

California High School Exit Examination

Technical Report

July 2009–May 2010 Administrations

Prepared by

Educational Testing Service

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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 2009 and February, March, and May 2010.

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 MC and one constructed-response (CR) item in each ELA form. Each test form also included a set of anchor items¹ 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 2009 and February, March, and May 2010 administrations. The majority of examinees in February and March were first-time examinees. Grade 10 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 mostly were repeat examinees that 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 ¹	ELA & Mathematics	ELA Only	Mathematics Only
July 2009	19,912	5,388	7,524	7,000
October 2009	58,654	23,339	18,231	17,084
November 2009	147,253	63,310	44,032	39,911
December 2009	4,360	950	1,804	1,606
February 2010	194,303	145,383	25,940	22,980
March 2010	421,982	359,729	33,392	28,861
May 2010	59,230	20,478	20,291	18,461

¹ 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" status, and do not include students who took the modifications, were absent, previously passed, or did not attempt the examination.

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.

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 2009	12,912	3,095 (24%)	12,388	4,073 (33%)
October 2009	41,570	14,321 (34%)	40,423	13,818 (34%)
November 2009	107,342	41,946 (39%)	103,221	43,277 (42%)
December 2009	2,754	839 (30%)	2,556	770 (30%)
February 2010	171,323	118,847 (69%)	168,363	113,048 (67%)
March 2010	393,121	290,586 (74%)	388,590	292,341 (75%)
May 2010	40,769	14,437 (35%)	38,939	12,528 (32%)

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 gridded fields were excluded for the purposes of the analyses reported in this technical report. Students who left sections blank were excluded from the equating samples.

Highlights of the results for 2009–10 CAHSEE administrations included in this report are presented in Tables E.3 and E.4 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 2009)

Administration	July 2009	October 2009
Scale Score Information		
Number of Examinees	12,912	41,570
Mean	335	340
SD	25	31
Possible Range	275-450	275-450
Obtained Range	275-450	275-450
Median	335	338
Raw Score Information		
Number of Examinees	12,912	41,570
Mean	47.59	49.97
SD ¹	12.19	14.11
Possible Range	0-90	0-90
Obtained Range	0-89	0-90
Median	48	50
Test Information		
Reliability	0.87	0.91
Raw Score Standard Error of Measurement	4.38	4.35
Mean Omits	0.53	0.66
SD Omits	4.41	4.97
Percent Responding to:		
All Items	90	89
All Items - 1 Item	97	97
All Items - 2 Items	99	98
All Items - 3 Items	99	98
All Items - 4 Items	99	99
All Items - 5 Items	99	99
Item Information²		
Number of Items	72	72
Mean Observed Average Item Score (AIS)	0.53	0.56
Equated Mean Rasch B-Value	-0.09	-0.10
Mean R-biserial	0.40	0.47
SD R-biserial	0.10	0.09
Examinee Information		
ELA-Only Examinees		
Number of Examinees	7,524	18,231
Mean Scale Score	336	340
SD Scale Score	22	25
Median Scale Score	337	340
ELA and Mathematics Examinees		
Number of Examinees	5,388	23,339
Mean Scale Score	334	341
SD Scale Score	30	35
Median Scale Score	333	336

¹ 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 2009, February 2010)

Administration	November 2009	December 2009	February 2010
Scale Score Information			
Number of Examinees	107,342	2,754	171,323
Mean	343	338	372
SD	30	28	41
Possible Range	275-450	275-450	275-450
Obtained Range	275-450	275-450	275-450
Median	343	336	373
Raw Score Information			
Number of Examinees	107,342	2,754	171,323
Mean	50.31	50.19	62.06
SD	13.90	13.12	15.97
Possible Range	0-90	0-90	0-90
Obtained Range	0-90	5-89	0-90
Median	51	50	65
Test Information			
Reliability	0.90	0.89	0.92
Raw Score Standard Error of Measurement	4.38	4.42	4.38
Mean Omits	0.61	0.28	0.33
SD Omits	4.69	2.77	3.37
Percent Responding to:			
All Items	89	91	93
All Items - 1 Item	97	98	98
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 Information¹			
Number of Items	72	72	72
Mean Observed Average Item Score (AIS)	0.56	0.57	0.71
Equated Mean Rasch B-Value	-0.03	-0.17	-0.06
Mean R-biserial	0.46	0.44	0.56
SD R-biserial	0.11	0.10	0.09
Examinee Information			
ELA-Only Examinees			
Number of Examinees	44,032	1,804	25,940
Mean Scale Score	343	337	342
SD Scale Score	25	25	27
Median Scale Score	344	336	344
ELA and Mathematics Examinees			
Number of Examinees	63,310	950	145,383
Mean Scale Score	342	340	378
SD Scale Score	33	33	41
Median Scale Score	341	336	381

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 2010)

Administration	March 2010	May 2010
Scale Score Information		
Number of Examinees	393,121	40,769
Mean	376	341
SD	40	33
Possible Range	275-450	275-450
Obtained Range	275-450	275-450
Median	376	339
Raw Score Information		
Number of Examinees	393,121	40,769
Mean	64.36	48.05
SD	15.04	15.76
Possible Range	0-90	0-90
Obtained Range	0-90	0-90
Median	67	48
Test Information		
Reliability	0.93	0.92
Raw Score Standard Error of Measurement	3.91	4.49
Mean Omits	0.27	0.97
SD Omits	2.99	6.38
Percent Responding to:		
All Items	94	88
All Items - 1 Item	98	96
All Items - 2 Items	99	97
All Items - 3 Items	99	98
All Items - 4 Items	99	98
All Items - 5 Items	99	98
Item Information¹		
Number of Items	72	72
Mean Observed Average Item Score (AIS)	0.74	0.53
Equated Mean Rasch B-Value	-0.12	0.05
Mean R-biserial	0.54	0.50
SD R-biserial	0.09	0.09
Examinee Information		
ELA-Only Examinees		
Number of Examinees	33,392	20,291
Mean Scale Score	341	342
SD Scale Score	29	31
Median Scale Score	340	341
ELA and Mathematics Examinees		
Number of Examinees	359,729	20,478
Mean Scale Score	379	340
SD Scale Score	39	36
Median Scale Score	381	335

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 2009)

Administration	July 2009	October 2009
Scale Score Information		
Number of Examinees	12,388	40,423
Mean	343	344
SD	21	26
Possible Range	275-450	275-450
Obtained Range	275-450	275-450
Median	342	342
Raw Score Information		
Number of Examinees	12,388	40,423
Mean	36.67	38.88
Standard Deviation	10.57	12.49
Possible Range	0-80	0-80
Obtained Range	1-80	0-80
Median	36	38
Test Information		
Reliability	0.85	0.89
Raw Score Standard Error of Measurement	4.11	4.07
Mean Omits	0.39	0.45
SD Omits	3.29	3.45
Percent Responding to:		
All Items	87	87
All Items - 1 Item	96	96
All Items - 2 Items	98	98
All Items - 3 Items	99	99
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)	0.45	0.48
Equated Mean Rasch B-Value	-0.10	-0.21
Mean R-biserial	0.36	0.42
SD R-biserial	0.12	0.10
Examinee Information		
Mathematics-Only Examinees		
Number of Examinees	7,000	17,084
Mean Scale Score	345	345
SD Scale Score	17	20
Median Scale Score	346	344
ELA and Mathematics Examinees		
Number of Examinees	5,388	23,339
Mean Scale Score	341	344
SD Scale Score	25	30
Median Scale Score	338	338

Table E.4.2: CAHSEE Summary Statistics—Mathematics (November and December 2009, February 2010)

Administration	November 2009	December 2009	February 2010
Scale Score Information			
Number of Examinees	103,221	2,556	168,363
Mean	348	342	373
SD	27	21	40
Possible Range	275-450	275-450	275-450
Obtained Range	275-450	275-450	275-450
Median	345	340	369
Raw Score Information			
Number of Examinees	103,221	2,556	168,363
Mean	40.11	38.99	52.53
Standard Deviation	13.10	10.74	16.83
Possible Range	0-80	0-80	0-80
Obtained Range	0-80	0-79	1-80
Median	39	38	54
Test Information			
Reliability	0.90	0.85	0.95
Raw Score Standard Error of Measurement	4.08	4.15	3.68
Mean Omits	0.49	0.30	0.28
SD Omits	3.76	2.91	2.70
Percent Responding to:			
All Items	86	89	91
All Items - 1 Item	96	97	98
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	99	99
Item Information			
Number of Items	80	80	80
Mean Observed Average Item Score (AIS)	0.50	0.48	0.65
Equated Mean Rasch B-Value	-0.17	-0.27	-0.28
Mean R-biserial	0.44	0.37	0.57
SD R-biserial	0.11	0.09	0.09
Examinee Information			
Mathematics-Only Examinees			
Number of Examinees	39,911	1,606	22,980
Mean Scale Score	348	343	344
SD Scale Score	21	20	22
Median Scale Score	347	342	343
ELA and Mathematics Examinees			
Number of Examinees	63,310	950	145,383
Mean Scale Score	348	341	377
SD Scale Score	31	24	40
Median Scale Score	344	338	375

Table E.4.3: CAHSEE Summary Statistics—Mathematics (March and May 2010)

Administration	March 2010	May 2010
Scale Score Information		
Number of Examinees	388,590	38,939
Mean	381	341
SD	40	28
Possible Range	275-450	275-450
Obtained Range	275-450	275-450
Median	379	339
Raw Score Information		
Number of Examinees	388,590	38,939
Mean	54.34	38.12
Standard Deviation	16.61	13.32
Possible Range	0-80	0-80
Obtained Range	0-80	0-80
Median	57	37
Test Information		
Reliability	0.95	0.91
Raw Score Standard Error of Measurement	3.61	4.06
Mean Omits	0.23	0.69
SD Omits	2.25	4.97
Percent 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	99
All Items - 5 Items	100	99
Item Information		
Number of Items	80	80
Mean Observed Average Item Score (AIS)	0.67	0.47
Equated Mean Rasch B-Value	-0.16	-0.24
Mean R-biserial	0.57	0.45
SD R-biserial	0.09	0.11
Examinee Information		
Mathematics-Only Examinees		
Number of Examinees	28,861	18,461
Mean Scale Score	347	343
SD Scale Score	25	25
Median Scale Score	343	341
ELA and Mathematics Examinees		
Number of Examinees	359,729	20,478
Mean Scale Score	383	340
SD Scale Score	40	30
Median Scale Score	382	335

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 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, 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 for another three years in July 2004, and again in August 2008. In 2009–10, 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 2009 and February, March, and May 2010.

Test Purpose

The primary 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 competency in reading, writing, and mathematics. The CAHSEE helps identify students who are not developing the academic competencies contained in the California content standards for English-language arts (ELA) and mathematics and encourages 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, 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 students with disabilities, by meeting the exemption requirement pursuant to California *Education Code (EC)* Section 60852.3, or by receiving a local waiver pursuant to *EC* Section 60851(c). 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) local school district governing boards may waive the requirement to pass the CAHSEE for students with disabilities 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 MC portions of both examinations are scored such that one point is assigned for each correct answer. One test form was constructed for each operational administration consisting of available items from the item bank. In addition to the standard forms, Braille, large-print, and audio CD versions were also available. One emergency form

was also constructed to cover all administrations although it was not necessary to use this form if test security was maintained.

The ELA examination measures reading and writing skills as defined by the State Board of Education (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 CR item. The CR item is a written response to a writing prompt.

The CAHSEE mathematics examination measures standards adopted by the SBE; that is grades 6 and 7 mathematics and Algebra I.² 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 10, 11, or 12 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 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 students with disabilities, 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 10 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 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 2009–10 school year on dates that were determined by the State Superintendent of Public Instruction (SSPI). Schools must administer the CAHSEE on the designated date, as shown in Table 1.1.

² The blueprints for CAHSEE ELA and 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: 2009–10

Administration	English-Language Arts (Tuesday)	Mathematics (Wednesday)
July 2009	July 28, 2009	July 29, 2009
October 2009	October 6, 2009	October 7, 2009
November 2009	November 3, 2009	November 4, 2009
December 2009	December 5, 2009*	December 12, 2009*
February 2010	February 2, 2010	February 3, 2010
March 2010	March 16, 2010	March 17, 2010
May 2010	May 11, 2010	May 12, 2010

* Saturday administration

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

- Grade 10 students shall only be tested during the census administrations in February or March, or the make-up administration in May as per state requirements.
- Grade 11 students may take the part(s) of CAHSEE not previously passed up to two times per school year and may test in consecutive administrations (e.g., October and November).
- Grade 12 students may take the part(s) of 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 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 2009–10 School Year

There were no new or unusual changes in examination content and test administration in the 2009–10 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 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 was retested.

Groups and Organizations

State Board of Education

The SBE is the state education agency that sets education policy for kindergarten through grade 12 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 seven million (7,000,000) children and young adults in more than 9,000 schools. The CDE's mission is to provide leadership, assistance, oversight, and resources so that every child in California has access to an educational system that meets world-class standards. 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 ETS 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 This Technical Report

This technical report describes the procedures applied to the CAHSEE for the four 2009 and the three 2010 administrations in the 2009–10 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 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 2009–10 administrations.
- Chapter 5 presents the processes involved in the actual 2009–10 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 2009–10 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 CAHSEE score use and interpretation.
- Chapter 7 describes the standard-setting process conducted for the CAHSEE when 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 end 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 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 multiple-choice (MC) items. The ELA test also includes one constructed-response (CR) item, which is a writing prompt that is polytomously scored.

Model for Generating Item Statistics

Item response theory (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 (1PL) model relates the probability that a person with ability θ will respond correctly to item i :

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

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 :

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

where:

- X_i is the response to item i , with possible value 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 are 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 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 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 2009–10 school year.

Criteria for Selecting RTQs

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' achievement of the content standards can be assessed. These released test questions, 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 10. 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 test form consists of 73 operational items and 7 field-test items for a total of 80 items. The mathematics test form consists 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. 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 2009–10 Administrations

Administration	Operational Items	Field-Test Forms	Number of Field-Test Items ¹
July 2009			
English–Language Arts	72 MC, 1 CR	1	7
Mathematics	80 MC	1	12
October 2009			
English–Language Arts	72 MC, 1 CR	1	7
Mathematics	80 MC	1	12
November 2009			
English–Language Arts	72 MC, 1 CR	1	7
Mathematics	80 MC	1	12
December 2009			
English–Language Arts	72 MC, 1 CR	1	7
Mathematics	80 MC	1	12
February 2010			
English–Language Arts	72 MC, 1 CR	104	711
Mathematics	80 MC	52	624
March 2010			
English–Language Arts	72 MC, 1 CR	155	1,059
Mathematics	80 MC	78	936
May 2010			
English–Language Arts	72 MC, 1 CR	1	7
Mathematics	80 MC	1	12

¹ In some cases, the same field-test items may have 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: ELA and Mathematics Strands

ELA Content Strand	Number of Items	Mathematics Content Strand	Number of Items
Word Analysis (RW)	7	Probability & Statistics (PS)	13
Reading Comprehension (RC)	18	Number Sense (NS)	17
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 administration 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 2009–10 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), and 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 are 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 district coordinators, test examiners, proctors, and scribes. The responsibilities for each staff member are included in the *CAHSEE District and Test Site Coordinator's Manual (DTSCM; CDE, 2009a)*, 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 2009b) includes directions to be read aloud to students as well as procedures the test administrator is to follow to assure 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.

District and Test Site Coordinator’s Manual. The *DTSCM* 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 <ul style="list-style-type: none"> – Chinese – Japanese – Korean – Vietnamese – Asian Indian – Laotian – Cambodian – Hmong – Other Asian Pacific Islander <ul style="list-style-type: none"> – 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

Test Variations, Accommodations and Modifications

Grade 10, 11, and 12 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, students with disabilities are exempted from meeting the CAHSEE requirement until alternative means to the CAHSEE are implemented. Many students with disabilities and English Learners (EL) 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 also must 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 "Far Below Basic" for API calculations and "Not Proficient" for AYP calculations. The only exception is the calculator use in the math exam. This modification is accepted and counted as tested. The proficient cut point is a little higher than 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 district test site coordinators, who will grid all accommodations and modifications that are actually used during the testing in Box 13 of the students' answer documents. The shaded sections and the sections that cannot be gridded 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 gridded for the ELA portion. The two letter abbreviations included to the right of the description in Table 2.4 are used to reference the modification 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, assisted devices, scribe, spell checker, grammar checker or an English dictionary.

Table 2.4: CAHSEE Modification/Accommodation Table: 2009–10

A. Student marks in test booklet (other than responses) - <i>Cannot be gridded for CAHSEE</i>		M. Test administered at home or in hospital by test examiner. Accommodation	HH
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	N. Dictionary. ELA Modification; Math Modification	DI(E) DM(M)
C. Responses dictated [orally, or in Manually Coded English or American Sign Language] to a scribe for selected-response items (MC questions). Accommodation	OR	O. Manually Coded English or American Sign Language to present test questions. ELA Modification; Math Accommodation	SL
D. Word processing software with spell and grammar check tools turned off for the essay responses (writing portion of the test) - <i>Cannot be gridded on the math portion of box number 13, ELA side only.</i> ELA Accommodation	SO	P. Test questions read aloud to student or audio presentation (CD). ELA Modification; Math Accommodation	OP
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. - <i>Cannot be gridded on the math portion of box 13, ELA side only.</i> ELA Accommodation	EO	Q. Calculators on mathematics test. - <i>Cannot be gridded for the ELA portion of box 13, math side only.</i> Math Modification	CA
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) - <i>Cannot be gridded on the math portion of box number 13, ELA side only.</i> ELA Accommodation	AN	R. Arithmetic table on mathematics test. - <i>Cannot be gridded for the ELA portion of box 13, math side only.</i> Math Modification	AT
G. Braille transcriptions provided by the test contractor. ELA Accommodation	BV	S. Math manipulatives on mathematics test. - <i>Cannot be gridded for the ELA portion of box 13, math side only.</i> Math Modification	MM
H. Large print versions. Test items enlarged if font larger than required on large print version. Accommodation	LV	T. Word processing software with spell and grammar check tools enabled on the essay responses writing portion of the test. - <i>Cannot be gridded for the math portion of box 13, ELA side only.</i> ELA Modification	SC
I. Extra time on test within a testing day. - <i>Cannot be gridded for CAHSEE</i>		U. Essay responses dictated orally, in Manually Coded English, or in American Sign Language to a scribe, [audio recorder, or speech-to-text converter] (scribe provides spelling, grammar, and language conventions). - <i>Cannot be gridded for the math portion of box 13, ELA side only.</i> ELA Modification	ER
J. Test over more than one day for a test or test part to be administered in a single sitting. Accommodation	TD	V. Assistive device that interferes with the independent work of the student on the MC and/or essay responses. Modification	AD
K. Supervised breaks within a section of the test. Accommodation	SB	W. Unlisted Modification. Modification	UM
L. Administration of the test at the most beneficial time of day to the student. Accommodation	BT	X. Unlisted Accommodation. Accommodation	UA

Note: The shaded sections are not applicable to CAHSEE. The sections that cannot be gridded 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 2000–10 administrations. To simplify the presentation of these data, all tables for this section are located in Appendix 2.A to Appendix 2.G.

Tables 1 and 2 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 with specific learning disabilities across the seven administrations ranged from 265 to 29,945 for ELA and 263 to 29,639 for mathematics. For students who tested with accommodations or modifications, the rates of achieving a score of 350 or higher ranged from 15 to 24 percent for ELA and from 13 to 24 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 present the percent 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, had responses dictated to a scribe for MC items, or had responses in the test booklet transferred to a scannable answer document achieved higher passing percentages. Tables 5 and 6 present scale scores at specific percentiles for each accommodation group.

Tables 7 and 8 present summary statistics for the breakdown of each testing variation by reported disability. Tables 9 and 10 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, English learner) were directions read aloud or signed, additional breaks, and had access to a glossary or word list. English-only speakers outperformed other categories in most but not all instances.

Table 2.5: Listing of Tables—Summary statistics for Testing Variations and Disability

Table¹	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

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 also is report. 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 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 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. Tables 7 and 8 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 2009–10 items were calibrated and placed on the reference scale using a set of linking items selected from the 2009 forms and re-administered in 2010. 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 reported 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 2009

Table 2.A.1: Summary Statistics by Testing Variations and Disability—ELA, July 2009

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	323	326	25	16
Modifications	1,379	329	24	18
All	1,702	328	24	17
Disability				
Mental Retardation	88	309	24	7
Hard of Hearing	41	324	26	24
Deaf	18	321	16	0
Speech or Language Impairment	138	330	22	17
Visual Impairment	-	-	-	-
Emotional Disturbance	220	327	29	21
Orthopedic Impairment	27	332	21	19
Other Health Impairment	145	330	21	17
Specific Learning Disability	2,657	326	23	15
Deaf-Blindness	-	-	-	-
Multiple Disabilities	-	-	-	-
Autism	77	326	24	10
Traumatic Brain Injury	16	325	22	13

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.A.2: Summary Statistics by Testing Variations and Disability—Mathematics, July 2009

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	238	335	23	19
Modifications	1,954	336	20	21
All	2,192	336	21	21
Disability				
Mental Retardation	75	323	17	8
Hard of Hearing	29	330	15	10
Deaf	-	-	-	-
Speech or Language Impairment	125	335	18	18
Visual Impairment	-	-	-	-
Emotional Disturbance	262	337	24	24
Orthopedic Impairment	30	335	17	17
Other Health Impairment	173	339	19	27
Specific Learning Disability	2,632	334	20	19
Deaf-Blindness	-	-	-	-
Multiple Disabilities	-	-	-	-
Autism	65	336	21	17
Traumatic Brain Injury	15	333	16	13

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.A.3: Demographic Summary for All Examinees by Testing Variations—ELA, July 2009

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading ²			Writing ² Mean Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 plan	2,640	422	16	2,218	84	327	53	47	53	41	48	1.9
Transfer of T/B Responses to A/D (TS)	14	3	21	11	79	329	48	51	52	52	51	1.8
Oral Responses Dictated to a Scribe (OR)	16	5	31	11	69	336	62	51	53	47	58	2.2
Spell Checker/Grammar Checker Off (SO)	44	8	18	36	82	330	57	47	56	40	50	2.1
Essay Responses (EO)	29	7	24	22	76	326	56	44	49	39	49	2.1
Assistive Device No Interference (AN)	-	-	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	202	24	12	178	88	326	54	45	53	41	48	2.0
Supervised Breaks (SB)	427	70	16	357	84	327	54	47	53	42	47	1.9
Beneficial Time (BT)	39	10	26	29	74	328	56	51	53	45	48	1.7
Tested At Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	445	73	16	372	84	328	58	47	53	42	48	2.0
Sign Language (SL)	16	3	19	13	81	324	61	44	49	43	48	1.8
Oral Presentation (OP)	1,155	214	19	941	81	330	55	49	56	43	49	2.0
Spell Checker or Grammar Checker (SC)	169	28	17	141	83	331	54	47	57	42	49	2.2
Essay Responses (ER)	31	5	16	26	84	329	60	45	53	41	48	2.2
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	52	7	13	45	87	322	46	45	49	39	49	1.8

¹ Results for groups with less than 11 students are not reported.

² RW — Word Analysis, RC — Reading Comprehension, RL — Literary Responses/Analysis, WS — Writing Strategies, WC — Writing Conventions

Table 2.A.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, July 2009

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	2,728	572	21	2,156	79	336	46	45	40	39	35
Transfer of T/B Responses to A/D (TS)	12	4	33	8	67	342	54	47	44	42	38
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	128	39	30	89	70	341	49	50	43	43	38
Supervised Breaks (SB)	369	86	23	283	77	337	47	45	40	41	35
Beneficial Time (BT)	40	13	33	27	68	347	53	51	48	48	38
Tested At Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	63	19	30	44	70	344	53	56	43	44	38
Sign Language (SL)	11	2	18	9	82	337	45	47	35	44	36
Oral Presentation (OP)	629	155	25	474	75	338	48	46	41	41	36
Calculator (CA)	1,933	411	21	1,522	79	336	46	46	40	39	36
Arithmetic Table (AT)	229	54	24	175	76	337	46	46	40	41	35
Math Manipulative (MM)	-	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	11	8	73	3	27	355	60	70	44	52	43
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	39	3	8	36	92	329	37	41	36	37	29

¹ Results for groups with less 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 2009

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 plan	275	288	311	327	343	368	389	327	24	2,640
Transfer of T/B Responses to A/D (TS)	284	284	315	325	349	373	373	329	24	14
Oral Responses Dictated to a Scribe (OR)	284	284	313	338	366	383	383	336	31	16
Spell Checker/Grammar Checker Off (SO)	282	296	317	327	343	373	392	330	22	44
Essay Responses (EO)	284	284	300	327	345	378	392	326	29	29
Assistive Device No Interference (AN)	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	280	294	311	327	341	361	383	326	21	202
Supervised Breaks (SB)	275	288	310	325	343	370	392	327	25	427
Beneficial Time (BT)	275	275	300	327	355	373	392	328	30	39
Tested At Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	275	292	313	327	343	370	383	328	23	445
Sign Language (SL)	278	278	315	325	333	353	353	324	19	16
Oral Presentation (OP)	275	292	313	329	345	373	392	330	24	1,155
Spell Checker or Grammar Checker (SC)	278	296	315	333	341	373	418	331	24	169
Essay Responses (ER)	300	302	315	327	331	378	386	329	22	31
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	284	288	302	321	338	381	389	322	26	52

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.A.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, July 2009

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 plan	294	305	321	335	347	373	396	336	21	2,728
Transfer of T/B Responses to A/D (TS)	310	310	324	335	361	388	388	342	24	12
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	297	305	323	337	355	391	417	341	25	128
Supervised Breaks (SB)	291	303	321	336	349	375	407	337	23	369
Beneficial Time (BT)	308	312	322	342	366	414	417	347	30	40
Tested At Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	275	305	327	342	358	393	396	344	26	63
Sign Language (SL)	310	310	327	335	342	364	364	337	15	11
Oral Presentation (OP)	294	305	321	335	349	381	401	338	23	629
Calculator (CA)	294	308	323	335	347	373	396	336	20	1,933
Arithmetic Table (AT)	288	297	321	336	349	386	410	337	25	229
Math Manipulative (MM)	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	317	317	346	353	364	396	396	355	20	11
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	297	300	319	331	338	355	356	329	14	39

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.A.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, July 2009

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Beneficial Time	Emotional Disturbance	24	334	30	33
Dictionary	Speech or Language Impairment	23	334	23	22
	Emotional Disturbance	13	329	32	23
	Specific Learning Disability	324	328	22	15
Essay Responses (EO)	Specific Learning Disability	15	319	22	20
Essay Responses (ER)	Specific Learning Disability	21	333	26	24
IEP or Section 504 Plan	Mental Retardation	67	309	24	9
	Hard of Hearing	32	325	26	25
	Deaf	15	322	17	0
	Speech or Language Impairment	101	329	21	14
	Emotional Disturbance	167	325	28	17
	Orthopedic Impairment	19	327	23	11
	Other Health Impairment	98	331	20	16
	Specific Learning Disability	1,811	327	23	16
	Autism	50	325	24	12
	Mental Retardation	42	310	25	10
	Oral Presentation	Hard of Hearing	12	332	22	33
Speech or Language Impairment		44	329	22	11
Emotional Disturbance		40	331	30	25
Other Health Impairment		42	326	21	17
Specific Learning Disability		839	330	23	18
Autism		20	324	30	20
Spell Checker Or Grammar Checker	Specific Learning Disability	114	331	21	14
Spell Checker Or Grammar Checker Off	Specific Learning Disability	26	330	25	19
Supervised Breaks	Emotional Disturbance	52	329	29	25
	Other Health Impairment	11	315	17	0
	Specific Learning Disability	302	328	25	16
Test Over More Than One Day	Emotional Disturbance	12	331	26	8
	Specific Learning Disability	145	325	20	11
Unlisted Accommodation	Specific Learning Disability	39	322	27	15

¹ Results for groups with less 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 2009

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Arithmetic Table	Emotional Disturbance	11	346	32	45
	Specific Learning Disability	168	336	25	23
Beneficial Time	Emotional Disturbance	27	347	30	33
Calculator	Mental Retardation	38	324	20	11
	Hard of Hearing	20	328	15	10
	Speech or Language Impairment	70	336	17	21
	Emotional Disturbance	104	338	22	25
	Orthopedic Impairment	19	333	20	21
	Other Health Impairment	98	341	20	30
	Specific Learning Disability	1,339	336	20	21
	Autism	36	336	16	17
Dictionary for Math	Specific Learning Disability	53	343	25	26
IEP or Section 504 Plan	Mental Retardation	61	322	18	8
	Hard of Hearing	23	330	15	9
	Speech or Language Impairment	91	336	19	22
	Emotional Disturbance	200	337	24	25
	Orthopedic Impairment	25	334	18	16
	Other Health Impairment	123	341	20	31
	Specific Learning Disability	1,864	335	20	20
	Autism	49	337	20	20
	Traumatic Brain Injury	12	338	15	17
Oral Presentation	Mental Retardation	24	320	18	13
	Speech or Language Impairment	20	331	18	15
	Emotional Disturbance	35	350	30	40
	Other Health Impairment	29	346	23	41
	Specific Learning Disability	426	337	22	23
	Autism	14	338	26	7
Supervised Breaks	Emotional Disturbance	59	340	26	31
	Other Health Impairment	15	337	22	20
	Specific Learning Disability	243	336	21	21
Test Over More Than One Day	Emotional Disturbance	12	368	30	75
	Specific Learning Disability	91	336	22	24
Unlisted Accommodation	Specific Learning Disability	32	330	13	9

¹ Results for groups with less 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 2009

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Beneficial Time	English Only	31	329	30	26
Dictionary	English Only	186	331	25	22
	English Learner	234	325	21	11
	Unknown	11	334	24	18
Essay Responses (EO)	English Learner	15	318	23	20
Essay Responses (ER)	English Only	14	336	25	21
	English Learner	15	322	19	13
IEP or Section 504 Plan	English Only	1,245	330	25	20
	Initially Fluent English Proficient	66	335	25	24
	Reclassified Fluent English Proficient	68	334	23	18
	English Learner	1,145	323	22	11
	Unknown	116	333	24	22
Oral Presentation	English Only	549	333	25	24
	Initially Fluent English Proficient	23	340	19	26
	Reclassified Fluent English Proficient	28	334	22	14
	English Learner	496	325	22	13
	Unknown	59	332	23	17
Sign Language	English Only	12	323	20	17
Spell Checker Or Grammar Checker	English Only	64	338	26	20
	English Learner	59	324	20	12
	Unknown	37	330	24	19
Spell Checker Or Grammar Checker Off	English Only	25	340	22	32
	English Learner	17	317	16	0
Supervised Breaks	English Only	182	330	27	20
	Initially Fluent English Proficient	12	340	24	33
	Reclassified Fluent English Proficient	13	342	29	23
	English Learner	200	322	22	11
	Unknown	20	332	28	25
Test Over More Than One Day	English Only	79	330	23	14
	English Learner	112	322	19	8
Unlisted Accommodation	English Only	15	321	27	13
	English Learner	30	322	27	13

¹ Results for groups with less 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 2009

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English Only	110	340	27	32
	English Learner	92	334	23	17
	Unknown	21	326	13	0
Beneficial Time	English Only	35	345	30	29
Calculator	English Only	1,028	337	21	22
	Initially Fluent English Proficient	43	343	24	37
	Reclassified Fluent English Proficient	60	341	17	25
	English Learner	714	334	19	18
	Unknown	88	341	25	26
Dictionary for Math	English Only	31	347	27	29
	English Learner	30	341	24	27
IEP or Section 504 Plan	English Only	1,463	337	21	23
	Initially Fluent English Proficient	72	341	21	31
	Reclassified Fluent English Proficient	78	340	18	26
	English Learner	1,003	333	19	17
	Unknown	112	340	25	24
Oral Presentation	English Only	308	340	24	27
	Initially Fluent English Proficient	11	349	16	64
	Reclassified Fluent English Proficient	17	331	15	6
	English Learner	264	335	22	21
	Unknown	29	340	25	28
Supervised Breaks	English Only	185	339	24	26
	Initially Fluent English Proficient	13	343	19	38
	English Learner	149	333	21	18
	Unknown	16	327	16	6
Test Over More Than One Day	English Only	58	348	28	41
	English Learner	65	334	22	18
Unlisted Accommodation	English Only	11	325	11	0
	English Learner	26	331	14	12

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Appendix 2.B: Results of Testing Variations and Disability Analyses—October 2009

Table 2.B.1: Summary Statistics by Testing Variations and Disability—ELA, October 2009

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	1,242	322	27	15
Modifications	2,694	328	25	20
All	3,936	326	26	18
Disability				
Unknown	-	-	-	-
Mental Retardation	296	303	20	3
Hard of Hearing	113	320	24	12
Deaf	163	308	19	2
Speech or Language Impairment	458	325	23	14
Visual Impairment	35	328	28	26
Emotional Disturbance	668	324	32	21
Orthopedic Impairment	79	324	26	19
Other Health Impairment	527	330	27	24
Specific Learning Disability	7,599	326	25	17
Multiple Disabilities	23	312	24	9
Autism	194	323	26	13
Traumatic Brain Injury	33	320	25	12

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.B.2: Summary Statistics by Testing Variations and Disability—Mathematics, October 2009

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	991	330	22	17
Modifications	4,283	331	21	17
All	5,274	331	21	17
Disability				
Unknown	-	-	-	-
Mental Retardation	292	314	17	3
Hard of Hearing	90	331	21	16
Deaf	108	323	17	5
Speech or Language Impairment	421	331	19	16
Visual Impairment	39	325	21	10
Emotional Disturbance	748	330	25	20
Orthopedic Impairment	86	326	22	10
Other Health Impairment	627	334	21	21
Specific Learning Disability	7,525	331	20	16
Multiple Disabilities	22	318	14	0
Autism	191	327	23	13
Traumatic Brain Injury	30	327	18	10

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.B.3: Demographic Summary for All Examinees by Testing Variations—ELA, October 2009

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
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 plan	7,795	1,335	17	6,460	83	325	52	49	52	36	47	1.9
Transfer of T/B Responses to A/D (TS)	52	10	19	42	81	326	53	49	52	38	52	1.8
Oral Responses Dictated to a Scribe (OR)	64	16	25	48	75	332	60	52	56	39	50	2.0
Spell Checker/Grammar Checker Off (SO)	73	19	26	54	74	331	58	53	54	41	52	1.9
Essay Responses (EO)	50	11	22	39	78	331	57	54	55	41	48	1.9
Assistive Device No Interference (AN)	54	11	20	43	80	326	53	50	52	38	49	1.9
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	24	4	17	20	83	323	52	48	54	33	49	1.7
Test Over More Than One Day (TD)	446	76	17	370	83	325	50	49	52	38	47	1.9
Supervised Breaks (SB)	1,384	231	17	1,153	83	323	52	48	51	35	45	1.8
Beneficial Time (BT)	221	27	12	194	88	319	49	47	49	33	42	1.7
Tested At Home or Hospital (HH)	17	8	47	9	53	349	61	68	61	46	58	2.1
Dictionary (DI)	814	179	22	635	78	329	57	52	55	38	47	1.9
Sign Language (SL)	38	4	11	34	89	318	49	44	49	30	45	1.7
Oral Presentation (OP)	2,218	470	21	1,748	79	330	56	53	55	39	49	1.9
Spell Checker or Grammar Checker (SC)	178	49	28	129	72	333	60	54	57	41	51	2.0
Essay Responses (ER)	43	10	23	33	77	333	57	50	55	37	52	2.3
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	34	6	18	28	82	324	52	54	54	40	46	1.5
Unlisted Accommodation (UA)	230	34	15	196	85	324	51	49	51	35	48	1.9

¹ Results for groups with less than 11 students are not reported.

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

Table 2.B.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, October 2009

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	8,104	1,313	16	6,791	84	330	45	43	41	37	33
Transfer of T/B Responses to A/D (TS)	47	7	15	40	85	329	43	39	40	37	35
Oral Responses Dictated to a Scribe (OR)	16	8	50	8	50	343	56	60	55	35	33
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	29	4	14	25	86	331	43	43	41	38	35
Test Over More Than One Day (TD)	242	32	13	210	87	325	43	41	37	34	30
Supervised Breaks (SB)	1,189	181	15	1,008	85	329	44	42	40	36	33
Beneficial Time (BT)	180	27	15	153	85	329	43	45	39	37	31
Tested At Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	163	32	20	131	80	332	46	48	40	37	34
Sign Language (SL)	15	4	27	11	73	336	46	50	47	37	36
Oral Presentation (OP)	1,445	258	18	1,187	82	332	46	44	41	38	34
Calculator (CA)	4,215	692	16	3,523	84	331	45	45	40	37	33
Arithmetic Table (AT)	442	95	21	347	79	335	50	49	42	39	34
Math Manipulative (MM)	39	15	38	24	62	341	59	51	45	48	31
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	51	21	41	30	59	342	50	53	45	50	37
Unlisted Accommodation (UA)	239	43	18	196	82	331	47	43	41	37	33

¹ Results for groups with less 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 2009

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	307	325	342	368	392	325	26	7,795
Transfer of T/B Responses to A/D (TS)	275	280	305	328	344	376	402	326	29	52
Oral Responses Dictated to a Scribe (OR)	280	288	313	327	350	378	441	332	30	64
Spell Checker/Grammar Checker Off (SO)	278	288	307	329	351	384	429	331	31	73
Essay Responses (EO)	280	290	309	325	344	399	441	331	32	50
Assistive Device No Interference (AN)	282	288	305	330	342	364	396	326	25	54
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	275	276	305	324	342	353	359	323	24	24
Test Over More Than One Day (TD)	275	284	305	325	344	371	389	325	26	446
Supervised Breaks (SB)	275	284	303	321	340	371	396	323	27	1,384
Beneficial Time (BT)	275	275	302	319	336	364	378	319	25	221
Tested At Home or Hospital (HH)	296	296	313	336	357	434	434	349	43	17
Dictionary (DI)	276	288	309	327	346	376	399	329	27	814
Sign Language (SL)	275	278	303	311	332	357	384	318	24	38
Oral Presentation (OP)	275	290	311	330	346	373	396	330	25	2,218
Spell Checker or Grammar Checker (SC)	276	296	315	332	351	368	399	333	25	178
Essay Responses (ER)	290	298	313	332	344	381	402	333	26	43
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	275	275	300	329	342	368	373	324	29	34
Unlisted Accommodation (UA)	275	284	305	326	342	364	378	324	24	230

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.B.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, October 2009

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 plan	288	299	315	329	344	368	389	330	21	8,104
Transfer of T/B Responses to A/D (TS)	291	297	309	329	342	368	427	329	27	47
Oral Responses Dictated to a Scribe (OR)	304	304	325	350	359	380	380	343	22	16
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	297	299	315	335	344	360	376	331	20	29
Test Over More Than One Day (TD)	275	288	309	324	342	366	394	325	24	242
Supervised Breaks (SB)	275	297	313	327	342	372	392	329	23	1,189
Beneficial Time (BT)	275	296	313	329	344	366	376	329	21	180
Tested At Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	284	299	320	329	346	368	376	332	21	163
Sign Language (SL)	302	302	325	331	351	368	368	336	18	15
Oral Presentation (OP)	288	302	315	329	344	374	397	332	22	1,445
Calculator (CA)	284	299	315	329	344	368	387	331	21	4,215
Arithmetic Table (AT)	288	302	322	333	347	370	387	335	21	442
Math Manipulatives (MM)	302	309	324	338	360	372	374	341	21	39
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	275	302	325	340	362	378	392	342	25	51
Unlisted Accommodation (UA)	291	299	315	329	347	368	376	331	20	239

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.B.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, October 2009

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Assistive Device No Interference	Specific Learning Disability	39	325	24	21
Beneficial Time	Mental Retardation	12	298	16	0
	Speech or Language Impairment	15	326	26	13
	Emotional Disturbance	50	317	27	16
	Specific Learning Disability	106	323	25	14
Dictionary	Mental Retardation	20	302	23	5
	Speech or Language Impairment	18	317	23	11
	Emotional Disturbance	27	337	21	22
	Other Health Impairment	42	337	27	38
	Specific Learning Disability	629	330	26	22
Essay Responses (EO)	Specific Learning Disability	29	332	27	24
Essay Responses (ER)	Specific Learning Disability	25	331	22	16
IEP or Section 504 Plan	Mental Retardation	225	303	19	3
	Hard of Hearing	75	316	22	12
	Deaf	52	312	18	2
	Speech or Language Impairment	323	322	22	10
	Visual Impairment	26	326	25	19
	Emotional Disturbance	463	324	31	20
	Orthopedic Impairment	59	321	26	14
	Other Health Impairment	380	330	27	23
	Specific Learning Disability	5,347	326	25	17
	Multiple Disabilities	16	305	20	6
	Autism	154	322	27	14
Traumatic Brain Injury	26	321	27	15	
Large Print Version	Visual Impairment	11	328	23	18
Oral Presentation	Mental Retardation	86	309	21	3
	Hard of Hearing	19	309	22	11
	Speech or Language Impairment	96	325	21	11
	Emotional Disturbance	75	333	25	27
	Orthopedic Impairment	21	329	29	19
	Other Health Impairment	108	333	25	27
	Specific Learning Disability	1,598	331	25	22
	Autism	39	325	22	18
	Specific Learning Disability	45	334	23	29
Oral Responses Dictated to a Scribe	Specific Learning Disability	45	334	23	29
Sign Language	Deaf	25	311	19	0
Spell Checker Or Grammar Checker	Emotional Disturbance	11	338	29	27
	Other Health Impairment	12	336	28	33
	Specific Learning Disability	111	336	25	32
Spell Checker Or Grammar Checker Off	Specific Learning Disability	31	332	27	32
Supervised Breaks	Mental Retardation	60	301	18	0
	Speech or Language Impairment	53	324	22	8
	Emotional Disturbance	126	322	29	17
	Orthopedic Impairment	12	323	23	8

Table 2.B.7 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Supervised Breaks	Other Health Impairment	64	328	27	23
	Specific Learning Disability	907	324	27	18
	Autism	30	321	24	10
Test Over More Than One Day	Mental Retardation	19	307	18	0
	Speech or Language Impairment	21	334	29	24
	Emotional Disturbance	42	327	26	24
	Other Health Impairment	17	327	27	29
	Specific Learning Disability	294	325	26	16
	Autism	11	327	31	18
Transfer of Student T/B Responses to A/D	Specific Learning Disability	17	327	24	18
Unlisted Accommodation	Other Health Impairment	16	337	22	31
	Specific Learning Disability	164	324	24	14
Unlisted Modification	Specific Learning Disability	20	333	26	30

¹ Results for groups with less 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 2009

