California High School Exit Examination

Technical Report

July 2012–May 2013 Administrations

Prepared by

Educational Testing Service

for

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Executive Summary

The California High School Exit Examination (CAHSEE) has been developed by the California Department of Education (CDE) to assess achievement of content standards for English-language arts (ELA) and mathematics set by the California State Board of Education (SBE). The CAHSEE is administered seven times per year between July and May to allow several testing opportunities for those students who have not yet passed the examination. This report covers the seven CAHSEE test administrations given in July, October, November, and December 2012 and February, March, and May 2013.

Each test form was constructed from items that had been previously administered and placed onto the operational scale. There were 80 operational multiple-choice (MC) items in each mathematics form and 72 operational MC items and one operational constructed-response (CR) item in each ELA form. In addition to the operational items, each mathematics form included 12 field-test or dummy items, and each ELA form included 7 field-test or dummy items. These items were not used for scoring. Each test form also included a set of anchor items[1] that were used to maintain the operational scale across administrations. All items included on operational test forms had been evaluated for bias and sensitivity and for alignment of the content standards. In addition, each test form was reviewed and approved by the CDE.

Table E.1 presents the administration dates and the total number of examinees taking one or both CAHSEE content areas during the July, October, November, and December 2012 and the February, March, and May 2013 administrations. The majority of examinees in February and March were first-time examinees. Grade ten students are only allowed to take the test in the February, March, or May administrations. Because students are allowed to take either ELA or mathematics in separate administrations, not all students took the ELA and mathematics examinations in a single administration. Examinees taking only one content area were mostly repeat examinees who did not pass that content area during a previous administration.

Table E.1: Summary of Examinees Tested for Each Administration by Content

Administration	Total Examinees*	ELA & Mathematics	ELA Only	Mathematics Only
July 2012	9,854	2,541	4,083	3,230
October 2012	58,541	23,458	18,964	16,119
November 2012	119,475	50,748	38,050	30,677
December 2012	2,862	659	1,285	918
February 2013	168,415	124,045	24,040	20,330
March 2013	415,767	360,397	30,170	25,200
May 2013	54,275	18,544	19,285	16,446

*Total number of examinees consists of examinees taking both ELA and mathematics, and either ELA or mathematics for each administration. These examinees include only students who received Passed or Not Passed

[1]Anchor items, also called linking items, are used to link the scores on the current administration's test form to scores obtained on the base forms to adjust for the difficulty level of the forms across administrations. This is accomplished during the equating process, as discussed in Chapters 2 and 6.

status and do not include students who took the modifications, were absent, had previously passed, or did not attempt the examination.

The passing rates for all students taking each content area by test administration are presented in Table E.2.

Table E.2: Summary of Passing Rates by Content Area and Test Administration

Administration	English-Language Arts		Mathematics	
	N Tested	N Passed (%)	N Tested	N Passed (%)
July 2012	6,624	1,692 (26)	5,771	1,000 (17)
October 2012	42,422	13,525 (32)	39,577	13,773 (35)
November 2012	88,798	34,047 (38)	81,425	29,718 (36)
December 2012	1,944	500 (26)	1,577	564 (36)
February 2013	148,085	99,294 (67)	144,375	101,625 (70)
March 2013	390,567	302,470 (77)	385,597	303,241 (79)
May 2013	37,829	13,274 (35)	34,990	12,919 (37)

Educational Testing Service (ETS) conducted a series of statistical analyses to evaluate the items and test forms for each CAHSEE administration. The following analyses were completed for each administration: classical item analyses, differential item functioning (DIF), item response theory (IRT) calibration, scaling, and equating. Scoring tables were also created for each operational test form, and reliability indices were calculated. This technical report also includes results from the following studies: inter-rater agreement and generalizability for the ELA CR items, and decision accuracy and consistency for the Pass/Not Pass and proficiency level classifications. Additional summary analyses conducted for students having special accommodation needs are included in this report.

All item analyses, including calibration, equating, and scaling, were completed using the Generalized Analysis System (GENASYS; ETS proprietary software) or commercially available software (e.g., SAS, SPSS, and GENOVA). In all cases, analyses were conducted on valid cases in each content area (e.g., students must have attempted at least the first 5 items on the test form). Individuals who entered invalid form numbers, left fields blank, or double-marked fields were excluded for the purposes of the analyses presented in this technical report. Students who left sections blank were excluded from the equating samples. Summary information for students who tested without modifications is presented in the Executive Summary and Chapter 8, and summary information for students who tested with modifications is presented in Chapter 2.

Highlights of the results for the 2012–13 CAHSEE administrations included in this report are presented in Tables E.3.1–3.3 and E.4.1–4.3 on the following pages. These statistics indicate satisfactory psychometric properties of the test form constructed for these examinations.

Table E.3.1: CAHSEE Summary Statistics—English-Language Arts (July and October 2012)

Administration	July 2012	October 2012
Scale Score Information		
Number of Examinees	6,624	42,422
Mean	337	339
SD[1]	25	30
Possible Range	275–450	275–450
Obtained Range	275–450	275–450
Median	338	338
Raw Score Information		
Number of Examinees	6,624	42,422
Mean	47.19	50.23
SD	11.85	13.95
Possible Range	0–90	0–90
Obtained Range	1–88	0–90
Median	48	51
Test Information		
Reliability	0.87	0.90
Raw Score Standard Error of Measurement	4.32	4.36
Mean Omits	0.51	0.78
SD Omits	4.38	5.45
Percentage Responding to:		
All Items	91	88
All Items - 1 Item	97	96
All Items - 2 Items	99	98
All Items - 3 Items	99	98
All Items - 4 Items	99	98
All Items - 5 Items	99	98
Item Information[2]		
Number of Items	72	72
Mean Observed Average Item Score (AIS)	0.53	0.57
Equated Mean Rasch *B*-Value	-0.01	-0.15
Mean R-Biserial	0.40	0.46
SD R-biserial	0.10	0.09
Examinee Information		
ELA-Only Examinees		
Number of Examinees	4,083	18,964
Mean Scale Score	338	339
SD Scale Score	22	25
Median Scale Score	340	340
ELA and Mathematics Examinees		
Number of Examinees	2,541	23,458
Mean Scale Score	335	339
SD Scale Score	29	34
Median Scale Score	334	336

[1]SD — Standard Deviation

[2]Means and standard deviations for the item information section are computed on 72 MC items.

Table E.3.2: CAHSEE Summary Statistics—English-Language Arts (November and December 2012, February 2013)

Administration	November 2012	December 2012	February 2013
Scale Score Information			
Number of Examinees	88,798	1,944	148,085
Mean	343	337	371
SD	31	27	42
Possible Range	275–450	275–450	275–450
Obtained Range	275–450	275–450	275–450
Median	343	337	371
Raw Score Information			
Number of Examinees	88,798	1,944	148,085
Mean	49.90	49.56	61.03
SD	14.53	12.01	16.77
Possible Range	0–90	0–90	0–90
Obtained Range	0–90	5–89	0–90
Median	51	50	64
Test Information			
Reliability	0.91	0.88	0.94
Raw Score Standard Error of Measurement	4.37	4.23	3.99
Mean Omits	0.74	0.23	0.43
SD Omits	5.38	2.27	4.01
Percentage Responding to:			
All Items	89	91	92
All Items - 1 Item	97	98	98
All Items - 2 Items	98	99	99
All Items - 3 Items	98	99	99
All Items - 4 Items	98	100	99
All Items - 5 Items	98	100	99
Item Information[1]			
Number of Items	72	72	72
Mean Observed Average Item Score (AIS)	0.57	0.56	0.70
Equated Mean Rasch *B*-Value	-0.05	-0.15	-0.05
Mean R-biserial	0.48	0.41	0.57
SD R-biserial	0.09	0.10	0.08
Examinee Information			
ELA-Only Examinees			
Number of Examinees	38,050	1,285	24,040
Mean Scale Score	342	337	339
SD Scale Score	25	23	28
Median Scale Score	343	337	339
ELA and Mathematics Examinees			
Number of Examinees	50,748	659	124,045
Mean Scale Score	343	336	378
SD Scale Score	35	33	42
Median Scale Score	341	333	379

[1]Means and standard deviations for the item information section are computed on 72 MC items.

Table E.3.3: CAHSEE Summary Statistics—English-Language Arts (March and May 2013)

Administration	March 2013	May 2013
Scale Score Information		
Number of Examinees	390,567	37,829
Mean	380	341
SD	39	33
Possible Range	275–450	275–450
Obtained Range	275–450	275–450
Median	382	338
Raw Score Information		
Number of Examinees	390,567	37,829
Mean	64.75	49.04
SD	14.66	15.18
Possible Range	0–90	0–90
Obtained Range	0–90	0–90
Median	68	49
Test Information		
Reliability	0.93	0.92
Raw Score Standard Error of Measurement	3.80	4.36
Mean Omits	0.27	0.83
SD Omits	2.89	5.81
Percentage Responding to:		
All Items	93	89
All Items - 1 Item	98	96
All Items - 2 Items	99	98
All Items - 3 Items	99	98
All Items - 4 Items	99	98
All Items - 5 Items	99	98
Item Information[1]		
Number of Items	72	72
Mean Observed Average Item Score (AIS)	0.75	0.55
Equated Mean Rasch *B*-Value	-0.06	-0.04
Mean R-biserial	0.53	0.49
SD R-biserial	0.08	0.09
Examinee Information		
ELA-Only Examinees		
Number of Examinees	30,170	19,285
Mean Scale Score	342	341
SD Scale Score	30	29
Median Scale Score	340	340
ELA and Mathematics Examinees		
Number of Examinees	360,397	18,544
Mean Scale Score	383	340
SD Scale Score	38	36
Median Scale Score	385	336

[1]Means and standard deviations for the item information section are computed on 72 MC items.

Table E.4.1: CAHSEE Summary Statistics—Mathematics (July and October 2012)

Administration	July 2012	October 2012
Scale Score Information		
Number of Examinees	5,771	39,577
Mean	335	344
SD	21	26
Possible Range	275–450	275–450
Obtained Range	275–450	275–450
Median	333	341
Raw Score Information		
Number of Examinees	5,771	39,577
Mean	35.11	38.11
Standard Deviation	10.30	12.88
Possible Range	0–80	0–80
Obtained Range	2–80	0–80
Median	34	37
Test Information		
Reliability	0.84	0.90
Raw Score Standard Error of Measurement	4.14	4.11
Mean Omits	0.53	0.67
SD Omits	3.93	4.69
Percentage Responding to:		
All Items	86	84
All Items - 1 Item	96	95
All Items - 2 Items	98	97
All Items - 3 Items	99	98
All Items - 4 Items	99	99
All Items - 5 Items	99	99
Item Information		
Number of Items	80	80
Mean Observed Average Item Score (AIS)	0.44	0.48
Equated Mean Rasch *B*-Value	-0.26	-0.17
Mean R-biserial	0.35	0.43
SD R-biserial	0.10	0.11
Examinee Information		
Mathematics-Only Examinees		
Number of Examinees	3,230	16,119
Mean Scale Score	337	344
SD Scale Score	17	20
Median Scale Score	337	343
ELA and Mathematics Examinees		
Number of Examinees	2,541	23,458
Mean Scale Score	333	344
SD Scale Score	25	30
Median Scale Score	330	338

Table E.4.2: CAHSEE Summary Statistics—Mathematics (November and December 2012, February 2013)

Administration	November 2012	December 2012	February 2013
Scale Score Information			
Number of Examinees	81,425	1,577	144,375
Mean	345	345	376
SD	28	21	40
Possible Range	275–450	275–450	275–450
Obtained Range	275–450	275–450	275–450
Median	342	343	373
Raw Score Information			
Number of Examinees	81,425	1,577	144,375
Mean	40.19	38.68	52.67
Standard Deviation	13.58	10.52	17.10
Possible Range	0–80	0–80	0–80
Obtained Range	0–80	8–77	0–80
Median	39	38	54
Test Information			
Reliability	0.91	0.84	0.95
Raw Score Standard Error of Measurement	4.10	4.15	3.66
Mean Omits	0.56	0.30	0.32
SD Omits	4.15	2.12	3.00
Percentage Responding to:			
All Items	86	87	91
All Items - 1 Item	96	96	97
All Items - 2 Items	98	99	99
All Items - 3 Items	99	99	99
All Items - 4 Items	99	99	99
All Items - 5 Items	99	100	99
Item Information			
Number of Items	80	80	80
Mean Observed Average Item Score (AIS)	0.50	0.48	0.66
Equated Mean Rasch *B*-Value	-0.27	-0.17	-0.18
Mean R-biserial	0.45	0.36	0.58
SD R-biserial	0.10	0.10	0.10
Examinee Information			
Mathematics-Only Examinees			
Number of Examinees	30,677	918	20,330
Mean Scale Score	345	346	345
SD Scale Score	21	18	22
Median Scale Score	345	345	345
ELA and Mathematics Examinees			
Number of Examinees	50,748	659	124,045
Mean Scale Score	345	343	381
SD Scale Score	32	24	41
Median Scale Score	340	340	381

Table E.4.3: CAHSEE Summary Statistics—Mathematics (March and May 2013)

Administration	March 2013	May 2013
Scale Score Information		
Number of Examinees	385,597	34,990
Mean	385	346
SD	40	29
Possible Range	275–450	275–450
Obtained Range	275–450	275–450
Median	385	342
Raw Score Information		
Number of Examinees	385,597	34,990
Mean	56.74	38.97
Standard Deviation	16.19	13.79
Possible Range	0–80	0–80
Obtained Range	0–80	0–80
Median	60	37
Test Information		
Reliability	0.95	0.91
Raw Score Standard Error of Measurement	3.53	4.08
Mean Omits	0.22	0.68
SD Omits	2.23	4.80
Percentage Responding to:		
All Items	91	87
All Items - 1 Item	98	96
All Items - 2 Items	99	98
All Items - 3 Items	99	98
All Items - 4 Items	100	98
All Items - 5 Items	100	99
Item Information		
Number of Items	80	80
Mean Observed Average Item Score (AIS)	0.71	0.49
Equated Mean Rasch *B*-Value	-0.21	-0.15
Mean R-biserial	0.57	0.46
SD R-biserial	0.09	0.11
Examinee Information		
Mathematics-Only Examinees		
Number of Examinees	25,200	16,446
Mean Scale Score	348	348
SD Scale Score	27	26
Median Scale Score	345	346
ELA and Mathematics Examinees		
Number of Examinees	360,397	18,544
Mean Scale Score	388	345
SD Scale Score	39	31
Median Scale Score	387	340

Chapter 1: Introduction

Background

The California Department of Education (CDE) initiated the development of the California High School Exit Examination (CAHSEE) to ensure that all students graduating from high school demonstrate competency with respect to the State Board of Education (SBE) content standards in reading, writing, and mathematics. The CAHSEE was first administered to ninth-graders on a voluntary basis in March and May 2001. Beginning October 1, 2001, the CDE awarded a contract to Educational Testing Service (ETS) and its subcontractors for the development and administration of the CAHSEE. ETS was awarded the new contract in July 2004 for three years, in August 2008 for four years, and in 2012 for an extension of two years. In 2012–13, the CAHSEE was administered seven times. Each administration took two days: English-language arts (ELA) on the first day and mathematics on the second. This report covers the seven administrations: July, October, November, and December 2012 and February, March, and May 2013.

Test Purpose

The primary purpose of the CAHSEE is to assess student achievement in public high schools and help ensure that students who graduate from public high schools can demonstrate competency in reading, writing, and mathematics. The CAHSEE's role in this process is to identify students who have not yet developed the academic competencies contained in the California content standards for ELA and mathematics and to encourage districts to give these students the attention and resources needed to help them achieve these competencies during their high school years. All California public school students, except eligible students with disabilities (SWDs), must satisfy the CAHSEE requirement, as well as all other state and local requirements, to receive a high school diploma. The CAHSEE requirement can be satisfied by passing the examination, or for eligible SWDs, by meeting the exemption requirement pursuant to California *Education Code (EC)* Section 60852.3, by receiving a local waiver pursuant to *EC* Section 60851(c), or by applying for a CAHSEE streamlined waiver pursuant to *EC* Section 56101. By definition, testing with a modification changes the construct of what is being tested. The results are reported as Modified rather than Passed or Not Passed. Under *EC* Section 60851(c), LEA governing boards may waive the requirement to pass the CAHSEE for SWDs who test with modifications and score 350 or above on one or both parts of the examination.

Content

The CAHSEE includes an examination in mathematics and an examination in ELA. Students may take either one or both examinations in a single administration. The multiple-choice (MC) portions of both examinations are scored such that one point is assigned for each correct answer. One test form is constructed for each operational administration consisting of available items from an item bank. In addition to the

standard forms, Braille, large-print, and audio CD versions are also available. One emergency form is also in place to cover all administrations, although it is only necessary to use this form if test security is not maintained.

The ELA examination measures reading and writing skills as defined by the SBE standards through grade ten.[2] It includes both reading and writing components. The reading portion covers vocabulary and informational and literary reading. The writing portion covers writing strategies, applications, and conventions. The ELA examination consists of 72 MC questions and one constructed-response (CR) item. The CR item is a written response to a writing prompt.

The CAHSEE mathematics examination measures standards adopted by the SBE for grades six and seven mathematics and Algebra I.[3] It covers statistics, data analysis and probability, number sense, measurement and geometry, algebra, and mathematical reasoning. There are 80 operational questions in each mathematics form.

Target Population

The target population for the CAHSEE is students who are either enrolled in California public high schools in grade ten, eleven, or twelve or are enrolled in adult schools. These students are working to attain a high school diploma and have not passed both the ELA and the mathematics portions of the CAHSEE.

Intended Use and Purpose of Test Scores

The results for the CAHSEE are used primarily to identify students who are not developing minimum competencies with respect to the standards in reading, writing, and mathematics that are contained in the California Content Standards. All California public school students, except eligible SWDs, must satisfy the CAHSEE requirement, as well as all other state and local requirements, to receive a high school diploma.

In addition, the state and federal governments use the CAHSEE results for grade ten as a measure of school and school district accountability. The state accountability program is the Public Schools Accountability Act; the federal accountability program is the Elementary and Secondary Education Act (ESEA). The use of the CAHSEE results for these accountability programs is intended to be independent of how the CAHSEE is used at the individual student level.

Schedule of Administrations and Participation Rules

The CAHSEE was administered seven times in the 2012–13 school year on dates that were determined by the State Superintendent of Public Instruction (SSPI). Schools were required to administer the CAHSEE on the designated dates, as shown in Table 1.1.

[2]The blueprints for the CAHSEE ELA examinations can be found on the CDE CAHSEE Program Resources Web page http://www.cde.ca.gov/ta/tg/hs/resources.asp.
[3]The blueprints for the CAHSEE Mathematics examinations can be found on the CDE CAHSEE Program Resources Web page http://www.cde.ca.gov/ta/tg/hs/resources.asp.

Table 1.1: Testing Date for Each Administration by Content: 2012–13

Administration	English-Language Arts (Tuesday)	Mathematics (Wednesday)
July 2012	July 24, 2012	July 25, 2012
October 2012	October 2, 2012	October 3, 2012
November 2012	November 6, 2012	November 7, 2012
December 2012	December 8, 2012[1]	December 15, 2012[1]
February 2013	February 5, 2013	February 6, 2013
March 2013	March 12, 2013	March 13, 2013
May 2013	May 14, 2013	May 15, 2013

[1]Saturday administration

Participation rules determine when and how many times a student may take the CAHSEE. The participation rules are:

- Grade ten students shall be tested only during the census administrations in February or March, or the make-up administration in March or May, as per state requirements.

- Grade eleven students may take the part(s) of the CAHSEE not previously passed up to two times per school year and may test in consecutive administrations (e.g., October and November). Grade eleven students cannot participate in the July administration.

- Grade twelve students may take the part(s) of the CAHSEE not previously passed at least three times and up to five times per school year and may test in consecutive administrations.

- Adult Education students may take the part(s) of the CAHSEE not previously passed up to three times per school year and may test in consecutive administrations.

- No student who has previously passed the CAHSEE is eligible to retake the exam.

Significant Developments in the 2012–13 School Year

There were no changes in examination content and test administration in the 2012–13 school year. The test blueprint remained unchanged. As per federal guidelines, beginning with the July 2009 administration the demographic groups included a category called Two or More Races that was used for Adequate Yearly Progress (AYP) reporting. Equating and scoring methodologies were unchanged from the previous year.

Limitations of the Assessment

Score Interpretation

School districts use the CAHSEE results as part of the gateway to student graduation. However, it is important to remember that a single test can provide only limited information. Other relevant graduation requirements should be considered as well. It is also important to note that a student's CAHSEE score in a content area contains measurement error and could vary somewhat if the student were retested.

Groups and Organizations

State Board of Education

SBE is the state education agency that sets education policy for kindergarten through grade twelve in the areas of standards, instructional materials, assessment, and accountability. The SBE adopts textbooks for kindergarten through grade eight, adopts regulations to implement legislation, and has the authority to grant waivers of the *EC*. In 2009, the SBE suspended the adoption of textbooks until 2013–2014.

The SBE is responsible for the maintenance of such programs as the ESEA for reporting results in terms of the Academic Performance Index (API), which measures the academic performance and growth of schools on a variety of academic measures.

California Department of Education

The CDE oversees California's public school system and is responsible for the education of more than six million (6,000,000) children and young adults in more than 9,000 schools. The CDE's mission is to provide a world-class education for all students from early childhood to adulthood. As part of its mission to promote district and school accountability for improving student achievement as defined by the SBE, the CDE oversees the development and administration of the CAHSEE.

Test Contractors

Educational Testing Service

The CDE awarded a contract to ETS to develop and administer the CAHSEE program. As the prime contractor, ETS has overall responsibility to coordinate the work of its employees and its subcontractor, Pearson Educational Measurement, in order to fulfill all requirements of the contract. Activities conducted directly by ETS include:

- Overall management of the program.
- Development of all test items and test forms.
- Construction and production of test booklets and test-related materials.

- Scoring all responses, including performance scoring of the writing response.
- Production and distribution of all score reports, summary reports, and data files of test results.
- Support and training for all local education agencies (LEAs).
- Implementation and management of the CAHSEE Online System for ordering materials, pre-identification services, and data correction.
- Completion of all psychometric activities.
- Monitoring and managing the work of Pearson Educational Measurement, subcontractor for the CAHSEE program.

Pearson Educational Measurement

Pearson produces all scannable materials; packages, distributes, and retrieves test materials; accounts for all secure test materials; and scans all responses.

Overview of the Technical Report

This technical report describes the procedures applied to the CAHSEE for the four 2012 and the three 2013 administrations in the 2012–13 school year. This report also presents the results of statistical analyses based on the data from these administrations. The organization of the technical report demonstrates the process for accumulating evidence to support the validity of inferences made from the CAHSEE test scores, which is one of the most fundamental considerations in developing and evaluating tests. The process begins with the test design and continues throughout the entire assessment process, including content specifications, item development, psychometric quality, and inferences made from the results.

This technical report contains nine additional chapters as follows:

- Chapter 2 presents a conceptual overview of processes involved in a testing cycle for a CAHSEE administration. This includes test construction, test administration, generation of test scores, and dissemination of score reports.
- Chapter 3 describes the procedures followed in the development of valid CAHSEE items; the chapter explains the process of field testing new items and the review of items by contractors and content experts.
- Chapter 4 details the content and psychometric criteria applicable to the test assembly of the CAHSEE for the 2012–13 administrations.
- Chapter 5 presents the processes involved in the actual 2012–13 CAHSEE administrations, with an emphasis on efforts made to ensure standardization of

the tests. It also includes a detailed section that describes the procedures that were followed by ETS to ensure test security.

- Chapter 6 summarizes the results of the item-level analyses performed after each of the seven 2012–13 administrations. These include the classical item analyses, differential item functioning (DIF), item response theory (IRT), and model-fit analyses, as well as documentation of the equating along with CAHSEE score conversion tables. Also summarized in this chapter are the results of reliability analyses. These analyses include assessments of test reliability and the consistency and accuracy of the classifications, including the Pass/Not Pass classifications and the proficiency-level classifications. Finally, this chapter discusses the procedures designed to ensure the validity of the CAHSEE score use and interpretation.

- Chapter 7 describes the standard-setting process conducted for the CAHSEE when the SBE adopted new test blueprints in 2003. Also described is the procedure to establish the CAHSEE reporting scale. In addition, results describing students' proficiency classifications are also provided.

- Chapter 8 details the types of scores and score reports that are produced at the conclusion of each administration of the CAHSEE. Information about the distributions of scores, aggregated by subgroups based on demographics and the use of special services, is also included in this chapter.

- Chapter 9 highlights the importance of controlling and maintaining the quality of the CAHSEE.

- Chapter 10 presents historical comparisons of various item- and test-level results for the past three years and for the baseline year.

Each chapter contains summary tables in the body of the text. Extended appendices that give more detailed information are provided at the ends of the relevant chapters.

Chapter 2: Test Specifications

This chapter provides an overview of the processes involved in a typical test development and administration for the CAHSEE. The specifications maintained by ETS to conduct these processes are described here. This chapter is organized to provide a brief description of each major process followed by a summary of the associated specifications. More details about the specifications and the analyses associated with each process are described in the ensuing chapters that are referenced in the following sections.

Item Development

CAHSEE items are developed to measure California Content Standards and are designed to conform to principles of item writing defined by ETS (ETS, 2002). ETS maintains item development specifications for the CAHSEE and has an Item Development Plan to guide the item writing for each content area. The emphasis in writing items is determined in consultation with the CDE.

The item development specifications describe the characteristics of the items written to measure each content standard. The item development specifications ensure that the items in any administration of the CAHSEE measure the content standards in the same way. This is achieved by providing detailed information to CAHSEE item writers.

The items selected for each CAHSEE administration undergo an extensive item review process that is designed to provide the best standards-based tests possible. Details about the item development specifications, the item development plan, the item review process, and field testing are presented in Chapter 3.

Item Formats

The CAHSEE tests contain four-option MC items. The ELA test also includes one CR item, which is a writing prompt that is polytomously scored.

Model for Generating Item Statistics

IRT is used to estimate item difficulty for the operational and field-test items. Items are calibrated using the Rasch model for the MC items and the Rasch partial-credit model for the ELA CR items. IRT expresses the probability that a student will achieve a certain score on an item (such as correct or incorrect) as a function of the item's statistical properties and the ability level of the student.

The fundamental equation of the Rasch or one-parameter logistic model (1PL) relates the probability that a person with ability θ will respond correctly to item i:

$$P_i(\theta) \equiv P_i(X_i = 1 \mid \theta) = \frac{1}{1 + \exp[-(\theta - b_i)]}$$

where:

X_i is the response to item i, 1 if correct and 0 if incorrect;

b_i is the threshold parameter of item i, characterizing its difficulty; and

θ is the ability level for an examinee.

The fundamental equation of the Rasch partial-credit model is the probability that a person with ability θ will obtain a score *of x* on item i, which is scored in score categories ordered from 0 to m:

$$P_{ix}(\theta) \equiv P(X_i = x \mid \theta) = \frac{\exp[\sum_{s=0}^{x}(\theta - b_i + d_{is})]}{\sum_{k=0}^{m_i}\exp[\sum_{s=0}^{k}(\theta - b_i + d_{is})]}$$

where:

X_i is the response to item i, with possible values of 0, 1, …, m_i;

b_i is the location parameter of item i, characterizing its difficulty;

d_{is} is the threshold parameter for score category s; and

θ is the ability level for an examinee.

A proprietary version of the PARSCALE computer program (Muraki & Bock, 1995) is used for all item calibration work. This program estimates parameters for both the three-parameter logistic model (3PL) and the generalized partial-credit model using procedures described by Muraki (1992). For CAHSEE forms, the PARSCALE program is constrained by setting a common discrimination value for all items equal to 1.0/1.7 (or 0.588) and by fixing the lower asymptote for all MC items to zero. The resulting estimation is equivalent to the Rasch model for MC items and the Rasch partial-credit model for CR items. Additional details of the item calibration procedures can be found in Chapter 6.

Item Banking

The newly developed items are placed in the item bank along with the corresponding information obtained at the review sessions. Items that are accepted by the content experts are updated to a Field-Test Ready status; items that are rejected are assigned to a Rejected Before Use status.

Items are field tested in census administrations (i.e., February and March) to obtain information concerning item performance and to obtain statistics that can be used to assemble operational forms. ETS identifies items flagged for high levels of DIF (C level) and the associated statistics for another round of review by content experts. Subsequent updates to items are based on the operational use of the items. The latest content of the item is retained in the bank at any time, along with the administration data from every administration that has included the item. The item statistics obtained from the latest census administration are used for test assembly.

ETS delivers the items to the CDE by means of a CAHSEE electronic item bank. Further details on item banking are presented in Chapter 3.

Item Refresh Rate and Released Test Questions

The Item Development Plan assumes that about 60 percent of items on an operational ELA form and 60 percent of items on an operational mathematics form are refreshed each year; these items remain in the item bank for future use. Previously, a number of items were released to the public. The Released Test Questions (RTQs) show the content and types of questions that are included on the CAHSEE. Because RTQs are released and posted on the Internet for public viewing, they are precluded from future forms. Due to the state budget cuts, no ELA or mathematics RTQs were released in the 2012–13 school year.

Criteria for Selecting Released Test Questions

In selecting test questions for release, three criteria are used: (1) The questions adequately cover a selection of the content standards; (2) The questions demonstrate a range of difficulty; and (3) The questions represent a variety of ways in which students' achievements of the content standards can be assessed. These RTQs, however, do not reflect all the ways the standards may be assessed.

Test Assembly

The test assembly process adheres to rigorous standards for item selection and form construction based on alignment to the California Content Standards as well as psychometric criteria. This is a multi-faceted process that takes into account the factors described below.

Test Blueprint

ETS selects all CAHSEE test items to conform to the SBE-approved California Content Standards and test blueprints. The ELA examination measures reading and writing skills as defined by the SBE standards through grade ten. The CAHSEE mathematics examination measures standards adopted by the SBE through Algebra I. The content blueprints for the CAHSEE can be found on the CDE CAHSEE Program Resources Web page at http://www.cde.ca.gov/ta/tg/hs/resources.asp.

Test Length

The number of items on the CAHSEE varies by content area. The ELA form consists of 80 items, which include 72 operational MC items, one operational CR item, and seven embedded field-test MC items. The mathematics test form consists of 80 operational items and 12 field-test items for a total of 92 items.

Number of Test Forms

In order to maintain the item pool for construction of future forms, multiple forms are administered, each containing a set of common operational items and unique MC field-test items. The ELA CR items are field tested separately from the operational CAHSEE administrations. Different forms contain the same operational items and different field-test items. Field-test data from only the February and March administrations are used to evaluate the quality of the field-test items. During the 2012–13 testing cycle, 104 ELA and 52 mathematics field-test forms were administered for the February administration and 155 ELA and 78 mathematics field-test forms were administered for the March administration. A summary of the items and forms included in the seven administrations is shown in Table 2.1.

Table 2.1: Items Included in the 2012–13 Administrations

Administration	Operational Items	Field-Test Forms	Number of Field-Test Items[1]
July 2012			
English-language arts	72 MC, 1 CR	1	7
Mathematics	80 MC	1	12
October 2012			
English-language arts	72 MC, 1 CR	1	7
Mathematics	80 MC	1	12
November 2012			
English-language arts	72 MC, 1 CR	1	7
Mathematics	80 MC	1	12
December 2012			
English-language arts	72 MC, 1 CR	1	7
Mathematics	80 MC	1	12
February 2013			
English-language arts	72 MC, 1 CR	104	651
Mathematics	80 MC	52	624
March 2013			
English-language arts	72 MC, 1 CR	155	1,039
Mathematics	80 MC	78	936
May 2013			
English-language arts	72 MC, 1 CR	1	7
Mathematics	80 MC	1	12

[1]For ELA, some field-test items appeared in more than one form.

Content and Process Categories

Although the test blueprints call for the number of items at the individual standard level, scores on the CAHSEE items are also grouped into sub-content areas, referred to as subscores or strands. For each strand, the number of questions correctly answered is reported on a student's score report. The ELA and mathematics strands reported for the CAHSEE are presented in Table 2.2.

Table 2.2: English-Language Arts and Mathematics Strands

ELA Content Strand	Number of Items	Mathematics Content Strand	Number of Items
Word Analysis (RW)	7	Number Sense (NS)	17
Reading Comprehension (RC)	18	Probability & Statistics (PS)	13
Literary Response & Analysis (RL)	20	Algebra & Functions (AF)	20
Writing Strategies (WS)	12	Measurement & Geometry (MG)	18
Writing Conventions (WC)	15	Algebra 1 (A1)	12
Writing Applications–CR (WA)	1		

Content Rules and Item Selection

When developing a new test for a given content area, test developers follow a number of rules. First and foremost, they select items that meet the blueprint for the content area. Using the electronic item bank, assessment specialists identify the two sets of linking items, which are chosen from the operational items of the census administrations in the previous year. The linking sets are used to equate the test forms for a given school year. Once the linking sets are approved, assessment specialists populate the rest of the test form. Another consideration is the difficulty of each item. Test developers strive to ensure that there are some easy and some hard items and that there are a large number of items in the middle range of difficulty. The detailed rules are presented in Chapter 4.

Psychometric Criteria

CAHSEE test developers and psychometricians strive to accomplish three goals while developing a test:

- The test must have the desired precision of measurement at all ability levels.
- The test score must be valid and reliable for the intended population and for the various subgroups of test takers.
- The test forms must be comparable across years of administrations to ensure that scores generalize over time.

In order to achieve these goals, a set of rules is developed that outlines the desired psychometric properties of the CAHSEE, referred to as statistical targets. Three types of assembly targets are developed for the test: the total test target, the linking set target, and content strand targets. These targets are provided to test developers before a test construction cycle begins. The test developers and psychometricians work together to design the tests according to these targets. The test targets used for the 2012–13 test development are presented in Tables 4.1 through 4.4 in Chapter 4.

Item Arrangement

The items in test forms are organized and sequenced differently depending on the requirements of the content area. Items are sequenced according to the reading passages in ELA, and items are sequenced according to strand in mathematics. Further details on the arrangement of items during test assembly are also described in Chapter 4.

Test Administration

It is of utmost priority to administer the CAHSEE in an appropriate, consistent, confidential, and standardized manner. The necessary measures are taken to ensure the standardization of the CAHSEE as described in this section.

Test Security and Confidentiality

All CAHSEE tests are secure documents. For the CAHSEE administration, every person having access to test materials maintains the security and confidentiality of the tests. ETS's Code of Ethics requires that all test information, including tangible materials (e.g., test booklets, test questions, test results), confidential files, processes, and activities, are kept secure. To ensure security for all the tests that ETS develops or handles, ETS maintains an Office of Testing Integrity (OTI). A description of the OTI and its mission is presented in Chapter 5.

In the pursuit of enforcing secure practices, ETS and the OTI strive to safeguard the various processes involved in a test development and administration cycle. The practices related to each process are discussed in detail in Chapter 5.

Procedures to Maintain Standardization

The CAHSEE processes are designed so that the tests are administered and scored in a standardized manner. The procedures implemented for the CAHSEE program are noted below.

Test Administrators

ETS employs personnel who facilitate various processes involved in the standardization of a CAHSEE administration cycle. Staff members at school districts who are central to the processes include the CAHSEE LEA coordinators, test examiners, proctors, and scribes. The responsibilities for each staff member are included in the *CAHSEE Local Educational Agency and Test Site Coordinator Manual* (*LEATSCM*; CDE, 2013a), which is presented in more detail in Chapter 5.

Test Directions

ETS maintains a series of instructions, compiled in detailed manuals, that are available to the test administrators. These documents include the following test administration manuals:

***Directions for Administration*.** The *Directions for Administration Manual* (*DFA*; CDE 2013b) includes directions to be read aloud to students as well as procedures the test administrator is to follow to ensure that the validity of the test administration is maintained and the security of the test is protected.

***Directions for Administration—Special Test Versions*.** The *DFA—Special Test Versions Manual* explains procedures concerning students using the Braille, large print, and audio CD test versions. The instructions mirror the standard administration but reflect the appropriate changes needed to accommodate differences when a student uses a special test version.

Local Educational Agency and Test Site Coordinator Manual. The *LEATSCM* provides specific information and forms appropriate to the respective roles carried out by the LEA and school coordinators.

Answer Documents

Pearson maintains strict security procedures when shipping, retrieving, and storing testing materials. The processing and warehouse facilities at Pearson, where answer documents are scanned, are secure and locked. All completed student answer documents are stored in the secure warehouse for a period of one year after the completion of each examination administration. ETS maintains an electronic file of all answer document images for one year following the review and approval process involving the CDE and ETS.

Demographic Distributions

CAHSEE results are presented by subgroup based on grade, gender, ethnicity, language fluency, economic disadvantage, and special education programs. Table 2.3 defines the demographic groups for which results are obtained. Students' economic statuses are determined by considering the education level of their parents and whether or not they are eligible to participate in the National School Lunch Program (NSLP).

Table 2.3: Subgroup Definitions

Subgroup	Definition
Grade	Tenth Eleventh Twelfth Adult Education
Gender	Male Female
Ethnicity	American Indian or Alaska Native Asian – Chinese – Japanese – Korean – Vietnamese – Asian Indian – Laotian – Cambodian – Hmong – Other Asian Pacific Islander – Native Hawaiian – Guamanian – Samoan – Tahitian – Other Pacific Islander Filipino Hispanic or Latino African American White (not Hispanic) Two or More Races
English Language Fluency	English-Only (EO) Initially Fluent English Proficient (IFEP) English-Learner (EL) Reclassified Fluent English Proficient (RFEP)
Economic Status	Not economically disadvantaged Economically disadvantaged
Special Services	No special services Special services
Parent Education	Graduate school or post graduate training College graduate Some college High school graduate Not a high school graduate

Test Variations, Accommodations, and Modifications

Grades ten, eleven, and twelve public high school students and adult education students who have not passed both the ELA and mathematics sections of the CAHSEE participate in the CAHSEE. Per the California *EC* Section 60852.3, SWDs are exempted from meeting the CAHSEE requirement until alternative means to the

CAHSEE are implemented. Many SWDs and English Learners (ELs) take the CAHSEE under standard conditions; however, some of these students may need assistance when taking the CAHSEE. This assistance takes the form of test variations, accommodations, or modifications. All students may have test administration directions simplified or clarified. In addition, all eligible students may have test variations if these variations are regularly used in the classroom. They must also be allowed to use the accommodations and modifications that are specified in each student's individualized education program (IEP) or Section 504 plan. The accommodations and/or modifications must match the one(s) used for classroom work throughout the year.

The purpose of test variations, accommodations, and modifications is to enable the students to take the CAHSEE, not to give them an advantage over other students or to improve their scores. Accommodations change the way the test is administered but do not change what is tested. Test administration variations and accommodations do not result in changes to the students' scores for API or AYP calculations. Modifications fundamentally change what is being tested and the construct being measured. If a student takes one or both parts of the CAHSEE with a modification and has received the equivalent of a passing score, the student has not passed that part of the exam but is eligible to request a local waiver of the requirement to successfully pass that part of the exam. In addition, scores for students tested with modifications are counted as Not Pass for API calculations and Not Proficient for AYP calculations. The only exception is the calculator use in the mathematics exam. This modification is accepted and counted as tested. The Proficient cut point is a little higher than for those students who did not use a calculator.

Brief descriptions and abbreviations for the different modifications and accommodations are provided in Table 2.4. This table is also provided as a guide for LEA test site coordinators, who will mark all accommodations and modifications that are actually used during the testing in Box 25 of the students' answer documents. The shaded sections and the sections that cannot be marked for any portion of the CAHSEE are not applicable to that portion of the CAHSEE. For example, code Q (Calculators on the mathematics test) is considered a modification for mathematics and therefore cannot be marked for the ELA portion. The two-letter abbreviations included to the right of the description in Table 2.4 are used to reference the modifications and accommodations in Appendices 2.A to 2.G, Tables 3 to 6.

Modifications for mathematics include the use of a calculator, an arithmetic table, or a mathematics dictionary. Modifications for ELA include the use of a reader, an audio presentation, assistive devices, a scribe, a spell checker, a grammar checker, or an English dictionary.

Table 2.4: CAHSEE Modification/Accommodation Table: 2012–13

A. Student marks in test booklet (other than responses)—*Cannot be gridded for CAHSEE*		**N.** Dictionary. ELA Modification; Math Modification	DI (ELA) DM (M)
B. Student marks responses in test booklet and responses are transferred to a scorable answer document by an employee of the school, district, or nonpublic school. Accommodation	TS	**O.** Manually Coded English or American Sign Language used to present test questions. ELA Modification; Math Accommodation	SL
C. Responses dictated [orally, or in Manually Coded English or American Sign Language] to a scribe for selected-response items (multiple-choice questions). Accommodation	OR	**P.** Test questions read aloud to student or audio presentation (CD). ELA Modification; Math Accommodation	OP
D. Word processing software with spell and grammar check tools turned off for the essay responses (writing portion of the test)—*Cannot be gridded on the math portion of Box 25, ELA side only.* ELA Accommodation	SO	**Q.** Calculators on mathematics test.—*Cannot be gridded for the ELA portion of Box 25, math side only.* Math Modification	CA
E. Essay responses dictated orally or in Manually Coded English to a scribe, audio recorder, or speech-to-text converter and the student provides all spelling and language conventions—*Cannot be gridded on the math portion of Box 25, ELA side only.* ELA Accommodation	EO	**R.** Arithmetic table on mathematics test—*Cannot be gridded for the ELA portion of Box 25, math side only.* Math Modification	AT
F. Assistive device that does not interfere with the independent work of the student on the multiple-choice and/or essay responses (writing portion of the test)—*Cannot be gridded on the math portion of Box 25, ELA side only.* ELA Accommodation	AN	**S.** Math manipulatives on mathematics test —*Cannot be gridded for the ELA portion of Box 25, math side only.* Math Modification	MM
G. Braille transcriptions provided by the test contractor. Accommodation	BV	**T.** Word processing software with spell and grammar check tools enabled on the essay responses writing portion of the test—*Cannot be gridded for the math portion of Box 25*, *ELA side only.* ELA Modification	SC
H. Large print versions. Test items enlarged if font larger than required on large print version. Accommodation	LV	**U.** Essay responses dictated orally, in Manually Coded English, or in American Sign Language to a scribe [audio recorder or speech-to-text converter] and scribe provides spelling, grammar, and language conventions —*Cannot be gridded for the math portion of Box 25, ELA side only.* ELA Modification	ER
I. Extra time on test within a testing day —*Cannot be gridded for CAHSEE*		**V.** Assistive device that interferes with the independent work of the student on the multiple-choice and/or essay responses. Modification	AD
J. Test over more than one day for a test or test part to be administered in a single sitting. Accommodation	TD	**W.** Unlisted Modification. Modification	UM
K. Supervised breaks within a section of the test. Accommodation	SB	**X.** Unlisted Accommodation. Accommodation	UA
L. Administration of the test at the most beneficial time of day to the student. Accommodation	BT	**Y.** Writing task prompt ONLY was read aloud to the student or presented in Manually Coded English or American Sign Language—*Cannot be gridded for the math portion of Box 25, ELA side only.* ELA Modification	WO

Table 2.4 (Continued)

M. Test administered at home or in hospital by test examiner. Accommodation	HH	**Z.** Leave Blank—*Cannot be gridded for CAHSEE*	

Note: The shaded sections are not applicable to the CAHSEE. The sections that cannot be marked for any portion of the CAHSEE are not applicable to that portion of the CAHSEE.

Scores for examinees who reported having a disability or who took the CAHSEE with an accommodation or modification were analyzed to investigate the relationships between CAHSEE scores and disability, accommodation, language fluency, and special program participation. Table 2.5 provides a listing of the tables summarizing student results based on disabilities and testing variations for the 2012–13 administrations. To simplify the presentation of these data, all tables for this section are located in Appendix 2.A to Appendix 2.G for the seven administrations (July 2012, October 2012, November 2012, December 2012, February 2013, March 2013, and May 2013), respectively.

Tables 1 and 2 in each appendix provide summary statistics in ELA and mathematics for each disability type and for all accommodated students, as well as separate statistics for accommodations versus modifications. Standard accommodations include students enrolled in an IEP/Section 504 plan who took either a Braille or audio CD form with no additional modifications. The largest disability group reported is Specific Learning Disability. The number of students in this group across the seven administrations ranged from 277 (December 2012) to 29,929 (March 2013) for ELA and 231 (December 2012) to 29,284 (March 2013) for mathematics. For students who tested with accommodations or modifications, the rates of achieving a score of 350 or higher ranged from 13 to 24 percent for ELA and from 8 to 26 percent for mathematics. Students who took the test with modifications are provided scale scores on their reports with Modified written beside the score. It is at the discretion of the local school boards whether each student using modifications and receiving a score of 350 or higher is granted a waiver.

Tables 3 and 4 in each appendix present the percentage of students achieving less than 350 and 350 or higher and summary statistics for each accommodation or modification used on the exam. Students enrolled in an IEP or Section 504 plan represent the largest number. The accommodation group with the largest percentage of students passing tended to vary across the seven administrations. Generally, students who tested at home or in the hospital, tested with the large print version, or had their responses transferred to an answer document achieved higher passing percentages. Tables 5 and 6 in each appendix present scale scores at specific percentiles for each accommodation group.

Tables 7 and 8 in each appendix present summary statistics for the breakdown of each testing variation by reported disability. Tables 9 and 10 in each appendix summarize the comparison between language fluency categories within each testing variation group. The most commonly reported categories of accommodation/modification for students with limited English proficiency (i.e., initially fluent English proficient, reclassified fluent English proficient, EL) were directions read aloud or signed, additional breaks, and access to a glossary or word list. English-only,

reclassified fluent English proficient, and initially fluent English proficient students tended to outperform the EL students in most instances.

Table 2.5: Listing of Tables–Summary Statistics for Testing Variations and Disability

Table[1]	Content	Label
2.x.1	Scale Score Summary Statistics and Passing Rate Percentages for Testing Variations and Disability Type—ELA	Summary Statistics by Testing Variations and Disability—ELA
2.x.2	Scale Score Summary Statistics and Passing Rate Percentages for Testing Variations and Disability Type—Mathematics	Summary Statistics by Testing Variations and Disability—Mathematics
2.x.3	Demographic Summary and Passing Rate Percentages for All Examinees by Testing Variations—ELA	Demographic Summary for All Examinees by Testing Variations—ELA
2.x.4	Demographic Summary and Passing Rate Percentages for All Examinees by Testing Variations—Mathematics	Demographic Summary for All Examinees by Testing Variations—Mathematics
2.x.5	Scale Score Percentiles and Summary Statistics by Testing Variations—ELA	Percentiles of Scale Scores for Students with Testing Variations—ELA
2.x.6	Scale Score Percentiles and Summary Statistics by Testing Variations—Mathematics	Percentiles of Scale Scores for Students with Testing Variations—Mathematics
2.x.7	Scale Score Summary Statistics and Passing Rate Percentages by Disability and Testing Variations—ELA	Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA
2.x.8	Scale Score Summary Statistics and Passing Rate Percentages by Disability and Testing Variations—Mathematics	Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics
2.x.9	Scale Score Summary Statistics and Passing Rates by Language Fluency and Testing Variations—ELA	Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA
2.x.10	Scale Score Summary Statistics and Passing Rates by Language Fluency and Testing Variations—Mathematics	Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—Mathematics

[1]x = Administration, where tables A = July, B = October, C = November, D = December, E = February, F = March, G = May.

Scores

Student raw scores are transformed to three-digit scale scores using the equating process described in Chapter 6. The weighting of the total raw scores is described below. CAHSEE results are reported using scale scores that range from 275 to 450 for both tests. The passing status is also reported. If the scale score is 350 or higher, it will be marked as Passed. If the scale score is less than 350, it will be marked as Not Passed.

In addition to scale scores, student performance on various strands is reported. The strand score is obtained by adding an examinee's scores on the items in each strand. That information is reported in terms of a percent correct score. Detailed descriptions of CAHSEE scores are described in Chapter 8.

Weighting of Scores

The ELA section consists of 45 MC items measuring reading, 27 MC items measuring writing, and one CR prompt. Each correct MC item is worth one point, and the points are added to calculate the total MC score. The CR item is scored on a rubric ranging

from 0 to 4 points. Each CR item is initially scored by two raters, and if the scores are the same or adjacent, the resulting item score is the average of the two ratings. Half-point intervals are possible when the scores assigned by the raters are adjacent scores. When the raters assign non-adjacent scores, the scoring leader, who assigns the final score, provides resolution. The weighting of these components is described below. The total raw score points is 90.

MC Reading Items:	45 items times scoring weight of 1.0 = 45 points
MC Writing Items:	27 items times scoring weight of 1.0 = 27 points
CR Item:	4 point rubric times scoring weight of 4.5 = 18 points

Total points MC = 72 points (80 percent of the total points)
Total points CR = 18 points (20 percent of the total points)
Total points: Composite (MC + Weighted CR) = 90 points

There is no special weighting for the mathematics test. Each item is worth one score point for a total of 80 points.

Total raw scores on the CAHSEE are transformed to a reporting scale that ranges from 275 to 450, with the minimum passing score set at 350.

Aggregation Procedures

In order to provide meaningful results to the stakeholders, CAHSEE scores are aggregated at the school, independent charter school, district, county, and state levels. The aggregated scores are generated both for individual scores as well as group scores. The following section presents the types of aggregation performed on CAHSEE scores.

Individual Scores

Summary statistics of individual student scores expressed as raw scores and scale scores are provided in the Executive Summary. Tables E.3.1 to E.3.3 contain the information for the ELA tests, and Tables E.4.1 to E.4.3 contain the information for the mathematics tests. The tables include the means, standard deviations, range, and median. The percentages of students passing the CAHSEE are found in Table E.2 in the Executive Summary.

Group Scores

Results for the demographic groups for the 2012–13 administrations may be found in Appendices 8.A to 8.G. Summary information is presented by demographic characteristic, including grade, gender, ethnicity, language fluency, economic status, and special education services for ELA and mathematics. Tables 5 and 6 in each appendix provide summary statistics based on all students taking each of the administrations for the ELA and mathematics tests, respectively. The tables show the number of students with valid scores in each group, the number and percent of students in the Pass/Not Pass classifications, mean scale scores, mean percent correct for the strands, and the mean score for writing applications.

Additional subgroup information may be found in Tables 7 through 10 of Appendix 8.A to Appendix 8.G. Tables 7 and 8 in each appendix display the number and percent of students classified as Below Proficient, Proficient, and Advanced according to the ESEA performance classifications. Selected percentiles, scale score means, and standard deviations for the subgroups are presented for all students in Tables 9 and 10 for ELA and mathematics, respectively.

Equating

Students taking the CAHSEE have multiple opportunities to take the examination until they pass both the ELA and mathematics portions. When administering multiple forms of a test, there is a need for a constant scale. This means that the passing score must represent the same level of achievement on all forms (versions) of the CAHSEE. To maintain comparability of scores across multiple test forms, the CAHSEE tests are equated to a reference form using a common-item nonequivalent groups design and methods based on IRT.

The procedure used for equating the CAHSEE involves three steps: item calibration, item parameter scaling, and true-score equating. The 2004 February administration is the baseline for equating all CAHSEE test forms. The 2012–13 items were calibrated and placed on the reference scale using a set of linking items selected from the previous year's forms and re-administered on the 2012–13 test forms. The number correct or raw score is converted to a scale score via true-score equating. The raw-score to scale-score conversion reflects the relationship between the difficulty of individual test items that make up each test form and the constant measure of achievement indicated by the reported scale scores. For different test forms, the expected number-correct score for a given level of achievement may vary somewhat due to (usually small) differences in the average difficulty of the items in one form compared to the average difficulty of items in other test forms. This is why the conversion tables for each test administration will differ slightly in relating raw scores to scale scores. Total scores on the CAHSEE are transformed to a reporting scale that ranges from 275 to 450, with the minimum passing score set at 350. The equating specifications and procedures are described in detail in Chapter 6.

Appendix 2.A: Results of Testing Variations and Disability Analyses—July 2012

Table 2.A.1: Summary Statistics by Testing Variations and Disability—ELA, July 2012

Testing Variations	Number[1]	Mean	SD[2]	Percent (≥ 350)
Accommodations	104	321	25	13
Modifications	277	325	22	14
All	381	324	23	14
Disability				
Autism	32	319	19	6
Deaf	-	-	-	-
Emotional Disturbance	51	319	28	16
Hard of Hearing	17	325	19	6
Mental Retardation	33	303	27	9
Orthopedic Impairment	11	328	22	18
Other Health Impairment	72	329	24	19
Specific Learning Disability	812	325	22	12
Speech or Language Impairment	64	326	19	9
Traumatic Brain Injury	-	-	-	-
Visual Impairment	-	-	-	-

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.A.2: Summary Statistics by Testing Variations and Disability—Mathematics, July 2012

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	98	322	16	5
Modifications	419	325	18	9
All	517	324	17	8
Disability				
Autism	32	324	16	6
Deaf	-	-	-	-
Emotional Disturbance	60	323	22	15
Hard of Hearing	14	337	18	21
Mental Retardation	30	312	20	7
Orthopedic Impairment	-	-	-	-
Other Health Impairment	77	323	15	6
Specific Learning Disability	784	324	17	7
Speech or Language Impairment	47	327	18	13
Traumatic Brain Injury	-	-	-	-

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.A.3: Demographic Summary for All Examinees by Testing Variations—ELA, July 2012

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading[2] Mean Percent Correct			Writing[2] Mean Percent Correct		Writing Applications Mean Score[3]
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	826	112	14	714	86	324	49	44	49	37	45	1.9
Transfer of T/B Responses to A/D (TS)	-	-	-	-	-	-	-	-	-	-	-	-
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-	-	-
Spell Checker/Grammar Checker Off (SO)	-	-	-	-	-	-	-	-	-	-	-	-
Essay Responses (EO)	-	-	-	-	-	-	-	-	-	-	-	-
Assistive Device No Interference (AN)	-	-	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	48	3	6	45	94	321	49	41	50	31	42	1.9
Supervised Breaks (SB)	130	19	15	111	85	321	51	43	48	34	43	1.8
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	89	13	15	76	85	329	53	48	54	38	49	1.9
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	205	28	14	177	86	325	50	44	50	37	46	1.9
Spell Checker or Grammar Checker (SC)	19	4	21	15	79	335	62	47	58	38	52	2.2
Essay Responses (ER)	-	-	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	20	4	20	16	80	327	52	48	50	37	52	1.7
Writing Only (WO)	-	-	-	-	-	-	-	-	-	-	-	-

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response & Analysis, WS — Writing Strategies, WC — Writing Conventions

[3]Writing Applications Mean Score is based on the unweighted score.

Table 2.A.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, July 2012

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	830	68	8	762	92	324	41	43	36	33	29
Transfer of T/B Responses to A/D (TS)	-	-	-	-	-	-	-	-	-	-	-
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	36	2	6	34	94	323	41	44	36	31	25
Supervised Breaks (SB)	97	6	6	91	94	322	40	41	35	32	27
Beneficial Time (BT)	12	0	0	12	100	320	40	48	29	31	19
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	12	0	0	12	100	317	34	39	31	31	24
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	128	11	9	117	91	322	40	42	35	33	29
Calculator (CA)	415	35	8	380	92	325	42	45	35	33	30
Arithmetic Table (AT)	27	3	11	24	89	326	40	45	37	35	30
Math Manipulatives (MM)	-	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	-	-	-	-	-	-	-	-	-	-	-

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1

Table 2.A.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, July 2012

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	285	306	322	341	360	381	324	24	826
Transfer of T/B Responses to A/D (TS)	-	-	-	-	-	-	-	-	-	-
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-
Spell Checker/Grammar Checker Off (SO)	-	-	-	-	-	-	-	-	-	-
Essay Responses (EO)	-	-	-	-	-	-	-	-	-	-
Assistive Device No Interference (AN)	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	275	289	307	320	338	352	358	321	21	48
Supervised Breaks (SB)	275	285	302	317	340	360	386	321	25	130
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	275	292	314	332	343	362	376	329	22	89
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	281	289	308	324	340	364	369	325	22	205
Spell Checker or Grammar Checker (SC)	296	296	318	336	347	367	367	335	22	19
Essay Responses (ER)	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	276	280	309	326	347	355	356	327	24	20
Writing Only (WO)	-	-	-	-	-	-	-	-	-	-

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.A.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, July 2012

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	287	301	312	320	333	355	380	324	18	830
Transfer of T/B Responses to A/D (TS)	-	-	-	-	-	-	-	-	-	-
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	301	303	312	322	330	353	358	323	13	36
Supervised Breaks (SB)	283	295	310	320	332	353	360	322	16	97
Beneficial Time (BT)	287	287	318	322	327	332	332	320	12	12
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	295	295	309	319	322	337	337	317	12	12
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	293	298	312	320	331	353	390	322	18	128
Calculator (CA)	290	301	312	322	335	355	385	325	17	415
Arithmetic Table (AT)	301	303	310	320	332	390	392	326	23	27
Math Manipulatives (MM)	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	-	-	-	-	-	-	-	-	-	-

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.A.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, July 2012

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Dictionary	Specific Learning Disability	67	328	21	12
IEP or Section 504 Plan	Autism	21	324	17	10
	Emotional Disturbance	35	317	25	11
	Hard of Hearing	12	329	17	8
	Mental Retardation	24	306	29	13
	Other Health Impairment	39	328	25	18
	Specific Learning Disability	573	324	23	13
	Speech or Language Impairment	40	325	21	13
Oral Presentation	Specific Learning Disability	140	327	20	14
Spell Checker or Grammar Checker	Specific Learning Disability	17	334	23	24
Supervised Breaks	Emotional Disturbance	12	317	24	17
	Specific Learning Disability	93	321	25	13
Test Over More Than One Day	Specific Learning Disability	32	319	20	3
Unlisted Accommodation	Specific Learning Disability	12	327	25	17

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.A.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, July 2012

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	Specific Learning Disability	20	321	14	5
Calculator	Autism	12	327	19	17
	Other Health Impairment	25	321	15	4
	Specific Learning Disability	279	325	17	8
	Speech or Language Impairment	16	323	16	0
IEP or Section 504 Plan	Autism	20	325	17	10
	Emotional Disturbance	42	322	22	14
	Mental Retardation	23	315	21	9
	Other Health Impairment	49	323	16	6
	Specific Learning Disability	566	324	17	7
	Speech or Language Impairment	27	325	20	11
Oral Presentation	Specific Learning Disability	77	324	18	10
Supervised Breaks	Specific Learning Disability	71	322	17	7
Test Over More Than One Day	Specific Learning Disability	28	321	12	4

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.A.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, July 2012

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Dictionary	English-Only	52	327	23	17
	English-Learner	34	331	19	9
IEP or Section 504 Plan	English-Only	432	325	24	16
	Initially Fluent English Proficient	22	325	20	9
	Reclassified Fluency	32	327	25	16
	English-Learner	336	322	23	11
Oral Presentation	English-Only	96	325	22	15
	English-Learner	96	325	22	14
Supervised Breaks	English-Only	77	324	26	18
	English-Learner	40	318	23	13
Test Over More Than One Day	English-Only	27	325	19	7
	English-Learner	18	317	22	6

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.A.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—Mathematics, July 2012

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	English-Only	18	329	27	17
Calculator	English-Only	238	326	18	10
	Initially Fluent English Proficient	11	310	6	0
	Reclassified Fluency	14	324	13	0
	English-Learner	151	324	17	7
IEP or Section 504 Plan	English-Only	476	325	18	9
	Initially Fluent English Proficient	24	320	16	8
	Reclassified Fluency	30	323	17	7
	English-Learner	296	322	17	7
Oral Presentation	English-Only	70	325	19	13
	English-Learner	52	320	17	4
Supervised Breaks	English-Only	69	322	17	7
	English-Learner	20	318	14	0
Test Over More Than One Day	English-Only	24	323	15	8
	English-Learner	11	321	10	0

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Appendix 2.B: Results of Testing Variations and Disability Analyses—October 2012

Table 2.B.1: Summary Statistics by Testing Variations and Disability—ELA, October 2012

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	1,761	321	25	12
Modifications	2,605	325	24	17
All	4,366	324	25	15
Disability				
Autism	408	324	26	14
Deaf	116	305	19	1
Deaf-Blindness	-	-	-	-
Emotional Disturbance	706	322	33	21
Hard of Hearing	119	320	23	11
Mental Retardation	281	303	20	3
Multiple Disabilities	24	310	26	4
Orthopedic Impairment	83	325	26	19
Other Health Impairment	757	327	27	19
Specific Learning Disability	9,276	323	23	14
Speech or Language Impairment	444	325	24	16
Traumatic Brain Injury	45	322	24	11
Visual Impairment	29	332	28	28

Note: Students tested with Accommodations and Modifications are counted in both rows.
[1]Results for groups with fewer than 11 students are not reported.
[2]SD — Standard Deviation

Table 2.B.2: Summary Statistics by Testing Variations and Disability—Mathematics, October 2012

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	1,427	328	20	14
Modifications	3,831	332	21	17
All	5,258	331	21	16
Disability				
Autism	353	332	22	16
Deaf	88	324	15	5
Deaf-Blindness	-	-	-	-
Emotional Disturbance	712	328	26	19
Hard of Hearing	88	330	19	19
Mental Retardation	274	319	18	5
Multiple Disabilities	22	322	16	0
Orthopedic Impairment	94	331	20	16
Other Health Impairment	832	331	21	18
Specific Learning Disability	8,822	330	19	14
Speech or Language Impairment	386	331	18	15
Traumatic Brain Injury	34	327	16	6
Visual Impairment	29	332	27	17

Note: Students tested with Accommodations and Modifications are counted in both rows.
[1]Results for groups with fewer than 11 students are not reported.
[2]SD — Standard Deviation

Table 2.B.3: Demographic Summary for All Examinees by Testing Variations—ELA, October 2012

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading[2] Mean Percent Correct			Writing[2] Mean Percent Correct		Writing Applications Mean Score[3]
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	9,687	1,416	15	8,271	85	323	54	49	48	40	46	1.9
Transfer of T/B Responses to A/D (TS)	61	15	25	46	75	329	60	50	52	48	51	2.0
Oral Responses Dictated to a Scribe (OR)	26	6	23	20	77	331	63	53	50	44	55	2.0
Spell Checker/Grammar Checker Off (SO)	53	22	42	31	58	343	69	60	58	54	58	2.2
Essay Responses (EO)	26	12	46	14	54	336	70	55	55	53	53	2.1
Assistive Device No Interference (AN)	35	15	43	20	57	343	71	61	58	53	59	2.3
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	23	6	26	17	74	335	66	57	57	41	51	1.9
Test Over More Than One Day (TD)	484	90	19	394	81	323	54	49	48	42	45	1.9
Supervised Breaks (SB)	1,959	286	15	1,673	85	322	54	47	48	41	45	1.9
Beneficial Time (BT)	400	55	14	345	86	320	53	47	47	41	45	1.8
Tested at Home or Hospital (HH)	21	8	38	13	62	332	65	54	55	46	50	1.8
Dictionary (DI)	912	156	17	756	83	325	60	50	50	42	46	1.9
Sign Language (SL)	46	1	2	45	98	303	38	32	36	31	40	1.6
Oral Presentation (OP)	2,038	378	19	1,660	81	327	58	50	52	44	48	2.0
Spell Checker or Grammar Checker (SC)	140	23	16	117	84	327	55	50	50	42	49	2.2
Essay Responses (ER)	53	23	43	30	57	340	67	55	57	48	51	2.6
Assistive Device (AD)	11	5	45	6	55	338	55	52	57	48	54	2.7
Unlisted Modification (UM)	38	5	13	33	87	320	52	52	47	38	43	1.7
Unlisted Accommodation (UA)	388	48	12	340	88	326	56	51	50	42	49	2.0
Writing Only (WO)	170	2	1	168	99	310	41	40	40	34	39	1.8

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response & Analysis, WS — Writing Strategies, WC — Writing Conventions

[3]Writing Applications Mean Score is based on the unweighted score.

Table 2.B.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, October 2012

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	9,515	1,455	15	8,060	85	330	43	44	39	36	31
Transfer of T/B Responses to A/D (TS)	58	19	33	39	67	341	51	53	44	45	36
Oral Responses Dictated to a Scribe (OR)	18	3	17	15	83	329	44	49	39	32	33
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	22	5	23	17	77	338	46	48	45	43	40
Test Over More Than One Day (TD)	322	68	21	254	79	331	43	47	39	37	30
Supervised Breaks (SB)	1,634	245	15	1,389	85	330	42	44	39	36	30
Beneficial Time (BT)	342	43	13	299	87	326	40	42	37	34	29
Tested at Home or Hospital (HH)	17	7	41	10	59	350	55	61	52	48	39
Dictionary for Math (DM)	237	35	15	202	85	331	43	47	39	37	31
Sign Language (SL)	42	4	10	38	90	325	38	42	35	31	32
Oral Presentation (OP)	1,258	257	20	1,001	80	334	45	48	41	39	33
Calculator (CA)	3,756	644	17	3,112	83	332	43	48	39	37	31
Arithmetic Table (AT)	346	58	17	288	83	332	45	47	40	37	32
Math Manipulatives (MM)	55	23	42	32	58	348	59	57	49	47	39
Assistive Device (AD)	15	3	20	12	80	337	41	54	39	43	42
Unlisted Modification (UM)	69	10	14	59	86	327	40	44	36	35	31
Unlisted Accommodation (UA)	365	51	14	314	86	330	43	43	40	36	31

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1

Table 2.B.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, October 2012

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	284	304	321	340	363	384	323	25	9,687
Transfer of T/B Responses to A/D (TS)	275	282	310	331	348	378	386	329	28	61
Oral Responses Dictated to a Scribe (OR)	290	294	314	325	346	384	389	331	27	26
Spell Checker/Grammar Checker Off (SO)	280	288	319	342	366	392	406	343	31	53
Essay Responses (EO)	282	288	313	338	355	371	389	336	26	26
Assistive Device No Interference (AN)	304	306	329	344	359	376	384	343	19	35
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	288	288	302	331	353	396	450	335	38	23
Test Over More Than One Day (TD)	275	278	302	321	344	371	389	323	28	484
Supervised Breaks (SB)	275	282	302	321	338	366	386	322	26	1,959
Beneficial Time (BT)	275	282	298	321	339	366	384	320	26	400
Tested at Home or Hospital (HH)	276	276	296	329	357	396	403	332	38	21
Dictionary (DI)	275	286	306	325	342	366	389	325	25	912
Sign Language (SL)	275	276	290	300	310	338	359	303	19	46
Oral Presentation (OP)	275	288	310	327	344	366	386	327	24	2,038
Spell Checker or Grammar Checker (SC)	282	290	310	328	344	362	381	327	23	140
Essay Responses (ER)	296	302	323	338	355	378	396	340	23	53
Assistive Device (AD)	286	286	325	348	357	363	363	338	24	11
Unlisted Modification (UM)	275	275	300	321	336	371	384	320	26	38
Unlisted Accommodation (UA)	275	290	310	327	340	363	384	326	23	388
Writing Only (WO)	275	280	294	310	325	344	361	310	21	170

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.B.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, October 2012

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	287	301	317	329	341	364	389	330	20	9,515
Transfer of T/B Responses to A/D (TS)	299	303	321	335	359	392	400	341	26	58
Oral Responses Dictated to a Scribe (OR)	276	276	312	327	348	382	382	329	26	18
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	301	301	321	340	348	392	392	338	26	22
Test Over More Than One Day (TD)	275	296	315	329	345	374	400	331	25	322
Supervised Breaks (SB)	284	299	315	327	341	364	406	330	22	1,634
Beneficial Time (BT)	284	296	313	323	338	364	387	326	21	342
Tested at Home or Hospital (HH)	290	290	327	348	378	432	432	350	40	17
Dictionary for Math (DM)	287	301	317	329	343	366	382	331	20	237
Sign Language (SL)	275	304	313	325	333	354	366	325	19	42
Oral Presentation (OP)	290	301	319	331	345	376	427	334	25	1,258
Calculator (CA)	290	304	317	331	343	366	397	332	21	3,756
Arithmetic Table (AT)	293	304	319	331	345	366	382	332	19	346
Math Manipulatives (MM)	299	301	329	347	363	418	427	348	31	55
Assistive Device (AD)	299	299	323	343	348	385	385	337	24	15
Unlisted Modification (UM)	280	299	313	325	336	368	382	327	21	69
Unlisted Accommodation (UA)	290	304	315	329	341	368	382	330	19	365

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.B.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, October 2012

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Assistive Device No Interference	Specific Learning Disability	24	346	19	46
Beneficial Time	Emotional Disturbance	76	316	28	11
	Other Health Impairment	27	326	27	15
	Specific Learning Disability	231	322	25	14
Dictionary	Autism	23	320	24	13
	Emotional Disturbance	29	320	29	21
	Mental Retardation	25	312	22	8
	Other Health Impairment	47	327	25	23
	Specific Learning Disability	670	325	24	16
	Speech or Language Impairment	27	322	25	19
Essay Responses (EO)	Specific Learning Disability	11	340	26	64
Essay Responses (ER)	Specific Learning Disability	36	342	22	47
IEP or Section 504 Plan	Autism	289	323	26	13
	Deaf	100	304	19	1
	Emotional Disturbance	563	322	33	22
	Hard of Hearing	74	320	22	9
	Mental Retardation	216	304	20	3
	Multiple Disabilities	19	311	27	5
	Orthopedic Impairment	60	325	25	18
	Other Health Impairment	561	326	27	17
	Specific Learning Disability	6,743	323	23	13
	Speech or Language Impairment	297	323	24	14
	Traumatic Brain Injury	33	320	23	12
	Visual Impairment	26	333	29	31
Large Print Version	Visual Impairment	13	337	33	38
Oral Presentation	Autism	70	319	22	6
	Emotional Disturbance	46	322	26	17
	Hard of Hearing	15	318	21	7
	Mental Retardation	74	308	20	5
	Orthopedic Impairment	16	327	28	25
	Other Health Impairment	106	331	26	20
	Specific Learning Disability	1,501	328	24	19
	Speech or Language Impairment	85	325	24	19
	Traumatic Brain Injury	12	322	23	17
Sign Language	Deaf	40	301	17	0
Spell Checker or Grammar Checker	Deaf	14	301	14	0
	Specific Learning Disability	93	332	22	20
Spell Checker or Grammar Checker Off	Specific Learning Disability	21	344	31	43
Supervised Breaks	Autism	56	317	23	7
	Emotional Disturbance	180	319	31	16
	Hard of Hearing	14	321	23	14
	Mental Retardation	60	302	19	3
	Other Health Impairment	104	323	27	16
	Specific Learning Disability	1,301	323	25	15
	Speech or Language Impairment	61	320	22	13

Table 2.B.7 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Test Over More Than One Day	Autism	12	327	23	8
	Deaf	30	302	18	0
	Emotional Disturbance	76	318	31	14
	Mental Retardation	11	312	24	9
	Other Health Impairment	30	326	30	23
	Specific Learning Disability	266	326	26	20
	Speech or Language Impairment	20	322	27	20
Transfer of Student T/B Responses to A/D	Specific Learning Disability	34	331	28	26
Unlisted Accommodation	Emotional Disturbance	24	324	30	21
	Other Health Impairment	16	325	24	13
	Specific Learning Disability	294	325	22	11
Unlisted Modification	Specific Learning Disability	20	317	24	15
Writing Only	Deaf	58	304	18	0
	Specific Learning Disability	77	316	21	1

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.B.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, October 2012

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	Autism	11	328	26	18
	Emotional Disturbance	16	333	23	25
	Mental Retardation	11	322	26	9
	Other Health Impairment	22	331	22	9
	Specific Learning Disability	254	333	18	18
Assistive Device	Specific Learning Disability	12	337	26	25
Beneficial Time	Emotional Disturbance	82	322	23	12
	Other Health Impairment	25	327	18	12
	Specific Learning Disability	179	327	18	12
Calculator	Autism	126	332	19	17
	Emotional Disturbance	168	332	28	20
	Hard of Hearing	20	330	20	20
	Mental Retardation	99	323	22	9
	Multiple Disabilities	11	326	13	0
	Orthopedic Impairment	25	333	21	16
	Other Health Impairment	247	334	21	18
	Specific Learning Disability	2,642	332	20	17
	Speech or Language Impairment	132	331	16	14
Dictionary for Math	Other Health Impairment	11	331	23	18
	Specific Learning Disability	164	331	18	13
IEP or Section 504 Plan	Autism	273	332	22	17
	Deaf	75	324	15	5
	Emotional Disturbance	574	327	26	18
	Hard of Hearing	61	330	18	18
	Mental Retardation	212	320	19	6
	Multiple Disabilities	19	322	18	0
	Orthopedic Impairment	66	330	20	12
	Other Health Impairment	620	331	21	17
	Specific Learning Disability	6,550	330	19	14
	Speech or Language Impairment	265	330	17	12
	Traumatic Brain Injury	23	325	11	4
	Visual Impairment	26	331	28	15
Math Manipulatives	Specific Learning Disability	38	347	30	42
Oral Presentation	Autism	41	332	23	20
	Emotional Disturbance	50	336	35	20
	Mental Retardation	61	328	26	16
	Orthopedic Impairment	15	331	20	13
	Other Health Impairment	71	338	24	25
	Specific Learning Disability	862	334	24	21
	Speech or Language Impairment	44	331	18	14
Sign Language	Deaf	35	326	16	9
Supervised Breaks	Autism	46	329	19	17
	Emotional Disturbance	173	326	27	14

Table 2.B.8 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
	Mental Retardation	50	324	26	10
	Other Health Impairment	114	334	20	24
	Specific Learning Disability	1,034	330	21	15
	Speech or Language Impairment	40	325	14	3
Test Over More Than One Day	Emotional Disturbance	73	325	26	19
	Other Health Impairment	19	328	20	16
	Specific Learning Disability	170	332	23	19
Transfer of Student T/B Responses to A/D	Specific Learning Disability	33	339	24	30
Unlisted Accommodation	Emotional Disturbance	27	331	26	22
	Other Health Impairment	21	319	24	10
	Specific Learning Disability	275	331	18	13
Unlisted Modification	Emotional Disturbance	12	323	30	17
	Specific Learning Disability	43	327	18	12

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.B.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, October 2012

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Assistive Device No Interference	English-Only	19	344	19	42
Beneficial Time	English-Only	252	324	27	18
	English-Learner	129	313	22	5
Dictionary	English-Only	482	326	27	21
	Initially Fluent English Proficient	13	333	16	23
	Reclassified Fluent English Proficient	24	341	24	33
	English-Learner	380	323	23	12
	Unknown	13	319	21	8
Essay Responses (EO)	English-Only	22	333	26	41
Essay Responses (ER)	English-Only	38	340	24	42
	English-Learner	13	339	21	46
IEP or Section 504 Plan	English-Only	5,062	325	27	18
	Initially Fluent English Proficient	206	327	24	18
	Reclassified Fluent English Proficient	352	334	25	29
	English-Learner	3,960	319	22	8
	Unknown	107	327	21	14
Large Print Version	English-Only	12	341	48	33
Oral Presentation	English-Only	1,069	330	26	23
	Initially Fluent English Proficient	42	328	20	19
	Reclassified Fluent English Proficient	97	333	23	27
	English-Learner	819	322	22	12
	Unknown	11	328	30	18
Oral Responses Dictated to a Scribe	English-Only	14	329	30	21
Sign Language	English-Only	18	304	22	6
	English-Learner	27	302	17	0
Spell Checker or Grammar Checker	English-Only	71	330	22	18
	English-Learner	51	322	23	10
Spell Checker or Grammar Checker Off	English-Only	42	344	34	48
Supervised Breaks	English-Only	1,122	323	27	17
	Initially Fluent English Proficient	44	324	26	11
	Reclassified Fluent English Proficient	61	333	26	26
	English-Learner	686	319	23	10
	Unknown	46	324	21	9
Test Over More Than One Day	English-Only	305	326	29	22
	English-Learner	157	317	23	10
Tested at Home or Hospital	English-Only	12	340	45	58
Transfer of Student T/B Responses to A/D	English-Only	43	332	29	30
	English-Learner	12	315	25	8
Unlisted Accommodation	English-Only	209	326	24	15
	Initially Fluent English Proficient	11	331	25	18
	Reclassified Fluent English Proficient	12	322	30	25
	English-Learner	153	325	20	7
Unlisted Modification	English-Only	27	321	24	11
	English-Learner	11	317	31	18

Table 2.B.9 (Continued)

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Writing Only	English-Only	71	310	24	3
	English-Learner	81	308	18	0

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.B.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—Mathematics, October 2012

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	English-Only	228	334	20	18
	Reclassified Fluent English Proficient	16	336	22	25
	English-Learner	92	329	17	12
Beneficial Time	English-Only	217	328	22	15
	English-Learner	113	323	17	8
Calculator	English-Only	2,182	333	22	19
	Initially Fluent English Proficient	83	333	19	19
	Reclassified Fluent English Proficient	171	339	21	29
	English-Learner	1,280	328	18	11
	Unknown	40	337	21	28
Dictionary for Math	English-Only	148	334	22	18
	English-Learner	84	326	15	7
IEP or Section 504 Plan	English-Only	5,326	331	22	17
	Initially Fluent English Proficient	221	331	20	16
	Reclassified Fluent English Proficient	405	338	20	29
	English-Learner	3,449	327	18	11
	Unknown	114	334	21	19
Large Print Version	English-Only	11	344	31	27
Math Manipulatives	English-Only	32	358	35	56
Oral Presentation	English-Only	732	337	26	24
	Initially Fluent English Proficient	23	332	18	22
	Reclassified Fluent English Proficient	59	338	25	29
	English-Learner	437	329	21	13
Sign Language	English-Only	22	324	21	9
	English-Learner	17	327	16	12
Supervised Breaks	English-Only	1,003	330	23	15
	Initially Fluent English Proficient	43	326	19	14
	Reclassified Fluent English Proficient	61	340	24	36
	English-Learner	509	328	20	12
	Unknown	18	315	16	0
Test Over More Than One Day	English-Only	235	332	26	22
	English-Learner	72	328	22	15
Tested at Home or Hospital	English-Only	14	351	41	43
Transfer of Student T/B Responses to A/D	English-Only	41	347	27	44
Unlisted Accommodation	English-Only	214	328	20	13
	Initially Fluent English Proficient	13	331	16	8
	Reclassified Fluent English Proficient	13	335	22	31
	English-Learner	123	332	19	15
Unlisted Modification	English-Only	46	329	23	17
	English-Learner	21	321	17	5

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Appendix 2.C: Results of Testing Variations and Disability Analyses—November 2012

Table 2.C.1: Summary Statistics by Testing Variations and Disability—ELA, November 2012

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	4,287	323	27	17
Modifications	6,398	327	24	19
All	10,685	326	25	18
Disability				
Unknown	-	-	-	-
Autism	911	328	27	21
Deaf	281	309	22	5
Deaf-Blindness	-	-	-	-
Emotional Disturbance	1,807	323	34	22
Hard of Hearing	262	322	24	14
Mental Retardation	616	305	19	3
Multiple Disabilities	39	308	22	8
Orthopedic Impairment	207	324	27	20
Other Health Impairment	2,324	330	28	24
Specific Learning Disability	19,016	326	24	17
Speech or Language Impairment	1,331	329	24	20
Traumatic Brain Injury	113	323	25	13
Visual Impairment	85	331	27	32

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.C.2: Summary Statistics by Testing Variations and Disability—Mathematics, November 2012

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	3,376	327	21	14
Modifications	9,762	333	20	19
All	13,138	332	20	17
Disability				
Unknown	-	-	-	-
Autism	830	334	23	21
Deaf	207	328	19	14
Deaf-Blindness	-	-	-	-
Emotional Disturbance	1,968	329	26	17
Hard of Hearing	217	329	20	16
Mental Retardation	612	317	17	3
Multiple Disabilities	38	321	20	3
Orthopedic Impairment	201	328	21	15
Other Health Impairment	2,478	333	23	21
Specific Learning Disability	18,149	330	19	15
Speech or Language Impairment	1,139	333	20	17
Traumatic Brain Injury	100	330	22	15
Visual Impairment	76	331	26	22

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.C.3: Demographic Summary for All Examinees by Testing Variations—ELA, November 2012

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading[2] Mean Percent Correct			Writing[2] Mean Percent Correct		Writing Applications Mean Score[3]
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	22,500	4,033	18	18,467	82	325	48	48	49	39	47	1.8
Transfer of T/B Responses to A/D (TS)	137	34	25	103	75	328	55	48	50	42	47	1.8
Oral Responses Dictated to a Scribe (OR)	59	12	20	47	80	329	53	50	53	39	48	1.9
Spell Checker/Grammar Checker Off (SO)	166	47	28	119	72	333	54	53	54	42	52	1.9
Essay Responses (EO)	93	34	37	59	63	338	60	57	56	50	53	1.8
Assistive Device No Interference (AN)	49	14	29	35	71	329	55	51	50	40	50	1.9
Braille Version (BV)	13	1	8	12	92	323	47	42	45	44	47	1.8
Large Print Version (LV)	60	18	30	42	70	330	56	51	51	43	49	1.8
Test Over More Than One Day (TD)	1,317	232	18	1,085	82	325	47	47	49	38	46	1.8
Supervised Breaks (SB)	4,448	763	17	3,685	83	324	47	47	48	38	46	1.8
Beneficial Time (BT)	626	94	15	532	85	317	44	43	43	36	42	1.5
Tested at Home or Hospital (HH)	43	17	40	26	60	343	58	58	57	47	58	2.0
Dictionary (DI)	1,710	309	18	1,401	82	327	52	48	50	39	48	1.9
Sign Language (SL)	77	8	10	69	90	314	40	36	44	34	40	1.7
Oral Presentation (OP)	5,387	1,058	20	4,329	80	328	51	49	52	41	48	1.8
Spell Checker or Grammar Checker (SC)	418	79	19	339	81	328	50	49	50	40	48	2.0
Essay Responses (ER)	85	21	25	64	75	333	51	48	54	46	47	2.2
Assistive Device (AD)	32	14	44	18	56	345	58	56	57	49	56	2.5
Unlisted Modification (UM)	60	11	18	49	82	324	45	47	47	40	46	1.9
Unlisted Accommodation (UA)	580	118	20	462	80	328	48	50	51	41	48	1.9
Writing Only (WO)	485	56	12	429	88	318	39	42	44	35	45	1.7

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response & Analysis, WS — Writing Strategies, WC — Writing Conventions

[3]Writing Applications Mean Score is based on the unweighted score.

