark

- Start at the beginning of the ordered item book
- Evaluate whether at least 2 out of 3 students demonstrating skills at the 'borderline' of *Partially Proficient* would correctly answer item 1
- Moving through the book, make this evaluation of each item
- The bookmark should go where you no longer think 2 out of 3 *Partially Proficient* 'borderline' students would correctly answer the question.

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Slide 17

How to Place a Bookmark

Item Number	Would at least 2 out of 3 students who demonstrate skills at the *Partially Proficient* 'borderline' correctly answer this question?
1	Yes
2	Yes
3	Yes
4	Yes
5	Yes
6	Yes
7	Yes
8	Yes
9	No
10	No
11	No
12	No
13	No
14	No
15	No
…	No

17

Slide 18

How to Place a Bookmark

- In the example, the bookmark would go between items 8 and 9
- However, it won't be that easy; there will be gray areas
- You will have the opportunity to discuss your bookmark placements and change them if desired
- Place one bookmark for each cut score

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Slide 19

How to Place a Bookmark

- To place your bookmarks you will need to be familiar with the achievement level descriptions and the assessment items

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Slide 20

How to Place a Bookmark

- Don’t worry, we have procedures, materials and staff to assist you in this process.

20

Slide 21

Any questions about the Bookmark Procedure?

21

Slide 22

What Next?

- After this session, you will break into grade-level groups, where you will:
  - take the assessment to familiarize yourself with the test items
  - discuss the Achievement Level Descriptions and develop definitions of "borderline" *Partially Proficient*, *Proficient*, and *Proficient with Distinction* students

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Slide 23

What Next?

- You will:
  - complete the Item Map, which is a document that will help you with the bookmark placement process, and
  - do the rounds of ratings

23

Slide 24

What Next?

- As the final step, we will ask you to complete an evaluation of the standard setting process

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Slide 25

Good Luck!

25

APPENDIX C: NECAP STANDARD SETTING GENERAL INSTRUCTIONS FOR GROUP FACILITATORS - READING -

GENERAL INSTRUCTIONS FOR NECAP STANDARD SETTING GROUP FACILITATORS

READING GRADE 11

- Prior to Round 1 Ratings

Introductions:

1. Welcome group, introduce yourself (name, affiliation, a little selected background information).
2. Have each participant introduce him/herself.

- Take the Test

Overview: In order to establish an understanding of the NECAP test items and for panelists to gain an understanding of the experience of the students who take the test, each participant will take the test. Panelists may wish to discuss or take issue with the items in the test. Tell them we will gladly take their feedback to the DOE. However, this is the actual assessment that students took and it is the set of items on which we must set standards.

Activities:

1) Introduce NECAP and convey/do each of the following:
    a. Tell panelists that they are about to take the actual NECAP assessment;
    b. The purpose of the exercise is to help them establish a good understanding of the test items and to gain an understanding of the experience of the students who take the assessment;
2) Give each panelist a test booklet;
3) Tell panelists to try to take on the perspective of a student as they complete the test.
4) When the majority of the panelists have finished, pass out answer key

Fill Out Item Map

Overview: The primary purpose of filling out the item map is for panelists to think about and document the knowledge, skills, and abilities students need to answer each question. Panelists should have an understanding of what makes one test item harder or easier than another. The notes panelists take here will be useful in helping them place their bookmarks and in discussions during the two rounds of ratings.

Activities:

1. Make sure panelists have the following materials:
   a. Item map
   b. Ordered item book
2. Review the ordered item book and item map with the panelists. Explain what each is, and point out the correspondence of the ordered items between the two. Explain that the items are ordered from easiest to hardest, and that items worth more than 1 point will appear once for each possible score point.
3. Provide an overview of the task paraphrasing the following:
   a. The primary purpose of this activity is for panelists to think about what makes one question harder or easier than another. For example, it may be that the concept tested is a difficult concept, or that the concept isn't difficult but that the particular wording of the question makes it a difficult question. Similarly, the concept may be a difficult one, but the wording of the question makes it easier.
   b. Panelists should take notes about their thoughts regarding each question. These will be useful in the rating activities and later discussions.
4. Tell panelists to work individually at first. After they complete the item map they will have the opportunity to discuss it with their colleagues.
5. Note that, for the bottom cut, panelists will begin the item mapping process with the first ordered item. For the remaining two cuts, they should start five ordered items before the starting cut.
6. Each panelist will begin with the first ordered item and compare it to the next ordered item. What makes the second item harder than the first? Panelists should not agonize over these decisions. It may be that the second item is only slightly harder than the first.
7. Panelists should work their way through the item map, stopping about five ordered items after the *Substantially Below Proficient/Partially Proficient* starting cut.
8. Panelists will then do the same process for the *Partially Proficient*/*Proficient* and *Proficient*/*Proficient with Distinction* cuts, each time starting approximately five ordered items before the cut and ending approximately five ordered items after the cut.
9. Note that panelists may feel that they need to expand the range of items they consider in one direction or the other. Five ordered items before and after the starting cuts is a guideline, but they may consider more items if necessary.
10. Once panelists have completed the item map, they should discuss them as a group.
11. Based on the group discussion, the panelists should modify their own item map (make additional notes, cross things out, etc…)

Discuss Achievement Level Descriptions & Describe Characteristics of the "Borderline" Student

Overview: In order to establish an understanding of the expected performance of borderline students

on the test, panelists must have a clear understanding of:

1) The definition of the four achievement levels, and

2) Characteristics of students who are "just able enough" to be classified into each achievement level. These students will be referred to as borderline students, since they are right on the border between achievement levels.

The purpose of this activity is for the panelists to obtain an understanding of the Achievement Level Descriptions with an emphasis on characteristics that describe students at the borderline -- both what these students can and cannot do.

This activity is critical since the ratings panelists will be making in Rounds 1 and 2 will be based on these understandings.

Activities:

1) Introduce task. In this activity they will:
   a. Individually review the Achievement Level Descriptions;
   b. discuss Descriptions as a group; and
   c. generate whole group descriptions of borderline *Partially Proficient*, *Proficient* and *Proficient with Distinction* students.

   The facilitator should compile the descriptions as bulleted lists on chart paper; the chart paper will then be posted so the panelists can refer to the lists as they go through the bookmark process.
2) Pass out the Achievement Level Descriptions and have panelists individually review them. Panelists can make notes if they like.
3) After individually reviewing the Descriptions, have panelists discuss each one as a whole group, starting with *Partially Proficient*, and provide clarification. The goal here is for the panelists to have a collegial discussion in which to bring up/clarify any issues or questions, and to come to a common understanding of what it means to be in each achievement level. It is not unusual for panelists to disagree with the descriptions they will see; almost certainly there will be some panelists who will want to change them. However, the task at hand is for panelists to have a common understanding of what knowledge, skills, and abilities are described by each Achievement Level Description.
4) Once panelists have a solid understanding of the Achievement Level Descriptions, have them focus their discussion on the knowledge, skills, and abilities of students who are in the *Partially Proficient* category, but just barely. The focus should be on those characteristics and KSAs that best describe the lowest level of performance necessary to warrant a *Partially Proficient* classification.
5) After discussing *Partially Proficient*, have the panelists discuss characteristics of the borderline *Proficient* student and then characteristics of the borderline *Proficient with Distinction* student. Panelists should be made aware of the importance of the *Proficient* cut.
6) Using chart paper, generate a bulleted list of characteristics for each of the levels based on the entire room discussion. Post these on the wall of the room.

- Round 1

Overview of Round 1: The primary purpose of Round 1 is to ask the panelists to evaluate and, if necessary, revise the starting cut points. For this round, panelists will work as a group. Beginning

with the starting *Substantially Below Proficient*/*Partially Proficient* cut point, panelists will evaluate each item, starting approximately five ordered items before the cut and ending approximately five ordered items after the cut (or as appropriate). (Note, again, that panelists may feel that they need to expand the range of items they consider in one direction or the other. Five ordered items before and after the starting cuts is a guideline, but they may consider more items if necessary.) The panelists will gauge the level of difficulty of each of the items for those students who barely meet the definition of *Partially Proficient*. The task that panelists are asked to do is to estimate whether a borderline *Partially Proficient* student would answer each question correctly. More specifically panelists should answer:

- Would *at least* 2 out of 3 students performing at the borderline answer the question correctly?

In the case of open-response questions, panelists should ask:

- Would *at least* 2 out of 3 students performing at the borderline get this score point *or higher*?

This same process is then repeated for the starting *Partially Proficient*/*Proficient* cut and the starting *Proficient*/*Proficient with Distinction* cut.

Activities:

1. Make sure panelists have the following materials:
    a. Round 1 rating form
    b. Ordered Item Book
    c. Item Map
    d. Achievement Level Descriptions
    e. Starting cut points
2. Have panelists write round number 1 and their ID number on the rating form. The ID number is on their name tags.
3. Provide an overview of Round 1. Paraphrase the following:
    a. Orient panelists to the ordered-item book. Explain that the items are ordered from easiest to hardest; for constructed-response items, explain that each item appears once for each possible score point.
    b. Orient panelists to the starting cut points. Make sure panelists understand that the ordered item cut point for *SBP/PP* is not the same as the raw score a student must obtain in order to be classified into *Partially Proficient*. For example, if a starting cut point is between ordered items 6 and 7, that **does not** mean that a student only needs 7 points to be classified as *Partially Proficient*.
    c. The primary purpose of this activity is for the panelists to discuss whether students whose performance is barely *Partially Proficient* would correctly answer each item, beginning approximately five positions prior to the starting *Substantially Below Proficient*/*Partially Proficient* cut, and to place their bookmark where they believe the answer of 'yes' turns to 'no'. Remind panelists that they should be thinking about two-thirds of the borderline students. Once they have completed the process for the *Substantially Below Proficient*/*Partially Proficient* cut, they will proceed to the remaining two cut points.
    d. Each panelist needs to base their judgments on his/her experience with the content, understanding of students, and the definitions of the borderline students generated previously.
    e. One bookmark will be placed for each cut point.

    f. If panelists are struggling with placing a particular bookmark they should use their best judgment and move on. They will have an opportunity to revise their ratings.
    g. Panelists should feel free to take notes if there are particular points about where they placed their bookmarks that they think are worthy of discussion in Round 2.
4. Tell panelists that they will be discussing each cut point with the other panelists, but that they will be placing the bookmarks individually. It is not necessary for the panelists to come to consensus about whether and how the cut points should be revised.
5. Go over the rating form with panelists.
    a. Lead panelists through a step-by-step demonstration of how to fill in the rating form.
    b. Answer questions the panelists may have about the work in Round 1.
    c. Once everyone understands what they are to do in Round 1, tell them to begin.
6. Using the ordered item book, the panelists begin approximately five ordered items prior to the starting *Substantially Below Proficient*/*Partially Proficient* cut, or as appropriate.
7. After they have placed the first bookmark, they will proceed to the *Partially Proficient*/ *Proficient* cut, beginning approximately five ordered items prior to the starting cut.
8. After they have placed the second bookmark, they will proceed to the *Proficient*/ *Proficient with Distinction* cut, again beginning approximately five ordered items prior to the starting cut.
9. After they have placed all three bookmarks, have panelists fill out their rating forms. Ask them to carefully inspect their rating forms to ensure they are filled out properly.
    a. **The round number and ID number must be filled in**.
    b. **The item numbers identifying each cut score must be adjacent**.
    c. Check each panelist's rating form before you allow them to leave for a short break.
    d. When all the rating forms have been collected, the group will take a break. Immediately bring the rating forms to the R&A work room for tabulation.

- Tabulation of Round 1 Results

Tabulation of Round 1 results will be completed as quickly as possible after receipt of the rating forms.

- Round 2

Overview of Round 2: The primary purpose of Round 2 is to ask the panelists to discuss their Round 1 placements as a whole group and to revise their ratings on the basis of that discussion. They will discuss their ratings in the context of the ratings made by other members of the group. The panelists with the highest and lowest ratings should comment on why they gave the ratings they did. The group should get a sense of how much variation there is in the ratings. Panelists should also consider the question, "How tough or easy a panelist are you?" The purpose here is to allow panelists to examine their individual expectations (in terms of their experiences) and to share these expectations and experiences in order to attain a better understanding of how their experiences impact their decision-making.

To aid with the discussion, panelists will also be given impact data, showing the approximate percentage of students who would be classified into each achievement level category based on the room average bookmark placements from Round 1.

Once panelists have reviewed and discussed their bookmark placements, they will be given the opportunity to change or revise their Round 1 ratings.

Activities:

1. Make sure panelists have the following materials:
    a. The Round 2 rating forms
    b. Ordered item booklets
    c. Item maps
    d. Achievement Level Descriptions
2. Have panelists write round number 2 and their ID number on the rating form.
3. A psychometrician will present and explain the following information to the panelists:
    a. The average bookmark placement for the whole group based on the Round 1 ratings. Based on their Round 1 ratings, panelists will know where they fall relative to the group average.
    b. Impact data, showing the approximate percentage of students across the three states that would be classified into each achievement level category based on the room average bookmark placements from Round 1.
4. Provide an overview of Round 2. Paraphrase the following:
    a. As in Round 1, the primary purpose is to place bookmarks where you feel the achievement levels are best distinguished, considering the additional information and further discussion.
    b. Each panelist needs to base his/her judgments on his/her experience with the content area, understanding of students, the definitions of the borderline students generated previously, discussions with other panelists and the knowledge, skills, and abilities required to answer each item.
5. Panelists should be given a few minutes to review the Round 1 average cut points and impact data.
6. Once they have reviewed the information, the panelists will discuss their Round 1 ratings, beginning with the first cut point.
    a. The discussion should focus on differences in where individual panelists placed their cutpoints.
    b. Panelists should be encouraged to listen to their colleagues as well as express their own points of view.
    c. If the panelists hear a logic/rationale/argument that they did not consider and that they feel is compelling, then they may adjust their ratings to incorporate that information.

d. On the basis of the discussions and the feedback presented, panelists should make a second round of ratings.
e. When placing their Round 2 bookmarks, panelists should not feel compelled to change their ratings.
f. The group does not have to achieve consensus. If panelists honestly disagree, that is fine. We are trying to get the best judgment of each panelist. Panelists should not feel compelled or coerced into making a rating they disagree with.

Encourage the panelists to use the discussion and feedback to assess how stringent or lenient a judge they are. If a panelist is consistently higher or lower than the group, they may have a different understanding of the borderline student than the rest of the group, or a different understanding of the Achievement Level Descriptions, or both. **It is O.K. for panelists to disagree, but that disagreement should be based on a common understanding of the Achievement Level Descriptions.**

7. When the group has completed their second ratings, collect the rating forms. When you collect the rating forms carefully inspect them to ensure they are filled out properly.
   a. **The round number and panelist ID number must be filled in**.
   b. **The item numbers identifying each cut score must be adjacent**.
   c. Check each panelist's rating form before you allow them to leave for a short break.
   d. When all the rating forms have been collected, the group will take a break. Immediately bring the rating forms to the R&A work room for tabulation.

- Complete Evaluation Form

Upon completion of Round 2, have panelists fill out the evaluation form. Emphasize that their honest feedback is important.

APPENDIX D: NECAP STANDARD SETTING GENERAL DIRECTIONS FOR GROUP FACILITATORS - MATHEMATICS –

GENERAL INSTRUCTIONS FOR NECAP STANDARD SETTING GROUP FACILITATORS

MATHEMATICS GRADE 11

- Prior to Round 1 Ratings

Introductions:

3. Welcome group, introduce yourself (name, affiliation, a little selected background information).
4. Have each participant introduce him/herself.

- Take the Test

Overview: In order to establish an understanding of the NECAP test items and for panelists to gain an understanding of the experience of the students who take the test, each participant will take the test. Panelists may wish to discuss or take issue with the items in the test. Tell them we will gladly take their feedback to the DOE. However, this is the actual assessment that students took and it is the set of items on which we must set standards.

Activities:

5) Introduce NECAP and convey/do each of the following:
    a. Tell panelists that they are about to take the actual NECAP assessment;
    b. The purpose of the exercise is to help them establish a good understanding of the test items and to gain an understanding of the experience of the students who take the assessment;
6) Give each panelist a test booklet;
7) Tell panelists to try to take on the perspective of a student as they complete the test.
8) When the majority of the panelists have finished, pass out answer key

Fill Out Item Map

Overview: The primary purpose of filling out the item map is for panelists to think about and document the knowledge, skills, and abilities students need to answer each question. Panelists should have an understanding of what makes one test item harder or easier than another. The notes panelists take here will be useful in helping them place their bookmarks and in discussions during the three rounds of ratings.

Activities:

12. Make sure panelists have the following materials:
    a. Item map
    b. Ordered item book
13. Review the ordered item book and item map with the panelists. Explain what each is, and point out the correspondence of the ordered items between the two. Explain that the items are ordered from easiest to hardest, and that items worth more than 1 point will appear once for each possible score point.
14. Provide an overview of the task paraphrasing the following:
    a. The primary purpose of this activity is for panelists to think about what makes one question harder or easier than another. For example, it may be that the concept tested is a difficult concept, or that the concept isn't difficult but that the

particular wording of the question makes it a difficult question. Similarly, the concept may be a difficult one, but the wording of the question makes it easier.

b. Panelists should take notes about their thoughts regarding each question. These will be useful in the rating activities and later discussions.

15. Tell panelists to work individually at first. After they complete the item map they will have the opportunity to discuss with their colleagues.
16. Each panelist will begin with the ordered item number one and compare it to the next ordered item. What makes the second item harder than the first? Panelists should not agonize over these decisions. It may be that the second item is only slightly harder than the first.
17. Panelists will continue this process, working their way through the item map and ordered item booklet.
18. Once panelists have completed their item maps, they should discuss them as a group.
19. Based on the group discussion, the panelists should modify their own item map (make additional notes, cross things out, etc…)

Discuss Achievement Level Descriptions & Describe Characteristics of the "Borderline" Student

Overview: In order to establish an understanding of the expected performance of borderline students on the test, panelists must have a clear understanding of:

3) The definition of the four achievement levels, and

4) Characteristics of students who are "just able enough" to be classified into each achievement level. These students will be referred to as borderline students, since they are right on the border between achievement levels.

The purpose of this activity is for the panelists to obtain an understanding of the Achievement Level Descriptions with an emphasis on characteristics that describe students at the borderline -- both what these students can and cannot do.

This activity is critical since the ratings panelists will be making in Rounds 1 through 3 will be based on these understandings.

Activities:

7) Introduce task. In this activity they will:
   a. Individually review the Achievement Level Descriptions;
   b. discuss Descriptions as a group; and
   c. generate whole group descriptions of borderline *Partially Proficient*, *Proficient* and *Proficient with Distinction* students.

   The facilitator should compile the descriptions as bulleted lists on chart paper; the chart paper will then be posted so the panelists can refer to the lists as they go through the bookmark process.
8) Pass out the Achievement Level Descriptions and have panelists individually review them. Panelists can make notes if they like.
9) After individually reviewing the Descriptions, have panelists discuss each one as a whole group, starting with *Partially Proficient*, and provide clarification. The goal here is for

the panelists to have a collegial discussion in which to bring up/clarify any issues or questions, and to come to a common understanding of what it means to be in each achievement level. It is not unusual for panelists to disagree with the descriptions they will see; almost certainly there will be some panelists who will want to change them. However, the task at hand is for panelists to have a common understanding of what knowledge, skills, and abilities are described by each Achievement Level Description.

10) Once panelists have a solid understanding of the Achievement Level Descriptions, have them focus their discussion on the knowledge, skills, and abilities of students who are in the *Partially Proficient* category, but just barely. The focus should be on those characteristics and KSAs that best describe the lowest level of performance necessary to warrant a *Partially Proficient* classification.
11) After discussing *Partially Proficient*, have the panelists discuss characteristics of the borderline *Proficient* student and then characteristics of the borderline *Proficient with Distinction* student. Panelists should be made aware of the importance of the *Proficient* cut.
12) Using chart paper, generate a bulleted list of characteristics for each of the levels based on the entire room discussion. Post these on the wall of the room.

- Round 1

Overview of Round 1: The purpose of Round 1 is for the panelists to make their initial judgments as to where the bookmarks should be placed. For this round, panelists will work individually, without consulting with their colleagues. Beginning with the first ordered item and the *Substantially Below Proficient*/*Partially Proficient* cut point, panelists will evaluate each item in turn. The panelists will gauge the level of difficulty of each of the items for those students who barely meet the definition of *Partially Proficient*. The task that panelists are asked to do is to estimate whether a borderline *Partially Proficient* student would answer each question correctly. More specifically panelists should answer:

- Would *at least* 2 out of 3 students performing at the borderline answer the question correctly?

In the case of open-response questions, panelists should ask:

- Would *at least* 2 out of 3 students performing at the borderline get this score point *or higher*?

This same process is then repeated for the starting *Partially Proficient*/*Proficient* cut and the starting *Proficient*/*Proficient with Distinction* cut.

Activities:

10. Make sure panelists have the following materials:
    a. Round 1 rating form
    b. Ordered Item Book
    c. Item Map
    d. Achievement Level Descriptions
11. Have panelists write round number 1 and their ID number on the rating form. The ID number is on their name tags.
12. Provide an overview of Round 1, covering each of the following:

a. Orient panelists to the ordered-item book. Explain that the items are ordered from easiest to hardest; for open-response items, explain that each item appears once for each possible score point.
b. The primary purpose of this activity is for the panelists to discuss whether students whose performance is barely *Partially Proficient* would correctly answer each item, and to place their bookmark where they believe the answer of 'yes' turns to 'no'. Remind panelists that they should be thinking about two-thirds of the borderline students. Once they have completed the process for the *Substantially Below Proficient*/*Partially Proficient* cut, they will proceed to the remaining two cut points.
c. Each panelist needs to base his/her judgments on his/her experience with the content, understanding of students, and the definitions of the borderline students generated previously.
d. One bookmark will be placed for each cut point.
e. If panelists are struggling with placing a particular bookmark they should use their best judgment and move on. They will have an opportunity to revise their ratings in Rounds 2 and 3.
f. Panelists should feel free to take notes if there are particular points about where they placed their bookmarks that they think are worthy of discussion in Round 2.

13. Go over the rating form with panelists.
    a. Lead panelists through a step-by-step demonstration of how to fill in the rating form.
    b. Answer questions the panelists may have about the work in Round 1.
    c. Once everyone understands what they are to do in Round 1, tell them to begin.
14. The panelists begin with ordered item number 1and proceed through the ordered item booklet, each time asking whether at least two out of three borderline students would correctly answer the question. They will place their first bookmark at the point where the answer changes from "yes" to "no."
15. After they have placed the first bookmark, they will continue through the ordered item booklet, making the same judgments for the *Partially Proficient*/*Proficient* cut, and the *Proficient*/*Proficient with Distinction* cut.
16. After they have placed all three bookmarks, have panelists fill out their rating forms. Ask them to carefully inspect their rating forms to ensure they are filled out properly.
    a. **The round number and ID number must be filled in**.
    b. **The item numbers identifying each cut score must be adjacent**.
    c. Check each panelist's rating form before you allow them to leave for a short break.
    d. When all the rating forms have been collected, the group will take a break. Immediately bring the rating forms to the R&A work room for tabulation.

- Tabulation of Round 1 Results

Tabulation of Round 1 results will be completed as quickly as possible after receipt of the rating forms.

- Round 2

Overview of Round 2: The primary purpose of Round 2 is to ask the panelists to discuss their Round 1 placements as a whole group and to revise their ratings on the basis of that discussion. They will discuss their ratings in the context of the ratings made by other members of the group. The panelists with the highest and lowest ratings should comment on why they gave the ratings they did. The group should get a sense of how much variation there is in the ratings. Panelists should also consider the question, "How tough or easy a panelist are you?" The purpose here is to allow panelists to examine their individual expectations (in terms of their experiences) and to share these expectations and experiences in order to attain a better understanding of how their experiences

impact their decision-making.

To aid with the discussion, a psychometrician will present the group with the room average bookmark placements from Round 1.

Once panelists have reviewed and discussed their bookmark placements, they will be given the opportunity to change or revise their Round 1 ratings.

Activities:

8. Make sure panelists have the following materials:
    a. The Round 2 rating forms
    b. Ordered item booklets
    c. Item maps
    d. Achievement Level Descriptions
9. Have panelists write round number 2 and their ID number on the rating form.
10. A psychometrician will present and explain the average bookmark placement for the whole group based on the Round 1 ratings. Based on their Round 1 ratings, panelists will know where they fall relative to the group average. This information is useful so that panelists get a sense if they are more stringent or more lenient than other panelists.
11. Provide an overview of Round 2. Paraphrase the following:
    a. As in Round 1, the primary purpose is to place bookmarks where you feel the achievement levels are best distinguished, considering the additional information and further discussion.
    b. Each panelist needs to base his/her judgments on his/her experience with the content area, understanding of students, the definitions of the borderline students generated previously, discussions with other panelists and the knowledge, skills, and abilities required to answer each item.
12. Panelists should be given a few minutes to review the bookmark placements based on the room average cut points from Round 1.
13. Once they have reviewed the information, the panelists will discuss their Round 1 ratings, beginning with the first cut point.
    g. The discussion should focus on differences in where individual panelists placed their cutpoints.
    h. Panelists should be encouraged to listen to their colleagues as well as express their own points of view.
    i. If the panelists hear a logic/rationale/argument that they did not consider and that they feel is compelling, then they may adjust their ratings to incorporate that information.
    j. On the basis of the discussions and the feedback presented, panelists should make a second round of ratings.
    k. When placing their Round 2 bookmarks, panelists should not feel compelled to change their ratings.
    l. The group does not have to achieve consensus. If panelists honestly disagree, that is fine. We are trying to get the best judgment of each panelist. Panelists should not feel compelled or coerced into making a rating they disagree with.

    Encourage the panelists to use the discussion and feedback to assess how stringent or lenient a judge they are. If a panelist is consistently higher or lower than the group, they may have a different understanding of the borderline student than the rest of the group, or a different understanding of the Achievement Level Descriptions, or both. **It is O.K. for panelists to disagree, but that disagreement should be based on a common**

understanding of the Achievement Level Descriptions.

14. When the group has completed their second ratings, collect the rating forms. When you collect the rating forms carefully inspect them to ensure they are filled out properly.
    a. **The round number and panelist ID number must be filled in**.
    b. **The item numbers identifying each cut score must be adjacent**.
    c. Check each panelist's rating form before you allow them to leave for a short break.
    d. When all the rating forms have been collected, the group will take a break. Immediately bring the rating forms to the R&A work room for tabulation.

- Tabulation of Round 2 Results

Round 2 results will be tabulated as soon as possible upon receipt of the rating forms.

- Round 3

Overview of Round 3: In Round 3, the panelists will discuss their Round 2 ratings as a whole group and have another opportunity to revise their ratings on the basis of that discussion. Again, they will discuss their ratings in the context of the ratings made by other members of the group.

To aid with the discussion, a psychometrician **may** present impact data to each group (this decision will be made at the standard-setting meeting). The impact data shows the approximate percentage of students across the three states that would be classified into each achievement level category based on the room average bookmark placements from Round 2.

Once panelists have reviewed and discussed their bookmark placements, they will be given the opportunity to revise their Round 2 ratings.

Activities:

1. Make sure panelists have the following materials:
    a. The Round 3 rating forms
    b. Ordered item booklets
    c. Item maps
    d. Achievement Level Descriptions

2. Have panelists write round number 3 and their ID number on the rating form.

3. A psychometrician will present and explain the average bookmark placement for the whole group based on the Round 2 ratings. Again, based on their Round 2 ratings, panelists will know where they fall relative to the group average. The psychometrician **may** also present impact data, showing the approximate percentage of students across the three states that would be classified into each achievement level category based on the room average bookmark placements from Round 2.

4. Provide an overview of Round 3. Paraphrase the following:
    a. As in Rounds 1 and 2, the primary purpose is to place bookmarks where you feel the achievement levels are best distinguished, considering the additional information and further discussion.

    b. Each panelist needs to base his/her judgments on his/her experience with the content area, understanding of students, the definitions of the borderline students generated

previously, discussions with other panelists and the knowledge, skills, and abilities required to answer each item.

5. Panelists should be given a few minutes to review the Round 2 average cut points and impact data (if presented).

6. Once they have reviewed the materials, the panelists will discuss their Round 2 ratings, beginning with the first cut point.
    a. The discussion should focus on differences in where individual panelists placed their cutpoints.

    b. Panelists should be encouraged to listen to their colleagues as well as express their own points of view.

    c. If the panelists hear a logic/rationale/argument that they did not consider and that they feel is compelling, then they may adjust their ratings to incorporate that information.

    d. On the basis of the discussions and the feedback presented, panelists should make a third round of ratings.

    e. When placing their Round 3 bookmarks, panelists should not feel compelled to change their ratings.

    f. The group does not have to achieve consensus. If panelists honestly disagree, that is fine. We are trying to get the best judgment of each panelist. Panelists should not feel compelled or coerced into making a rating they disagree with.

    Encourage the panelists to use the discussion and feedback to assess how stringent or lenient a judge they are. If a panelist is consistently higher or lower than the group, they may have a different understanding of the borderline student than the rest of the group, or a different understanding of the Achievement Level Definitions, or both. **It is O.K. for panelists to disagree, but that disagreement should be based on a common understanding of the Achievement Level Definitions.**

7. When the group has completed their third round of ratings, collect the rating forms. When you collect the rating forms **carefully inspect them** to ensure they are filled out properly.
    a. **The round number and panelist ID number must be filled in**.
    b. **The item numbers identifying each cut score must be adjacent**.
    c. Immediately provide the completed rating forms to R&A. The panelists will not see the results from this round.

- Complete Evaluation Form

Upon completion of Round 3, have panelists fill out the evaluation form. Emphasize that their honest feedback is important.

APPENDIX E: NECAP STANDARD SETTING GENERAL DIRECTIONS FOR GROUP FACILITATORS - WRITING –

NECAP Grade 11 Writing
Standards Validation

Procedures for Writing Standards Validation Panel Meetings

1.) Introductions, purpose of standards validation panel meeting, and overview of the writing test design (Tim) **~15-30 minutes**

2.) Discussion of the five (5) writing scoring rubrics for grade 11. The common prompt this year is "Response to Informational Text", the rubrics for "Response to Literary Text", "Reflective Essay", "Persuasive Essay", "Report", and "Procedure" will also be reviewed and discussed. Each rubric is essentially the same, with some bullets specific to the type of writing. (DOE content specialists) **~30 minutes**

3.) Discussion of common prompt anchor papers and scores assigned to the papers. Intent of this section is to ensure that panelists are comfortable with the scoring process and understand the relationship between the rubrics and student work. (DOE Content Specialists) **~45 minutes**

> Note to Specialists: We've packaged all of the anchor papers and will let you choose the ones you want to highlight (total of 14 papers, two per score point).

4.) Overview and discussion of the general NECAP grade 11 Achievement Level Descriptors. These are the descriptors that were used during teacher judgment ratings. (Tim) **~15 minutes**

5.) Overview of achievement level definitions and cut scores. Explanation of the process and steps taken by state content specialists to arrive at the starting achievement level definitions, which will be validated by the panelists. (Tim) **~5 minutes**

> Note to Specialists: This will be a very short description connecting the rubric language to the general descriptors.

6.) Rationale for the starting cut points and current achievement level definition based on the descriptions contained in the rubrics. The starting cuts are as follows:
   - Substantially Below Proficient/Partially Proficient = 3/4,
   - Partially Proficient/Proficient = 6/7,
   - Proficient/Proficient with Distinction = 9/10.

   Panelists will discuss the rationale for the cuts and the details of the definitions and may propose alternatives—with rationale. The common anchor papers and rubrics from Step #3 will help guide discussion. Notes of discussion will be recorded. (DOE Content Specialists) **~30-45 minutes**

> Note to Specialists: This should be around lunch time.

7.) Panelists will take 5-7 minutes to write to the common prompt. This will help familiarize them with the prompt and understand how students may have answered. Next, panelists will examine of a set of student responses from the common prompt. This set will consist of approximately 16 papers distributed across the score range 2-12. (For example, a possible score distribution is 1 each for score points 2-4, 2 papers each for score points 5-9, and 1 paper each for score points 10-12.) The papers will be rank ordered lowest to highest, labeled with letters as an identifier, and will **not** have scores displayed.

Note to Specialists: You'll be picking these this afternoon on your call with Amanda.

- Panelists will be asked to read through the papers and place them in each of the 4 achievement levels. Does this level of work fit the description of proficiency in the definition? Panelists will use a rating form similar to one for a Body of Work standard setting.
- The facilitator will tally the panelists' placements and present the results to the group. Group discussion will focus on disagreements regarding the achievement level for specific papers. Discussion will be focused in reference to the rubric. Group consensus is not needed.
- The group will then be told the scores of each paper, so as not to influence their first rating and discussion. Panelists will then do a second rating of the set of papers.
- This *should* bring the group to the end of day one. **3-3 ½ hours**

8.) Examination of student responses from the matrix prompts one at a time. This set of responses will consist of 11 papers across the 2-12 score range. This set will display the score for each paper. Panelists repeat step 7 for each of the 5 prompts. **~45-60 minutes per prompt**

9.) Final discussion at the end of the process across all prompts. Final rating of the achievement level definition (cut scores). **~30 minutes**

<u>Selection of student work samples</u>
Common prompt: papers for even score points will be selected from the scoring training pack since these have already been approved by the DOE. (The anchor papers will have already been used in step 3). Papers for odd score points (adjacent scores when double scored) will be identified by R&A. A selection will be made by Measured Progress and sent to the DOE content specialists for approval. The selection will include MP's recommendations and extra papers in case the DOE is in disagreement. A chart will be provided to organize the papers and facilitate discussion.

Matrix prompts: papers for even score points will be selected from the anchor pack and training pack, if necessary. Odd score points will be selected in the same way as the common prompt.

Measured Progress will send the selected odd score point papers to the DOE content specialists on January 2 (for delivery January 3). A conference call will be held on January 4th to come to agreement on which papers will be used.

<u>Schedule</u>
The DOE content specialists will meet at Measured Progress the afternoon of January 8th to finalize their role as facilitators. They will also meet with Tim at 7:30AM on January 9th.

January 9th: The entire group will start together at 9:00AM for a quick welcome and overview. The writing group will leave to start their work, while the reading and mathematics panelists stay for training on the bookmark method. Work will end around 4:00-4:30PM

January 10th: Work will start at 8:30AM., and the day should conclude by 4:00PM.

APPENDIX F: NECAP STANDARD SETTING GRADE 11 RATING FORM - READING/MATHEMATICS -

NECAP Reading Grade 11
Rating Form

Round _____

ID _____

Substantially Below Proficient Ordered Item Numbers	**Partially Proficient** Ordered Item Numbers	**Proficient** Ordered Item Numbers	**Proficient with Distinction** Ordered Item Numbers
First 1	First ____	First ____	First ____
Last ____	Last ____	Last ____	Last 52

<u>Directions</u>: Please enter the range of ordered item numbers that fall into each achievement level category according to where you placed your cutpoints.

<u>Note</u>: The ranges must be adjacent to each other. For example: Substantially Below Proficient: 1-13, Partially Proficient: 14-26, Proficient: 27-39, Proficient with Distinction: 40-52.

NECAP Mathematics Grade 11
Rating Form

Round _____

ID _____

Substantially Below Proficient Ordered Item Numbers	**Partially Proficient** Ordered Item Numbers	**Proficient** Ordered Item Numbers	**Proficient with Distinction** Ordered Item Numbers
First 1	First ____	First ____	First ____
Last ____	Last ____	Last ____	Last 64

<u>Directions</u>: Please enter the range of ordered item numbers that fall into each achievement level category according to where you placed your cutpoints.

<u>Note</u>: The ranges must be adjacent to each other. For example: Substantially Below Proficient: 1-16, Partially Proficient: 17-32, Proficient: 33-48, Proficient with Distinction: 49-64.

APPENDIX G: NECAP GRADE 11 FINAL WRITING RUBRICS

Grade 11 Writing Rubric - Response to Literary or Informational Text

6
• purpose is clear throughout; strong focus/controlling idea OR strongly stated purpose focuses the writing • intentionally organized for effect • fully developed details; rich and/or insightful elaboration supports purpose • distinctive voice, tone, and style enhance meaning • consistent application of the rules of grade-level grammar, usage, and mechanics

5
• purpose is clear; focus/controlling idea is maintained throughout • well-organized and coherent throughout • details are relevant and support purpose; details are sufficiently/purposely elaborated • strong command of sentence structure; uses language to enhance meaning • consistent application of the rules of grade-level grammar, usage, and mechanics

4
• purpose is evident; focus/controlling idea may not be maintained • generally organized and coherent • details are generally relevant and appropriately developed • well-constructed sentences; uses language well • may have some errors in grammar, usage, and mechanics

3
• writing has a general purpose • some sense of organization; may have lapses in coherence • some relevant details support purpose • uses language adequately; may show little variety of sentence structures • may have some errors in grammar, usage, and mechanics

2
• attempted or vague purpose • attempted organization; lapses in coherence • generalized, listed, or undeveloped details • may lack sentence control or may use language poorly • may have errors in grammar, usage, and mechanics that interfere with meaning

1
• minimal evidence of purpose • little or no organization • minimal or random information • rudimentary or deficient use of language • may have errors in grammar, usage, and mechanics that interfere with meaning

0
• response is totally incorrect or irrelevant

Grade 11 Writing Rubric – Reflective Essay

6
• purpose and context are engaging • intentionally organized, with a progression of ideas • analyzes a condition or situation using rich and insightful elaboration • distinctive voice, tone, and style enhance meaning • consistent application of the rules of grade-level grammar, usage, and mechanics

5
• purpose and context are clear • well organized and coherent throughout, with a progression of ideas • analyzes a condition or situation using meaningful details/elaboration • uses language effectively; uses a variety of sentence structures • consistent application of the rules of grade-level grammar, usage, and mechanics

4
• purpose and context are evident • generally organized and coherent • explains a condition or situation using relevant details • uses language adequately; uses correct sentence structures • may have some errors in grammar, usage, and mechanics

3
• writing has a general purpose • some sense of organization; may have lapses in coherence • addresses a condition or situation; some relevant details support purpose • uses language adequately; may show little variety of sentence structures • may have some errors in grammar, usage, and mechanics

2
• attempted or vague purpose • attempted organization; lapses in coherence • may state a condition or situation; generalized, listed, or undeveloped details • may lack sentence control or may use language poorly • may have errors in grammar, usage, and mechanics that interfere with meaning

1
• minimal evidence of purpose • little or no organization • few or random details • rudimentary or deficient use of language • may have errors in grammar, usage, and mechanics that interfere with meaning

0
• response is totally irrelevant

Grade 11 Writing Rubric –Report Writing

6
• purpose is clear throughout; strong focus/controlling idea OR strongly stated purpose focuses the writing • intentionally organized for effect • fully developed details, rich and/or insightful elaboration supports purpose • distinctive voice, tone, and style enhance meaning • consistent application of the rules of grade-level grammar, usage, and mechanics

5
• purpose is clear; focus/controlling idea is maintained throughout • well organized and coherent throughout • details are relevant and support purpose; details are sufficiently elaborated • strong command of sentence structure; uses language to enhance meaning • consistent application of the rules of grade-level grammar, usage, and mechanics

4
• purpose is evident; focus/controlling idea may not be maintained • generally organized and coherent • details are relevant and mostly support purpose • well-constructed sentences; uses language well • may have some errors in grammar, usage, and mechanics

3
• writing has a general purpose • some sense of organization; may have lapses in coherence • some relevant details support purpose • uses language adequately; may show little variety of sentence structures • may have some errors in grammar, usage, and mechanics

2
• attempted or vague purpose • attempted organization; lapses in coherence • generalized, listed, or undeveloped details • may lack sentence control or may use language poorly • may have errors in grammar, usage, and mechanics that interfere with meaning

1
• minimal evidence of purpose • little or no organization • random or minimal details • rudimentary or deficient use of language • may have errors in grammar, usage, and mechanics that interfere with meaning

0
• response is totally incorrect or irrelevant

Grade 11 Writing Rubric – Persuasive Writing

6
• purpose/position is clear throughout; strong focus/position; OR strongly stated purpose/opinion focuses the writing • intentionally organized for effect • fully developed arguments and reasons; rich, insightful elaboration supports purpose/opinion • distinctive voice, tone, and style effectively support position • consistent application of the rules of grade-level grammar, usage, and mechanics

5
• purpose/position is clear; stated focus/opinion maintained consistently throughout • well organized and coherent throughout • arguments/reasons are relevant and support purpose/opinion; arguments/reasons are sufficiently elaborated • strong command of sentence structure; uses language to support position • consistent application of the rules of grade-level grammar, usage, and mechanics

4
• purpose/position and focus are evident, but may not be maintained • generally well organized and coherent • arguments are appropriate and mostly support purpose/opinion • well-constructed sentences; uses language well • may contain some errors in grammar, usage, and mechanics

3
• purpose/position may be general • some sense of organization; may have lapses in coherence • some relevant details support purpose; arguments are thinly developed • generally correct sentence structure; uses language adequately • may contain some errors in grammar, usage, and mechanics

2
• attempted or vague purpose/position • attempted organization; lapses in coherence • generalized, listed, or undeveloped details/reasons • may lack sentence control or may use language poorly • may have errors in grammar, usage, and mechanics that interfere with meaning

1
• minimal evidence of purpose/position • little or no organization • random or minimal details • rudimentary or deficient use of language • may have errors in grammar, usage, and mechanics that interfere with meaning

0
• response is totally irrelevant

Grade 11 Writing Rubric –Procedure

Text features can serve as organizational devices or as details that enhance meaning.

6
• purpose and context are clear; strong focus/controlling idea maintained throughout • intentionally organized for effect • fully developed details and elaborated steps support purpose • distinctive voice, tone, and style enhance reader's understanding • consistent application of the rules of grade-level grammar, usage, and mechanics

5
• purpose and context are clear; focus/controlling idea is maintained throughout • well organized and coherent throughout • details are relevant and support purpose; steps are sufficiently explained • precise word choice; sentence structure/phrasing is appropriate • consistent application of the rules of grade-level grammar, usage, and mechanics

4
• purpose and context are evident; • generally organized and coherent • details are relevant, clear, and mostly support purpose; steps are explained • specific word choice; sentence structure/phrasing is appropriate • may have some errors in grammar, usage, and mechanics

3
• purpose is general • some sense of organization; may have lapses in coherence • some relevant details support purpose; some steps are identified • may use nonspecific language; sentences/ phrases may be unclear • may have some errors in grammar, usage, and mechanics

2
• attempted or vague purpose • attempted organization; lapses in coherence • generalized, list or undeveloped details; may identify steps • may use language poorly; sentence/phrasing may cause confusion • may have errors in grammar, usage, and mechanics that interfere with meaning

1
• minimal evidence of purpose • little or no organization • random or minimal details • rudimentary or deficient use of language • may have errors in grammar, usage, and mechanics that interfere with meaning

0
• response is totally incorrect or irrelevant

APPENDIX H: NECAP STANDARD SETTING GRADE 11 RATING FORMS -WRITING ROUNDS 1 AND 2 -

NECAP WRITING GRADE 11
Rating Form

Common Prompt: *Working*

ID _____

	Round 1				Round 2			
	SBP	**PP**	**P**	**PWD**	**SBP**	**PP**	**P**	**PWD**
A								
B								
C								
D								
E								
F								
G								
H								
I								
J								
K								
L								
M								
N								
O								
P								

APPENDIX I NECAP STANDARD SETTING GRADE 11 RATING FORM -WRITING FINAL ROUND -

NECAP Writing Grade 11
Final Round

ID _____

Starting Cutpoints

Substantially Below Proficient Score Points		**Partially Proficient** Score Points		**Proficient** Score Points		**Proficient with Distinction** Score Points	
First	Last	First	Last	First	Last	First	Last
2	3	4	6	7	9	10	12

Final Round

Directions: Please enter the range of score points that fall into each achievement level category according to where you believe the cutpoints should be placed.

Substantially Below Proficient Score Points		**Partially Proficient** Score Points		**Proficient** Score Points		**Proficient with Distinction** Score Points	
First	Last	First	Last	First	Last	First	Last
2	____	____	____	____	____	____	12

APPENDIX J: NECAP STANDARD SETTING EVALUATION SUMMARIES

NECAP Grade 11 Standard Setting—Mathematics 17 Evaluations completed
January 9-10, 2008
Sheraton Harborside Portsmouth Hotel, Portsmouth, NH

1. **How would you rate the training you received?**

Rating Scale	*Appropriate*	*Somewhat Appropriate*	*Not Appropriate*
Tally	**17**	**0**	**0**

2. **How clear were you with the achievement level definitions?**

Rating Scale	*Very Clear*	*Clear*	*Somewhat Clear*	*Not Clear*
Tally	**8**	**7**	**2**	**0**

3. **How do you feel about the length of time of this meeting for setting achievement standards?**

Rating Scale	*About Right*	*Too little time*	*Too much time*
Tally	**17**	**0**	**0**
Comment: Try to do more on day 1			

4. **What factors influenced the standards you set?**
(Circle the most appropriate rating from 1 = Not at all Influential to 5 = Very Influential)

Rating Scale:	**1**	**2**	**3**	**4**	**5**
The achievement level definitions			**3**	**8**	**6**
The assessment items			**1**	**5**	**11**
Other panelists Comment: Excellent discussions!		**1**	**7**	**8**	**1**
Impact Data	**4**	**2**	**7**	**3**	**1**
My experience in the field			**1**	**4**	**12**
Other *(please explain)*					

or each statement below, please circle the rating that best represents your judgment.

5. **The training was:**

Rating scale	**1** *Not Useful*	**2**	**3**	**4**	**5** *Very Useful*
Tally				**4**	**13**

6. **The achievement level definitions were:**

Rating scale	**1** *Not Clear*	**2**	**3**	**4**	**5** *Very Clear*
Tally		**1**	**5**	**5**	**6**

For each statement below, please circle the rating that best represents your judgment.

7. **Reviewing the assessment materials was:**

Rating scale	**1** *Not Useful*	**2**	**3**	**4**	**5** *Very Useful*
Tally			**1**	**2**	**14**

8. **The discussion with other panelists was:**

Rating scale	**1** *Not Useful*	**2**	**3**	**4**	**5** *Very Useful*
Tally			**1**	**6**	**10**

9. **The standard setting task was:**

Rating scale	**1** *Not Clear*	**2**	**3**	**4**	**5** *Very Clear*
Tally			**2**	**7**	**8**
Comment: Clearer as time went on.					