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	Emotional Disturbance	15	332	15	7
	Other Health Impairment	33	338	21	24
	Specific Learning Disability	338	335	22	23
Beneficial Time	Mental Retardation	13	320	15	0
	Speech or Language Impairment	12	320	23	8
	Emotional Disturbance	32	324	24	16
	Other Health Impairment	12	334	12	8
	Specific Learning Disability	91	334	21	21
Calculator	Mental Retardation	144	317	16	4
	Hard of Hearing	34	329	24	15
	Deaf	13	322	16	8
	Speech or Language Impairment	187	328	18	12
	Visual Impairment	12	325	17	8
	Emotional Disturbance	213	330	25	22
	Orthopedic Impairment	36	328	26	14
	Other Health Impairment	253	335	20	20
	Specific Learning Disability	2,901	331	21	17
	Multiple Disabilities	12	319	15	0
	Autism	86	324	23	13
	Traumatic Brain Injury	12	330	14	8
	Dictionary for Math	Other Health Impairment	13	332	17	8
Specific Learning Disability		124	334	22	22
IEP or Section 504 Plan	Mental Retardation	233	315	16	3
	Hard of Hearing	69	330	21	14
	Deaf	32	324	19	9
	Speech or Language Impairment	318	330	19	13
	Visual Impairment	30	328	19	13
	Emotional Disturbance	536	330	25	19
	Orthopedic Impairment	70	327	22	11
	Other Health Impairment	464	334	20	21
	Specific Learning Disability	5,482	331	20	16
	Multiple Disabilities	17	317	14	0
	Autism	153	326	25	13
	Traumatic Brain Injury	26	327	19	12
	Visual Impairment	11	335	24	27
	Specific Learning Disability	26	342	22	42
Math Manipulatives	Specific Learning Disability	26	342	22	42
	Specific Learning Disability	26	342	22	42
Oral Presentation	Mental Retardation	74	319	16	4
	Speech or Language Impairment	55	332	20	24
	Emotional Disturbance	47	334	24	21
	Orthopedic Impairment	20	329	30	20
	Other Health Impairment	89	337	19	16
	Specific Learning Disability	1,017	332	22	18
	Autism	23	328	30	30

Table 2.B.8 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Supervised Breaks	Mental Retardation	57	316	19	4
	Speech or Language Impairment	45	329	22	16
	Emotional Disturbance	108	326	24	14
	Orthopedic Impairment	14	327	17	7
	Other Health Impairment	66	333	18	14
	Specific Learning Disability	764	330	23	16
	Autism	25	324	22	12
Test Over More Than One Day	Mental Retardation	17	310	18	0
	Speech or Language Impairment	11	323	16	0
	Emotional Disturbance	20	326	23	15
	Other Health Impairment	11	324	26	9
	Specific Learning Disability	159	327	25	17
Transfer of Student T/B Responses to A/D	Specific Learning Disability	17	329	13	0
Unlisted Accommodation	Emotional Disturbance	11	335	23	27
	Other Health Impairment	21	339	18	24
	Specific Learning Disability	168	330	20	18
Unlisted Modification	Specific Learning Disability	41	345	22	41

¹ Results for groups with less 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 2009

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Assistive Device No Interference	English Only	25	328	29	28
	English Learner	23	321	21	4
Beneficial Time	English Only	177	319	25	11
	English Learner	40	318	23	13
Dictionary	English Only	447	333	27	26
	Initially Fluent English Proficient	17	341	23	53
	Reclassified Fluent English Proficient	15	340	21	40
Essay Responses (EO)	English Only	36	334	36	28
	English Learner	12	323	17	8
Essay Responses (ER)	English Only	34	333	24	18
IEP or Section 504 Plan	English Only	4,512	327	27	20
	Initially Fluent English Proficient	230	326	26	20
	Reclassified Fluent English Proficient	199	335	24	30
	English Learner	2,807	321	23	12
	Unknown	47	322	26	13
Large Print Version	English Only	14	325	23	21
Oral Presentation	English Only	1,263	332	27	24
	Initially Fluent English Proficient	62	330	22	21
	Reclassified Fluent English Proficient	71	336	25	35
	English Learner	811	326	23	16
	Unknown	11	322	19	0
Oral Responses Dictated to a Scribe	English Only	50	334	32	30
Sign Language	English Learner	30	313	20	7
Spell Checker Or Grammar Checker	English Only	132	334	26	29
	English Learner	37	332	20	27
Spell Checker Or Grammar Checker Off	English Only	62	331	33	26
Supervised Breaks	English Only	860	325	29	19
	Initially Fluent English Proficient	41	322	26	17
	Reclassified Fluent English Proficient	32	333	24	22
	English Learner	439	319	24	12
	Unknown	12	319	22	8
Test Over More Than One Day	English Only	318	325	27	17
	Initially Fluent English Proficient	13	335	17	15
	English Learner	106	324	23	14
Transfer of Student T/B Responses to A/D	English Only	39	329	29	21
Unlisted Accommodation	English Only	137	329	25	20
	English Learner	79	316	22	6
Unlisted Modification	English Only	22	329	29	18

¹ Results for groups with less 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 2009

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English Only	306	336	22	24
	Initially Fluent English Proficient	12	345	20	33
	English Learner	110	330	18	15
Beneficial Time	English Only	142	330	23	17
	English Learner	34	326	17	9
Calculator	English Only	2,589	331	22	18
	Initially Fluent English Proficient	117	334	16	15
	Reclassified Fluent English Proficient	128	335	20	22
	English Learner	1,334	329	19	12
	Unknown	47	333	21	11
Dictionary for Math	English Only	112	333	23	22
	English Learner	44	331	18	16
IEP or Section 504 Plan	English Only	4,985	331	22	18
	Initially Fluent English Proficient	248	333	21	18
	Reclassified Fluent English Proficient	242	337	20	24
	English Learner	2,561	328	19	12
	Unknown	68	332	22	15
Large Print Version	English Only	16	326	19	6
Math Manipulatives	English Only	33	344	20	45
Oral Presentation	English Only	852	332	24	20
	Initially Fluent English Proficient	45	337	22	22
	Reclassified Fluent English Proficient	41	338	23	27
	English Learner	498	329	20	13
Oral Responses Dictated to a Scribe	English Only	11	350	19	64
Supervised Breaks	English Only	787	329	23	15
	Initially Fluent English Proficient	37	331	22	14
	Reclassified Fluent English Proficient	31	339	20	23
	English Learner	333	329	22	14
Test Over More Than One Day	English Only	170	325	26	14
	English Learner	61	325	19	8
Transfer of Student T/B Responses to A/D	English Only	35	328	26	11
Unlisted Accommodation	English Only	149	334	21	23
	English Learner	78	327	17	9
Unlisted Modification	English Only	32	345	25	50
	English Learner	16	339	26	31

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Appendix 2.C: Results of Testing Variations and Disability Analyses—November 2009

Table 2.C.1: Summary Statistics by Testing Variations and Disability—ELA, November 2009

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	3,087	325	26	17
Modifications	6,591	330	24	21
All	9,678	328	24	20
Disability				
Unknown	-	-	-	-
Mental Retardation	635	305	20	3
Hard of Hearing	297	327	24	14
Deaf	234	310	24	7
Speech or Language Impairment	1,232	330	24	21
Visual Impairment	71	331	26	24
Emotional Disturbance	1,564	325	32	23
Orthopedic Impairment	198	329	27	27
Other Health Impairment	1,520	331	27	25
Specific Learning Disability	18,895	327	24	18
Deaf-Blindness	-	-	-	-
Multiple Disabilities	45	317	25	9
Autism	555	328	26	22
Traumatic Brain Injury	99	321	23	10

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.C.2: Summary Statistics by Testing Variations and Disability—Mathematics, November 2009

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	2,739	332	23	20
Modifications	10,127	336	21	24
All	12,866	335	22	23
Disability				
Unknown	-	-	-	-
Mental Retardation	652	317	18	5
Hard of Hearing	244	336	21	23
Deaf	182	327	18	10
Speech or Language Impairment	1,179	336	21	25
Visual Impairment	92	341	32	26
Emotional Disturbance	1,756	332	26	22
Orthopedic Impairment	212	336	22	24
Other Health Impairment	1,730	337	24	28
Specific Learning Disability	18,628	334	21	21
Deaf-Blindness	-	-	-	-
Multiple Disabilities	42	326	21	12
Autism	555	335	24	24
Traumatic Brain Injury	96	331	19	19

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.C.3: Demographic Summary for All Examinees by Testing Variations—ELA, November 2009

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading ²			Writing ²		Writing Applications
							Mean Percent Correct			Mean Percent Correct		Mean Score
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 plan	19,681	3,700	19	15,981	81	327	53	49	49	39	47	1.9
Transfer of T/B Responses to A/D (TS)	83	21	25	62	75	331	53	49	49	40	53	2.1
Oral Responses Dictated to a Scribe (OR)	88	46	52	42	48	344	65	62	59	52	57	2.0
Spell Checker/Grammar Checker Off (SO)	151	50	33	101	67	336	58	54	54	45	53	2.2
Essay Responses (EO)	103	43	42	60	58	339	57	57	57	45	52	2.1
Assistive Device No Interference (AN)	99	24	24	75	76	331	58	53	53	39	49	2.0
Braille Version (BV)	11	6	55	5	45	346	74	63	57	60	56	2.1
Large Print Version (LV)	55	17	31	38	69	333	55	52	53	44	51	2.0
Test Over More Than One Day (TD)	1,218	264	22	954	78	329	54	50	50	41	48	2.0
Supervised Breaks (SB)	3,734	673	18	3,061	82	326	53	48	49	39	46	1.9
Beneficial Time (BT)	413	70	17	343	83	322	54	46	46	36	43	1.8
Tested At Home or Hospital (HH)	44	15	34	29	66	340	61	55	57	45	52	2.1
Dictionary (DI)	1,966	412	21	1,554	79	329	56	50	51	40	47	2.0
Sign Language (SL)	86	9	10	77	90	320	45	43	45	34	44	1.9
Oral Presentation (OP)	5,429	1,192	22	4,237	78	331	56	51	54	41	48	2.0
Spell Checker or Grammar Checker (SC)	650	144	22	506	78	332	55	52	53	41	49	2.1
Essay Responses (ER)	122	31	25	91	75	334	57	51	54	43	49	2.2
Assistive Device (AD)	15	3	20	12	80	332	58	54	47	40	45	2.3
Unlisted Modification (UM)	121	20	17	101	83	325	52	46	48	38	45	2.0
Unlisted Accommodation (UA)	458	73	16	385	84	324	52	47	47	38	45	1.9

¹ Results for groups with less than 11 students are not reported.

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

Table 2.C.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, November 2009

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	20,214	4,501	22	15,713	78	334	45	47	42	38	34
Transfer of T/B Responses to A/D (TS)	76	17	22	59	78	335	43	49	42	40	33
Oral Responses Dictated to a Scribe (OR)	69	20	29	49	71	342	50	53	45	45	38
Braille Version (BV)	13	3	23	10	77	339	43	52	42	42	40
Large Print Version (LV)	45	7	16	38	84	331	41	48	40	35	30
Test Over More Than One Day (TD)	728	152	21	576	79	332	43	45	40	38	34
Supervised Breaks (SB)	3,134	688	22	2,446	78	333	44	46	41	38	34
Beneficial Time (BT)	387	58	15	329	85	328	42	42	37	35	31
Tested At Home or Hospital (HH)	28	13	46	15	54	347	59	55	48	46	40
Dictionary for Math (DM)	220	54	25	166	75	336	44	51	42	38	35
Sign Language (SL)	104	19	18	85	82	331	39	47	41	35	35
Oral Presentation (OP)	3,373	886	26	2,487	74	337	46	50	43	40	36
Calculator (CA)	10,046	2,452	24	7,594	76	336	45	50	42	39	35
Arithmetic Table (AT)	770	173	22	597	78	335	44	50	41	39	34
Math Manipulative (MM)	107	47	44	60	56	347	53	58	48	47	43
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	65	24	37	41	63	343	50	57	47	42	37
Unlisted Accommodation (UA)	409	77	19	332	81	332	42	46	40	38	33

¹ Results for groups with less 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 2009

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	308	327	344	367	387	327	25	19,681
Transfer of T/B Responses to A/D (TS)	275	290	308	329	350	374	382	331	26	83
Oral Responses Dictated to a Scribe (OR)	286	296	323	351	361	382	390	344	26	88
Spell Checker/Grammar Checker Off (SO)	277	294	317	339	355	374	393	336	26	151
Essay Responses (EO)	284	298	319	341	359	382	390	339	26	103
Assistive Device No Interference (AN)	277	294	317	327	348	365	382	331	22	99
Braille Version (BV)	306	306	323	357	368	375	375	346	26	11
Large Print Version (LV)	275	279	310	333	355	381	387	333	27	55
Test Over More Than One Day (TD)	275	288	312	329	346	370	393	329	25	1,218
Supervised Breaks (SB)	275	286	308	325	343	367	390	326	25	3,734
Beneficial Time (BT)	275	281	302	321	341	367	384	322	26	413
Tested At Home or Hospital (HH)	275	296	315	337	359	399	450	340	34	44
Dictionary (DI)	275	288	312	329	346	370	384	329	24	1,966
Sign Language (SL)	281	286	300	317	337	363	387	320	24	86
Oral Presentation (OP)	279	292	313	331	346	370	390	331	24	5,429
Spell Checker or Grammar Checker (SC)	275	296	317	333	346	367	387	332	22	650
Essay Responses (ER)	290	300	313	333	350	377	396	334	26	122
Assistive Device (AD)	286	286	323	329	344	384	384	332	24	15
Unlisted Modification (UM)	279	288	308	325	343	361	374	325	23	121
Unlisted Accommodation (UA)	275	288	306	323	341	363	379	324	24	458

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.C.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, November 2009

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 plan	290	304	319	333	347	373	398	334	22	20,214
Transfer of T/B Responses to A/D (TS)	293	303	320	333	349	386	426	335	25	76
Oral Responses Dictated to a Scribe (OR)	275	298	329	336	359	395	414	342	28	69
Braille Version (BV)	306	306	323	338	349	386	386	339	25	13
Large Print Version (LV)	279	301	315	333	344	363	407	331	23	45
Test Over More Than One Day (TD)	275	296	315	330	347	373	398	332	24	728
Supervised Breaks (SB)	286	301	317	331	347	373	393	333	23	3,134
Beneficial Time (BT)	275	296	313	325	342	371	398	328	23	387
Tested At Home or Hospital (HH)	275	279	315	342	375	427	450	347	43	28
Dictionary for Math (DM)	286	304	321	335	349	377	398	336	23	220
Sign Language (SL)	293	298	317	331	345	361	393	331	20	104
Oral Presentation (OP)	296	304	319	335	351	381	401	337	23	3,373
Calculator (CA)	293	306	321	335	349	373	395	336	21	10,046
Arithmetic Table (AT)	296	306	321	335	347	371	398	335	21	770
Math Manipulatives (MM)	296	308	333	347	365	381	390	347	23	107
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	298	304	331	340	358	373	398	343	20	65
Unlisted Accommodation (UA)	296	301	317	329	345	369	398	332	21	409

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.C.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, November 2009

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Assistive Device No Interference	Specific Learning Disability	56	333	21	30
Beneficial Time	Emotional Disturbance	95	319	28	13
	Other Health Impairment	24	325	30	29
Dictionary	Specific Learning Disability	200	323	25	17
	Mental Retardation	57	311	22	4
	Hard of Hearing	23	326	23	17
	Deaf	26	307	22	4
	Speech or Language Impairment	73	326	24	18
	Emotional Disturbance	40	337	27	38
	Orthopedic Impairment	13	324	23	23
	Other Health Impairment	88	332	26	28
	Specific Learning Disability	1,445	330	24	21
	Autism	35	323	26	17
Essay Responses (EO)	Orthopedic Impairment	11	344	25	55
	Specific Learning Disability	49	338	26	41
Essay Responses (ER)	Deaf	12	320	18	0
	Specific Learning Disability	72	339	23	31
IEP or Section 504 Plan	Mental Retardation	502	306	20	3
	Hard of Hearing	184	325	22	11
	Deaf	146	309	24	9
	Speech or Language Impairment	780	327	24	17
	Visual Impairment	60	330	26	25
	Emotional Disturbance	1,180	325	32	23
	Orthopedic Impairment	142	330	26	28
	Other Health Impairment	1,086	330	26	24
	Specific Learning Disability	13,391	327	24	18
	Multiple Disabilities	39	315	25	8
	Autism	422	328	26	22
	Traumatic Brain Injury	77	321	22	8
Large Print Version	Visual Impairment	19	330	29	26
	Specific Learning Disability	12	334	31	50
Oral Presentation	Mental Retardation	192	314	20	5
	Hard of Hearing	33	329	22	12
	Speech or Language Impairment	244	327	23	14
	Visual Impairment	13	340	23	31
	Emotional Disturbance	132	331	29	30
	Orthopedic Impairment	47	328	24	23
	Other Health Impairment	288	336	24	29
	Specific Learning Disability	3,926	332	23	23
	Multiple Disabilities	16	318	21	13
	Autism	111	328	23	20
	Traumatic Brain Injury	32	323	16	6
Oral Responses Dictated to a Scribe	Orthopedic Impairment	15	333	27	40

Table 2.C.7 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Sign Language	Hard of Hearing	25	322	21	8
	Deaf	44	314	22	5
Spell Checker Or Grammar Checker	Mental Retardation	36	315	17	6
	Speech or Language Impairment	22	335	19	9
	Emotional Disturbance	12	327	21	8
	Other Health Impairment	47	332	25	19
	Specific Learning Disability	467	334	22	24
	Autism	13	334	18	23
Spell Checker Or Grammar Checker Off	Specific Learning Disability	90	335	20	23
Supervised Breaks	Mental Retardation	134	310	22	4
	Hard of Hearing	26	326	20	12
	Speech or Language Impairment	141	326	23	16
	Visual Impairment	18	326	27	28
	Emotional Disturbance	311	321	31	18
	Orthopedic Impairment	27	330	27	30
	Other Health Impairment	203	328	24	18
	Specific Learning Disability	2,446	327	24	18
	Autism	78	324	27	19
		Traumatic Brain Injury	18	324	20	11
Test Over More Than One Day	Mental Retardation	24	308	23	4
	Speech or Language Impairment	48	333	24	21
	Emotional Disturbance	57	320	28	11
	Orthopedic Impairment	11	332	36	36
	Other Health Impairment	61	334	26	30
	Specific Learning Disability	855	329	24	21
	Autism	20	333	34	25
Tested At Home Or Hospital	Specific Learning Disability	11	331	23	27
Transfer of Student T/B Responses to A/D	Visual Impairment	20	323	26	20
	Specific Learning Disability	17	329	27	24
Unlisted Accommodation	Mental Retardation	12	311	16	0
	Speech or Language Impairment	22	323	19	14
	Emotional Disturbance	17	336	30	35
	Other Health Impairment	34	324	23	15
	Specific Learning Disability	309	324	24	16
	Autism	15	322	19	13
Unlisted Modification	Mental Retardation	11	315	15	0
	Specific Learning Disability	73	326	22	18

¹ Results for groups with less 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 2009

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Arithmetic Table	Mental Retardation	38	327	23	16
	Speech or Language Impairment	18	340	32	44
	Emotional Disturbance	35	334	26	23
	Other Health Impairment	58	339	20	31
	Specific Learning Disability	555	335	19	21
	Autism	18	337	23	22
Beneficial Time	Mental Retardation	12	312	13	0
	Emotional Disturbance	91	328	26	21
	Other Health Impairment	30	329	27	20
	Specific Learning Disability	177	328	21	12
Calculator	Mental Retardation	266	321	20	8
	Hard of Hearing	84	338	19	25
	Deaf	36	323	21	11
	Speech or Language Impairment	441	337	20	25
	Visual Impairment	28	337	26	18
	Emotional Disturbance	454	336	24	25
	Orthopedic Impairment	85	337	20	21
	Other Health Impairment	623	339	22	29
	Specific Learning Disability	7,003	336	21	24
	Multiple Disabilities	23	329	18	17
	Autism	242	335	21	22
	Traumatic Brain Injury	39	332	19	23
	Dictionary for Math	Speech or Language Impairment	12	327	16	8
Specific Learning Disability		165	334	23	22
IEP or Section 504 Plan	Mental Retardation	522	317	19	6
	Hard of Hearing	164	335	20	21
	Deaf	117	326	20	12
	Speech or Language Impairment	807	334	20	23
	Visual Impairment	76	337	28	24
	Emotional Disturbance	1,330	332	26	23
	Orthopedic Impairment	161	337	22	25
	Other Health Impairment	1,262	336	23	26
	Specific Learning Disability	13,508	334	21	22
	Multiple Disabilities	36	327	21	14
	Autism	430	335	24	22
	Traumatic Brain Injury	76	330	18	18
	Visual Impairment	25	338	24	24
	Math Manipulatives	Specific Learning Disability	68	344	22	37
Oral Presentation	Mental Retardation	111	324	22	14
	Hard of Hearing	15	340	20	40
	Speech or Language Impairment	139	337	23	25
	Visual Impairment	11	343	30	27

Table 2.C.8 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
	Emotional Disturbance	110	340	23	34
	Orthopedic Impairment	32	337	25	31
	Other Health Impairment	196	341	23	32
	Specific Learning Disability	2,331	337	23	26
	Multiple Disabilities	13	329	21	23
	Autism	88	337	23	26
	Traumatic Brain Injury	18	333	22	28
Oral Responses Dictated to a Scribe	Orthopedic Impairment	17	348	27	47
	Specific Learning Disability	27	336	24	15
Sign Language	Hard of Hearing	23	330	16	13
	Deaf	53	326	20	13
	Specific Learning Disability	13	347	23	38
Supervised Breaks	Mental Retardation	111	320	22	12
	Hard of Hearing	18	334	19	17
	Speech or Language Impairment	116	332	20	18
	Visual Impairment	18	325	21	6
	Emotional Disturbance	303	331	25	22
	Orthopedic Impairment	23	332	22	22
	Other Health Impairment	205	335	22	25
	Specific Learning Disability	1,978	334	22	23
	Autism	62	335	25	23
	Traumatic Brain Injury	16	335	22	25
Test Over More Than One Day	Mental Retardation	15	323	18	7
	Speech or Language Impairment	24	340	26	25
	Emotional Disturbance	51	330	25	25
	Other Health Impairment	36	334	20	25
	Specific Learning Disability	495	332	23	20
	Autism	11	340	10	9
Transfer of Student T/B Responses to A/D	Visual Impairment	26	336	33	19
	Orthopedic Impairment	11	338	18	36
	Specific Learning Disability	14	331	20	14
Unlisted Accommodation	Mental Retardation	13	328	26	23
	Speech or Language Impairment	18	330	16	6
	Emotional Disturbance	15	337	35	27
	Other Health Impairment	32	333	19	22
	Specific Learning Disability	272	332	20	18
Unlisted Modification	Specific Learning Disability	45	343	16	36

¹ Results for groups with less 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 2009

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
Assistive Device No Interference	English Only	67	330	20	16
	English Learner	20	326	26	30
Beneficial Time	English Only	300	324	27	19
	English Learner	98	320	24	11
Dictionary	English Only	970	331	24	25
	Initially Fluent English Proficient	54	334	23	30
	Reclassified Fluent English Proficient	55	340	25	40
	English Learner	858	325	23	14
	Unknown	29	343	28	45
Essay Responses (EO)	English Only	62	338	25	40
	English Learner	25	331	28	28
	Unknown	13	355	20	77
Essay Responses (ER)	English Only	63	336	25	29
	English Learner	47	328	25	17
IEP or Section 504 Plan	English Only	10,921	328	27	21
	Initially Fluent English Proficient	552	330	25	24
	Reclassified Fluent English Proficient	765	336	25	31
	English Learner	7,191	323	23	13
	Unknown	252	329	26	22
Large Print Version	English Only	31	339	27	42
	English Learner	19	327	23	16
Oral Presentation	English Only	2,918	332	24	25
	Initially Fluent English Proficient	144	336	25	31
	Reclassified Fluent English Proficient	221	338	25	33
	English Learner	2,092	328	22	16
	Unknown	54	342	26	39
Oral Responses Dictated to a Scribe	English Only	64	344	26	52
	English Learner	20	342	27	55
Sign Language	English Only	39	322	25	13
	English Learner	36	316	21	8
Spell Checker Or Grammar Checker	English Only	348	334	22	24
	Initially Fluent English Proficient	25	335	19	28
	Reclassified Fluent English Proficient	29	332	27	31
	English Learner	234	329	20	15
	Unknown	14	354	20	71

Table 2.C.9 (continued)

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
Spell Checker Or Grammar Checker Off	English Only	95	336	28	36
	English Learner	35	330	16	11
	Unknown	14	353	20	71
Supervised Breaks	English Only	2,068	327	26	20
	Initially Fluent English Proficient	106	329	23	23
	Reclassified Fluent English Proficient	163	334	26	28
	English Learner	1,319	323	23	12
	Unknown	78	330	29	31
Test Over More Than One Day	English Only	638	330	26	25
	Initially Fluent English Proficient	36	335	19	31
	Reclassified Fluent English Proficient	49	337	23	29
	English Learner	473	327	24	17
	Unknown	22	322	25	14
Tested At Home Or Hospital	English Only	31	338	38	32
Transfer of Student T/B Responses to A/D	English Only	58	332	25	28
	English Learner	16	322	30	19
Unlisted Accommodation	English Only	248	327	24	22
	Initially Fluent English Proficient	17	321	25	12
	English Learner	174	320	21	7
	Unknown	12	315	31	17
Unlisted Modification	English Only	65	324	24	14
	English Learner	47	324	23	21

¹ Results for groups with less 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 2009

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English Only	439	336	21	24
	Initially Fluent English Proficient	18	340	15	28
	Reclassified Fluent English Proficient	15	347	33	47
	English Learner	290	333	20	18
Beneficial Time	English Only	281	329	24	18
	English Learner	93	325	21	8
Calculator	English Only	5,938	337	22	26
	Initially Fluent English Proficient	316	339	20	27
	Reclassified Fluent English Proficient	386	343	20	34
	English Learner	3,290	334	20	20
	Unknown	116	335	18	17
Dictionary for Math	English Only	136	339	25	29
	English Learner	78	329	17	15
IEP or Section 504 Plan	English Only	11,954	335	23	24
	Initially Fluent English Proficient	596	337	21	26
	Reclassified Fluent English Proficient	803	341	21	32
	English Learner	6,614	332	21	19
	Unknown	247	335	21	21
Large Print Version	English Only	27	330	24	11
Math Manipulatives	English Only	74	346	22	46
	English Learner	25	351	27	40
Oral Presentation	English Only	1,889	338	24	28
	Initially Fluent English Proficient	85	341	22	33
	Reclassified Fluent English Proficient	122	341	23	29
	English Learner	1,257	335	22	23
	Unknown	20	346	18	35
Oral Responses Dictated to a Scribe	English Only	48	344	28	33
	English Learner	15	336	33	20
Sign Language	English Only	69	330	20	14
	English Learner	31	332	17	23
Supervised Breaks	English Only	1,883	333	23	23
	Initially Fluent English Proficient	89	336	21	25
	Reclassified Fluent English Proficient	132	335	20	26
	English Learner	971	332	21	18
	Unknown	59	342	25	36
Test Over More Than One Day	English Only	364	334	25	25
	Initially Fluent English Proficient	16	335	20	19

Table 2.C.10 (Continued)

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
	Reclassified Fluent English Proficient	28	334	23	25
	English Learner	301	331	22	17
	Unknown	19	323	19	5
Tested At Home Or Hospital	English Only	22	340	42	36
Transfer of Student T/B Responses to A/D	English Only	55	333	21	20
	English Learner	12	335	28	17
Unlisted Accommodation	English Only	238	334	23	24
	Initially Fluent English Proficient	16	332	19	19
	English Learner	147	330	18	11
Unlisted Modification	English Only	50	342	22	36

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Appendix 2.D: Results of Testing Variations and Disability Analyses—December 2009

Table 2.D.1: Summary Statistics by Testing Variations and Disability—ELA, December 2009

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	52	317	21	6
Modifications	108	333	27	26
All	160	328	26	19
Disability				
Mental Retardation	-	-	-	-
Hard of Hearing	-	-	-	-
Deaf	-	-	-	-
Speech or Language Impairment	16	335	18	25
Visual Impairment	-	-	-	-
Emotional Disturbance	13	326	25	23
Orthopedic Impairment	-	-	-	-
Other Health Impairment	13	319	30	31
Specific Learning Disability	265	330	24	19
Multiple Disabilities	-	-	-	-
Autism	-	-	-	-
Traumatic Brain Injury	-	-	-	-

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.D.2: Summary Statistics by Testing Variations and Disability—Mathematics, December 2009

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	22	329	18	14
Modifications	185	336	24	23
All	207	336	23	22
Disability				
Mental Retardation	-	-	-	-
Hard of Hearing	-	-	-	-
Deaf	-	-	-	-
Speech or Language Impairment	11	338	11	18
Visual Impairment	-	-	-	-
Emotional Disturbance	-	-	-	-
Orthopedic Impairment	-	-	-	-
Other Health Impairment	14	332	21	29
Specific Learning Disability	263	333	21	16
Multiple Disabilities	-	-	-	-
Autism	-	-	-	-
Traumatic Brain Injury	-	-	-	-

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.D.3: Demographic Summary for All Examinees by Testing Variations—ELA, December 2009

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
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 plan	282	57	20	225	80	330	51	55	55	44	50	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)	-	-	-	-	-	-	-	-	-	-	-	-
Supervised Breaks (SB)	50	6	12	44	88	319	46	50	49	36	44	1.8
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-	-	-
Tested At Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	28	11	39	17	61	344	63	67	64	49	54	2.1
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	92	28	30	64	70	335	55	60	59	51	51	2.0
Spell Checker or Grammar Checker (SC)	21	3	14	18	86	335	50	57	57	52	57	2.1
Essay Responses (ER)	-	-	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	12	1	8	11	92	313	41	45	43	31	35	2.1

¹ Results for groups with less than 11 students are not reported.

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

Table 2.D.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, December 2009

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	290	56	19	234	81	335	49	49	42	42	36
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)	26	5	19	21	81	329	44	49	38	39	32
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-	-
Tested At Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	-	-	-	-	-	-	-	-	-	-	-
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	56	11	20	45	80	336	48	48	46	42	36
Calculator (CA)	184	41	22	143	78	336	49	51	43	44	36
Arithmetic Table (AT)	17	3	18	14	82	332	43	51	39	44	33
Math Manipulatives (MM)	-	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	-	-	-	-	-	-	-	-	-	-	-

¹ Results for groups with less 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 2009

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 plan	279	289	313	330	344	377	391	330	25	282
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)	-	-	-	-	-	-	-	-	-	-
Supervised Breaks (SB)	275	279	302	315	336	367	388	319	25	50
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-
Tested At Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	287	287	324	342	379	388	391	344	34	28
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	279	285	316	336	354	385	391	335	28	92
Spell Checker or Grammar Checker (SC)	313	313	322	338	342	354	365	335	15	21
Essay Responses (ER)	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	289	289	299	311	325	356	356	313	19	12

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.D.6: Percentiles of Scale Scores for Students with Testing Variations— Mathematics, December 2009

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 plan	295	305	322	331	344	373	424	335	22	290
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)	280	303	312	330	342	367	389	329	24	26
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-
Tested At Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	-	-	-	-	-	-	-	-	-	-
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	280	305	317	331	347	424	430	336	29	56
Calculator (CA)	289	307	322	334	347	378	424	336	24	184
Arithmetic Table (AT)	295	295	318	335	342	356	356	332	17	17
Math Manipulatives (MM)	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	-	-	-	-	-	-	-	-	-	-

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.D.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, December 2009

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Dictionary	Specific Learning Disability	21	349	32	43
IEP or Section 504 Plan	Specific Learning Disability	202	330	25	19
Oral Presentation	Specific Learning Disability	67	338	29	34
Spell Checker Or Grammar Checker	Specific Learning Disability	15	333	16	13
Supervised Breaks	Specific Learning Disability	35	317	25	9
Unlisted Accommodation	Specific Learning Disability	11	314	20	9

¹ Results for groups with less 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 2009

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Arithmetic Table	Specific Learning Disability	13	330	18	15
Calculator	Specific Learning Disability	134	336	24	21
IEP or Section 504 Plan	Specific Learning Disability	211	334	22	18
Oral Presentation	Specific Learning Disability	44	338	31	20
Supervised Breaks	Specific Learning Disability	20	330	25	20

¹ Results for groups with less 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 2009

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
Dictionary	English Only	12	352	34	50
	English Learner	13	344	32	38
IEP or Section 504 Plan	English Only	166	331	24	22
	English Learner	89	329	25	19
	Unknown	19	328	36	11
Oral Presentation	English Only	44	337	29	36
	English Learner	39	335	29	31
Spell Checker Or Grammar Checker	English Only	11	332	16	9
Supervised Breaks	English Only	30	323	28	17

¹ Results for groups with less 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 2009

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
Arithmetic Table	English Only	11	333	21	27
Calculator	English Only	112	337	23	23
	English Learner	52	338	28	23
	Unknown	12	329	10	8
IEP or Section 504 Plan	English Only	180	334	21	20
	English Learner	78	336	25	19
	Unknown	21	336	26	14
Oral Presentation	English Only	35	336	31	20
	English Learner	12	340	31	17
Supervised Breaks	English Only	20	330	26	20

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Appendix 2.E: Results of Testing Variations and Disability Analyses—February 2010

Table 2.E.1: Summary Statistics by Testing Variations and Disability—ELA, February 2010

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	3,274	329	32	24
Modifications	3,833	328	25	19
All	7,107	328	29	22
Disability				
Unknown	-	-	-	-
Mental Retardation	593	305	22	4
Hard of Hearing	265	337	33	31
Deaf	214	323	34	18
Speech or Language Impairment	1,217	343	37	37
Visual Impairment	95	355	46	48
Emotional Disturbance	1,596	334	37	33
Orthopedic Impairment	195	341	41	37
Other Health Impairment	1,540	343	34	40
Specific Learning Disability	15,746	330	28	23
Deaf-Blindness	-	-	-	-
Multiple Disabilities	39	325	36	18
Autism	604	349	40	46
Traumatic Brain Injury	91	332	30	31

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.E.2: Summary Statistics by Testing Variations and Disability—Mathematics, February 2010

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	2,780	332	28	21
Modifications	6,225	332	22	19
All	9,005	332	24	20
Disability				
Unknown	-	-	-	-
Mental Retardation	572	313	18	4
Hard of Hearing	229	343	31	36
Deaf	176	339	31	26
Speech or Language Impairment	1,193	347	36	37
Visual Impairment	104	356	46	49
Emotional Disturbance	1,693	334	32	26
Orthopedic Impairment	199	342	35	32
Other Health Impairment	1,632	343	31	36
Specific Learning Disability	15,494	333	25	22
Deaf-Blindness	-	-	-	-
Multiple Disabilities	44	330	31	18
Autism	593	354	40	46
Traumatic Brain Injury	87	340	31	33

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.E.3: Demographic Summary for All Examinees by Testing Variations—ELA, February 2010

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
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 plan	16,327	4,131	25	12,196	75	331	58	48	56	42	48	1.9
Transfer of T/B Responses to A/D (TS)	106	43	41	63	59	344	65	52	60	54	58	2.0
Oral Responses Dictated to a Scribe (OR)	94	25	27	69	73	331	62	49	57	41	48	1.8
Spell Checker/Grammar Checker Off (SO)	163	59	36	104	64	342	62	51	62	49	54	2.1
Essay Responses (EO)	76	21	28	55	72	332	62	48	57	43	47	1.8
Assistive Device No Interference (AN)	68	34	50	34	50	355	71	62	67	56	62	2.2
Braille Version (BV)	14	8	57	6	43	353	64	58	70	63	53	2.5
Large Print Version (LV)	76	33	43	43	57	352	70	58	67	53	59	2.1
Test Over More Than One Day (TD)	788	174	22	614	78	327	56	46	54	40	45	1.9
Supervised Breaks (SB)	3,184	661	21	2,523	79	327	56	45	54	39	45	1.9
Beneficial Time (BT)	462	109	24	353	76	328	57	46	54	42	44	1.8
Tested At Home or Hospital (HH)	56	23	41	33	59	346	65	57	63	55	57	2.0
Dictionary (DI)	1,302	228	18	1,074	82	327	59	46	54	38	46	1.9
Sign Language (SL)	80	15	19	65	81	328	53	45	52	38	51	1.9
Oral Presentation (OP)	3,016	606	20	2,410	80	328	60	47	55	40	47	1.9
Spell Checker or Grammar Checker (SC)	336	85	25	251	75	333	62	48	57	42	47	2.1
Essay Responses (ER)	71	19	27	52	73	334	59	47	56	41	50	2.3
Assistive Device (AD)	19	4	21	15	79	339	66	51	61	41	49	2.4
Unlisted Modification (UM)	63	13	21	50	79	330	58	45	55	44	51	1.9
Unlisted Accommodation (UA)	556	120	22	436	78	329	58	47	55	40	47	1.9

¹ Results for groups with less than 11 students are not reported.

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

Table 2.E.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, February 2010

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	16,491	3,773	23	12,718	77	334	48	50	44	41	33
Transfer of T/B Responses to A/D (TS)	93	40	43	53	57	348	61	59	53	46	39
Oral Responses Dictated to a Scribe (OR)	60	21	35	39	65	347	56	57	56	47	37
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	62	27	44	35	56	352	62	61	56	48	41
Test Over More Than One Day (TD)	471	81	17	390	83	330	44	47	42	38	32
Supervised Breaks (SB)	2,713	512	19	2,201	81	330	45	47	42	39	31
Beneficial Time (BT)	388	91	23	297	77	330	45	47	42	38	31
Tested At Home or Hospital (HH)	30	8	27	22	73	333	48	49	42	41	35
Dictionary for Math (DM)	175	34	19	141	81	335	53	52	44	40	33
Sign Language (SL)	65	13	20	52	80	335	44	52	45	42	36
Oral Presentation (OP)	2,046	410	20	1,636	80	332	46	50	43	40	33
Calculator (CA)	6,119	1,148	19	4,971	81	332	46	51	42	39	32
Arithmetic Table (AT)	626	143	23	483	77	334	50	53	43	40	32
Math Manipulatives (MM)	124	39	31	85	69	336	49	55	44	42	34
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	39	14	36	25	64	342	54	60	48	45	37
Unlisted Accommodation (UA)	530	120	23	410	77	333	47	50	43	40	34

¹ Results for groups with less 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 2010

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 plan	275	287	309	328	350	386	422	331	31	16,327
Transfer of T/B Responses to A/D (TS)	275	287	310	338	370	424	450	344	43	106
Oral Responses Dictated to a Scribe (OR)	275	291	309	326	352	386	450	331	32	94
Spell Checker/Grammar Checker Off (SO)	281	293	314	336	366	427	450	342	39	163
Essay Responses (EO)	275	291	304	327	354	398	450	332	34	76
Assistive Device No Interference (AN)	283	299	326	349	385	413	424	355	36	68
Braille Version (BV)	289	289	326	360	377	424	424	353	39	14
Large Print Version (LV)	275	289	321	346	378	439	450	352	43	76
Test Over More Than One Day (TD)	275	281	307	324	346	375	398	327	29	788
Supervised Breaks (SB)	275	285	305	324	346	378	409	327	29	3,184
Beneficial Time (BT)	275	278	303	324	348	389	418	328	33	462
Tested At Home or Hospital (HH)	275	287	320	342	375	418	422	346	38	56
Dictionary (DI)	275	289	309	326	344	368	389	327	25	1,302
Sign Language (SL)	278	288	308	322	345	382	450	328	29	80
Oral Presentation (OP)	276	291	310	328	344	373	392	328	25	3,016
Spell Checker or Grammar Checker (SC)	275	293	312	332	350	386	402	333	27	336
Essay Responses (ER)	276	297	310	334	355	383	418	334	28	71
Assistive Device (AD)	314	314	328	340	348	363	363	339	15	19
Unlisted Modification (UM)	287	291	312	330	348	370	439	330	26	63
Unlisted Accommodation (UA)	278	289	307	326	346	375	418	329	29	556

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.E.6: Percentiles of Scale Scores for Students with Testing Variations — Mathematics, February 2010

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 plan	285	299	315	329	347	387	425	334	27	16,491
Transfer of T/B Responses to A/D (TS)	294	299	317	343	371	445	450	348	40	93
Oral Responses Dictated to a Scribe (OR)	294	302	325	340	361	424	450	347	34	60
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	291	297	325	348	375	445	450	352	41	62
Test Over More Than One Day (TD)	278	294	313	327	343	373	420	330	26	471
Supervised Breaks (SB)	282	297	313	327	343	375	401	330	24	2,713
Beneficial Time (BT)	275	294	311	323	347	384	398	330	27	388
Tested At Home or Hospital (HH)	285	297	315	326	350	395	398	333	30	30
Dictionary for Math (DM)	285	304	319	334	345	369	389	335	20	175
Sign Language (SL)	299	304	319	329	348	369	437	335	24	65
Oral Presentation (OP)	285	299	315	329	345	380	404	332	24	2,046
Calculator (CA)	288	302	317	329	345	371	398	332	22	6,119
Arithmetic Table (AT)	291	304	319	332	347	369	395	334	22	626
Math Manipulative (MM)	294	299	316	331	354	392	411	336	27	124
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	291	294	319	341	369	395	404	342	31	39
Unlisted Accommodation (UA)	288	297	315	329	347	384	415	333	26	530

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported

Table 2.E.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, February 2010

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)	
Assistive Device	Specific Learning Disability	14	338	16	21	
Assistive Device No Interference	Specific Learning Disability	22	330	22	18	
Beneficial Time	Speech or Language Impairment	22	327	23	18	
	Emotional Disturbance	122	320	32	17	
	Other Health Impairment	28	333	24	14	
	Specific Learning Disability	218	328	30	22	
Dictionary	Mental Retardation	53	314	24	11	
	Speech or Language Impairment	39	323	24	18	
	Emotional Disturbance	29	326	21	14	
	Other Health Impairment	46	334	22	17	
	Specific Learning Disability	982	328	25	18	
Essay Responses (EO)	Autism	23	331	22	17	
	Specific Learning Disability	34	324	27	18	
Essay Responses (ER)	Specific Learning Disability	41	338	25	27	
IEP or Section 504 Plan	Mental Retardation	437	305	22	5	
	Hard of Hearing	177	331	28	24	
	Deaf	95	319	27	14	
	Speech or Language Impairment	616	330	28	24	
	Visual Impairment	69	351	42	46	
	Emotional Disturbance	1,120	331	36	30	
	Orthopedic Impairment	121	338	43	33	
	Other Health Impairment	1,000	339	33	35	
	Specific Learning Disability	10,514	328	27	21	
	Multiple Disabilities	25	321	26	16	
	Autism	401	345	39	42	
Large Print Version	Traumatic Brain Injury	71	331	30	28	
	Visual Impairment	33	354	43	45	
	Oral Presentation	Mental Retardation	123	313	26	11
		Hard of Hearing	25	320	25	8
		Speech or Language Impairment	128	331	23	22
		Emotional Disturbance	92	328	30	26
		Orthopedic Impairment	19	323	27	16
		Other Health Impairment	148	331	26	18
		Specific Learning Disability	2,166	329	24	20
		Autism	66	324	24	14
		Traumatic Brain Injury	15	336	31	20
Oral Responses Dictated to a Scribe		Specific Learning Disability	29	334	33	31
		Hard of Hearing	26	327	22	15
Sign Language	Deaf	39	323	25	18	
	Specific Learning Disability	29	334	33	31	
Spell Checker Or Grammar Checker	Mental Retardation	12	308	19	0	
	Speech or Language Impairment	16	340	32	50	
	Emotional Disturbance	12	357	36	58	
	Other Health Impairment	23	336	23	22	
	Specific Learning Disability	227	332	25	22	