Table 2.C.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, November 2012

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	22,262	3,622	16	18,640	84	331	45	46	42	39	32
Transfer of T/B Responses to A/D (TS)	128	22	17	106	83	333	44	49	43	40	34
Oral Responses Dictated to a Scribe (OR)	41	13	32	28	68	341	53	52	47	47	38
Braille Version (BV)	11	0	0	11	100	327	43	45	35	38	29
Large Print Version (LV)	51	16	31	35	69	338	49	52	45	42	35
Test Over More Than One Day (TD)	762	134	18	628	82	331	46	47	42	40	32
Supervised Breaks (SB)	3,808	603	16	3,205	84	329	45	45	41	38	31
Beneficial Time (BT)	589	67	11	522	89	325	42	43	38	35	29
Tested at Home or Hospital (HH)	38	13	34	25	66	340	53	52	47	43	38
Dictionary for Math (DM)	208	39	19	169	81	332	46	50	41	41	31
Sign Language (SL)	104	12	12	92	88	328	40	44	40	38	33
Oral Presentation (OP)	3,084	523	17	2,561	83	332	45	49	42	41	32
Calculator (CA)	9,671	1,797	19	7,874	81	333	46	51	42	41	32
Arithmetic Table (AT)	892	177	20	715	80	335	48	52	43	43	32
Math Manipulatives (MM)	50	17	34	33	66	344	51	56	48	52	40
Assistive Device (AD)	15	3	20	12	80	338	51	57	43	47	24
Unlisted Modification (UM)	89	19	21	70	79	334	47	52	43	40	34
Unlisted Accommodation (UA)	513	91	18	422	82	332	46	46	44	40	33

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1

Table 2.C.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, November 2012

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	285	307	323	343	368	388	325	26	22,500
Transfer of T/B Responses to A/D (TS)	276	285	307	326	348	368	388	328	26	137
Oral Responses Dictated to a Scribe (OR)	275	278	308	333	343	378	412	329	29	59
Spell Checker/Grammar Checker Off (SO)	275	291	314	331	353	373	394	333	26	166
Essay Responses (EO)	275	283	316	341	361	388	412	338	31	93
Assistive Device No Interference (AN)	285	285	310	329	351	366	386	329	25	49
Braille Version (BV)	298	298	314	318	330	371	371	323	20	13
Large Print Version (LV)	281	286	308	329	352	366	430	330	30	60
Test Over More Than One Day (TD)	275	281	305	325	344	368	383	325	26	1,317
Supervised Breaks (SB)	275	283	303	322	343	368	388	324	26	4,448
Beneficial Time (BT)	275	276	295	310	337	368	388	317	28	626
Tested at Home or Hospital (HH)	275	297	322	337	361	425	448	343	40	43
Dictionary (DI)	276	289	308	327	343	368	388	327	25	1,710
Sign Language (SL)	275	281	295	308	331	357	383	314	24	77
Oral Presentation (OP)	276	289	310	327	344	370	386	328	24	5,387
Spell Checker or Grammar Checker (SC)	278	289	310	327	344	373	394	328	25	418
Essay Responses (ER)	278	291	314	331	348	375	383	333	25	85
Assistive Device (AD)	297	301	323	345	363	404	442	345	32	32
Unlisted Modification (UM)	275	289	305	323	342	365	378	324	24	60
Unlisted Accommodation (UA)	275	289	307	328	346	369	391	328	25	580
Writing Only (WO)	275	283	297	312	339	359	375	318	25	485

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.C.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, November 2012

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	287	301	316	330	344	365	389	331	21	22,262
Transfer of T/B Responses to A/D (TS)	277	306	318	332	344	375	394	333	22	128
Oral Responses Dictated to a Scribe (OR)	298	303	318	335	358	394	423	341	30	41
Braille Version (BV)	298	298	316	330	335	349	349	327	15	11
Large Print Version (LV)	293	296	314	326	352	423	450	338	36	51
Test Over More Than One Day (TD)	275	298	318	331	344	367	384	331	21	762
Supervised Breaks (SB)	281	298	314	328	342	367	397	329	22	3,808
Beneficial Time (BT)	275	293	310	324	338	361	389	325	22	589
Tested at Home or Hospital (HH)	287	293	318	331	356	397	450	340	34	38
Dictionary for Math (DM)	293	308	318	330	344	369	384	332	19	208
Sign Language (SL)	293	301	318	328	338	363	373	328	18	104
Oral Presentation (OP)	290	303	318	331	344	369	397	332	21	3,084
Calculator (CA)	293	306	320	331	345	367	389	333	20	9,671
Arithmetic Table (AT)	296	308	322	333	347	369	389	335	19	892
Math Manipulatives (MM)	298	314	330	342	356	384	429	344	23	50
Assistive Device (AD)	298	298	326	333	344	406	406	338	24	15
Unlisted Modification (UM)	275	301	320	335	345	377	403	334	22	89
Unlisted Accommodation (UA)	293	301	316	330	344	377	403	332	23	513

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.C.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, November 2012

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Assistive Device	Specific Learning Disability	15	338	23	40
Assistive Device No Interference	Specific Learning Disability	27	335	23	33
Beneficial Time	Autism	29	310	28	14
	Emotional Disturbance	154	311	30	14
	Mental Retardation	26	300	21	4
	Other Health Impairment	57	318	34	21
	Specific Learning Disability	309	321	26	16
Dictionary	Autism	50	331	18	14
	Deaf	11	297	9	0
	Emotional Disturbance	47	316	25	9
	Hard of Hearing	19	324	23	16
	Mental Retardation	44	312	27	14
	Orthopedic Impairment	13	323	23	15
	Other Health Impairment	107	328	27	22
	Specific Learning Disability	1,262	329	24	19
	Speech or Language Impairment	66	323	20	9
Essay Responses (EO)	Orthopedic Impairment	13	332	30	31
	Specific Learning Disability	39	343	28	38
Essay Responses (ER)	Specific Learning Disability	42	333	23	24
IEP or Section 504 Plan	Autism	738	328	27	20
	Deaf	225	308	21	4
	Emotional Disturbance	1,478	323	33	22
	Hard of Hearing	207	321	23	12
	Mental Retardation	514	305	18	3
	Multiple Disabilities	34	308	23	9
	Orthopedic Impairment	170	324	27	19
	Other Health Impairment	1,788	330	27	23
	Specific Learning Disability	14,826	325	24	17
	Speech or Language Impairment	931	327	23	18
	Traumatic Brain Injury	89	322	25	12
	Visual Impairment	74	332	25	31
Large Print Version	Visual Impairment	31	329	26	32
Oral Presentation	Autism	189	325	24	15
	Emotional Disturbance	129	323	29	22
	Hard of Hearing	52	322	22	17
	Mental Retardation	163	309	20	6
	Orthopedic Impairment	49	328	27	22
	Other Health Impairment	400	330	25	23
	Specific Learning Disability	3,812	329	23	20
	Speech or Language Impairment	268	328	20	18
	Traumatic Brain Injury	27	322	31	15
	Visual Impairment	26	341	26	54
Oral Responses Dictated to a Scribe	Orthopedic Impairment	11	331	32	27
	Specific Learning Disability	17	335	23	29

Table 2.C.7 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Sign Language	Deaf	56	309	23	5
	Hard of Hearing	16	326	22	19
Spell Checker or Grammar Checker	Autism	16	337	22	38
	Deaf	17	299	12	0
	Other Health Impairment	46	334	32	20
	Specific Learning Disability	266	330	23	19
	Speech or Language Impairment	35	325	22	20
Spell Checker or Grammar Checker Off	Autism	20	339	35	45
	Other Health Impairment	18	342	22	33
	Specific Learning Disability	84	330	25	25
Supervised Breaks	Autism	178	320	27	16
	Deaf	13	315	20	8
	Emotional Disturbance	431	319	32	19
	Hard of Hearing	42	318	22	14
	Mental Retardation	140	305	21	4
	Orthopedic Impairment	41	325	27	22
	Other Health Impairment	343	329	29	23
	Specific Learning Disability	2,808	325	25	17
	Speech or Language Impairment	142	326	21	13
	Traumatic Brain Injury	23	310	20	0
	Visual Impairment	20	336	29	45
Test Over More Than One Day	Autism	52	330	26	23
	Deaf	17	299	12	0
	Emotional Disturbance	130	315	32	18
	Hard of Hearing	12	311	19	0
	Mental Retardation	34	311	24	9
	Orthopedic Impairment	16	321	28	25
	Other Health Impairment	91	321	28	14
	Specific Learning Disability	843	327	24	17
	Speech or Language Impairment	48	333	25	27
Tested at Home or Hospital	Specific Learning Disability	13	348	37	31
Transfer of Student T/B Responses to A/D	Other Health Impairment	19	339	23	42
	Specific Learning Disability	46	330	25	22
	Visual Impairment	26	325	24	19
Unlisted Accommodation	Autism	23	333	25	26
	Emotional Disturbance	23	326	26	22
	Other Health Impairment	47	330	24	23
	Specific Learning Disability	411	328	24	18
	Speech or Language Impairment	17	322	22	12
Unlisted Modification	Specific Learning Disability	42	324	25	17
Writing Only	Autism	15	319	25	7
	Deaf	90	302	17	2
	Mental Retardation	19	300	14	0

Table 2.C.7 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
	Other Health Impairment	29	326	29	24
	Specific Learning Disability	285	323	24	13

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.C.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, November 2012

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	Autism	30	334	18	10
	Emotional Disturbance	27	332	21	19
	Mental Retardation	17	328	28	24
	Orthopedic Impairment	11	331	23	27
	Other Health Impairment	82	339	23	29
	Specific Learning Disability	660	335	18	19
	Speech or Language Impairment	27	340	19	22
Beneficial Time	Autism	31	324	22	10
	Emotional Disturbance	152	320	24	9
	Mental Retardation	17	311	16	0
	Other Health Impairment	56	327	26	21
	Specific Learning Disability	287	327	19	10
Calculator	Autism	340	336	21	23
	Deaf	31	336	18	26
	Emotional Disturbance	460	332	22	18
	Hard of Hearing	63	332	18	16
	Mental Retardation	223	322	19	6
	Multiple Disabilities	13	324	25	8
	Orthopedic Impairment	80	331	22	16
	Other Health Impairment	840	336	21	23
	Specific Learning Disability	6,625	333	19	18
	Speech or Language Impairment	424	334	18	18
	Traumatic Brain Injury	51	334	24	22
	Visual Impairment	27	337	27	30
Dictionary for Math	Other Health Impairment	12	332	26	25
	Specific Learning Disability	159	332	18	18
IEP or Section 504 Plan	Autism	679	334	23	21
	Deaf	174	328	18	14
	Emotional Disturbance	1,635	328	25	16
	Hard of Hearing	170	329	19	14
	Mental Retardation	517	317	17	3
	Multiple Disabilities	34	322	19	3
	Orthopedic Impairment	168	328	21	15
	Other Health Impairment	1,939	332	22	20
	Specific Learning Disability	14,462	331	19	15
	Speech or Language Impairment	815	332	19	15
	Traumatic Brain Injury	84	330	23	17
	Visual Impairment	67	331	26	21
Large Print Version	Visual Impairment	23	330	24	26
Math Manipulatives	Specific Learning Disability	23	341	21	30

Table 2.C.8 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Oral Presentation	Autism	113	332	21	15
	Emotional Disturbance	87	330	27	17
	Hard of Hearing	22	327	17	14
	Mental Retardation	119	321	21	5
	Orthopedic Impairment	33	329	23	15
	Other Health Impairment	264	335	22	21
	Specific Learning Disability	2,098	333	20	17
	Speech or Language Impairment	142	332	18	15
	Traumatic Brain Injury	19	326	33	11
	Visual Impairment	21	334	25	24
Oral Responses Dictated to a Scribe	Orthopedic Impairment	12	333	34	17
	Specific Learning Disability	12	346	28	42
Sign Language	Deaf	70	327	17	10
	Hard of Hearing	11	322	20	9
	Specific Learning Disability	15	336	19	20
Supervised Breaks	Autism	142	332	21	15
	Emotional Disturbance	437	326	25	14
	Hard of Hearing	30	316	17	3
	Mental Retardation	113	318	23	6
	Orthopedic Impairment	29	328	23	21
	Other Health Impairment	335	333	25	23
	Specific Learning Disability	2,323	330	21	16
	Speech or Language Impairment	115	329	19	10
	Traumatic Brain Injury	21	324	22	10
	Visual Impairment	19	330	27	16
Test Over More Than One Day	Autism	31	339	24	29
	Emotional Disturbance	97	327	25	12
	Mental Retardation	12	328	20	17
	Other Health Impairment	66	328	21	15
	Specific Learning Disability	454	332	20	17
	Speech or Language Impairment	34	330	20	9
Transfer of Student T/B Responses to A/D	Orthopedic Impairment	11	322	21	9
	Other Health Impairment	13	332	23	15
	Specific Learning Disability	46	338	17	15
	Visual Impairment	24	329	23	21
Unlisted Accommodation	Autism	20	330	19	10
	Emotional Disturbance	32	331	27	22
	Other Health Impairment	47	339	27	34
	Specific Learning Disability	349	331	21	15
	Speech or Language Impairment	13	328	20	8
Unlisted Modification	Specific Learning Disability	68	333	22	19

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.C.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, November 2012

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Assistive Device	English-Only	25	350	32	48
Assistive Device No Interference	English-Only	32	331	28	38
	English-Learner	12	321	12	0
Beneficial Time	English-Only	436	317	30	16
	English-Learner	162	317	26	11
	Unknown	13	309	23	8
Dictionary	English-Only	864	330	26	22
	Initially Fluent English Proficient	46	332	22	22
	Reclassified Fluent English Proficient	49	335	23	31
	English-Learner	728	323	22	13
	Unknown	23	325	28	17
Essay Responses (EO)	English-Only	67	340	28	37
	English-Learner	22	326	36	23
Essay Responses (ER)	English-Only	55	334	23	22
	English-Learner	25	329	27	24
IEP or Section 504 Plan	English-Only	12,776	327	27	21
	Initially Fluent English Proficient	481	330	25	22
	Reclassified Fluent English Proficient	885	334	26	30
	English-Learner	8,111	322	23	12
	Unknown	247	324	26	19
Large Print Version	English-Only	38	335	31	34
	English-Learner	21	322	25	24
Oral Presentation	English-Only	2,746	331	25	24
	Initially Fluent English Proficient	129	332	23	23
	Reclassified Fluent English Proficient	225	337	21	29
	English-Learner	2,249	324	23	14
	Unknown	38	325	23	21
Oral Responses Dictated to a Scribe	English-Only	25	332	33	32
	English-Learner	30	325	26	10
Sign Language	English-Only	50	317	25	12
	English-Learner	24	305	21	4
Spell Checker or Grammar Checker	English-Only	226	329	27	22
	Initially Fluent English Proficient	15	336	20	20
	Reclassified Fluent English Proficient	14	337	27	21
	English-Learner	162	325	22	15
Spell Checker or Grammar Checker Off	English-Only	112	338	28	37
	English-Learner	43	323	18	9

Table 2.C.9 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Supervised Breaks	English-Only	2,565	325	28	20
	Initially Fluent English Proficient	80	328	23	19
	Reclassified Fluent English Proficient	219	331	26	26
	English-Learner	1,543	320	23	11
	Unknown	41	320	29	15
Test Over More Than One Day	English-Only	723	324	28	19
	Initially Fluent English Proficient	23	322	22	9
	Reclassified Fluent English Proficient	40	337	26	40
	English-Learner	522	325	23	14
Tested at Home or Hospital	English-Only	30	351	41	47
Transfer of Student T/B Responses to A/D	English-Only	93	331	27	28
	English-Learner	37	322	25	19
Unlisted Accommodation	English-Only	371	331	26	25
	Reclassified Fluent English Proficient	12	332	32	33
	English-Learner	188	322	22	11
Unlisted Modification	English-Only	38	328	24	24
	English-Learner	16	322	25	13
Writing Only	English-Only	299	318	25	12
	Initially Fluent English Proficient	13	315	26	15
	English-Learner	161	315	24	9

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.C.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—Mathematics, November 2012

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	English-Only	525	336	20	22
	Initially Fluent English Proficient	13	336	17	15
	Reclassified Fluent English Proficient	31	339	17	26
	English-Learner	318	333	17	15
Assistive Device	English-Only	12	337	26	17
Beneficial Time	English-Only	408	325	22	12
	Initially Fluent English Proficient	12	333	20	25
	English-Learner	147	324	20	9
	Unknown	13	318	17	0
Calculator	English-Only	5,575	334	20	20
	Initially Fluent English Proficient	234	335	19	25
	Reclassified Fluent English Proficient	411	338	18	26
	English-Learner	3,340	331	18	14
	Unknown	111	337	24	25
Dictionary for Math	English-Only	125	333	18	21
	English-Learner	78	331	19	14
IEP or Section 504 Plan	English-Only	13,265	331	21	17
	Initially Fluent English Proficient	522	333	21	21
	Reclassified Fluent English Proficient	944	337	20	24
	English-Learner	7,264	329	19	13
	Unknown	267	331	23	17
Large Print Version	English-Only	37	342	39	35
	English-Learner	13	325	23	15
Math Manipulatives	English-Only	33	341	24	24
	English-Learner	12	354	19	67
Oral Presentation	English-Only	1,720	333	22	18
	Initially Fluent English Proficient	65	336	20	26
	Reclassified Fluent English Proficient	105	337	17	22
	English-Learner	1,176	330	20	14
	Unknown	18	347	31	39
Oral Responses Dictated to a Scribe	English-Only	26	341	23	31
	English-Learner	13	333	35	31
Sign Language	English-Only	72	328	19	13
	English-Learner	28	329	16	7
Supervised Breaks	English-Only	2,310	330	23	16
	Initially Fluent English Proficient	85	332	22	21
	Reclassified Fluent English Proficient	213	336	21	26

Table 2.C.10 (Continued)

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
	English-Learner	1,159	327	20	12
	Unknown	41	333	24	20
Test Over More Than One Day	English-Only	426	332	23	20
	Initially Fluent English Proficient	17	329	19	18
	Reclassified Fluent English Proficient	25	341	22	32
	English-Learner	286	330	18	12
Tested at Home or Hospital	English-Only	27	345	36	41
Transfer of Student T/B Responses to A/D	English-Only	96	333	24	19
	English-Learner	25	329	15	12
Unlisted Accommodation	English-Only	348	335	25	22
	English-Learner	149	326	17	7
Unlisted Modification	English-Only	64	337	21	25
	English-Learner	20	327	19	5

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Appendix 2.D: Results of Testing Variations and Disability Analyses—December 2012

Table 2.D.1: Summary Statistics by Testing Variations and Disability—ELA, December 2012

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	40	330	24	23
Modifications	58	328	24	16
All	98	329	24	18
Disability				
Autism	14	332	29	21
Deaf-Blindness	-	-	-	-
Emotional Disturbance	-	-	-	-
Hard of Hearing	-	-	-	-
Mental Retardation	-	-	-	-
Multiple Disabilities	-	-	-	-
Orthopedic Impairment	-	-	-	-
Other Health Impairment	25	326	21	12
Specific Learning Disability	277	322	25	13
Speech or Language Impairment	-	-	-	-
Traumatic Brain Injury	-	-	-	-

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.D.2: Summary Statistics by Testing Variations and Disability—Mathematics, December 2012

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	20	340	22	45
Modifications	93	337	20	19
All	113	337	20	24
Disability				
Autism	15	330	19	13
Deaf	-	-	-	-
Emotional Disturbance	-	-	-	-
Mental Retardation	-	-	-	-
Multiple Disabilities	-	-	-	-
Orthopedic Impairment	-	-	-	-
Other Health Impairment	27	334	17	15
Specific Learning Disability	231	333	19	19
Speech or Language Impairment	-	-	-	-
Traumatic Brain Injury	-	-	-	-

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.D.3: Demographic Summary for All Examinees by Testing Variations—ELA, December 2012

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading[2] Mean Percent Correct			Writing[2] Mean Percent Correct		Writing Applications Mean Score[3]
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	220	32	15	188	85	325	47	52	49	40	51	2.0
Transfer of T/B Responses to A/D (TS)	-	-	-	-	-	-	-	-	-	-	-	-
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-	-	-
Spell Checker/Grammar Checker Off (SO)	-	-	-	-	-	-	-	-	-	-	-	-
Essay Responses (EO)	-	-	-	-	-	-	-	-	-	-	-	-
Assistive Device No Interference (AN)	-	-	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	18	3	17	15	83	328	46	55	56	42	45	2.1
Supervised Breaks (SB)	25	8	32	17	68	337	53	60	58	48	57	2.0
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	23	5	22	18	78	334	54	56	53	45	55	2.2
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	48	9	19	39	81	329	51	53	52	47	49	2.0
Spell Checker or Grammar Checker (SC)	13	2	15	11	85	325	40	53	52	42	44	2.2
Essay Responses (ER)	-	-	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	14	7	50	7	50	350	63	68	70	56	59	2.1
Writing Only (WO)	-	-	-	-	-	-	-	-	-	-	-	-

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response & Analysis, WS — Writing Strategies, WC — Writing Conventions

[3]Writing Applications Mean Score is based on the unweighted score.

Table 2.D.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, December 2012

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	213	48	23	165	77	335	50	48	41	39	32
Transfer of T/B Responses to A/D (TS)	-	-	-	-	-	-	-	-	-	-	-
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	-	-	-	-	-	-	-	-	-	-	-
Supervised Breaks (SB)	11	4	36	7	64	339	45	53	45	43	38
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	-	-	-	-	-	-	-	-	-	-	-
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	31	9	29	22	71	336	50	50	43	40	30
Calculator (CA)	93	18	19	75	81	337	48	51	42	41	32
Arithmetic Table (AT)	25	1	4	24	96	329	44	42	36	39	28
Math Manipulatives (MM)	-	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	19	2	11	17	89	330	47	42	40	37	27

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1

Table 2.D.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, December 2012

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	281	306	325	343	362	380	325	24	220
Transfer of T/B Responses to A/D (TS)	-	-	-	-	-	-	-	-	-	-
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-
Spell Checker/Grammar Checker Off (SO)	-	-	-	-	-	-	-	-	-	-
Essay Responses (EO)	-	-	-	-	-	-	-	-	-	-
Assistive Device No Interference (AN)	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	298	298	311	320	347	362	362	328	21	18
Supervised Breaks (SB)	275	275	325	341	353	380	398	337	30	25
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	291	302	321	329	341	380	398	334	26	23
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	289	291	310	328	345	380	398	329	26	48
Spell Checker or Grammar Checker (SC)	298	298	311	317	341	358	358	325	19	13
Essay Responses (ER)	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	309	309	333	350	367	398	398	350	25	14
Writing Only (WO)	-	-	-	-	-	-	-	-	-	-

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.D.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, December 2012

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	283	303	323	336	349	369	388	335	20	213
Transfer of T/B Responses to A/D (TS)	-	-	-	-	-	-	-	-	-	-
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	-	-	-	-	-	-	-	-	-	-
Supervised Breaks (SB)	289	289	325	340	354	377	377	339	23	11
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	-	-	-	-	-	-	-	-	-	-
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	298	303	315	334	352	377	398	336	23	31
Calculator (CA)	298	308	325	336	345	377	393	337	20	93
Arithmetic Table (AT)	298	303	319	332	340	343	350	329	14	25
Math Manipulatives (MM)	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	298	298	315	336	343	350	350	330	16	19

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.D.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, December 2012

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Dictionary	Specific Learning Disability	16	336	25	19
IEP or Section 504 Plan	Autism	11	329	26	18
	Other Health Impairment	16	327	23	19
	Specific Learning Disability	172	325	24	15
Oral Presentation	Specific Learning Disability	36	326	24	14
Spell Checker or Grammar Checker	Specific Learning Disability	12	326	19	17
Supervised Breaks	Specific Learning Disability	21	338	28	33
Test Over More Than One Day	Specific Learning Disability	18	328	21	17
Unlisted Accommodation	Specific Learning Disability	13	347	25	46

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.D.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, December 2012

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	Specific Learning Disability	20	328	15	5
Calculator	Specific Learning Disability	71	337	21	23
IEP or Section 504 Plan	Other Health Impairment	18	333	16	11
	Specific Learning Disability	161	336	20	25
Oral Presentation	Specific Learning Disability	24	334	20	29
Unlisted Accommodation	Specific Learning Disability	17	330	16	12

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.D.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, December 2012

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Dictionary	English-Learner	11	326	16	9
IEP or Section 504 Plan	English-Only	94	326	26	18
	Reclassified Fluent English Proficient	14	326	18	7
	English-Learner	103	323	23	13
Oral Presentation	English-Only	25	331	30	24
	English-Learner	15	328	20	13
Supervised Breaks	English-Learner	14	328	25	21

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.D.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—Mathematics, December 2012

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	English-Only	19	327	14	0
Calculator	English-Only	60	339	21	22
	English-Learner	29	333	19	17
IEP or Section 504 Plan	English-Only	120	337	20	24
	Reclassified Fluent English Proficient	11	332	12	18
	English-Learner	73	333	20	22
Oral Presentation	English-Only	22	336	24	27
Unlisted Accommodation	English-Only	14	327	17	7

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Appendix 2.E: Results of Testing Variations and Disability Analyses—February 2013

Table 2.E.1: Summary Statistics by Testing Variations and Disability—ELA, February 2013

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	3,947	326	32	21
Modifications	3,730	324	24	14
All	7,677	325	29	18
Disability				
Unknown	-	-	-	-
Autism	976	345	41	39
Deaf	234	311	30	8
Emotional Disturbance	1,703	329	40	29
Hard of Hearing	279	337	37	31
Mental Retardation	547	300	19	1
Multiple Disabilities	39	327	33	13
Orthopedic Impairment	172	338	41	31
Other Health Impairment	2,129	338	35	35
Specific Learning Disability	15,944	327	27	19
Speech or Language Impairment	1,221	337	36	28
Traumatic Brain Injury	82	330	32	22
Visual Impairment	83	347	45	45

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.E.2: Summary Statistics by Testing Variations and Disability—Mathematics, February 2013

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	3,271	333	27	23
Modifications	5,845	331	22	17
All	9,116	332	24	19
Disability				
Unknown	-	-	-	-
Autism	937	352	39	42
Deaf	195	332	28	19
Deaf-Blindness	-	-	-	-
Emotional Disturbance	1,832	334	32	26
Hard of Hearing	242	346	35	33
Mental Retardation	540	314	18	3
Multiple Disabilities	39	333	30	15
Orthopedic Impairment	181	343	33	30
Other Health Impairment	2,215	342	31	34
Specific Learning Disability	15,507	334	24	22
Speech or Language Impairment	1,161	347	35	38
Traumatic Brain Injury	66	339	32	30
Visual Impairment	78	353	41	45

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.E.3: Demographic Summary for All Examinees by Testing Variations—ELA, February 2013

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading[2] Mean Percent Correct			Writing[2] Mean Percent Correct		Writing Applications Mean Score[3]
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	18,470	4,067	22	14,403	78	328	53	48	51	41	47	1.8
Transfer of T/B Responses to A/D (TS)	122	34	28	88	72	332	56	48	53	43	51	1.8
Oral Responses Dictated to a Scribe (OR)	51	14	27	37	73	331	60	48	55	43	49	1.7
Spell Checker/Grammar Checker Off (SO)	131	73	56	58	44	358	72	61	66	57	64	2.3
Essay Responses (EO)	69	17	25	52	75	330	59	50	53	42	46	1.8
Assistive Device No Interference (AN)	35	5	14	30	86	327	57	46	49	35	47	1.9
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	59	25	42	34	58	344	65	56	58	52	55	2.0
Test Over More Than One Day (TD)	944	141	15	803	85	323	51	45	47	38	44	1.7
Supervised Breaks (SB)	3,616	680	19	2,936	81	324	51	45	49	39	44	1.7
Beneficial Time (BT)	522	65	12	457	88	316	45	41	46	34	39	1.5
Tested at Home or Hospital (HH)	35	12	34	23	66	338	59	55	60	47	50	1.7
Dictionary (DI)	1,177	177	15	1,000	85	325	55	46	49	38	45	1.8
Sign Language (SL)	88	5	6	83	94	310	46	40	37	33	36	1.5
Oral Presentation (OP)	3,010	456	15	2,554	85	325	50	46	50	39	45	1.8
Spell Checker or Grammar Checker (SC)	215	34	16	181	84	322	50	44	46	36	43	1.9
Essay Responses (ER)	49	12	24	37	76	332	58	48	51	41	49	2.2
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	21	4	19	17	81	330	56	50	55	42	41	1.8
Unlisted Accommodation (UA)	526	107	20	419	80	327	50	48	51	40	47	1.8
Writing Only (WO)	339	32	9	307	91	315	43	41	42	34	41	1.6

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response & Analysis, WS — Writing Strategies, WC — Writing Conventions

[3]Writing Applications Mean Score is based on the unweighted score.

Table 2.E.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, February 2013

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	18,405	4,426	24	13,979	76	335	48	48	44	37	35
Transfer of T/B Responses to A/D (TS)	106	39	37	67	63	345	54	51	50	45	40
Oral Responses Dictated to a Scribe (OR)	37	7	19	30	81	330	46	46	40	34	28
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	46	20	43	26	57	347	56	50	49	48	47
Test Over More Than One Day (TD)	626	126	20	500	80	331	46	45	41	36	33
Supervised Breaks (SB)	3,183	651	20	2,532	80	332	46	45	41	36	33
Beneficial Time (BT)	465	59	13	406	87	326	43	43	37	32	28
Tested at Home or Hospital (HH)	36	10	28	26	72	340	49	52	46	40	36
Dictionary for Math (DM)	225	49	22	176	78	333	48	45	41	37	36
Sign Language (SL)	71	8	11	63	89	328	39	43	40	32	33
Oral Presentation (OP)	1,787	341	19	1,446	81	332	46	45	41	36	34
Calculator (CA)	5,752	990	17	4,762	83	331	45	46	41	35	32
Arithmetic Table (AT)	580	95	16	485	84	331	48	46	40	36	32
Math Manipulatives (MM)	60	23	38	37	62	341	52	48	47	43	37
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	42	7	17	35	83	329	45	45	37	34	31
Unlisted Accommodation (UA)	549	101	18	448	82	333	48	46	41	36	33

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1

Table 2.E.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, February 2013

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	282	306	325	347	385	420	328	31	18,470
Transfer of T/B Responses to A/D (TS)	275	280	304	326	353	400	448	332	38	122
Oral Responses Dictated to a Scribe (OR)	275	275	314	331	351	374	397	331	31	51
Spell Checker/Grammar Checker Off (SO)	292	302	325	355	379	430	450	358	39	131
Essay Responses (EO)	275	284	304	327	345	403	435	330	36	69
Assistive Device No Interference (AN)	284	286	306	319	339	379	450	327	32	35
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	275	282	314	341	367	415	450	344	39	59
Test Over More Than One Day (TD)	275	278	304	321	343	364	393	323	27	944
Supervised Breaks (SB)	275	278	302	321	343	379	407	324	30	3,616
Beneficial Time (BT)	275	275	294	312	335	364	393	316	29	522
Tested at Home or Hospital (HH)	275	275	302	335	367	415	450	338	43	35
Dictionary (DI)	275	286	308	323	341	367	390	325	25	1,177
Sign Language (SL)	275	278	295	308	319	364	420	310	24	88
Oral Presentation (OP)	275	286	308	323	341	364	387	325	24	3,010
Spell Checker or Grammar Checker (SC)	275	282	304	319	341	364	382	322	25	215
Essay Responses (ER)	280	300	317	329	349	369	397	332	24	49
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	275	275	300	335	347	382	407	330	36	21
Unlisted Accommodation (UA)	276	282	304	325	345	387	420	327	31	526
Writing Only (WO)	275	280	296	310	331	357	385	315	25	339

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.E.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, February 2013

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	285	302	316	330	348	386	423	335	27	18,405
Transfer of T/B Responses to A/D (TS)	294	300	320	339	367	415	428	345	34	106
Oral Responses Dictated to a Scribe (OR)	300	302	318	324	345	373	373	330	20	37
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	302	305	316	343	365	415	448	347	35	46
Test Over More Than One Day (TD)	275	294	316	332	345	373	396	331	23	626
Supervised Breaks (SB)	278	300	314	328	345	379	415	332	25	3,183
Beneficial Time (BT)	275	291	312	324	339	369	393	326	23	465
Tested at Home or Hospital (HH)	275	278	315	332	360	404	450	340	37	36
Dictionary for Math (DM)	278	302	316	328	345	381	411	333	25	225
Sign Language (SL)	285	302	318	324	334	375	401	328	19	71
Oral Presentation (OP)	285	302	316	328	343	375	411	332	24	1,787
Calculator (CA)	288	302	316	328	343	369	398	331	21	5,752
Arithmetic Table (AT)	288	302	318	330	344	365	379	331	19	580
Math Manipulatives (MM)	275	294	316	330	366	408	450	341	38	60
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	275	288	314	321	343	381	423	329	29	42
Unlisted Accommodation (UA)	288	302	316	330	345	381	415	333	25	549

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.E.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, February 2013

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Assistive Device No Interference	Specific Learning Disability	17	326	21	12
Beneficial Time	Autism	35	327	42	31
	Emotional Disturbance	126	309	32	10
	Mental Retardation	13	292	11	0
	Other Health Impairment	48	322	29	19
	Specific Learning Disability	244	318	24	11
Dictionary	Autism	20	325	17	5
	Deaf	11	308	12	0
	Emotional Disturbance	42	308	28	7
	Mental Retardation	26	306	23	0
	Other Health Impairment	67	330	29	15
	Specific Learning Disability	844	326	24	16
	Speech or Language Impairment	41	328	23	20
Essay Responses (EO)	Emotional Disturbance	14	311	26	7
	Specific Learning Disability	17	339	34	29
Essay Responses (ER)	Specific Learning Disability	18	336	26	33
IEP or Section 504 Plan	Autism	707	342	39	36
	Deaf	186	308	25	5
	Emotional Disturbance	1,306	327	38	27
	Hard of Hearing	189	329	32	24
	Mental Retardation	422	301	18	0
	Multiple Disabilities	30	325	29	10
	Orthopedic Impairment	131	333	36	26
	Other Health Impairment	1,491	334	34	31
	Specific Learning Disability	11,748	326	27	18
	Speech or Language Impairment	722	328	29	18
	Traumatic Brain Injury	55	325	27	15
	Visual Impairment	61	338	41	36
Large Print Version	Visual Impairment	28	347	40	50
Oral Presentation	Autism	100	325	26	16
	Emotional Disturbance	90	320	31	21
	Hard of Hearing	26	325	26	19
	Mental Retardation	104	306	19	1
	Orthopedic Impairment	22	325	18	9
	Other Health Impairment	218	328	25	18
	Specific Learning Disability	2,144	325	24	16
	Speech or Language Impairment	140	320	20	6
	Traumatic Brain Injury	14	331	31	29
Oral Responses Dictated to a Scribe	Specific Learning Disability	16	340	23	25
Sign Language	Deaf	58	305	18	2
	Hard of Hearing	16	319	26	13
Spell Checker or Grammar Checker	Deaf	17	298	18	0
	Other Health Impairment	15	337	29	40
	Specific Learning Disability	136	324	24	17
	Speech or Language Impairment	12	315	20	0

Table 2.E.7 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Spell Checker or Grammar Checker Off	Autism	22	365	42	68
	Other Health Impairment	18	364	36	67
	Specific Learning Disability	54	348	35	44
Supervised Breaks	Autism	162	336	40	31
	Deaf	20	315	38	10
	Emotional Disturbance	388	317	37	20
	Hard of Hearing	31	327	31	16
	Mental Retardation	114	299	18	0
	Orthopedic Impairment	29	329	30	21
	Other Health Impairment	314	329	32	27
	Specific Learning Disability	2,180	324	27	17
	Speech or Language Impairment	126	321	28	16
	Traumatic Brain Injury	19	322	21	11
	Visual Impairment	12	325	48	33
Test Over More Than One Day	Autism	40	327	31	18
	Deaf	17	300	20	0
	Emotional Disturbance	84	312	32	11
	Hard of Hearing	11	323	31	27
	Mental Retardation	28	302	16	0
	Other Health Impairment	66	325	28	15
	Specific Learning Disability	605	325	25	16
	Speech or Language Impairment	24	326	29	13
Transfer of Student T/B Responses to A/D	Autism	11	327	43	27
	Other Health Impairment	14	344	37	36
	Specific Learning Disability	49	329	33	27
	Visual Impairment	18	342	42	39
Unlisted Accommodation	Autism	18	333	38	33
	Emotional Disturbance	28	312	36	11
	Other Health Impairment	48	340	33	42
	Specific Learning Disability	361	324	26	15
	Speech or Language Impairment	22	331	42	23
Writing Only	Autism	12	311	23	0
	Deaf	80	303	17	0
	Emotional Disturbance	14	316	22	7
	Hard of Hearing	14	314	24	14
	Mental Retardation	21	296	12	0
	Other Health Impairment	20	321	26	20
	Specific Learning Disability	152	322	25	14

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.E.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, February 2013

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	Autism	22	329	19	14
	Emotional Disturbance	24	331	23	21
	Other Health Impairment	36	332	21	19
	Specific Learning Disability	429	332	19	17
	Speech or Language Impairment	18	333	20	17
Beneficial Time	Autism	32	325	28	13
	Emotional Disturbance	106	322	27	13
	Mental Retardation	11	300	16	0
	Other Health Impairment	46	329	26	20
	Specific Learning Disability	210	327	18	10
Calculator	Autism	205	337	29	26
	Deaf	31	332	28	13
	Emotional Disturbance	339	329	23	18
	Hard of Hearing	42	331	17	12
	Mental Retardation	146	319	22	6
	Multiple Disabilities	11	320	14	0
	Orthopedic Impairment	50	331	17	14
	Other Health Impairment	491	333	23	19
	Specific Learning Disability	3,888	331	20	17
	Speech or Language Impairment	203	331	20	18
	Traumatic Brain Injury	13	333	27	8
	Visual Impairment	15	326	18	7
Dictionary for Math	Emotional Disturbance	14	344	41	36
	Specific Learning Disability	157	331	21	21
IEP or Section 504 Plan	Autism	691	348	37	37
	Deaf	147	328	24	15
	Emotional Disturbance	1,421	333	31	25
	Hard of Hearing	162	336	28	22
	Mental Retardation	412	314	18	3
	Multiple Disabilities	32	330	25	13
	Orthopedic Impairment	137	338	31	26
	Other Health Impairment	1,579	339	28	30
	Specific Learning Disability	11,581	333	23	20
	Speech or Language Impairment	693	338	29	28
	Traumatic Brain Injury	41	335	30	24
	Visual Impairment	58	342	35	34
Large Print Version	Visual Impairment	25	355	37	52
Math Manipulatives	Specific Learning Disability	19	330	21	16

Table 2.E.8 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Oral Presentation	Autism	67	331	23	19
	Emotional Disturbance	77	331	32	21
	Mental Retardation	71	315	21	4
	Orthopedic Impairment	14	332	17	21
	Other Health Impairment	144	334	26	19
	Specific Learning Disability	1,196	333	22	20
	Speech or Language Impairment	88	330	25	15
Sign Language	Deaf	48	328	20	10
	Hard of Hearing	12	327	21	17
Supervised Breaks	Autism	124	340	36	28
	Emotional Disturbance	359	327	30	20
	Hard of Hearing	20	338	28	15
	Mental Retardation	91	313	20	4
	Orthopedic Impairment	28	333	22	21
	Other Health Impairment	288	335	27	25
	Specific Learning Disability	1,917	332	22	19
	Speech or Language Impairment	110	334	24	26
	Traumatic Brain Injury	12	326	20	17
Test Over More Than One Day	Autism	30	325	23	13
	Emotional Disturbance	52	331	28	25
	Mental Retardation	14	310	34	7
	Other Health Impairment	44	338	24	27
	Specific Learning Disability	411	332	22	20
	Speech or Language Impairment	12	326	28	25
Transfer of Student T/B Responses to A/D	Other Health Impairment	12	341	32	33
	Specific Learning Disability	42	340	30	26
	Visual Impairment	14	347	30	43
Unlisted Accommodation	Autism	22	334	26	14
	Emotional Disturbance	32	329	38	16
	Other Health Impairment	52	340	25	31
	Specific Learning Disability	378	330	20	15
	Speech or Language Impairment	22	344	30	27
Unlisted Modification	Specific Learning Disability	28	336	26	21

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.E.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, February 2013

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Assistive Device No Interference	English-Only	24	331	33	17
Beneficial Time	English-Only	333	317	31	15
	Initially Fluent English Proficient	11	318	25	9
	Reclassified Fluent English Proficient	18	326	33	28
	English-Learner	138	313	24	7
	Unknown	22	313	27	5
Dictionary	English-Only	537	326	26	17
	Initially Fluent English Proficient	34	338	26	29
	Reclassified Fluent English Proficient	43	332	31	21
	English-Learner	555	322	22	12
Essay Responses (EO)	English-Only	51	329	37	22
	English-Learner	13	324	32	15
Essay Responses (ER)	English-Only	31	339	22	26
	English-Learner	17	318	21	18
IEP or Section 504 Plan	English-Only	11,042	332	34	27
	Initially Fluent English Proficient	450	327	31	20
	Reclassified Fluent English Proficient	810	341	31	36
	English-Learner	5,934	319	23	10
	Unknown	234	332	34	27
Large Print Version	English-Only	44	350	39	48
Oral Presentation	English-Only	1,552	327	25	18
	Initially Fluent English Proficient	68	327	28	19
	Reclassified Fluent English Proficient	115	333	24	21
	English-Learner	1,253	321	22	11
	Unknown	22	333	29	32
Oral Responses Dictated to a Scribe	English-Only	28	328	32	21
	English-Learner	13	323	29	23
Sign Language	English-Only	48	317	28	10
	English-Learner	38	303	16	0
Spell Checker or Grammar Checker	English-Only	103	326	26	21
	English-Learner	101	318	23	10
Spell Checker or Grammar Checker Off	English-Only	106	362	40	58
	English-Learner	18	333	28	33
Supervised Breaks	English-Only	2,213	327	33	23
	Initially Fluent English Proficient	84	325	28	14
	Reclassified Fluent English Proficient	149	335	32	29
	English-Learner	1,126	316	24	10
	Unknown	44	316	28	9

Table 2.E.9 (Continued)

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Test Over More Than One Day	English-Only	492	325	29	17
	Initially Fluent English Proficient	45	317	26	11
	Reclassified Fluent English Proficient	21	341	24	33
	English-Learner	382	320	24	11
Tested at Home or Hospital	English-Only	23	345	47	48
Transfer of Student T/B Responses to A/D	English-Only	86	337	38	34
	English-Learner	24	310	23	4
Unlisted Accommodation	English-Only	317	330	33	24
	Reclassified Fluent English Proficient	18	323	31	22
	English-Learner	171	320	24	11
	Unknown	14	337	38	29
Unlisted Modification	English-Only	14	327	30	14
Writing Only	English-Only	223	317	26	11
	Initially Fluent English Proficient	12	306	23	8
	English-Learner	91	309	20	4

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.E.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—Mathematics, February 2013

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	English-Only	375	332	21	18
	Reclassified Fluent English Proficient	15	337	18	20
	English-Learner	178	331	17	12
Beneficial Time	English-Only	321	326	24	13
	Initially Fluent English Proficient	12	320	24	8
	Reclassified Fluent English Proficient	18	333	29	33
	English-Learner	95	323	17	7
	Unknown	19	329	25	21
Calculator	English-Only	3,362	332	22	19
	Initially Fluent English Proficient	139	333	22	22
	Reclassified Fluent English Proficient	252	339	22	25
	English-Learner	1,926	328	19	13
	Unknown	73	335	24	19
Dictionary for Math	English-Only	137	338	28	30
	English-Learner	81	327	19	10
IEP or Section 504 Plan	English-Only	11,537	337	29	27
	Initially Fluent English Proficient	454	335	27	24
	Reclassified Fluent English Proficient	864	348	29	41
	English-Learner	5,312	329	20	14
	Unknown	238	340	30	30
Large Print Version	English-Only	33	348	31	48
Math Manipulatives	English-Only	42	333	35	29
Oral Presentation	English-Only	1,032	334	25	22
	Initially Fluent English Proficient	39	333	28	26
	Reclassified Fluent English Proficient	79	341	22	34
	English-Learner	622	328	20	12
	Unknown	15	336	20	13
Oral Responses Dictated to a Scribe	English-Only	25	329	19	20
Sign Language	English-Only	40	330	17	15
	English-Learner	27	324	20	4
Supervised Breaks	English-Only	2,039	333	27	23
	Initially Fluent English Proficient	77	329	23	17
	Reclassified Fluent English Proficient	149	344	29	38
	English-Learner	879	326	19	11
	Unknown	39	330	21	18
Test Over More Than One Day	English-Only	334	332	25	21
	Initially Fluent English Proficient	19	326	17	16
	Reclassified Fluent English Proficient	18	341	25	22
	English-Learner	246	328	21	17
Tested at Home or Hospital	English-Only	25	338	39	28

Table 2.E.10 (Continued)

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Transfer of Student T/B Responses to A/D	English-Only	71	346	34	39
	English-Learner	25	334	26	24
Unlisted Accommodation	English-Only	350	334	26	20
	Reclassified Fluent English Proficient	21	335	31	24
	English-Learner	153	329	19	10
	Unknown	18	340	23	39
Unlisted Modification	English-Only	29	325	27	10
	English-Learner	13	336	33	31

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Appendix 2.F: Results of Testing Variations and Disability Analyses—March 2013

Table 2.F.1: Summary Statistics by Testing Variations and Disability—ELA, March 2013

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	7,801	333	33	28
Modifications	4,622	325	25	16
All	12,423	330	30	24
Disability				
Unknown	-	-	-	-
Autism	2,371	349	43	46
Deaf	351	310	26	7
Deaf-Blindness	12	333	24	17
Emotional Disturbance	2,645	337	41	37
Hard of Hearing	600	346	40	41
Mental Retardation	716	303	22	3
Multiple Disabilities	54	315	30	9
Orthopedic Impairment	402	342	40	41
Other Health Impairment	4,963	345	35	44
Specific Learning Disability	29,929	332	28	26
Speech or Language Impairment	2,645	354	41	47
Traumatic Brain Injury	147	328	32	20
Visual Impairment	207	359	44	57

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.F.2: Summary Statistics by Testing Variations and Disability—Mathematics, March 2013

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	6,620	339	30	31
Modifications	7,635	335	23	22
All	14,255	337	27	26
Disability				
Unknown	-	-	-	-
Autism	2,280	361	43	53
Deaf	269	335	30	21
Deaf-Blindness	-	-	-	-
Emotional Disturbance	2,670	339	35	32
Hard of Hearing	559	356	39	46
Mental Retardation	695	315	18	4
Multiple Disabilities	59	329	28	14
Orthopedic Impairment	413	346	36	37
Other Health Impairment	5,040	347	33	41
Specific Learning Disability	29,284	338	27	29
Speech or Language Impairment	2,573	364	42	55
Traumatic Brain Injury	133	338	31	26
Visual Impairment	203	363	42	56

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.F.3: Demographic Summary for All Examinees by Testing Variations—ELA, March 2013

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading[2] Mean Percent Correct			Writing[2] Mean Percent Correct		Writing Applications Mean Score[3]
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	33,330	9,452	28	23,878	72	333	58	51	55	46	49	1.9
Transfer of T/B Responses to A/D (TS)	258	96	37	162	63	339	62	53	56	49	53	1.9
Oral Responses Dictated to a Scribe (OR)	60	30	50	30	50	347	67	60	61	54	55	2.0
Spell Checker/Grammar Checker Off (SO)	235	126	54	109	46	360	73	65	68	59	61	2.2
Essay Responses (EO)	96	41	43	55	57	346	66	59	60	53	53	2.1
Assistive Device No Interference (AN)	107	46	43	61	57	347	67	60	62	53	55	2.1
Braille Version (BV)	39	21	54	18	46	355	66	60	65	53	60	2.3
Large Print Version (LV)	141	60	43	81	57	346	63	58	61	54	56	2.0
Test Over More Than One Day (TD)	2,321	738	32	1,583	68	335	58	52	55	48	50	2.0
Supervised Breaks (SB)	6,377	1,485	23	4,892	77	329	55	49	52	44	46	1.9
Beneficial Time (BT)	841	133	16	708	84	320	50	44	48	38	41	1.7
Tested at Home or Hospital (HH)	83	42	51	41	49	347	68	61	63	53	56	1.9
Dictionary (DI)	1,580	220	14	1,360	86	324	55	46	49	40	43	1.9
Sign Language (SL)	39	2	5	37	95	317	52	39	42	40	40	1.7
Oral Presentation (OP)	3,637	586	16	3,051	84	325	54	46	51	41	44	1.9
Spell Checker or Grammar Checker (SC)	295	59	20	236	80	330	56	49	52	42	47	2.0
Essay Responses (ER)	73	18	25	55	75	336	61	51	53	46	49	2.2
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	22	5	23	17	77	334	60	48	57	52	48	1.6
Unlisted Accommodation (UA)	794	236	30	558	70	334	59	52	56	46	49	2.0
Writing Only (WO)	588	59	10	529	90	316	46	40	45	37	40	1.8

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response & Analysis, WS — Writing Strategies, WC — Writing Conventions

[3]Writing Applications Mean Score is based on the unweighted score.

Table 2.F.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, March 2013

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	32,951	9,982	30	22,969	70	340	52	49	47	43	37
Transfer of T/B Responses to A/D (TS)	207	84	41	123	59	348	58	54	51	46	42
Oral Responses Dictated to a Scribe (OR)	64	27	42	37	58	347	54	55	50	47	43
Braille Version (BV)	37	18	49	19	51	356	57	62	54	52	47
Large Print Version (LV)	114	63	55	51	45	356	61	57	57	52	47
Test Over More Than One Day (TD)	1,631	623	38	1,008	62	344	55	52	50	45	40
Supervised Breaks (SB)	5,619	1,499	27	4,120	73	336	50	47	45	41	35
Beneficial Time (BT)	808	142	18	666	82	328	46	43	39	36	30
Tested at Home or Hospital (HH)	77	36	47	41	53	351	57	59	52	49	42
Dictionary for Math (DM)	248	45	18	203	82	331	46	47	39	38	31
Sign Language (SL)	98	19	19	79	81	333	48	46	41	38	36
Oral Presentation (OP)	2,596	547	21	2,049	79	334	48	47	41	40	34
Calculator (CA)	7,550	1,634	22	5,916	78	335	48	50	41	40	32
Arithmetic Table (AT)	495	92	19	403	81	332	48	48	40	39	31
Math Manipulatives (MM)	107	33	31	74	69	337	49	52	43	41	35
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	24	7	29	17	71	339	53	49	47	44	31
Unlisted Accommodation (UA)	755	239	32	516	68	340	52	50	47	43	36

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1

Table 2.F.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, March 2013

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	286	310	330	353	394	425	333	33	33,330
Transfer of T/B Responses to A/D (TS)	275	282	306	334	366	416	450	339	41	258
Oral Responses Dictated to a Scribe (OR)	275	275	313	350	378	423	443	347	42	60
Spell Checker/Grammar Checker Off (SO)	286	302	326	355	394	437	450	360	42	235
Essay Responses (EO)	275	286	313	340	381	420	443	346	40	96
Assistive Device No Interference (AN)	275	288	322	347	374	404	416	347	35	107
Braille Version (BV)	275	275	312	351	397	450	450	355	48	39
Large Print Version (LV)	275	286	312	344	376	420	437	346	42	141
Test Over More Than One Day (TD)	275	286	312	332	355	387	416	335	31	2,321
Supervised Breaks (SB)	275	284	306	326	349	385	412	329	30	6,377
Beneficial Time (BT)	275	275	298	318	338	376	400	320	29	841
Tested at Home or Hospital (HH)	275	280	306	357	382	416	425	347	43	83
Dictionary (DI)	275	288	306	322	340	366	385	324	24	1,580
Sign Language (SL)	275	278	302	310	332	364	437	317	27	39
Oral Presentation (OP)	275	288	306	324	340	366	390	325	25	3,637
Spell Checker or Grammar Checker (SC)	275	292	308	328	347	376	412	330	27	295
Essay Responses (ER)	275	298	312	332	349	394	450	336	32	73
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	275	288	310	325	349	387	431	334	36	22
Unlisted Accommodation (UA)	275	288	312	330	355	390	425	334	32	794
Writing Only (WO)	275	282	300	312	332	364	394	316	25	588

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.F.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, March 2013

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	288	302	319	335	355	400	448	340	31	32,951
Transfer of T/B Responses to A/D (TS)	281	302	319	340	372	414	450	348	37	207
Oral Responses Dictated to a Scribe (OR)	275	302	313	342	375	414	423	347	38	64
Braille Version (BV)	302	302	321	349	378	428	440	356	40	37
Large Print Version (LV)	281	302	317	355	380	433	450	356	41	114
Test Over More Than One Day (TD)	277	302	321	342	362	398	433	344	30	1,631
Supervised Breaks (SB)	284	299	317	333	351	390	423	336	28	5,619
Beneficial Time (BT)	275	291	311	325	344	376	400	328	26	808
Tested at Home or Hospital (HH)	275	299	321	347	372	428	448	351	38	77
Dictionary for Math (DM)	275	296	315	329	344	374	410	331	25	248
Sign Language (SL)	275	299	317	331	347	376	423	333	25	98
Oral Presentation (OP)	288	302	317	331	347	378	407	334	24	2,596
Calculator (CA)	291	302	319	333	347	376	404	335	23	7,550
Arithmetic Table (AT)	291	302	319	331	345	366	395	332	21	495
Math Manipulatives (MM)	294	306	317	331	355	378	404	337	25	107
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	299	304	314	336	359	378	450	339	33	24
Unlisted Accommodation (UA)	291	302	317	335	356	398	440	340	30	755

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.F.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, March 2013

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Assistive Device No Interference	Specific Learning Disability	53	350	28	47
	Visual Impairment	14	371	47	64
Beneficial Time	Autism	39	328	39	28
	Emotional Disturbance	154	315	31	14
	Mental Retardation	28	298	16	0
	Other Health Impairment	70	326	33	24
	Specific Learning Disability	447	321	26	14
	Speech or Language Impairment	19	324	20	11
Braille Version	Visual Impairment	35	361	46	60
Dictionary	Autism	56	322	24	11
	Deaf	13	314	15	0
	Emotional Disturbance	43	320	33	16
	Hard of Hearing	21	323	30	19
	Mental Retardation	38	308	21	5
	Orthopedic Impairment	13	316	25	15
	Other Health Impairment	99	331	26	19
	Specific Learning Disability	1,131	324	23	14
	Speech or Language Impairment	62	322	21	10
Essay Responses (EO)	Orthopedic Impairment	14	366	30	71
	Other Health Impairment	14	326	33	14
	Specific Learning Disability	27	341	31	44
Essay Responses (ER)	Specific Learning Disability	33	340	24	33
IEP or Section 504 Plan	Autism	1,612	344	41	41
	Deaf	278	308	22	4
	Emotional Disturbance	1,998	334	40	33
	Hard of Hearing	396	339	36	34
	Mental Retardation	556	303	20	3
	Multiple Disabilities	41	313	27	7
	Orthopedic Impairment	284	336	38	35
	Other Health Impairment	3,246	341	34	40
	Specific Learning Disability	20,501	330	28	23
	Speech or Language Impairment	1,129	333	30	23
	Traumatic Brain Injury	92	328	31	23
	Visual Impairment	176	357	43	55
Large Print Version	Orthopedic Impairment	11	331	48	27
	Specific Learning Disability	18	337	34	33
	Visual Impairment	75	356	41	56
Oral Presentation	Autism	146	321	30	12
	Emotional Disturbance	83	321	28	17
	Hard of Hearing	29	326	23	21
	Mental Retardation	135	306	20	3
	Orthopedic Impairment	45	323	34	18
	Other Health Impairment	228	327	24	15
	Specific Learning Disability	2,569	326	24	17

Table 2.F.7 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
	Speech or Language Impairment	147	325	20	12
	Traumatic Brain Injury	14	310	22	7
	Visual Impairment	21	336	41	33
Oral Responses Dictated to a Scribe	Orthopedic Impairment	20	355	45	55
	Specific Learning Disability	12	340	35	42
Sign Language	Deaf	23	313	15	0
Spell Checker or Grammar Checker	Autism	13	334	25	23
	Other Health Impairment	31	331	26	23
	Specific Learning Disability	198	329	25	20
	Speech or Language Impairment	20	324	17	5
Spell Checker or Grammar Checker Off	Autism	35	357	42	54
	Emotional Disturbance	19	355	46	42
	Orthopedic Impairment	16	351	35	50
	Other Health Impairment	26	366	40	58
	Specific Learning Disability	72	350	35	43
	Visual Impairment	19	366	52	68
Supervised Breaks	Autism	316	338	40	35
	Deaf	39	306	16	0
	Emotional Disturbance	534	325	36	23
	Hard of Hearing	89	332	31	28
	Mental Retardation	143	303	19	4
	Multiple Disabilities	14	309	24	0
	Orthopedic Impairment	50	332	33	30
	Other Health Impairment	611	337	32	34
	Specific Learning Disability	3,972	328	27	21
	Speech or Language Impairment	215	327	26	16
	Traumatic Brain Injury	27	322	29	15
	Visual Impairment	32	350	47	50
Test Over More Than One Day	Autism	105	343	40	40
	Emotional Disturbance	160	326	38	24
	Hard of Hearing	29	336	33	34
	Mental Retardation	32	299	20	6
	Orthopedic Impairment	30	338	40	43
	Other Health Impairment	224	346	35	46
	Specific Learning Disability	1,465	334	28	30

Table 2.F.7 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
	Speech or Language Impairment	87	334	27	29
	Visual Impairment	25	353	45	60
Tested at Home or Hospital	Emotional Disturbance	13	321	33	23
	Specific Learning Disability	15	318	32	20
Transfer of Student T/B Responses to A/D	Autism	25	338	42	32
	Orthopedic Impairment	28	336	40	36
	Other Health Impairment	25	337	37	36
	Specific Learning Disability	74	329	30	27
	Speech or Language Impairment	12	341	45	33
	Visual Impairment	55	354	45	56
Unlisted Accommodation	Autism	34	347	41	44
	Emotional Disturbance	37	329	40	27
	Mental Retardation	11	305	17	0
	Other Health Impairment	78	337	32	35
	Specific Learning Disability	481	331	28	24
	Speech or Language Impairment	28	332	30	25
Writing Only	Autism	18	336	34	28
	Deaf	122	306	19	0
	Hard of Hearing	16	327	34	13
	Mental Retardation	21	304	18	0
	Other Health Impairment	20	320	26	10
	Specific Learning Disability	321	320	26	14
	Speech or Language Impairment	14	312	18	7

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.F.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, March 2013

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	Autism	17	329	14	0
	Emotional Disturbance	12	329	18	17
	Mental Retardation	14	312	14	0
	Other Health Impairment	47	334	24	26
	Specific Learning Disability	348	333	20	18
	Speech or Language Impairment	17	336	15	24
Beneficial Time	Autism	36	345	35	39
	Emotional Disturbance	158	320	23	11
	Mental Retardation	26	314	15	0
	Other Health Impairment	64	328	29	23
	Specific Learning Disability	421	329	23	16
	Speech or Language Impairment	16	330	24	31
Braille Version	Visual Impairment	31	357	41	52
Calculator	Autism	311	340	27	28
	Deaf	20	335	15	10
	Emotional Disturbance	342	329	26	18
	Hard of Hearing	61	336	32	23
	Mental Retardation	174	318	15	3
	Orthopedic Impairment	71	334	25	21
	Other Health Impairment	665	338	25	28
	Specific Learning Disability	5,090	334	22	21
	Speech or Language Impairment	309	338	22	23
	Traumatic Brain Injury	23	330	19	9
	Visual Impairment	21	339	32	29
Dictionary for Math	Emotional Disturbance	11	316	28	18
	Other Health Impairment	11	338	16	27
	Specific Learning Disability	159	330	25	16
	Speech or Language Impairment	17	332	18	18
IEP or Section 504 Plan	Autism	1,555	355	41	47
	Deaf	201	332	24	18
	Emotional Disturbance	2,019	336	33	28
	Hard of Hearing	367	348	35	37
	Mental Retardation	551	315	15	2
	Multiple Disabilities	46	329	24	15
	Orthopedic Impairment	295	340	33	31
	Other Health Impairment	3,338	344	31	37
	Specific Learning Disability	20,190	336	26	26
	Speech or Language Impairment	1,091	343	31	33
	Traumatic Brain Injury	82	339	32	26
	Visual Impairment	174	361	42	54

Table 2.F.8 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Large Print Version	Visual Impairment	64	361	39	61
Math Manipulatives	Specific Learning Disability	57	334	23	30
Oral Presentation	Autism	103	339	32	24
	Emotional Disturbance	80	325	30	16
	Hard of Hearing	25	327	21	16
	Mental Retardation	109	317	15	4
	Orthopedic Impairment	44	340	32	32
	Other Health Impairment	181	335	22	24
	Specific Learning Disability	1,729	334	23	21
	Speech or Language Impairment	113	335	23	20
	Visual Impairment	17	347	36	35
Oral Responses Dictated to a Scribe	Orthopedic Impairment	22	357	38	59
	Specific Learning Disability	22	328	34	18
Sign Language	Deaf	64	334	22	22
	Hard of Hearing	18	330	37	17
	Specific Learning Disability	11	332	23	18
Supervised Breaks	Autism	264	351	39	43
	Deaf	37	331	19	14
	Emotional Disturbance	503	329	30	21
	Hard of Hearing	74	337	34	26
	Mental Retardation	118	315	17	3
	Multiple Disabilities	14	334	18	21
	Orthopedic Impairment	51	341	31	33
	Other Health Impairment	538	341	29	36
	Specific Learning Disability	3,455	336	25	25
	Speech or Language Impairment	167	336	29	23
	Traumatic Brain Injury	21	335	31	19
	Visual Impairment	33	354	36	45
Test Over More Than One Day	Autism	80	362	38	56
	Emotional Disturbance	140	333	34	26
	Hard of Hearing	23	345	32	39
	Mental Retardation	23	315	16	0
	Orthopedic Impairment	21	346	34	48
	Other Health Impairment	175	350	31	46
	Specific Learning Disability	1,041	343	27	37
	Speech or Language Impairment	57	347	31	33
	Visual Impairment	18	358	38	56
Tested at Home or Hospital	Emotional Disturbance	12	325	24	8
	Other Health Impairment	11	372	39	64
	Specific Learning Disability	14	324	21	14
Transfer of Student T/B Responses to A/D	Autism	19	344	41	32
	Orthopedic Impairment	22	345	35	36

Table 2.F.8 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
	Other Health Impairment	22	335	35	27
	Specific Learning Disability	49	340	24	35
	Visual Impairment	55	361	41	56
Unlisted Accommodation	Autism	32	364	45	56
	Emotional Disturbance	28	325	23	14
	Other Health Impairment	83	337	30	27
	Specific Learning Disability	462	336	27	26
	Speech or Language Impairment	26	345	29	46
Unlisted Modification	Specific Learning Disability	11	328	18	9

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.F.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, March 2013

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Assistive Device No Interference	English-Only	67	352	31	48
	Reclassified Fluent English Proficient	11	369	37	73
	English-Learner	25	320	31	12
Beneficial Time	English-Only	511	323	30	18
	Initially Fluent English Proficient	19	316	31	16
	Reclassified Fluent English Proficient	37	339	35	38
	English-Learner	255	313	23	8
	Unknown	19	315	29	16
Braille Version	English-Only	17	354	45	53
	Reclassified Fluent English Proficient	11	390	35	91
Dictionary	English-Only	661	325	26	16
	Initially Fluent English Proficient	31	326	28	26
	Reclassified Fluent English Proficient	71	342	25	44
	English-Learner	793	321	21	9
	Unknown	24	322	20	13
Essay Responses (EO)	English-Only	66	349	40	41
	English-Learner	18	327	35	39
Essay Responses (ER)	English-Only	41	339	34	29
	English-Learner	27	326	24	11
IEP or Section 504 Plan	English-Only	18,398	338	36	35
	Initially Fluent English Proficient	858	340	36	37
	Reclassified Fluent English Proficient	2,279	351	30	53
	English-Learner	11,218	322	23	12
	Unknown	577	322	30	17
Large Print Version	English-Only	73	349	41	37
	Reclassified Fluent English Proficient	23	376	34	83
	English-Learner	36	318	29	22
Oral Presentation	English-Only	1,825	327	26	20
	Initially Fluent English Proficient	70	326	23	16
	Reclassified Fluent English Proficient	165	333	26	25
	English-Learner	1,536	321	23	11
	Unknown	41	322	26	17
Oral Responses Dictated to a Scribe	English-Only	41	356	43	56
	English-Learner	12	334	31	42
Sign Language	English-Only	22	315	14	0
	English-Learner	16	312	24	6
Spell Checker or Grammar Checker	English-Only	153	333	31	25
	Initially Fluent English Proficient	11	327	23	18
	English-Learner	121	325	22	12
Spell Checker or Grammar Checker Off	English-Only	176	363	43	58

Table 2.F.9 (Continued)

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
	Reclassified Fluent English Proficient	16	384	35	88
	English-Learner	32	328	21	13
Supervised Breaks	English-Only	3,282	332	33	27
	Initially Fluent English Proficient	165	332	32	30
	Reclassified Fluent English Proficient	468	347	30	47
	English-Learner	2,257	322	23	13
	Unknown	205	318	26	12
Test Over More Than One Day	English-Only	1,121	339	34	38
	Initially Fluent English Proficient	76	341	33	42
	Reclassified Fluent English Proficient	179	358	26	69
	English-Learner	851	325	23	17
	Unknown	94	322	30	18
Tested at Home or Hospital	English-Only	58	353	43	57
	English-Learner	12	315	37	17
Transfer of Student T/B Responses to A/D	English-Only	153	343	40	41
	Reclassified Fluent English Proficient	26	373	38	73
	English-Learner	69	313	26	12
Unlisted Accommodation	English-Only	509	337	34	33
	Initially Fluent English Proficient	17	330	30	35
	Reclassified Fluent English Proficient	44	348	26	48
	English-Learner	219	325	23	17
Unlisted Modification	English-Only	13	337	41	31
Writing Only	English-Only	334	316	26	8
	Initially Fluent English Proficient	14	310	25	7
	Reclassified Fluent English Proficient	31	337	29	35
	English-Learner	190	315	22	10
	Unknown	19	311	17	0

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.F.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—Mathematics, March 2013

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	English-Only	272	332	22	20
	Initially Fluent English Proficient	14	332	24	21
	Reclassified Fluent English Proficient	15	347	29	40
	English-Learner	185	331	18	14
Beneficial Time	English-Only	497	330	26	20
	Initially Fluent English Proficient	21	332	26	24
	Reclassified Fluent English Proficient	40	350	27	43
	English-Learner	232	323	23	8
	Unknown	18	317	21	17
Braille Version	English-Only	16	356	47	44
Calculator	English-Only	4,184	335	24	23
	Initially Fluent English Proficient	163	340	24	32
	Reclassified Fluent English Proficient	412	348	27	41
	English-Learner	2,717	331	20	16
	Unknown	74	334	19	19
Dictionary for Math	English-Only	146	333	27	22
	English-Learner	93	327	23	12
IEP or Section 504 Plan	English-Only	18,698	343	33	34
	Initially Fluent English Proficient	851	347	35	38
	Reclassified Fluent English Proficient	2,346	356	32	52
	English-Learner	10,467	331	23	18
	Unknown	589	329	26	17
Large Print Version	English-Only	59	359	40	58
	Reclassified Fluent English Proficient	19	381	36	84
	English-Learner	27	329	31	30
Math Manipulatives	English-Only	65	337	26	31
	Initially Fluent English Proficient	11	338	24	36
	English-Learner	24	330	22	25
Oral Presentation	English-Only	1,303	335	26	23
	Initially Fluent English Proficient	51	339	24	31
	Reclassified Fluent English Proficient	126	345	27	40
	English-Learner	1,056	331	22	17
	Unknown	60	323	21	8
Oral Responses Dictated to a Scribe	English-Only	42	356	36	50
	English-Learner	17	328	39	24
Sign Language	English-Only	68	334	24	21
	English-Learner	26	332	29	19
Supervised Breaks	English-Only	2,983	338	29	29
	Initially Fluent English Proficient	147	339	29	31

Table 2.F.10 (Continued)

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
	Reclassified Fluent English Proficient	428	354	30	48
	English-Learner	1,844	332	24	20
	Unknown	217	323	23	13
Test Over More Than One Day	English-Only	841	345	31	40
	Initially Fluent English Proficient	46	350	32	52
	Reclassified Fluent English Proficient	127	366	30	71
	English-Learner	602	337	26	28
	Unknown	15	347	31	53
Tested at Home or Hospital	English-Only	58	355	37	48
Transfer of Student T/B Responses to A/D	English-Only	133	349	36	42
	Reclassified Fluent English Proficient	20	372	33	70
	English-Learner	45	327	26	18
Unlisted Accommodation	English-Only	495	341	31	33
	Initially Fluent English Proficient	16	340	29	25
	Reclassified Fluent English Proficient	41	357	35	51
	English-Learner	198	334	25	24
Unlisted Modification	English-Only	15	337	27	40

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Appendix 2.G: Results of Testing Variations and Disability Analyses—May 2013

Table 2.G.1: Summary Statistics by Testing Variations and Disability—ELA, May 2013

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	1,474	320	27	13
Modifications	2,275	324	24	14
All	3,749	322	25	13
Disability				
Unknown	-	-	-	-
Autism	410	327	30	20
Deaf	108	308	24	7
Deaf-Blindness	-	-	-	-
Emotional Disturbance	739	317	28	15
Hard of Hearing	117	320	23	11
Mental Retardation	303	305	20	3
Multiple Disabilities	21	309	25	10
Orthopedic Impairment	76	324	30	20
Other Health Impairment	892	327	29	21
Specific Learning Disability	7,353	321	24	12
Speech or Language Impairment	468	326	23	14
Traumatic Brain Injury	36	325	26	8
Visual Impairment	30	335	38	30

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.G.2: Summary Statistics by Testing Variations and Disability—Mathematics, May 2013

Testing Variations	N[1]	Mean	SD[2]	Percent (≥350)
Accommodations	1,235	330	22	15
Modifications	3,334	333	19	17
All	4,569	332	20	17
Disability				
Unknown	-	-	-	-
Autism	366	334	24	18
Deaf	84	329	16	13
Deaf-Blindness	-	-	-	-
Emotional Disturbance	835	328	23	15
Hard of Hearing	93	335	21	17
Mental Retardation	287	319	15	3
Multiple Disabilities	24	327	16	4
Orthopedic Impairment	76	332	19	18
Other Health Impairment	1,011	334	23	21
Specific Learning Disability	6,931	330	19	14
Speech or Language Impairment	366	333	19	18
Traumatic Brain Injury	30	339	19	27
Visual Impairment	25	342	26	24

Note: Students tested with Accommodations and Modifications are counted in both rows.

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.G.3: Demographic Summary for All Examinees by Testing Variations—ELA, May 2013

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading[2] Mean Percent Correct			Writing[2] Mean Percent Correct		Writing Applications Mean Score[3]
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	8,549	1,134	13	7,415	87	321	53	43	46	34	43	1.8
Transfer of T/B Responses to A/D (TS)	71	23	32	48	68	337	64	51	58	46	49	1.9
Oral Responses Dictated to a Scribe (OR)	12	6	50	6	50	341	68	54	57	50	53	2.0
Spell Checker/Grammar Checker Off (SO)	76	23	30	53	70	338	62	53	55	43	56	2.0
Essay Responses (EO)	25	3	12	22	88	329	63	50	54	35	45	1.8
Assistive Device No Interference (AN)	33	8	24	25	76	330	56	49	51	42	52	1.8
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	18	7	39	11	61	336	63	52	51	51	50	2.0
Test Over More Than One Day (TD)	341	58	17	283	83	320	52	43	46	35	42	1.8
Supervised Breaks (SB)	1,504	195	13	1,309	87	320	52	43	46	34	43	1.8
Beneficial Time (BT)	319	32	10	287	90	315	48	39	44	32	39	1.6
Tested at Home or Hospital (HH)	33	14	42	19	58	341	65	55	58	51	52	1.9
Dictionary (DI)	779	100	13	679	87	322	59	43	46	34	44	1.9
Sign Language (SL)	45	5	11	40	89	316	51	43	39	33	43	1.7
Oral Presentation (OP)	1,749	261	15	1,488	85	325	56	46	49	37	44	1.9
Spell Checker or Grammar Checker (SC)	163	35	21	128	79	325	53	45	48	36	48	2.0
Essay Responses (ER)	33	7	21	26	79	329	53	49	46	40	47	2.2
Assistive Device (AD)	16	7	44	9	56	346	54	61	61	36	62	2.6
Unlisted Modification (UM)	35	7	20	28	80	334	64	51	53	49	56	1.8
Unlisted Accommodation (UA)	210	32	15	178	85	323	52	45	49	35	44	1.9
Writing Only (WO)	163	15	9	148	91	313	47	38	39	31	40	1.7

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response & Analysis, WS — Writing Strategies, WC — Writing Conventions

[3]Writing Applications Mean Score is based on the unweighted score.