10. **My level of confidence in setting cut-points is:**

Rating scale	**1** *Very Low*	**2**	**3**	**4**	**5** *Very High*
Tally			**1**	**10**	**5**

*one panelist did not answer

11. **How could the standard setting process have been improved?**

- Some discussions were too long and off-track
- I calibrated with my special-ed chair before coming by looking at student work. (I wanted her perspective, in my mind's eye).
- Change the standards for special-ed. That's a big issue that affects the scores quite a bit.
- Everything was superb.
- If I did it again, it would be much easier.
- Maybe a "mock training" first with pilot data or grade 8 data
- More open process that allows for participants to spend more time with different aspects of the program, (allow more time for discussion or item rating, as needed by individual)
- I'm not sure the process could be improved. The facilitators were fabulous. Everyone was focused on leading us through with a thorough understanding.
- Validation with another, similar group of teachers.
- I would start by setting the cut points for Proficient, then worry about Substantially Below to Partially Proficient later.
- Quickly review the GSEs
- Whipping around to hear quick opinions on different topics from *all* members (some chose not to share)
- A bit more time to talk.
- Reviewing the GSEs before taking the test and setting standards.

12. **Please use the space below to provide any additional comments or suggestions about the standard setting process**

Achievement Level Definitions

- Achievement Level Definitions need measurable benchmarks/goals. They are too subjective in their present form.
- It seemed (very much) as though our feedback on Achievement Level Definitions was not well received or sincerely wanted.
- The Achievement Level Definitions [discussion] should have been typed up and put back to the group before the first run through cut points because our definitions of the 4 "buckets" were not totally clear.

Facilitators/Presenters

- Great group, Phil was fun & a good facilitator.
- Phil was a *great* facilitator, very helpful, informative, and knowledgeable.
- A *very* helpful conference to attend. Interaction with colleagues from my state and other two states is invaluable.
- Phil was terrific in maintaining climate & focus.
- Excellent task facilitator and great moderators from each state.
- People from Measured Progress were extremely professional and informed. I have almost unlimited positive things to say about the people from Measured Progress, they were all awesome.

Other

- Organization of the activities was good.
- Small group & whole group mixtures may be rich.
- A *very* helpful conference to attend.
- Interaction with colleagues from my state and other two states is invaluable.
- I would encourage more people to become involved in the process.
- Excellent accommodations.
- Good test, besides the special-ed issue, I think things are going in the right direction. We do need teachers that are qualified and do their job correctly.

NECAP Grade 11 Standard Setting—Reading - 15 Evaluations completed
January 9-10, 2008
Sheraton Harborside Portsmouth Hotel, Portsmouth, NH

1. **How would you rate the training you received?**

Rating Scale	*Appropriate*	*Somewhat Appropriate*	*Not Appropriate*
Tally	**15**		

2. **How clear were you with the achievement level definitions?**

Rating Scale	*Very Clear*	*Clear*	*Somewhat Clear*	*Not Clear*
Tally	**5**	**8**	**2**	

3. **How do you feel about the length of time of this meeting for setting achievement standards?**

Rating Scale	*About Right*	*Too little time*	*Too much time*
Tally	**14**	**1**	

4. **What factors influenced the standards you set?**
(Circle the most appropriate rating from 1 = Not at all Influential to 5 = Very Influential)

Rating Scale:	**1**	**2**	**3**	**4**	**5**
The achievement level definitions		**1**	**3**	**4**	**7**
The assessment items				**8**	**7**
Other panelists			**3**	**10**	**2**
Impact Data		**1**	**6**	**8**	
My experience in the field				**6**	**9**
Other *(please explain)*					

For each statement below, please circle the rating that best represents your judgment.

5. The training was:

Rating scale	**1** *Not Useful*	**2**	**3**	**4**	**5** *Very Useful*
Tally				**6**	**9**

6. The achievement level definitions were:

Rating scale	**1** *Not Clear*	**2**	**3**	**4**	**5** *Very Clear*
Tally			**2**	**8**	**5**
Comment: rated a 4 only after our elaboration of the definitions					

For each statement below, please circle the rating that best represents your judgment.

7. Reviewing the assessment materials was:

Rating scale	**1** *Not Useful*	**2**	**3**	**4**	**5** *Very Useful*
Tally				**1**	**14**

8. The discussion with other panelists was:

Rating scale	**1** *Not Useful*	**2**	**3**	**4**	**5** *Very Useful*
Tally			**1**	**4**	**10**

9. The standard setting task was:

Rating scale	**1** *Not Clear*	**2**	**3**	**4**	**5** *Very Clear*
Tally			**2**	**9**	**4**

10. My level of confidence in setting cut-points is:

Rating scale	**1** *Very Low*	**2**	**3**	**4**	**5** *Very High*
Tally			**1**	**12**	**2**

11. How could the standard setting process have been improved?

- Perhaps matching the items with our elaboration of the Achievement Level Definitions. (Although, I understand that this might have been too time consuming).
- I'd like to see the data while making my bookmarks.
- I was unclear about the big picture and what was expected of me.
- I think a clearer outline of the tasks would have been helpful prior to beginning the process. I was very confused about how the bookmark process worked, however it did become clear over time.
- People need more information up front, before attending and at the beginning of the process, the big picture.
- Up front outline off entire process, maybe a rough outline of time frame to keep discussion focused.
- Fewer tangential conversations, discussions, and arguments which were not relevant to the task.
- Fewer people coming in and out of the room.
- Process went very smoothly. David was very diplomatic as a facilitator and did an excellent job clarifying what was sometimes a gray area.
- Facilitators needed to respect the situation and not talk (even in whispers) during the time we were taking the test.
- Reduce noise from adjacent room (3 comments)

12. Please use the space below to provide any additional comments or suggestions about the standard setting process

Process

- Keep one test the whole time
- There should be an outlet for discussion of test items. Very frustrating and unnatural to push it out of discussion.
- I would have liked to have seen an item-by-item analysis of students' performance on all 52 questions (percentages of right/wrong for MC items or 1-4 score percentages on CR items)
- It would be interesting to see how we would rank the skill difficulty of the items with how the students actually performed.

Involvement in standard setting

- I was very happy to have participated in the standard setting process.
- Very interesting professionally.
- This process was extremely helpful to me as an educator. One crucial piece of information that I now have is the way that data is used to assess my students.
- Overall I really enjoyed the process and am looking forward to hearing the results. I appreciate that classroom teachers are so actively involved.

Other

- David did an excellent job leading us through the process.
- Our instructor needed to stop discussions that were getting off task. Too much time spent arguing the test itself.
- Accommodations were lovely
- The venue and support were outstanding.
- Less noisy setting.
- Closer proximity of participants when discussing
- Less interruptions during meetings (fewer people entering /leaving, i.e. observers)
- People were friendly and the professionals extremely knowledgeable.

NECAP Grade 11 Standard Setting –Writing - 16 Evaluations completed
January 9-10, 2008
Sheraton Harborside Portsmouth Hotel, Portsmouth, NH

1. **How would you rate the training you received?**

Rating Scale	*Appropriate*	*Somewhat Appropriate*	*Not Appropriate*
Tally	**15**	**1**	

2. **How do you feel about the length of time of this meeting for setting achievement standards?**

Rating Scale	*About Right*	*Too little time*	*Too much time*
Tally	**14**		**2**
Comments: Time within the 2 days could have been better structured. (rated *About Right*) Day 2 process should be set up so there is less waiting around. (rated *Too much time*)			

3. **What factors influenced the standards you set?**
(Circle the most appropriate rating from 1 = Not at all Influential to 5 = Very Influential)

Rating Scale:	**1**	**2**	**3**	**4**	**5**
The achievement level definitions				**7**	**9**
The writing prompts *one panelist did not answer	**1**		**5**	**7**	**2**
The student responses			**1**	**6**	**9**
Other panelists	**3**	**1**	**8**	**4**	
My experience in the field				**6**	**10**
Other *(please explain)*			**1**		**1**
Explanations of *Other* ratings: 3 = The rubrics 5 = Grade 11 writing rubric, because it is the standard for what is best and what is not acceptable. Helped me gauge writing quality. Other comment (with no rating): the group process					

For each statement below, please circle the rating that best represents your judgment.

4. **The training was:**

Rating scale	**1** *Not Useful*	**2**	**3**	**4**	**5** *Very Useful*
Tally				**6**	**10**

5. **The scoring rubrics were:**

Rating scale	**1** *Not Clear*	**2**	**3**	**4**	**5** *Very Clear*
Tally			**1**	**3**	**12**

For each statement below, please circle the rating that best represents your judgment.

6. **Reviewing the assessment materials was:**

Rating scale	**1** *Not Useful*	**2**	**3**	**4**	**5** *Very Useful*
Tally				**6**	**10**

7. **The discussion with other panelists was:**

Rating scale	**1** *Not Useful*	**2**	**3**	**4**	**5** *Very Useful*
Tally			**2**	**5**	**9**

8. **The standard setting task was:**

Rating scale	**1** *Not Clear*	**2**	**3**	**4**	**5** *Very Clear*
Tally			**2**	**5**	**9**
Comment: became more so as we progressed (rated 4)					

9. **My level of confidence in setting cut-points is:**

Rating scale	**1** *Very Low*	**2**	**3**	**4**	**5** *Very High*
Tally			**3**	**11**	**2**

10. How could the standard setting process have been improved?

<u>Process</u>
- Do not give the scores or rank the papers, it really influenced the work. (5 comments)
- Downtime, waiting between matrix pieces feels wasted. (3 comments)
- Consider not giving in advance what the ELA folks had set for their cut points. I feel like it may have influenced the group.
- By doing 4 essays on day 2 I really lost steam.
- It was clearly explained, executed efficiently, and gave us the sense that what we think matters. In short, little needs improvement.
- I felt the time allotted for each task was sufficient.
- Spacing/enough time to do task and more breaks to rest/refresh.

<u>Scoring</u>
- It seems that discrepancies in scores could have been discussed further to glean the reasons between the various scores. Allow more discussion in this area.
- I would spend more time on authentic scoring rather than providing the scores while we read the pieces. It biases the reader.

Other
- I felt Measured Progress really tried to hear and answer our concerns.
- Talk at meals helped make me feel comfortable with others so I could share my opinions in sessions.
- Some discussions went on too long
- Would have like to have the schedule before coming
- Impressed with the whole process. The info and work done prior to our meeting was well thought out and professional and grounded in the right values to challenge and support good student learning and promote the process we came here for.
- The very loud fan made it difficult to hear comments from some folks across the room.

11. Please use the space below to provide any additional comments or suggestions about the standard setting process

Cut points and Process
- I am still uncomfortable with 7 as a cut score for proficient. I would be more comfortable with a definition corresponding to a score point—even if it were 3.5
- While I understand that ours is not the only factor in determining the cut points, the facilitator's comments about the process have led me to feel that we are merely validating points that have already been a t least mentally established by Measured Progress. I've not been pressured to change my rating, but I've been given the impression that I also won't influence the decision that will be made (at least not much).
- Some concern over the Partially Proficient and Proficient cut. If this were *only* about improving students skills, then it would be fine. However, we all know the repercussions of poor test scores. Perhaps erring on the side of generosity would help the big picture and not really hurt the students' progress.
- Do this *before* papers are scored.
- Provide work samples/prompts for participants to bring back to their schools/districts

Overall concerns
- My concern goes back to the scoring that was already completed before we came to this task. Just with the number of pieces we saw, several of us saw papers "on the cusp". In some cases, that 6/7 rated piece could be making/breaking a school district. With the stakes so high, I'm still not completely comfortable with scoring. I appreciate Linda's [NH DOE] explanation, and I trust her, but I'm still uneasy.
- I hope the DOE folks from the three states will hear our concerns about what may influence the way students prepare for and see the test. Teachers' language in the classroom (prompt vs task, essay vs response) will be lenses for how students tackle assignments. The language of John Collins, Nancy Atwell, Peter Elbow (sp?) impacts how teachers teach and students respond.
- We have heard repeatedly that NECAP is a snapshot, and no where is this more applicable than in the writing portion. Continue to stress this point in all discussions of results with state and local education officials. It's imperative that parents and press understand this fact.
- Work on the word "prompt"

Facilitators and facility
- The facilitators were excellent and I enjoyed working with them.
- Tim did a fantastic job of leading us all through quite a complicated process.
- I applaud the work of the representatives from the three states.
- MP staff was friendly and very helpful.
- The facility was outstanding.

Other

- This was a valuable experience for me and I enjoyed it.
- Thank you for believing that classroom teachers actually have something valuable to contribute to the process.
- Interesting, helped me understand the NECAP testing process and scoring. I will be armed with this new found knowledge when I assess my classroom instruction.
- I have never participated in an exercise quite like this, but I feel as though the process was valid.
- Have more SPED folks involved.
- Overall this was a useful experience.
- I attended standard setting for grade 8 and had a terrible go of it. This was *much better*. We had clear directions and a clear task. I really enjoyed the process.

APPENDIX K: NECAP STANDARD SETTING PANELISTS

New Hampshire

Reading

First Name	Last Name	School/Association Affiliation	Position
Susan	Dean-Olsen	Kingswood Regional High School	English Language Arts Teacher/Coordinator
Jack	Finley	Franklin High School	English Language Arts Teacher
Joanne	O'Connor	Pinkerton Academy	Special Education Teacher
Jeanne	Provender	Nashua (retired)	English Language Arts Teacher
Chris	Saunders	Nashua High School	English Language Arts Teacher
Michael	Williamson	Hollis/Brookline High School	English Language Arts Teacher

Mathematics

First Name	Last Name	School/Association Affiliation	Position
Linda	Belmonte	Bedford High School	Dean
Tracy	Bricchi	Kearsarge School District	Mathematics Coordinator
Marina	Capen	Souhegan High School	Mathematics Teacher
Robert	Comey	Memorial High School	Mathematics Teacher
Matt	Cygan	Memorial High School	Mathematics Teacher
Rob	Lukasiak	Independent Consultant	Mathematics Consultant for CEIL

Writing

First Name	Last Name	School/Association Affiliation	Position
Carrie	Costello	Conway High School	English Language Arts Teacher
Kim	Lindley-Soucy	Londonderry High School	English Language Arts Curriculum Coordinator
Meg	Petersen	Plymouth University	Plymouth Writing Project
Jean	Shankle	Milford High School	English Language Arts Teacher
Ruth Ellen	Vaughn	Farmington	English Language Arts Curriculum Coordinator
Ann	West	Pinkerton Academy	English Department Chair

Rhode Island

Reading

First Name	Last Name	School/Association Affiliation	Position
Patricia	Armstrong	East Providence High School	Department Chair
Jill	Burke	Chariho High School	English Language Arts Teacher
Jean	Dietrich	Community College of Rhode Island	English Language Arts Teacher
Rebecca	Moore	Mt. Hope High School	English Language Arts Teacher
Sharon	Solway	Mt. Hope High School	English Language Learner Teacher

Mathematics

First Name	Last Name	School/Association Affiliation	Position
Michelle	Brousseau-Cavallaro	East Providence High School	Department Chair
Linda	Curtin	Hope Arts High School	Mathematics Teacher
Jean	Mollicone	Mt. Hope High School	Department Chair
Suzanne	Ross Walker	Woonsocket High School	AP Calculus Teacher
Monique	Rousselle-Condon	West Warwick High School	Mathematics Teacher

Writing

First Name	Last Name	School/Association Affiliation	Position
David	Groccia	North Providence High School	English Language Arts Teacher
Emmanuel	Vincent	E-Cubed Academy	Special Education Teacher
Jeff	Miner	Toll Gate High School	Department Chair
David	Schofield	Lincoln Senior High School	Department Chair

Vermont

Reading

First Name	Last Name	School/Association Affiliation	Position
Alan	Crowley	Missisquoi Valley Union	English Language Arts Teacher and Department Leader
Sue	Boardman	Brattleboro Union High School	English Language Arts Teacher
Colleen	Fiore	Long Trail School	English Language Arts Teacher and Special Services Director
Sandy	Frizzell	North Country Union High School	English Language Arts Teacher
Katie	Lenox	Colchester High School	English Language Arts Teacher
Marilyn	Woodard	Mt. Anthony Union High School	English Language Arts Teacher and Department Chair

Mathematics

First Name	Last Name	School/Association Affiliation	Position
Laurie	Camelio	Mt. Anthony Union High School	Mathematics Teacher and Department Chair
Mike	Caraco	Burr and Burton Academy	Mathematics Teacher and Department Chair
Nancy	Disenhaus	U-32 High School	English Language Arts Teacher
Sharon	Fadden	Danville High School	Mathematics Teacher
Erik	Jacobson	Windham Northeast Supervisory Union	Mathematics Teacher
John	Pandolfo	Spaulding High School	Mathematics Teacher & Department Head

Writing

First Name	Last Name	School/Association Affiliation	Position
Teri	Appel	Brattleboro Union High School	English Language Arts Teacher and Literacy Network Leader
Renee	Berthiaume	North Country Union High School	Literacy Coach & Language Arts Department Liaison
Erin	McGuire	Colchester High School	English Humanities Teacher
Peter	Riegelman	St. Albans	English Language Arts Teacher
Susan	Soltau	Essex High School	Mathematics Teacher & Co-chair Mathematics Department

APPENDIX G—RAW TO SCALED SCORE CONVERSIONS

Table G-1. 2007-08 NECAP Scale Conversion: Math Grade 3.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	300	300	310	1
1	-4.00	300	300	310	1
2	-4.00	300	300	310	1
3	-4.00	300	300	310	1
4	-4.00	300	300	310	1
5	-4.00	300	300	310	1
6	-4.00	300	300	309	1
7	-4.00	300	300	308	1
8	-3.67	304	300	311	1
9	-3.37	307	301	313	1
10	-3.13	309	303	315	1
11	-2.92	312	307	317	1
12	-2.74	313	308	318	1
13	-2.58	315	311	320	1
14	-2.44	317	313	321	1
15	-2.30	318	314	322	1
16	-2.18	320	316	324	1
17	-2.07	321	317	325	1
18	-1.96	322	318	326	1
19	-1.86	323	320	326	1
20	-1.76	324	321	327	1
21	-1.67	325	322	328	1
22	-1.58	326	323	329	1
23	-1.49	327	324	330	1
24	-1.41	328	325	331	1
25	-1.33	329	326	332	1
26	-1.25	329	326	332	1
27	-1.18	330	327	333	1
28	-1.10	331	328	334	1
29	-1.03	332	329	335	2
30	-0.96	333	330	336	2
31	-0.89	333	330	336	2
32	-0.82	334	331	337	2
33	-0.75	335	332	338	2
34	-0.68	336	333	339	2
35	-0.61	336	333	339	2
36	-0.54	337	334	340	2
37	-0.47	338	335	341	2
38	-0.41	338	337	342	2
39	-0.34	339	337	342	2

(cont'd)

Table G-1. 2007-08 NECAP Scale Conversion: Math Grade 3 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
40	-0.27	340	338	343	3
41	-0.20	341	338	344	3
42	-0.13	342	339	345	3
43	-0.06	342	339	345	3
44	0.01	343	340	346	3
45	0.09	344	341	347	3
46	0.16	345	342	348	3
47	0.24	345	342	348	3
48	0.32	346	343	349	3
49	0.40	347	344	350	3
50	0.48	348	345	351	3
51	0.56	349	346	352	3
52	0.65	350	347	353	3
53	0.75	351	348	354	3
54	0.85	352	349	355	3
55	0.96	352	349	355	3
56	1.07	354	351	357	4
57	1.20	356	353	359	4
58	1.34	357	353	361	4
59	1.50	359	355	363	4
60	1.68	361	357	365	4
61	1.90	363	358	368	4
62	2.19	366	360	372	4
63	2.58	371	364	378	4
64	3.23	378	368	380	4
65	4.00	380	370	380	4

Table G-2. 2007-08 NECAP Scale Conversion: Math Grade 4.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	400	400	400	1
1	-4.00	400	400	400	1
2	-4.00	400	400	400	1
3	-4.00	400	400	400	1
4	-4.00	400	400	400	1
5	-4.00	400	400	404	1
6	-4.00	400	400	408	1
7	-3.80	402	400	411	1
8	-3.42	406	400	413	1
9	-3.13	410	404	416	1
10	-2.90	412	407	417	1
11	-2.71	414	409	419	1
12	-2.54	416	411	421	1
13	-2.39	418	414	422	1
14	-2.25	419	415	423	1
15	-2.13	421	417	425	1
16	-2.02	422	418	426	1
17	-1.91	423	419	427	1
18	-1.81	424	421	428	1
19	-1.71	425	422	428	1
20	-1.62	426	423	429	1
21	-1.53	427	424	430	1
22	-1.45	428	425	431	1
23	-1.36	429	426	432	1
24	-1.28	430	427	433	1
25	-1.21	430	427	433	1
26	-1.13	432	429	435	2
27	-1.06	432	429	435	2
28	-0.99	433	430	436	2
29	-0.92	434	431	437	2
30	-0.85	435	432	438	2
31	-0.78	436	433	439	2
32	-0.71	436	433	439	2
33	-0.64	437	434	440	2
34	-0.58	438	435	441	2
35	-0.51	439	436	442	2
36	-0.44	439	436	442	2
37	-0.38	439	436	442	2

(cont'd)

Table G-2. 2007-08 NECAP Scale Conversion: Math Grade 4 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
38	-0.31	441	438	444	3
39	-0.25	441	438	444	3
40	-0.18	442	439	445	3
41	-0.11	443	440	446	3
42	-0.04	444	441	447	3
43	0.02	444	441	447	3
44	0.09	445	442	448	3
45	0.17	446	443	449	3
46	0.24	447	444	450	3
47	0.31	448	445	451	3
48	0.39	448	445	451	3
49	0.47	449	446	452	3
50	0.55	450	447	453	3
51	0.64	451	448	454	3
52	0.73	452	449	455	3
53	0.82	453	450	456	3
54	0.92	454	451	457	3
55	1.03	456	453	459	4
56	1.14	457	454	461	4
57	1.27	458	454	462	4
58	1.41	460	456	464	4
59	1.57	462	458	466	4
60	1.75	464	460	469	4
61	1.97	466	461	471	4
62	2.25	469	463	475	4
63	2.64	473	466	480	4
64	3.30	480	470	480	4
65	4.00	480	470	480	4

Table G-3. 2007-08 NECAP Scale Conversion: Math Grade 5.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	500	500	510	1
1	-4.00	500	500	510	1
2	-4.00	500	500	510	1
3	-4.00	500	500	510	1
4	-4.00	500	500	510	1
5	-4.00	500	500	510	1
6	-4.00	500	500	510	1
7	-3.51	505	500	515	1
8	-2.99	511	504	519	1
9	-2.63	515	509	521	1
10	-2.35	518	513	524	1
11	-2.13	520	515	525	1
12	-1.94	522	517	527	1
13	-1.77	524	520	528	1
14	-1.62	526	522	530	1
15	-1.48	527	523	531	1
16	-1.36	528	524	532	1
17	-1.24	530	526	534	1
18	-1.13	531	528	535	1
19	-1.03	532	529	535	1
20	-0.93	532	529	535	1
21	-0.83	534	531	537	2
22	-0.74	535	532	538	2
23	-0.66	536	533	539	2
24	-0.57	537	534	540	2
25	-0.49	538	535	541	2
26	-0.41	539	536	542	2
27	-0.33	539	536	542	2

(cont'd)

Table G-3. 2007-08 NECAP Scale Conversion: Math Grade 5 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
28	-0.26	540	537	543	3
29	-0.18	541	538	544	3
30	-0.11	542	539	545	3
31	-0.04	543	540	546	3
32	0.03	543	540	546	3
33	0.10	544	541	547	3
34	0.17	545	542	548	3
35	0.24	546	543	549	3
36	0.30	546	543	549	3
37	0.37	547	544	550	3
38	0.44	548	545	551	3
39	0.51	549	546	552	3
40	0.58	549	546	552	3
41	0.64	550	547	553	3
42	0.71	551	548	554	3
43	0.78	552	549	555	3
44	0.86	552	549	555	3
45	0.93	553	550	556	3
46	1.00	553	550	556	3
47	1.08	555	552	558	4
48	1.16	555	552	558	4
49	1.23	556	553	559	4
50	1.32	557	554	560	4
51	1.40	558	555	561	4
52	1.49	559	556	562	4
53	1.58	560	557	563	4
54	1.68	561	558	564	4
55	1.78	562	559	565	4
56	1.89	563	560	566	4
57	2.01	565	562	568	4
58	2.14	566	562	570	4
59	2.28	568	564	572	4
60	2.44	569	565	573	4
61	2.62	571	567	575	4
62	2.83	574	569	579	4
63	3.10	576	571	580	4
64	3.46	580	574	580	4
65	4.00	580	571	580	4
66	4.00	580	571	580	4

Table G-4. 2007-08 NECAP Scale Conversion: Math Grade 6.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	600	600	600	1
1	-4.00	600	600	600	1
2	-4.00	600	600	600	1
3	-4.00	600	600	600	1
4	-4.00	600	600	600	1
5	-4.00	600	600	609	1
6	-4.00	600	600	615	1
7	-3.47	606	600	616	1
8	-2.88	612	605	620	1
9	-2.50	616	610	622	1
10	-2.21	619	614	625	1
11	-1.98	621	616	626	1
12	-1.79	623	618	628	1
13	-1.62	625	621	629	1
14	-1.47	627	623	631	1
15	-1.34	628	624	632	1
16	-1.21	630	626	634	1
17	-1.10	631	628	635	1
18	-0.99	632	629	635	1
19	-0.89	632	629	635	1
20	-0.80	634	631	637	2
21	-0.71	635	632	638	2
22	-0.62	636	633	639	2
23	-0.54	637	634	640	2
24	-0.46	637	634	640	2
25	-0.38	638	635	641	2
26	-0.31	639	636	642	2
27	-0.24	639	636	642	2

(cont'd)

Table G-4. 2007-08 NECAP Scale Conversion: Math Grade 6 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
28	-0.17	641	638	644	3
29	-0.10	641	638	644	3
30	-0.03	642	639	645	3
31	0.04	643	641	646	3
32	0.11	644	642	647	3
33	0.17	644	642	647	3
34	0.24	645	643	648	3
35	0.30	646	644	648	3
36	0.37	646	644	648	3
37	0.43	647	645	649	3
38	0.50	648	646	650	3
39	0.56	648	646	650	3
40	0.62	649	647	651	3
41	0.69	650	648	652	3
42	0.75	650	648	652	3
43	0.81	651	649	653	3
44	0.88	652	650	654	3
45	0.94	652	650	654	3
46	1.01	652	650	654	3
47	1.08	654	652	656	4
48	1.15	655	653	657	4
49	1.22	655	653	658	4
50	1.29	656	654	659	4
51	1.36	657	655	660	4
52	1.44	658	655	661	4
53	1.52	658	655	661	4
54	1.60	659	656	662	4
55	1.69	660	657	663	4
56	1.78	661	658	664	4
57	1.88	662	659	665	4
58	1.99	663	660	666	4
59	2.12	665	662	668	4
60	2.25	666	663	670	4
61	2.42	668	664	672	4
62	2.61	670	666	674	4
63	2.87	673	668	678	4
64	3.23	677	671	680	4
65	3.87	680	670	680	4
66	4.00	680	670	680	4

Table G-5. 2007-08 NECAP Scale Conversion: Math Grade 7.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	700	700	710	1
1	-4.00	700	700	710	1
2	-4.00	700	700	710	1
3	-4.00	700	700	710	1
4	-4.00	700	700	710	1
5	-4.00	700	700	710	1
6	-3.33	707	700	717	1
7	-2.61	714	706	722	1
8	-2.21	718	712	724	1
9	-1.94	721	716	726	1
10	-1.72	723	718	728	1
11	-1.54	725	721	729	1
12	-1.38	727	723	731	1
13	-1.24	728	724	732	1
14	-1.11	729	726	733	1
15	-1.00	731	728	734	1
16	-0.89	732	729	735	1
17	-0.79	733	730	736	1
18	-0.70	734	731	737	2
19	-0.61	735	732	738	2
20	-0.53	735	732	738	2
21	-0.45	736	733	739	2
22	-0.37	737	734	740	2
23	-0.29	738	735	741	2
24	-0.22	739	736	742	2
25	-0.15	739	737	742	2
26	-0.08	739	737	742	2

(cont'd)

Table G-5. 2007-08 NECAP Scale Conversion: Math Grade 7 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
27	-0.02	741	739	743	3
28	0.05	741	739	743	3
29	0.11	742	740	744	3
30	0.17	743	741	745	3
31	0.24	743	741	745	3
32	0.30	744	742	746	3
33	0.36	744	742	746	3
34	0.42	745	743	747	3
35	0.48	746	744	748	3
36	0.54	746	744	748	3
37	0.60	747	745	749	3
38	0.66	748	746	750	3
39	0.72	748	746	750	3
40	0.78	749	747	751	3
41	0.84	749	747	751	3
42	0.91	750	748	752	3
43	0.97	751	749	753	3
44	1.04	751	749	753	3
45	1.11	752	750	754	4
46	1.18	753	751	755	4
47	1.25	754	752	757	4
48	1.32	754	752	757	4
49	1.40	755	752	758	4
50	1.48	756	753	759	4
51	1.56	757	754	760	4
52	1.65	758	755	761	4
53	1.74	759	756	762	4
54	1.84	760	757	763	4
55	1.94	761	758	764	4
56	2.05	762	759	765	4
57	2.17	763	760	766	4
58	2.30	764	761	767	4
59	2.45	766	762	770	4
60	2.62	768	764	772	4
61	2.81	770	766	774	4
62	3.05	772	767	777	4
63	3.36	775	769	780	4
64	3.78	779	772	780	4
65	4.00	780	773	780	4
66	4.00	780	773	780	4

Table G-6. 2007-08 NECAP Scale Conversion: Math Grade 8.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	800	800	810	1
1	-4.00	800	800	810	1
2	-4.00	800	800	810	1
3	-4.00	800	800	810	1
4	-4.00	800	800	810	1
5	-4.00	800	800	810	1
6	-3.79	802	800	812	1
7	-2.50	815	806	824	1
8	-2.00	820	814	827	1
9	-1.69	823	818	828	1
10	-1.47	825	821	830	1
11	-1.29	827	823	831	1
12	-1.15	829	825	833	1
13	-1.02	830	827	833	1
14	-0.91	831	828	834	1
15	-0.81	832	829	835	1
16	-0.72	833	830	836	1
17	-0.63	834	831	837	2
18	-0.56	835	832	838	2
19	-0.48	835	832	838	2
20	-0.41	836	834	839	2
21	-0.34	837	835	839	2
22	-0.28	837	835	839	2
23	-0.21	838	836	840	2
24	-0.15	839	837	841	2
25	-0.09	839	837	841	2
26	-0.04	839	837	841	2

(cont'd)

Table G-6. 2007-08 NECAP Scale Conversion: Math Grade 8 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
27	0.02	840	838	842	3
28	0.07	841	839	843	3
29	0.13	842	840	844	3
30	0.18	842	840	844	3
31	0.24	843	841	845	3
32	0.29	843	841	845	3
33	0.34	844	842	846	3
34	0.39	844	842	846	3
35	0.44	845	843	847	3
36	0.50	845	843	847	3
37	0.55	846	844	848	3
38	0.60	846	844	848	3
39	0.65	847	845	849	3
40	0.70	847	845	849	3
41	0.76	848	846	850	3
42	0.81	848	846	850	3
43	0.87	849	847	851	3
44	0.92	850	848	852	3
45	0.98	850	848	852	3
46	1.03	851	849	853	3
47	1.09	851	849	853	3
48	1.15	852	850	854	4
49	1.21	852	850	854	4
50	1.27	853	851	855	4
51	1.34	854	852	856	4
52	1.40	854	852	856	4
53	1.47	855	853	857	4
54	1.55	856	854	858	4
55	1.62	857	855	859	4
56	1.70	857	855	859	4
57	1.79	858	856	860	4
58	1.88	859	857	862	4
59	1.99	860	857	863	4
60	2.11	861	858	864	4
61	2.24	863	860	866	4
62	2.40	865	862	868	4
63	2.62	867	863	871	4
64	2.92	870	865	875	4
65	3.49	875	867	880	4
66	4.00	880	870	880	4

Table G-7. 2007-08 NECAP Scale Conversion: Math Grade 11.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	1100	1100	1110	1
1	-4.00	1100	1100	1110	1
2	-4.00	1100	1100	1110	1
3	-4.00	1100	1100	1110	1
4	-4.00	1100	1100	1110	1
5	-3.38	1105	1100	1115	1
6	-2.14	1116	1110	1122	1
7	-1.69	1120	1115	1125	1
8	-1.40	1123	1119	1127	1
9	-1.17	1124	1120	1128	1
10	-0.99	1126	1123	1129	1
11	-0.84	1127	1124	1130	1
12	-0.70	1129	1126	1132	1
13	-0.58	1130	1127	1133	1
14	-0.46	1131	1128	1134	1
15	-0.36	1132	1130	1135	1
16	-0.27	1132	1130	1134	1
17	-0.18	1133	1131	1135	1
18	-0.09	1134	1132	1136	2
19	-0.02	1135	1133	1137	2
20	0.06	1135	1133	1137	2
21	0.13	1136	1134	1138	2
22	0.20	1136	1134	1138	2
23	0.27	1137	1135	1139	2
24	0.33	1138	1136	1140	2
25	0.39	1138	1136	1140	2
26	0.46	1139	1137	1141	2
27	0.52	1139	1137	1141	2
28	0.57	1139	1137	1141	2

Table G-7. 2007-08 NECAP Scale Conversion: Math Grade 11 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
29	0.63	1140	1138	1142	3
30	0.69	1141	1139	1143	3
31	0.74	1141	1139	1143	3
32	0.80	1142	1140	1144	3
33	0.85	1142	1140	1144	3
34	0.91	1143	1141	1145	3
35	0.96	1143	1141	1145	3
36	1.02	1143	1141	1145	3
37	1.07	1144	1142	1146	3
38	1.13	1144	1142	1146	3
39	1.18	1145	1143	1147	3
40	1.23	1145	1143	1147	3
41	1.29	1146	1144	1148	3
42	1.35	1146	1144	1148	3
43	1.40	1147	1145	1149	3
44	1.46	1147	1145	1149	3
45	1.52	1148	1146	1150	3
46	1.58	1148	1146	1150	3
47	1.64	1149	1147	1151	3
48	1.70	1149	1147	1151	3
49	1.77	1150	1148	1152	3
50	1.83	1151	1149	1153	3
51	1.90	1151	1149	1153	3
52	1.98	1151	1149	1153	3
53	2.06	1152	1150	1154	4
54	2.15	1153	1151	1155	4
55	2.24	1154	1152	1156	4
56	2.34	1155	1153	1157	4
57	2.46	1156	1154	1159	4
58	2.59	1157	1154	1160	4
59	2.75	1158	1155	1161	4
60	2.94	1160	1157	1163	4
61	3.19	1162	1158	1166	4
62	3.56	1165	1160	1170	4
63	4.00	1169	1162	1176	4
64	4.00	1180	1173	1180	4

Table G-8. 2007-08 NECAP Scale Conversion: Reading Grade 3.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	300	300	310	1
1	-4.00	300	300	310	1
2	-4.00	300	300	310	1
3	-4.00	300	300	310	1
4	-4.00	300	300	310	1
5	-4.00	300	300	310	1
6	-4.00	300	300	309	1
7	-3.75	303	300	311	1
8	-3.42	307	300	314	1
9	-3.14	310	303	317	1
10	-2.91	312	306	318	1
11	-2.70	315	309	321	1
12	-2.52	317	312	322	1
13	-2.35	319	314	324	1
14	-2.19	321	316	326	1
15	-2.05	322	317	327	1
16	-1.92	324	320	328	1
17	-1.79	325	321	329	1
18	-1.67	327	323	331	1
19	-1.56	328	324	332	1
20	-1.46	329	325	333	1
21	-1.35	330	327	334	1
22	-1.26	331	328	334	2
23	-1.16	332	329	335	2
24	-1.07	333	330	336	2
25	-0.98	334	332	338	2
26	-0.89	335	333	339	2
27	-0.80	336	334	340	2
28	-0.71	337	335	341	2
29	-0.62	337	336	342	2
30	-0.53	339	336	342	2

(cont'd)

Table G-8. 2007-08 NECAP Scale Conversion: Reading Grade 3 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
31	-0.44	341	338	344	3
32	-0.35	342	339	345	3
33	-0.25	343	340	346	3
34	-0.16	344	341	347	3
35	-0.05	345	342	348	3
36	0.05	346	343	349	3
37	0.16	348	345	351	3
38	0.28	349	345	353	3
39	0.41	350	346	354	3
40	0.54	352	348	356	3
41	0.68	353	349	357	3
42	0.84	355	351	359	3
43	1.01	356	352	361	3
44	1.20	359	354	364	4
45	1.41	362	357	367	4
46	1.64	364	359	370	4
47	1.91	367	361	373	4
48	2.24	371	364	378	4
49	2.65	376	368	380	4
50	3.23	380	370	380	4
51	4.00	380	370	380	4
52	4.00	380	370	380	4

Table G-9. 2007-08 NECAP Scale Conversion: Reading Grade 4.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	400	400	410	1
1	-4.00	400	400	410	1
2	-4.00	400	400	410	1
3	-4.00	400	400	410	1
4	-4.00	400	400	410	1
5	-4.00	400	400	410	1
6	-4.00	400	400	410	1
7	-3.85	402	400	411	1
8	-3.46	406	400	414	1
9	-3.15	409	402	416	1
10	-2.88	412	406	418	1
11	-2.66	415	409	421	1
12	-2.45	417	412	423	1
13	-2.27	419	414	424	1
14	-2.11	421	416	426	1
15	-1.96	422	417	427	1
16	-1.82	424	420	428	1
17	-1.69	425	421	429	1
18	-1.56	426	422	430	1
19	-1.45	428	424	432	1
20	-1.34	429	425	433	1
21	-1.23	430	427	434	1
22	-1.13	431	428	434	2
23	-1.04	432	429	435	2
24	-0.94	433	430	436	2
25	-0.85	434	431	437	2
26	-0.76	435	432	438	2
27	-0.66	436	433	439	2
28	-0.57	437	434	440	2
29	-0.48	438	435	441	2
30	-0.39	439	436	442	2

(cont'd)

Table G-9. 2007-08 NECAP Scale Conversion: Reading Grade 4 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
31	-0.30	440	437	443	3
32	-0.20	441	438	444	3
33	-0.10	442	439	445	3
34	0.00	443	440	446	3
35	0.11	445	442	448	3
36	0.22	446	443	450	3
37	0.33	447	443	451	3
38	0.46	448	444	452	3
39	0.59	450	446	454	3
40	0.74	451	447	455	3
41	0.90	453	448	458	3
42	1.08	455	450	460	3
43	1.27	457	452	462	4
44	1.49	460	454	466	4
45	1.74	462	456	468	4
46	2.02	465	458	472	4
47	2.34	469	462	476	4
48	2.71	473	465	480	4
49	3.14	477	469	480	4
50	3.69	480	471	480	4
51	4.00	480	470	480	4
52	4.00	480	470	480	4

Table G-10. 2007-08 NECAP Scale Conversion: Reading Grade 5.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	500	500	510	1
1	-4.00	500	500	510	1
2	-4.00	500	500	510	1
3	-4.00	500	500	510	1
4	-4.00	500	500	510	1
5	-3.86	502	500	512	1
6	-3.37	507	500	514	1
7	-3.03	511	505	517	1
8	-2.77	514	509	519	1
9	-2.56	516	511	521	1
10	-2.37	518	514	523	1
11	-2.21	520	516	524	1
12	-2.06	522	518	526	1
13	-1.92	523	519	527	1
14	-1.78	525	521	529	1
15	-1.66	526	522	530	1
16	-1.54	528	524	532	1
17	-1.42	529	525	533	1
18	-1.31	530	527	534	2
19	-1.20	531	528	535	2
20	-1.09	533	530	536	2
21	-0.98	534	531	537	2
22	-0.87	535	532	538	2
23	-0.77	536	533	539	2
24	-0.66	537	534	540	2
25	-0.56	539	536	542	2
26	-0.45	539	536	542	2

(cont'd)

Table G-10. 2007-08 NECAP Scale Conversion: Reading Grade 5 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
27	-0.34	541	538	544	3
28	-0.24	542	539	545	3
29	-0.12	543	540	546	3
30	-0.01	545	542	549	3
31	0.11	546	542	550	3
32	0.23	547	543	551	3
33	0.35	549	545	553	3
34	0.48	550	546	554	3
35	0.61	552	548	556	3
36	0.75	553	549	557	3
37	0.90	555	551	559	3
38	1.05	557	553	561	4
39	1.20	558	554	562	4
40	1.36	560	556	564	4
41	1.52	562	558	566	4
42	1.69	564	560	568	4
43	1.86	566	562	571	4
44	2.04	568	564	573	4
45	2.22	570	565	575	4
46	2.42	572	567	577	4
47	2.64	574	569	579	4
48	2.87	577	572	580	4
49	3.15	580	574	580	4
50	3.52	580	573	580	4
51	4.00	580	571	580	4
52	4.00	580	571	580	4

Table G-11. 2007-08 NECAP Scale Conversion: Reading Grade 6.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	600	600	610	1
1	-4.00	600	600	610	1
2	-4.00	600	600	610	1
3	-4.00	600	600	610	1
4	-4.00	600	600	610	1
5	-3.87	602	600	610	1
6	-3.50	606	600	613	1
7	-3.23	609	603	615	1
8	-3.00	611	606	616	1
9	-2.81	614	609	619	1
10	-2.64	616	612	621	1
11	-2.49	617	613	621	1
12	-2.35	619	615	623	1
13	-2.22	621	617	625	1
14	-2.09	622	618	626	1
15	-1.97	623	619	627	1
16	-1.85	625	621	629	1
17	-1.74	626	622	630	1
18	-1.62	627	623	631	1
19	-1.51	628	624	632	1
20	-1.40	630	626	634	2
21	-1.29	631	627	635	2
22	-1.18	632	628	636	2
23	-1.07	634	630	638	2
24	-0.96	635	631	639	2
25	-0.84	636	632	640	2
26	-0.73	638	634	642	2
27	-0.61	639	635	643	2

(cont'd)

Table G-11. 2007-08 NECAP Scale Conversion: Reading Grade 6 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
28	-0.49	640	636	644	3
29	-0.36	642	638	646	3
30	-0.24	643	639	647	3
31	-0.10	645	641	649	3
32	0.03	646	642	650	3
33	0.18	648	644	652	3
34	0.33	650	646	654	3
35	0.48	651	647	655	3
36	0.65	653	648	658	3
37	0.82	655	650	660	3
38	1.00	657	652	662	3
39	1.20	660	655	665	4
40	1.40	662	657	667	4
41	1.61	664	659	669	4
42	1.83	667	662	672	4
43	2.06	670	665	675	4
44	2.30	672	667	678	4
45	2.56	675	669	680	4
46	2.82	678	672	680	4
47	3.11	680	674	680	4
48	3.42	680	674	680	4
49	3.77	680	674	680	4
50	4.00	680	673	680	4
51	4.00	680	673	680	4
52	4.00	680	673	680	4

Table G-12. 2007-08 NECAP Scale Conversion: Reading Grade 7.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	700	700	710	1
1	-4.00	700	700	710	1
2	-4.00	700	700	710	1
3	-4.00	700	700	710	1
4	-4.00	700	700	710	1
5	-3.61	704	700	712	1
6	-3.28	708	702	714	1
7	-3.02	711	706	717	1
8	-2.81	714	709	719	1
9	-2.63	716	711	721	1
10	-2.47	718	714	722	1
11	-2.32	719	715	723	1
12	-2.19	721	717	725	1
13	-2.06	722	718	726	1
14	-1.94	724	720	728	1
15	-1.83	725	721	729	1
16	-1.72	726	722	730	1
17	-1.61	727	724	731	1
18	-1.51	728	725	732	1
19	-1.41	730	727	734	2
20	-1.31	731	728	735	2
21	-1.21	732	729	735	2
22	-1.11	733	730	736	2
23	-1.01	734	731	737	2
24	-0.91	736	733	739	2
25	-0.81	737	734	740	2
26	-0.71	738	735	741	2
27	-0.61	739	736	743	2

(cont'd)

Table G-12. 2007-08 NECAP Scale Conversion: Reading Grade 7 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
28	-0.50	740	737	744	3
29	-0.40	741	738	745	3
30	-0.29	743	740	747	3
31	-0.18	744	740	748	3
32	-0.07	745	741	749	3
33	0.04	746	742	750	3
34	0.16	748	744	752	3
35	0.28	749	745	753	3
36	0.41	751	747	755	3
37	0.54	752	748	756	3
38	0.67	754	750	758	3
39	0.82	755	751	759	3
40	0.96	757	753	761	3
41	1.12	759	755	763	3
42	1.27	761	757	765	4
43	1.44	763	759	768	4
44	1.62	765	760	770	4
45	1.80	767	762	772	4
46	2.01	769	764	774	4
47	2.23	772	767	777	4
48	2.47	774	769	779	4
49	2.77	778	772	780	4
50	3.15	780	773	780	4
51	3.78	780	770	780	4
52	4.00	780	770	780	4

Table G-13. 2007-08 NECAP Scale Conversion: Reading Grade 8.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	800	800	810	1
1	-4.00	800	800	810	1
2	-4.00	800	800	810	1
3	-4.00	800	800	809	1
4	-4.00	800	800	808	1
5	-3.84	802	800	809	1
6	-3.56	805	800	811	1
7	-3.33	808	803	813	1
8	-3.14	810	805	815	1
9	-2.97	812	808	816	1
10	-2.82	814	810	818	1
11	-2.69	815	811	819	1
12	-2.56	817	813	821	1
13	-2.44	818	814	822	1
14	-2.33	819	816	823	1
15	-2.22	820	817	823	1
16	-2.12	822	819	825	1
17	-2.02	823	820	826	1
18	-1.92	824	821	827	1
19	-1.82	825	822	828	1
20	-1.73	826	823	829	1
21	-1.64	827	824	830	1
22	-1.54	827	824	830	1
23	-1.45	829	826	832	2
24	-1.36	830	827	833	2
25	-1.27	831	828	834	2
26	-1.17	833	830	836	2
27	-1.07	834	831	837	2
28	-0.97	835	832	838	2
29	-0.87	836	833	839	2
30	-0.77	837	834	840	2
31	-0.65	838	835	842	2
32	-0.54	839	835	843	2

(cont'd)

Table G-13. 2007-08 NECAP Scale Conversion: Reading Grade 8 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
33	-0.42	841	837	845	3
34	-0.29	843	839	847	3
35	-0.16	844	840	848	3
36	-0.02	846	842	850	3
37	0.12	847	843	851	3
38	0.27	849	845	853	3
39	0.42	851	847	855	3
40	0.57	853	849	857	3
41	0.73	854	850	858	3
42	0.89	856	852	860	3
43	1.05	858	854	862	3
44	1.22	860	856	864	4
45	1.41	862	858	866	4
46	1.60	864	860	868	4
47	1.80	867	862	872	4
48	2.04	869	864	874	4
49	2.31	873	868	878	4
50	2.67	877	871	880	4
51	3.24	880	871	880	4
52	4.00	880	870	880	4

Table G-14. 2007-08 NECAP Scale Conversion: Reading Grade 11.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	1100	1100	1110	1
1	-4.00	1100	1100	1110	1
2	-4.00	1100	1100	1110	1
3	-4.00	1100	1100	1110	1
4	-4.00	1100	1100	1110	1
5	-3.43	1106	1100	1115	1
6	-2.99	1111	1105	1117	1
7	-2.70	1114	1109	1119	1
8	-2.47	1117	1113	1122	1
9	-2.29	1119	1115	1123	1
10	-2.13	1120	1116	1124	1
11	-1.99	1122	1119	1126	1
12	-1.86	1123	1120	1126	1
13	-1.74	1124	1121	1127	1
14	-1.63	1126	1123	1129	1
15	-1.53	1127	1124	1130	1
16	-1.43	1128	1125	1131	1
17	-1.33	1129	1126	1132	1
18	-1.24	1129	1126	1132	1
19	-1.14	1131	1128	1134	2
20	-1.05	1132	1129	1135	2
21	-0.96	1133	1130	1136	2
22	-0.86	1134	1131	1137	2
23	-0.77	1135	1132	1138	2
24	-0.68	1136	1133	1139	2
25	-0.59	1137	1134	1140	2
26	-0.49	1138	1135	1141	2
27	-0.39	1139	1136	1142	2

Table G-14. 2007-08 NECAP Scale Conversion: Reading Grade 11 (cont'd).