Table 2.E.7 (continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Spell Checker Or Grammar Checker Off	Other Health Impairment	12	380	44	67
	Specific Learning Disability	55	330	29	24
	Autism	17	345	41	53
Supervised Breaks	Mental Retardation	109	305	23	6
	Hard of Hearing	33	329	29	27
	Deaf	14	333	43	29
	Speech or Language Impairment	95	326	21	15
	Visual Impairment	16	326	32	25
	Emotional Disturbance	308	325	33	21
	Orthopedic Impairment	26	328	28	23
	Other Health Impairment	215	334	28	28
	Specific Learning Disability	2,020	326	27	19
	Autism	87	340	41	36
	Traumatic Brain Injury	19	328	34	26
Test Over More Than One Day	Mental Retardation	28	304	17	4
	Speech or Language Impairment	37	331	25	27
	Emotional Disturbance	73	332	35	33
	Other Health Impairment	40	334	31	23
	Specific Learning Disability	519	325	27	19
Tested At Home Or Hospital	Specific Learning Disability	19	324	33	11
Transfer of Student T/B Responses to A/D	Visual Impairment	25	365	49	60
	Other Health Impairment	14	339	38	36
	Specific Learning Disability	23	330	31	35
Unlisted Accommodation	Mental Retardation	23	318	26	13
	Speech or Language Impairment	13	314	28	15
	Emotional Disturbance	32	327	25	19
	Orthopedic Impairment	11	335	46	27
	Other Health Impairment	44	334	33	27
	Specific Learning Disability	386	327	25	19
Unlisted Modification	Specific Learning Disability	37	326	22	16

¹ Results for groups with less 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 2010

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Arithmetic Table	Mental Retardation	23	339	35	35
	Speech or Language Impairment	15	339	21	47
	Emotional Disturbance	25	333	24	36
	Other Health Impairment	46	333	20	17
	Specific Learning Disability	452	334	21	22
	Autism	12	332	16	8
Beneficial Time	Speech or Language Impairment	17	332	32	35
	Emotional Disturbance	101	323	29	17
	Other Health Impairment	26	335	23	27
	Specific Learning Disability	172	328	23	20
	Autism	14	344	24	50
Calculator	Mental Retardation	198	318	20	7
	Hard of Hearing	56	330	21	16
	Deaf	26	335	22	15
	Speech or Language Impairment	244	330	21	18
	Visual Impairment	18	330	25	22
	Emotional Disturbance	307	331	26	23
	Orthopedic Impairment	45	336	23	18
	Other Health Impairment	398	337	24	26
	Specific Learning Disability	4,187	332	21	18
	Multiple Disabilities	15	327	22	20
	Autism	135	337	26	24
	Traumatic Brain Injury	26	337	22	23
	Dictionary for Math	Other Health Impairment	14	340	25	36
Specific Learning Disability		127	335	20	19
IEP or Section 504 Plan	Mental Retardation	432	314	17	4
	Hard of Hearing	160	337	26	29
	Deaf	71	332	23	14
	Speech or Language Impairment	603	333	25	22
	Visual Impairment	76	354	43	49
	Emotional Disturbance	1,191	332	30	24
	Orthopedic Impairment	129	342	35	29
	Other Health Impairment	1,082	340	29	32
	Specific Learning Disability	10,525	332	23	19
	Multiple Disabilities	29	324	19	10
	Autism	400	349	36	41
Traumatic Brain Injury	67	339	31	31	
Large Print Version	Visual Impairment	32	359	43	53
Math Manipulatives	Other Health Impairment	12	338	17	33
	Specific Learning Disability	87	333	25	26
Oral Presentation	Mental Retardation	86	320	24	9
	Hard of Hearing	18	339	18	28
	Speech or Language Impairment	72	332	19	19

Table 2.E.8 (continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
	Emotional Disturbance	74	325	25	18
	Orthopedic Impairment	12	334	26	25
	Other Health Impairment	131	333	27	21
	Specific Learning Disability	1,424	333	24	21
	Autism	49	335	22	24
Oral Responses Dictated to a Scribe	Specific Learning Disability	20	342	24	35
Sign Language	Hard of Hearing	22	335	19	18
	Deaf	14	334	26	21
	Specific Learning Disability	15	332	20	27
Supervised Breaks	Mental Retardation	89	313	16	2
	Hard of Hearing	35	336	29	31
	Deaf	11	351	33	36
	Speech or Language Impairment	71	329	19	15
	Visual Impairment	14	328	22	14
	Emotional Disturbance	276	326	29	20
	Orthopedic Impairment	17	339	30	29
	Other Health Impairment	203	337	28	28
	Specific Learning Disability	1,684	329	22	17
	Autism	80	346	32	38
	Traumatic Brain Injury	17	331	20	12
Test Over More Than One Day	Mental Retardation	18	316	16	6
	Speech or Language Impairment	25	327	19	16
	Emotional Disturbance	57	329	31	21
	Other Health Impairment	28	346	27	36
	Specific Learning Disability	288	328	21	12
Transfer of Student T/B Responses to A/D	Visual Impairment	28	362	45	57
	Specific Learning Disability	15	337	34	40
Unlisted Accommodation	Mental Retardation	23	330	37	26
	Speech or Language Impairment	13	327	24	23
	Emotional Disturbance	32	332	24	25
	Orthopedic Impairment	12	345	46	33
	Other Health Impairment	41	339	29	34
	Specific Learning Disability	363	331	24	19
	Autism	12	335	25	33
Unlisted Modification	Specific Learning Disability	24	338	25	29

¹ Results for groups with less 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 2010

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Assistive Device No Interference	English Only	37	361	36	59
	English Learner	17	329	24	18
Beneficial Time	English Only	357	330	34	27
	English Learner	90	320	26	10
Dictionary	English Only	646	330	25	21
	Initially Fluent English Proficient	22	338	30	27
	Reclassified Fluent English Proficient	35	336	29	34
	English Learner	582	323	23	12
	Unknown	17	331	32	29
Essay Responses (EO)	English Only	49	336	36	33
	English Learner	23	323	27	17
Essay Responses (ER)	English Only	41	331	27	22
	English Learner	24	336	31	33
IEP or Section 504 Plan	English Only	10,355	334	33	30
	Initially Fluent English Proficient	470	336	32	30
	Reclassified Fluent English Proficient	582	344	32	43
	English Learner	4,792	322	24	13
	Unknown	128	327	26	17
Large Print Version	English Only	50	357	45	48
	English Learner	19	338	27	26
Oral Presentation	English Only	1,681	330	26	23
	Initially Fluent English Proficient	78	330	26	24
	Reclassified Fluent English Proficient	109	333	27	25
	English Learner	1,124	325	24	15
	Unknown	24	329	30	25
Oral Responses Dictated to a Scribe	English Only	57	332	30	30
	English Learner	29	322	22	10
Sign Language	English Only	32	331	31	22
	English Learner	39	322	23	13
Spell Checker Or Grammar Checker	English Only	204	336	28	27
	Initially Fluent English Proficient	13	326	20	8
	Reclassified Fluent English Proficient	20	332	32	40
	English Learner	93	327	24	18
Spell Checker Or Grammar Checker Off	English Only	115	349	40	44
	English Learner	36	318	18	8
Supervised Breaks	English Only	2,072	329	30	24
	Initially Fluent English Proficient	79	324	26	14
	Reclassified Fluent English Proficient	96	339	29	40
	English Learner	918	321	25	13

Table 2.E.9 (continued)

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
	Unknown	19	323	28	11
Test Over More Than One Day	English Only	533	328	30	23
	Initially Fluent English Proficient	20	330	27	25
	Reclassified Fluent English Proficient	26	339	33	50
	English Learner	206	322	25	16
Tested At Home Or Hospital	English Only	31	351	40	45
	English Learner	17	324	29	18
Transfer of Student T/B Responses to A/D	English Only	79	350	45	47
	English Learner	20	322	30	15
Unlisted Accommodation	English Only	350	331	31	26
	Initially Fluent English Proficient	14	334	20	21
	Reclassified Fluent English Proficient	17	345	42	29
	English Learner	172	323	21	12
Unlisted Modification	English Only	34	336	30	29
	English Learner	27	321	20	7

¹ Results for groups with less 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 2010

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
Arithmetic Table	English Only	408	335	21	25
	Initially Fluent English Proficient	19	340	34	26
	Reclassified Fluent English Proficient	15	333	19	27
	English Learner	174	332	20	16
Beneficial Time	English Only	300	330	29	25
	English Learner	73	327	20	16
Calculator	English Only	3,728	333	23	21
	Initially Fluent English Proficient	192	335	23	22
	Reclassified Fluent English Proficient	225	337	23	26
	English Learner	1,894	329	20	13
	Unknown	80	329	20	21
Dictionary for Math	English Only	99	336	22	27
	English Learner	66	331	18	6
IEP or Section 504 Plan	English Only	10,842	336	29	26
	Initially Fluent English Proficient	499	339	30	27
	Reclassified Fluent English Proficient	620	346	30	37
	English Learner	4,377	329	21	14
	Unknown	153	328	23	17
Large Print Version	English Only	42	351	42	40
	English Learner	12	341	25	33
Math Manipulatives	English Only	86	337	28	35
	English Learner	28	335	26	25
Oral Presentation	English Only	1,224	333	25	22
	Initially Fluent English Proficient	49	340	27	33
	Reclassified Fluent English Proficient	68	337	27	21
	English Learner	678	330	22	17
	Unknown	27	325	23	15
Oral Responses Dictated to a Scribe	English Only	32	344	27	38
	English Learner	19	334	20	21
Sign Language	English Only	40	337	25	23
	English Learner	21	332	23	19
Supervised Breaks	English Only	1,827	330	26	20
	Initially Fluent English Proficient	77	334	25	23
	Reclassified Fluent English Proficient	81	342	26	35
	English Learner	707	327	20	13
	Unknown	21	331	20	19
Test Over More Than One Day	English Only	323	330	28	19
	Initially Fluent English Proficient	11	331	17	9
	Reclassified Fluent English Proficient	14	327	22	14
	English Learner	121	329	19	13
Tested At Home Or Hospital	English Only	17	332	32	24
Transfer of Student T/B Responses to A/D	English Only	71	349	40	42
	English Learner	13	335	30	38

Table 2.E.10 (continued)

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
Unlisted Accommodation	English Only	353	333	26	24
	Initially Fluent English Proficient	15	337	30	27
	Reclassified Fluent English Proficient	20	343	37	35
	English Learner	137	330	24	18
Unlisted Modification	English Only	20	351	25	45
	English Learner	17	328	33	18

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Appendix 2.F: Results of Testing Variations and Disability Analyses— March 2010

Table 2.F.1: Summary Statistics by Testing Variations and Disability—ELA, March 2010

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	5,988	334	33	29
Modifications	5,322	326	26	17
All	11,310	330	30	24
Disability				
Mental Retardation	755	302	20	2
Hard of Hearing	508	341	38	35
Deaf	350	316	28	10
Speech or Language Impairment	2,311	345	36	39
Visual Impairment	201	360	43	56
Emotional Disturbance	2,897	335	39	36
Orthopedic Impairment	362	344	39	41
Other Health Impairment	3,878	347	35	47
Specific Learning Disability	29,945	331	28	25
Deaf-Blindness	-	-	-	-
Multiple Disabilities	61	329	34	23
Autism	1,442	352	41	52
Traumatic Brain Injury	152	327	29	23

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.F.2: Summary Statistics by Testing Variations and Disability—Mathematics, March 2010

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	5,059	338	30	30
Modifications	9,313	333	23	20
All	14,372	335	26	24
Disability				
Mental Retardation	737	315	15	3
Hard of Hearing	465	349	35	40
Deaf	304	334	27	16
Speech or Language Impairment	2,256	353	38	45
Visual Impairment	207	362	41	56
Emotional Disturbance	2,990	338	34	30
Orthopedic Impairment	379	347	35	39
Other Health Impairment	3,989	349	33	43
Specific Learning Disability	29,639	337	26	27
Deaf-Blindness	-	-	-	-
Multiple Disabilities	55	334	29	31
Autism	1,446	358	42	51
Traumatic Brain Injury	143	335	27	26

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.F.3: Demographic Summary for All Examinees by Testing Variations—ELA, March 2010

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
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 plan	29,641	8,213	28	21,428	72	333	54	56	55	42	53	1.9
Transfer of T/B Responses to A/D (TS)	188	88	47	100	53	352	62	65	65	51	62	2.1
Oral Responses Dictated to a Scribe (OR)	94	33	35	61	65	336	59	56	58	47	52	1.8
Spell Checker/Grammar Checker Off (SO)	241	122	51	119	49	354	65	67	67	54	60	2.2
Essay Responses (EO)	130	54	42	76	58	342	60	59	62	46	55	2.1
Assistive Device No Interference (AN)	100	47	47	53	53	350	65	67	64	48	64	2.2
Braille Version (BV)	39	24	62	15	38	359	67	68	66	54	65	2.4
Large Print Version (LV)	148	84	57	64	43	354	63	70	67	53	63	2.0
Test Over More Than One Day (TD)	1,733	500	29	1,233	71	334	56	58	56	43	53	1.9
Supervised Breaks (SB)	5,017	1,192	24	3,825	76	329	53	54	53	40	50	1.9
Beneficial Time (BT)	815	193	24	622	76	327	52	53	53	39	47	1.7
Tested At Home or Hospital (HH)	85	42	49	43	51	359	68	69	67	56	65	2.2
Dictionary (DI)	1,838	306	17	1,532	83	325	58	51	50	36	48	1.9
Sign Language (SL)	104	26	25	78	75	331	54	54	49	42	51	1.9
Oral Presentation (OP)	4,043	650	16	3,393	84	325	52	51	51	38	48	1.8
Spell Checker or Grammar Checker (SC)	435	99	23	336	77	332	55	55	54	40	52	2.0
Essay Responses (ER)	130	24	18	106	82	327	53	49	51	37	47	2.2
Assistive Device (AD)	27	2	7	25	93	323	50	43	49	35	41	2.2
Unlisted Modification (UM)	55	20	36	35	64	343	65	62	60	49	56	2.0
Unlisted Accommodation (UA)	801	191	24	610	76	330	54	54	53	40	51	1.9

¹ Results for groups with less than 11 students are not reported.

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

Table 2.F.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, March 2010

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	29,626	8,433	28	21,193	72	338	49	47	47	41	35
Transfer of T/B Responses to A/D (TS)	166	79	48	87	52	357	60	57	57	52	45
Oral Responses Dictated to a Scribe (OR)	76	25	33	51	67	342	50	52	50	42	36
Braille Version (BV)	39	18	46	21	54	345	52	55	46	46	42
Large Print Version (LV)	117	55	47	62	53	359	59	55	60	54	47
Test Over More Than One Day (TD)	1,154	365	32	789	68	340	51	48	48	42	35
Supervised Breaks (SB)	4,179	1,076	26	3,103	74	335	47	45	45	39	33
Beneficial Time (BT)	752	193	26	559	74	333	46	44	43	38	32
Tested At Home or Hospital (HH)	52	22	42	30	58	351	59	51	52	49	43
Dictionary for Math (DM)	314	53	17	261	83	332	43	46	42	35	31
Sign Language (SL)	149	34	23	115	77	337	43	47	46	38	37
Oral Presentation (OP)	3,122	647	21	2,475	79	333	45	44	43	38	32
Calculator (CA)	9,147	1,802	20	7,345	80	333	45	46	42	38	31
Arithmetic Table (AT)	540	109	20	431	80	333	46	45	42	38	31
Math Manipulative (MM)	112	46	41	66	59	348	53	53	52	47	40
Assistive Device (AD)	18	5	28	13	72	357	56	66	53	48	42
Unlisted Modification (UM)	30	11	37	19	63	340	48	49	47	46	32
Unlisted Accommodation (UA)	546	179	33	367	67	340	49	49	48	40	36

¹ Results for groups with less 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 2010

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	311	330	352	390	421	333	32	29,641
Transfer of T/B Responses to A/D (TS)	275	290	315	342	380	438	450	352	44	188
Oral Responses Dictated to a Scribe (OR)	275	282	298	328	368	407	450	336	43	94
Spell Checker/Grammar Checker Off (SO)	282	296	324	350	381	426	450	354	41	241
Essay Responses (EO)	275	286	313	337	366	411	450	342	39	130
Assistive Device No Interference (AN)	286	301	327	347	372	407	438	350	33	100
Braille Version (BV)	278	280	320	357	390	446	450	359	46	39
Large Print Version (LV)	275	290	318	356	384	421	446	354	40	148
Test Over More Than One Day (TD)	275	288	313	334	352	387	411	334	30	1,733
Supervised Breaks (SB)	275	284	307	326	348	384	411	329	30	5,017
Beneficial Time (BT)	275	276	301	322	348	384	416	327	33	815
Tested At Home or Hospital (HH)	276	294	320	348	390	450	450	359	45	85
Dictionary (DI)	275	288	307	324	342	368	387	325	24	1,838
Sign Language (SL)	278	286	301	321	349	407	432	331	38	104
Oral Presentation (OP)	275	288	307	324	342	368	393	325	25	4,043
Spell Checker or Grammar Checker (SC)	278	294	311	332	348	376	416	332	27	435
Essay Responses (ER)	280	286	309	326	344	376	381	327	26	130
Assistive Device (AD)	275	280	298	322	344	350	446	323	34	27
Unlisted Modification (UM)	278	284	320	332	366	421	450	343	37	55
Unlisted Accommodation (UA)	275	288	309	326	348	384	411	330	30	801

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.F.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, March 2010

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 plan	289	303	317	332	352	396	435	338	29	29,626
Transfer of T/B Responses to A/D (TS)	286	303	325	347	386	429	450	357	41	166
Oral Responses Dictated to a Scribe (OR)	286	300	321	335	364	405	424	342	30	76
Braille Version (BV)	282	286	317	334	375	429	435	345	41	39
Large Print Version (LV)	292	303	327	349	386	450	450	359	43	117
Test Over More Than One Day (TD)	275	300	319	336	358	396	424	340	30	1,154
Supervised Breaks (SB)	282	300	315	330	350	389	416	335	28	4,179
Beneficial Time (BT)	275	292	312	327	350	394	412	333	30	752
Tested At Home or Hospital (HH)	300	303	320	338	373	429	442	351	40	52
Dictionary for Math (DM)	295	300	317	327	343	373	416	332	23	314
Sign Language (SL)	298	303	315	330	345	420	435	337	33	149
Oral Presentation (OP)	289	300	317	329	345	379	405	333	24	3,122
Calculator (CA)	292	303	317	329	345	373	402	333	22	9,147
Arithmetic Table (AT)	295	303	317	330	345	374	405	333	23	540
Math Manipulatives (MM)	295	300	323	344	363	450	450	348	36	112
Assistive Device (AD)	310	310	332	342	371	450	450	357	43	18
Unlisted Modification (UM)	298	303	321	337	356	384	420	340	27	30
Unlisted Accommodation (UA)	282	303	319	333	358	396	442	340	30	546

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.F.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, March 2010

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Assistive Device	Specific Learning Disability	18	319	26	6
Assistive Device No Interference	Visual Impairment	19	346	34	37
	Specific Learning Disability	39	349	26	44
Beneficial Time	Mental Retardation	16	308	34	19
	Speech or Language Impairment	18	319	21	6
	Emotional Disturbance	194	321	36	21
	Other Health Impairment	53	337	36	36
	Specific Learning Disability	390	327	27	21
Braille Version	Autism	23	325	41	26
	Visual Impairment	30	359	46	57
Dictionary	Mental Retardation	60	302	17	0
	Hard of Hearing	21	319	24	10
	Deaf	31	317	22	6
	Speech or Language Impairment	60	325	24	15
	Emotional Disturbance	43	328	33	30
	Other Health Impairment	99	334	28	29
	Specific Learning Disability	1,349	326	23	16
	Autism	49	327	32	27
Essay Responses (EO)	Orthopedic Impairment	13	343	27	54
	Specific Learning Disability	58	337	33	31
Essay Responses (ER)	Deaf	18	329	19	11
	Specific Learning Disability	75	326	25	15
IEP or Section 504 Plan	Mental Retardation	557	303	19	2
	Hard of Hearing	292	334	35	29
	Deaf	226	315	28	11
	Speech or Language Impairment	1,018	331	28	22
	Visual Impairment	161	357	43	53
	Emotional Disturbance	1,956	332	38	32
	Orthopedic Impairment	218	342	38	39
	Other Health Impairment	2,396	344	34	43
	Specific Learning Disability	19,195	330	27	23
	Multiple Disabilities	48	330	34	23
	Autism	933	348	40	47
	Traumatic Brain Injury	111	324	27	19
Large Print Version	Visual Impairment	62	359	42	60
	Specific Learning Disability	16	322	24	6
Oral Presentation	Mental Retardation	153	305	17	2
	Hard of Hearing	32	323	30	19
	Speech or Language Impairment	169	325	23	14
	Visual Impairment	18	343	36	33
	Emotional Disturbance	118	326	33	25
	Orthopedic Impairment	42	330	29	29

Table 2.F.7 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
	Other Health Impairment	223	333	26	24
	Specific Learning Disability	2,871	326	24	16
	Multiple Disabilities	11	320	23	9
	Autism	107	322	27	17
	Traumatic Brain Injury	28	323	20	14
Oral Responses Dictated to a Scribe	Deaf	16	306	27	6
	Orthopedic Impairment	12	342	38	42
	Specific Learning Disability	22	338	32	36
Sign Language	Hard of Hearing	15	310	26	7
	Deaf	60	316	22	7
Spell Checker Or Grammar Checker	Mental Retardation	18	317	17	0
	Speech or Language Impairment	18	331	19	17
	Emotional Disturbance	15	335	41	33
	Other Health Impairment	36	340	33	36
	Specific Learning Disability	267	329	22	19
	Autism	22	339	32	45
Spell Checker Or Grammar Checker Off	Visual Impairment	11	364	40	55
	Emotional Disturbance	19	355	40	47
	Orthopedic Impairment	14	360	44	50
	Other Health Impairment	23	372	40	78
	Specific Learning Disability	87	342	35	38
	Autism	21	371	40	76
Supervised Breaks	Mental Retardation	132	305	19	2
	Hard of Hearing	41	323	30	15
	Deaf	21	321	23	14
	Speech or Language Impairment	193	329	25	17
	Visual Impairment	41	352	42	44
	Emotional Disturbance	503	327	38	25
	Orthopedic Impairment	34	343	41	29
	Other Health Impairment	369	341	34	39
	Specific Learning Disability	3,189	328	27	21
	Autism	160	344	39	43
	Traumatic Brain Injury	19	324	27	21
Test Over More Than One Day	Mental Retardation	31	310	21	3
	Hard of Hearing	15	336	34	33
	Speech or Language Impairment	69	334	25	22
	Visual Impairment	22	355	47	45
	Emotional Disturbance	123	321	33	17
	Orthopedic Impairment	17	347	32	47
	Other Health Impairment	147	347	31	49

Table 2.F.7 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
	Specific Learning Disability	1,168	333	27	27
	Autism	45	361	34	62
Tested At Home Or Hospital	Specific Learning Disability	12	328	28	17
Transfer of Student T/B Responses to A/D	Visual Impairment	58	364	45	55
	Orthopedic Impairment	18	375	48	67
	Specific Learning Disability	48	334	31	25
	Autism	14	352	42	64
Unlisted Accommodation	Mental Retardation	20	299	17	5
	Deaf	34	303	17	3
	Speech or Language Impairment	22	334	25	27
	Emotional Disturbance	30	331	39	33
	Other Health Impairment	55	343	33	42
	Specific Learning Disability	492	327	25	17
	Autism	26	349	43	54
Unlisted Modification	Specific Learning Disability	31	339	24	29

¹ Results for groups with less 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 2010

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	Mental Retardation	16	322	20	13
	Emotional Disturbance	19	345	28	37
	Other Health Impairment	41	331	16	15
	Specific Learning Disability	385	333	23	20
	Autism	11	326	16	9
Beneficial Time	Mental Retardation	13	307	18	0
	Speech or Language Impairment	21	324	19	10
	Emotional Disturbance	191	326	31	21
	Orthopedic Impairment	12	342	25	17
	Other Health Impairment	50	344	35	38
	Specific Learning Disability	350	333	27	25
	Autism	18	344	33	50
Braille Version	Visual Impairment	33	347	40	48
Calculator	Mental Retardation	259	319	15	5
	Hard of Hearing	62	331	22	23
	Deaf	40	327	13	5
	Speech or Language Impairment	330	331	21	17
	Visual Impairment	29	337	32	28
	Emotional Disturbance	415	335	26	23
	Orthopedic Impairment	84	333	24	14
	Other Health Impairment	674	338	25	26
	Specific Learning Disability	6,365	333	22	19
	Multiple Disabilities	15	327	16	13
	Autism	301	337	27	26
	Traumatic Brain Injury	43	328	25	16
	Dictionary for Math	Mental Retardation	13	310	16	8
Speech or Language Impairment		12	326	13	0
Other Health Impairment		17	334	23	24
Specific Learning Disability		222	330	19	15
IEP or Section 504 Plan	Mental Retardation	549	315	15	3
	Hard of Hearing	263	342	34	33
	Deaf	194	335	28	16
	Speech or Language Impairment	999	339	29	29
	Visual Impairment	167	359	41	52
	Emotional Disturbance	2,022	335	32	27
	Orthopedic Impairment	237	343	33	32
	Other Health Impairment	2,507	346	31	39
	Specific Learning Disability	19,065	336	25	25
	Multiple Disabilities	44	332	26	27
	Autism	940	354	40	46
Traumatic Brain Injury	105	332	26	21	
Large Print Version	Visual Impairment	67	361	44	48
	Specific Learning Disability	11	328	15	9

Table 2.F.8 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Math Manipulatives	Specific Learning Disability	58	337	27	26
Oral Presentation	Mental Retardation	125	317	16	5
	Hard of Hearing	21	337	28	24
	Speech or Language Impairment	122	335	24	26
	Visual Impairment	15	337	33	33
	Emotional Disturbance	86	338	28	31
	Orthopedic Impairment	31	340	28	23
	Other Health Impairment	191	337	28	26
	Specific Learning Disability	2,212	333	23	20
	Autism	90	333	26	20
Oral Responses Dictated to a Scribe	Traumatic Brain Injury	22	332	29	23
	Deaf	16	337	25	13
	Orthopedic Impairment	15	350	28	33
Sign Language	Hard of Hearing	13	321	25	8
	Deaf	100	335	30	17
	Specific Learning Disability	15	337	28	27
Supervised Breaks	Mental Retardation	117	314	16	3
	Hard of Hearing	34	338	28	29
	Deaf	11	331	14	0
	Speech or Language Impairment	168	338	28	30
	Visual Impairment	36	351	37	47
	Emotional Disturbance	466	329	29	23
	Orthopedic Impairment	36	341	26	28
	Other Health Impairment	295	343	31	38
	Specific Learning Disability	2,607	334	25	24
	Autism	126	349	42	44
Test Over More Than One Day	Traumatic Brain Injury	13	320	23	8
	Mental Retardation	16	316	20	0
	Speech or Language Impairment	40	342	29	38
	Emotional Disturbance	115	325	33	22
	Orthopedic Impairment	11	348	23	36
	Other Health Impairment	97	352	32	51
	Specific Learning Disability	763	339	27	29
	Autism	31	366	39	61
Tested At Home Or Hospital	Specific Learning Disability	11	337	18	27
Transfer of Student T/B Responses to A/D	Visual Impairment	55	367	46	58
	Orthopedic Impairment	17	375	34	76
	Specific Learning Disability	40	340	30	25
Unlisted Accommodation	Mental Retardation	13	311	8	0
	Speech or Language Impairment	12	340	22	33
	Emotional Disturbance	28	337	37	25
	Other Health Impairment	44	342	32	39

Table 2.F.8 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
	Specific Learning Disability	319	337	26	29
	Autism	18	350	39	56
Unlisted Modification	Specific Learning Disability	19	337	22	37

¹ Results for groups with less 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 2010

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
Assistive Device	English Only	13	335	40	15
	English Learner	14	311	23	0
Assistive Device No Interference	English Only	58	351	34	53
	Initially Fluent English Proficient	11	355	32	45
	Reclassified Fluent English Proficient	11	360	39	45
	English Learner	20	339	24	30
Beneficial Time	English Only	568	328	35	26
	Initially Fluent English Proficient	17	331	34	29
	Reclassified Fluent English Proficient	19	350	38	42
	English Learner	211	321	26	14
Braille Version	English Only	21	360	40	62
Dictionary	English Only	914	327	26	20
	Initially Fluent English Proficient	50	332	26	22
	Reclassified Fluent English Proficient	47	346	29	47
	English Learner	817	322	22	11
Essay Responses (EO)	English Only	89	347	41	45
	English Learner	32	327	29	25
Essay Responses (ER)	English Only	72	332	27	26
	English Learner	55	318	20	5
IEP or Section 504 Plan	English Only	17,242	337	34	34
	Initially Fluent English Proficient	971	340	35	38
	Reclassified Fluent English Proficient	1,375	351	30	54
	English Learner	9,929	323	23	13
	Unknown	124	326	28	19
Large Print Version	English Only	92	358	42	60
	Reclassified Fluent English Proficient	18	367	25	83
	English Learner	32	330	27	28
Oral Presentation	English Only	2,160	326	26	18
	Initially Fluent English Proficient	88	330	25	24
	Reclassified Fluent English Proficient	121	337	25	25
	English Learner	1,657	322	23	12
	Unknown	17	329	23	12
Oral Responses Dictated to a Scribe	English Only	47	348	45	45
	English Learner	37	318	35	19
Sign Language	English Only	45	335	41	29

Table 2.F.9 (Continued)

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
	English Learner	50	318	25	12
Spell Checker Or Grammar Checker	English Only	274	335	29	30
	Initially Fluent English Proficient	12	324	19	0
	Reclassified Fluent English Proficient	13	338	22	31
	English Learner	133	324	20	11
Spell Checker Or Grammar Checker Off	English Only	179	357	41	57
	English Learner	43	334	29	21
Supervised Breaks	English Only	2,886	333	33	29
	Initially Fluent English Proficient	138	329	30	27
	Reclassified Fluent English Proficient	245	344	31	40
	English Learner	1,725	321	23	12
	Unknown	23	326	26	13
Test Over More Than One Day	English Only	941	337	32	33
	Initially Fluent English Proficient	61	343	30	43
	Reclassified Fluent English Proficient	66	354	33	56
	English Learner	665	328	24	19
Tested At Home Or Hospital	English Only	57	365	49	54
	English Learner	16	327	24	13
Transfer of Student T/B Responses to A/D	English Only	133	352	43	45
	Initially Fluent English Proficient	11	389	47	82
	Reclassified Fluent English Proficient	19	374	36	79
	English Learner	25	319	24	16
Unlisted Accommodation	English Only	459	335	32	31
	Reclassified Fluent English Proficient	27	344	31	52
	English Learner	298	321	24	10
Unlisted Modification	English Only	32	352	38	50
	English Learner	16	320	23	6

¹ Results for groups with less 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 2010

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English Only	327	334	23	21
	Reclassified Fluent English Proficient	16	360	35	56
	English Learner	181	328	19	15
Beneficial Time	English Only	544	334	31	27
	Initially Fluent English Proficient	13	337	40	23
	Reclassified Fluent English Proficient	14	358	29	57
	English Learner	180	329	25	19
Braille Version	English Only	21	339	38	38
Calculator	English Only	5,462	334	24	21
	Initially Fluent English Proficient	299	337	22	24
	Reclassified Fluent English Proficient	336	344	25	36
	English Learner	2,988	329	19	15
	Unknown	62	331	22	16
Dictionary for Math	English Only	186	332	20	17
	English Learner	121	328	19	13
IEP or Section 504 Plan	English Only	17,752	341	31	32
	Initially Fluent English Proficient	978	343	31	34
	Reclassified Fluent English Proficient	1,423	355	32	52
	English Learner	9,320	331	23	19
	Unknown	153	329	25	17
Large Print Version	English Only	79	363	45	51
	Reclassified Fluent English Proficient	15	363	26	53
	English Learner	18	332	26	22
Math Manipulatives	English Only	75	341	33	31
	English Learner	19	357	36	63
Oral Presentation	English Only	1,660	333	24	21
	Initially Fluent English Proficient	81	330	23	21
	Reclassified Fluent English Proficient	98	347	28	40
	English Learner	1,268	332	23	19
	Unknown	15	354	38	47
Oral Responses Dictated to a Scribe	English Only	34	341	30	35
	English Learner	31	336	25	23
Sign Language	English Only	102	338	34	25
	English Learner	42	330	25	12
Supervised Breaks	English Only	2,554	336	29	28
	Initially Fluent English Proficient	114	335	28	23
	Reclassified Fluent English Proficient	193	347	29	41
	English Learner	1,295	331	23	19

Table 2.F.10 (Continued)

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
	Unknown	23	338	35	26
Test Over More Than One Day	English Only	612	340	31	34
	Initially Fluent English Proficient	40	337	26	23
	Reclassified Fluent English Proficient	44	368	40	64
	English Learner	456	337	25	27
Tested At Home Or Hospital	English Only	42	356	40	45
Transfer of Student T/B Responses to A/D	English Only	115	355	42	42
	Reclassified Fluent English Proficient	21	380	40	76
	English Learner	20	339	24	45
Unlisted Accommodation	English Only	362	341	31	33
	Reclassified Fluent English Proficient	18	356	37	67
	English Learner	153	335	24	29
Unlisted Modification	English Only	17	339	30	35
	English Learner	11	337	24	36

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Appendix 2.G: Results of Testing Variations and Disability Analyses— May 2010

Table 2.G.1: Summary Statistics by Testing Variations and Disability—ELA, May 2010

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	1,046	322	28	14
Modifications	2,260	325	24	15
All	3,306	324	25	15
Disability				
Unknown	-	-	-	-
Mental Retardation	300	304	18	2
Hard of Hearing	129	322	22	9
Deaf	142	315	23	4
Speech or Language Impairment	494	329	24	22
Visual Impairment	30	335	34	27
Emotional Disturbance	875	322	34	20
Orthopedic Impairment	96	324	26	10
Other Health Impairment	633	327	29	20
Specific Learning Disability	7,155	322	24	14
Deaf-Blindness	-	-	-	-
Multiple Disabilities	23	325	30	26
Autism	260	323	28	16
Traumatic Brain Injury	44	326	32	14

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.G.2: Summary Statistics by Testing Variations and Disability—Mathematics, May 2010

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	914	327	25	15
Modifications	3,568	327	21	13
All	4,482	327	22	13
Disability				
Unknown	-	-	-	-
Mental Retardation	295	313	16	3
Hard of Hearing	97	326	18	7
Deaf	96	325	19	7
Speech or Language Impairment	434	330	21	13
Visual Impairment	45	333	28	27
Emotional Disturbance	962	326	26	16
Orthopedic Impairment	100	322	18	8
Other Health Impairment	710	330	24	18
Specific Learning Disability	6,975	325	20	11
Multiple Disabilities	20	327	22	5
Autism	266	328	25	15
Traumatic Brain Injury	42	331	27	21

¹ Results for groups with less than 11 students are not reported.

² SD — Standard Deviation

Table 2.G.3: Demographic Summary for All Examinees by Testing Variations—ELA, May 2010

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
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 plan	7,285	1,081	15	6,204	85	323	52	40	46	34	44	1.9
Transfer of T/B Responses to A/D (TS)	44	12	27	32	73	332	62	46	50	44	49	2.0
Oral Responses Dictated to a Scribe (OR)	28	7	25	21	75	331	56	47	52	42	47	1.8
Spell Checker/Grammar Checker Off (SO)	75	13	17	62	83	327	57	41	48	35	45	2.1
Essay Responses (EO)	34	10	29	24	71	334	59	46	50	47	45	2.0
Assistive Device No Interference (AN)	23	2	9	21	91	326	49	44	46	31	49	2.0
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	20	5	25	15	75	332	63	44	51	46	53	1.9
Test Over More Than One Day (TD)	400	74	19	326	82	328	56	43	49	38	47	2.0
Supervised Breaks (SB)	1,268	160	13	1,108	87	321	52	39	44	33	43	1.9
Beneficial Time (BT)	278	38	14	240	86	319	50	39	44	32	40	1.7
Tested At Home or Hospital (HH)	28	9	32	19	68	343	58	50	55	44	54	2.2
Dictionary (DI)	696	99	14	597	86	324	54	40	46	35	44	1.9
Sign Language (SL)	46	3	7	43	93	316	50	32	43	31	45	1.6
Oral Presentation (OP)	1,843	286	16	1,557	84	325	55	41	48	37	46	1.9
Spell Checker or Grammar Checker (SC)	215	37	17	178	83	328	54	43	47	37	48	2.1
Essay Responses (ER)	72	15	21	57	79	328	54	42	45	38	44	2.4
Assistive Device (AD)	15	2	13	13	87	336	54	50	49	33	45	2.9
Unlisted Modification (UM)	51	6	12	45	88	320	50	39	41	34	43	2.0
Unlisted Accommodation (UA)	209	29	14	180	86	324	52	40	45	34	45	2.0

¹ Results for groups with less than 11 students are not reported.

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

Table 2.G.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, May 2010

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	7,376	958	13	6,418	87	326	43	45	39	34	30
Transfer of T/B Responses to A/D (TS)	50	17	34	33	66	340	52	53	47	41	40
Oral Responses Dictated to a Scribe (OR)	26	7	27	19	73	330	47	50	37	34	32
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	22	4	18	18	82	328	43	45	43	31	32
Test Over More Than One Day (TD)	191	34	18	157	82	329	46	45	40	34	33
Supervised Breaks (SB)	1,053	148	14	905	86	326	42	45	38	33	30
Beneficial Time (BT)	264	35	13	229	87	323	40	44	35	32	28
Tested At Home or Hospital (HH)	27	9	33	18	67	348	54	56	49	48	40
Dictionary for Math (DM)	92	24	26	68	74	333	49	50	43	38	32
Sign Language (SL)	23	1	4	22	96	325	39	46	36	31	35
Oral Presentation (OP)	980	170	17	810	83	329	45	46	40	35	32
Calculator (CA)	3,500	443	13	3,057	87	327	44	46	39	33	30
Arithmetic Table (AT)	259	41	16	218	84	328	44	45	40	35	33
Math Manipulative (MM)	44	7	16	37	84	324	38	41	35	35	31
Assistive Device (AD)	17	2	12	15	88	332	50	49	41	33	39
Unlisted Modification (UM)	41	2	5	39	95	318	38	40	30	30	28
Unlisted Accommodation (UA)	194	26	13	168	87	328	43	47	39	34	31

¹ Results for groups with less 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 2010

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 plan	275	283	303	320	339	367	394	323	26	7,285
Transfer of T/B Responses to A/D (TS)	275	283	317	333	354	385	391	332	28	44
Oral Responses Dictated to a Scribe (OR)	277	279	304	332	347	391	424	331	35	28
Spell Checker/Grammar Checker Off (SO)	275	285	305	326	343	380	450	327	30	75
Essay Responses (EO)	275	275	303	332	364	424	448	334	42	34
Assistive Device No Interference (AN)	275	301	311	322	333	383	388	326	25	23
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	282	285	319	336	350	376	388	332	27	20
Test Over More Than One Day (TD)	275	290	309	326	345	373	399	328	26	400
Supervised Breaks (SB)	275	285	303	318	337	364	388	321	25	1,268
Beneficial Time (BT)	275	279	301	316	335	364	441	319	29	278
Tested At Home or Hospital (HH)	275	279	305	331	357	450	450	343	52	28
Dictionary (DI)	275	285	305	322	341	367	385	324	24	696
Sign Language (SL)	275	287	295	317	330	364	369	316	23	46
Oral Presentation (OP)	275	289	307	324	341	367	388	325	24	1,843
Spell Checker or Grammar Checker (SC)	277	289	309	330	345	362	378	328	23	215
Essay Responses (ER)	289	295	306	323	345	369	429	328	26	72
Assistive Device (AD)	307	307	324	343	348	360	360	336	16	15
Unlisted Modification (UM)	283	293	305	318	335	358	378	320	21	51
Unlisted Accommodation (UA)	275	289	303	324	339	367	388	324	25	209

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.G.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, May 2010

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 plan	284	298	312	322	337	366	399	326	22	7,376
Transfer of T/B Responses to A/D (TS)	275	290	312	332	372	408	446	340	37	50
Oral Responses Dictated to a Scribe (OR)	275	277	303	317	362	399	446	330	41	26
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	298	303	312	323	334	366	385	328	22	22
Test Over More Than One Day (TD)	280	290	312	326	343	374	408	329	25	191
Supervised Breaks (SB)	280	296	310	322	337	370	402	326	23	1,053
Beneficial Time (BT)	275	287	308	318	334	366	446	323	27	264
Tested At Home or Hospital (HH)	277	298	315	328	390	431	450	348	47	27
Dictionary for Math (DM)	290	301	316	326	350	388	399	333	25	92
Sign Language (SL)	301	308	312	326	335	348	353	325	14	23
Oral Presentation (OP)	284	301	312	324	341	378	405	329	25	980
Calculator (CA)	287	301	312	324	339	362	396	327	21	3,500
Arithmetic Table (AT)	290	301	312	324	341	376	402	328	24	259
Math Manipulative (MM)	290	296	306	319	331	362	446	324	28	44
Assistive Device (AD)	287	287	330	335	341	359	359	332	17	17
Unlisted Modification (UM)	284	293	306	318	326	348	368	318	18	41
Unlisted Accommodation (UA)	275	301	312	325	339	366	408	328	22	194

¹ SD — Standard Deviation

² Results for groups with less than 11 students are not reported.