Table 2.G.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, May 2013

Testing Variations	N Tested[1]	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	8,367	1,318	16	7,049	84	331	43	43	41	34	33
Transfer of T/B Responses to A/D (TS)	48	10	21	38	79	338	49	45	47	39	33
Oral Responses Dictated to a Scribe (OR)	14	3	21	11	79	334	44	44	49	39	24
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	238	60	25	178	75	332	44	46	43	35	32
Supervised Breaks (SB)	1,299	201	15	1,098	85	330	43	42	40	34	31
Beneficial Time (BT)	296	42	14	254	86	327	41	41	38	31	29
Tested at Home or Hospital (HH)	39	18	46	21	54	353	59	62	54	45	45
Dictionary for Math (DM)	115	31	27	84	73	335	46	49	44	37	33
Sign Language (SL)	33	4	12	29	88	332	39	41	43	36	37
Oral Presentation (OP)	917	183	20	734	80	334	45	46	43	37	34
Calculator (CA)	3,300	567	17	2,733	83	333	43	46	42	34	33
Arithmetic Table (AT)	312	61	20	251	80	333	43	46	42	36	32
Math Manipulatives (MM)	48	13	27	35	73	340	50	53	46	37	37
Assistive Device (AD)	17	7	41	10	59	346	58	53	52	45	38
Unlisted Modification (UM)	58	16	28	42	72	341	51	52	48	41	36
Unlisted Accommodation (UA)	219	31	14	188	86	331	45	42	41	33	32

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1

Table 2.G.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, May 2013

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	284	302	319	338	365	390	321	25	8,549
Transfer of T/B Responses to A/D (TS)	275	290	310	331	363	410	450	337	37	71
Oral Responses Dictated to a Scribe (OR)	275	275	307	345	370	399	399	341	41	12
Spell Checker/Grammar Checker Off (SO)	275	294	318	336	355	390	450	338	29	76
Essay Responses (EO)	275	292	310	335	344	367	387	329	26	25
Assistive Device No Interference (AN)	280	282	310	331	346	387	440	330	31	33
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	290	290	306	335	352	410	410	336	32	18
Test Over More Than One Day (TD)	275	280	296	317	340	367	387	320	28	341
Supervised Breaks (SB)	275	280	300	317	336	365	393	320	26	1,504
Beneficial Time (BT)	275	278	294	312	331	365	396	315	27	319
Tested at Home or Hospital (HH)	275	280	306	338	369	419	434	341	43	33
Dictionary (DI)	275	286	304	321	338	363	387	322	24	779
Sign Language (SL)	276	284	296	314	338	354	363	316	24	45
Oral Presentation (OP)	275	288	308	323	340	367	387	325	24	1,749
Spell Checker or Grammar Checker (SC)	275	284	304	325	346	369	377	325	26	163
Essay Responses (ER)	284	288	316	325	346	374	393	329	25	33
Assistive Device (AD)	306	306	331	348	363	374	374	346	21	16
Unlisted Modification (UM)	282	288	321	336	346	369	369	334	22	35
Unlisted Accommodation (UA)	275	280	304	325	338	367	390	323	26	210
Writing Only (WO)	275	278	294	306	327	354	372	313	24	163

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.G.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, May 2013

Testing Variations	Percentiles							Mean Scale Score	SD[1]	N Tested[2]
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	284	302	318	330	342	365	393	331	20	8,367
Transfer of T/B Responses to A/D (TS)	288	302	320	334	348	401	414	338	28	48
Oral Responses Dictated to a Scribe (OR)	307	307	316	326	342	393	393	334	25	14
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	275	291	314	331	351	375	404	332	25	238
Supervised Breaks (SB)	281	300	316	328	342	367	395	330	21	1,299
Beneficial Time (BT)	277	291	312	326	339	363	395	327	22	296
Tested at Home or Hospital (HH)	297	305	320	342	388	418	418	353	35	39
Dictionary for Math (DM)	294	302	318	333	351	375	395	335	23	115
Sign Language (SL)	291	305	324	333	342	360	365	332	16	33
Oral Presentation (OP)	291	302	320	331	346	373	401	334	22	917
Calculator (CA)	291	305	320	331	344	365	387	333	19	3,300
Arithmetic Table (AT)	291	305	318	330	344	369	395	333	21	312
Math Manipulatives (MM)	302	307	321	335	353	383	407	340	24	48
Assistive Device (AD)	288	288	339	347	360	375	375	346	22	17
Unlisted Modification (UM)	302	307	330	340	353	375	407	341	20	58
Unlisted Accommodation (UA)	288	297	320	328	342	365	381	331	20	219

[1]SD — Standard Deviation

[2]Results for groups with fewer than 11 students are not reported.

Table 2.G.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, May 2013

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Assistive Device No Interference	Specific Learning Disability	19	330	20	26
Beneficial Time	Autism	21	323	28	14
	Emotional Disturbance	67	313	30	15
	Other Health Impairment	20	311	24	5
	Specific Learning Disability	172	315	26	9
Dictionary	Autism	18	325	18	6
	Emotional Disturbance	25	314	29	20
	Hard of Hearing	12	331	29	25
	Mental Retardation	17	300	10	0
	Other Health Impairment	38	326	28	18
	Specific Learning Disability	568	322	22	12
	Speech or Language Impairment	27	319	22	11
Essay Responses (EO)	Specific Learning Disability	16	331	19	6
IEP or Section 504 Plan	Autism	299	324	28	16
	Deaf	86	306	21	6
	Emotional Disturbance	587	318	28	15
	Hard of Hearing	87	320	24	13
	Mental Retardation	241	306	21	4
	Multiple Disabilities	17	308	25	12
	Orthopedic Impairment	62	324	31	21
	Other Health Impairment	672	327	29	20
	Specific Learning Disability	5,488	321	23	12
	Speech or Language Impairment	320	325	23	13
	Traumatic Brain Injury	25	323	30	12
	Visual Impairment	27	339	37	33
Large Print Version	Visual Impairment	11	345	33	45
Oral Presentation	Autism	71	323	22	8
	Emotional Disturbance	47	317	26	13
	Mental Retardation	72	311	23	6
	Orthopedic Impairment	17	331	27	24
	Other Health Impairment	110	328	23	15
	Specific Learning Disability	1,233	325	24	15
	Speech or Language Impairment	89	324	22	13
Sign Language	Deaf	32	311	23	6
Spell Checker or Grammar Checker	Deaf	19	304	19	5
	Other Health Impairment	17	341	27	35
	Specific Learning Disability	88	326	26	22
	Speech or Language Impairment	16	329	22	31
Spell Checker or Grammar Checker Off	Specific Learning Disability	30	331	28	23
Supervised Breaks	Autism	60	325	27	10
	Deaf	18	301	21	0
	Emotional Disturbance	194	313	27	12

Table 2.G.7 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
	Hard of Hearing	20	325	32	20
	Mental Retardation	46	306	17	0
	Orthopedic Impairment	12	318	23	17
	Other Health Impairment	103	330	31	26
	Specific Learning Disability	903	320	24	11
	Speech or Language Impairment	56	325	23	16
Test Over More Than One Day	Autism	14	333	26	21
	Deaf	18	303	21	6
	Emotional Disturbance	44	314	32	16
	Other Health Impairment	27	338	32	37
	Specific Learning Disability	195	320	26	16
	Speech or Language Impairment	11	320	22	9
Transfer of Student T/B Responses to A/D	Specific Learning Disability	33	334	29	30
	Visual Impairment	12	344	38	50
Unlisted Accommodation	Emotional Disturbance	11	305	30	18
	Other Health Impairment	11	339	36	36
	Specific Learning Disability	159	323	23	13
Unlisted Modification	Specific Learning Disability	20	341	14	25
Writing Only	Deaf	38	303	20	3
	Specific Learning Disability	84	317	23	12

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.G.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, May 2013

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	Autism	15	326	17	7
	Emotional Disturbance	11	330	19	27
	Mental Retardation	13	318	11	0
	Other Health Impairment	26	330	17	8
	Specific Learning Disability	191	333	22	18
	Speech or Language Impairment	11	331	20	27
Beneficial Time	Autism	11	319	19	0
	Emotional Disturbance	62	322	23	13
	Other Health Impairment	20	328	24	15
	Specific Learning Disability	163	330	23	17
Calculator	Autism	123	332	18	18
	Emotional Disturbance	173	332	21	17
	Hard of Hearing	23	336	12	9
	Mental Retardation	96	323	19	6
	Multiple Disabilities	12	328	16	0
	Orthopedic Impairment	25	334	14	16
	Other Health Impairment	274	333	19	19
	Specific Learning Disability	2,194	333	19	16
	Speech or Language Impairment	132	332	16	16
Dictionary for Math	Specific Learning Disability	65	332	25	20
IEP or Section 504 Plan	Autism	282	332	22	18
	Deaf	59	331	17	17
	Emotional Disturbance	681	328	24	15
	Hard of Hearing	74	335	19	14
	Mental Retardation	222	320	16	3
	Multiple Disabilities	22	327	17	5
	Orthopedic Impairment	62	332	19	18
	Other Health Impairment	768	334	23	20
	Specific Learning Disability	5,225	330	19	14
	Speech or Language Impairment	262	331	17	15
	Traumatic Brain Injury	22	338	20	23
	Visual Impairment	22	344	27	27
Math Manipulatives	Specific Learning Disability	27	340	27	22
Oral Presentation	Autism	32	329	17	9
	Emotional Disturbance	33	327	24	21
	Mental Retardation	43	324	25	7
	Other Health Impairment	70	337	21	24
	Specific Learning Disability	612	335	21	19
	Speech or Language Impairment	40	333	15	18
Sign Language	Deaf	22	331	15	14
Supervised Breaks	Autism	42	329	22	14
	Emotional Disturbance	203	325	23	14

Table 2.G.8 (Continued)

Testing Variations	Disability	N[1]	Mean	SD[2]	Percent (≥350)
	Hard of Hearing	11	332	14	9
	Mental Retardation	40	315	14	0
	Orthopedic Impairment	12	334	19	25
	Other Health Impairment	109	334	19	17
	Specific Learning Disability	739	330	20	14
	Speech or Language Impairment	29	328	24	14
Test Over More Than One Day	Emotional Disturbance	42	332	29	29
	Other Health Impairment	20	336	30	25
	Specific Learning Disability	129	330	24	19
Transfer of Student T/B Responses to A/D	Specific Learning Disability	23	323	17	4
Unlisted Accommodation	Emotional Disturbance	16	323	20	13
	Other Health Impairment	14	346	22	43
	Specific Learning Disability	162	329	18	11
Unlisted Modification	Specific Learning Disability	39	338	18	21

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.G.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, May 2013

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Assistive Device	English-Only	11	345	18	36
Assistive Device No Interference	English-Only	23	329	24	22
Beneficial Time	English-Only	206	316	29	14
	English-Learner	102	310	19	3
Dictionary	English-Only	396	325	24	17
	Initially Fluent English Proficient	11	327	28	18
	Reclassified Fluent English Proficient	42	323	25	12
	English-Learner	318	317	21	7
	Unknown	12	345	25	42
Essay Responses (EO)	English-Only	18	330	29	17
Essay Responses (ER)	English-Only	19	331	25	21
IEP or Section 504 Plan	English-Only	4,871	323	27	16
	Initially Fluent English Proficient	180	325	29	17
	Reclassified Fluent English Proficient	323	329	25	20
	English-Learner	3,052	317	21	8
	Unknown	123	325	30	20
Large Print Version	English-Only	11	338	34	36
Oral Presentation	English-Only	952	327	25	18
	Initially Fluent English Proficient	40	328	24	18
	Reclassified Fluent English Proficient	56	335	21	27
	English-Learner	670	320	22	8
	Unknown	31	332	26	23
Sign Language	English-Only	21	330	19	19
	English-Learner	24	303	20	4
Spell Checker or Grammar Checker	English-Only	67	330	27	28
	English-Learner	74	317	25	14
Spell Checker or Grammar Checker Off	English-Only	40	334	30	28
	English-Learner	28	338	19	25
Supervised Breaks	English-Only	909	321	28	15
	Initially Fluent English Proficient	33	334	34	27
	Reclassified Fluent English Proficient	50	329	29	22
	English-Learner	495	317	22	7
	Unknown	17	333	32	35
Test Over More Than One Day	English-Only	201	324	31	25
	English-Learner	127	313	22	5

Table 2.G.9 (Continued)

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Tested at Home or Hospital	English-Only	17	341	44	41
Transfer of Student T/B Responses to A/D	English-Only	52	335	35	33
	English-Learner	11	329	22	18
Unlisted Accommodation	English-Only	125	325	29	18
	English-Learner	75	321	20	12
Unlisted Modification	English-Only	28	335	21	21
Writing Only	English-Only	95	312	24	9
	English-Learner	58	314	25	9

[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Table 2.G.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—Mathematics, May 2013

Testing Variations	Language Fluency	N[1]	Mean	SD[2]	Percent (≥350)
Arithmetic Table	English-Only	209	335	22	23
	English-Learner	90	329	19	13
Assistive Device	English-Only	16	347	22	44
Beneficial Time	English-Only	205	328	24	16
	English-Learner	82	323	18	11
Calculator	English-Only	1,991	334	20	19
	Initially Fluent English Proficient	72	334	18	13
	Reclassified Fluent English Proficient	161	339	17	27
	English-Learner	1,014	329	17	11
	Unknown	62	333	21	26
Dictionary for Math	English-Only	79	338	23	32
	English-Learner	34	328	22	15
IEP or Section 504 Plan	English-Only	5,070	332	22	18
	Initially Fluent English Proficient	186	332	20	15
	Reclassified Fluent English Proficient	364	337	18	23
	English-Learner	2,597	328	18	11
	Unknown	150	332	21	19
Math Manipulatives	English-Only	41	341	26	32
Oral Presentation	English-Only	529	335	23	23
	Initially Fluent English Proficient	21	330	18	10
	Reclassified Fluent English Proficient	30	339	15	23
	English-Learner	321	333	19	15
	Unknown	16	340	24	25
Sign Language	English-Only	13	338	13	15
	English-Learner	16	330	17	13
Supervised Breaks	English-Only	830	331	22	17
	Initially Fluent English Proficient	22	330	26	14
	Reclassified Fluent English Proficient	54	335	20	19
	English-Learner	384	327	19	13
Test Over More Than One Day	English-Only	159	334	26	26
	English-Learner	68	328	21	22
Tested at Home or Hospital	English-Only	22	356	35	50
Transfer of Student T/B Responses to A/D	English-Only	35	339	29	23
Unlisted Accommodation	English-Only	139	331	21	16
	English-Learner	74	330	17	12
Unlisted Modification	English-Only	53	342	21	30

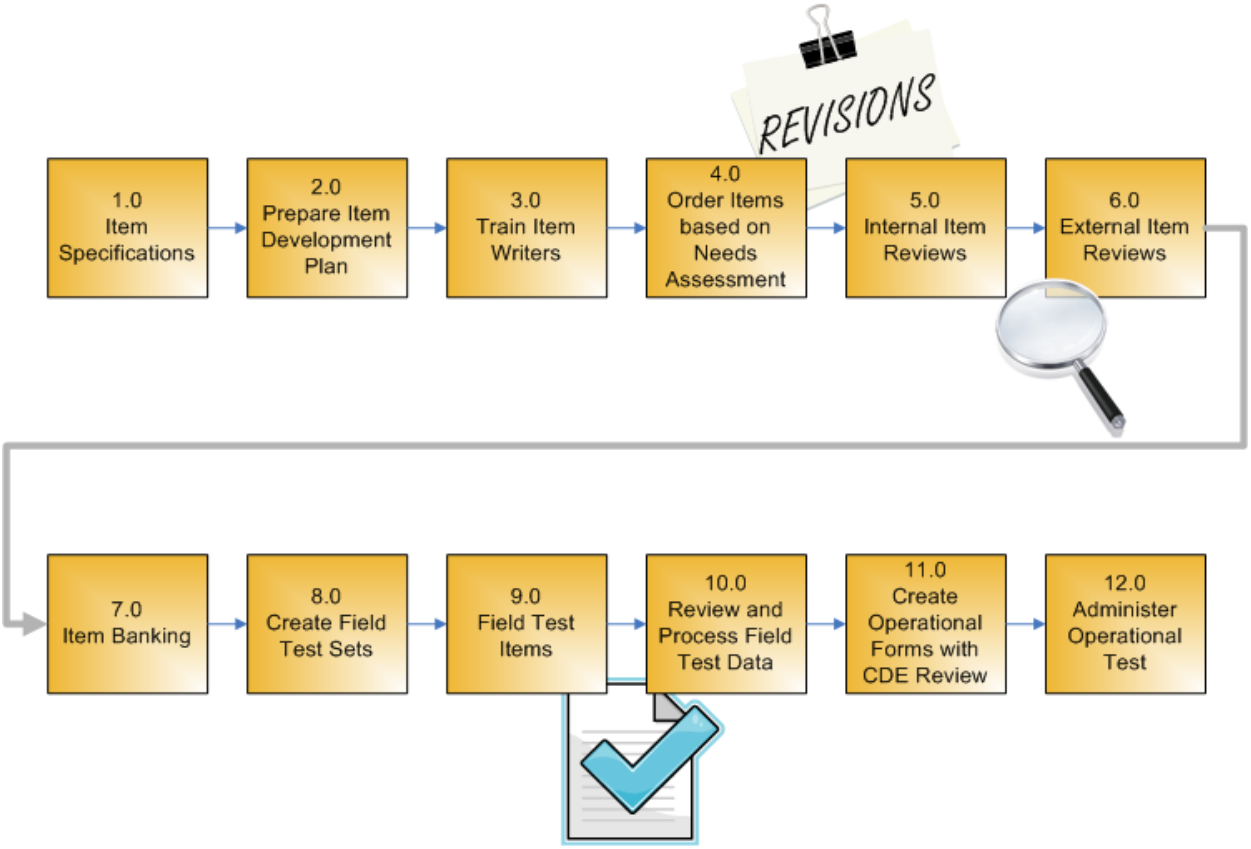
[1]Results for groups with fewer than 11 students are not reported.

[2]SD — Standard Deviation

Chapter 3: Item Development

The CAHSEE items are developed to measure California's content standards and are designed to conform to the principles of item writing defined by ETS (ETS, 2002). Each CAHSEE item goes through a comprehensive development cycle as described in Figure 3.1 below.

Figure 3.1: The ETS Item Development Process for the CAHSEE



1.0 Item Specifications

The first step in the item development process is to develop item specifications for ELA and mathematics. The item specifications describe the characteristics of the items that are needed to measure each content standard. The item specifications help ensure that the items on the CAHSEE measure the content standards as intended. To accomplish this, the item specifications provide detailed information to item writers who are developing items for the CAHSEE. The specifications include the following:

- A full statement of each academic content standard, as defined by the SBE (CDE, 2011c).
- A description of each content strand.

- The expected depth of knowledge (DOK), coded as 1, 2, 3, or 4.
  - DOK level 1 (low) – recall or simple reproduction of information
  - DOK level 2 (medium) – skills and concepts; comprehension and processing of text
  - DOK level 3 (high) – strategic thinking, prediction, elaboration
  - DOK level 4 (CR) – extended reasoning, complex analyses

- The homogeneity of the construct measured by each standard.

- A description of the kinds of item stems appropriate for MC items used to assess each standard.

- Sample items to serve as a guide for the types of MC items that are appropriate for assessing each standard.

- A description of appropriate stimuli (such as charts, tables, graphs, or other illustrations) for mathematics items.

- When applicable, the content limits for the standard (such as one or two variables, maximum place values of numbers) for mathematics items.

- When applicable, a description of appropriate reading passages for ELA items.

- When applicable, a description of specific types of items to be avoided (e.g., negatives should not appear in both the stem and the options for an item).

In addition, the ELA item specifications contain guidelines for passages used to assess reading comprehension and writing. These guidelines include the following:

- The acceptable ranges for passage length.

- The expected distribution of passages by genre.

- Guidelines for readability and cognitive load, using standards agreed to by the CDE and ETS.

- Expected use of illustrations.

- The target number of items that should follow each reading passage.

- Writing passages and reading passages to have a readability level appropriate to the tested grade level.

- A list of topics to be avoided.

- Diversity and Fairness of passages.

- Passages and items developed using Universal Design Principles.

2.0 Prepare Item Development Plan

Next, the test blueprint is used to determine item needs and to create an Item Development Plan. The Item Development Plan includes strategies for developing items that will permit coverage of all appropriate standards for both the ELA and mathematics tests. ETS test development staff use this plan to determine the number of items to develop for each content area. Item writing emphasis for particular standards/content is determined in consultation with the CDE.

The Item Development Plan assumes that 70 percent of items on an operational ELA form and 70 percent of items on an operational mathematics form are refreshed each year; these items remain in the item bank for future use. Previously, a certain number of items were released to the public. However, due to the state budget cuts, no ELA or mathematics RTQs were released in the 2012–13 testing cycle.

The field-test percentages and item counts for the 2013 field tests are shown in Table 3.1. The percentages are based on the ratio of the number of items field tested to the number of unique operational items on all the test forms, plus the number of items in the linking sets. The number of ELA items field tested was 4.69 times or 469 percent of the number of unique items used to score students across the administrations. The number of mathematics items field tested was 3.74 times or 374 percent of the number of unique items used to score students across the administrations.

Table 3.1: Field-Test Ratios and Numbers for the CAHSEE

Content Area	Ratio of Field-Test Items to Operational Items	Number of Items Field Tested
English-Language Arts	≈ 469	1,690
Mathematics	≈ 374	1,560

The plan calls for larger numbers of items to be field tested for ELA than for mathematics because most ELA items are based on passages. An entire set of items associated with a passage may be eliminated if a few items in the set perform poorly, so the potential rate of item loss is greater in ELA than in mathematics.

3.0 Train Item Writers

The items selected for each operational form are written by special panels of item writers with expertise in the California content standards. Applicants for item writing training are screened by senior ETS content staff and approved by the CDE staff. Only those with strong content and teaching backgrounds are approved for inclusion in the training. Thus, the participants are particularly experienced in writing test questions to the standards measured by the CAHSEE. However, due to the adoption of the Common Core State Standards and forthcoming changes in the state's

assessment system, no new item development took place during the 2012–13 school year.

All item writers must meet the following minimum qualifications:

- Bachelor's or Master's degree in a specified content area being tested.
- Three or more years of general education teaching experience in the content areas of ELA or mathematics.
- Knowledge about the capabilities of the students taking these tests.
- Knowledge of and experience with California content standards in ELA and mathematics.

Before items can be written for the CAHSEE ELA test, passages must be written for both reading and language. Applicants for passage writing are screened by senior ETS content staff, and only those with strong writing skills are approved to write passages. It is only after the passages have gone through an extensive internal review process that the passages can be sent out to item writers. This internal review process includes: content review, fairness review, fact checking review, and editorial review.

4.0 Order Items Based on Needs Assessment

Content Leads use the Item Bank Inventory and the Item Development Plan to determine how many items are needed for each standard and order items from item writers based on these numbers. The item writers are given, at a minimum, the following materials to guide them in their work:

- *CAHSEE Guidelines for Item Writers*.
- ETS's *Guidelines for Bias and Sensitivity*.
- A copy of the test item specifications document for the CAHSEE, which includes the California content standards assessed on the CAHSEE, sample stems, sample items, and a checklist for item writers.
- An explanation of the DOK ratings.
- The Internet Web link to the previous RTQs.

Throughout the item writing process, ETS assessment specialists provide feedback to item writers.

5.0 Internal Item Reviews (Educational Testing Service)

Purpose

The items selected for the CAHSEE undergo an extensive item review process that is designed to provide the CDE with the best standards-based tests possible. This section summarizes the various reviews performed that ensure the quality of the CAHSEE items and test forms.

Once the items have been written by external item writers, a series of ETS internal reviews are conducted. The reviews help establish the criteria used to judge the quality of the item content and are designed to ensure that each item is measuring what it is intended to measure. The internal reviews also examine the overall quality of the test items before they are prepared for presentation to the content review committees and the CDE. Because of the complexities involved in producing defensible items for high-stakes programs such as the CAHSEE, it is essential that many experienced individuals review each item before it is presented to the content review committees, the CDE, and the Statewide Pupil Assessment Review (SPAR) panels.

The Internal Review process for the CAHSEE includes the following stages:

1. Internal Content Review
2. Internal Bias and Sensitivity Review
3. Internal Editorial Review

Throughout this multi-step item review process, the lead content-area assessment specialists and development team members continually evaluate adherence to the rules for item development.

Internal Content Review

Test items and materials undergo three reviews by the content-area assessment specialists. These assessment specialists make sure that the test items and related materials are in compliance with ETS's written guidelines for clarity, style, accuracy, and appropriateness for California students, as well as in compliance with the approved item specifications. Assessment specialists review each item in terms of the following characteristics:

- Relevance of each item to the purpose of the test.
- Match of each item to the item specifications, including DOK.
- Adherence of each item to the principles of quality item writing.
- Match of each item to the identified standard or standards.
- Difficulty of the item.
- Accuracy of the content of the item.
- Readability of the item or passage.
- Grade-level appropriateness of the item.

- Appropriateness of any illustrations, graphs, or figures.
- Calculator sensitivity in mathematics items.

Each item is classified with a code for the standard it is intended to measure. The assessment specialists check all items against these classification codes, both to evaluate the correctness of the classification and to ensure that the task posed by the item is relevant to the outcome it is intended to measure. The internal content reviewers may accept the item and classification as written, suggest revisions, or recommend that the item be rejected.

Internal Bias and Sensitivity Review

ETS assessment specialists, who are specially trained to identify and eliminate questions that contain content or wording that could be construed as offensive to or biased against members of specific ethnic, racial, learning-disabled, or gender groups, conduct the next level of review.

The review process promotes a general awareness of and responsiveness to the following:

- Cultural diversity.
- Diversity of background, cultural tradition, and viewpoints to be found in the test-taking populations.
- Changing roles and attitudes toward various groups.
- Role of language in setting and changing attitudes toward various groups.
- Contributions of diverse groups (including ethnic and minority groups, individuals with disabilities, and women) to the history and culture of the United States and the achievements of individuals within these groups.
- Ensuring the language of items is appropriate for EL students.

Internal Editorial Review

After the items are reviewed by the content-area assessment specialists and the bias and sensitivity reviewers, a group of specially trained, project-specific editors review each item in preparation for review by the CAHSEE content review committees and the CDE. The editors check items for clarity, correctness of language, appropriateness of language for the grade level assessed, adherence to the style guidelines, and conformity with accepted item-writing practices.

6.0 External Item Reviews (California Educators and California Department of Education)

Purpose

The CAHSEE Content and Bias and Sensitivity Review committees review newly developed items for accuracy of item content, clarity of phrasing, item quality, and fairness. The review panels are provided with the opportunity to review newly developed items and to make recommendations for the use of items in embedded field tests. For the 2012–13 development cycle, Content and Bias and Sensitivity Review committees were convened.

The Content and Bias and Sensitivity Review committees are composed of current and former teachers, resource specialists, administrators, curriculum experts, and other education professionals. Current school staff members must meet minimum qualifications to serve on the panels, including:

- Three or more years of general teaching experience in middle school and high school and in the content areas of English-language arts and mathematics.
- Bachelor's degree or higher in a grade or subject area related to English-language arts or mathematics.
- Knowledge and experience with the California content standards in English-language arts or mathematics.

Every effort is made to ensure that Content and Bias and Sensitivity Review committees include representation of gender and of the geographic regions and ethnic groups in California. Efforts are also made to ensure representation by members with experience serving California's diverse special education population.

Committee members are recruited through an application process. Recommendations are solicited from districts, charter schools, and county offices of education in addition to the CDE staff. Applications are received and reviewed throughout the year. Committee applications are reviewed by ETS Assessment Directors, who confirm that the applicants' qualifications meet the specified criteria. Applications that meet the criteria are forwarded to the CDE for review and final approval. Upon approval, the applicant is notified that he or she has been selected to serve on the Content Review committee or the Bias and Sensitivity Review committee.

Bias and Sensitivity Review Meetings for Review of the CAHSEE Items

The ETS test development manager facilitates the Bias and Sensitivity Review meetings. The CDE consultants also attend. Each meeting begins with a brief training session on how to review items for bias and sensitivity. The training consists of the following steps:

- An overview of the purpose and scope of the CAHSEE.

- An overview of the CAHSEE test development process.
- An overview of the Universal Design Principles.
- An overview of guidelines for reviewing CAHSEE items for potential issues of bias and sensitivity.

Guidelines for reviewing items are provided by ETS and approved by the CDE. The guidelines include the following:

- A definition of item bias.
- A discussion of common forms of bias and stereotypes in test items.
- A definition of potential issues of sensitivity in test items.
- A discussion of methods for detecting item bias.
- The purpose of bias and sensitivity review.
- Guiding questions.
- Sample items with embedded bias and sensitivity issues.

The committee is also trained on how to make recommendations for revising items.

Content Review Meetings for Review of CAHSEE Items

Content review committees serve in an advisory capacity and review the newly developed items for alignment to the California content standards. They determine if the items are:

- Measuring the California standards as appropriate for the CAHSEE testing population.
- Interesting and appropriate to students tested at a particular grade/course level.

The ETS content-area assessment specialists facilitate the CAHSEE content review meetings. The CDE consultants also attend. Each meeting begins with a brief training session conducted by ETS on how to review items. The training consists of the following topics:

- An overview of the purpose and scope of the CAHSEE.
- An overview of the CAHSEE test development process.
- An overview of guidelines for reviewing CAHSEE items.
- An overview of Universal Design practices.
- An analysis of CAHSEE item specifications.

Guidelines for reviewing items are provided by ETS and approved by the CDE. The guidelines for reviewing items are summarized below.

Item Guidelines

Does the item:

- Measure the content standard?
- Match the test item specifications?
- Align with the construct being measured?
- Test worthwhile concepts or information?
- Include administrative directions in the stem or question that give the student a full sense of what the item is asking?
- Avoid unnecessary wordiness?
- Reflect content that is free from bias against any person or group?
- Match the DOK rating?

Stimulus Guidelines

Is the stimulus (if any) for the item:

- Required in order to answer the item?
- Likely to be interesting to students?
- Clearly and correctly labeled?
- Providing all the information needed to answer the item?

As the first step of the item review process, panel members review a set of items independently and record their individual comments. Next, the group discusses each item. The content-area assessment specialists facilitate the discussion and record all recommendations in a master item review binder.

ETS staff maintains the master binders showing committee recommendations. Any discrepancies are reconciled with the CDE consultants. The committee is also trained on how to make recommendations for revising items.

Statewide Pupil Assessment Review

The SPAR is responsible for reviewing and approving test items before they are used operationally or as field-test items. The SPAR examines the items for intrusiveness into students' personal lives such as student and family beliefs, morality, religion, or sexuality. The SPAR panel representatives ensure that the test items conform to the requirements of *EC* Section 60614. The CR writing tasks are also presented for review. At the SPAR panel meetings, items are presented in binders for review. If the

SPAR panel rejects specific items and/or CR writing tasks, the items and/or tasks are replaced. For the SPAR panel meeting, the item development coordinator or an ETS content specialist, requested in advance by the CDE, attends the opening session and remains accessible to respond to any questions during the course of the meeting.

7.0 Item Banking

Once the Content Review and Bias and Sensitivity Review committees are finished, the items are placed in the item bank along with their corresponding review information. Items that are accepted are updated to a Field-Test Ready status; items that are rejected are updated to a Rejected Before Use status. ETS then delivers the items to the CDE by means of the CAHSEE electronic item bank. Subsequent updates to items are based on field-test and operational use of the items. However, only the latest version of the item is in the bank at any given time. Data from every administration in which the item was used are included. Item statistics from the census administrations (i.e., February and March) are used for test assembly.

After field-test or operational use, items may be rejected that do not meet statistical specifications; such items are updated with a status of Rejected for Statistical Reasons and remain unavailable in the bank. The research group at ETS evaluates each item for difficulty, discrimination, and conformance to the IRT Rasch model. Researchers also determine if each item functions similarly for various subgroups of interest by performing DIF analyses. Field-tested items are temporarily unavailable if any subgroup has C+/- DIF; these items are updated with a status of Operational Ready – Needs DIF Review. Once items are reviewed by California educators at a Data Review meeting (refer to section 10.0) and are accepted as valid measures of the content standards, they will be made available and updated in the item bank with a status of Operational Ready.

Items that are released or pending release and awaiting the CDE's approval are updated with a Released or Scheduled for Release status and remain unavailable in the bank. CAHSEE items used operationally Rest, i.e., items are unusable for two years plus one administration. As items appear on forms, they go into a Resting status and are unavailable until their Wake-up date.

All unavailable items are marked with an availability indicator of Unavailable and the reason for rejection, as described above. Statuses and availability are updated programmatically as items are presented for review, accepted or rejected, placed on a form for field testing, presented for statistical review, used operationally, and released. All rejection and release indications are monitored and controlled through ETS's assessment development processes.

ETS currently provides and maintains the electronic item banks for several of the California assessments, including the California Standards Tests (CST), California Modified Assessment (CMA), California Alternate Performance Assessment (CAPA), Standards-based Tests in Spanish (STS), and CAHSEE. The CST, CMA, CAPA, STS, and CAHSEE item banks are currently consolidated in the California Item Banking system. ETS works with the CDE to obtain the data for those assessments under contract with other vendors for inclusion in the item bank, using the tools

previously developed. ETS provides the item banking application using the LAN architecture and the relational database management system, SQL 2000, already deployed. ETS provides updated versions of the item bank to the CDE on an ongoing basis and works with the CDE to determine the optimum process if a change in databases is desired.

8.0 Create Field-Test Sets

The primary purpose of field testing is to obtain information about item performance and to obtain statistics that can be used to assemble operational forms. Two types of field tests are conducted for the CAHSEE. A stand-alone field test is used for the ELA writing prompts. An embedded field test is used for both the ELA and mathematics MC items.

Stand-Alone Field Testing

Continual development and field testing of writing prompt items are essential to maintaining a robust item bank. Due to the time required to complete the writing prompt items, separate testing is conducted. The purpose of the ELA field test is to try out a large number of writing prompts to augment the CAHSEE item bank. The results of the field-test analyses are not provided to students. However, due to state budget cuts, the 2012 stand-alone writing prompt field testing was not conducted.

Embedded Field-Test Items

Although a stand-alone field test is useful for developing a new test because it can produce a large pool of quality items, embedded field testing is generally preferred because the field-test items are dispersed throughout the operational test. Variables such as test-taker motivation and test security are the same for embedded field testing as when the items are later administered operationally. Such field testing involves distributing the field-test items within each operational test form. Different forms contain the same operational items and different field-test items. Only field-test data from the February and March administrations are used to evaluate the item performance.

Allocation of Students to Field-Test Items

The operational test forms for the CAHSEE are spiraled among students in the state so that a large representative sample of test takers responds to the field-test items embedded in these forms. The spiraling design ensures that a diverse sample of students takes each field-test item. The students do not know which items are field-test items and which items are operational items; therefore, their motivation is not expected to vary between the two types of items (Patrick & Way, 2008).

9.0 Field-Test Items

Newly field-tested items are analyzed to obtain statistical information about item performance. A set of seven field-test items is administered on the ELA forms and a set of 12 field-test items is administered on the mathematics forms. The sets of field-test items differ across forms, and the number of forms varies across administrations.

Table 3.2 shows the number of forms administered during the CAHSEE census administrations in 2013 and the numbers of examinees included in samples used for the field test or Final Item Analyses (FIA) of these forms. The field-test samples constitute the entire population tested except students who did not have a valid form number, did not complete the test, or did not attempt at least the first five questions of the test. 104 ELA field-test forms were administered in February and 155 ELA field-test forms were administered in March. 52 mathematics field-test forms were administered in February and 78 field-test forms were administered in March.

Table 3.2: Summary of Items and Forms Presented in 2013 CAHSEE

		Operational			Field Test			
Subject	**Administration**	**Number of Items**	**Number of Examinees FIA Sample**	**Number of Examinees Total[1]**	**Number of Forms**	**Number of Items**	**Number of Examinees FIA Sample[2]**	**Number of Examinees Total**
ELA	**February**	73	147,455	148,085	104	651	1,095–5,201	148,085
	March	73	388,998	390,567	155	1,039	2,113–5,649	390,567
Mathematics	**February**	80	143,827	144,375	52	624	2,602–3,489	144,375
	March	80	383,778	385,597	78	936	4,576–5,934	385,597

[1]The Number of Examinees Total is the total number of examinees for score reporting purposes.

[2]The number of examinees for the ELA March FIA sample varied per form.

10.0 Review and Process Field-Test Data

Internal Review

Newly field-tested items are analyzed to obtain statistical information on student performance. This information is used to evaluate items that are candidates for operational test forms. These criteria ensure that the item (1) has an appropriate level of difficulty for the target population; (2) discriminates well between examinees who differ in ability; and (3) contains distractors that are functioning properly. Items with

statistics that fall outside of the target range are flagged. These items undergo review by the ETS content specialists to verify that there is one correct key, all distractors are incorrect, and the items appeared in the test booklet as expected.

Differential Item Functioning Review

A Data Review meeting is held to review the field-test items that were flagged for DIF. The items and their associated statistics are prepared and presented to the Data Review committee, which is composed of members from the Content Review and Bias and Sensitivity Review committees and those who volunteered for one or both committees. ETS assessment specialists facilitate the Data Review sessions with qualified psychometric staff for technical assistance.

Committee members review and discuss the items that have been flagged for C-level DIF. Some of the items have also been flagged for poor statistics and do not meet the psychometric criteria for high item quality. The CDE has defined the criteria for acceptable or unacceptable item statistics. These criteria ensure that the item (1) has an appropriate level of difficulty for the target population, (2) discriminates well between examinees who differ in ability, and (3) conforms well to the statistical model underlying the measurement of the intended constructs. The panel members also use the DIF results to make judgments about the appropriateness of items for various subgroups. The panelists respond to questions such as:

- Is there a content problem within the item?
- Are there any instructional issues that have negatively affected the performance of students on the item?

The panelists recommend whether to accept or reject each item for inclusion in the CAHSEE item bank. At the completion of the meeting, ETS provides the CDE with summaries of the recommendations based on the field-test analyses and the content reviews that are relevant to future form construction of the CAHSEE. All final decisions on acceptance of items rest with the CDE. Typically, a Data Review meeting is held once a year, and for the 2012–13 school year the Data Review meeting was held in November 2012.

11.0 Create Operational Forms with California Department of Education Review

Forms are created by ETS using the California Item Bank, based on the CAHSEE blueprints and statistical requirements. Forms are reviewed internally by the content specialist, the psychometrician, and editorial staff before being posted to the CDE for their review. These forms are posted to and reviewed by the CDE three times and include additional ETS content, psychometric, and editorial checks during each step.

12.0 Administer Operational Test

The CAHSEE test is administered seven times per year. The months of administration are July, October, November, December, February, March, and May. The census administrations, consisting primarily of grade ten students, are February and March. The other administrations permit testing opportunities for those students who have not yet passed the examination. The July administration is only for grade twelve and adult education students.

Chapter 4: Test Development

The CAHSEE test forms are constructed to measure student performance relative to California's content standards approved by the SBE. They are also constructed to meet professional standards for validity and reliability. Each CAHSEE test form consists of operational and field-test items. Operational items are used to produce student scores. The field-test items are scored along with the operational items, but students' scores on these items are not included in the computation of a total test score. Instead, student performance on the field-test items from the census administrations is analyzed, and the calibrated items are placed in the item bank. The test development process described here refers to the process used to assemble items into operational test forms.

For each CAHSEE test, the content standards and psychometric attributes are used as the basis for assembling the test forms. The match of proposed forms to the specified psychometric criteria is evaluated using estimates based on the most recent item statistics obtained from embedded field testing conducted during the census administrations or previous operational administrations. The test construction process is completed using the CAHSEE item bank.

Test Length

The selection of items in each CAHSEE test form is decided by considering the construct that the test is intended to measure and the level of psychometric quality desired. Test length is closely related to the complexity of content to be measured by each test; this content is defined by California's content standards for each content area. Also considered is the goal that the tests be short enough so that most of the students complete the test in a reasonable amount of time.

Each ELA form consists of 80 items, which include 72 operational MC items, one operational CR item, and seven embedded field-test MC items. Each mathematics form consists of 92 items, which include 80 operational MC items and 12 field-test MC items. For more details on the distribution of items across seven 2012–13 CAHSEE administrations, see Table 2.1 in Chapter 2.

Rules for Item Selection

Test Blueprint

ETS has developed all CAHSEE test items to conform to the SBE-approved content standards and CAHSEE blueprints. The test blueprints for the CAHSEE can be found on the CDE CAHSEE Program Resources Web page at http://www.cde.ca.gov/ta/tg/hs/resources.asp.

Although the CAHSEE blueprints indicate the number of items at the individual standard level, scores on the CAHSEE items are grouped into subscore reporting categories referred to as content strands. For each CAHSEE content strand, the

number of questions correctly answered and the percentage of the total number of items in the strand are reported on a student's score report. For ELA, a CR item score is also given. A summary of the strand scores reported for the CAHSEE is provided in Table 2.2 in Chapter 2.

Content Rules and Item Selection

When developing a new test for a given examination, test developers follow a number of rules. First and foremost, they select items that meet the CAHSEE blueprint for that content area. Using an electronic item bank, assessment specialists begin by identifying a number of linking items. These are operational items that appeared in the previous year's census administrations and are used to equate the test forms administered in the subsequent year. Approximately one-half of the anchor items are selected from each of the February and March administrations in order to minimize item exposure for students retaking the test in another testing cycle. Linking items are selected to proportionally represent the full blueprint. For example, if 25 percent of all of the items in a test are in the Algebra and Functions strand, then approximately 25 percent of the linking items are targeted for inclusion from that strand. The linking items are selected for their content quality and are reviewed to ensure that they meet specified psychometric criteria as described below.

After the linking items are approved by the psychometricians and the CDE, assessment specialists select the remainder of the test form. Their first consideration is the strength of the content and the match of each item to the standard. In selecting items, test developers ensure that a variety of formats and content is included. Some items should include graphics that are visually interesting.

One psychometric consideration is the difficulty of each item. Test developers strive to ensure that each test contains a variety of easy, medium, and difficult items. If items do not meet all content and psychometric criteria, test developers review alternate selections that could improve the match of the test to the requirements. If such a match is not attainable, the test developers work in conjunction with psychometricians and the CDE to determine which combination of items will be the best match possible within the constraints of the available item pool.

Psychometric Criteria

The CAHSEE test developers and psychometricians strive to accomplish three goals while developing a test:

1. The test must have the desired precision of measurement at all ability levels.

2. The test scores must be valid and reliable for the intended population and for the various subgroups of test takers.

3. The test forms must be comparable across administrations to ensure that scores generalize over time.

In order to achieve these goals, a set of rules has been developed that outlines the desired psychometric properties of each content area. Such rules are referred to as statistical targets, which are provided to test developers before a test construction cycle begins. Tables 4.1 to 4.4 list the recommended statistical specifications for the CAHSEE test assembly, articulated in terms of equated item Rasch difficulty values (*b*-values) and item biserial correlations (r-bis) for the total test. The item *b*-values are based on the IRT Rasch model. When using the IRT Rasch model, the *b*-value targets make it possible to choose items to produce a test that has the desired precision of measurement at all ability levels, and test forms are comparable across administrations. The biserial correlation is a measure of how well the items discriminate among test takers that differ in their ability, and it is related to the overall reliability of the test.

In general, test developers are asked to match the statistical characteristics as closely as possible to the statistical targets. Tables 4.1 and 4.3 provide the target distributions of MC items in each of the intervals. They are used as guidelines by the test developers to match the mean equated Rasch difficulty for each form. Tables 4.2 and 4.4 provide the statistical guidelines for content strands in each of the test forms.

Figure 4.1 is an example of a test characteristic curve (TCC) that falls within the specifications. The TCC depicts the relationship between students' abilities and their expected true scores, expressed in the raw score metric. The dotted line shows that the TCC for the new test being constructed matches the average difficulty of the base form (depicted by the solid line) throughout the range of ability.

In addition to item difficulty and discrimination specifications, information about model-data fit and DIF is taken into account during test assembly (see Chapter 6 for a description of the procedures used for evaluating model-data fit). Test developers are instructed to avoid items with fit classifications of F, as well as items that have been flagged for severe (C-/C+) DIF unless they are approved by the CDE content specialists and DIF review committees for use.

Once constructed, the forms are reviewed and approved, first by ETS psychometricians and then by the CDE. If any items are replaced, test developers resend the forms to the psychometricians for approval.

Figure 4.1: Example of Test Characteristic Curves

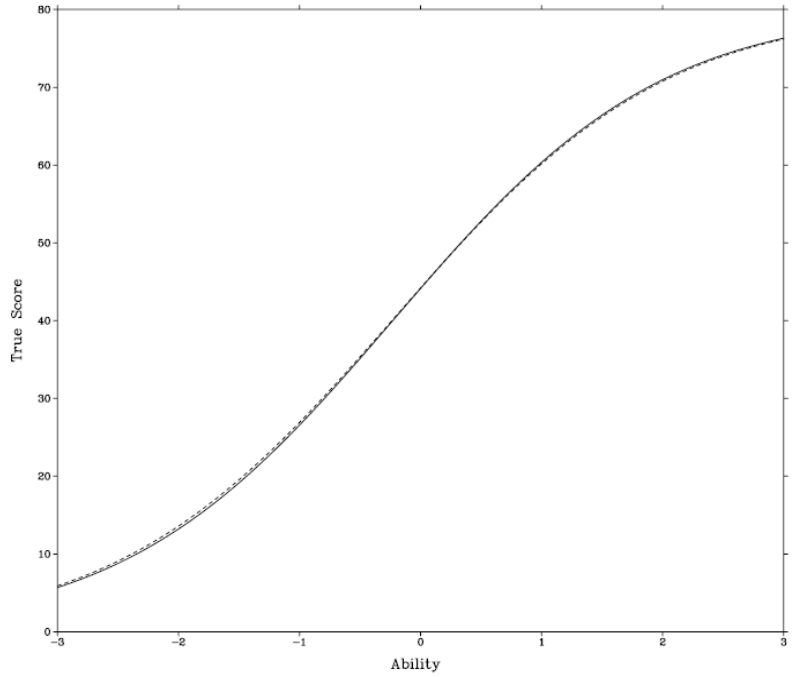


Table 4.1: Difficulty (B) and Discrimination (R-bis) Specifications for ELA MC Items

Low B	High B	Specifications
-1.75	-1.50	0 – 1
-1.50	-1.25	1 – 2
-1.25	-1.00	2 – 4
-1.00	-0.75	4 – 6
-0.75	-0.50	7 – 9
-0.50	-0.25	9 – 13
-0.25	0.00	10 – 14
0.00	0.25	9 – 13
0.25	0.50	7 – 12
0.50	0.75	7 – 10
0.75	1.00	2 – 5
1.00	1.25	2 – 5
1.25	1.50	1 – 3
1.50	1.75	0 – 2
	No. MC Items	**72**
	MC Mean	**-0.10 – 0.10**
	MC SD	**0.55 – 0.70**
Low R-bis	**High R-bis**	**Specifications**
0.0	0.1	0 – 0
0.1	0.2	0 – 0
0.2	0.3	4 – 10
0.3	0.4	16 – 24
0.4	0.5	16 – 24
0.5	0.6	16 – 24
0.6	0.7	7 – 10
0.7	0.8	1 – 3
	No. MC Items	**72**
	MC Mean	**0.44 – 0.54**
	MC SD	**0.10 – 0.15**

Table 4.2: Number of Items and Mean *B*-Value Ranges by Content Strand for ELA

Content Class	No. Items	Mean B Range
Reading Comprehension	18	-0.05 – 0.20
Literary Response & Analysis	20	-0.20 – 0.00
Word Analysis	7	-0.40 – 0.15
Writing Conventions	15	-0.03 – 0.25
Writing Strategies	12	0.07 – 0.50
Total	**72**	

Table 4.3: Difficulty (B) and Discrimination (R-bis) Specifications for Mathematics

Low B	High B	Specifications
-1.75	-1.50	0 – 1
-1.50	-1.25	1 – 2
-1.25	-1.00	2 – 4
-1.00	-0.75	7 – 10
-0.75	-0.50	7 – 10
-0.50	-0.25	7 – 10
-0.25	0.00	9 – 13
0.00	0.25	9 – 13
0.25	0.50	7 – 10
0.50	0.75	7 – 10
0.75	1.00	2 – 5
1.00	1.25	2 – 4
1.25	1.50	0 – 1
	No. MC Items	**80**
	MC Mean	**-0.30 – -0.20**
	MC SD	**0.65 – 0.80**
Low R-bis	**High R-bis**	**Specifications**
0.0	0.1	0 – 0
0.1	0.2	0 – 0
0.2	0.3	0 – 1
0.3	0.4	10 – 13
0.4	0.5	13 – 16
0.5	0.6	25 – 30
0.6	0.7	20 – 24
0.7	0.8	2 – 4
	No. MC Items	**80**
	MC Mean	**0.44 – 0.54**
	MC SD	**0.10 – 0.15**

Table 4.4: Number of Items and Mean *B*-Value Ranges by Content Strand for Mathematics

Content Class	No. Items	Mean B Range
Number Sense	17	-0.7 – -0.3
Probability and Statistics	13	-0.8 – -0.4
Algebra and Functions	20	-0.7 – -0.3
Measurement & Geometry	18	-0.4 – 0.0
Algebra I	12	0.0 – 0.4
Total	**80**	

Rules for Item Sequence and Layout

The items on test forms are organized and sequenced differently according to the requirements of the content area.

- **English-Language Arts:** Since the ELA test is primarily passage-dependent, items are sequenced according to their associated reading passages. Passages are sequenced according to genre and interest level. Test developers alternate potentially higher-interest pieces (typically narrative selections) with lower-interest pieces (typically functional or technical writing) to help alleviate reader fatigue. ELA items are divided into two sessions in the following order: first session—reading passages with their associated items followed by the writing CR item; second session—reading passages and writing passages with their associated items and writing stand-alone MC items.
- **Mathematics:** The mathematics test is sequenced according to reporting categories; that is, all items from a single reporting category are presented together, and then all of the items from the next reporting category are presented. This ordering permits students to concentrate on one reporting category at a time. The reporting categories are organized in the following order: Number Sense, Probability and Statistics, Algebra and Functions, Measurement and Geometry, and Algebra I. Mathematical reasoning items are interspersed among the Number Sense, Probability and Statistics, Algebra and Functions, and Measurement and Geometry sections of the test. Mathematical reasoning is part of the *Mathematics Framework for California Public Schools* (CDE, 2006) and therefore, the blueprints. “It characterizes the thinking skills that students can carry from doing mathematics into other disciplines. Constructing valid arguments and criticizing invalid ones are inherent in doing mathematics” (CDE, 2006, p. xvi). Mathematical reasoning items are not scored as a separate reporting cluster but are scored under the associated content reporting cluster.

Chapter 5: Test Administration

Test Security and Confidentiality

All tests within the CAHSEE program are secure documents. For the CAHSEE administrations, every person having access to test materials maintains the security and confidentiality of the tests. ETS's Code of Ethics requires that all test information, including tangible materials (such as test booklets), confidential files, processes, and activities are kept secure. ETS has systems in place that maintain tight security for test questions and test results, as well as for student data. To ensure security for all of the tests that ETS develops or handles, ETS maintains the OTI, which is described in the next section.

Educational Testing Service Office of Testing Integrity

The OTI is part of the ETS legal department and is a division that oversees test security standards for all testing programs administered by ETS. The Quality Assurance division, also within the legal department, publishes and maintains *ETS Standards for Quality and Fairness* and supports the OTI's goals and activities. The purposes of the *ETS Standards for Quality and Fairness* are to help ETS design, develop, and deliver technically sound, fair, and useful products and services and to help the public and auditors evaluate those products and services.

The OTI's mission is to

- Minimize any testing security violations that can impact the fairness of testing
- Minimize and investigate any security breach
- Report on security activities

The OTI helps prevent misconduct on the part of test takers and administrators, detects potential misconduct through empirically established indicators, and resolves situations in a fair and balanced way that reflects the laws and professional standards governing the integrity of testing. In their pursuit of enforcing secure practices, ETS and the OTI strive to safeguard the various processes involved in a test development and administration cycle. These practices are discussed in detail in the following sections.

Test Development

During the test development process, ETS staff members consistently adhere to the following established security procedures:

- Only authorized individuals have access to test content at any step in the test development, item review, and data analysis processes.

- Test developers keep all hard copy test content, computer disk copies, art, film, proofs, and plates in locked storage when not in use.

- ETS shreds working copies of secure content as soon as they are no longer needed in the test development process.
- Test developers take further security measures when test materials are to be shared outside of ETS; this is achieved by using registered and/or secure mail, using express delivery methods, and actively tracking records of dispatch and receipt of the materials.

Item Review

ETS enforces security measures at item review panel meetings to protect the integrity of meeting materials by using the following protocols:

- Individuals who participate in the review panels must sign a confidentiality agreement.
- Meeting materials are strictly managed before, during, and after the review meetings.
- Meeting participants are supervised at all times during the meetings.
- Meeting participants are required to use cell phones outside of the room and not to have cell phones at the meeting tables.

Item Bank

Once the item review panel completes its review, the items are placed in the item bank along with their statistics. ETS then delivers the items to the CDE through the CAHSEE electronic item bank. Subsequent updates to content and statistics associated with items are based on data collected from field testing and the operational use of the items. The latest version of the item is retained in the bank along with the data from every administration that has included the item.

Security of the electronic item banking system is of critical importance. The measures for assuring the security of electronic files include the following:

- Electronic forms of test content, documentation, and item banks are backed up, and the backups are kept offsite.
- The offsite backup files are kept in secure storage with access limited to authorized personnel only.
- To prevent unauthorized electronic access to the item bank, state-of-the-art network security measures are used.

ETS routinely maintains many secure electronic systems for both internal and external access. The current electronic item banking application includes a login/password

system to authorize access to the database or designated portions of the database. In addition, only users authorized to access the specific SQL database are able to use the electronic item banking system. Designated administrators at the CDE and at ETS are authorized users.

Transfer of Forms and Items to the California Department of Education

ETS shares a secure file transfer protocol (SFTP) site with the CDE. SFTP is a method for reliable and exclusive routing of files. Files reside on a password-protected server that authorized users only may access. On that site, ETS posts Microsoft Word and Excel documents, Adobe Acrobat PDFs, or other document files for the CDE to review. ETS sends a notification e-mail to the CDE to announce that files are posted. Item data are always transmitted in an encrypted format to the SFTP site; test data are never sent via e-mail. The SFTP server is used only as a conduit for the transfer of files; secure test data are not stored permanently on the shared SFTP server.

Printing

After items and test forms are approved, the files are sent for printing on a CD using a secure courier system. According to established procedures, the OTI preapproves all printing vendors before they can work on secured confidential and proprietary testing material. The printing vendor must submit a completed ETS Printing Plan and a Typesetting Facility Security Plan; both plans document security procedures, access to testing materials, a log of work in progress, personnel procedures, and access to the facilities by the employees and visitors. After reviewing the completed plans, representatives of the OTI visit the printing vendor to conduct an onsite inspection. The printing vendor ships printed test booklets to Pearson Educational Measurement (Pearson) in Iowa City.

Test Administration

Pearson receives testing materials from printers, prints a unique barcode identifier on each test booklet, packages them, and ships them to school districts in triple-walled boxes. Pearson ships secure and non-secure test materials in separate shipments, both via secure, expedited delivery. Materials must be signed for and inventoried when they arrive at the district. After testing, the school districts return materials to Pearson for scanning. During these processes, Pearson takes extraordinary measures to protect the testing materials. Pearson’s customized Oracle business applications verify that inventory controls are in place, from materials receipt to packaging. The reputable carriers used by Pearson provide a specialized handling and delivery service that maintains test security and meets the CAHSEE program schedule. The carriers provide inside delivery directly to the CAHSEE LEA coordinators or authorized recipients of the assessment materials.

Test Delivery

Test security requires accounting for all secure materials before, during, and after each test administration. All booklets (including those for stand-alone field tests) are printed with unique readable bar code numbers. Packing lists in each box of secure materials contain the bar code range of booklets within that shipment. Any missing materials are to be reported immediately to ETS. The same process is required when materials are distributed from the LEA's main location to the individual test sites. The CAHSEE LEA coordinators are required to keep all test materials in central locked storage except during actual test administration times. After personnel inventory all test booklets at the district and local sites, the boxes in which the test booklets were shipped are resealed and not opened until the day of the examination. Test site coordinators are responsible for accounting for and returning all secure materials to the CAHSEE LEA coordinator, who is responsible for returning them to the CAHSEE Processing Center at Pearson. All test booklets, upon return receipt at Pearson's receiving facility, are scanned and accounted for. If booklets are missing, LEA test coordinators are contacted and asked to recover and return the booklets. A final report of missing booklets is forwarded to the CAHSEE Office at the CDE.

The following measures are in place to ensure security of the CAHSEE testing materials:

- The CAHSEE LEA coordinators are required to sign and submit a *CAHSEE Test Security Agreement* form to the CAHSEE Technical Assistance Center before ETS can ship any testing materials to the district.

- Test site coordinators have to sign and submit a *CAHSEE Test Security Agreement* form to the CAHSEE LEA coordinator before any testing materials can be delivered to the school/test site.

- Anyone having access to the test materials must sign and submit a *CAHSEE Test Security Affidavit* form to the test site coordinator before receiving access to any testing materials.

- All testing is conducted on specific dates as determined by the SSPI. To ensure security throughout the state, test sessions must begin between the hours of 8 and 10 a.m. Test sites that must test outside this window must advise the CDE of their planned testing schedule.

- Test security during testing is managed by the CAHSEE LEA coordinator as well as the CAHSEE test site coordinator. All students are seated facing the same direction and with spacing at least four feet from center of desk to center of desk. Any information on bulletin boards, chalkboards, whiteboards, or charts that could be used by students to help answer questions on the test is removed or covered.

- If a security breach occurs at a test site before, during, or after a CAHSEE administration and is determined to be a violation of the *Test Security Agreement*,

the LEA coordinator records all pertinent information on the *Test Security Breach Report* supplied in the *CAHSEE LEATSCM* (CDE, 2013a) and faxes or e-mails the form immediately to ETS. ETS, in consultation with the CDE CAHSEE offices, then launches an investigation.

- Any irregularities in test security may result in the invalidation of student test results.
- Procedures for test site security are documented in the *LEATSCM* (CDE, 2013a) and are reviewed annually with the CDE CAHSEE Office.

Processing Security

Pearson has established the following security safeguards at their sites:

- Access to the facility is controlled.
- No test materials may leave the facility during the project.
- All staff must wear Pearson identification badges at all times in Pearson facilities.
- No recording or photographic equipment is allowed in the processing area.

The scanned answer documents are stored in secure warehouses. After they are stored they will not be handled again unless questions arise about a student's score. For example, a school district may request that a student's test responses be rescored. In such a case, the answer document is removed from storage, copied, and sent securely to ETS for hand scoring. Afterwards, the copy is destroyed. School and district personnel are not allowed to look at a completed answer document unless required for transcription or to investigate irregular cases.

All answer documents are securely destroyed one year after each examination administration, and test booklets are destroyed 90 days after each administration.

Data Management

Data, electronic files, test files, programs (source and object), and all associated tables and parameters are maintained in secure network libraries for all systems developed and maintained in a client-server environment. Only authorized software development employees are given access as needed for development, testing, and implementation in a strictly controlled environment.

Transfer of Files via Secure Data Exchange

ETS maintains an SFTP site to transmit secure data (test items, test forms, detail files, aggregate files, and other data files as needed) to the CDE and/or other third parties such as the independent evaluator. ETS also uses an SFTP site to share files

between ETS and Pearson. Files posted to SFTP sites are protected using 128-bit encryption. Access to the CAHSEE data files is limited to appropriate personnel with direct project responsibilities.

Scoring and Analysis

After quality assurance procedures have been completed, Pearson transmits electronic files containing all information captured from the answer documents to ETS for scoring and analysis. MC items are scored in the Score Key Management (SKM) system. Images of student essays are uploaded to the *Online Scoring Network*™ (OSN) where they are scored and the results are downloaded to the SKM system and then merged with the students' MC scores in the CAHSEE Management System.

Extracts are generated from the database, and the Data Quality Services (DQS) area performs quality control procedures before passing files to the Statistical Analysis group. The Statistical Analysis group maintains the files on secure servers and adheres to the ETS Code of Ethics to prevent any unauthorized access.

Reporting and Posting Results

After statistical analysis and quality control have been completed on student data, the data are reported in several ways. Student demographic detail files, which include student exam results, and district and school rosters and summary reports are posted in secure, password-protected district folders on the CAHSEE Web site. Individual student score reports are printed on security paper and shipped by secure delivery to the LEA.[4] Encrypted files of summary results are sent to the CDE by means of the SFTP. Additionally, CDs with student detail and summary results are created and delivered to the CAHSEE Office at the CDE by ETS staff located in Sacramento. Any summary results that have fewer than eleven students are not reported. The statistics based on the results are also entered into the item bank.

Student Confidentiality

To meet ESEA and state requirements, school districts must collect demographic data about students. This includes information about student ethnicity, parent education, disabilities, whether the student qualifies for the NSLP, and so forth. In addition, students may reveal other information about themselves through the essays they write. ETS takes precautions to prevent any of this information from becoming public or being used for anything other than testing purposes. These procedures are applied to all documents where this demographic information may appear, including the following:

- Pre-ID files
- Reports
- Essays

[4]LEA includes public school districts, statewide benefit charter schools, state board–authorized charter schools, county of education programs, and charter schools testing independently from their home district.

Data Security

ETS is committed to safeguarding the information in its possession from unauthorized access, disclosure, modification, or destruction and adheres to strict information security policies in order to protect the confidentiality of client data. ETS staff's access to production databases is limited to personnel with a business need to access the data. User IDs for production systems must be person-specific or for systems use only.

ETS has implemented network controls for routers, gateways, switches, firewalls, network tier management, and network connectivity. Routers, gateways, and switches represent points of access between networks. However, these do not contain mass storage or represent points of vulnerability, particularly to unauthorized access or denial of service. Routers, switches, firewalls, and gateways may possess little in the way of logical access.

Facilities and procedures that protect computer files such as firewalls, intrusion detection, and virus control are in place at ETS to provide for physical security, data security, and disaster recovery. Comprehensive disaster recovery facilities are available and tested regularly at the SunGard installation in Philadelphia, Pennsylvania. ETS routinely sends backup data cartridges and files for critical software, applications, and documentation to a secure offsite storage facility for safekeeping.

ETS protects individual students' results on both electronic files and paper reports during the following events:

- Scoring
- Transfer of scores by means of secure data exchange
- Statistical Analysis
- Reporting
- Internet postings
- Storage

In addition to protecting the confidentiality of testing materials, the ETS Code of Ethics further prohibits employees from financial misuse, conflicts of interest, and unauthorized appropriation of ETS property and resources. Specific rules are also given to ETS employees and their immediate families who may take a test developed by ETS, such as the CAHSEE examination. The OTI verifies that these standards are followed throughout ETS. It does this, in part, by conducting periodic onsite security audits of departments with follow-up reports containing recommendations for improvement.

Procedures to Maintain Standardization

The CAHSEE processes are designed so that the tests are administered and scored in a standardized manner. ETS takes all necessary measures to ensure the standardization of the CAHSEE tests, as described in this section.

Test Administrators

The CAHSEE tests are administered seven times in a school year. To that end, ETS employs personnel who facilitate various processes involved in the standardization of an administration cycle.

The responsibilities for district and test site staff members are included in the *CAHSEE LEATSCM* (CDE, 2013a). The manual is described in a later section.

The LEA staff members involved in the test administration are as follows:

CAHSEE LEA Coordinator

Each LEA designates a CAHSEE LEA coordinator who is responsible for ensuring the proper and consistent administration of the CAHSEE tests. The LEA coordinator also is responsible for securing testing materials upon receipt, distributing testing materials to schools, tracking the materials, training and answering questions from district staff and test site coordinators, receiving scorable and nonscorable materials from schools after an administration, and returning the materials to the CAHSEE contractor for processing.

Test Examiner

The CAHSEE is administered by test examiners who may be assisted by test proctors and scribes. A test examiner is an employee of a school district or an employee of a nonpublic, nonsectarian school (NPS). The test examiner has been trained to administer the tests and has signed a *CAHSEE Test Security Affidavit*. Test examiners must follow the directions in the *CAHSEE DFA* (CDE, 2013b) exactly.

Test Proctor

A test proctor is either an employee of the school district or a person assigned by an NPS to implement the IEP of a student. The test proctor is trained to assist the test examiner in the administration of the CAHSEE. Test proctors must sign the *CAHSEE Test Security Affidavit*.

Scribe

A scribe is either an employee of the school district or a person assigned by an NPS to implement the IEP of a student. The scribe is required to transcribe a student's responses to the format required by the test. A student's parent or guardian is not eligible to serve as a scribe. Scribes must sign the *CAHSEE Test Security Affidavit*.

CAHSEE Directions for Administration

The *CAHSEE DFA Manual* is used by test examiners to administer the CAHSEE to students. The test examiners must follow all directions and guidelines in this manual and read, word-for-word, the instructions to students in the SAY boxes to ensure test standardization.

CAHSEE Local Educational Agency and Test Site Coordinator Manual

Test administration procedures found in the *CAHSEE LEATSCM* must be followed so all students have an equal opportunity to demonstrate their academic achievements. The *CAHSEE LEATSCM* (CDE, 2013a) contributes to this goal by providing information about the responsibilities of district and test site coordinators, as well as those of the other staff involved in the administration cycle. However, the manual is not intended as a substitute for the *California Code of Regulations*, Title 5, *EC*, or to detail all of the coordinator's responsibilities.

CAHSEE Online

CAHSEE Online is a secure, Web-based application that allows CAHSEE LEA coordinators to order materials, submit student Pre-ID data, maintain district contact and shipping information, and correct student demographic data. Access to the online system is managed by unique passwords assigned to each CAHSEE LEA coordinator.

Test Booklets

For both ELA and mathematics tests, multiple versions of test booklets are administered in the census administrations (February and March). The versions differ only in terms of the field-test items. These versions are spiraled, or packaged, consecutively and are distributed at the student level; that is, each classroom or group of test takers receives at least one of each version of the test. Only one version is administered in non-census administrations (May, July, October, November, and December).

The answer documents are packaged by the school and may be sorted by group(s) within the school, depending on whether the CAHSEE LEA coordinator provided a sorting order on the Pre-ID file. For example, if a school wanted all of a teacher's answer documents together, they would enter their own district code for the teacher and the documents would come packaged that way. All materials are sent to the CAHSEE LEA coordinator for proper distribution within the LEA. Special formats of test booklets are also available for test takers who require test variations to participate in testing. These special formats include audio CDs, large-print test materials, and Braille test materials.

Students with Disabilities

All students participate in the CAHSEE Program, including SWDs. Per the California *EC* Section 60852.3, SWDs are exempted from meeting the CAHSEE requirement until alternative means to the CAHSEE are implemented. During the test, students may use testing variations that are regularly used in the classroom and any accommodations or modifications specified in their IEPs or Section 504 plans. Examples of test variations available only to students who regularly use them in the classroom include special or adaptive furniture, special lighting, or being tested

individually in a separate room. An accommodation is any variation in the assessment environment or process that does not fundamentally alter what the test measures or affect the comparability of test scores. Examples of accommodations for the CAHSEE include using a Braille transcription, having the mathematics section presented orally via audio presentation on a CD, or having extra time beyond that day to complete the test. A modification is any variation in the assessment environment or process that fundamentally alters what the test measures or affects the comparability of test scores. Examples of modifications for the CAHSEE include using a calculator on the mathematics section of the test, having the MC portion of the ELA section presented orally to the student, or using Manually Coded English or American Sign Language to present the MC questions of the ELA section to the student.

Identification of Students with Test Variations, Accommodations, or Modifications

Most SWDs and ELs take the CAHSEE without test variations. However, some of these students may need assistance when taking the CAHSEE; the assistance takes the form of test variations, accommodations, or modifications (see Table 2.4 in Chapter 2 for details). Test site coordinators are responsible for providing test examiners with any information about students who require accommodations or modifications as specified in their IEPs or Section 504 plans. If a student uses accommodations or modifications for the CAHSEE, the CAHSEE Test Site Coordinator or designated person completes a section of the answer document to indicate which accommodation(s) and modification(s) the student used on each test – ELA and mathematics. The coordinator also indicates, by signature, that the student had access to the modifications and/or accommodations specified in the student's IEP or Section 504 plan.

Scoring

The purpose of test variations and accommodations is to enable students to take the CAHSEE but not to give them an advantage over other students or to improve their scores. However, testing with a modification (e.g., calculators on the mathematics test, test questions read aloud on the ELA test) impacts the construct being measured and affects the comparability of test scores. If a student takes one or both parts of the CAHSEE with a modification and has received the equivalent of a passing score, the student has not passed that part of the exam but is eligible to request a local waiver of the requirement to meet the high school graduation requirements. In addition, scores for students tested with modifications are counted as Far Below Basic for API calculations and Not Proficient for AYP calculations, and these students are not counted in the cohort of students tested. Test administration variations and accommodations do not result in changes to students' scores for API or AYP calculations, and these students are counted as Tested. The only exception is the calculator use in the mathematics exam. This modification is accepted and counted as tested. The Proficient cut point is a little higher than that for those students who did not use a calculator.

Demographic Data Corrections

After reviewing student data, some school districts may discover demographic data that are incorrect or incomplete. The Demographics Data Corrections function of the CAHSEE Online exam gives school districts the ability to correct these data within a specified availability window.

Testing Irregularities

Testing irregularities are circumstances that may compromise the reliability and validity of test results. If more than five percent of the students tested are involved, these irregularities could affect a school's API and AYP. These scores are invalidated.

In the event of an administration irregularity, the test site coordinator completes a *Test Administration Incident Form* that details all pertinent information and immediately notifies ETS and the CDE. This form is kept at the school or district office for one year following the test. If the school and/or district determines that a student's answer document should be invalidated due to cheating, the Score Code field on the answer document is coded I. This invalidates the student's score for that portion of the test, and the student's testing status is reported as Score Invalidated. The information and procedures to assist in identifying irregularities and notifying the CDE are provided in the *CAHSEE LEATSCM* (CDE, 2013a).

Test Administration Incidents

A test administration incident is any event that occurs before, during, or after test administration that does not conform to the instructions stated in the *DFA* and the *CAHSEE LEATSCM* (CDE, 2013a). These events include test administration errors, disruptions, and student cheating. Except in the case of cheating, test administration incidents generally do not affect test results. These administration incidents are not reported to the CDE or the CAHSEE Program testing contractor. The CAHSEE test site coordinator should immediately notify the CAHSEE LEA coordinator of any test administration incidents that occur. It is recommended by the CDE that districts and schools maintain records of these incidents.

Chapter 6: Analyses

Overview

This chapter summarizes item- and test-level statistics obtained for the CAHSEE administered in 2012–13. The statistics presented in this chapter are divided into five sections and are presented in the following order:

1. Classical Item Analyses
2. DIF Analyses
3. IRT Analyses (Calibration, Scaling, and Equating)
4. Reliability Analyses
5. Validity Evidence

Each of these sets of analyses is presented in the text and in the appendices listed below.

1. Appendices 6.B through 6.H present item-level statistics for operational items. Included are the following summary tables:

    a. Item characteristics, including IRT Rasch item difficulty statistics (*b*-values) and point-biserial correlations for items in each operational test.

    b. The distribution of items based on their fit to the Rasch model.

    c. DIF analyses that list items flagged for significant DIF and the distributions of items across DIF categories.

    d. Summary of the ELA CR item that incorporates the polyserial correlation, DIF results, and the IRT *b*-value and step parameters.

2. Appendices 6.I and 6.J present item-level statistics for MC field-test items for the February and March administrations, respectively. Field-test data from the February and March administrations only are used to evaluate the item performance. Therefore, summary tables are provided only for the February and March administrations. Tables in Appendices 6.I and 6.J follow the same numbering system as Appendices 6.B through 6.H.

3. Appendices 6.K through 6.N present results of the reliability analyses. Appendix 6.K presents the estimates of intercorrelations, reliability, and standard errors of measurement for total test scores and strand scores for the population as a whole and for selected subgroups. Appendix 6.L presents inter-rater reliability results and Appendix 6.M presents generalizability analyses for the ELA writing prompts. The results of the classification consistency and classification accuracy

of the Pass/Not Pass designations and ESEA performance levels are shown in Appendix 6.N.

4. Appendix 6.O presents the scoring tables obtained from the IRT equating process.

To simplify the presentation of these data, Table 6.1 provides a description of the tables located in Appendices 6.B through 6.J. Information pertaining to the operational items is found in Appendices 6.B through 6.H; information pertaining to the field-test items is found in Appendices 6.I and 6.J.

Table 6.1: Listing of Summary Tables for Items

Table[1, 2]	Content	Label
6.x.1	Statistics for ELA items: IRT *b*-values and point-biserial correlations for all items and summarized by strand	Summary of Item Statistics—ELA
6.x.2	Statistics for Mathematics items: IRT *b*-values and point-biserial correlations for all items and summarized by strand	Summary of Item Statistics—Mathematics
6.x.3	IRT model fit statistics for ELA items	IRT Model Data Fit Distribution of Items—ELA
6.x.4	IRT model fit statistics for Mathematics items	IRT Model Data Fit Distribution of Items—Mathematics
6.x.5	Items flagged for significant DIF	Items Containing Significant DIF
6.x.6	DIF classifications—ELA	Distribution of DIF Classifications—ELA
6.x.7	DIF classifications—Mathematics	Distribution of DIF Classifications—Mathematics
6.x.8	Summary of ELA CR item, including the IRT *b*-value and step parameters, polyserial correlations, and DIF results	Listing of CR Item Statistics—ELA

[1]For operational items: x = Administration, where B = July, C = October, D = November, E = December, F = February, G = March, H = May.
[2]For field-test items: x = Administration, where I = February, J = March.

Samples Used for the Analyses

CAHSEE analyses were conducted at different times in the testing process and involved varying proportions of the full CAHSEE population. The reliability statistics and the correlations were calculated using the aggregate data file, which contains test results of the overall population. Following the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999, Standard 6.4), the results of the summary analyses are presented for specific populations in addition to the overall test-taking population. For the two census administrations (February and March), classical item analyses, item-level DIF results, and IRT results were based on a sample of students used in the FIA, which was close to 100 percent of students. For the five non-census administrations (July, October, November, December, and May), classical item analyses and item-level DIF results were based on a sample with a minimum of 70 percent of students. The IRT analyses for the operational items were

based on a sample, also used in the equating, that comprised a minimum of 90 percent of students.

Classical Item Analyses

For each administration, classical item analyses are completed prior to DIF and item calibration, scaling, and equating. These analyses involve computing a set of statistics based on classical test theory for every item in each form. Each statistic is designed to provide some essential empirical information about the quality of each item. The statistics estimated for the CAHSEE are described below.

Classical item difficulty ("*p*-value"):

This statistic indicates the percentage of examinees in the sample who answered the item correctly. Desired *p*-values generally fall within the range of 0.25 to 0.90.

Item discrimination:

An item is considered discriminating if high-ability students tend to answer it correctly and low-ability students tend to answer it incorrectly. Item discrimination is generally assessed by comparing how the performance on an item is related to the performance on the criterion score, which is usually the total score on the test. For ELA, the test criterion score is the raw weighted composite score, which includes the total number-correct score on the MC items plus the weighted CR item score. For mathematics, the test criterion score is the total number-correct score.

Item discrimination indices used for the CAHSEE include the biserial correlation, the point-biserial correlation, and the polyserial correlation. Both the biserial correlation, or r-biserial, and the point-biserial correlation measure the relationship between a dichotomous item and the criterion score. A dichotomous item is an item that is scored as either correct or incorrect, such as the MC items in ELA or mathematics. Biserial and point-biserial correlations differ in their assumptions and in how they are computed. In biserial correlations, scores on a dichotomous item are treated as an indicator of a theoretical, underlying, normally-distributed proficiency; the biserial correlation is the estimated correlation between the total test score and a theoretical normally distributed proficiency that was dichotomized to produce the item score. For point-biserial correlations, the item scores are treated as observed binary classifications—the correct or incorrect answer.

Point-biserial correlations are computed as:

$$r_{ptbis} = \frac{(\mu_{+} - \mu_{-})}{\sigma_{tot}} \sqrt{pq} \qquad (6.1)$$

where μ_{+} is the mean criterion score of examinees answering the item correctly; μ_{-} is the mean criterion score of the examinees answering the item incorrectly; σ_{tot} is the standard deviation of the criterion score of all examinees answering the

item; *p* is the proportion of examinees answering the item correctly; and *q* equals (1– *p*).

The relationship of biserial and point-biserial correlations is presented in the following formula, which can also be used to compute the biserial correlation:

$$r_{bis} = \frac{\sqrt{pq}}{Y_{zp}} r_{ptbis} \tag{6.2}$$

where Y_{ZP} is the *Y* ordinate (height) of the standard normal curve at the *z*-score associated with the *p*-value for the item. The r_{bis} values are always greater than the r_{ptbis} values.

The polyserial correlation measures the relationship between a polytomous item and the criterion score. A polytomous item is an item that is scored with more than two ordered categories, such as the ELA essay. Polyserial correlations used for the CAHSEE are based on a polyserial regression model (Drasgow, 1988; Lewis & Thayer, 1996), which assumes that performance on an item is determined by the examinee's position on an underlying latent variable that is normally distributed at a given criterion score level. Based on this model, the polyserial correlation can be estimated as:

$$r_{polyreg} = \frac{\beta\, \sigma_{tot}}{\sqrt{\beta^2 \sigma_{tot}^2 + 1}} \tag{6.3}$$

where β is a series of parameters estimated from the data using maximum likelihood and σ_{tot} is the standard deviation of the criterion score.

Item discrimination indices are bounded by –1 and +1. The higher the value, the better the item distinguishes between higher- and lower-scoring examinees. Positive values indicate that the students who do well on the test have a higher probability of answering the question correctly, while negative values indicate that the students who do poorly on the test have a higher probability of answering the question correctly. Therefore, negative correlations can indicate serious problems with the item content (e.g., multiple correct answers or unusually difficult or complex content), or that students have not been taught the instructional content pertaining to that item.

Percentage of students choosing each response option:

These statistics indicate the percentage of students who select each of the available answer options.

Percentage of students omitting an item:

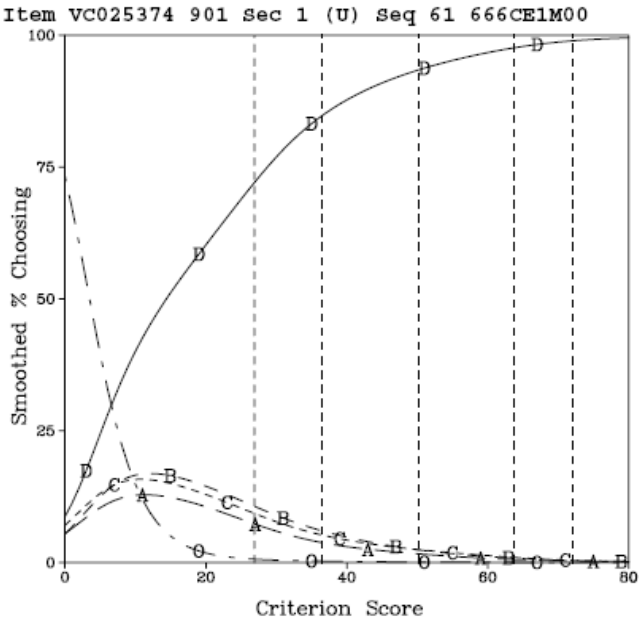
This statistic is useful for identifying problems with test features such as testing time and item/test layout. Typically, the expectation is that if students have an adequate amount of testing time and are motivated to respond to the test questions, at least 95 percent of students should attempt to answer each

question. When omit percentages exceed 5 percent for a series of items at the end of a timed section, this may indicate that there was insufficient time for students to complete all items. Alternatively, if the omit percentage is greater than 5 for a single item, this could be an indication of an item/test page layout problem. For example, students might accidentally skip an item that follows an item containing a lengthy stem.