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
28	-0.29	1140	1137	1143	3
29	-0.19	1141	1138	1144	3
30	-0.08	1142	1139	1145	3
31	0.02	1144	1141	1147	3
32	0.14	1145	1142	1148	3
33	0.26	1146	1143	1149	3
34	0.38	1147	1144	1150	3
35	0.50	1149	1146	1152	3
36	0.64	1150	1147	1153	3
37	0.77	1152	1149	1155	3
38	0.91	1153	1150	1157	3
39	1.06	1155	1152	1159	4
40	1.21	1156	1153	1160	4
41	1.36	1158	1154	1162	4
42	1.52	1160	1156	1164	4
43	1.68	1162	1158	1166	4
44	1.86	1163	1159	1167	4
45	2.04	1165	1161	1169	4
46	2.22	1167	1163	1171	4
47	2.42	1170	1166	1174	4
48	2.64	1172	1168	1176	4
49	2.90	1175	1171	1180	4
50	3.24	1178	1173	1180	4
51	3.86	1180	1171	1180	4
52	4.00	1180	1170	1180	4

Table G-15. 2007-08 NECAP Scale Conversion: Writing Grade 5.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	500	500	510	1
1	-4.00	500	500	510	1
2	-4.00	500	500	510	1
3	-4.00	500	500	510	1
4	-4.00	500	500	510	1
5	-4.00	500	500	510	1
6	-4.00	500	500	510	1
7	-4.00	500	500	510	1
8	-4.00	500	500	509	1
9	-3.85	502	500	510	1
10	-3.42	506	500	513	1
11	-3.06	509	503	516	1
12	-2.73	513	507	519	1
13	-2.44	516	510	522	1
14	-2.17	518	513	524	1
15	-1.90	521	516	526	1
16	-1.64	524	519	529	1
17	-1.38	526	521	532	1
18	-1.11	529	523	535	2
19	-0.82	532	526	538	2
20	-0.51	535	529	541	2
21	-0.17	538	531	545	2
22	0.19	542	535	549	3
23	0.56	546	539	553	3
24	0.96	550	543	557	3
25	1.36	554	546	562	3
26	1.78	558	550	566	4
27	2.22	563	555	571	4
28	2.69	567	559	575	4
29	3.18	572	564	580	4
30	3.69	577	568	580	4
31	4.00	580	571	580	4
32	4.00	580	571	580	4
33	4.00	580	571	580	4
34	4.00	580	571	580	4
35	4.00	580	571	580	4
36	4.00	580	571	580	4
37	4.00	580	571	580	4

Table G-16. 2007-08 NECAP Scale Conversion: Writing Grade 8.

Raw Score	θ	Scaled Score	Error Band Lower Bound	Error Band Upper Bound	Performance Level
0	-4.00	800	800	810	1
1	-4.00	800	800	810	1
2	-4.00	800	800	810	1
3	-4.00	800	800	810	1
4	-4.00	800	800	810	1
5	-4.00	800	800	810	1
6	-4.00	800	800	810	1
7	-4.00	800	800	810	1
8	-3.48	805	800	812	1
9	-3.07	809	803	815	1
10	-2.76	812	807	817	1
11	-2.49	815	810	820	1
12	-2.25	817	812	822	1
13	-2.03	819	815	824	1
14	-1.82	821	817	825	1
15	-1.62	823	819	827	1
16	-1.42	825	821	829	1
17	-1.22	827	823	831	1
18	-1.02	829	825	833	2
19	-0.82	831	827	835	2
20	-0.60	833	828	838	2
21	-0.38	835	830	840	2
22	-0.15	838	833	843	2
23	0.09	839	834	844	2
24	0.33	842	837	847	3
25	0.58	845	840	850	3
26	0.83	847	842	852	3
27	1.10	850	845	855	3
28	1.39	853	848	858	3
29	1.70	855	850	862	3
30	2.03	859	853	865	4
31	2.38	862	856	868	4
32	2.77	866	860	872	4
33	3.22	871	864	878	4
34	3.81	876	868	880	4
35	4.00	878	869	880	4
36	4.00	878	869	880	4
37	4.00	880	871	880	4

APPENDIX H—SCALED SCORE CUMULATIVE DENSITY FUNCTIONS

Table H-1. 2007-08 NECAP Scaled Score Cumulative Density Function: Math Grade 3.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
300	0.3%	0.3%	340	2.2%	34.7%
301	0.0%	0.3%	341	2.3%	36.9%
302	0.0%	0.3%	342	5.2%	42.1%
303	0.0%	0.3%	343	2.8%	44.9%
304	0.1%	0.5%	344	2.8%	47.7%
305	0.0%	0.5%	345	6.0%	53.6%
306	0.0%	0.5%	346	3.3%	56.9%
307	0.2%	0.7%	347	3.1%	60.0%
308	0.0%	0.7%	348	3.3%	63.3%
309	0.3%	0.9%	349	3.4%	66.7%
310	0.0%	0.9%	350	3.6%	70.3%
311	0.0%	0.9%	351	3.7%	74.0%
312	0.3%	1.2%	352	7.3%	81.3%
313	0.3%	1.5%	353	0.0%	81.3%
314	0.0%	1.5%	354	3.3%	84.6%
315	0.4%	1.9%	355	0.0%	84.6%
316	0.0%	1.9%	356	3.2%	87.8%
317	0.4%	2.3%	357	2.9%	90.7%
318	0.5%	2.8%	358	0.0%	90.7%
319	0.0%	2.8%	359	2.6%	93.3%
320	0.5%	3.3%	360	0.0%	93.3%
321	0.6%	3.9%	361	2.3%	95.7%
322	0.6%	4.5%	362	0.0%	95.7%
323	0.7%	5.2%	363	1.8%	97.5%
324	0.7%	5.9%	364	0.0%	97.5%
325	0.7%	6.6%	365	0.0%	97.5%
326	0.8%	7.4%	366	1.3%	98.8%
327	0.9%	8.3%	367	0.0%	98.8%
328	0.9%	9.2%	368	0.0%	98.8%
329	2.2%	11.4%	369	0.0%	98.8%
330	1.2%	12.6%	370	0.0%	98.8%
331	1.2%	13.9%	371	0.8%	99.6%
332	1.2%	15.1%	372	0.0%	99.6%
333	2.6%	17.7%	373	0.0%	99.6%
334	1.5%	19.1%	374	0.0%	99.6%
335	1.5%	20.7%	375	0.0%	99.6%
336	3.7%	24.4%	376	0.0%	99.6%
337	1.8%	26.2%	377	0.0%	99.6%
338	1.9%	28.2%	378	0.3%	99.9%
339	4.3%	32.4%	379	0.0%	99.9%
			380	0.1%	100.0%

Table H-2. 2007-08 NECAP Scaled Score Cumulative Density Function: Math Grade 4.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
400	0.3%	0.3%	440	0.0%	38.2%
401	0.0%	0.3%	441	5.0%	43.2%
402	0.2%	0.5%	442	2.7%	45.9%
403	0.0%	0.5%	443	2.7%	48.6%
404	0.0%	0.5%	444	5.4%	54.0%
405	0.0%	0.5%	445	2.6%	56.6%
406	0.3%	0.8%	446	2.8%	59.4%
407	0.0%	0.8%	447	2.7%	62.1%
408	0.0%	0.8%	448	5.9%	68.0%
409	0.0%	0.8%	449	2.8%	70.7%
410	0.3%	1.1%	450	2.9%	73.6%
411	0.0%	1.1%	451	2.7%	76.3%
412	0.4%	1.6%	452	2.7%	79.1%
413	0.0%	1.6%	453	2.6%	81.7%
414	0.5%	2.1%	454	2.6%	84.3%
415	0.0%	2.1%	455	0.0%	84.3%
416	0.5%	2.7%	456	2.5%	86.9%
417	0.0%	2.7%	457	2.6%	89.5%
418	0.6%	3.3%	458	2.3%	91.7%
419	0.7%	4.0%	459	0.0%	91.7%
420	0.0%	4.0%	460	2.1%	93.8%
421	0.8%	4.8%	461	0.0%	93.8%
422	0.8%	5.6%	462	1.9%	95.7%
423	0.8%	6.5%	463	0.0%	95.7%
424	0.9%	7.3%	464	1.4%	97.1%
425	1.0%	8.3%	465	0.0%	97.1%
426	1.0%	9.3%	466	1.3%	98.4%
427	1.1%	10.4%	467	0.0%	98.4%
428	1.2%	11.6%	468	0.0%	98.4%
429	1.2%	12.8%	469	0.8%	99.1%
430	2.7%	15.5%	470	0.0%	99.1%
431	0.0%	15.5%	471	0.0%	99.1%
432	3.0%	18.5%	472	0.0%	99.1%
433	1.7%	20.1%	473	0.5%	99.6%
434	1.7%	21.8%	474	0.0%	99.6%
435	1.7%	23.5%	475	0.0%	99.6%
436	3.8%	27.3%	476	0.0%	99.6%
437	1.9%	29.3%	477	0.0%	99.6%
438	2.1%	31.3%	478	0.0%	99.6%
439	6.9%	38.2%	479	0.0%	99.6%
			480	0.4%	100.0%

Table H-3. 2007-08 NECAP Scaled Score Cumulative Density Function: Math Grade 5.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
500	0.6%	0.6%	540	2.5%	38.8%
501	0.0%	0.6%	541	2.5%	41.3%
502	0.0%	0.6%	542	2.5%	43.9%
503	0.0%	0.6%	543	5.0%	48.9%
504	0.0%	0.6%	544	2.5%	51.4%
505	0.4%	1.0%	545	2.6%	54.0%
506	0.0%	1.0%	546	5.2%	59.3%
507	0.0%	1.0%	547	2.5%	61.8%
508	0.0%	1.0%	548	2.5%	64.3%
509	0.0%	1.0%	549	5.1%	69.4%
510	0.0%	1.0%	550	2.5%	71.9%
511	0.5%	1.5%	551	2.3%	74.2%
512	0.0%	1.5%	552	4.6%	78.8%
513	0.0%	1.5%	553	4.2%	83.0%
514	0.0%	1.5%	554	0.0%	83.0%
515	0.7%	2.2%	555	3.9%	87.0%
516	0.0%	2.2%	556	1.8%	88.8%
517	0.0%	2.2%	557	1.7%	90.5%
518	0.9%	3.1%	558	1.6%	92.1%
519	0.0%	3.1%	559	1.3%	93.4%
520	1.0%	4.1%	560	1.2%	94.6%
521	0.0%	4.1%	561	1.2%	95.8%
522	1.3%	5.4%	562	0.9%	96.8%
523	0.0%	5.4%	563	0.8%	97.5%
524	1.3%	6.7%	564	0.0%	97.5%
525	0.0%	6.7%	565	0.7%	98.3%
526	1.6%	8.3%	566	0.5%	98.8%
527	1.6%	9.9%	567	0.0%	98.8%
528	1.8%	11.7%	568	0.4%	99.2%
529	0.0%	11.7%	569	0.3%	99.5%
530	1.7%	13.4%	570	0.0%	99.5%
531	1.9%	15.3%	571	0.2%	99.7%
532	4.2%	19.5%	572	0.0%	99.7%
533	0.0%	19.5%	573	0.0%	99.7%
534	2.2%	21.7%	574	0.1%	99.9%
535	2.2%	23.9%	575	0.0%	99.9%
536	2.4%	26.3%	576	0.1%	99.9%
537	2.4%	28.7%	577	0.0%	99.9%
538	2.5%	31.2%	578	0.0%	99.9%
539	5.2%	36.3%	579	0.0%	99.9%
			580	0.1%	100.0%

Table H-4. 2007-08 NECAP Scaled Score Cumulative Density Function: Math Grade 6.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
600	1.1%	1.1%	640	0.0%	37.5%
601	0.0%	1.1%	641	4.9%	42.4%
602	0.0%	1.1%	642	2.5%	44.9%
603	0.0%	1.1%	643	2.4%	47.3%
604	0.0%	1.1%	644	5.1%	52.5%
605	0.0%	1.1%	645	2.5%	54.9%
606	0.7%	1.8%	646	4.7%	59.7%
607	0.0%	1.8%	647	2.2%	61.9%
608	0.0%	1.8%	648	4.5%	66.4%
609	0.0%	1.8%	649	2.3%	68.6%
610	0.0%	1.8%	650	4.1%	72.7%
611	0.0%	1.8%	651	2.2%	74.9%
612	0.9%	2.7%	652	6.0%	80.9%
613	0.0%	2.7%	653	0.0%	80.9%
614	0.0%	2.7%	654	1.7%	82.6%
615	0.0%	2.7%	655	3.6%	86.2%
616	1.0%	3.7%	656	1.7%	87.9%
617	0.0%	3.7%	657	1.4%	89.3%
618	0.0%	3.7%	658	2.8%	92.1%
619	1.1%	4.7%	659	1.3%	93.3%
620	0.0%	4.7%	660	1.1%	94.4%
621	1.2%	5.9%	661	1.0%	95.5%
622	0.0%	5.9%	662	1.0%	96.4%
623	1.3%	7.2%	663	0.9%	97.3%
624	0.0%	7.2%	664	0.0%	97.3%
625	1.5%	8.7%	665	0.7%	98.0%
626	0.0%	8.7%	666	0.6%	98.7%
627	1.7%	10.4%	667	0.0%	98.7%
628	1.6%	12.0%	668	0.5%	99.2%
629	0.0%	12.0%	669	0.0%	99.2%
630	1.6%	13.6%	670	0.4%	99.6%
631	2.1%	15.7%	671	0.0%	99.6%
632	3.9%	19.6%	672	0.0%	99.6%
633	0.0%	19.6%	673	0.2%	99.8%
634	2.0%	21.6%	674	0.0%	99.8%
635	2.1%	23.7%	675	0.0%	99.8%
636	2.2%	25.8%	676	0.0%	99.8%
637	4.5%	30.3%	677	0.1%	99.9%
638	2.4%	32.7%	678	0.0%	99.9%
639	4.8%	37.5%	679	0.0%	99.9%
			680	0.1%	100.0%

Table H-5. 2007-08 NECAP Scaled Score Cumulative Density Function: Math Grade 7.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
700	1.0%	1.0%	740	0.0%	42.5%
701	0.0%	1.0%	741	4.9%	47.4%
702	0.0%	1.0%	742	2.3%	49.8%
703	0.0%	1.0%	743	5.0%	54.8%
704	0.0%	1.0%	744	4.9%	59.6%
705	0.0%	1.0%	745	2.5%	62.2%
706	0.0%	1.0%	746	4.6%	66.8%
707	0.7%	1.7%	747	2.3%	69.1%
708	0.0%	1.7%	748	4.1%	73.2%
709	0.0%	1.7%	749	4.2%	77.4%
710	0.0%	1.7%	750	2.0%	79.4%
711	0.0%	1.7%	751	3.7%	83.1%
712	0.0%	1.7%	752	1.7%	84.8%
713	0.0%	1.7%	753	1.7%	86.5%
714	0.9%	2.6%	754	3.2%	89.7%
715	0.0%	2.6%	755	1.4%	91.1%
716	0.0%	2.6%	756	1.4%	92.5%
717	0.0%	2.6%	757	1.1%	93.5%
718	1.2%	3.8%	758	1.2%	94.7%
719	0.0%	3.8%	759	1.0%	95.7%
720	0.0%	3.8%	760	1.0%	96.7%
721	1.4%	5.2%	761	0.7%	97.4%
722	0.0%	5.2%	762	0.7%	98.1%
723	1.6%	6.8%	763	0.5%	98.6%
724	0.0%	6.8%	764	0.4%	99.0%
725	1.7%	8.5%	765	0.0%	99.0%
726	0.0%	8.5%	766	0.3%	99.4%
727	1.7%	10.2%	767	0.0%	99.4%
728	1.8%	12.0%	768	0.3%	99.6%
729	2.0%	14.0%	769	0.0%	99.6%
730	0.0%	14.0%	770	0.1%	99.8%
731	2.2%	16.2%	771	0.0%	99.8%
732	2.2%	18.3%	772	0.1%	99.8%
733	2.2%	20.6%	773	0.0%	99.8%
734	2.4%	23.0%	774	0.0%	99.8%
735	4.8%	27.8%	775	0.1%	99.9%
736	2.6%	30.4%	776	0.0%	99.9%
737	2.4%	32.7%	777	0.0%	99.9%
738	2.3%	35.1%	778	0.0%	99.9%
739	7.4%	42.5%	779	0.0%	100.0%
			780	0.0%	100.0%

Table H-6. 2007-08 NECAP Scaled Score Cumulative Density Function: Math Grade 8.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
800	1.4%	1.4%	840	2.3%	47.4%
801	0.0%	1.4%	841	2.1%	49.5%
802	0.9%	2.3%	842	4.5%	53.9%
803	0.0%	2.3%	843	4.2%	58.2%
804	0.0%	2.3%	844	4.3%	62.5%
805	0.0%	2.3%	845	4.0%	66.5%
806	0.0%	2.3%	846	3.8%	70.3%
807	0.0%	2.3%	847	3.7%	74.0%
808	0.0%	2.3%	848	3.6%	77.6%
809	0.0%	2.3%	849	1.6%	79.2%
810	0.0%	2.3%	850	3.3%	82.5%
811	0.0%	2.3%	851	3.1%	85.6%
812	0.0%	2.3%	852	3.0%	88.5%
813	0.0%	2.3%	853	1.3%	89.8%
814	0.0%	2.3%	854	2.4%	92.2%
815	1.3%	3.6%	855	1.2%	93.4%
816	0.0%	3.6%	856	1.1%	94.4%
817	0.0%	3.6%	857	1.8%	96.2%
818	0.0%	3.6%	858	0.8%	97.1%
819	0.0%	3.6%	859	0.7%	97.8%
820	1.6%	5.2%	860	0.6%	98.4%
821	0.0%	5.2%	861	0.4%	98.9%
822	0.0%	5.2%	862	0.0%	98.9%
823	1.7%	6.9%	863	0.4%	99.2%
824	0.0%	6.9%	864	0.0%	99.2%
825	2.1%	9.0%	865	0.2%	99.5%
826	0.0%	9.0%	866	0.0%	99.5%
827	2.1%	11.1%	867	0.3%	99.7%
828	0.0%	11.1%	868	0.0%	99.7%
829	2.2%	13.3%	869	0.0%	99.7%
830	2.1%	15.5%	870	0.2%	99.9%
831	2.2%	17.6%	871	0.0%	99.9%
832	2.3%	20.0%	872	0.0%	99.9%
833	2.2%	22.2%	873	0.0%	99.9%
834	2.3%	24.5%	874	0.0%	99.9%
835	4.3%	28.8%	875	0.1%	100.0%
836	2.3%	31.1%	876	0.0%	100.0%
837	4.6%	35.7%	877	0.0%	100.0%
838	2.4%	38.1%	878	0.0%	100.0%
839	7.0%	45.1%	879	0.0%	100.0%
			880	0.0%	100.0%

Table H-7. 2007-08 NECAP Scaled Score Cumulative Density Function: Math Grade 11.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
1100	3.0%	3.0%	1140	1.9%	75.9%
1101	0.0%	3.0%	1141	3.6%	79.5%
1102	0.0%	3.0%	1142	3.2%	82.7%
1103	0.0%	3.0%	1143	4.0%	86.6%
1104	0.0%	3.0%	1144	2.5%	89.1%
1105	2.0%	5.0%	1145	2.2%	91.4%
1106	0.0%	5.0%	1146	1.7%	93.0%
1107	0.0%	5.0%	1147	1.5%	94.6%
1108	0.0%	5.0%	1148	1.3%	95.9%
1109	0.0%	5.0%	1149	1.1%	97.0%
1110	0.0%	5.0%	1150	0.5%	97.5%
1111	0.0%	5.0%	1151	1.1%	98.5%
1112	0.0%	5.0%	1152	0.3%	98.9%
1113	0.0%	5.0%	1153	0.3%	99.1%
1114	0.0%	5.0%	1154	0.2%	99.4%
1115	0.0%	5.0%	1155	0.2%	99.6%
1116	2.5%	7.5%	1156	0.1%	99.7%
1117	0.0%	7.5%	1157	0.1%	99.8%
1118	0.0%	7.5%	1158	0.1%	99.9%
1119	0.0%	7.5%	1159	0.0%	99.9%
1120	3.1%	10.6%	1160	0.1%	99.9%
1121	0.0%	10.6%	1161	0.0%	99.9%
1122	0.0%	10.6%	1162	0.0%	100.0%
1123	3.5%	14.1%	1163	0.0%	100.0%
1124	3.7%	17.8%	1164	0.0%	100.0%
1125	0.0%	17.8%	1165	0.0%	100.0%
1126	3.8%	21.7%	1166	0.0%	100.0%
1127	3.8%	25.4%	1167	0.0%	100.0%
1128	0.0%	25.4%	1168	0.0%	100.0%
1129	3.8%	29.3%	1169	0.0%	100.0%
1130	3.7%	33.0%	1170	0.0%	100.0%
1131	3.7%	36.6%	1171	0.0%	100.0%
1132	6.8%	43.4%	1172	0.0%	100.0%
1133	3.1%	46.5%	1173	0.0%	100.0%
1134	3.1%	49.6%	1174	0.0%	100.0%
1135	5.6%	55.3%	1175	0.0%	100.0%
1136	5.3%	60.5%	1176	0.0%	100.0%
1137	2.4%	62.9%	1177	0.0%	100.0%
1138	4.9%	67.8%	1178	0.0%	100.0%
1139	6.2%	74.0%	1179	0.0%	100.0%
			1180	0.0%	100.0%

Table H-8. 2007-08 NECAP Scaled Score Cumulative Density Function: Reading Grade 3.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
300	0.6%	0.6%	340	0.0%	27.1%
301	0.0%	0.6%	341	2.7%	29.8%
302	0.0%	0.6%	342	3.1%	33.0%
303	0.3%	0.8%	343	3.4%	36.4%
304	0.0%	0.8%	344	3.9%	40.3%
305	0.0%	0.8%	345	4.4%	44.7%
306	0.0%	0.8%	346	4.9%	49.5%
307	0.3%	1.2%	347	0.0%	49.5%
308	0.0%	1.2%	348	5.2%	54.7%
309	0.0%	1.2%	349	5.3%	60.0%
310	0.4%	1.6%	350	5.6%	65.7%
311	0.0%	1.6%	351	0.0%	65.7%
312	0.5%	2.1%	352	5.9%	71.6%
313	0.0%	2.1%	353	5.5%	77.1%
314	0.0%	2.1%	354	0.0%	77.1%
315	0.6%	2.7%	355	5.2%	82.3%
316	0.0%	2.7%	356	4.8%	87.0%
317	0.6%	3.3%	357	0.0%	87.0%
318	0.0%	3.3%	358	0.0%	87.0%
319	0.7%	3.9%	359	4.1%	91.2%
320	0.0%	3.9%	360	0.0%	91.2%
321	0.7%	4.7%	361	0.0%	91.2%
322	0.8%	5.4%	362	3.2%	94.3%
323	0.0%	5.4%	363	0.0%	94.3%
324	0.8%	6.2%	364	2.5%	96.8%
325	1.0%	7.2%	365	0.0%	96.8%
326	0.0%	7.2%	366	0.0%	96.8%
327	0.9%	8.1%	367	1.6%	98.4%
328	1.1%	9.1%	368	0.0%	98.4%
329	1.1%	10.2%	369	0.0%	98.4%
330	1.2%	11.4%	370	0.0%	98.4%
331	1.1%	12.5%	371	0.9%	99.3%
332	1.4%	14.0%	372	0.0%	99.3%
333	1.4%	15.3%	373	0.0%	99.3%
334	0.0%	15.3%	374	0.0%	99.3%
335	1.5%	16.9%	375	0.0%	99.3%
336	1.7%	18.5%	376	0.5%	99.8%
337	1.7%	20.2%	377	0.0%	99.8%
338	2.1%	22.3%	378	0.0%	99.8%
339	4.8%	27.1%	379	0.0%	99.8%
			380	0.2%	100.0%

Table H-9. 2007-08 NECAP Scaled Score Cumulative Density Function: Reading Grade 4.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
400	0.4%	0.4%	440	3.0%	33.7%
401	0.0%	0.4%	441	3.3%	37.0%
402	0.2%	0.7%	442	3.6%	40.6%
403	0.0%	0.7%	443	4.0%	44.6%
404	0.0%	0.7%	444	0.0%	44.6%
405	0.0%	0.7%	445	4.2%	48.8%
406	0.3%	1.0%	446	4.3%	53.0%
407	0.0%	1.0%	447	4.5%	57.5%
408	0.0%	1.0%	448	4.7%	62.2%
409	0.4%	1.3%	449	0.0%	62.2%
410	0.0%	1.3%	450	4.9%	67.1%
411	0.0%	1.3%	451	5.1%	72.2%
412	0.5%	1.8%	452	0.0%	72.2%
413	0.0%	1.8%	453	4.9%	77.1%
414	0.0%	1.8%	454	0.0%	77.1%
415	0.6%	2.4%	455	4.9%	82.0%
416	0.0%	2.4%	456	0.0%	82.0%
417	0.6%	3.0%	457	4.5%	86.4%
418	0.0%	3.0%	458	0.0%	86.4%
419	0.7%	3.7%	459	0.0%	86.4%
420	0.0%	3.7%	460	3.9%	90.4%
421	0.6%	4.3%	461	0.0%	90.4%
422	0.7%	5.1%	462	3.2%	93.6%
423	0.0%	5.1%	463	0.0%	93.6%
424	0.8%	5.9%	464	0.0%	93.6%
425	1.0%	6.9%	465	2.6%	96.2%
426	1.0%	7.9%	466	0.0%	96.2%
427	0.0%	7.9%	467	0.0%	96.2%
428	1.1%	9.0%	468	0.0%	96.2%
429	1.3%	10.3%	469	1.6%	97.8%
430	1.4%	11.7%	470	0.0%	97.8%
431	1.4%	13.1%	471	0.0%	97.8%
432	1.6%	14.6%	472	0.0%	97.8%
433	1.8%	16.5%	473	1.2%	98.9%
434	2.0%	18.4%	474	0.0%	98.9%
435	2.0%	20.4%	475	0.0%	98.9%
436	2.3%	22.7%	476	0.0%	98.9%
437	2.4%	25.1%	477	0.7%	99.6%
438	2.6%	27.8%	478	0.0%	99.6%
439	2.9%	30.7%	479	0.0%	99.6%
			480	0.4%	100.0%

Table H-10. 2007-08 NECAP Scaled Score Cumulative Density Function: Reading Grade 5.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
500	0.0%	0.2%	540	3.8%	35.2%
501	0.1%	0.4%	541	4.0%	39.2%
502	0.0%	0.4%	542	4.5%	43.7%
503	0.0%	0.4%	543	0.0%	43.7%
504	0.0%	0.4%	544	4.6%	48.3%
505	0.0%	0.4%	545	5.0%	53.3%
506	0.3%	0.7%	546	5.0%	58.3%
507	0.0%	0.7%	547	0.0%	58.3%
508	0.0%	0.7%	548	5.2%	63.4%
509	0.0%	0.7%	549	5.1%	68.5%
510	0.3%	1.0%	550	0.0%	68.5%
511	0.0%	1.0%	551	4.7%	73.3%
512	0.0%	1.0%	552	4.6%	77.8%
513	0.4%	1.4%	553	0.0%	77.8%
514	0.0%	1.4%	554	4.2%	82.1%
515	0.5%	1.9%	555	0.0%	82.1%
516	0.0%	1.9%	556	3.8%	85.9%
517	0.6%	2.5%	557	3.1%	89.0%
518	0.0%	2.5%	558	0.0%	89.0%
519	0.7%	3.2%	559	2.5%	91.5%
520	0.0%	3.2%	560	0.0%	91.5%
521	0.8%	4.0%	561	2.2%	93.7%
522	0.9%	4.9%	562	0.0%	93.7%
523	0.0%	4.9%	563	1.8%	95.5%
524	1.0%	6.0%	564	0.0%	95.5%
525	1.0%	7.0%	565	1.3%	96.8%
526	0.0%	7.0%	566	0.0%	96.8%
527	1.2%	8.2%	567	1.0%	97.8%
528	1.3%	9.5%	568	0.0%	97.8%
529	1.5%	11.0%	569	0.8%	98.5%
530	1.6%	12.6%	570	0.0%	98.5%
531	0.0%	12.6%	571	0.6%	99.1%
532	2.1%	14.7%	572	0.0%	99.1%
533	2.4%	17.1%	573	0.4%	99.5%
534	2.4%	19.4%	574	0.0%	99.5%
535	2.6%	22.0%	575	0.0%	99.5%
536	3.0%	25.0%	576	0.2%	99.7%
537	0.0%	25.0%	577	0.0%	99.7%
538	6.4%	31.4%	578	0.0%	99.7%
539	0.0%	31.4%	579	0.3%	100.0%
			580	0.0%	100.0%

Table H-11. 2007-08 NECAP Scaled Score Cumulative Density Function: Reading Grade 6.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
600	0.2%	0.2%	640	4.1%	35.0%
601	0.0%	0.2%	641	0.0%	35.0%
602	0.1%	0.4%	642	4.5%	39.5%
603	0.0%	0.4%	643	4.7%	44.3%
604	0.0%	0.4%	644	0.0%	44.3%
605	0.0%	0.4%	645	5.0%	49.3%
606	0.2%	0.5%	646	5.6%	54.9%
607	0.0%	0.5%	647	0.0%	54.9%
608	0.0%	0.5%	648	5.5%	60.3%
609	0.2%	0.8%	649	0.0%	60.3%
610	0.0%	0.8%	650	5.4%	65.8%
611	0.3%	1.1%	651	5.5%	71.3%
612	0.0%	1.1%	652	0.0%	71.3%
613	0.0%	1.1%	653	5.3%	76.6%
614	0.4%	1.5%	654	0.0%	76.6%
615	0.0%	1.5%	655	4.9%	81.5%
616	0.4%	2.0%	656	0.0%	81.5%
617	0.6%	2.5%	657	4.3%	85.8%
618	0.0%	2.5%	658	0.0%	85.8%
619	0.6%	3.2%	659	0.0%	85.8%
620	0.0%	3.2%	660	3.8%	89.6%
621	0.7%	3.9%	661	0.0%	89.6%
622	0.8%	4.6%	662	2.9%	92.5%
623	0.9%	5.6%	663	0.0%	92.5%
624	0.0%	5.6%	664	2.2%	94.7%
625	0.9%	6.5%	665	0.0%	94.7%
626	1.2%	7.7%	666	0.0%	94.7%
627	1.2%	8.9%	667	1.6%	96.3%
628	1.4%	10.3%	668	0.0%	96.3%
629	0.0%	10.3%	669	0.0%	96.3%
630	1.6%	11.9%	670	1.3%	97.6%
631	1.9%	13.8%	671	0.0%	97.6%
632	2.1%	15.8%	672	0.9%	98.5%
633	0.0%	15.8%	673	0.0%	98.5%
634	2.3%	18.2%	674	0.0%	98.5%
635	2.7%	20.9%	675	0.6%	99.1%
636	3.0%	23.9%	676	0.0%	99.1%
637	0.0%	23.9%	677	0.0%	99.1%
638	3.4%	27.2%	678	0.4%	99.5%
639	3.7%	30.9%	679	0.0%	99.5%
			680	0.5%	100.0%

Table H-12. 2007-08 NECAP Scaled Score Cumulative Density Function: Reading Grade 7.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
700	0.2%	0.2%	740	3.0%	31.5%
701	0.0%	0.2%	741	3.4%	34.9%
702	0.0%	0.2%	742	0.0%	34.9%
703	0.0%	0.2%	743	3.4%	38.3%
704	0.1%	0.3%	744	3.7%	42.1%
705	0.0%	0.3%	745	3.9%	46.0%
706	0.0%	0.3%	746	4.1%	50.1%
707	0.0%	0.3%	747	0.0%	50.1%
708	0.2%	0.6%	748	4.5%	54.5%
709	0.0%	0.6%	749	4.6%	59.1%
710	0.0%	0.6%	750	0.0%	59.1%
711	0.3%	0.9%	751	4.5%	63.6%
712	0.0%	0.9%	752	4.6%	68.2%
713	0.0%	0.9%	753	0.0%	68.2%
714	0.4%	1.3%	754	4.6%	72.8%
715	0.0%	1.3%	755	4.5%	77.3%
716	0.4%	1.7%	756	0.0%	77.3%
717	0.0%	1.7%	757	4.1%	81.4%
718	0.6%	2.3%	758	0.0%	81.4%
719	0.5%	2.8%	759	3.7%	85.2%
720	0.0%	2.8%	760	0.0%	85.2%
721	0.7%	3.5%	761	3.4%	88.5%
722	0.8%	4.3%	762	0.0%	88.5%
723	0.0%	4.3%	763	2.9%	91.4%
724	0.9%	5.2%	764	0.0%	91.4%
725	0.9%	6.1%	765	2.3%	93.7%
726	1.0%	7.0%	766	0.0%	93.7%
727	1.1%	8.2%	767	2.0%	95.7%
728	1.3%	9.5%	768	0.0%	95.7%
729	0.0%	9.5%	769	1.5%	97.2%
730	1.4%	10.9%	770	0.0%	97.2%
731	1.5%	12.5%	771	0.0%	97.2%
732	1.9%	14.3%	772	1.2%	98.4%
733	2.0%	16.3%	773	0.0%	98.4%
734	2.0%	18.3%	774	0.8%	99.2%
735	0.0%	18.3%	775	0.0%	99.2%
736	2.4%	20.7%	776	0.0%	99.2%
737	2.3%	23.0%	777	0.0%	99.2%
738	2.6%	25.6%	778	0.5%	99.6%
739	2.9%	28.5%	779	0.0%	99.6%
			780	0.4%	100.0%

Table H-13. 2007-08 NECAP Scaled Score Cumulative Density Function: Reading Grade 8.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
800	0.0%	0.0%	840	0.0%	34.2%
801	0.0%	0.0%	841	4.0%	38.2%
802	0.1%	0.1%	842	0.0%	38.2%
803	0.0%	0.1%	843	4.6%	42.9%
804	0.0%	0.1%	844	4.8%	47.6%
805	0.2%	0.3%	845	0.0%	47.6%
806	0.0%	0.3%	846	5.0%	52.6%
807	0.0%	0.3%	847	5.2%	57.8%
808	0.3%	0.6%	848	0.0%	57.8%
809	0.0%	0.6%	849	5.3%	63.1%
810	0.3%	0.8%	850	0.0%	63.1%
811	0.0%	0.8%	851	5.2%	68.4%
812	0.4%	1.2%	852	0.0%	68.4%
813	0.0%	1.2%	853	5.0%	73.4%
814	0.5%	1.7%	854	4.5%	77.9%
815	0.5%	2.2%	855	0.0%	77.9%
816	0.0%	2.2%	856	4.1%	82.0%
817	0.6%	2.7%	857	0.0%	82.0%
818	0.5%	3.3%	858	3.9%	85.9%
819	0.6%	3.9%	859	0.0%	85.9%
820	0.6%	4.5%	860	3.2%	89.1%
821	0.0%	4.5%	861	0.0%	89.1%
822	0.8%	5.4%	862	2.8%	92.0%
823	0.7%	6.1%	863	0.0%	92.0%
824	0.9%	6.9%	864	2.3%	94.3%
825	1.0%	8.0%	865	0.0%	94.3%
826	1.1%	9.0%	866	0.0%	94.3%
827	2.4%	11.4%	867	1.9%	96.2%
828	0.0%	11.4%	868	0.0%	96.2%
829	1.3%	12.7%	869	1.5%	97.7%
830	1.4%	14.2%	870	0.0%	97.7%
831	1.7%	15.8%	871	0.0%	97.7%
832	0.0%	15.8%	872	0.0%	97.7%
833	1.9%	17.7%	873	1.0%	98.7%
834	2.1%	19.8%	874	0.0%	98.7%
835	2.3%	22.1%	875	0.0%	98.7%
836	2.5%	24.6%	876	0.0%	98.7%
837	3.0%	27.6%	877	0.7%	99.5%
838	3.2%	30.8%	878	0.0%	99.5%
839	3.4%	34.2%	879	0.0%	99.5%
			880	0.5%	100.0%

Table H-14. 2007-08 NECAP Scaled Score Cumulative Density Function: Reading Grade 11.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
1100	0.4%	0.4%	1140	3.7%	38.5%
1101	0.0%	0.4%	1141	3.8%	42.3%
1102	0.0%	0.4%	1142	4.2%	46.5%
1103	0.0%	0.4%	1143	0.0%	46.5%
1104	0.0%	0.4%	1144	4.3%	50.8%
1105	0.0%	0.4%	1145	4.6%	55.4%
1106	0.2%	0.6%	1146	4.7%	60.1%
1107	0.0%	0.6%	1147	4.7%	64.8%
1108	0.0%	0.6%	1148	0.0%	64.8%
1109	0.0%	0.6%	1149	4.7%	69.5%
1110	0.0%	0.6%	1150	4.6%	74.1%
1111	0.4%	1.0%	1151	0.0%	74.1%
1112	0.0%	1.0%	1152	4.3%	78.3%
1113	0.0%	1.0%	1153	4.3%	82.6%
1114	0.5%	1.5%	1154	0.0%	82.6%
1115	0.0%	1.5%	1155	3.6%	86.3%
1116	0.0%	1.5%	1156	3.2%	89.5%
1117	0.5%	2.0%	1157	0.0%	89.5%
1118	0.0%	2.0%	1158	2.5%	92.0%
1119	0.7%	2.7%	1159	0.0%	92.0%
1120	0.8%	3.5%	1160	2.1%	94.1%
1121	0.0%	3.5%	1161	0.0%	94.1%
1122	0.8%	4.4%	1162	1.7%	95.8%
1123	0.9%	5.3%	1163	1.4%	97.2%
1124	1.0%	6.3%	1164	0.0%	97.2%
1125	0.0%	6.3%	1165	1.0%	98.3%
1126	0.9%	7.2%	1166	0.0%	98.3%
1127	1.2%	8.4%	1167	0.8%	99.0%
1128	1.2%	9.6%	1168	0.0%	99.0%
1129	2.9%	12.5%	1169	0.0%	99.0%
1130	0.0%	12.5%	1170	0.5%	99.5%
1131	1.6%	14.2%	1171	0.0%	99.5%
1132	1.8%	15.9%	1172	0.2%	99.7%
1133	2.1%	18.0%	1173	0.0%	99.7%
1134	2.2%	20.2%	1174	0.0%	99.7%
1135	2.4%	22.7%	1175	0.2%	99.9%
1136	2.6%	25.3%	1176	0.0%	99.9%
1137	2.8%	28.1%	1177	0.0%	99.9%
1138	3.3%	31.4%	1178	0.1%	100.0%
1139	3.4%	34.8%	1179	0.0%	100.0%
			1180	0.0%	100.0%

Table H-15. 2007-08 NECAP Scaled Score Cumulative Density Function: Writing Grade 5.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
500	1.2%	1.2%	540	0.0%	48.1%
501	0.0%	1.2%	541	0.0%	48.1%
502	0.5%	1.7%	542	9.5%	57.6%
503	0.0%	1.7%	543	0.0%	57.6%
504	0.0%	1.7%	544	0.0%	57.6%
505	0.0%	1.7%	545	0.0%	57.6%
506	0.7%	2.4%	546	9.3%	66.9%
507	0.0%	2.4%	547	0.0%	66.9%
508	0.0%	2.4%	548	0.0%	66.9%
509	0.9%	3.3%	549	0.0%	66.9%
510	0.0%	3.3%	550	8.6%	75.5%
511	0.0%	3.3%	551	0.0%	75.5%
512	0.0%	3.3%	552	0.0%	75.5%
513	1.2%	4.5%	553	0.0%	75.5%
514	0.0%	4.5%	554	7.5%	83.0%
515	0.0%	4.5%	555	0.0%	83.0%
516	1.6%	6.1%	556	0.0%	83.0%
517	0.0%	6.1%	557	0.0%	83.0%
518	2.1%	8.2%	558	5.6%	88.6%
519	0.0%	8.2%	559	0.0%	88.6%
520	0.0%	8.2%	560	0.0%	88.6%
521	2.8%	11.0%	561	0.0%	88.6%
522	0.0%	11.0%	562	0.0%	88.6%
523	0.0%	11.0%	563	4.2%	92.7%
524	3.6%	14.5%	564	0.0%	92.7%
525	0.0%	14.5%	565	0.0%	92.7%
526	4.6%	19.1%	566	0.0%	92.7%
527	0.0%	19.1%	567	2.8%	95.5%
528	0.0%	19.1%	568	0.0%	95.5%
529	5.7%	24.8%	569	0.0%	95.5%
530	0.0%	24.8%	570	0.0%	95.5%
531	0.0%	24.8%	571	0.0%	95.5%
532	6.7%	31.5%	572	2.0%	97.5%
533	0.0%	31.5%	573	0.0%	97.5%
534	0.0%	31.5%	574	0.0%	97.5%
535	7.8%	39.3%	575	0.0%	97.5%
536	0.0%	39.3%	576	0.0%	97.5%
537	0.0%	39.3%	577	1.1%	98.7%
538	8.8%	48.1%	578	0.0%	98.7%
539	0.0%	48.1%	579	0.0%	98.7%
			580	1.3%	100.0%

Table H-16. 2007-08 NECAP Scaled Score Cumulative Density Function: Writing Grade 8.

Scale Score	Percentage	Cumulative Percentage	Scale Score	Percentage	Cumulative Percentage
800	1.1%	1.1%	840	0.0%	56.7%
801	0.0%	1.1%	841	0.0%	56.7%
802	0.0%	1.1%	842	7.6%	64.3%
803	0.0%	1.1%	843	0.0%	64.3%
804	0.0%	1.1%	844	0.0%	64.3%
805	0.3%	1.4%	845	7.2%	71.5%
806	0.0%	1.4%	846	0.0%	71.5%
807	0.0%	1.4%	847	6.5%	78.0%
808	0.0%	1.4%	848	0.0%	78.0%
809	0.5%	1.9%	849	0.0%	78.0%
810	0.0%	1.9%	[1]850	5.7%	83.7%
811	0.0%	1.9%	851	0.0%	83.7%
812	0.7%	2.5%	852	0.0%	83.7%
813	0.0%	2.5%	853	4.6%	88.4%
814	0.0%	2.5%	854	0.0%	88.4%
815	0.9%	3.4%	855	0.0%	88.4%
816	0.0%	3.4%	856	3.8%	92.1%
817	1.2%	4.6%	857	0.0%	92.1%
818	0.0%	4.6%	858	0.0%	92.1%
819	1.5%	6.1%	859	2.9%	95.1%
820	0.0%	6.1%	860	0.0%	95.1%
821	1.8%	7.9%	861	0.0%	95.1%
822	0.0%	7.9%	862	2.0%	97.1%
823	2.4%	10.3%	863	0.0%	97.1%
824	0.0%	10.3%	864	0.0%	97.1%
825	3.3%	13.6%	865	0.0%	97.1%
826	0.0%	13.6%	866	1.5%	98.6%
827	4.0%	17.6%	867	0.0%	98.6%
828	0.0%	17.6%	868	0.0%	98.6%
829	4.7%	22.3%	869	0.0%	98.6%
830	0.0%	22.3%	870	0.0%	98.6%
831	5.7%	28.0%	871	0.8%	99.4%
832	0.0%	28.0%	872	0.0%	99.4%
833	6.4%	34.4%	873	0.0%	99.4%
834	0.0%	34.4%	874	0.0%	99.4%
835	7.2%	41.6%	875	0.0%	99.4%
836	0.0%	41.6%	876	0.4%	99.8%
837	0.0%	41.6%	877	0.0%	99.8%
838	7.5%	49.1%	878	0.2%	100.0%
839	7.6%	56.7%	879	0.0%	100.0%
			880	0.0%	100.0%

[1] Scaled scores are not computed for writing in grade 11.