Table 2.G.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, May 2010

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Assistive Device	Specific Learning Disability	12	338	17	17
Assistive Device No Interference	Specific Learning Disability	15	323	24	7
Beneficial Time	Speech or Language Impairment	12	318	27	8
	Emotional Disturbance	67	314	29	12
	Other Health Impairment	17	333	41	35
Dictionary	Specific Learning Disability	134	320	22	11
	Mental Retardation	34	303	15	0
	Speech or Language Impairment	22	319	25	14
	Emotional Disturbance	14	319	29	14
	Other Health Impairment	27	322	22	11
Essay Responses (EO)	Specific Learning Disability	515	326	24	15
	Autism	18	319	27	11
Essay Responses (ER)	Specific Learning Disability	14	325	37	29
IEP or Section 504 Plan	Specific Learning Disability	38	336	29	32
	Mental Retardation	221	305	17	2
	Hard of Hearing	89	320	22	8
	Deaf	61	313	23	3
	Speech or Language Impairment	311	329	24	19
	Visual Impairment	23	335	35	26
	Emotional Disturbance	588	322	34	19
	Orthopedic Impairment	69	324	24	9
	Other Health Impairment	422	326	28	18
	Specific Learning Disability	4,758	322	24	14
	Multiple Disabilities	18	326	32	28
	Autism	194	321	27	13
	Traumatic Brain Injury	29	321	23	10
Oral Presentation	Mental Retardation	82	305	16	0
	Hard of Hearing	19	325	20	5
	Speech or Language Impairment	104	329	25	20
	Emotional Disturbance	34	330	30	24
	Orthopedic Impairment	20	325	28	15
	Other Health Impairment	100	330	21	14
	Specific Learning Disability	1,317	326	24	16
Sign Language	Autism	52	324	23	13
	Deaf	34	313	21	3
Spell Checker Or Grammar Checker	Deaf	34	313	21	3
	Speech or Language Impairment	14	325	22	14
	Other Health Impairment	14	338	26	36
Spell Checker Or Grammar Checker Off	Specific Learning Disability	146	329	22	17
	Specific Learning Disability	32	330	22	22
Supervised Breaks	Specific Learning Disability	32	330	22	22
	Mental Retardation	51	303	17	4
	Hard of Hearing	19	321	16	5
	Speech or Language Impairment	55	327	24	16

Table 2.G.7 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
	Emotional Disturbance	117	316	29	14
	Orthopedic Impairment	19	322	24	11
	Other Health Impairment	65	329	29	20
	Specific Learning Disability	800	322	23	12
	Autism	36	317	24	11
Test Over More Than One Day	Speech or Language Impairment	12	338	21	25
	Emotional Disturbance	32	320	28	19
	Other Health Impairment	27	326	20	15
	Specific Learning Disability	275	330	25	19
	Autism	18	330	23	22
Tested At Home Or Hospital	Specific Learning Disability	12	323	33	17
Transfer of Student T/B Responses to A/D	Specific Learning Disability	19	343	32	42
Unlisted Accommodation	Emotional Disturbance	12	316	24	8
	Other Health Impairment	12	344	29	33
	Specific Learning Disability	138	324	23	14
Unlisted Modification	Specific Learning Disability	30	325	21	17

¹ Results for groups with less 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 2010

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	Emotional Disturbance	15	327	15	13
	Other Health Impairment	19	334	29	21
	Specific Learning Disability	169	327	22	12
Assistive Device	Specific Learning Disability	15	330	17	7
Beneficial Time	Emotional Disturbance	69	319	26	9
	Other Health Impairment	17	341	39	29
	Specific Learning Disability	114	320	19	9
	Autism	12	323	48	17
Calculator	Mental Retardation	118	314	18	4
	Hard of Hearing	26	327	17	12
	Deaf	20	323	20	15
	Speech or Language Impairment	156	329	20	12
	Visual Impairment	11	332	26	9
	Emotional Disturbance	172	325	22	12
	Orthopedic Impairment	35	324	15	3
	Other Health Impairment	234	329	21	14
	Specific Learning Disability	2,400	327	20	13
	Multiple Disabilities	13	326	26	8
	Autism	101	326	23	12
	Traumatic Brain Injury	15	335	18	27
	Dictionary for Math	Specific Learning Disability	66	328	21	17
IEP or Section 504 Plan	Mental Retardation	222	313	17	4
	Hard of Hearing	72	325	18	7
	Deaf	43	324	22	12
	Speech or Language Impairment	275	329	21	13
	Visual Impairment	38	334	27	24
	Emotional Disturbance	658	326	27	15
	Orthopedic Impairment	74	322	16	5
	Other Health Impairment	489	330	24	17
	Specific Learning Disability	4,719	326	20	12
	Multiple Disabilities	16	325	24	6
	Autism	209	327	26	14
	Traumatic Brain Injury	30	328	19	17
	Visual Impairment	13	328	23	15
	Specific Learning Disability	26	326	22	23
Large Print Version	Specific Learning Disability	26	326	22	23
	Math Manipulatives	Specific Learning Disability	26	326	22	23
Oral Presentation	Mental Retardation	50	322	23	14
	Speech or Language Impairment	33	335	25	24
	Emotional Disturbance	27	324	26	15
	Orthopedic Impairment	20	326	18	5
	Other Health Impairment	55	332	26	22
	Specific Learning Disability	659	329	24	17

Table 2.G.8 (Continued)

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
	Autism	38	327	30	16
Sign Language	Deaf	11	327	15	9
Supervised Breaks	Mental Retardation	44	316	20	9
	Hard of Hearing	17	321	14	0
	Speech or Language Impairment	42	326	16	10
	Emotional Disturbance	120	320	26	8
	Orthopedic Impairment	13	322	23	15
	Other Health Impairment	64	331	29	19
	Specific Learning Disability	643	326	21	14
	Autism	27	327	32	11
Test Over More Than One Day	Emotional Disturbance	30	320	20	3
	Other Health Impairment	17	325	23	24
	Specific Learning Disability	105	329	23	18
	Autism	11	338	44	27
Transfer of Student T/B Responses to A/D	Specific Learning Disability	14	364	34	64
Unlisted Accommodation	Other Health Impairment	14	349	26	36
	Specific Learning Disability	122	326	19	11
Unlisted Modification	Specific Learning Disability	20	319	16	0

¹ Results for groups with less 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 2010

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Assistive Device	English Only	11	339	12	9
Assistive Device No Interference	English Only	12	324	28	8
	English Learner	11	328	22	9
Beneficial Time	English Only	181	320	31	14
	English Learner	76	317	23	11
	Unknown	12	318	28	8
Dictionary	English Only	355	326	25	18
	Initially Fluent English Proficient	13	313	22	0
	Reclassified Fluent English Proficient	19	317	18	5
	English Learner	292	321	23	9
	Unknown	17	333	26	35
Essay Responses (EO)	English Only	23	331	40	26
Essay Responses (ER)	English Only	43	333	29	26
	English Learner	18	318	20	11
IEP or Section 504 Plan	English Only	4,206	324	28	17
	Initially Fluent English Proficient	186	325	28	17
	Reclassified Fluent English Proficient	257	326	26	18
	English Learner	2,508	320	22	10
	Unknown	128	325	27	20
Oral Presentation	English Only	997	327	24	17
	Initially Fluent English Proficient	29	322	26	14
	Reclassified Fluent English Proficient	63	333	22	22
	English Learner	721	323	23	12
	Unknown	33	330	29	27
Oral Responses Dictated to a Scribe	English Only	18	333	39	28
Sign Language	English Only	11	317	24	9
	English Learner	30	314	22	3
Spell Checker Or Grammar Checker	English Only	127	329	24	20
	English Learner	73	328	20	15
Spell Checker Or Grammar Checker Off	English Only	54	328	33	19
	English Learner	16	321	22	13
Supervised Breaks	English Only	673	323	28	16
	Initially Fluent English Proficient	37	317	24	5
	Reclassified Fluent English Proficient	47	318	22	11
	English Learner	489	319	21	8
	Unknown	22	318	26	9
Test Over More Than One Day	English Only	204	329	25	22

Table 2.G.9 (Continued)

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
	Initially Fluent English Proficient	14	335	38	14
	English Learner	168	327	26	15
Tested At Home Or Hospital	English Only	19	355	58	42
Transfer of Student T/B Responses to A/D	English Only	30	337	27	33
Unlisted Accommodation	English Only	114	326	26	17
	English Learner	82	317	20	5
Unlisted Modification	English Only	22	322	22	9
	English Learner	27	318	22	15

¹ Results for groups with less 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 2010

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English Only	171	330	26	18
	English Learner	70	326	20	11
Assistive Device	English Only	13	333	18	15
	English Learner	66	317	15	3
Beneficial Time	English Only	183	325	30	16
	English Learner	66	317	15	3
Calculator	English Only	2,159	328	21	13
	Initially Fluent English Proficient	94	329	19	10
	Reclassified Fluent English Proficient	139	334	24	22
	English Learner	1,053	324	18	10
Dictionary for Math	English Only	63	337	26	32
	English Learner	24	323	20	8
	Initially Fluent English Proficient	94	329	19	10
	Reclassified Fluent English Proficient	139	334	24	22
IEP or Section 504 Plan	English Only	4,553	327	23	14
	Initially Fluent English Proficient	193	331	21	13
	Reclassified Fluent English Proficient	302	331	23	19
	English Learner	2,217	324	19	9
	Unknown	111	327	23	17
Math Manipulatives	English Only	31	321	28	10
Oral Presentation	English Only	519	331	27	20
	Initially Fluent English Proficient	19	336	18	21
	Reclassified Fluent English Proficient	42	339	26	26
	English Learner	383	325	20	12
	Unknown	17	331	22	29
Oral Responses Dictated to a Scribe	English Only	20	332	45	30
Sign Language	English Learner	13	326	10	0
Supervised Breaks	English Only	606	327	26	16
	Initially Fluent English Proficient	33	330	18	18
	Reclassified Fluent English Proficient	55	327	21	15
	English Learner	344	324	20	10
	Unknown	15	324	20	13
Test Over More Than One Day	English Only	111	328	25	17
	English Learner	67	331	27	22
Tested At Home Or Hospital	English Only	21	354	51	38
Transfer of Student T/B Responses to A/D	English Only	37	341	38	35
Unlisted Accommodation	English Only	122	329	24	16
	English Learner	58	324	17	7
Unlisted Modification	English Only	22	319	23	9
	English Learner	17	317	12	0

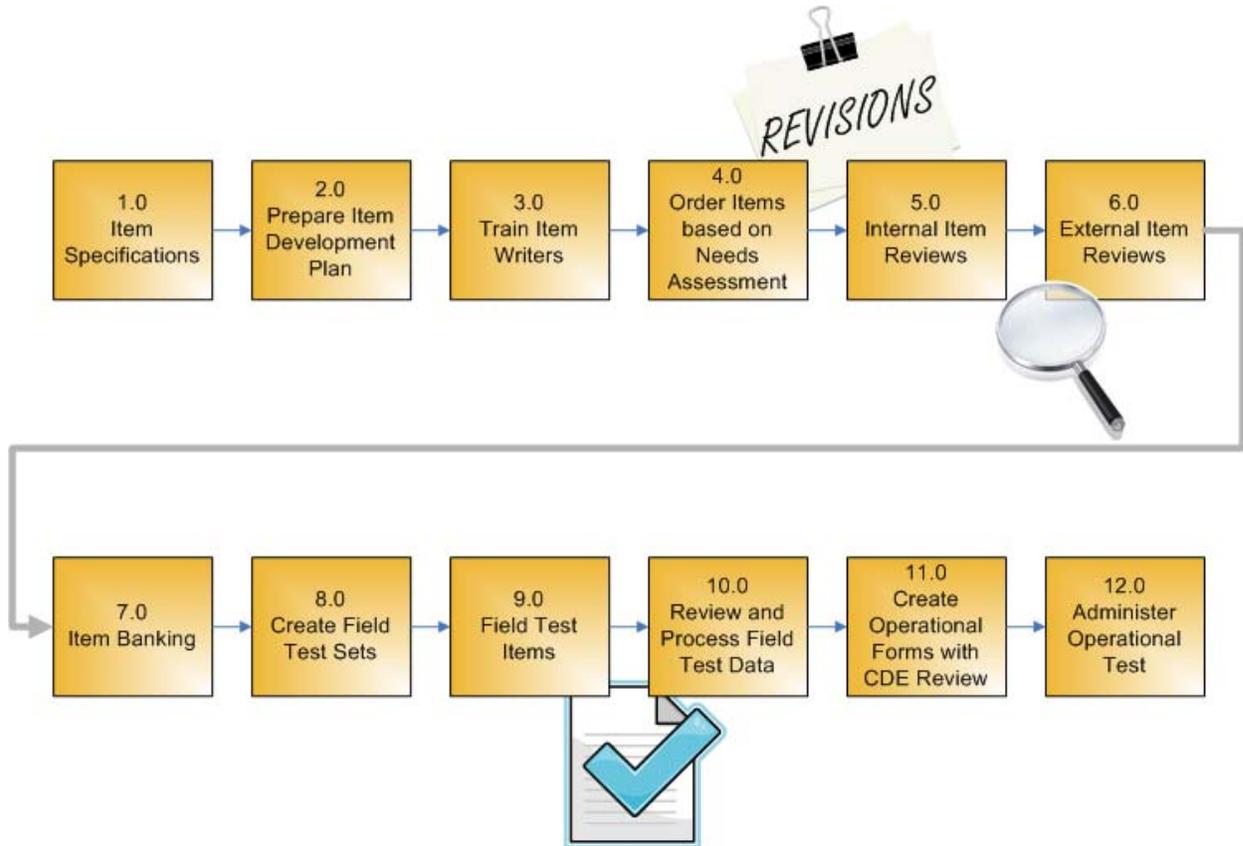
¹ Results for groups with less than 11 students are not reported.

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 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, 2010).
- 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 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., items with a negative connotation in the stem, such as, “Which of the following is NOT...”).

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 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 blueprint is used to determine item needs and helps 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 test. ETS test development staff uses 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 and mathematics RTQs were released.

The field-test percentages and item counts for the 2010 field test 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. That is, the number of ELA items field tested was 4.5 times or 450 percent of the number of unique items used to score students across the administrations. The number of mathematics items field tested was 3.5 times or 350 percent of the number of unique items used to score students across the administrations.

Table 3.1 Field-test Percentages for the CAHSEE

Content Area	Percentage of Operational Form Field Tested	Number of Items Field Tested
English–Language Arts	≈ 450	1770
Mathematics	≈ 350	1560

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 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. All item writers 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 and mathematics.
- Knowledge about the capabilities of the students taking these tests.
- Knowledge and experience with California content standards in ELA and mathematics.

Before items can be written for CAHSEE ELA, passages must be written for both reading and language. Applicants for passage writing were screened by senior ETS content staff, and only those with strong writing skills were 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 used the Item Bank Inventory and the Item Development Plan to determine how many items were still needed for each standard and ordered items from item writers based on these numbers. The item writers were 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 sample stems, sample items, and a checklist for item writers.
- An explanation of the depth-of-knowledge ratings.
- The Internet Web link to the previous Released Test Questions.

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 CDE 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 included the following stages:

1. Internal Content Review
2. Internal Editorial Review
3. Internal Bias and Sensitivity 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 depth of knowledge
- 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/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.
- Checking the language of the items for EL students.

Internal Editorial Review

After the items are reviewed by the content-area assessment specialists and the bias/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 2009-10 development cycle, Content and Bias and Sensitivity Review committees were not 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 and county offices of education in addition to 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 or the Bias and Sensitivity Review committee.

Bias and Sensitivity Review Meetings for Review of CAHSEE Items

The ETS test development manager facilitates the Bias and Sensitivity Review meetings. 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 principles of Universal Design.
- An overview of guidelines for reviewing CAHSEE items for potential issues of bias and sensitivity.

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

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. 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

The committee was also trained on how to make recommendations for revising items. 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 depth of knowledge 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 CDE consultants.

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 one time. Data from every administration 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 the 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 CDE approval are updated with a “released” or “scheduled for release” status and remain unavailable in the bank. CAHSEE items used operationally “rest” or 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 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’ 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 into 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 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 maintain 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 2009 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 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 over 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 2010 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.

Table 3.2 Summary of Items and Forms Presented in 2010 CAHSEE

Subject	Administration	Operational			Field Test			
		No. of Items	No. of Examinees FIA Sample	No. of Examinees Total ¹	No. of Forms	No. of Items	No. of Examinees FIA Sample	No. of Examinees Total ¹
ELA	February	73	174,459	171,323	104	711	1,581-3,851	171,323
	March	73	397,188	393,121	155	1059	2,266-6,442	393,121
Mathematics	February	80	174,038	168,363	52	624	3,229-5,397	168,363
	March	80	396,557	388,590	78	936	4,946-8,328	388,590

¹ This number is the total number of examinees for score reporting purposes, and due to different inclusion criteria for score reporting than for FIA, it is smaller than the number of examinees in the FIA sample. See note under Table E.1 for criteria.

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 that differ in ability; and (3) the distractors 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 item 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 that 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 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, although no meeting was held during the 2009–2010 school year.

11.0 Create Operational Forms with California Department of Education Approval

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 CDE for their review. These forms are posted to and reviewed by 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 include July, October, November, December, February, March, and May. The census administrations, consisting primarily of grade 10 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 12 and adult education students.

Chapter 4: Test Development

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 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 2009–10 CAHSEE administrations, see Table 2.1 in Chapter 2.

Rules for Item Selection

Test Blueprint

ETS 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 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 are 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 there is a variety of easy, medium, and difficult items on the test. 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 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) which 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 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 for approval to the psychometricians.

Figure 4.1: Example of Test Characteristic Curves

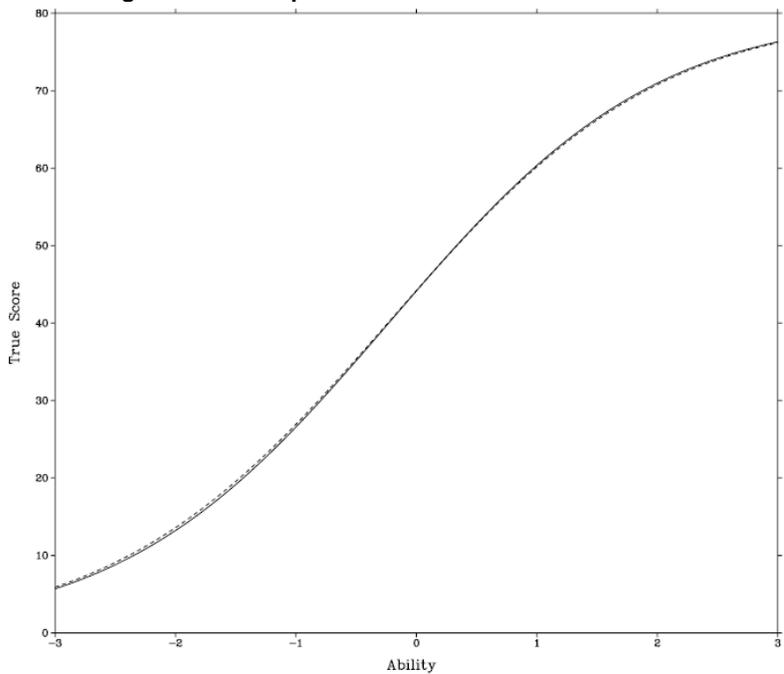


Table 4.1: Difficulty (B) and Discrimination (R-bis) Specifications for ELA MC Items

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
Probability and Statistics	13	-0.8 - -0.4
Number Sense	17	-0.7 - -0.3
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, 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 administration, every person having access to test materials maintains the security and confidentiality of the tests. ETS' 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 the tests that ETS develops or handles, ETS maintains an OTI, which is described in the next section.

Educational Testing Service Office of Testing Integrity

The OTI is a division that oversees test security standards for all testing programs administered by ETS and resides in the legal department. The Quality Assurance division 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

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 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 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 only authorized personnel.
- 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 only authorized users may access. On that site, ETS posts Microsoft Word and Excel, Adobe Acrobat PDF, 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 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 pre-approves 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 and other authorized locations. Pearson distributes the booklets to school districts in securely packaged boxes.

Test Administration

Pearson receives testing materials from printers, prints a unique barcode identifier on each test booklet, packages them, and sends them to school districts. Pearson ships secure and non-secure test materials in separate shipments, both via secure, expedited delivery. When materials arrive at the district they must be signed for and inventoried. 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 district 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 secure box

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 district's main location to the individual test sites. The CAHSEE district 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 district coordinator, who is responsible for returning them to the CAHSEE Scoring and Processing Center at Pearson Educational Measurement. All test booklets, upon return receipt at Pearson's receiving facility, are scanned and accounted for. If booklets are missing, district 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 CAHSEE testing materials:

- CAHSEE district 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 district 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 CDE of their planned testing schedule.
- Test security during testing is managed by the CAHSEE district coordinator as well as the CAHSEE test site coordinator. All students are to be 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 district coordinator records all pertinent information on the *Test Security Breach Report* supplied in the *CAHSEE DTSCM* (CDE, 2009a) and faxes 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 *DTSCM* (CDE, 2009a) 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 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 a secure file transfer protocol (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 results downloaded to SKM 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 then keeps 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, including student results, are posted in secure district folders on the CAHSEE Web site. Individual student score reports are printed on security paper and shipped by secure delivery to the LEA.³ 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 ten 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

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

³ Local education agency 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. 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 student's 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 a 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 CAHSEE tests, as described in this section.

Test Administrators

The CAHSEE tests are administered seven times in a school year. In that respect, 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 DTSCM* (CDE, 2009a). This manual is described in the next section.

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

CAHSEE District Coordinator

Each LEA designates a CAHSEE district coordinator who is responsible for ensuring the proper and consistent administration of the CAHSEE tests. They are also 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, 2009b) exactly.

Test Proctor

A test proctor is an employee of the school district or a person, assigned by an NPS to implement the IEP of a student, who has received training designed to prepare him or her to assist the test examiner in the administration of the CAHSEE. Test proctors must sign *CAHSEE Test Security Affidavits*.

Scribe

A scribe is an employee of the school district or a person, assigned by an NPS to implement the IEP of a student, who 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 *CAHSEE Test Security Affidavits*.

CAHSEE Directions for Administration

CAHSEE DFA Manuals are 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 District and Test Site Coordinator's Manual

Test administration procedures found in the *CAHSEE DTSCM* must be followed so all students have an equal opportunity to demonstrate their academic achievement. The *CAHSEE DTSCM* (CDE, 2009a) 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 district 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 district coordinator.

Test Booklets

For each ELA and mathematics test, 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 district 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 CAHSEE district 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 students with disabilities. Per the California *EC* Section 60852.3, students with disabilities 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 only available 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 of the test read to the student or 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 math section of the test; having the MC portion of the ELA section of the test read to the student via audio or oral presentation on a CD, 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 students with disabilities and English learners 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 IEP or Section 504 plan. If students use 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 actually used on each test – ELA and mathematics. The coordinator also indicates, by signature, that the student had access to the modifications and/or accommodations as 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 successfully pass that part of the examination. In addition, scores for students tested with modifications are counted as Far Below Basic for API calculations and Not Proficient for AYP calculations. Test administration variations and accommodations do not result in changes to students’ scores for API or AYP calculations. The only exception is the calculator use in the math exam. This modification is accepted and counted as tested. The proficient cut point is a little higher than 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. The Demographics Data Corrections function of the CAHSEE Online 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 determine 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 "Score Invalidated." The information and procedures to assist in identifying irregularities and notifying the CDE are provided in the *CAHSEE District and Test Site Coordinator's Manual* (CDE, 2009a).

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 *DFAs* and the *CAHSEE District and Test Site Coordinator's Manual* (CDE, 2009a). These events include test administration errors, disruptions, and student 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 district 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

This chapter summarizes item- and test-level statistics obtained for the CAHSEE administered in 2009–10. The statistics presented in this chapter are divided into five sections and are presented in the following order:

1. Classical Item Analyses
2. Differential Item Functioning Analyses
3. Item Response Theory Analyses (Calibration, Scaling, and Equating)
4. Reliability Analyses
5. Validity Evidence

Each of those 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 February and March administrations, respectively. Field-test data from 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 intercorrelations, reliability and standard error 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 classifications consistency and 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-value 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 (operational items only)	Listing of CR item statistics – ELA (operational items only)

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-analysis, item-level DIF results, and IRT results were based on a sample of students used in the final item analyses (FIA) which was close to 100 percent of students. For the five non-census administrations (May, July, October, November, December), classical item-analysis 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, which 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 percent of examinees in the sample that 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 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 the 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:

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

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:

$$r_{bis} = \frac{\sqrt{pq}}{Y_{zp}} r_{ptbis} \quad (6.2)$$

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 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:

$$r_{polyreg} = \frac{\beta \sigma_{tot}}{\sqrt{\beta^2 \sigma_{tot}^2 + 1}} \quad (6.3)$$

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 questions correctly, while negative values indicate that the students who do poorly on the test have a higher probability of answering the questions 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.

Percent of students choosing each response option:

These statistics indicate the percent of students that selects each of the available answer options.

Percent 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 percent 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 a lengthy stem.

Examples of the item analysis produced for 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 percent 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

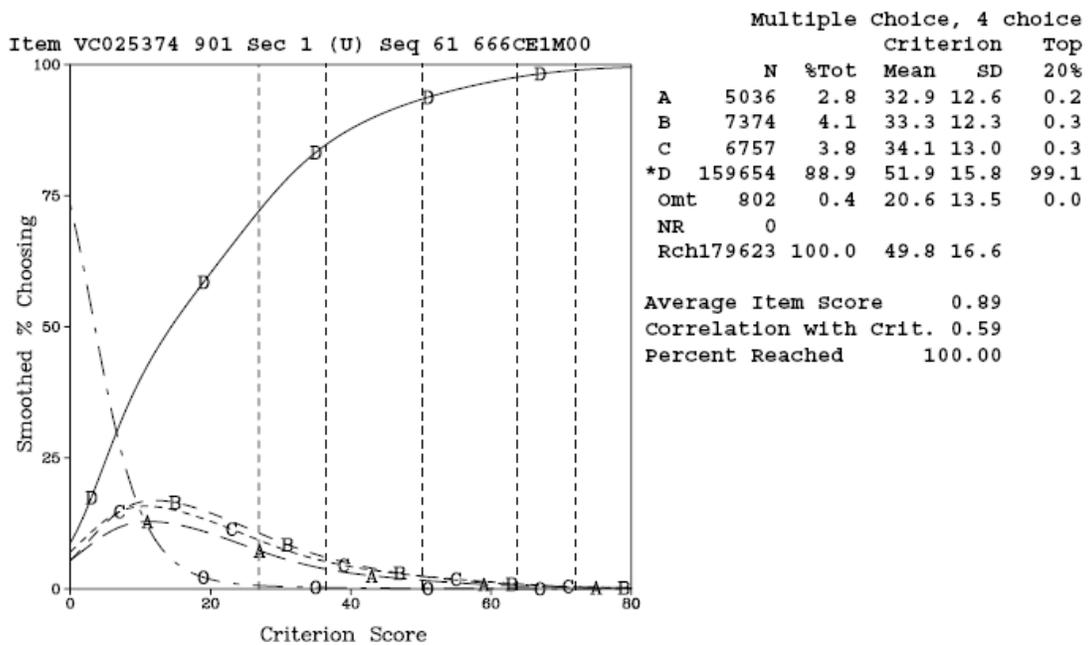
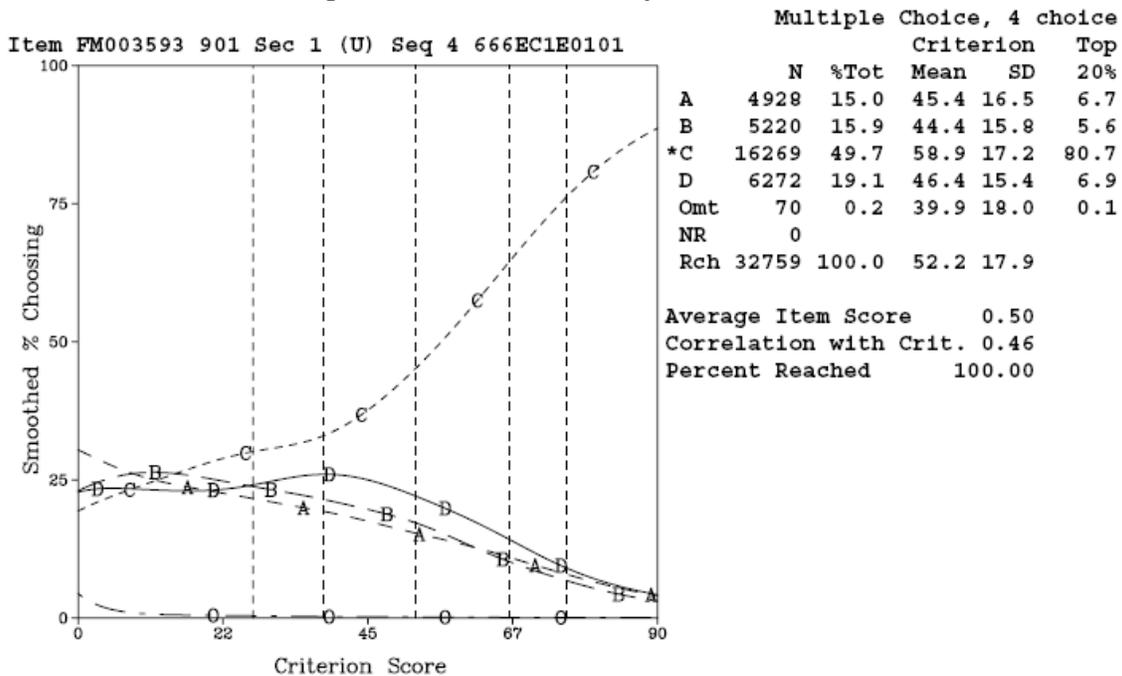


Figure 6.2: CAHSEE Item Analysis — ELA Item



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, and Tables 1

and 2 of Appendices 6.I to 6.J provide the same information for the field-test items. 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 July 2009 through May 2010 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 characteristic 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 the item is correctly keyed, there is one clear and correct answer, and the item is printed correctly.

Table 6.2: Flagging Criteria for Classical Item Analyses

Flag Type	Value
Low Average Item Score for dichotomous (MC) items	<0.25
Low Average Item Score for polytomous (CR) items	<0.30
Low Correlation with Criterion for dichotomous (MC) items	<0.30
Low Correlation with Criterion for polytomous (CR) items	<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	>0.95
High Average Item Score for polytomous (CR) items	>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, differential item functioning studies were conducted following the classical item analyses. Differential item functioning 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.⁴ This statistic is expressed as the differences between the focal and reference groups after conditioning on 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 or 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.

⁴ 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):

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

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 ≤ 0.17 , 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,⁵ Hispanic, and African American), and English language proficiency (English proficient compared to English learner⁶). Operational items flagged for C DIF are reviewed by an expert committee consisting of CAHSEE item development staff, 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 Appendixes 6.B to 6.H for the operational items and Appendixes 6.I and 6.J for field-testing items in census administrations.

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”

⁵ Combined Asian group includes students from Asian, Filipino, and Pacific Islander groups.

⁶ According to “CAHSEE DIF Procedures,” DIF analyses were performed for English learners on mathematics items only. From September 2005, DIF analyses were also performed for English learners on ELA items.

scale for the CAHSEE was established in the February 2004 administration. The 2010 items were placed on the reference scale through a set of linking items that appeared in the 2009 operational forms and were re-administered in 2010. 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 GENASYST 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 one-parameter 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 or unweighted 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:

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

where abilities are grouped in the intervals of .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 correct response for the transformed new form item at ability level θ_j , and $P_r(\theta_j)$ is the probability of 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 ELA items are passage-dependent and more susceptible to context and position effects.

True-Score Equating

Once the items for the 2009–10 administration were calibrated and linked to the operational theta scale, IRT true-score equating procedures were utilized to transform the new form 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):

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

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:

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

where $w_{mc} = 1.000$, $w_{cr} = 4.500$, 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 2009–10 forms were linked back to scale established in February 2004.

Complete raw-to-scale score conversion tables for the 2009–10 CAHSEE are presented in Appendix 6.O. The raw scores and corresponding unrounded converted scale scores are listed in those tables. For all the 2009–10 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 2009 operational form was used as the Braille, Braille large-print, and Braille audio CD forms for the July, October, and November 2009 administrations for both ELA and mathematics. The December 2009 operational form was used for the December 2009 and February 2010 administrations, and the March operational form was used for the March and May 2010 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-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. The numbers and percentages 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	Number of Items (Percent)
February 2010	ELA	563 (79)
	Mathematics	552 (88)
March 2010	ELA	895 (85)
	Mathematics	780 (83)

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 (MR), 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 to 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 total test, strands, and subgroups; intercorrelations between the two content areas and between different sub-strands; inter-rater agreement 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:

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

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):

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

6.

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:

$$\alpha_{cr} = \frac{r_{mc.cr}^2}{\alpha_{mc}} \quad (6.9)$$

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 0.85 to 0.95. Reliabilities for the MC strands for ELA ranged from 0.42 to 0.83, while the strand reliabilities for mathematics ranged from 0.39 to 0.86. The reliabilities for the ELA CR (unweighted) item score ranged from 0.25 to 0.44.

The standard error of measurement (SEM) provides a measure of score instability in the score metric. The formula for computing the SEM is:

$$\sigma_e = \sigma_x \sqrt{1 - \alpha} \quad (6.10)$$

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 standard errors of measurement for the ELA total raw scores and the mathematics raw scores across the 2009–10 administrations ranged from 3.91 to 4.42

and 3.61 to 4.15, respectively. The reliabilities and SEMs of the test scores may be found in Appendix 6.K, Tables 1 to 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 2009–10 administrations, the correlations between ELA strands (including essay) ranged from 0.35 to 0.79, while the correlations between mathematics strands ranged from 0.28 to 0.80. The reliabilities of the ELA strands ranged from 0.42 to 0.83, and the reliability of the mathematics strands ranged from 0.39 to 0.86. The SEM for the MC strands for ELA ranged from 1.01 to 2.01, while the SEM for mathematics ranged from 1.38 to 2.05. The SEM for the ELA CR items ranged from 0.45 to 0.53.

Subgroup Reliabilities and Standard Errors of Measurement

Reliabilities (REL) and SEM estimates are reported for subgroups from the February and March 2010 census administrations, where larger case counts are available. Table 6.K.8 shows REL and SEM for the MC total and the composite score for gender, ethnic, accommodation, non-accommodation, English learner, and English-proficient groups for the ELA February 2010 administration. Table 6.K.9 provides the same information for the mathematics test of the February 2010 administration. Tables 6.K.10 and 6.K.11 provide REL and SEM for the subgroups for ELA and mathematics for the March 2010 administration. The sample sizes for these REL also appear in these tables.

Reliability estimates for the ELA composite (MC + Essay) scores are similar for the gender groups across the two administrations. The SEM is slightly lower for the female group than for the male group. In general, REL are similar for the ethnic groups; the SEM are similar for most groups with a range of 2.79 (Asian, March) to 3.56 (Hispanic, February) for the MC total and a range of 3.60 (Asian, March) to 4.16 (African American, February) for the composite. All REL are greater than or equal to 0.88.

The REL for the accommodation groups are slightly lower than the nonaccommodation groups and the SEM are higher. REL for the English Learner group are lower than that for the English-proficient group. SEM is higher for the English learner group than the English-proficient group.

REL and SEM for the mathematics total score are similar for gender groups. REL for ethnic groups are similar; the SEM are similar for most groups with a range of 2.79 (Asian, March) to 3.95 (African American, February). The REL for the accommodation groups are slightly lower than the nonaccommodation groups and the SEM are slightly higher. REL for the English-proficient group is slightly higher than that for the

English learner group, whereas the SEM is higher for the English learner group than the English-proficient group. All REL are greater than or equal to 0.91.

Writing Prompt and Rater Agreement Summary

The CAHSEE ELA CR section consists of a single writing prompt that may be passage-based or stand-alone. 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, persuasion, or business letter. The standards require students to combine the rhetorical strategies of narration, exposition, persuasion, and description to produce texts of at least 1,500 words each.

Every response to the ELA writing prompt is rated by two different readers on a scale between 1 and 4. Nonvalid 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 2009 administrations had about 1 percent of CR item scores resulted 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 0.19 to 0.32. The correlation between first and second ratings across the seven administrations ranged from 0.64 to 0.74.

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 if 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 4 percent, with the majority of zero scores due to CR items that were either left blank or written off topic. The lowest percentage of zero scores for the CR item was in the March 2010 administration and the largest percentage was in the May 2010 administration.

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 the Appendix 6.M. Generalizability coefficients for the CR item ranged from 0.78 to 0.85 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 all-forms average (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 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 0.92 to 0.99, while the accuracy for mathematics ranged from 0.95 to 0.99. The consistency of classifying students into the Advanced level versus Proficient level or below for ELA ranged from 0.89 to 0.99, while the consistency for mathematics ranged from 0.93 to 1.00.

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 0.97.

The reliability of classification results for the cut points at the Pass/Not Pass level 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 level ranged from 0.90 to 0.94, while the decision accuracy for mathematics at the Pass/Not Pass level ranged from 0.90 to 0.95. The decision consistency for ELA at the Pass/Not Pass level ranged from 0.87 to 0.91, while the decision consistency for mathematics at the Pass/Not Pass ranged from 0.87 to 0.93. The magnitude of the estimates (0.87 or above) reflect 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, which are to be assessed by a test, the

population to be assessed, as well as 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 has 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 grade-level competency in reading, writing, 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 10. The mathematics examination measures grade 6 and 7 mathematics and Algebra I standards.

CAHSEE test blueprints provide the number of items per standard that will appear on an operational form. 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 procedure 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 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 grade 10, 11, or 12 or are enrolled in adult schools operated by a school district. Beginning in the 2005–06 school year, with the exception of eligible students with disabilities, no student will receive a public high school diploma without passing the CAHSEE and 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 score 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 also is used to classify students in terms of their level of knowledge and skill in the 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' achievement 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 appropriately can be 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 2010 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 to establish whether the material on the test is the same as that which they are expected to know. 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 students with disabilities. The results of the alignment study and universal test design study provide useful information regarding test validity.

The Human Resource Research Organization (HumRRO) performs yearly alignment studies on portions of the CAHSEE to verify the quality of the tests. The Independent Evaluation report for 2009 contains the results of an alignment study for the February 2009 ELA test form (Taylor & Wise, 2009), while the 2008 Independent Evaluation report includes the results of an alignment study for the February 2008 ELA and mathematics forms (Taylor, Johnstone, Wise, Thacker, & Hardoin-Mandeville, 2008).

There were two approaches to evaluating the content alignment of the February 2009 ELA test. The panelists-test developer agreement reveals the extent to which panelists chose the same category content and standard for the items as the test developers. Results indicated that panelists demonstrated high agreement with test developers at the content category level, but showed moderate agreement at the standard level (most specific level). The Webb alignment method was used to evaluate the alignment of the 2009 ELA test to the California content standards. The Webb method requires a set of raters to evaluate each test item on two different dimensions: (1) the standard(s) targeted by items and (2) the depth of knowledge required of students to respond to items. These ratings form the basis of the four separate Webb alignment analyses: categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance-of-knowledge representation. Webb Alignment statistics indicate acceptable assessment for most strands.

For the universal test design study the panelists were asked to rate the quality of the items in terms of lack of flaws and accessibility to all students. The analyses indicated that a large majority of items were well constructed, unbiased, and accessible to a wide range of students.

Overall, the findings of the 2009 study parallel the results of the 2008 alignment study. Both 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, as well as 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 CSTs and CAHSEE. Student performance on the CAHSEE and CSTs 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 students with disabilities. Results suggest the CST results were good indicators of how students performed on the CAHSEE, demonstrating consistency of test results across testing programs.

The most recent Independent Evaluation report examined the relationship between the seventh grade ELA and mathematics scores from the 2003 STAR 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 12 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 11 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 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 students with disabilities, the 2007 CAHSEE results were compared with the 2006 CST results. Results indicate that the majority of students who took the Grade 9 or 10 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 10 students with disabilities in 2007 who had taken the general mathematics test and the Algebra I end-of-course tests in 2006. Approximately 80 percent of students 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 on the general mathematics test (Wise, 2007).

Differential Item Functioning

Differential item functioning 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 English learner).

Across all 2009–10 administrations few operational items were flagged for significant DIF per administration. Of the 38 items that were flagged, 26 were ELA items and 12 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 Appendixes 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 0.59 to 0.71) 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., 0.81 and 0.79 for the February and March administrations, respectively).

In addition, inter-correlations 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, inter-correlations between the test scores and strand scores of different content areas are expected to be less strong because the strands measure aspects of a different construct. The findings reflect these expectations. Using the February administration as an example, the mean inter-correlations between the content area scores and the strand scores were 0.86 and 0.89 for ELA and mathematics, respectively. The mean inter-correlations between the ELA score and mathematics strands was 0.72, and the mean inter-correlations between the mathematics score and the ELA strands was 0.71.

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 0.78 to 0.85 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 69 to 82 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 also is 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 0.45 for ELA and from 0.28 to 0.46 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 standard error of measurement estimates (SEM) are reported for demographic groups for the February and March 2010 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 English learner 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 is 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 0.70 (SD = 0.06) and 0.67 (SD = 0.08) for the February and March administrations, respectively. The mathematics strands exhibit mean correlations of 0.74 (SD = 0.05) for both administrations. The mean intercorrelations between the ELA and mathematics strand scores are 0.63 (SD = 0.06) and 0.60 (SD = 0.06) 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 10 CST and the CAHSEE ELA component scores. Four ELA strand scores for each test were included in the analyses. For reading, the scores for a) word analysis, fluency and systematic vocabulary development; and b) reading comprehension; and for writing, the scores were 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.
- 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 STAR program. For example, the finding that socio-economic status is related to achievement is a common finding across testing programs.

Conclusions

Conclusions about the validity of 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 item characteristic curves 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, FM002619; Item 95, FM002640)

- 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, FM002641)

- 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, FM002767)

- 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.

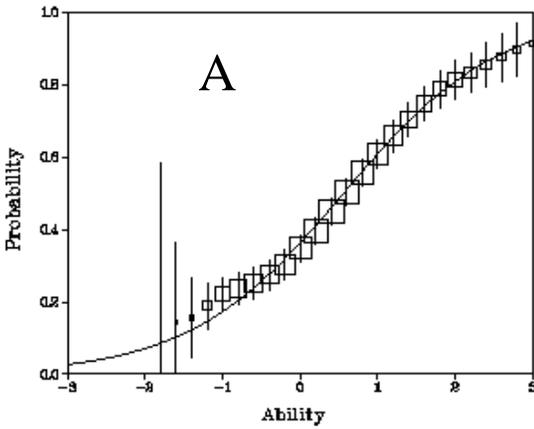
Flag D (Item 94, FM002620)

- 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 of R. These items require additional examination and can be used if deemed appropriate.

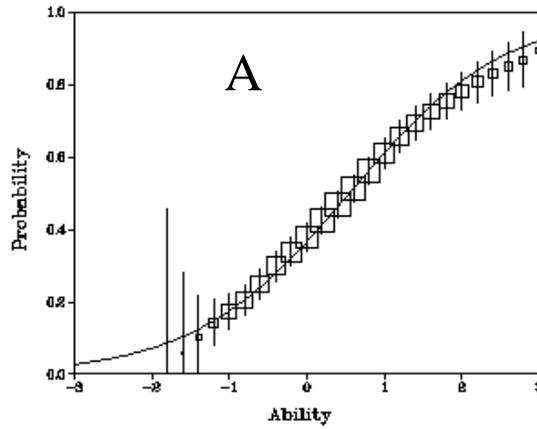
Flag F (Item 98, FM002768)

- 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 before operational use.