Examples of the item analysis produced for the CAHSEE are provided in Figures 6.1 and 6.2 for two items that have been released. For each item, statistical information is presented on the right and the graphical display is presented on the left. The keyed answer is flagged with an asterisk. Statistical information includes the number and percentage of examinees choosing each option and their mean and standard deviation on the total or criterion score. The proportion of the top 20 percent choosing each option is presented on the far right column. Numbers of students reaching (Rch) or not reaching (NR) the item are also included. In addition, *p*-value (average item score), r-biserial (correlation with criterion), and percent reached are presented. Point-biserial correlations are not provided in these plots, but they are included in the CAHSEE client item bank.

The graphs represent response curves for the key and the item distractors, with the horizontal axis indicating the criterion score and the vertical axis (Smoothed % Choosing) displaying the examinee's probability of answering the item correctly or the probability of choosing a distractor at each criterion score. The dashed vertical lines indicate 10th, 25th, 50th, 75th, and 90th percentiles of the distribution of the criterion score so that the information represented by the graph can be referenced to student abilities. For ELA, the criterion score is a weighted sum of the MC number right score and the CR score. For mathematics, the criterion is the total number right score. Figure 6.1 provides an example of a mathematics item. It is an easy item, with a *p*-value of 0.89. The lowest-scoring students have about an 11 percent probability of getting the item correct. Figure 6.2 provides an example of an ELA item with moderate difficulty. The item in Figure 6.1 has an r-biserial of 0.59 and the item in Figure 6.2 has an r-biserial of 0.46. It can be seen that for both items, the probability of answering the item correctly increases as the total score/criterion increases. This indicates that both items discriminate well among students across the range of the total score.

Figure 6.1: CAHSEE Item Analysis — Mathematics Item

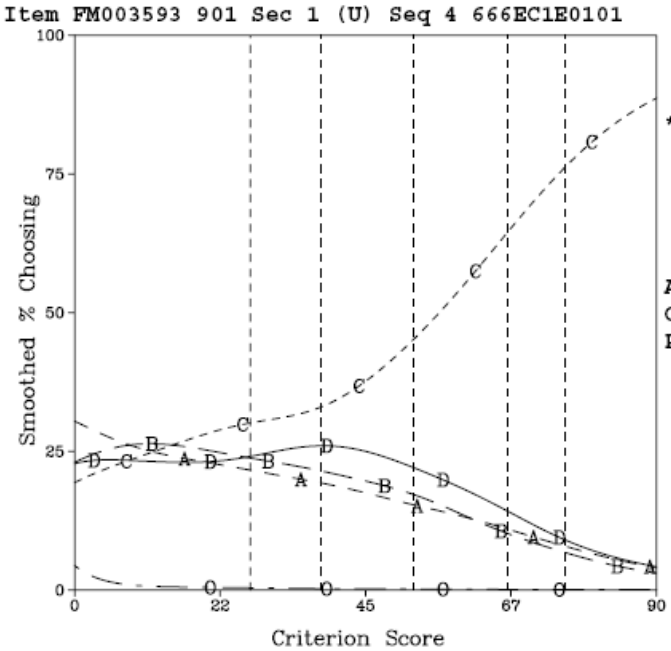


Multiple Choice, 4 choice

	N	%Tot	Criterion Mean	SD	Top 20%
A	5036	2.8	32.9	12.6	0.2
B	7374	4.1	33.3	12.3	0.3
C	6757	3.8	34.1	13.0	0.3
*D	159654	88.9	51.9	15.8	99.1
Omt	802	0.4	20.6	13.5	0.0
NR	0				
Rch	179623	100.0	49.8	16.6	

Average Item Score 0.89
Correlation with Crit. 0.59
Percent Reached 100.00

Figure 6.2: CAHSEE Item Analysis — ELA Item



Multiple Choice, 4 choice

	N	%Tot	Criterion Mean	SD	Top 20%
A	4928	15.0	45.4	16.5	6.7
B	5220	15.9	44.4	15.8	5.6
*C	16269	49.7	58.9	17.2	80.7
D	6272	19.1	46.4	15.4	6.9
Omt	70	0.2	39.9	18.0	0.1
NR	0				
Rch	32759	100.0	52.2	17.9	

Average Item Score 0.50
Correlation with Crit. 0.46
Percent Reached 100.00

Summary of Item Statistics

Classical item analyses are performed on the MC items and on the ratings of the writing prompts. Each statistic is designed to provide key information about the quality of each item from an empirical perspective. Summary statistics for the operational and field-test items are provided for ELA and mathematics overall and by content strand. Tables 1 and 2 of Appendices 6.B through 6.H provide summary statistics for the point-biserial correlations and the IRT *b*-values for the operational items for the seven

administrations in 2012–13, and Tables 1 and 2 of Appendices 6.I to 6.J provide the same information for the field-test items for the February and March administrations. When there is only one item in the strand (e.g., WA in Table 6.B.1), the standard deviation (SD) of the statistic is not available.

Table 8 of the same appendices summarizes the statistics for ELA essays used in the July 2012 through May 2013 administrations. These statistics include the polyserial correlation, the DIF results for specified group comparisons, and the IRT *b*-values and step parameters for each score point.

Procedures for Documenting Items That Fail to Meet the Desired Psychometric Criteria

Classical item analyses are performed using the Generalized Analysis System (GENASYS). As part of the psychometric review process, Statistical Analysis staff review the GENASYS output for each item. Items with psychometric characteristics that fall outside of the expected range of values, using the criteria specified in Table 6.2, are flagged for review by test development staff. Additional items that exhibit questionable performance are flagged as well. Items are flagged for review to verify that each item is correctly keyed, that there is one clear and correct answer, and that each item is printed correctly.

Table 6.2: Flagging Criteria for Classical Item Analyses

Flag Type	Value
Low Average Item Score for dichotomous (MC) items Low Average Item Score for polytomous (CR) items	< 0.25 < 0.30
Low Correlation with Criterion for dichotomous (MC) items Low Correlation with Criterion for polytomous (CR) items	< 0.30 < 0.60
High Percent Omits	> 5%
High Percent Not Responding	> 5%
High Ability Group Defined as Top 20% (to identify distractors chosen by high ability examinees)	20%
High Average Item Score for dichotomous (MC) items High Average Item Score for polytomous (CR) items	> 0.95 > 0.70

Differential Item Functioning Analyses

One of the goals of test development is to assemble a set of items that provides an estimate of a student's ability that is as fair and accurate as possible for all groups within the population. To this end, DIF studies were conducted following the classical item analyses. DIF statistics are used to identify those items that identifiable groups of students (e.g., females, African Americans, Hispanics) with the same underlying level of ability have different probabilities of answering correctly. If the item is differentially more difficult for an identifiable subgroup, the item may be measuring something different from the intended construct. However, it is important to recognize that DIF flagged items might be related to actual differences in relevant knowledge or skill

(item impact) or a statistical Type I error. As a result, DIF statistics are used to identify potential sources of item bias. Subsequent review by content experts and bias and sensitivity committees is required to determine the source and meaning of any observed differences.

ETS uses two DIF detection methods: the Mantel-Haenszel approach and the standardization approach. As part of the Mantel-Haenszel procedure, the statistic described by Holland and Thayer (1988), known as MH D-DIF, is used.[5] This statistic is expressed as the differences between the focal and reference groups after conditioning on the total test score. This statistic is reported on the delta scale, which is a normalized transformation of item difficulty (proportion correct) with a mean of 13 and a standard deviation of 4. Negative MH D-DIF statistics favor the reference group and positive values favor the focal group. The classification logic used for flagging items is based on a combination of absolute differences and significance testing. Items that are not statistically different based on the MH D-DIF ($p > 0.05$) are considered to have similar performance between the two studied groups; these items are considered to be functioning appropriately. For items where the statistical test indicates significant differences ($p < 0.05$), the effect size is used to determine the direction and severity of the DIF. For the ELA CR item, the Mantel-Haenszel procedure was executed where item categories are treated as integer scores and a Chi-square test was carried out with one degree of freedom. The male and white groups are considered as reference groups, and the female and other ethnic groups are categorized as focal groups.

Based on these DIF statistics, items are classified into one of three categories and assigned values of A, B, or C (see Table 6.3). Items classified into category A contain negligible DIF, items in category B exhibit slight to moderate DIF, and items in category C have moderate to large values of DIF. Negative values imply that, conditional on the matching variable, the focal group has a lower mean item score than the reference group. In contrast, a positive value implies (conditional on the matching variable) that the reference group has a lower mean item score than the focal group.

[5]The formula for the estimate of constant odds ratio is:

$$\alpha_{MH} = \frac{\left(\sum_m \frac{R_{rm} W_{fm}}{N_m}\right)}{\left(\sum_m \frac{R_{fm} W_{rm}}{N_m}\right)},$$

where

R_{rm} = number in reference group at ability level m answering the item right,
W_{fm} = number in focal group at ability level m answering the item wrong,
R_{fm} = number in focal group at ability level m answering the item right,
W_{rm} = number in reference group at ability level m answering the item wrong,
N_m = total group at ability level m.

This can then be used in the following formula (Holland & Thayer, 1988):

$$MH\ D\text{-}DIF = -2.35 \ln[\alpha_{MH}].$$

Table 6.3: DIF Categories

DIF Category	Definition
A (negligible)	Absolute value of the MH D-DIF is not significantly different from zero, or is less than one. Positive values are classified as "A+" and negative values as "A–."
B (slight to moderate)	Absolute value of the MH D-DIF is significantly different from zero but not from one, and is at least one **OR** Absolute value of the MH D-DIF is significantly different from one, but is less than 1.5. Positive values are classified as "B+" and negative values as "B–."
C (moderate to large)	Absolute value of the MH D-DIF is significantly different from one, and is at least 1.5. Positive values are classified as "C+" and negative values as "C–."

For CR items, the MH D-DIF statistic is not calculated; instead, the standardization procedure is used in conjunction with the Mantel Chi-square statistic. Analogous flagging rules have been developed that are used to classify the CR items into A, B, or C DIF categories. The flagging criteria for CR items are:

A) If the Mantel Chi-square *p*-value > 0.05, or if the Mantel Chi-square *p*-value < 0.05 but the absolute value of the Standardized Mean Difference $|SMD/SD| \leq 0.17$, then the item is classified as A.

B) If the Mantel Chi-square *p*-value < 0.05 and $0.17 < |SMD/SD| \leq 0.25$, then the item is classified as B.

C) If the Mantel Chi-square *p*-value < 0.05 and $|SMD/SD| > 0.25$, then the item is classified as C.

Positive values favor the focal group and negative values favor the reference group.

All DIF analyses were performed according to the procedures specified in the document "CAHSEE DIF Procedures" dated February 22, 2002. DIF comparison groups are based on gender (Male compared to Female), ethnicity (White compared to American Indian, Asian, Pacific Islander, Filipino, Combined Asian,[6] Hispanic, and African American), and English language proficiency (English proficient compared to EL[7]). Operational items flagged for C DIF are reviewed by an expert committee consisting of CAHSEE item development staff, the CDE staff responsible for the CAHSEE, external educators identified by the CDE, and additional CDE content experts in ELA and mathematics, as needed, to ensure that the items are free from any bias before being used to compute final test scores. Some items were flagged for DIF in more than one administration. If an item passed the review process by the CAHSEE DIF Review Panel, it is not reviewed a second time.

Details of the results for each administration can be found in Tables 5, 6, and 7 of Appendices 6.B to 6.H for the operational items in the seven administrations and Appendices 6.I and 6.J for field-test items in the two census administrations.

[6]Combined Asian group includes students from Asian, Filipino, and Pacific Islander groups.
[7]According to "CAHSEE DIF Procedures," DIF analyses were performed for ELs on mathematics items only. From September 2005, DIF analyses were also performed for ELs on ELA items.

Item Response Theory Analyses (Calibration, Scaling, and Equating)

The CAHSEE tests are equated to a reference form using a common-item nonequivalent groups design and methods based on IRT. The “base” or “reference” scale for the CAHSEE was established in the February 2004 administration. The 2012 (2013) items were placed on the reference scale through a set of linking items that appeared in the 2011 (2012) operational forms and were re-administered in 2012 (2013). The procedures used for equating the CAHSEE involve three steps: item calibration, item parameter scaling, and true-score equating.

Measurement Model

Items are calibrated using the Rasch model for the MC questions and the Rasch partial-credit model for the ELA CR item. The section *Model for Generating Item Statistics* in Chapter 2 provides further details on both models.

ETS uses GENASYS for the IRT item calibration and equating work. As part of this system, a proprietary version of the PARSCALE computer program (Muraki & Bock, 1995) is used and parameterized to produce item calibrations. Research conducted at ETS suggests that PARSCALE calibrations produce results that are virtually identical to results based on WINSTEPS (Way, Kubiak, Henderson, & Julian, 2002), which is a program often used to perform Rasch scaling.

Item Calibration and Scaling

The samples used for item calibration, scaling, and equating include scanned and scored student records provided in statistical file extracts. Typically, over 90 percent of the student data are available for equating. Students taking special test forms (large-print, audio CD, and Braille) are excluded from the equating sample. Incomplete data records are also removed. In addition, data records are eliminated based on analyses of performance on different sections of the tests. Specifically, outlier scores are identified for mathematics and ELA by comparing scores on the first and second sections of the test, and for ELA by comparing scores on the MC and CR components of the test. Finally, the equating samples exclude students who did not indicate a valid test form code. For the purposes of item calibration, scaling, and equating and the production of scoring tables for score reporting, only operational items are included. Field-test items are analyzed and calibrated separately.

The PARSCALE program is run in two stages. In the first stage, the estimation imposes normal constraints on the updated subject prior distribution (θ). The estimates resulting from this first stage are used as starting values for a second PARSCALE run, in which the subject prior distribution is updated after each expectation-maximization (EM) cycle. For both stages, the multiplicative metric of the scale is controlled by the use of the fixed discrimination parameter.

The resulting calibrations are then transformed to the existing scale, using the Stocking and Lord (1983) test characteristic equating procedure. Because only a constant is added to the new item parameter estimates, this procedure is essentially

equivalent to setting the means of the new estimates equal to their anchor item values. The linking process is iterative and involves an inspection of differences between the new estimates and the anchor estimates for the linking items. Items with large weighted root-mean-square differences (WRMSD) between item characteristic curves (ICCs) based on the old and new difficulty estimates are eliminated from the Stocking and Lord equating and the linking constants are re-estimated. The differences are calculated as follows:

$$WRMSD = \sqrt{\sum_{j=1}^{N_g} w_j [P_n(\theta_j) - P_r(\theta_j)]^2} \qquad (6.4)$$

where abilities are grouped in the intervals of 0.005 between –4.0 and 4.0, θ_j is the mean of the abilities in the interval j, N_g is the number of intervals, w_j is a weight equal to the proportion of estimated abilities from the transformed new form in interval j, $P_n(\theta_j)$ is the probability of a correct response for the transformed new form item at ability level θ_j, and $P_r(\theta_j)$ is the probability of a correct response at ability level θ_j for the reference form (i.e., the item bank estimates). Any linking items for which the difference WRMSD is greater than 0.125 are eliminated from the anchor set. This criterion was established in early CAHSEE calibrations, has produced reasonable results over time, and has been used satisfactorily for CAHSEE administrations and other testing programs.

For each administration, plots of new transformed difficulty estimates against the reference estimates are then produced and inspected. Results across administrations have consistently indicated high correlations between the new and reference difficulty estimates, and typically no more than two or three items are eliminated from the linking because of large WRMSD differences. In general, the correlation between the new and existing difficulty estimates tends to be slightly higher for mathematics than for ELA, possibly because most ELA items are passage-dependent and more susceptible to context and position effects.

True-Score Equating

Once the items for the 2012–13 administrations were calibrated and linked to the operational theta scale, IRT true-score equating procedures were utilized to transform the new forms to the base form scale established in February 2004. The true-score equating procedure is based on the relationship between raw scores and ability. For mathematics, which consists entirely of MC items, this is the well-known relationship defined in Lord (1980; eq. 4–5):

$$\xi(\theta) = \sum_{i=1}^{n} P_i(\theta) \qquad (6.5)$$

where $P_i(\theta)$ is the probability of a correct response to item i at ability level θ (defined by the Rasch model) and $\xi(\theta)$ is the corresponding true score, and the summation is over the n items in the test.

For ELA, $\xi(\theta)$ is based on a weighted sum of MC and CR items, and the relationship can be defined as:

$$\xi(\theta) = w_{mc}\sum_{i=1}^{n_{mc}} P_i(\theta) + w_{cr}\sum_{j=1}^{n_{cr}}\sum_{x=1}^{m} s_x P_{xj}(\theta) \tag{6.6}$$

where w_{mc} = 1.0, w_{cr} = 4.5, s_x is the score value for category x, n_{mc} is the number of MC items in the test, n_{cr} is the number of CR items in the test, m is the number of score categories in each CR item, and $P_{xj}(\theta)$ is the probability of a score in category x at ability θ (defined by the Rasch partial-credit model). For the ELA writing item, there are eight possible scores: 0, 1, 1.5, 2, 2.5, 3, 3.5, and 4.

For each integer score ξ_n on the new form, the true-score equating procedure first solves for the corresponding ability level using equations 6.5 (for mathematics) or 6.6 (for ELA). Next, the procedure uses that ability level (θ) to find the corresponding score, ξ_b, on the base form. Finally, each score ξ_b is transformed to the CAHSEE reporting-score scale using the raw-score to scale-score conversion table developed for the February 2004 administration and linear interpolation.

For both ELA and mathematics, the 2012–13 forms were linked back to the scale established in February 2004.

Complete raw-score to scale-score conversion tables for the 2012–13 CAHSEE are presented in Appendix 6.O. The raw scores and corresponding rounded and unrounded converted scale scores are listed in those tables. For all the 2012–13 CAHSEE administrations, scale scores were adjusted at both ends of the scale so that the minimum was 275 and the maximum reported scale score was 450. The scale scores defining the cut scores for passing and ESEA proficiency levels are indicated on the conversion tables.

Equating Braille, Large-Print, and Audio CD Forms

The large-print and audio CD versions of the test forms were identical to the standard form administered for all administrations. The July 2012 operational form was used as the Braille, Braille large-print, and Braille audio CD forms for the July, October, and November 2012 administrations for both ELA and mathematics. The December 2012 operational form was used for the December 2012 and February 2013 administrations, and the March 2013 operational form was used for the March and May 2013 administrations of the Braille, Braille large-print, and Braille audio CD forms for both tests. The Braille versions did not have field-test items. These special versions included operational items from standard administrations; therefore, no special equating analyses were required.

Raw-Score to Scale-Score Conversion Tables and Conditional Standard Errors of Measurement

Following the equating analyses, raw-score to scale-score conversion tables and conditional standard errors of measurement (CSEM) were produced. CSEM for CAHSEE scale scores are based on IRT and are calculated by the IRTEQUATE module in GENASYS. For mathematics, where reported scores are based on number-correct scores, the calculation of the CSEM based on Rasch model difficulty

estimates is straightforward. However, for ELA, reported scores are based on a weighted composite of the MC and CR items. Because the raw-score to scale-score conversions for the base form are nonlinear, the scale-score CSEM estimated in GENASYS are characterized by minor irregularities that are smoothed in a subsequent step. Operational, large-print, audio books, and audio CD score conversions and the smoothed CSEM at score points for the ELA and mathematics tests are presented in Tables 1 to 14 of Appendix 6.O; the scoring tables for the Braille forms are presented in Tables 15 to 20.

Appendix 6.P presents the equations for calculating the standard errors of theta (θ) based on weighted raw scores using the Rasch and Rasch partial-credit models.

Scaling Field-Test Items

The MC field-test items are embedded in operational forms, and their IRT parameters are placed on the same base scale as the operational items. The field-test item scaling is carried out by fixing the IRT item parameters of the operational items and estimating the item parameters for the field-test items. Consistent with the calibration process for operational items, the PARSCALE program is constrained for the Rasch model by setting a common discrimination value for all items equal to 1.0/1.7 (or 0.588) and by fixing the lower asymptote for all MC items to zero. Items with biserial correlations less than or equal to 0.10 are not included in the calibration.

Item Response Theory Model-Data Fit Analyses

Because the Rasch model is used in equating the CAHSEE, an important part of IRT analyses is the assessment of model-data fit. Statistics describing the fit of the Rasch model to the data, reported in letter categories of A, B, C, D, and F (IRT flag), are produced. A description and examples of this model-data fit-rating scheme are provided in Appendix 6.A. In general, items with flagging categories of A, B, or C are all considered acceptable. Ratings of D are considered questionable, and the ratings of F indicate a poor model fit. All items receiving a rating of F are also rated as Do Not Use. The test developers are asked to avoid the items flagged as D if possible and to carefully review them if they must be used. Test developers are instructed to not select items rated F for operational test assembly without a review by a psychometrician.

For the census (February and March) administrations, the evaluation of model fit is performed twice in an administration cycle. This assessment is first performed on operational items before scoring tables are produced and released and is performed again on field-test items as part of the FIA. The flags produced as a result of this assessment are added to the item bank. For the non-census administrations (July, October, November, December, and May), the assessment is performed only on operational items before scoring tables are produced and released.

The distributions of the operational items across the IRT model-data fit classifications are presented in Tables 3 and 4 of Appendices 6.B through 6.H for each of the seven administrations, respectively. The total number of field-test items and percentage of field-test items that received IRT model-data fit ratings of A, B, C, or D and were

recommended for use in future operational tests are summarized in Table 6.4. The distributions for the field-test items are presented in Tables 3 and 4 of Appendices 6.I and 6.J.

Table 6.4: Field-Test Items Recommended for Future Forms

Administration Date	Subject	Total Number of Field-Test Items	Percent of Field-Test Items Recommended for Future Forms
February 2013	ELA	651	89
	Mathematics	624	80
March 2013	ELA	1,039	84
	Mathematics	936	87

Summaries of Scaled Item Response Theory B-Values

Once the IRT *b*-values are placed on the base scale, analyses are performed to assess the overall test difficulty, the difficulty level of strands, and the distribution of items in a particular range of item difficulty. Summary statistics for operational items are provided for ELA and mathematics overall and by content strand in Tables 1 and 2, respectively, of Appendices 6.B through 6.H. In addition, results are provided for mathematical reasoning, a secondary strand based on items that are integrated into other mathematics content strands. Summary statistics for field-test items are provided for ELA and mathematics overall and by content strand in Tables 1 and 2, respectively, of Appendices 6.I and 6.J.

Reliability Analyses

Reliability focuses on the extent to which differences in test scores reflect true differences in the knowledge, ability, or skill being tested rather than fluctuations due to chance or factors other than those of interest. The reliability analyses included in this section are reliability statistics and standard errors of measurement (SEMs) for the total test, by strands and by subgroups; intercorrelations between the two content areas and between different substrands; generalizability analyses results on the essay prompts; and the results from the classification accuracy and consistency analyses.

Test Reliabilities and Standard Errors of Measurement

The variance in the distributions of test scores, essentially the differences among individuals, is partly due to real differences in the knowledge, skill, or ability being tested (true variance) and partly due to random errors in the measurement process (error variance). The number used to describe reliability is an estimate of the proportion of the total variance that is true variance. Several different ways of

estimating this proportion exist. The estimates of reliability reported in this report are internal-consistency measures. Therefore, they apply only to the test form being analyzed. They do not take into account form-to-form variation due to equating limitations or lack of parallelism, nor are they responsive to day-to-day variation due, for example, to the examinee's state of health or the testing environment. Reliability coefficients range from 0 to 1. The higher the reliability coefficient for a set of scores, the more likely individuals would be to obtain very similar scores if they took another form of the test. The formula for the internal consistency reliability, as measured by Cronbach's Alpha (Cronbach, 1951), is reported below:

$$\alpha = \frac{n}{n-1}\left[1 - \frac{\sum_{i=1}^{n} \sigma_i^{\,2}}{\sigma_x^2}\right] \tag{6.7}$$

where n is the number of items, σ_i^2 is the variance of scores on the i-th item, and σ_x^2 is the variance of the total score (sum of scores on the individual items).

When test scores are a composite of the MC and CR items, the reliability estimates can be computed by the following formula (Feldt & Brennan, 1989):

$$\alpha_c = 1 - \frac{\sum_{j=1}^{k} \left(w_j \sigma_{e_j}\right)^2}{\sigma_c^2} \tag{6.8}$$

where k is the number of part scores in the composite, w_j is the weight associated with the j-th part score, $\sigma_{e_j}^2$ is the SEM of the j-th part score, and σ_c^2 is the variance of the composite score.

The reliability of the CR items can be estimated indirectly by examining the correlation between the MC and CR item components in relation to the MC reliability. The lower-bound reliability for a CR item in a test with MC items and only one CR item can be found using the squared correlation between the MC and CR item portions of the test and dividing by the reliability of the MC portion of the test:

$$\alpha_{cr} = \frac{r_{mc.cr}^2}{\alpha_{mc}} \tag{6.9}$$

Reliability estimates for the ELA section across the seven administrations ranged from 0.87 to 0.94. Reliability estimates for the mathematics section across the seven administrations ranged from 0.84 to 0.95. Reliabilities for the MC strands for ELA ranged from 0.40 to 0.85, while the strand reliabilities for mathematics ranged from 0.39 to 0.86. The reliabilities for the ELA CR (unweighted) item score ranged from 0.24 to 0.45.

The SEM provides a measure of score instability in the score metric. The formula for computing the SEM is:

$$\sigma_e = \sigma_x \sqrt{1-\alpha} \tag{6.10}$$

where reliability is the reliability estimated using formulas 6.7, 6.8, or 6.9 above, and σ_x is the standard deviation of the score being examined.

The SEM is particularly useful in determining the confidence interval (CI) that captures an examinee's true score. Assuming that measurement error is normally distributed, it can be said that upon infinite replications of the testing occasion, approximately 95 percent of the CIs of ±1.96 SEM around the observed score would contain an examinee's true score (Crocker & Algina, 1986).

The SEMs for the ELA total raw scores and the mathematics raw scores across the 2012–13 administrations ranged from 3.80 to 4.37 and 3.53 to 4.15, respectively. The reliabilities and SEMs of the test scores may be found in Appendix 6.K, Tables 1 through 7.

Strand Intercorrelations, Reliabilities, and Standard Errors of Measurement

Intercorrelations are the correlations between the raw scores obtained on the different tests or strands by individual test takers. Intercorrelations, reliabilities, and SEM estimates for both assessments and for the content strands within each assessment are reported in Appendix 6.K. Note: the scoring weight of 4.5 was not applied to ELA essay scores when computing the reliability and intercorrelation statistics for the essay items.

Across the 2012–13 administrations, the correlations between ELA strands (including the essay) ranged from 0.29 to 0.80, while the correlations between mathematics strands ranged from 0.26 to 0.83. The reliabilities of the ELA strands (including the essay) ranged from 0.24 to 0.85, and the reliability of the mathematics strands ranged from 0.39 to 0.86. The SEM for the MC strands for ELA ranged from 0.93 to 2.03, while the SEM for mathematics strands ranged from 1.39 to 2.09. The SEM for the ELA CR items ranged from 0.38 to 0.48.

Subgroup Reliabilities and Standard Errors of Measurement

Reliabilities (R_{XX}) and SEM estimates are reported for subgroups from the February and March 2013 census administrations, where larger case counts are available. Table 6.K.8 shows R_{XX} and SEM for the MC total and the composite score for gender, ethnicity, English-proficient and EL, and accommodation and non-accommodation groups for the ELA February 2013 administration. Table 6.K.9 provides the same information for the mathematics test of the February 2013 administration. Tables 6.K.10 and 6.K.11 provide R_{XX} and SEM for the subgroups for ELA and mathematics for the March 2013 administration. The sample sizes for these R_{XX} also appear in these tables.

Reliability estimates for the ELA composite (MC + Essay) scores are similar for the gender groups across the two census administrations. The SEM is slightly lower for the female group than for the male group. In general, R_{XX} are similar for the ethnic groups; the SEM are similar for most groups, with a range of 2.85 (Asian, March) to 3.58 (African American, February) for the MC total and a range of 3.60 (Asian, White, March) to 4.20 (African American, February) for the composite.

The R_{XX} for the ELA is the same for the accommodation group and the non-accommodation group for March and is slightly lower for the accommodation group for February. The SEM is higher for the accommodation group. R_{XX} for the EL group is lower than that for the English-proficient group. SEM is higher for the EL group than the English-proficient group. All R_{XX} are greater than or equal to 0.88.

R_{XX} and SEM for the mathematics total score are similar for gender groups. R_{XX} for ethnic groups is similar; the SEM is similar for most groups, with a range of 2.69 (Asian, March) to 3.95 (African American, February). The R_{XX} for the accommodation group is slightly lower than for the non-accommodation group, and the SEM is slightly higher. R_{XX} for the English-proficient group is slightly higher than that for the EL group, whereas the SEM is higher for the EL group than for the English-proficient group. All R_{XX} are greater than or equal to 0.90.

Writing Prompt and Rater Agreement Summary

The CAHSEE ELA CR portion of each test currently consists of a single stand-alone writing prompt that is not passage-based. All of the following categories of writing are randomly rotated to appear in the test administrations: response to literature or analytic essay (expository writing), biography, or persuasion. The standards require students to combine the rhetorical strategies of narration, exposition, persuasion, and description to produce texts of about 1,500 words each.

Every response to the ELA writing prompt is rated by two different readers on a scale between 1 and 4. Non-valid responses are scored as zero. The scores from both readers must be the same or adjacent (within one score point of each other). If the difference between the two scores is more than one score point, it is considered discrepant, and a scoring leader provides a third score, which becomes the score of record. The ratings obtained from the first two readers are used to carry out inter-rater agreement and generalizability analyses to assess the reliability of the writing scores.

Rater Agreement

An important part of the analysis of any multiple-rated CR item is the degree to which the individual rater scores agree. Tables 1, 3, 5, 7, 9, 11, and 13 in Appendix 6.L present the possible score combinations, the distribution of the two ratings, and the distribution of differences between the first and second ratings of each CR item. As the diagonals of the tables show, the majority of raters assigned the same score. When ratings differed, most were by only one score point. Only the February and March 2013 administrations had about 1 percent of CR item scores result in discrepant scores.

Tables 2, 4, 6, 8, 10, 12, and 14 in Appendix 6.L present the mean of the first and second ratings for each CR item and the corresponding standard deviation, mean absolute difference, and the correlation between the first and second ratings. The mean absolute difference between the first and second ratings for the seven administrations ranged from 0.16 to 0.29. The correlation between first and second ratings across the seven administrations ranged from 0.61 to 0.75.

The even-numbered tables also summarize the reasons given for CR items that received a score of zero. Zero scores are given if a CR item is left blank or the response is illegible, does not address the topic, is a cartoon/drawing, uses inappropriate content, or is not written in English. During the seven administrations, the percentage of zero scores received on the CR item ranged from 1 to 3 percent, with the majority of zero scores assessed because of CR items that were either left blank or written off topic. The lowest percentage of zero scores for the CR item was in the December 2012 and the March 2013 administrations, and the largest percentage was in the October 2012, November 2012, and May 2013 administrations.

Generalizability Analyses

Generalizability analyses were performed to estimate the proportion of variance explained by possible sources of variation, including raters and persons (desired variance). A person crossed with rater design, or P x R design, was used for the generalizability analyses. This design assumes that the examinee could be rated by any rater in the pool of raters. Theoretically, this is correct, but the practicality of producing scores in a timely manner prevents this from happening operationally. Therefore, the generalizability and dependability coefficients produced will be conservative estimates of score generalizability. The analyses were conducted using the GENOVA software group (Brennan, 2001; Crick & Brennan, 1983). A generalizability study (g-study) was performed to estimate variance components for selected sources of variation, also known as “facets.” A decision study (d-study) was performed to estimate the generalizability and dependability coefficients for the operational design.

The results of the generalizability analyses are presented in Appendix 6.M. Generalizability coefficients for the CR item ranged from 0.75 to 0.86 across the seven administrations. The rater facet was consistently estimated to have minimal effect on score variance across the seven administrations.

The fluctuation in generalizability coefficients across administrations can be attributed to the changes in the amount of variation resulting from differences among students. Generally, as facets other than universe and person are found to contribute to the score variance, the generalizability coefficient will decrease, indicating that score differences are a function of more than individual differences in the construct being assessed. Therefore, more of the student’s score is due to error, and score reliability is reduced. However, when the person variance is examined across administrations, the percentage of variance attributable to individual differences is very similar and large. The final interaction term is confounded with undifferentiated error that is not accounted for in the current design and represents the second largest source of score variance.

Decision Classification Analyses

The method used for estimating the reliability of classification decisions is described in Livingston and Lewis (1995) and is implemented using the proprietary computer program RELCLASS-COMP (Version 4.14). The program provides two statistics that

describe the reliability of classifications based on test scores from an administration of one form. Decision *consistency* describes the extent to which examinees are classified in the same way as they would be on the basis of a single form of a test other than the one for which data are available. Decision *accuracy* describes the extent to which examinees are classified in the same way as they would be on the basis of the average of all possible forms of a test.

RELCLASS-COMP estimates decision *consistency* using an estimated multivariate distribution of reported classifications on the current form of the examination and classifications on parallel forms. RELCLASS-COMP estimates decision *accuracy* using an estimated multivariate distribution of reported classifications on the current form of the examination and the classifications based on an average of all the forms (true score). In each case, the proportion of classifications with exact agreement is the sum of the entries in the diagonal of the contingency table representing the multivariate distribution. Reliability of classification at the cut score is estimated by collapsing the multivariate distribution at the passing score boundary into an *n*-by-*n* table (where *n* is the number of proficiency levels) and summing up the entries in the diagonal. Note that the proportions may not add up to 1 due to rounding.

The reliability of classification results for the ESEA cut scores at the Advanced and Proficient levels for both accuracy and consistency are reported in Appendix 6.N, Tables 1, 3, 5, 7, 9, 11, and 13. Across the seven administrations, the accuracy of classifying students into the Advanced level versus Proficient level or below for ELA ranged from 0.91 to 0.99, while the accuracy for mathematics ranged from 0.94 to 0.99. The consistency of classifying students into the Advanced level versus Proficient level or below for ELA ranged from 0.88 to 0.99, while the consistency for mathematics ranged from 0.92 to 0.99.

The accuracy of classifying students into the Proficient level or above versus Below Proficient level for ELA ranged from 0.92 to 0.97, while the accuracy for mathematics ranged from 0.94 to 0.98. The consistency of classifying students into the Proficient level or above versus Below Proficient level for ELA ranged from 0.89 to 0.96, while the consistency for mathematics ranged from 0.91 to 0.98.

The reliability of classification results for the cut points at the Pass/Not Pass levels for both accuracy and consistency are reported in Appendix 6.N, Tables 2, 4, 6, 8, 10, 12, and 14. Across the seven administrations, the decision accuracy for ELA at the Pass/Not Pass levels ranged from 0.90 to 0.95, while the decision accuracy for mathematics at the Pass/Not Pass levels ranged from 0.90 to 0.95. The decision consistency for ELA at the Pass/Not Pass levels ranged from 0.86 to 0.93, while the decision consistency for mathematics at the Pass/Not Pass levels ranged from 0.86 to 0.94. The magnitude of the estimates (0.86 or above) reflects a high level of accuracy and consistency in the student classifications.

Validity Evidence

Validity refers to the degree to which evidence supports a proposed interpretation or use of a set of scores, and it is one of the most fundamental considerations in developing and evaluating tests (AERA, APA, & NCME, 1999). Validity is not based

on a single study or type of study but involves an ongoing process of gathering evidence supporting the interpretation or use of the resulting test scores. The process is iterative in nature and begins with the test design and continues throughout the entire assessment process, including design, content specifications, item development, examination of psychometric quality, and inferences made from the results.

This section presents the evidence gathered to support the intended uses and interpretations of scores for the CAHSEE testing program. The description is organized in the manner prescribed in the *Standards for Educational and Psychological Testing* (1999), published jointly by AERA, APA, and NCME. These standards require a clear definition of the purpose of the test, which includes a description of the qualities, called constructs, that are to be assessed by a test, and the population to be assessed. The standards also dictate how the scores are to be interpreted and used. In addition, the *Standards* identify five kinds of evidence that can provide support for score interpretations and uses, which are as follows:

1. Evidence based on test content
2. Evidence based on relations to other variables
3. Evidence based on response processes
4. Evidence based on internal structure
5. Additional validity evidence

These kinds of evidence are also defined as important elements of validity information in documents developed by the U.S. Department of Education for the peer review of testing programs administered by states in response to the ESEA of 2001 (USDOE, 2009).

The next section defines the purpose of the CAHSEE, followed by a description and discussion of the kinds of validity evidence that have been gathered.

Test Purpose

As mentioned in Chapter 1, the purpose of the CAHSEE is to assess student achievement in public high schools and to ensure that students who graduate from public high schools can demonstrate minimum competency in reading, writing, and mathematics as defined by the grade ten content standards in ELA and mathematics. Additionally, the CAHSEE is used in determining AYP that applies toward meeting the requirement of the federal ESEA of 2001, which is to have all students score Proficient or above by 2014.

Constructs to Be Measured

The CAHSEE ELA and mathematics examinations are designed to show how well students perform relative to the California content standards. These content standards were approved by the SBE; they describe what students should know and be able to do. The ELA examination measures reading and writing standards through grade ten.

The mathematics examination measures grades six and seven mathematics and Algebra I standards.

The CAHSEE test blueprints provide the number of items per standard that will appear on an operational form. The CAHSEE item specifications provide the general characteristics of the items for each content standard, including an operational definition of the construct, appropriate or inappropriate item types or content, administration instructions, and the rules used to score examinee responses. By following the test blueprints and item specifications to construct the CAHSEE tests, as many aspects of the measurement procedures as possible are controlled so that the testing conditions will remain the same over test administrations (Cronbach, 1971; Cronbach, Gleser, Nanda, & Rajaratnam, 1972) to minimize construct irrelevant score variance (Messick, 1989). The blueprints for the CAHSEE ELA and mathematics examinations can be found on the CDE CAHSEE Program Resources Web page at http://www.cde.ca.gov/ta/tg/hs/resources.asp.

Intended Test Population

The target population for the CAHSEE consists of students who are either enrolled in California public high schools in grades ten, eleven, or twelve or are enrolled in adult schools operated by a school district. Beginning in the 2005–06 school year, with the exception of eligible SWDs, no student will receive a public high school diploma without passing the CAHSEE and without meeting all other state and district requirements for graduation.

Scores Generated and the Interpretations and Uses of These Scores

Total scores expressed as scale scores, student performance levels, and strand scores for each strand are generated for each subject area test. On the basis of a student's total score, an inference is drawn about how much knowledge and skill in the subject area the student has achieved. The total score is also used to classify students in terms of their levels of knowledge and skills in a subject area. These three levels are called performance levels and are as follows: Advanced, Proficient, and Pass.

Strand results show an individual student's raw score and percent-correct score. A detailed description of the uses and applications of CAHSEE scores is presented in Chapter 8.

The CAHSEE tests provide results or score summaries that are used for different purposes. The three major purposes are:

- Communicating with parents and guardians about the students' achievements and if the students fulfill one or both part(s) of the CAHSEE for the graduation requirement.

- Informing decisions needed to provide additional assistance for students who did not pass one or both part(s) of the CAHSEE.

- Providing data for state and federal accountability programs for schools.

These are the only uses and interpretations of scores for which validity evidence has been gathered. If the test user wishes to interpret or use the scores in other ways, the user is cautioned that the validity of doing so has not been established (APA, AERA, & NCME, 1999, Standard 1.3). The user is advised to gather evidence to support these additional interpretations or uses (APA, AERA, & NCME, 1999, Standard 1.4).

Evidence Based on Content

According to the AERA, APA, and NCME's *Standards for Educational and Psychological Testing* (1999), analyses that demonstrate a strong relationship between a test's content and the construct that the test was designed to measure can provide important evidence of validity. In current K–12 testing, the construct of interest usually is operationally defined by state content standards and the test blueprints that specify the content, format, and scoring of items that are admissible measures of the knowledge and skills described in the content standards. Evidence that the items meet these specifications and represent the domain of knowledge and skills referenced by the standards supports the inference that students' scores on these items can be appropriately regarded as measures of the intended construct.

As noted in the AERA, APA, and NCME's *Standards for Educational and Psychological Testing* (1999), evidence based on test content may involve logical analyses of test content in which experts judge the adequacy with which the test content conforms to the test specifications and represents the intended domain of content. Such reviews can also be used to determine whether the test content contains material that is not relevant to the construct of interest. Analyses of test content may also involve the use of empirical evidence of item quality.

Also to be considered in evaluating test content are the procedures used for test administration and test scoring. As Kane (2006, p. 29) has noted, although evidence that appropriate administration and scoring procedures have been used does not provide compelling evidence to support a particular score interpretation or use, such evidence may prove useful in refuting rival explanations of test results. Evidence based on content includes the following:

Descriptions of the state standards—As was noted in Chapter 1, the SBE adopted rigorous content standards in ELA and mathematics. These standards were designed to guide instruction and learning for all students in the state and to bring California students to world-class levels of achievement.

Specifications and blueprints—ETS maintains item development specifications for both CAHSEE tests. The item specifications describe the characteristics of the items that should be written to measure each content standard. A thorough description of the specifications can be found in Chapter 4. Once the items are developed, ETS selects all CAHSEE test items to conform to the SBE-approved California content standards and test blueprints. Test blueprints for the components of the CAHSEE program were proposed by ETS, reviewed and approved by the CDE, and presented to the SBE for adoption. There have been no recent changes in the blueprints. The

content blueprints for the CAHSEE can be found on the CDE CAHSEE Program Resources Web page at http://www.cde.ca.gov/ta/tg/hs/resources.asp.

Item development process—Detailed descriptions of the content and psychometric criteria applicable to the construction of the 2012–13 CAHSEE are presented in Chapter 4.

Item review process—Chapter 3 explains the extensive item review process applied to items written for use in the CAHSEE. In brief, items written for the CAHSEE undergo multiple review cycles and involve multiple groups of reviewers. The content review is conducted by external reviewers. The content review committees are responsible for reviewing all newly developed items for alignment to the California content standards. Additionally, the SPAR is responsible for reviewing and approving test items before they are used operationally or in field tests. The SPAR examines the items for intrusiveness into students' personal lives such as student and family beliefs, morality, religion, or sexuality. More information about the SPAR is given in Chapter 3.

Form construction process—For each test, the content standards, blueprints, and test specifications are used as the basis for choosing items. Additional targets for item difficulty and discrimination that are used for test construction were defined in light of what are desirable statistical characteristics in test items and statistical evaluations of the CAHSEE items. Guidelines for test construction were established with the goal of maintaining parallel forms to the greatest extent possible from year to year. Details can be found in Chapter 4.

Alignment study—Strong alignment between standards and assessments is fundamental to meaningful measurement of student achievement and instructional effectiveness. An alignment study evaluates the extent to which there is overlap between the test content and the standards. This is used to establish whether the test material reflects the skills and knowledge that students are expected to demonstrate. A universal test design study evaluates a test for appropriate format, scope, and content for various student populations, such as students with limited English proficiency and SWDs. The results of the alignment study and universal test design study provide useful information regarding test validity.

The Human Resources Research Organization (HumRRO) performs yearly alignment studies on the CAHSEE to verify the quality of the tests. The most recent alignment study results are presented in Taylor, Johnstone, and Hardoin (2011). HumRRO and the National Center for Educational Outcomes staff served as the reviewers to establish an independent evaluation of content alignment.

The Webb Alignment method (2005) was used to evaluate the alignment of the 2011 ELA and mathematics tests to the California content standards. The Webb method consists of four dimensions. Each dimension provides information about the extent of alignment between the assessment and content standards.

Categorical concurrence is a general measure of content match between the test and state standards indicating the number of items addressing each content strand.

DOK measures the level of cognitive processing required by items compared to the processing outlined by the content standards.

Range-of-knowledge correspondence focuses on the breadth of content assessed compared to the state standards.

Balance-of-knowledge representation considers the number of items matched to each content standard per strand.

The review was conducted for the ELA and mathematics items based on the March 2011 administration. The results indicated that the mathematics items assessed most standards broadly and at an appropriate level of complexity, except for mathematical reasoning. The standards for mathematical reasoning require a higher level of processing (i.e., DOK level 3 or 4). Not many items assessing higher-order thinking skills were found. The ELA items showed lower alignment to some standards, especially on the DOK assessed. Items in the Reading Comprehension and Writing Applications have narrowly covered standards within these strands.

Data were presented for the results of each alignment study HumRRO has conducted. The mathematics studies were conducted in 2005, 2008, and 2011, and the ELA studies were conducted in 2005, 2008, 2009, and 2011. The results show fairly consistent results across studies for both content areas, indicating test form alignment is relatively stable over time. Most outcomes surpass the minimum criterion specified for the alignment measure.

The same reviewers and test forms used for the alignment study were employed for the accessibility review of universal test design. The panelists were asked to rate the quality of the items in terms of lack of flaws and accessibility to all students. The test forms demonstrated many instances of conformity to universal design practices, including appropriate grade level vocabulary and sentence complexity, inclusion of commonly used words, sensitivity to test-taker characteristics, and identifiable questions. Some concerns were raised about aspects of the visual presentation of the items.

The independent evaluation reports are available on the CDE CASHEE Independent Evaluation Reports Web page at http://www.cde.ca.gov/ta/tg/hs/evaluations.asp.

Evidence Based on Relations to Other Variables

Empirical results concerning the relationships between scores on a test and measures of other variables external to the test can also provide evidence of validity when these relationships are found to be consistent with the definition of the construct that the test is intended to measure. As indicated in the AERA, APA, and NCME's *Standards for Educational and Psychological Testing* (1999), the variables investigated can include other tests that measure the same constructs and different constructs, criterion measures that scores on the test are expected to predict, and demographic characteristics of examinees that are expected to be related and unrelated to test performance.

Relationship between CAHSEE and CST Results

Studies have been undertaken to examine the relationship between student scores on the CST and CAHSEE. Student performance on the CAHSEE and CST has been

examined using special populations of students. The CDE's independent evaluator, HumRRO, has addressed the consistency of test results for students struggling to pass the CAHSEE and for SWDs. Results suggest the CST results were good indicators of how students performed on the CAHSEE, demonstrating consistency of test results across testing programs.

The Independent Evaluation report examined the relationship between the seventh grade ELA and mathematics scores from the 2003 CST administration and success in passing the 2008 CAHSEE (Wise, 2009). Researchers used the average of students' ELA and mathematics CST scores to show the likelihood of passing the CAHSEE. Students who were near or above the median on the seventh grade tests had a very high likelihood of meeting the CAHSEE requirement, whereas students who scored well below the median on the CST tests did not have a high likelihood of meeting the CAHSEE requirement. These results demonstrate that it is possible to identify students early on who may need additional help to pass the CAHSEE.

Additional research showing the relationship between the CAHSEE and CST results comes from the Independent Evaluation report of 2007. HumRRO investigated the performance of students who were repeat test-takers by examining the average CST scores for all students and for grade twelve students taking the CAHSEE. The latter group had mean CST scores between 0.75 and 1.00 standard deviations below the mean scores for all students on the grade eleven ELA, Algebra I, Geometry, and Algebra II tests. The correlations between the CST and CAHSEE scores for CAHSEE repeat test-takers were in the low to moderate range (0.28 to 0.38). Generally, the 2006 CST end-of-course results proved to be a good predictor of 2007 CAHSEE results (Wise & Rui, 2007).

To examine the performance of SWDs, the 2007 CAHSEE results were compared with the 2006 CST results. Results indicate that the majority of students who took the grade nine or ten CST in 2006 scored in the Far Below Basic and Below Basic categories for ELA and had very little success in passing the CAHSEE. Students who scored in the higher CST performance categories (i.e., Basic, Proficient, Advanced) had an increased chance of passing the CAHSEE. Similar results were found for the grade ten SWDs in 2007 who had taken the general mathematics test and the Algebra I end-of-course tests in 2006. Approximately 80 percent of students who scored in the Far Below Basic and Below Basic categories on the CST mathematics test in 2006 had low rates of passing the CAHSEE mathematics test in 2007, although they had more success in passing the CAHSEE if they were in the bottom two categories on the Algebra I test than did students in the same categories on the general mathematics test (Wise, 2007).

Relationship between CAHSEE Performance and Post-Secondary School Outcomes

HumRRO conducted a special study to address what post high school outcomes might be linked to CAHSEE performance, and how well and in what ways CAHSEE might predict post high school performance (Becker and Wiley, 2012). The study looked at short and long term post high school outcome variables, college enrollment

rates, and college degree completion. A total of twelve volunteer LEAs participated in the study.

The study results showed that there were strong positive correlations between post-secondary enrollment rates and CAHSEE ELA and mathematics performance.

There were also strong positive correlations between post-secondary degree completion and CAHSEE ELA and mathematics achievement levels. The relationship is particularly strong for ELA. Students scoring at the Advanced level on each test were most likely to earn degrees. Sixty percent of graduates were at the Advanced ELA level and 46 percent were Advanced in mathematics.

Differential Item Functioning

DIF statistics are used to identify those items that identifiable groups of students (e.g., females, African Americans, Hispanics) with the same underlying level of ability have different probabilities of answering the items correctly. If the item is differentially more difficult for an identifiable subgroup, the item may be measuring something different from the intended construct. However, it is important to recognize that DIF-flagged items might be related to actual differences in relevant knowledge or skill (item impact) or statistical Type I error. As a result, DIF statistics are used to identify potential sources of item bias. Subsequent review by content experts and bias/sensitivity committees is required to determine the source and meaning of any differences that are seen.

For the CAHSEE, DIF comparison groups are based on gender (male compared to female), ethnicity (white compared to American Indian, Asian, Pacific Islander, Filipino, combined Asian, Hispanic, and African American), and English language proficiency (English proficient compared to EL).

Across all 2012–13 administrations few operational items were flagged for significant DIF per administration. Of the 28 items that were flagged, 17 were ELA items and 11 were mathematics items. All items were submitted for DIF panel review and determined to be valid measures of the intended construct. DIF analysis of the CAHSEE items is described earlier in this chapter (refer to *Differential Item Analysis* section). Details of the results of the DIF analysis for each administration can be found in Tables 5, 6, and 7 of Appendices 6.B through 6.H.

Intercorrelations between Content Areas

To the degree that students' content area scores correlate as expected, evidence of the validity regarding those scores as measures of the intended constructs is provided. The correlations between scores on the ELA and mathematics tests are presented in Appendix 6.K. Results appear to be consistent with expectations. In general, students' ELA scores correlate moderately with their mathematics scores (range of 0.58 to 0.72) for the non-census administrations and correlate higher for the census administrations where there is larger variance in the ability of students, which

leads to higher correlations (i.e., 0.82 and 0.79 for the February and March administrations, respectively).

In addition, intercorrelations between the strands and the total test scores are presented in the same tables. In general, moderate correlations between the test scores and strand scores of the same content area are expected since, by design, the strands measure various aspects of the same construct, whereas intercorrelations between the test scores and strand scores of different content areas are expected to be less strong because the strands measure aspects of different constructs. The findings reflect these expectations. Using the February administration as an example, the mean intercorrelations between the content area scores and the strand scores were 0.86 and 0.89 for ELA and mathematics, respectively. The mean intercorrelation between the ELA score and mathematics strands was 0.74, and the mean intercorrelation between the mathematics score and the ELA strands was 0.70.

Generalizability Analyses for Writing Prompts

Generalizability analyses were performed on student responses to the ELA CR item to assess the proportion of variance explained by raters and persons. The details on the methodology are described in this chapter under the heading Generalizability Analyses. The results can be found in Appendix 6.M.

A decision study (d-study) was conducted to look at the generalizability-coefficients (g-coefficients) for the writing scores; the g-coefficients ranged from 0.75 to 0.86 across administrations. The largest variance component was attributed to the “person” variation, which is the desired variation to occur among the examinee or “person” scores. Variation attributable to the construct-irrelevant rater variable was negligible.

Evidence Based on Response Processes

As noted in the AERA, APA, and NCME’s *Standards for Educational and Psychological Testing* (1999), additional support for a particular score interpretation or use can be provided by theoretical and empirical evidence indicating that examinees are using the intended response processes when responding to the items in a test. This evidence may be gathered from interacting with examinees in order to understand what processes underlie their item responses. Finally, evidence may also be derived from evidence provided by observers or judges involved in the scoring of examinee responses.

Inter-Rater Agreement

Rater consistency for the ELA writing prompt is critical to the CAHSEE writing scores and their interpretations. These findings provide evidence of the degree to which raters agree in their observations about the qualities evident in students’ essay responses. As described in this chapter under *Writing Prompt and Rater Agreement Summary*, two raters scored each examinee response. The raters demonstrated exact agreement for 71 to 84 percent of student papers across the administrations and demonstrated exact or adjacent agreement for 99 to 100 percent of the papers

across the administrations. Details of the analyses are provided in Appendix 6.L in this chapter.

Evidence Based on Internal Structure

As suggested by the *Standards for Educational and Psychological Testing* (1999), evidence of validity can also be obtained from studies of the properties of the item scores and the relationship between these scores and scores on components of the test. To the extent that the score properties and relationships found are consistent with the definition of the construct measured by the test, support is gained for interpreting these scores as measures of the construct.

For the CAHSEE, it is assumed that a single construct underlies the total scores obtained on each test. Evidence to support this assumption can be gathered from the results of item analyses, evaluations of internal consistency, intercorrelations of strands, and test dimensionality.

With respect to the strands that are reported, these scores are intended to reflect the examinees' knowledge and/or skill in an area that is part of the construct underlying the total test. Analyses of the intercorrelations among the strands themselves and between the strands and total test score can be used for this purpose. Information about the internal consistency of the items on which each strand is based is also useful to provide. The relevant findings are described in the paragraphs that follow.

Classical and IRT Item Statistics

Point-biserial correlations calculated for the items in a test show the degree to which the items discriminate between students with low and high scores on a test. To the degree that the correlations are high, evidence that the items assess the same construct is provided. The distributions of point-biserial correlations for the items in the CAHSEE are presented in Appendices 6.B through 6.H, Table 1 for ELA and Table 2 for mathematics. This mean correlation ranged from 0.31 to 0.46 for ELA and from 0.27 to 0.47 for mathematics.

Also germane to the validity of a score interpretation are the ranges of difficulties for the items on which a test score will be based. The finding that items have difficulties that span the range of examinee ability provides evidence that examinees at all levels of ability are adequately measured by the items. Information on the distributions of item *b*-values is presented in Appendices 6.B through 6.H, Table 1 for ELA and Table 2 for mathematics. The data indicate that the tests had a range of item *b*-values.

Reliability of Test Scores

Reliability is a prerequisite for *validity*. The finding of reliability in student scores supports the validity of the inference that the scores reflect a stable construct. Findings concerning the reliabilities at the total-test level, as well as reliability results for the strands, were discussed in detail in the Reliability Analyses section in this chapter. This section will summarize briefly evidence supporting the reliability of the CAHSEE test scores.

Overall reliability—The CAHSEE scores exhibit high reliability as evidenced by the mean internal consistency (coefficient α) values for the population of students. The mean reliability across the February and March census administrations was 0.94 for ELA and 0.95 for mathematics.

Subgroup reliability—High reliability of CAHSEE scores was observed for groups defined by gender, ethnicity, accommodation status, and English Language Proficiency status. Reliabilities and SEM estimates are reported for demographic groups for the February and March 2013 census administrations, where larger samples were available. For both administrations and content areas, results indicate similar reliability estimates within gender and ethnic groups. The reliabilities for the accommodation groups are slightly lower than those for the non-accommodation groups, and the reliabilities for the EL group are lower than those for the English-proficient group. It can be noted that a reduced range (i.e., a reduced standard deviation of scores) is normally associated with a reduction in reliability, and this likely occurred for some of the CAHSEE subgroups.

Strand reliability—The reliabilities of CAHSEE content strands invariably are lower than those for the total tests because they are based on very few items. Consistent with the findings of previous years, the strand reliabilities also are affected by the number of items in each strand, with strand scores based on fewer items having somewhat lower reliabilities than strand scores based on more items. Because the reliabilities of scores at the strand level are lower, schools should supplement the score results with other information when interpreting the results.

Reliability of Performance Classification—The methodology used for estimating the reliability of classification decisions is described in the section Decision Classification Analyses in this chapter. Results for the reliability of classification reflect a high level of agreement in the student classifications, consistent with levels seen in previous years.

Intercorrelations of Strands

Evidence that strand scores have the intended meaning is provided by the finding that higher correlations are observed among scores obtained on strands designed to assess similar skills than are seen among scores obtained on strands designated to assess different skills. This is related to the ideas of convergent and divergent validity that Campbell and Fiske (1959) outlined.

Intercorrelations between CAHSEE ELA and mathematics raw scores at the strand level are provided for each administration in Appendix 6.K. For the census administrations, the ELA MC strands exhibit mean correlations of 0.73 (SD = 0.04) and 0.69 (SD = 0.05) for the February and March administrations, respectively. The mathematics strands exhibit mean correlations of 0.76 (SD = 0.05) and 0.75 (SD = 0.04) for the February and March administrations, respectively.

The mean intercorrelations between the ELA and mathematics strand scores are 0.65 (SD = 0.04) and 0.60 (SD = 0.05) for the February and March administrations, respectively. The finding that the relationship is stronger between strands of the same content area, compared to the strands of different content areas, is consistent with the

concept that ELA and mathematics measure different constructs, while the strands within a content area relate to the same construct.

Test Dimensionality

Gaffney and Perryman (2009) analyzed the factor structure for low stakes and high stakes tests to determine whether consequences at the student level affect the factor structure. Specifically, exploratory factor analysis was used to analyze the factor structure of the grade ten CST and the CAHSEE ELA component scores. Four ELA strand scores for each test were included in the analyses. For reading, the scores were for a) word analysis, fluency, and systematic vocabulary development; and b) reading comprehension. For writing, the scores were for a) writing strategies; and b) writing applications. Principal components extraction was followed by Promax rotation. Results indicated that the component scores for the low and high stakes subtests clearly loaded on separate factors in the two-factor solution.

Additional Validity Evidence

In addition to the validation documentation gathered and maintained by the CDE, other empirical information in support of the CAHSEE is described below.

- Chapter 4 outlines the statistical criteria used to ensure that the test forms are comparable across administrations, providing additional evidence supporting inferences based on the comparability of the scores on different test forms.

- The section on IRT Analyses in the current chapter describes the calibration, scaling, and equating procedures used to place scores on the base scale developed in February 2004, thereby supporting the validity of inferences based on comparability of test scores.

- The current chapter also provides validity evidence supporting the quality of the test items with summary information for classical item analyses, DIF, and model-data fit for the operational and field-test items.

- Demographic summary information in Chapter 8 provides validity evidence supporting the quality of the test forms. The relative results for demographic subgroups for CAHSEE are, at a general level, consistent with results of other assessment programs, such as the Standardized Testing and Reporting (STAR) program. For example, the finding that socioeconomic status is related to achievement is a common finding across testing programs.

Conclusions

Conclusions about the validity of the CAHSEE for a particular use depend upon the definition of that use, but a wide variety of evidence is available for examining the validity of the CAHSEE testing program. As summarized in this chapter, this evidence covers the design of the content of the test, the alignment of the items to the state

standards, judgmental and statistical review of item quality, the accuracy of classification decisions based on this assessment, and the credibility of statistical analyses based on CAHSEE results.

Appendix 6.A: CAHSEE Item Review—Description and Examples of Classification Categories

The categories used by ETS statisticians to classify items for the CAHSEE, based on an evaluation of how well each item fits the Rasch model, are described below. The flagging scheme has categories of A, B, C, D, and F. Descriptors for each category are provided below. The IRT ICCs and empirical data (item-ability regressions) for six recently field-tested items are shown on the next page (Figure 6.3), starting from the upper-left corner. These six items illustrate the span of the rating categories. The item number in the calibration and the ETS identification number for each item (accession number) are listed next to one of the descriptions for the five possible categories provided below. This number can be used to identify the corresponding item-ability regression plot in the figure.

Flag A (Item 93, FM002619901; Item 95, FM002640901)

- Good fit of theoretical curve to empirical data along the entire ability range; may have some small divergence at the extremes.
- Small Chi-square value relative to the other items in the calibration with similar sample sizes.

Flag B (Item 96, FM002641901)

- Good fit at the passing score.
- Theoretical curve within error range across most of ability range; may have some small divergence at the extremes.
- Acceptable Chi-square value relative to the other items in the calibration with similar sample sizes.

Flag C (Item 97, FM002767901)

- Acceptable fit at the passing score.
- Theoretical curve within error range at some regions and slightly outside of error range at remaining regions of ability range.
- Moderate Chi-square value relative to the other items in the calibration with similar sample sizes.

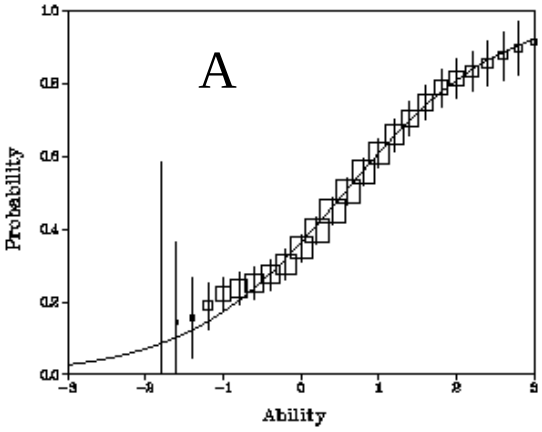
Flag D (Item 94, FM002620901)

- Fit at the passing score may be slightly out of error range.
- Theoretical curve outside of error range at some regions across ability range.
- Empirical curve may have a zero slope at and around the passing score.
- Large Chi-square value relative to the other items in the calibration with similar sample sizes.
- Items receiving a D fit value also receive a Use Status code of R. These items require additional examination and can be used if deemed appropriate.

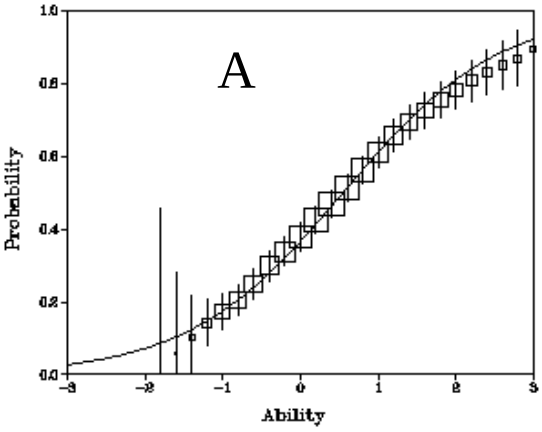
Flag F (Item 98, FM002768901)

- Fit at the passing score outside error range.
- Theoretical curve outside of error range at most regions across ability range.
- Probability of answering item correctly may be greater at lower ability than higher ability (U-shaped empirical curve).
- Very large Chi-square value (sometimes larger than three digits) relative to the other items with similar sample sizes.
- Items receiving an F fit value also receive a Use Status code of X, an indication the item should not be used in its current form and must be revised and field-tested again before operational use.

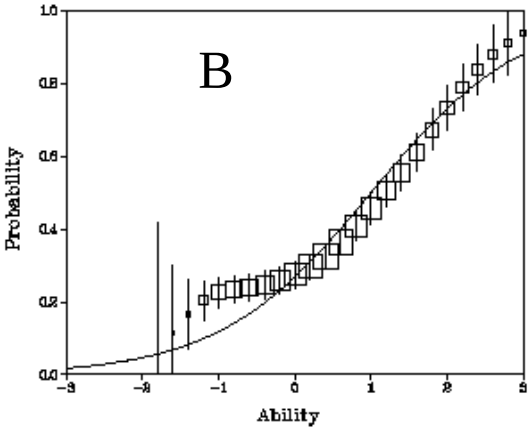
Figure 6.3: Samples of CAHSEE Item-Fit Rating Categories



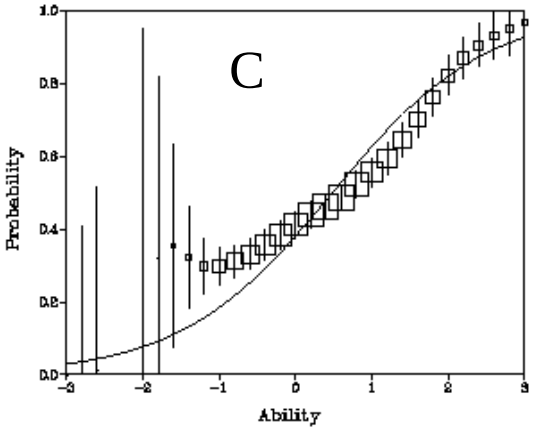
No.93 FM002619901 4 Choice P+=0.494
a=0.588 F, b=0.561, c=0.000 F, CHI=11.85



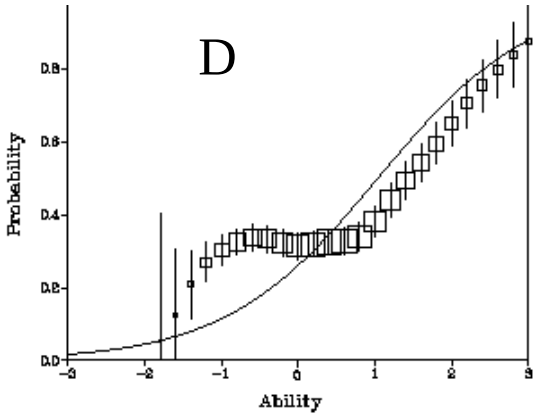
No.95 FM002640901 4 Choice P+=0.496
a=0.588 F, b=0.550, c=0.000 F, CHI=10.50



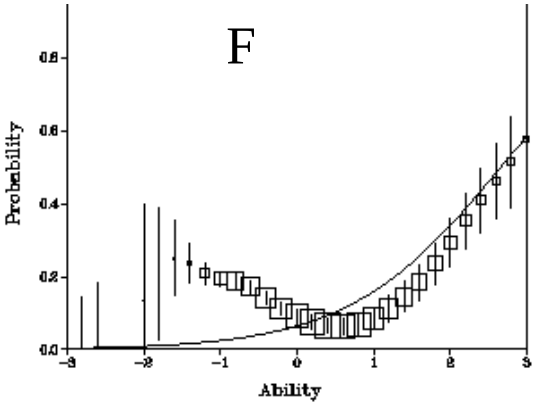
No.96 FM002641901 4 Choice P+=0.402
a=0.588 F, b=1.003, c=0.000 F, CHI=116.63



No.97 FM002767901 4 Choice P+=0.506
a=0.588 F, b=0.486, c=0.000 F, CHI=151.58



No.94 FM002620901 4 Choice P+=0.395
a=0.588 F, b=1.040, c=0.000 F, CHI=480.45



No.98 FM002768901 4 Choice P+=0.136
a=0.588 F, b= 2.664, c=0.000 F, CHI=720.60

Appendix 6.B: Summary Statistics for Operational Items—July 2012

Table 6.B.1: Summary of Operational Item Statistics—ELA, July 2012

Content area[1]	Number of items	IRT *b*-value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	0.00	0.64	-1.63	1.46	0.31	0.08	0.10	0.46
RC	18	-0.04	0.53	-0.95	0.88	0.34	0.06	0.18	0.42
RL	20	-0.15	0.68	-1.13	1.14	0.31	0.11	0.10	0.46
RW	7	-0.08	0.47	-0.86	0.72	0.30	0.04	0.24	0.37
WA	1	0.72	N/A	0.72	0.72	0.59	N/A	0.59	0.59
WC	15	-0.06	0.74	-1.63	0.93	0.29	0.06	0.20	0.39
WS	12	0.39	0.59	-0.81	1.46	0.29	0.05	0.20	0.37

[1]RC = Reading Comprehension, RL = Literary Response & Analysis, RW = Word Analysis, WA = Writing Applications, WC = Writing Conventions, WS = Writing Strategies.

Table 6.B.2: Summary of Operational Item Statistics—Mathematics, July 2012

Content area[1]	Number of items	IRT *b*-value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.26	0.64	-2.46	1.23	0.27	0.07	0.13	0.45
A1	12	0.24	0.27	-0.28	0.65	0.21	0.04	0.13	0.29
AF	20	-0.34	0.50	-1.19	0.77	0.30	0.07	0.16	0.39
MG	18	-0.12	0.59	-1.22	1.23	0.28	0.09	0.15	0.45
MR	8	-0.31	0.58	-1.43	0.54	0.29	0.07	0.20	0.38
NS	17	-0.46	0.83	-2.46	0.85	0.26	0.08	0.14	0.38
PS	13	-0.54	0.62	-1.46	0.49	0.29	0.03	0.24	0.35

[1]A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.B.3: IRT Model Data Fit Distribution of Operational Items—ELA, July 2012

IRT review category	Status	Item count	Percent[1]
A	Use	33	45
B	Use	25	34
C	Use	15	21
Total		73	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.B.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, July 2012

IRT review category	Status	Item count	Percent[1]
A	Use	37	46
B	Use	28	35
C	Use	15	19
Total		80	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.B.5: Operational Items Containing Significant DIF, July 2012

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	VC392463	L589G004	0	2	A	S	S	S	S	S	A	A	C-
ELA	VC392370	L581G013	0	33	A	S	S	S	S	S	C-	B-	B-
MATH	VC070809	M13446	0	25	A	S	S	S	S	S	B-	C-	A
MATH	FM004097	M10797	0	63	C+	S	S	S	S	S	A	B+	A

Note: Items with C values (positive and negative) were reviewed by the DIF review committee prior to scoring.
S indicates that DIF was not performed due to insufficient sample size.

Table 6.B.6: Distribution of Operational Item DIF Classifications—ELA, July 2012

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C DIF Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	2	3
B-	3	4	0	0	0	0	0	0	0	0	0	0	2	3	5	7	2	3		
A	67	92	0	0	0	0	0	0	0	0	0	0	67	92	63	86	66	90		
B+	3	4	0	0	0	0	0	0	0	0	0	0	3	4	5	7	4	5		
C+[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N[3]	0	0	73	100	73	100	73	100	73	100	73	100	0	0	0	0	0	0		
Total[4]	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	2	3

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.B.7: Distribution of Operational Item DIF Classifications—Mathematics, July 2012

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C DIF Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1
B-	3	4	0	0	0	0	0	0	0	0	0	0	1	1	2	3	1	1		
A	73	91	0	0	0	0	0	0	0	0	0	0	78	98	76	95	78	98		
B+	3	4	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1		
C+[2]	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Small N[3]	0	0	80	100	80	100	80	100	80	100	80	100	0	0	0	0	0	0		
Total[4]	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	2	3

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.
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Table 6.B.8: Listing of CR Item Statistics—ELA, July 2012

Accession number	VE025124
CAHSEE ID	L6OSA1421
Polyserial correlation	0.67
IRT *b*-value	0.7150
Step category 1[1]	2.22317
Step category 2	1.47981
Step category 3	3.68357
Step category 4	-1.19876
Step category 5	-0.94687
Step category 6	-2.86541
Step category 7	-2.37552
DIF category, Male-Female	A
DIF category, White-American Indian	S[3]
DIF category, White-Asian	S
DIF category, White-Pacific Islander	S
DIF category, White-Filipino	S
DIF category, White-Combined Asian	S
DIF category, White-Hispanic	A
DIF category, White-African American	A
Least favorable DIF category among all focal groups[2]	A

[1]Step categories refer to the parameters describing each item category in the polytomous item calibrations.
[2]This refers to the most extreme DIF category found among all focal groups for which a comparison was made. Positive DIF categories favor the focal group, and negative DIF categories favor the reference group.
[3]S indicates that DIF analysis was not performed due to insufficient sample size.

Appendix 6.C: Summary Statistics for Operational Items—October 2012

Table 6.C.1: Summary of Operational Item Statistics—ELA, October 2012

Content area[1]	Number of items	IRT *b*-value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.14	0.64	-1.72	1.47	0.36	0.07	0.18	0.49
RC	18	-0.25	0.48	-0.89	0.58	0.37	0.06	0.30	0.49
RL	20	-0.16	0.67	-1.29	1.11	0.35	0.06	0.19	0.48
RW	7	-0.43	0.45	-1.10	0.29	0.37	0.07	0.26	0.46
WA	1	0.62	N/A	0.62	0.62	0.66	N/A	0.66	0.66
WC	15	-0.21	0.70	-1.72	0.68	0.35	0.07	0.22	0.48
WS	12	0.25	0.72	-0.91	1.47	0.35	0.08	0.18	0.47

[1]RC = Reading Comprehension, RL = Literary Response & Analysis, RW = Word Analysis, WA = Writing Applications, WC = Writing Conventions, WS = Writing Strategies

Table 6.C.2: Summary of Operational Item Statistics—Mathematics, October 2012

Content area[1]	Number of items	IRT *b*-value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.17	0.59	-1.31	1.28	0.33	0.08	0.15	0.47
A1	12	0.31	0.54	-0.57	1.21	0.28	0.07	0.15	0.39
AF	20	-0.30	0.54	-1.25	0.64	0.36	0.06	0.25	0.45
MG	18	-0.06	0.60	-0.91	1.28	0.34	0.09	0.16	0.46
MR	8	-0.29	0.40	-1.10	0.24	0.34	0.06	0.26	0.41
NS	17	-0.25	0.47	-1.10	0.61	0.31	0.07	0.18	0.47
PS	13	-0.46	0.59	-1.31	0.64	0.36	0.06	0.25	0.44

[1]A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.C.3: IRT Model Data Fit Distribution of Operational Items—ELA, October 2012

IRT review category	Status	Item count	Percent[1]
A	Use	20	27
B	Use	26	36
C	Use	27	37
Total		73	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.C.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, October 2012

IRT review category	Status	Item count	Percent[1]
A	Use	15	19
B	Use	22	28
C	Use	40	50
D	Review	3	4
Total		80	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.C.5: Operational Items Containing Significant DIF, October 2012

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	FM004202	L132B001	0	26	B-	A	A	S	C-	B-	B-	A	B-
ELA	VE045848	L665H001	0	41	C-	A	C-	S	B-	B-	A	B-	A
ELA	VE045533	L643H006	0	54	A	A	B-	S	C-	B-	C-	A	C-
MATH	VE047191	M50086	0	14	C-	A	A	S	A	A	A	A	A
MATH	VE047259	M50155	0	23	A	A	B-	S	C-	B-	A	A	A
MATH	VC023975	M20696	0	82	A	A	B+	S	C+	C+	A	B+	A
MATH	VC022972	M13129	0	92	A	A	C+	S	B+	B+	A	A	A

Note: Items with C values (positive and negative) were reviewed by the DIF review committee prior to scoring.
S indicates that DIF was not performed due to insufficient sample size.

Table 6.C.6: Distribution of Operational Item DIF Classifications—ELA, October 2012

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C DIF Across All Analyses[1]	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	1	1	0	0	1	1	0	0	2	3	0	0	1	1	0	0	1	1	3	4
B-	1	1	2	3	2	3	0	0	2	3	3	4	1	1	1	1	3	4		
A	71	97	69	95	67	92	0	0	67	92	69	95	71	97	72	99	68	93		
B+	0	0	2	3	3	4	0	0	2	3	1	1	0	0	0	0	1	1		
C+[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N[3]	0	0	0	0	0	0	73	100	0	0	0	0	0	0	0	0	0	0		
Total[4]	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	3	4

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.C.7: Distribution of Operational Item DIF Classifications—Mathematics, October 2012

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C DIF Across All Analyses[1]	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	3
B-	2	3	0	0	6	8	0	0	3	4	3	4	0	0	1	1	0	0		
A	76	95	80	100	70	88	0	0	74	93	75	94	80	100	78	98	80	100		
B+	1	1	0	0	3	4	0	0	1	1	1	1	0	0	1	1	0	0		
C+[2]	0	0	0	0	1	1	0	0	1	1	1	1	0	0	0	0	0	0	2	3
Small N[3]	0	0	0	0	0	0	80	100	0	0	0	0	0	0	0	0	0	0		
Total[4]	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	4	5

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.C.8: Listing of CR Item Statistics—ELA, October 2012

Accession number	VE025110
CAHSEE ID	L6OSA1403
Polyserial correlation	0.72
IRT *b*-value	0.61930
Step category 1[1]	1.82494
Step category 2	1.43497
Step category 3	3.51927
Step category 4	-0.91515
Step category 5	-0.84234
Step category 6	-2.66334
Step category 7	-2.35834
DIF category, Male-Female	A
DIF category, White-American Indian	A
DIF category, White-Asian	A
DIF category, White-Pacific Islander	S[3]
DIF category, White-Filipino	A
DIF category, White-Combined Asian	A
DIF category, White-Hispanic	A
DIF category, White-African American	A
Least favorable DIF category among all focal groups[2]	A

[1]Step categories refer to the parameters describing each item category in the polytomous item calibrations.
[2]This refers to the most extreme DIF category found among all focal groups for which a comparison was made. Positive DIF categories favor the focal group, and negative DIF categories favor the reference group.
[3]S indicates that DIF analysis was not performed due to insufficient sample size.

Appendix 6.D: Summary Statistics for Operational Items—November 2012

Table 6.D.1: Summary of Operational Item Statistics—ELA, November 2012

Content area[1]	Number of items	IRT *b*-value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.04	0.63	-1.45	1.44	0.37	0.07	0.14	0.50
RC	18	-0.17	0.51	-1.06	0.95	0.39	0.05	0.27	0.46
RL	20	-0.17	0.77	-1.45	1.30	0.37	0.10	0.14	0.50
RW	7	-0.08	0.55	-0.95	0.52	0.36	0.05	0.28	0.43
WA	1	0.89	N/A	0.89	0.89	0.67	N/A	0.67	0.67
WC	15	-0.09	0.53	-1.10	0.56	0.37	0.05	0.30	0.45
WS	12	0.41	0.54	-0.76	1.44	0.36	0.07	0.21	0.48

[1]RC = Reading Comprehension, RL = Literary Response & Analysis, RW = Word Analysis, WA = Writing Applications, WC = Writing Conventions, WS = Writing Strategies.