APPENDIX I—SUMMARY STATISTICS OF DIFFICULTY AND DISCRIMINATION INDICES

Table I-1. 2007-08 NECAP Item Difficulty and Discrimination Indices by Grade, Subject, and Test Form.

Grade	Subject	Form	N Items	Difficulty Mean	Difficulty SD	Discrimination Mean	Discrimination SD
3	Math	00	55	0.69	0.16	0.43	0.08
		01	10	0.67	0.15	0.47	0.05
		02	10	0.66	0.11	0.45	0.06
		03	10	0.69	0.2	0.44	0.09
		04	10	0.71	0.14	0.48	0.05
		05	10	0.69	0.13	0.45	0.12
		06	10	0.67	0.15	0.43	0.07
		07	10	0.67	0.16	0.46	0.06
		08	10	0.66	0.11	0.46	0.05
		09	10	0.69	0.20	0.43	0.09
	Reading	00	34	0.69	0.16	0.45	0.10
		01	17	0.66	0.17	0.46	0.10
		02	17	0.71	0.13	0.42	0.12
		03	17	0.73	0.13	0.50	0.09
4	Math	00	55	0.63	0.14	0.43	0.08
		01	10	0.63	0.18	0.48	0.10
		02	10	0.66	0.20	0.42	0.10
		03	10	0.68	0.24	0.38	0.12
		04	10	0.65	0.11	0.45	0.08
		05	10	0.65	0.20	0.44	0.05
		06	10	0.63	0.16	0.42	0.13
		07	10	0.64	0.18	0.47	0.09
		08	10	0.67	0.20	0.42	0.10
		09	10	0.68	0.25	0.37	0.14
	Reading	00	34	0.72	0.14	0.43	0.07
		01	17	0.69	0.14	0.46	0.08
		02	17	0.69	0.13	0.42	0.09
		03	17	0.63	0.14	0.42	0.07
5	Math	00	48	0.54	0.18	0.40	0.12
		01	11	0.48	0.20	0.43	0.13
		02	11	0.55	0.15	0.43	0.08
		03	11	0.50	0.18	0.44	0.09
		04	11	0.54	0.17	0.45	0.12
		05	11	0.52	0.20	0.48	0.09
		06	11	0.50	0.17	0.45	0.09
		07	11	0.49	0.20	0.42	0.13
		08	11	0.55	0.15	0.42	0.08
		09	11	0.50	0.18	0.45	0.09
	Reading	00	34	0.65	0.15	0.40	0.11
		01	17	0.64	0.13	0.46	0.10
		02	17	0.65	0.17	0.42	0.12
		03	17	0.65	0.15	0.40	0.14
	Writing	01	17	0.73	0.20	0.36	0.14

cont'd

Table I-1. 2007-08 NECAP Item Difficulty and Discrimination Indices by Grade, Subject, and Test Form.

Grade	Subject	Form	N Items	Difficulty Mean	Difficulty SD	Discrimination Mean	Discrimination SD
6	Math	00	11	0.51	0.14	0.48	0.10
		01	11	0.49	0.18	0.49	0.10
		02	11	0.46	0.12	0.49	0.13
		03	11	0.48	0.15	0.50	0.13
		04	11	0.51	0.19	0.45	0.13
		05	11	0.46	0.18	0.44	0.10
		06	11	0.52	0.14	0.47	0.09
		07	11	0.50	0.18	0.49	0.09
		08	11	0.48	0.12	0.49	0.13
		09	34	0.69	0.17	0.40	0.09
	Reading	00	17	0.64	0.15	0.44	0.12
		01	17	0.72	0.16	0.46	0.12
		02	17	0.69	0.17	0.42	0.12
		03	48	0.50	0.17	0.42	0.12
7	Math	00	11	0.40	0.17	0.44	0.11
		01	11	0.54	0.20	0.41	0.14
		02	11	0.46	0.14	0.44	0.09
		03	11	0.46	0.23	0.43	0.17
		04	11	0.47	0.19	0.38	0.09
		05	11	0.44	0.12	0.43	0.12
		06	11	0.41	0.17	0.42	0.11
		07	11	0.54	0.20	0.41	0.14
		08	11	0.46	0.14	0.44	0.08
		09	34	0.69	0.14	0.42	0.12
	Reading	00	17	0.69	0.17	0.43	0.11
		01	17	0.68	0.14	0.43	0.13
		02	17	0.73	0.14	0.44	0.11
		03	48	0.47	0.17	0.43	0.13

cont'd

Table I-1. 2007-08 NECAP Item Difficulty and Discrimination Indices by Grade, Subject, and Test Form.

Grade	Subject	Form	N Items	Difficulty		Discrimination	
				Mean	SD	Mean	SD
8	Math	00	11	0.47	0.15	0.46	0.09
		01	11	0.45	0.15	0.47	0.12
		02	11	0.42	0.18	0.40	0.15
		03	11	0.52	0.24	0.47	0.07
		04	11	0.54	0.15	0.47	0.13
		05	11	0.54	0.16	0.48	0.10
		06	11	0.49	0.16	0.45	0.10
		07	11	0.45	0.15	0.47	0.12
		08	11	0.42	0.19	0.39	0.14
		09	34	0.73	0.13	0.44	0.12
	Reading	00	17	0.66	0.17	0.46	0.14
		01	17	0.73	0.15	0.42	0.14
		02	17	0.70	0.12	0.45	0.13
		03	17	0.71	0.19	0.37	0.17
	Writing	01	11	0.51	0.14	0.48	0.10
11	Math	00	46	0.36	0.18	0.42	0.13
		01	8	0.31	0.17	0.41	0.11
		02	8	0.29	0.22	0.44	0.12
		03	8	0.26	0.14	0.43	0.13
		04	8	0.34	0.20	0.40	0.21
		05	8	0.30	0.15	0.52	0.12
		06	8	0.27	0.16	0.39	0.16
		07	8	0.32	0.17	0.41	0.13
		08	8	0.29	0.22	0.43	0.12
	Reading	00	34	0.66	0.15	0.42	0.13
		01	17	0.64	0.16	0.47	0.14
		02	17	0.65	0.14	0.48	0.12

Table I-2. 2007-08 NECAP Item Difficulty and Discrimination Index Means and Standard Deviations by Grade, Subject, and Item Type.

Grade	Subject	Statistic[1]	All[2]	MC[2]	OR[2]
3	Math	Diff	0.68 (0.15)	0.72 (0.14)	0.63 (0.16)
		Disc	0.45 (0.08)	0.43 (0.07)	0.47 (0.08)
		N	145	89	56
	Reading	Diff	0.7 (0.15)	0.72 (0.13)	0.58 (0.19)
		Disc	0.45 (0.1)	0.43 (0.1)	0.56 (0.05)
		N	85	70	15
4	Math	Diff	0.65 (0.17)	0.68 (0.18)	0.59 (0.13)
		Disc	0.43 (0.1)	0.4 (0.09)	0.48 (0.09)
		N	145	89	56
	Reading	Diff	0.69 (0.14)	0.72 (0.12)	0.54 (0.15)
		Disc	0.43 (0.07)	0.42 (0.07)	0.49 (0.07)
		N	85	70	15
5	Math	Diff	0.52 (0.18)	0.59 (0.16)	0.43 (0.16)
		Disc	0.43 (0.11)	0.38 (0.08)	0.49 (0.11)
		N	147	86	61
	Reading	Diff	0.65 (0.15)	0.7 (0.11)	0.42 (0.03)
		Disc	0.42 (0.12)	0.37 (0.08)	0.61 (0.04)
		N	85	70	15
	Writing	Diff	0.73 (0.2)	0.76 (0.15)	0.68 (0.27)
		Disc	0.36 (0.14)	0.31 (0.07)	0.43 (0.18)
		N	17	10	7
6	Math	Diff	0.5 (0.16)	0.54 (0.15)	0.44 (0.16)
		Disc	0.46 (0.11)	0.41 (0.09)	0.54 (0.1)
		N	147	86	61
	Reading	Diff	0.69 (0.16)	0.75 (0.11)	0.42 (0.05)
		Disc	0.43 (0.11)	0.39 (0.08)	0.6 (0.05)
		N	85	70	15
7	Math	Diff	0.48 (0.17)	0.54 (0.17)	0.38 (0.13)
		Disc	0.42 (0.12)	0.36 (0.09)	0.51 (0.09)
		N	147	86	61
	Reading	Diff	0.69 (0.15)	0.74 (0.12)	0.49 (0.05)
		Disc	0.43 (0.12)	0.39 (0.08)	0.62 (0.03)
		N	85	70	15

[1]Diff = Difficulty (p-value); Disc = Discrimination (point-biserial correlation); N = number of items
[2]All = MC and OR; MC = multiple-choice; OR = open response

Table I-2. 2007-08 NECAP Item Difficulty and Discrimination Index Means and Standard Deviations by Grade, Subject, and Item Type.

8	Math	Diff	0.47 (0.17)	0.53 (0.15)	0.4 (0.17)
		Disc	0.44 (0.12)	0.38 (0.09)	0.53 (0.1)
		N	147	86	61
	Reading	Diff	0.71 (0.14)	0.75 (0.12)	0.53 (0.03)
		Disc	0.44 (0.13)	0.39 (0.08)	0.67 (0.03)
		N	85	70	15
	Writing	Diff	0.71 (0.19)	0.69 (0.17)	0.73 (0.24)
		Disc	0.37 (0.17)	0.28 (0.08)	0.5 (0.2)
		N	17	10	7
11	Math	Diff	0.32 (0.17)	0.41 (0.13)	0.23 (0.16)
		Disc	0.42 (0.13)	0.34 (0.10)	0.51 (0.11)
		N	110	56	54
	Reading	Diff	0.65 (0.15)	0.7 (0.11)	0.43 (0.05)
		Disc	0.45 (0.13)	0.4 (0.09)	0.67 (0.02)
		N	68	56	12

[1]Diff = Difficulty (p-value); Disc = Discrimination (point-biserial correlation); N = number of items
[2]All = MC and OR; MC = multiple-choice; OR = open response

Table I-3: 2007-08 NECAP Frequencies, Relative Percentages, and Cumulative Percentages of Difficulty and Discrimination Indices by Grade, Subject, and Index Range.

			Difficulty			Discrimination		
Grade	**Subject**	**Range**	**N**	**%**	**Cum%**	**N**	**%**	**Cum%**
3	Math	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	0	0.0	0.0	0	0.0	0.0
		0.20 - 0.29	10	1.6	1.6	24	3.8	3.8
		0.30 - 0.39	3	0.5	2.0	182	28.4	32.2
		0.40 - 0.49	91	14.2	16.3	294	45.9	78.1
		0.50 - 0.59	110	17.2	33.4	129	20.2	98.3
		0.60 - 0.69	30	4.7	38.1	11	1.7	100.0
		0.70 - 0.79	203	31.7	69.8	0	0.0	100.0
		0.80 - 0.89	182	28.4	98.3	0	0.0	100.0
		0.90 - 0.99	11	1.7	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0
3	Reading	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	0	0.0	0.0	0	0.0	0.0
		0.20 - 0.29	0	0.0	0.0	13	3.3	3.3
		0.30 - 0.39	22	5.6	5.6	111	28.4	31.7
		0.40 - 0.49	33	8.4	14.1	82	21.0	52.7
		0.50 - 0.59	58	14.8	28.9	172	44.0	96.7
		0.60 - 0.69	59	15.1	44.0	13	3.3	100.0
		0.70 - 0.79	74	18.9	62.9	0	0.0	100.0
		0.80 - 0.89	133	34.0	96.9	0	0.0	100.0
		0.90 - 0.99	12	3.1	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0

cont'd

Table I-3: 2007-08 NECAP Frequencies, Relative Percentages, and Cumulative Percentages of Difficulty and Discrimination Indices by Grade, Subject, and Index Range.

			Difficulty			Discrimination		
Grade	**Subject**	**Range**	**N**	**%**	**Cum%**	**N**	**%**	**Cum%**
4	Math	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	1	0.2	0.2
		0.10 - 0.19	2	0.3	0.3	1	0.2	0.3
		0.20 - 0.29	3	0.5	0.8	49	7.7	8.0
		0.30 - 0.39	46	7.2	8.0	151	23.6	31.6
		0.40 - 0.49	55	8.6	16.6	293	45.8	77.3
		0.50 - 0.59	169	26.4	43.0	140	21.9	99.2
		0.60 - 0.69	107	16.7	59.7	5	0.8	100.0
		0.70 - 0.79	161	25.2	84.8	0	0.0	100.0
		0.80 - 0.89	95	14.8	99.7	0	0.0	100.0
		0.90 - 0.99	2	0.3	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0
4	Reading	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	0	0.0	0.0	13	3.3	3.3
		0.20 - 0.29	0	0.0	0.0	90	23.0	26.3
		0.30 - 0.39	11	2.8	2.8	230	58.8	85.2
		0.40 - 0.49	25	6.4	9.2	57	14.6	99.7
		0.50 - 0.59	47	12.0	21.2	1	0.3	100.0
		0.60 - 0.69	74	18.9	40.2	0	0.0	100.0
		0.70 - 0.79	112	28.6	68.8	0	0.0	100.0
		0.80 - 0.89	100	25.6	94.4	0	0.0	100.0
		0.90 - 0.99	22	5.6	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	0.0

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Table I-3: 2007-08 NECAP Frequencies, Relative Percentages, and Cumulative Percentages of Difficulty and Discrimination Indices by Grade, Subject, and Index Range.

			Difficulty			Discrimination		
Grade	Subject	Range	N	%	Cum%	N	%	Cum%
5	Math	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	2	0.3	0.3	2	0.3	0.3
		0.20 - 0.29	73	12.6	13.0	83	14.3	14.7
		0.30 - 0.39	61	10.5	23.5	185	32.0	46.6
		0.40 - 0.49	112	19.3	42.8	171	29.5	76.2
		0.50 - 0.59	128	22.1	64.9	81	14.0	90.2
		0.60 - 0.69	57	9.8	74.8	57	9.8	100.0
		0.70 - 0.79	110	19.0	93.8	0	0.0	100.0
		0.80 - 0.89	36	6.2	100.0	0	0.0	100.0
		0.90 - 0.99	0	0.0	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0
5	Reading	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	0	0.0	0.0	11	2.8	2.8
		0.20 - 0.29	0	0.0	0.0	66	16.9	19.7
		0.30 - 0.39	11	2.8	2.8	136	34.8	54.5
		0.40 - 0.49	61	15.6	18.4	107	27.4	81.8
		0.50 - 0.59	75	19.2	37.6	44	11.3	93.1
		0.60 - 0.69	72	18.4	56.0	27	6.9	100.0
		0.70 - 0.79	73	18.7	74.7	0	0.0	100.0
		0.80 - 0.89	98	25.1	99.7	0	0.0	100.0
		0.90 - 0.99	1	0.3	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0
5	Writing	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	0	0.0	0.0	1	5.9	5.9
		0.20 - 0.29	0	0.0	0.0	5	29.4	35.3
		0.30 - 0.39	0	0.0	0.0	7	41.2	76.5
		0.40 - 0.49	4	23.5	23.5	0	0.0	76.5
		0.50 - 0.59	2	11.8	35.3	3	17.6	94.1
		0.60 - 0.69	0	0.0	35.3	1	5.9	100.0
		0.70 - 0.79	1	5.9	41.2	0	0.0	100.0
		0.80 - 0.89	6	35.3	76.5	0	0.0	100.0
		0.90 - 0.99	4	23.5	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0

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Table I-3: 2007-08 NECAP Frequencies, Relative Percentages, and Cumulative Percentages of Difficulty and Discrimination Indices by Grade, Subject, and Index Range.

			Difficulty			Discrimination		
Grade	**Subject**	**Range**	**N**	**%**	**Cum%**	**N**	**%**	**Cum%**
6	Math	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	14	2.4	2.4	0	0.0	0.0
		0.20 - 0.29	58	10.0	12.4	58	10.0	10.0
		0.30 - 0.39	65	11.2	23.7	154	26.6	36.6
		0.40 - 0.49	105	18.1	41.8	173	29.9	66.5
		0.50 - 0.59	151	26.1	67.9	122	21.1	87.6
		0.60 - 0.69	77	13.3	81.2	61	10.5	98.1
		0.70 - 0.79	99	17.1	98.3	11	1.9	100.0
		0.80 - 0.89	10	1.7	100.0	0	0.0	100.0
		0.90 - 0.99	0	0.0	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0
6	Reading	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	0	0.0	0.0	2	0.5	0.5
		0.20 - 0.29	0	0.0	0.0	33	8.4	9.0
		0.30 - 0.39	33	8.4	8.4	172	44.0	52.9
		0.40 - 0.49	35	9.0	17.4	112	28.6	81.6
		0.50 - 0.59	25	6.4	23.8	54	13.8	95.4
		0.60 - 0.69	72	18.4	42.2	18	4.6	100.0
		0.70 - 0.79	82	21.0	63.2	0	0.0	100.0
		0.80 - 0.89	120	30.7	93.9	0	0.0	100.0
		0.90 - 0.99	24	6.1	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0

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Table I-3: 2007-08 NECAP Frequencies, Relative Percentages, and Cumulative Percentages of Difficulty and Discrimination Indices by Grade, Subject, and Index Range.

			Difficulty			Discrimination		
Grade	**Subject**	**Range**	**N**	**%**	**Cum%**	**N**	**%**	**Cum%**
7	Math	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	0	0.0	0.0	10	1.7	1.7
		0.20 - 0.29	102	17.6	17.6	86	14.9	16.6
		0.30 - 0.39	86	14.9	32.5	92	15.9	32.5
		0.40 - 0.49	109	18.8	51.3	258	44.6	77.0
		0.50 - 0.59	113	19.5	70.8	95	16.4	93.4
		0.60 - 0.69	77	13.3	84.1	37	6.4	99.8
		0.70 - 0.79	66	11.4	95.5	1	0.2	100.0
		0.80 - 0.89	26	4.5	100.0	0	0.0	100.0
		0.90 - 0.99	0	0.0	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0
7	Reading	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	0	0.0	0.0	1	0.3	0.3
		0.20 - 0.29	0	0.0	0.0	55	14.1	14.3
		0.30 - 0.39	0	0.0	0.0	102	26.1	40.4
		0.40 - 0.49	58	14.8	14.8	160	40.9	81.3
		0.50 - 0.59	37	9.5	24.3	15	3.8	85.2
		0.60 - 0.69	76	19.4	43.7	58	14.8	100.0
		0.70 - 0.79	103	26.3	70.1	0	0.0	100.0
		0.80 - 0.89	114	29.2	99.2	0	0.0	100.0
		0.90 - 0.99	3	0.8	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0

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Table I-3: 2007-08 NECAP Frequencies, Relative Percentages, and Cumulative Percentages of Difficulty and Discrimination Indices by Grade, Subject, and Index Range.

			Difficulty			Discrimination		
Grade	Subject	Range	N	%	Cum%	N	%	Cum%
8	Math	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	23	4.0	4.0	10	1.7	1.7
		0.20 - 0.29	74	12.8	16.8	73	12.6	14.3
		0.30 - 0.39	109	18.8	35.6	158	27.3	41.6
		0.40 - 0.49	118	20.4	56.0	139	24.0	65.6
		0.50 - 0.59	91	15.7	71.7	109	18.8	84.5
		0.60 - 0.69	121	20.9	92.6	90	15.5	100.0
		0.70 - 0.79	28	4.8	97.4	0	0.0	100.0
		0.80 - 0.89	15	2.6	100.0	0	0.0	100.0
		0.90 - 0.99	0	0.0	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0
8	Reading	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	0	0.0	0.0	1	0.3	0.3
		0.20 - 0.29	0	0.0	0.0	12	3.1	3.3
		0.30 - 0.39	1	0.3	0.3	159	40.7	44.0
		0.40 - 0.49	15	3.8	4.1	116	29.7	73.7
		0.50 - 0.59	67	17.1	21.2	34	8.7	82.4
		0.60 - 0.69	69	17.6	38.9	56	14.3	96.7
		0.70 - 0.79	82	21.0	59.8	13	3.3	100.0
		0.80 - 0.89	126	32.2	92.1	0	0.0	100.0
		0.90 - 0.99	31	7.9	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0
8	Writing	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	0	0.0	0.0	1	5.9	5.9
		0.20 - 0.29	0	0.0	0.0	5	29.4	35.3
		0.30 - 0.39	0	0.0	0.0	7	41.2	76.5
		0.40 - 0.49	3	17.6	17.6	0	0.0	76.5
		0.50 - 0.59	4	23.5	41.2	0	0.0	76.5
		0.60 - 0.69	1	5.9	47.1	4	23.5	100.0
		0.70 - 0.79	2	11.8	58.8	0	0.0	100.0
		0.80 - 0.89	4	23.5	82.4	0	0.0	100.0
		0.90 - 0.99	3	17.6	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0

Difficulty = p-value; Discrimination = point-biserial correlation

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Table I-3. 2007-08 NECAP Frequencies, Relative Percentages, and Cumulative Percentages of Difficulty and Discrimination Indices by Grade, Subject, and Index Range.

			Difficulty			Discrimination		
Grade	**Subject**	**Range**	**N**	**%**	**Cum%**	**N**	**%**	**Cum%**
11	Math	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	34	7.1	7.1	9	1.9	1.9
		0.10 - 0.19	68	14.2	21.3	22	4.6	6.5
		0.20 - 0.29	93	19.5	40.8	31	6.5	13.0
		0.30 - 0.39	90	18.8	59.6	138	28.9	41.8
		0.40 - 0.49	105	22.0	81.6	169	35.4	77.2
		0.50 - 0.59	40	8.4	90.0	66	13.8	91.0
		0.60 - 0.69	36	7.5	97.5	32	6.7	97.7
		0.70 - 0.79	12	2.5	100.0	11	2.3	100.0
		0.80 - 0.89	0	0.0	100.0	0	0.0	100.0
		0.90 - 0.99	0	0.0	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0
11	Reading	< -0.30	0	0.0	0.0	0	0.0	0.0
		-0.30 - -0.21	0	0.0	0.0	0	0.0	0.0
		-0.20 - -0.11	0	0.0	0.0	0	0.0	0.0
		-0.10 - -0.01	0	0.0	0.0	0	0.0	0.0
		0.00 - 0.09	0	0.0	0.0	0	0.0	0.0
		0.10 - 0.19	0	0.0	0.0	9	2.6	2.6
		0.20 - 0.29	0	0.0	0.0	28	8.2	10.9
		0.30 - 0.39	29	8.5	8.5	114	33.5	44.4
		0.40 - 0.49	31	9.1	17.6	113	33.2	77.6
		0.50 - 0.59	21	6.2	23.8	16	4.7	82.4
		0.60 - 0.69	101	29.7	53.5	58	17.1	99.4
		0.70 - 0.79	71	20.9	74.4	2	0.6	100.0
		0.80 - 0.89	87	25.6	100.0	0	0.0	100.0
		0.90 - 0.99	0	0.0	100.0	0	0.0	100.0
		>= 1.00	0	0.0	100.0	0	0.0	100.0

Difficulty = p-value; Discrimination = point-biserial correlation

APPENDIX J—SUBGROUP RELIABILITY

Table J-1. Reliabilities of Subgroups by Grade and Subject.

Grade	Subject	Subgroup	N	(α)
3	Math	White	25823	0.92
		Native Hawaiian or Pacific Islander	11	0.75
		Hispanic or Latino	2339	0.93
		Black or African American	1239	0.93
		Asian	776	0.93
		American Indian or Alaskan Native	123	0.94
		LEP	1408	0.94
		IEP	4171	0.94
		Low SES	9163	0.93
	Reading	White	25820	0.89
		Native Hawaiian or Pacific Islander	11	0.64
		Hispanic or Latino	2271	0.89
		Black or African American	1221	0.89
		Asian	766	0.88
		American Indian or Alaskan Native	122	0.89
		LEP	1301	0.90
		IEP	4170	0.90
		Low SES	9113	0.90
4	Math	White	26940	0.92
		Native Hawaiian or Pacific Islander	10	0.95
		Hispanic or Latino	2787	0.92
		Black or African American	1401	0.93
		Asian	782	0.94
		American Indian or Alaskan Native	230	0.93
		LEP	1524	0.93
		IEP	4724	0.93
		Low SES	10004	0.93
	Reading	White	26935	0.86
		Native Hawaiian or Pacific Islander	10	0.83
		Hispanic or Latino	2717	0.88
		Black or African American	1389	0.88
		Asian	762	0.85
		American Indian or Alaskan Native	231	0.88
		LEP	1408	0.88
		IEP	4724	0.88
		Low SES	9941	0.88

(cont'd)

Table J-1. Reliabilities of Subgroups by Grade and Subject

Grade	Subject	Subgroup	N	(α)
5	Math	White	27352	0.91
		Native Hawaiian or Pacific Islander	11	0.86
		Hispanic or Latino	2518	0.89
		Black or African American	1370	0.90
		Asian	836	0.92
		American Indian or Alaskan Native	214	0.91
		LEP	1356	0.91
		IEP	5289	0.90
		Low SES	9638	0.90
	Reading	White	27353	0.88
		Native Hawaiian or Pacific Islander	11	0.65
		Hispanic or Latino	2467	0.87
		Black or African American	1354	0.88
		Asian	818	0.87
		American Indian or Alaskan Native	213	0.88
		LEP	1265	0.88
		IEP	5288	0.88
		Low SES	9596	0.88
	Writing	White	27290	0.74
		Native Hawaiian or Pacific Islander	11	0.53
		Hispanic or Latino	2465	0.76
		Black or African American	1347	0.76
		Asian	819	0.73
		American Indian or Alaskan Native	213	0.76
		LEP	1263	0.78
		IEP	5253	0.77
		Low SES	9553	0.76
6	Math	White	27921	0.92
		Native Hawaiian or Pacific Islander	9	0.95
		Hispanic or Latino	2476	0.91
		Black or African American	1374	0.91
		Asian	794	0.93
		American Indian or Alaskan Native	222	0.93
		LEP	1196	0.91
		IEP	5377	0.89
		Low SES	9596	0.91
	Reading	White	27921	0.87
		Native Hawaiian or Pacific Islander	9	0.92
		Hispanic or Latino	2421	0.87
		Black or African American	1358	0.88
		Asian	786	0.87
		American Indian or Alaskan Native	223	0.91
		LEP	1100	0.87
		IEP	5388	0.87
		Low SES	9550	0.88

(cont'd)

Table J-1. Reliabilities of Subgroups by Grade and Subject

Grade	Subject	Subgroup	N	(α)
7	Math	White	28954	0.92
		Native Hawaiian or Pacific Islander	10	0.89
		Hispanic or Latino	2542	0.89
		Black or African American	1413	0.90
		Asian	753	0.93
		American Indian or Alaskan Native	150	0.89
		LEP	1002	0.91
		IEP	5709	0.89
		Low SES	9699	0.90
	Reading	White	28972	0.88
		Native Hawaiian or Pacific Islander	10	0.78
		Hispanic or Latino	2486	0.88
		Black or African American	1398	0.88
		Asian	734	0.88
		American Indian or Alaskan Native	150	0.91
		LEP	901	0.87
		IEP	5717	0.88
		Low SES	9658	0.88
8	Math	White	29907	0.92
		Native Hawaiian or Pacific Islander	16	0.90
		Hispanic or Latino	2706	0.89
		Black or African American	1407	0.89
		Asian	790	0.93
		American Indian or Alaskan Native	131	0.92
		LEP	921	0.90
		IEP	5655	0.87
		Low SES	9521	0.90
	Reading	White	29901	0.89
		Native Hawaiian or Pacific Islander	16	0.84
		Hispanic or Latino	2667	0.90
		Black or African American	1406	0.91
		Asian	778	0.90
		American Indian or Alaskan Native	132	0.89
		LEP	840	0.91
		IEP	5673	0.90
		Low SES	9484	0.90
	Writing	White	29818	0.74
		Native Hawaiian or Pacific Islander	16	0.77
		Hispanic or Latino	2643	0.76
		Black or African American	1393	0.76
		Asian	777	0.75
		American Indian or Alaskan Native	131	0.75
		LEP	832	0.77
		IEP	5619	0.74
		Low SES	9422	0.75

(cont'd)

Table J-1. Reliabilities of Subgroups by Grade and Subject

Grade	Subject	Subgroup	N	(α)
11	Math	White	29562	0.91
		Native Hawaiian or Pacific Islander	15	0.90
		Hispanic or Latino	2207	0.86
		Black or African American	1231	0.87
		Asian	669	0.93
		American Indian or Alaskan Native	148	0.88
		LEP	692	0.88
		IEP	4926	0.83
		Low SES	6762	0.88
	Reading	White	29691	0.89
		Native Hawaiian or Pacific Islander	15	0.63
		Hispanic or Latino	2171	0.87
		Black or African American	1231	0.89
		Asian	661	0.90
		American Indian or Alaskan Native	150	0.90
		LEP	639	0.85
		IEP	4970	0.88
		Low SES	6771	0.89

[1]Only subgroups with sample size ≥10 reported

APPENDIX K—DECISION ACCURACY AND CONSISTENCY RESULTS

Table K-1a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Math, Grade 3

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.105	0.020	0.000	0.000	0.126
PP	0.022	0.152	0.041	0.000	0.215
P	0.000	0.033	0.390	0.047	0.470
PWD	0.000	0.000	0.021	0.169	0.190
Total	0.127	0.206	0.451	0.216	1.000

Overall Accuracy (sum of diagonal) = 0.816

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-1b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Math, Grade 3

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.097	0.029	0.001	0.000	0.127
PP	0.029	0.127	0.051	0.000	0.206
P	0.001	0.051	0.353	0.047	0.451
PWD	0.000	0.000	0.047	0.169	0.216
Total	0.127	0.206	0.451	0.216	1.000

Overall Consistency (sum of diagonal) = 0.746

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-1c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Math, Grade 3

Accuracy	0.816
Consistency	0.746
Kappa (k)	0.633

Table K-1d. 2007-08 NECAP Indices Conditional On Achievement Level: Math, Grade 3

Achievement Level	Accuracy	Consistency
SBP	0.838	0.766
PP	0.709	0.614
P	0.830	0.783
PWD	0.889	0.784

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-1e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Math, Grade 3

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.958	0.020	0.022	0.941
PP:P	0.926	0.041	0.033	0.897
P:PWD	0.932	0.047	0.021	0.907

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-2a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Math, Grade 4

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.121	0.023	0.000	0.000	0.144
PP	0.024	0.181	0.044	0.000	0.249
P	0.000	0.034	0.381	0.041	0.457
PWD	0.000	0.000	0.018	0.133	0.151
Total	0.145	0.238	0.442	0.174	1.000
Overall Accuracy (sum of diagonal) = 0.816					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-2b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Math, Grade 4

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.112	0.032	0.001	0.000	0.145
PP	0.032	0.153	0.054	0.000	0.238
P	0.001	0.054	0.348	0.041	0.442
PWD	0.000	0.000	0.041	0.134	0.174
Total	0.145	0.238	0.442	0.174	1.000
Overall Consistency (sum of diagonal) = 0.746					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-2c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Math, Grade 4

Accuracy	0.816
Consistency	0.746
Kappa (k)	0.635

Table K-2d. 2007-08 NECAP Indices Conditional On Achievement Level: Math, Grade 4

Achievement Level	Accuracy	Consistency
SBP	0.841	0.773
PP	0.729	0.640
P	0.835	0.785
PWD	0.883	0.767

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-2e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Math, Grade 4

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.953	0.023	0.024	0.934
PP:P	0.922	0.044	0.034	0.892
P:PWD	0.941	0.041	0.018	0.919

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-3a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Math, Grade 5

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.151	0.031	0.002	0.000	0.184
PP	0.031	0.095	0.045	0.000	0.171
P	0.002	0.037	0.404	0.043	0.485
PWD	0.000	0.000	0.022	0.139	0.160
Total	0.183	0.163	0.472	0.182	1.000
Overall Accuracy (sum of diagonal) = 0.789					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-3b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Math, Grade 5

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.138	0.039	0.007	0.000	0.183
PP	0.039	0.073	0.052	0.000	0.163
P	0.007	0.052	0.368	0.045	0.472
PWD	0.000	0.000	0.045	0.137	0.182
Total	0.183	0.163	0.472	0.182	1.000
Overall Consistency (sum of diagonal) = 0.715					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-3c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Math, Grade 5

Accuracy	0.789
Consistency	0.715
Kappa (k)	0.583

Table K-3d. 2007-08 NECAP Indices Conditional On Achievement Level: Math, Grade 5

Achievement Level	Accuracy	Consistency
SBP	0.821	0.750
PP	0.557	0.446
P	0.832	0.780
PWD	0.866	0.753

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-3e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Math, Grade 5

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.9346	0.0329	0.0325	0.9084
PP:P	0.9155	0.0462	0.0382	0.8823
P:PWD	0.9353	0.0432	0.0215	0.9101

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-4a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Math, Grade 6

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.154	0.028	0.001	0.000	0.182
PP	0.028	0.112	0.041	0.000	0.181
P	0.001	0.035	0.386	0.039	0.460
PWD	0.000	0.000	0.020	0.157	0.177
Total	0.182	0.174	0.448	0.196	1.000

Overall Accuracy (sum of diagonal) = 0.809

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-4b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Math, Grade 6

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.142	0.036	0.004	0.000	0.182
PP	0.036	0.089	0.050	0.000	0.174
P	0.004	0.050	0.354	0.041	0.448
PWD	0.000	0.000	0.041	0.155	0.196
Total	0.182	0.174	0.448	0.196	1.000

Overall Consistency (sum of diagonal) = 0.740

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-4c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Math, Grade 6

Accuracy	0.809
Consistency	0.740
Kappa (k)	0.627

Table K-4d. 2007-08 NECAP Indices Conditional On Achievement Level: Math, Grade 6

Achievement Level	Accuracy	Consistency
SBP	0.846	0.784
PP	0.619	0.509
P	0.840	0.789
PWD	0.887	0.791

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-4e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Math, Grade 6

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.944	0.028	0.028	0.922
PP:P	0.923	0.042	0.035	0.893
P:PWD	0.941	0.039	0.020	0.918

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-5a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Math, Grade 7

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.162	0.034	0.000	0.000	0.197
PP	0.032	0.147	0.047	0.000	0.226
P	0.000	0.036	0.342	0.039	0.416
PWD	0.000	0.000	0.020	0.141	0.161
Total	0.195	0.218	0.409	0.179	1.000

Overall Accuracy (sum of diagonal) = 0.792

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-5b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Math, Grade 7

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.148	0.044	0.003	0.000	0.195
PP	0.044	0.119	0.055	0.000	0.218
P	0.003	0.055	0.310	0.041	0.409
PWD	0.000	0.000	0.041	0.139	0.179
Total	0.195	0.218	0.409	0.179	1.000

Overall Consistency (sum of diagonal) = 0.715

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-5c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Math, Grade 7

Accuracy	0.792
Consistency	0.715
Kappa (k)	0.602

Table K-5d. 2007-08 NECAP Indices Conditional On Achievement Level: Math, Grade 7

Achievement Level	Accuracy	Consistency
SBP	0.824	0.759
PP	0.652	0.546
P	0.820	0.758
PWD	0.876	0.773

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-5e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Math, Grade 7

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.933	0.035	0.032	0.906
PP:P	0.917	0.047	0.036	0.884
P:PWD	0.942	0.039	0.020	0.919

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-6a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Math, Grade 8

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.173	0.039	0.000	0.000	0.212
PP	0.033	0.157	0.048	0.000	0.238
P	0.000	0.034	0.345	0.035	0.415
PWD	0.000	0.000	0.017	0.119	0.135
Total	0.206	0.231	0.409	0.154	1.000
Overall Accuracy (sum of diagonal) = 0.794					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-6b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Math, Grade 8

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.155	0.048	0.003	0.000	0.206
PP	0.048	0.128	0.055	0.000	0.231
P	0.003	0.055	0.316	0.036	0.409
PWD	0.000	0.000	0.036	0.118	0.154
Total	0.206	0.231	0.409	0.154	1.000
Overall Consistency (sum of diagonal) = 0.717					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-6c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Math, Grade 8

Accuracy	0.794
Consistency	0.717
Kappa (k)	0.603

Table K-6d. 2007-08 NECAP Indices Conditional On Achievement Level: Math, Grade 8

Achievement Level	Accuracy	Consistency
SBP	0.814	0.753
PP	0.660	0.554
P	0.832	0.772
PWD	0.878	0.767

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-6e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Math, Grade 8

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.927	0.040	0.034	0.898
PP:P	0.917	0.048	0.035	0.885
P:PWD	0.949	0.035	0.017	0.928

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-7a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Math, Grade 11

Observed Achievement Level	True Achievement Level				Total
	SBP	PP	P	PWD	
SBP	0.372	0.050	0.000	0.000	0.422
PP	0.040	0.224	0.047	0.000	0.310
P	0.000	0.028	0.229	0.005	0.262
PWD	0.000	0.000	0.001	0.005	0.006
Total	0.412	0.302	0.276	0.009	1.000
Overall Accuracy (sum of diagonal) = 0.794					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-7b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Math, Grade 11

Form 2 Achievement Level	Form 1 Achievement Level				Total
	SBP	PP	P	PWD	
SBP	0.350	0.061	0.001	0.000	0.412
PP	0.061	0.190	0.051	0.000	0.302
P	0.001	0.051	0.220	0.004	0.276
PWD	0.000	0.000	0.004	0.005	0.009
Total	0.412	0.302	0.276	0.009	1.000
Overall Consistency (sum of diagonal) = 0.717					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-7c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Math, Grade 11

Accuracy	0.830
Consistency	0.765
Kappa (k)	0.645

Table K-7d. 2007-08 NECAP Indices Conditional On Achievement Level: Math, Grade 11

Achievement Level	Accuracy	Consistency
SBP	0.882	0.849
PP	0.722	0.629
P	0.874	0.796
PWD	0.807	0.539

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-7e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Math, Grade 11

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.910	0.050	0.040	0.875
PP:P	0.925	0.047	0.028	0.896
P:PWD	0.994	0.005	0.001	0.991

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-8a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Reading, Grade 3

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.071	0.018	0.000	0.000	0.090
PP	0.023	0.158	0.047	0.000	0.228
P	0.000	0.040	0.427	0.054	0.521
PWD	0.000	0.000	0.021	0.140	0.161
Total	0.094	0.217	0.496	0.193	1.000
Overall Accuracy (sum of diagonal) = 0.796					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-8b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Reading, Grade 3

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.065	0.028	0.001	0.000	0.094
PP	0.028	0.130	0.060	0.000	0.217
P	0.001	0.060	0.383	0.052	0.496
PWD	0.000	0.000	0.052	0.142	0.193
Total	0.094	0.217	0.496	0.193	1.000
Overall Consistency (sum of diagonal) = 0.720					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-8c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Reading, Grade 3

Accuracy	0.796
Consistency	0.720
Kappa (k)	0.576

Table K-8d. 2007-08 NECAP Indices Conditional On Achievement Level: Reading, Grade 3

Achievement Level	Accuracy	Consistency
SBP	0.794	0.691
PP	0.694	0.597
P	0.820	0.773
PWD	0.868	0.734

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-8e.2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Reading, Grade 3

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.959	0.019	0.023	0.942
PP:P	0.912	0.047	0.040	0.878
P:PWD	0.925	0.054	0.021	0.897

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-9a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Reading, Grade 4

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.072	0.021	0.000	0.000	0.093
PP	0.027	0.163	0.055	0.000	0.244
P	0.000	0.045	0.384	0.063	0.493
PWD	0.000	0.000	0.024	0.146	0.170
Total	0.099	0.229	0.464	0.209	1.000
Overall Accuracy (sum of diagonal) = 0.765					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-9b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Reading, Grade 4

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.065	0.031	0.002	0.000	0.099
PP	0.031	0.130	0.067	0.000	0.229
P	0.002	0.067	0.335	0.060	0.464
PWD	0.000	0.000	0.060	0.149	0.209
Total	0.099	0.229	0.464	0.209	1.000
Overall Consistency (sum of diagonal) = 0.678					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-9c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Reading, Grade 4

Accuracy	0.765
Consistency	0.678
Kappa (k)	0.527

Table K-9d. 2007-08 NECAP Indices Conditional On Achievement Level: Reading, Grade 4

Achievement Level	Accuracy	Consistency
SBP	0.774	0.660
PP	0.667	0.568
P	0.780	0.722
PWD	0.858	0.712

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-9e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Reading, Grade 4

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.952	0.021	0.027	0.933
PP:P	0.899	0.055	0.046	0.861
P:PWD	0.913	0.063	0.024	0.880

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-10a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Reading, Grade 5

Observed Achievement Level	True Achievement Level				Total
	SBP	PP	P	PWD	
SBP	0.058	0.016	0.000	0.000	0.074
PP	0.022	0.199	0.048	0.000	0.269
P	0.000	0.043	0.379	0.050	0.472
PWD	0.000	0.000	0.025	0.161	0.185
Total	0.080	0.258	0.452	0.210	1.000
Overall Accuracy (sum of diagonal) = 0.797					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-10b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Reading, Grade 5

Form 2 Achievement Level	Form 1 Achievement Level				Total
	SBP	PP	P	PWD	
SBP	0.053	0.026	0.001	0.000	0.080
PP	0.026	0.169	0.063	0.000	0.258
P	0.001	0.063	0.337	0.052	0.452
PWD	0.000	0.000	0.052	0.158	0.210
Total	0.080	0.258	0.452	0.210	1.000
Overall Consistency (sum of diagonal) = 0.717					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-10c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Reading, Grade 5

Accuracy	0.797
Consistency	0.717
Kappa (k)	0.583

Table K-10d. 2007-08 NECAP Indices Conditional On Achievement Level: Reading, Grade 5

Achievement Level	Accuracy	Consistency
SBP	0.787	0.669
PP	0.740	0.654
P	0.803	0.745
PWD	0.867	0.753

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-10e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Reading, Grade 5

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.963	0.016	0.022	0.947
PP:P	0.909	0.048	0.043	0.873
P:PWD	0.926	0.050	0.025	0.896

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-11a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Reading, Grade 6

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.068	0.018	0.000	0.000	0.086
PP	0.024	0.189	0.049	0.000	0.261
P	0.000	0.044	0.408	0.046	0.498
PWD	0.000	0.000	0.022	0.133	0.155
Total	0.092	0.250	0.479	0.180	1.000
Overall Accuracy (sum of diagonal) = 0.798					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-11b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Reading, Grade 6

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.0624	0.0284	0.0008	0	0.0915
PP	0.0284	0.1581	0.0637	0.0001	0.2502
P	0.0008	0.0637	0.3663	0.0477	0.4785
PWD	0	0.0001	0.0477	0.1319	0.1797
Total	0.0915	0.2502	0.4785	0.1797	1
Overall Consistency (sum of diagonal) = 0.719					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-11c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Reading, Grade 6

Accuracy	0.798
Consistency	0.719
Kappa (k)	0.579

Table K-11d. 2007-08 NECAP Indices Conditional On Achievement Level: Reading, Grade 6

Achievement Level	Accuracy	Consistency
SBP	0.794	0.681
PP	0.723	0.632
P	0.819	0.765
PWD	0.859	0.734

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-11e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Reading, Grade 6

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.959	0.018	0.024	0.942
PP:P	0.908	0.049	0.044	0.871
P:PWD	0.932	0.046	0.022	0.904

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-12a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Reading, Grade 7

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.061	0.016	0.000	0.000	0.077
PP	0.020	0.163	0.043	0.000	0.226
P	0.000	0.038	0.458	0.047	0.542
PWD	0.000	0.000	0.021	0.135	0.155
Total	0.081	0.217	0.521	0.181	1.000
Overall Accuracy (sum of diagonal) = 0.816					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-12b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Reading, Grade 7

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.056	0.025	0.001	0.000	0.081
PP	0.025	0.136	0.056	0.000	0.217
P	0.001	0.056	0.418	0.047	0.521
PWD	0.000	0.000	0.047	0.135	0.181
Total	0.081	0.217	0.521	0.181	1.000
Overall Consistency (sum of diagonal) = 0.744					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-12c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Reading, Grade 7

Accuracy	0.816
Consistency	0.744
Kappa (k)	0.602

Table K-12d. 2007-08 NECAP Indices Conditional On Achievement Level: Reading, Grade 7

Achievement Level	Accuracy	Consistency
SBP	0.796	0.689
PP	0.721	0.628
P	0.844	0.802
PWD	0.868	0.743

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-12e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Reading, Grade 7

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.964	0.016	0.020	0.950
PP:P	0.919	0.043	0.038	0.887
P:PWD	0.933	0.047	0.021	0.907

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-13a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Reading, Grade 8

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.087	0.019	0.000	0.000	0.106
PP	0.022	0.216	0.047	0.000	0.284
P	0.000	0.038	0.367	0.045	0.449
PWD	0.000	0.000	0.020	0.141	0.161
Total	0.109	0.272	0.433	0.186	1.000
Overall Accuracy (sum of diagonal) = 0.809					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-13b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Reading, Grade 8

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.080	0.028	0.000	0.000	0.109
PP	0.028	0.185	0.058	0.000	0.272
P	0.000	0.058	0.330	0.045	0.433
PWD	0.000	0.000	0.045	0.141	0.186
Total	0.109	0.272	0.433	0.186	1.000
Overall Consistency (sum of diagonal) = 0.735					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-13c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Reading, Grade 8

Accuracy	0.809
Consistency	0.735
Kappa (k)	0.618

Table K-13d. 2007-08 NECAP Indices Conditional On Achievement Level: Reading, Grade 8

Achievement Level	Accuracy	Consistency
SBP	0.821	0.736
PP	0.758	0.681
P	0.815	0.761
PWD	0.875	0.757

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-13e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Reading, Grade 8

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.959	0.019	0.022	0.943
PP:P	0.916	0.047	0.038	0.882
P:PWD	0.935	0.045	0.020	0.910

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-14a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Reading, Grade 11