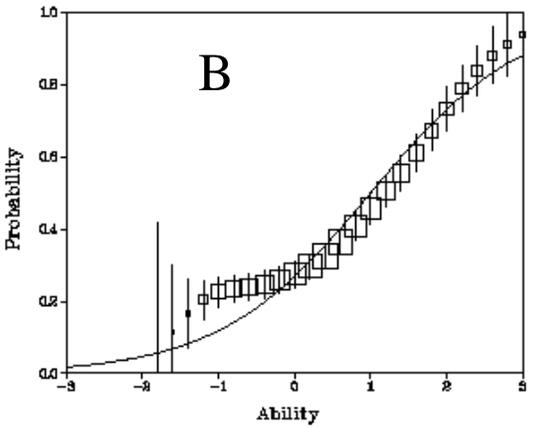
Figure 6.3: Samples of CAHSEE Item-Fit Rating Categories



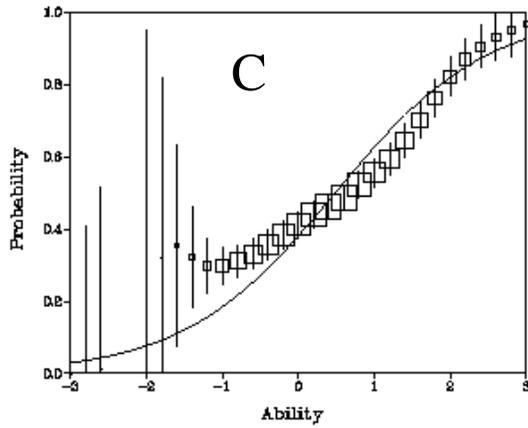
No.93 FM002619901 4 Choice $P+=0.494$
 $a=0.588$ F, $b=0.561$, $c=0.000$ F, $CHI=11.85$



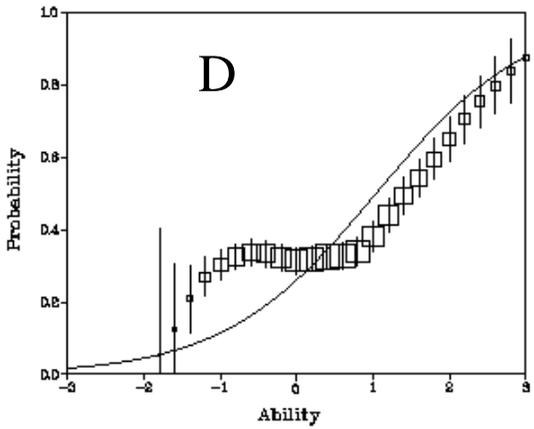
No.95 FM002640901 4 Choice $P+=0.496$
 $a=0.588$ F, $b=0.550$, $c=0.000$ F, $CHI=10.50$



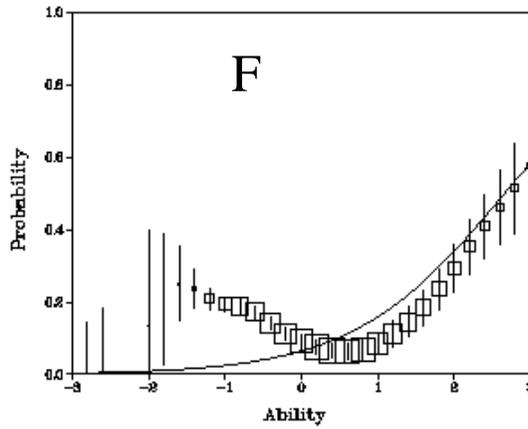
No.96 FM002641901 4 Choice $P+=0.402$
 $a=0.588$ F, $b=1.003$, $c=0.000$ F, $CHI=116.63$



No.97 FM002767901 4 Choice $P+=0.506$
 $a=0.588$ F, $b=0.486$, $c=0.000$ F, $CHI=151.78$



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 2009

Table 6.B.1: Summary of Operational Item Statistics—ELA

Content area ¹	Number of items	IRT b value				Point-biserial/Pearson correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.08	0.66	-1.47	1.57	0.31	0.07	0.15	0.46
RC	18	-0.09	0.51	-1.27	0.76	0.35	0.06	0.24	0.45
RL	20	-0.30	0.92	-1.47	1.57	0.32	0.09	0.15	0.46
RW	7	-0.17	0.52	-0.81	0.57	0.30	0.06	0.22	0.37
WA	1	0.74	-	0.74	0.74	0.60	-	0.60	0.60
WC	15	-0.04	0.62	-0.85	1.00	0.28	0.07	0.15	0.39
WS	12	0.22	0.27	-0.36	0.55	0.30	0.05	0.21	0.41

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

Content area ¹	Number of items	IRT b value				Point-biserial correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.10	0.71	-1.93	1.97	0.28	0.09	0.08	0.48
A1	12	0.18	0.21	-0.22	0.45	0.22	0.09	0.08	0.35
AF	20	-0.10	0.74	-1.59	1.97	0.29	0.10	0.09	0.48
MG	18	-0.03	0.77	-1.93	0.94	0.28	0.11	0.13	0.46
MR	8	-0.33	0.84	-1.59	1.29	0.30	0.05	0.21	0.38
NS	17	-0.16	0.79	-1.61	1.11	0.29	0.05	0.21	0.40
PS	13	-0.37	0.77	-1.75	1.29	0.29	0.04	0.20	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

IRT review category	Status	Item count	Percent ¹
A	Use	30	41
B	Use	20	27
C	Use	23	32
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

IRT review category	Status	Item count	Percent ¹
A	Use	31	39
B	Use	24	30
C	Use	24	30
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.B.5: Operational Items Containing Significant DIF

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	VC020914	L372E013	0	27	C-	S	S	S	S	C-	A	A	B-
ELA	VC020055	L281C009	0	31	A	S	S	S	S	A	A	A	C-
ELA	VC392700	L5OSA653	0	78	A	S	S	S	S	B-	A	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.B.6: Distribution of Operational Item DIF Classifications—ELA

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	0	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	3	4
B ⁻¹		3	0	0	0	0	0	0	0	0	5	7	0	0	1	1	3	4		
A	70	96	0	0	0	0	0	0	0	0	61	84	73	100	71	97	68	93		
B ₂ ⁺	0	0	0	0	0	0	0	0	0	0	6	8	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
Small N ³	0	0	73	100	73	100	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	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.B.7: Distribution of Operational Item DIF Classifications—Mathematics

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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B-	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0		
A	78	98	0	0	0	0	0	0	0	0	77	96	80	100	80	100	80	100		
B+	1	1	0	0	0	0	0	0	0	0	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	80	100	80	100	80	100	80	100	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.B.8: Listing of CR Item Statistics—ELA

Accession number	VC367715
CAHSEE ID	L30SA247
Polyserial correlation	0.68
IRT b-value	0.7360
Step category 1 ¹	1.7132
Step category 2	1.4830
Step category 3	3.7739
Step category 4	-1.0058
Step category 5	-0.7065
Step category 6	-2.8655
Step category 7	-2.3923
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	B+
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.

³S indicates that DIF analysis was not performed due to insufficient sample size.

Appendix 6.C: Summary Statistics for Operational Items—October 2009

Table 6.C.1: Summary of Operational Item Statistics—ELA

Content area ¹	Number of items	IRT b value				Point-biserial/Pearson correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.09	0.69	-1.59	1.16	0.36	0.07	0.18	0.49
RC	18	-0.19	0.55	-1.23	0.61	0.37	0.07	0.23	0.48
RL	20	-0.33	0.67	-1.59	1.04	0.37	0.08	0.18	0.49
RW	7	-0.37	0.84	-1.34	1.07	0.37	0.07	0.28	0.45
WA	1	0.78	.	0.78	0.78	0.66	.	0.66	0.66
WC	15	-0.10	0.71	-1.29	1.02	0.34	0.07	0.23	0.49
WS	12	0.55	0.45	-0.17	1.16	0.36	0.05	0.30	0.42

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

Content area ¹	Number of items	IRT b value				Point-biserial correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.21	0.69	-1.75	1.27	0.33	0.07	0.14	0.46
A1	12	0.22	0.46	-0.32	1.17	0.27	0.07	0.14	0.37
AF	20	-0.30	0.69	-1.38	0.84	0.34	0.06	0.23	0.42
MG	18	-0.08	0.69	-1.46	1.27	0.34	0.07	0.21	0.45
MR	8	-0.20	0.68	-1.29	0.42	0.32	0.06	0.25	0.42
NS	17	-0.31	0.60	-1.29	1.20	0.34	0.07	0.23	0.46
PS	13	-0.51	0.80	-1.75	0.38	0.33	0.06	0.22	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.C.3: IRT Model Data Fit Distribution of Operational Items—ELA

IRT review category	Status	Item count	Percent ¹
A	Use	22	30
B	Use	22	30
C	Use	28	38
D	Review	1	1
Total		73	100

¹Total 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

IRT review category	Status	Item count	Percent ¹
A	Use	29	36
B	Use	19	24
C	Use	32	40
Total		80	100

¹Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.C.5: Operational Items Containing Significant DIF

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	VC392153	L565G017	0	1	C-	A	B-	S	A	B-	A	A	A
ELA	VC254905	L451G002	0	29	A	A	C-	S	B-	B-	A	A	A
ELA	VC020660	L346F011	0	45	A	A	B+	S	C+	B+	A	A	A
ELA	VC017545	L114B006	0	56	A	A	A	S	A	A	A	A	C-
ELA	VC018270	L20SA061	0	72	A	A	C+	S	B+	B+	A	A	B+
ELA	VC017478	L10SA477	0	79	A	A	C+	S	A	B+	A	A	A
MATH	VC025221	M23144	0	13	C-	A	A	S	A	A	A	A	A
MATH	VC025508	M30107	0	15	C-	A	A	S	A	A	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

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	0	0	0	0	0	0	0	0	1	1	3	4
B-		0	0	0	3	4	0	0	6	8	4	5	0	0	0	0	3	4		
A	72	99	73	100	66	90	0	0	61	84	66	90	72	99	73	100	67	92		
B+	0	0	0	0	1	1	0	0	5	7	3	4	1	1	0	0	2	3		
C+ ²		0	0	0	2	3	0	0	1	1	0	0	0	0	0	0	0	0	3	4
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	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.C.7: Distribution of Operational Item DIF Classifications—Mathematics

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	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	
B-	1	1	0	0	2	3	0	0	1	1	1	1	0	0	0	0	0	0	0			
A	75	94	80	100	77	96	0	0	76	95	77	96	80	100	80	100	80	100	80	100		
B+	2	3	0	0	1	1	0	0	3	4	2	3	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	
Small N ³	0	0	0	0	0	0	80	100	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	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.C.8: Listing of CR Item Statistics—ELA

Accession number	VC367713
CAHSEE ID	L20SA205
Polyserial correlation	0.74
IRT b-value	0.7818
Step category 1 ¹	1.8007
Step category 2	1.3293
Step category 3	3.8493
Step category 4	-1.0515
Step category 5	-0.6712
Step category 6	-2.8541
Step category 7	-2.4025
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	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

³ S indicates that DIF analysis was not performed due to insufficient sample size.

Appendix 6.D: Summary Statistics for Operational Items—November 2009

Table 6.D.1: Summary of Operational Item Statistics—ELA

Content area ¹	Number of items	IRT b value				Point-biserial/Pearson correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.02	0.69	-1.96	1.45	0.36	0.08	0.08	0.50
RC	18	-0.12	0.66	-1.43	0.85	0.37	0.07	0.26	0.49
RL	20	-0.13	0.82	-1.83	1.27	0.35	0.10	0.08	0.50
RW	7	-0.21	0.89	-1.96	0.82	0.31	0.08	0.21	0.42
WA	1	0.66	.	0.66	0.66	0.65	.	0.65	0.65
WC	15	-0.07	0.50	-0.76	1.06	0.39	0.06	0.28	0.47
WS	12	0.42	0.42	-0.20	1.45	0.33	0.08	0.19	0.45

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

Content area ¹	Number of items	IRT b value				Point-biserial correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.17	0.64	-2.27	0.96	0.34	0.08	0.15	0.48
A1	12	0.25	0.23	-0.17	0.62	0.30	0.09	0.17	0.41
AF	20	-0.27	0.60	-1.21	0.95	0.36	0.08	0.22	0.48
MG	18	-0.01	0.70	-1.73	0.88	0.33	0.09	0.18	0.48
MR	8	-0.41	0.66	-1.11	0.95	0.36	0.06	0.26	0.42
NS	17	-0.34	0.82	-2.27	0.96	0.34	0.06	0.15	0.42
PS	13	-0.40	0.41	-1.11	0.22	0.36	0.05	0.28	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.D.3: IRT Model Data Fit Distribution of Operational Items—ELA

IRT review category	Status	Item count	Percent ¹
A	Use	25	34
B	Use	35	48
C	Use	12	16
D	Review	1	1
Total		73	100

¹Total 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

IRT review category	Status	Item count	Percent ¹
A	Use	28	35
B	Use	35	44
C	Use	17	21
Total		80	100

¹Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.D.5: Operational Items Containing Significant DIF

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	VC021165	L388E001	0	1	A	A	B-	A	B-	B-	A	A	C-
ELA	VC020914	L372E013	0	27	B-	A	C-	B-	B-	C-	B-	A	B-
ELA	VC019656	L262D003	0	61	A	A	B-	B-	C-	B-	A	A	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

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	1	1	0	0	1	1	1	1	0	0	0	0	1	1	3	4
B-	3	4	0	0	4	5	2	3	4	5	3	4	1	1	0	0	2	3		
A	70	96	73	100	65	89	69	95	66	90	68	93	72	99	73	100	68	93		
B+	0	0	0	0	3	4	2	3	2	3	1	1	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
Small N ³	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.D.7: Distribution of Operational Item DIF Classifications—Mathematics

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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B-		5	0	0	3	4	0	0	3	4	3	4	0	0	0	0	0	0			
A	74	93	80	100	72	90	79	99	73	91	74	93	80	100	80	100	79	99			
B+ ⁴	2	3	0	0	5	6	1	1	4	5	3	4	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	0	0	0	0	0	0	0	0	0	0	0	0			
Total ⁴	0	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.D.8: Listing of CR Item Statistics—ELA

Accession number	VC020402
CAHSEE ID	L30SA337
Polyserial correlation	0.72
IRT b-value	0.6625
Step category 1 ¹	1.8747
Step category 2	1.3122
Step category 3	3.4909
Step category 4	-0.8743
Step category 5	-0.7320
Step category 6	-2.6464
Step category 7	-2.4252
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 2009

Table 6.E.1: Summary of Operational Item Statistics—ELA

Content area ¹	Number of items	IRT b value				Point-biserial/Pearson correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.16	0.59	-1.70	1.02	0.34	0.07	0.18	0.48
RC	18	-0.33	0.58	-1.23	0.69	0.34	0.07	0.20	0.48
RL	20	-0.33	0.58	-1.70	0.71	0.36	0.07	0.23	0.46
RW	7	-0.23	0.45	-0.77	0.46	0.34	0.09	0.22	0.48
WA	1	0.75	.	0.75	0.75	0.63	.	0.63	0.63
WC	15	-0.11	0.54	-1.29	0.81	0.31	0.07	0.18	0.42
WS	12	0.27	0.55	-0.61	1.02	0.33	0.06	0.24	0.42

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

Content area ¹	Number of items	IRT b value				Point-biserial correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.27	0.65	-1.87	1.18	0.28	0.06	0.14	0.42
A1	12	0.09	0.41	-0.45	0.73	0.25	0.05	0.19	0.38
AF	20	-0.33	0.71	-1.87	1.18	0.30	0.08	0.14	0.42
MG	18	-0.22	0.65	-1.54	1.04	0.28	0.07	0.15	0.38
MR	8	-0.08	0.54	-1.06	0.76	0.27	0.07	0.14	0.32
NS	17	-0.32	0.55	-1.11	0.68	0.28	0.05	0.22	0.42
PS	13	-0.52	0.79	-1.55	0.76	0.28	0.06	0.20	0.39

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

IRT review category	Status	Item count	Percent ¹
A	Use	18	25
B	Use	32	44
C	Use	23	32
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

IRT review category	Status	Item count	Percent ¹
A	Use	35	44
B	Use	26	33
C	Use	19	24
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

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-Learner
ELA	VC018296	L210D013	0	10	C-	S	S	S	S	S	S	S	B-
ELA	VC017512	L10SA531	0	78	A	S	S	S	S	S	S	S	C-
MATH	VC024214	M21002	0	11	C-	S	S	S	S	S	S	S	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.E.6: Distribution of Operational Item DIF Classifications—ELA

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	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	
B-	5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4			
A	62	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	89			
B+	5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5			
C ⁺²	0			0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	
Small N ³	00	00	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	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

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	1			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
B-	21	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			
A	74	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	98			
B+	3	4	0	0	0	0	0	0	0	0	0	0	0	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	
Small N ³	0	0	80	100	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	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.E.8: Listing of CR Item Statistics—ELA

Accession number	VC020393
CAHSEE ID	L30SA328
Polyserial correlation	0.71
IRT b-value	0.7536
Step category 1 ¹	1.3814
Step category 2	1.5339
Step category 3	3.9623
Step category 4	-1.0838
Step category 5	-0.5173
Step category 6	-2.2977
Step category 7	-2.9787
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	S
DIF category, White-African American	S
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.F: Summary Statistics for Operational Items—February 2010

Table 6.F.1: Summary of Operational Item Statistics—ELA

Content area ¹	Number of items	IRT b value				Point-biserial/Pearson correlation			
		Mean	Std. Dev.	Minimum	Maximum	Mean	Std. Dev.	Minimum	Maximum
Overall	73	-0.05	0.79	-1.73	1.72	0.45	0.07	0.25	0.60
RC	18	0.07	0.75	-1.24	1.72	0.44	0.07	0.33	0.56
RL	20	-0.40	0.81	-1.73	1.31	0.43	0.07	0.25	0.53
RW	7	-0.36	0.71	-1.40	0.52	0.42	0.08	0.29	0.50
WA	1	0.88	.	0.88	0.88	0.75	.	0.75	0.75
WC	15	0.03	0.90	-1.15	1.65	0.45	0.06	0.35	0.53
WS	12	0.35	0.45	-0.32	1.17	0.48	0.07	0.38	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

Content area ¹	Number of items	IRT b value				Point-biserial correlation			
		Mean	Std. Dev.	Minimum	Maximum	Mean	Std. Dev.	Minimum	Maximum
Overall	80	-0.28	0.69	-2.19	1.26	0.46	0.08	0.23	0.64
A1	12	0.37	0.48	-0.64	1.26	0.45	0.08	0.35	0.56
AF	20	-0.49	0.55	-1.75	0.60	0.49	0.06	0.36	0.58
MG	18	-0.08	0.77	-1.31	0.94	0.45	0.09	0.31	0.64
MR	8	-0.49	0.62	-1.75	0.34	0.47	0.07	0.34	0.56
NS	17	-0.54	0.67	-2.19	0.88	0.45	0.07	0.33	0.55
PS	13	-0.52	0.57	-1.74	0.46	0.44	0.09	0.23	0.54

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

IRT review category	Status	Item count	Percent ¹
A	Use	27	37
B	Use	29	40
C	Use	17	23
D	Review	0	0
Total		73	100

¹Total 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

IRT review category	Status	Item count	Percent ¹
A	Use	29	36
B	Use	25	31
C	Use	26	33
D	Review	0	0
Total		80	100

¹Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.F.5: Operational Items Containing Significant DIF

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	VE045223	L630J001	0	1	A	A	B-	B-	C-	B-	A	A	B-
ELA	VE044533	L603J002	0	7	B-	A	C-	C-	A	B-	C-	C-	C-
ELA	VC392135	L564G011	0	27	A	A	C-	B-	A	B-	A	A	A
ELA	VC172613	L3OSA382	0	78	A	A	C-	A	B-	C-	A	A	A
MATH	VC393225	M40601	0	9	C-	A	A	A	A	A	A	A	A
MATH	VE047236	M50131	0	71	B-	A	C-	A	B-	B-	A	A	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

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	3	4	1	1	1	1	1	1	1	1	1	1	1	1	4	5
B-	3	4	0	0	3	4	2	3	4	5	3	4	1	1	0	0	2	3		
A	70	96	73	100	62	85	70	96	65	89	66	90	71	97	72	99	68	93		
B+	0	0	0	0	5	7	0	0	3	4	3	4	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
Small N ³	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	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.F.7: Distribution of Operational Item DIF Classifications—Mathematics

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	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	3
B-	6	8	0	0	3	4	0	0	3	4	3	4	0	0	2	3	2	3		
A	71	89	80	100	75	94	79	99	76	95	77	96	79	99	78	98	78	98		
B+	2			0	1	1	1	1	1	1	0	0	1	1	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
Small N ³	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	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.F.8: Listing of CR Item Statistics—ELA

Accession number	VC020369
CAHSEE ID	L30SA304
Polyserial correlation	0.81
IRT b-value	0.8811
Step category 1 ¹	2.2995
Step category 2	1.4429
Step category 3	3.3413
Step category 4	-0.7651
Step category 5	-0.8627
Step category 6	-2.6767
Step category 7	-2.7791
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.G: Summary Statistics for Operational Items—March 2010

Table 6.G.1: Summary of Operational Item Statistics—ELA

Content area ¹	Number of items	IRT b value				Point-biserial/Pearson correlation			
		Mean	Std. Dev.	Minimum	Maximum	Mean	Std. Dev.	Minimum	Maximum
Overall	73	-0.11	0.73	-1.99	1.23	0.43	0.08	0.25	0.56
RC	18	-0.38	0.66	-1.37	1.07	0.44	0.07	0.31	0.55
RL	20	-0.23	0.69	-1.99	1.08	0.44	0.10	0.25	0.56
RW	7	-0.05	0.65	-0.95	0.85	0.38	0.07	0.26	0.46
WA	1	0.95	.	0.95	0.95	0.73	.	0.73	0.73
WC	15	-0.15	0.89	-1.78	1.23	0.42	0.07	0.30	0.54
WS	12	0.42	0.41	-0.41	0.95	0.47	0.06	0.37	0.56

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

Content area ¹	Number of items	IRT b value				Point-biserial correlation			
		Mean	Std. Dev.	Minimum	Maximum	Mean	Std. Dev.	Minimum	Maximum
Overall	80	-0.16	0.71	-1.83	1.66	0.46	0.08	0.24	0.67
A1	12	0.42	0.75	-0.99	1.66	0.47	0.09	0.29	0.58
AF	20	-0.41	0.62	-1.83	0.76	0.48	0.07	0.36	0.61
MG	18	0.04	0.60	-1.37	0.90	0.46	0.08	0.24	0.57
MR	8	-0.45	0.44	-1.01	0.35	0.46	0.06	0.36	0.53
NS	17	-0.21	0.76	-1.12	1.52	0.46	0.09	0.28	0.67
PS	13	-0.51	0.54	-1.25	0.29	0.45	0.08	0.30	0.55

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

IRT review category	Status	Item count	Percent ¹
A	Use	29	40
B	Use	20	27
C	Use	24	33
D	Review	0	0
Total		73	100

¹Total 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

IRT review category	Status	Item count	Percent ¹
A	Use	30	38
B	Use	21	26
C	Use	27	34
D	Review	2	3
Total		80	100

¹Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.G.5: Operational Items Containing Significant DIF

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	VE045264	L632H001	0	39	B-	A	A	C-	A	A	A	A	B+
ELA	VE045277	L632H014	0	45	A	A	C+	A	A	B+	A	A	A
ELA	VC392542	L594G011	0	53	A	A	C-	B-	B-	C-	B-	A	A
ELA	VC172613	L3OSA382	0	73	A	A	C-	A	B-	B-	A	A	A
MATH	VC023116	M13491	0	6	C-	A	A	A	A	A	A	A	A
MATH	VE047191	M50086	0	10	C-	A	A	A	A	A	A	A	A
MATH	FM006978	M22109	0	34	A	A	C-	A	C-	C-	A	A	A
MATH	VC022269	M11130	0	41	C-	A	B-	B-	C-	B-	A	A	A
MATH	VC172863	M30329	0	49	B-	A	C-	A	B-	B-	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

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	2	3	1	1	0	0	1	1	0	0	0	0	0	0	3	4	
B-		1	0	0	6	8	3	4	5	7	6	8	3	4	2	3	1	1			
A	72	99	73	100	56	77	69	95	65	89	62	85	69	95	71	97	71	97			
B+ ₁	0	0	0	0	8	11	0	0	3	4	4	5	1	1	0	0	1	1			
C+ ²		0	0	0	1	1	0	0	0	0	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	0	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	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.G.7: Distribution of Operational Item DIF Classifications—Mathematics

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	3	4	0	0	2	3	0	0	2	3	1	1	0	0	0	0	0	0	5	6
B-	3	4	0	0	5	6	3	4	2	3	5	6	0	0	0	0	0	0		
A	73	91	80	100	72	90	76	95	75	94	74	93	80	100	80	100	80	100		
B+	1	1	0	0	1	1	1	1	1	1	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
Small N ³	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	5	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 percentages may differ slightly from the sum of the category percentages due to rounding.

Table 6.G.8: Listing of CR Item Statistics—ELA

Accession number	VE025134
CAHSEE ID	L6OSA1436
Polyserial correlation	0.80
IRT b-value	0.9459
Step category 1 ¹	2.0361
Step category 2	1.4892
Step category 3	3.7305
Step category 4	-0.6759
Step category 5	-0.8031
Step category 6	-2.8264
Step category 7	-2.9505
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 2010

Table 6.H.1: Summary of Operational Item Statistics—ELA

Content area ¹	Number of items	IRT b value				Point-biserial/Pearson correlation			
		Mean	Std. Dev.	Minimum	Maximum	Mean	Std. Dev.	Minimum	Maximum
Overall	73	0.06	0.54	-1.11	1.39	0.39	0.07	0.23	0.55
RC	18	0.16	0.40	-0.58	1.02	0.39	0.07	0.26	0.55
RL	20	-0.11	0.39	-0.81	0.60	0.39	0.07	0.24	0.49
RW	7	-0.36	0.57	-1.11	0.44	0.38	0.07	0.29	0.49
WA	1	0.74	.	0.74	0.74	0.67	.	0.67	0.67
WC	15	-0.04	0.64	-1.02	1.06	0.40	0.08	0.23	0.53
WS	12	0.53	0.50	-0.19	1.39	0.39	0.08	0.29	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

Content area ¹	Number of items	IRT b value				Point-biserial correlation			
		Mean	Std. Dev.	Minimum	Maximum	Mean	Std. Dev.	Minimum	Maximum
Overall	80	-0.24	0.66	-1.76	1.64	0.34	0.08	0.18	0.52
A1	12	0.24	0.46	-0.52	1.10	0.30	0.07	0.19	0.41
AF	20	-0.33	0.45	-1.28	0.68	0.37	0.07	0.22	0.52
MG	18	-0.03	0.75	-1.02	1.64	0.36	0.09	0.18	0.48
MR	8	-0.56	0.71	-1.71	0.27	0.35	0.08	0.22	0.45
NS	17	-0.48	0.73	-1.76	0.71	0.32	0.07	0.18	0.43
PS	13	-0.53	0.61	-1.70	0.43	0.35	0.05	0.27	0.45

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

IRT review category	Status	Item count	Percent ¹
A	Use	19	26
B	Use	24	33
C	Use	30	41
Total		73	100

¹Total 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

IRT review category	Status	Item count	Percent ¹
A	Use	25	31
B	Use	21	26
C	Use	34	43
Total		80	100

¹Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.H.5: Operational Items Containing Significant DIF

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-Learner
ELA	VE045910	L669H007	0	2	A	A	C-	S	S	B-	A	A	A
ELA	VE045917	L669H014	0	3	B-	A	B-	S	S	A	A	A	C-
ELA	VE045282	L633H005	0	12	A	A	C-	S	S	B-	A	A	A
ELA	VE046462	L6OSA1169	0	76	A	A	A	S	S	A	A	C-	A
MATH	VC023693	M20363	0	9	C-	A	A	S	S	A	A	A	A
MATH	VC173460	M32472	0	14	C-	A	A	S	S	A	A	A	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

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	2	3	0	0	0	0	0	0	0	0	1	1	1	1	4	5
B-	1	1	0	0	4	5	0	0	0	0	4	5	0	0	0	0	0	0		
A	72	99	73	100	62	85	0	0	0	0	64	88	73	100	72	99	70	96		
B+	0	0	0	0	5	7	0	0	0	0	5	7	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
Small N ³	00	00	0	0	0	0	73	100	73	100	0	00	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	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.H.7: Distribution of Operational Item DIF Classifications—Mathematics

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	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
B-	3	4	0	0	2	3	0	0	0	0	1	1	0	0	0	0	0	0		
A	73	91	79	99	78	98	0	0	0	0	79	99	80	100	80	100	80	100		
B+	2	3	1	1	0	0	0	0	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
Small N ³	00	00	0	0	0	0	80	100	80	100	0	00	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.

Table 6.H.8: Listing of CR Item Statistics—ELA

Accession number	VE025127
CAHSEE ID	L6OSA1426
Polyserial correlation	0.74
IRT b Value	0.7359
Step category 1 ¹	1.5473
Step category 2	1.6057
Step category 3	3.4672
Step category 4	-0.8296
Step category 5	-0.6464
Step category 6	-2.5098
Step category 7	-2.6342
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 2010

Table 6.I.1: Summary of Field-Test Item Statistics—ELA

Content area ¹	Number of items	IRT b value				Point-biserial/Pearson correlation			
		Mean	Std. Dev.	Minimum	Maximum	Mean	Std. Dev.	Minimum	Maximum
Overall	681	0.79	0.82	-1.70	3.48	0.37	0.12	0.08	0.61
RC	207	0.78	0.73	-1.06	2.67	0.38	0.12	0.10	0.60
RL	117	0.91	0.81	-0.72	2.83	0.35	0.12	0.08	0.59
RW	51	0.49	0.77	-1.04	2.61	0.40	0.10	0.19	0.61
WC	97	0.73	1.17	-1.70	3.48	0.36	0.12	0.08	0.59
WS	209	0.82	0.71	-0.79	2.97	0.37	0.11	0.11	0.59

¹ RC = Reading Comprehension, RL = Literary Response & Analysis, RW = Word Analysis, WA = Writing Applications, WC = Writing Conventions, WS = Writing Strategies

Table 6.I.2: Summary of Field-Test Item Statistics—Mathematics

Content area ¹	Number of items	IRT b value				Point-biserial correlation			
		Mean	Std. Dev.	Minimum	Maximum	Mean	Std. Dev.	Minimum	Maximum
Overall	610	0.50	0.93	-2.42	3.66	0.40	0.11	0.09	0.66
A1	99	0.98	0.54	-0.46	2.25	0.34	0.11	0.10	0.59
AF	148	0.39	0.85	-2.12	2.17	0.42	0.10	0.12	0.64
MG	108	0.70	1.07	-1.61	3.66	0.41	0.11	0.11	0.62
MR	53	0.63	0.89	-1.52	2.23	0.38	0.11	0.09	0.61
NS	127	0.50	0.81	-1.52	2.32	0.41	0.10	0.09	0.66
PS	128	0.10	1.02	-2.42	3.02	0.40	0.09	0.14	0.57

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

IRT review category	Status	Item count	Percent¹
A	Use	103	14
B	Use	144	20
C	Use	256	36
D	Review	60	8
F	Do not use	118	17
N/A	Dropped from Calibration	30	4
Total		711	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

IRT review category	Status	Item count	Percent¹
A	Use	97	16
B	Use	136	22
C	Use	278	45
D	Review	41	7
F	Do not use	58	9
N/A	Dropped from Calibration	14	2
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

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	VE337850	L714K002	6	46	C-	S	S	S	S	S	B-	S	A
ELA	VE337910	L719K004	7	48	C-	S	S	S	S	S	B-	S	C-
ELA	VE337736	L704K008	9	49	C-	S	S	S	S	S	A	S	A
ELA	VE338780	L789J002	12	46	B-	S	S	S	S	S	C-	S	A
ELA	VE338786	L789J009	12	50	A	S	S	S	S	S	C+	S	A
ELA	VE338994	L7OSA1523	12	74	A	S	S	S	S	S	A	S	C-
ELA	VE338995	L7OSA1524	21	74	C+	S	S	S	S	S	A	S	C-
ELA	VE338884	L796J002	22	46	A	S	S	S	S	S	B-	S	C-
ELA	VE338883	L796J001	23	46	C-	S	S	S	S	S	A	S	A
ELA	VE337803	L710K005	29	49	A	S	S	S	S	S	C-	S	A
ELA	VE338115	L737K009	34	47	A	S	S	S	S	S	B-	S	C-
ELA	VE339012	L7OSA1544	35	74	A	S	S	S	S	S	B-	S	C-
ELA	VE339001	L7OSA1530	39	74	A	S	S	S	S	S	A	S	C-
ELA	VE338021	L728K013	58	49	A	S	S	S	S	S	A	S	C-
ELA	VE338673	L776J008	61	46	C-	S	S	S	S	S	A	S	A
ELA	VE339021	L7OSA1553	61	74	A	S	S	S	S	S	B-	S	C-
ELA	VE337963	L723K013	67	51	C-	S	S	S	S	S	A	S	A
ELA	VE337952	L723K001	68	46	A	S	S	S	S	S	A	S	C-
ELA	VE338681	L778J002	69	46	A	S	S	S	S	S	C-	S	A
ELA	VE338680	L778J001	70	46	C-	S	S	S	S	S	A	S	A
ELA	VE338768	L788J002	73	48	C-	S	S	S	S	S	A	S	B-
ELA	VE338778	L788J013	74	46	A	S	S	S	S	S	C-	S	B-
ELA	VE338895	L797J001	75	46	B-	S	S	S	S	S	C-	S	A
ELA	VE338897	L797J003	76	47	A	S	S	S	S	S	C-	S	A
ELA	VE045093	L625J009	78	48	B-	S	S	S	S	S	C-	S	A
ELA	VE338640	L772J012	80	46	C-	S	B-	S	S	B-	C-	B-	B-
ELA	VE338272	L749J012	82	46	C-	S	S	S	S	S	A	S	A
ELA	VE338273	L749J013	83	46	C-	S	S	S	S	S	B-	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	VE338297	L750J012	86	46	A	S	S	S	S	S	C-	S	C-
ELA	VE338299	L750J015	88	48	A	S	S	S	S	B-	C-	A	A
ELA	VE337981	L725K007	94	48	A	S	S	S	S	S	A	S	C-
ELA	VE337949	L722K010	96	47	A	S	S	S	S	S	A	S	C-
ELA	VE337950	L722K011	96	48	A	S	S	S	S	S	C-	S	C-
ELA	VE338319	L750K005	99	49	A	S	S	S	S	S	B-	S	C-
MATH	VE047345	M50241	1	19	C-	S	A	S	S	A	A	A	A
MATH	VE047993	M50891	1	20	A	S	A	S	S	A	A	A	C-
MATH	VE047768	M50666	2	58	B-	S	B-	S	S	C-	B-	A	C-
MATH	VE047555	M50453	6	21	B-	S	C-	S	S	B-	A	A	A
MATH	VE047831	M50729	6	58	A	S	A	S	S	A	A	C-	B-
MATH	VE047588	M50486	7	19	B-	S	A	S	S	A	A	B-	C-
MATH	VE047436	M50333	8	35	A	S	A	S	S	A	A	A	C-
MATH	VC025113	M23008	9	59	C-	S	C-	S	S	B-	B-	B-	A
MATH	VC173041	M30898	12	35	A	S	A	S	S	A	A	A	C-
MATH	VE047507	M50404	13	35	C-	S	A	S	S	A	A	A	A
MATH	VE048640	M51539	14	35	A	S	C+	S	S	B+	A	A	A
MATH	VE048261	M51161	17	18	A	S	S	S	S	A	A	A	C-
MATH	VE047397	M50294	17	21	A	S	S	S	S	A	A	A	C-
MATH	VE048898	M51796	22	18	A	S	A	S	S	A	A	A	C-
MATH	VE047988	M50886	24	35	B+	S	S	S	S	A	A	A	C-
MATH	VE048052	M50951	27	35	C+	S	A	S	S	A	A	A	A
MATH	VE047875	M50773	27	57	B-	S	A	S	S	A	B-	C-	A
MATH	VE047946	M50844	29	21	A	S	S	S	S	C-	B-	A	C-
MATH	VE339657	M60698	30	21	A	S	A	S	S	A	A	A	C-
MATH	VC172945	M30738	32	60	C-	S	A	S	S	A	A	B-	C-
MATH	VE339267	M60111	35	59	A	S	S	S	S	A	A	C-	A
MATH	VE339247	M60086	36	19	C-	S	A	S	S	A	A	A	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	VE048399	M51298	36	35	A	S	A	S	S	A	A	C-	A
MATH	VE339711	M60768	37	21	B-	S	S	S	S	C-	B-	B-	B-
MATH	VC173263	M31258	38	60	A	S	C-	S	S	B-	A	B-	A
MATH	VE339296	M60146	39	18	C-	S	S	S	S	A	A	A	A
MATH	VE047945	M50843	40	21	A	S	S	S	S	B-	B-	C-	B-
MATH	VE048816	M51714	42	36	A	S	S	S	S	C+	A	A	A
MATH	VE339186	M60001	43	19	A	S	A	S	S	A	A	A	C-
MATH	VE048235	M51135	43	20	A	S	B-	S	S	B-	C-	B-	C-
MATH	VE048047	M50946	44	20	A	S	S	S	S	A	A	B-	C-
MATH	VE048053	M50952	44	21	A	S	S	S	S	C-	C-	C-	B-
MATH	VE048672	M51571	48	19	C-	S	S	S	S	A	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.I.6: Distribution of Field-Test Item DIF Classifications—ELA

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	11	2	0	0	0	0	0	0	0	0	0	0	11	2	0	0	15	2	37	5	
B-	26	4	0	0	1	0	0	0	0	0	2	0	56	8	3	0	56	8			
A	655	92	0	0	7	1	0	0	0	0	14	2	631	89	21	3	631	89			
B+	18	3	0	0	1	0	0	0	0	0	1	0	12	2	0	0	9	1			
C ⁺²		0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	
Small N ³	1	0	0	711	100	702	99	711	100	711	100	694	98	0	0	687	97	0	0		
Total ⁴	711	100	711	100	711	100	711	100	711	100	711	100	711	100	711	100	711	100	39	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

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 Analyse ¹	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C ⁻²	7	1	0	0	3	0	0	0	0	0	4	1	2	0	6	1	15	2	37	6
B-	32	5	0	0	11	2	0	0	0	0	19	3	31	5	44	7	35	6		
A	572	92	0	0	298	48	0	0	0	0	553	89	586	94	564	90	574	92		
B+	12	2	0	0	35	6	0	0	0	0	47	8	5	1	10	2	0	0		
C ⁺²		0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0
Small N ³	1	0	0	624	100	276	44	624	100	624	100	0	0	0	0	0	0	0		
Total ⁴	624	100	624	100	624	100	624	100	624	100	624	100	624	100	624	100	624	100	40	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.