Table 6.D.2: Summary of Operational Item Statistics—Mathematics, November 2012

Content area[1]	Number of items	IRT *b*-value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.27	0.56	-1.52	0.97	0.35	0.07	0.16	0.51
A1	12	0.19	0.35	-0.24	0.97	0.34	0.08	0.16	0.46
AF	20	-0.41	0.41	-0.93	0.46	0.37	0.08	0.24	0.51
MG	18	-0.15	0.61	-1.52	0.94	0.35	0.09	0.18	0.51
MR	8	-0.18	0.63	-1.41	0.46	0.30	0.07	0.22	0.40
NS	17	-0.34	0.66	-1.41	0.81	0.33	0.06	0.22	0.48
PS	13	-0.55	0.51	-1.39	0.20	0.35	0.05	0.28	0.43

[1]A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.D.3: IRT Model Data Fit Distribution of Operational Items—ELA, November 2012

IRT review category	Status	Item count	Percent[1]
A	Use	28	38
B	Use	35	48
C	Use	9	12
D	Review	1	1
Total		73	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.D.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, November 2012

IRT review category	Status	Item count	Percent[1]
A	Use	26	33
B	Use	40	50
C	Use	14	18
Total		80	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.D.5: Operational Items Containing Significant DIF, November 2012

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	FM003702	L134B003	0	1	A	A	C-	B-	B-	B-	B-	B-	B-
ELA	VE359124	L802L002	0	17	A	A	C-	C-	B-	B-	A	A	A
ELA	VE045533	L643H006	0	54	A	A	C-	B-	A	B-	B-	A	C-
ELA	VE046765	L6OSA751	0	68	A	A	C+	A	C+	B+	A	A	A
ELA	VE339104	L7OSA1653	0	76	A	A	B-	B-	C-	C-	A	A	A
ELA	VE339097	L7OSA1646	0	78	A	A	C-	A	C-	C-	A	A	A
MATH	VC023693	M20363	0	9	C-	A	A	B-	A	B-	A	B-	A

Note: Items with C values (positive and negative) were reviewed by the DIF review committee prior to scoring.

Table 6.D.6: Distribution of Operational Item DIF Classifications—ELA, November 2012

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	0	0	0	0	4	5	1	1	2	3	2	3	0	0	0	0	1	1	5	7
B-	2	3	0	0	4	5	4	5	4	5	5	7	2	3	1	1	1	1		
A	70	96	73	100	61	84	65	89	64	88	64	88	71	97	72	99	69	95		
B+	1	1	0	0	3	4	3	4	2	3	2	3	0	0	0	0	2	3		
C+[2]	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1
Small N[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total[4]	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	6	8

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.D.7: Distribution of Operational Item DIF Classifications—Mathematics, November 2012

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
B-	2	3	0	0	2	3	3	4	4	5	2	3	0	0	1	1	1	1		
A	77	96	80	100	75	94	76	95	73	91	76	95	80	100	79	99	79	99		
B+	0	0	0	0	3	4	1	1	3	4	2	3	0	0	0	0	0	0		
C+[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total[4]	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	1	1

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.D.8: Listing of CR Item Statistics—ELA, November 2012

Accession number	VE025133
CAHSEE ID	L6OSA1435
Polyserial correlation	0.74
IRT *b*-value	0.88917
Step category 1[1]	2.30626
Step category 2	1.56286
Step category 3	3.10467
Step category 4	-1.08975
Step category 5	-0.92098
Step category 6	-2.54460
Step category 7	-2.41846
DIF category, Male-Female	A
DIF category, White-American Indian	A
DIF category, White-Asian	A
DIF category, White-Pacific Islander	A
DIF category, White-Filipino	A
DIF category, White-Combined Asian	A
DIF category, White-Hispanic	A
DIF category, White-African American	A
Least favorable DIF category among all focal groups[2]	A

[1]Step categories refer to the parameters describing each item category in the polytomous item calibrations.
[2]This refers to the most extreme DIF category found among all focal groups for which a comparison was made. Positive DIF categories favor the focal group, and negative DIF categories favor the reference group.

Appendix 6.E: Summary Statistics for Operational Items—December 2012

Table 6.E.1: Summary of Operational Item Statistics—ELA, December 2012

Content area[1]	Number of items	IRT *b*-value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.14	0.68	-1.81	1.56	0.31	0.07	0.12	0.43
RC	18	-0.33	0.61	-1.81	0.49	0.33	0.05	0.25	0.40
RL	20	-0.14	0.62	-1.03	1.07	0.33	0.06	0.18	0.41
RW	7	0.11	0.74	-0.77	1.26	0.30	0.06	0.22	0.42
WA	1	0.40	N/A	0.40	0.40	0.59	N/A	0.59	0.59
WC	15	-0.35	0.61	-1.65	0.66	0.28	0.08	0.13	0.41
WS	12	0.19	0.83	-1.06	1.56	0.31	0.09	0.12	0.43

[1]RC = Reading Comprehension, RL = Literary Response & Analysis, RW = Word Analysis, WA = Writing Applications, WC = Writing Conventions, WS = Writing Strategies.

Table 6.E.2: Summary of Operational Item Statistics—Mathematics, December 2012

Content area[1]	Number of items	IRT *b*-value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.17	0.66	-1.68	1.40	0.27	0.08	0.11	0.47
A1	12	0.43	0.52	-0.59	1.40	0.26	0.08	0.15	0.35
AF	20	-0.20	0.51	-1.10	0.48	0.30	0.07	0.15	0.42
MG	18	-0.06	0.66	-1.68	1.21	0.26	0.10	0.11	0.47
MR	8	0.11	0.28	-0.41	0.48	0.27	0.06	0.20	0.36
NS	17	-0.28	0.56	-1.40	0.79	0.25	0.05	0.14	0.33
PS	13	-0.69	0.68	-1.54	0.80	0.28	0.07	0.13	0.41

[1]A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.E.3: IRT Model Data Fit Distribution of Operational Items—ELA, December 2012

IRT review category	Status	Item count	Percent[1]
A	Use	26	36
B	Use	22	30
C	Use	24	33
D	Review	1	1
Total		73	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.E.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, December 2012

IRT review category	Status	Item count	Percent[1]
A	Use	35	44
B	Use	26	33
C	Use	18	23
D	Review	1	1
Total		80	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.E.5: Operational Items Containing Significant DIF, December 2012

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	VE045163	L628H012	0	23	S	S	S	S	S	S	S	S	C-
ELA	VE046695	L6OSA1418	0	80	S	S	S	S	S	S	S	S	C-
MATH	VE047524	M50421	0	34	B-	S	S	S	S	S	S	S	C-
MATH	VC070833	M30670	0	84	C+	S	S	S	S	S	S	S	B+

Note: Items with C values (positive and negative) were reviewed by the DIF review committee prior to scoring.
S indicates that DIF was not performed due to insufficient sample size.

Table 6.E.6: Distribution of Operational Item DIF Classifications—ELA, December 2012

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	3
B-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	8		
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	81		
B+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	8		
C+[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N[3]	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	0	0		
Total[4]	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	2	3

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.E.7: Distribution of Operational Item DIF Classifications—Mathematics, December 2012

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
B-	6	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5		
A	70	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71	89		
B+	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5		
C+[2]	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Small N[3]	0	0	80	100	80	100	80	100	80	100	80	100	80	100	80	100	0	0		
Total[4]	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	2	3

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.E.8: Listing of CR Item Statistics—ELA, December 2012

Accession number	VE046695
CAHSEE ID	L6OSA1418
Polyserial correlation	0.69
IRT *b*-value	0.40401
Step category 1[1]	5.09327
Step category 2	1.17605
Step category 3	3.76946
Step category 4	-1.57759
Step category 5	-0.93802
Step category 6	-3.48019
Step category 7	-4.04299
DIF category, Male-Female	S[3]
DIF category, White-American Indian	S
DIF category, White-Asian	S
DIF category, White-Pacific Islander	S
DIF category, White-Filipino	S
DIF category, White-Combined Asian	S
DIF category, White-Hispanic	S
DIF category, White-African American	S
DIF category, English Proficient-English Learner	C-
Least favorable DIF category among all focal groups[2]	C-

[1]Step categories refer to the parameters describing each item category in the polytomous item calibrations.
[2]This refers to the most extreme DIF category found among all focal groups for which a comparison was made. Positive DIF categories favor the focal group, and negative DIF categories favor the reference group.
[3]S indicates that DIF analysis was not performed due to insufficient sample size.

Appendix 6.F: Summary Statistics for Operational Items—February 2013

Table 6.F.1: Summary of Operational Item Statistics—ELA, February 2013

		IRT *b*-value				Point-Biserial/Pearson Correlation			
Content area[1]	Number of items	Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.03	0.73	-2.36	1.55	0.46	0.07	0.29	0.60
RC	18	0.04	0.69	-1.09	1.55	0.44	0.08	0.33	0.60
RL	20	-0.28	0.83	-2.36	0.96	0.47	0.06	0.29	0.59
RW	7	-0.29	0.62	-0.87	0.92	0.49	0.06	0.37	0.54
WA	1	1.06	N/A	1.06	1.06	0.75	N/A	0.75	0.75
WC	15	-0.07	0.65	-0.89	1.27	0.47	0.07	0.35	0.59
WS	12	0.39	0.62	-0.72	1.54	0.46	0.08	0.33	0.60

[1]RC = Reading Comprehension, RL = Literary Response & Analysis, RW = Word Analysis, WA = Writing Applications, WC = Writing Conventions, WS = Writing Strategies.

Table 6.F.2: Summary of Operational Item Statistics—Mathematics, February 2013

		IRT *b*-value				Point-Biserial/Pearson Correlation			
Content area[1]	Number of items	Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.18	0.71	-2.08	1.62	0.47	0.09	0.22	0.66
A1	12	0.21	0.56	-0.79	0.79	0.48	0.11	0.32	0.63
AF	20	-0.34	0.65	-1.50	0.77	0.49	0.07	0.33	0.61
MG	18	0.02	0.57	-0.92	1.07	0.51	0.09	0.22	0.66
MR	8	-0.33	0.78	-1.64	0.70	0.43	0.09	0.33	0.58
NS	17	-0.31	0.94	-2.08	1.62	0.43	0.07	0.27	0.58
PS	13	-0.42	0.60	-1.04	0.71	0.42	0.07	0.23	0.50

[1]A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.F.3: IRT Model Data Fit Distribution of Operational Items—ELA, February 2013

IRT review category	Status	Item count	Percent[1]
A	Use	22	30
B	Use	31	42
C	Use	20	27
Total		73	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.F.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, February 2013

IRT review category	Status	Item count	Percent[1]
A	Use	21	26
B	Use	30	38
C	Use	27	34
D	Review	2	3
Total		80	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.F.5: Operational Items Containing Significant DIF, February 2013

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	VE580140	L897K001	0	1	A	A	C-	B-	C-	C-	B-	A	C-
ELA	VC017374	L10SA351	0	74	A	A	C-	B-	B-	C-	B-	B-	A
ELA	VE580286	L8OSA2016	0	79	A	A	A	A	A	A	A	C-	A

Note: Items with C values (positive and negative) were reviewed by the DIF review committee prior to scoring.

Table 6.F.6: Distribution of Operational Item DIF Classifications—ELA, February 2013

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	0	0	0	0	2	3	0	0	1	1	2	3	0	0	1	1	1	1	3	4
B-	2	3	0	0	2	3	2	3	7	10	2	3	4	5	1	1	4	5		
A	70	96	73	100	65	89	69	95	60	82	65	89	69	95	71	97	66	90		
B+	1	1	0	0	4	5	2	3	5	7	4	5	0	0	0	0	2	3		
C+[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total[4]	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	3	4

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.F.7: Distribution of Operational Item DIF Classifications—Mathematics, February 2013

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B-	4	5	0	0	4	5	3	4	2	3	3	4	0	0	2	3	2	3		
A	75	94	80	100	76	95	75	94	78	98	77	96	80	100	78	98	78	98		
B+	1	1	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0		
C+[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total[4]	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	0	0

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.F.8: Listing of CR Item Statistics—ELA, February 2013

Accession number	VE358934
CAHSEE ID	L7OSA1515
Polyserial correlation	0.83
IRT *b*-value	1.05745
Step category 1[1]	2.23638
Step category 2	1.60308
Step category 3	3.61078
Step category 4	-0.95037
Step category 5	-0.90180
Step category 6	-2.76153
Step category 7	-2.83655
DIF category, Male-Female	A
DIF category, White-American Indian	A
DIF category, White-Asian	A
DIF category, White-Pacific Islander	A
DIF category, White-Filipino	B+
DIF category, White-Combined Asian	A
DIF category, White-Hispanic	A
DIF category, White-African American	A
Least favorable DIF category among all focal groups[2]	B+

[1]Step categories refer to the parameters describing each item category in the polytomous item calibrations.

[2]This refers to the most extreme DIF category found among all focal groups for which a comparison was made. Positive DIF categories favor the focal group, and negative DIF categories favor the reference group.

Appendix 6.G: Summary Statistics for Operational Items—March 2013

Table 6.G.1: Summary of Operational Item Statistics—ELA, March 2013

		IRT *b*-value				Point-Biserial/Pearson Correlation			
Content area[1]	Number of items	Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.04	0.75	-1.39	1.58	0.43	0.07	0.26	0.60
RC	18	-0.14	0.64	-1.13	1.16	0.46	0.07	0.34	0.60
RL	20	-0.18	0.80	-1.39	0.91	0.42	0.05	0.32	0.54
RW	7	-0.43	0.81	-1.30	0.82	0.43	0.07	0.34	0.51
WA	1	1.01	N/A	1.01	1.01	0.70	N/A	0.70	0.70
WC	15	0.12	0.78	-1.32	1.58	0.41	0.07	0.27	0.53
WS	12	0.27	0.65	-0.62	1.34	0.43	0.09	0.26	0.53

[1]RC = Reading Comprehension, RL = Literary Response & Analysis, RW = Word Analysis, WA = Writing Applications, WC = Writing Conventions, WS = Writing Strategies.

Table 6.G.2: Summary of Operational Item Statistics—Mathematics, March 2013

		IRT *b*-value				Point-Biserial/Pearson Correlation			
Content area[1]	**Number of items**	**Mean**	**SD**	**Minimum**	**Maximum**	**Mean**	**SD**	**Minimum**	**Maximum**
Overall	80	-0.21	0.70	-1.79	1.44	0.46	0.08	0.27	0.62
A1	12	0.30	0.50	-0.85	0.95	0.49	0.08	0.33	0.59
AF	20	-0.38	0.72	-1.27	1.44	0.46	0.07	0.33	0.62
MG	18	-0.10	0.70	-1.24	1.18	0.48	0.08	0.29	0.58
MR	8	-0.55	0.82	-1.79	0.97	0.47	0.04	0.37	0.52
NS	17	-0.30	0.69	-1.79	0.82	0.46	0.07	0.27	0.55
PS	13	-0.43	0.69	-1.41	0.97	0.41	0.08	0.27	0.52

[1]A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.G.3: IRT Model Data Fit Distribution of Operational Items—ELA, March 2013

IRT review category	Status	Item count	Percent[1]
A	Use	36	49
B	Use	18	25
C	Use	17	23
D	Review	2	3
Total		73	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.G.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, March 2013

IRT review category	Status	Item count	Percent[1]
A	Use	33	41
B	Use	20	25
C	Use	24	30
D	Review	3	4
Total		80	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.G.5: Operational Items Containing Significant DIF, March 2013

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
MATH	VE048673	M51572	0	3	C-	A	A	A	A	A	A	A	A

Note: Items with C values (positive and negative) were reviewed by the DIF review committee prior to scoring.

Table 6.G.6: Distribution of Operational Item DIF Classifications—ELA, March 2013

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B-	5	7	0	0	3	4	2	3	5	7	3	4	1	1	1	1	0	0		
A	67	92	73	100	62	85	69	95	63	86	64	88	70	96	71	97	73	100		
B+	1	1	0	0	8	11	2	3	5	7	6	8	2	3	1	1	0	0		
C+[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total[4]	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	0	0

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.G.7: Distribution of Operational Item DIF Classifications—Mathematics, March 2013

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
B-	3	4	0	0	6	8	2	3	6	8	6	8	1	1	1	1	0	0		
A	75	94	80	100	73	91	78	98	73	91	74	93	77	96	79	99	80	100		
B+	1	1	0	0	1	1	0	0	1	1	0	0	2	3	0	0	0	0		
C+[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total[4]	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	1	1

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.G.8: Listing of CR Item Statistics—ELA, March 2013

Accession number	VE358928
CAHSEE ID	L7OSA1509
Polyserial correlation	0.82
IRT *b*-value	1.00973
Step category 1[1]	2.34984
Step category 2	1.44896
Step category 3	4.11146
Step category 4	-0.97667
Step category 5	-0.99372
Step category 6	-3.09662
Step category 7	-2.84326
DIF category, Male-Female	A
DIF category, White-American Indian	A
DIF category, White-Asian	A
DIF category, White-Pacific Islander	A
DIF category, White-Filipino	A
DIF category, White-Combined Asian	A
DIF category, White-Hispanic	A
DIF category, White-African American	A
Least favorable DIF category among all focal groups[2]	A

[1]Step categories refer to the parameters describing each item category in the polytomous item calibrations.

[2]This refers to the most extreme DIF category found among all focal groups for which a comparison was made. Positive DIF categories favor the focal group, and negative DIF categories favor the reference group.

Appendix 6.H: Summary Statistics for Operational Items—May 2013

Table 6.H.1: Summary of Operational Item Statistics—ELA, May 2013

		IRT *b*-value				Point-Biserial/Pearson Correlation			
Content area[1]	Number of items	Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.03	0.57	-1.23	1.15	0.39	0.06	0.23	0.52
RC	18	-0.01	0.47	-0.72	1.10	0.39	0.07	0.23	0.52
RL	20	-0.15	0.48	-0.95	1.15	0.37	0.06	0.26	0.47
RW	7	-0.47	0.74	-1.20	0.69	0.39	0.08	0.28	0.49
WA	1	0.78	N/A	0.78	0.78	0.68	N/A	0.68	0.68
WC	15	-0.10	0.66	-1.23	1.03	0.40	0.06	0.25	0.47
WS	12	0.43	0.30	-0.03	1.00	0.39	0.06	0.30	0.51

[1]RC = Reading Comprehension, RL = Literary Response & Analysis, RW = Word Analysis, WA = Writing Applications, WC = Writing Conventions, WS = Writing Strategies

Table 6.H.2: Summary of Operational Item Statistics—Mathematics, May 2013

		IRT *b*-value				Point-Biserial/Pearson Correlation			
Content area[1]	Number of items	Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.15	0.58	-1.32	1.27	0.36	0.08	0.17	0.51
A1	12	0.24	0.40	-0.56	0.81	0.31	0.07	0.21	0.43
AF	20	-0.34	0.43	-1.32	0.32	0.36	0.08	0.23	0.47
MG	18	0.08	0.70	-1.17	1.27	0.38	0.07	0.24	0.50
MR	8	-0.49	0.36	-0.82	-0.01	0.37	0.07	0.23	0.46
NS	17	-0.22	0.57	-1.13	0.75	0.35	0.09	0.17	0.51
PS	13	-0.44	0.53	-1.07	0.71	0.36	0.06	0.24	0.46

[1]A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.H.3: IRT Model Data Fit Distribution of Operational Items—ELA, May 2013

IRT review category	Status	Item count	Percent[1]
A	Use	10	14
B	Use	24	33
C	Use	39	53
Total		73	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.H.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, May 2013

IRT review category	Status	Item count	Percent[1]
A	Use	11	14
B	Use	13	16
C	Use	54	68
D	Review	2	3
Total		80	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.H.5: Operational Items Containing Significant DIF, May 2013

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	VE645161	L887L001	0	6	A	A	C-	S	S	B-	A	A	B-
MATH	VE339457	M60408	0	7	C-	A	A	S	A	A	A	B-	A

Note: Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
S indicates that DIF was not performed due to insufficient sample size.

Table 6.H.6: Distribution of Operational Item DIF Classifications—ELA, May 2013

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
B-	0	0	1	1	7	10	0	0	0	0	4	5	0	0	0	0	3	4		
A	73	100	72	99	59	81	0	0	0	0	63	86	73	100	73	100	67	92		
B+	0	0	0	0	6	8	0	0	0	0	6	8	0	0	0	0	3	4		
C+[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N[3]	0	0	0	0	0	0	73	100	73	100	0	0	0	0	0	0	0	0		
Total[4]	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	1	1

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.H.7: Distribution of Operational Item DIF Classifications—Mathematics, May 2013

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
B-	1	1	0	0	1	1	0	0	2	3	0	0	0	0	1	1	0	0		
A	76	95	80	100	78	98	0	0	75	94	80	100	80	100	79	99	80	100		
B+	2	3	0	0	1	1	0	0	3	4	0	0	0	0	0	0	0	0		
C+[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N[3]	0	0	0	0	0	0	80	100	0	0	0	0	0	0	0	0	0	0		
Total[4]	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	1	1

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.H.8: Listing of CR Item Statistics—ELA, May 2013

Accession number	VE025118
CAHSEE ID	L6OSA1414
Polyserial correlation	0.76
IRT *b*-value	0.78009
Step category 1[1]	1.95658
Step category 2	1.38304
Step category 3	3.72349
Step category 4	-1.21452
Step category 5	-0.66497
Step category 6	-2.77001
Step category 7	-2.41362
DIF category, Male-Female	A
DIF category, White-American Indian	A
DIF category, White-Asian	A
DIF category, White-Pacific Islander	S[3]
DIF category, White-Filipino	S
DIF category, White-Combined Asian	A
DIF category, White-Hispanic	A
DIF category, White-African American	A
Least favorable DIF category among all focal groups[2]	A

[1]Step categories refer to the parameters describing each item category in the polytomous item calibrations.
[2]This refers to the most extreme DIF category found among all focal groups for which a comparison was made. Positive DIF categories favor the focal group, and negative DIF categories favor the reference group.
[3]S indicates that DIF analysis was not performed due to insufficient sample size.

Appendix 6.I: Summary Statistics for Field-Test Items—February 2013

Table 6.I.1: Summary of Field-Test Item Statistics—ELA, February 2013

		IRT *b*-value				Point-Biserial/Pearson Correlation			
Content area[1]	Number of items	Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	624	0.63	0.90	-2.06	3.62	0.40	0.11	0.08	0.64
RC	113	0.99	0.65	-0.47	2.41	0.37	0.11	0.12	0.59
RL	265	0.73	0.74	-1.31	2.69	0.40	0.11	0.10	0.62
RW	133	0.58	0.87	-1.26	2.95	0.41	0.12	0.08	0.64
WC	98	-0.05	1.22	-2.06	3.62	0.40	0.11	0.09	0.59
WS	15	1.01	0.55	0.02	1.78	0.41	0.09	0.20	0.56

[1]RC = Reading Comprehension, RL = Literary Response & Analysis, RW = Word Analysis, WC = Writing Conventions, WS = Writing Strategies.

Table 6.I.2: Summary of Field-Test Item Statistics—Mathematics, February 2013

		IRT *b*-value				Point-Biserial/Pearson Correlation			
Content area[1]	Number of items	Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	580	0.83	0.90	-1.64	3.81	0.39	0.13	0.07	0.67
A1	95	0.97	0.69	-0.63	2.83	0.38	0.13	0.08	0.62
AF	133	0.67	0.84	-1.64	2.38	0.39	0.12	0.10	0.58
MG	147	1.04	1.03	-1.19	3.81	0.36	0.14	0.07	0.61
MR	50	0.94	0.90	-1.12	2.77	0.33	0.13	0.10	0.56
NS	122	0.90	0.86	-1.27	3.43	0.42	0.14	0.10	0.67
PS	83	0.45	0.86	-1.45	2.37	0.39	0.09	0.16	0.58

[1]A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.I.3: IRT Model Data Fit Distribution of Field-Test Items—ELA, February 2013

IRT review category	Status	Item count	Percent[1]
A	Use	108	17
B	Use	143	22
C	Use	271	42
D	Review	60	9
F	Do Not Use	42	6
N/A	Dropped from Calibration	27	4
Total		651	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.I.4: IRT Model Data Fit Distribution of Field-Test Items—Mathematics, February 2013

IRT review category	Status	Item count	Percent[1]
A	Use	45	7
B	Use	96	15
C	Use	256	41
D	Review	104	17
F	Do Not Use	79	13
N/A	Dropped from Calibration	44	7
Total		624	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.I.5: Field-Test Items Containing Significant DIF, February 2013

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	VF075584	L928M016	14	50	A	S	S	S	S	S	C-	S	A
ELA	VF076079	L9OSA2240	17	75	A	S	S	S	S	S	A	S	C+
ELA	VF075388	L913M002	19	46	C-	S	S	S	S	S	A	S	B-
ELA	VF539648	L9OSA2300	25	75	A	S	S	S	S	S	C-	S	A
ELA	VF539235	L976M003	45	47	B-	S	S	S	S	S	A	S	C-
ELA	VF539691	L9OSA2343	47	75	A	S	S	S	S	S	A	S	C-
ELA	VF075784	L945M005	48	46	B-	S	S	S	S	S	C-	S	B-
ELA	VF075930	L961M003	52	46	A	S	S	S	S	S	C-	S	A
ELA	VF075913	L960M003	53	47	A	S	S	S	S	S	A	S	C-
ELA	VF539688	L9OSA2340	56	75	A	S	S	S	S	S	C-	S	A
ELA	VF539690	L9OSA2342	58	75	A	S	S	S	S	S	A	S	C-
ELA	VF075421	L916M002	60	46	A	S	S	S	S	C-	A	A	B-
ELA	VF076046	L9OSA2187	62	75	A	S	S	S	S	S	B-	S	C-
ELA	VF075373	L912M002	63	46	B-	S	A	S	S	A	B-	C-	C-
ELA	VF075377	L912M006	63	48	C+	S	S	S	S	S	A	S	A
ELA	VF075946	L970M003	65	46	A	S	S	S	S	A	A	S	C-
ELA	VF076042	L9OSA2183	65	75	A	S	S	S	S	A	C-	S	B-
ELA	VF075767	L944M004	69	46	A	S	S	S	S	S	A	S	C-
ELA	VF539415	L992M001	71	46	C-	S	A	S	S	A	A	A	A
ELA	VF076037	L9OSA2178	72	75	A	S	S	S	S	A	A	S	C-
ELA	VF075358	L911M002	75	46	C-	S	S	S	S	A	B-	S	A
ELA	VF075365	L911M009	75	48	A	S	S	S	S	B-	A	S	C-
ELA	VF075340	L909M002	78	46	A	S	S	S	S	S	C-	S	C-
ELA	VF539589	L9OSA2189	82	75	A	S	S	S	S	S	A	S	C+
ELA	VF075813	L949M002	84	46	A	S	S	S	S	S	C-	S	C-
ELA	VF075733	L941M001	85	46	A	S	S	S	S	S	B-	S	C-
ELA	VF075735	L941M003	86	47	C-	S	S	S	S	S	A	S	A
ELA	VF076014	L9OSA2155	88	75	A	S	S	S	S	S	C-	S	B+
ELA	VF539564	L9OSA2124	95	75	A	S	S	S	S	A	B+	S	C+
ELA	VF075638	L935M004	100	46	A	S	S	S	S	S	A	S	C-
ELA	VF539635	L9OSA2276	101	75	A	S	S	S	S	S	A	S	C+
ELA	VF538494	L918N001	103	46	A	S	S	S	S	S	C-	S	A
MATH	VF076665	M63480	1	36	A	S	S	S	S	C-	A	B-	A

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
MATH	VE645996	M62842	3	21	A	S	S	S	S	A	C+	A	A
MATH	VF076680	M63512	9	57	A	S	A	S	S	B-	A	C-	A
MATH	VF076803	M63938	9	59	C-	S	A	S	S	A	A	A	A
MATH	VF076332	M62914	10	20	A	S	A	S	S	A	A	A	C-
MATH	VE645594	M61440	10	35	A	S	A	S	S	A	A	C-	A
MATH	VE645798	M62170	12	18	B-	S	S	S	S	C-	A	B-	A
MATH	VF076316	M62890	13	21	A	S	A	S	S	A	A	B-	C-
MATH	VE646019	M63009	15	20	A	S	S	S	S	C+	A	A	A
MATH	VF076385	M62979	18	20	A	S	S	S	S	B-	A	B-	C-
MATH	VF076581	M63258	22	19	A	S	C+	S	S	C+	A	A	A
MATH	VF076325	M62899	24	21	A	S	C-	S	S	C-	A	A	A
MATH	VE359400	M60070	24	79	A	S	C+	S	S	B+	A	A	A
MATH	VF076622	M63388	30	18	C-	S	A	S	S	A	A	A	A
MATH	VF076585	M63262	30	19	A	S	C+	S	S	B+	A	A	A
MATH	VF076324	M62898	30	21	A	S	C-	S	S	C-	B-	A	B-
MATH	VF076425	M63037	32	19	C-	S	S	S	S	A	A	A	A
MATH	VF076327	M62901	32	21	B-	S	S	S	S	A	A	A	C-
MATH	VF539978	M63617	32	35	B-	S	S	S	S	B-	C-	C-	A
MATH	VF539756	M63293	33	57	A	S	S	S	S	C-	A	A	A
MATH	VF076766	M63727	33	58	B-	S	S	S	S	A	A	C-	A
MATH	VF076550	M63204	34	19	C-	S	A	S	S	A	A	A	A
MATH	VF076490	M63112	35	19	C-	S	A	S	S	A	A	A	A
MATH	VF076705	M63631	35	21	C-	S	A	S	S	B-	B-	B-	A
MATH	VE359361	M40458	36	79	A	S	S	S	S	C+	A	A	A
MATH	VF076448	M63062	37	21	A	S	S	S	S	A	A	A	C-
MATH	VF076610	M63366	38	58	C-	S	S	S	S	A	A	A	A
MATH	VF539878	M63481	41	57	A	S	S	S	S	A	B-	C-	A
MATH	VF076533	M63182	43	58	C-	S	S	S	S	A	A	A	A
MATH	VF540045	M63758	46	59	A	S	S	S	S	A	A	A	C+
MATH	VF076802	M63937	47	35	C-	S	S	S	S	A	A	B-	A
MATH	VF539820	M63365	48	57	A	S	S	S	S	A	A	C-	A

Table 6.I.6: Distribution of Field-Test Item DIF Classifications—ELA, February 2013

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	4	1	0	0	0	0	0	0	0	0	1	0	10	2	1	0	14	2	27	4
B-	17	3	0	0	1	0	0	0	0	0	10	2	55	8	2	0	80	12		
A	590	91	0	0	27	4	0	0	0	0	85	13	577	89	28	4	541	83		
B+	39	6	0	0	1	0	0	0	0	0	1	0	9	1	2	0	12	2		
C+[2]	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5	1
Small N[3]	0	0	651	100	622	96	651	100	651	100	554	85	0	0	618	95	0	0		
Total[4]	651	100	651	100	651	100	651	100	651	100	651	100	651	100	651	100	651	100	32	5

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.I.7: Distribution of Field-Test Item DIF Classifications—Mathematics, February 2013

	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
DIF category	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	9	1	0	0	2	0	0	0	0	0	5	1	1	0	6	1	5	1	24	4
B-	30	5	0	0	4	1	0	0	0	0	39	6	15	2	57	9	27	4		
A	574	92	0	0	153	25	0	0	0	0	559	90	602	96	540	87	589	94		
B+	11	2	0	0	6	1	0	0	0	0	18	3	5	1	9	1	2	0		
C+[2]	0	0	0	0	3	0	0	0	0	0	3	0	1	0	0	0	1	0	8	1
Small N[3]	0	0	624	100	456	73	624	100	624	100	0	0	0	0	12	2	0	0		
Total[4]	624	100	624	100	624	100	624	100	624	100	624	100	624	100	624	100	624	100	32	5

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

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Appendix 6.J: Summary Statistics for Field-Test Items—March 2013

Table 6.J.1: Summary of Field-Test Item Statistics—ELA, March 2013

		IRT *b*-value				Point-Biserial/Pearson Correlation			
Content area[1]	Number of items	Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	976	1.03	0.85	-1.61	4.15	0.35	0.11	0.06	0.59
RC	188	0.96	0.76	-1.06	2.57	0.36	0.11	0.08	0.59
RL	206	1.11	0.76	-0.53	4.01	0.35	0.11	0.06	0.58
RW	105	0.86	0.97	-1.02	3.37	0.36	0.11	0.10	0.54
WC	147	0.61	1.01	-1.61	3.17	0.38	0.11	0.09	0.59
WS	330	1.25	0.75	-1.08	4.15	0.34	0.11	0.08	0.56

[1]RC = Reading Comprehension, RL = Literary Response & Analysis, RW = Word Analysis, WC = Writing Conventions, WS = Writing Strategies.

Table 6.J.2: Summary of Field-Test Item Statistics—Mathematics, March 2013

		IRT *b*-value				Point-Biserial/Pearson Correlation			
Content area[1]	Number of items	Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	901	0.88	0.89	-1.81	3.60	0.39	0.11	0.08	0.64
A1	151	1.05	0.70	-0.75	2.79	0.38	0.12	0.09	0.61
AF	187	0.82	0.89	-1.39	3.27	0.38	0.12	0.09	0.59
MG	191	1.31	0.93	-1.38	3.60	0.35	0.12	0.08	0.59
MR	111	1.08	0.90	-1.03	3.01	0.35	0.12	0.08	0.60
NS	216	0.62	0.82	-1.22	2.69	0.43	0.09	0.14	0.64
PS	156	0.61	0.87	-1.81	3.01	0.38	0.10	0.11	0.56

[1]A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.J.3: IRT Model Data Fit Distribution of Field-Test Items—ELA, March 2013

IRT review category	Status	Item count	Percent[1]
A	Use	126	12
B	Use	232	22
C	Use	403	39
D	Review	114	11
F	Do Not Use	101	10
N/A	Dropped from Calibration	63	6
Total		1,039	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.J.4: IRT Model Data Fit Distribution of Field-Test Items—Mathematics, March 2013

IRT review category	Status	Item count	Percent[1]
A	Use	150	16
B	Use	180	19
C	Use	398	43
D	Review	82	9
F	Do Not Use	91	10
N/A	Dropped from Calibration	35	4
Total		936	100

[1]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.J.5: Field-Test Items Containing Significant DIF, March 2013

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	VF539300	L981M012	5	48	C-	S	S	S	S	A	C-	S	A
ELA	VF539291	L981M003	6	47	A	S	S	S	S	A	C-	S	B+
ELA	VF539052	L964M002	10	46	A	S	S	S	S	A	C-	S	A
ELA	VF539056	L964M006	10	48	A	S	S	S	S	A	C+	S	B+
ELA	VF539019	L962M002	11	46	C-	S	S	S	S	A	B-	S	A
ELA	VF539478	L996M001	13	46	C-	S	S	S	S	A	A	S	A
ELA	VF539218	L975M003	16	50	A	S	S	S	S	A	C-	S	A
ELA	VF539458	L994M013	18	51	A	S	S	S	S	C+	A	S	A
ELA	VF539083	L966M002	21	46	B-	S	S	S	S	C-	C-	S	A
ELA	VF539600	L9OSA2200	25	74	A	S	S	S	S	C-	B-	S	A
ELA	VF539200	L974M001	27	46	C-	S	S	S	S	B-	C-	S	B-
ELA	VF539275	L979M003	32	46	A	S	S	S	S	A	C-	S	A
ELA	VF539284	L979M012	32	50	A	S	S	S	S	A	C-	S	A
ELA	VF539274	L979M002	33	46	A	S	S	S	S	B-	C-	S	A
ELA	VF539277	L979M005	33	49	A	S	C+	S	S	C+	A	B+	A
ELA	VF539342	L984M001	37	46	C-	S	S	S	S	A	A	S	A
ELA	VF539251	L977M004	39	48	C-	S	S	S	S	B-	C-	S	B-
ELA	VE644714	L855L016	46	46	C-	S	S	S	S	A	A	S	A
ELA	VF539192	L972M023	50	50	A	S	S	S	S	A	C-	S	B-
ELA	VF539549	L9OSA2109	54	74	A	S	S	S	S	C+	A	S	A
ELA	VF538439	L915N006	62	48	B-	S	S	S	S	B-	C-	S	C-
ELA	VF076055	L9OSA2216	64	74	A	S	S	S	S	C+	A	S	A
ELA	VF538288	L905N008	65	48	B-	S	S	S	S	A	C-	S	A
ELA	VF538321	L908N001	67	46	A	S	S	S	S	B-	C-	S	C-
ELA	VF538322	L908N002	68	46	C-	S	S	S	S	A	A	S	C-
ELA	VF538467	L917N006	69	49	A	S	C-	S	S	B-	A	C-	B-
ELA	VF538295	L906N001	72	46	A	S	S	S	S	A	B-	S	C-
ELA	VF538213	L888M003	73	47	A	S	S	S	S	A	C-	S	A

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	VF538215	L888M005	73	48	C-	S	S	S	S	A	B-	S	A
ELA	VF538217	L888M007	73	49	A	S	S	S	S	A	C-	S	A
ELA	VF538395	L913N005	77	50	C-	S	S	S	S	B-	C-	S	A
ELA	VF538754	L933N001	79	46	A	S	S	S	S	C+	C+	S	A
ELA	VF538755	L933N002	80	46	C-	S	S	S	S	A	B-	S	A
ELA	VF538308	L907N002	83	47	C-	S	S	S	S	A	C-	S	B-
ELA	VF539657	L9OSA2309	83	74	A	S	S	S	S	C+	A	S	A
ELA	VF538777	L934N004	84	47	C-	S	A	S	S	A	A	S	A
ELA	VF539662	L9OSA2314	88	74	A	S	S	S	S	C+	A	S	A
ELA	VF538820	L936N008	90	49	A	S	S	S	S	A	A	S	C-
ELA	VF539663	L9OSA2315	90	74	A	S	S	S	S	C+	A	S	A
ELA	VF538815	L936N003	91	47	A	S	S	S	S	A	A	S	C-
ELA	VF538822	L936N010	91	49	C-	S	S	S	S	A	B-	S	A
ELA	VF538407	L914N002	93	46	B-	S	S	S	S	A	C-	S	C-
ELA	VF539630	L9OSA2271	94	74	A	S	S	S	S	B-	A	S	C-
ELA	VF538793	L935N006	96	49	A	S	S	S	S	A	A	S	C-
ELA	VF538790	L935N003	97	47	A	S	B+	S	S	C+	A	S	A
ELA	VF075967	L973M004	101	49	A	S	S	S	S	A	C-	S	A
ELA	VF075551	L927M001	102	46	B-	S	B-	S	S	B-	B-	B-	C-
ELA	VF539003	L958M005	117	47	A	S	S	S	S	C-	C-	S	C-
ELA	VF538922	L948M010	119	48	A	S	S	S	S	B-	B-	S	C-
ELA	VF538568	L924N002	127	47	A	S	S	S	S	C-	B-	S	A
ELA	VF539571	L9OSA2131	128	74	A	S	S	S	S	C+	A	S	A
ELA	VF075797	L946M002	134	46	A	S	S	S	S	A	C-	S	A
ELA	VF539123	L968M001	135	46	C-	S	S	S	S	A	B-	S	A
ELA	VF539129	L968M007	136	48	A	S	S	S	S	B-	C-	S	B-
ELA	VF539534	L999M013	139	51	C-	S	S	S	S	A	A	S	A
ELA	VF538242	L902N004	140	49	C-	S	S	S	S	A	A	S	A

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	VF538243	L902N005	141	49	A	S	S	S	S	A	B-	S	C-
ELA	VF075896	L959M002	142	47	A	S	S	S	S	C-	B-	S	C-
ELA	VF538678	L931M001	144	46	C-	S	S	S	S	C-	C-	S	B-
ELA	VF539619	L9OSA2260	148	74	A	S	S	S	S	C-	A	S	B-
ELA	VF539038	L963M005	152	46	A	S	S	S	S	A	C-	S	C-
ELA	VF538805	L936M005	153	50	A	S	S	S	S	A	C-	S	A
ELA	VF539153	L971M001	154	46	C-	S	S	S	S	B-	C-	S	A
MATH	VF540381	M64138	5	20	A	S	A	S	S	B+	B+	C+	A
MATH	VF540287	M64044	11	19	C-	S	A	S	S	A	A	A	A
MATH	VF540250	M64007	11	20	A	S	A	S	S	A	A	C-	B-
MATH	VF539785	M63324	11	60	B-	S	A	S	S	A	C-	A	A
MATH	VF076214	M62402	13	20	A	S	C+	S	S	B+	A	A	A
MATH	VE645681	M61764	15	35	B-	S	B-	S	S	C-	B-	B-	A
MATH	VF540137	M63867	16	36	A	S	A	S	S	A	A	B-	C-
MATH	VF540224	M63981	18	20	A	S	A	S	S	A	A	A	C-
MATH	VF540141	M63871	20	57	C-	S	C-	S	S	B-	C-	B-	B-
MATH	VF076685	M63519	22	35	A	S	B-	S	S	B-	C-	B-	A
MATH	VF539952	M63591	24	59	A	S	A	S	S	A	A	C-	A
MATH	VF540307	M64064	26	21	C-	S	A	S	S	A	A	A	A
MATH	VF540187	M63926	26	58	A	S	B-	S	S	B-	A	C-	A
MATH	VF540310	M64067	27	18	C-	S	B-	S	S	B-	B-	B-	A
MATH	VE645432	M61028	28	79	C+	S	A	S	S	B+	A	B+	A
MATH	VF540332	M64089	30	19	A	S	B+	S	S	C+	A	A	A
MATH	VF540251	M64008	31	36	C-	S	A	S	S	A	A	B-	A
MATH	VF540140	M63870	32	57	C-	S	B-	S	S	B-	A	A	A
MATH	VF540311	M64068	33	18	C-	S	A	S	S	A	A	A	A
MATH	VF539876	M63478	33	21	A	S	A	S	S	A	B-	C-	A
MATH	VF540308	M64065	34	18	C-	S	A	S	S	A	A	B-	A

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
MATH	VF540338	M64095	34	19	A	S	C+	S	S	C+	A	A	A
MATH	VF540017	M63718	34	36	A	S	A	S	S	B-	B-	C-	A
MATH	VF076271	M62834	36	20	A	S	A	S	S	A	B-	C-	A
MATH	VF540306	M64063	37	20	C-	S	A	S	S	A	A	A	A
MATH	VF540300	M64057	39	19	C-	S	A	S	S	B-	A	B-	A
MATH	VF540304	M64061	42	18	C-	S	A	S	S	A	A	A	A
MATH	VF540302	M64059	43	18	C-	S	A	S	S	A	A	B-	A
MATH	VF539706	M62989	44	21	B-	S	C-	S	S	C-	C-	B-	A
MATH	VF540305	M64062	46	19	C-	S	A	S	S	A	A	A	A
MATH	VE645406	M60963	46	79	C+	S	A	S	S	B+	A	A	B+
MATH	VF076281	M62855	51	57	A	S	A	S	S	A	A	C-	A
MATH	VE645717	M61810	52	79	A	S	B+	S	S	C+	A	A	A
MATH	VF540133	M63863	54	80	C-	S	A	S	S	A	A	A	A
MATH	VE646009	M62941	55	36	A	S	A	S	S	A	C-	A	A
MATH	VE645983	M62803	56	79	A	S	C+	S	S	C+	A	A	A
MATH	VE645471	M61123	58	36	A	S	B-	S	S	B-	C-	B-	C-
MATH	VF540222	M63979	58	57	A	S	C-	S	S	C-	B-	B-	C-
MATH	VF540151	M63881	62	60	A	S	A	S	S	A	A	C-	A
MATH	VF540252	M64009	63	18	A	S	C+	S	S	B+	A	A	A
MATH	VF540036	M63749	64	60	A	S	C+	S	S	B+	A	A	A
MATH	VF539779	M63318	64	79	A	S	C+	S	S	B+	A	A	A
MATH	VF540043	M63756	66	60	A	S	B-	S	S	C-	A	C-	A
MATH	VF540039	M63752	67	60	B-	S	B-	S	S	B-	C-	B-	A
MATH	VF539884	M63487	75	57	C-	S	A	S	S	A	A	B-	A
MATH	VF539695	M62223	75	60	A	S	A	S	S	A	B-	C-	A

Note: Items with C values (positive and negative) were reviewed by the DIF review committee prior to scoring.
S indicates that DIF was not performed due to insufficient sample size.

Table 6.J.6: Distribution of Field-Test Item DIF Classifications—ELA, March 2013

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	19	2	0	0	1	0	0	0	0	0	7	1	27	3	1	0	15	1	52	5
B-	35	3	0	0	3	0	0	0	0	0	47	5	81	8	5	0	73	7		
A	954	92	0	0	85	8	0	0	0	0	913	88	919	88	59	6	947	91		
B+	31	3	0	0	4	0	0	0	0	0	48	5	10	1	4	0	4	0		
C+[2]	0	0	0	0	1	0	0	0	0	0	10	1	2	0	0	0	0	0	11	1
Small N[3]	0	0	1,039	100	945	91	1,039	100	1,039	100	14	1	0	0	970	93	0	0		
Total[4]	1,039	100	1,039	100	1,039	100	1,039	100	1,039	100	1,039	100	1,039	100	1,039	100	1,039	100	63	6

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.J.7: Distribution of Field-Test Item DIF Classifications—Mathematics, March 2013

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses[1]	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C-[2]	15	2	0	0	3	0	0	0	0	0	4	0	7	1	10	1	4	0	35	4
B-	32	3	0	0	31	3	0	0	0	0	34	4	38	4	78	8	51	5		
A	873	93	0	0	808	86	0	0	0	0	841	90	880	94	827	88	880	94		
B+	14	1	0	0	88	9	0	0	0	0	53	6	11	1	20	2	1	0		
C+[2]	2	0	0	0	6	1	0	0	0	0	4	0	0	0	1	0	0	0	11	1
Small N[3]	0	0	936	100	0	0	936	100	936	100	0	0	0	0	0	0	0	0		
Total[4]	936	100	936	100	936	100	936	100	936	100	936	100	936	100	936	100	936	100	46	5

[1]Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.
[2]Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.
[3]Small N indicates that DIF analysis was not performed due to insufficient sample size.
[4]Total percentage may differ slightly from the sum of the category percentages due to rounding.

Appendix 6.K: Intercorrelations, Reliability Estimates, and Standard Errors of Measurement

Table 6.K.1: Intercorrelations and Reliability Estimates by Section—July 2012

	ELA	Essay	Word Anal.	Read. Comp.	Lit. Resp. & Anal.	Writing Strat.	Writing Conv.	Math	Prob. & Stat.	Number Sense	Alg. & Func.	Meas. & Geom.	A1
ELA	1.00	-	-	-	-	-	-	-	-	-	-	-	-
Essay	0.59	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.64	0.29	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.84	0.37	0.50	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.83	0.40	0.49	0.63	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.72	0.30	0.37	0.54	0.49	1.00	-	-	-	-	-	-	-
Writing Conventions	0.73	0.36	0.35	0.48	0.49	0.46	1.00	-	-	-	-	-	-
Mathematics	0.58	0.34	0.37	0.51	0.46	0.48	0.49	1.00	-	-	-	-	-
Probability and Statistics	0.53	0.31	0.37	0.48	0.44	0.42	0.43	0.74	1.00	-	-	-	-
Number Sense	0.49	0.31	0.35	0.44	0.39	0.39	0.39	0.75	0.50	1.00	-	-	-
Algebra & Functions	0.49	0.28	0.31	0.44	0.41	0.42	0.42	0.84	0.54	0.52	1.00	-	-
Measurement & Geometry	0.48	0.27	0.31	0.42	0.37	0.40	0.41	0.79	0.48	0.47	0.56	1.00	-
Algebra 1	0.25	0.15	0.10	0.21	0.19	0.23	0.25	0.57	0.26	0.30	0.37	0.36	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	47.19	2.04	3.82	9.66	11.17	5.34	8.03	35.11	6.49	8.16	9.14	7.39	3.94
SD	11.85	0.47	1.62	3.52	3.48	2.36	2.79	10.30	2.46	2.75	3.44	3.01	2.02
Reliability	0.87	0.24	0.43	0.70	0.66	0.55	0.60	0.84	0.54	0.53	0.63	0.58	0.39
SEM	4.32	0.41	1.23	1.94	2.03	1.59	1.76	4.14	1.66	1.88	2.09	1.95	1.57

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in these computations.
Correlations for the ELA section are reported for 6,623 examinees completing the ELA section.
Correlations for the mathematics section are reported for 5,770 examinees completing the mathematics section.
Correlations between ELA and mathematics are reported for 2,541 examinees taking both sections.

Table 6.K.2: Intercorrelations and Reliability Estimates by Section—October 2012

	ELA	Essay	Word Anal.	Read. Comp.	Lit. Resp. & Anal.	Writing Strat.	Writing Conv.	Math	Prob. & Stat.	Number Sense	Alg. & Func.	Meas. & Geom.	A1
ELA	1.00	-	-	-	-	-	-	-	-	-	-	-	-
Essay	0.66	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.72	0.38	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.85	0.46	0.57	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.87	0.46	0.59	0.70	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.78	0.41	0.51	0.59	0.61	1.00	-	-	-	-	-	-	-
Writing Conventions	0.79	0.45	0.49	0.56	0.57	0.57	1.00	-	-	-	-	-	-
Mathematics	0.66	0.45	0.45	0.58	0.57	0.55	0.57	1.00	-	-	-	-	-
Probability and Statistics	0.61	0.41	0.43	0.55	0.54	0.51	0.51	0.79	1.00	-	-	-	-
Number Sense	0.54	0.37	0.38	0.48	0.47	0.45	0.46	0.80	0.57	1.00	-	-	-
Algebra & Functions	0.60	0.41	0.40	0.52	0.51	0.50	0.53	0.88	0.63	0.61	1.00	-	-
Measurement & Geometry	0.57	0.38	0.38	0.49	0.49	0.49	0.50	0.84	0.58	0.56	0.67	1.00	-
Algebra 1	0.41	0.30	0.25	0.35	0.34	0.35	0.38	0.69	0.40	0.46	0.55	0.51	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	50.23	2.10	4.38	10.62	11.36	5.80	8.61	38.12	7.00	8.35	10.06	8.20	4.51
SD	13.95	0.57	1.72	3.71	3.87	2.56	3.20	12.88	2.85	3.23	3.94	3.56	2.30
Reliability	0.90	0.32	0.54	0.74	0.73	0.63	0.71	0.90	0.68	0.65	0.73	0.71	0.54
SEM	4.36	0.47	1.17	1.90	2.00	1.55	1.71	4.11	1.62	1.92	2.04	1.92	1.57

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in these computations.
Correlations for the ELA section are reported for 42,393 examinees completing the ELA section.
Correlations for the mathematics section are reported for 39,552 examinees completing the mathematics section.
Correlations between ELA and mathematics are reported for 23,440 examinees taking both sections.

Table 6.K.3: Intercorrelations and Reliability Estimates by Section—November 2012

	ELA	Essay	Word Anal.	Read. Comp.	Lit. Resp. & Anal.	Writing Strat.	Writing Conv.	Math	Prob. & Stat.	Number Sense	Alg. & Func.	Meas. & Geom.	A1
ELA	1.00	-	-	-	-	-	-	-	-	-	-	-	-
Essay	0.67	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.71	0.39	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.87	0.47	0.62	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.87	0.48	0.59	0.72	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.79	0.43	0.50	0.62	0.62	1.00	-	-	-	-	-	-	-
Writing Conventions	0.81	0.47	0.48	0.60	0.61	0.61	1.00	-	-	-	-	-	-
Mathematics	0.69	0.48	0.53	0.62	0.59	0.57	0.59	1.00	-	-	-	-	-
Probability and Statistics	0.63	0.44	0.49	0.56	0.55	0.52	0.53	0.77	1.00	-	-	-	-
Number Sense	0.58	0.41	0.47	0.53	0.49	0.48	0.49	0.81	0.57	1.00	-	-	-
Algebra & Functions	0.63	0.44	0.48	0.56	0.54	0.52	0.53	0.89	0.63	0.63	1.00	-	-
Measurement & Geometry	0.59	0.41	0.45	0.52	0.50	0.50	0.50	0.84	0.57	0.57	0.68	1.00	-
Algebra 1	0.48	0.35	0.35	0.42	0.41	0.41	0.42	0.75	0.44	0.51	0.60	0.57	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	49.90	2.01	4.02	10.70	11.79	5.69	8.63	40.20	7.31	8.78	10.64	8.60	4.86
SD	14.53	0.58	1.72	3.86	3.91	2.67	3.32	13.58	2.81	3.34	4.10	3.62	2.69
Reliability	0.91	0.33	0.52	0.76	0.75	0.65	0.73	0.91	0.66	0.69	0.75	0.72	0.66
SEM	4.37	0.48	1.19	1.88	1.96	1.57	1.72	4.10	1.63	1.87	2.05	1.92	1.56

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in these computations.
Correlations for the ELA section are reported for 88,740 examinees completing the ELA section.
Correlations for the mathematics section are reported for 81,376 examinees completing the mathematics section.
Correlations between ELA and mathematics are reported for 50,712 examinees taking both sections.

Table 6.K.4: Intercorrelations and Reliability Estimates by Section—December 2012

	ELA	Essay	Word Anal.	Read. Comp.	Lit. Resp. & Anal.	Writing Strat.	Writing Conv.	Math	Prob. & Stat.	Number Sense	Alg. & Func.	Meas. & Geom.	A1
ELA	1.00	-	-	-	-	-	-	-	-	-	-	-	-
Essay	0.59	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.64	0.33	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.83	0.37	0.47	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.84	0.38	0.50	0.64	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.74	0.34	0.41	0.55	0.53	1.00	-	-	-	-	-	-	-
Writing Conventions	0.72	0.38	0.36	0.47	0.47	0.48	1.00	-	-	-	-	-	-
Mathematics	0.62	0.42	0.46	0.54	0.50	0.51	0.49	1.00	-	-	-	-	-
Probability and Statistics	0.58	0.41	0.43	0.51	0.51	0.43	0.44	0.71	1.00	-	-	-	-
Number Sense	0.47	0.29	0.37	0.41	0.40	0.39	0.38	0.74	0.40	1.00	-	-	-
Algebra & Functions	0.57	0.41	0.42	0.50	0.45	0.46	0.44	0.85	0.53	0.52	1.00	-	-
Measurement & Geometry	0.50	0.31	0.38	0.45	0.37	0.43	0.42	0.77	0.46	0.43	0.55	1.00	-
Algebra 1	0.28	0.25	0.17	0.25	0.20	0.26	0.22	0.64	0.27	0.39	0.44	0.37	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	49.56	2.08	3.54	10.69	11.15	5.84	8.95	38.70	7.75	8.65	9.79	8.24	4.25
SD	12.01	0.44	1.56	3.46	3.74	2.40	2.82	10.52	2.46	2.81	3.51	2.95	2.29
Reliability	0.88	0.25	0.40	0.70	0.71	0.58	0.61	0.84	0.57	0.52	0.65	0.56	0.54
SEM	4.23	0.38	1.21	1.90	2.03	1.55	1.75	4.15	1.62	1.94	2.09	1.97	1.55

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in these computations.
Correlations for the ELA section are reported for 1,942 examinees completing the ELA section.
Correlations for the mathematics section are reported for 1,574 examinees completing the mathematics section.
Correlations between ELA and mathematics are reported for 657 examinees taking both sections.

Table 6.K.5: Intercorrelations and Reliability Estimates by Section—February 2013

	ELA	Essay	Word Anal.	Read. Comp.	Lit. Resp. & Anal.	Writing Strat.	Writing Conv.	Math	Prob. & Stat.	Number Sense	Alg. & Func.	Meas. & Geom.	A1
ELA	1.00	-	-	-	-	-	-	-	-	-	-	-	-
Essay	0.75	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.82	0.52	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.90	0.59	0.72	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.92	0.60	0.75	0.79	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.87	0.57	0.67	0.75	0.75	1.00	-	-	-	-	-	-	-
Writing Conventions	0.88	0.60	0.67	0.74	0.75	0.75	1.00	-	-	-	-	-	-
Mathematics	0.82	0.60	0.65	0.74	0.75	0.73	0.75	1.00	-	-	-	-	-
Probability and Statistics	0.73	0.52	0.59	0.65	0.67	0.63	0.66	0.84	1.00	-	-	-	-
Number Sense	0.73	0.54	0.58	0.65	0.66	0.64	0.66	0.89	0.71	1.00	-	-	-
Algebra & Functions	0.78	0.56	0.61	0.70	0.71	0.69	0.71	0.93	0.75	0.78	1.00	-	-
Measurement & Geometry	0.77	0.56	0.60	0.69	0.70	0.69	0.70	0.93	0.74	0.78	0.83	1.00	-
Algebra 1	0.70	0.53	0.54	0.63	0.63	0.63	0.65	0.88	0.66	0.74	0.79	0.78	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	61.04	2.30	5.22	12.47	14.72	7.63	10.65	52.68	9.10	11.45	13.72	11.29	7.11
SD	16.77	0.65	1.78	3.84	4.37	2.96	3.51	17.10	2.85	3.63	4.69	4.62	3.16
Reliability	0.94	0.45	0.70	0.80	0.85	0.76	0.82	0.95	0.74	0.79	0.86	0.86	0.79
SEM	3.99	0.48	0.98	1.72	1.68	1.45	1.50	3.66	1.47	1.66	1.77	1.73	1.46

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in the computations.
Correlations for the ELA section are reported for 148,007 examinees completing the ELA section.
Correlations for the mathematics section are reported for 144,308 examinees completing the mathematics section.
Correlations between ELA and mathematics are reported for 123,988 examinees taking both sections.

Table 6.K.6: Intercorrelations and Reliability Estimates by Section—March 2013

	ELA	Essay	Word Anal.	Read. Comp.	Lit. Resp. & Anal.	Writing Strat.	Writing Conv.	Math	Prob. & Stat.	Number Sense	Alg. & Func.	Meas. & Geom.	A1
ELA	1.00	-	-	-	-	-	-	-	-	-	-	-	-
Essay	0.70	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.77	0.45	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.90	0.53	0.69	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.90	0.55	0.68	0.80	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.84	0.50	0.61	0.72	0.70	1.00	-	-	-	-	-	-	-
Writing Conventions	0.86	0.54	0.61	0.70	0.71	0.70	1.00	-	-	-	-	-	-
Mathematics	0.79	0.53	0.60	0.72	0.70	0.68	0.69	1.00	-	-	-	-	-
Probability and Statistics	0.70	0.45	0.54	0.64	0.62	0.59	0.60	0.85	1.00	-	-	-	-
Number Sense	0.70	0.47	0.53	0.64	0.63	0.60	0.61	0.90	0.72	1.00	-	-	-
Algebra & Functions	0.75	0.49	0.58	0.69	0.67	0.65	0.65	0.92	0.75	0.78	1.00	-	-
Measurement & Geometry	0.73	0.48	0.55	0.66	0.64	0.63	0.63	0.92	0.73	0.77	0.81	1.00	-
Algebra 1	0.65	0.45	0.47	0.57	0.57	0.56	0.57	0.87	0.65	0.74	0.75	0.75	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	64.76	2.38	5.60	13.79	15.32	8.46	10.86	56.75	9.68	12.31	14.72	12.47	7.57
SD	14.66	0.56	1.47	3.76	3.76	2.71	3.10	16.19	2.69	3.74	4.22	4.20	3.20
Reliability	0.93	0.38	0.60	0.83	0.80	0.74	0.76	0.95	0.73	0.82	0.84	0.84	0.80
SEM	3.80	0.44	0.93	1.56	1.67	1.39	1.52	3.53	1.39	1.60	1.70	1.67	1.43

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in the computations.
Correlations for the ELA section are reported for 390,397 examinees completing the ELA section.
Correlations for the mathematics section are reported for 385,410 examinees completing the mathematics section.
Correlations between ELA and mathematics are reported for 360,240 examinees taking both sections.

Table 6.K.7: Intercorrelations and Reliability Estimates by Section—May 2013

	ELA	Essay	Word Anal.	Read. Comp.	Lit. Resp. & Anal.	Writing Strat.	Writing Conv.	Math	Prob. & Stat.	Number Sense	Alg. & Func.	Meas. & Geom.	A1
ELA	1.00	-	-	-	-	-	-	-	-	-	-	-	-
Essay	0.68	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.74	0.43	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.88	0.49	0.61	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.87	0.50	0.64	0.72	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.81	0.45	0.52	0.67	0.62	1.00	-	-	-	-	-	-	-
Writing Conventions	0.83	0.50	0.53	0.65	0.61	0.64	1.00	-	-	-	-	-	-
Mathematics	0.72	0.49	0.52	0.64	0.62	0.63	0.64	1.00	-	-	-	-	-
Probability and Statistics	0.65	0.43	0.49	0.58	0.57	0.56	0.56	0.80	1.00	-	-	-	-
Number Sense	0.61	0.42	0.45	0.53	0.53	0.51	0.53	0.83	0.61	1.00	-	-	-
Algebra & Functions	0.65	0.44	0.47	0.58	0.56	0.57	0.59	0.88	0.65	0.63	1.00	-	-
Measurement & Geometry	0.64	0.42	0.46	0.57	0.55	0.57	0.57	0.87	0.62	0.63	0.69	1.00	-
Algebra 1	0.50	0.36	0.34	0.45	0.42	0.44	0.45	0.73	0.46	0.52	0.58	0.58	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	49.04	2.06	4.45	9.84	11.55	5.48	8.45	38.97	7.13	8.52	10.52	7.95	4.85
SD	15.18	0.58	1.71	3.84	4.15	2.84	3.46	13.79	2.82	3.50	4.06	3.75	2.45
Reliability	0.92	0.35	0.57	0.75	0.77	0.69	0.76	0.91	0.66	0.71	0.75	0.75	0.58
SEM	4.36	0.47	1.12	1.92	2.01	1.57	1.68	4.08	1.63	1.87	2.05	1.87	1.59

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in the computations.
Correlations for the ELA section are reported for 37,813 examinees completing the ELA section.
Correlations for the mathematics section are reported for 34,973 examinees completing the mathematics section.
Correlations between ELA and mathematics are reported for 18,535 examinees taking both sections.

Table 6.K.8: Reliabilities (R_{XX}) and Standard Errors of Measurement (SEMs) of Subgroups for ELA—February 2013

	Total MC N = 148,085		Composite (MC + Essay) N = 148,085	
	R_{XX}	SEM	R_{XX}	SEM
Gender				
Male	0.95	3.42	0.94	4.09
Female	0.94	3.27	0.94	3.86
Race/Ethnicity				
American Indian or Alaska Native	0.94	3.41	0.94	4.08
Asian	0.95	3.10	0.95	3.84
Pacific Islander	0.94	3.47	0.93	4.09
Filipino	0.93	3.07	0.92	3.73
Hispanic or Latino	0.94	3.57	0.93	4.11
African American	0.94	3.58	0.94	4.20
White (not of Hispanic origin)	0.94	2.99	0.93	3.75
Two or More Races	0.95	3.13	0.94	3.87
Language Fluency				
English Proficient Students	0.94	3.18	0.94	3.86
English Learner Students	0.88	3.88	0.88	4.37
Special Education Program Participation				
Students Receiving Services	0.93	3.81	0.92	4.50
Students Not Receiving Services	0.94	3.28	0.93	3.90

Table 6.K.9: Reliabilities (R_{XX}) and Standard Errors of Measurement (SEMs) of Subgroups for Mathematics—February 2013

	Total N = 144,375	
	R_{XX}	SEM
Gender		
Male	0.96	3.64
Female	0.95	3.67
Race/Ethnicity		
American Indian or Alaska Native	0.95	3.77
Asian	0.95	3.00
Pacific Islander	0.94	3.76
Filipino	0.94	3.36
Hispanic or Latino	0.94	3.89
African American	0.94	3.95
White (not of Hispanic origin)	0.95	3.38
Two or More Races	0.96	3.51
Language Fluency		
English Proficient Students	0.95	3.55
English Learner Students	0.90	4.09
Special Education Program Participation		
Students Receiving Services	0.91	4.06
Students Not Receiving Services	0.95	3.60

Table 6.K.10: Reliabilities (R_{XX}) and Standard Errors of Measurement (SEMs) of Subgroups for ELA—March 2013

	Total MC N = 390,567		Composite (MC + Essay) N = 390,567	
	R_{XX}	SEM	R_{XX}	SEM
Gender				
Male	0.94	3.31	0.94	3.87
Female	0.93	3.15	0.93	3.70
Race/Ethnicity				
American Indian or Alaska Native	0.94	3.30	0.93	3.91
Asian	0.94	2.85	0.93	3.60
Pacific Islander	0.93	3.33	0.92	3.87
Filipino	0.92	2.98	0.91	3.62
Hispanic or Latino	0.93	3.40	0.93	3.87
African American	0.94	3.45	0.94	3.98
White (not of Hispanic origin)	0.93	2.91	0.91	3.60
Two or More Races	0.94	3.12	0.94	3.78
Language Fluency				
English Proficient Students	0.92	3.07	0.91	3.69
English Learner Students	0.89	3.84	0.89	4.21
Special Education Program Participation				
Students Receiving Services	0.93	3.80	0.92	4.32
Students Not Receiving Services	0.93	3.16	0.92	3.73

Table 6.K.11: Reliabilities (R_{XX}) and Standard Errors of Measurement (SEMs) of Subgroups for Mathematics—March 2013

	Total N = 385,597	
	R_{XX}	SEM
Gender		
Male	0.96	3.50
Female	0.95	3.54
Race/Ethnicity		
American Indian or Alaska Native	0.95	3.67
Asian	0.95	2.69
Pacific Islander	0.94	3.62
Filipino	0.94	3.15
Hispanic or Latino	0.95	3.71
African American	0.95	3.83
White (not of Hispanic origin)	0.95	3.25
Two or More Races	0.96	3.46
Language Fluency		
English Proficient Students	0.95	3.41
English Learner Students	0.92	4.04
Special Education Program Participation		
Students Receiving Services	0.93	4.03
Students Not Receiving Services	0.95	3.47

Appendix 6.L: Rater Agreement Analyses

Table 6.L.1: Agreement of First and Second Ratings on the ELA Essay Item—July 2012
(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	136	0	0	0	0	136	2
1	0	191	115	0	0	306	5
2	0	150	4,754	455	5	5,364	81
3	0	2	443	328	19	792	12
4	0	0	2	13	10	25	0
Total	136	343	5,314	796	34	6,623	100
Percent	2	5	80	12	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	5,419	82	82
1	1,195	18	100
2	9	0	100
3	0	0	100
4	0	0	100

Table 6.L.2: Summary Statistics for the ELA Essay Item—July 2012

	First Rating	Second Rating
Mean	2.04	2.04
Standard Deviation	0.51	0.52
Mean Absolute Difference Between First and Second Ratings: 0.18 Correlation of First and Second Ratings: 0.65		

Summary of Essays Receiving Final Score of Zero

Essay	**N**
Blank	69
Illegible	0
Off Topic	59
Cartoon/Inappropriate	3
Not in English	5
Total	**136**

Note: A final score of 0 is assigned when the first or second rater assigns a 0 score and the adjudicator assigns a 0 score.

Table 6.L.3: Agreement of First and Second Ratings on the ELA Essay Item—October 2012

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	1,136	0	0	0	0	1,136	3
1	0	1,323	883	4	0	2,210	5
2	0	831	26,172	3,646	59	30,708	72
3	0	5	3,764	3,664	294	7,727	18
4	0	0	75	300	237	612	1
Total	1,136	2,159	30,894	7,614	590	42,393	100
Percent	3	5	73	18	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	32,532	77	77
1	9,718	23	100
2	143	0	100
3	0	0	100
4	0	0	100

Table 6.L.4: Summary Statistics for the ELA Essay Item—October 2012

	First Rating	Second Rating
Mean	2.11	2.10
Standard Deviation	0.62	0.62
Mean Absolute Difference Between First and Second Ratings: 0.24 Correlation of First and Second Ratings: 0.69		

Summary of Essays Receiving Final Score of Zero

Essay	**N**
Blank	687
Illegible	0
Off Topic	402
Cartoon/Inappropriate	34
Not in English	13
Total	**1,136**

Note: A final score of 0 is assigned when the first or second rater assigns a 0 score and the adjudicator assigns a 0 score.

Table 6.L.5: Agreement of First and Second Ratings on the ELA Essay Item—November 2012

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	2,718	0	0	0	0	2,718	3
1	0	4,733	3,040	10	0	7,783	9
2	0	3,027	55,419	6,113	115	64,674	73
3	0	16	6,241	5,675	538	12,470	14
4	0	0	108	559	428	1,095	1
Total	2,718	7,776	64,808	12,357	1,081	88,740	100
Percent	3	9	73	14	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	68,973	78	78
1	19,518	22	100
2	249	0	100
3	0	0	100
4	0	0	100

Table 6.L.6: Summary Statistics for the ELA Essay Item—November 2012

	First Rating	Second Rating
Mean	2.02	2.01
Standard Deviation	0.63	0.63
Mean Absolute Difference Between First and Second Ratings: 0.23 Correlation of First and Second Ratings: 0.71		

Summary of Essays Receiving Final Score of Zero

Essay	**N**
Blank	1,918
Illegible	0
Off Topic	667
Cartoon/Inappropriate	111
Not in English	22
Total	**2,718**

Note: A final score of 0 is assigned when the first or second rater assigns a 0 score and the adjudicator assigns a 0 score.

Table 6.L.7: Agreement of First and Second Ratings on the ELA Essay Item—December 2012

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	25	0	0	0	0	25	1
1	0	42	32	0	0	74	4
2	0	23	1,423	133	0	1,579	81
3	0	0	119	129	8	256	13
4	0	0	1	2	5	8	0
Total	25	65	1,575	264	13	1,942	100
Percent	1	3	81	14	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	1,624	84	84
1	317	16	100
2	2	0	100
3	0	0	100
4	0	0	100

Table 6.L.8: Summary Statistics for the ELA Essay Item—December 2012

	First Rating	Second Rating
Mean	2.08	2.09
Standard Deviation	0.48	0.49
Mean Absolute Difference Between First and Second Ratings: 0.16		
Correlation of First and Second Ratings: 0.65		

Summary of Essays Receiving Final Score of Zero

Essay	**N**
Blank	13
Illegible	0
Off Topic	11
Cartoon/Inappropriate	0
Not in English	1
Total	**25**

Note: A final score of 0 is assigned when the first or second rater assigns a 0 score and the adjudicator assigns a 0 score.

Table 6.L.9: Agreement of First and Second Ratings on the ELA Essay Item—February 2013

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	2,919	0	0	0	0	2,919	2
1	0	3,741	2,160	11	0	5,912	4
2	0	2,184	72,241	14,513	432	89,370	60
3	0	15	14,381	25,821	3,350	43,567	29
4	0	0	395	3,420	2,424	6,239	4
Total	2,919	5,940	89,177	43,765	6,206	148,007	100
Percent	2	4	60	30	4	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	107,146	72	72
1	40,008	27	99
2	853	1	100
3	0	0	100
4	0	0	100

Table 6.L.10: Summary Statistics for the ELA Essay Item—February 2013

	First Rating	Second Rating
Mean	2.30	2.30
Standard Deviation	0.70	0.70
Mean Absolute Difference Between First and Second Ratings: 0.28 Correlation of First and Second Ratings: 0.70		

Summary of Essays Receiving Final Score of Zero

Essay	**N**
Blank	1,905
Illegible	0
Off Topic	912
Cartoon/Inappropriate	69
Not in English	33
Total	**2,919**

Note: A final score of 0 is assigned when the first or second rater assigns a 0 score and the adjudicator assigns a 0 score.

Table 6.L.11: Agreement of First and Second Ratings on the ELA Essay Item—March 2013

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	3,066	0	0	0	0	3,066	1
1	0	4,615	2,622	24	1	7,262	2
2	0	2,626	181,600	45,036	908	230,170	59
3	0	28	45,001	83,192	7,683	135,904	35
4	0	0	981	7,907	5,107	13,995	4
Total	3,066	7,269	230,204	136,159	13,699	390,397	100
Percent	1	2	59	35	4	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	277,580	71	71
1	110,875	28	100
2	1,941	0	100
3	1	0	100
4	0	0	100

Table 6.L.12: Summary Statistics for the ELA Essay Item—March 2013

	First Rating	Second Rating
Mean	2.39	2.38
Standard Deviation	0.63	0.63
Mean Absolute Difference Between First and Second Ratings: 0.29 Correlation of First and Second Ratings: 0.61		

Summary of Essays Receiving Final Score of Zero

Essay	**N**
Blank	2,251
Illegible	0
Off Topic	676
Cartoon/Inappropriate	86
Not in English	53
Total	**3,066**

Note: A final score of 0 is assigned when the first or second rater assigns a 0 score and the adjudicator assigns a 0 score.

Table 6.L.13: Agreement of First and Second Ratings on the ELA Essay Item—May 2013

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	1,193	0	0	0	0	1,193	3
1	0	1,420	790	3	0	2,213	6
2	0	698	24,818	2,492	27	28,035	74
3	0	2	2,454	3,175	245	5,876	16
4	0	1	30	267	198	496	1
Total	1,193	2,121	28,092	5,937	470	37,813	100
Percent	3	6	74	16	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	30,804	81	81
1	6,946	18	100
2	62	0	100
3	1	0	100
4	0	0	100

Table 6.L.14: Summary Statistics for the ELA Essay Item—May 2013

	First Rating	Second Rating
Mean	2.06	2.06
Standard Deviation	0.62	0.62
Mean Absolute Difference Between First and Second Ratings: 0.19		
Correlation of First and Second Ratings: 0.75		

Summary of Essays Receiving Final Score of Zero

Essay	**N**
Blank	783
Illegible	0
Off Topic	348
Cartoon/Inappropriate	42
Not in English	20
Total	**1,193**

Note: A final score of 0 is assigned when the first or second rater assigns a 0 score and the adjudicator assigns a 0 score.