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.090	0.020	0.000	0.000	0.110
PP	0.023	0.205	0.045	0.000	0.274
P	0.000	0.038	0.349	0.044	0.431
PWD	0.000	0.000	0.022	0.163	0.186
Total	0.114	0.263	0.417	0.207	1.000
Overall Accuracy (sum of diagonal) = 0.808					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-14b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Reading, Grade 11

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.084	0.030	0.000	0.000	0.114
PP	0.030	0.175	0.058	0.000	0.263
P	0.000	0.058	0.312	0.046	0.417
PWD	0.000	0.000	0.046	0.161	0.207
Total	0.114	0.263	0.417	0.207	1.000
Overall Consistency (sum of diagonal) = 0.732					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-14c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Reading, Grade 11

Accuracy	0.808
Consistency	0.732
Kappa (k)	0.618

Table K-14d. 2007-08 NECAP Indices Conditional On Achievement Level: Reading, Grade 11

Achievement Level	Accuracy	Consistency
SBP	0.821	0.734
PP	0.749	0.667
P	0.810	0.750
PWD	0.879	0.777

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-14e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Reading, Grade 11

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.957	0.020	0.023	0.940
PP:P	0.917	0.045	0.038	0.883
P:PWD	0.934	0.044	0.022	0.908

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-15a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Writing, Grade 5

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.136	0.046	0.004	0.000	0.185
PP	0.060	0.171	0.088	0.007	0.325
P	0.004	0.064	0.179	0.084	0.330
PWD	0.000	0.001	0.030	0.128	0.160
Total	0.199	0.282	0.301	0.219	1.000
Overall Accuracy (sum of diagonal) = 0.613					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-15b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Writing, Grade 5

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.120	0.062	0.016	0.001	0.199
PP	0.062	0.122	0.082	0.015	0.282
P	0.016	0.082	0.135	0.068	0.301
PWD	0.001	0.015	0.068	0.134	0.219
Total	0.199	0.282	0.301	0.219	1.000
Overall Consistency (sum of diagonal) = 0.512					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-15c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Writing, Grade 5

Accuracy	0.613
Consistency	0.512
Kappa (k)	0.342

Table K-15d. 2007-08 NECAP Indices Conditional On Achievement Level: Writing, Grade 5

Achievement Level	Accuracy	Consistency
SBP	0.733	0.605
PP	0.525	0.435
P	0.542	0.449
PWD	0.800	0.612

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-15e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Writing, Grade 5

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.887	0.049	0.063	0.843
PP:P	0.833	0.099	0.069	0.772
P:PWD	0.878	0.091	0.032	0.830

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

Table K-16a. 2007-08 NECAP Decision Accuracy -- Cross-Tabulation of True and Observed Achievement Level Proportions: Writing, Grade 8

Observed Achievement Level	True Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.118	0.044	0.001	0.000	0.163
PP	0.057	0.259	0.102	0.002	0.420
P	0.001	0.060	0.238	0.062	0.361
PWD	0.000	0.000	0.012	0.044	0.056
Total	0.175	0.363	0.354	0.107	1.000
Overall Accuracy (sum of diagonal) = 0.659					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-16b. 2007-08 NECAP Decision Consistency -- Cross-Tabulation of Observed Achievement Level Proportions for Two Parallel Forms: Writing, Grade 8

Form 2 Achievement Level	Form 1 Achievement Level				
	SBP	PP	P	PWD	Total
SBP	0.104	0.063	0.008	0.000	0.175
PP	0.063	0.195	0.100	0.005	0.363
P	0.008	0.100	0.199	0.048	0.354
PWD	0.000	0.005	0.048	0.054	0.107
Total	0.175	0.363	0.354	0.107	1.000
Overall Consistency (sum of diagonal) = 0.551					

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-16c. 2007-08 NECAP Summary of Overall Accuracy and Consistency Indices: Writing, Grade 8

Accuracy	0.659
Consistency	0.551
Kappa (k)	0.359

Table K-16d. 2007-08 NECAP Indices Conditional On Achievement Level: Writing, Grade 8

Achievement Level	Accuracy	Consistency
SBP	0.724	0.593
PP	0.617	0.537
P	0.660	0.561
PWD	0.780	0.503

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table K-16e. 2007-08 NECAP Accuracy and Consistency Indices at Cutpoints: Writing, Grade 8

Cutpoint	Accuracy	False Positive	False Negative	Consistency
SBP:PP	0.898	0.045	0.058	0.857
PP:P	0.834	0.105	0.061	0.774
P:PWD	0.924	0.063	0.012	0.893

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

APPENDIX L—STUDENT QUESTIONNAIRE DATA

Table L-1. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 1-9 – Reading: Grade 3

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
1	(blank)	3896	13	343	650	673	2120	453	17	17	54	12
	A	8672	29	343	1408	1645	4822	797	16	19	56	9
	B	12527	41	348	761	1583	8116	2067	6	13	65	17
	C	5306	17	345	652	877	3156	621	12	17	59	12
2	(blank)	3927	13	343	665	679	2127	456	17	17	54	12
	A	7784	26	345	971	1403	4597	813	12	18	59	10
	B	10929	36	348	808	1404	6968	1749	7	13	64	16
	C	3908	13	347	377	577	2349	605	10	15	60	15
	D	3853	13	342	650	715	2173	315	17	19	56	8
3	(blank)	4022	13	343	688	707	2160	467	17	18	54	12
	A	17235	57	346	1795	2683	10540	2217	10	16	61	13
	B	8174	27	347	711	1194	5068	1201	9	15	62	15
	C	970	3	338	277	194	446	53	29	20	46	5
4	(blank)	4060	13	343	710	698	2183	469	17	17	54	12
	A	7512	25	342	1326	1581	4115	490	18	21	55	7
	B	11565	38	348	756	1500	7501	1808	7	13	65	16
	C	7264	24	347	679	999	4415	1171	9	14	61	16
5	(blank)	3904	13	343	654	668	2123	459	17	17	54	12
	A	20939	69	347	1943	2970	12975	3051	9	14	62	15
	B	2922	10	344	374	564	1734	250	13	19	59	9
	C	1976	6	342	316	417	1096	147	16	21	55	7
	D	660	2	338	184	159	286	31	28	24	43	5
6	(blank)	3951	13	343	656	687	2144	464	17	17	54	12
	A	16225	53	346	1676	2489	9830	2230	10	15	61	14
	B	6672	22	346	651	987	4165	869	10	15	62	13
	C	1322	4	345	184	215	774	149	14	16	59	11
	D	2231	7	344	304	400	1301	226	14	18	58	10
7	(blank)	3957	13	343	658	671	2158	470	17	17	55	12
	A	16999	56	348	1265	2303	10782	2649	7	14	63	16
	B	5772	19	344	822	1065	3371	514	14	18	58	9
	C	3148	10	343	528	612	1723	285	17	19	55	9
	D	525	2	335	198	127	180	20	38	24	34	4
8	(blank)	3954	13	343	663	685	2145	461	17	17	54	12
	A	14801	49	347	1336	2171	9011	2283	9	15	61	15
	B	7520	25	346	720	1090	4768	942	10	14	63	13
	C	1689	6	343	255	312	981	141	15	18	58	8
	D	2437	8	340	497	520	1309	111	20	21	54	5
9	(blank)	4062	13	343	660	714	2211	477	16	18	54	12
	A	9247	30	345	1035	1567	5592	1053	11	17	60	11
	B	8516	28	348	655	1091	5296	1474	8	13	62	17
	C	4250	14	346	456	671	2545	578	11	16	60	14
	D	4326	14	343	665	735	2570	356	15	17	59	8

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-2. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 1-9 – Reading: Grade 4

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
1	(blank)	3097	10	442	567	667	1404	459	18	22	45	15
	A	7434	23	441	1393	1741	3490	810	19	23	47	11
	B	16796	52	447	1254	2828	9126	3588	7	17	54	21
	C	4899	15	446	547	880	2516	956	11	18	51	20
2	(blank)	3118	10	442	570	666	1428	454	18	21	46	15
	A	7117	22	444	977	1539	3487	1114	14	22	49	16
	B	13649	42	447	1101	2255	7349	2944	8	17	54	22
	C	4919	15	446	468	865	2618	968	10	18	53	20
	D	3423	11	441	645	791	1654	333	19	23	48	10
3	(blank)	3222	10	442	576	695	1473	478	18	22	46	15
	A	18101	56	445	2051	3438	9373	3239	11	19	52	18
	B	10285	32	446	948	1833	5457	2047	9	18	53	20
	C	618	2	437	186	150	233	49	30	24	38	8
4	(blank)	3236	10	442	603	700	1463	470	19	22	45	15
	A	6175	19	439	1369	1673	2683	450	22	27	43	7
	B	14545	45	446	1178	2609	8042	2716	8	18	55	19
	C	8270	26	448	611	1134	4348	2177	7	14	53	26
5	(blank)	3130	10	442	569	668	1433	460	18	21	46	15
	A	24530	76	446	2276	4357	12990	4907	9	18	53	20
	B	2635	8	442	430	602	1324	279	16	23	50	11
	C	1481	5	440	320	379	637	145	22	26	43	10
	D	450	1	435	166	110	152	22	37	24	34	5
6	(blank)	3198	10	442	579	682	1464	473	18	21	46	15
	A	17313	54	446	1895	3077	8930	3411	11	18	52	20
	B	7638	24	445	775	1481	4046	1336	10	19	53	17
	C	1513	5	445	176	297	778	262	12	20	51	17
	D	2564	8	443	336	579	1318	331	13	23	51	13
7	(blank)	3168	10	442	562	674	1448	484	18	21	46	15
	A	19384	60	447	1578	3182	10487	4137	8	16	54	21
	B	6148	19	442	985	1425	2940	798	16	23	48	13
	C	3192	10	442	509	736	1563	384	16	23	49	12
	D	334	1	433	127	99	98	10	38	30	29	3
8	(blank)	3200	10	442	576	692	1460	472	18	22	46	15
	A	15521	48	447	1433	2641	8005	3442	9	17	52	22
	B	9411	29	445	932	1801	5148	1530	10	19	55	16
	C	1846	6	442	313	357	936	240	17	19	51	13
	D	2248	7	438	507	625	987	129	23	28	44	6
9	(blank)	3377	10	443	581	701	1558	537	17	21	46	16
	A	10574	33	445	1174	2045	5514	1841	11	19	52	17
	B	9942	31	447	851	1672	5202	2217	9	17	52	22
	C	4436	14	445	563	835	2276	762	13	19	51	17
	D	3897	12	442	592	863	1986	456	15	22	51	12

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-3. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 1-9 – Reading: Grade 5

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
1	(blank)	3090	10	542	520	768	1357	445	17	25	44	14
	A	8439	26	543	1152	2044	4037	1206	14	24	48	14
	B	17487	54	547	1085	3578	9300	3524	6	20	53	20
	C	3337	10	545	329	673	1709	626	10	20	51	19
2	(blank)	3095	10	542	523	771	1347	454	17	25	44	15
	A	4830	15	544	597	1160	2305	768	12	24	48	16
	B	14614	45	547	932	2865	7810	3007	6	20	53	21
	C	6315	20	546	525	1331	3265	1194	8	21	52	19
	D	3499	11	542	509	936	1676	378	15	27	48	11
3	(blank)	3213	10	542	539	801	1409	464	17	25	44	14
	A	16612	51	545	1500	3710	8424	2978	9	22	51	18
	B	11915	37	546	857	2382	6355	2321	7	20	53	19
	C	613	2	536	190	170	215	38	31	28	35	6
4	(blank)	3255	10	542	557	815	1409	474	17	25	43	15
	A	5455	17	539	1027	1719	2306	403	19	32	42	7
	B	15886	49	546	1061	3378	8545	2902	7	21	54	18
	C	7757	24	549	441	1151	4143	2022	6	15	53	26
5	(blank)	3113	10	542	528	777	1358	450	17	25	44	14
	A	24339	75	546	1860	5046	12782	4651	8	21	53	19
	B	2971	9	544	355	713	1454	449	12	24	49	15
	C	1301	4	542	223	355	556	167	17	27	43	13
	D	629	2	541	120	172	253	84	19	27	40	13
6	(blank)	3144	10	542	527	787	1378	452	17	25	44	14
	A	16254	50	546	1317	3270	8297	3370	8	20	51	21
	B	8693	27	545	704	1945	4572	1472	8	22	53	17
	C	1791	6	545	179	385	962	265	10	21	54	15
	D	2471	8	542	359	676	1194	242	15	27	48	10
7	(blank)	3166	10	542	522	786	1387	471	16	25	44	15
	A	19313	60	547	1143	3569	10424	4177	6	18	54	22
	B	6371	20	542	859	1730	3011	771	13	27	47	12
	C	3196	10	542	451	862	1511	372	14	27	47	12
	D	307	1	533	111	116	70	10	36	38	23	3
8	(blank)	3162	10	542	525	789	1387	461	17	25	44	15
	A	14410	45	548	983	2566	7466	3395	7	18	52	24
	B	10206	32	545	841	2308	5463	1594	8	23	54	16
	C	2193	7	542	270	601	1094	228	12	27	50	10
	D	2382	7	539	467	799	993	123	20	34	42	5
9	(blank)	3393	10	542	546	827	1498	522	16	24	44	15
	A	12003	37	546	985	2571	6291	2156	8	21	52	18
	B	9208	28	547	651	1750	4744	2063	7	19	52	22
	C	3953	12	545	387	894	1966	706	10	23	50	18
	D	3796	12	542	517	1021	1904	354	14	27	50	9

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-4. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 1-9 – Reading: Grade 6

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
1	(blank)	3571	11	642	682	824	1644	421	19	23	46	12
	A	6766	21	642	1079	1623	3325	739	16	24	49	11
	B	19088	58	647	1321	3763	11016	2988	7	20	58	16
	C	3425	10	647	308	563	2031	523	9	16	59	15
2	(blank)	3581	11	642	687	834	1641	419	19	23	46	12
	A	3426	10	643	524	747	1738	417	15	22	51	12
	B	13842	42	647	1002	2631	7924	2285	7	19	57	17
	C	7965	24	647	587	1499	4646	1233	7	19	58	15
	D	4036	12	642	590	1062	2067	317	15	26	51	8
3	(blank)	3766	11	642	726	881	1723	436	19	23	46	12
	A	15921	48	645	1526	3319	8760	2316	10	21	55	15
	B	12602	38	646	980	2423	7309	1890	8	19	58	15
	C	561	2	637	158	150	224	29	28	27	40	5
4	(blank)	3814	12	642	736	882	1762	434	19	23	46	11
	A	4183	13	638	961	1281	1715	226	23	31	41	5
	B	16811	51	646	1243	3478	9706	2384	7	21	58	14
	C	8042	24	649	450	1132	4833	1627	6	14	60	20
5	(blank)	3715	11	642	702	855	1720	438	19	23	46	12
	A	24892	76	646	1966	4859	14327	3740	8	20	58	15
	B	2815	9	643	400	697	1395	323	14	25	50	11
	C	960	3	641	193	238	408	121	20	25	43	13
	D	468	1	638	129	124	166	49	28	26	35	10
6	(blank)	3723	11	642	709	873	1699	442	19	23	46	12
	A	15265	46	647	1252	2831	8710	2472	8	19	57	16
	B	10835	33	646	910	2285	6155	1485	8	21	57	14
	C	1263	4	643	185	306	622	150	15	24	49	12
	D	1764	5	640	334	478	830	122	19	27	47	7
7	(blank)	3773	11	642	715	863	1752	443	19	23	46	12
	A	20203	62	647	1308	3607	11908	3380	6	18	59	17
	B	5234	16	642	761	1351	2571	551	15	26	49	11
	C	3344	10	642	471	867	1711	295	14	26	51	9
	D	296	1	631	135	85	74	2	46	29	25	1
8	(blank)	3744	11	642	714	871	1727	432	19	23	46	12
	A	11347	35	649	786	1669	6420	2472	7	15	57	22
	B	11167	34	645	953	2400	6464	1350	9	21	58	12
	C	3387	10	643	384	827	1893	283	11	24	56	8
	D	3205	10	639	553	1006	1512	134	17	31	47	4
9	(blank)	3963	12	642	717	911	1854	481	18	23	47	12
	A	14451	44	646	1168	2861	8307	2115	8	20	57	15
	B	7472	23	647	628	1402	4134	1308	8	19	55	18
	C	3457	11	645	378	703	1846	530	11	20	53	15
	D	3507	11	642	499	896	1875	237	14	26	53	7

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-5. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 1-9 – Reading: Grade 7

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
1	(blank)	3747	11	742	720	848	1755	424	19	23	47	11
	A	6675	20	743	977	1514	3466	718	15	23	52	11
	B	19648	58	748	1290	3495	11655	3208	7	18	59	16
	C	3809	11	749	241	577	2313	678	6	15	61	18
2	(blank)	3743	11	742	718	855	1746	424	19	23	47	11
	A	2188	6	743	330	527	1070	261	15	24	49	12
	B	11745	35	748	754	1967	6954	2070	6	17	59	18
	C	10143	30	748	681	1695	6077	1690	7	17	60	17
	D	6060	18	744	745	1390	3342	583	12	23	55	10
3	(blank)	3842	11	742	744	887	1781	430	19	23	46	11
	A	14228	42	747	1247	2798	8009	2174	9	20	56	15
	B	14821	44	748	1019	2505	8930	2367	7	17	60	16
	C	988	3	740	218	244	469	57	22	25	47	6
4	(blank)	3965	12	742	769	900	1851	445	19	23	47	11
	A	3813	11	739	814	1120	1682	197	21	29	44	5
	B	17860	53	747	1221	3382	10610	2647	7	19	59	15
	C	8241	24	750	424	1032	5046	1739	5	13	61	21
5	(blank)	3744	11	742	721	855	1744	424	19	23	47	11
	A	25903	76	748	1844	4622	15457	3980	7	18	60	15
	B	2839	8	745	357	600	1455	427	13	21	51	15
	C	888	3	742	189	218	348	133	21	25	39	15
	D	505	1	740	117	139	185	64	23	28	37	13
6	(blank)	3772	11	742	721	869	1764	418	19	23	47	11
	A	14366	42	748	1009	2406	8504	2447	7	17	59	17
	B	12821	38	747	996	2323	7571	1931	8	18	59	15
	C	1272	4	744	169	330	633	140	13	26	50	11
	D	1648	5	739	333	506	717	92	20	31	44	6
7	(blank)	3792	11	742	718	876	1771	427	19	23	47	11
	A	21012	62	749	1182	3400	12710	3720	6	16	60	18
	B	4885	14	744	693	1137	2528	527	14	23	52	11
	C	3808	11	743	506	910	2045	347	13	24	54	9
	D	382	1	734	129	111	135	7	34	29	35	2
8	(blank)	3805	11	742	737	883	1763	422	19	23	46	11
	A	9501	28	751	508	1071	5548	2374	5	11	58	25
	B	11220	33	747	813	2093	6692	1622	7	19	60	14
	C	4555	13	745	436	1043	2664	412	10	23	58	9
	D	4798	14	741	734	1344	2522	198	15	28	53	4
9	(blank)	4181	12	743	751	964	1983	483	18	23	47	12
	A	17441	51	748	1175	3060	10441	2765	7	18	60	16
	B	5754	17	747	489	1059	3215	991	8	18	56	17
	C	3121	9	746	397	564	1691	469	13	18	54	15
	D	3382	10	744	416	787	1859	320	12	23	55	9

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-6. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 1-9 – Reading: Grade 8

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
1	(blank)	3369	10	840	795	848	1331	395	24	25	40	12
	A	5831	17	841	1113	1583	2580	555	19	27	44	10
	B	20807	59	846	1751	4611	11383	3062	8	22	55	15
	C	5045	14	848	396	941	2796	912	8	19	55	18
2	(blank)	3332	10	840	801	862	1304	365	24	26	39	11
	A	1696	5	841	321	478	736	161	19	28	43	9
	B	11960	34	847	1021	2365	6612	1962	9	20	55	16
	C	11282	32	847	905	2320	6212	1845	8	21	55	16
	D	6782	19	842	1007	1958	3226	591	15	29	48	9
3	(blank)	3425	10	840	831	883	1329	382	24	26	39	11
	A	14073	40	846	1470	3153	7385	2065	10	22	52	15
	B	16094	46	846	1409	3493	8801	2391	9	22	55	15
	C	1460	4	838	345	454	575	86	24	31	39	6
4	(blank)	3637	10	840	875	950	1413	399	24	26	39	11
	A	3357	10	837	965	999	1223	170	29	30	36	5
	B	18003	51	845	1600	4380	9679	2344	9	24	54	13
	C	10055	29	849	615	1654	5775	2011	6	16	57	20
5	(blank)	3379	10	840	810	868	1335	366	24	26	40	11
	A	27900	80	846	2425	6159	15255	4061	9	22	55	15
	B	2451	7	842	472	616	1035	328	19	25	42	13
	C	897	3	840	226	216	337	118	25	24	38	13
	D	425	1	838	122	124	128	51	29	29	30	12
6	(blank)	3387	10	840	805	873	1335	374	24	26	39	11
	A	13484	38	846	1210	2880	7280	2114	9	21	54	16
	B	14492	41	846	1294	3217	7855	2126	9	22	54	15
	C	1742	5	843	255	434	858	195	15	25	49	11
	D	1947	6	838	491	579	762	115	25	30	39	6
7	(blank)	3415	10	840	816	874	1342	383	24	26	39	11
	A	21826	62	847	1504	4338	12306	3678	7	20	56	17
	B	5215	15	842	898	1380	2383	554	17	26	46	11
	C	4056	12	841	658	1214	1890	294	16	30	47	7
	D	540	2	834	179	177	169	15	33	33	31	3
8	(blank)	3412	10	840	825	871	1344	372	24	26	39	11
	A	8904	25	850	506	1231	4998	2169	6	14	56	24
	B	10796	31	846	970	2290	5954	1582	9	21	55	15
	C	5481	16	843	629	1454	2906	492	11	27	53	9
	D	6459	18	840	1125	2137	2888	309	17	33	45	5
9	(blank)	3791	11	840	847	975	1561	408	22	26	41	11
	A	19833	57	846	1696	4304	10869	2964	9	22	55	15
	B	5064	14	846	596	1061	2569	838	12	21	51	17
	C	3003	9	845	405	660	1495	443	13	22	50	15
	D	3361	10	842	511	983	1596	271	15	29	47	8

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-7. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 13-23 – Reading: Grade 11

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
13	(blank)	8098	24	1141	1610	1900	3380	1208	20	23	42	15
	A	4939	15	1139	995	1484	2050	410	20	30	42	8
	B	14236	42	1144	1192	3252	7535	2257	8	23	53	16
	C	6723	20	1148	454	936	3303	2030	7	14	49	30
14	(blank)	7730	23	1141	1496	1793	3260	1181	19	23	42	15
	A	1387	4	1139	330	349	567	141	24	25	41	10
	B	7477	22	1145	697	1421	3709	1650	9	19	50	22
	C	9712	29	1145	739	1889	5131	1953	8	19	53	20
	D	7690	23	1142	989	2120	3601	980	13	28	47	13
15	(blank)	8210	24	1141	1635	1962	3421	1192	20	24	42	15
	A	4874	14	1142	698	1238	2304	634	14	25	47	13
	B	15554	46	1146	1102	2956	8132	3364	7	19	52	22
	C	5358	16	1142	816	1416	2411	715	15	26	45	13
16	(blank)	8295	24	1141	1655	1961	3460	1219	20	24	42	15
	A	3336	10	1137	812	1096	1242	186	24	33	37	6
	B	13478	40	1143	1183	3288	7212	1795	9	24	54	13
	C	8887	26	1148	601	1227	4354	2705	7	14	49	30
17	(blank)	7799	23	1141	1516	1816	3273	1194	19	23	42	15
	A	17355	51	1145	1486	3717	9046	3106	9	21	52	18
	B	5222	15	1144	613	1221	2430	958	12	23	47	18
	C	2627	8	1144	385	557	1161	524	15	21	44	20
	D	993	3	1139	251	261	358	123	25	26	36	12
18	(blank)	7840	23	1141	1513	1834	3292	1201	19	23	42	15
	A	12328	36	1146	844	2218	6369	2897	7	18	52	23
	B	9486	28	1144	925	2153	4910	1498	10	23	52	16
	C	2282	7	1140	408	684	983	207	18	30	43	9
	D	2060	6	1137	561	683	714	102	27	33	35	5
19	(blank)	7808	23	1141	1514	1810	3280	1204	19	23	42	15
	A	6326	19	1146	547	1193	3014	1572	9	19	48	25
	B	12484	37	1145	1050	2555	6530	2349	8	20	52	19
	C	4581	13	1142	561	1155	2287	578	12	25	50	13
	D	2797	8	1139	579	859	1157	202	21	31	41	7
20	(blank)	7900	23	1141	1520	1839	3319	1222	19	23	42	15
	A	12315	36	1146	878	2394	6544	2499	7	19	53	20
	B	8638	25	1143	1007	2119	4180	1332	12	25	48	15
	C	3436	10	1144	470	738	1546	682	14	21	45	20
	D	1707	5	1139	376	482	679	170	22	28	40	10
21	(blank)	7890	23	1141	1532	1838	3303	1217	19	23	42	15
	A	5597	16	1147	456	883	2790	1468	8	16	50	26
	B	7303	21	1145	694	1381	3633	1595	10	19	50	22
	C	6144	18	1144	572	1342	3216	1014	9	22	52	17
	D	7062	21	1141	997	2128	3326	611	14	30	47	9
22	(blank)	8397	25	1141	1572	1974	3557	1294	19	24	42	15
	A	15623	46	1145	1199	3101	8215	3108	8	20	53	20
	B	4963	15	1144	564	1136	2345	918	11	23	47	18
	C	2464	7	1141	440	634	1054	336	18	26	43	14
	D	2549	7	1140	476	727	1097	249	19	29	43	10
23	(blank)	8007	24	1141	1539	1861	3374	1233	19	23	42	15
	A	8309	24	1150	475	896	3925	3013	6	11	47	36
	B	11406	34	1143	1053	2686	6235	1432	9	24	55	13
	C	4383	13	1139	749	1452	2019	163	17	33	46	4
	D	1891	6	1137	435	677	715	64	23	36	38	3

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-8. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 10-19 – Math: Grade 3

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
10	(blank)	4114	13	341	839	811	1876	588	20	20	46	14
	A	8422	28	341	1581	1995	3860	986	19	24	46	12
	B	11876	39	346	943	1861	6304	2768	8	16	53	23
	C	6091	20	345	847	996	2892	1356	14	16	47	22
11	(blank)	4127	14	341	843	791	1895	598	20	19	46	14
	A	16412	54	344	2114	3131	8199	2968	13	19	50	18
	B	8787	29	345	959	1501	4363	1964	11	17	50	22
	C	1177	4	340	294	240	475	168	25	20	40	14
12	(blank)	4127	14	342	805	786	1912	624	20	19	46	15
	A	2293	8	338	597	594	929	173	26	26	41	8
	B	4132	14	342	708	908	1983	533	17	22	48	13
	C	11652	38	346	1018	1838	6007	2789	9	16	52	24
	D	8299	27	344	1082	1537	4101	1579	13	19	49	19
13	(blank)	3900	13	342	776	763	1787	574	20	20	46	15
	A	21525	71	345	2521	3725	10728	4551	12	17	50	21
	B	3013	10	342	445	681	1499	388	15	23	50	13
	C	1491	5	341	279	337	725	150	19	23	49	10
	D	574	2	336	189	157	193	35	33	27	34	6
14	(blank)	4028	13	342	791	801	1851	585	20	20	46	15
	A	5548	18	340	1241	1273	2345	689	22	23	42	12
	B	11311	37	345	1231	2072	5730	2278	11	18	51	20
	C	4857	16	347	411	671	2558	1217	8	14	53	25
	D	4759	16	345	536	846	2448	929	11	18	51	20
15	(blank)	3992	13	342	784	785	1847	576	20	20	46	14
	A	13818	45	345	1683	2490	6758	2887	12	18	49	21
	B	9139	30	345	1072	1667	4664	1736	12	18	51	19
	C	1750	6	343	268	323	863	296	15	18	49	17
	D	1804	6	340	403	398	800	203	22	22	44	11
16	(blank)	4104	13	342	809	812	1893	590	20	20	46	14
	A	5230	17	341	1072	1212	2343	603	20	23	45	12
	B	10821	35	344	1282	2022	5433	2084	12	19	50	19
	C	6590	22	347	527	967	3394	1702	8	15	52	26
	D	3758	12	344	520	650	1869	719	14	17	50	19
17	(blank)	4237	14	342	842	829	1951	615	20	20	46	15
	A	2606	9	339	653	695	1062	196	25	27	41	8
	B	8553	28	345	834	1529	4428	1762	10	18	52	21
	C	7241	24	346	683	1059	3742	1757	9	15	52	24
	D	7866	26	343	1198	1551	3749	1368	15	20	48	17
18	(blank)	4221	14	342	840	824	1935	622	20	20	46	15
	A	9539	31	345	1029	1686	4879	1945	11	18	51	20
	B	3094	10	341	621	733	1399	341	20	24	45	11
	C	10435	34	346	1087	1758	5238	2352	10	17	50	23
	D	3214	11	341	633	662	1481	438	20	21	46	14
19	(blank)	4538	15	341	905	892	2082	659	20	20	46	15
	A	12885	42	344	1750	2487	6353	2295	14	19	49	18
	B	9335	31	346	923	1594	4745	2073	10	17	51	22
	C	2414	8	345	327	380	1177	530	14	16	49	22
	D	1331	4	340	305	310	575	141	23	23	43	11

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-9. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 10-19 – Math: Grade 4

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
10	(blank)	3280	10	440	788	816	1269	407	24	25	39	12
	A	7859	24	439	1827	2161	3190	681	23	27	41	9
	B	15459	48	445	1679	3306	7738	2736	11	21	50	18
	C	5736	18	445	702	1066	2726	1242	12	19	48	22
11	(blank)	3307	10	440	771	824	1291	421	23	25	39	13
	A	17401	54	443	2588	4032	8204	2577	15	23	47	15
	B	10736	33	444	1379	2288	5118	1951	13	21	48	18
	C	890	3	439	258	205	310	117	29	23	35	13
12	(blank)	3372	10	440	758	822	1330	462	22	24	39	14
	A	2127	7	438	623	538	793	173	29	25	37	8
	B	5145	16	441	990	1379	2268	508	19	27	44	10
	C	15371	48	445	1780	3236	7477	2878	12	21	49	19
	D	6319	20	444	845	1374	3055	1045	13	22	48	17
13	(blank)	3128	10	440	732	783	1216	397	23	25	39	13
	A	24603	76	444	3169	5322	11818	4294	13	22	48	17
	B	2802	9	440	581	747	1230	244	21	27	44	9
	C	1285	4	438	339	348	495	103	26	27	39	8
	D	516	2	435	175	149	164	28	34	29	32	5
14	(blank)	3257	10	440	754	815	1279	409	23	25	39	13
	A	4881	15	439	1309	1210	1853	509	27	25	38	10
	B	12270	38	443	1659	2881	5851	1879	14	23	48	15
	C	6803	21	446	609	1271	3498	1425	9	19	51	21
	D	5123	16	444	665	1172	2442	844	13	23	48	16
15	(blank)	3211	10	440	759	803	1247	402	24	25	39	13
	A	16824	52	444	2241	3663	8049	2871	13	22	48	17
	B	9502	29	443	1333	2217	4522	1430	14	23	48	15
	C	1515	5	442	306	323	641	245	20	21	42	16
	D	1282	4	438	357	343	464	118	28	27	36	9
16	(blank)	3462	11	440	785	866	1370	441	23	25	40	13
	A	3740	12	438	993	1020	1408	319	27	27	38	9
	B	10113	31	443	1521	2469	4705	1418	15	24	47	14
	C	9742	30	446	889	1817	5004	2032	9	19	51	21
	D	5277	16	443	808	1177	2436	856	15	22	46	16
17	(blank)	3431	11	440	802	871	1327	431	23	25	39	13
	A	1766	5	435	634	495	549	88	36	28	31	5
	B	8446	26	442	1363	2164	3853	1066	16	26	46	13
	C	10634	33	446	989	2070	5504	2071	9	19	52	19
	D	8057	25	444	1208	1749	3690	1410	15	22	46	18
18	(blank)	3459	11	440	793	846	1365	455	23	24	39	13
	A	11314	35	444	1337	2437	5561	1979	12	22	49	17
	B	3659	11	439	885	1055	1456	263	24	29	40	7
	C	10648	33	445	1312	2209	5176	1951	12	21	49	18
	D	3254	10	441	669	802	1365	418	21	25	42	13
19	(blank)	3709	11	440	848	924	1476	461	23	25	40	12
	A	13460	42	443	2111	3089	6131	2129	16	23	46	16
	B	11623	36	444	1346	2556	5750	1971	12	22	49	17
	C	2529	8	444	364	512	1231	422	14	20	49	17
	D	1013	3	437	327	268	335	83	32	26	33	8

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-10. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 10-19 – Math: Grade 5

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
10	(blank)	3285	10	540	948	536	1375	426	29	16	42	13
	A	9511	29	541	2396	1872	4190	1053	25	20	44	11
	B	15775	49	545	2373	2536	7785	3081	15	16	49	20
	C	3867	12	546	603	504	1808	952	16	13	47	25
11	(blank)	3382	10	540	962	552	1426	442	28	16	42	13
	A	16088	50	543	3100	2843	7649	2496	19	18	48	16
	B	12008	37	545	1931	1889	5748	2440	16	16	48	20
	C	960	3	538	327	164	335	134	34	17	35	14
12	(blank)	3363	10	541	910	535	1424	494	27	16	42	15
	A	2347	7	539	658	480	1011	198	28	20	43	8
	B	6150	19	542	1353	1178	2889	730	22	19	47	12
	C	15928	49	545	2499	2488	7729	3212	16	16	49	20
	D	4650	14	543	900	767	2105	878	19	16	45	19
13	(blank)	3172	10	540	886	517	1343	426	28	16	42	13
	A	23444	72	544	4069	3875	11142	4358	17	17	48	19
	B	3623	11	542	809	632	1725	457	22	17	48	13
	C	1292	4	540	340	243	550	159	26	19	43	12
	D	907	3	541	216	181	398	112	24	20	44	12
14	(blank)	3249	10	540	912	539	1365	433	28	17	42	13
	A	4665	14	541	1213	858	1935	659	26	18	41	14
	B	12793	39	544	2311	2205	6043	2234	18	17	47	17
	C	7151	22	546	906	1053	3664	1528	13	15	51	21
	D	4580	14	542	978	793	2151	658	21	17	47	14
15	(blank)	3194	10	540	908	526	1343	417	28	16	42	13
	A	17978	55	544	2911	2849	8781	3437	16	16	49	19
	B	8921	28	543	1825	1655	4056	1385	20	19	45	16
	C	1355	4	542	314	245	605	191	23	18	45	14
	D	990	3	537	362	173	373	82	37	17	38	8
16	(blank)	3457	11	540	962	569	1473	453	28	16	43	13
	A	2281	7	538	796	437	834	214	35	19	37	9
	B	8657	27	542	1822	1665	3899	1271	21	19	45	15
	C	11693	36	546	1492	1712	5997	2492	13	15	51	21
	D	6350	20	543	1248	1065	2955	1082	20	17	47	17
17	(blank)	3368	10	540	951	566	1413	438	28	17	42	13
	A	1890	6	538	624	373	717	176	33	20	38	9
	B	10486	32	543	1992	1910	4933	1651	19	18	47	16
	C	10493	32	545	1370	1593	5329	2201	13	15	51	21
	D	6201	19	543	1383	1006	2766	1046	22	16	45	17
18	(blank)	3326	10	540	928	544	1407	447	28	16	42	13
	A	11211	35	544	1827	1815	5467	2102	16	16	49	19
	B	4355	13	540	1247	896	1804	408	29	21	41	9
	C	10516	32	545	1622	1658	5123	2113	15	16	49	20
	D	3030	9	542	696	535	1357	442	23	18	45	15
19	(blank)	3269	10	540	923	533	1385	428	28	16	42	13
	A	15507	48	544	2685	2511	7500	2811	17	16	48	18
	B	10624	33	544	1921	1833	5005	1865	18	17	47	18
	C	2286	7	542	478	434	1029	345	21	19	45	15
	D	752	2	536	313	137	239	63	42	18	32	8

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-11. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 10-19 – Math: Grade 6

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
10	(blank)	3754	11	639	1146	695	1384	529	31	19	37	14
	A	9438	29	640	2301	2045	4025	1067	24	22	43	11
	B	16189	49	644	2479	2741	7434	3535	15	17	46	22
	C	3549	11	647	504	430	1453	1162	14	12	41	33
11	(blank)	3892	12	639	1183	720	1435	554	30	18	37	14
	A	16046	49	643	3006	3015	7171	2854	19	19	45	18
	B	12074	37	644	1942	2006	5380	2746	16	17	45	23
	C	918	3	639	299	170	310	139	33	19	34	15
12	(blank)	3787	12	640	1110	699	1423	555	29	18	38	15
	A	4029	12	642	872	761	1767	629	22	19	44	16
	B	10434	32	644	1747	1832	4852	2003	17	18	47	19
	C	13192	40	644	2364	2350	5634	2844	18	18	43	22
	D	1488	5	641	337	269	620	262	23	18	42	18
13	(blank)	3683	11	639	1092	673	1377	541	30	18	37	15
	A	23710	72	644	3964	4159	10572	5015	17	18	45	21
	B	3645	11	641	865	709	1589	482	24	19	44	13
	C	1178	4	640	316	227	470	165	27	19	40	14
	D	714	2	640	193	143	288	90	27	20	40	13
14	(blank)	3812	12	639	1120	712	1417	563	29	19	37	15
	A	4770	14	641	1215	847	1913	795	25	18	40	17
	B	12029	37	644	2078	2185	5375	2391	17	18	45	20
	C	7103	22	646	920	1146	3340	1697	13	16	47	24
	D	5216	16	642	1097	1021	2251	847	21	20	43	16
15	(blank)	3779	11	639	1129	710	1399	541	30	19	37	14
	A	17797	54	645	2709	2999	8146	3943	15	17	46	22
	B	9376	28	642	1927	1830	4017	1602	21	20	43	17
	C	1049	3	640	257	189	464	139	24	18	44	13
	D	929	3	634	408	183	270	68	44	20	29	7
16	(blank)	4243	13	640	1216	804	1611	612	29	19	38	14
	B	6331	19	641	1476	1311	2611	933	23	21	41	15
	C	11542	35	645	1437	1904	5536	2665	12	16	48	23
	D	9265	28	644	1645	1585	4080	1955	18	17	44	21
17	(blank)	4030	12	639	1195	759	1500	576	30	19	37	14
	A	2519	8	640	688	492	978	361	27	20	39	14
	B	10315	31	643	2075	1910	4472	1858	20	19	43	18
	C	10248	31	645	1302	1718	4814	2414	13	17	47	24
	D	5818	18	643	1170	1032	2532	1084	20	18	44	19
18	(blank)	4021	12	639	1174	763	1503	581	29	19	37	14
	A	11489	35	644	1950	2023	5175	2341	17	18	45	20
	B	5156	16	640	1337	1125	2129	565	26	22	41	11
	C	9153	28	645	1252	1459	4203	2239	14	16	46	24
	D	3111	9	642	717	541	1286	567	23	17	41	18
19	(blank)	4496	14	640	1261	826	1738	671	28	18	39	15
	A	16512	50	644	2574	2812	7499	3627	16	17	45	22
	B	9286	28	643	1840	1767	4065	1614	20	19	44	17
	C	1938	6	641	461	379	780	318	24	20	40	16
	D	698	2	635	294	127	214	63	42	18	31	9

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-12. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 10-19 – Math: Grade 7

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
10	(blank)	3900	11	737	1321	851	1239	489	34	22	32	13
	A	12072	36	740	2774	3124	4943	1231	23	26	41	10
	B	14933	44	743	2415	3035	6540	2943	16	20	44	20
	C	3044	9	746	450	431	1091	1072	15	14	36	35
11	(blank)	3973	12	737	1339	879	1263	492	34	22	32	12
	A	14625	43	741	2903	3390	6079	2253	20	23	42	15
	B	13855	41	743	2221	2795	6001	2838	16	20	43	20
	C	1496	4	737	497	377	470	152	33	25	31	10
12	(blank)	3845	11	738	1282	842	1229	492	33	22	32	13
	A	3930	12	740	898	928	1602	502	23	24	41	13
	B	10540	31	743	1819	2218	4534	1969	17	21	43	19
	C	14237	42	742	2598	3124	5935	2580	18	22	42	18
	D	1397	4	740	363	329	513	192	26	24	37	14
13	(blank)	3736	11	738	1235	812	1202	487	33	22	32	13
	A	24185	71	742	4295	5295	10243	4352	18	22	42	18
	B	3974	12	741	891	890	1590	603	22	22	40	15
	C	1333	4	740	341	284	519	189	26	21	39	14
	D	721	2	739	198	160	259	104	27	22	36	14
14	(blank)	3838	11	738	1258	839	1247	494	33	22	32	13
	A	5183	15	741	1219	1082	2038	844	24	21	39	16
	B	11703	34	742	2205	2505	4925	2068	19	21	42	18
	C	7655	23	743	1114	1630	3387	1524	15	21	44	20
	D	5570	16	741	1164	1385	2216	805	21	25	40	14
15	(blank)	3801	11	738	1257	833	1226	485	33	22	32	13
	A	19746	58	743	3043	4178	8634	3891	15	21	44	20
	B	8671	26	741	1944	2034	3462	1231	22	23	40	14
	C	954	3	737	310	236	320	88	32	25	34	9
	D	777	2	732	406	160	171	40	52	21	22	5
16	(blank)	4163	12	738	1338	920	1372	533	32	22	33	13
	B	5326	16	739	1484	1219	2021	602	28	23	38	11
	C	11684	34	744	1651	2428	5243	2362	14	21	45	20
	D	11361	33	743	1920	2531	4761	2149	17	22	42	19
17	(blank)	4002	12	738	1311	877	1297	517	33	22	32	13
	A	4564	13	741	1006	1056	1827	675	22	23	40	15
	B	10528	31	741	2167	2390	4264	1707	21	23	41	16
	C	9669	28	743	1401	1988	4331	1949	14	21	45	20
	D	5186	15	741	1075	1130	2094	887	21	22	40	17
18	(blank)	4077	12	738	1323	877	1353	524	32	22	33	13
	A	11812	35	742	2277	2693	4970	1872	19	23	42	16
	B	5817	17	740	1465	1474	2209	669	25	25	38	12
	C	8938	26	744	1282	1707	3939	2010	14	19	44	22
	D	3305	10	742	613	690	1342	660	19	21	41	20
19	(blank)	4500	13	738	1387	977	1536	600	31	22	34	13
	A	17744	52	743	2733	3709	7803	3499	15	21	44	20
	B	8932	26	741	1961	2103	3557	1311	22	24	40	15
	C	1953	6	739	503	473	712	265	26	24	36	14
	D	820	2	734	376	179	205	60	46	22	25	7

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-13. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 10-19 – Math: Grade 8

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
10	(blank)	3616	10	836	1353	840	1052	371	37	23	29	10
	A	11608	33	837	3285	3313	4334	676	28	29	37	6
	B	15972	45	842	2656	3467	7325	2524	17	22	46	16
	C	3913	11	847	465	434	1511	1503	12	11	39	38
11	(blank)	3655	10	836	1365	858	1066	366	37	23	29	10
	A	13961	40	840	3030	3464	5735	1732	22	25	41	12
	B	15558	44	842	2658	3258	6853	2789	17	21	44	18
	C	1935	6	836	706	474	568	187	36	24	29	10
12	(blank)	3508	10	836	1278	819	1048	363	36	23	30	10
	A	4406	13	839	1085	1054	1794	473	25	24	41	11
	B	11433	33	842	2029	2539	5035	1830	18	22	44	16
	C	13934	40	841	2768	3188	5735	2243	20	23	41	16
	D	1828	5	837	599	454	610	165	33	25	33	9
13	(blank)	3420	10	836	1242	792	1026	360	36	23	30	11
	A	25875	74	841	4885	5923	11026	4041	19	23	43	16
	B	3736	11	839	993	866	1420	457	27	23	38	12
	C	1343	4	838	390	311	493	149	29	23	37	11
	D	735	2	837	249	162	257	67	34	22	35	9
14	(blank)	3527	10	836	1273	816	1062	376	36	23	30	11
	A	5309	15	840	1250	1203	2130	726	24	23	40	14
	B	11200	32	841	2398	2646	4649	1507	21	24	42	13
	C	8389	24	842	1407	1837	3684	1461	17	22	44	17
	D	6684	19	841	1431	1552	2697	1004	21	23	40	15
15	(blank)	3495	10	836	1273	810	1038	374	36	23	30	11
	A	21216	60	842	3422	4520	9403	3871	16	21	44	18
	B	8373	24	839	2154	2248	3251	720	26	27	39	9
	C	1110	3	835	429	287	328	66	39	26	30	6
	D	915	3	831	481	189	202	43	53	21	22	5
16	(blank)	3749	11	836	1353	875	1131	390	36	23	30	10
	A	1268	4	834	554	297	359	58	44	23	28	5
	B	4590	13	838	1354	1227	1635	374	29	27	36	8
	C	11797	34	842	2066	2742	5225	1764	18	23	44	15
	D	13705	39	842	2432	2913	5872	2488	18	21	43	18
17	(blank)	3579	10	836	1314	833	1060	372	37	23	30	10
	A	7421	21	841	1474	1593	3092	1262	20	21	42	17
	B	12457	35	841	2518	2840	5263	1836	20	23	42	15
	C	7570	22	841	1407	1807	3215	1141	19	24	42	15
	D	4082	12	839	1046	981	1592	463	26	24	39	11
18	(blank)	3656	10	836	1308	866	1092	390	36	24	30	11
	A	11928	34	841	2577	2735	4898	1718	22	23	41	14
	B	5766	16	838	1539	1534	2174	519	27	27	38	9
	C	9759	28	842	1566	2100	4391	1702	16	22	45	17
	D	4000	11	842	769	819	1667	745	19	20	42	19
19	(blank)	3553	10	836	1298	833	1054	368	37	23	30	10
	A	19051	54	842	3117	4221	8496	3217	16	22	45	17
	B	9177	26	840	2238	2177	3609	1153	24	24	39	13
	C	2390	7	838	687	591	830	282	29	25	35	12
	D	938	3	833	419	232	233	54	45	25	25	6

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-14. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 24-36 – Math: Grade 11

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
24	(blank)	7714	23	1131	4033	1894	1692	95	52	25	22	1
	A	2867	8	1125	2444	321	102	0	85	11	4	0
	B	4732	14	1129	3377	1056	298	1	71	22	6	0
	C	11709	35	1135	4523	4374	2779	33	39	37	24	0
	D	5874	17	1140	1106	1535	2986	247	19	26	51	4
	E	1011	3	1139	257	163	474	117	25	16	47	12
25	(blank)	7933	23	1131	4163	1959	1715	96	52	25	22	1
	A	2550	8	1125	2010	384	155	1	79	15	6	0
	B	2663	8	1127	2059	446	157	1	77	17	6	0
	C	4152	12	1129	2995	923	231	3	72	22	6	0
	D	10486	31	1135	3938	4213	2323	12	38	40	22	0
	E	6123	18	1142	575	1418	3750	380	9	23	61	6
26	(blank)	8265	24	1131	4396	1989	1780	100	53	24	22	1
	A	12964	38	1131	7203	3922	1828	11	56	30	14	0
	B	8510	25	1135	3078	2645	2708	79	36	31	32	1
	C	4168	12	1139	1063	787	2015	303	26	19	48	7
27	(blank)	8269	24	1131	4434	1987	1752	96	54	24	21	1
	A	6542	19	1132	3437	1895	1176	34	53	29	18	1
	B	12173	36	1136	4335	3492	4066	280	36	29	33	2
	C	6923	20	1132	3534	1969	1337	83	51	28	19	1
28	(blank)	7806	23	1131	4096	1905	1711	94	52	24	22	1
	A	5769	17	1133	2721	1747	1256	45	47	30	22	1
	B	11026	33	1135	4182	3332	3327	185	38	30	30	2
	C	7176	21	1134	3237	1931	1848	160	45	27	26	2
	D	2130	6	1128	1504	428	189	9	71	20	9	0
29	(blank)	7911	23	1131	4147	1931	1735	98	52	24	22	1
	A	12214	36	1133	6102	3224	2662	226	50	26	22	2
	B	6085	18	1134	2623	1794	1590	78	43	29	26	1
	C	4169	12	1135	1676	1235	1200	58	40	30	29	1
	D	3528	10	1135	1192	1159	1144	33	34	33	32	1
30	(blank)	7965	23	1131	4184	1943	1742	96	53	24	22	1
	A	4556	13	1133	2147	1308	1039	62	47	29	23	1
	B	8747	26	1134	3916	2448	2232	151	45	28	26	2
	C	6408	19	1135	2628	1843	1812	125	41	29	28	2
	D	6231	18	1133	2865	1801	1506	59	46	29	24	1
31	(blank)	7975	24	1131	4193	1953	1732	97	53	24	22	1
	A	18051	53	1136	6572	5597	5537	345	36	31	31	2
	B	4805	14	1131	2725	1215	822	43	57	25	17	1
	C	1441	4	1128	1009	296	133	3	70	21	9	0
	D	1635	5	1126	1241	282	107	5	76	17	7	0
32	(blank)	8172	24	1131	4272	2003	1795	102	52	25	22	1
	A	1994	6	1130	1242	462	286	4	62	23	14	0
	B	3853	11	1130	2361	936	532	24	61	24	14	1
	C	6637	20	1134	3017	1914	1611	95	45	29	24	1
	D	13251	39	1136	4848	4028	4107	268	37	30	31	2
33	(blank)	8038	24	1131	4223	1972	1744	99	53	25	22	1
	A	14320	42	1136	5248	4337	4428	307	37	30	31	2
	B	6901	20	1133	3398	1940	1495	68	49	28	22	1
	C	2852	8	1131	1658	740	444	10	58	26	16	0
	D	1796	5	1129	1213	354	220	9	68	20	12	1
34	(blank)	8127	24	1131	4272	1987	1769	99	53	24	22	1
	A	9724	29	1134	4382	2768	2452	122	45	28	25	1
	B	4958	15	1132	2670	1338	910	40	54	27	18	1
	C	7390	22	1135	2980	2178	2084	148	40	29	28	2
	D	3708	11	1135	1436	1072	1116	84	39	29	30	2

(cont'd.)