Appendix 6.J: Summary Statistics for Field-Test Items—March 2010

Table 6.J.1: Summary of Field-Test Item Statistics—ELA

		IRT b value				Point-biserial/Pearson correlation			
Content area ¹	Number of items	Mean	Std. Dev.	Minimum	Maximum	Mean	Std. Dev.	Minimum	Maximum
Overall	997	0.65	0.85	-1.64	3.19	0.36	0.10	0.07	0.57
RC	340	0.74	0.78	-1.21	2.61	0.37	0.10	0.09	0.57
RL	322	0.77	0.82	-0.95	3.19	0.36	0.11	0.07	0.57
RW	115	0.52	0.89	-1.13	2.98	0.38	0.09	0.10	0.55
WC	151	0.25	0.88	-1.64	2.57	0.37	0.09	0.12	0.54
WS	69	0.81	0.84	-1.24	2.71	0.34	0.10	0.08	0.52

¹ RC = Reading Comprehension, RL = Literary Response & Analysis, RW = Word Analysis, WA = Writing Applications, WC = Writing Conventions, WS = Writing Strategies

Table 6.J.2: Summary of Field-Test Item Statistics—Mathematics

		IRT b value				Point-biserial/Pearson correlation			
Content area ¹	Number of items	Mean	Std. Dev.	Minimum	Maximum	Mean	Std. Dev.	Minimum	Maximum
Overall	892	0.75	0.94	-2.03	4.16	0.39	0.12	0.07	0.66
A1	147	0.97	0.69	-0.64	2.98	0.37	0.13	0.08	0.62
AF	227	0.63	0.91	-2.03	2.97	0.40	0.11	0.09	0.63
MG	216	0.91	0.97	-1.48	4.16	0.38	0.12	0.09	0.61
MR	87	1.08	1.00	-1.59	3.65	0.33	0.12	0.09	0.61
NS	207	0.62	1.01	-2.00	3.96	0.41	0.12	0.07	0.66
PS	95	0.66	1.01	-1.32	3.34	0.36	0.12	0.09	0.61

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

IRT review category	Status	Item count	Percent¹
A	Use	187	18
B	Use	262	25
C	Use	365	34
D	Review	81	8
F	Do not use	102	10
N/A	Dropped from Calibration	62	6
Total		1059	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

IRT review category	Status	Item count	Percent¹
A	Use	167	18
B	Use	199	21
C	Use	372	40
D	Review	42	4
F	Do not use	112	12
N/A	Dropped from Calibration	44	5
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

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	VE339105	L7OSA1654	2	72	A	S	S	S	S	C+	A	S	A
ELA	VE338178	L744K002	5	46	A	S	S	S	S	B-	C-	S	A
ELA	VE338274	L749K001	8	46	A	S	S	S	S	B-	C-	B-	C-
ELA	VE338253	L748K005	9	47	A	S	S	S	S	A	A	S	C-
ELA	VE339038	L7OSA1572	9	72	A	S	S	S	S	C-	C-	S	C-
ELA	VE338808	L791J006	12	47	A	S	A	S	S	A	B-	S	C-
ELA	VE046389	L6OSA1042	12	72	A	S	C-	S	S	C-	A	S	A
ELA	VE339108	L7OSA1657	13	72	A	S	S	S	S	A	B-	S	C-
ELA	VE338100	L736K007	16	49	A	S	A	S	S	A	C-	S	A
ELA	VE337837	L713K002	21	47	C-	S	S	S	S	B-	B-	S	B-
ELA	VE339111	L7OSA1660	22	72	A	S	S	S	S	C-	A	S	A
ELA	VE337882	L716K011	23	50	A	S	S	S	S	C-	A	S	A
ELA	VE339042	L7OSA1577	24	72	A	S	S	S	S	C-	A	S	A
ELA	VE338582	L768J002	28	46	A	S	S	S	S	A	A	S	C-
ELA	VE339114	L7OSA1663	30	72	A	S	S	S	S	C-	A	S	A
ELA	VE338336	L751J012	31	46	A	S	S	S	S	A	C-	S	B-
ELA	VE338397	L755J013	33	46	A	S	S	S	S	A	C+	S	A
ELA	VE339115	L7OSA1664	33	72	A	S	S	S	S	B-	C-	S	A
ELA	VE338233	L747K015	35	48	A	S	S	S	S	A	A	S	C-
ELA	VE338221	L747K002	36	46	C-	S	S	S	S	B-	C-	S	A
ELA	VE338976	L7OSA1491	37	72	A	S	S	S	S	A	A	S	C-
ELA	VE045711	L654H008	40	46	A	S	S	S	S	A	A	S	C-
ELA	VE338603	L769J013	42	49	C+	S	S	S	S	A	A	S	A
ELA	VE338169	L742K004	43	46	B-	S	S	S	S	B-	C-	S	A
ELA	VE338167	L742K002	43	47	B-	S	S	S	S	C+	A	S	B+
ELA	VE338173	L742K010	43	49	A	S	S	S	S	A	A	S	C-
ELA	VE339048	L7OSA1583	43	72	A	S	S	S	S	C-	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	VE339145	L7OSA1724	44	72	A	S	S	S	S	A	A	S	C-
ELA	VE338802	L790J014	46	46	C-	S	S	S	S	A	A	S	A
ELA	VE338459	L762J002	51	46	A	S	S	S	S	C-	B-	S	C-
ELA	VE338981	L7OSA1497	51	72	A	S	S	S	S	C+	A	S	A
ELA	VE339148	L7OSA1727	53	72	A	S	S	S	S	C-	B-	S	B-
ELA	VE339149	L7OSA1728	56	72	A	S	S	S	S	A	B-	S	C-
ELA	VE046219	L690H010	57	49	C+	S	S	S	S	A	A	S	A
ELA	VE046222	L690H013	57	51	B-	S	S	S	S	B-	C-	S	A
ELA	VE046215	L690H006	58	47	A	S	S	S	S	C-	B-	S	C-
ELA	VE338908	L798J002	60	46	A	S	S	S	S	A	A	S	C-
ELA	VE337768	L707K007	64	46	A	S	S	S	S	B-	C-	S	A
ELA	VE337772	L707K012	64	49	C+	S	S	S	S	A	A	S	A
ELA	VE338492	L763K014	65	50	C-	S	S	S	S	A	B-	S	A
ELA	VE338484	L763K004	66	51	B+	S	C+	S	S	B+	B+	S	A
ELA	VE044554	L604J007	68	46	B-	S	S	S	S	A	B-	S	C-
ELA	VC021103	L384E003	72	47	A	S	S	S	S	A	C-	S	B-
ELA	VE339156	L7OSA1735	77	72	A	S	S	S	S	B-	C-	S	A
ELA	VE339157	L7OSA1737	81	72	A	S	S	S	S	S	C-	S	C-
ELA	VE338434	L760K001	86	46	A	S	S	S	S	S	B-	S	C-
ELA	VE338875	L795J006	87	49	A	S	S	S	S	S	C-	S	A
ELA	VE337696	L701K005	91	46	C-	S	S	S	S	S	B-	S	B-
ELA	VE337699	L701K009	91	47	A	S	S	S	S	S	C-	S	A
ELA	VE339164	L7OSA1744	105	72	A	S	S	S	S	S	A	S	C+
ELA	VE338505	L764K001	107	46	A	S	S	S	S	S	C-	S	C-
ELA	VE338476	L762K007	109	48	B-	S	S	S	S	S	C-	S	B-
ELA	VC019586	L256E002	111	46	C-	S	S	S	S	S	A	S	A
ELA	VE045164	L628H013	113	51	A	S	S	S	S	S	C-	S	A
ELA	VE338844	L793J001	117	46	C-	S	S	S	S	S	C-	S	C-

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	VE338429	L759J010	122	47	A	S	S	S	S	S	C-	S	B-
ELA	VE339170	L7OSA1750	122	72	A	S	S	S	S	S	B-	S	C+
ELA	VE045541	L643J002	127	46	A	S	S	S	S	S	C-	S	A
ELA	VE338345	L751K009	128	47	A	S	S	S	S	S	B-	S	C-
ELA	VE338530	L765J015	132	50	C+	S	S	S	S	S	A	S	A
ELA	VC172468	L378E004	136	47	C-	S	S	S	S	S	C-	S	C-
ELA	VE046020	L676H014	144	51	A	S	S	S	S	S	C-	S	A
ELA	VE046007	L676H001	145	46	C-	S	S	S	S	S	C-	S	A
ELA	VE044520	L602J005	148	47	C+	S	A	S	S	A	A	A	A
ELA	VE044518	L602J003	149	48	C+	S	S	S	S	S	A	S	A
MATH	VE339293	M60143	3	19	C-	S	A	S	S	A	A	A	A
MATH	VE047951	M50849	3	57	C-	S	A	S	S	A	C-	A	A
MATH	VE047864	M50762	4	59	A	S	C+	S	S	A	A	A	A
MATH	VE339190	M60005	5	20	A	S	C+	S	S	C+	A	A	A
MATH	VE339199	M60017	8	19	A	S	A	S	S	A	A	A	C-
MATH	VE048685	M51584	9	18	A	S	C+	S	S	C+	A	A	A
MATH	VE048674	M51573	10	18	C-	S	A	S	S	A	B-	A	A
MATH	VE339641	M60678	12	21	A	S	B-	S	S	B-	C-	C-	A
MATH	VE048087	M50986	12	35	B-	S	C-	S	S	C-	B-	B-	A
MATH	VE339490	M60441	13	19	A	S	C+	S	S	C+	A	A	A
MATH	VE047637	M50535	15	19	C-	S	B-	S	S	A	A	A	A
MATH	VE048691	M51590	21	20	A	S	C+	S	S	B+	A	A	A
MATH	VE339457	M60408	25	19	C-	S	A	S	S	B-	A	B-	A
MATH	VE339187	M60002	27	57	A	S	B-	S	S	B-	C-	A	B-
MATH	VE048799	M51697	28	18	C+	S	A	S	S	A	A	A	A
MATH	VE339291	M60141	29	18	C-	S	A	S	S	A	A	A	A
MATH	VE048801	M51699	32	18	C+	S	B+	S	S	C+	A	A	A
MATH	VE339766	M60848	35	57	C-	S	A	S	S	A	A	A	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	VE339208	M60029	36	18	C-	S	A	S	S	B-	A	B-	A
MATH	VE339583	M60565	40	20	C-	S	A	S	S	A	A	A	A
MATH	VE339452	M60403	43	18	C-	S	A	S	S	A	B-	B-	A
MATH	VE339610	M60628	43	35	A	S	B-	S	S	B-	C-	A	B-
MATH	VE339652	M60689	45	21	A	S	A	S	S	B-	A	C-	A
MATH	VE339607	M60624	49	18	A	S	A	S	S	B-	A	A	C-
MATH	VE339755	M60818	50	21	A	S	A	S	S	A	A	A	C-
MATH	VE339254	M60093	55	18	C-	S	A	S	S	A	A	A	A
MATH	VE048489	M51388	55	58	C-	S	A	S	S	A	A	A	A
MATH	VC025134	M23034	57	80	A	S	C+	S	S	B+	A	A	A
MATH	VE047910	M50808	58	60	A	S	C+	S	S	B+	A	A	A
MATH	VE048264	M51164	61	36	A	S	A	S	S	A	C-	A	B-
MATH	VE339549	M60522	65	18	C-	S	A	S	S	A	C-	A	A
MATH	VE047812	M50710	68	60	C-	S	B-	S	S	C-	A	A	A
MATH	VE339253	M60092	69	19	A	S	C+	S	S	B+	A	B+	A
MATH	VE339819	M60946	69	60	B-	S	B-	S	S	C-	A	B-	A
MATH	VE339535	M60495	71	20	A	S	C-	S	S	C-	B-	B-	B-
MATH	VE339800	M60924	73	18	C-	S	A	S	S	A	A	B-	A
MATH	VE047694	M50591	77	20	A	S	C-	S	S	C-	B-	A	C-

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

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 Analyse ¹	
	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	1	0	0	0	0	0	10	1	24	2	0	0	22	2	52	5
B-	42	4	0	0	8	1	0	0	0	0	40	4	83	8	5	0	85	8		
A	973	92	0	0	105	10	0	0	0	0	501	47	943	89	48	5	946	89		
B+	29	3	0	0	4	0	0	0	0	0	19	2	8	1	0	0	4	0		
C ⁺²	6	1	0	0	1	0	0	0	0	0	3	0	1	0	0	0	2	0	13	1
Small N ³	0	0	1059	100	940	89	1059	100	1059	100	486	46	0	0	1006	95	0	0		
Total ⁴	1059	100	1059	100	1059	100	1059	100	1059	100	1059	100	1059	100	1059	100	1059	100	65	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

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 Analyse 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	5	1	6	1	2	0	4	0	27	3
B-	42	4	0	0	27	3	0	0	0	0	34	4	21	2	45	5	29	3		
A	865	92	0	0	802	86	0	0	0	0	823	88	906	97	873	93	902	96		
B+	12	1	0	0	96	10	0	0	0	0	70	7	3	0	16	2	1	0		
C ⁺²	2	0	0	0	8	1	0	0	0	0	4	0	0	0	0	0	0	0	10	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	37	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.

Appendix 6.K: Intercorrelations, Reliability Estimates and Standard Errors of Measurement

Table 6.K.1: Intercorrelations and Reliability Estimates by Section—July 2009

	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	0.61	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.64	0.31	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.84	0.39	0.51	1.00	-	-	-	-	-	-	-	-	-
Literary Responses & Analysis	0.83	0.40	0.49	0.65	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.72	0.33	0.35	0.53	0.50	1.00	-	-	-	-	-	-	-
Writing Conventions	0.72	0.37	0.36	0.48	0.47	0.47	1.00	-	-	-	-	-	-
Mathematics	0.59	0.36	0.39	0.53	0.48	0.49	0.46	1.00	-	-	-	-	-
Probability and Statistics	0.52	0.31	0.37	0.48	0.44	0.41	0.38	0.73	1.00	-	-	-	-
Number Sense	0.51	0.31	0.36	0.47	0.42	0.41	0.39	0.79	0.50	1.00	-	-	-
Algebra & Functions	0.51	0.33	0.34	0.47	0.41	0.42	0.41	0.84	0.52	0.56	1.00	-	-
Measurement & Geometry	0.47	0.28	0.30	0.42	0.37	0.41	0.38	0.79	0.48	0.49	0.56	1.00	-
Algebra 1	0.30	0.20	0.16	0.26	0.24	0.27	0.27	0.61	0.28	0.36	0.42	0.38	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	47.59	2.04	3.82	9.61	11.53	5.59	7.84	36.67	6.77	7.96	9.25	8.00	4.69
SD	12.19	0.52	1.63	3.58	3.52	2.49	2.76	10.58	2.44	2.96	3.35	3.02	2.11
Reliability	0.87	0.25	0.43	0.71	0.70	0.57	0.58	0.85	0.55	0.61	0.63	0.60	0.39
SEM	4.38	0.45	1.22	1.94	1.94	1.63	1.78	4.11	1.64	1.86	2.05	1.92	1.64

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in the computation.
 Correlations for the ELA section are reported for 12,908 examinees completing the ELA section.
 Correlations for the Mathematics section are reported for 12,385 examinees completing the Mathematics section.
 Correlations between ELA and Mathematics are reported for 5,387 examinees taking both sections.

Table 6.K.2: Intercorrelations and Reliability Estimates by Section—October 2009

	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	0.71	0.38	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.86	0.46	0.59	1.00	-	-	-	-	-	-	-	-	-
Literary Responses & Analysis	0.87	0.47	0.59	0.73	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.78	0.42	0.49	0.60	0.61	1.00	-	-	-	-	-	-	-
Writing Conventions	0.78	0.45	0.48	0.56	0.58	0.58	1.00	-	-	-	-	-	-
Mathematics	0.66	0.46	0.48	0.57	0.55	0.56	0.58	1.00	-	-	-	-	-
Probability and Statistics	0.61	0.41	0.45	0.54	0.52	0.51	0.50	0.77	1.00	-	-	-	-
Number Sense	0.56	0.39	0.43	0.49	0.48	0.47	0.47	0.82	0.56	1.00	-	-	-
Algebra & Functions	0.59	0.41	0.43	0.51	0.50	0.50	0.52	0.87	0.61	0.63	1.00	-	-
Measurement & Geometry	0.55	0.38	0.40	0.47	0.45	0.47	0.49	0.84	0.56	0.58	0.65	1.00	-
Algebra1	0.42	0.32	0.28	0.34	0.33	0.37	0.39	0.69	0.39	0.46	0.53	0.51	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	49.97	2.08	4.32	10.47	12.19	5.16	8.47	38.88	7.13	8.61	10.15	8.28	4.71
SD	14.11	0.58	1.67	3.71	3.97	2.70	3.10	12.49	2.60	3.40	3.68	3.52	2.26
Reliability	0.91	0.32	0.55	0.74	0.76	0.67	0.69	0.89	0.62	0.70	0.70	0.71	0.50
SEM	4.35	0.48	1.12	1.90	1.96	1.56	1.72	4.07	1.60	1.88	2.02	1.90	1.60

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in the computation.

Correlations for the ELA section are reported for 41,551 examinees completing the ELA section.

Correlations for the Mathematics section are reported for 40,402 examinees completing the Mathematics section.

Correlations between ELA and Mathematics are reported for 23,326 examinees taking both sections.

Table 6.K.3: Intercorrelations and Reliability Estimates by Section—November 2009

	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	0.65	0.36	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.86	0.45	0.54	1.00	-	-	-	-	-	-	-	-	-
Literary Responses & Analysis	0.86	0.46	0.51	0.70	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.76	0.39	0.40	0.58	0.57	1.00	-	-	-	-	-	-	-
Writing Conventions	0.82	0.46	0.45	0.61	0.60	0.61	1.00	-	-	-	-	-	-
Mathematics	0.67	0.44	0.43	0.60	0.58	0.54	0.58	1.00	-	-	-	-	-
Probability and Statistics	0.60	0.39	0.42	0.54	0.52	0.47	0.51	0.79	1.00	-	-	-	-
Number Sense	0.56	0.38	0.38	0.50	0.49	0.44	0.48	0.83	0.59	1.00	-	-	-
Algebra & Functions	0.61	0.40	0.39	0.54	0.52	0.49	0.53	0.89	0.64	0.66	1.00	-	-
Measurement & Geometry	0.57	0.37	0.35	0.51	0.49	0.48	0.49	0.83	0.57	0.57	0.66	1.00	-
Algebra1	0.45	0.31	0.27	0.39	0.39	0.39	0.40	0.71	0.41	0.50	0.56	0.52	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	50.31	2.13	4.14	10.51	11.66	5.71	8.69	40.11	7.21	9.01	10.54	8.44	4.92
SD	13.90	0.58	1.55	3.64	3.83	2.55	3.43	13.10	2.89	3.34	3.92	3.43	2.46
Reliability	0.90	0.31	0.42	0.73	0.74	0.60	0.75	0.90	0.68	0.70	0.73	0.69	0.57
SEM	4.38	0.48	1.18	1.88	1.96	1.61	1.71	4.08	1.64	1.83	2.02	1.91	1.61

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in the computation.
 Correlations for the ELA section are reported for 107,286 examinees completing the ELA section.
 Correlations for the Mathematics section are reported for 103,164 examinees completing the Mathematics section.
 Correlations between ELA and Mathematics are reported for 63,272 examinees taking both sections.

Table 6.K.4: Intercorrelations and Reliability Estimates by Section—December 2009

	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	0.62	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.70	0.35	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.84	0.42	0.59	1.00	-	-	-	-	-	-	-	-	-
Literary Responses & Analysis	0.86	0.41	0.58	0.67	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.74	0.35	0.44	0.51	0.56	1.00	-	-	-	-	-	-	-
Writing Conventions	0.75	0.39	0.42	0.52	0.53	0.52	1.00	-	-	-	-	-	-
Mathematics	0.60	0.35	0.41	0.50	0.51	0.54	0.53	1.00	-	-	-	-	-
Probability and Statistics	0.57	0.37	0.38	0.49	0.50	0.49	0.48	0.71	1.00	-	-	-	-
Number Sense	0.46	0.27	0.33	0.39	0.38	0.43	0.41	0.78	0.44	1.00	-	-	-
Algebra & Functions	0.52	0.28	0.38	0.45	0.45	0.47	0.46	0.84	0.54	0.55	1.00	-	-
Measurement & Geometry	0.47	0.28	0.30	0.40	0.39	0.44	0.42	0.79	0.47	0.51	0.55	1.00	-
Algebra1	0.32	0.18	0.20	0.23	0.27	0.32	0.29	0.64	0.30	0.39	0.46	0.39	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	50.20	2.08	4.08	10.80	11.98	5.67	8.33	38.99	7.07	8.40	10.05	8.56	4.91
SD	13.13	0.56	1.66	3.46	3.93	2.58	2.95	10.75	2.39	3.04	3.35	3.09	2.22
Reliability	0.89	0.26	0.47	0.70	0.74	0.63	0.64	0.85	0.54	0.60	0.63	0.60	0.47
SEM	4.42	0.48	1.21	1.90	1.99	1.58	1.78	4.15	1.62	1.92	2.05	1.96	1.62

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in the computation.

Correlations for the ELA section are reported for 2,752 examinees completing the ELA section.

Correlations for the Mathematics section are reported for 2,555 examinees completing the Mathematics section.

Correlations between ELA and Mathematics are reported for 949 examinees taking both sections.

Table 6.K.5: Intercorrelations and Reliability Estimates by Section—February 2010

	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	0.76	0.49	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.90	0.58	0.66	1.00	-	-	-	-	-	-	-	-	-
Literary Responses & Analysis	0.90	0.58	0.69	0.79	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.87	0.57	0.60	0.75	0.73	1.00	-	-	-	-	-	-	-
Writing Conventions	0.87	0.59	0.60	0.73	0.73	0.75	1.00	-	-	-	-	-	-
Mathematics	0.81	0.58	0.60	0.73	0.72	0.73	0.75	1.00	-	-	-	-	-
Probability and Statistics	0.74	0.52	0.56	0.67	0.67	0.66	0.67	0.85	1.00	-	-	-	-
Number Sense	0.74	0.51	0.56	0.66	0.66	0.66	0.67	0.90	0.74	1.00	-	-	-
Algebra & Functions	0.76	0.53	0.56	0.68	0.68	0.69	0.71	0.93	0.76	0.79	1.00	-	-
Measurement & Geometry	0.72	0.52	0.52	0.64	0.63	0.66	0.67	0.91	0.72	0.76	0.79	1.00	-
Algebra 1	0.66	0.49	0.46	0.58	0.57	0.60	0.61	0.85	0.64	0.69	0.74	0.73	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	62.07	2.40	5.31	12.48	15.24	7.83	10.42	52.53	9.09	11.88	13.90	11.14	6.51
SD	15.97	0.66	1.57	3.83	3.89	3.09	3.33	16.83	2.96	3.86	4.74	4.17	3.12
Reliability	0.94	0.44	0.59	0.80	0.82	0.79	0.79	0.95	0.76	0.82	0.86	0.82	0.77
SEM	4.00	0.49	1.01	1.71	1.66	1.42	1.51	3.68	1.45	1.64	1.77	1.77	1.51

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in the computation.
 Correlations for the ELA section are reported for 171,248 examinees completing the ELA section.
 Correlations for the Mathematics section are reported for 168,285 examinees completing the Mathematics section.
 Correlations between ELA and Mathematics are reported for 145,315 examinees taking both sections.

Table 6.K.6: Intercorrelations and Reliability Estimates by Section—March 2010

	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	0.73	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.72	0.44	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.89	0.55	0.62	1.00	-	-	-	-	-	-	-	-	-
Literary Responses & Analysis	0.91	0.56	0.64	0.79	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.87	0.55	0.58	0.72	0.74	1.00	-	-	-	-	-	-	-
Writing Conventions	0.84	0.55	0.54	0.68	0.68	0.69	1.00	-	-	-	-	-	-
Mathematics	0.79	0.54	0.58	0.70	0.70	0.71	0.69	1.00	-	-	-	-	-
Probability and Statistics	0.73	0.48	0.53	0.65	0.66	0.64	0.63	0.86	1.00	-	-	-	-
Number Sense	0.71	0.48	0.52	0.62	0.63	0.62	0.62	0.90	0.74	1.00	-	-	-
Algebra & Functions	0.75	0.50	0.54	0.66	0.66	0.67	0.66	0.93	0.77	0.80	1.00	-	-
Measurement & Geometry	0.71	0.48	0.52	0.62	0.62	0.64	0.62	0.91	0.73	0.75	0.80	1.00	-
Algebra 1	0.64	0.45	0.45	0.55	0.56	0.58	0.57	0.85	0.64	0.71	0.75	0.73	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	64.36	2.43	5.14	14.06	15.18	7.94	11.11	54.34	9.61	11.68	14.43	11.66	6.97
SD	15.04	0.62	1.55	3.50	4.03	3.00	3.03	16.61	2.93	3.83	4.49	4.17	3.12
Reliability	0.93	0.41	0.53	0.81	0.83	0.77	0.76	0.95	0.78	0.82	0.85	0.82	0.78
SEM	3.91	0.47	1.06	1.54	1.68	1.43	1.48	3.61	1.38	1.64	1.73	1.77	1.45

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in the computation.

Correlations for the ELA section are reported for 2,752 examinees completing the ELA section.

Correlations for the Mathematics section are reported for 2,555 examinees completing the Mathematics section.

Correlations between ELA and Mathematics are reported for 949 examinees taking both sections.

Table 6.K.7: Intercorrelations and Reliability Estimates by Section—May 2010

	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	0.73	0.42	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.88	0.49	0.62	1.00	-	-	-	-	-	-	-	-	-
Literary Responses & Analysis	0.89	0.49	0.63	0.76	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.81	0.44	0.52	0.66	0.65	1.00	-	-	-	-	-	-	-
Writing Conventions	0.82	0.49	0.55	0.64	0.64	0.64	1.00	-	-	-	-	-	-
Mathematics	0.71	0.48	0.50	0.65	0.62	0.61	0.61	1.00	-	-	-	-	-
Probability and Statistics	0.64	0.43	0.48	0.59	0.58	0.53	0.53	0.79	1.00	-	-	-	-
Number Sense	0.58	0.40	0.42	0.52	0.51	0.48	0.50	0.80	0.57	1.00	-	-	-
Algebra & Functions	0.63	0.42	0.44	0.57	0.55	0.54	0.55	0.89	0.64	0.63	1.00	-	-
Measurement & Geometry	0.60	0.40	0.42	0.56	0.53	0.53	0.51	0.85	0.59	0.58	0.67	1.00	-
Algebra 1	0.49	0.34	0.32	0.44	0.42	0.45	0.44	0.73	0.46	0.49	0.59	0.56	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	48.06	2.11	4.31	9.27	11.40	5.27	8.32	38.13	6.97	8.88	9.91	7.90	4.47
SD	15.76	0.64	1.72	3.99	4.38	2.82	3.48	13.32	2.79	3.21	4.13	3.65	2.40
Reliability	0.92	0.33	0.54	0.77	0.79	0.70	0.76	0.91	0.66	0.66	0.76	0.74	0.58
SEM	4.49	0.53	1.16	1.92	2.01	1.54	1.69	4.06	1.62	1.86	2.04	1.87	1.56

Note: All correlations are for raw scores. Students who took Braille, Large Print and Audio CD forms are not included in the computation.
 Correlations for the ELA section are reported for 40,744 examinees completing the ELA section.
 Correlations for the Mathematics section are reported for 38,910 examinees completing the Mathematics section.
 Correlations between ELA and Mathematics are reported for 20,458 examinees taking both sections.

Table 6.K.8: Reliabilities (REL) and Standard Errors of Measurement (SEM) of Subgroups for ELA—February 2010

	Total MC N=171,323		Composite (MC + Essay) N=171,323	
	REL	SEM	REL	SEM
Gender				
Male	0.94	3.41	0.94	4.10
Female	0.94	3.25	0.94	3.87
Race/Ethnicity				
American Indian or Alaska Native	0.94	3.38	0.93	4.05
Asian	0.94	3.00	0.93	3.78
Pacific Islander	0.93	3.40	0.92	4.06
Filipino	0.92	3.08	0.92	3.75
Hispanic or Latino	0.93	3.56	0.93	4.12
African American	0.94	3.53	0.93	4.16
White (not of Hispanic origin)	0.93	2.96	0.92	3.76
Two or More Races	0.95	3.37	0.94	4.12
Language Fluency				
English Proficient Students	0.94	3.16	0.93	3.89
English Learner Students	0.88	3.83	0.88	4.32
Special Education Program Participation				
Students Receiving Services	0.92	3.80	0.91	4.48
Students Not Receiving Services	0.94	3.27	0.93	3.94

Table 6.K.9: Reliabilities (REL) and Standard Errors of Measurement (SEM) of Subgroups for Mathematics—February 2010

	REL	SEM
Gender		
Male	0.96	3.65
Female	0.95	3.71
Race/Ethnicity		
American Indian or Alaska Native	0.94	3.76
Asian	0.95	3.01
Pacific Islander	0.94	3.77
Filipino	0.94	3.41
Hispanic or Latino	0.94	3.91
African American	0.93	3.95
White (not of Hispanic origin)	0.95	3.37
Two or More Races	0.95	3.75
Language Fluency		
English Proficient Students	0.95	3.57
English Learner Students	0.91	4.08
Special Education Program Participation		
Students Receiving Services	0.92	4.05
Students Not Receiving Services	0.95	3.64

Table 6.K.10: Reliabilities (REL) and Standard Errors of Measurement (SEM) of Subgroups for ELA—March 2010

	Total MC N=393,121		Composite (MC + Essay) N=393,121	
	REL	SEM	REL	SEM
Gender				
Male	0.94	3.35	0.93	4.00
Female	0.93	3.19	0.93	3.79
Race/Ethnicity				
American Indian or Alaska Native	0.94	3.28	0.93	4.00
Asian	0.94	2.79	0.93	3.60
Pacific Islander	0.93	3.36	0.92	3.98
Filipino	0.92	2.97	0.91	3.66
Hispanic or Latino	0.93	3.47	0.93	4.01
African American	0.93	3.47	0.93	4.07
White (not of Hispanic origin)	0.93	2.89	0.91	3.68
Two or More Races	0.95	3.21	0.94	3.95
Language Fluency				
English Proficient Students	0.93	3.10	0.92	3.79
English Learner Students	0.89	3.83	0.89	4.29
Special Education Program Participation				
Students Receiving Services	0.92	3.80	0.91	4.44
Students Not Receiving Services	0.93	3.21	0.92	3.84

Table 6.K.11: Reliabilities (REL) and Standard Errors of Measurement (SEM) of Subgroups for Mathematics—March 2010

	Total N=388,590	
	REL	SEM
Gender		
Male	0.96	3.58
Female	0.95	3.63
Race/Ethnicity		
American Indian or Alaska Native	0.95	3.68
Asian	0.95	2.79
Pacific Islander	0.95	3.67
Filipino	0.94	3.28
Hispanic or Latino	0.94	3.79
African American	0.94	3.88
White (not of Hispanic origin)	0.95	3.31
Two or More Races	0.96	3.58
Language Fluency		
English Proficient Students	0.95	3.49
English Learner Students	0.92	4.04
Special Education Program Participation		
Students Receiving Services	0.93	4.04
Students Not Receiving Services	0.95	3.57

Appendix 6.L: Rater Agreement Analyses

Table 6.L.1: Agreement of First and Second Ratings on the ELA Essay Item—July 2009

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	361	0	0	0	0	361	3
1	0	367	218	1	0	586	5
2	0	249	8,954	894	14	10,111	78
3	0	0	940	795	41	1,776	14
4	0	0	10	40	24	74	1
Total	361	616	10,122	1,730	79	12,908	100
Percent	3	5	78	13	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	10,501	81	81
1	2,382	18	100
2	25	0	100
3	0	0	100
4	0	0	100

Table 6.L.2: Summary Statistics for the ELA Essay Item—July 2009

	First Rating	Second Rating
Mean	2.05	2.04
Standard Deviation	0.56	0.56
Mean Absolute Difference Between First and Second Ratings: 0.19		
Correlation of First and Second Ratings: 0.70		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	194
Illegible	0
Off Topic	155
Cartoon / Inappropriate	11
Not in English	1
Total	361

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 2009

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	1,290	0	0	0	0	1,290	3
1	0	1,316	679	1	0	1,996	5
2	0	677	27,178	3,128	20	31,003	75
3	0	1	3,017	3,470	239	6,727	16
4	0	0	22	263	250	535	1
Total	1,290	1,994	30,896	6,862	509	41,551	100
Percent	3	5	74	17	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	33,504	81	81
1	8,003	19	100
2	44	0	100
3	0	0	100
4	0	0	100

Table 6.L.4: Summary Statistics for the ELA Essay Item—October 2009

	First Rating	Second Rating
Mean	2.08	2.08
Standard Deviation	0.62	0.62
Mean Absolute Difference Between First and Second Ratings: 0.19		
Correlation of First and Second Ratings: 0.74		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	719
Illegible	0
Off Topic	546
Cartoon / Inappropriate	15
Not in English	10
Total	1290

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 2009

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	2,766	0	0	0	0	2,766	3
1	0	3,246	1,857	9	0	5,112	5
2	0	2,017	63,802	9,702	144	75,665	71
3	0	11	10,136	11,095	855	22,097	21
4	0	0	150	870	626	1,646	2
Total	2,766	5,274	75,945	21,676	1,625	107,286	100
Percent	3	5	71	20	2	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	81,535	76	76
1	25,437	24	100
2	314	0	100
3	0	0	100
4	0	0	100

Table 6.L.6: Summary Statistics for the ELA Essay Item—November 2009

	First Rating	Second Rating
Mean	2.14	2.13
Standard Deviation	0.63	0.63
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	1,844
Illegible	0
Off Topic	842
Cartoon / Inappropriate	62
Not in English	18
Total	2,766

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 2009

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	84	0	0	0	0	84	3
1	0	67	42	0	0	109	4
2	0	40	1,882	184	2	2,108	77
3	0	0	189	206	21	416	15
4	0	0	4	24	7	35	1
Total	84	107	2,117	414	30	2,752	100
Percent	3	4	77	15	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	2,246	82	82
1	500	18	100
2	6	0	100
3	0	0	100
4	0	0	100

Table 6.L.8: Summary Statistics for the ELA Essay Item—December 2009

	First Rating	Second Rating
Mean	2.08	2.07
Standard Deviation	0.60	0.59
Mean Absolute Difference Between First and Second Ratings: 0.19		
Correlation of First and Second Ratings: 0.73		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	34
Illegible	0
Off Topic	46
Cartoon / Inappropriate	4
Not in English	0
Total	84

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 2010

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	2,345	0	0	0	0	2,345	1
1	0	3,832	2,411	29	0	6,272	4
2	0	2,349	72,091	18,699	659	93,798	55
3	0	39	18,406	34,976	5,174	58,595	34
4	0	3	667	5,257	4,311	10,238	6
Total	2,345	6,223	93,575	58,961	10,144	171,248	100
Percent	1	4	55	34	6	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	11,7555	69	69
1	52,296	31	99
2	1,394	1	100
3	3	0	100
4	0	0	100

Table 6.L.10: Summary Statistics for the ELA Essay Item—February 2010

	First Rating	Second Rating
Mean	2.42	2.42
Standard Deviation	0.72	0.72
Mean Absolute Difference Between First and Second Ratings: 0.32		
Correlation of First and Second Ratings: 0.67		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	1,917
Illegible	0
Off Topic	322
Cartoon / Inappropriate	87
Not in English	20
Total	2,346

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 2010

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	4,569	0	0	0	0	4,569	1
1	0	5,604	3,641	46	3	9,294	2
2	0	3,499	161,501	45,731	1,240	211,971	54
3	0	38	45,879	89,836	11,349	147,102	37
4	0	1	1,262	10,925	7,835	20,023	5
Total	4,569	9,142	212,283	146,538	20,427	392,959	100
Percent	1	2	54	37	5	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	269,345	69	69
1	121,024	31	99
2	2,586	1	100
3	4	0	100
4	0	0	100

Table 6.L.12: Summary Statistics for the ELA Essay Item—March 2010

	First Rating	Second Rating
Mean	2.43	2.43
Standard Deviation	0.68	0.68
Mean Absolute Difference Between First and Second Ratings: 0.32		
Correlation of First and Second Ratings: 0.64		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	2,968
Illegible	0
Off Topic	1,408
Cartoon / Inappropriate	137
Not in English	56
Total	4,569

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 2010

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	1,586	0	0	0	0	1,586	4
1	0	1,276	898	9	0	2,183	5
2	0	869	23,736	3,435	62	28,102	69
3	0	7	3,378	4,215	453	8,053	20
4	0	1	57	438	324	820	2
Total	1,586	2,153	28,069	8,097	839	40,744	100
Percent	4	5	69	20	2	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	31,137	76	76
1	9,471	23	100
2	135	0	100
3	1	0	100
4	0	0	100

Table 6.L.14: Summary Statistics for the ELA Essay Item—May 2010

	First Rating	Second Rating
Mean	2.11	2.11
Standard Deviation	0.69	0.69
Mean Absolute Difference Between First and Second Ratings: 0.24		
Correlation of First and Second Ratings: 0.74		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	1,151
Illegible	0
Off Topic	361
Cartoon / Inappropriate	63
Not in English	12
Total	1,587

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 2009

Person x Rater: CR item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	12,589	0.53	0.21699	69.21
Rater (R)	1	0.12	0.00000	0.00
PR,e	12,589	0.10	0.09651	30.78
Generalizability Coefficient				0.82
Dependability Coefficient				0.82

Table 6.M.2: Generalizability Results—October 2009

Person x Rater: CR item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	40,328	0.66	0.27865	73.78
Rater (R)	1	0.08	0.00000	0.00
PR,e	40,328	0.10	0.09904	26.22
Generalizability Coefficient				0.85
Dependability Coefficient				0.85

Table 6.M.3: Generalizability Results—November 2009

Person x Rater: CR item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	104,255	0.67	0.27035	68.37
Rater (R)	1	1.86	0.00002	0.00
PR,e	104,255	0.13	0.12510	31.63
Generalizability Coefficient				0.81
Dependability Coefficient				0.81

Table 6.M.4: Generalizability Results—December 2009

Person x Rater: CR item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	2,702	0.60	0.25484	72.78
Rater (R)	1	0.05	0.00002	0.01
PR,e	2,702	0.10	0.09532	27.22
Generalizability Coefficient				0.84
Dependability Coefficient				0.84

Table 6.M.5: Generalizability Results—February 2010

Person x Rater: CR item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	168,049	0.85	0.33889	66.58
Rater (R)	1	0.19	0.00000	0.00
PR,e	168,049	0.17	0.17012	33.42
Generalizability Coefficient				0.80
Dependability Coefficient				0.80

Table 6.M.6: Generalizability Results—March 2010

Person x Rater: CR item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	387,133	0.75	0.29290	63.53
Rater (R)	1	0.19	0.00000	0.00
PR,e	387,133	0.17	0.16815	36.47
Generalizability Coefficient				0.78
Dependability Coefficient				0.78

Table 6.M.7: Generalizability Results—May 2010

Person x Rater: CR item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	39,723	0.82	0.34950	73.86
Rater (R)	1	0.14	0.00000	0.00
PR,e	39,723	0.12	0.12367	26.14
Generalizability Coefficient				0.85
Dependability Coefficient				0.85

Appendix 6.N: Decision Classification Reliability Analyses

Table 6.N.1: ESEA Reliability Classifications—July 2009

English-Language Arts Decision Accuracy

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (77-90)	0.00	0.01	0.01	0.01
Proficient (69-76)	0.00	0.02	0.01	0.03
Below Proficient (0-68)	0.00	0.01	0.94	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

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (77-90)	0.00	0.01	0.01	0.01
Proficient (69-76)	0.00	0.01	0.01	0.03
Below Proficient (0-68)	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

Mathematics Decision Accuracy

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (71-80)	0.00	0.00	0.00	0.01
Proficient (57-70)	0.00	0.02	0.01	0.03
Below Proficient (0-56)	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				0.98

¹ True Score

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (71-80)	0.00	0.00	0.00	0.01
Proficient (57-70)	0.00	0.02	0.01	0.03
Below Proficient (0-56)	0.00	0.02	0.94	0.96
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				1.00
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.97

Table 6.N.2: Pass/Not Pass Classifications—July 2009

**English-Language Arts
Decision Accuracy**

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
56-90	0.20	0.04	0.23
0-55	0.05	0.72	0.77
Estimated Proportion Correctly Classified			0.92

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
56-90	0.18	0.05	0.23
0-55	0.08	0.69	0.77
Estimated Proportion Consistently Classified			0.88

**Mathematics
Decision Accuracy**

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
41-80	0.26	0.05	0.31
0-40	0.04	0.64	0.69
Estimated Proportion Correctly Classified			0.90

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Score	Pass
41-80	0.25	0.07	0.31
0-40	0.07	0.62	0.69
Estimated Proportion Consistently Classified			0.87

Table 6.N.3: ESEA Reliability Classifications—October 2009

**English-Language Arts
Decision Accuracy**

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (77-90)	0.02	0.01	0.01	0.04
Proficient (69-76)	0.00	0.04	0.02	0.05
Below Proficient (0-68)	0.00	0.02	0.89	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

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (77-90)	0.02	0.01	0.01	0.04
Proficient (69-76)	0.00	0.03	0.02	0.05
Below Proficient (0-68)	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

**Mathematics
Decision Accuracy**

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (72-80)	0.00	0.01	0.01	0.02
Proficient (58-71)	0.00	0.05	0.01	0.06
Below Proficient (0-57)	0.00	0.02	0.91	0.92
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

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (72-80)	0.01	0.01	0.00	0.02
Proficient (58-71)	0.00	0.05	0.01	0.06
Below Proficient (0-57)	0.00	0.03	0.90	0.92
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.96

Table 6.N.4: Pass/Not Pass Classifications—October 2009

**English-Language Arts
Decision Accuracy**

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
56-90	0.30	0.04	0.34
0-55	0.04	0.62	0.66
Estimated Proportion Correctly Classified			0.92

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
56-90	0.28	0.05	0.34
0-55	0.07	0.60	0.66
Estimated Proportion Consistently Classified			0.88

**Mathematics
Decision Accuracy**

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
43-80	0.28	0.04	0.33
0-42	0.04	0.64	0.67
Estimated Proportion Correctly Classified			0.92

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
43-80	0.27	0.05	0.33
0-42	0.06	0.62	0.67
Estimated Proportion Consistently Classified			0.89

Table 6.N.5: ESEA Reliability Classifications—November 2009
English-Language Arts
Decision Accuracy

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (77-90)	0.01	0.01	0.01	0.03
Proficient (69-76)	0.00	0.04	0.02	0.06
Below Proficient (0-68)	0.00	0.02	0.89	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

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (77-90)	0.01	0.01	0.01	0.03
Proficient (69-76)	0.00	0.03	0.02	0.06
Below Proficient (0-68)	0.00	0.03	0.88	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

Mathematics
Decision Accuracy

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (72-80)	0.00	0.01	0.01	0.03
Proficient (58-71)	0.00	0.05	0.02	0.07
Below Proficient (0-57)	0.00	0.01	0.89	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

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (72-80)	0.00	0.01	0.01	0.03
Proficient (58-71)	0.00	0.05	0.02	0.07
Below Proficient (0-57)	0.00	0.03	0.88	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

Table 6.N.6: Pass/Not Pass Classifications—November 2009
English-Language Arts
Decision Accuracy

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
55-90	0.33	0.05	0.38
0-54	0.05	0.57	0.62
Estimated Proportion Correctly Classified			0.90

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
55-90	0.32	0.06	0.38
0-54	0.07	0.55	0.62
Estimated Proportion Consistently Classified			0.87

Mathematics
Decision Accuracy

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
42-80	0.37	0.03	0.40
0-41	0.07	0.53	0.60
Estimated Proportion Correctly Classified			0.90

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
42-80	0.36	0.05	0.40
0-41	0.09	0.51	0.60
Estimated Proportion Consistently Classified			0.87

Table 6.N.7: ESEA Reliability Classifications—December 2009
English-Language Arts
Decision Accuracy

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (78-90)	0.01	0.01	0.01	0.03
Proficient (70-77)	0.00	0.03	0.02	0.05
Below Proficient (0-69)	0.00	0.01	0.91	0.92
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

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (78-90)	0.01	0.01	0.01	0.03
Proficient (70-77)	0.00	0.03	0.02	0.05
Below Proficient (0-69)	0.00	0.03	0.90	0.92
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.95

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	0.00	0.01
Proficient (59-72)	0.00	0.03	0.01	0.04
Below Proficient (0-58)	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

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (73-80)	0.00	0.00	0.00	0.01
Proficient (59-72)	0.00	0.03	0.01	0.04
Below Proficient (0-58)	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

Table 6.N.8: Pass/Not Pass Classifications—December 2009
English-Language Arts
Decision Accuracy

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
57-90	0.26	0.04	0.30
0-56	0.05	0.65	0.70
Estimated Proportion Correctly Classified			0.91

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
57-90	0.25	0.05	0.30
0-56	0.07	0.62	0.70
Estimated Proportion Consistently Classified			0.87

Mathematics
Decision Accuracy

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
44-80	0.25	0.05	0.30
0-43	0.04	0.66	0.70
Estimated Proportion Correctly Classified			0.91

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
44-80	0.24	0.06	0.30
0-43	0.07	0.64	0.70
Estimated Proportion Consistently Classified			0.88

Table 6.N.9: ESEA Reliability Classifications—February 2010
English-Language Arts
Decision Accuracy

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (76-90)	0.20	0.04	0.00	0.24
Proficient (68-75)	0.03	0.12	0.04	0.19
Below Proficient (0-67)	0.00	0.03	0.54	0.57
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.93
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
Advanced (76-90)	0.19	0.04	0.01	0.24
Proficient (68-75)	0.04	0.10	0.05	0.19
Below Proficient (0-67)	0.00	0.05	0.52	0.57
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.90
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.89

Mathematics
Decision Accuracy

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (73-80)	0.11	0.02	0.00	0.14
Proficient (59-72)	0.02	0.22	0.03	0.27
Below Proficient (0-58)	0.00	0.02	0.57	0.60
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.96
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
Advanced (73-80)	0.11	0.03	0.00	0.14
Proficient (59-72)	0.03	0.20	0.04	0.27
Below Proficient (0-58)	0.00	0.04	0.56	0.60
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.94
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.92

**Table 6.N.10: Pass/Not Pass Classifications—February 2010
English-Language Arts
Decision Accuracy**

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
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

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	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 (Raw Score)	Category		
	Pass	Not Pass	Total
44-80	0.63	0.03	0.65
0-43	0.03	0.31	0.35
Estimated Proportion Correctly Classified			0.94

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
44-80	0.62	0.04	0.65
0-43	0.04	0.30	0.35
Estimated Proportion Consistently Classified			0.92

Table 6.N.11: ESEA Reliability Classifications—March 2010
English-Language Arts
Decision Accuracy

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (76-90)	0.23	0.04	0.00	0.27
Proficient (69-75)	0.04	0.12	0.04	0.19
Below Proficient (0-68)	0.00	0.04	0.50	0.54
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.92
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
Advanced (76-90)	0.22	0.05	0.01	0.27
Proficient (69-75)	0.05	0.09	0.05	0.19
Below Proficient (0-68)	0.00	0.05	0.48	0.54
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.89
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.89

Mathematics
Decision Accuracy

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (72-80)	0.15	0.03	0.00	0.18
Proficient (58-71)	0.02	0.24	0.03	0.29
Below Proficient (0-57)	0.00	0.03	0.50	0.53
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
Advanced (72-80)	0.14	0.03	0.00	0.18
Proficient (58-71)	0.03	0.22	0.04	0.29
Below Proficient (0-57)	0.00	0.04	0.49	0.53
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.93
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.91

**Table 6.N.12: Pass/Not Pass Classifications—March 2010
English-Language Arts
Decision Accuracy**

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
56-90	0.71	0.03	0.73
0-55	0.03	0.23	0.27
Estimated Proportion Correctly Classified			0.94

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
56-90	0.69	0.04	0.73
0-55	0.04	0.22	0.27
Estimated Proportion Consistently Classified			0.91

**Mathematics
Decision Accuracy**

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
42-80	0.72	0.02	0.74
0-41	0.03	0.23	0.26
Estimated Proportion Correctly Classified			0.95

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
42-80	0.71	0.03	0.74
0-41	0.04	0.22	0.26
Estimated Proportion Consistently Classified			0.93

Table 6.N.13: ESEA Reliability Classifications—May 2010
English-Language Arts
Decision Accuracy

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (76-90)	0.03	0.02	0.01	0.05
Proficient (68-75)	0.00	0.04	0.02	0.06
Below Proficient (0-67)	0.00	0.02	0.86	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

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (76-90)	0.03	0.02	0.01	0.05
Proficient (68-75)	0.01	0.03	0.02	0.06
Below Proficient (0-67)	0.00	0.03	0.85	0.88
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.97
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.94

Mathematics
Decision Accuracy

Classification on All-Forms Average ¹				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (73-80)	0.00	0.01	0.01	0.02
Proficient (59-72)	0.00	0.04	0.02	0.07
Below Proficient (0-58)	0.00	0.00	0.92	0.92
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.96

¹ True Score

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			
	Advanced	Proficient	Below Proficient	Total
Advanced (73-80)	0.00	0.01	0.01	0.02
Proficient (59-72)	0.00	0.04	0.02	0.07
Below Proficient (0-58)	0.00	0.01	0.90	0.92
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.95

Table 6.N.14: Pass/Not Pass Classifications—May 2010
English-Language Arts
Decision Accuracy

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
54-90	0.31	0.03	0.34
0-53	0.04	0.61	0.66
Estimated Proportion Correctly Classified			0.92

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
54-90	0.30	0.05	0.34
0-53	0.06	0.59	0.66
Estimated Proportion Consistently Classified			0.89