Appendix 6.M: Generalizability Analyses

Table 6.M.1: Generalizability Results—July 2012

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	6,526	0.43397	0.17029	64.58
Rater (R)	1	0.02214	0.00000	0.00
PR,*e*	6,526	0.09339	0.09339	35.42
Generalizability Coefficient				0.78
Dependability Coefficient				0.78

Table 6.M.2: Generalizability Results—October 2012

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	40,725	0.64166	0.25985	68.06
Rater (R)	1	0.12277	0.00000	0.00
PR,*e*	40,725	0.12196	0.12196	31.94
Generalizability Coefficient				0.81
Dependability Coefficient				0.81

Table 6.M.3: Generalizability Results—November 2012

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	84,670	0.67095	0.27731	70.45
Rater (R)	1	0.03779	0.00000	0.00
PR,*e*	84,670	0.11632	0.11632	29.55
Generalizability Coefficient				0.83
Dependability Coefficient				0.83

Table 6.M.4: Generalizability Results—December 2012

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	1,907	0.38479	0.15088	64.49
Rater (R)	1	0.16378	0.00004	0.02
PR,*e*	1,907	0.08303	0.08303	35.49
Generalizability Coefficient				0.78
Dependability Coefficient				0.78

Table 6.M.5: Generalizability Results—February 2013

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	144,311	0.82170	0.33673	69.43
Rater (R)	1	0.05501	0.00000	0.00
PR,*e*	144,311	0.14825	0.14825	30.57
Generalizability Coefficient				0.82
Dependability Coefficient				0.82

Table 6.M.6: Generalizability Results—March 2013

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	382,908	0.62427	0.23546	60.56
Rater (R)	1	0.14654	0.00000	0.00
PR,*e*	382,908	0.15334	0.15334	39.44
Generalizability Coefficient				0.75
Dependability Coefficient				0.75

Table 6.M.7: Generalizability Results—May 2013

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	36,412	0.66658	0.28523	74.79
Rater (R)	1	0.14007	0.00000	0.00
PR,*e*	36,412	0.09613	0.09613	25.21
Generalizability Coefficient				0.86
Dependability Coefficient				0.86

Appendix 6.N: Decision Classification Reliability Analyses

Table 6.N.1: ESEA Reliability Classifications—July 2012

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[2]
Advanced (76–90)	0.00	0.01	0.01	0.01
Proficient (68–75)	0.00	0.02	0.01	0.03
Below Proficient (0–67)	0.00	0.01	0.95	0.96
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.97

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (76–90)	0.00	0.01	0.01	0.01
Proficient (68–75)	0.00	0.01	0.02	0.03
Below Proficient (0–67)	0.00	0.02	0.94	0.96
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.96

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (73–80)	0.00	0.00	0.01	0.01
Proficient (59–72)	0.00	0.01	0.01	0.02
Below Proficient (0–58)	0.00	0.00	0.97	0.97
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.98

[1]True Score

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (73–80)	0.00	0.00	0.01	0.01
Proficient (59–72)	0.00	0.01	0.01	0.02
Below Proficient (0–58)	0.00	0.00	0.97	0.97
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.98

Table 6.N.2: Pass/Not Pass Classifications—July 2012

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[2]
55–90	0.21	0.04	0.26
0–54	0.05	0.69	0.74
Estimated Proportion Correctly Classified			0.90

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
55–90	0.20	0.06	0.26
0–54	0.08	0.66	0.74
Estimated Proportion Consistently Classified			0.86

Mathematics

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[2]
44–80	0.14	0.03	0.18
0–43	0.06	0.77	0.82
Estimated Proportion Correctly Classified			0.91

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[1]
44–80	0.13	0.04	0.18
0–43	0.08	0.74	0.82
Estimated Proportion Consistently Classified			0.87

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.N.3: ESEA Reliability Classifications—October 2012

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[2]
Advanced (77–90)	0.02	0.01	0.01	0.04
Proficient (70–76)	0.00	0.03	0.02	0.05
Below Proficient (0–69)	0.00	0.02	0.90	0.91
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.96

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (77–90)	0.02	0.01	0.01	0.04
Proficient (70–76)	0.01	0.03	0.02	0.05
Below Proficient (0–69)	0.00	0.03	0.88	0.91
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.97
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.94

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[2]
Advanced (72–80)	0.00	0.01	0.01	0.02
Proficient (58–71)	0.00	0.05	0.02	0.07
Below Proficient (0–57)	0.00	0.01	0.91	0.91
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.96

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (72–80)	0.00	0.01	0.01	0.02
Proficient (58–71)	0.00	0.04	0.02	0.07
Below Proficient (0–57)	0.00	0.02	0.89	0.91
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.94

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.N.4: Pass/Not Pass Classifications—October 2012

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
57–90	0.29	0.04	0.33
0–56	0.05	0.62	0.67
Estimated Proportion Correctly Classified			0.91

[1]True Score

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[1]
57–90	0.28	0.05	0.33
0–56	0.08	0.60	0.67
Estimated Proportion Consistently Classified			0.87

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[2]
42–80	0.33	0.02	0.36
0–41	0.07	0.57	0.64
Estimated Proportion Correctly Classified			0.90

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[1]
42–80	0.31	0.04	0.36
0–41	0.09	0.55	0.64
Estimated Proportion Consistently Classified			0.86

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.N.5: ESEA Reliability Classifications—November 2012

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[2]
Advanced (76–90)	0.02	0.02	0.00	0.05
Proficient (68–75)	0.00	0.05	0.02	0.07
Below Proficient (0–67)	0.00	0.02	0.86	0.89
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.95

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (76–90)	0.02	0.02	0.01	0.05
Proficient (68–75)	0.01	0.04	0.02	0.07
Below Proficient (0–67)	0.00	0.04	0.84	0.89
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.97
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.93

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[2]
Advanced (73–80)	0.01	0.01	0.01	0.02
Proficient (60–72)	0.00	0.06	0.01	0.07
Below Proficient (0–59)	0.00	0.02	0.88	0.90
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.97

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (73–80)	0.01	0.01	0.01	0.02
Proficient (60–72)	0.00	0.06	0.01	0.07
Below Proficient (0–59)	0.00	0.03	0.87	0.90
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.95

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.N.6: Pass/Not Pass Classifications—November 2012

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
55–90	0.35	0.04	0.39
0–54	0.05	0.56	0.61
Estimated Proportion Correctly Classified			0.91

[1]True Score

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
55–90	0.33	0.06	0.39
0–54	0.07	0.54	0.61
Estimated Proportion Consistently Classified			0.87

Mathematics

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
44–80	0.33	0.04	0.37
0–43	0.04	0.59	0.63
Estimated Proportion Correctly Classified			0.92

[1]True Score

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
44–80	0.32	0.05	0.37
0–43	0.06	0.57	0.63
Estimated Proportion Consistently Classified			0.89

Table 6.N.7: ESEA Reliability Classifications—December 2012

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[2]
Advanced (77–90)	0.01	0.01	0.01	0.02
Proficient (69–76)	0.00	0.03	0.02	0.04
Below Proficient (0–68)	0.00	0.01	0.93	0.94
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.97

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (77–90)	0.01	0.01	0.01	0.02
Proficient (69–76)	0.00	0.02	0.02	0.04
Below Proficient (0–68)	0.00	0.02	0.91	0.94
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.95

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[2]
Advanced (72–80)	0.00	0.00	0.00	0.01
Proficient (58–71)	0.00	0.03	0.01	0.04
Below Proficient (0–57)	0.00	0.01	0.94	0.95
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.98

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (72–80)	0.00	0.00	0.00	0.01
Proficient (58–71)	0.00	0.03	0.01	0.04
Below Proficient (0–57)	0.00	0.02	0.93	0.95
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.96

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.N.8: Pass/Not Pass Classifications—December 2012

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[2]
57–90	0.22	0.03	0.26
0–56	0.06	0.69	0.74
Estimated Proportion Correctly Classified			0.91

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
57–90	0.21	0.05	0.26
0–56	0.08	0.66	0.74
Estimated Proportion Consistently Classified			0.87

Mathematics

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
42–80	0.30	0.06	0.36
0–41	0.04	0.60	0.64
Estimated Proportion Correctly Classified			0.90

[1]True Score

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[1]
42–80	0.28	0.07	0.36
0–41	0.07	0.57	0.64
Estimated Proportion Consistently Classified			0.86

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.N.9: ESEA Reliability Classifications—February 2013

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (75–90)	0.22	0.04	0.00	0.26
Proficient (68–74)	0.03	0.10	0.04	0.17
Below Proficient (0–67)	0.00	0.03	0.53	0.56
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.93
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.93

[1]True Score

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (75–90)	0.21	0.04	0.01	0.26
Proficient (68–74)	0.04	0.08	0.05	0.17
Below Proficient (0–67)	0.00	0.04	0.52	0.56
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.90
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.90

Mathematics

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (72–80)	0.14	0.03	0.00	0.17
Proficient (58–71)	0.02	0.23	0.03	0.28
Below Proficient (0–57)	0.00	0.02	0.52	0.54
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.95
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.94

[1]True Score

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (72–80)	0.14	0.03	0.00	0.17
Proficient (58–71)	0.03	0.21	0.04	0.28
Below Proficient (0–57)	0.00	0.04	0.51	0.54
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.94
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.92

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.N.10: Pass/Not Pass Classifications—February 2013

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[2]
55–90	0.66	0.03	0.68
0–54	0.04	0.28	0.32
Estimated Proportion Correctly Classified			0.94

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
55–90	0.64	0.04	0.68
0–54	0.05	0.27	0.32
Estimated Proportion Consistently Classified			0.91

Mathematics

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[2]
42–80	0.69	0.02	0.72
0–41	0.03	0.25	0.29
Estimated Proportion Correctly Classified			0.95

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[1]
42–80	0.68	0.03	0.72
0–41	0.04	0.24	0.29
Estimated Proportion Consistently Classified			0.92

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.N.11: ESEA Reliability Classifications—March 2013

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (75–90)	0.27	0.04	0.00	0.31
Proficient (68–74)	0.05	0.13	0.04	0.22
Below Proficient (0–67)	0.00	0.04	0.43	0.47
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.91
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.92

[1]True Score

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (75–90)	0.25	0.05	0.00	0.31
Proficient (68–74)	0.06	0.10	0.06	0.22
Below Proficient (0–67)	0.00	0.05	0.42	0.47
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.88
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.89

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (72–80)	0.19	0.03	0.00	0.22
Proficient (58–71)	0.02	0.27	0.04	0.33
Below Proficient (0–57)	0.00	0.03	0.42	0.45
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.94
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.94

[1]True Score

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (72–80)	0.18	0.04	0.00	0.22
Proficient (58–71)	0.04	0.25	0.05	0.33
Below Proficient (0–57)	0.00	0.04	0.40	0.45
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.92
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.91

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.N.12: Pass/Not Pass Classifications—March 2013

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
55–90	0.76	0.02	0.78
0–54	0.03	0.19	0.22
Estimated Proportion Correctly Classified			0.95

[1]True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total[1]
55–90	0.75	0.04	0.78
0–54	0.04	0.18	0.22
Estimated Proportion Consistently Classified			0.93

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average[1]			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total[2]
43–80	0.78	0.02	0.79
0–42	0.03	0.18	0.21
Estimated Proportion Correctly Classified			0.95

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total[1]
43–80	0.77	0.03	0.79
0–42	0.04	0.17	0.21
Estimated Proportion Consistently Classified			0.94

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.N.13: ESEA Reliability Classifications—May 2013

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[2]
Advanced (76–90)	0.03	0.02	0.01	0.05
Proficient (69–75)	0.00	0.04	0.02	0.06
Below Proficient (0–68)	0.00	0.02	0.87	0.88
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.97
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.96

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (76–90)	0.03	0.02	0.01	0.05
Proficient (69–75)	0.01	0.03	0.02	0.06
Below Proficient (0–68)	0.00	0.03	0.85	0.88
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.96
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.94

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average[1]				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[2]
Advanced (72–80)	0.00	0.01	0.01	0.03
Proficient (58–71)	0.00	0.06	0.02	0.09
Below Proficient (0–57)	0.00	0.01	0.87	0.89
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.95

[1]True score

[2]Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total[1]
Advanced (72–80)	0.00	0.01	0.01	0.03
Proficient (58–71)	0.00	0.06	0.03	0.09
Below Proficient (0–57)	0.00	0.03	0.86	0.89
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.94

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.N.14: Pass/Not Pass Classifications—May 2013

English-Language Arts

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
55–90	0.33	0.03	0.36
0–54	0.05	0.59	0.64
Estimated Proportion Correctly Classified			0.92

[1]True Score

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
55–90	0.31	0.05	0.36
0–54	0.07	0.57	0.64
Estimated Proportion Consistently Classified			0.88

Mathematics

Decision Accuracy

Classification on All Forms Average[1]			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total
42–80	0.36	0.02	0.38
0–41	0.07	0.55	0.62
Estimated Proportion Correctly Classified			0.91

[1]True Score

Decision Consistency

Classification on Alternate Form			
Placement	Category		
(Raw Score)	Pass	Not Pass	Total[1]
42–80	0.34	0.03	0.38
0–41	0.09	0.53	0.62
Estimated Proportion Consistently Classified			0.87

[1]Total percentage may not equal the sum of the category percentages due to rounding.

Appendix 6.O: Scoring Tables for Operational and Special Test Versions

Table 6.O.1: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, July 2012

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	23	44	329.7620	330	8
89	501.2687	450	23	43	327.8153	328	8
88	478.9861	450	23	42	325.8670	326	8
87	465.7976	450	23	41	323.9140	324	8
86	456.1629	450	23	40	321.9558	322	8
85	448.3525	448	22	39	319.9927	320	9
84	441.6219	442	20	38	318.0214	318	9
83	435.6344	436	18	37	316.0438	316	9
82	430.2112	430	17	36	314.0557	314	9
81	425.2286	425	16	35	312.0593	312	9
80	420.6106	421	15	34	310.0512	310	9
79	416.3028	416	14	33	308.0333	308	9
78	412.2612	412	13	32	306.0039	306	9
77	408.4473	408	13	31	303.9645	304	9
76	404.8414	405(Advanced)	12	30	301.9158	302	9
75	401.4148	401	12	29	299.8560	300	9
74	398.1447	398	12	28	297.7848	298	10
73	395.0130	395	11	27	295.7039	296	10
72	392.0048	392	11	26	293.6102	294	10
71	389.1082	389	11	25	291.5046	292	10
70	386.3105	386	11	24	289.3867	289	10
69	383.6010	384	10	23	287.2508	287	10
68	380.9697	381(Proficient)	10	22	285.0947	285	10
67	378.4132	378	10	21	282.9138	283	11
66	375.9214	376	10	20	280.7041	281	11
65	373.4897	373	10	19	278.4609	278	11
64	371.1115	371	9	18	276.1744	276	11
63	368.7864	369	9	17	273.8291	275	11
62	366.5040	367	9	16	271.3980	275	11
61	364.2651	364	9	15	268.8805	275	11
60	362.0613	362	9	14	266.2597	275	11
59	359.8950	360	9	13	263.5140	275	11
58	357.7610	358	9	12	260.6080	275	11
57	355.6531	356	9	11	257.4573	275	11
56	353.5729	354	9	10	254.0573	275	11
55	351.5147	352(Pass)	9	9	250.3419	275	11
54	349.4763	349	9	8	246.2255	275	11
53	347.4578	347	9	7	241.5904	275	11
52	345.4549	345	8	6	236.2687	275	11
51	343.4664	343	8	5	229.8939	275	11
50	341.4891	341	8	4	222.0869	275	11
49	339.5205	340	8	3	212.0183	275	11

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
48	337.5609	338	8
47	335.6054	336	8
46	333.6546	334	8
45	331.7088	332	8

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
2	197.8367	275	11
1	173.6443	275	11
0	147.2238	275	11

Table 6.O.2: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, July 2012

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	19
79	491.4419	450	19
78	468.0707	450	19
77	454.2431	450	19
76	444.2876	444	18
75	436.4619	436	17
74	429.9643	430	15
73	424.3826	424(Advanced)	14
72	419.4694	419	13
71	415.0599	415	12
70	411.0534	411	11
69	407.3657	407	11
68	403.9419	404	10
67	400.7388	401	10
66	397.7203	398	10
65	394.8581	395	9
64	392.1327	392	9
63	389.5304	390	9
62	387.0296	387	9
61	384.6212	385	9
60	382.2927	382	9
59	380.0377	380(Proficient)	8
58	377.8449	378	8
57	375.7106	376	8
56	373.6271	374	8
55	371.5891	372	8
54	369.5931	370	8
53	367.6311	368	8
52	365.7014	366	8
51	363.8043	364	8
50	361.9315	362	8
49	360.0809	360	8
48	358.2502	358	8
47	356.4365	356	8
46	354.6380	355	8
45	352.8510	353	8
44	351.0741	351(Pass)	8
43	349.3049	349	8
42	347.5421	348	8
41	345.7809	346	8
40	344.0222	344	8
39	342.2629	342	8
38	340.5007	341	8
37	338.7340	339	8
36	336.9584	337	8
35	335.1756	335	8
34	333.3801	333	8
33	331.5740	332	8
32	329.7488	330	8
31	327.9070	328	8
30	326.0417	326	8
29	324.1505	324	8
28	322.2354	322	8
27	320.2881	320	8
26	318.3049	318	8
25	316.2850	316	8
24	314.2202	314	8
23	312.1083	312	8
22	309.9442	310	8
21	307.7212	308	9
20	305.4324	305	9
19	303.0662	303	9
18	300.6188	301	9
17	298.0754	298	9
16	295.4252	295	9
15	292.6540	293	10
14	289.7422	290	10
13	286.6682	287	10
12	283.4049	283	10
11	279.9181	280	11
10	276.1628	276	11
9	272.0848	275	12
8	267.6049	275	12
7	262.6110	275	12
6	256.9488	275	12
5	250.3721	275	12
4	242.4674	275	12
3	232.4629	275	12
2	218.6253	275	12
1	195.4393	275	12
0	171.7079	275	12

Table 6.O.3: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, October 2012

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24
89	497.3249	450	24
88	474.1433	450	24
87	460.5546	450	24
86	450.6597	450	24
85	442.6728	443	22
84	435.8477	436	20
83	429.8238	430	18
82	424.3814	424	17
81	419.3959	419	16
80	414.7861	415	15
79	410.5005	411	14
78	406.4829	406	13
77	402.7060	403(Advanced)	13
76	399.1313	399	12
75	395.7346	396	12
74	392.4951	392	12
73	389.3963	389	11
72	386.4219	386	11
71	383.5572	384	11
70	380.7890	381(Proficient)	11
69	378.1123	378	10
68	375.5129	376	10
67	372.9862	373	10
66	370.5244	371	10
65	368.1281	368	10
64	365.7810	366	9
63	363.4838	363	9
62	361.2289	361	9
61	359.0163	359	9
60	356.8392	357	9
59	354.6951	355	9
58	352.5816	353	9
57	350.4933	350(Pass)	9
56	348.4332	348	9
55	346.3945	346	9
54	344.3785	344	9
53	342.3788	342	9
52	340.3971	340	8
51	338.4267	338	8
50	336.4711	336	8
49	334.5233	335	8
48	332.5868	333	8
47	330.6578	331	8
46	328.7337	329	8
45	326.8150	327	8
44	324.8993	325	8
43	322.9863	323	8
42	321.0735	321	8
41	319.1648	319	8
40	317.2521	317	9
39	315.3417	315	9
38	313.4279	313	9
37	311.5137	312	9
36	309.5974	310	9
35	307.6790	308	9
34	305.7584	306	9
33	303.8359	304	9
32	301.9127	302	9
31	299.9870	300	9
30	298.0575	298	9
29	296.1254	296	9
28	294.1890	294	9
27	292.2469	292	10
26	290.2996	290	10
25	288.3444	288	10
24	286.3763	286	10
23	284.3870	284	10
22	282.3673	282	10
21	280.3215	280	10
20	278.2431	278	11
19	276.1248	276	11
18	273.9459	275	11
17	271.6840	275	11
16	269.3443	275	11
15	266.9137	275	11
14	264.3615	275	11
13	261.6248	275	11
12	258.7169	275	11
11	255.6047	275	11
10	252.2455	275	11
9	248.4782	275	11
8	244.2834	275	11
7	239.5496	275	11
6	234.1066	275	11
5	227.6956	275	11
4	219.8894	275	11
3	209.8905	275	11
2	195.9058	275	11
1	171.9525	275	11
0	147.2238	275	11

Table 6.O.4: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, October 2012

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18
79	493.3937	450	18
78	470.3256	450	18
77	456.6183	450	18
76	446.7236	447	18
75	438.9191	439	17
74	432.4348	432	15
73	426.8583	427	14
72	421.9444	422(Advanced)	13
71	417.5368	418	12
70	413.5218	414	11
69	409.8309	410	11
68	406.4040	406	10
67	403.1992	403	10
66	400.1801	400	10
65	397.3180	397	9
64	394.5904	395	9
63	391.9827	392	9
62	389.4829	389	9
61	387.0728	387	9
60	384.7448	385	9
59	382.4884	382	8
58	380.2978	380(Proficient)	8
57	378.1639	378	8
56	376.0823	376	8
55	374.0475	374	8
54	372.0538	372	8
53	370.0981	370	8
52	368.1750	368	8
51	366.2795	366	8
50	364.4138	364	8
49	362.5723	363	8
48	360.7491	361	8
47	358.9453	359	8
46	357.1560	357	8
45	355.3806	355	8
44	353.6164	354	8
43	351.8602	352	8
42	350.1095	350(Pass)	8
41	348.3661	348	8
40	346.6221	347	7

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
39	344.8792	345	8
38	343.1349	343	8
37	341.3863	341	8
36	339.6326	340	8
35	337.8691	338	8
34	336.0961	336	8
33	334.3103	334	8
32	332.5110	333	8
31	330.6939	331	8
30	328.8565	329	8
29	326.9966	327	8
28	325.1086	325	8
27	323.1927	323	8
26	321.2457	321	8
25	319.2601	319	8
24	317.2335	317	8
23	315.1615	315	8
22	313.0373	313	8
21	310.8565	311	8
20	308.6127	309	9
19	306.2975	306	9
18	303.9000	304	9
17	301.4103	301	9
16	298.8179	299	9
15	296.1052	296	9
14	293.2576	293	10
13	290.2514	290	10
12	287.0610	287	10
11	283.6525	284	11
10	279.9833	280	11
9	275.9966	276	12
8	271.6217	275	13
7	266.7532	275	13
6	261.1932	275	13
5	254.6944	275	13
4	246.8489	275	13
3	236.8576	275	13
2	222.9183	275	13
1	199.2600	275	13
0	171.7079	275	13

Table 6.O.5: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, November 2012

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	23
89	502.2226	450	23
88	479.6831	450	23
87	466.2645	450	23
86	456.4194	450	23
85	448.3944	448	22
84	441.5163	442	20
83	435.4274	435	19
82	429.9352	430	17
81	424.9050	425	16
80	420.2521	420	15
79	415.9158	416	14
78	411.8471	412	13
77	408.0050	408	13
76	404.3684	404(Advanced)	13
75	400.9076	401	12
74	397.6004	398	12
73	394.4293	394	11
72	391.3804	391	11
71	388.4428	388	11
70	385.6036	386	11
69	382.8539	383	10
68	380.1829	380(Proficient)	10
67	377.5917	378	10
66	375.0675	375	10
65	372.6077	373	10
64	370.2045	370	10
63	367.8569	368	9
62	365.5551	366	9
61	363.2990	363	9
60	361.0830	361	9
59	358.9065	359	9
58	356.7637	357	9
57	354.6525	355	9
56	352.5706	353	9
55	350.5129	351(Pass)	9
54	348.4825	348	9
53	346.4730	346	9
52	344.4853	344	8
51	342.5132	343	8
50	340.5592	341	8
49	338.6162	339	8
48	336.6889	337	8
47	334.7688	335	8
46	332.8602	333	8
45	330.9606	331	8
44	329.0661	329	8
43	327.1775	327	8
42	325.2932	325	8
41	323.4121	323	8
40	321.5327	322	9
39	319.6574	320	9
38	317.7804	318	9
37	315.9065	316	9
36	314.0294	314	9
35	312.1528	312	9
34	310.2723	310	9
33	308.3896	308	9
32	306.5012	307	9
31	304.6086	305	9
30	302.7087	303	9
29	300.8025	301	9
28	298.8838	299	9
27	296.9519	297	10
26	295.0056	295	10
25	293.0385	293	10
24	291.0488	291	10
23	289.0290	289	10
22	286.9716	287	10
21	284.8730	285	10
20	282.7243	283	11
19	280.5191	281	11
18	278.2473	278	11
17	275.8960	276	11
16	273.4536	275	12
15	270.8920	275	12
14	268.1834	275	12
13	265.3164	275	12
12	262.2598	275	12
11	258.9777	275	12
10	255.4250	275	12
9	251.5397	275	12
8	247.2365	275	12
7	242.3926	275	12
6	236.8009	275	12
5	230.2361	275	12
4	222.2644	275	12
3	212.0605	275	12
2	197.7852	275	12
1	173.5553	275	12
0	147.2238	275	12

Table 6.O.6: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, November 2012

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	19
79	490.5164	450	19
78	467.0134	450	19
77	453.1423	450	19
76	443.1754	443	18
75	435.3491	435	17
74	428.8589	429	15
73	423.2882	423(Advanced)	14
72	418.3889	418	13
71	413.9937	414	12
70	410.0034	410	11
69	406.3323	406	11
68	402.9329	403	10
67	399.7507	400	10
66	396.7507	397	10
65	393.9062	394	9
64	391.1993	391	9
63	388.6132	389	9
62	386.1287	386	9
61	383.7369	384	9
60	381.4247	381(Proficient)	9
59	379.1864	379	8
58	377.0100	377	8
57	374.8931	375	8
56	372.8264	373	8
55	370.8061	371	8
54	368.8279	369	8
53	366.8829	367	8
52	364.9725	365	8
51	363.0957	363	8
50	361.2413	361	8
49	359.4117	359	8
48	357.6010	358	8
47	355.8086	356	8
46	354.0315	354	8
45	352.2666	352	8
44	350.5108	351(Pass)	8
43	348.7654	349	8
42	347.0247	347	7
41	345.2878	345	7
40	343.5535	344	7
39	341.8190	342	7
38	340.0828	340	7
37	338.3418	338	8
36	336.5939	337	8
35	334.8386	335	8
34	333.0726	333	8
33	331.2956	331	8
32	329.5013	330	8
31	327.6911	328	8
30	325.8591	326	8
29	324.0027	324	8
28	322.1236	322	8
27	320.2122	320	8
26	318.2664	318	8
25	316.2854	316	8
24	314.2611	314	8
23	312.1912	312	8
22	310.0708	310	8
21	307.8934	308	8
20	305.6521	306	9
19	303.3361	303	9
18	300.9402	301	9
17	298.4519	298	9
16	295.8587	296	9
15	293.1475	293	9
14	290.2992	290	10
13	287.2916	287	10
12	284.0988	284	10
11	280.6861	281	11
10	277.0095	277	11
9	273.0134	275	12
8	268.6206	275	12
7	263.7187	275	12
6	258.1507	275	12
5	251.6706	275	12
4	243.8608	275	12
3	233.9394	275	12
2	220.1465	275	12
1	196.8649	275	12
0	171.7079	275	12

Table 6.O.7: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, December 2012

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24
89	512.3633	450	24
88	497.2894	450	24
87	479.5916	450	24
86	466.9195	450	24
85	456.0528	450	24
84	446.7891	447	23
83	438.6817	439	21
82	431.5459	432	19
81	425.2400	425	17
80	419.6134	420	16
79	414.5572	415	15
78	409.9757	410	14
77	405.7512	406(Advanced)	13
76	401.8334	402	13
75	398.1629	398	12
74	394.7005	395	12
73	391.4155	391	12
72	388.2842	388	11
71	385.2832	385	11
70	382.4003	382	11
69	379.6182	380(Proficient)	10
68	376.9259	377	10
67	374.3111	374	10
66	371.7646	372	10
65	369.2826	369	10
64	366.8566	367	10
63	364.4827	364	9
62	362.1536	362	9
61	359.8702	360	9
60	357.6279	358	9
59	355.4194	355	9
58	353.2434	353	9
57	351.0945	351(Pass)	9
56	348.9733	349	9
55	346.8761	347	9
54	344.8009	345	9
53	342.7431	343	9
52	340.7030	341	9
51	338.6743	339	8
50	336.6614	337	8
49	334.6546	335	8
48	332.6578	333	8
47	330.6665	331	8
46	328.6776	329	8
45	326.6906	327	8
44	324.7025	325	8
43	322.7121	323	8
42	320.7163	321	8
41	318.7159	319	8
40	316.7049	317	8
39	314.6841	315	8
38	312.6504	313	9
37	310.6017	311	9
36	308.5368	309	9
35	306.4488	306	9
34	304.3403	304	9
33	302.2077	302	9
32	300.0500	300	9
31	297.8619	298	9
30	295.6439	296	9
29	293.3907	293	9
28	291.1015	291	9
27	288.7733	289	9
26	286.3956	286	10
25	283.9715	284	10
24	281.4947	281	10
23	278.9652	279	10
22	276.3730	276	10
21	273.7132	275	11
20	270.9688	275	11
19	268.1334	275	11
18	265.1966	275	11
17	262.1423	275	11
16	258.9551	275	11
15	255.6159	275	11
14	252.1021	275	11
13	248.3006	275	11
12	244.1865	275	11
11	239.7171	275	11
10	234.8182	275	11
9	229.4091	275	11
8	222.9937	275	11
7	215.5522	275	11
6	206.8966	275	11
5	196.9719	275	11
4	182.9413	275	11
3	170.4683	275	11
2	160.5358	275	11
1	152.9389	275	11
0	147.2238	275	11

Table 6.O.8: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, December 2012

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18
79	494.1563	450	18
78	471.3351	450	18
77	457.6320	450	18
76	447.7313	448	18
75	439.9145	440	17
74	433.4151	433	15
73	427.8210	428	14
72	422.8879	423(Advanced)	13
71	418.4603	418	12
70	414.4249	414	11
69	410.7127	411	11
68	407.2613	407	10
67	404.0303	404	10
66	400.9859	401	10
65	398.0996	398	9
64	395.3486	395	9
63	392.7177	393	9
62	390.1926	390	9
61	387.7598	388	9
60	385.4081	385	9
59	383.1289	383	9
58	380.9144	381(Proficient)	8
57	378.7581	379	8
56	376.6523	377	8
55	374.5943	375	8
54	372.5769	373	8
53	370.5972	371	8
52	368.6510	369	8
51	366.7307	367	8
50	364.8399	365	8
49	362.9745	363	8
48	361.1257	361	8
47	359.2971	359	8
46	357.4822	357	8
45	355.6809	356	8
44	353.8901	354	8
43	352.1069	352	8
42	350.3282	350(Pass)	8
41	348.5561	349	8
40	346.7835	347	8
39	345.0111	345	8
38	343.2368	343	8
37	341.4579	341	8
36	339.6730	340	8
35	337.8779	338	8
34	336.0725	336	8
33	334.2537	334	8
32	332.4208	332	8
31	330.5692	331	8
30	328.6968	329	8
29	326.8008	327	8
28	324.8756	325	8
27	322.9226	323	8
26	320.9367	321	8
25	318.9114	319	8
24	316.8448	317	8
23	314.7309	315	8
22	312.5647	313	8
21	310.3408	310	9
20	308.0528	308	9
19	305.6924	306	9
18	303.2476	303	9
17	300.7120	301	9
16	298.0702	298	9
15	295.3092	295	9
14	292.4121	292	10
13	289.3555	289	10
12	286.1151	286	10
11	282.6560	283	11
10	278.9350	279	11
9	274.8781	275	12
8	270.4238	275	12
7	265.4578	275	12
6	259.8192	275	12
5	253.2629	275	12
4	245.3678	275	12
3	235.3449	275	12
2	221.4174	275	12
1	197.9067	275	12
0	171.7079	275	12

Table 6.O.9: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, February 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	23	44	328.9260	329	9
89	508.7991	450	23	43	326.9833	327	9
88	491.8999	450	23	42	325.0463	325	9
87	476.3642	450	23	41	323.1145	323	9
86	465.2094	450	23	40	321.1863	321	9
85	456.1979	450	23	39	319.2657	319	9
84	448.4630	448	22	38	317.3444	317	9
83	441.5474	442	20	37	315.4297	315	9
82	435.3039	435	18	36	313.5152	314	9
81	429.6319	430	17	35	311.6044	312	9
80	424.4359	424	16	34	309.6949	310	9
79	419.6442	420	15	33	307.7867	308	9
78	415.1971	415	14	32	305.8786	306	9
77	411.0408	411	13	31	303.9703	304	9
76	407.1297	407	13	30	302.0614	302	9
75	403.4397	403(Advanced)	12	29	300.1495	300	9
74	399.9344	400	12	28	298.2302	298	10
73	396.5926	397	12	27	296.3038	296	10
72	393.3950	393	11	26	294.3662	294	10
71	390.3229	390	11	25	292.4133	292	10
70	387.3637	387	11	24	290.4430	290	10
69	384.5029	385	11	23	288.4500	288	10
68	381.7307	382(Proficient)	10	22	286.4257	286	10
67	379.0393	379	10	21	284.3586	284	11
66	376.4227	376	10	20	282.2385	282	11
65	373.8730	374	10	19	280.0641	280	11
64	371.3836	371	10	18	277.8224	278	11
63	368.9530	369	9	17	275.5012	276	11
62	366.5718	367	9	16	273.0874	275	12
61	364.2395	364	9	15	270.5641	275	12
60	361.9478	362	9	14	267.8852	275	12
59	359.7016	360	9	13	265.0360	275	12
58	357.4906	357	9	12	261.9903	275	12
57	355.3115	355	9	11	258.7115	275	12
56	353.1630	353	9	10	255.1521	275	12
55	351.0399	351(Pass)	9	9	251.2474	275	12
54	348.9439	349	9	8	246.9101	275	12
53	346.8708	347	9	7	242.0255	275	12
52	344.8193	345	9	6	236.4129	275	12
51	342.7851	343	9	5	229.7780	275	12
50	340.7688	341	9	4	221.7227	275	12
49	338.7643	339	9	3	211.4256	275	12
48	336.7777	337	9	2	197.0633	275	12
47	334.7987	335	8	1	172.8114	275	12
46	332.8323	333	8	0	147.2238	275	12
45	330.8760	331	8				

Table 6.O.10: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, February 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18
79	494.6362	450	18
78	472.2283	450	18
77	458.3758	450	18
76	448.3983	448	18
75	440.5258	441	17
74	433.9808	434	15
73	428.3461	428	14
72	423.3758	423(Advanced)	13
71	418.9127	419	12
70	414.8441	415	11
69	411.0990	411	11
68	407.6160	408	10
67	404.3535	404	10
66	401.2785	401	10
65	398.3622	398	10
64	395.5815	396	9
63	392.9208	393	9
62	390.3663	390	9
61	387.9046	388	9
60	385.5239	386	9
59	383.2162	383	9
58	380.9730	381(Proficient)	8
57	378.7884	379	8
56	376.6544	377	8
55	374.5684	375	8
54	372.5231	373	8
53	370.5157	371	8
52	368.5407	369	8
51	366.5942	367	8
50	364.6763	365	8
49	362.7834	363	8
48	360.9080	361	8
47	359.0521	359	8
46	357.2102	357	8
45	355.3823	355	8
44	353.5652	354	8
43	351.7556	352	8
42	349.9513	350(Pass)	8
41	348.1544	348	8
40	346.3561	346	8
39	344.5592	345	8
38	342.7605	343	8
37	340.9571	341	8
36	339.1487	339	8
35	337.3290	337	8
34	335.5009	336	8
33	333.6582	334	8
32	331.8036	332	8
31	329.9281	330	8
30	328.0340	328	8
29	326.1152	326	8
28	324.1675	324	8
27	322.1944	322	8
26	320.1863	320	8
25	318.1392	318	8
24	316.0525	316	8
23	313.9167	314	8
22	311.7302	312	8
21	309.4867	309	9
20	307.1786	307	9
19	304.7973	305	9
18	302.3296	302	9
17	299.7735	300	9
16	297.1081	297	9
15	294.3242	294	10
14	291.4024	291	10
13	288.3191	288	10
12	285.0493	285	10
11	281.5573	282	11
10	277.7998	278	11
9	273.7192	275	12
8	269.2403	275	12
7	264.2497	275	12
6	258.5894	275	12
5	252.0142	275	12
4	244.1063	275	12
3	234.0849	275	12
2	220.1923	275	12
1	196.8222	275	12
0	171.7079	275	12

Table 6.O.11: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, March 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	22
89	509.2671	450	22
88	493.5525	450	22
87	478.1394	450	22
86	467.3474	450	22
85	458.3672	450	22
84	450.3615	450	22
83	443.1696	443	20
82	436.6592	437	19
81	430.7448	431	17
80	425.3394	425	16
79	420.3713	420	15
78	415.7780	416	14
77	411.5021	412	13
76	407.4929	407	13
75	403.7221	404(Advanced)	12
74	400.1507	400	12
73	396.7515	397	12
72	393.5061	394	11
71	390.3977	390	11
70	387.4078	387	11
69	384.5205	385	11
68	381.7252	382(Proficient)	10
67	379.0133	379	10
66	376.3779	376	10
65	373.8108	374	10
64	371.3048	371	10
63	368.8582	369	9
62	366.4606	366	9
61	364.1120	364	9
60	361.8056	362	9
59	359.5417	360	9
58	357.3118	357	9
57	355.1127	355	9
56	352.9418	353	9
55	350.7967	351(Pass)	9
54	348.6761	349	9
53	346.5757	347	9
52	344.4957	344	9
51	342.4300	342	9
50	340.3813	340	9
49	338.3420	338	9
48	336.3150	336	9
47	334.2944	334	9
46	332.2832	332	9
45	330.2769	330	9

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
44	328.2741	328	9
43	326.2754	326	9
42	324.2781	324	9
41	322.2818	322	9
40	320.2861	320	9
39	318.2903	318	9
38	316.2941	316	9
37	314.2963	314	9
36	312.2987	312	9
35	310.2985	310	9
34	308.2974	308	9
33	306.2939	306	9
32	304.2904	304	9
31	302.2865	302	9
30	300.2826	300	9
29	298.2756	298	10
28	296.2669	296	10
27	294.2544	294	10
26	292.2361	292	10
25	290.2114	290	10
24	288.1764	288	10
23	286.1252	286	10
22	284.0551	284	10
21	281.9500	282	11
20	279.8059	280	11
19	277.6172	278	11
18	275.3753	275	11
17	273.0705	275	11
16	270.6904	275	11
15	268.1753	275	11
14	265.5394	275	11
13	262.7577	275	11
12	259.8014	275	11
11	256.6345	275	11
10	253.1419	275	11
9	249.3085	275	11
8	245.0490	275	11
7	240.2462	275	11
6	234.7305	275	11
5	228.2437	275	11
4	220.3612	275	11
3	210.2878	275	11
2	196.1075	275	11
1	172.0660	275	11
0	147.2238	275	11

Table 6.O.12: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, March 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18
79	494.0743	450	18
78	471.1382	450	18
77	457.4259	450	18
76	447.5047	448	18
75	439.6640	440	17
74	433.1385	433	15
73	427.5174	428	14
72	422.5565	423(Advanced)	13
71	418.1006	418	12
70	414.0364	414	11
69	410.2951	410	11
68	406.8138	407	10
67	403.5533	404	10
66	400.4790	400	10
65	397.5622	398	10
64	394.7803	395	9
63	392.1181	392	9
62	389.5639	390	9
61	387.0996	387	9
60	384.7175	385	9
59	382.4069	382	9
58	380.1623	380(Proficient)	8
57	377.9741	378	8
56	375.8385	376	8
55	373.7493	374	8
54	371.7014	372	8
53	369.6917	370	8
52	367.7123	368	8
51	365.7640	366	8
50	363.8445	364	8
49	361.9471	362	8
48	360.0699	360	8
47	358.2107	358	8
46	356.3668	356	8
45	354.5365	355	8
44	352.7164	353	8
43	350.9044	351(Pass)	8
42	349.0995	349	8
41	347.2990	347	8
40	345.4996	345	8
39	343.7013	344	8
38	341.9011	342	8
37	340.0972	340	8
36	338.2867	338	8
35	336.4675	336	8
34	334.6387	335	8
33	332.7977	333	8
32	330.9424	331	8
31	329.0685	329	8
30	327.1752	327	8
29	325.2574	325	8
28	323.3136	323	8
27	321.3428	321	8
26	319.3371	319	8
25	317.2945	317	8
24	315.2113	315	8
23	313.0809	313	8
22	310.9000	311	8
21	308.6628	309	9
20	306.3617	306	9
19	303.9875	304	9
18	301.5310	302	9
17	298.9844	299	9
16	296.3316	296	9
15	293.5613	294	10
14	290.6541	291	10
13	287.5877	288	10
12	284.3362	284	10
11	280.8648	281	11
10	277.1296	277	11
9	273.0750	275	12
8	268.6241	275	12
7	263.6645	275	12
6	258.0397	275	12
5	251.5041	275	12
4	243.6411	275	12
3	233.6717	275	12
2	219.8423	275	12
1	196.5594	275	12
0	171.7079	275	12

Table 6.O.13: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, May 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24
89	501.1692	450	24
88	478.6940	450	24
87	465.2690	450	24
86	455.3457	450	24
85	447.2344	447	22
84	440.2557	440	20
83	434.0635	434	19
82	428.4774	428	17
81	423.3718	423	16
80	418.6680	419	15
79	414.3065	414	14
78	410.2360	410	13
77	406.4139	406	13
76	402.8171	403(Advanced)	12
75	399.4084	399	12
74	396.1637	396	12
73	393.0627	393	11
72	390.0893	390	11
71	387.2294	387	11
70	384.4680	384	11
69	381.7947	382(Proficient)	10
68	379.2007	379	10
67	376.6800	377	10
66	374.2244	374	10
65	371.8270	372	10
64	369.4849	369	9
63	367.1920	367	9
62	364.9437	365	9
61	362.7358	363	9
60	360.5663	361	9
59	358.4319	358	9
58	356.3277	356	9
57	354.2523	354	9
56	352.2020	352	9
55	350.1746	350(Pass)	9
54	348.1709	348	9
53	346.1845	346	8
52	344.2182	344	8
51	342.2641	342	8
50	340.3242	340	8
49	338.3929	338	8
48	336.4731	336	8
47	334.5584	335	8
46	332.6520	333	8
45	330.7504	331	8

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
44	328.8509	329	8
43	326.9539	327	8
42	325.0574	325	8
41	323.1607	323	8
40	321.2618	321	8
39	319.3643	319	8
38	317.4604	317	9
37	315.5569	316	9
36	313.6469	314	9
35	311.7347	312	9
34	309.8176	310	9
33	307.8966	308	9
32	305.9706	306	9
31	304.0407	304	9
30	302.1071	302	9
29	300.1689	300	9
28	298.2235	298	9
27	296.2718	296	10
26	294.3118	294	10
25	292.3410	292	10
24	290.3589	290	10
23	288.3616	288	10
22	286.3425	286	10
21	284.2951	284	10
20	282.2027	282	11
19	280.0704	280	11
18	277.8860	278	11
17	275.6391	276	11
16	273.3185	275	12
15	270.8967	275	12
14	268.3374	275	12
13	265.6369	275	12
12	262.7637	275	12
11	259.6806	275	12
10	256.3423	275	12
9	252.6515	275	12
8	248.5167	275	12
7	243.8376	275	12
6	238.4386	275	12
5	232.0492	275	12
4	224.2227	275	12
3	214.1174	275	12
2	199.8531	275	12
1	175.4203	275	12
0	147.2238	275	12

Table 6.O.14: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, May 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18
79	493.8361	450	18
78	470.8463	450	18
77	457.1765	450	18
76	447.3104	447	18
75	439.5372	440	17
74	433.0746	433	15
73	427.5136	428	14
72	422.6113	423(Advanced)	13
71	418.2128	418	12
70	414.2051	414	11
69	410.5201	411	11
68	407.0950	407	10
67	403.8898	404	10
66	400.8707	401	10
65	398.0093	398	9
64	395.2829	395	9
63	392.6764	393	9
62	390.1756	390	9
61	387.7669	388	9
60	385.4392	385	9
59	383.1841	383	8
58	380.9935	381(Proficient)	8
57	378.8614	379	8
56	376.7797	377	8
55	374.7461	375	8
54	372.7532	373	8
53	370.7979	371	8
52	368.8770	369	8
51	366.9819	367	8
50	365.1174	365	8
49	363.2786	363	8
48	361.4569	361	8
47	359.6543	360	8
46	357.8662	358	8
45	356.0914	356	8
44	354.3278	354	8
43	352.5722	353	8
42	350.8222	351(Pass)	8
41	349.0776	349	8
40	347.3351	347	7

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
39	345.5918	346	8
38	343.8476	344	8
37	342.0995	342	8
36	340.3456	340	8
35	338.5836	339	8
34	336.8099	337	8
33	335.0252	335	8
32	333.2248	333	8
31	331.4095	331	8
30	329.5717	330	8
29	327.7129	328	8
28	325.8259	326	8
27	323.9088	324	8
26	321.9630	322	8
25	319.9785	320	8
24	317.9515	318	8
23	315.8809	316	8
22	313.7565	314	8
21	311.5760	312	8
20	309.3324	309	9
19	307.0172	307	9
18	304.6212	305	9
17	302.1301	302	9
16	299.5387	300	9
15	296.8250	297	9
14	293.9765	294	10
13	290.9696	291	10
12	287.7772	288	10
11	284.3666	284	11
10	280.6940	281	11
9	276.7029	277	12
8	272.3207	275	13
7	267.4433	275	13
6	261.9167	275	13
5	255.4567	275	13
4	247.6033	275	13
3	237.5952	275	13
2	223.6199	275	13
1	199.8672	275	13
0	171.7079	275	13

Table 6.O.15: Braille, LP-Braille, and LP-Braille CD Conversions—ELA— July, October, and November 2012

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	23
89	501.2687	450	23
88	478.9861	450	23
87	465.7976	450	23
86	456.1629	450	23
85	448.3525	448	22
84	441.6219	442	20
83	435.6344	436	18
82	430.2112	430	17
81	425.2286	425	16
80	420.6106	421	15
79	416.3028	416	14
78	412.2612	412	13
77	408.4473	408	13
76	404.8414	405(Advanced)	12
75	401.4148	401	12
74	398.1447	398	12
73	395.0130	395	11
72	392.0048	392	11
71	389.1082	389	11
70	386.3105	386	11
69	383.6010	384	10
68	380.9697	381(Proficient)	10
67	378.4132	378	10
66	375.9214	376	10
65	373.4897	373	10
64	371.1115	371	9
63	368.7864	369	9
62	366.5040	367	9
61	364.2651	364	9
60	362.0613	362	9
59	359.8950	360	9
58	357.7610	358	9
57	355.6531	356	9
56	353.5729	354	9
55	351.5147	352(Pass)	9
54	349.4763	349	9
53	347.4578	347	9
52	345.4549	345	8
51	343.4664	343	8
50	341.4891	341	8
49	339.5205	340	8
48	337.5609	338	8
47	335.6054	336	8
46	333.6546	334	8
45	331.7088	332	8

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
44	329.7620	330	8
43	327.8153	328	8
42	325.8670	326	8
41	323.9140	324	8
40	321.9558	322	8
39	319.9927	320	9
38	318.0214	318	9
37	316.0438	316	9
36	314.0557	314	9
35	312.0593	312	9
34	310.0512	310	9
33	308.0333	308	9
32	306.0039	306	9
31	303.9645	304	9
30	301.9158	302	9
29	299.8560	300	9
28	297.7848	298	10
27	295.7039	296	10
26	293.6102	294	10
25	291.5046	292	10
24	289.3867	289	10
23	287.2508	287	10
22	285.0947	285	10
21	282.9138	283	11
20	280.7041	281	11
19	278.4609	278	11
18	276.1744	276	11
17	273.8291	275	11
16	271.3980	275	11
15	268.8805	275	11
14	266.2597	275	11
13	263.5140	275	11
12	260.6080	275	11
11	257.4573	275	11
10	254.0573	275	11
9	250.3419	275	11
8	246.2255	275	11
7	241.5904	275	11
6	236.2687	275	11
5	229.8939	275	11
4	222.0869	275	11
3	212.0183	275	11
2	197.8367	275	11
1	173.6443	275	11
0	147.2238	275	11

Table 6.O.16: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics—July, October, and November 2012

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	19
79	491.4419	450	19
78	468.0707	450	19
77	454.2431	450	19
76	444.2876	444	18
75	436.4619	436	17
74	429.9643	430	15
73	424.3826	424(Advanced)	14
72	419.4694	419	13
71	415.0599	415	12
70	411.0534	411	11
69	407.3657	407	11
68	403.9419	404	10
67	400.7388	401	10
66	397.7203	398	10
65	394.8581	395	9
64	392.1327	392	9
63	389.5304	390	9
62	387.0296	387	9
61	384.6212	385	9
60	382.2927	382	9
59	380.0377	380(Proficient)	8
58	377.8449	378	8
57	375.7106	376	8
56	373.6271	374	8
55	371.5891	372	8
54	369.5931	370	8
53	367.6311	368	8
52	365.7014	366	8
51	363.8043	364	8
50	361.9315	362	8
49	360.0809	360	8
48	358.2502	358	8
47	356.4365	356	8
46	354.6380	355	8
45	352.8510	353	8
44	351.0741	351(Pass)	8
43	349.3049	349	8
42	347.5421	348	8
41	345.7809	346	8
40	344.0222	344	8
39	342.2629	342	8
38	340.5007	341	8
37	338.7340	339	8
36	336.9584	337	8
35	335.1756	335	8
34	333.3801	333	8
33	331.5740	332	8
32	329.7488	330	8
31	327.9070	328	8
30	326.0417	326	8
29	324.1505	324	8
28	322.2354	322	8
27	320.2881	320	8
26	318.3049	318	8
25	316.2850	316	8
24	314.2202	314	8
23	312.1083	312	8
22	309.9442	310	8
21	307.7212	308	9
20	305.4324	305	9
19	303.0662	303	9
18	300.6188	301	9
17	298.0754	298	9
16	295.4252	295	9
15	292.6540	293	10
14	289.7422	290	10
13	286.6682	287	10
12	283.4049	283	10
11	279.9181	280	11
10	276.1628	276	11
9	272.0848	275	12
8	267.6049	275	12
7	262.6110	275	12
6	256.9488	275	12
5	250.3721	275	12
4	242.4674	275	12
3	232.4629	275	12
2	218.6253	275	12
1	195.4393	275	12
0	171.7079	275	12

Table 6.O.17: Braille, LP-Braille, and LP-Braille CD Conversions—ELA—December 2012 and February 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24
89	512.3633	450	24
88	497.2894	450	24
87	479.5916	450	24
86	466.9195	450	24
85	456.0528	450	24
84	446.7891	447	23
83	438.6817	439	21
82	431.5459	432	19
81	425.2400	425	17
80	419.6134	420	16
79	414.5572	415	15
78	409.9757	410	14
77	405.7512	406(Advanced)	13
76	401.8334	402	13
75	398.1629	398	12
74	394.7005	395	12
73	391.4155	391	12
72	388.2842	388	11
71	385.2832	385	11
70	382.4003	382	11
69	379.6182	380(Proficient)	10
68	376.9259	377	10
67	374.3111	374	10
66	371.7646	372	10
65	369.2826	369	10
64	366.8566	367	10
63	364.4827	364	9
62	362.1536	362	9
61	359.8702	360	9
60	357.6279	358	9
59	355.4194	355	9
58	353.2434	353	9
57	351.0945	351(Pass)	9
56	348.9733	349	9
55	346.8761	347	9
54	344.8009	345	9
53	342.7431	343	9
52	340.7030	341	9
51	338.6743	339	8
50	336.6614	337	8
49	334.6546	335	8
48	332.6578	333	8
47	330.6665	331	8
46	328.6776	329	8
45	326.6906	327	8
44	324.7025	325	8
43	322.7121	323	8
42	320.7163	321	8
41	318.7159	319	8
40	316.7049	317	8
39	314.6841	315	8
38	312.6504	313	9
37	310.6017	311	9
36	308.5368	309	9
35	306.4488	306	9
34	304.3403	304	9
33	302.2077	302	9
32	300.0500	300	9
31	297.8619	298	9
30	295.6439	296	9
29	293.3907	293	9
28	291.1015	291	9
27	288.7733	289	9
26	286.3956	286	10
25	283.9715	284	10
24	281.4947	281	10
23	278.9652	279	10
22	276.3730	276	10
21	273.7132	275	11
20	270.9688	275	11
19	268.1334	275	11
18	265.1966	275	11
17	262.1423	275	11
16	258.9551	275	11
15	255.6159	275	11
14	252.1021	275	11
13	248.3006	275	11
12	244.1865	275	11
11	239.7171	275	11
10	234.8182	275	11
9	229.4091	275	11
8	222.9937	275	11
7	215.5522	275	11
6	206.8966	275	11
5	196.9719	275	11
4	182.9413	275	11
3	170.4683	275	11
2	160.5358	275	11
1	152.9389	275	11
0	147.2238	275	11

Table 6.O.18: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics—December 2012 and February 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18
79	494.1563	450	18
78	471.3351	450	18
77	457.6320	450	18
76	447.7313	448	18
75	439.9145	440	17
74	433.4151	433	15
73	427.8210	428	14
72	422.8879	423(Advanced)	13
71	418.4603	418	12
70	414.4249	414	11
69	410.7127	411	11
68	407.2613	407	10
67	404.0303	404	10
66	400.9859	401	10
65	398.0996	398	9
64	395.3486	395	9
63	392.7177	393	9
62	390.1926	390	9
61	387.7598	388	9
60	385.4081	385	9
59	383.1289	383	9
58	380.9144	381(Proficient)	8
57	378.7581	379	8
56	376.6523	377	8
55	374.5943	375	8
54	372.5769	373	8
53	370.5972	371	8
52	368.6510	369	8
51	366.7307	367	8
50	364.8399	365	8
49	362.9745	363	8
48	361.1257	361	8
47	359.2971	359	8
46	357.4822	357	8
45	355.6809	356	8
44	353.8901	354	8
43	352.1069	352	8
42	350.3282	350(Pass)	8
41	348.5561	349	8
40	346.7835	347	8
39	345.0111	345	8
38	343.2368	343	8
37	341.4579	341	8
36	339.6730	340	8
35	337.8779	338	8
34	336.0725	336	8
33	334.2537	334	8
32	332.4208	332	8
31	330.5692	331	8
30	328.6968	329	8
29	326.8008	327	8
28	324.8756	325	8
27	322.9226	323	8
26	320.9367	321	8
25	318.9114	319	8
24	316.8448	317	8
23	314.7309	315	8
22	312.5647	313	8
21	310.3408	310	9
20	308.0528	308	9
19	305.6924	306	9
18	303.2476	303	9
17	300.7120	301	9
16	298.0702	298	9
15	295.3092	295	9
14	292.4121	292	10
13	289.3555	289	10
12	286.1151	286	10
11	282.6560	283	11
10	278.9350	279	11
9	274.8781	275	12
8	270.4238	275	12
7	265.4578	275	12
6	259.8192	275	12
5	253.2629	275	12
4	245.3678	275	12
3	235.3449	275	12
2	221.4174	275	12
1	197.9067	275	12
0	171.7079	275	12

Table 6.O.19: Braille, LP-Braille, and LP-Braille CD Conversions—ELA—March and May 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	22	44	328.2741	328	9
89	509.2671	450	22	43	326.2754	326	9
88	493.5525	450	22	42	324.2781	324	9
87	478.1394	450	22	41	322.2818	322	9
86	467.3474	450	22	40	320.2861	320	9
85	458.3672	450	22	39	318.2903	318	9
84	450.3615	450	22	38	316.2941	316	9
83	443.1696	443	20	37	314.2963	314	9
82	436.6592	437	19	36	312.2987	312	9
81	430.7448	431	17	35	310.2985	310	9
80	425.3394	425	16	34	308.2974	308	9
79	420.3713	420	15	33	306.2939	306	9
78	415.7780	416	14	32	304.2904	304	9
77	411.5021	412	13	31	302.2865	302	9
76	407.4929	407	13	30	300.2826	300	9
75	403.7221	404(Advanced)	12	29	298.2756	298	10
74	400.1507	400	12	28	296.2669	296	10
73	396.7515	397	12	27	294.2544	294	10
72	393.5061	394	11	26	292.2361	292	10
71	390.3977	390	11	25	290.2114	290	10
70	387.4078	387	11	24	288.1764	288	10
69	384.5205	385	11	23	286.1252	286	10
68	381.7252	382(Proficient)	10	22	284.0551	284	10
67	379.0133	379	10	21	281.9500	282	11
66	376.3779	376	10	20	279.8059	280	11
65	373.8108	374	10	19	277.6172	278	11
64	371.3048	371	10	18	275.3753	275	11
63	368.8582	369	9	17	273.0705	275	11
62	366.4606	366	9	16	270.6904	275	11
61	364.1120	364	9	15	268.1753	275	11
60	361.8056	362	9	14	265.5394	275	11
59	359.5417	360	9	13	262.7577	275	11
58	357.3118	357	9	12	259.8014	275	11
57	355.1127	355	9	11	256.6345	275	11
56	352.9418	353	9	10	253.1419	275	11
55	350.7967	351(Pass)	9	9	249.3085	275	11
54	348.6761	349	9	8	245.0490	275	11
53	346.5757	347	9	7	240.2462	275	11
52	344.4957	344	9	6	234.7305	275	11
51	342.4300	342	9	5	228.2437	275	11
50	340.3813	340	9	4	220.3612	275	11
49	338.3420	338	9	3	210.2878	275	11
48	336.3150	336	9	2	196.1075	275	11
47	334.2944	334	9	1	172.0660	275	11
46	332.2832	332	9	0	147.2238	275	11
45	330.2769	330	9				

Table 6.O.20: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics—March and May 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18
79	494.0743	450	18
78	471.1382	450	18
77	457.4259	450	18
76	447.5047	448	18
75	439.6640	440	17
74	433.1385	433	15
73	427.5174	428	14
72	422.5565	423(Advanced)	13
71	418.1006	418	12
70	414.0364	414	11
69	410.2951	410	11
68	406.8138	407	10
67	403.5533	404	10
66	400.4790	400	10
65	397.5622	398	10
64	394.7803	395	9
63	392.1181	392	9
62	389.5639	390	9
61	387.0996	387	9
60	384.7175	385	9
59	382.4069	382	9
58	380.1623	380(Proficient)	8
57	377.9741	378	8
56	375.8385	376	8
55	373.7493	374	8
54	371.7014	372	8
53	369.6917	370	8
52	367.7123	368	8
51	365.7640	366	8
50	363.8445	364	8
49	361.9471	362	8
48	360.0699	360	8
47	358.2107	358	8
46	356.3668	356	8
45	354.5365	355	8
44	352.7164	353	8
43	350.9044	351(Pass)	8
42	349.0995	349	8
41	347.2990	347	8
40	345.4996	345	8
39	343.7013	344	8
38	341.9011	342	8
37	340.0972	340	8
36	338.2867	338	8
35	336.4675	336	8
34	334.6387	335	8
33	332.7977	333	8
32	330.9424	331	8
31	329.0685	329	8
30	327.1752	327	8
29	325.2574	325	8
28	323.3136	323	8
27	321.3428	321	8
26	319.3371	319	8
25	317.2945	317	8
24	315.2113	315	8
23	313.0809	313	8
22	310.9000	311	8
21	308.6628	309	9
20	306.3617	306	9
19	303.9875	304	9
18	301.5310	302	9
17	298.9844	299	9
16	296.3316	296	9
15	293.5613	294	10
14	290.6541	291	10
13	287.5877	288	10
12	284.3362	284	10
11	280.8648	281	11
10	277.1296	277	11
9	273.0750	275	12
8	268.6241	275	12
7	263.6645	275	12
6	258.0397	275	12
5	251.5041	275	12
4	243.6411	275	12
3	233.6717	275	12
2	219.8423	275	12
1	196.5594	275	12
0	171.7079	275	12

Appendix 6.P: Standard Errors of Theta Based on Weighted Raw Scores

Let:

i = 1 represent dichotomous items (with scores U_j) scaled with Rasch model, with ICC $P_{j1}(\theta)$;

i = 2 represent polytomous items (with scores Y_j) scaled with Rasch partial-credit model;

item *j* has m_j levels; score for *k*-th level is *k*-1, with ICC $P_{j2k}(\theta)$

w_{ji} = weight for the *j*-th item of type *i*

$$S = \text{raw score} = \sum_{j=1}^{n_1} w_{j1} U_j + \sum_{j=1}^{n_2} w_{j2} Y_j$$

$$\hat{\theta} = \text{MLE of } \theta$$

$$\text{SEM}(\hat{\theta}) \approx [I(\theta, S)]^{-1/2}$$

$$I(\theta,S) = \frac{\left[\dfrac{d\,E(S\,|\,\theta)}{d\theta}\right]^2}{\sigma^2(S\,|\,\theta)}$$ see Lord (1980), pp. 67 and 73.

$$E(S\,|\,\theta) = \sum_{j=1}^{n_1} w_{j1} P_{j1}(\theta) + \sum_{j=1}^{n_2} w_{j2} \sum_{k=1}^{m_j} (k-1) P_{j2k}(\theta)$$

$$\frac{dE(S\,|\theta)}{d\theta} = \sum_{j=1}^{n_1} w_{j1} P'_{j1}(\theta) + \sum_{j=1}^{n_2} w_{j2} \sum_{k=1}^{m_j} (k-1) P'_{j2k}(\theta)$$

where

$$P'_{j1}(\theta) = P_{j1}(\theta)\left(1 - P_{j1}(\theta)\right)$$

$$P'_{j2k}(\theta) = P_{j2k}(\theta)\left[k - \sum_{r=1}^{m_j} r P_{j2r}(\theta)\right]$$

$$\sigma^2(S\,|\theta) = \sum_{j=1}^{n_1} \left(w_{j1}\right)^2 P_{j1}(\theta)\left(1 - P_{j1}(\theta)\right) + \sum_{j=1}^{n_2} \left(w_{j2}\right)^2 \sigma^2\left(Y_j\,|\theta\right)$$

$$\sigma^2\left(Y_j\,|\theta\right) = \left[\sum_{k=1}^{m_j} (k-1)^2 P_{j2k}(\theta)\right] - \left[\sum_{k=1}^{m_j} (k-1) P_{j2k}(\theta)\right]^2$$

Note also Lord (1980), Eq. (5-23) and Eq. (6-6) used for transforming the standard errors to other metrics.

Chapter 7: Performance Standards

Background and Procedures

The CAHSEE was offered for the first time in spring 2001 (March and May) to volunteer ninth-graders (class of 2004). At that time, the SBE set the passing score at 350 on a scale of 250 to 450 based on recommendations produced in a standard-setting workshop conducted by the American Institutes for Research (AIR) with test results from March 2001. In order to conduct a census testing of all tenth-graders, Assembly Bill (AB) 1609 was passed in October 2001 to prohibit ninth-graders from taking the CAHSEE. The SBE directed the CDE to conduct a standard-setting on the first census administration of the CAHSEE, which was in spring 2003.

Subsequently, in July 2003, the SBE made the passing of both the CAHSEE ELA and mathematics examinations a diploma requirement for the class of 2006 and adopted revised test blueprints for the CAHSEE. In September 2003, a standard-setting workshop was performed using CAHSEE test items that were constructed to meet the new content blueprints and difficulty specifications. The Bookmark Method for setting passing scores was implemented. The Bookmark Method has widespread support in the measurement profession and has withstood legal challenges (see, for example, Lewis, et al., 1998 & Mitzel, et al., 2001).

The Bookmark Method typically uses three rounds of standard-setting in which panelists are instructed to set one passing score at the Just Sufficient level on the items reviewed (ELA or mathematics). During the standard-setting workshop, the panelists were asked to review the item booklet, in which items were ordered from easiest to hardest based on item difficulty, and then to find the point that defined the knowledge and skills needed to just pass the CAHSEE.

Two standard-setting panels for each subject were convened for the workshop. One panel in each subject was primarily composed of California educators (e.g., English or mathematics teachers), while the other panel was primarily composed of community members (e.g., business representatives, district or school administrators, and college professors). Panelists were selected based on their knowledge of the subject matter assessed, familiarity with students in the respective grade levels, an understanding of large-scale assessments, and an appreciation of the consequences of setting these passing scores. Panelists represented diverse geographic regions, major racial/ethnic subgroups, and both genders.

The standard-setting panelists were first given rigorous training, which included an overview of the CAHSEE and the Bookmark Method. Once panelists were comfortable with the procedure, they were asked to place a bookmark at the point in the ordered test book at which they felt students had demonstrated sufficient knowledge and skills in a certain subject area. Panelists typically placed the first bookmark independently and then received information on how their bookmark placement compared with those of their peers. There was then a small-group discussion followed by a second bookmark placement. Finally, there was a large-

group discussion followed by a presentation of consequence or impact data—for example, what percentage of students would pass the test given the current median passing score—followed by the third (last) bookmark placement.

CAHSEE Passing Scores

In November 2003, after reviewing the results of the September standard-setting study, the SBE set new passing scores on the CAHSEE. These scores corresponded to specific score levels on the test forms used in the standard settings: 55 percent correct on the mathematics portion (44 raw score points out of 80) and 60 percent of the points on the ELA portion (54 raw score points out of 90), corresponding to theta values of -0.0701 for mathematics and 0.5356 for ELA. Following the February 2004 administration, the cut-score theta levels were applied to determine the raw score equivalent of the CAHSEE passing scores and to establish the new CAHSEE reporting scale.

For the February 2004 administration, items were calibrated and linked to the CAHSEE item bank scale. IRT-based equating procedures were used to determine the theta levels corresponding to each raw score. The passing scores on the February test forms were set at the raw scores corresponding to the theta levels that were closest to the cut-score theta levels (0.5356 for ELA and -0.0701 for mathematics). Table 7.1 shows that the raw scores associated with passing on the February 2004 form were 54 for ELA and 43 for mathematics.[8]

Table 7.1: Passing Scores on the February 2004 CAHSEE

English-Language Arts			Mathematics	
Raw Score	**Theta**		**Raw Score**	**Theta**
53	0.4724		42	-0.1249
54	0.5290	**⇐ 350 ⇒**	43	-0.0685
55	0.5863		44	-0.0118

The new reporting scales for the ELA and mathematics assessments were established. The reporting scale was obtained by establishing linear scaling parameters to transform the theta values corresponding to each raw score to the reporting scale. The transformation constants associated with these scoring tables are as follows:

ELA: Scale Score = Theta * 33.7230 + 332.1605

Mathematics: Scale Score = Theta * 32.2900 + 352.2119

The resulting scale has several notable characteristics:

1. The Passing raw scores (54 and 43, respectively) are set to a scale score of 350.

[8]Since raw scores are integers and the theta metric is continuous, the cut-score theta levels will usually fall between the thetas at adjacent raw scores. In this situation, the raw scores corresponding to the theta level closest to the values of 0.5356 for ELA and -0.0701 for mathematics were chosen as the raw-score cut points.

2. The Proficient cut score to be used for ESEA accountability purposes has been set at 380 for both ELA and mathematics. On the theta scale, the Proficient cut scores were 1.4152 and 0.8762, respectively. These translate to scale scores of 379.88 for ELA and 380.50 for mathematics on the new scale. To simplify the communication of these important ESEA cut scores to a wide audience, 380 is used for both ELA and mathematics.
3. The Advanced cut scores to be used for ESEA accountability purposes were thetas of 2.1056 for ELA and 2.1456 for mathematics, which translate to 403 and 422, respectively.
4. The minimum and maximum scale scores were set at 275 and 450 for both ELA and mathematics.

Since the February 2004 administration, the raw-score to scale-score conversions have been maintained through the use of IRT-based equating procedures. The following rule is followed in determining the raw cut score a student must achieve to be classified as Passing, Proficient, or Advanced. For each administration, scale scores and raw scores that correspond to these cuts are identified. First, the scale score that is equal to or greater than the cut point (e.g., 350) is located. If 350 is not found in the conversion, the next higher score (e.g., 351) is used as the cutoff point. The corresponding raw score associated with that rounded scale score is defined to be the raw score equivalent of that cut.

Results

Table 7.2 is a summary of the raw score cuts and overall passing rates based on equating samples for each administration during the 2012–13 school year. For each administration, the passing rate for each proficiency level is the percentage of examinees earning a score at or above the raw score cut for that level. For example, for the October 2012 administration, 32 percent of examinees who took the ELA examination received a raw score of 57 or higher and thereby passed the ELA examination. Of those who passed, 9 percent of examinees received a score of 70 or higher and passed the Proficient cut point, while 4 percent scored 77 or above and passed the Advanced cut point.

Among examinees who took the mathematics exam, 35 percent passed by attaining a raw score of 42 or higher. Of those who passed, 8 percent were at or above the Proficient cut point with a raw score of 58 or higher, while 2 percent were at or above the Advanced cut point with a raw score of 72 or higher.

Table 7.2: Summary of Cut Scores and Passing Rates Based on Equating Samples

Administration	Levels	ELA		Mathematics	
		Raw Score Cut	Percent Passing[1]	Raw Score Cut	Percent Passing[1]
July 2012	Pass	55	26	44	17
	Proficient And Above	68	4	59	3
	Advanced And Above	76	1	73	1
October 2012	Pass	57	32	42	35
	Proficient And Above	70	9	58	8
	Advanced And Above	77	4	72	2
November 2012	Pass	55	38	44	37
	Proficient And Above	68	11	60	9
	Advanced And Above	76	4	73	2
December 2012	Pass	57	25	42	36
	Proficient And Above	69	6	58	5
	Advanced And Above	77	2	72	1
February 2013	Pass	55	67	42	70
	Proficient And Above	68	43	58	45
	Advanced And Above	75	26	72	17
March 2013	Pass	55	78	43	79
	Proficient And Above	68	53	58	55
	Advanced And Above	75	31	72	22
May 2013	Pass	55	35	42	37
	Proficient And Above	69	11	58	11
	Advanced And Above	76	5	72	3

[1]Percentage of examinees at or above the cut score.

Chapter 8: Scoring and Reporting

ETS conforms to high standards of quality and fairness (ETS, 2002) when scoring tests and reporting scores. Such standards dictate that ETS provide accurate and understandable assessment results to the intended recipients. It is also the mission of ETS to provide appropriate guidelines for score interpretation and to provide cautions about the limitations in the meaning and use of the test scores. Finally, attempts are made to ensure sufficient data are collected for the major subgroups of students. These data are necessary for conducting analyses that ensure equitable results for various groups of test takers.

Procedures for Maintaining and Retrieving Individual Scores

Items for the CAHSEE mathematics and ELA examinations, except for the writing prompt in each ELA form, are MC. Students are presented with an item and asked to select the correct option from four possible choices. Students mark their choices on an answer document. All MC items are machine scored. Responses to the writing task are scored by trained readers.

In order to score and report the CAHSEE results, ETS follows an established set of written procedures. These specifications are presented in the next sections.

Scoring and Reporting Specifications

ETS develops standardized scoring procedures and specifications so that test materials are processed and scored accurately. These documents include the following:

- General Reporting Specifications—Provides the calculation rules for the information presented on CAHSEE summary reports and defines the appropriate codes to use when a student does not take or complete a test or when a score will not be reported.

- Score Key and Score Conversion—Defines file formats and information that is provided for scoring; defines the process of converting raw scores to scale scores.

- Form Planner Specifications—Describes the contents of files that contain keys required for scoring. Specifically, the form planner specification document defines each column in the form planner, the values contained in the columns, and the naming conventions for the form planners. The form planners contain the information about an assembled test form, including the test name and administration month and year. The form planners also contain information about each item, including item identification, sequence number, item type (i.e., operational, linking, field test), scoring key, strand-score identification, standards, classical statistics (i.e., *p*-value, biserial and point biserial correlations,

percentage of students choosing each option), and IRT statistics (i.e., *b*-value, IRT fit rating).

- Strand Names and Item Numbers—Identifies the reporting strands for each test and the number of items in each strand.
- Matching Criteria for MC and Writing Answer Documents—Describes the method used to match students' writing and MC results.

The scoring specifications are reviewed and revised by the CDE and ETS. After a version that both parties agree to is finalized, the CDE issues a formal approval of the scoring and reporting specifications.

Scanning and Scoring

Answer documents are scanned by Pearson and scored by ETS in accordance with the scoring specifications that have been approved by the CDE. Each school district must return scorable materials within five working days after the administration date for each test and non-scorable materials within ten working days.

Pearson scans the mathematics and ELA answer document sheets and transmits electronic files of all information captured to ETS for scoring and reporting. This includes demographic information and MC item data. Pearson also sends the data file images to ETS for use in the OSN system. These files consist of the images of the students' constructed responses as well as the unique PAS identification numbers. The identification numbers allow for the absolute matching of CR scores to other student data including demographic information and responses from MC items.

Scoring Multiple-Choice Items

ETS maintains all scoring keys with its SKM system. Prior to scoring, information on all test items and the test keys are loaded into the SKM system from test form planners created from the item bank. The keys are "locked" to ensure that they cannot be used in scoring until the appropriate quality control checks have been completed. When the final quality control check is completed and no errors have been identified, the test keys are "unlocked" for use in the scoring process.

Scoring Writing Tasks

All student responses to the ELA writing tasks are scored in the OSN system, a distributed, Web-based scoring system that enables a large number of raters to view and score assigned responses from remote locations. All identifying information from the responses sent to raters is removed so that neither the identity of the student nor the student's school is revealed to the rater; the rater sees only the student response.

Types of Scores and Strand Scores

Raw Score

For mathematics, the total raw score equals the sum of the examinee's scores on the MC test items. In ELA, the total raw score equals the weighted sum of the examinee's scores on both the MC items and the writing task. The weighting scheme for raw scores is described in detail in Chapter 2.

Strand Score

The items on the mathematics and ELA examinations are aggregated into groups, referred to as Reporting Strands. A strand score or subscore is the total item score in the reporting strand. A description of the CAHSEE reporting strands is provided in Table 2.2 of Chapter 2.

Scale Score

Raw scores on each CAHSEE examination are transformed to three-digit scale scores using the equating process described in Chapter 6. Scale scores range from 275 to 450 for both mathematics and ELA. The scale scores of students who have been tested in different administrations in a given content area can be compared. However, the raw scores cannot be meaningfully compared, because these scores are affected by the difficulty of the test taken as well as by the ability of the student.

Passing Scores

A passing score is 350 for both ELA and mathematics. A student will pass either of the tests if the total score is 350 or higher.

As part of the reporting requirements for the ESEA, cut scores defining Proficient and Advanced performance on the CAHSEE were set for both ELA and mathematics. The ESEA Proficient cut score is 380 for both ELA and mathematics. The Advanced cut score is 403 for ELA and 422 for mathematics. These values are used to classify tenth-grade students taking the CAHSEE into the Proficient and Above category as part of California's assessment of AYP.

Score for Writing Applications

The score for Writing Applications shows the total number of points that an examinee received on the essay. Each essay is rated by two readers using a 1–4 scale. Students can also receive a "non-scorable" (NS) score of 0 if they do not write enough to score, write off the topic, write illegibly, or write in a language other than English. The scores from both readers must be the same or within one score point of each other. If the difference between the two scores is more than one score point,[9] the

[9] If an essay received an NS from a reader and a score of 1, 2, 3, or 4 from another reader, scores are considered discrepant and the essay will receive a score from the third reader.

score for that essay is considered discrepant, and a scoring leader provides a third score, which becomes the score of record. Otherwise, the writing score is obtained by averaging two scores.

Score Verification Procedures

ETS takes various measures to be certain that the scoring keys are applied to the student responses as expected and that the student scores are computed accurately.

Scoring Key Verification Process

Scoring keys, provided in the form planners, are produced and verified thoroughly by performing various quality control checks before and after they are loaded into the SKM system. The form planners contain the information about an assembled test form including scoring keys, test name, administration year, strand-score identification, and the standards and statistics associated with each item. The various checks that are performed before the keys are finalized are listed below:

1. The form planners are checked for accuracy against the Form Planner Specifications document and the Score Key and Score Conversion document before the keys are loaded into the SKM system.

2. The printed lists of the scoring keys are checked again once the keys have been loaded into the SKM system.

3. The sequence of linking items[10] in the form planners is matched with their sequence in the actual test booklets.

4. The entire scoring system is tested using early returned answer documents.

5. Throughout the answer document scanning/scoring process, a number of records are randomly pulled from each scanned batch and are hand-scored by the resolutions team using a template provided by SKM staff. This QC step verifies that the scanned file matches the hard copy document and that electronic-scoring results are consistent with the hand-scoring results.

6. Classical item analyses are run on an early sample of data to provide an additional check of the keys. Although rare, if an item is found to be problematic (e.g., very difficult, low correlation with criterion), a follow-up process is carried out to determine whether it should be excluded from further analyses.

[10]Linking items are used to link the scores on the current administration's test forms to scores obtained on the base forms to adjust for the difficulty level of the forms across administrations. This is accomplished during the equating process, as discussed in Chapter 2.

Monitoring and Quality Control of Writing Scoring

Students' responses to the ELA writing task are read by two readers, and their writing scores are based on the average of the two ratings. The next sections provide details of the process employed by ETS to score the writing tasks.

The Online Scoring Network™

All student responses to the ELA writing tasks are scored in the OSN system, a distributed, Web-based scoring system that enables a large number of scorers to view and score assigned responses from remote locations. The distributed OSN is as reliable as a center-based solution and is more flexible:

- All scorers are trained with a consistent set of materials and must pass a certification test before they are admitted to the CAHSEE reader pool.
- Scorers must successfully score a calibration set of papers before each scoring session. Failure to do so locks them out of scoring for that session.
- Trained scoring leaders remotely monitor the scoring progress of each scorer using virtual monitoring tools and real-time score-performance data.
- The system is password protected and scorers can access the system only during their scheduled reading blocks.
- The OSN improves the efficiency of the scoring process. Specifically, essays are sorted and distributed by topic to promote efficiency. In addition, each response is systematically routed for first and second reads and discrepancy resolutions, thereby ensuring that it is read by different scorers.
- The OSN allows authorized personnel to actively monitor the scoring process dynamically.

Training Scoring Leaders and Readers

Individuals who are selected to serve as scoring leaders or readers must be college graduates who possess at least a bachelor's degree. Each prospective scorer is required to participate in a systematic and multi-tiered virtual training program that ensures the application of uniform scoring standards. Scoring leaders are experienced scorers who have had additional training. During operational scoring, scoring leaders monitor and assist readers throughout each scoring session over the Internet.

Scoring Leader Training

Scoring leaders are trained using the Live Meeting approach, which is a dynamic and collaborative Web-based training model that is effective, efficient, and secure. ETS trains scoring leader personnel in advance of each administration.

During the training session, scoring leaders review a comprehensive set of CAHSEE training materials assembled by the CAHSEE Scoring Manager. The Scoring Manager presents scoring guides, anchor papers representative of each score point, and decision set papers that cover ambiguities and problematic approaches to each CR topic. Throughout the training session, scoring leaders can engage the Scoring Manager by way of a conference call or live meeting.

Reader Training

Once recruited, CAHSEE readers are trained by using extensive materials provided over the CAHSEE tutorial Web site. Pre-operational training focuses on general instruction on how to apply the program's scoring guide criteria and on practice in certification tests. Readers log on to a tutorial site for Web-based training, where they are provided information about the writing task, scoring rubrics, scoring rationales, anchor papers, and the standards to be maintained. Anchor papers are selected to demonstrate clear examples of each score point.

At the completion of the training process, readers take a certification test that consists of a set of pre-scored responses. If readers achieve the required exact agreement rate, they are admitted to the reader pool. Readers are permitted to score only those topics on which they have been trained and certified.

System Training

Scorers have different levels of experience working on computers. OSN has established simple step-by-step procedures that guide readers through every aspect of the scoring process. In addition, an ETS Web site currently includes one section dedicated to OSN system functionality and provides detailed guides for readers.

All CAHSEE readers log on, certify, and perform a system test well in advance of operational scoring. This ensures that the equipment is functioning as it should and that the readers are familiar with the OSN system and the scoring process well before they view live items.

Scorer Qualification

ETS maintains a pool of more than 8,000 readers, more than 1,000 of whom are currently trained and experienced in the scoring of CAHSEE writing tasks. Most are educators who hold full-time teaching positions. Preference is given to those with a bachelor's degree in English or a related field. The recruiting and training plan includes a commitment to the CDE to maintain a 20 percent participation rate by California English teachers in the CAHSEE reader pool.

Scorers continue to qualify throughout the operational scoring process. The structure of a typical CAHSEE scoring session, whether a half day or a full day, is standardized. Prior to each scoring session, certified readers are required to demonstrate ongoing proficiency by scoring a set of calibration papers, which consists of pre-scored responses to one topic arranged in an electronic folder. The calibration results are automatically calculated. Failure to satisfy this requirement prohibits a reader from scoring that day. Readers must calibrate for each day of operational scoring. During the scoring session, scoring leaders will monitor scorer performance dynamically and target sub-standard scorers for additional training and calibration.

Accuracy Monitoring

The monitoring functions of the OSN provide a useful method for overseeing the accuracy of scoring and the performance of individual topics. The OSN produces a variety of reports with extensive data on both readers and topics, as well as an overview of the progress and accuracy of the overall scoring process. Most reader performance data are available immediately. A content specialist or a scoring leader is able to view statistical tabulations of reader performance within any given time period. Scoring leaders even have the capability of monitoring readers while they are actively scoring a group of essays.

The OSN can produce reports to show the degree to which readers are consistent in scores that they assign. The consistency is measured in terms of the percentage of instances in which the first and second readers' scores are exact, adjacent, and discrepant; this is a commonly used measure of inter-rater reliability. In addition, the overall mean and the percentage of scores awarded at each score point reveal whether the reader is fulfilling the performance standard of using the full range or whether the reader is scoring too low, too high, or too exclusively in the middle. If a reader's rate of agreement begins to decline, the reader is retrained by a scoring leader and closely monitored thereafter. If the reader's performance does not improve, the reader is released.

In addition to a statistical depiction of reader performance, the OSN monitoring function also provides a statistical portrait of topic performance. Test development staff are able to see over time whether a given topic is performing well by considering:

- The number/percentage of exact, adjacent, and discrepant scores awarded for papers on that topic
- The average rate at which papers for this topic are read
- The mean score overall
- The percentage of scores awarded at each point
- The number and percentage of scoring iterations (indicating how many third and fourth readings were required)

Data are also available on a particular type of paper (monitor, production, etc.) within a specified time period. As is the case with reader performance, the goal is to ensure a higher rate of exact scores than adjacent scores, a low percentage of discrepancies,

and a distribution of scores over the whole range. An additional aim is to have comparable mean scores across topics.

Quality Control in Raw-to-Scale Score Conversions

ETS psychometricians employ special procedures that adjust for item difficulty differences across test forms. As a result of this process, scoring tables are produced. These tables map the current administration's raw score to an appropriate scale score. The Information Technology (IT) Division utilizes these tables to generate scale scores for each student.

After score conversion is completed, both the IT Division and the Statistical Analysis Division independently generate a raw-score to scale-score mapping report and verify the accuracy of the score conversion against the original scoring tables.

Overview of Score Aggregation Procedures

In order to provide meaningful results to the stakeholders, the CAHSEE scores for a given content area are aggregated at the school, independently testing charter school, district, and state levels. The aggregated scores are generated for individual and group scores. The following section presents the types of aggregation performed on CAHSEE scores.

Individual Scores

The tables referenced in this section provide state-level summary statistics describing student performance in each CAHSEE administration.

Score Distributions and Summary Statistics

Summary statistics for individual scores are presented in Tables E.3.1 to E.4.3, in the Executive Summary chapter. Included in the tables are the number of items in each test, the number of students taking each test, and the means and standard deviations of student scores expressed in terms of both raw scores and scale scores. The percentage of students passing each CAHSEE content area is presented in Table E.2.