Question	Resp	NResp	%Resp	AvgSS	NSBP	NPP	NP	NPWD	%SBP	%PP	%P	%PWD
35	(blank)	8053	24	1131	4241	1967	1746	99	53	24	22	1
	A	12131	36	1134	5221	3634	3098	178	43	30	26	1
	B	8517	25	1134	3668	2449	2263	137	43	29	27	2
	C	3513	10	1133	1627	924	897	65	46	26	26	2
	D	1693	5	1130	983	369	327	14	58	22	19	1
36	(blank)	8099	24	1131	4266	1973	1762	98	53	24	22	1
	A	7109	21	1138	1824	1819	3146	320	26	26	44	5
	B	10295	30	1134	4206	3394	2630	65	41	33	26	1
	C	5670	17	1131	3428	1591	642	9	60	28	11	0
	D	2734	8	1128	2016	566	151	1	74	21	6	0

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-15. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 20-31 – Writing: Grade 5

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
20	(blank)	3173	10	536	963	897	905	408	30	28	29	13
	A	10878	34	540	2198	3241	3757	1682	20	30	35	15
	B	14474	45	543	2174	4057	5398	2845	15	28	37	20
	C	3573	11	540	741	1111	1167	554	21	31	33	16
	D	183	1	526	105	45	26	7	57	25	14	4
21	(blank)	3196	10	537	954	904	926	412	30	28	29	13
	A	16209	50	542	2757	4773	5832	2847	17	29	36	18
	B	11897	37	542	2033	3384	4294	2186	17	28	36	18
	C	830	3	531	338	260	186	46	41	31	22	6
	D	149	0	522	99	30	15	5	66	20	10	3
22	(blank)	3189	10	536	964	909	911	405	30	29	29	13
	A	23294	72	542	3789	6759	8510	4236	16	29	37	18
	B	3783	12	540	851	1122	1252	558	22	30	33	15
	C	1386	4	538	383	393	396	214	28	28	29	15
	D	629	2	536	194	168	184	83	31	27	29	13
23	(blank)	3363	10	537	986	965	977	435	29	29	29	13
	A	3864	12	538	1026	1198	1138	502	27	31	29	13
	B	6760	21	541	1376	1967	2302	1115	20	29	34	16
	C	14000	43	543	2003	3962	5274	2761	14	28	38	20
	D	4294	13	541	790	1259	1562	683	18	29	36	16
24	(blank)	3856	12	537	1091	1109	1129	527	28	29	29	14
	A	1526	5	533	584	483	356	103	38	32	23	7
	B	3351	10	538	882	1031	1004	434	26	31	30	13
	C	10547	33	542	1712	3048	3853	1934	16	29	37	18
	D	13001	40	543	1912	3680	4911	2498	15	28	38	19
25	(blank)	3326	10	537	986	962	953	425	30	29	29	13
	A	5597	17	539	1293	1676	1845	783	23	30	33	14
	B	7292	23	541	1347	2166	2489	1290	18	30	34	18
	C	12230	38	543	1789	3409	4633	2399	15	28	38	20
	D	3836	12	540	766	1138	1333	599	20	30	35	16
26	(blank)	3385	10	537	1001	971	975	438	30	29	29	13
	A	6411	20	540	1322	1973	2121	995	21	31	33	16
	B	6269	19	540	1309	1832	2148	980	21	29	34	16
	C	9348	29	543	1409	2597	3479	1863	15	28	37	20
	D	6868	21	542	1140	1978	2530	1220	17	29	37	18
27	(blank)	3461	11	537	1001	992	1009	459	29	29	29	13
	A	12972	40	544	1724	3519	4965	2764	13	27	38	21
	B	7650	24	537	1913	2513	2458	766	25	33	32	10
	C	2338	7	538	581	740	718	299	25	32	31	13
	D	4745	15	545	651	1209	1775	1110	14	25	37	23
	E	1115	3	536	311	378	328	98	28	34	29	9
28	(blank)	3451	11	536	1031	996	994	430	30	29	29	12
	A	10139	31	544	1518	2727	3778	2116	15	27	37	21
	B	6253	19	541	1257	1875	2109	1012	20	30	34	16
	C	7088	22	541	1280	2135	2556	1117	18	30	36	16
	D	5350	17	540	1095	1618	1816	821	20	30	34	15
29	(blank)	3424	11	537	1017	981	990	436	30	29	29	13
	A	9845	30	541	1883	2785	3427	1750	19	28	35	18
	B	5949	18	541	1126	1730	2033	1060	19	29	34	18
	C	7031	22	542	1113	2058	2587	1273	16	29	37	18
	D	6032	19	541	1042	1797	2216	977	17	30	37	16
30	(blank)	3513	11	537	1031	1018	1021	443	29	29	29	13
	A	3586	11	540	807	1002	1165	612	23	28	32	17
	B	3978	12	541	868	1082	1342	686	22	27	34	17
	C	7300	23	543	1126	2065	2674	1435	15	28	37	20
	D	13904	43	542	2349	4184	5051	2320	17	30	36	17

(cont'd.)

Question	Resp	NResp	%Resp	AvgSS	NSBP	NPP	NP	NPWD	%SBP	%PP	%P	%PWD
	(blank)	3850	12	537	1095	1122	1122	511	28	29	29	13
	A	6161	19	539	1296	1959	2107	799	21	32	34	13
31	B	2860	9	538	655	941	935	329	23	33	33	12
	C	3018	9	540	632	888	1049	449	21	29	35	15
	D	16392	51	543	2503	4441	6040	3408	15	27	37	21

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-16. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 20-31 – Writing: Grade 8

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
20	(blank)	3443	10	834	1174	1200	862	207	34	35	25	6
	A	6993	20	837	1516	2852	2193	432	22	41	31	6
	B	19148	55	841	2425	7538	7495	1690	13	39	39	9
	C	5028	14	839	864	1982	1770	412	17	39	35	8
	D	317	1	828	164	103	41	9	52	32	13	3
21	(blank)	3492	10	834	1167	1228	899	198	33	35	26	6
	A	13578	39	840	2056	5471	5003	1048	15	40	37	8
	B	15873	45	841	2136	6207	6082	1448	13	39	38	9
	C	1706	5	832	627	676	350	53	37	40	21	3
	D	280	1	825	157	93	27	3	56	33	10	1
22	(blank)	3500	10	834	1186	1222	893	199	34	35	26	6
	A	26417	76	840	3546	10559	10135	2177	13	40	38	8
	B	3211	9	837	830	1250	903	228	26	39	28	7
	C	1285	4	836	382	465	327	111	30	36	25	9
	D	516	1	832	199	179	103	35	39	35	20	7
23	(blank)	3586	10	834	1199	1263	928	196	33	35	26	5
	A	3337	10	836	840	1354	944	199	25	41	28	6
	B	7804	22	839	1289	3114	2797	604	17	40	36	8
	C	15941	46	841	1986	6199	6275	1481	12	39	39	9
	D	4261	12	838	829	1745	1417	270	19	41	33	6
24	(blank)	3783	11	834	1245	1346	982	210	33	36	26	6
	A	1660	5	834	545	661	394	60	33	40	24	4
	B	3831	11	837	909	1553	1157	212	24	41	30	6
	C	13056	37	841	1760	5095	5023	1178	13	39	38	9
	D	12599	36	841	1684	5020	4805	1090	13	40	38	9
25	(blank)	3592	10	834	1187	1270	924	211	33	35	26	6
	A	5704	16	838	1209	2371	1762	362	21	42	31	6
	B	6282	18	838	1182	2622	2114	364	19	42	34	6
	C	11749	34	841	1556	4658	4524	1011	13	40	39	9
	D	7602	22	841	1009	2754	3037	802	13	36	40	11
26	(blank)	3551	10	834	1195	1246	911	199	34	35	26	6
	A	4714	13	837	1002	1984	1456	272	21	42	31	6
	B	7333	21	839	1312	2977	2540	504	18	41	35	7
	C	11589	33	841	1549	4462	4572	1006	13	39	39	9
	D	7742	22	841	1085	3006	2882	769	14	39	37	10
27	(blank)	3537	10	834	1171	1248	914	204	33	35	26	6
	A	12570	36	841	1537	4872	5025	1136	12	39	40	9
	B	5972	17	834	1684	2800	1366	122	28	47	23	2
	C	2823	8	836	652	1243	814	114	23	44	29	4
	D	8562	25	844	701	2848	3894	1119	8	33	45	13
	E	1465	4	835	398	664	348	55	27	45	24	4
28	(blank)	3628	10	834	1214	1278	929	207	33	35	26	6
	A	11016	32	842	1260	4105	4489	1162	11	37	41	11
	B	6983	20	839	1220	2750	2484	529	17	39	36	8
	C	7459	21	839	1277	3122	2558	502	17	42	34	7
	D	5843	17	838	1172	2420	1901	350	20	41	33	6
29	(blank)	3649	10	834	1217	1272	949	211	33	35	26	6
	A	6799	19	838	1296	2748	2274	481	19	40	33	7
	B	6435	18	839	1114	2588	2232	501	17	40	35	8
	C	8721	25	840	1276	3370	3325	750	15	39	38	9
	D	9325	27	841	1240	3697	3581	807	13	40	38	9
30	(blank)	3701	11	834	1232	1303	960	206	33	35	26	6
	A	4612	13	840	726	1798	1711	377	16	39	37	8
	B	5518	16	840	973	2054	2027	464	18	37	37	8
	C	8429	24	840	1157	3286	3236	750	14	39	38	9
	D	12669	36	839	2055	5234	4427	953	16	41	35	8

(cont'd.)

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
	(blank)	4039	12	835	1270	1430	1092	247	31	35	27	6
	A	3853	11	835	1011	1738	987	117	26	45	26	3
31	B	5700	16	838	1097	2420	1836	347	19	42	32	6
	C	4204	12	838	805	1799	1336	264	19	43	32	6
	D	17133	49	842	1960	6288	7110	1775	11	37	41	10

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Table L-17. 2007-08 NECAP Average Scaled Score, and Counts and Percentages within Performance Levels, of Responses to Student Survey Questions 1-12 – Writing: Grade 11

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
1	(blank)	7494	22	5.3	1647	3456	2144	247	22	46	29	3
	A	5770	17	4.7	1629	3056	1040	45	28	53	18	1
	B	14455	43	5.8	1703	7510	4879	363	12	52	34	3
	C	6167	18	6.6	498	2351	2863	455	8	38	46	7
2	(blank)	7518	22	5.3	1660	3471	2142	245	22	46	28	3
	A	4958	15	5.5	761	2553	1534	110	15	51	31	2
	B	15666	46	6	1740	7529	5819	578	11	48	37	4
	C	5744	17	5.2	1316	2820	1431	177	23	49	25	3
3	(blank)	7432	22	5.3	1633	3429	2128	242	22	46	29	3
	A	19557	58	5.8	2643	9685	6611	618	14	50	34	3
	B	4072	12	5.7	623	1933	1369	147	15	47	34	4
	C	2146	6	5.6	370	1019	665	92	17	47	31	4
	D	679	2	4.8	208	307	153	11	31	45	23	2
4	(blank)	7537	22	5.3	1670	3477	2144	246	22	46	28	3
	A	3460	10	5.7	573	1602	1152	133	17	46	33	4
	B	6808	20	5.8	925	3219	2385	279	14	47	35	4
	C	12715	38	5.8	1605	6298	4422	390	13	50	35	3
	D	3366	10	5.1	704	1777	823	62	21	53	24	2
5	(blank)	7689	23	5.3	1708	3550	2186	245	22	46	28	3
	A	3549	10	5.3	648	1872	959	70	18	53	27	2
	B	3800	11	5.4	697	1956	1065	82	18	51	28	2
	C	8476	25	5.8	1125	4123	2959	269	13	49	35	3
	D	10372	31	5.9	1299	4872	3757	444	13	47	36	4
6	(blank)	8077	24	5.3	1812	3753	2262	250	22	46	28	3
	A	1805	5	5.2	388	909	471	37	21	50	26	2
	B	3931	12	5.6	624	1913	1268	126	16	49	32	3
	C	10378	31	6	1180	4871	3942	385	11	47	38	4
	D	9695	29	5.6	1473	4927	2983	312	15	51	31	3
7	(blank)	7570	22	5.3	1664	3490	2173	243	22	46	29	3
	A	2758	8	5	705	1385	600	68	26	50	22	2
	B	4670	14	5.4	843	2431	1293	103	18	52	28	2
	C	9470	28	5.8	1222	4673	3273	302	13	49	35	3
	D	9418	28	6	1043	4394	3587	394	11	47	38	4
8	(blank)	7410	22	5.3	1594	3418	2155	243	22	46	29	3
	A	8645	26	5.8	1151	4259	2941	294	13	49	34	3
	B	4488	13	4.8	1106	2500	842	40	25	56	19	1
	C	1733	5	4.9	386	968	358	21	22	56	21	1
	D	10033	30	6.3	804	4426	4317	486	8	44	43	5
	E	1577	5	4.8	436	802	313	26	28	51	20	2
9	(blank)	7563	22	5.3	1672	3487	2161	243	22	46	29	3
	A	8455	25	6	927	3938	3243	347	11	47	38	4
	B	5636	17	5.7	804	2790	1874	168	14	50	33	3
	C	6493	19	5.6	980	3334	1995	184	15	51	31	3
	D	5739	17	5.4	1094	2824	1653	168	19	49	29	3
10	(blank)	7673	23	5.3	1706	3537	2182	248	22	46	28	3
	A	4907	14	5.5	871	2444	1469	123	18	50	30	3
	B	4961	15	5.6	769	2443	1592	157	16	49	32	3
	C	6925	20	5.8	913	3409	2371	232	13	49	34	3
	D	9420	28	5.8	1218	4540	3312	350	13	48	35	4
11	(blank)	7757	23	5.3	1734	3581	2198	244	22	46	28	3
	A	2845	8	5.8	437	1262	1026	120	15	44	36	4
	B	3849	11	5.8	516	1852	1326	155	13	48	34	4
	C	6370	19	5.9	816	3094	2242	218	13	49	35	3
	D	13065	39	5.6	1974	6584	4134	373	15	50	32	3

(cont'd.)

Question	*Resp*	*NResp*	*%Resp*	*AvgSS*	*NSBP*	*NPP*	*NP*	*NPWD*	*%SBP*	*%PP*	*%P*	*%PWD*
	(blank)	7846	23	5.3	1739	3621	2237	249	22	46	29	3
	A	1493	4	4.8	400	762	314	17	27	51	21	1
12	B	7718	23	5.8	1001	3901	2585	231	13	51	33	3
	C	4204	12	5.5	748	2064	1242	150	18	49	30	4
	D	12625	37	5.9	1589	6025	4548	463	13	48	36	4

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction.

Grades 3 – 8 NECAP Student Questionnaire

Reading Questions

1. How difficult was the reading test?
A. harder than my regular reading schoolwork
B. about the same as my regular reading schoolwork
C. easier than my regular reading schoolwork

2. How interesting were the reading passages?
A. All of the passages were interesting to me.
B. Most of the passages were interesting to me.
C. Most of the passages were not interesting to me.
D. None of the passages were interesting to me.

3. How hard did you try on the reading test?
A. I tried harder on this test than I do on my regular reading schoolwork.
B. I tried about the same as I do on my regular reading schoolwork.
C. I did not try as hard on this test as I do on my regular reading schoolwork.

4. How difficult were the reading passages on the test?
A. Most of the passages were more difficult than what I normally read for school.
B. Most of the passages were about the same as what I normally read for school.
C. Most of the passages were easier than what I normally read for school.

5. Did you have enough time to answer all of the questions on the reading test?
A. I had enough time to answer all of the questions and check my work.
B. I had enough time to answer all of the questions, but I did not have time to check my work.
C. I felt rushed, but I was able to answer all of the questions.
D. I did not have enough time to answer all of the questions.

6. How often do you have Language Arts/Reading homework?
A. almost every day
B. a few times a week
C. a few times a month
D. I usually don't have homework in Language Arts/Reading.

7. When I am reading and come to a word I do not know, I usually
A. figure it out myself.
B. ask someone what the word is.
C. skip the word.
D. stop reading.

8. How often do you choose to read in your free time?
A. almost every day
B. a few times a week
C. a few times a month
D. I almost never read.

9. How do you most often find information about things that interest you?
A. I use a computer.
B. I look in books, magazines, or newspapers.
C. I ask someone.
D. I watch TV or videos.

Mathematics Questions

10. How difficult was the mathematics test?
A. harder than my regular mathematics schoolwork
B. about the same as my regular mathematics schoolwork
C. easier than my regular mathematics schoolwork

11. How hard did you try on the mathematics test?
A. I tried harder on this test than I do on my regular mathematics schoolwork.
B. I tried about the same as I do on my regular mathematics schoolwork.
C. I did not try as hard on this test as I do on my regular mathematics schoolwork.

12. How much did you use a calculator on the test?
A. If it was allowed, I used it on most questions.
B. If it was allowed, I used it on some questions.
C. I didn't use it on very many questions.
D. I didn't have a calculator.

13. Did you have enough time to answer all of the questions on the mathematics test?
A. I had enough time to answer all of the questions and check my work.
B. I had enough time to answer all of the questions, but I did not have time to check my work.
C. I felt rushed, but I was able to answer all of the questions.
D. I did not have enough time to answer all of the questions.

14. How often do you work with other students in small groups on problem-solving in mathematics class?
A. almost every day
B. a few times a week
C. a few times a month
D. never or almost never

15. How often do you have mathematics homework?
A. almost every day
B. a few times a week
C. a few times a month
D. I usually don't have homework in mathematics.

16. How often do you use hands-on materials such as base-ten blocks, cubes, rods, counters, geoboards, and tangrams in mathematics class?
A. almost every day
B. a few times a week
C. a few times a month
D. a few times a year or less

17. How often do you use a calculator in mathematics class?
A. almost every day
B. a few times a week
C. a few times a month
D. a few times a year or less

18. How do you spend most of your time in mathematics class?
A. I work by myself.
B. I work in small groups.
C. I do some work myself and some in small groups.
D. The whole class works together.

19. In mathematics class, how often are you asked to explain how you solved a problem?
A. almost every day
B. a few times a week
C. a few times a month
D. a few times a year or less

Writing Questions (Grades 5 and 8 only)

20. How difficult was the writing test?
A. harder than my regular writing schoolwork
B. about the same as my regular writing schoolwork
C. easier than my regular writing schoolwork
D. I did not take the writing test.

21. How hard did you try on the writing test?
A. I tried harder on this test than I do on my regular schoolwork.
B. I tried about the same as I do on my regular schoolwork.
C. I did not try as hard on this test as I do on my regular schoolwork.
D. I did not take the writing test.

22. Did you have enough time to answer all of the questions on the writing test?
A. I had enough time to answer all of the questions and check my work.
B. I had enough time to answer all of the questions, but I did not have time to check my work.
C. I felt rushed, but I was able to answer all of the questions.
D. I did not have enough time to answer all of the questions.

23. How often are you asked to write at least one paragraph for Reading/Language Arts class?
A. more than once a day
B. once a day
C. a few times a week
D. less than once a week

24. How often are you asked to write at least one paragraph for Science class?
A. more than once a day
B. once a day
C. a few times a week
D. less than once a week

25. How often are you asked to use writing to explain your mathematical ideas?
A. more than once a day
B. once a day
C. a few times a week
D. less than once a week

26. I choose my own topics for writing
A. almost always.
B. more than half the time.
C. about half the time.
D. less than half the time.

27. I know how to revise my writing to improve it
A. on my own.
B. with my teacher's help.
C. with help from my family or friends.
D. by using all of the above.
E. but I rarely revise my writing.

28. I write more than one draft
A. almost always.
B. more than half the time.
C. about half the time.
D. less than half the time.

29. I discuss my rough drafts with the teacher
A. almost always.
B. more than half the time.
C. about half the time.
D. less than half the time.

30. I discuss my rough drafts with other students
A. almost always.
B. more than half the time.
C. about half the time.
D. less than half the time.

31. What kinds of writing do you do most in school?
A. I mostly write stories.
B. I mostly write reports.
C. I mostly write about things I've read.
D. I do all kinds of writing.

Thank you very much for all of your hard work during testing and for answering these questions.

Grade 11 NECAP Student Questionnaire

Writing Questions

1. How difficult was the writing test?
- E. harder than my regular writing schoolwork
- F. about the same as my regular writing schoolwork
- G. easier than my regular writing schoolwork

2. How hard did you try on the writing test?
- E. I tried harder on this test than I do on my regular schoolwork.
- F. I tried about the same as I do on my regular schoolwork.
- G. I did not try as hard on this test as I do on my regular schoolwork.

3. Did you have enough time to complete the prompts on the writing test?
- E. I had enough time to complete the prompts and check my work.
- F. I had enough time to complete the prompts, but I did not have time to check my work.
- G. I felt rushed, but I was able to complete the prompts.
- H. I did not have enough time to complete the prompts.

4. How often are you asked to write at least one paragraph in English class?
- E. more than once a day
- F. once a day
- G. a few times a week
- H. less than once a week

5. How often are you asked to use writing to explain your mathematical ideas?
- A. more than once a day
- B. once a day
- C. a few times a week
- D. less than once a week

6. How often are you asked to write at least one paragraph in Science class?
- A. more than once a day
- B. once a day
- C. a few times a week
- D. less than once a week

7. I choose my own topics for writing
- E. almost always.
- F. more than half the time.
- G. about half the time.
- H. less than half the time.

8. I know how to revise my writing to improve it
- F. on my own.
- G. with my teacher's help.
- H. with help from my family or friends.
- I. by using all of the above.
- J. but I rarely revise my writing.

9. I write more than one draft
- A. almost always.
- B. more than half the time.
- C. about half the time.
- D. less than half the time.

10. I discuss my rough drafts with the teacher
- A. almost always.
- B. more than half the time.
- C. about half the time.
- D. less than half the time.

11. I discuss my rough drafts with other students
- E. almost always.
- F. more than half the time.
- G. about half the time.
- H. less than half the time.

12. What kinds of writing do you do most in school?
- E. I mostly write narratives/poems.
- F. I mostly write reports/persuasive pieces.
- G. I mostly write about things I've read.
- H. I do all kinds of writing.

Reading Questions

13. How difficult was the reading test?
- A. harder than my regular reading work
- B. about the same as my regular reading work
- C. easier than my regular reading work

14. How interesting were the reading passages?
- A. All of the passages were interesting to me.
- B. Most of the passages were interesting to me.
- C. Most of the passages were not interesting to me.
- D. None of the passages were interesting to me.

15. How hard did you try on the reading test?
- D. I tried harder on this test than I do on my regular reading work.
- E. I tried about the same as I do on my regular reading work.
- F. I did not try as hard on this test as I do on my regular reading work.

16. How difficult were the reading passages on the test?
- D. Most of the passages were more difficult than what I normally read for school.
- E. Most of the passages were about the same as what I normally read for school.
- F. Most of the passages were easier than what I normally read for school.

17. Did you have enough time to answer all of the questions on the reading test?
- E. I had enough time to answer all of the questions and check my work.
- F. I had enough time to answer all of the questions, but I did not have time to check my work.
- G. I felt rushed, but I was able to answer all of the questions.
- H. I did not have enough time to answer all of the questions.

18. How often do you have reading homework in English class?
- E. almost every day
- F. a few times a week
- G. a few times a month
- H. I usually don't have reading homework in English class.

19. How often do you have reading homework in other subject areas?
- A. almost every day
- B. a few times a week
- C. a few times a month
- D. I usually don't have reading homework in other subject areas.

20. How do you most often learn new vocabulary words?
- E. I am taught new vocabulary words in most of my courses.
- F. I am taught new vocabulary words mostly in my English class.
- G. I learn new vocabulary words on my own using a dictionary or computer.
- H. I rarely learn new vocabulary words.

21. How often do you choose to read in your free time?
- E. almost every day
- F. a few times a week
- G. a few times a month
- H. I almost never read.

22. How do you most often find information about things that interest you?
- A. I use a computer.
- B. I look in books, magazines, or newspapers.
- C. I ask someone.
- D. I watch TV or videos.

23. What grade did you receive in the last English course you completed?
- A. A
- B. B
- C. C
- D. lower than C

Mathematics Questions

24. What best describes the last mathematics course you completed?
- D. General Math or Pre-Algebra
- E. Algebra I or Integrated Mathematics I
- F. Geometry or Integrated Mathematics II
- G. Algebra II or Integrated Mathematics III
- H. Pre-Calculus/Advanced Mathematics or Higher

25. What best describes the mathematics course you are currently taking or will be taking this year?
- A. General Math or Pre-Algebra
- B. Algebra I or Integrated Mathematics I
- C. Geometry or Integrated Mathematics II
- D. Algebra II or Integrated Mathematics III
- E. Pre-Calculus/Advanced Mathematics or Higher

26. How difficult was the mathematics test compared to your current or most recent mathematics class?
- A. more difficult
- B. about the same
- C. less difficult

27. How hard did you try on the mathematics test compared to your current or most recent mathematics class?
- D. I tried harder on this test.
- E. I tried about the same.
- F. I did not try as hard on this test.

28. How much did you use a calculator on the test?

E. When it was allowed, I used it on most questions.
F. When it was allowed, I used it on some questions.
G. I didn't use it on very many questions.
H. I didn't have a calculator.

29. Did you have enough time to answer all of the questions on the mathematics test?

E. I had enough time to answer all of the questions and check my work.
F. I had enough time to answer all of the questions, but I did not have time to check my work.
G. I felt rushed, but I was able to answer all of the questions.
H. I did not have enough time to answer all of the questions.

30. How often do you work in groups with other students on problem solving tasks in mathematics?

E. almost every day
F. a few times a week
G. a few times a month
H. never or almost never

31. How often do you have mathematics homework assignments?

E. almost every day
F. a few times a week
G. a few times a month
H. I usually don't have homework in mathematics.

32. How often do you use hands-on materials such as algebra tiles or blocks, geoboards, geometric solids, or software applications such as spreadsheets in mathematics class?

E. almost every day
F. a few times a week
G. a few times a month
H. a few times a year or less

33. How often do you use a calculator in mathematics class?

E. almost every day
F. a few times a week
G. a few times a month
H. a few times a year or less

34. How do you spend most of your time in mathematics class?

E. I work by myself.
F. I work in small groups.
G. I do some work myself and some in small groups.
H. The whole class works together.

35. In mathematics class, how often are you asked to explain how you solved a problem?

E. almost every day
F. a few times a week
G. a few times a month
H. a few times a year or less

36. What grade did you receive in the last mathematics course you completed?

A. A
B. B
C. C
D. lower than C

Thank you very much for all of your hard work during testing and for answering these questions.

APPENDIX M—SAMPLE REPORTS

Technical Report — Appendix M: Sample Reports

Report	Grades Available	Teaching Year & Testing Year	Sample Report Included
Student Report	3-8, 11	No	Grade 5 & 11, testing year
Item Analysis: Reading	3-8, 11	Yes	Grade 11, testing year
Item Analysis: Mathematics	3-8, 11	Yes	Grade 5, testing year
Item Analysis: Writing	5, 8, 11	Yes	Grade 5 & 11, testing year
School Results Report	3-8, 11	Yes	Grade 11, testing year
School Summary Report	One summary of all grades in a school	Yes	All grades, testing year
District Results Report	3-8, 11	Yes	Grade 5, testing year
District Summary Report	One summary of all grades in a school	Yes	All grades, testing year

NECAP Student Report - Fall 2007

This report contains results from the Fall 2007 New England Common Assessment Program (NECAP) tests. The NECAP tests are administered to students in New Hampshire, Rhode Island, and Vermont as part of each state's statewide assessment program. The NECAP tests are designed to measure student performance on grade level expectations (GLE) developed and adopted by the three states. Specifically, the tests are designed to measure the content and skills that students are expected to have as they begin the current enrolled grade. In other words, content and skills which students have learned through the end of the previous grade.

NECAP test results are used primarily for school improvement and accountability. Achievement level results are used in the state accountability system required under No Child Left Behind. More detailed school and district results are used by schools to help improve curriculum and instruction. Individual student results are used to support information gathered through classroom instruction and assessments. Contact the school for more information on this student's overall achievement.

Achievement Levels and Corresponding Score Ranges

Student performance on the NECAP tests is classified into one of four achievement levels describing students' level of proficiency on the content and skills required through the end of the previous grade. Performance at Proficient or Proficient with Distinction indicates that the student has a level of proficiency necessary to begin working successfully on current grade content and skills. Performance below Proficient suggests that additional instruction and student work may be needed on the previous grade content and skills as the student is introduced to new content and skills at the current grade. Refer to the Achievement Level Descriptions contained in this report for a more detailed description of the achievement levels.

There is a wide range of student proficiency within each achievement level. NECAP test results are also reported as scaled scores to provide additional information about the location of student performance within each achievement level. NECAP scores are reported as three-digit scores in which the first digit represents the grade level. The remaining digits range from 00 to 80. Scores of 40 and higher indicate a level of proficiency at or above the Proficient level. Scores below 40 indicate proficiency below the Proficient level. For example, scores of 340 at grade 3, 540 at grade 5, and 740 at grade 7 each indicate Proficient performance at each grade level.

Comparisons to Other Beginning of Grade Students

The tables in the middle section of the report provide the percentage of students performing at each achievement level in the student's school, district, and statewide. Note that one or two students can have a large impact on percentages in small schools and districts. Results are not reported for schools or districts with nine (9) or fewer students.

Performance in Content Area Subcategories

This section of the report provides information about student performance on sets of items measuring particular content and skills within each test. These results can provide a general idea of relative strengths and weaknesses in comparison to other students. However, results in this section are based on small numbers of test items and should be interpreted cautiously.

Students at Proficient Level

This column shows the average performance on these items of students who performed near the beginning of the Proficient achievement level on the overall test. Students whose performance in a category falls within the range shown performed similarly to those students. This comparison can provide some information about the level of performance needed to perform at the Proficient level.

Comments about this student's writing performance

Students in grades 5 and 8 took the NECAP writing test which included a writing prompt that required students to produce a written response up to three pages long. Student responses were scored independently by two scorers. Each scorer was able to choose up to three comments from a prepared list to provide feedback about each student's performance on the writing prompt. If both scorers selected the same comment, it is listed only once.

Achievement Level Descriptions

Proficient with Distinction (Level 4) - Students performing at this level demonstrate the prerequisite knowledge and skills needed to participate and excel in instructional activities aligned with the GLE at the current grade level. Errors made by these students are few and minor and do not reflect gaps in prerequisite knowledge and skills.

Proficient (Level 3) - Students performing at this level demonstrate minor gaps in the prerequisite knowledge and skills needed to participate and perform successfully in instructional activities aligned with the GLE at the current grade level. It is likely that any gaps in prerequisite knowledge and skills demonstrated by these students can be addressed during the course of typical classroom instruction.

Partially Proficient (Level 2) - Students performing at this level demonstrate gaps in prerequisite knowledge and skills needed to participate and perform successfully in instructional activities aligned with the GLE at the current grade level. Additional instructional support may be necessary for these students to meet grade level expectations.

Substantially Below Proficient (Level 1) - Students performing at this level demonstrate extensive and significant gaps in prerequisite knowledge and skills needed to participate and perform successfully in instructional activities aligned with the GLE at the current grade level. Additional instructional support is necessary for these students to meet grade level expectations.

Student	Grade 05	School	District	State

Fall 2007 - Beginning of Grade 5 NECAP Test Results

Content Area	Achievement Level	Scaled Score	This Student's Achievement Level and Score
Reading			Below (500–530) · Partial (530–540) · Proficient (540–556) · Distinction (556–580)

Content Area	Achievement Level	Scaled Score	This Student's Achievement Level and Score
Mathematics			Below (500–533) · Partial (533–540) · Proficient (540–554) · Distinction (554–580)

Content Area	Achievement Level	Scaled Score	This Student's Achievement Level and Score
Writing			Below (500–528) · Partial (528–540) · Proficient (540–555) · Distinction (555–580)

Interpretation of Graphic Display

The line (▌) represents the student's score. The bar (▬) surrounding the score represents the probable range of scores for the student if he or she were to be tested many times. This statistic is called the standard error of measurement. See the reverse side for the achievement level descriptions.

This Student's Achievement Level Compared to Other Beginning of Grade 5 Students by School, District, and State

	Reading				Mathematics				Writing			
	Student	School	District	State	Student	School	District	State	Student	School	District	State
Proficient with Distinction												
Proficient												
Partially Proficient												
Substantially Below Proficient												

This Student's Performance in Content Area Subcategories

Reading		Possible Points	Student	Average Points Earned: School	District	State	Students at Proficient Level
Word ID/ Vocabulary		9					
Type of Text*	Literary	22					
	Informational	21					
Level of Comprehension*	Initial Understanding	19					
	Analysis and Interpretation	24					

Mathematics	Possible Points	Student	Average Points Earned: School	District	State	Students at Proficient Level
Numbers and Operations	30					
Geometry and Measurement	13					
Functions and Algebra	13					
Data, Statistics, and Probability	10					

Writing	Possible Points	Student	Average Points Earned: School	District	State	Students at Proficient Level
Structures of Language & Writing Conventions	10					
Short Responses	12					
Extended Response	15					

Comments about this student's writing performance:

*With the exception of Word ID/Vocabulary items, reading items are reported in two ways - Type of Text and Level of Comprehension.

NECAP Student Report - Fall 2007

This report contains results from the Fall 2007 New England Common Assessment Program (NECAP) tests. The NECAP tests are administered to students in New Hampshire, Rhode Island, and Vermont as part of each state's statewide assessment program. The NECAP tests are designed to measure student performance on grade span expectations (GSE) developed and adopted by the three states. Specifically, the tests are designed to measure the content and skills that students are expected to have as they begin the current enrolled grade. In other words, content and skills which students have learned through the end of the previous grade.

NECAP test results are used primarily for school improvement and accountability. Achievement level results are used in the state accountability system required under No Child Left Behind. More detailed school and district results are used by schools to help improve curriculum and instruction. Individual student results are used to support information gathered through classroom instruction and assessments. Contact the school for more information on this student's overall achievement.

Achievement Levels and Corresponding Score Ranges

Student performance on the NECAP tests is classified into one of four achievement levels describing students' level of proficiency on the content and skills required through the end of the previous grade. Performance at Proficient or Proficient with Distinction indicates that the student has a level of proficiency necessary to begin working successfully on current grade content and skills. Performance below Proficient suggests that additional instruction and student work may be needed on the previous grade content and skills as the student is introduced to new content and skills at the current grade. Refer to the Achievement Level Descriptions contained in this report for a more detailed description of the achievement levels.

There is a wide range of student proficiency within each achievement level. NECAP test results are also reported as scaled scores to provide additional information about the location of student performance within each achievement level. Grade 11 NECAP scores are reported as four-digit scores in which the first two digits represent the grade level. The remaining digits range from 00 to 80. Scores of 40 and higher indicate a level of proficiency at or above the Proficient level. Scores below 40 indicate proficiency below the Proficient level. For example, a score of 1140 indicates Proficient performance at the grade level. Because writing scores are based on a single writing prompt, a raw score is reported instead of a scaled score.

Comparisons to Other Beginning of Grade Students

The tables in the middle section of the report provide the percentage of students performing at each achievement level in the student's school, district, and statewide. Note that one or two students can have a large impact on percentages in small schools and districts. Results are not reported for schools or districts with nine (9) or fewer students.

Performance in Content Area Subcategories

This section of the report provides information about student performance on sets of items measuring particular content and skills within each test. These results can provide a general idea of relative strengths and weaknesses in comparison to other students. However, results in this section are based on small numbers of test items and should be interpreted cautiously.

Students at Proficient Level

This column shows the average performance on these items of students who performed near the beginning of the Proficient achievement level on the overall test. Students whose performance in a category falls within the range shown performed similarly to those students. This comparison can provide some information about the level of performance needed to perform at the Proficient level.

Comments about this student's writing performance

Students in grade 11 took the NECAP writing test which required students to produce a written response up to three pages long. Student responses were scored independently by two scorers. Each scorer was able to choose up to three comments from a prepared list to provide feedback about each student's performance on the writing prompt. If both scorers selected the same comment, it is listed only once.

Achievement Level Descriptions

Proficient with Distinction (Level 4) - Students performing at this level demonstrate the prerequisite knowledge and skills needed to participate and excel in instructional activities aligned with the grade 9-10 GSEs. Errors made by these students are few and minor and do not reflect gaps in prerequisite knowledge and skills.

These students are prepared to perform successfully in classroom instruction aligned with grade 11-12 expectations.

Proficient (Level 3) - Students performing at this level demonstrate minor gaps in the knowledge and skills needed to participate and perform successfully in instructional activities aligned with the grade 9-10 GSEs.

It is likely that any gaps in the prerequisite knowledge and skills demonstrated by these students can be addressed by the classroom teacher during the course of classroom instruction aligned with grade 11-12 expectations.

Partially Proficient (Level 2) - Students performing at this level demonstrate gaps in the knowledge and skills needed to participate and perform successfully in instructional activities aligned with the grade 9-10 GSEs.

Additional instructional support may be necessary for these students to perform successfully in courses aligned with grade 11-12 expectations.

Substantially Below Proficient (Level 1) - Students performing at this level demonstrate extensive and significant gaps in the prerequisite knowledge and skills needed to participate and perform successfully in instructional activities aligned with the grade 9-10 GSEs.

Additional instruction and support is necessary for these students to meet the grade 9-10 GSEs.

Student	Grade 11	School	District	State

Fall 2007 - Beginning of Grade 11 NECAP Test Results

Content Area	Achievement Level	Scaled Score	This Student's Achievement Level and Score
Reading			Below / Partial / Proficient / Distinction 1100 — 1130 — 1140 — 1154 — 1180

Content Area	Achievement Level	Scaled Score	This Student's Achievement Level and Score
Mathematics			Below / Partial / Proficient / Distinction 1100 — 1134 — 1140 — 1152 — 1180

Content Area	Achievement Level	Scaled Score	This Student's Achievement Level and Score
Writing			Below / Partial / Proficient / Distinction 2 — 4 — 7 — 10 — 12

Interpretation of Graphic Display

The line (▌) represents the student's score. The bar (▬) surrounding the score represents the probable range of scores for the student if he or she were to be tested many times. This statistic is called the standard error of measurement. See the reverse side for the achievement level descriptions.

This Student's Achievement Level Compared to Other Beginning of Grade 11 Students by School, District, and State

	Reading				Mathematics				Writing			
	Student	School	District	State	Student	School	District	State	Student	School	District	State
Proficient with Distinction												
Proficient												
Partially Proficient												
Substantially Below Proficient												

This Student's Performance in Content Area Subcategories

Reading		Possible Points	Student	Average Points Earned: School	District	State	Students at Proficient Level
Word ID/ Vocabulary		10					
Type of Text*	Literary	21					
	Informational	21					
Level of Comprehension*	Initial Understanding	18					
	Analysis and Interpretation	24					

Mathematics	Possible Points	Student	Average Points Earned: School	District	State	Students at Proficient Level
Numbers and Operations	10					
Geometry and Measurement	19					
Functions and Algebra	25					
Data, Statistics, and Probability	10					

Comments about this student's writing performance:

Writing	Possible Points	Student	Average Points Earned: School	District	State	Students at Proficient Level
Extended Response	12					

*With the exception of Word ID/Vocabulary items, reading items are reported in two ways - Type of Text and Level of Comprehension.

Fall 2007 - Beginning of Grade 11 NECAP Tests
Grade 11 Students in 2007-2008
Item Analysis Report
Reading

School:
District:
State:
Code: 000-000-00000

	Released Items																	Total Test Results							
Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Subcategory Points Earned					Total Points Earned	Scaled Score	Achievement Level
Content Strand	WV	WV	WV	LI	LI	LA	LA	IA	WV	WV	IA	IA	WV	II	II	IA	IA	Word ID/ Vocabulary	Literary	Informational	Initial Understanding	Analysis & Interpretation			
GSE Code	10-3	10-2	10-3	10-4	10-4	10-5	10-5	10-8	10-2	10-3	10-8	10-8	10-2	10-7	10-7	10-8	10-8								
Depth of Knowledge Code	1	1	2	2	2	2	3	2	2	2	2	2	2	2	1	2	3								
Item Type	MC	MC	MC	MC	MC	MC	CR	MC	MC	MC	MC	CR	MC	MC	MC	MC	CR								
Correct MC Response	A	C	D	A	B	A		D	B	D	D		A	C	B	A									
Name/Student ID Total Possible Points	1	1	1	1	1	1	4	1	1	1	1	4	1	1	1	1	4								

LEGEND FOR THE ITEM ANALYSIS REPORT - GRADE 11 READING

Released Items Section

Released Item Number: This number corresponds to the item number in the released item documents. This report provides complete data on items that are being released, which are approximately 25% of the items used to calculate scores.

Content Strand: The letters indicate the content strand with which the item is aligned: Word ID/Vocabulary (**WV**), Literary/Initial Understanding (**LI**), Literary/Analysis & Interpretation (**LA**), Informational/Initial Understanding (**II**), or Informational/Analysis & Interpretation (**IA**).

GSE Code: The first two digits indicate the grade of the GSE tested. The third digit indicates the GSE measured by the item.

Depth of Knowledge Code: This number indicates the Depth of Knowledge to which the item is coded.

Item Type: This indicates whether the question is multiple choice (**MC**) or constructed response (**CR**).

Correct MC Response: This is the correct letter response for multiple-choice questions.

Total Possible Points: The number indicates the maximum points awarded for the item: 1 point for a multiple-choice question and 4 points for a constructed-response question.

Student Item Results: Each student's name and state assigned student identification number are listed, followed by a score for each released item on the test included in this report.

- For multiple-choice (**MC**) questions only, a plus sign (+) indicates a correct response. If the student answered incorrectly, the letter of his or her response is indicated. An asterisk (*) indicates that the student selected more than one response.
- For all other item types, a number indicates how many points a student earned for that item.
- For all item types, a blank space indicates that the student left the question blank. A dash (–) means that the score was invalidated and that the student received no credit for parts of the test that were administered under non-standard conditions.

Total Test Results Section

Subcategory Points Earned: These columns show the points the student earned in each content strand. The content strand points earned are based on all common items in the test and not just the released items.