Mathematics
Decision Accuracy

Classification on All-Forms Average ¹			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
43-80	0.29	0.02	0.31
0-42	0.07	0.63	0.69
Estimated Proportion Correctly Classified			0.92

¹ True Score

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		
	Pass	Not Pass	Total
43-80	0.27	0.04	0.31
0-42	0.09	0.60	0.69
Estimated Proportion Consistently Classified			0.87

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 2009

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	15	44	326.8973	327	8
89	500.7457	450	23	43	324.9673	325	8
88	478.3426	450	27	42	323.0385	323	8
87	464.9827	450	26	41	321.1090	321	9
86	455.0907	450	23	40	319.1827	319	9
85	446.9787	447	21	39	317.2515	317	9
84	439.9687	440	17	38	315.3223	315	9
83	433.7204	434	17	37	313.3894	313	9
82	428.0583	428	17	36	311.4562	311	9
81	422.8653	423	15	35	309.5214	310	9
80	418.0695	418	15	34	307.5851	308	9
79	413.6160	414	14	33	305.6480	306	9
78	409.4572	409	14	32	303.7100	304	9
77	405.5549	406(Advanced)	13	31	301.7733	302	9
76	401.8838	402	13	30	299.8353	300	9
75	398.4084	398	12	29	297.8954	298	9
74	395.1044	395	12	28	295.9547	296	10
73	391.9511	392	11	27	294.0107	294	10
72	388.9322	389	11	26	292.0624	292	10
71	386.0306	386	11	25	290.1093	290	10
70	383.2325	383	11	24	288.1475	288	10
69	380.5246	381(Proficient)	10	23	286.1719	286	10
68	377.9033	378	10	22	284.1805	284	10
67	375.3534	375	10	21	282.1489	282	11
66	372.8713	373	10	20	280.0863	280	11
65	370.4512	370	10	19	277.9838	278	11
64	368.0896	368	9	18	275.8327	276	11
63	365.7735	366	9	17	273.6246	275	11
62	363.5038	364	9	16	271.3103	275	12
61	361.2731	361	9	15	268.8973	275	12
60	359.0815	359	9	14	266.3703	275	12
59	356.9226	357	9	13	263.7069	275	13
58	354.7939	355	9	12	260.8498	275	13
57	352.6921	353	9	11	257.7471	275	14
56	350.6154	351(Pass)	9	10	254.3791	275	14
55	348.5629	349	9	9	250.6797	275	15
54	346.5299	347	9	8	246.5614	275	15
53	344.5170	345	9	7	241.9085	275	16
52	342.5179	343	9	6	236.5205	275	21
51	340.5354	341	8	5	230.0926	275	24
50	338.5621	339	8	4	222.2338	275	27
49	336.6023	337	8	3	212.1146	275	28
48	334.6479	335	8	2	197.8908	275	26
47	332.7032	333	8	1	173.6711	275	19
46	330.7645	331	8	0	147.2238	275	8
45	328.8290	329	8				

Table 6.O.2: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, July 2009

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	14
79	496.4854	450	20
78	475.8029	450	22
77	461.4803	450	19
76	451.3094	450	18
75	443.3243	443	16
74	436.7086	437	15
73	431.0228	431	13
72	426.0153	426	13
71	421.5230	422(Advanced)	12
70	417.4343	417	11
69	413.6767	414	11
68	410.2038	410	10
67	406.9451	407	10
66	403.8724	404	10
65	400.9592	401	10
64	398.1827	398	9
63	395.5245	396	9
62	392.9705	393	9
61	390.5139	391	9
60	388.1387	388	9
59	385.8357	386	9
58	383.5990	384	8
57	381.4197	381(Proficient)	8
56	379.2947	379	8
55	377.2140	377	8
54	375.1787	375	8
53	373.1811	373	8
52	371.2169	371	8
51	369.2827	369	8
50	367.3726	367	8
49	365.4868	365	8
48	363.6238	364	8
47	361.7764	362	8
46	359.9444	360	8
45	358.1249	358	8
44	356.3158	356	8
43	354.5154	355	8
42	352.7205	353	8
41	350.9279	351(Pass)	8
40	349.1392	349	8

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
39	347.3495	347	8
38	345.5560	346	8
37	343.7587	344	8
36	341.9546	342	8
35	340.1416	340	8
34	338.3168	338	8
33	336.4776	336	8
32	334.6230	335	8
31	332.7503	333	8
30	330.8568	331	8
29	328.9374	329	8
28	326.9914	327	8
27	325.0128	325	8
26	323.0010	323	8
25	320.9519	321	8
24	318.8579	319	8
23	316.7170	317	8
22	314.5220	315	8
21	312.2675	312	9
20	309.9483	310	9
19	307.5557	308	9
18	305.0809	305	9
17	302.5089	303	9
16	299.8320	300	9
15	297.0265	297	10
14	294.0832	294	10
13	290.9787	291	10
12	287.6850	288	11
11	284.1703	284	11
10	280.3911	280	11
9	276.2912	276	12
8	271.7998	275	12
7	266.8135	275	13
6	261.1267	275	14
5	254.4912	275	14
4	246.5077	275	20
3	236.3823	275	20
2	222.3273	275	18
1	198.6246	275	13
0	171.7079	275	10

Table 6.O.3: Operational, Large Print, Audio Books and Audio CD Conversions—ELA, October 2009

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	15	44	326.5989	327	8
89	501.4793	450	23	43	324.6559	325	8
88	479.1704	450	27	42	322.7166	323	9
87	465.8155	450	26	41	320.7790	321	9
86	455.8996	450	23	40	318.8460	319	9
85	447.7492	448	21	39	316.9123	317	9
84	440.6967	441	17	38	314.9819	315	9
83	434.4057	434	17	37	313.0520	313	9
82	428.7058	429	17	36	311.1242	311	9
81	423.4803	423	15	35	309.1982	309	9
80	418.6569	419	15	34	307.2733	307	9
79	414.1806	414	14	33	305.3507	305	9
78	410.0021	410	14	32	303.4296	303	9
77	406.0806	406(Advanced)	13	31	301.5123	302	9
76	402.3917	402	13	30	299.5947	300	9
75	398.8981	399	12	29	297.6765	298	9
74	395.5751	396	12	28	295.7583	296	10
73	392.4015	392	11	27	293.8361	294	10
72	389.3607	389	11	26	291.9090	292	10
71	386.4362	386	11	25	289.9755	290	10
70	383.6137	384	11	24	288.0307	288	10
69	380.8803	381(Proficient)	10	23	286.0692	286	10
68	378.2313	378	10	22	284.0882	284	10
67	375.6538	376	10	21	282.0663	282	10
66	373.1427	373	10	20	280.0048	280	11
65	370.6901	371	10	19	277.8979	278	11
64	368.2970	368	10	18	275.7363	276	11
63	365.9511	366	9	17	273.5107	275	11
62	363.6518	364	9	16	271.1792	275	12
61	361.3909	361	9	15	268.7350	275	12
60	359.1694	359	9	14	266.1683	275	12
59	356.9806	357	9	13	263.4556	275	13
58	354.8223	355	9	12	260.5623	275	13
57	352.6912	353	9	11	257.3973	275	14
56	350.5859	351(Pass)	9	10	253.9579	275	14
55	348.5053	349	9	9	250.1772	275	15
54	346.4448	346	9	8	245.9688	275	15
53	344.4054	344	9	7	241.2172	275	16
52	342.3813	342	9	6	235.7548	275	21
51	340.3741	340	9	5	229.3270	275	24
50	338.3776	338	8	4	221.4073	275	27
49	336.3947	336	8	3	211.2398	275	28
48	334.4194	334	8	2	197.0032	275	26
47	332.4550	332	8	1	172.8621	275	19
46	330.4976	330	8	0	147.2238	275	8
45	328.5454	329	8				

Table 6.O.4: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, October 2009

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	14
79	493.6203	450	20
78	470.5690	450	22
77	456.8539	450	19
76	446.9428	447	17
75	439.1179	439	16
74	432.6107	433	14
73	427.0099	427	13
72	422.0704	422(Advanced)	12
71	417.6366	418	12
70	413.5946	414	11
69	409.8778	410	11
68	406.4220	406	10
67	403.1867	403	10
66	400.1369	400	10
65	397.2438	397	10
64	394.4850	394	9
63	391.8461	392	9
62	389.3144	389	9
61	386.8719	387	9
60	384.5116	385	9
59	382.2220	382	9
58	379.9984	380(Proficient)	8
57	377.8303	378	8
56	375.7149	376	8
55	373.6452	374	8
54	371.6164	372	8
53	369.6254	370	8
52	367.6641	368	8
51	365.7336	366	8
50	363.8314	364	8
49	361.9507	362	8
48	360.0898	360	8
47	358.2463	358	8
46	356.4176	356	8
45	354.6019	355	8
44	352.7959	353	8
43	350.9976	351(Pass)	8
42	349.2054	349	8
41	347.4175	347	8
40	345.6297	346	8

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
39	343.8425	344	8
38	342.0528	342	8
37	340.2586	340	8
36	338.4575	338	8
35	336.6464	337	8
34	334.8255	335	8
33	332.9910	333	8
32	331.1423	331	8
31	329.2736	329	8
30	327.3852	327	8
29	325.4715	325	8
28	323.5300	324	8
27	321.5616	322	8
26	319.5575	320	8
25	317.5150	318	8
24	315.4316	315	8
23	313.2995	313	8
22	311.1162	311	8
21	308.8756	309	9
20	306.5701	307	9
19	304.1908	304	9
18	301.7275	302	9
17	299.1737	299	9
16	296.5121	297	9
15	293.7320	294	10
14	290.8140	291	10
13	287.7354	288	10
12	284.4707	284	10
11	280.9848	281	11
10	277.2340	277	11
9	273.1623	275	12
8	268.6933	275	12
7	263.7143	275	13
6	258.0690	275	14
5	251.5119	275	14
4	243.6268	275	20
3	233.6352	275	20
2	219.7854	275	18
1	196.4903	275	13
0	171.7079	275	10

Table 6.O.5: Operational, Large Print, Audio Books and Audio CD Conversions—ELA, November 2009

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	15	44	328.9544	329	8
89	500.3521	450	23	43	327.0293	327	8
88	477.4266	450	27	42	325.1030	325	8
87	463.8368	450	26	41	323.1751	323	9
86	453.9047	450	23	40	321.2437	321	9
85	445.8747	446	21	39	319.3128	319	9
84	439.0233	439	17	38	317.3742	317	9
83	432.9770	433	17	37	315.4353	315	9
82	427.5337	428	17	36	313.4898	313	9
81	422.5580	423	15	35	311.5415	312	9
80	417.9669	418	14	34	309.5888	310	9
79	413.6999	414	14	33	307.6319	308	9
78	409.7083	410	13	32	305.6711	306	9
77	405.9544	406(Advanced)	13	31	303.7064	304	9
76	402.4160	402	12	30	301.7394	302	9
75	399.0599	399	12	29	299.7674	300	9
74	395.8642	396	12	28	297.7892	298	10
73	392.8100	393	11	27	295.8051	296	10
72	389.8821	390	11	26	293.8120	294	10
71	387.0666	387	11	25	291.8085	292	10
70	384.3488	384	10	24	289.7929	290	10
69	381.7181	382(Proficient)	10	23	287.7593	288	10
68	379.1658	379	10	22	285.7024	286	10
67	376.6851	377	10	21	283.6175	284	11
66	374.2674	374	10	20	281.4967	281	11
65	371.9058	372	10	19	279.3299	279	11
64	369.5966	370	9	18	277.0943	277	11
63	367.3342	367	9	17	274.7908	275	11
62	365.1127	365	9	16	272.4058	275	12
61	362.9288	363	9	15	269.9224	275	12
60	360.7792	361	9	14	267.3202	275	12
59	358.6617	359	9	13	264.5478	275	13
58	356.5698	357	9	12	261.5767	275	13
57	354.5046	355	9	11	258.3842	275	14
56	352.4618	352	9	10	254.9210	275	14
55	350.4374	350(Pass)	9	9	251.1211	275	15
54	348.4328	348	9	8	246.8963	275	15
53	346.4429	346	9	7	242.1292	275	16
52	344.4689	344	9	6	236.6065	275	21
51	342.5045	343	8	5	230.0684	275	24
50	340.5526	341	8	4	222.1001	275	27
49	338.6060	339	8	3	211.8750	275	28
48	336.6693	337	8	2	197.5590	275	26
47	334.7344	335	8	1	173.2934	275	19
46	332.8059	333	8	0	147.2238	275	8
45	330.8797	331	8				

**Table 6.O.6: Operational, Large Print, Audio Books, and Audio CD Conversions—
Mathematics, November 2009**

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	14	39	345.2660	345	8
79	493.6129	450	20	38	343.5005	344	8
78	470.6053	450	22	37	341.7298	342	8
77	456.9395	450	19	36	339.9523	340	8
76	447.0777	447	17	35	338.1646	338	8
75	439.3015	439	16	34	336.3651	336	8
74	432.8421	433	14	33	334.5522	335	8
73	427.3011	427	13	32	332.7237	333	8
72	422.4160	422(Advanced)	12	31	330.8769	331	8
71	418.0327	418	12	30	329.0077	329	8
70	414.0381	414	11	29	327.1141	327	8
69	410.3647	410	11	28	325.1915	325	8
68	406.9494	407	10	27	323.2388	323	8
67	403.7529	404	10	26	321.2533	321	8
66	400.7411	401	10	25	319.2273	319	8
65	397.8857	398	9	24	317.1583	317	8
64	395.1640	395	9	23	315.0417	315	8
63	392.5597	393	9	22	312.8709	313	8
62	390.0631	390	9	21	310.6412	311	9
61	387.6558	388	9	20	308.3460	308	9
60	385.3287	385	9	19	305.9769	306	9
59	383.0731	383	8	18	303.5222	304	9
58	380.8811	381(Proficient)	8	17	300.9739	301	9
57	378.7463	379	8	16	298.3183	298	9
56	376.6613	377	8	15	295.5407	296	10
55	374.6232	375	8	14	292.6249	293	10
54	372.6249	373	8	13	289.5470	290	10
53	370.6634	371	8	12	286.2823	286	10
52	368.7340	369	8	11	282.7962	283	11
51	366.8316	367	8	10	279.0471	279	11
50	364.9567	365	8	9	274.9603	275	12
49	363.1076	363	8	8	270.4659	275	12
48	361.2746	361	8	7	265.4548	275	13
47	359.4603	359	8	6	259.7659	275	14
46	357.6591	358	8	5	253.1539	275	14
45	355.8706	356	8	4	245.1982	275	20
44	354.0922	354	8	3	235.1117	275	20
43	352.3207	352	8	2	221.1243	275	18
42	350.5534	351(Pass)	8	1	197.5842	275	13
41	348.7914	349	8	0	171.7079	275	10
40	347.0293	347	8				

Table 6.O.7: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, December 2009

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	15	44	324.3778	324	8
89	503.4510	450	23	43	322.4917	322	8
88	479.5131	450	27	42	320.6082	321	8
87	464.6291	450	26	41	318.7291	319	8
86	453.4623	450	23	40	316.8503	317	8
85	444.3609	444	21	39	314.9750	315	9
84	436.6304	437	17	38	313.1005	313	9
83	429.8975	430	17	37	311.2284	311	9
82	423.9362	424	17	36	309.3584	309	9
81	418.6212	419	15	35	307.4900	307	9
80	413.7976	414	15	34	305.6244	306	9
79	409.3680	409	14	33	303.7614	304	9
78	405.2664	405(Advanced)	13	32	301.9027	302	9
77	401.4487	401	13	31	300.0467	300	9
76	397.8635	398	12	30	298.1922	298	9
75	394.4761	394	12	29	296.3402	296	9
74	391.2589	391	12	28	294.4894	294	9
73	388.1905	388	11	27	292.6377	293	10
72	385.2487	385	11	26	290.7855	291	10
71	382.4217	382	11	25	288.9278	289	10
70	379.6927	380(Proficient)	10	24	287.0504	287	10
69	377.0543	377	10	23	285.1589	285	10
68	374.4890	374	10	22	283.2482	283	10
67	371.9935	372	10	21	281.3140	281	10
66	369.5613	370	10	20	279.3450	279	11
65	367.1861	367	10	19	277.3135	277	11
64	364.8618	365	9	18	275.2305	275	11
63	362.5836	363	9	17	273.0863	275	11
62	360.3495	360	9	16	270.8590	275	11
61	358.1553	358	9	15	268.4993	275	12
60	355.9957	356	9	14	266.0209	275	12
59	353.8699	354	9	13	263.4001	275	12
58	351.7752	352	9	12	260.6000	275	13
57	349.7056	350(Pass)	9	11	257.5269	275	13
56	347.6645	348	9	10	254.1813	275	14
55	345.6449	346	9	9	250.4965	275	14
54	343.6468	344	9	8	246.3849	275	15
53	341.6661	342	8	7	241.7304	275	15
52	339.7011	340	8	6	236.3591	275	21
51	337.7512	338	8	5	229.9218	275	24
50	335.8132	336	8	4	222.0512	275	27
49	333.8866	334	8	3	211.9210	275	28
48	331.9713	332	8	2	197.6927	275	26
47	330.0636	330	8	1	173.4892	275	19
46	328.1624	328	8	0	147.2238	275	8
45	326.2681	326	8				

**Table 6.O.8: Operational, Large Print, Audio Books, and Audio CD Conversions—
Mathematics, December 2009**

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	14	39	341.8205	342	8
79	491.6353	450	20	38	340.0483	340	8
78	468.2749	450	22	37	338.2710	338	8
77	454.4377	450	19	36	336.4866	336	8
76	444.4657	444	17	35	334.6942	335	8
75	436.6207	437	16	34	332.8912	333	8
74	430.1026	430	14	33	331.0761	331	8
73	424.4997	424(Advanced)	13	32	329.2438	329	8
72	419.5651	420	12	31	327.3946	327	8
71	415.1344	415	12	30	325.5230	326	8
70	411.1065	411	11	29	323.6275	324	8
69	407.3977	407	11	28	321.7085	322	8
68	403.9532	404	10	27	319.7570	320	8
67	400.7296	401	10	26	317.7714	318	8
66	397.6909	398	10	25	315.7501	316	8
65	394.8088	395	10	24	313.6845	314	8
64	392.0640	392	9	23	311.5736	312	8
63	389.4426	389	9	22	309.4117	309	8
62	386.9229	387	9	21	307.1920	307	9
61	384.4961	384	9	20	304.9066	305	9
60	382.1494	382	9	19	302.5442	303	9
59	379.8768	380(Proficient)	9	18	300.1041	300	9
58	377.6664	378	8	17	297.5678	298	9
57	375.5154	376	8	16	294.9278	295	9
56	373.4151	373	8	15	292.1687	292	10
55	371.3608	371	8	14	289.2711	289	10
54	369.3489	369	8	13	286.2143	286	10
53	367.3709	367	8	12	282.9708	283	10
52	365.4262	365	8	11	279.5074	280	11
51	363.5146	364	8	10	275.7790	276	11
50	361.6265	362	8	9	271.7327	275	12
49	359.7620	360	8	8	267.2891	275	12
48	357.9171	358	8	7	262.3366	275	13
47	356.0901	356	8	6	256.7225	275	14
46	354.2784	354	8	5	250.2005	275	14
45	352.4789	352	8	4	242.3577	275	20
44	350.6886	351(Pass)	8	3	232.4224	275	20
43	348.9080	349	8	2	218.6589	275	18
42	347.1326	347	8	1	195.5392	275	13
41	345.3604	345	8	0	171.7079	275	10
40	343.5907	344	8				

Table 6.O.9: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, February 2010

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	15	44	328.0422	328	9
89	506.4997	450	23	43	326.0778	326	9
88	487.2390	450	27	42	324.1172	324	9
87	472.3356	450	26	41	322.1608	322	9
86	461.5439	450	23	40	320.2087	320	9
85	452.7989	450	21	39	318.2596	318	9
84	445.2959	445	17	38	316.3137	316	9
83	438.6547	439	17	37	314.3695	314	9
82	432.6780	433	17	36	312.4283	312	9
81	427.2305	427	16	35	310.4879	310	9
80	422.2231	422	15	34	308.5493	309	9
79	417.5902	418	14	33	306.6084	307	9
78	413.2778	413	14	32	304.6683	305	9
77	409.2387	409	13	31	302.7262	303	9
76	405.4364	405(Advanced)	13	30	300.7834	301	9
75	401.8445	402	12	29	298.8338	299	9
74	398.4306	398	12	28	296.8773	297	10
73	395.1722	395	12	27	294.9128	295	10
72	392.0506	392	11	26	292.9345	293	10
71	389.0511	389	11	25	290.9416	291	10
70	386.1588	386	11	24	288.9274	289	10
69	383.3610	383	11	23	286.8811	287	10
68	380.6460	381(Proficient)	10	22	284.8013	285	10
67	378.0107	378	10	21	282.6801	283	11
66	375.4419	375	10	20	280.5122	281	11
65	372.9357	373	10	19	278.2884	278	11
64	370.4868	370	10	18	275.9971	276	11
63	368.0946	368	10	17	273.6291	275	11
62	365.7449	366	9	16	271.1436	275	12
61	363.4389	363	9	15	268.5393	275	12
60	361.1699	361	9	14	265.7999	275	12
59	358.9381	359	9	13	262.9004	275	13
58	356.7372	357	9	12	259.8125	275	13
57	354.5654	355	9	11	256.5045	275	14
56	352.4194	352	9	10	252.8761	275	14
55	350.2974	350(Pass)	9	9	248.8920	275	15
54	348.1999	348	9	8	244.4766	275	16
53	346.1215	346	9	7	239.5148	275	16
52	344.0644	344	9	6	233.8390	275	21
51	342.0213	342	9	5	227.1915	275	24
50	339.9930	340	9	4	219.1423	275	27
49	337.9766	338	9	3	208.8768	275	28
48	335.9718	336	9	2	194.5701	275	26
47	333.9764	334	9	1	171.1364	275	19
46	331.9917	332	9	0	147.2238	275	8
45	330.0138	330	9				

**Table 6.O.10: Operational, Large Print, Audio Books, and Audio CD Conversions—
Mathematics, February 2010**

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	14	39	341.3075	341	8
79	491.9460	450	20	38	339.5167	340	8
78	468.6149	450	22	37	337.7198	338	8
77	454.7750	450	19	36	335.9176	336	8
76	444.7890	445	17	35	334.1063	334	8
75	436.9256	437	16	34	332.2863	332	8
74	430.3863	430	15	33	330.4521	330	8
73	424.7608	425(Advanced)	13	32	328.6027	329	8
72	419.8025	420	12	31	326.7352	327	8
71	415.3479	415	12	30	324.8453	325	8
70	411.2954	411	11	29	322.9337	323	8
69	407.5621	408	11	28	320.9963	321	8
68	404.0926	404	10	27	319.0269	319	8
67	400.8442	401	10	26	317.0245	317	8
66	397.7807	398	10	25	314.9844	315	8
65	394.8739	395	10	24	312.9017	313	8
64	392.1045	392	9	23	310.7731	311	8
63	389.4584	389	9	22	308.5931	309	8
62	386.9142	387	9	21	306.3552	306	9
61	384.4632	384	9	20	304.0511	304	9
60	382.0922	382	9	19	301.6725	302	9
59	379.7957	380(Proficient)	9	18	299.2137	299	9
58	377.5613	378	8	17	296.6595	297	9
57	375.3868	375	8	16	294.0014	294	9
56	373.2630	373	8	15	291.2232	291	10
55	371.1855	371	8	14	288.3062	288	10
54	369.1508	369	8	13	285.2293	285	10
53	367.1495	367	8	12	281.9650	282	10
52	365.1827	365	8	11	278.4800	278	11
51	363.2491	363	8	10	274.7296	275	11
50	361.3385	361	8	9	270.6609	275	12
49	359.4526	359	8	8	266.1934	275	12
48	357.5859	358	8	7	261.2165	275	13
47	355.7378	356	8	6	255.5784	275	14
46	353.9052	354	8	5	249.0324	275	14
45	352.0849	352	8	4	241.1668	275	20
44	350.2738	350(Pass)	8	3	231.2114	275	20
43	348.4739	348	8	2	217.4283	275	18
42	346.6776	347	8	1	194.5720	275	13
41	344.8861	345	8	0	171.7079	275	10
40	343.0970	343	8				

Table 6.O.11: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, March 2010

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	15	44	326.1929	326	9
89	508.0332	450	23	43	324.2593	324	9
88	490.1149	450	27	42	322.3311	322	9
87	474.4754	450	26	41	320.4076	320	9
86	463.0789	450	23	40	318.4892	318	9
85	453.7139	450	21	39	316.5743	317	9
84	445.5963	446	17	38	314.6635	315	9
83	438.3834	438	17	37	312.7565	313	9
82	431.9101	432	17	36	310.8529	311	9
81	426.0504	426	16	35	308.9534	309	9
80	420.7129	421	15	34	307.0558	307	9
79	415.8218	416	15	33	305.1620	305	9
78	411.3086	411	14	32	303.2696	303	9
77	407.1114	407	13	31	301.3812	301	9
76	403.2002	403(Advanced)	13	30	299.4911	299	9
75	399.5332	400	12	29	297.5985	298	9
74	396.0627	396	12	28	295.7031	296	10
73	392.7626	393	12	27	293.8005	294	10
72	389.6125	390	11	26	291.8888	292	10
71	386.5936	387	11	25	289.9657	290	10
70	383.6889	384	11	24	288.0256	288	10
69	380.8840	381(Proficient)	10	23	286.0624	286	10
68	378.1726	378	10	22	284.0726	284	10
67	375.5404	376	10	21	282.0344	282	11
66	372.9820	373	10	20	279.9489	280	11
65	370.4900	370	10	19	277.8084	278	11
64	368.0638	368	10	18	275.6036	276	11
63	365.6871	366	9	17	273.3241	275	11
62	363.3603	363	9	16	270.9416	275	12
61	361.0763	361	9	15	268.4252	275	12
60	358.8342	359	9	14	265.7746	275	12
59	356.6275	357	9	13	262.9644	275	13
58	354.4539	354	9	12	259.9654	275	13
57	352.3107	352	9	11	256.7324	275	14
56	350.1924	350(Pass)	9	10	253.1733	275	14
55	348.1031	348	9	9	249.2616	275	15
54	346.0361	346	9	8	244.9131	275	15
53	343.9916	344	9	7	240.0122	275	16
52	341.9632	342	9	6	234.3907	275	21
51	339.9515	340	9	5	227.7918	275	24
50	337.9536	338	9	4	219.7885	275	27
49	335.9687	336	9	3	209.5765	275	28
48	333.9946	334	9	2	195.3714	275	26
47	332.0325	332	8	1	171.5436	275	19
46	330.0784	330	9	0	147.2238	275	8
45	328.1317	328	9				

Table 6.O.12: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, March 2010

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	14	39	345.0865	345	8
79	495.4640	450	20	38	343.2881	343	8
78	473.7958	450	22	37	341.4858	341	8
77	459.7064	450	19	36	339.6786	340	8
76	449.6165	450	18	35	337.8620	338	8
75	441.6679	442	16	34	336.0361	336	8
74	435.0652	435	15	33	334.1975	334	8
73	429.3817	429	13	32	332.3460	332	8
72	424.3690	424(Advanced)	13	31	330.4763	330	8
71	419.8675	420	12	30	328.5870	329	8
70	415.7647	416	11	29	326.6748	327	8
69	411.9873	412	11	28	324.7345	325	8
68	408.4754	408	10	27	322.7675	323	8
67	405.1848	405	10	26	320.7680	321	8
66	402.0839	402	10	25	318.7301	319	8
65	399.1440	399	10	24	316.6521	317	8
64	396.3414	396	9	23	314.5271	315	8
63	393.6589	394	9	22	312.3513	312	8
62	391.0842	391	9	21	310.1185	310	9
61	388.6047	389	9	20	307.8225	308	9
60	386.2062	386	9	19	305.4551	305	9
59	383.8828	384	9	18	303.0035	303	9
58	381.6237	382(Proficient)	8	17	300.4631	300	9
57	379.4259	379	8	16	297.8165	298	9
56	377.2779	377	8	15	295.0522	295	10
55	375.1809	375	8	14	292.1526	292	10
54	373.1252	373	8	13	289.0944	289	10
53	371.1077	371	8	12	285.8534	286	10
52	369.1255	369	8	11	282.3887	282	11
51	367.1694	367	8	10	278.6557	279	11
50	365.2432	365	8	9	274.5995	275	12
49	363.3436	363	8	8	270.1465	275	12
48	361.4622	361	8	7	265.1827	275	13
47	359.6005	360	8	6	259.5478	275	14
46	357.7539	358	8	5	252.9965	275	14
45	355.9214	356	8	4	245.1083	275	20
44	354.1007	354	8	3	235.0956	275	20
43	352.2886	352	8	2	221.1848	275	18
42	350.4820	350(Pass)	8	1	197.7096	275	13
41	348.6826	349	8	0	171.7079	275	10
40	346.8842	347	8				

Table 6.O.13: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, May 2010

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	15	44	331.4377	331	8
89	502.9483	450	23	43	329.5727	330	8
88	480.1120	450	27	42	327.7077	328	8
87	466.1892	450	26	41	325.8413	326	8
86	455.9610	450	23	40	323.9715	324	8
85	447.6662	448	21	39	322.0983	322	8
84	440.5854	441	17	38	320.2218	320	9
83	434.3483	434	17	37	318.3409	318	9
82	428.7589	429	17	36	316.4555	316	9
81	423.6747	424	15	35	314.5650	315	9
80	419.0074	419	14	34	312.6700	313	9
79	414.6923	415	14	33	310.7699	311	9
78	410.6763	411	13	32	308.8659	309	9
77	406.9137	407	13	31	306.9558	307	9
76	403.3819	403(Advanced)	12	30	305.0424	305	9
75	400.0416	400	12	29	303.1234	303	9
74	396.8687	397	11	28	301.2023	301	9
73	393.8424	394	11	27	299.2732	299	10
72	390.9459	391	11	26	297.3361	297	10
71	388.1657	388	11	25	295.3918	295	10
70	385.4858	385	10	24	293.4340	293	10
69	382.8958	383	10	23	291.4624	291	10
68	380.3834	380(Proficient)	10	22	289.4735	289	10
67	377.9472	378	10	21	287.4593	287	10
66	375.5725	376	10	20	285.4137	285	11
65	373.2567	373	9	19	283.3295	283	11
64	370.9921	371	9	18	281.1981	281	11
63	368.7780	369	9	17	279.0111	279	11
62	366.6039	367	9	16	276.7392	277	12
61	364.4701	364	9	15	274.3686	275	12
60	362.3692	362	9	14	271.8866	275	12
59	360.3018	360	9	13	269.2671	275	13
58	358.2634	358	9	12	266.4793	275	13
57	356.2486	356	9	11	263.4837	275	13
56	354.2588	354	9	10	260.2284	275	14
55	352.2895	352	9	9	256.6457	275	14
54	350.3372	350(Pass)	8	8	252.6290	275	15
53	348.4036	348	8	7	248.0734	275	16
52	346.4832	346	8	6	242.8085	275	21
51	344.5776	345	8	5	236.5786	275	24
50	342.6807	343	8	4	228.8999	275	27
49	340.7944	341	8	3	218.8477	275	28
48	338.9124	339	8	2	204.4999	275	26
47	337.0400	337	8	1	179.5729	275	19
46	335.1676	335	8	0	147.2238	275	8
45	333.3013	333	8				

Table 6.O.14: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, May 2010

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	14
79	492.7670	450	20
78	469.5377	450	22
77	455.7234	450	19
76	445.7450	446	17
75	437.8688	438	16
74	431.3200	431	14
73	425.6848	426(Advanced)	13
72	420.7171	421	12
71	416.2549	416	12
70	412.1960	412	11
69	408.4587	408	11
68	404.9857	405	10
67	401.7357	402	10
66	398.6728	399	10
65	395.7683	396	10
64	393.0023	393	9
63	390.3584	390	9
62	387.8206	388	9
61	385.3752	385	9
60	383.0124	383	9
59	380.7230	381(Proficient)	9
58	378.4991	378	8
57	376.3331	376	8
56	374.2204	374	8
55	372.1540	372	8
54	370.1303	370	8
53	368.1434	368	8
52	366.1879	366	8
51	364.2661	364	8
50	362.3713	362	8
49	360.4982	360	8
48	358.6468	359	8
47	356.8128	357	8
46	354.9951	355	8
45	353.1906	353	8
44	351.3960	351	8
43	349.6097	350(Pass)	8
42	347.8319	348	8
41	346.0558	346	8
40	344.2833	344	8

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
39	342.5111	343	8
38	340.7366	341	8
37	338.9591	339	8
36	337.1730	337	8
35	335.3809	335	8
34	333.5765	334	8
33	331.7626	332	8
32	329.9303	330	8
31	328.0821	328	8
30	326.2123	326	8
29	324.3174	324	8
28	322.3999	322	8
27	320.4511	320	8
26	318.4677	318	8
25	316.4486	316	8
24	314.3863	314	8
23	312.2783	312	8
22	310.1188	310	8
21	307.9024	308	9
20	305.6217	306	9
19	303.2658	303	9
18	300.8298	301	9
17	298.3004	298	9
16	295.6659	296	9
15	292.9129	293	10
14	290.0219	290	10
13	286.9713	287	10
12	283.7345	284	10
11	280.2773	280	11
10	276.5554	277	11
9	272.5141	275	12
8	268.0754	275	12
7	263.1272	275	13
6	257.5145	275	14
5	250.9912	275	14
4	243.1422	275	20
3	233.1910	275	20
2	219.3907	275	18
1	196.1726	275	13
0	171.7079	275	10

Table 6.O.15: Braille, LP-Braille, and LP-Braille CD Conversions—ELA— July, October and November 2009

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	15	44	326.8973	327	8
89	500.7457	450	23	43	324.9673	325	8
88	478.3426	450	27	42	323.0385	323	8
87	464.9827	450	26	41	321.1090	321	9
86	455.0907	450	23	40	319.1827	319	9
85	446.9787	447	21	39	317.2515	317	9
84	439.9687	440	17	38	315.3223	315	9
83	433.7204	434	17	37	313.3894	313	9
82	428.0583	428	17	36	311.4562	311	9
81	422.8653	423	15	35	309.5214	310	9
80	418.0695	418	15	34	307.5851	308	9
79	413.6160	414	14	33	305.6480	306	9
78	409.4572	409	14	32	303.7100	304	9
77	405.5549	406(Advanced)	13	31	301.7733	302	9
76	401.8838	402	13	30	299.8353	300	9
75	398.4084	398	12	29	297.8954	298	9
74	395.1044	395	12	28	295.9547	296	10
73	391.9511	392	11	27	294.0107	294	10
72	388.9322	389	11	26	292.0624	292	10
71	386.0306	386	11	25	290.1093	290	10
70	383.2325	383	11	24	288.1475	288	10
69	380.5246	381(Proficient)	10	23	286.1719	286	10
68	377.9033	378	10	22	284.1805	284	10
67	375.3534	375	10	21	282.1489	282	11
66	372.8713	373	10	20	280.0863	280	11
65	370.4512	370	10	19	277.9838	278	11
64	368.0896	368	9	18	275.8327	276	11
63	365.7735	366	9	17	273.6246	275	11
62	363.5038	364	9	16	271.3103	275	12
61	361.2731	361	9	15	268.8973	275	12
60	359.0815	359	9	14	266.3703	275	12
59	356.9226	357	9	13	263.7069	275	13
58	354.7939	355	9	12	260.8498	275	13
57	352.6921	353	9	11	257.7471	275	14
56	350.6154	351(Pass)	9	10	254.3791	275	14
55	348.5629	349	9	9	250.6797	275	15
54	346.5299	347	9	8	246.5614	275	15
53	344.5170	345	9	7	241.9085	275	16
52	342.5179	343	9	6	236.5205	275	21
51	340.5354	341	8	5	230.0926	275	24
50	338.5621	339	8	4	222.2338	275	27
49	336.6023	337	8	3	212.1146	275	28
48	334.6479	335	8	2	197.8908	275	26
47	332.7032	333	8	1	173.6711	275	19
46	330.7645	331	8	0	147.2238	275	8
45	328.8290	329	8				

Table 6.O.16: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics—July, October and November 2009

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	14	39	347.3495	347	8
79	496.4854	450	20	38	345.5560	346	8
78	475.8029	450	22	37	343.7587	344	8
77	461.4803	450	19	36	341.9546	342	8
76	451.3094	450	18	35	340.1416	340	8
75	443.3243	443	16	34	338.3168	338	8
74	436.7086	437	15	33	336.4776	336	8
73	431.0228	431	13	32	334.6230	335	8
72	426.0153	426	13	31	332.7503	333	8
71	421.5230	422(Advanced)	12	30	330.8568	331	8
70	417.4343	417	11	29	328.9374	329	8
69	413.6767	414	11	28	326.9914	327	8
68	410.2038	410	10	27	325.0128	325	8
67	406.9451	407	10	26	323.0010	323	8
66	403.8724	404	10	25	320.9519	321	8
65	400.9592	401	10	24	318.8579	319	8
64	398.1827	398	9	23	316.7170	317	8
63	395.5245	396	9	22	314.5220	315	8
62	392.9705	393	9	21	312.2675	312	9
61	390.5139	391	9	20	309.9483	310	9
60	388.1387	388	9	19	307.5557	308	9
59	385.8357	386	9	18	305.0809	305	9
58	383.5990	384	8	17	302.5089	303	9
57	381.4197	381(Proficient)	8	16	299.8320	300	9
56	379.2947	379	8	15	297.0265	297	10
55	377.2140	377	8	14	294.0832	294	10
54	375.1787	375	8	13	290.9787	291	10
53	373.1811	373	8	12	287.6850	288	11
52	371.2169	371	8	11	284.1703	284	11
51	369.2827	369	8	10	280.3911	280	11
50	367.3726	367	8	9	276.2912	276	12
49	365.4868	365	8	8	271.7998	275	12
48	363.6238	364	8	7	266.8135	275	13
47	361.7764	362	8	6	261.1267	275	14
46	359.9444	360	8	5	254.4912	275	14
45	358.1249	358	8	4	246.5077	275	20
44	356.3158	356	8	3	236.3823	275	20
43	354.5154	355	8	2	222.3273	275	18
42	352.7205	353	8	1	198.6246	275	13
41	350.9279	351(Pass)	8	0	171.7079	275	10
40	349.1392	349	8				

Table 6.O.17: Braille, LP-Braille, and LP-Braille CD Conversions—ELA—December 2009 and February 2010

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	15	44	324.3778	324	8
89	503.4510	450	23	43	322.4917	322	8
88	479.5131	450	27	42	320.6082	321	8
87	464.6291	450	26	41	318.7291	319	8
86	453.4623	450	23	40	316.8503	317	8
85	444.3609	444	21	39	314.9750	315	9
84	436.6304	437	17	38	313.1005	313	9
83	429.8975	430	17	37	311.2284	311	9
82	423.9362	424	17	36	309.3584	309	9
81	418.6212	419	15	35	307.4900	307	9
80	413.7976	414	15	34	305.6244	306	9
79	409.3680	409	14	33	303.7614	304	9
78	405.2664	405(Advanced)	13	32	301.9027	302	9
77	401.4487	401	13	31	300.0467	300	9
76	397.8635	398	12	30	298.1922	298	9
75	394.4761	394	12	29	296.3402	296	9
74	391.2589	391	12	28	294.4894	294	9
73	388.1905	388	11	27	292.6377	293	10
72	385.2487	385	11	26	290.7855	291	10
71	382.4217	382	11	25	288.9278	289	10
70	379.6927	380(Proficient)	10	24	287.0504	287	10
69	377.0543	377	10	23	285.1589	285	10
68	374.4890	374	10	22	283.2482	283	10
67	371.9935	372	10	21	281.3140	281	10
66	369.5613	370	10	20	279.3450	279	11
65	367.1861	367	10	19	277.3135	277	11
64	364.8618	365	9	18	275.2305	275	11
63	362.5836	363	9	17	273.0863	275	11
62	360.3495	360	9	16	270.8590	275	11
61	358.1553	358	9	15	268.4993	275	12
60	355.9957	356	9	14	266.0209	275	12
59	353.8699	354	9	13	263.4001	275	12
58	351.7752	352	9	12	260.6000	275	13
57	349.7056	350(Pass)	9	11	257.5269	275	13
56	347.6645	348	9	10	254.1813	275	14
55	345.6449	346	9	9	250.4965	275	14
54	343.6468	344	9	8	246.3849	275	15
53	341.6661	342	8	7	241.7304	275	15
52	339.7011	340	8	6	236.3591	275	21
51	337.7512	338	8	5	229.9218	275	24
50	335.8132	336	8	4	222.0512	275	27
49	333.8866	334	8	3	211.9210	275	28
48	331.9713	332	8	2	197.6927	275	26
47	330.0636	330	8	1	173.4892	275	19
46	328.1624	328	8	0	147.2238	275	8
45	326.2681	326	8				

Table 6.O.18: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics— December 2009 and February 2010

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	14	39	341.8205	342	8
79	491.6353	450	20	38	340.0483	340	8
78	468.2749	450	22	37	338.2710	338	8
77	454.4377	450	19	36	336.4866	336	8
76	444.4657	444	17	35	334.6942	335	8
75	436.6207	437	16	34	332.8912	333	8
74	430.1026	430	14	33	331.0761	331	8
73	424.4997	424(Advanced)	13	32	329.2438	329	8
72	419.5651	420	12	31	327.3946	327	8
71	415.1344	415	12	30	325.5230	326	8
70	411.1065	411	11	29	323.6275	324	8
69	407.3977	407	11	28	321.7085	322	8
68	403.9532	404	10	27	319.7570	320	8
67	400.7296	401	10	26	317.7714	318	8
66	397.6909	398	10	25	315.7501	316	8
65	394.8088	395	10	24	313.6845	314	8
64	392.0640	392	9	23	311.5736	312	8
63	389.4426	389	9	22	309.4117	309	8
62	386.9229	387	9	21	307.1920	307	9
61	384.4961	384	9	20	304.9066	305	9
60	382.1494	382	9	19	302.5442	303	9
59	379.8768	380(Proficient)	9	18	300.1041	300	9
58	377.6664	378	8	17	297.5678	298	9
57	375.5154	376	8	16	294.9278	295	9
56	373.4151	373	8	15	292.1687	292	10
55	371.3608	371	8	14	289.2711	289	10
54	369.3489	369	8	13	286.2143	286	10
53	367.3709	367	8	12	282.9708	283	10
52	365.4262	365	8	11	279.5074	280	11
51	363.5146	364	8	10	275.7790	276	11
50	361.6265	362	8	9	271.7327	275	12
49	359.7620	360	8	8	267.2891	275	12
48	357.9171	358	8	7	262.3366	275	13
47	356.0901	356	8	6	256.7225	275	14
46	354.2784	354	8	5	250.2005	275	14
45	352.4789	352	8	4	242.3577	275	20
44	350.6886	351(Pass)	8	3	232.4224	275	20
43	348.9080	349	8	2	218.6589	275	18
42	347.1326	347	8	1	195.5392	275	13
41	345.3604	345	8	0	171.7079	275	10
40	343.5907	344	8				

Table 6.O.19: Braille, LP-Braille, and LP-Braille CD Conversions—ELA—March and May 2010