Frequency distributions of scale scores for ELA and mathematics are presented in Tables 1 and 2 in Appendices 8.A to 8.G. The results are reported in terms of score intervals. The passing line indicates the Pass/Not Pass cuts. Similar distributions of scale scores for ELA and mathematics, with the ESEA cuts indicated, are presented in Tables 3 and 4 in Appendices 8.A to 8.G. The first line indicates the Advanced level cut, while the second line indicates the Proficient level cut.

The numbers in the summary tables may not match exactly the results reported on the CDE's Web site, as there may be small differences in the samples used to compute the statistics. The statistics in these tables may differ slightly from the statewide statistics reported on the CDE Web site, because school districts may conduct data correction after the data file is generated for the analyses in this chapter.

Group Scores

Statistics summarizing student performance by content area and test administration for selected groups of students are provided in Tables 5 (ELA) and 6 (mathematics) in Appendices 8.A to 8.G. In the tables, students are grouped by demographic characteristics, including grade, gender, ethnicity, English proficiency, need for special education services, and economic status.[11] The tables show the numbers of valid cases in each group as well as scale score means and standard deviations for each demographic group. Table 2.3 in Chapter 2 defines the demographic groups included in the tables.

Similar summary statistics for demographic groups are presented in Tables 7 and 8 in Appendices 8.A to 8.G. These summary statistics display the percentages of examinees classified as Below Proficient, Proficient, and Advanced according to the ESEA classifications. Selected percentiles, scale score means, and standard deviations for the subgroups are presented for all students in Tables 9 and 10 for ELA and mathematics, respectively.

Table 8.1 provides a listing of the frequency distribution and demographic summary tables found in the Appendices. To simplify the presentation of these data, all tables for this section are located from Appendix 8.A to Appendix 8.G.

Table 8.1: Listing of Frequency Distribution and Demographic Summary Tables

Table[1]	Content	Label
8.x.1	Frequency Distributions Highlighted at Pass Line—ELA	Frequency Distributions—ELA
8.x.2	Frequency Distributions Highlighted at Pass Line—Mathematics	Frequency Distributions—Mathematics
8.x.3	Frequency Distributions Highlighted at ESEA Cuts—ELA	Frequency Distributions—ELA for ESEA
8.x.4	Frequency Distributions Highlighted at ESEA Cuts—Mathematics	Frequency Distributions—Mathematics for ESEA
8.x.5	Scale Score Summary Statistics and Passing Rates for All Examinees—ELA	Demographic Summary for All Examinees—ELA
8.x.6	Scale Score Summary Statistics and Passing Rates for All Examinees—Mathematics	Demographic Summary for All Examinees—Mathematics
8.x.7	ESEA Summary for All Examinees—ELA	ESEA Demographic Summary for All Examinees—ELA
8.x.8	ESEA Summary for All Examinees—Mathematics	ESEA Demographic Summary for All Examinees—Mathematics
8.x.9	Scale Score Percentiles for All Examinees—ELA	Examinee Demographics Showing Mean Scale Score at Each Percentile—ELA
8.x.10	Scale Score Percentiles for All Examinees—Mathematics	Examinee Demographics Showing Mean Scale Score at Each Percentile—Mathematics

[1]x = Administration, where tables A = July, B = October, C = November, D = December, E = February, F = March, G = May.

[11]Students' economic status was determined by considering the education level of their parents and whether or not they are eligible to participate in the NSLP.

Reports to be Produced and Scores for Each Report

The scores of the CAHSEE ELA and mathematics tests provide results or score summaries that are reported for different purposes. The three major purposes include:

1. Communicating with parents and guardians about students' achievements and whether the students fulfill one or both part(s) of the CAHSEE graduation requirement.

2. Informing decisions needed to provide additional assistance for students who did not pass one or both part(s) of the CAHSEE.

3. Providing data for state and federal accountability programs for schools.

A detailed description of the uses and applications of the CAHSEE score reports is presented in the next section.

Types of Score Reports

There are three categories of CAHSEE score reports. These categories and the specific reports in each category are given in the table below.

Table 8.2: Types of CAHSEE Reports

1. Individual Reports	▪ CAHSEE Student and Parent Report
2. Aggregate Reports	▪ CAHSEE Subgroup Summary (including the Ethnicity for Economic Status) ◦ School-Level Reports ◦ District-Level Reports ◦ State-Level Reports
3. Quarterly Reports	▪ DataQuest Reporting ▪ Detail File for Academic Performance Index (API) and Adequate Yearly Progress (AYP)

These reports are sent to the independently testing charter schools, county offices of education, or school districts, who in turn forward them to the appropriate schools. In the case of the CAHSEE Student and Parent Report, the report is mailed to the child's parents or guardians and a copy is retained in the student's file. Internet reports are described on the CDE Web site and are accessible to the public online at http://cahsee.cde.ca.gov/.

Score Report Contents

The CAHSEE Student and Parent Report provides the student's scale score and the score in relation to the passing score for each test taken by the student. Scale scores are reported on a scale ranging from 275 to 450.

The score report also provides strand scores that indicate how the student performed on each of the content strands assessed. The number of questions in the strand and the number answered correctly are provided on the score report. ELA strand score

results are grouped under the broader categories of Reading and Writing. Reports for SWDs and ELs who use modifications include a notation that indicates that the student was tested with modifications. Modifications change what is being tested and therefore, change the meaning of these scores. If students use modifications, their scores are counted differently from non-modified test scores on summary reports. Students who use a modification and earn the equivalent of a passing score on one or both parts of the CAHSEE do not pass but may be eligible for a local waiver of the CAHSEE requirement. Tests for students who use accommodations that are specified in their IEPs or Section 504 plans are reported in the same way as non-accommodated tests.

Aggregate reports comprise a series of student, demographic, and geographic summaries that inform LEAs and state officials and their constituencies of student performance across defined subgroups. Aggregated reports following each administration are prepared in PDF format and are printed, packed, and shipped by expedited delivery to LEAs. Reports are also posted in each LEA's secure folder on the CAHSEE Web site. The aggregated results following each administration are not publicly distributed. At the CDE's direction, these reports include complete performance distributions for each of the designated subgroups, regardless of the size of the subgroup. The aggregate results are available to the public via DataQuest. Results for groups with fewer than 11 students are not reported.

ETS also provides the CDE with data files that meet the quarterly CAHSEE results reporting requirements as well as the state (API) and federal (AYP) accountability reporting timeline requirements. CD-ROMs or DVDs containing these data files with encryption software are delivered to the CDE so that the CDE can generate reports as well as conduct additional analyses to inform decision makers about student achievement and programs delivered to students.

Score Report Applications

The results for the CAHSEE are used primarily to identify students who are not developing high school graduate-level competencies in reading, writing, and mathematics that are essential after high school. Beginning in the 2005–06 school year, with the exception of eligible SWDs, no student received a public high school diploma without passing the CAHSEE and meeting all other state and district requirements for graduation.

Counties, school districts, and schools are encouraged to use the summary results and other standards-based evidence of student achievement to develop and implement an ongoing process for refining classroom instruction and school programs. The goal is to work with school staff to identify patterns of student performance and identify program areas needing improvement.

In addition, the state and federal governments use the CAHSEE results for grade ten as a measure of school and school district accountability. The state accountability program is the Public Schools Accountability Act; the federal accountability program is the ESEA. The use of CAHSEE results for these accountability programs is intended to be independent of how the CAHSEE is used for individual student accountability.

Criteria for Interpreting Test Scores

A school district may use CAHSEE results to help make decisions about student graduation. However, it is important to remember that a single test can provide only limited information. Other relevant graduation requirements should be considered as well. It is also important to note that a student's score in a content area contains measurement error and could vary if the student were retested.

Criteria for Interpreting Score Reports

The information presented on various reports must be interpreted with caution when making performance comparisons. When comparing scale score and performance level results for the CAHSEE, the user is limited to comparisons within the same content area. This is because the underlying scales are different for each content area. Comparing scores obtained in different content areas should be avoided because the results are not on the same scale. Comparisons between raw scores and cluster scores should be limited to comparisons within not only content area but also test administration. The user may compare scores for the same content area within a school, between schools, or between a school and its district, its county, or the state. The user can also make comparisons within the same content area across administrations.

Appendix 8.A: Frequency Distributions and Demographic Summaries—July 2012

Table 8.A.1: Frequency Distributions, ELA—July 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	3	0	3	99
440–449	9	0	12	99
430–439	9	0	21	99
420–429	15	0	36	99
410–419	27	0	63	99
400–409	48	1	111	98
390–399	60	1	171	97
380–389	120	2	291	96
370–379	177	3	468	93
360–369	497	8	965	85
350–359[1]	727	11	1,692	74
340–349	1,445	22	3,137	53
330–339	1,114	17	4,251	36
320–329	873	13	5,124	23
310–319	663	10	5,787	13
300–309	453	7	6,240	6
290–299	203	3	6,443	3
280–289	101	2	6,544	1
270–279	80	1	6,624	0

[1]Passing Score = 350

Table 8.A.2: Frequency Distributions, Mathematics—July 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	15	0	15	99
440–449	6	0	21	99
430–439	11	0	32	99
420–429	8	0	40	99
410–419	23	0	63	99
400–409	19	0	82	99
390–399	37	1	119	98
380–389	39	1	158	97
370–379	101	2	259	96
360–369	230	4	489	92
350–359[1]	511	9	1,000	83
340–349	1,108	19	2,108	63
330–339	1,457	25	3,565	38
320–329	1,068	19	4,633	20
310–319	769	13	5,402	6
300–309	259	4	5,661	2
290–299	77	1	5,738	1
280–289	20	0	5,758	0
270–279	13	0	5,771	0

[1]Passing Score = 350

Table 8.A.3: Frequency Distributions, ELA for ESEA—July 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	3	0	3	99
440–449	9	0	12	99
430–439	9	0	21	99
420–429	15	0	36	99
410–419	27	0	63	99
403–409[1]	29	0	92	99
390–402	79	1	171	97
380–389[2]	120	2	291	96
370–379	177	3	468	93
360–369	497	8	965	85
350–359	727	11	1,692	74
340–349	1,445	22	3,137	53
330–339	1,114	17	4,251	36
320–329	873	13	5,124	23
310–319	663	10	5,787	13
300–309	453	7	6,240	6
290–299	203	3	6,443	3
280–289	101	2	6,544	1
270–279	80	1	6,624	0

[1]Advanced-Level Cut = 403

[2]Proficient-Level Cut = 380

Table 8.A.4: Frequency Distributions, Mathematics for ESEA—July 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	15	0	15	99
440–449	6	0	21	99
430–439	11	0	32	99
422–429[1]	8	0	40	99
410–421	23	0	63	99
400–409	19	0	82	99
390–399	37	1	119	98
380–389[2]	39	1	158	97
370–379	101	2	259	96
360–369	230	4	489	92
350–359	511	9	1,000	83
340–349	1,108	19	2,108	63
330–339	1,457	25	3,565	38
320–329	1,068	19	4,633	20
310–319	769	13	5,402	6
300–309	259	4	5,661	2
290–299	77	1	5,738	1
280–289	20	0	5,758	0
270–279	13	0	5,771	0

[1]Advanced-Level Cut = 422

[2]Proficient-Level Cut = 380

Table 8.A.5: Demographic Summary for All Examinees, ELA—July 2012

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading[2] Avg. Percent Correct			Writing[2] Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	6,624	1,692	26	4,932	74	337	55	54	56	44	54	2.0
Grade												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-	-	-
Twelfth	5,614	1,339	24	4,275	76	335	54	52	55	43	53	2.0
Adult Education	1,010	353	35	657	65	345	59	61	60	50	58	2.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	3,586	872	24	2,714	76	335	55	53	54	43	52	2.0
Female	3,034	819	27	2,215	73	339	54	55	58	46	55	2.1
Unknown	4	-	-	-	-	-	-	-	-	-	-	-
Race/Ethnicity												
American Indian or Alaska Native	21	7	33	14	67	342	54	58	58	43	60	2.1
Asian	715	168	23	547	77	334	47	53	54	43	57	2.0
Pacific Islander	52	17	33	35	67	340	55	56	56	45	54	2.2
Filipino	130	31	24	99	76	338	53	51	56	48	58	2.0
Hispanic or Latino	4,532	1,075	24	3,457	76	336	54	53	56	44	52	2.1
African American	570	159	28	411	72	336	57	52	56	45	52	2.0
White (not of Hispanic origin)	459	192	42	267	58	346	63	59	59	50	58	2.1
Two or More Races	145	43	30	102	70	339	58	54	55	43	55	2.1
Language Fluency												
English-Only Students	1,889	617	33	1,272	67	340	60	55	58	45	54	2.1
Initially Fluent English Proficient (IFEP)	172	56	33	116	67	341	57	56	60	44	56	2.2
Reclassified Fluent English Proficient (RFEP)	250	111	44	139	56	347	60	59	63	50	60	2.2
English-Learner Students	3,607	652	18	2,955	82	332	50	51	53	42	52	2.0
Unknown	706	256	36	450	64	348	61	62	61	51	58	2.1
Economically Disadvantaged												
No	887	280	32	607	68	341	58	56	58	47	56	2.1
Yes	4,621	1,066	23	3,555	77	335	53	52	55	43	53	2.0
Unknown	1,116	346	31	770	69	341	58	57	58	48	56	2.1
Special Education Program Participation												
Students Receiving Services	864	106	12	758	88	324	49	44	49	37	45	1.9
Students Not Receiving Services	5,760	1,586	28	4,174	72	339	55	55	57	46	55	2.1

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response/Analysis, WS — Writing Strategies, WC — Writing Conventions.

Table 8.A.6: Demographic Summary for All Examinees, Mathematics—July 2012

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
Total Examinees	5,771	1,000	17	4,771	83	335	50	48	46	41	33
Grade											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-	-
Twelfth	4,883	784	16	4,099	84	334	49	47	45	40	32
Adult Education	888	216	24	672	76	342	54	51	50	46	35
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	2,659	481	18	2,178	82	334	50	48	45	40	32
Female	3,106	517	17	2,589	83	336	50	48	46	42	34
Unknown	6	-	-	-	-	-	-	-	-	-	-
Race/Ethnicity											
American Indian or Alaska Native	15	4	27	11	73	344	56	53	54	47	34
Asian	204	72	35	132	65	352	53	56	55	50	48
Pacific Islander	38	8	21	30	79	335	48	50	44	42	35
Filipino	73	17	23	56	77	341	49	49	50	46	38
Hispanic or Latino	3,988	620	16	3,368	84	334	50	47	45	40	32
African American	850	121	14	729	86	332	48	47	43	39	31
White (not of Hispanic origin)	453	121	27	332	73	341	54	53	48	45	35
Two or More Races	150	37	25	113	75	340	53	52	49	43	34
Language Fluency											
English-Only Students	2,441	427	17	2,014	83	335	50	49	45	41	31
Initially Fluent English Proficient (IFEP)	231	47	20	184	80	337	52	50	47	42	32
Reclassified Fluent English Proficient (RFEP)	423	106	25	317	75	340	56	50	50	43	35
English-Learner Students	2,006	237	12	1,769	88	332	46	45	44	39	33
Unknown	670	183	27	487	73	344	55	52	51	47	36
Economically Disadvantaged											
No	938	189	20	749	80	338	52	50	47	43	34
Yes	3,737	555	15	3,182	85	333	49	47	45	40	32
Unknown	1,096	256	23	840	77	339	52	50	48	44	34
Special Education Program Participation											
Students Receiving Services	695	51	7	644	93	323	41	41	37	33	29
Students Not Receiving Services	5,076	949	19	4,127	81	337	51	49	47	42	33

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1.

Table 8.A.7: ESEA Demographic Summary for All Examinees, ELA—July 2012

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		6,624	6,333	96	199	3	92	1	291	4
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	-	-	-	-	-	-	-	-	-
	Twelfth	5,614	5,432	97	127	2	55	1	182	3
	Adult Education	1,010	901	89	72	7	37	4	109	11
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	3,586	3,431	96	117	3	38	1	155	4
	Female	3,034	2,899	96	82	3	53	2	135	4
	Unknown	4	3	75			1	25	1	25
Race/Ethnicity	American Indian or Alaskan Native	21	19	90	1	5	1	5	2	10
	Asian	715	690	97	16	2	9	1	25	3
	Pacific Islander	52	49	94	2	4	1	2	3	6
	Filipino	130	126	97			4	3	4	3
	Hispanic or Latino	4,532	4,379	97	112	2	41	1	153	3
	African American	570	549	96	16	3	5	1	21	4
	White (not of Hispanic origin)	459	390	85	46	10	23	5	69	15
	Two or More Races	145	131	90	6	4	8	6	14	10
Language Fluency	English-Only Students	1,889	1,752	93	93	5	44	2	137	7
	Initially Fluent English Proficient (IFEP)	172	161	94	8	5	3	2	11	6
	Reclassified Fluent English Proficient (RFEP)	250	231	92	16	6	3	1	19	8
	English-Learner Students	3,607	3,574	99	27	1	6	0	33	1
	Unknown	706	615	87	55	8	36	5	91	13
Economically Disadvantaged	No	887	811	91	40	5	36	4	76	9
	Yes	4,621	4,509	98	90	2	22	0	112	2
	Unknown	1,116	1,013	91	69	6	34	3	103	9
Special Education Program Participation	Receiving Services	864	856	99	8	1			8	1
	Not Receiving Services	5,760	5,477	95	191	3	92	2	283	5

[1]Results for groups with fewer than 11 students are not reported.

Table 8.A.8: ESEA Demographic Summary for All Examinees, Mathematics—July 2012

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		5,771	5,613	97	118	2	40	1	158	3
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	-	-	-	-	-	-	-	-	-
	Twelfth	4,883	4,782	98	77	2	24	0	101	2
	Adult Education	888	831	94	41	5	16	2	57	6
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	2,659	2,572	97	66	2	21	1	87	3
	Female	3,106	3,037	98	51	2	18	1	69	2
	Unknown	6	4	67	1	17	1	17	2	33
Race/Ethnicity	American Indian or Alaskan Native	15	13	87	2	13			2	13
	Asian	204	163	80	19	9	22	11	41	20
	Pacific Islander	38	36	95	2	5			2	5
	Filipino	73	66	90	5	7	2	3	7	10
	Hispanic or Latino	3,988	3,930	99	50	1	8	0	58	1
	African American	850	838	99	11	1	1	0	12	1
	White (not of Hispanic origin)	453	426	94	23	5	4	1	27	6
	Two or More Races	150	141	94	6	4	3	2	9	6
Language Fluency	English-Only Students	2,441	2,389	98	43	2	9	0	52	2
	Initially Fluent English Proficient (IFEP)	231	224	97	4	2	3	1	7	3
	Reclassified Fluent English Proficient (RFEP)	423	414	98	6	1	3	1	9	2
	English-Learner Students	2,006	1,974	98	23	1	9	0	32	2
	Unknown	670	612	91	42	6	16	2	58	9
Economically Disadvantaged	No	938	892	95	30	3	16	2	46	5
	Yes	3,737	3,691	99	38	1	8	0	46	1
	Unknown	1,096	1,030	94	50	5	16	1	66	6
Special Education Program Participation	Receiving Services	695	695	100						
	Not Receiving Services	5,076	4,918	97	118	2	40	1	158	3

[1]Results for groups with fewer than 11 students are not reported.

Table 8.A.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—July 2012

	Percentiles[1]									
	1	5	25	50	75	95	99	Mean Scale Score	SD[2]	N Tested[3]
Total Examinees	278	298	320	338	352	376	408	337	25	6,624
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-
Twelfth	278	296	320	336	349	371	401	335	24	5,614
Adult Education	289	308	330	342	358	398	430	345	27	1,010
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	294	318	336	349	376	405	335	25	3,586
Female	283	300	324	340	352	376	412	339	24	3,034
Unknown	312	312	313	320	384	442	442	349	63	4
Race/Ethnicity										
American Indian or Alaska Native	294	310	320	336	356	398	405	342	28	21
Asian	275	292	318	336	349	373	405	334	25	715
Pacific Islander	283	298	328	339	354	395	421	340	26	52
Filipino	283	302	324	337	349	371	416	338	23	130
Hispanic or Latino	281	300	322	336	349	371	401	336	23	4,532
African American	275	292	320	338	354	376	401	336	26	570
White (not of Hispanic origin)	275	296	324	343	362	405	448	346	33	459
Two or More Races	275	298	316	334	354	408	442	339	32	145
Language Fluency										
English-Only Students	275	296	322	341	356	386	412	340	27	1,889
Initially Fluent English Proficient (IFEP)	298	304	324	341	355	386	408	341	24	172
Reclassified Fluent English Proficient (RFEP)	287	308	334	345	360	389	408	347	24	250
English-Learner Students	278	296	318	334	345	364	378	332	21	3,607
Unknown	292	308	330	343	358	405	442	348	29	706
Economically Disadvantaged										
No	281	298	324	340	356	398	425	341	29	887
Yes	278	296	320	336	349	369	392	335	23	4,621
Unknown	276	300	324	340	356	395	425	341	28	1,116
Special Education Program Participation										
Students Receiving Services	275	285	306	324	341	360	378	324	23	864
Students Not Receiving Services	281	300	324	340	352	378	412	339	24	5,760

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation.

[3]Results for groups with fewer than 11 students are not reported.

Table 8.A.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—July 2012

	Percentiles[1]							Mean Scale Score	SD[2]	N Tested[3]
	1	5	25	50	75	95	99			
Total Examinees	295	308	322	333	346	368	415	335	21	5,771
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-
Twelfth	293	305	322	333	344	364	404	334	20	4,883
Adult Education	301	314	328	339	349	387	444	342	24	888
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	290	303	320	332	346	370	419	334	22	2,659
Female	298	310	324	335	346	364	404	336	19	3,106
Unknown	312	312	314	325	407	450	450	355	59	6
Race/Ethnicity										
American Indian or Alaska Native	316	316	324	342	351	395	395	344	24	15
Asian	301	308	324	339	364	450	450	352	41	204
Pacific Islander	280	280	322	333	348	387	390	335	24	38
Filipino	303	305	322	335	348	404	430	341	28	73
Hispanic or Latino	295	308	322	333	344	362	390	334	18	3,988
African American	293	305	320	332	342	362	385	332	18	850
White (not of Hispanic origin)	298	308	326	337	353	382	419	341	23	453
Two or More Races	290	303	324	339	349	392	450	340	26	150
Language Fluency										
English-Only Students	293	305	322	333	346	366	395	335	20	2,441
Initially Fluent English Proficient (IFEP)	293	308	324	335	348	374	430	337	23	231
Reclassified Fluent English Proficient (RFEP)	295	312	330	339	351	368	407	340	19	423
English-Learner Students	295	305	320	332	342	360	395	332	19	2,006
Unknown	301	314	328	339	351	401	450	344	26	670
Economically Disadvantaged										
No	295	308	324	335	348	378	436	338	24	938
Yes	293	305	322	333	344	362	382	333	18	3,737
Unknown	295	308	324	335	349	387	444	339	25	1,096
Special Education Program Participation										
Students Receiving Services	280	298	312	322	333	355	370	323	17	695
Students Not Receiving Services	298	310	324	335	346	368	415	337	21	5,076

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation.

[3]Results for groups with fewer than 11 students are not reported.

Appendix 8.B: Frequency Distributions and Demographic Summaries—October 2012

Table 8.B.1: Frequency Distributions, ELA—October 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	151	0	151	99
440–449	92	0	243	99
430–439	194	0	437	99
420–429	110	0	547	99
410–419	516	1	1,063	97
400–409	434	1	1,497	96
390–399	789	2	2,286	95
380–389	1,331	3	3,617	91
370–379	1,903	4	5,520	87
360–369	2,868	7	8,388	80
350–359[1]	5,137	12	13,525	68
340–349	6,500	15	20,025	53
330–339	6,486	15	26,511	38
320–329	5,007	12	31,518	26
310–319	4,621	11	36,139	15
300–309	2,743	6	38,882	8
290–299	1,831	4	40,713	4
280–289	960	2	41,673	2
270–279	749	2	42,422	0

[1]Passing Score = 350

Table 8.B.2: Frequency Distributions, Mathematics—October 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	234	1	234	99
440–449	96	0	330	99
430–439	224	1	554	99
420–429	247	1	801	98
410–419	371	1	1,172	97
400–409	469	1	1,641	96
390–399	526	1	2,167	95
380–389	1,153	3	3,320	92
370–379	1,702	4	5,022	87
360–369	2,885	7	7,907	80
350–359[1]	5,866	15	13,773	65
340–349	7,675	19	21,448	46
330–339	6,407	16	27,855	30
320–329	5,519	14	33,374	16
310–319	3,969	10	37,343	6
300–309	1,568	4	38,911	2
290–299	442	1	39,353	1
280–289	114	0	39,467	0
270–279	110	0	39,577	0

[1]Passing Score = 350

Table 8.B.3: Frequency Distributions, ELA for ESEA—October 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	151	0	151	99
440–449	92	0	243	99
430–439	194	0	437	99
420–429	110	0	547	99
410–419	516	1	1,063	97
403–409[1]	434	1	1,497	96
390–402	789	2	2,286	95
380–389[2]	1,331	3	3,617	91
370–379	1,903	4	5,520	87
360–369	2,868	7	8,388	80
350–359	5,137	12	13,525	68
340–349	6,500	15	20,025	53
330–339	6,486	15	26,511	38
320–329	5,007	12	31,518	26
310–319	4,621	11	36,139	15
300–309	2,743	6	38,882	8
290–299	1,831	4	40,713	4
280–289	960	2	41,673	2
270–279	749	2	42,422	0

[1]Advanced-Level Cut = 403

[2]Proficient-Level Cut = 380

Table 8.B.4: Frequency Distributions, Mathematics for ESEA—October 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	234	1	234	99
440–449	96	0	330	99
430–439	224	1	554	99
422–429[1]	247	1	801	98
410–421	371	1	1,172	97
400–409	469	1	1,641	96
390–399	526	1	2,167	95
380–389[2]	1,153	3	3,320	92
370–379	1,702	4	5,022	87
360–369	2,885	7	7,907	80
350–359	5,866	15	13,773	65
340–349	7,675	19	21,448	46
330–339	6,407	16	27,855	30
320–329	5,519	14	33,374	16
310–319	3,969	10	37,343	6
300–309	1,568	4	38,911	2
290–299	442	1	39,353	1
280–289	114	0	39,467	0
270–279	110	0	39,577	0

[1]Advanced-Level Cut = 422

[2]Proficient-Level Cut = 380

Table 8.B.5: Demographic Summary for All Examinees, ELA—October 2012

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading[2] Avg. Percent Correct			Writing[2] Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	42,422	13,525	32	28,897	68	339	63	59	57	48	57	2.1
Grade												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	18,363	6,726	37	11,637	63	341	64	61	58	50	59	2.1
Twelfth	22,333	6,186	28	16,147	72	336	61	57	55	47	56	2.1
Adult Education	1,726	613	36	1,113	64	344	66	63	60	52	61	2.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	24,745	7,811	32	16,934	68	337	63	58	56	48	56	2.0
Female	17,635	5,707	32	11,928	68	341	62	60	58	49	59	2.2
Unknown	42	7	17	35	83	330	53	52	51	42	51	2.0
Race/Ethnicity												
American Indian or Alaska Native	275	109	40	166	60	341	65	60	61	50	56	2.1
Asian	2,888	765	26	2,123	74	336	54	57	54	47	59	2.1
Pacific Islander	293	95	32	198	68	338	59	58	55	47	57	2.2
Filipino	640	265	41	375	59	347	66	63	60	52	64	2.2
Hispanic or Latino	27,861	8,107	29	19,754	71	337	62	58	56	47	57	2.1
African American	4,685	1,373	29	3,312	71	336	62	57	56	47	53	2.1
White (not of Hispanic origin)	4,812	2,410	50	2,402	50	353	70	66	64	57	63	2.2
Two or More Races	968	401	41	567	59	346	66	62	61	53	59	2.2
Language Fluency												
English-Only Students	16,470	6,577	40	9,893	60	344	66	62	60	52	58	2.2
Initially Fluent English Proficient (IFEP)	1,263	625	49	638	51	352	71	67	64	54	63	2.3
Reclassified Fluent English Proficient (RFEP)	3,325	1,920	58	1,405	42	354	74	70	66	56	66	2.3
English-Learner Students	19,331	3,618	19	15,713	81	330	57	54	52	43	55	2.0
Unknown	2,033	785	39	1,248	61	345	66	63	60	52	61	2.1
Economically Disadvantaged												
No	7,584	3,408	45	4,176	55	349	68	64	62	55	62	2.2
Yes	30,323	8,389	28	21,934	72	335	61	57	55	46	56	2.1
Unknown	4,515	1,728	38	2,787	62	344	66	62	59	51	60	2.1
Special Education Program Participation												
Students Receiving Services	9,834	1,329	14	8,505	86	322	53	49	48	40	46	1.9
Students Not Receiving Services	32,588	12,196	37	20,392	63	344	65	62	60	51	61	2.2

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response/Analysis, WS — Writing Strategies, WC — Writing Conventions.

Table 8.B.6: Demographic Summary for All Examinees, Mathematics—October 2012

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
Total Examinees	39,577	13,773	35	25,804	65	344	54	49	50	46	38
Grade											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	17,777	6,825	38	10,952	62	345	55	50	52	46	39
Twelfth	20,237	6,389	32	13,848	68	342	53	48	49	45	37
Adult Education	1,563	559	36	1,004	64	346	56	49	52	49	35
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	20,011	7,093	35	12,918	65	344	53	50	49	46	37
Female	19,528	6,666	34	12,862	66	344	54	48	51	45	39
Unknown	38	14	37	24	63	341	56	46	48	44	34
Race/Ethnicity											
American Indian or Alaska Native	288	114	40	174	60	346	56	51	51	47	37
Asian	1,297	774	60	523	40	370	62	62	66	61	57
Pacific Islander	260	99	38	161	62	345	52	50	52	46	41
Filipino	548	270	49	278	51	354	58	53	58	51	46
Hispanic or Latino	26,043	8,307	32	17,736	68	341	52	47	49	44	36
African American	5,275	1,475	28	3,800	72	339	51	47	46	41	35
White (not of Hispanic origin)	4,841	2,321	48	2,520	52	354	61	56	56	52	41
Two or More Races	1,025	413	40	612	60	348	58	53	52	48	38
Language Fluency											
English-Only Students	18,145	6,659	37	11,486	63	345	56	50	51	46	37
Initially Fluent English Proficient (IFEP)	1,463	680	46	783	54	351	60	54	55	50	40
Reclassified Fluent English Proficient (RFEP)	4,030	1,993	49	2,037	51	351	61	53	56	50	41
English-Learner Students	13,999	3,627	26	10,372	74	339	48	45	47	43	37
Unknown	1,940	814	42	1,126	58	350	59	52	54	51	39
Economically Disadvantaged											
No	7,713	3,533	46	4,180	54	353	60	54	55	50	42
Yes	27,454	8,396	31	19,058	69	340	52	47	48	43	36
Unknown	4,410	1,844	42	2,566	58	350	57	52	54	50	40
Special Education Program Participation											
Students Receiving Services	8,171	1,123	14	7,048	86	329	42	41	40	35	31
Students Not Receiving Services	31,406	12,650	40	18,756	60	348	57	51	53	48	39

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1.

Table 8.B.7: ESEA Demographic Summary for All Examinees, ELA—October 2012

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		42,422	38,805	91	2,120	5	1,497	4	3,617	9
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	18,363	16,563	90	1,099	6	701	4	1,800	10
	Twelfth	22,333	20,712	93	903	4	718	3	1,621	7
	Adult Education	1,726	1,530	89	118	7	78	5	196	11
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	24,745	22,811	92	1,214	5	720	3	1,934	8
	Female	17,635	15,955	90	906	5	774	4	1,680	10
	Unknown	42	39	93			3	7	3	7
Race/Ethnicity	American Indian or Alaskan Native	275	247	90	18	7	10	4	28	10
	Asian	2,888	2,673	93	104	4	111	4	215	7
	Pacific Islander	293	273	93	12	4	8	3	20	7
	Filipino	640	557	87	44	7	39	6	83	13
	Hispanic or Latino	27,861	26,221	94	1,103	4	537	2	1,640	6
	African American	4,685	4,346	93	218	5	121	3	339	7
	White (not of Hispanic origin)	4,812	3,689	77	534	11	589	12	1,123	23
	Two or More Races	968	799	83	87	9	82	8	169	17
Language Fluency	English-Only Students	16,470	14,111	86	1,257	8	1,102	7	2,359	14
	Initially Fluent English Proficient (IFEP)	1,263	1,026	81	144	11	93	7	237	19
	Reclassified Fluent English Proficient (RFEP)	3,325	2,878	87	318	10	129	4	447	13
	English-Learner Students	19,331	19,025	98	245	1	61	0	306	2
	Unknown	2,033	1,765	87	156	8	112	6	268	13
Economically Disadvantaged	No	7,584	6,156	81	702	9	726	10	1,428	19
	Yes	30,323	28,753	95	1,089	4	481	2	1,570	5
	Unknown	4,515	3,896	86	329	7	290	6	619	14
Special Education Program Participation	Receiving Services	9,834	9,710	99	97	1	27	0	124	1
	Not Receiving Services	32,588	29,095	89	2,023	6	1,470	5	3,493	11

[1]Results for groups with fewer than 11 students are not reported.

Table 8.B.8: ESEA Demographic Summary for All Examinees, Mathematics—October 2012

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		39,577	36,257	92	2,519	6	801	2	3,320	8
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	17,777	16,145	91	1,274	7	358	2	1,632	9
	Twelfth	20,237	18,667	92	1,150	6	420	2	1,570	8
	Adult Education	1,563	1,445	92	95	6	23	1	118	8
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	20,011	18,155	91	1,397	7	459	2	1,856	9
	Female	19,528	18,067	93	1,120	6	341	2	1,461	7
	Unknown	38	35	92	2	5	1	3	3	8
Race/Ethnicity	American Indian or Alaskan Native	288	257	89	25	9	6	2	31	11
	Asian	1,297	832	64	221	17	244	19	465	36
	Pacific Islander	260	233	90	22	8	5	2	27	10
	Filipino	548	455	83	63	11	30	5	93	17
	Hispanic or Latino	26,043	24,688	95	1,172	5	183	1	1,355	5
	African American	5,275	5,020	95	228	4	27	1	255	5
	White (not of Hispanic origin)	4,841	3,885	80	690	14	266	5	956	20
	Two or More Races	1,025	887	87	98	10	40	4	138	13
Language Fluency	English-Only Students	18,145	16,269	90	1,442	8	434	2	1,876	10
	Initially Fluent English Proficient (IFEP)	1,463	1,265	86	136	9	62	4	198	14
	Reclassified Fluent English Proficient (RFEP)	4,030	3,681	91	296	7	53	1	349	9
	English-Learner Students	13,999	13,360	95	464	3	175	1	639	5
	Unknown	1,940	1,682	87	181	9	77	4	258	13
Economically Disadvantaged	No	7,713	6,347	82	946	12	420	5	1,366	18
	Yes	27,454	26,120	95	1,136	4	198	1	1,334	5
	Unknown	4,410	3,790	86	437	10	183	4	620	14
Special Education Program Participation	Receiving Services	8,171	8,074	99	85	1	12	0	97	1
	Not Receiving Services	31,406	28,183	90	2,434	8	789	3	3,223	10

[1]Results for groups with fewer than 11 students are not reported.

Table 8.B.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—October 2012

	Percentiles[1]							Mean Scale Score	SD[2]	N Tested[3]
	1	5	25	50	75	95	99			
Total Examinees	275	292	319	338	355	392	430	339	30	42,422
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	275	292	321	340	359	396	424	341	30	18,363
Twelfth	275	290	317	335	353	389	430	336	30	22,333
Adult Education	282	304	327	340	359	399	424	344	28	1,726
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	288	317	336	355	389	419	337	30	24,745
Female	278	298	323	338	355	396	436	341	30	17,635
Unknown	276	282	306	324	342	415	450	330	38	42
Race/Ethnicity										
American Indian or Alaska Native	275	286	323	342	359	396	419	341	32	275
Asian	275	290	317	335	350	392	436	336	30	2,888
Pacific Islander	275	290	317	336	355	389	430	338	30	293
Filipino	282	302	325	344	365	409	443	347	31	640
Hispanic or Latino	275	292	319	336	353	384	411	337	27	27,861
African American	275	288	315	335	353	386	419	336	30	4,685
White (not of Hispanic origin)	275	292	327	350	378	424	450	353	39	4,812
Two or More Races	275	290	319	342	368	415	450	346	37	968
Language Fluency										
English-Only Students	275	290	321	342	363	406	443	344	35	16,470
Initially Fluent English Proficient (IFEP)	282	302	331	348	371	411	436	352	32	1,263
Reclassified Fluent English Proficient (RFEP)	292	315	340	355	368	396	419	354	25	3,325
English-Learner Students	275	290	315	333	346	366	386	330	23	19,331
Unknown	278	298	325	340	361	403	436	345	31	2,033
Economically Disadvantaged										
No	275	294	325	346	371	415	450	349	36	7,584
Yes	275	290	317	336	350	381	411	335	27	30,323
Unknown	275	292	323	340	361	406	443	344	33	4,515
Special Education Program Participation										
Students Receiving Services	275	282	304	321	338	363	381	322	25	9,834
Students Not Receiving Services	278	298	325	342	359	399	436	344	30	32,588

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation.

[3]Results for groups with fewer than 11 students are not reported.

Table 8.B.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—October 2012

	Percentiles[1]							Mean Scale Score	SD[2]	N Tested[3]
	1	5	25	50	75	95	99			
Total Examinees	296	309	327	341	355	392	439	344	26	39,577
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	296	309	329	343	357	395	439	345	26	17,777
Twelfth	296	309	325	340	354	392	439	342	26	20,237
Adult Education	299	313	331	341	355	395	427	346	24	1,563
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	290	306	325	340	357	397	439	344	28	20,011
Female	299	311	329	341	355	389	432	344	25	19,528
Unknown	290	296	321	340	354	406	422	341	28	38
Race/Ethnicity										
American Indian or Alaska Native	299	311	326	343	358	392	447	346	27	288
Asian	301	315	336	359	406	450	450	370	43	1,297
Pacific Islander	301	312	325	343	359	395	427	345	26	260
Filipino	304	315	334	348	364	422	450	354	30	548
Hispanic or Latino	296	309	327	340	354	380	414	341	22	26,043
African American	287	306	323	338	352	378	406	339	23	5,275
White (not of Hispanic origin)	293	309	331	348	372	422	450	354	33	4,841
Two or More Races	290	309	329	343	361	410	450	348	31	1,025
Language Fluency										
English-Only Students	293	309	327	341	357	400	447	345	28	18,145
Initially Fluent English Proficient (IFEP)	301	313	333	347	363	414	450	351	30	1,463
Reclassified Fluent English Proficient (RFEP)	309	319	338	348	361	389	427	351	22	4,030
English-Learner Students	296	306	323	336	350	376	427	339	23	13,999
Unknown	296	314	333	345	361	410	450	350	29	1,940
Economically Disadvantaged										
No	296	311	331	347	366	422	450	353	33	7,713
Yes	296	309	325	340	352	378	414	340	22	27,454
Unknown	296	309	329	345	363	414	450	350	31	4,410
Special Education Program Participation										
Students Receiving Services	287	301	315	327	341	363	382	329	19	8,171
Students Not Receiving Services	299	313	331	345	359	400	447	348	26	31,406

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation.

[3]Results for groups with fewer than 11 students are not reported.

Appendix 8.C: Frequency Distributions and Demographic Summaries—November 2012

Table 8.C.1: Frequency Distributions, ELA—November 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	305	0	305	99
440–449	406	0	711	99
430–439	622	1	1,333	99
420–429	741	1	2,074	98
410–419	847	1	2,921	97
400–409	1,556	2	4,477	95
390–399	1,878	2	6,355	93
380–389	3,437	4	9,792	89
370–379	4,988	6	14,780	83
360–369	7,162	8	21,942	75
350–359[1]	12,105	14	34,047	62
340–349	12,960	15	47,007	47
330–339	11,366	13	58,373	34
320–329	10,878	12	69,251	22
310–319	7,128	8	76,379	14
300–309	5,480	6	81,859	8
290–299	3,934	4	85,793	3
280–289	1,859	2	87,652	1
270–279	1,146	1	88,798	0

[1]Passing Score = 350

Table 8.C.2: Frequency Distributions, Mathematics—November 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	680	1	680	99
440–449	300	0	980	99
430–439	303	0	1,283	98
420–429	657	1	1,940	98
410–419	1,074	1	3,014	96
400–409	1,207	1	4,221	95
390–399	1,297	2	5,518	93
380–389	2,220	3	7,738	91
370–379	3,835	5	11,573	86
360–369	6,300	8	17,873	78
350–359[1]	11,845	15	29,718	64
340–349	14,657	18	44,375	46
330–339	14,260	18	58,635	28
320–329	9,976	12	68,611	16
310–319	7,609	9	76,220	6
300–309	3,552	4	79,772	2
290–299	1,197	1	80,969	1
280–289	226	0	81,195	0
270–279	230	0	81,425	0

[1]Passing Score = 350

Table 8.C.3: Frequency Distributions, ELA for ESEA—November 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	305	0	305	99
440–449	406	0	711	99
430–439	622	1	1,333	99
420–429	741	1	2,074	98
410–419	847	1	2,921	97
403–409[1]	995	1	3,916	96
390–402	2,439	3	6,355	93
380–389[2]	3,437	4	9,792	89
370–379	4,988	6	14,780	83
360–369	7,162	8	21,942	75
350–359	12,105	14	34,047	62
340–349	12,960	15	47,007	47
330–339	11,366	13	58,373	34
320–329	10,878	12	69,251	22
310–319	7,128	8	76,379	14
300–309	5,480	6	81,859	8
290–299	3,934	4	85,793	3
280–289	1,859	2	87,652	1
270–279	1,146	1	88,798	0

[1]Advanced-Level Cut = 403

[2]Proficient-Level Cut = 380

Table 8.C.4: Frequency Distributions, Mathematics for ESEA—November 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	680	1	680	99
440–449	300	0	980	99
430–439	303	0	1,283	98
422–429[1]	657	1	1,940	98
410–421	1,074	1	3,014	96
400–409	1,207	1	4,221	95
390–399	1,297	2	5,518	93
380–389[2]	2,220	3	7,738	91
370–379	3,835	5	11,573	86
360–369	6,300	8	17,873	78
350–359	11,845	15	29,718	64
340–349	14,657	18	44,375	46
330–339	14,260	18	58,635	28
320–329	9,976	12	68,611	16
310–319	7,609	9	76,220	6
300–309	3,552	4	79,772	2
290–299	1,197	1	80,969	1
280–289	226	0	81,195	0
270–279	230	0	81,425	0

[1]Advanced-Level Cut = 422

[2]Proficient-Level Cut = 380

Table 8.C.5: Demographic Summary for All Examinees, ELA—November 2012

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading[2] Avg. Percent Correct			Writing[2] Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	88,798	34,047	38	54,751	62	343	57	59	59	47	58	2.0
Grade												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	54,160	23,097	43	31,063	57	345	59	61	61	49	59	2.0
Twelfth	31,165	9,641	31	21,524	69	338	55	56	56	44	55	2.0
Adult Education	3,473	1,309	38	2,164	62	345	61	64	61	48	57	2.0
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	52,342	19,087	36	33,255	64	340	57	59	57	46	56	2.0
Female	36,395	14,941	41	21,454	59	346	58	60	62	49	60	2.1
Unknown	61	19	31	42	69	336	56	56	57	39	49	1.9
Race/Ethnicity												
American Indian or Alaska Native	738	292	40	446	60	342	59	59	58	48	56	2.0
Asian	5,092	1,938	38	3,154	62	344	54	60	59	48	61	2.0
Pacific Islander	642	235	37	407	63	343	52	58	59	48	60	2.1
Filipino	1,435	676	47	759	53	351	57	64	64	51	63	2.2
Hispanic or Latino	56,979	19,631	34	37,348	66	339	56	58	58	45	56	2.0
African American	8,068	2,843	35	5,225	65	339	54	56	57	46	56	2.0
White (not of Hispanic origin)	14,037	7,558	54	6,479	46	356	67	66	64	56	64	2.2
Two or More Races	1,807	874	48	933	52	352	62	64	62	53	62	2.1
Language Fluency												
English-Only Students	38,019	17,441	46	20,578	54	348	61	62	61	51	60	2.1
Initially Fluent English Proficient (IFEP)	2,832	1,606	57	1,226	43	357	65	68	66	56	66	2.2
Reclassified Fluent English Proficient (RFEP)	6,260	3,900	62	2,360	38	356	64	68	67	55	66	2.2
English-Learner Students	37,525	9,401	25	28,124	75	334	52	54	55	42	52	1.9
Unknown	4,162	1,699	41	2,463	59	346	61	64	61	49	58	2.0
Economically Disadvantaged												
No	20,363	10,672	52	9,691	48	355	65	66	64	54	64	2.2
Yes	59,386	19,663	33	39,723	67	338	55	57	57	45	55	2.0
Unknown	9,049	3,712	41	5,337	59	346	60	62	60	49	58	2.0
Special Education Program Participation												
Students Receiving Services	20,922	3,722	18	17,200	82	325	47	48	49	39	48	1.8
Students Not Receiving Services	67,876	30,325	45	37,551	55	348	61	63	62	50	61	2.1

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response/Analysis, WS — Writing Strategies, WC — Writing Conventions.

Table 8.C.6: Demographic Summary for All Examinees, Mathematics—November 2012

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
Total Examinees	81,425	29,718	36	51,707	64	345	56	52	53	48	40
Grade											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	50,572	20,178	40	30,394	60	347	57	53	55	48	42
Twelfth	27,826	8,529	31	19,297	69	342	55	49	50	46	38
Adult Education	3,027	1,011	33	2,016	67	344	58	50	53	51	36
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	42,010	14,883	35	27,127	65	344	55	52	52	46	39
Female	39,346	14,819	38	24,527	62	346	58	51	54	49	42
Unknown	69	16	23	53	77	339	56	49	47	44	36
Race/Ethnicity											
American Indian or Alaska Native	740	246	33	494	67	341	55	51	51	46	38
Asian	2,915	1,777	61	1,138	39	370	62	64	66	63	60
Pacific Islander	574	243	42	331	58	347	56	53	56	49	45
Filipino	1,230	621	50	609	50	354	58	56	60	54	50
Hispanic or Latino	51,861	16,822	32	35,039	68	341	55	49	51	46	38
African American	8,889	2,608	29	6,281	71	339	53	48	49	44	37
White (not of Hispanic origin)	13,348	6,576	49	6,772	51	355	63	59	59	53	45
Two or More Races	1,868	825	44	1,043	56	351	61	56	57	51	43
Language Fluency											
English-Only Students	39,794	15,482	39	24,312	61	347	58	53	54	48	41
Initially Fluent English Proficient (IFEP)	3,171	1,574	50	1,597	50	356	63	58	60	54	46
Reclassified Fluent English Proficient (RFEP)	7,465	3,704	50	3,761	50	351	63	55	58	52	44
English-Learner Students	27,164	7,523	28	19,641	72	339	51	47	50	45	39
Unknown	3,831	1,435	37	2,396	63	347	58	52	55	51	39
Economically Disadvantaged											
No	20,363	9,945	49	10,418	51	355	62	58	59	53	46
Yes	52,706	16,561	31	36,145	69	341	54	49	51	45	38
Unknown	8,356	3,212	38	5,144	62	347	58	53	54	50	40
Special Education Program Participation											
Students Receiving Services	16,765	2,442	15	14,323	85	329	45	43	42	37	32
Students Not Receiving Services	64,660	27,276	42	37,384	58	349	59	54	56	50	43

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1.

Table 8.C.7: ESEA Demographic Summary for All Examinees, ELA—November 2012

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		88,798	79,006	89	5,876	7	3,916	4	9,792	11
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	54,160	47,405	88	4,092	8	2,663	5	6,755	12
	Twelfth	31,165	28,511	91	1,524	5	1,130	4	2,654	9
	Adult Education	3,473	3,090	89	260	7	123	4	383	11
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	52,342	47,280	90	3,263	6	1,799	3	5,062	10
	Female	36,395	31,671	87	2,609	7	2,115	6	4,724	13
	Unknown	61	55	90	4	7	2	3	6	10
Race/Ethnicity	American Indian or Alaskan Native	738	655	89	49	7	34	5	83	11
	Asian	5,092	4,480	88	317	6	295	6	612	12
	Pacific Islander	642	588	92	31	5	23	4	54	8
	Filipino	1,435	1,200	84	130	9	105	7	235	16
	Hispanic or Latino	56,979	53,043	93	2,832	5	1,104	2	3,936	7
	African American	8,068	7,292	90	529	7	247	3	776	10
	White (not of Hispanic origin)	14,037	10,353	74	1,785	13	1,899	14	3,684	26
	Two or More Races	1,807	1,395	77	203	11	209	12	412	23
Language Fluency	English-Only Students	38,019	31,285	82	3,669	10	3,065	8	6,734	18
	Initially Fluent English Proficient (IFEP)	2,832	2,145	76	403	14	284	10	687	24
	Reclassified Fluent English Proficient (RFEP)	6,260	5,254	84	739	12	267	4	1,006	16
	English-Learner Students	37,525	36,747	98	681	2	97	0	778	2
	Unknown	4,162	3,575	86	384	9	203	5	587	14
Economically Disadvantaged	No	20,363	15,624	77	2,358	12	2,381	12	4,739	23
	Yes	59,386	55,659	94	2,755	5	972	2	3,727	6
	Unknown	9,049	7,723	85	763	8	563	6	1,326	15
Special Education Program Participation	Receiving Services	20,922	20,491	98	347	2	84	0	431	2
	Not Receiving Services	67,876	58,515	86	5,529	8	3,832	6	9,361	14

[1]Results for groups with fewer than 11 students are not reported.

Table 8.C.8: ESEA Demographic Summary for All Examinees, Mathematics—November 2012

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		81,425	73,687	90	5,798	7	1,940	2	7,738	10
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	50,572	45,332	90	3,955	8	1,285	3	5,240	10
	Twelfth	27,826	25,551	92	1,660	6	615	2	2,275	8
	Adult Education	3,027	2,804	93	183	6	40	1	223	7
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	42,010	37,805	90	3,107	7	1,098	3	4,205	10
	Female	39,346	35,816	91	2,689	7	841	2	3,530	9
	Unknown	69	66	96	2	3	1	1	3	4
Race/Ethnicity	American Indian or Alaskan Native	740	681	92	50	7	9	1	59	8
	Asian	2,915	1,893	65	547	19	475	16	1,022	35
	Pacific Islander	574	512	89	51	9	11	2	62	11
	Filipino	1,230	1,027	83	142	12	61	5	203	17
	Hispanic or Latino	51,861	49,082	95	2,363	5	416	1	2,779	5
	African American	8,889	8,431	95	393	4	65	1	458	5
	White (not of Hispanic origin)	13,348	10,518	79	2,011	15	819	6	2,830	21
	Two or More Races	1,868	1,543	83	241	13	84	4	325	17
Language Fluency	English-Only Students	39,794	34,947	88	3,614	9	1,233	3	4,847	12
	Initially Fluent English Proficient (IFEP)	3,171	2,569	81	390	12	212	7	602	19
	Reclassified Fluent English Proficient (RFEP)	7,465	6,804	91	530	7	131	2	661	9
	English-Learner Students	27,164	25,980	96	941	3	243	1	1,184	4
	Unknown	3,831	3,387	88	323	8	121	3	444	12
Economically Disadvantaged	No	20,363	16,377	80	2,729	13	1,257	6	3,986	20
	Yes	52,706	49,987	95	2,302	4	417	1	2,719	5
	Unknown	8,356	7,323	88	767	9	266	3	1,033	12
Special Education Program Participation	Receiving Services	16,765	16,514	99	224	1	27	0	251	1
	Not Receiving Services	64,660	57,173	88	5,574	9	1,913	3	7,487	12

[1]Results for groups with fewer than 11 students are not reported.

Table 8.C.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—November 2012

	Percentiles[1]							Mean Scale Score	SD[2]	N Tested[3]
	1	5	25	50	75	95	99			
Total Examinees	276	295	322	343	359	401	435	343	31	88,798
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	278	295	323	344	363	401	435	345	32	54,160
Twelfth	275	293	318	337	355	394	430	338	31	31,165
Adult Education	291	305	327	343	359	398	425	345	27	3,473
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	291	318	341	359	394	430	340	31	52,342
Female	283	299	327	344	361	408	442	346	31	36,395
Unknown	275	275	316	337	353	388	416	336	32	61
Race/Ethnicity										
American Indian or Alaska Native	275	291	320	341	361	401	425	342	32	738
Asian	278	297	323	343	359	408	442	344	32	5,092
Pacific Islander	275	299	325	343	359	388	420	343	28	642
Filipino	291	305	331	348	366	416	442	351	31	1,435
Hispanic or Latino	278	295	322	341	357	386	416	339	28	56,979
African American	275	289	316	339	357	394	420	339	31	8,068
White (not of Hispanic origin)	276	297	329	353	380	430	450	356	39	14,037
Two or More Races	275	293	325	348	375	420	448	352	38	1,807
Language Fluency										
English-Only Students	275	293	323	346	368	416	448	348	36	38,019
Initially Fluent English Proficient (IFEP)	287	303	335	355	378	416	442	357	34	2,832
Reclassified Fluent English Proficient (RFEP)	285	308	341	357	370	401	425	356	27	6,260
English-Learner Students	278	293	318	335	351	370	386	334	23	37,525
Unknown	283	299	327	344	363	401	435	346	31	4,162
Economically Disadvantaged										
No	281	299	329	351	375	425	450	355	37	20,363
Yes	276	293	320	339	355	383	412	338	27	59,386
Unknown	276	295	323	343	363	408	435	346	33	9,049
Special Education Program Participation										
Students Receiving Services	275	285	307	323	343	368	388	325	26	20,922
Students Not Receiving Services	283	301	329	346	363	404	442	348	31	67,876

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation.

[3]Results for groups with fewer than 11 students are not reported.

Table 8.C.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—November 2012

	Percentiles[1]							Mean Scale Score	SD[2]	N Tested[3]
	1	5	25	50	75	95	99			
Total Examinees	293	308	326	342	358	400	443	345	28	81,425
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	296	308	328	344	359	403	443	347	28	50,572
Twelfth	290	306	324	338	354	397	443	342	28	27,826
Adult Education	301	312	330	342	356	389	429	344	24	3,027
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	290	306	324	340	358	400	443	344	29	42,010
Female	298	310	330	344	358	397	443	346	27	39,346
Unknown	287	308	324	337	349	379	443	339	25	69
Race/Ethnicity										
American Indian or Alaska Native	290	303	324	340	356	390	423	341	26	740
Asian	298	314	338	359	400	450	450	370	42	2,915
Pacific Islander	290	306	330	345	361	397	435	347	28	574
Filipino	298	312	333	351	369	418	450	354	31	1,230
Hispanic or Latino	296	308	326	340	354	381	414	341	24	51,861
African American	284	303	322	337	352	381	414	339	25	8,889
White (not of Hispanic origin)	296	308	331	349	373	429	450	355	35	13,348
Two or More Races	296	308	328	345	367	418	450	351	33	1,868
Language Fluency										
English-Only Students	293	306	326	342	361	406	450	347	30	39,794
Initially Fluent English Proficient (IFEP)	298	312	333	349	371	435	450	356	34	3,171
Reclassified Fluent English Proficient (RFEP)	303	316	337	349	363	394	435	351	24	7,465
English-Learner Students	293	306	324	337	352	377	418	339	23	27,164
Unknown	298	310	330	342	359	406	450	347	29	3,831
Economically Disadvantaged										
No	298	310	331	349	371	429	450	355	34	20,363
Yes	293	306	324	340	354	381	414	341	24	52,706
Unknown	293	308	328	342	359	410	450	347	30	8,356
Special Education Program Participation										
Students Receiving Services	281	298	314	328	342	363	386	329	21	16,765
Students Not Receiving Services	298	312	331	345	361	406	450	349	28	64,660

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation.

[3]Results for groups with fewer than 11 students are not reported.

Appendix 8.D: Frequency Distributions and Demographic Summaries—December 2012

Table 8.D.1: Frequency Distributions, ELA—December 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	5	0	5	99
440–449	3	0	8	99
430–439	5	0	13	99
420–429	7	0	20	99
410–419	9	0	29	99
400–409	18	1	47	98
390–399	25	1	72	96
380–389	47	2	119	94
370–379	50	3	169	91
360–369	145	7	314	84
350–359[1]	186	10	500	74
340–349	354	18	854	56
330–339	351	18	1,205	38
320–329	265	14	1,470	24
310–319	206	11	1,676	14
300–309	137	7	1,813	7
290–299	63	3	1,876	4
280–289	35	2	1,911	2
270–279	33	2	1,944	0

[1]Passing Score = 350

Table 8.D.2: Frequency Distributions, Mathematics—December 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	3	0	3	99
440–449	5	0	8	99
430–439	3	0	11	99
420–429	2	0	13	99
410–419	6	0	19	99
400–409	15	1	34	98
390–399	21	1	55	97
380–389	19	1	74	95
370–379	77	5	151	90
360–369	124	8	275	83
350–359[1]	289	18	564	64
340–349	385	24	949	40
330–339	273	17	1,222	23
320–329	227	14	1,449	8
310–319	95	6	1,544	2
300–309	28	2	1,572	0
290–299	1	0	1,573	0
280–289	2	0	1,575	0
270–279	2	0	1,577	0

[1]Passing Score = 350

Table 8.D.3: Frequency Distributions, ELA for ESEA—December 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	5	0	5	99
440–449	3	0	8	99
430–439	5	0	13	99
420–429	7	0	20	99
410–419	9	0	29	99
403–409[1]	10	1	39	98
390–402	33	2	72	96
380–389[2]	47	2	119	94
370–379	50	3	169	91
360–369	145	7	314	84
350–359	186	10	500	74
340–349	354	18	854	56
330–339	351	18	1,205	38
320–329	265	14	1,470	24
310–319	206	11	1,676	14
300–309	137	7	1,813	7
290–299	63	3	1,876	4
280–289	35	2	1,911	2
270–279	33	2	1,944	0

[1]Advanced-Level Cut = 403
[2]Proficient-Level Cut = 380

Table 8.D.4: Frequency Distributions, Mathematics for ESEA—December 2012

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	3	0	3	99
440–449	5	0	8	99
430–439	3	0	11	99
422–429[1]	2	0	13	99
410–421	6	0	19	99
400–409	15	1	34	98
390–399	21	1	55	97
380–389[2]	19	1	74	95
370–379	77	5	151	90
360–369	124	8	275	83
350–359	289	18	564	64
340–349	385	24	949	40
330–339	273	17	1,222	23
320–329	227	14	1,449	8
310–319	95	6	1,544	2
300–309	28	2	1,572	0
290–299	1	0	1,573	0
280–289	2	0	1,575	0
270–279	2	0	1,577	0

[1]Advanced-Level Cut = 422
[2]Proficient-Level Cut = 380

Table 8.D.5: Demographic Summary for All Examinees, ELA—December 2012

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading[2] Avg. Percent Correct			Writing[2] Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	1,944	500	26	1,444	74	337	51	59	56	49	60	2.1
Grade												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	331	120	36	211	64	342	54	62	59	49	61	2.2
Twelfth	1,160	222	19	938	81	333	48	57	53	47	58	2.0
Adult Education	453	158	35	295	65	344	55	64	60	53	62	2.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	980	257	26	723	74	336	51	59	56	47	59	2.1
Female	963	243	25	720	75	338	50	59	56	50	60	2.1
Unknown	1	-	-	-	-	-	-	-	-	-	-	-
Race/Ethnicity												
American Indian or Alaska Native	8	-	-	-	-	-	-	-	-	-	-	-
Asian	202	29	14	173	86	331	43	58	50	47	59	2.0
Pacific Islander	9	-	-	-	-	-	-	-	-	-	-	-
Filipino	22	3	14	19	86	334	41	57	51	49	61	2.1
Hispanic or Latino	1,325	321	24	1,004	76	336	50	59	55	49	59	2.1
African American	193	61	32	132	68	339	55	59	60	46	57	2.2
White (not of Hispanic origin)	126	60	48	66	52	354	63	67	64	54	66	2.3
Two or More Races	59	24	41	35	59	347	56	67	62	53	62	2.1
Language Fluency												
English-Only Students	443	137	31	306	69	340	55	59	59	47	59	2.2
Initially Fluent English Proficient (IFEP)	16	8	50	8	50	347	62	62	68	54	63	2.2
Reclassified Fluent English Proficient (RFEP)	105	50	48	55	52	349	61	66	62	55	67	2.2
English-Learner Students	941	136	14	805	86	330	45	55	50	46	58	2.0
Unknown	439	169	38	270	62	347	56	66	62	54	63	2.1
Economically Disadvantaged												
No	212	51	24	161	76	336	53	57	56	45	58	2.1
Yes	1,222	258	21	964	79	333	48	57	53	47	59	2.1
Unknown	510	191	37	319	63	346	56	65	61	54	63	2.1
Special Education Program Participation												
Students Receiving Services	288	39	14	249	86	321	44	50	48	38	50	1.9
Students Not Receiving Services	1,656	461	28	1,195	72	340	52	61	57	51	61	2.1

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response/Analysis, WS — Writing Strategies, WC — Writing Conventions.

Table 8.D.6: Demographic Summary for All Examinees, Mathematics—December 2012

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
Total Examinees	1,577	564	36	1,013	64	345	60	51	49	46	35
Grade											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	288	129	45	159	55	349	62	53	53	46	39
Twelfth	872	286	33	586	67	343	58	50	47	44	36
Adult Education	417	149	36	268	64	346	62	51	51	49	33
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	643	223	35	420	65	344	59	52	49	45	33
Female	927	338	36	589	64	345	60	50	49	46	37
Unknown	7	-	-	-	-	-	-	-	-	-	-
Race/Ethnicity											
American Indian or Alaska Native	10	-	-	-	-	-	-	-	-	-	-
Asian	51	22	43	29	57	350	56	53	53	48	48
Pacific Islander	6	-	-	-	-	-	-	-	-	-	-
Filipino	9	-	-	-	-	-	-	-	-	-	-
Hispanic or Latino	1,002	352	35	650	65	344	58	51	48	46	35
African American	265	78	29	187	71	341	60	48	46	42	34
White (not of Hispanic origin)	142	70	49	72	51	355	69	56	56	51	38
Two or More Races	92	36	39	56	61	346	62	52	51	46	34
Language Fluency											
English-Only Students	546	185	34	361	66	344	62	51	48	44	35
Initially Fluent English Proficient (IFEP)	22	13	59	9	41	350	70	56	50	49	35
Reclassified Fluent English Proficient (RFEP)	115	57	50	58	50	350	62	55	54	48	39
English-Learner Students	483	140	29	343	71	340	53	49	45	44	36
Unknown	411	169	41	242	59	349	63	52	53	50	34
Economically Disadvantaged											
No	235	87	37	148	63	347	63	53	51	45	37
Yes	882	291	33	591	67	342	57	50	47	44	36
Unknown	460	186	40	274	60	348	63	53	52	49	34
Special Education Program Participation											
Students Receiving Services	202	36	18	166	82	331	51	44	38	36	31
Students Not Receiving Services	1,375	528	38	847	62	347	61	52	51	47	36

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1.

Table 8.D.7: ESEA Demographic Summary for All Examinees, ELA —December 2012

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		1,944	1,825	94	80	4	39	2	119	6
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	331	301	91	19	6	11	3	30	9
	Twelfth	1,160	1,129	97	22	2	9	1	31	3
	Adult Education	453	395	87	39	9	19	4	58	13
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	980	927	95	37	4	16	2	53	5
	Female	963	897	93	43	4	23	2	66	7
	Unknown	1	-	-	-	-	-	-	-	-
Race/Ethnicity	American Indian or Alaskan Native	8	-	-	-	-	-	-	-	-
	Asian	202	199	99	3	1	0	0	3	1
	Pacific Islander	9	-	-	-	-	-	-	-	-
	Filipino	22	20	91	2	9	0	0	2	9
	Hispanic or Latino	1,325	1,262	95	49	4	14	1	63	5
	African American	193	179	93	12	6	2	1	14	7
	White (not of Hispanic origin)	126	98	78	10	8	18	14	28	22
	Two or More Races	59	50	85	4	7	5	8	9	15
Language Fluency	English-Only Students	443	407	92	20	5	16	4	36	8
	Initially Fluent English Proficient (IFEP)	16	15	94	1	6	0	0	1	6
	Reclassified Fluent English Proficient (RFEP)	105	89	85	15	14	1	1	16	15
	English-Learner Students	941	936	99	4	0	1	0	5	1
	Unknown	439	378	86	40	9	21	5	61	14
Economically Disadvantaged	No	212	197	93	10	5	5	2	15	7
	Yes	1,222	1,182	97	31	3	9	1	40	3
	Unknown	510	446	87	39	8	25	5	64	13
Special Education Program Participation	Receiving Services	288	286	99	1	0	1	0	2	1
	Not Receiving Services	1,656	1,539	93	79	5	38	2	117	7

[1]Results for groups with fewer than 11 students are not reported.

Table 8.D.8: ESEA Demographic Summary for All Examinees, Mathematics—December 2012

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		1,577	1,503	95	61	4	13	1	74	5
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	288	269	93	14	5	5	2	19	7
	Twelfth	872	840	96	28	3	4	0	32	4
	Adult Education	417	394	94	19	5	4	1	23	6
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	643	612	95	23	4	8	1	31	5
	Female	927	884	95	38	4	5	1	43	5
	Unknown	7	-	-	-	-	-	-	-	-
Race/Ethnicity	American Indian or Alaskan Native	10	-	-	-	-	-	-	-	-
	Asian	51	46	90	5	10	0	0	5	10
	Pacific Islander	6	-	-	-	-	-	-	-	-
	Filipino	9	-	-	-	-	-	-	-	-
	Hispanic or Latino	1,002	967	97	30	3	5	0	35	3
	African American	265	256	97	9	3	0	0	9	3
	White (not of Hispanic origin)	142	122	86	13	9	7	5	20	14
	Two or More Races	92	88	96	3	3	1	1	4	4
Language Fluency	English-Only Students	546	512	94	26	5	8	1	34	6
	Initially Fluent English Proficient (IFEP)	22	22	100	0	0	0	0	0	0
	Reclassified Fluent English Proficient (RFEP)	115	109	95	5	4	1	1	6	5
	English-Learner Students	483	475	98	8	2	0	0	8	2
	Unknown	411	385	94	22	5	4	1	26	6
Economically Disadvantaged	No	235	214	91	17	7	4	2	21	9
	Yes	882	860	98	18	2	4	0	22	2
	Unknown	460	429	93	26	6	5	1	31	7
Special Education Program Participation	Receiving Services	202	201	100	1	0	0	0	1	0
	Not Receiving Services	1,375	1,302	95	60	4	13	1	73	5

[1]Results for groups with fewer than 11 students are not reported.

Table 8.D.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—December 2012

	Percentiles[1]							Mean Scale Score	SD[2]	N Tested[3]
	1	5	25	50	75	95	99			
Total Examinees	276	296	321	337	351	382	420	337	27	1,944
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	275	296	323	341	360	395	432	342	30	331
Twelfth	275	292	319	335	347	368	402	333	24	1,160
Adult Education	293	304	325	341	360	402	432	344	29	453
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	293	321	337	351	380	410	336	26	980
Female	276	298	321	337	351	385	425	338	27	963
Unknown	-	-	-	-	-	-	-	-	-	1
Race/Ethnicity										
American Indian or Alaska Native	-	-	-	-	-	-	-	-	-	8
Asian	276	298	315	332	345	364	382	331	20	202
Pacific Islander	-	-	-	-	-	-	-	-	-	9
Filipino	281	300	315	334	345	382	398	334	28	22
Hispanic or Latino	276	296	321	335	349	377	406	336	25	1,325
African American	275	289	319	339	358	385	406	339	28	193
White (not of Hispanic origin)	275	291	331	347	374	439	450	354	40	126
Two or More Races	293	298	317	345	362	425	432	347	34	59
Language Fluency										
English-Only Students	275	293	323	339	355	395	432	340	30	443
Initially Fluent English Proficient (IFEP)	304	304	336	350	362	385	385	347	22	16
Reclassified Fluent English Proficient (RFEP)	286	300	335	349	364	388	395	349	25	105
English-Learner Students	275	293	317	331	345	360	374	330	21	941
Unknown	286	304	329	343	362	402	439	347	30	439
Economically Disadvantaged										
No	275	281	317	337	349	385	450	336	31	212
Yes	276	296	319	335	347	372	398	333	24	1,222
Unknown	286	304	329	343	362	402	432	346	29	510
Special Education Program Participation										
Students Receiving Services	275	276	301	323	341	362	372	321	26	288
Students Not Receiving Services	281	302	323	339	351	385	420	340	26	1,656

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation.

[3]Results for groups with fewer than 11 students are not reported.

Table 8.D.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—December 2012

	Percentiles[1]							Mean Scale Score	SD[2]	N Tested[3]
	1	5	25	50	75	95	99			
Total Examinees	303	315	331	343	354	379	414	345	21	1,577
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	308	317	335	346	359	388	433	349	22	288
Twelfth	301	313	329	341	354	377	404	343	20	872
Adult Education	313	321	334	343	354	383	411	346	21	417
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	303	313	331	343	356	379	440	344	22	643
Female	306	317	332	343	354	379	411	345	20	927
Unknown	-	-	-	-	-	-	-	-	-	7
Race/Ethnicity										
American Indian or Alaska Native	-	-	-	-	-	-	-	-	-	10
Asian	315	317	336	345	359	404	411	350	22	51
Pacific Islander	-	-	-	-	-	-	-	-	-	6
Filipino	-	-	-	-	-	-	-	-	-	9
Hispanic or Latino	303	315	331	343	354	375	407	344	20	1,002
African American	303	313	327	340	352	375	401	341	19	265
White (not of Hispanic origin)	308	323	336	349	365	407	450	355	29	142
Two or More Races	303	317	333	343	356	379	433	346	21	92
Language Fluency										
English-Only Students	306	315	331	341	354	388	433	344	23	546
Initially Fluent English Proficient (IFEP)	317	325	338	352	361	377	379	350	17	22
Reclassified Fluent English Proficient (RFEP)	315	323	338	349	357	383	418	350	20	115
English-Learner Students	301	313	329	341	352	371	393	340	18	483
Unknown	315	321	334	345	357	388	411	349	21	411
Economically Disadvantaged										
No	303	313	334	343	357	395	448	347	25	235
Yes	303	315	329	341	352	373	398	342	19	882
Unknown	310	321	334	345	357	389	433	348	22	460
Special Education Program Participation										
Students Receiving Services	283	303	321	331	343	361	375	331	18	202
Students Not Receiving Services	308	319	334	345	356	381	418	347	21	1,375

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation.

[3]Results for groups with fewer than 11 students are not reported.

Appendix 8.E: Frequency Distributions and Demographic Summaries—February 2013

Table 8.E.1: Frequency Distributions, ELA—February 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	4,946	3	4,946	97
440–449	4,948	3	9,894	93
430–439	6,202	4	16,096	89
420–429	6,978	5	23,074	84
410–419	7,471	5	30,545	79
400–409	11,350	8	41,895	72
390–399	11,044	7	52,939	64
380–389	10,194	7	63,133	57
370–379	12,111	8	75,244	49
360–369	13,595	9	88,839	40
350–359[1]	10,455	7	99,294	33
340–349	12,162	8	111,456	25
330–339	10,309	7	121,765	18
320–329	7,863	5	129,628	12
310–319	7,311	5	136,939	8
300–309	4,584	3	141,523	4
290–299	3,407	2	144,930	2
280–289	1,837	1	146,767	1
270–279	1,318	1	148,085	0

[1]Passing Score = 350

Table 8.E.2: Frequency Distributions, Mathematics—February 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	8,133	6	8,133	94
440–449	6,432	4	14,565	90
430–439	3,348	2	17,913	88
420–429	6,419	4	24,332	83
410–419	9,347	6	33,679	77
400–409	8,756	6	42,435	71
390–399	11,401	8	53,836	63
380–389	10,604	7	64,440	55
370–379	11,997	8	76,437	47
360–369	11,242	8	87,679	39
350–359[1]	13,946	10	101,625	30
340–349	11,736	8	113,361	21
330–339	12,741	9	126,102	13
320–329	8,589	6	134,691	7
310–319	5,293	4	139,984	3
300–309	3,431	2	143,415	1
290–299	594	0	144,009	0
280–289	185	0	144,194	0
270–279	181	0	144,375	0

[1]Passing Score = 350

Table 8.E.3: Frequency Distributions, ELA for ESEA—February 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	4,946	3	4,946	97
440–449	4,948	3	9,894	93
430–439	6,202	4	16,096	89
420–429	6,978	5	23,074	84
410–419	7,471	5	30,545	79
403–409[1]	7,628	5	38,173	74
390–402	14,766	10	52,939	64
380–389[2]	10,194	7	63,133	57
370–379	12,111	8	75,244	49
360–369	13,595	9	88,839	40
350–359	10,455	7	99,294	33
340–349	12,162	8	111,456	25
330–339	10,309	7	121,765	18
320–329	7,863	5	129,628	12
310–319	7,311	5	136,939	8
300–309	4,584	3	141,523	4
290–299	3,407	2	144,930	2
280–289	1,837	1	146,767	1
270–279	1,318	1	148,085	0

[1]Advanced-Level Cut = 403

[2]Proficient-Level Cut = 380

Table 8.E.4: Frequency Distributions, Mathematics for ESEA—February 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	8,133	6	8,133	94
440–449	6,432	4	14,565	90
430–439	3,348	2	17,913	88
422–429[1]	6,419	4	24,332	83
410–421	9,347	6	33,679	77
400–409	8,756	6	42,435	71
390–399	11,401	8	53,836	63
380–389[2]	10,604	7	64,440	55
370–379	11,997	8	76,437	47
360–369	11,242	8	87,679	39
350–359	13,946	10	101,625	30
340–349	11,736	8	113,361	21
330–339	12,741	9	126,102	13
320–329	8,589	6	134,691	7
310–319	5,293	4	139,984	3
300–309	3,431	2	143,415	1
290–299	594	0	144,009	0
280–289	185	0	144,194	0
270–279	181	0	144,375	0

[1]Advanced-Level Cut = 422

[2]Proficient-Level Cut = 380

Table 8.E.5: Demographic Summary for All Examinees, ELA—February 2013

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading[2] Avg. Percent Correct			Writing[2] Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	148,085	99,294	67	48,791	33	371	75	69	74	64	71	2.3
Grade												
Tenth	106,441	88,571	83	17,870	17	386	82	76	81	71	78	2.5
Eleventh	15,602	4,476	29	11,126	71	336	56	53	56	45	53	1.9
Twelfth	23,176	5,302	23	17,874	77	332	53	51	53	43	52	1.9
Adult Education	2,866	945	33	1,921	67	342	57	58	60	51	57	2
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	78,253	48,770	62	29,483	38	366	73	67	71	62	68	2.2
Female	69,734	50,475	72	19,259	28	378	77	72	77	66	75	2.4
Unknown	98	49	50	49	50	354	65	61	65	54	63	2.1
Race/Ethnicity												
American Indian or Alaska Native	1,233	825	67	408	33	367	75	67	73	62	69	2.2
Asian	14,305	10,994	77	3,311	23	387	78	75	78	72	79	2.5
Pacific Islander	1,078	689	64	389	36	366	73	67	71	60	70	2.3
Filipino	4,647	3,926	84	721	16	391	82	78	81	73	81	2.6
Hispanic or Latino	69,301	38,217	55	31,084	45	357	67	64	67	57	64	2.1
African American	11,989	6,495	54	5,494	46	355	70	62	67	54	62	2.1
White (not of Hispanic origin)	40,671	34,319	84	6,352	16	391	85	77	83	74	80	2.5
Two or More Races	4,861	3,829	79	1,032	21	384	82	74	80	70	77	2.4
Language Fluency												
English-Only Students	82,872	62,856	76	20,016	24	380	81	73	78	68	75	2.4
Initially Fluent English Proficient (IFEP)	7,766	6,544	84	1,222	16	392	83	78	82	74	80	2.6
Reclassified Fluent English Proficient (RFEP)	22,282	19,777	89	2,505	11	385	82	77	81	72	79	2.5
English-Learner Students	30,840	8,013	26	22,827	74	334	52	53	54	45	53	1.9
Unknown	4,325	2,104	49	2,221	51	357	66	64	67	57	63	2.1
Economically Disadvantaged												
No	54,738	46,819	86	7,919	14	393	85	78	83	74	81	2.5
Yes	82,090	45,806	56	36,284	44	357	68	64	67	57	65	2.1
Unknown	11,257	6,669	59	4,588	41	365	71	67	70	61	68	2.2
Special Education Program Participation												
Students Receiving Services	19,870	4,777	24	15,093	76	330	54	49	52	42	49	1.8
Students Not Receiving Services	128,215	94,517	74	33,698	26	378	78	72	77	67	74	2.4

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response/Analysis, WS — Writing Strategies, WC — Writing Conventions

Table 8.E.6: Demographic Summary for All Examinees, Mathematics—February 2013

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
Total Examinees	144,375	101,625	70	42,750	30	376	70	67	69	63	59
Grade											
Tenth	105,840	89,959	85	15,881	15	389	76	74	76	71	67
Eleventh	15,217	5,074	33	10,143	67	342	54	51	49	41	38
Twelfth	20,572	5,663	28	14,909	72	339	53	49	46	39	36
Adult Education	2,746	929	34	1,817	66	344	58	51	50	46	35
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	73,281	50,718	69	22,563	31	376	70	68	68	62	58
Female	71,009	50,857	72	20,152	28	377	70	67	70	63	60
Unknown	85	50	59	35	41	366	66	63	63	56	50
Race/Ethnicity											
American Indian or Alaska Native	1,235	847	69	388	31	370	69	65	65	60	54
Asian	12,471	11,346	91	1,125	9	409	81	82	84	80	78
Pacific Islander	1,027	716	70	311	30	372	68	65	68	60	59
Filipino	4,551	4,007	88	544	12	395	77	76	80	74	71
Hispanic or Latino	66,877	39,566	59	27,311	41	362	64	61	62	55	51
African American	12,606	6,658	53	5,948	47	356	61	58	58	50	49
White (not of Hispanic origin)	40,683	34,649	85	6,034	15	393	78	75	77	73	68
Two or More Races	4,925	3,836	78	1,089	22	386	74	72	73	68	64
Language Fluency											
English-Only Students	84,819	63,537	75	21,282	25	381	72	70	71	65	62
Initially Fluent English Proficient (IFEP)	7,936	6,681	84	1,255	16	396	78	76	78	74	70
Reclassified Fluent English Proficient (RFEP)	23,116	20,118	87	2,998	13	389	77	74	77	71	68
English-Learner Students	24,353	9,222	38	15,131	62	345	54	52	51	43	42
Unknown	4,151	2,067	50	2,084	50	361	64	59	59	55	47
Economically Disadvantaged											
No	54,911	47,140	86	7,771	14	395	78	76	78	74	70
Yes	78,648	47,681	61	30,967	39	364	65	62	62	55	52
Unknown	10,816	6,804	63	4,012	37	371	68	65	65	60	55
Special Education Program Participation											
Students Receiving Services	17,492	4,839	28	12,653	72	338	50	49	45	39	37
Students Not Receiving Services	126,883	96,786	76	30,097	24	382	73	70	72	66	62

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1.