Total Points Earned: This column shows the total number of points the student earned on all common items. If the row is blank in this column, it means that the student was classified as Not Tested.

Scaled Score: This column shows the scaled score reported as a 4-digit number. The first 2 digits ares the grade and the next two digits are a score of 00-80. If the row is blank in this column, it means that the student was classified as Not Tested. (See Achievement Level below.)

Achievement Level: For Tested students, this column shows the achievement level into which the student's scores fall: **4** = Proficient with Distinction, **3** = Proficient, **2** = Partially Proficient, and **1** = Substantially Below Proficient. For Not Tested students, there are six reasons why a student did not participate: **A** = student participated in an alternate assessment in 2006-07, **L** = student is first year LEP, **W** = student withdrew from school after Oct. 1, 2007, **E** = student enrolled in school after Oct. 1, 2007, **S** = state approved special consideration, and **N** = other reason.

School/District/State Percent Correct/Average Score:

- **Released Items:** Percent correct refers to the percent of tested students who answered a multiple-choice item correctly. Average score refers to the average number of points awarded to all tested students for that constructed-response item.
- **Subcategory Points Earned:** Average score refers to the average number of points awarded to all tested students for that subcategory.

Fall 2007 - Begining of Grade 5 NECAP Tests
Grade 5 Students in 2007-2008
Item Analysis Report
Mathematics

School:
District:
State:
Code: 000-000-00000

	Released Items																	Total Test Results							
Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			Subcategory Points Earned					Total Points Earned	Scaled Score	Achievement Level
Content Strand	NO	NO	NO	NO	NO	GM	FA	FA	FA	DP	GM	DP	GM	DP	NO			Number & Operations	Geometry & Measurement	Functions & Algebra	Data, Statistics, & Probability				
GLE Code	4-1	4-2	4-2	4-3	4-3	4-7	4-1	4-4	4-4	4-1	4-5	4-2	4-1	4-5	4-1										
Depth of Knowledge Code	1	1	2	2	2	2	2	2	2	2	2	1	2	2	2										
Item Type	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	SA	SA	SA	SA	CR										
Correct MC Response	B	B	B	C	A	D	B	A	D	C															
Name/Student ID Total Possible Points	1	1	1	1	1	1	1	1	1	1	1	1	2	2	4			30	13	13	10		66		
Released Item Number																									
Percent Correct/Average Score: School																									
Percent Correct/Average Score: District																									
Percent Correct/Average Score: State																									

LEGEND FOR THE ITEM ANALYSIS REPORT - MATHEMATICS

Released Items Section

Released Item Number: This number corresponds to the item number in the released item documents. This report provides complete data on items that are being released, which are approximately 25% of the items used to calculate scores.

Content Strand: The letters indicate the content strand with which the item is aligned: Numbers & Operations (**NO**), Geometry & Measurement (**GM**), Functions & Algebra (**FA**), or Data, Statistics, & Probability (**DP**).

GLE Code: The first digit indicates the grade of the GLE tested. The second number digit indicates the GLE measured by the item.

Depth of Knowledge Code: This number indicates the Depth of Knowledge to which the item is coded.

Item Type: This indicates whether the question is multiple choice (**MC**), short answer (**SA**), or constructed response (**CR**).

Correct MC Response: This is the correct letter response for multiple-choice questions.

Total Possible Points: The number indicates the maximum points awarded for the item: 1 point for a multiple-choice question; 0-2 points for a short-answer question; and 0-4 points for a constructed-response question (grades 5-8 only).

Student Item Results: Each student's name and state assigned student identification number are listed, followed by a score for each released item on the test included in this report.

- For multiple-choice (**MC**) questions only, a plus sign (+) indicates a correct response. If the student answered incorrectly, the letter of his or her response is indicated. An asterisk (*) indicates that the student selected more than one response.
- For all other item types, a number indicates how many points a student earned for that item.
- For all item types, a blank space indicates that the student left the question blank. A dash (–) means that the score was invalidated and that the student received no credit for parts of the test that were administered under non-standard conditions.

Total Test Results Section

Subcategory Points Earned: These columns show the points the student earned in each content strand. The content strand points earned are based on all common items in the test and not just the released items.

Total Points Earned: This column shows the total number of points the student earned on all common items. If the row is blank in this column, it means that the student was classified as Not Tested.

Scaled Score: This column shows the scaled score reported as a 3-digit number. The first digit is the grade and the next two digits are a score of 00-80. If the row is blank in this column, it means that the student was classified as Not Tested. (See Achievement Level below.)

Achievement Level: For Tested students, this column shows the achievement level into which the student's scores fall: **4** = Proficient with Distinction, **3** = Proficient, **2** = Partially Proficient, and **1** = Substantially Below Proficient. For Not Tested students, there are six reasons why a student did not participate: **A** = student participated in an alternate assessment in 2006-07, **L** = student is first year LEP, **W** = student withdrew from school after Oct. 1, 2007, **E** = student enrolled in school after Oct. 1, 2007, **S** = state approved special consideration, and **N** = other reason.

School/District/State Percent Correct/Average Score:

- **Released Items:** Percent correct refers to the percent of tested students who answered a multiple-choice item correctly. Average score refers to the average number of points awarded to all tested students for that short-answer or constructed-response item.
- **Subcategory Points Earned:** Average score refers to the average number of points awarded to all tested students for that subcategory.

Fall 2007 - Begining of Grade 5 NECAP Tests
Grade 5 Students in 2007-2008
Item Analysis Report
Writing

School:
District:
State:
Code: 000-000-00000

	Released Items																	Total Test Results							
Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Subcategory Points Earned							
Content Strand	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	LR	RW	NW	IR	IR	IR	IR	Structures of Language & Writing Conventions	Short Responses	Extended Response			Total Points Earned	Scaled Score	Achievement Level
GLE Code	4-9	4-9	4-1	4-9	4-9	4-1	4-9	4-9	4-1	4-9	4-3	4-8	4-4	4-3	4-3	4-3	4-3								
Depth of Knowledge Code	1	1	2	1	1	2	1	1	2	1	2	2	2	3	3	3	3								
Item Type	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	CR	CR	CR	SA	SA	SA	ER								
Correct MC Response	C	A	B	D	A	D	A	D	A	C															
Name/Student ID Total Possible Points	1	1	1	1	1	1	1	1	1	1	4	4	4	1	1	1	12	10	12	15			37		
Released Item Number																									
Percent Correct/Average Score: School																									
Percent Correct/Average Score: District																									
Percent Correct/Average Score: State																									

LEGEND FOR THE ITEM ANALYSIS REPORT - GRADE 5 WRITING

Released Items Section

Released Item Number: This number corresponds to the item number in the released item documents. The complete writing test, which is made up entirely of common items, is being released. This report provides complete data on those items.

Content Strand: The letters indicate the content strand with which the item is aligned: Structures of Language & Writing Conventions (**SC**), Short Responses — Response to Literary Text (**LR**), Report Writing (**RW**), Narrative Writing (**NW**), Extended Response — Response to Informational Text (**IR**).

GLE Code: The first digit indicates the grade of the GLE tested. The second number digit indicates the GLE measured by the item.

Depth of Knowledge Code: This number indicates the Depth of Knowledge to which the item is coded.

Item Type: This indicates whether the question is multiple choice (**MC**), constructed response (**CR**), short answer (**SA**), or writing prompt (**ER**).

Correct MC Response: This is the correct letter response for multiple-choice questions.

Total Possible Points: The number indicates the maximum points awarded for the item: 1 point for a multiple-choice question, 1 point for a short-answer question, 0-4 points for a constructed-response question, and 0-12 points for the writing prompt.

Student Item Results: Each student's name and state assigned student identification number are listed, followed by a score for each released item on the test included in this report.

- For multiple-choice (**MC**) questions only, a plus sign (+) indicates a correct response. If the student answered incorrectly, the letter of his or her response is indicated. An asterisk (*) indicates that the student selected more than one response.
- For all other item types, a number indicates how many points a student earned for that item.
- For all item types, a blank space indicates that the student left the question blank. A dash (–) means that the score was invalidated and that the student received no credit for parts of the test that were administered under non-standard conditions.

Total Test Results Section

Subcategory Points Earned: These columns show the points the student earned in each content strand. The content strand points earned are based on all items in the test.

Total Points Earned: This column shows the total number of points the student earned on all common items. If the row is blank in this column, it means that the student was classified as Not Tested.

Scaled Score: This column shows the scaled score reported as a 3-digit number. The first digit is the grade and the next two digits are a score of 00-80. If the row is blank in this column, it means that the student was classified as Not Tested. (See Achievement Level below.)

Achievement Level: For Tested students, this column shows the achievement level into which the student's scores fall: **4** = Proficient with Distinction, **3** = Proficient, **2** = Partially Proficient, and **1** = Substantially Below Proficient. For Not Tested students, there are six reasons why a student did not participate: **A** = student participated in an alternate assessment in 2006-07, **L** = student is first year LEP, **W** = student withdrew from school after Oct. 1, 2007, **E** = student enrolled in school after Oct. 1, 2007, **S** = state approved special consideration, and **N** = other reason.

School/District/State Percent Correct/Average Score:

- **Released Items:** Percent correct refers to the percent of tested students who answered a multiple-choice item correctly. Average score refers to the average number of points awarded to all tested students for that short-answer or constructed-response item or the writing prompt.
- **Subcategory Points Earned:** Average score refers to the average number of points awarded to all tested students for that subcategory.

Fall 2007 - Beginning of Grade 11 NECAP Tests
Grade 11 Students in 2007-2008
Item Analysis Report
Writing

School:
District:
State:
Code: 000-000-00000

Content Strand	GSE Codes	Depth of Knowledge Code	Item Type	Total Possible Points
Response to Informational Text	10-2, 10-3, 10-1, 10-9	3	Extended Response	12

Name/Student ID	Total Test Results	
	Total Points Earned	Achievement Level

LEGEND FOR THE ITEM ANALYSIS REPORT - GRADE 11 WRITING

Released Items Section

Content Strand: This indicates the genre of the writing prompt: Response to Informational Text.

GSE Code: The first two digits indicate the grade of the GSE tested. The third digit indicates the GSE measured by the item.

Depth of Knowledge Code: This number indicates the Depth of Knowledge to which the item is coded.

Item Type: This indicates the type of question: Writing Prompt.

Total Possible Points: The number indicates the maximum points awarded for the item: 0-12 points for the writing prompt.

Total Test Results Section

Total Points Earned: This column shows the total number of points the student earned on all common items. If the row is blank in this column, it means that the student was classified as Not Tested.

Achievement Level: For Tested students, this column shows the achievement level into which the student's scores fall: **4** = Proficient with Distinction, **3** = Proficient, **2** = Partially Proficient, and **1** = Substantially Below Proficient. For Not Tested students, there are six reasons why a student did not participate: **A** = student participated in an alternate assessment in 2006-07, **L** = student is first year LEP, **W** = student withdrew from school after Oct. 1, 2007, **E** = student enrolled in school after Oct. 1, 2007, **S** = state approved special consideration, and **N** = other reason.

School/District/State/Average Points:

The numbers in these rows indicate the average number of points earned on the writing test for the school, district, and state.

About The New England Common Assessment Program

This report highlights results from the Fall 2007 New England Common Assessment Program (NECAP) tests. The NECAP tests are administered to students in New Hampshire, Rhode Island, and Vermont as part of each state's statewide assessment program. NECAP test results are used primarily for school improvement and accountability. Achievement level results are used in the state accountability system required under No Child Left Behind (NCLB). More detailed school and district results are used by schools to help improve curriculum and instruction. Individual student results are used to support information gathered through classroom instruction and assessments.

NECAP tests in reading and mathematics are administered to students in grades 3 through 8 and 11 and writing tests are administered to students in grades 5, 8, and 11. The NECAP grade 11 tests are designed to measure student performance on grade span expectations (GSE) developed and adopted by the three states. Specifically, the tests are designed to measure the content and skills that students are expected to have as they begin the school year in their current grade – in other words, the content and skills which students have learned through the end of the previous grade.

Each test contains a mix of multiple-choice and constructed-response questions. Constructed-response questions require students to develop their own answers to questions. On the mathematics test, students may be required to provide the correct answer to a computation or word problem, draw or interpret a chart or graph, or explain how they solved a problem. On the reading test, students may be required to make a list or write a few paragraphs to answer a question related to a literary or informational passage. On the writing test, students are required to provide two extended responses of 1-3 pages.

This report contains a variety of school- and/or district-, and state-level assessment results for the NECAP tests administered at a grade level. Achievement level distributions and mean scaled scores are provided for all students tested as well as for subgroups of students classified by demographics or program participation. The report also contains comparative information on school and district performance on subtopics within each content area tested.

In addition to this report of grade 11 results, schools and districts will also receive Item Analysis Reports, Released Item support materials, and student-level data files containing NECAP results. Together, these reports and data constitute a rich source of information to support local decisions in curriculum, instruction, assessment, and professional development. Over time, this information can also strengthen school's and district's evaluation of their ongoing improvement efforts.

Fall 2007
Beginning of Grade 11
NECAP Tests

Grade 11 Students in 2007-2008

School Results

School:

District:

Code: 000-000-00000

Fall 2007 - Beginning of Grade 11 NECAP Tests
Grade 11 Students in 2007-2008
Grade Level Summary Report

School:
District:
State:
Code: 000-000-00000

Schools and districts administered all NECAP tests to every enrolled student with the following exceptions: students who participated in the alternate assessment for the 2006-07 school year, first year LEP students, students who withdrew from the school after October 1, 2007, students who enrolled in the school after October 1, 2007, students for whom a special consideration was granted through the state Department of Education, and other students for reasons not approved. On this page, and throughout this report, results are only reported for groups of students that are larger than nine (9).

PARTICIPATION in NECAP	Number									Percentage								
	School			District			State			School			District			State		
Students enrolled on or after October 1																		
	Reading	Math	Writing	Reading	Math	Writing	Reading	Math	Writing	Reading	Math	Writing	Reading	Math	Writing	Reading	Math	Writing
Students tested																		
Students not tested in NECAP																		
State Approved																		
Alternate Assessment																		
First Year LEP																		
Withdrew After October 1																		
Enrolled After October 1																		
Special Consideration																		
Other																		

NECAP RESULTS

	School													District						State					
	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Score
	N	N	N	N	N	%	N	%	N	%	N	%		N	%	%	%	%		N	%	%	%	%	
READING																									
MATH																									
WRITING																									

Level 4 = Proficient with Distinction; Level 3 = Proficient; Level 2 = Partially Proficient; Level 1 = Substantially Below Proficient

Note: Throughout this report, percentages may not total 100 since each percentage is rounded to the nearest whole number.

Fall 2007 - Beginning of Grade 11 NECAP Tests
Grade 11 Students in 2007-2008
Reading Results

School:
District:
State:
Code: 000-000-00000

Proficient with Distinction (Level 4)
Student's performance demonstrates an ability to read and comprehend grade-appropriate text. Student is able to analyze and interpret literary and informational text. Student offers insightful observations/assertions that are well supported by references to the text. Student uses range of vocabulary strategies and breadth of vocabulary knowledge to read and comprehend a wide variety of texts.

Proficient (Level 3)
Student's performance demonstrates an ability to read and comprehend grade-appropriate text. Student is able to analyze and interpret literary and informational text. Student makes and supports relevant assertions by referencing text. Student uses vocabulary strategies and breadth of vocabulary knowledge to read and comprehend text.

Partially Proficient (Level 2)
Student's performance demonstrates an inconsistent ability to read and comprehend grade-appropriate text. Student attempts to analyze and interpret literary and informational text. Student may make and/or support assertions by referencing text. Student's vocabulary knowledge and use of strategies may be limited and may impact the ability to read and comprehend text.

Substantially Below Proficient (Level 1)
Student's performance demonstrates minimal ability to derive/construct meaning from grade-appropriate text. Student may be able to recognize story elements and text features. Student's limited vocabulary knowledge and use of strategies impacts the ability to read and comprehend text.

	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Score
	N	N	N	N	N	%	N	%	N	%	N	%	
SCHOOL 2007-08													
DISTRICT 2007-08													
STATE 2007-08													

Subtopic	Total Possible Points	Percent of Total Possible Points (0 10 20 30 40 50 60 70 80 90 100)
Word ID/Vocabulary	19	
Type of Text		
Literary	42	
Informational	43	
Level of Comprehension		
Initial Understanding	35	
Analysis & Interpretation	50	

● School
▲ District
◆ State
— Standard Error Bar

Fall 2007 - Beginning of Grade 11 NECAP Tests
Grade 11 Students in 2007-2008
Disaggregated Reading Results

School:
District:
State:
Code: 000-000-00000

REPORTING CATEGORIES	School													District						State					
	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Score
	N	N	N	N	N	%	N	%	N	%	N	%	N	N	%	%	%	%	N	N	%	%	%	%	N
All Students																									
Gender																									
Male																									
Female																									
Not Reported																									
Primary Race/Ethnicity																									
American Indian or Alaskan Native																									
Asian																									
Black or African American																									
Hispanic or Latino																									
Native Hawaiian or Pacific Islander																									
White (non-Hispanic)																									
No Primary Race/Ethnicity Reported																									
LEP Status																									
Currently receiving LEP services																									
Former LEP student - monitoring year 1																									
Former LEP student - monitoring year 2																									
All Other Students																									
IEP																									
Students with an IEP																									
All Other Students																									
SES																									
Economically Disadvantaged Students																									
All Other Students																									
Migrant																									
Migrant Students																									
All Other Students																									
Title I																									
Students Receiving Title I Services																									
All Other Students																									

Level 4 = Proficient with Distinction; Level 3 = Proficient; Level 2 = Partially Proficient; Level 1 = Substantially Below Proficient

NOTE: Some numbers may have been left blank because fewer than ten (10) students were tested.

Fall 2007 - Beginning of Grade 11 NECAP Tests
Grade 11 Students in 2007-2008
Mathematics Results

School:
District:
State:
Code: 000-000-00000

Proficient with Distinction (Level 4)
Student's problem solving demonstrates logical reasoning with strong explanations that include both words and proper mathematical notation. Student's work exhibits a high level of accuracy, effective use of a variety of strategies, and an understanding of mathematical concepts within and across grade level expectations. Student demonstrates the ability to move from concrete to abstract representations.

Proficient (Level 3)
Student's problem solving demonstrates logical reasoning with appropriate explanations that include both words and proper mathematical notation. Student uses a variety of strategies that are often systematic. Computational errors do not interfere with communicating understanding. Student demonstrates conceptual understanding of most aspects of the grade level expectations.

Partially Proficient (Level 2)
Student's problem solving demonstrates logical reasoning and conceptual understanding in some, but not all, aspects of the grade level expectations. Many problems are started correctly, but computational errors may get in the way of completing some aspects of the problem. Student uses some effective strategies. Student's work demonstrates that he or she is generally stronger with concrete than abstract situations.

Substantially Below Proficient (Level 1)
Student's problem solving is often incomplete, lacks logical reasoning and accuracy, and shows little conceptual understanding in most aspects of the grade level expectations. Student is able to start some problems but computational errors and lack of conceptual understanding interfere with solving problems successfully.

	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Score
	N	N	N	N	N	%	N	%	N	%	N	%	
SCHOOL 2007-08													
DISTRICT 2007-08													
STATE 2007-08													

Subtopic	Total Possible Points	Percent of Total Possible Points (0 10 20 30 40 50 60 70 80 90 100)
Numbers and Operations	20	
Geometry and Measurement	42	
Functions and Algebra	55	
Data, Statistics, and Probability	19	

● School
▲ District
◆ State
— Standard Error Bar

Fall 2007 - Beginning of Grade 11 NECAP Tests
Grade 11 Students in 2007-2008
Disaggregated Mathematics Results

School:
District:
State:
Code: 000-000-00000

REPORTING CATEGORIES	School													District						State					
	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Score
	N	N	N	N	N	%	N	%	N	%	N	%	N	N	%	%	%	%	N	N	%	%	%	%	N
All Students																									
Gender																									
Male																									
Female																									
Not Reported																									
Primary Race/Ethnicity																									
American Indian or Alaskan Native																									
Asian																									
Black or African American																									
Hispanic or Latino																									
Native Hawaiian or Pacific Islander																									
White (non-Hispanic)																									
No Primary Race/Ethnicity Reported																									
LEP Status																									
Currently receiving LEP services																									
Former LEP student - monitoring year 1																									
Former LEP student - monitoring year 2																									
All Other Students																									
IEP																									
Students with an IEP																									
All Other Students																									
SES																									
Economically Disadvantaged Students																									
All Other Students																									
Migrant																									
Migrant Students																									
All Other Students																									
Title I																									
Students Receiving Title I Services																									
All Other Students																									

Level 4 = Proficient with Distinction; Level 3 = Proficient; Level 2 = Partially Proficient; Level 1 = Substantially Below Proficient

NOTE: Some numbers may have been left blank because fewer than ten (10) students were tested.

Fall 2007 - Beginning of Grade 11 NECAP Tests
Grade 11 Students in 2007-2008
Writing Results

School:
District:
State:
Code: 000-000-00000

Proficient with Distinction (Level 4)
Student's writing demonstrates an ability to respond to prompt/task with clarity and insight. Focus is well developed and maintained throughout response. Response demonstrates use of strong organizational structures. A variety of elaboration strategies is evident. Sentence structures and language choices are varied and used effectively. Response demonstrates control of conventions; minor errors may occur.

Proficient (Level 3)
Student's writing demonstrates an ability to respond to prompt/task. Focus is clear and maintained throughout the response. Response is organized with a beginning, middle and end with appropriate transitions. Details are sufficiently elaborated to support focus. Sentence structures and language use are varied. Response demonstrates control of conventions; errors may occur but do not interfere with meaning.

Partially Proficient (Level 2)
Student's writing demonstrates an attempt to respond to prompt/task. Focus may be present but not maintained. Organizational structure is inconsistent with limited use of transitions. Details may be listed and lack elaboration. Sentence structures and language use are unsophisticated and may be repetitive. Response demonstrates inconsistent control of conventions.

Substantially Below Proficient (Level 1)
Student's writing demonstrates a minimal response to prompt/task. Focus is unclear or lacking. Little or no organizational structure is evident. Details are minimal and/or random. Sentence structures and language use are minimal or absent. Frequent errors in conventions may interfere with meaning.

	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Score
	N	N	N	N	N	%	N	%	N	%	N	%	
SCHOOL 2007-08													
DISTRICT 2007-08													
STATE 2007-08													

Strand	Total Possible Points	Percent of Total Possible Points (0 10 20 30 40 50 60 70 80 90 100)	Number of Prompts	Distribution of Score Points Across Prompts	0 %	1 %	2 %	3 %	4 %	5 %	6 %
Writing in Response to Text • Response to Informational Text • Response to Literary Text	12		2	School District State							
Informational Writing • Report • Procedure • Persuasive Essay	6		3	School District State							
Expressive Writing • Reflective Essay	18		1	School District State							

● School ▲ District ◆ State — Standard Error Bar

Fall 2007 - Beginning of Grade 11 NECAP Tests
Grade 11 Students in 2007-2008
Disaggregated Writing Results

School:
District:
State:
Code: 000-000-00000

REPORTING CATEGORIES	School													District						State					
	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Score
	N	N	N	N	N	%	N	%	N	%	N	%	N	N	%	%	%	%	N	N	%	%	%	%	N
All Students																									
Gender																									
Male																									
Female																									
Not Reported																									
Primary Race/Ethnicity																									
American Indian or Alaskan Native																									
Asian																									
Black or African American																									
Hispanic or Latino																									
Native Hawaiian or Pacific Islander																									
White (non-Hispanic)																									
No Primary Race/Ethnicity Reported																									
LEP Status																									
Currently receiving LEP services																									
Former LEP student - monitoring year 1																									
Former LEP student - monitoring year 2																									
All Other Students																									
IEP																									
Students with an IEP																									
All Other Students																									
SES																									
Economically Disadvantaged Students																									
All Other Students																									
Migrant																									
Migrant Students																									
All Other Students																									
Title I																									
Students Receiving Title I Services																									
All Other Students																									

Level 4 = Proficient with Distinction; Level 3 = Proficient; Level 2 = Partially Proficient; Level 1 = Substantially Below Proficient

NOTE: Some numbers may have been left blank because fewer than ten (10) students were tested.

School Summary
2007-2008 Students

School:
District:
State:
Code: 00-00000

Reading	Enrolled	NT Approved	NT Other	Tested	Achievement Level								
					Level 4		Level 3		Level 2		Level 1		Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	

Mathematics	Enrolled	NT Approved	NT Other	Tested	Achievement Level								
					Level 4		Level 3		Level 2		Level 1		Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	

Writing	Enrolled	NT Approved	NT Other	Tested	Achievement Level								
					Level 4		Level 3		Level 2		Level 1		Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	

Level 4 = Proficient with Distinction; Level 3 = Proficient; Level 2 = Partially Proficient; Level 1 = Substantially Below Proficient

About The New England Common Assessment Program

This report highlights results from the Fall 2007 Beginning of Grade New England Common Assessment Program (NECAP) tests. The NECAP tests are administered to students in New Hampshire, Rhode Island, and Vermont as part of each state's statewide assessment program. NECAP test results are used primarily for school improvement and accountability. Achievement level results are used in the state accountability system required under No Child Left Behind (NCLB). More detailed school and district results are used by schools to help improve curriculum and instruction. Individual student results are used to support information gathered through classroom instruction and assessments.

NECAP tests in reading and mathematics are administered to students in grades 3 through 8 and writing tests are administered to students in grades 5 and 8. The NECAP tests are designed to measure student performance on grade level expectations (GLE) developed and adopted by the three states. Speci cally, the tests are designed to measure the content and skills that students are expected to have as they begin the school year in their current grade – in other words, the content and skills which students have learned through the end of the previous grade.

Each test contains a mix of multiple-choice and constructed-response questions. Constructed-response questions require students to develop their own answers to questions. On the mathematics test, students may be required to provide the correct answer to a computation or word problem, draw or interpret a chart or graph, or explain how they solved a problem. On the reading test, students may be required to make a list or write a few paragraphs to answer a question related to a literary or informational passage. On the writing test, students are required to provide a single extended response of 1-3 pages and three shorter responses to questions measuring different types of writing.

This report contains a variety of school- and/or district-, and state-level assessment results for the NECAP tests administered at a grade level. Achievement level distributions and mean scaled scores are provided for all students tested as well as for subgroups of students classi ed by demographics or program participation. The report also contains comparative information on school and district performance on subtopics within each content area tested.

In addition to this report of grade level results, schools and districts will also receive Summary Reports, Item Analysis Reports, Released Item support materials, and student-level data les containing NECAP results. Together, these reports and data constitute a rich source of information to support local decisions in curriculum, instruction, assessment, and professional development. Over time, this information can also strengthen school's and district's evaluation of their ongoing improvement efforts.

Fall 2007
Beginning of Grade 5
NECAP Tests

Grade 5 Students in 2007-2008

District Results

District:

Code: 000-000

Fall 2007 - Beginning of Grade 5 NECAP Tests
Grade 5 Students in 2007-2008
Grade Level Summary Report

District:
State:
Code: 000-000

Schools and districts administered all NECAP tests to every enrolled student with the following exceptions: students who participated in the alternate assessment for the 2006-07 school year, rst year LEP students, students who withdrew from the school after October 1, 2007, students who enrolled in the school after October 1, 2007, students for whom a special consideration was granted through the state Department of Education, and other students for reasons not approved. On this page, and throughout this report, results are only reported for groups of students that are larger than nine (9).

PARTICIPATION in NECAP	Number									Percentage								
	School			District			State			School			District			State		
Students enrolled on or after October 1																		
	Reading	Math	Writing	Reading	Math	Writing	Reading	Math	Writing	Reading	Math	Writing	Reading	Math	Writing	Reading	Math	Writing
Students tested																		
Students not tested in NECAP																		
State Approved																		
Alternate Assessment																		
First Year LEP																		
Withdrew After October 1																		
Enrolled After October 1																		
Special Consideration																		
Other																		

NECAP RESULTS

	District													State											
	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Scaled Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Scaled Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%		N	%	%	%	%		N	%	%	%	%	
READING																									
MATH																									
WRITING																									

Level 4 = Proficient with Distinction; Level 3 = Proficient; Level 2 = Partially Proficient; Level 1 = Substantially Below Proficient

Note: Throughout this report, percentages may not total 100 since each percentage is rounded to the nearest whole number.

Fall 2007 - Beginning of Grade 5 NECAP Tests
Grade 5 Students in 2007-2008
Reading Results

District:
State:
Code: 000-000

Proficient with Distinction (Level 4)
Student's performance demonstrates an ability to read and comprehend grade-appropriate text. Student is able to analyze and interpret literary and informational text. Student offers insightful observations/assertions that are well supported by references to the text. Student uses range of vocabulary strategies and breadth of vocabulary knowledge to read and comprehend a wide variety of texts.

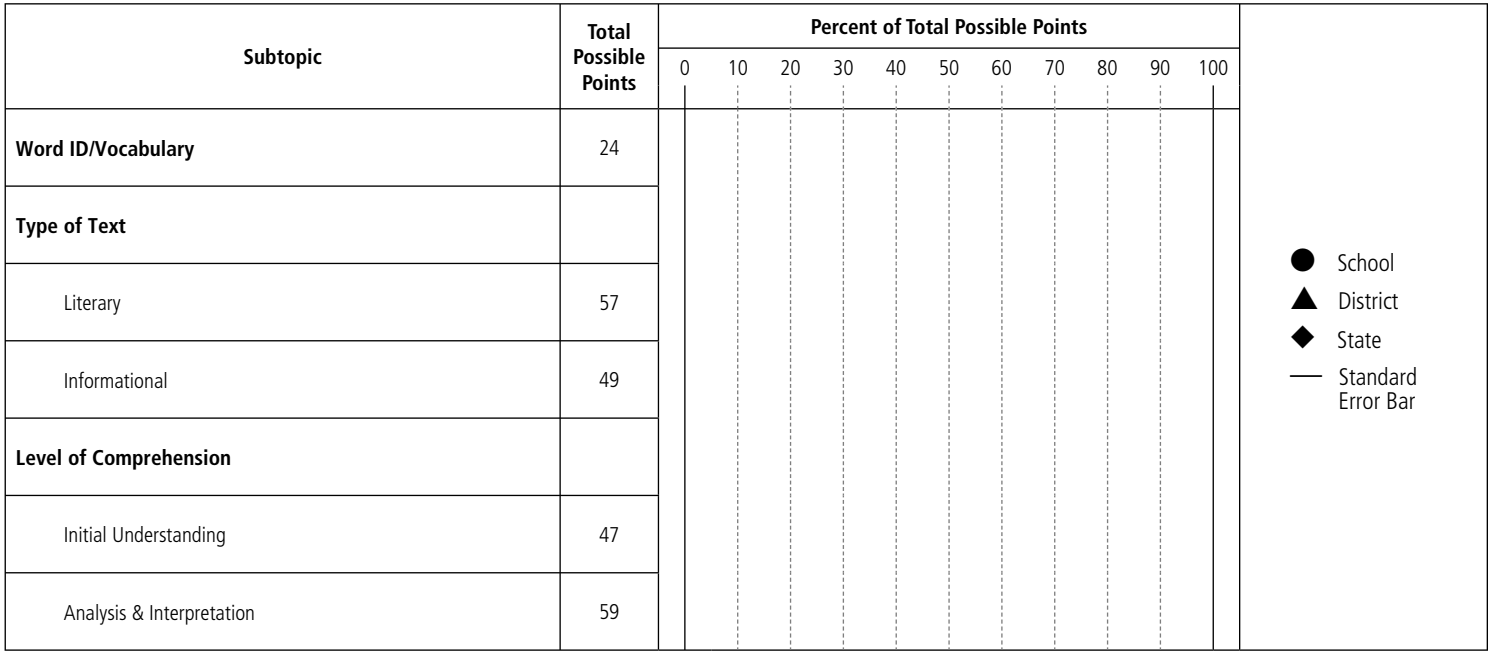
Proficient (Level 3)
Student's performance demonstrates an ability to read and comprehend grade-appropriate text. Student is able to analyze and interpret literary and informational text. Student makes and supports relevant assertions by referencing text. Student uses vocabulary strategies and breadth of vocabulary knowledge to read and comprehend text.

Partially Proficient (Level 2)
Student's performance demonstrates an inconsistent ability to read and comprehend grade-appropriate text. Student attempts to analyze and interpret literary and informational text. Student may make and/or support assertions by referencing text. Student's vocabulary knowledge and use of strategies may be limited and may impact the ability to read and comprehend text.

Substantially Below Proficient (Level 1)
Student's performance demonstrates minimal ability to derive/construct meaning from grade-appropriate text. Student may be able to recognize story elements and text features. Student's limited vocabulary knowledge and use of strategies impacts the ability to read and comprehend text.

	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	
SCHOOL													
2005-06													
2006-07													
2007-08													
Cumulative Total													
DISTRICT													
2005-06													
2006-07													
2007-08													
Cumulative Total													
STATE													
2005-06													
2006-07													
2007-08													
Cumulative Total													

Subtopic	Total Possible Points
Word ID/Vocabulary	24
Type of Text	
Literary	57
Informational	49
Level of Comprehension	
Initial Understanding	47
Analysis & Interpretation	59



Fall 2007 - Beginning of Grade 5 NECAP Tests
Grade 5 Students in 2007-2008
Disaggregated Reading Results

District:
State:
Code: 000-000

REPORTING CATEGORIES	District													State											
	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Scaled Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Scaled Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	N	N	%	%	%	%	N	N	%	%	%	%	N
All Students																									
Gender																									
Male																									
Female																									
Not Reported																									
Primary Race/Ethnicity																									
American Indian or Alaskan Native																									
Asian																									
Black or African American																									
Hispanic or Latino																									
Native Hawaiian or Pacific Islander																									
White (non-Hispanic)																									
No Primary Race/Ethnicity Reported																									
LEP Status																									
Currently receiving LEP services																									
Former LEP student - monitoring year 1																									
Former LEP student - monitoring year 2																									
All Other Students																									
IEP																									
Students with an IEP																									
All Other Students																									
SES																									
Economically Disadvantaged Students																									
All Other Students																									
Migrant																									
Migrant Students																									
All Other Students																									
Title I																									
Students Receiving Title I Services																									
All Other Students																									

Level 4 = Proficient with Distinction; Level 3 = Proficient; Level 2 = Partially Proficient; Level 1 = Substantially Below Proficient

NOTE: Some numbers may have been left blank because fewer than ten (10) students were tested.

Fall 2007 - Beginning of Grade 5 NECAP Tests
Grade 5 Students in 2007-2008
Mathematics Results

District:
State:
Code: 000-000

Proficient with Distinction (Level 4)
Student's problem solving demonstrates logical reasoning with strong explanations that include both words and proper mathematical notation. Student's work exhibits a high level of accuracy, effective use of a variety of strategies, and an understanding of mathematical concepts within and across grade level expectations. Student demonstrates the ability to move from concrete to abstract representations.

Proficient (Level 3)
Student's problem solving demonstrates logical reasoning with appropriate explanations that include both words and proper mathematical notation. Student uses a variety of strategies that are often systematic. Computational errors do not interfere with communicating understanding. Student demonstrates conceptual understanding of most aspects of the grade level expectations.

Partially Proficient (Level 2)
Student's problem solving demonstrates logical reasoning and conceptual understanding in some, but not all, aspects of the grade level expectations. Many problems are started correctly, but computational errors may get in the way of completing some aspects of the problem. Student uses some effective strategies. Student's work demonstrates that he or she is generally stronger with concrete than abstract situations.

Substantially Below Proficient (Level 1)
Student's problem solving is often incomplete, lacks logical reasoning and accuracy, and shows little conceptual understanding in most aspects of the grade level expectations. Student is able to start some problems but computational errors and lack of conceptual understanding interfere with solving problems successfully.

	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	
SCHOOL													
2005-06													
2006-07													
2007-08													
Cumulative Total													
DISTRICT													
2005-06													
2006-07													
2007-08													
Cumulative Total													
STATE													
2005-06													
2006-07													
2007-08													
Cumulative Total													

Subtopic	Total Possible Points	Percent of Total Possible Points (0 10 20 30 40 50 60 70 80 90 100)
Number & Operations	73	
Geometry & Measurement	32	
Functions & Algebra	32	
Data, Statistics, & Probability	25	

● School
▲ District
◆ State
— Standard Error Bar

Fall 2007 - Beginning of Grade 5 NECAP Tests
Grade 5 Students in 2007-2008
Disaggregated Mathematics Results

District:
State:
Code: 000-000

REPORTING CATEGORIES	District													State											
	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Scaled Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Scaled Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	N	N	%	%	%	%	N	N	%	%	%	%	N
All Students																									
Gender																									
Male																									
Female																									
Not Reported																									
Primary Race/Ethnicity																									
American Indian or Alaskan Native																									
Asian																									
Black or African American																									
Hispanic or Latino																									
Native Hawaiian or Pacific Islander																									
White (non-Hispanic)																									
No Primary Race/Ethnicity Reported																									
LEP Status																									
Currently receiving LEP services																									
Former LEP student - monitoring year 1																									
Former LEP student - monitoring year 2																									
All Other Students																									
IEP																									
Students with an IEP																									
All Other Students																									
SES																									
Economically Disadvantaged Students																									
All Other Students																									
Migrant																									
Migrant Students																									
All Other Students																									
Title I																									
Students Receiving Title I Services																									
All Other Students																									

Level 4 = Proficient with Distinction; Level 3 = Proficient; Level 2 = Partially Proficient; Level 1 = Substantially Below Proficient

NOTE: Some numbers may have been left blank because fewer than ten (10) students were tested.

Fall 2007 - Beginning of Grade 5 NECAP Tests
Grade 5 Students in 2007-2008
Writing Results

District:
State:
Code: 000-000

Proficient with Distinction (Level 4)
Student's writing demonstrates an ability to respond to prompt/task with clarity and insight. Focus is well developed and maintained throughout response. Response demonstrates use of strong organizational structures. A variety of elaboration strategies is evident. Sentence structures and language choices are varied and used effectively. Response demonstrates control of conventions; minor errors may occur.

Proficient (Level 3)
Student's writing demonstrates an ability to respond to prompt/task. Focus is clear and maintained throughout the response. Response is organized with a beginning, middle and end with appropriate transitions. Details are sufficiently elaborated to support focus. Sentence structures and language use are varied. Response demonstrates control of conventions; errors may occur but do not interfere with meaning.

Partially Proficient (Level 2)
Student's writing demonstrates an attempt to respond to prompt/task. Focus may be present but not maintained. Organizational structure is inconsistent with limited use of transitions. Details may be listed and lack elaboration. Sentence structures and language use are unsophisticated and may be repetitive. Response demonstrates inconsistent control of conventions.

Substantially Below Proficient (Level 1)
Student's writing demonstrates a minimal response to prompt/task. Focus is unclear or lacking. Little or no organizational structure is evident. Details are minimal and/or random. Sentence structures and language use are minimal or absent. Frequent errors in conventions may interfere with meaning.

	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	
SCHOOL													
2005-06													
2006-07													
2007-08													
Cumulative Total													
DISTRICT													
2005-06													
2006-07													
2007-08													
Cumulative Total													
STATE													
2005-06													
2006-07													
2007-08													
Cumulative Total													

Subtopic	Total Possible Points	Percent of Total Possible Points (0 10 20 30 40 50 60 70 80 90 100)
Structures of Language & Writing Conventions	10	
Short Responses	12	
Extended Response	15	

● School
▲ District
◆ State
— Standard Error Bar

Fall 2007 - Beginning of Grade 5 NECAP Tests
Grade 5 Students in 2007-2008
Disaggregated Writing Results

District:
State:
Code: 000-000

REPORTING CATEGORIES	District													State											
	Enrolled	NT Approved	NT Other	Tested	Level 4		Level 3		Level 2		Level 1		Mean Scaled Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Scaled Score	Tested	Level 4	Level 3	Level 2	Level 1	Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	N	N	%	%	%	%	N	N	%	%	%	%	N
All Students																									
Gender																									
Male																									
Female																									
Not Reported																									
Primary Race/Ethnicity																									
American Indian or Alaskan Native																									
Asian																									
Black or African American																									
Hispanic or Latino																									
Native Hawaiian or Pacific Islander																									
White (non-Hispanic)																									
No Primary Race/Ethnicity Reported																									
LEP Status																									
Currently receiving LEP services																									
Former LEP student - monitoring year 1																									
Former LEP student - monitoring year 2																									
All Other Students																									
IEP																									
Students with an IEP																									
All Other Students																									
SES																									
Economically Disadvantaged Students																									
All Other Students																									
Migrant																									
Migrant Students																									
All Other Students																									
Title I																									
Students Receiving Title I Services																									
All Other Students																									

Level 4 = Proficient with Distinction; Level 3 = Proficient; Level 2 = Partially Proficient; Level 1 = Substantially Below Proficient

NOTE: Some numbers may have been left blank because fewer than ten (10) students were tested.

District Summary
2007-2008 Students

District:
State:
Code: 00

Reading	Enrolled	NT Approved	NT Other	Tested	Achievement Level								
					Level 4		Level 3		Level 2		Level 1		Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	

Mathematics	Enrolled	NT Approved	NT Other	Tested	Achievement Level								
					Level 4		Level 3		Level 2		Level 1		Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	

Writing	Enrolled	NT Approved	NT Other	Tested	Achievement Level								
					Level 4		Level 3		Level 2		Level 1		Mean Scaled Score
	N	N	N	N	N	%	N	%	N	%	N	%	

Level 4 = Proficient with Distinction; Level 3 = Proficient; Level 2 = Partially Proficient; Level 1 = Substantially Below Proficient

APPENDIX N—DECISION RULES

ANALYSIS AND REPORTING DECISION RULES

NECAP
Fall 07-08 Grades 03-08 Administration

This document details rules for analysis and reporting. The final student level data set used for analysis and reporting is described in the "Data Processing Specifications." This document is considered a draft until the NECAP State Department of Education (DOE) signs off. If there are rules that need to be added or modified after said sign-off, DOE sign off will be obtained for each rule. Details of these additions and modifications will be in the Addendum section.

I. General Information

A. *Tests administered:*

Grade	Subject	Test items used for Scaling	IREF Reporting Categories (Subtopic and Subcategory IREF Source)
03	Reading	Common	Cat2
03	Math	Common	Cat1
04	Reading	Common	Cat2
04	Math	Common	Cat1
05	Reading	Common	Cat2
05	Math	Common	Cat1
05	Writing	Common	type
06	Reading	Common	Cat2
06	Math	Common	Cat1
07	Reading	Common	Cat2
07	Math	Common	Cat1
08	Reading	Common	Cat2
08	Math	Common	Cat1
08	Writing	Common	type

B. *Reports Produced*:

1. Student Report
   a. Testing School District
2. School Item Analysis Report by Grade and Subject
   a. Testing School District
   b. Teaching School District
3. Grade Level School/District/State Results
   a. Testing School District
   b. Teaching School District – District and School Levels only
4. School/District/State Summary
   a. Testing School District
   b. Teaching School District – District and School Levels only

C. *Files Produced:*

1. State Student Cleanup Data
2. Preliminary State Results
3. State Student Released Item Data
4. State Student Raw Data
5. State Student Scored Data

6. District Student Data
7. Item Information
8. Grade Level Results Report Disaggregated and Historical Data
9. Grade Level Results Report Participation Category Data
10. Grade Level Results Report Subtopic Data
11. Summary Results Data
12. Released Item Percent Responses Data
13. Invalidated Students Original Score
14. Multiple Choice Response Distribution Data Grades 05-08
15. Block Blank Response Distribution Data Grades 03 & 04

D. *School Type:*

SchType	**Source: ICORE SubTypeID**	**Description**
PUB	1,12,13	Public School
PRI	3	Private School
OOD	4	Out-of-District Private Providers
OUT	8	Out Placement
CHA	11	Charter School
INS	7	Institution
OTH	9	Other

School Type Impact on Data Analysis and Reporting				
Level	**Testing**		**Teaching**	
	Impact on Analysis	**Impact on Reporting**	**Impact on Analysis**	**Impact on Reporting**
Student	n/a	Report students based on testing discode and schcode. District data will be blank for students tested at PRI, OOD, OUT, INS, or OTH schools. Always print tested year state data.	n/a	n/a
School	Include all non-home school students using testing school code for aggregations	Generate a report for each school with at least one student enrolled using the tested school aggregate denominator. District data will be blank for PRI, OOD, OUT, INS, or OTH schools. Always print tested year state data.	Include all non-home school students using the teaching school code. Exclude students who do not have a teaching school code.	Generate a report for each school with at least one student enrolled using the teaching school aggregate denominator. District data will be blank for PRI, OOD, OUT, INS, or OTH schools. Always print tested year state data.
District	For OUT and OOD schools, aggregate using the sending district. If OUT or OOD student does not have a sending district, do not include in aggregations. Do not include students tested at PRI, INS, or OTH schools Do not include home school students.	Generate a report for each district with at least one student enrolled using the tested district aggregate denominator. Always report tested year state data.	Do not include students taught at PRI, OOD, OUT, INS, or OTH schools. Do not include students who do not have a teaching district code. Do not include home school students.	Generate a report for each district with at least one student enrolled using the teaching district aggregate denominator. Always report tested year state data.
State	Do not include students tested at PRI schools for NH and RI. Include all students for VT. Do not include home school students.	Always report testing year state data.	n/a	n/a

E. *Requirements To Report Aggregate Data(Minimum N)*

Calculation Description	Rule
Number and Percent at each achievement level, mean score by disaggregated category and aggregate level	If the number of tested students included in the denominator is less than 10, then do not report.
Content Area Subcategories Average Points Earned based on common items only by aggregate level	If the number of tested students included in the denominator is less than 10, then do not report.
Aggregate data on Item Analysis report	No required minimum number of students
Number and Percent of students in a participation category by aggregate level	No required minimum number of students
Content Area Subtopic Percent of Total Possible Points and Standard Error Bar	If any item was not administered to at least one tested student included in the denominator or the number of tested students included in the denominator is less than 10, then do not report

F. *Special Forms:*

1. Form 00 is created for students whose matrix scores will be ignored for analysis. Such students include Braille or administration issues resolved by program management.

G. *Other Information*

1. Home school students are excluded from all school, district, and state level aggregations. Home school students receive a parent letter based on the testing school. Print aggregate data based on the testing school. Print tested year state data. Home school students are not listed on the item analysis report.
2. Plan504 data not available for NH and VT; therefore 504 Plan section will be suppressed for NH and VT.
3. To calculate Title1 data for writing using Title1rea variable.
4. Title 1 data are not available for VT; therefore Title 1 section will be suppressed for VT.
5. Only students with a testing year school type of OUT or OOD are allowed to have a sending district code. Non-public sending district codes will be ignored. For RI, senddiscode of 88 is ignored. For NH, senddiscode of 000 is ignored.
6. Several reports and data files are provided by testing and teaching school district levels. Testing level is defined to be the school and district where the student tested (discode and schcode). Teaching level is defined to be where the student was enrolled last year (sprdiscode and sprschcode). Every student will have testing district and school codes. Some students will have a teaching school code. Some students will have a teaching district code.

II. Student Participation / Exclusions

A. *Test Attempt Rules by content area*

1. A content area was attempted if any multiple choice item or non-field test open response item has been answered. (Use original item responses – see special circumstances section II.F)
2. A multiple choice item has been answered by a student if the response is A, B, C, D, or * (*=multiple responses)
3. An open response item has been answered if it is not scored blank ‘B’

B. *Session Attempt Rules by content area*

1. A session was attempted if any multiple choice item or non-field test open response item has been answered in the session. (Use original item responses – see special circumstances section II.F)

C. *Not Tested Reasons by content area*

1. Not Tested State Approved Alternate Assessment

   a. If content area "Alternate Assessment blank or partially blank reason" is marked, then student is identified as "Not Tested State Approved Alternate Assessment".

2. Not Tested State Approved First Year LEP (reading and writing only)

   a. If content area "First Year LEP blank or partially blank reason" is marked, then student is identified as "Not Tested State Approved First Year LEP".

3. Not Tested State Approved Special Consideration

   a. If content area "Special Consideration blank or partially blank reason" is marked, the student is identified as "Not Tested State Approved Special Consideration".

4. Not Tested State Approved Withdrew After October 1

   a. If content area "Withdrew After October 1 blank or partially blank reason" is marked and at least one content area session was not attempted, then the student is identified as "Not Tested State Approved Withdrew After October 1"

5. Not Tested State Approved Enrolled After October 1

   a. If content area "Enrolled After October 1 blank or partially blank reason" is marked and at least one content area session was not attempted, then the student is identified as "Not Tested State Approved Enrolled After October 1".

6. Not Tested Other

   a. If content area test was not attempted, the student is identified as "Not Tested Other".

D. *Not Tested Reasons Hierarchy by content area: if more than one reason for not testing at a content area is identified then select the first category indicated in the order of the list below.*

1. Not Tested State Approved Alternate Assessment
2. Not Tested State Approved First Year LEP (reading and writing only)
3. Not Tested State Approved Special Consideration
4. Not Tested State Approved Withdrew After October 1
5. Not Tested State Approved Enrolled After October 1
6. Not Tested Other

E. *Student Participation Status by content area*

1. Tested

   a. If the student does not have any content area not tested reasons identified, then the student is considered Tested for the content area.

2. Not Tested: State Approved Alternate Assessment
3. Not Tested: State Approved First Year LEP (reading and writing only)
4. Not Tested: State Approved Special Consideration
5. Not Tested: State Approved Withdrew After October 1
6. Not Tested: State Approved Enrolled After October 1
7. Not Tested: Other

F. *Special Circumstances by content area*

1. Students identified as content area tested and did not attempt all sessions in the test are considered to be "Tested Incomplete."

2. Students identified as content area tested and have at least one of the content area invalidation session flags marked will be treated as "Tested with Non-Standard Accommodations". Math accommodation F01 also identifies non-standard accommodations for Math.

3. For students identified as "Tested with Non-Standard Accommodations" the content area sessions item responses which are marked for invalidation will be treated as a non-response. For the students with math accommodations F01 marked, the non-calculator session 1 math items will be treated as a non-response.

4. Students identified as tested in a content area will receive released item scores, scaled score, scale score bounds, achievement level, raw total score, subcategory scores, and writing annotations (where applicable).

5. Students identified as not tested in a content area will not receive a scaled score, scaled score bounds, achievement level, writing annotations (where applicable). They will receive released item scores, raw total score, and subcategory scores.

G. *Student Participation Summary*

Participation Status	**Description**	**Raw Score (*)**	**Scaled Score**	**Ach. Level**	**Student Report Ach. Level Text**	**Roster Ach. Level Text**
1	Tested	✓	✓	✓	Substantially Below Proficient, Partially Proficient, Proficient, or Proficient with Distinction	1,2,3, or 4
2	Not Tested State Approved Alternate Assessment	✓			Alternate Assessment	A
3	Not Tested State Approved First Year LEP	✓			First Year LEP	L
4	Not Tested State Approved Enrolled After October 1	✓			Enrolled After October 1	E
5	Not Tested State Approved Withdrew After October 1	✓			Withdrew After October 1	W
6	Not Tested State Approved Special Consideration	✓			Special Consideration	S
7	Not Tested Other	✓			Not Tested	N

(*) Raw scores are not printed on student report for students with a not tested status.

III. Calculations

A. *Rounding*

1. All percents are rounded to the nearest whole number
2. All mean scaled scores are rounded to the nearest whole number
3. Content Area Subcategories: Average Points Earned (student report): round to the nearest tenth.
4. Round non-multiple choice average item scores to the nearest tenth.

B. *Students included in calculations based on participation status*

1. For number and percent of students enrolled, tested, and not tested categories include all students not excluded by other decision rules.
2. For number and percent at each achievement level, average scaled score, subtopic percent of total possible points and standard error, subcategories average points earned, percent/correct average score for each released item include all tested students not excluded by other decision rules.

C. *Raw scores*

1. For all analysis, non-response for an item by a tested student is treated as a score of 0.
2. Content Area Total Points: Sum the pointes earned by the student for the common items.

D. *Item Scores*

1. For all analysis, non-response for an item by a tested student is treated as a score of 0.
2. For multiple choice released item data store a '+' for correct response, or A,B,C,D,* or blank
3. For open response released items, store the student score. If the score is not numeric ('B'), then store it as blank.
4. For students identified as content area tested with non-standard accommodations, then store the released item score as '-' for invalidated items.

E. *Scaling*

Scaling is done using a look-up table provided by psychometrics and the student's raw score.

F. *SubTopic Item Scores*

1. Identify the Subtopic
   a. The excel file IREF_ReportingCategories.xls outlines the IREF variables and values for identifying the Content Strand, GLE code, Depth of Knowledge code, subtopics, and subcategories. The variable type in IREF is the source for the Item Type, except the writing prompt item type is reported as "ER".
2. Student Content Area Subcategories (student report): Subtopic item scores at the student level is the sum of the points earned by the student for the common items in the subtopic.
3. Content Area Subtopic (grade level results report): Subtopic scores are based on all unique common and matrix items. The itemnumber identifies each unique item.
   a. Percent of Total Possible Points:
      I. For each unique common and matrix item calculate the average student score as follows: (sum student item score/number of tested students administered the item).
      II. 100 * (Sum the average score for items in the subtopic)/(Total Possible Points for the subtopic) rounded to the nearest whole number.
   b. Standard Error Bar: Before multiplying by 100 and rounding the Percent of Total Possible points (ppe) calculate standard error for school,district and state: 100* (square root (((ppe)*(1-ppe)/number of tested students))) rounded to the nearest whole number
      Percent of Total Possible Points +/- Standard Error

G. *Cumulative Total*

1. Include the yearly results where the number tested is greater than or equal to 10
2. Cumulative total N (Enrolled, Not Tested Approved, Not Tested Other, Tested, at each achievement level) is the sum of the yearly results for each category where the number tested is greater than or equal to 10.
3. Cumulative percent for each achievement level is 100*(Number of students at the achievement level cumulative total / number of students tested cumulative total) rounded to the nearest whole number.
4. Cumulative mean scaled score is a weighted average. For years where the number tested is greater than or equal to 10, (sum of (yearly number tested * yearly mean scaled score)) / (sum of yearly number tested) rounded to the nearest whole number.

H. *Average Points Earned Students at Proficient Level (Range)*

1. Select all students across the states with Y40 scaled score, where Y=grade. Average the content area subcategories across the students and round to the nearest tenth. Add and subtract one standard error of measurement to get the range.

I. Writing Annotations

1. Students with a writing prompt score of 2-12 receive at least one, but up to five statements based on decision rules for annotations as outlined in Final Statements & Decision Rules for NECAP Writing Annotations.doc

IV. Report Specific Rules

A. *Student Report*

1. Student header Information
   a. If “FNAME” or “LNAME” is not missing then print “FNAME MI LNAME”. Otherwise, print “No Name Provided”.
   b. Print the student’s tested grade
   c. For school and district name, print the abbreviated tested school and district ICORE name based on school type decision rules.
   d. Print “NH”,”RI”, or “VT” for state.
2. Test Results by content area
   a. For students identified as “Not Tested”, print the not tested reason in the achievement level, leave scaled score and graphic display blank.
   b. For students identified as tested for the content area then do the following
      I. Print the complete achievement level name the student earned
      II. Print the scaled score the student earned
      III. Print a vertical black bar for the student scaled score with gray horizontal bounds in the graphic display
      IV. For students identified as “Tested with a non-standard accommodation” for a content area, print ‘**’ after the content area earned achievement level and after student points earned for each subcategory.
      V. For students identified as “Tested Incomplete” for a content area, place a section symbol after content area earned scaled score.
3. Exclude students based on school type and participation status decision rules for aggregations.

4. This Student's Achievement Compared to Other Students by content area
    a. For tested students, print a check mark in the appropriate achievement level in the content area student column. For not tested students leave blank
    b. For percent of students with achievement level by school, district and state print aggregate data based on school type and minimum N rules
5. This Student's Performance in Content Area Subcategories by content area
    a. Always print total possible points and students at proficient average points earned range.
    b. For students identified as not tested then leave student scores blank
    c. For students identified as tested do the following
        I. Always print student subcategory scores
        II. If the student is identified as tested with a non-standard accommodation for the content area then place '**" after the student points earned for each subcategory.
    d. Print aggregate data based on school type and minimum N-size rules.
5. Writing Annotations (Grades 05 and 08 only)
    a. For students with writing prompt score of 2-12 print at least one, but up to five annotation statements.

B. *School Item Analysis Report by Grade and Subject*

1. Reports are created for testing school and teaching school independently.
2. School Header Information
    a. Use abbreviated ICORE school and district name based on school type decision rules
    b. Print "New Hampshire", "Rhode Island", or "Vermont" for State.
    c. For NH, the code should print SAU code – district code – school code. For RI and VT, the code should print district code – school code.
3. For multiple choice items, print '+' for correct response, or A,B,C,D,* or blank
4. For open response items, print the student score. If the score is not numeric ('B'), then leave blank.
5. For students identified as content area tested with non-standard accommodations, print '-' for invalidated items.
6. All students receive subcategory points earned and total points earned.
7. Leave scaled score blank for not tested students and print the not tested reason in the achievement level column.
8. Exclude students based on school type and participation status decision rules for aggregations.
9. Always print aggregated data regardless of N-size based on school type decision rules.
10. For students identified as not tested for the content area print a cross symbol next to students' name.
11. For students identified as tested incomplete for the content area print a section symbol next to the scaled score.
12. Home school student are not listed on the report.

C. Grade Level School/District/State Results

1. Reports are run by testing state, testing district, testing school, teaching district, and teaching school.
2. Exclude students based on school type and participation status decision rules for aggregations.
3. Report Header Information

a. Use abbreviated school and district name from ICORE based on school type decision rules.

b. Print “New Hampshire”, “Rhode Island”, or “Vermont” to reference the state. The state graphic is printed on the first page.

4. Report Section: Participation in NECAP

a. For testing level reports always print number and percent based on school type decision rules.

b. For the teaching level reports leave the section blank.

5. Report Section: NECAP Results by content area

a. For the testing level report always print based on minimum N-size and school type decision rules.

b. For the teaching level report leave Enrolled, NT Approved, and NT Other blank. Print Tested, number and percent at each achievement level, mean scaled score based on minimum N-size and school type decision rules.

6. Report Section: Historical NECAP Results by content area

a. For teaching level report always print current year, prior years, and cumulative total results based on minimum N-size and school type decision rules.

b. For teaching level report leave Enrolled, NT Approved, and NT Other blank. Print Tested, number and percent at each achievement level, mean scaled score based on minimum N-size and school type decision rules.

7. Report Section: Subtopic Results by content area

a. For testing and teaching level reports always print based on minimum N-size and school type decision rules

8. Report Section: Disaggregated Results by content area

a. For testing level report always print based on minimum N-size and school type decision rules.

b. For teaching level report leave Enrolled, NT Approved, and NT Other blank. Print Tested, number and percent at each achievement level, mean scaled score based on minimum N-size and school type decision rules.

D. *School/District/State Summary*

1. Reports are run by testing state, testing district, testing school, teaching district, and teaching school

2. Exclude students based on school type and participation status decision rules for aggregations.

3. For testing level report print entire aggregate group across grades tested and list grades tested results based on minimum N-size and school type decision rules. Mean scaled score across the grades is not calculated.

4. For the teaching level report leave Enrolled, NT Approved, and NT Other blank. Print Tested, number and percent at each achievement level, mean scaled score based on minimum N-size and school type decision rules. Mean scaled score across the grades is not calculated.

V. Data File Rules

In the file names GG refers to the two digit grade (03-08) , YYYY refers to the year 0708, DDDDD refers to the district code, and SS refers to two letter state code.

A. State Student Cleanup Data

1. One CSV file per grade and state will be created based on the file layout NECAPYYYYF Gr 03-08 11 Student Demographic Cleanup File Layout.xls.
2. Refer to NECAPYYYYF Gr 03-08 11 Student Demographic Cleanup Description.doc
3. Session Invalidation Flags are marked as follows.
   a. If reaaccF02 or reaaccF03 is marked, then mark reaInvSes1, reaInvSes2, and reaInvSes3
   b. If mataccF03 is marked, then mark matInvSes1, matInvSes2, and matInvSes03. MataccF01 is left as marked on booklet.
   c. If wriaccF03 is marked, then mark wriInvSes1 and wriInvSes2

B. Preliminary State Results

1. A PDF file will be created for each state containing preliminary state results for each grade and subject and will list historical state data for comparison.
2. The file name will be SSPreliminaryResultsDATE.pdf

C. State Student Released Item Data

1. Students who tested at a private school are excluded from NH and RI student data files.
2. A CSV file will be created for each state and grade following the layout NECAP YYYY Fall Gr 03-08 State Student Data Released Item Layout.xls
3. The CSV file name will be NECAP YYYY Fall State Student Data Released Item Gr GG.csv.

D. State Student Raw Data

1. Students who tested at a private school are excluded from NH and RI student data files.
2. A CSV file will be created for each state and grade following the layout NECAP YYYY Fall Gr 03-08 State Student Raw Data File Layout.xls
3. The CSV file name will be NECAP YYYY Fall State Student Raw Data File Gr GG.csv.

E. State Student Scored Data

1. Students who tested at a private school are excluded from NH and RI student data files.
2. A CSV file will be created for each state and grade following the layout NECAP YYYY Fall Gr 03-08 State Student Scored Data File Layout.xls
3. The CSV file name will be NECAP YYYY Fall State Student Scored Data File Gr GG.csv.

F. District Student Data

1. Students with the Discode or SendDiscode will be in the district grade specific CSV file for the testing year.
2. Students with a sprDiscode will be in the district grade specific CSV file for the teaching year.
3. Home school students are excluded from district student data files. For NH and RI only public school districts will receive district data files. (Districts with at least one school with schoolsubtypeID=1 in ICORE)
4. Testing and teaching CSV files will be created for each state and grade and district following the layout NECAP YYYY Fall Gr 03-08 District Student Data Layout.xls
5. The testing CSV file name will be NECAP YYYY Fall Testing District Slice Gr GG_DDDDD.csv. The teaching CSV file name will be NECAP YYYY Fall Teaching District Slice Gr GG_DDDDD.csv.

G. Item Information

1. An excel file will be created containing item information for common items: grade, subject, raw data item name, item type, key, and point value.
2. The file name will be NECAP YYYY Fall Gr 03-08 Item Information.xls

H. Grade Level Results Report Disaggregated and Historical Data

1. Teaching and testing CSV files will be created for each state and grade containing the grade level results disaggregated and historical data following the layout NECAP YYYY Fall Gr 03-08 Results Report Disaggregated and Historical Data Layout.xls.
2. Data will be suppressed based on minimum N-size and report type decision rules.
3. The testing file name will be NECAP YYYY Fall Testing Results Report Disaggregated and Historical Data Gr GG.csv . The teaching file name will be NECAP YYYY Fall Teaching Results Report Disaggregated and Historical Data Gr GG.csv.

I. Grade Level Results Report Participation Category Data

1. Teaching CSV file will be created for each state and grade containing the grade level results participation data following the layout NECAP YYYY Fall Gr 03-08 Results Report Participation Category Data Layout.xls.
2. The testing file name will be NECAP YYYY Fall Testing Results Report Participation Category Data Gr GG.csv

J. Grade Level Results Report Subtopic Data

1. Teaching and testing CSV files will be created for each state and grade containing the grade level results subtopic data following the layout NECAP YYYY Fall Gr 03-08 Results Report Subtopic Data Layout.xls.
2. Data will be suppressed based on minimum N-size and report type decision rules.
3. The testing file name will be NECAP YYYY Fall Testing Results Report Subtopic Data Gr GG.csv . The teaching file name will be NECAP YYYY Fall Teaching Results Report Subtopic Data Gr GG.csv.

K. Summary Results Data

1. Teaching and testing CSV files will be created for each state and grade containing the summary report data following the layout NECAP YYYY Fall Gr 03-08 Summary Results Layout.xls.
2. Data will be suppressed based on minimum N-size and report type decision rules.
3. The testing file name will be NECAP YYYY Fall Testing Summary Results Gr GG.csv . The teaching file name will be NECAP YYYY Fall Teaching Summary Results Gr GG.csv.

L. Released Item Percent Responses Data

1. The CSV files will only contain state level aggregation for released items.
2. Teaching and testing CSV files will be created for each state and grade containing the released item analysis report state data following the layout NECAP YYYY Fall Gr 03-08 Released Item Percent Responses Layout.xls.
3. The testing file name will be NECAP YYYY Fall Testing Released Item Percent Responses.csv . The teaching file name will be NECAP YYYY Fall Teaching Released Item Percent Responses.csv.

M. Invalidated Students Original Score

1. Original raw scores for students whose responses were invalidated for reporting will be provided.
2. Students who tested at a private school are excluded from NH and RI student data files.
3. A CSV file will be created for each state and grade following the layout NECAP YYYY Fall Gr 03-08 State Invalidated Student Original Scored Data File Layout.xls.
4. The CSV file name will be NECAP YYYY Fall State Student Scored Data File Gr GG OriScInvStu.csv.

N. Multiple Choice Response Distribution Data Grades 05-08

1. One CSV file will be created containing the frequency of multiple responses (*) for multiple choice items.
2. All students are included in the frequencies.
3. The file will follow the layout NECAP YYYY Fall Multiple MC Responses Freq Layout.xls and will be named NECAP YYYY Fall Multiple MC Responses Freq.xls.

O. Block Blank Response Distribution Data Grades 03 & 04

Addenda

1. 01/04/2008: Grade Level School/District/State Results – Cumulative Total
   - Suppress cumulative total data if at least one reported year has fewer than 10 tested students.

Analysis and Reporting Decision Rules
NECAP
Fall 07-08 Grade 11 Administration

This document details rules for analysis and reporting. The final student level data set used for analysis and reporting is described in the "Data Processing Specifications." This document is considered a draft until the NECAP State Department of Education (DOE) signs off. If there are rules that need to be added or modified after said sign-off, DOE sign off will be obtained for each rule. Details of these additions and modifications will be in the Addendum section.

VI. General Information

A. *Tests administered:*

Grade	Subject	Test items used for Scaling	IREF Reporting Categories (Subtopic and Subcategory IREF Source)
11	Reading	Common	Cat2
11	Math	Common	Cat1
11	Writing	Common	form

B. *Reports Produced*:

1. Student Report
   b. Testing School District
2. School Item Analysis Report by Grade and Subject
   c. Testing School District
   d. Teaching School District
3. Grade Level School/District/State Results
   c. Testing School District
   d. Teaching School District – District and School Levels only

C. *Files Produced:*

1. State Student Cleanup Data
2. Preliminary State Results
3. State Student Released Item Data
4. State Student Raw Data
5. State Student Scored Data
6. District Student Data
7. Item Information
8. Grade Level Results Report Disaggregated and Historical Data
9. Grade Level Results Report Participation Category Data
10. Grade Level Results Report Subtopic Data
11. Released Item Percent Responses Data
12. Invalidated Students Original Score
13. Multiple Choice Response Distribution Data Grades 11

D. *School Type:*

SchType	**Source: ICORE SubTypeID**	**Description**
PUB	1,12,13	Public School
PRI	3	Private School
OOD	4	Out-of-District Private Providers
OUT	8	Out Placement
CHA	11	Charter School
INS	7	Institution
OTH	9	Other

School Type Impact on Data Analysis and Reporting				
Level	**Testing**		**Teaching**	
	Impact on Analysis	**Impact on Reporting**	**Impact on Analysis**	**Impact on Reporting**
Student	n/a	Report students based on testing discode and schcode. District data will be blank for students tested at PRI, OOD, OUT, INS, or OTH schools. Always print tested year state data.	n/a	n/a
School	Include all non-home school students using testing school code for aggregations	Generate a report for each school with at least one student enrolled using the tested school aggregate denominator. District data will be blank for PRI, OOD, OUT, INS, or OTH schools. Always print tested year state data.	Include all non-home school students using the teaching school code. Exclude students who do not have a teaching school code.	Generate a report for each school with at least one student enrolled using the teaching school aggregate denominator. District data will be blank for PRI, OOD, OUT, INS, or OTH schools. Always print tested year state data.
District	For OUT and OOD schools, aggregate using the sending district. If OUT or OOD student does not have a sending district, do not include in aggregations. Do not include students tested at PRI, INS, or OTH schools Do not include home school students.	Generate a report for each district with at least one student enrolled using the tested district aggregate denominator. Always report tested year state data.	Do not include students taught at PRI, OOD, OUT, INS, or OTH schools. Do not include students who do not have a teaching district code. Do not include home school students.	Generate a report for each district with at least one student enrolled using the teaching district aggregate denominator. Always report tested year state data.
State	Do not include students tested at PRI schools for NH and RI. Include all students for VT. Do not include home school students.	Always report testing year state data.	n/a	n/a

E. *Requirements To Report Aggregate Data(Minimum N)*

Calculation Description	Rule
Number and Percent at each achievement level, mean score by disaggregated category and aggregate level	If the number of tested students included in the denominator is less than 10, then do not report.
Content Area Subcategories Average Points Earned based on common items only by aggregate level	If the number of tested students included in the denominator is less than 10, then do not report.
Aggregate data on Item Analysis report	No required minimum number of students
Number and Percent of students in a participation category by aggregate level	No required minimum number of students
Content Area Subtopic Percent of Total Possible Points and Standard Error Bar and Grade 11 Writing Distribution of Score Points Across Prompts	If any item was not administered to at least one tested student included in the denominator or the number of tested students included in the denominator is less than 10, then do not report

F. *Special Forms:*

1. Form 00 is created for students whose matrix scores will be ignored for analysis. Such students include Braille or administration issues resolved by program management.

G. *Other Information*

1. Home school students are excluded from all school, district, and state level aggregations. Home school students receive a parent letter based on the testing school. Print aggregate data based on the testing school. Print tested year state data. Home school students are not listed on the item analysis report.
2. Plan504 data not available for NH and VT; therefore 504 Plan section will be suppressed for NH and VT.
3. To calculate Title1 data for writing using Title1rea variable.
4. Title 1 data are not available for VT; therefore Title 1 section will be suppressed for VT.
5. Only students with a testing year school type of OUT or OOD are allowed to have a sending district code. Non-public sending district codes will be ignored. For RI, senddiscode of 88 is ignored. For NH, senddiscode of 000 is ignored.
6. Several reports and data files are provided by testing and teaching school district levels. Testing level is defined to be the school and district where the student tested (discode and schcode). Teaching level is defined to be where the student was enrolled last year (sprdiscode and sprschcode). Every student will have testing district and school codes. Some students will have a teaching school code. Some students will have a teaching district code.

VII. Student Participation / Exclusions

A. *Test Attempt Rules by content area*

1. Grade 11 writing was attempted if the common writing prompt is not scored blank ‘B’. For all other grades and content areas test attempt can be determined as follows. A content area was attempted if any multiple choice item or non-field test open response item has been answered. (Use original item responses – see special circumstances section II.F)
2. A multiple choice item has been answered by a student if the response is A, B, C, D, or * (*=multiple responses)
3. An open response item has been answered if it is not scored blank ‘B’

B. *Session Attempt Rules by content area*

1. A session was attempted if any multiple choice item or non-field test open response item has been answered in the session. (Use original item responses – see special circumstances section II.F)

2. Because of the test design for grade 11 writing, only determine if session 1 was attempted. Session 2 is ignored.

C. *Not Tested Reasons by content area*

1. Not Tested State Approved Alternate Assessment

   b. If content area "Alternate Assessment blank or partially blank reason" is marked, then student is identified as "Not Tested State Approved Alternate Assessment".

2. Not Tested State Approved First Year LEP (reading and writing only)

   a. If content area "First Year LEP blank or partially blank reason" is marked, then student is identified as "Not Tested State Approved First Year LEP".

3. Not Tested State Approved Special Consideration

   a. If content area "Special Consideration blank or partially blank reason" is marked, the student is identified as "Not Tested State Approved Special Consideration".

4. Not Tested State Approved Withdrew After October 1

   b. If content area "Withdrew After October 1 blank or partially blank reason" is marked and at least one content area session was not attempted, then the student is identified as "Not Tested State Approved Withdrew After October 1". For grade 11 writing, only use session 1 attempt status.

5. Not Tested State Approved Enrolled After October 1

   - If content area "Enrolled After October 1 blank or partially blank reason" is marked and at least one content area session was not attempted, then the student is identified as "Not Tested State Approved Enrolled After October 1". For grade 11 writing, only use session 1 attempt status.

6. Not Tested Other

   a. If content area test was not attempted, the student is identified as "Not Tested Other".

D. *Not Tested Reasons Hierarchy by content area: if more than one reason for not testing at a content area is identified then select the first category indicated in the order of the list below.*

7. Not Tested State Approved Alternate Assessment
8. Not Tested State Approved First Year LEP (reading and writing only)
9. Not Tested State Approved Special Consideration
10. Not Tested State Approved Withdrew After October 1
11. Not Tested State Approved Enrolled After October 1
12. Not Tested Other

E. *Student Participation Status by content area*

1. Tested

   a. If the student does not have any content area not tested reasons identified, then the student is considered Tested for the content area.

8. Not Tested: State Approved Alternate Assessment
9. Not Tested: State Approved First Year LEP (reading and writing only)
10. Not Tested: State Approved Special Consideration

11. Not Tested: State Approved Withdrew After October 1

12. Not Tested: State Approved Enrolled After October 1

13. Not Tested: Other

F. *Special Circumstances by content area*

6. Students identified as content area tested and did not attempt all sessions in the test are considered to be "Tested Incomplete." Not applicable at grade 11 writing.

7. Students identified as content area tested and have at least one of the content area invalidation session flags marked will be treated as "Tested with Non-Standard Accommodations". Math accommodation F01 also identifies non-standard accommodations for Math.

8. For students identified as "Tested with Non-Standard Accommodations" the content area sessions item responses which are marked for invalidation will be treated as a non-response. For the students with math accommodations F01 marked, the non-calculator session 1 math items will be treated as a non-response.

9. Students identified as tested in a content area will receive released item scores, scaled score, scale score bounds, achievement level, raw total score, subcategory scores, and writing annotations (where applicable).

10. Students identified as not tested in a content area will not receive a scaled score, scaled score bounds, achievement level, writing annotations (where applicable). They will receive released item scores, raw total score, and subcategory scores.

G. *Student Participation Summary*

Participation Status	**Description**	**Raw Score(*)**	**Scaled Score (**)**	**Ach. Level**	**Student Report Ach. Level Text**	**Roster Ach. Level Text**
1	Tested	✓	✓	✓	Substantially Below Proficient, Partially Proficient, Proficient, or Proficient with Distinction	1,2,3, or 4
2	Not Tested State Approved Alternate Assessment	✓			Alternate Assessment	A
3	Not Tested State Approved First Year LEP	✓			First Year LEP	L
4	Not Tested State Approved Enrolled After October 1	✓			Enrolled After October 1	E
5	Not Tested State Approved Withdrew After October 1	✓			Withdrew After October 1	W
6	Not Tested State Approved Special Consideration	✓			Special Consideration	S
7	Not Tested Other	✓			Not Tested	N

(*) Raw scores are not printed on student report for students with a not tested status.

(**) Grade 11 writing students do not receive a scaled score. The writing achievement level is determined by the total common writing prompt score.

VIII. Calculations

A. *Rounding*

5. All percents are rounded to the nearest whole number
6. All mean scaled scores are rounded to the nearest whole number
7. Grade 11 writing mean (raw) score is rounded to the nearest tenth.
8. Content Area Subcategories: Average Points Earned (student report): round to the nearest tenth.
9. Round non-multiple choice average item scores to the nearest tenth.

B. *Students included in calculations based on participation status*

3. For number and percent of students enrolled, tested, and not tested categories include all students not excluded by other decision rules.
4. For number and percent at each achievement level, average scaled score, subtopic percent of total possible points and standard error, subtopic distribution across writing prompts, subcategories average points earned, percent/correct average score for each released item include all tested students not excluded by other decision rules.

C. *Raw scores*

1. For all analysis, non-response for an item by a tested student is treated as a score of 0.
2. Content Area Total Points: Sum the pointes earned by the student for the common items.

D. *Item Scores*

1. For all analysis, non-response for an item by a tested student is treated as a score of 0.
2. For multiple choice released item data store a '+' for correct response, or A,B,C,D,* or blank
3. For open response released items, store the student score. If the score is not numeric ('B'), then store it as blank.
4. For students identified as content area tested with non-standard accommodations, then store the released item score as '-' for invalidated items.
5. For common writing prompt score, the final score of record is the sum of scorer 1 and scorer 2. If both scorers give the student a B(F), then the final score is B(F).
6. For matrix writing prompt score, the final score of record is scorer 1.

E. *Scaling*

Scaling is done using a look-up table provided by psychometrics and the student's raw score.

F. *SubTopic Item Scores*

4. Identify the Subtopic
   a. The excel file IREF_ReportingCategories.xls outlines the IREF variables and values for identifying the Content Strand, GLE code, Depth of Knowledge code, subtopics, and subcategories. The variable type in IREF is the source for the Item Type, except the writing prompt item type is reported as "ER".
5. Student Content Area Subcategories (student report): Subtopic item scores at the student level is the sum of the points earned by the student for the common items in the subtopic. For grade 11 writing, the subtopic score is the final score of record for the common writing prompt.
6. Content Area Subtopic (grade level results report): Subtopic scores are based on all unique common and matrix items. The itemnumber identifies each unique item.
   a. Percent of Total Possible Points:
      I. For each unique common and matrix item calculate the average student score as follows: (sum student item score/number of tested students administered the item).

II. 100 * (Sum the average score for items in the subtopic)/(Total Possible Points for the subtopic) rounded to the nearest whole number.

b. Standard Error Bar: Before multiplying by 100 and rounding the Percent of Total Possible points (ppe) calculate standard error for school,district and state: 100* (square root (((ppe)*(1-ppe)/number of tested students))) rounded to the nearest whole number
Percent of Total Possible Points +/- Standard Error

G. *Grade 11 Writing: Distribution of Score Points Across Prompts*.

1. Each prompt is assigned a subtopic based on information provided by program management.

2. The set of items used to calculate the percent at each score point is defined as follows: scorer 1 common prompt score, scorer 2 common prompt score, scorer 1of each matrix prompt. (Note: scores of 'B' and 'F' are treated as a 0 score for tested students.)

3. Using the set of items do the following to calculate the percent at each score point.

- Step1 A: For each item, calculate the number of students at each score point. Adjust the common item counts by multiplying the common items' number of students at each score point by 0.5.

- Step 1 B: Calculate the total number of scores by summing up the number of students at each score point across the items in the subtopic

- Step 2: For each score point, sum up the (adjusted) number of students at the score point across the items in the subtopic. Divide the sum by total number of scores for the subtopic. Multiply that by 100 and round to the nearest whole number.

4. *Example*

	Common Prompt		Matrix Prompt 1	Matrix Prompt 2	Matrix Prompt 3	Matrix Prompt 4	Matrix Prompt 5
Item	**C1**	**C2**	**M1**	**M2**	**M3**	**M4**	**M5**
Subtopic	***1***	***1***	***1***	***2***	***2***	***2***	***3***
Student	**Student Item Score**						
A	3	4	2				
B	4	4					
C	2	1	3				
D	5	2		4			
E	3	2		1			
F	0	0			2		
G	1	2	1				
H	6	5	5				
I	2	2				1	
J	3	2				2	
K	5	4					4

Score Point	**Step 1 Number at each score point**						
Item	**C1**	**C2**	**M1**	**M2**	**M3**	**M4**	**M5**
Subtopic	***1***	***1***	***1***	***2***	***2***	***2***	***3***
0	0.5	0.5	0	0	0	0	0
1	0.5	0.5	1	1	0	1	0
2	1	2.5	1	0	1	1	0
3	1.5	0	1	0	0	0	0
4	0.5	1.5	0	1	0	0	1
5	1	0.5	1	0	0	0	0
6	0.5	0	0	0	0	0	0
Total	15			5			1

Score Point	**Step 2 Percent at each score point**		
Subtopic	**1**	**2**	**3**
0	7	0	0
1	13	40	0
2	30	40	0
3	17	0	0
4	13	20	100
5	17	0	0
6	3	0	0

Cumulative Total

5. Include the yearly results where the number tested is greater than or equal to 10

6. Cumulative total N (Enrolled, Not Tested Approved, Not Tested Other, Tested, at each achievement level) is the sum of the yearly results for each category where the number tested is greater than or equal to 10.

7. Cumulative percent for each achievement level is 100*(Number of students at the achievement level cumulative total / number of students tested cumulative total) rounded to the nearest whole number.

8. Cumulative mean scaled score is a weighted average. For years where the number tested is greater than or equal to 10, (sum of (yearly number tested * yearly mean scaled score)) / (sum of yearly number tested) rounded to the nearest whole number.

H. *Average Points Earned Students at Proficient Level (Range)*

2. Select all students across the states with Y40 scaled score, where Y=grade. Average the content area subcategories across the students and round to the nearest tenth. Add and subtract one standard error of measurement to get the range.

I. Writing Annotations

2. Students with a writing prompt score of 2-12 receive at least one, but up to five statements based on decision rules for annotations as outlined in Final Statements & Decision Rules for NECAP Writing Annotations.doc. Grade 11 students with the common writing prompt score of F or 0 will also receive annotations.

IX. Report Specific Rules

A. *Student Report*

1. Student header Information

a. If "FNAME" or "LNAME" is not missing then print "FNAME MI LNAME". Otherwise, print "No Name Provided".

b. Print the student's tested grade

c. For school and district name, print the abbreviated tested school and district ICORE name based on school type decision rules.

d. Print "NH","RI", or "VT" for state.

2. Test Results by content area

c. For students identified as "Not Tested", print the not tested reason in the achievement level, leave scaled score and graphic display blank.

d. For students identified as tested for the content area then do the following

VI. Print the complete achievement level name the student earned

VII. Print the scaled score the student earned

VIII. Print a vertical black bar for the student scaled score with gray horizontal bounds in the graphic display

IX. For students identified as "Tested with a non-standard accommodation" for a content area, print '**' after the content area earned achievement level and after student points earned for each subcategory.

X. For students identified as "Tested Incomplete" for a content area, place a section symbol after content area earned scaled score.

3. Grade 11 writing graphic display will not have standard error bars. Also, if a student's total points earned is 0 for writing, do not print the graphic display.

4. Exclude students based on school type and participation status decision rules for aggregations.

5. This Student's Achievement Compared to Other Students by content area

c. For tested students, print a check mark in the appropriate achievement level in the content area student column. For not tested students leave blank

d. For percent of students with achievement level by school, district and state print aggregate data based on school type and minimum N rules

6. This Student's Performance in Content Area Subcategories by content area

b. Always print total possible points and students at proficient average points earned range.

c. For students identified as not tested then leave student scores blank

d. For students identified as tested do the following

I. Always print student subcategory scores

II. If the student is identified as tested with a non-standard accommodation for the content area then place '**" after the student points earned for each subcategory.

e. Print aggregate data based on school type and minimum N-size rules.

5. Writing Annotations

a. For students with writing prompt score of 2-12 print at least one, but up to five annotation statements. Grade 11 students with the common writing prompt score of F or 0 will also receive annotations.

B. *School Item Analysis Report by Grade and Subject*

13. Reports are created for testing school and teaching school independently.

14. School Header Information

d. Use abbreviated ICORE school and district name based on school type decision rules

e. Print "New Hampshire", "Rhode Island", or "Vermont" for State.

f. For NH, the code should print SAU code – district code – school code. For RI and VT, the code should print district code – school code.

15. For multiple choice items, print '+' for correct response, or A,B,C,D,* or blank

16. For open response items, print the student score. If the score is not numeric ('B'), then leave blank.

17. For students identified as content area tested with non-standard accommodations, print '-' for invalidated items.

18. All students receive subcategory points earned and total points earned, including grade 11 writing.

19. Leave scaled score blank for not tested students and print the not tested reason in the achievement level column.

20. Exclude students based on school type and participation status decision rules for aggregations.

21. Always print aggregated data regardless of N-size based on school type decision rules.

22. For students identified as not tested for the content area print a cross symbol next to students' name.

23. For students identified as tested incomplete for the content area print a section symbol next to the scaled score.

24. Home school student are not listed on the report.

C. Grade Level School/District/State Results

9. Reports are run by testing state, testing district, testing school, teaching district, and teaching school using the aggregate school and district codes described in the school type table.

10. Exclude students based on school type and participation status decision rules for aggregations.

11. Report Header Information

c. Use abbreviated school and district name from ICORE based on school type decision rules.

d. Print "New Hampshire", "Rhode Island", or "Vermont" to reference the state. The state graphic is printed on the first page.

12. Report Section: Participation in NECAP

c. For testing level reports always print number and percent based on school type decision rules.

d. For the teaching level reports leave the section blank.

13. Report Section: NECAP Results by content area

    c. For the testing level report always print based on minimum N-size and school type decision rules.

    d. For the teaching level report leave Enrolled, NT Approved, and NT Other blank. Print Tested, number and percent at each achievement level, mean scaled score based on minimum N-size and school type decision rules.

14. Report Section: Historical NECAP Results by content area

    c. For teaching level report always print current year, prior years, and cumulative total results based on minimum N-size and school type decision rules.

    d. For teaching level report leave Enrolled, NT Approved, and NT Other blank. Print Tested, number and percent at each achievement level, mean scaled score based on minimum N-size and school type decision rules.

15. Report Section: Subtopic Results by content area

    b. For testing and teaching level reports always print based on minimum N-size and school type decision rules

16. Report Section: Disaggregated Results by content area

    c. For testing level report always print based on minimum N-size and school type decision rules.

    d. For teaching level report leave Enrolled, NT Approved, and NT Other blank. Print Tested, number and percent at each achievement level, mean scaled score based on minimum N-size and school type decision rules.

D. *School/District/State Summary*

1. Reports are run by testing state, testing district, testing school, teaching district, and teaching school using the aggregate school and district codes described in the school type table.
2. Exclude students based on school type and participation status decision rules for aggregations.
3. For testing level report print entire aggregate group across grades tested and list grades tested results based on minimum N-size and school type decision rules. Mean scaled score across the grades is not calculated.
4. For the teaching level report leave Enrolled, NT Approved, and NT Other blank. Print Tested, number and percent at each achievement level, mean scaled score based on minimum N-size and school type decision rules. Mean scaled score across the grades is not calculated.

X. Data File Rules

In the file names GG refers to the two digit grade (11) , YYYY refers to the year 0708, DDDDD refers to the district code, and SS refers to two letter state code.

A. State Student Cleanup Data

4. One CSV file per grade and state will be created based on the file layout NECAPYYYYF Gr 03-08 11 Student Demographic Cleanup File Layout.xls.
5. Refer to NECAPYYYYF Gr 03-08 11 Student Demographic Cleanup Description.doc
6. Session Invalidation Flags are marked as follows.

    a. If reaaccF02 or reaaccF03 is marked, then mark reaInvSes1, reaInvSes2, and reaInvSes3

    b. If mataccF03 is marked, then mark matInvSes1, matInvSes2, and matInvSes03. MataccF01 is left as marked on booklet.

    c. If wriaccF03 is marked, then mark wriInvSes1 and wriInvSes2

B. Preliminary State Results

3. A PDF file will be created for each state containing preliminary state results for each grade and subject and will list historical state data for comparison.
4. The file name will be SSPreliminaryResultsDATE.pdf

C. State Student Released Item Data

4. Students who tested at a private school are excluded from NH and RI student data files.
5. A CSV file will be created for each state and grade following the layout NECAP YYYY Fall Gr 11 State Student Data Released Item Layout.xls
6. The CSV file name will be NECAP YYYY Fall State Student Data Released Item Gr GG.csv.

D. State Student Raw Data

1. Students who tested at a private school are excluded from NH and RI student data files.
2. A CSV file will be created for each state and grade following the layout NECAP YYYY Fall Gr 11 State Student Raw Data File Layout.xls
3. The CSV file name will be NECAP YYYY Fall State Student Raw Data File Gr GG.csv.

E. State Student Scored Data

1. Students who tested at a private school are excluded from NH and RI student data files.
2. A CSV file will be created for each state and grade following the layout NECAP YYYY Fall Gr 11 State Student Scored Data File Layout.xls
3. The CSV file name will be NECAP YYYY Fall State Student Scored Data File Gr GG.csv.

F. District Student Data

1. Students with the Discode or SendDiscode will be in the district grade specific CSV file for the testing year.
2. Students with a sprDiscode will be in the district grade specific CSV file for the teaching year.
3. Home school students are excluded from district student data files. For NH and RI only public school districts will receive district data files. (Districts with at least one school with schoolsubtypeID=1 in ICORE)
4. Testing and teaching CSV files will be created for each state and grade and district following the layout NECAP YYYY Fall Gr 11 District Student Data Layout.xls
5. The testing CSV file name will be NECAP YYYY Fall Testing District Slice Gr GG_DDDDD.csv. The teaching CSV file name will be NECAP YYYY Fall Teaching District Slice Gr GG_DDDDD.csv.

G. Item Information

1. An excel file will be created containing item information for common items: grade, subject, raw data item name, item type, key, and point value.
2. The file name will be NECAP YYYY Fall Gr 11 Item Information.xls

H. Grade Level Results Report Disaggregated and Historical Data

1. Teaching and testing CSV files will be created for each state and grade containing the grade level results disaggregated and historical data following the layout NECAP YYYY Fall Gr 11 Results Report Disaggregated and Historical Data Layout.xls.
2. Data will be suppressed based on minimum N-size and report type decision rules.
3. The testing file name will be NECAP YYYY Fall Testing Results Report Disaggregated and Historical Data Gr GG.csv . The teaching file name will be NECAP YYYY Fall Teaching Results Report Disaggregated and Historical Data Gr GG.csv.

I. Grade Level Results Report Participation Category Data

1. Teaching CSV file will be created for each state and grade containing the grade level results participation data following the layout NECAP YYYY Fall Gr 11 Results Report Participation Category Data Layout.xls.
2. The testing file name will be NECAP YYYY Fall Testing Results Report Participation Category Data Gr GG.csv

J. Grade Level Results Report Subtopic Data

1. Teaching and testing CSV files will be created for each state and grade containing the grade level results subtopic data following the layout NECAP YYYY Fall Gr 11 Results Report Subtopic Data Layout.xls.
2. Data will be suppressed based on minimum N-size and report type decision rules.
3. The testing file name will be NECAP YYYY Fall Testing Results Report Subtopic Data Gr GG.csv . The teaching file name will be NECAP YYYY Fall Teaching Results Report Subtopic Data Gr GG.csv.

K. Released Item Percent Responses Data

1. The CSV files will only contain state level aggregation for released items.
2. Teaching and testing CSV files will be created for each state and grade containing the released item analysis report state data following the layout NECAP YYYY Fall Gr 11 Released Item Percent Responses Layout.xls.
3. The testing file name will be NECAP YYYY Fall Testing Released Item Percent Responses.csv . The teaching file name will be NECAP YYYY Fall Teaching Released Item Percent Responses.csv.

L. Invalidated Students Original Score

1. Original raw scores for students whose responses were invalidated for reporting will be provided.
2. Students who tested at a private school are excluded from NH and RI student data files.
3. A CSV file will be created for each state and grade following the layout NECAP YYYY Fall Gr 11 State Invalidated Student Original Scored Data File Layout.xls.
4. The CSV file name will be NECAP YYYY Fall State Student Scored Data File Gr GG OriScInvStu.csv.

M. Multiple Choice Response Distribution Data Grades 11

1. One CSV file will be created containing the frequency of multiple responses (*) for multiple choice items.
2. All students are included in the frequencies.
3. The file will follow the layout NECAP YYYY Fall Multiple MC Responses Freq Layout.xls and will be named NECAP YYYY Fall Multiple MC Responses Freq.xls.

Addenda

2/4/2008: The writing student's at proficient extended response range on the student report will be '7'.

2/6/2008: Summary results data files will be created as follows:

1. Teaching and testing CSV files will be created for each state and grade containing the summary report data following the layout NECAP YYYY Fall Gr 11 Summary Results Layout.xls.
2. Data will be suppressed based on minimum N-size and report type decision rules.
3. The testing file name will be NECAP YYYY Fall Testing Summary Results Gr GG.csv . The teaching file name will be NECAP YYYY Fall Teaching Summary Results Gr GG.csv.