Table 8.E.7: ESEA Demographic Summary for All Examinees, ELA—February 2013

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		148,085	84,952	57	24,960	17	38,173	26	63,133	43
Grade	Tenth	106,441	45,432	43	23,712	22	37,297	35	61,009	57
	Eleventh	15,602	14,635	94	563	4	404	3	967	6
	Twelfth	23,176	22,287	96	521	2	368	2	889	4
	Adult Education	2,866	2,598	91	164	6	104	4	268	9
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	78,253	48,783	62	12,505	16	16,965	22	29,470	38
	Female	69,734	36,097	52	12,444	18	21,193	30	33,637	48
	Unknown	98	72	73	11	11	15	15	26	27
Race/Ethnicity	American Indian or Alaskan Native	1,233	773	63	200	16	260	21	460	37
	Asian	14,305	5,967	42	2,369	17	5,969	42	8,338	58
	Pacific Islander	1,078	697	65	188	17	193	18	381	35
	Filipino	4,647	1,682	36	1,034	22	1,931	42	2,965	64
	Hispanic or Latino	69,301	50,568	73	9,864	14	8,869	13	18,733	27
	African American	11,989	8,941	75	1,587	13	1,461	12	3,048	25
	White (not of Hispanic origin)	40,671	14,177	35	8,827	22	17,667	43	26,494	65
	Two or More Races	4,861	2,147	44	891	18	1,823	38	2,714	56
Language Fluency	English-Only Students	82,872	39,122	47	16,124	19	27,626	33	43,750	53
	Initially Fluent English Proficient (IFEP)	7,766	2,771	36	1,658	21	3,337	43	4,995	64
	Reclassified Fluent English Proficient (RFEP)	22,282	10,001	45	5,958	27	6,323	28	12,281	55
	English-Learner Students	30,840	29,838	97	813	3	189	1	1,002	3
	Unknown	4,325	3,220	74	407	9	698	16	1,105	26
Economically Disadvantaged	No	54,738	18,428	34	11,535	21	24,775	45	36,310	66
	Yes	82,090	59,455	72	11,844	14	10,791	13	22,635	28
	Unknown	11,257	7,069	63	1,581	14	2,607	23	4,188	37
Special Education Program Participation	Receiving Services	19,870	18,446	93	885	4	539	3	1,424	7
	Not Receiving Services	128,215	66,506	52	24,075	19	37,634	29	61,709	48

[1]Results for groups with fewer than 11 students are not reported.

Table 8.E.8: ESEA Demographic Summary for All Examinees, Mathematics— February 2013

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		144,375	79,935	55	40,108	28	24,332	17	64,440	45
Grade	Tenth	105,840	43,255	41	38,595	36	23,990	23	62,585	59
	Eleventh	15,217	14,330	94	706	5	181	1	887	6
	Twelfth	20,572	19,761	96	664	3	147	1	811	4
	Adult Education	2,746	2,589	94	143	5	14	1	157	6
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	73,281	40,254	55	20,047	27	12,980	18	33,027	45
	Female	71,009	39,628	56	20,038	28	11,343	16	31,381	44
	Unknown	85	53	62	23	27	9	11	32	38
Race/Ethnicity	American Indian or Alaskan Native	1,235	771	62	339	27	125	10	464	38
	Asian	12,471	2,813	23	3,929	32	5,729	46	9,658	77
	Pacific Islander	1,027	607	59	306	30	114	11	420	41
	Filipino	4,551	1,533	34	1,815	40	1,203	26	3,018	66
	Hispanic or Latino	66,877	47,472	71	14,582	22	4,823	7	19,405	29
	African American	12,606	9,750	77	2,282	18	574	5	2,856	23
	White (not of Hispanic origin)	40,683	14,733	36	15,325	38	10,625	26	25,950	64
	Two or More Races	4,925	2,256	46	1,530	31	1,139	23	2,669	54
Language Fluency	English-Only Students	84,819	42,342	50	26,476	31	16,001	19	42,477	50
	Initially Fluent English Proficient (IFEP)	7,936	2,828	36	2,529	32	2,579	32	5,108	64
	Reclassified Fluent English Proficient (RFEP)	23,116	9,711	42	8,580	37	4,825	21	13,405	58
	English-Learner Students	24,353	21,932	90	1,950	8	471	2	2,421	10
	Unknown	4,151	3,122	75	573	14	456	11	1,029	25
Economically Disadvantaged	No	54,911	19,024	35	20,027	36	15,860	29	35,887	65
	Yes	78,648	54,244	69	17,666	22	6,738	9	24,404	31
	Unknown	10,816	6,667	62	2,415	22	1,734	16	4,149	38
Special Education Program Participation	Receiving Services	17,492	16,004	91	1,184	7	304	2	1,488	9
	Not Receiving Services	126,883	63,931	50	38,924	31	24,028	19	62,952	50

[1]Results for groups with fewer than 11 students are not reported.

Table 8.E.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—February 2013

	Percentiles[1]							Mean Scale Score	SD[2]	N Tested[3]
	1	5	25	50	75	95	99			
Total Examinees	280	300	341	371	403	442	450	371	42	148,085
Grade[4]										
Tenth	290	317	362	387	411	448	450	386	38	106,441
Eleventh	275	288	315	337	353	387	424	336	29	15,602
Twelfth	275	288	314	333	349	374	411	332	27	23,176
Adult Education	280	300	325	341	357	397	424	342	28	2,866
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	276	296	335	364	397	442	450	366	42	78,253
Female	288	310	347	379	407	448	450	378	41	69,734
Unknown	275	275	327	350	385	430	450	354	44	98
Race/Ethnicity										
American Indian or Alaska Native	278	298	341	367	397	435	450	367	40	1,233
Asian	284	310	353	390	424	450	450	387	44	14,305
Pacific Islander	284	302	339	367	393	430	450	366	38	1,078
Filipino	296	325	367	393	420	450	450	391	37	4,647
Hispanic or Latino	278	296	331	355	382	424	448	357	38	69,301
African American	275	292	329	353	382	420	448	355	38	11,989
White (not of Hispanic origin)	288	315	367	397	420	450	450	391	39	40,671
Two or More Races	282	308	355	387	415	450	450	384	42	4,861
Language Fluency										
English-Only Students	282	306	351	385	411	448	450	380	42	82,872
Initially Fluent English Proficient (IFEP)	290	321	367	397	420	450	450	392	39	7,766
Reclassified Fluent English Proficient (RFEP)	306	337	364	385	403	442	450	385	31	22,282
English-Learner Students	275	290	315	335	351	374	397	334	26	30,840
Unknown	278	300	329	349	382	442	450	357	41	4,325
Economically Disadvantaged										
No	292	321	369	397	424	450	450	393	39	54,738
Yes	278	296	331	355	385	424	448	357	38	82,090
Unknown	276	294	333	362	397	442	450	365	44	11,257
Special Education Program Participation										
Students Receiving Services	275	282	306	327	349	387	420	330	32	19,870
Students Not Receiving Services	288	312	349	379	407	448	450	378	40	128,215

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation

[3]Results for groups with fewer than 11 students are not reported.

[4]Grade ten students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Table 8.E.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—February 2013

	Percentiles[1]							Mean Scale Score	SD[2]	N Tested[3]
	1	5	25	50	75	95	99			
Total Examinees	302	316	345	373	408	450	450	376	40	144,375
Grade[4]										
Tenth	307	326	363	388	419	450	450	389	37	105,840
Eleventh	294	307	326	341	354	383	423	342	24	15,217
Twelfth	294	305	324	337	350	375	415	339	23	20,572
Adult Education	300	314	332	343	354	383	415	344	21	2,746
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	300	314	343	373	408	450	450	376	42	73,281
Female	305	318	346	373	404	450	450	377	39	71,009
Unknown	300	307	332	363	396	441	450	366	41	85
Race/Ethnicity										
American Indian or Alaska Native	300	314	341	367	396	441	450	370	37	1,235
Asian	314	336	383	415	448	450	450	409	38	12,471
Pacific Islander	305	318	345	369	398	441	450	372	37	1,027
Filipino	314	334	369	396	423	450	450	395	36	4,551
Hispanic or Latino	300	312	336	357	386	428	450	362	35	66,877
African American	294	309	332	352	377	419	450	356	34	12,606
White (not of Hispanic origin)	307	326	367	393	423	450	450	393	38	40,683
Two or More Races	305	320	354	386	419	450	450	386	41	4,925
Language Fluency										
English-Only Students	302	316	348	381	411	450	450	381	40	84,819
Initially Fluent English Proficient (IFEP)	307	326	365	398	434	450	450	396	41	7,936
Reclassified Fluent English Proficient (RFEP)	316	334	363	388	415	450	450	389	35	23,116
English-Learner Students	297	309	326	343	359	396	434	345	27	24,353
Unknown	300	314	334	348	379	448	450	361	38	4,151
Economically Disadvantaged										
No	309	328	367	396	428	450	450	395	39	54,911
Yes	300	312	337	359	388	434	450	364	37	78,648
Unknown	300	314	339	363	401	450	450	371	42	10,816
Special Education Program Participation										
Students Receiving Services	288	302	318	332	352	393	434	338	29	17,492
Students Not Receiving Services	307	322	350	379	411	450	450	382	39	126,883

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation

[3]Results for groups with fewer than 11 students are not reported.

[4]Grade ten students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Appendix 8.F: Frequency Distributions and Demographic Summaries—March 2013

Table 8.F.1: Frequency Distributions, ELA—March 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	16,200	4	16,200	96
440–449	7,664	2	23,864	94
430–439	19,545	5	43,409	89
420–429	23,230	6	66,639	83
410–419	25,800	7	92,439	76
400–409	39,434	10	131,873	66
390–399	37,643	10	169,516	57
380–389	33,524	9	203,040	48
370–379	38,102	10	241,142	38
360–369	37,370	10	278,512	29
350–359[1]	23,958	6	302,470	23
340–349	24,895	6	327,365	16
330–339	19,447	5	346,812	11
320–329	14,720	4	361,532	7
310–319	11,126	3	372,658	5
300–309	8,273	2	380,931	2
290–299	5,474	1	386,405	1
280–289	2,621	1	389,026	0
270–279	1,541	0	390,567	0

[1]Passing Score = 350

Table 8.F.2: Frequency Distributions, Mathematics—March 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	32,129	8	32,129	92
440–449	20,903	5	53,032	86
430–439	10,409	3	63,441	84
420–429	20,579	5	84,020	78
410–419	30,251	8	114,271	70
400–409	28,633	7	142,904	63
390–399	35,859	9	178,763	54
380–389	32,213	8	210,976	45
370–379	35,255	9	246,231	36
360–369	30,426	8	276,657	28
350–359[1]	26,584	7	303,241	21
340–349	27,795	7	331,036	14
330–339	19,005	5	350,041	9
320–329	15,474	4	365,515	5
310–319	11,799	3	377,314	2
300–309	5,717	1	383,031	1
290–299	1,915	1	384,946	0
280–289	339	0	385,285	0
270–279	312	0	385,597	0

[1]Passing Score = 350

Table 8.F.3: Frequency Distributions, ELA for ESEA—March 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	16,200	4	16,200	96
440–449	7,664	2	23,864	94
430–439	19,545	5	43,409	89
420–429	23,230	6	66,639	83
410–419	25,800	7	92,439	76
403–409[1]	26,328	7	118,767	70
390–402	50,749	13	169,516	57
380–389[2]	33,524	9	203,040	48
370–379	38,102	10	241,142	38
360–369	37,370	10	278,512	29
350–359	23,958	6	302,470	23
340–349	24,895	6	327,365	16
330–339	19,447	5	346,812	11
320–329	14,720	4	361,532	7
310–319	11,126	3	372,658	5
300–309	8,273	2	380,931	2
290–299	5,474	1	386,405	1
280–289	2,621	1	389,026	0
270–279	1,541	0	390,567	0

[1]Advanced-Level Cut = 403

[2]Proficient-Level Cut = 380

Table 8.F.4: Frequency Distributions, Mathematics for ESEA—March 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	32,129	8	32,129	92
440–449	20,903	5	53,032	86
430–439	10,409	3	63,441	84
422–429[1]	20,579	5	84,020	78
410–421	30,251	8	114,271	70
400–409	28,633	7	142,904	63
390–399	35,859	9	178,763	54
380–389[2]	32,213	8	210,976	45
370–379	35,255	9	246,231	36
360–369	30,426	8	276,657	28
350–359	26,584	7	303,241	21
340–349	27,795	7	331,036	14
330–339	19,005	5	350,041	9
320–329	15,474	4	365,515	5
310–319	11,799	3	377,314	2
300–309	5,717	1	383,031	1
290–299	1,915	1	384,946	0
280–289	339	0	385,285	0
270–279	312	0	385,597	0

[1]Advanced-Level Cut = 422

[2]Proficient-Level Cut = 380

Table 8.F.5: Demographic Summary for All Examinees, ELA—March 2013

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading[2] Avg. Percent Correct			Writing[2] Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	390,567	302,470	77	88,097	23	380	80	77	77	71	72	2.4
Grade												
Tenth	346,119	289,834	84	56,285	16	385	82	80	79	73	75	2.4
Eleventh	24,610	7,874	32	16,736	68	338	62	54	57	49	53	2.0
Twelfth	17,025	3,753	22	13,272	78	331	58	49	53	45	50	1.9
Adult Education	2,813	1,009	36	1,804	64	345	70	58	61	54	55	2.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	201,855	148,703	74	53,152	26	375	79	75	75	68	69	2.3
Female	188,590	153,712	82	34,878	18	385	81	78	79	73	76	2.5
Unknown	122	55	45	67	55	349	69	59	62	53	57	2.0
Race/Ethnicity												
American Indian or Alaska Native	2,534	1,906	75	628	25	376	79	75	76	68	71	2.3
Asian	33,208	28,642	86	4,566	14	400	86	83	83	79	81	2.7
Pacific Islander	2,167	1,626	75	541	25	376	78	74	75	68	72	2.4
Filipino	10,233	9,046	88	1,187	12	395	85	82	82	78	80	2.6
Hispanic or Latino	218,231	156,444	72	61,787	28	371	77	73	73	67	68	2.3
African American	25,247	16,765	66	8,482	34	366	74	70	71	63	66	2.2
White (not of Hispanic origin)	89,901	80,776	90	9,125	10	396	87	84	84	78	80	2.5
Two or More Races	9,046	7,265	80	1,781	20	385	82	79	79	72	74	2.5
Language Fluency												
English-Only Students	197,183	164,715	84	32,468	16	387	83	80	80	74	76	2.5
Initially Fluent English Proficient (IFEP)	27,879	25,544	92	2,335	8	399	87	85	84	79	80	2.6
Reclassified Fluent English Proficient (RFEP)	91,110	84,530	93	6,580	7	389	85	83	82	77	78	2.5
English-Learner Students	67,690	24,092	36	43,598	64	340	62	56	58	51	54	2.0
Unknown	6,705	3,589	54	3,116	46	356	71	65	66	59	61	2.1
Economically Disadvantaged												
No	130,582	118,155	90	12,427	10	398	87	85	84	79	80	2.6
Yes	230,936	162,394	70	68,542	30	369	76	72	72	66	68	2.3
Unknown	29,049	21,921	75	7,128	25	380	80	76	76	70	72	2.4
Special Education Program Participation												
Students Receiving Services	40,703	13,178	32	27,525	68	337	60	54	57	48	50	2.0
Students Not Receiving Services	349,864	289,292	83	60,572	17	385	82	79	79	73	75	2.4

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response/Analysis, WS — Writing Strategies, WC — Writing Conventions.

Table 8.F.6: Demographic Summary for All Examinees, Mathematics—March 2013

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
Total Examinees	385,597	303,241	79	82,356	21	385	74	72	74	69	63
Grade											
Tenth	344,931	290,926	84	54,005	16	390	77	75	76	72	66
Eleventh	23,185	7,638	33	15,547	67	342	55	49	50	45	37
Twelfth	14,889	3,740	25	11,149	75	338	53	47	47	42	34
Adult Education	2,592	937	36	1,655	64	347	59	52	54	50	35
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	195,594	152,661	78	42,933	22	385	74	73	74	69	62
Female	189,867	150,512	79	39,355	21	385	75	72	74	69	64
Unknown	136	68	50	68	50	357	61	58	58	52	47
Race/Ethnicity											
American Indian or Alaska Native	2,558	1,886	74	672	26	377	72	69	70	65	57
Asian	31,371	29,734	95	1,637	5	420	86	88	87	86	84
Pacific Islander	2,094	1,657	79	437	21	381	72	71	73	67	63
Filipino	10,037	9,154	91	883	9	403	81	82	82	79	75
Hispanic or Latino	214,765	157,356	73	57,409	27	376	71	68	70	65	58
African American	25,935	16,185	62	9,750	38	365	65	63	64	58	52
White (not of Hispanic origin)	89,711	80,113	89	9,598	11	399	81	79	81	77	70
Two or More Races	9,126	7,156	78	1,970	22	387	75	74	74	70	64
Language Fluency											
English-Only Students	198,618	162,304	82	36,314	18	389	76	74	76	71	65
Initially Fluent English Proficient (IFEP)	28,004	25,236	90	2,768	10	403	82	81	82	79	73
Reclassified Fluent English Proficient (RFEP)	92,071	83,742	91	8,329	9	395	80	78	79	75	70
English-Learner Students	60,350	28,439	47	31,911	53	351	58	54	56	51	45
Unknown	6,554	3,520	54	3,034	46	360	64	60	61	56	46
Economically Disadvantaged											
No	130,478	117,366	90	13,112	10	402	81	80	81	78	72
Yes	226,421	164,142	72	62,279	28	376	71	68	69	64	58
Unknown	28,698	21,733	76	6,965	24	384	74	72	73	69	62
Special Education Program Participation											
Students Receiving Services	37,022	13,115	35	23,907	65	344	54	50	50	45	40
Students Not Receiving Services	348,575	290,126	83	58,449	17	389	77	75	76	72	66

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1— Algebra 1.

Table 8.F.7: ESEA Demographic Summary for All Examinees, ELA—March 2013

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		390,567	187,527	48	84,273	22	118,767	30	203,040	52
Grade	Tenth	346,119	145,854	42	82,577	24	117,688	34	200,265	58
	Eleventh	24,610	22,858	93	1,075	4	677	3	1,752	7
	Twelfth	17,025	16,316	96	432	3	277	2	709	4
	Adult Education	2,813	2,499	89	189	7	125	4	314	11
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	201,855	107,121	53	42,843	21	51,891	26	94,734	47
	Female	188,590	80,317	43	41,410	22	66,863	35	108,273	57
	Unknown	122	89	73	20	16	13	11	33	27
Race/Ethnicity	American Indian or Alaskan Native	2,534	1,282	51	568	22	684	27	1,252	49
	Asian	33,208	9,235	28	5,697	17	18,276	55	23,973	72
	Pacific Islander	2,167	1,155	53	485	22	527	24	1,012	47
	Filipino	10,233	3,171	31	2,348	23	4,714	46	7,062	69
	Hispanic or Latino	218,231	127,743	59	46,634	21	43,854	20	90,488	41
	African American	25,247	15,895	63	4,797	19	4,555	18	9,352	37
	White (not of Hispanic origin)	89,901	25,319	28	21,817	24	42,765	48	64,582	72
	Two or More Races	9,046	3,727	41	1,927	21	3,392	37	5,319	59
Language Fluency	English-Only Students	197,183	76,522	39	45,738	23	74,923	38	120,661	61
	Initially Fluent English Proficient (IFEP)	27,879	7,788	28	6,580	24	13,511	48	20,091	72
	Reclassified Fluent English Proficient (RFEP)	91,110	34,940	38	27,517	30	28,653	31	56,170	62
	English-Learner Students	67,690	63,326	94	3,477	5	887	1	4,364	6
	Unknown	6,705	4,951	74	961	14	793	12	1,754	26
Economically Disadvantaged	No	130,582	35,845	27	30,534	23	64,203	49	94,737	73
	Yes	230,936	138,044	60	47,894	21	44,998	19	92,892	40
	Unknown	29,049	13,638	47	5,845	20	9,566	33	15,411	53
Special Education Program	Receiving Services	40,703	36,308	89	2,759	7	1,636	4	4,395	11
	Not Receiving Services	349,864	151,219	43	81,514	23	117,131	33	198,645	57

[1]Results for groups with fewer than 11 students are not reported.

Table 8.F.8: ESEA Demographic Summary for All Examinees, Mathematics—March 2013

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		385,597	174,621	45	126,956	33	84,020	22	210,976	55
Grade	Tenth	344,931	136,493	40	124,924	36	83,514	24	208,438	60
	Eleventh	23,185	21,597	93	1,250	5	338	1	1,588	7
	Twelfth	14,889	14,182	95	579	4	128	1	707	5
	Adult Education	2,592	2,349	91	203	8	40	2	243	9
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	195,594	86,953	44	63,610	33	45,031	23	108,641	56
	Female	189,867	87,564	46	63,322	33	38,981	21	102,303	54
	Unknown	136	104	76	24	18	8	6	32	24
Race/Ethnicity	American Indian or Alaskan Native	2,558	1,334	52	862	34	362	14	1,224	48
	Asian	31,371	4,427	14	8,513	27	18,431	59	26,944	86
	Pacific Islander	2,094	1,027	49	724	35	343	16	1,067	51
	Filipino	10,037	2,512	25	3,916	39	3,609	36	7,525	75
	Hispanic or Latino	214,765	118,284	55	68,396	32	28,085	13	96,481	45
	African American	25,935	17,097	66	6,616	26	2,222	9	8,838	34
	White (not of Hispanic origin)	89,711	26,025	29	35,033	39	28,653	32	63,686	71
	Two or More Races	9,126	3,915	43	2,896	32	2,315	25	5,211	57
Language Fluency	English-Only Students	198,618	80,635	41	69,637	35	48,346	24	117,983	59
	Initially Fluent English Proficient (IFEP)	28,004	7,786	28	9,697	35	10,521	38	20,218	72
	Reclassified Fluent English Proficient (RFEP)	92,071	31,240	34	37,979	41	22,852	25	60,831	66
	English-Learner Students	60,350	50,155	83	8,381	14	1,814	3	10,195	17
	Unknown	6,554	4,805	73	1,262	19	487	7	1,749	27
Economically Disadvantaged	No	130,478	36,272	28	48,413	37	45,793	35	94,206	72
	Yes	226,421	125,045	55	69,928	31	31,448	14	101,376	45
	Unknown	28,698	13,304	46	8,615	30	6,779	24	15,394	54
Special Education Program Participation	Receiving Services	37,022	31,904	86	3,935	11	1,183	3	5,118	14
	Not Receiving Services	348,575	142,717	41	123,021	35	82,837	24	205,858	59

[1]Results for groups with fewer than 11 students are not reported.

Chapter 8: Scoring and Reporting | Appendix 8.F: Frequency Distributions and Demographic Summaries—March 2013

Table 8.F.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—March 2013

	Percentiles[1]							Mean Scale Score	SD[2]	N Tested[3]
	1	5	25	50	75	95	99			
Total Examinees	288	310	353	382	407	443	450	380	39	390,567
Grade[4]										
Tenth	294	320	362	387	412	443	450	385	36	346,119
Eleventh	275	292	320	338	355	387	425	338	29	24,610
Twelfth	275	288	312	332	347	376	412	331	27	17,025
Adult Education	290	306	326	342	360	400	420	345	28	2,813
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	284	306	349	376	404	437	450	375	39	201,855
Female	296	318	360	387	412	450	450	385	38	188,590
Unknown	275	284	320	347	385	420	450	349	42	122
Race/Ethnicity										
American Indian or Alaska Native	284	310	351	379	404	437	450	376	38	2,534
Asian	296	320	376	407	431	450	450	400	40	33,208
Pacific Islander	290	314	351	376	400	437	450	376	36	2,167
Filipino	304	328	374	400	420	450	450	395	35	10,233
Hispanic or Latino	286	308	347	371	397	431	450	371	36	218,231
African American	278	300	340	366	394	425	450	366	38	25,247
White (not of Hispanic origin)	296	330	376	400	420	450	450	396	35	89,901
Two or More Races	286	310	360	390	416	450	450	385	40	9,046
Language Fluency										
English-Only Students	290	316	364	390	416	450	450	387	38	197,183
Initially Fluent English Proficient (IFEP)	304	338	376	400	425	450	450	399	34	27,879
Reclassified Fluent English Proficient (RFEP)	320	344	371	387	407	437	450	389	28	91,110
English-Learner Students	280	294	320	340	357	385	404	340	27	67,690
Unknown	280	300	330	353	382	420	443	356	36	6,705
Economically Disadvantaged										
No	300	332	376	400	425	450	450	398	35	130,582
Yes	286	306	344	371	397	431	450	369	37	230,936
Unknown	286	308	351	385	412	450	450	380	41	29,049
Special Education Program Participation										
Students Receiving Services	275	288	312	334	357	397	425	337	34	40,703
Students Not Receiving Services	296	322	362	387	412	443	450	385	36	349,864

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation

[3]Results for groups with fewer than 11 students are not reported.

[4]Grade ten students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Table 8.F.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—March 2013

	Percentiles[1]									
	1	5	25	50	75	95	99	Mean Scale Score	SD[2]	N Tested[3]
Total Examinees	304	319	355	385	414	450	450	385	40	385,597
Grade[4]										
Tenth	306	325	364	390	418	450	450	390	38	344,931
Eleventh	291	306	325	340	355	387	433	342	26	23,185
Twelfth	291	304	321	336	351	378	418	338	24	14,889
Adult Education	304	317	333	344	356	395	428	347	24	2,592
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	302	317	355	385	418	450	450	385	41	195,594
Female	306	323	355	382	414	450	450	385	39	189,867
Unknown	299	313	327	350	376	448	450	357	38	136
Race/Ethnicity										
American Indian or Alaska Native	299	317	349	378	400	448	450	377	38	2,558
Asian	317	349	398	433	450	450	450	420	35	31,371
Pacific Islander	306	321	355	380	407	450	450	381	37	2,094
Filipino	313	338	378	407	433	450	450	403	36	10,037
Hispanic or Latino	302	317	347	374	400	448	450	376	37	214,765
African American	296	311	338	362	390	433	450	365	37	25,935
White (not of Hispanic origin)	309	333	374	400	428	450	450	399	37	89,711
Two or More Races	302	317	355	387	423	450	450	387	42	9,126
Language Fluency										
English-Only Students	304	321	360	390	418	450	450	389	40	198,618
Initially Fluent English Proficient (IFEP)	313	336	376	404	440	450	450	403	38	28,004
Reclassified Fluent English Proficient (RFEP)	321	340	370	392	418	450	450	395	34	92,071
English-Learner Students	296	309	329	347	370	407	448	351	31	60,350
Unknown	296	311	335	353	382	428	450	360	35	6,554
Economically Disadvantaged										
No	313	335	376	404	433	450	450	402	37	130,478
Yes	302	315	347	374	400	448	450	376	38	226,421
Unknown	302	317	351	384	418	450	450	384	42	28,698
Special Education Program Participation										
Students Receiving Services	291	302	319	338	362	407	450	344	33	37,022
Students Not Receiving Services	309	327	362	390	418	450	450	389	38	348,575

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation

[3]Results for groups with fewer than 11 students are not reported.

[4]Grade ten students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Appendix 8.G: Frequency Distributions and Demographic Summaries—May 2013

Table 8.G.1: Frequency Distributions, ELA—May 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	119	0	119	99
440–449	194	1	313	99
430–439	126	0	439	99
420–429	331	1	770	98
410–419	675	2	1,445	96
400–409	539	1	1,984	95
390–399	1,238	3	3,222	91
380–389	1,047	3	4,269	89
370–379	1,661	4	5,930	84
360–369	2,988	8	8,918	76
350–359[1]	4,356	12	13,274	65
340–349	5,235	14	18,509	51
330–339	5,013	13	23,522	38
320–329	4,195	11	27,717	27
310–319	4,017	11	31,734	16
300–309	2,666	7	34,400	9
290–299	1,857	5	36,257	4
280–289	922	2	37,179	2
275–279	650	2	37,829	0

[1]Passing Score = 350

Table 8.G.2: Frequency Distributions, Mathematics—May 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	271	1	271	99
440–449	250	1	521	99
430–439	147	0	668	98
420–429	264	1	932	97
410–419	514	1	1,446	96
400–409	546	2	1,992	94
390–399	860	2	2,852	92
380–389	1,024	3	3,876	89
370–379	1,605	5	5,481	84
360–369	3,135	9	8,616	75
350–359[1]	4,303	12	12,919	63
340–349	6,644	19	19,563	44
330–339	6,262	18	25,825	26
320–329	4,373	13	30,198	14
310–319	2,659	8	32,857	6
300–309	1,645	5	34,502	1
290–299	276	1	34,778	1
280–289	110	0	34,888	0
270–279	102	0	34,990	0

[1]Passing Score = 350

Table 8.G.3: Frequency Distributions, ELA for ESEA—May 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	119	0	119	99
440–449	194	1	313	99
430–439	126	0	439	99
420–429	331	1	770	98
410–419	675	2	1,445	96
403–409[1]	539	1	1,984	95
390–402	1,238	3	3,222	91
380–389[2]	1,047	3	4,269	89
370–379	1,661	4	5,930	84
360–369	2,988	8	8,918	76
350–359	4,356	12	13,274	65
340–349	5,235	14	18,509	51
330–339	5,013	13	23,522	38
320–329	4,195	11	27,717	27
310–319	4,017	11	31,734	16
300–309	2,666	7	34,400	9
290–299	1,857	5	36,257	4
280–289	922	2	37,179	2
270–279	650	2	37,829	0

[1]Advanced-Level Cut = 403

[2]Proficient-Level Cut = 380

Table 8.G.4: Frequency Distributions, Mathematics for ESEA—May 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	271	1	271	99
440–449	250	1	521	99
430–439	147	0	668	98
422–429[1]	264	1	932	97
410–421	514	1	1,446	96
400–409	546	2	1,992	94
390–399	860	2	2,852	92
380–389[2]	1,024	3	3,876	89
370–379	1,605	5	5,481	84
360–369	3,135	9	8,616	75
350–359	4,303	12	12,919	63
340–349	6,644	19	19,563	44
330–339	6,262	18	25,825	26
320–329	4,373	13	30,198	14
310–319	2,659	8	32,857	6
300–309	1,645	5	34,502	1
290–299	276	1	34,778	1
280–289	110	0	34,888	0
270–279	102	0	34,990	0

[1]Advanced-Level Cut = 422

[2]Proficient-Level Cut = 380

Table 8.G.5: Demographic Summary for All Examinees, ELA—May 2013

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading[2] Avg. Percent Correct			Writing[2] Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	37,829	13,274	35	24,555	65	341	64	55	58	46	56	2.1
Grade												
Tenth	8,659	5,319	61	3,340	39	360	74	65	68	57	67	2.3
Eleventh	12,784	4,041	32	8,743	68	337	63	53	56	44	55	2.0
Twelfth	13,694	2,828	21	10,866	79	330	57	49	52	40	51	1.9
Adult Education	2,692	1,086	40	1,606	60	346	67	60	62	51	59	2.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	21,666	7,026	32	14,640	68	337	63	53	56	44	54	2.0
Female	16,090	6,222	39	9,868	61	345	64	57	60	48	60	2.1
Unknown	73	26	36	47	64	340	61	55	58	45	61	2.0
Race/Ethnicity												
American Indian or Alaska Native	287	128	45	159	55	343	66	58	60	48	56	2.0
Asian	1,891	667	35	1,224	65	344	62	57	56	49	63	2.1
Pacific Islander	231	72	31	159	69	337	61	52	54	42	57	2.1
Filipino	454	173	38	281	62	345	63	59	58	48	61	2.2
Hispanic or Latino	23,944	7,343	31	16,601	69	337	61	53	56	44	55	2.0
African American	3,595	1,072	30	2,523	70	334	61	51	55	40	52	2.0
White (not of Hispanic origin)	6,292	3,290	52	3,002	48	355	72	62	65	54	63	2.2
Two or More Races	1,135	529	47	606	53	349	70	60	62	50	60	2.1
Language Fluency												
English-Only Students	16,345	7,057	43	9,288	57	346	68	57	61	48	58	2.1
Initially Fluent English Proficient (IFEP)	986	512	52	474	48	353	69	61	64	52	64	2.3
Reclassified Fluent English Proficient (RFEP)	2,363	1,401	59	962	41	355	72	63	66	55	66	2.2
English-Learner Students	15,324	3,149	21	12,175	79	330	57	49	52	40	52	1.9
Unknown	2,811	1,155	41	1,656	59	347	67	60	63	51	59	2.1
Economically Disadvantaged												
No	6,952	3,593	52	3,359	48	355	71	62	65	53	64	2.2
Yes	26,022	7,701	30	18,321	70	336	61	52	55	43	54	2.0
Unknown	4,855	1,980	41	2,875	59	345	66	58	61	49	58	2.1
Special Education Program Participation												
Students Receiving Services	8,402	1,078	13	7,324	87	321	52	43	46	34	44	1.8
Students Not Receiving Services	29,427	12,196	41	17,231	59	346	67	58	61	49	60	2.1

[1]Results for groups with fewer than 11 students are not reported.

[2]RW — Word Analysis, RC — Reading Comprehension, RL — Literary Response/Analysis, WS — Writing Strategies, WC — Writing Conventions.

Table 8.G.6: Demographic Summary for All Examinees, Mathematics—May 2013

	N Tested[1]	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Strands for Mathematics[2] Average Percent Correct				
							PS	NS	AF	MG	A1
Total Examinees	34,990	12,919	37	22,071	63	346	55	50	53	44	40
Grade											
Tenth	8,427	5,186	62	3,241	38	365	65	63	63	55	50
Eleventh	12,067	4,098	34	7,969	66	343	52	48	51	42	39
Twelfth	11,726	2,601	22	9,125	78	337	49	43	47	38	36
Adult Education	2,770	1,034	37	1,736	63	347	58	48	55	47	38
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	17,740	6,416	36	11,324	64	345	54	51	51	43	39
Female	17,181	6,471	38	10,710	62	348	56	50	54	45	42
Unknown	69	32	46	37	54	349	58	53	55	46	40
Race/Ethnicity											
American Indian or Alaska Native	287	113	39	174	61	347	57	52	52	45	39
Asian	850	485	57	365	43	368	63	62	64	57	55
Pacific Islander	195	61	31	134	69	346	51	49	54	43	41
Filipino	389	177	46	212	54	352	57	53	57	48	45
Hispanic or Latino	21,924	7,204	33	14,720	67	343	53	48	51	42	39
African American	3,984	1,116	28	2,868	72	339	50	46	49	39	38
White (not of Hispanic origin)	6,115	3,207	52	2,908	48	359	62	59	59	52	46
Two or More Races	1,246	556	45	690	55	352	59	54	56	48	42
Language Fluency											
English-Only Students	17,604	7,228	41	10,376	59	349	57	52	54	46	42
Initially Fluent English Proficient (IFEP)	1,134	554	49	580	51	354	60	56	57	48	44
Reclassified Fluent English Proficient (RFEP)	2,960	1,534	52	1,426	48	356	62	56	59	50	45
English-Learner Students	10,380	2,469	24	7,911	76	337	48	44	48	39	37
Unknown	2,912	1,134	39	1,778	61	349	58	50	55	47	40
Economically Disadvantaged											
No	7,033	3,569	51	3,464	49	358	61	58	59	51	47
Yes	23,171	7,489	32	15,682	68	342	52	48	50	42	39
Unknown	4,786	1,861	39	2,925	61	349	57	51	54	47	40
Special Education Program Participation											
Students Receiving Services	7,026	1,016	14	6,010	86	330	43	41	41	33	32
Students Not Receiving Services	27,964	11,903	43	16,061	57	351	58	52	56	47	42

[1]Results for groups with fewer than 11 students are not reported.

[2]PS — Probability/Statistics, NS — Number Sense, AF — Algebra & Functions, MG — Measurement/Geometry, A1 — Algebra 1.

Table 8.G.7: ESEA Demographic Summary for All Examinees, ELA—May 2013

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		37,829	33,560	89	2,285	6	1,984	5	4,269	11
Grade	Tenth	8,659	5,830	67	1,415	16	1,414	16	2,829	33
	Eleventh	12,784	11,963	94	488	4	333	3	821	6
	Twelfth	13,694	13,344	97	226	2	124	1	350	3
	Adult Education	2,692	2,423	90	156	6	113	4	269	10
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	21,666	19,620	91	1,195	6	851	4	2,046	9
	Female	16,090	13,877	86	1,082	7	1,131	7	2,213	14
	Unknown	73	63	86	8	11	2	3	10	14
Race/Ethnicity	American Indian or Alaskan Native	287	245	85	29	10	13	5	42	15
	Asian	1,891	1,631	86	105	6	155	8	260	14
	Pacific Islander	231	209	90	12	5	10	4	22	10
	Filipino	454	387	85	37	8	30	7	67	15
	Hispanic or Latino	23,944	22,306	93	1,039	4	599	3	1,638	7
	African American	3,595	3,335	93	159	4	101	3	260	7
	White (not of Hispanic origin)	6,292	4,542	72	771	12	979	16	1,750	28
	Two or More Races	1,135	905	80	133	12	97	9	230	20
Language Fluency	English-Only Students	16,345	13,333	82	1,517	9	1,495	9	3,012	18
	Initially Fluent English Proficient (IFEP)	986	760	77	119	12	107	11	226	23
	Reclassified Fluent English Proficient (RFEP)	2,363	1,908	81	277	12	178	8	455	19
	English-Learner Students	15,324	15,125	99	173	1	26	0	199	1
	Unknown	2,811	2,434	87	199	7	178	6	377	13
Economically Disadvantaged	No	6,952	5,114	74	807	12	1,031	15	1,838	26
	Yes	26,022	24,262	93	1,124	4	636	2	1,760	7
	Unknown	4,855	4,184	86	354	7	317	7	671	14
Special Education Program	Receiving Services	8,402	8,272	98	90	1	40	0	130	2
	Not Receiving Services	29,427	25,288	86	2,195	7	1,944	7	4,139	14

[1]Results for groups with fewer than 11 students are not reported.

Table 8.G.8: ESEA Demographic Summary for All Examinees, Mathematics—May 2013

Subgroup	Group	N Tested[1]	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		34,990	31,114	89	2,944	8	932	3	3,876	11
Grade	Tenth	8,427	5,752	68	1,935	23	740	9	2,675	32
	Eleventh	12,067	11,371	94	573	5	123	1	696	6
	Twelfth	11,726	11,418	97	261	2	47	0	308	3
	Adult Education	2,770	2,573	93	175	6	22	1	197	7
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	17,740	15,706	89	1,530	9	504	3	2,034	11
	Female	17,181	15,350	89	1,403	8	428	2	1,831	11
	Unknown	69	58	84	11	16			11	16
Race/Ethnicity	American Indian or Alaska Native	287	254	89	28	10	5	2	33	11
	Asian	850	582	68	129	15	139	16	268	32
	Pacific Islander	195	171	88	16	8	8	4	24	12
	Filipino	389	320	82	56	14	13	3	69	18
	Hispanic or Latino	21,924	20,366	93	1,314	6	244	1	1,558	7
	African American	3,984	3,784	95	174	4	26	1	200	5
	White (not of Hispanic origin)	6,115	4,577	75	1,085	18	453	7	1,538	25
	Two or More Races	1,246	1,060	85	142	11	44	4	186	15
Language Fluency	English-Only Students	17,604	14,988	85	1,944	11	672	4	2,616	15
	Initially Fluent English Proficient (IFEP)	1,134	941	83	135	12	58	5	193	17
	Reclassified Fluent English Proficient (RFEP)	2,960	2,466	83	398	13	96	3	494	17
	English-Learner Students	10,380	10,095	97	246	2	39	0	285	3
	Unknown	2,912	2,624	90	221	8	67	2	288	10
Economically Disadvantaged	No	7,033	5,362	76	1,122	16	549	8	1,671	24
	Yes	23,171	21,530	93	1,401	6	240	1	1,641	7
	Unknown	4,786	4,222	88	421	9	143	3	564	12
Special Education Program Participation	Receiving Services	7,026	6,891	98	120	2	15	0	135	2
	Not Receiving Services	27,964	24,223	87	2,824	10	917	3	3,741	13

[1]Results for groups with fewer than 11 students are not reported.

Chapter 8: Scoring and Reporting | Appendix 8.G: Frequency Distributions and Demographic Summaries—May 2013

Table 8.G.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—May 2013

	Percentiles[1]									
	1	5	25	50	75	95	99	Mean Scale Score	SD[2]	N Tested[3]
Total Examinees	275	292	319	338	358	403	434	341	33	37,829
Grade[4]										
Tenth	275	294	331	363	390	423	450	360	40	8,659
Eleventh	275	292	317	336	354	387	423	337	29	12,784
Twelfth	275	290	314	331	346	369	399	330	25	13,694
Adult Education	292	308	329	344	358	396	428	346	27	2,692
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	288	314	336	356	396	428	337	32	21,666
Female	280	298	323	342	361	410	440	345	33	16,090
Unknown	275	278	319	340	358	393	414	340	32	73
Race/Ethnicity										
American Indian or Alaska Native	275	284	319	344	365	396	434	343	34	287
Asian	276	292	321	338	358	419	450	344	35	1,891
Pacific Islander	275	290	316	336	354	396	414	337	31	231
Filipino	278	294	325	342	358	406	440	345	33	454
Hispanic or Latino	276	292	317	336	354	387	419	337	28	23,944
African American	275	284	312	333	354	390	414	334	31	3,595
White (not of Hispanic origin)	275	294	323	352	384	428	450	355	41	6,292
Two or More Races	275	292	323	346	372	414	447	349	37	1,135
Language Fluency										
English-Only Students	275	290	319	344	369	414	440	346	37	16,345
Initially Fluent English Proficient (IFEP)	278	294	329	350	379	423	450	353	37	986
Reclassified Fluent English Proficient (RFEP)	284	302	336	356	374	410	428	355	31	2,363
English-Learner Students	275	290	314	333	346	365	382	330	23	15,324
Unknown	282	304	329	344	363	406	434	347	30	2,811
Economically Disadvantaged										
No	278	294	327	350	384	428	450	355	40	6,952
Yes	275	290	316	336	352	387	414	336	29	26,022
Unknown	275	296	323	342	363	406	440	345	33	4,855
Special Education Program Participation										
Students Receiving Services	275	282	302	319	338	363	390	321	25	8,402
Students Not Receiving Services	278	298	325	344	363	406	440	346	32	29,427

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation

[3]Results for groups with fewer than 11 students are not reported.

[4]Grade ten students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Table 8.G.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—May 2013

	Percentiles[1]							Mean Scale Score	SD[2]	N Tested[3]
	1	5	25	50	75	95	99			
Total Examinees	294	309	328	342	358	404	447	346	29	34,990
Grade[4]										
Tenth	297	312	337	361	388	433	450	365	37	8,427
Eleventh	294	307	328	342	354	383	423	343	24	12,067
Twelfth	294	307	324	337	349	369	398	337	20	11,726
Adult Education	307	318	335	346	356	388	418	347	21	2,770
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	291	307	324	340	358	404	447	345	30	17,740
Female	300	312	331	344	358	401	447	348	27	17,181
Unknown	275	312	330	347	367	395	411	349	27	69
Race/Ethnicity										
American Indian or Alaska Native	300	309	330	344	361	398	428	347	27	287
Asian	300	316	337	356	395	450	450	368	42	850
Pacific Islander	300	312	328	340	354	418	447	346	30	195
Filipino	302	314	331	347	367	411	447	352	30	389
Hispanic or Latino	297	309	328	340	354	388	423	343	24	21,924
African American	291	305	324	339	353	381	414	339	23	3,984
White (not of Hispanic origin)	294	312	333	353	381	433	450	359	36	6,115
Two or More Races	300	312	331	347	365	414	447	352	30	1,246
Language Fluency										
English-Only Students	294	307	328	344	363	414	450	349	31	17,604
Initially Fluent English Proficient (IFEP)	297	312	333	349	367	423	450	354	32	1,134
Reclassified Fluent English Proficient (RFEP)	302	316	339	351	369	411	447	356	28	2,960
English-Learner Students	294	307	324	337	349	371	398	337	21	10,380
Unknown	305	316	333	344	358	398	440	349	25	2,912
Economically Disadvantaged										
No	300	312	333	351	377	433	450	358	36	7,033
Yes	294	307	326	340	354	388	423	342	25	23,171
Unknown	297	312	331	344	360	404	447	349	28	4,786
Special Education Program Participation										
Students Receiving Services	284	302	316	328	342	365	393	330	21	7,026
Students Not Receiving Services	300	314	333	346	361	411	447	351	29	27,964

[1]Mean scale scores are reported at each percentile.

[2]SD — Standard Deviation

[3]Results for groups with fewer than 11 students are not reported.

[4]Grade ten students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Chapter 9: Quality Control Procedures

ETS implements rigorous quality control procedures throughout the test development, administration, scoring, and reporting processes. As part of this effort, ETS maintains the Office of Professional Standards, which resides in the legal department. The office publishes and maintains the *ETS Standards for Quality and Fairness*, with the purposes of helping design, develop, and deliver technically sound, fair, and useful products and services. The office also helps the public and auditors evaluate those products and services.

In addition, every department that is involved in the testing cycle designs and implements an independent set of procedures to ensure the quality of its products. ETS established the Office of Quality Assurance, which provides tools and oversight to assist program managers in this endeavor. In the next sections, these procedures are described.

Quality Control of Item Development

The item development process for the CAHSEE is described in detail in Chapter 3. The following sections highlight elements of the process devoted specifically to quality control of item development.

Item Specifications

ETS maintains item development specifications for the CAHSEE and has developed an item development plan to guide the writing of the items for both content areas. Item writing emphasis is determined in consultation with the CDE. Adherence to these specifications ensures the maintenance of quality and consistency of the item development process.

Item Writers

The items for the CAHSEE are written by panels of item writers who have a thorough understanding of the California content standards. The item writers are carefully screened and selected by senior content staff. Only those with strong content and teaching backgrounds are invited to participate in an extensive training program for item writers.

Internal Contractor Reviews

Once items have been written, ETS assessment specialists make sure that each item goes through an internal review process. Every step of this process is designed to produce items that exceed industry standards for quality. It includes three rounds of content reviews, an editorial review, an internal bias and sensitivity review, and a high-level review and approval by a content-area director. A carefully designed and

monitored workflow and detailed checklists help to ensure that all items meet the specifications at each step of the process.

Content Review

ETS assessment specialists make sure that the test items and related materials comply with ETS written guidelines for clarity, style, accuracy, and appropriateness and with approved item specifications. The artwork and graphics for the items are created during the internal content review period so that assessment specialists can evaluate the correctness and appropriateness of the art early in the item development process. ETS selects visual stimuli that are relevant to the item content and that are easily understood.

Editorial Review

Another step in the ETS internal review process involves a team of specially trained editors who check questions for clarity, correctness, and grade-level appropriateness of language, adherence to style guidelines, and conformity to item-writing best practices. The editorial review also includes cycles of copyediting and proofreading.

Bias and Sensitivity Review

One of the final steps in the internal review process is to have all items and stimuli reviewed for bias and sensitivity. Only staff members who have participated in ETS Fairness Training conduct this bias and sensitivity review. These staff members have been trained to identify and eliminate test questions that contain content that could be construed as offensive to, or biased against, members of specific ethnic, racial, or gender groups.

Assessment Director Review

As a final quality control step, the content area's assessment director or another senior-level content reviewer reads each item before it is presented to the CDE.

Content Expert Reviews

In addition to the content reviews completed by ETS content-area experts and the content staff at the CDE, all CAHSEE items are reviewed by content review committees and bias and sensitivity review committees. The review committees are advisory panels to ETS on areas related to item development for the CAHSEE.

Content Review Meetings for CAHSEE Items

The content review committee reviews the newly developed items prior to field testing and checks for content correctness, content appropriateness, technical quality, and alignment to the California content standards.

Bias and Sensitivity Review Meetings for CAHSEE Items

The Bias and Sensitivity Review Committee reviews newly developed items prior to field testing to screen for potential bias that may affect the performance of a particular group of students.

Statewide Pupil Assessment Review Panel Review

The SPAR panel is responsible for reviewing and approving test items before they are used as operational or field-test items. The SPAR examines the items for intrusiveness into students' personal lives such as student and family beliefs, morality, religion, or sexuality. The SPAR panel representatives ensure that the test items conform to the requirements of *EC* Section 60614. The CR writing tasks are also presented to the SPAR panel for review. If the SPAR panel rejects specific items and/or CR writing tasks, the items and/or tasks are replaced.

Data Review of Field-Tested Items

Newly developed items are field tested to obtain statistical information about item performance. The information is used to evaluate items that are on operational test forms. The CDE defines the criteria for acceptable or unacceptable item statistics. These criteria ensure that each item (1) has an appropriate level of difficulty for the target population; (2) discriminates well between examinees who differ in ability; and (3) conforms well to the statistical model underlying the measurement of the intended constructs.

Data Review Committee members review and discuss the items that have been flagged for C-level DIF. Some of the items have also been flagged for poor statistics and do not meet the psychometric criteria for item quality.

The panel members also use the results of analyses for DIF to make judgments about the appropriateness of items for various subgroups. The panelists respond to questions such as:

- Is there a content problem within the item?
- Are there any instructional issues that have negatively affected the performance of the item?

The panelists make recommendations about whether to accept or reject each item for inclusion in the CAHSEE item bank.

Quality Control of the Item Bank

After the completion of the analyses, items are placed in the item bank with their statistics. ETS delivers the items to the CDE through the CAHSEE electronic item bank. The item bank database is maintained by a staff of application systems programmers, led by the Item Bank Manager. All processes are logged; all change requests, including item bank updates for item availability status, are tracked; and all output and CAHSEE item bank deliveries undergo quality-control for accuracy.

The quality of the item bank and secure transfer of the CAHSEE item bank to the CDE are critical. The ETS internal item bank database resides on a server within the ETS firewall; access to the SQL, the server database, is strictly controlled by means of system administration. The electronic item banking application includes a login/password system to authorize access to the database or designated portions of the database. In addition, only users authorized to access the specific database are able to use the item bank. Users are authorized by a designated administrator at the CDE and at ETS.

The SFTP is the current method to deliver the CAHSEE electronic item bank to the CDE. All files posted on the SFTP site by the item bank staff are encrypted with a password.

The measures taken for ensuring the accuracy, confidentiality, and security of electronic files are as follows:

- Electronic forms of test content, documentation, and item banks are backed up electronically, with the backup media kept off-site, to prevent loss from a system breakdown or a natural disaster.
- The off-site backup files are kept in secure storage with access limited to authorized personnel only.
- Advanced network security measures are used to prevent unauthorized electronic access to the item bank.

Quality Control of Test Materials

Collecting Test Materials

Once the tests are administered, school districts return scorable materials within five working days and non-scorable materials within ten working days after the last testing day of each test administration period. Districts are provided color-coded labels identifying scorable and non-scorable materials and labels with bar-coded information identifying the school and district. The school districts apply the appropriate labels and number the cartons prior to returning the materials to the processing center. Scorable materials are returned via overnight carrier and non-scorable materials are returned by a designated overland carrier.

The use of the color-coded labels streamlines the return process. All scorable materials are delivered to the Pearson scanning and scoring facilities in Iowa City, Iowa. The non-scorable materials, including test booklets, are returned to the Security Processing Department in Pearson's Cedar Rapids, Iowa, facility. ETS and Pearson closely monitor the return of materials. The CAHSEE Support Center at ETS contacts school districts that do not return their materials in a timely manner and works with them to facilitate the return of the test materials.

Processing Test Materials

Upon receipt of the test materials, Pearson uses precise inventory and test processing systems, in addition to quality assurance procedures, to maintain an up-to-date accounting of all the testing materials within their facilities. The materials are removed carefully from the shipping cartons and examined for a number of conditions, including physical damage, shipping errors, and omissions. A visual inspection to compare the number of students recorded on the School and Grade Identification (SGID) sheets with the number of answer documents in the stack is also conducted.

Pearson's image scanning process captures security information electronically and compares scorable material quantities reported on the SGID sheets to actual documents scanned. School districts are contacted by phone if there are any missing shipments or if the quantity of materials returned appears to be less than expected.

Quality Control of Scanning

The CAHSEE has multiple administrations each school year, but the answer document remains the same for each administration. As such, there are two scanning quality control initiatives. The first initiative takes place during the development of the scannable form. The second initiative takes place prior to the scanning process for each of the seven administrations.

Before any CAHSEE answer documents are distributed for use, Pearson conducts a complete check of the scanning system using the new document. Pearson creates test decks of approximately 25 answer documents for ELA and mathematics marked to cover response ranges, demographic data, blanks, double marks, and other responses. Fictitious students are created to verify that each marking possibility is processed correctly by the scanning program. The output file generated as a result of this activity is thoroughly checked against each answer document after each stage to verify that the scanner is capturing marks correctly. When the program output is confirmed to match the expected results, a scan program release form is signed, and the scan program is placed in the production environment under configuration management.

For each test administration, Pearson conducts what it calls the "blue dot file." Early return answer documents, numbering 300 to 500, are scanned, and a quality control file is created. The Quality Assurance Office pulls random documents from the blue dot batch and performs one-to-one matches of the documents to the scan files, verifying that the scan program is capturing the data accurately. Not until this check is complete and signed off does full processing begin for that particular administration.

The intensity levels of each scanner are constantly monitored throughout each administration for quality control purposes. Intensity diagnostic sheets are run before and during each batch to verify that the scanner is working properly. In the event that a scanner fails to properly pick up data on the diagnostic sheets, the scanner is recalibrated before it can resume processing student documents.

Documents received in poor condition (torn, folded, or water-stained) that cannot be fed through the high-speed scanners are either scanned using a flatbed scanner or keyed into the system manually.

Post-Scanning Edits

After scanning, there are opportunities for demographic data to be edited:

- After scanning by Pearson online editors.
- After student results are posted by the CAHSEE LEA coordinators (online demographic data corrections).

Online corrections are limited to those changes that do not change a student's reporting status or score. Corrections may be made throughout the year up until the time ETS prepares annual reports for the CDE. If the nature of the correction is such that the student's reporting status is changed (removal of a test modification, for example), the changes are authorized by the CDE and ETS makes the corrections. Corrected data are used for quarterly and annual reporting and for technical reports.

Quality Control of Image Editing

When ETS receives the blue dot file from Pearson, the MC items are scored in the SKM system and essay images are uploaded to the OSN. The images are reviewed by online scoring leaders to confirm that the images have been saved correctly. Pearson does not begin processing answer documents until they have received this confirmation from ETS.

Quality Control of Answer Document Processing and Scoring

Processing of Answer Documents

Once processing begins, Pearson sends scanned files several times each day to ETS for scoring. The files contain several batches of up to 1,500 records per batch. Within each batch, several records at the beginning, middle, and end are identified for QC. Photocopies are made of the identified answer documents and sent to the ETS resolutions area, where they are compared with the electronic file. Any discrepancies are reported to program management for resolution. The record is put on hold until the discrepancy is resolved. This procedure ensures that the scored record matches the physical answer document.

Scoring and Reporting Specifications

ETS develops standardized scoring procedures and specifications to ensure testing materials are processed and scored accurately. These documents include:

- General Reporting Specifications
- Form Planner Specifications

- Matching Criteria for MC and Writing Answer Documents

Each document is explained in detail in Chapter 8. The scoring specifications are reviewed and revised by the CDE and ETS each year. After the specifications are finalized, the CDE issues a formal approval of the scoring and reporting specifications.

Matching Information on CAHSEE Answer Documents

Answer documents are designed to produce a single, complete record for each student. The record includes demographic data and scanned responses. The scored responses and the total test scores are computed and merged into the same record. All scores must comply with ETS scoring specifications.

CAHSEE answer documents contain unique numbered lithocodes that are scannable and eye-readable. The lithocodes allow all pages of the document to be linked throughout processing, even after the documents have been separated into single sheets for scanning.

Matching Multiple-Choice and Writing Scores for English-Language Arts

Each student record is assigned a unique ETS identification number. When essay scores are uploaded to the CAHSEE database, they are matched with their associated MC scores.

Storing Answer Documents

After the answer documents have been scanned, they are palletized and placed in the secure storage facilities at Pearson. The materials are stored for one year from the date of the exam. At that time, ETS requests permission to salvage the materials. After receiving CDE approval, the materials are salvaged in a secure manner.

Quality Control of Psychometric Processes

Scoring Key Verification Process

ETS takes various necessary measures to ascertain that the scoring keys are applied to the student responses as expected and that the student scores are computed accurately. As described in detail in Chapter 8 (see Scoring Key Verification Process section), various quality control checks are performed before keys are finalized in the SKM system.

Quality Control of Item Analyses, Differential Item Functioning and Equating Process

The psychometric analyses conducted at ETS undergo comprehensive quality checks by a team of psychometricians and data analysts. Detailed checklists are employed by members of the team for each of the statistical procedures performed on the

CAHSEE. Quality assurance checks also include comparisons of the current year's statistics to those from previous years. The results of preliminary classical item analyses provide a check on scoring keys that are also reviewed by a senior psychometrician. The items that are flagged for questionable statistical attributes are sent to test development staff for their review; their comments are reviewed by the psychometricians before items are approved for inclusion in the equating process.

In addition to the team of psychometricians and data analysts, the results of the equating process are reviewed by a psychometric manager and a senior psychometric advisor. Several pieces of informative analyses are provided to facilitate the process. The CDE also performs a replication of the equating results. The CDE replicates both content areas for the census administrations and may replicate one content area for the non-census administrations.

A few additional checks are performed for each process, as described below:

Calibrations

During the calibration process, checks are made to ascertain that the correct options for the analyses are selected. Checks are also made on the number of items, the number of examinees with valid scores, IRT Rasch item difficulties, standard errors for the Rasch item difficulties, and the match of selected statistics to the results on the same statistics obtained during preliminary item analyses. Psychometricians also perform detailed reviews of plots and statistics to investigate model fit.

Scaling

During the scaling process, checks are made on the number of linking items, their average item difficulty, the number of items dropped during the stability check of the scaling process, Rasch item difficulties, standard errors of the Rasch item difficulty estimates, and the scaling constant.

Scoring Tables

Once the equating activities are complete and raw-to-scale scoring tables are generated, the psychometricians carry out quality control checks on each scoring table. Scoring tables are checked to verify that all raw scores are included in the tables, that scale scores increase as raw scores increase, and that the cut points for Pass, Proficient, and Advanced levels are correctly identified. As a check on the reasonableness of the cut scores, psychometricians compare passing rates of all students and students in various demographic subgroups from the current administration with passing rates from the same administration in previous years. After all quality control steps are completed and any differences are resolved, a psychometric manager and a senior psychometric advisor inspect the equating process and scoring tables as the final step in quality control.

Score Verification Process

ETS utilizes the raw-to-scale scoring tables to compute scale scores for each student. ETS verifies the scale scores by reviewing longitudinal data for reasonableness. The results are used to look at the trends for the state. The results of the longitudinal analyses are provided to the CDE and jointly discussed. If any anomalies in the results were to arise, they would be investigated further and discussed. After obtaining explanations that satisfy both the CDE and ETS, scores would then be released.

Offloads to Test Development

The statistics based on classical item analyses, DIF analyses, and IRT analyses are provided to test development staff in specially designed Excel spreadsheets called Statistical Offloads. These statistics are used for future test assembly. Before their release, the item statistic offloads are checked by the psychometric staff to make sure they are accurately combined from various analyses.

Independent Evaluation of the CAHSEE Program

HumRRO has functioned as the independent evaluator of the CAHSEE program since January 2000. During this time, HumRRO has analyzed and reported on a wide range of topics. The evaluation reports cover analyses of test results, analyses of questionnaire responses, and other evaluation activities. The annual and biennial evaluation reports may be found on the CDE CAHSEE Independent Evaluation Reports Web page at http://www.cde.ca.gov/ta/tg/hs/evaluations.asp.

Quality Control of Reporting

Quality control of reporting is carried out by two support centers at ETS. The Enterprise Scoring and Reporting (ENSR) and DQS groups work in tandem to monitor quality control of all CAHSEE reports. Quality control procedures are performed for data and production quality. The steps include:

- Data validation and verification of all extract files used for statistical analysis and production of student detail files and LEA summary reports.
- DQS replication of the summary report data to compare them to the data created by the IT group. The quality control check is completed before ENSR produces the summary report files (i.e., PDF files) that are printed and distributed to LEAs.
- Comparison of a sampling of student data on the Individual Student Report against data in the CAHSEE student data base. This comparison includes student name, birth date, student ID, grade, County District School (CDS) code, and test results. The comparison is completed before reports are distributed.
- Comparison of summary report PDF files created from IT generated data files against summary reports created from DQS replicated summary data.

- Confirmation of the number of printed Individual Student Report impressions against the number of records on the file sent to the printer.

All reports are required to include a single, accurate CDS code, a school name, a district name, and a county name. The CDE Master File, provided monthly by the CDE, is used to validate school identity and authorization to administer the CAHSEE. Reports are not released for distribution or for posting on CAHSEE Online until all quality control processes are completed and quality standards have been met.

Excluding Student Scores from Summary Reports

ETS provides specifications to the CDE that document when to exclude student scores from accountability reporting. These specifications include the logic for handling answer documents that, for example, indicate the student tested but marked no answers, did not complete the test due to a medical emergency, or tested using modifications. The methods for handling other anomalies are also covered in the specifications.

Chapter 10: Historical Comparisons

Historical comparisons of the CAHSEE results are routinely performed to identify the trends in examinee performance and test characteristics over time. Such comparisons are performed over a period of the three most recent years of administration: 2010–11, 2011–12, and 2012–13. The indicators of examinee performance include the means and standard deviations of scale scores; the percentages of examinees classified into the Pass, Proficient, and Advanced performance levels; and the observed score distributions. Test characteristics are compared by looking at the mean percent correct, mean IRT *b*-value, mean point-biserial correlations of operational items, and the overall score reliability and SEM for each CAHSEE operational test form.

Examinee Performance

Table 10.A.1 shows the number of examinees assessed and the means and standard deviations of examinees' scale scores in 2010–11, 2011–12, and 2012–13 for the ELA and mathematics tests.

Students taking the CAHSEE are classified into Pass/Not Pass as well as ESEA performance levels: Below Proficient, Proficient, and Advanced. The percentages of students passing each content area are presented in Table 10.A.2. The percentages of students assigned to ESEA performance levels are presented in Table 10.A.3. Although passing the CAHSEE is a requirement for graduation, the SBE established the Proficient level as the desired achievement goal for all students by 2014. This goal for all students is consistent with school growth targets for state accountability and federal requirements under the ESEA.

The distributions of scale scores observed in the three most recent years are shown in Table 10.A.4 through Table 10.A.7. Scale score distributions for the summer and fall administrations are found in Table 10.A.4 for ELA and Table 10.A.6 for mathematics. Scale score distributions for the winter and spring administrations are found in Table 10.A.5 for ELA and Table 10.A.7 for mathematics. For the CAHSEE, a minimum score of 350 is required to pass the exam, and a minimum score of 380 is required to reach the proficient level of performance.

Test Characteristics

The results of the CAHSEE over the past several years indicate that the CAHSEE tests meet the technical criteria established in professional standards for high-stakes tests. Table 10.B.1 and Table 10.B.2 present, respectively, the average percent correct values and the mean equated IRT *b*-values[12, 13] for the items on the ELA and mathematics tests. The mean percent correct is affected both by the difficulty of the items and the abilities of the students taking them. The mean equated IRT *b*-values

[12]These statistics are based on the equating samples.
[13]Comparisons of mean *b*-values should be made only within a given subject test (e.g., ELA or mathematics).

reflect only average item difficulty. The average point-biserial correlations for the items on the ELA and mathematics tests are presented in Table 10.B.3. The reliabilities and SEMs expressed in raw score units appear in Table 10.B.4 for both content areas across administrations and years. Like the average percent correct, point-biserial correlations and reliabilities are affected by both item characteristics and student characteristics.

Appendix 10.A—Historical Comparisons on Student Performance

Table 10.A.1: Number of Examinees Tested, Scale Score Means, and Standard Deviations of the CAHSEE Across 2010–11, 2011–12, and 2012–13

Subject	Admin	Number of Students (with valid scores)			Scale Score Mean and Standard Deviation (SD)					
					2010–11		2011–12		2012–13	
		2010–11	2011–12	2012–13	Mean	SD	Mean	SD	Mean	SD
English-Language Arts	July	8,389	7,166	6,624	337	25	337	25	337	25
	October	43,194	36,343	42,422	342	29	341	30	339	30
	November	102,616	93,601	88,798	345	30	344	32	343	31
	December	2,405	2,319	1,944	342	25	339	26	337	27
	February	154,910	157,272	148,085	370	41	371	41	371	42
	March	402,061	388,104	390,567	381	40	378	39	380	39
	May	39,105	39,166	37,829	340	34	337	34	341	33
Mathematics	July	8,222	6,910	5,771	338	22	339	21	335	21
	October	41,519	35,680	39,577	342	26	345	27	344	26
	November	98,156	93,368	81,425	344	28	347	27	345	28
	December	2,433	2,087	1,577	340	23	343	21	345	21
	February	155,492	154,181	144,375	373	40	375	40	376	40
	March	401,838	383,396	385,597	382	39	384	39	385	40
	May	38,851	36,368	34,990	344	28	344	30	346	29

Table 10.A.2: Percentage of Students Passing Each Content Area Across 2010–11, 2011–12, and 2012–13

Admin	Percent Passing					
	English-Language Arts			Mathematics		
	2010–11	2011–12	2012–13	2010–11	2011–12	2012–13
July	27	27	26	26	27	17
October	37	36	32	31	38	35
November	40	39	38	35	42	36
December	36	29	26	29	34	36
February	67	68	67	68	69	70
March	77	78	77	77	79	79
May	34	29	35	36	35	37

Table 10.A.3: Percentage of Below Proficient, Proficient, and Advanced Across 2010–11, 2011–12, and 2012–13

Subject	Admin	Below Proficient			Proficient			Advanced		
		2010–11	2011–12	2012–13	2010–11	2011–12	2012–13	2010–11	2011–12	2012–13
English-Language Arts	July	95	95	96	4	3	3	1	2	1
	October	92	91	91	5	5	5	3	4	4
	November	90	89	89	6	6	7	4	5	4
	December	94	94	94	4	4	4	2	2	2
	February	58	57	57	19	18	17	23	25	26
	March	47	50	48	23	22	22	30	28	30
	May	88	88	89	7	7	6	5	5	5
Mathematics	July	96	97	97	3	2	2	1	1	1
	October	93	91	92	5	7	6	2	2	2
	November	91	91	90	7	7	7	2	2	2
	December	95	95	95	4	4	4	1	1	1
	February	59	57	55	26	28	28	15	15	17
	March	50	46	45	31	34	33	19	20	22
	May	90	89	89	8	8	8	2	3	3

Table 10.A.4: Scale Score Distributions Across 2010, 2011, and 2012 for ELA (July to December)

Scale Score Distribution	July			October			November			December		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
450	9	7	3	174	145	151	400	399	305	3	9	5
440–449	4	8	9	85	82	92	238	547	406	3	4	3
430–439	15	13	9	234	180	194	599	747	622	5	1	5
420–429	24	26	15	288	257	110	840	945	741	11	7	7
410–419	38	39	27	498	325	516	1,003	1,107	847	19	20	9
400–409	59	59	48	415	548	434	1,828	1,869	1,556	14	18	18
390–399	122	63	60	1,004	646	789	2,163	2,206	1,878	38	29	25
380–389	132	142	120	1,038	1,065	1,331	3,885	2,893	3,437	41	41	47
370–379	250	211	177	2,040	1,578	1,903	5,986	5,471	4,988	86	87	50
360–369	582	495	497	4,188	3,328	2,868	11,571	10,139	7,162	226	124	145
350–359	1,055	881	727	6,089	5,031	5,137	12,206	10,263	12,105	417	322	186
340–349	1,486	1,277	1,445	7,004	5,717	6,500	18,756	13,489	12,960	462	431	354
330–339	1,519	1,334	1,114	6,284	5,296	6,486	13,294	14,184	11,366	427	406	351
320–329	1,205	988	873	4,789	4,035	5,007	10,114	9,016	10,878	283	299	265
310–319	849	744	663	4,187	3,067	4,621	7,822	7,264	7,128	155	231	206
300–309	491	449	453	2,253	2,233	2,743	5,420	6,589	5,480	83	152	137
290–299	306	255	203	1,395	1,539	1,831	4,042	3,518	3,934	80	76	63
280–289	140	109	101	723	765	960	1,262	1,816	1,859	30	41	35
275–279	103	66	80	506	506	749	1,187	1,139	1,146	22	21	33

Table 10.A.5: Scale Score Distributions Across 2011, 2012, and 2013 for ELA (February to May)

Scale Score Distribution	February			March			May		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
450	5,534	4,418	4,946	21,724	12,321	16,200	229	219	119
440–449	2,469	2,125	4,948	8,297	6,634	7,664	130	120	194
430–439	5,920	5,590	6,202	19,558	17,291	19,545	304	129	126
420–429	7,120	7,012	6,978	22,657	21,600	23,230	435	402	331
410–419	7,744	12,020	7,471	36,871	24,517	25,800	517	742	675
400–409	12,001	8,254	11,350	25,808	38,878	39,434	924	588	539
390–399	11,726	16,183	11,044	37,067	38,878	37,643	973	926	1,238
380–389	14,183	11,339	10,194	44,350	35,307	33,524	1,394	1,447	1,047
370–379	12,369	13,273	12,111	37,110	40,633	38,102	1,645	1,568	1,661
360–369	11,337	14,166	13,595	30,510	32,708	37,370	2,793	1,900	2,988
350–359	13,394	13,190	10,455	25,402	32,185	23,958	4,004	3,328	4,356
340–349	12,899	12,135	12,162	25,848	20,296	24,895	4,878	4,591	5,235
330–339	10,856	10,555	10,309	19,709	19,484	19,447	4,948	6,240	5,013
320–329	10,169	8,515	7,863	15,066	14,897	14,720	4,527	4,749	4,195
310–319	6,212	6,864	7,311	11,839	11,117	11,126	4,354	4,602	4,017
300–309	4,876	5,140	4,584	9,257	8,468	8,273	3,059	3,165	2,666
290–299	3,279	3,505	3,407	6,094	6,427	5,474	2,166	2,295	1,857
280–289	1,689	1,793	1,837	3,102	3,821	2,621	1,001	1,228	922
275–279	1,133	1,195	1,318	1,792	2,642	1,541	764	927	650

Table 10.A.6: Scale Score Distributions Across 2010, 2011, and 2012 for Mathematics (July to December)

Scale Score Distribution	July			October			November			December		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
450	16	13	15	204	240	234	806	672	680	4	5	3
440–449	9	9	6	91	86	96	285	324	300	0	2	5
430–439	17	15	11	234	213	224	687	673	303	7	3	3
420–429	15	17	8	171	223	247	744	678	657	11	4	2
410–419	19	11	23	419	243	371	797	722	1,074	6	10	6
400–409	48	46	19	501	628	469	1,322	1,204	1,207	20	13	15
390–399	88	61	37	551	458	526	2,062	1,919	1,297	32	14	21
380–389	119	65	39	1,156	993	1,153	2,582	2,602	2,220	48	46	19
370–379	219	171	101	1,338	1,645	1,702	4,795	5,248	3,835	91	83	77
360–369	435	393	230	3,443	3,001	2,885	8,047	8,758	6,300	144	170	124
350–359	1,145	1,066	511	4,907	5,811	5,866	11,926	16,041	11,845	339	368	289
340–349	1,405	1,375	1,108	7,362	5,780	7,675	17,861	15,111	14,657	486	424	385
330–339	1,969	1,625	1,457	7,704	6,497	6,407	17,677	15,875	14,260	503	463	273
320–329	1,305	983	1,068	5,783	4,477	5,519	12,603	10,421	9,976	344	268	227
310–319	923	667	769	4,607	3,428	3,969	9,548	7,950	7,609	236	123	95
300–309	340	275	259	2,096	1,401	1,568	4,332	3,507	3,552	117	70	28
290–299	109	82	77	721	347	442	1,382	1,223	1,197	35	19	1
280–289	26	13	20	123	103	114	418	226	226	8	1	2
275–279	15	23	13	108	106	110	282	214	230	2	1	2

Table 10.A.7: Scale Score Distributions Across 2011, 2012, and 2013 for Mathematics (February to May)

Scale Score Distribution	February			March			May		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
450	8,060	9,313	8,133	26,615	26,965	32,129	237	365	271
440–449	3,105	3,453	6,432	19,698	20,015	20,903	135	118	250
430–439	6,496	6,898	3,348	9,917	10,041	10,409	268	310	147
420–429	6,521	6,902	6,419	19,734	20,063	20,579	302	338	264
410–419	9,485	6,541	9,347	29,187	29,883	30,251	312	388	514
400–409	9,297	9,506	8,756	28,409	28,511	28,633	730	618	546
390–399	11,534	12,030	11,401	35,906	36,138	35,859	653	899	860
380–389	10,778	11,366	10,604	33,337	33,616	32,213	1,343	1,054	1,024
370–379	12,497	13,099	11,997	37,533	36,969	35,255	1,762	1,677	1,605
360–369	12,138	12,483	11,242	33,684	32,189	30,426	2,817	2,360	3,135
350–359	15,613	15,432	13,946	36,569	27,803	26,584	5,298	4,426	4,303
340–349	13,576	13,060	11,736	27,102	29,090	27,795	6,895	5,848	6,644
330–339	14,497	13,516	12,741	26,739	19,067	19,005	5,870	5,195	6,262
320–329	9,904	8,808	8,589	17,556	17,547	15,474	5,274	5,761	4,373
310–319	7,417	6,833	5,293	10,417	8,491	11,799	4,210	3,469	2,659
300–309	3,237	3,331	3,431	7,323	4,908	5,717	1,890	2,669	1,645
290–299	835	1,181	594	1,379	1,548	1,915	619	542	276
280–289	265	228	185	412	286	339	114	199	110
275–279	237	201	181	321	266	312	122	132	102

Appendix 10.B—Historical Comparisons on Test Characteristics

Table 10.B.1: Average Percent Correct of Operational Test Items Across 2010–11, 2011–12, and 2012–13

Subject	Admin	Average *p*-value		
		2010–11	2011–12	2012–13
English-Language Arts	July	0.54	0.53	0.53
	October	0.56	0.56	0.57
	November	0.58	0.58	0.57
	December	0.57	0.54	0.56
	February	0.70	0.70	0.70
	March	0.75	0.76	0.75
	May	0.54	0.55	0.55
Mathematics	July	0.45	0.46	0.44
	October	0.47	0.48	0.48
	November	0.49	0.51	0.50
	December	0.47	0.46	0.48
	February	0.64	0.66	0.66
	March	0.69	0.71	0.71
	May	0.47	0.48	0.49

Table 10.B.2: Average IRT *b*-values of Operational Test Items Across 2010–11, 2011–12, and 2012–13

Subject	Admin	Average IRT *b*-value		
		2010–11	2011–12	2012–13
English-Language Arts	July	-0.07	-0.01	-0.01
	October	-0.05	-0.05	-0.15
	November	-0.06	-0.09	-0.05
	December	-0.07	-0.04	-0.15
	February	-0.04	-0.01	-0.05
	March	-0.06	-0.16	-0.06
	May	-0.04	-0.11	-0.04
Mathematics	July	-0.24	-0.24	-0.26
	October	-0.25	-0.19	-0.17
	November	-0.26	-0.24	-0.27
	December	-0.25	-0.15	-0.17
	February	-0.18	-0.24	-0.18
	March	-0.18	-0.20	-0.21
	May	-0.18	-0.22	-0.15

Table 10.B.3: Average Point-Biserial Correlation of Operational Test Items Across 2010–11, 2011–12, and 2012–13

Subject	Admin	Average Point-Biserial Correlation		
		2010–11	2011–12	2012–13
English-Language Arts	July	0.31	0.31	0.31
	October	0.35	0.36	0.36
	November	0.36	0.37	0.37
	December	0.31	0.31	0.31
	February	0.45	0.46	0.46
	March	0.44	0.44	0.43
	May	0.40	0.40	0.39
Mathematics	July	0.28	0.27	0.27
	October	0.33	0.34	0.33
	November	0.35	0.34	0.35
	December	0.30	0.28	0.27
	February	0.47	0.46	0.47
	March	0.46	0.45	0.46
	May	0.35	0.37	0.36

Table 10.B.4: Reliabilities and Standard Errors of Measurement (SEMs) of Operational Test Forms Across 2010–11, 2011–12, and 2012–13

Subject	Admin	Reliability			SEM		
		2010–11	2011–12	2012–13	2010–11	2011–12	2012–13
English-Language Arts	July	0.87	0.87	0.87	4.37	4.40	4.32
	October	0.89	0.90	0.90	4.43	4.37	4.36
	November	0.90	0.91	0.91	4.34	4.36	4.37
	December	0.86	0.87	0.88	4.32	4.25	4.23
	February	0.94	0.94	0.94	4.10	4.05	3.99
	March	0.94	0.93	0.93	3.81	3.81	3.80
	May	0.92	0.92	0.92	4.46	4.48	4.36
Mathematics	July	0.86	0.85	0.84	4.12	4.16	4.14
	October	0.90	0.90	0.90	4.10	4.10	4.11
	November	0.91	0.90	0.91	4.06	4.10	4.10
	December	0.87	0.85	0.84	4.13	4.14	4.15
	February	0.95	0.95	0.95	3.71	3.67	3.66
	March	0.95	0.95	0.95	3.59	3.56	3.53
	May	0.91	0.92	0.91	4.08	4.05	4.08

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