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	15	44	326.1929	326	9
89	508.0332	450	23	43	324.2593	324	9
88	490.1149	450	27	42	322.3311	322	9
87	474.4754	450	26	41	320.4076	320	9
86	463.0789	450	23	40	318.4892	318	9
85	453.7139	450	21	39	316.5743	317	9
84	445.5963	446	17	38	314.6635	315	9
83	438.3834	438	17	37	312.7565	313	9
82	431.9101	432	17	36	310.8529	311	9
81	426.0504	426	16	35	308.9534	309	9
80	420.7129	421	15	34	307.0558	307	9
79	415.8218	416	15	33	305.1620	305	9
78	411.3086	411	14	32	303.2696	303	9
77	407.1114	407	13	31	301.3812	301	9
76	403.2002	403(Advanced)	13	30	299.4911	299	9
75	399.5332	400	12	29	297.5985	298	9
74	396.0627	396	12	28	295.7031	296	10
73	392.7626	393	12	27	293.8005	294	10
72	389.6125	390	11	26	291.8888	292	10
71	386.5936	387	11	25	289.9657	290	10
70	383.6889	384	11	24	288.0256	288	10
69	380.8840	381(Proficient)	10	23	286.0624	286	10
68	378.1726	378	10	22	284.0726	284	10
67	375.5404	376	10	21	282.0344	282	11
66	372.9820	373	10	20	279.9489	280	11
65	370.4900	370	10	19	277.8084	278	11
64	368.0638	368	10	18	275.6036	276	11
63	365.6871	366	9	17	273.3241	275	11
62	363.3603	363	9	16	270.9416	275	12
61	361.0763	361	9	15	268.4252	275	12
60	358.8342	359	9	14	265.7746	275	12
59	356.6275	357	9	13	262.9644	275	13
58	354.4539	354	9	12	259.9654	275	13
57	352.3107	352	9	11	256.7324	275	14
56	350.1924	350(Pass)	9	10	253.1733	275	14
55	348.1031	348	9	9	249.2616	275	15
54	346.0361	346	9	8	244.9131	275	15
53	343.9916	344	9	7	240.0122	275	16
52	341.9632	342	9	6	234.3907	275	21
51	339.9515	340	9	5	227.7918	275	24
50	337.9536	338	9	4	219.7885	275	27
49	335.9687	336	9	3	209.5765	275	28
48	333.9946	334	9	2	195.3714	275	26
47	332.0325	332	8	1	171.5436	275	19
46	330.0784	330	9	0	147.2238	275	8
45	328.1317	328	9				

Table 6.O.20: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics—March and May 2010

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	14	39	345.0865	345	8
79	495.4640	450	20	38	343.2881	343	8
78	473.7958	450	22	37	341.4858	341	8
77	459.7064	450	19	36	339.6786	340	8
76	449.6165	450	18	35	337.8620	338	8
75	441.6679	442	16	34	336.0361	336	8
74	435.0652	435	15	33	334.1975	334	8
73	429.3817	429	13	32	332.3460	332	8
72	424.3690	424(Advanced)	13	31	330.4763	330	8
71	419.8675	420	12	30	328.5870	329	8
70	415.7647	416	11	29	326.6748	327	8
69	411.9873	412	11	28	324.7345	325	8
68	408.4754	408	10	27	322.7675	323	8
67	405.1848	405	10	26	320.7680	321	8
66	402.0839	402	10	25	318.7301	319	8
65	399.1440	399	10	24	316.6521	317	8
64	396.3414	396	9	23	314.5271	315	8
63	393.6589	394	9	22	312.3513	312	8
62	391.0842	391	9	21	310.1185	310	9
61	388.6047	389	9	20	307.8225	308	9
60	386.2062	386	9	19	305.4551	305	9
59	383.8828	384	9	18	303.0035	303	9
58	381.6237	382(Proficient)	8	17	300.4631	300	9
57	379.4259	379	8	16	297.8165	298	9
56	377.2779	377	8	15	295.0522	295	10
55	375.1809	375	8	14	292.1526	292	10
54	373.1252	373	8	13	289.0944	289	10
53	371.1077	371	8	12	285.8534	286	10
52	369.1255	369	8	11	282.3887	282	11
51	367.1694	367	8	10	278.6557	279	11
50	365.2432	365	8	9	274.5995	275	12
49	363.3436	363	8	8	270.1465	275	12
48	361.4622	361	8	7	265.1827	275	13
47	359.6005	360	8	6	259.5478	275	14
46	357.7539	358	8	5	252.9965	275	14
45	355.9214	356	8	4	245.1083	275	20
44	354.1007	354	8	3	235.0956	275	20
43	352.2886	352	8	2	221.1848	275	18
42	350.4820	350(Pass)	8	1	197.7096	275	13
41	348.6826	349	8	0	171.7079	275	10
40	346.8842	347	8				

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

$$S = \text{rawscore} = \sum_{j=1}^{n_1} w_{j1} U_j + \sum_{j=1}^{n_2} w_{j2} Y_j$$

$\hat{\theta}$ = MLE of θ

$$\text{SEM}(\hat{\theta}) \approx [I(\theta, S)]^{-1/2}$$

$$I(\theta, S) = \frac{\left[\frac{d E(S | \theta)}{d\theta} \right]^2}{\sigma^2(S | \theta)} \quad \text{see Lord (1980), pp. 67 and 73.}$$

$$E(S | \theta) = \sum_{j=1}^{n_1} w_{j1} P_{j1}(\theta) + \sum_{j=1}^{n_2} w_{j2} \sum_{k=1}^{m_j} (k-1) P_{j2k}(\theta)$$

$$\frac{dE(S | \theta)}{d\theta} = \sum_{j=1}^{n_1} w_{j1} P'_{j1}(\theta) + \sum_{j=1}^{n_2} w_{j2} \sum_{k=1}^{m_j} (k-1) P'_{j2k}(\theta)$$

where

$$P'_{j1}(\theta) = P_{j1}(\theta) (1 - P_{j1}(\theta))$$

$$P'_{j2k}(\theta) = P_{j2k}(\theta) \left[k - \sum_{r=1}^{m_j} r P_{j2r}(\theta) \right]$$

$$\sigma^2(S | \theta) = \sum_{j=1}^{n_1} (w_{j1})^2 P_{j1}(\theta) (1 - P_{j1}(\theta)) + \sum_{j=1}^{n_2} (w_{j2})^2 \sigma^2(Y_j | \theta)$$

$$\sigma^2(Y_j | \theta) = \left[\sum_{k=1}^{m_j} (k-1)^2 P_{j2k}(\theta) \right] - \left[\sum_{k=1}^{m_j} (k-1) P_{j2k}(\theta) \right]^2$$

Note also Lord (1980), Eq. (5-23) and Eq. (6-6) for transforming the standard error 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. Assembly Bill (AB) 1609 passed in October 2001 which prohibited ninth-graders from taking the CAHSEE in order to have a census testing of all tenth-graders. 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 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 primarily was composed of California educators (e.g., English or mathematics teachers), while the other panel primarily was 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 first were 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 feel students have demonstrated sufficient knowledge and skills in that subject area. Panelists typically place the first bookmark independently and then receive information on how their bookmark placement compares with those of their peers. There is then a small-group discussion followed by a second bookmark placement. Finally, there is 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.⁷

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:

$$\text{ELA: Scale Score} = \text{Theta} * 33.7230 + 332.1605$$

$$\text{Mathematics: Scale Score} = \text{Theta} * 32.2900 + 352.2119$$

The resulting scale has several notable characteristics:

1. The passing raw scores (54 and 43, respectively) are set to a scale score of 350.
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

⁷ 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.

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 2009–10 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 July 2009 administration, 23 percent of examinees who took the ELA examination received a raw score of 56 or higher and thereby passed the ELA. Of those who passed, 4 percent of examinees received a score of 69 or higher and passed the proficient cut point, while 1 percent scored 77 or above and passed the advanced cut point.

Among examinees who took the mathematics exam, 31 percent passed by attaining a raw score of 41 or higher. Of those who passed, 4 percent were at or above the proficient cut point with a raw score of 57 or higher, while 1 percent was at or above the advanced cut point with a raw score of 71 and 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 2009	Pass	56	23	41	31
	Proficient And Above	69	4	57	4
	Advanced And Above	77	1	71	1
October 2009	Pass	56	34	43	33
	Proficient And Above	69	9	58	8
	Advanced And Above	77	4	72	2
November 2009	Pass	55	38	42	40
	Proficient And Above	69	9	58	9
	Advanced And Above	77	3	72	3
December 2009	Pass	57	30	44	30
	Proficient And Above	70	8	59	5
	Advanced And Above	78	3	73	1
February 2010	Pass	55	68	44	65
	Proficient And Above	68	43	59	40
	Advanced And Above	76	24	73	13
March 2010	Pass	56	73	42	74
	Proficient And Above	69	46	58	47
	Advanced And Above	76	27	72	18
May 2010	Pass	54	34	43	31
	Proficient And Above	68	12	59	8
	Advanced And Above	76	5	73	2

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 provides 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 prompts in ELA, 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 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**—Provide the calculation rules for the information presented on CAHSEE summary reports and define 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**—Describe 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, percent of students choosing each option), and IRT statistics (i.e., b-value, IRT fit rating).

- Strand Names and Item Numbers—Identify the reporting strands for each test and the number of items in each strand.
- Matching Criteria for MC and Writing Answer Documents—Describe the method used to match students’ writing and MC results.

The scoring specifications are reviewed and revised by the CDE, ETS, and Pearson each year. After a version that all 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 nonscorable 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, MC item data, and, if applicable, data from the Pre-ID process. Pearson sends the data file images to ETS for use in the *Online Scoring Network*[™] (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 MC 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 assure 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 examinees' scores on the MC test items. In ELA, the total raw score equals the weighted sum of examinees' 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 is obtained by summing an examinee's scores on the items in each 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 the ability of the student.

Passing Scores

The 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 on 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,⁸ it 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.

⁸ 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 Verification Procedures

ETS takes various measures to ascertain that the scoring keys are applied to the student responses as expected, and 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. Various checks are performed before keys are finalized as 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 items⁹ 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.

Monitoring and Quality Control of Writing Scoring

Students' responses to the ELA writing task are read by two readers, and their writing score is based on the average of the two ratings. The next sections provide details of the process employed by ETS to score the writing tasks.

⁹ 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.

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 score 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 block.
- 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 assuring 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 assures 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 prescored 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 assures 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 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 is 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 assure 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, CAHSEE scores for a given content area are aggregated at the school, independently testing charter school,

district, county, 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 percentages of students passing each CAHSEE content area are presented in Table E.2.

Frequency distributions of scale scores for ELA and mathematics are presented in Tables 1 and 2 in Appendixes 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 Appendixes 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 was 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 Appendixes 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.¹⁰ 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 Appendixes 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

¹⁰ Students' economic status was 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).

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 in Appendix 8.A to Appendix 8.G.

Table 8.1: Listing of Frequency Distribution and Demographic Summary Tables

Table¹	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
8.x.4	Frequency Distributions Highlighted at ESEA cuts – Mathematics	Frequency Distributions – Mathematics
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

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

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' achievement and whether the students fulfill one or both part(s) of the CAHSEE for the 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 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	<ul style="list-style-type: none">▪ CAHSEE Student and Parent Report
2. Aggregate Reports	<ul style="list-style-type: none">▪ CAHSEE Subgroup Summary (including the Ethnicity for Economic Status)<ul style="list-style-type: none">◦ School-Level Reports◦ LEA-Level Reports◦ State-Level Reports
3. Quarterly Reports	<ul style="list-style-type: none">▪ 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; the school district forwards the appropriate reports to test sites or in the case of the CAHSEE Student and Parent Report, sends the reports to the child's parents or guardians and forwards a copy to the student's school or test site. 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 students with disabilities and English learners 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 used a modification and earned the equivalent of a passing score on one or both parts of the CAHSEE did not pass but may have been eligible for a local waiver of the CAHSEE requirement. Students who use accommodations that are specified in their IEP or Section 504 plan 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 the 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 available to the public via DataQuest do not include distributions for any subgroup consisting of 10 or fewer students.

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 and LEAs 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 students with disabilities, no student receives 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 10 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 was 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 2009

Table 8.A.1: Frequency Distributions, ELA—July 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	15	0	15	99
440-449	20	0	35	99
430-439	12	0	47	99
420-429	35	0	82	99
410-419	53	0	135	99
400-409	102	1	237	98
390-399	134	1	371	97
380-389	228	2	599	95
370-379	383	3	982	92
360-369	631	5	1,613	88
350-359 ¹	1,482	11	3,095	76
340-349	2,164	17	5,259	59
330-339	2,298	18	7,557	41
320-329	1,935	15	9,492	26
310-319	1,612	12	11,104	14
300-309	904	7	12,008	7
290-299	519	4	12,527	3
280-289	226	2	12,753	1
275-279	159	1	12,912	0

¹Passing Score = 350

Table 8.A.2: Frequency Distributions, Mathematics—July 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	31	0	31	99
440-449	6	0	37	99
430-439	14	0	51	99
420-429	24	0	75	99
410-419	63	1	138	99
400-409	74	1	212	98
390-399	127	1	339	97
380-389	182	1	521	96
370-379	448	4	969	92
360-369	1,195	10	2,164	83
350-359 ¹	1,909	15	4,073	67
340-349	2,972	24	7,045	43
330-339	2,184	18	9,229	26
320-329	1,712	14	10,941	12
310-319	1,047	8	11,988	3
300-309	297	2	12,285	1
290-299	65	1	12,350	0
280-289	15	0	12,365	0
275-279	23	0	12,388	0

¹Passing Score = 350

Table 8.A.3: Frequency Distributions, ELA for ESEA—July 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	15	0	15	99
440-449	20	0	35	99
430-439	12	0	47	99
420-429	35	0	82	99
410-419	53	0	135	99
403-409 ¹	65	1	200	98
390-402	171	1	371	97
380-389 ²	228	2	599	95
370-379	383	3	982	92
360-369	631	5	1,613	88
350-359	1,482	11	3,095	76
340-349	2,164	17	5,259	59
330-339	2,298	18	7,557	41
320-329	1,935	15	9,492	26
310-319	1,612	12	11,104	14
300-309	904	7	12,008	7
290-299	519	4	12,527	3
280-289	226	2	12,753	1
275-279	159	1	12,912	0

¹ Advanced-Level Cut = 403

² Proficient-Level Cut = 380

Table 8.A.4: Frequency Distributions, Mathematics for ESEA—July 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	31	0	31	99
440-449	6	0	37	99
430-439	14	0	51	99
422-429 ¹	24	0	75	99
410-421	63	1	138	99
400-409	74	1	212	98
390-399	127	1	339	97
380-389 ²	182	1	521	96
370-379	448	4	969	92
360-369	1,195	10	2,164	83
350-359	1,909	15	4,073	67
340-349	2,972	24	7,045	43
330-339	2,184	18	9,229	26
320-329	1,712	14	10,941	12
310-319	1,047	8	11,988	3
300-309	297	2	12,285	1
290-299	65	1	12,350	0
280-289	15	0	12,365	0
275-279	23	0	12,388	0

¹ Advanced-Level Cut = 422

² Proficient-Level Cut = 380

Table 8.A.5: Demographic Summary for All Examinees ELA—July 2009

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ²			Writing ²		Writing Applications
							Avg. Percent Correct			Avg. Percent Correct		Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	12,912	3,095	24	9,817	76	335	55	53	58	47	52	2.0
Grade³												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-	-	-
Twelfth	10,745	2,341	22	8,404	78	333	53	52	57	45	52	2.0
Adult Education	2,167	754	35	1,413	65	345	60	60	62	53	56	2.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	7,098	1,618	23	5,480	77	333	55	53	56	44	51	2.0
Female	5,803	1,475	25	4,328	75	337	54	53	59	49	54	2.1
Unknown	11	2	18	9	82	342	56	59	61	54	56	2.1
Race/Ethnicity												
American Indian or Alaska Native	80	32	40	48	60	348	64	62	63	51	61	2.2
Asian	1,222	289	24	933	76	334	47	53	55	49	56	2.0
Pacific Islander	92	27	29	65	71	342	58	55	60	51	58	2.2
Filipino	313	58	19	255	81	334	54	53	56	48	52	2.1
Hispanic or Latino	8,606	1,937	23	6,669	77	334	55	52	57	46	51	2.0
African American	1,291	328	25	963	75	335	56	54	58	43	51	2.1
White (not of Hispanic origin)	1,129	397	35	732	65	343	59	59	61	49	56	2.1
Two or More Races	175	27	15	148	85	334	53	53	58	45	50	2.0
Unknown	4	-	-	-	-	-	-	-	-	-	-	-
Language Fluency												
English-Only Students	3,554	1,086	31	2,468	69	338	58	56	60	46	54	2.1
Initially Fluent English Proficient (IFEP)	391	119	30	272	70	338	61	56	59	46	54	2.1
Reclassified Fluent English Proficient (RFEP)	431	193	45	238	55	346	65	60	63	52	59	2.2
English-Learner Students	6,736	1,031	15	5,705	85	330	50	49	55	45	50	2.0
Unknown	1,800	666	37	1,134	63	346	62	61	63	54	56	2.2
Economically Disadvantaged												
No	1,966	597	30	1,369	70	339	58	56	59	47	55	2.1
Yes	8,053	1,593	20	6,460	80	332	53	51	56	45	51	2.0
Unknown	2,893	905	31	1,988	69	341	58	57	61	50	55	2.1
Special Education Program Participation												
Students Receiving Services	2,188	310	14	1,878	86	325	50	46	52	39	47	1.9
Students Not Receiving Services	10,724	2,785	26	7,939	74	337	56	55	59	48	53	2.1

¹ Results for groups with less than 11 students are not reported.

² RW — Word Analysis, RC — Reading Comprehension, RL — Literary Responses/Analysis, WS — Writing Strategies, WC — Writing Conventions

³ As of 2007, only Grade 12 and Adult Education students may take the July administration of the CAHSEE.

Table 8.A.6: Demographic Summary for All Examinees, Mathematics—July 2009

	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	12,388	4,073	33	8,315	67	343	52	47	46	44	39
Grade³											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-	-
Twelfth	10,040	3,084	31	6,956	69	342	51	46	45	43	39
Adult Education	2,348	989	42	1,359	58	349	57	51	49	49	40
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	5,570	1,804	32	3,766	68	342	52	47	46	44	38
Female	6,803	2,263	33	4,540	67	344	52	47	47	45	40
Unknown	15	6	40	9	60	344	50	44	52	48	34
Race/Ethnicity											
American Indian or Alaska Native	102	36	35	66	65	345	54	50	47	46	35
Asian	378	176	47	202	53	356	54	54	54	52	50
Pacific Islander	80	32	40	48	60	348	54	49	50	50	41
Filipino	229	78	34	151	66	344	53	47	47	46	41
Hispanic or Latino	8,342	2,680	32	5,662	68	342	52	46	46	44	39
African American	1,881	523	28	1,358	72	340	51	45	44	42	38
White (not of Hispanic origin)	1,179	498	42	681	58	349	57	52	51	47	40
Two or More Races	195	49	25	146	75	339	50	42	45	42	37
Unknown	2	-	-	-	-	-	-	-	-	-	-
Language Fluency											
English-Only Students	4,690	1,556	33	3,134	67	343	53	48	46	43	38
Initially Fluent English Proficient (IFEP)	539	187	35	352	65	343	53	48	46	43	37
Reclassified Fluent English Proficient (RFEP)	843	354	42	489	58	347	56	49	49	47	42
English-Learner Students	4,299	1,106	26	3,193	74	339	48	43	44	43	39
Unknown	2,017	870	43	1,147	57	350	57	51	50	50	41
Economically Disadvantaged											
No	2,225	759	34	1,466	66	345	53	48	48	44	40
Yes	6,982	2,095	30	4,887	70	341	50	45	45	43	39
Unknown	3,181	1,219	38	1,962	62	347	55	49	48	47	40
Special Education Program Participation											
Students Receiving Services	1,668	294	18	1,374	82	333	45	41	39	38	35
Students Not Receiving Services	10,720	3,779	35	6,941	65	345	53	48	47	45	40

¹ Results for groups with less than 11 students are not reported.

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

³ As of 2007, only Grade 12 and Adult Education students may take the July administration of the CAHSEE.

Table 8.A.7: ESEA Demographic Summary for All CAHSEE Examinees, ELA— July 2009

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		12,912	12,313	95	399	3	200	2	599	5
Grade²	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	-	-	-	-	-	-	-	-	-
	Twelfth	10,745	10,412	97	242	2	91	1	333	3
	Adult Education	2,167	1,901	88	157	7	109	5	266	12
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	7,098	6,797	96	200	3	101	1	301	4
	Female	5,803	5,507	95	197	3	99	2	296	5
	Unknown	11	9	82	2	18	0	0	2	18
Race/Ethnicity	American Indian or Alaskan Native	80	68	85	6	8	6	8	12	15
	Asian	1,222	1,184	97	30	2	8	1	38	3
	Pacific Islander	92	84	91	5	5	3	3	8	9
	Filipino	313	304	97	7	2	2	1	9	3
	Hispanic or Latino	8,606	8,293	96	232	3	81	1	313	4
	African American	1,291	1,238	96	37	3	16	1	53	4
	White (not of Hispanic origin)	1,129	967	86	80	7	82	7	162	14
	Two or More Races	175	171	98	2	1	2	1	4	2
Unknown	4	-	-	-	-	-	-	-	-	
Language Fluency	English-Only Students	3,554	3,290	93	169	5	95	3	264	7
	Initially Fluent English Proficient (IFEP)	391	371	95	17	4	3	1	20	5
	Reclassified Fluent English Proficient (RFEP)	431	406	94	22	5	3	1	25	6
	English-Learner Students	6,736	6,689	99	41	1	6	0	47	1
	Unknown	1,800	1,557	87	150	8	93	5	243	14
Economically Disadvantaged	No	1,966	1,810	92	100	5	56	3	156	8
	Yes	8,053	7,897	98	126	2	30	0	156	2
	Unknown	2,893	2,606	90	173	6	114	4	287	10
Special Education	Receiving Services	2,188	2,161	99	23	1	4	0	27	1
Program Participation	Not Receiving Services	10,724	10,152	95	376	4	196	2	572	5

¹ Results for groups with less than 11 students are not reported.

² As of 2007, only Grade 12 and Adult Education students may take the July administration of the CAHSEE.

Table 8.A.8: ESEA Demographic Summary for All CAHSEE Examinees, Mathematics—July 2009

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		12,388	11,867	96	446	4	75	1	521	4
Grade²	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	-	-	-	-	-	-	-	-	-
	Twelfth	10,040	9,705	97	290	3	45	0	335	3
	Adult Education	2,348	2,162	92	156	7	30	1	186	8
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	5,570	5,292	95	237	4	41	1	278	5
	Female	6,803	6,561	96	208	3	34	0	242	4
	Unknown	15	14	93	1	7	0	0	1	7
Race/Ethnicity	American Indian or Alaskan Native	102	98	96	3	3	1	1	4	4
	Asian	378	312	83	44	12	22	6	66	17
	Pacific Islander	80	77	96	3	4	0	0	3	4
	Filipino	229	221	97	7	3	1	0	8	3
	Hispanic or Latino	8,342	8,073	97	248	3	21	0	269	3
	African American	1,881	1,836	98	43	2	2	0	45	2
	White (not of Hispanic origin)	1,179	1,057	90	95	8	27	2	122	10
	Two or More Races	195	191	98	3	2	1	1	4	2
	Unknown	2	-	-	-	-	-	-	-	-
Language Fluency	English-Only Students	4,690	4,458	95	200	4	32	1	232	5
	Initially Fluent English Proficient (IFEP)	539	524	97	14	3	1	0	15	3
	Reclassified Fluent English Proficient (RFEP)	843	821	97	20	2	2	0	22	3
	English-Learner Students	4,299	4,224	98	66	2	9	0	75	2
	Unknown	2,017	1,840	91	146	7	31	2	177	9
Economically Disadvantaged	No	2,225	2,093	94	105	5	27	1	132	6
	Yes	6,982	6,821	98	146	2	15	0	161	2
	Unknown	3,181	2,953	93	195	6	33	1	228	7
Special Education Program Participation	Receiving Services	1,668	1,630	98	37	2	1	0	38	2
	Not Receiving Services	10,720	10,237	95	409	4	74	1	483	5

¹ Results for groups with less than 11 students are not reported.

² As of 2007, only Grade 12 and Adult Education students may take the July administration of the CAHSEE.

Table 8.A.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—July 2009

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	278	294	319	335	349	378	414	335	25	12,912
Grade⁴										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-
Twelfth	276	294	317	333	347	370	398	333	24	10,745
Adult Education	288	304	327	341	357	406	434	345	29	2,167
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	292	317	333	349	375	409	333	26	7,098
Female	284	300	321	337	351	381	414	337	25	5,803
Unknown	304	304	319	339	347	395	395	342	28	11
Race/Ethnicity										
American Indian or Alaska Native	282	308	329	345	364	412	440	348	32	80
Asian	278	294	319	335	349	370	398	334	24	1,222
Pacific Islander	288	296	328	339	355	386	428	342	26	92
Filipino	284	300	321	335	347	368	398	334	21	313
Hispanic or Latino	278	296	319	335	349	373	402	334	24	8,606
African American	275	292	317	333	351	375	406	335	25	1,291
White (not of Hispanic origin)	275	290	321	339	359	414	450	343	35	1,129
Two or More Races	276	292	321	337	347	366	414	334	23	175
Unknown	-	-	-	-	-	-	-	-	-	4
Language Fluency										
English-Only Students	275	294	319	337	353	389	423	338	28	3554
Initially Fluent English Proficient (IFEP)	275	298	323	339	353	381	395	338	25	391
Reclassified Fluent English Proficient (RFEP)	286	306	333	347	359	381	402	346	23	431
English-Learner Students	278	294	315	331	343	361	375	330	21	6,736
Unknown	287	304	327	343	361	406	437	346	30	1,800
Economically Disadvantaged										
No	278	294	321	337	353	389	428	339	28	1,966
Yes	276	294	317	333	347	366	389	332	23	8,053
Unknown	278	300	323	339	355	398	428	341	29	2,893
Special Education Program Participation										
Students Receiving Services	275	286	308	325	341	361	383	325	23	2,188
Students Not Receiving Services	280	298	321	337	351	381	414	337	25	10,724

¹ Mean scale scores are reported at each percentile.

² SD — Standard Deviation.

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Table 8.A.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—July 2009

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	300	312	329	342	355	377	410	343	21	12,388
Grade⁴										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-
Twelfth	300	312	329	342	353	373	407	342	20	10,040
Adult Education	305	317	335	347	360	391	437	349	23	2,348
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	297	310	327	342	355	379	414	342	23	5,570
Female	303	315	331	344	355	375	407	344	20	6,803
Unknown	312	312	327	340	362	404	404	344	25	15
Race/Ethnicity										
American Indian or Alaska Native	308	315	329	346	356	379	391	345	22	102
Asian	308	317	335	347	367	426	450	356	32	378
Pacific Islander	303	313	337	346	358	377	417	348	21	80
Filipino	310	317	331	344	356	377	393	344	19	229
Hispanic or Latino	300	312	329	342	353	373	401	342	20	8,342
African American	297	310	327	340	351	371	393	340	19	1,881
White (not of Hispanic origin)	297	315	331	346	360	398	443	349	26	1,179
Two or More Races	305	312	327	340	351	365	407	339	19	195
Unknown	-	-	-	-	-	-	-	-	-	2
Language Fluency										
English-Only Students	297	310	329	342	355	379	410	343	22	4,690
Initially Fluent English Proficient (IFEP)	300	312	331	342	355	373	391	343	19	539
Reclassified Fluent English Proficient (RFEP)	308	323	336	347	356	373	391	347	16	843
English-Learner Students	300	310	327	338	351	367	393	339	18	4,299
Unknown	308	317	335	347	360	393	437	350	24	2,017
Economically Disadvantaged										
No	303	312	331	344	355	386	422	345	23	2,225
Yes	300	312	329	340	353	371	393	341	19	6,982
Unknown	300	315	331	346	358	388	426	347	23	3,181
Special Education Program Participation										
Students Receiving Services	291	305	321	331	344	367	393	333	20	1,668
Students Not Receiving Services	303	315	331	344	355	379	414	345	21	10,720

¹ Mean scale scores are reported at each percentile.

² SD — Standard Deviation.

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Appendix 8.B: Frequency Distributions and Demographic Summaries—October 2009

Table 8.B.1: Frequency Distributions, ELA—October 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	237	1	237	99
440-449	229	1	466	99
430-439	122	0	588	99
420-429	320	1	908	98
410-419	537	1	1,445	97
400-409	380	1	1,825	96
390-399	744	2	2,569	94
380-389	1,312	3	3,881	91
370-379	1,999	5	5,880	86
360-369	3,043	7	8,923	79
350-359 ¹	5,398	13	14,321	66
340-349	6,092	15	20,413	51
330-339	5,839	14	26,252	37
320-329	4,923	12	31,175	25
310-319	3,975	10	35,150	15
300-309	3,403	8	38,553	7
290-299	1,577	4	40,130	3
280-289	863	2	40,993	1
275-279	577	1	41,570	0

¹ Passing Score = 350

Table 8.B.2: Frequency Distributions, Mathematics—October 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	218	1	218	99
440-449	95	0	313	99
430-439	239	1	552	99
420-429	228	1	780	98
410-419	382	1	1,162	97
400-409	470	1	1,632	96
390-399	534	1	2,166	95
380-389	1,101	3	3,267	92
370-379	1,902	5	5,169	87
360-369	3,251	8	8,420	79
350-359 ¹	5,398	13	13,818	66
340-349	8,202	20	22,020	46
330-339	6,700	17	28,720	29
320-329	6,291	16	35,011	13
310-319	2,930	7	37,941	6
300-309	1,743	4	39,684	2
290-299	562	1	40,246	0
280-289	99	0	40,345	0
275-279	78	0	40,423	0

¹ Passing Score = 350

Table 8.B.3: Frequency Distributions, ELA for ESEA—October 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	237	1	237	99
440-449	229	1	466	99
430-439	122	0	588	99
420-429	320	1	908	98
410-419	537	1	1,445	97
403-409 ¹	175	0	1,620	96
390-402	949	2	2,569	94
380-389 ²	1,312	3	3,881	91
370-379	1,999	5	5,880	86
360-369	3,043	7	8,923	79
350-359	5,398	13	14,321	66
340-349	6,092	15	20,413	51
330-339	5,839	14	26,252	37
320-329	4,923	12	31,175	25
310-319	3,975	10	35,150	15
300-309	3,403	8	38,553	7
290-299	1,577	4	40,130	3
280-289	863	2	40,993	1
275-279	577	1	41,570	0

¹ Advanced-Level Cut = 403

² Proficient-Level Cut = 380

Table 8.B.4: Frequency Distributions, Mathematics for ESEA—October 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	218	1	218	99
440-449	95	0	313	99
430-439	239	1	552	99
422-429 ¹	228	1	780	98
410-421	382	1	1,162	97
400-409	470	1	1,632	96
390-399	534	1	2,166	95
380-389 ²	1,101	3	3,267	92
370-379	1,902	5	5,169	87
360-369	3,251	8	8,420	79
350-359	5,398	13	13,818	66
340-349	8,202	20	22,020	46
330-339	6,700	17	28,720	29
320-329	6,291	16	35,011	13
310-319	2,930	7	37,941	6
300-309	1,743	4	39,684	2
290-299	562	1	40,246	0
280-289	99	0	40,345	0
275-279	78	0	40,423	0

¹ Advanced-Level Cut = 422

² Proficient-Level Cut = 380

Table 8.B.5: Demographic Summary for All Examinees, ELA—October 2009

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ²			Writing ²		Writing Applications
							Avg. Percent Correct			Avg. Percent Correct		Mean. Score
							RW	RC	RL	WS	WC	
Total Examinees	41,570	14,321	34	27,249	66	340	62	58	61	43	56	2.1
Grade												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	16,303	6,499	40	9,804	60	343	63	60	63	45	58	2.1
Twelfth	23,220	7,015	30	16,205	70	338	60	57	59	41	55	2.1
Adult Education	2,047	807	39	1,240	61	347	66	63	65	47	58	2.1
Unknown												
Gender												
Male	23,749	7,941	33	15,808	67	339	62	58	60	42	55	2.0
Female	17,760	6,363	36	11,397	64	343	61	59	63	44	59	2.1
Unknown	61	17	28	44	72	334	59	59	57	39	51	1.9
Race/Ethnicity												
American Indian or Alaska Native	250	103	41	147	59	345	67	60	63	47	57	2.1
Asian	2,195	742	34	1,453	66	340	57	56	61	43	61	2.1
Pacific Islander	266	111	42	155	58	344	62	60	64	44	57	2.2
Filipino	582	222	38	360	62	346	62	59	63	46	62	2.2
Hispanic or Latino	25,443	7,723	30	17,720	70	337	61	57	59	41	55	2.1
African American	4,169	1,481	36	2,688	64	339	60	58	61	43	54	2.1
White (not of Hispanic origin)	4,680	2,331	50	2,349	50	353	68	64	66	52	62	2.2
Two or More Races	3,751	1,569	42	2,182	58	347	65	62	64	47	58	2.1
Unknown	234	39	17	195	83	328	48	47	56	38	54	2.0
Language Fluency												
English-Only Students	17,223	7,595	44	9,628	56	347	65	62	65	48	58	2.1
Initially Fluent English Proficient (IFEP)	1,658	815	49	843	51	349	67	64	66	48	61	2.2
Reclassified Fluent English Proficient (RFEP)	2,158	1,172	54	986	46	353	68	65	69	51	65	2.2
English-Learner Students	18,798	4,044	22	14,754	78	331	57	53	56	37	53	2.0
Unknown	1,733	695	40	1,038	60	347	67	62	65	47	58	2.1
Economically Disadvantaged												
No	8,927	4,341	49	4,586	51	352	67	64	66	50	62	2.2
Yes	27,361	8,041	29	19,320	71	336	60	56	59	40	55	2.0
Unknown	5,282	1,939	37	3,343	63	343	63	60	62	45	57	2.1
Special Education Program Participation												
Students Receiving Services	7,689	1,229	16	6,460	84	324	51	48	52	35	47	1.9
Students Not Receiving Services	33,881	13,092	39	20,789	61	344	64	60	63	45	59	2.1

¹ Results for groups with less 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 2009

	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	40,423	13,818	34	26,605	66	344	55	51	51	46	39
Grade											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	15,955	6,155	39	9,800	61	346	56	53	52	46	41
Twelfth	22,357	6,961	31	15,396	69	343	54	49	50	45	39
Adult Education	2,111	702	33	1,409	67	345	57	50	51	49	36
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	20,118	7,331	36	12,787	64	345	54	53	50	46	39
Female	20,252	6,467	32	13,785	68	344	55	48	51	46	40
Unknown	53	20	38	33	62	341	54	47	50	45	36
Race/Ethnicity											
American Indian or Alaska Native	314	136	43	178	57	348	57	55	53	48	41
Asian	1,079	601	56	478	44	365	59	62	62	59	54
Pacific Islander	221	91	41	130	59	348	55	53	53	47	42
Filipino	487	227	47	260	53	353	59	56	56	51	46
Hispanic or Latino	24,436	7,455	31	16,981	69	341	53	49	49	45	38
African American	4,907	1,315	27	3,592	73	339	52	47	48	41	37
White (not of Hispanic origin)	4,797	2,349	49	2,448	51	354	61	58	56	52	44
Two or More Races	4,093	1,613	39	2,480	61	348	58	53	52	48	40
Unknown	89	31	35	58	65	346	51	49	54	49	44
Language Fluency											
English-Only Students	19,665	7,364	37	12,301	63	346	57	53	52	46	40
Initially Fluent English Proficient (IFEP)	1,985	858	43	1,127	57	350	59	55	54	49	42
Reclassified Fluent English Proficient (RFEP)	3,014	1,350	45	1,664	55	349	60	54	55	49	41
English-Learner Students	13,938	3,630	26	10,308	74	339	50	47	48	44	38
Unknown	1821	616	34	1,205	66	345	57	50	51	49	37
Economically Disadvantaged											
No	9,697	4,400	45	5,297	55	353	60	56	56	50	44
Yes	25,283	7,510	30	17,773	70	341	53	48	49	44	38
Unknown	5,443	1,908	35	3,535	65	345	56	51	51	47	39
Special Education Program Participation											
Students Receiving Services	6,217	966	16	5,251	84	330	45	42	41	36	33
Students Not Receiving Services	34,206	12,852	38	21,354	62	347	57	52	52	48	40

¹ Results for groups with less 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 CAHSEE Examinees, ELA—October 2009

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		41,570	37,689	91	2,261	5	1,620	4	3,881	9	
Grade	Tenth	-	-	-	-	-	-	-	-	-	
	Eleventh	16,303	14,543	89	1,074	7	686	4	1,760	11	
	Twelfth	23,220	21,419	92	998	4	803	3	1,801	8	
	Adult Education	2,047	1,727	84	189	9	131	6	320	16	
	Unknown	-	-	-	-	-	-	-	-	-	
Gender	Male	23,749	21,767	92	1,224	5	758	3	1,982	8	
	Female	17,760	15,865	89	1,035	6	860	5	1,895	11	
	Unknown	61	57	93	2	3	2	3	4	7	
Race/Ethnicity	American Indian or Alaskan Native	250	212	85	22	9	16	6	38	15	
	Asian	2,195	1,991	91	110	5	94	4	204	9	
	Pacific Islander	266	243	91	14	5	9	3	23	9	
	Filipino	582	501	86	41	7	40	7	81	14	
	Hispanic or Latino	25,443	23,926	94	1,069	4	448	2	1,517	6	
	African American	4,169	3,841	92	206	5	122	3	328	8	
	White (not of Hispanic origin)	4,680	3,605	77	474	10	601	13	1,075	23	
	Two or More Races	3,751	3,141	84	321	9	289	8	610	16	
	Unknown	234	229	98	4	2	1	0	5	2	
	Language Fluency	English-Only Students	17,223	14,523	84	1,409	8	1,291	7	2,700	16
		Initially Fluent English Proficient (IFEP)	1,658	1,420	86	155	9	83	5	238	14
Reclassified Fluent English Proficient (RFEP)		2,158	1,885	87	203	9	70	3	273	13	
English-Learner Students		18,798	18,408	98	322	2	68	0	390	2	
Unknown		1,733	1,453	84	172	10	108	6	280	16	
Economically Disadvantaged	No	8,927	7,155	80	818	9	954	11	1,772	20	
	Yes	27,361	25,955	95	1,040	4	366	1	1,406	5	
	Unknown	5,282	4,579	87	403	8	300	6	703	13	
Special Education Program Participation	Receiving Services	7,689	7,561	98	107	1	21	0	128	2	
	Not Receiving Services	33,881	30,128	89	2,154	6	1,599	5	3,753	11	

¹ Results for groups with less than 11 students are not reported.

Table 8.B.8: ESEA Demographic Summary for All CAHSEE Examinees, Mathematics—October 2009

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		40,423	37,156	92	2,487	6	780	2	3,267	8
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	15,955	14,525	91	1,119	7	311	2	1,430	9
	Twelfth	22,357	20,690	93	1,218	5	449	2	1,667	7
	Adult Education	2,111	1,941	92	150	7	20	1	170	8
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	20,118	18,219	91	1,448	7	451	2	1,899	9
	Female	20,252	18,889	93	1,034	5	329	2	1,363	7
	Unknown	53	48	91	5	9	0	0	5	9
Race/Ethnicity	American Indian or Alaskan Native	314	282	90	26	8	6	2	32	10
	Asian	1,079	749	69	189	18	141	13	330	31
	Pacific Islander	221	195	88	21	10	5	2	26	12
	Filipino	487	409	84	55	11	23	5	78	16
	Hispanic or Latino	24,436	23,299	95	976	4	161	1	1137	5
	African American	4,907	4,689	96	178	4	40	1	218	4
	White (not of Hispanic origin)	4,797	3,890	81	654	14	253	5	907	19
	Two or More Races	4,093	3,560	87	382	9	151	4	533	13
Unknown	89	83	93	6	7			6	7	
Language Fluency	English-Only Students	19,665	17,571	89	1,566	8	528	3	2,094	11
	Initially Fluent English Proficient (IFEP)	1,985	1,763	89	154	8	68	3	222	11
	Reclassified Fluent English Proficient (RFEP)	3,014	2,836	94	144	5	34	1	178	6
	English-Learner Students	13,938	13,330	96	482	3	126	1	608	4
	Unknown	1,821	1,656	91	141	8	24	1	165	9
Economically Disadvantaged	No	9,697	8,094	83	1,117	12	486	5	1,603	17
	Yes	25,283	24,181	96	933	4	169	1	1,102	4
	Unknown	5,443	4,881	90	437	8	125	2	562	10
Special Education	Receiving Services	6,217	6,103	98	107	2	7	0	114	2
Program Participation	Not Receiving Services	34,206	31,053	91	2,380	7	773	2	3,153	9

¹ Results for groups with less than 11 students are not reported.

Table 8.B.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—October 2009

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	276	294	319	338	357	396	441	340	31	41,570
Grade⁴										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	276	294	323	342	361	399	441	343	32	16,303
Twelfth	275	292	319	336	353	392	441	338	30	23,220
Adult Education	282	300	323	342	366	410	441	347	33	2,047
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	292	317	338	357	392	434	339	31	23,749
Female	282	298	323	340	359	402	448	343	31	17,760
Unknown	275	290	311	336	355	381	434	334	32	61
Race/Ethnicity										
American Indian or Alaska Native	275	294	321	344	361	410	429	345	34	250
Asian	278	296	319	338	355	399	448	340	31	2,195
Pacific Islander	286	302	323	342	359	392	441	344	29	266
Filipino	282	300	325	341	364	410	448	346	33	582
Hispanic or Latino	278	294	319	336	353	384	419	337	27	25,443
African American	275	290	319	340	357	392	429	339	31	4,169
White (not of Hispanic origin)	275	290	325	349	376	434	450	353	41	4,680
Two or More Races	275	292	323	344	366	419	450	347	36	3,751
Unknown	275	288	313	329	342	366	384	328	23	234
Language Fluency										
English-Only Students	275	292	323	344	366	419	450	347	36	17,223
Initially Fluent English Proficient (IFEP)	280	298	329	349	366	406	441	349	31	1,658
Reclassified Fluent English Proficient (RFEP)	288	313	338	351	366	399	429	353	26	2,158
English-Learner Students	276	292	315	332	346	368	389	331	23	18,798
Unknown	276	298	323	342	366	410	441	347	34	1,733
Economically Disadvantaged										
No	278	298	327	349	371	429	450	352	38	8,927
Yes	276	292	319	336	353	381	410	336	27	27,361
Unknown	275	292	319	340	361	410	448	343	34	5,282
Special Education Program Participation										
Students Receiving Services	275	284	305	323	342	366	386	324	25	7,689
Students Not Receiving Services	280	298	325	342	359	402	441	344	31	33,881

¹ Mean scale scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Table 8.B.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—October 2009

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	297	309	327	342	356	392	439	344	26	40,423
Grade⁴										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	297	309	329	344	358	394	439	346	26	15,955
Twelfth	297	309	327	340	355	392	439	343	26	22,357
Adult Education	299	311	329	342	356	389	418	345	24	2,111
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	294	307	327	342	358	397	439	345	28	20,118
Female	299	311	329	342	355	387	433	344	24	20,252
Unknown	299	307	320	338	358	385	403	341	25	53
Race/Ethnicity										
American Indian or Alaska Native	297	313	331	347	358	400	439	348	26	314
Asian	299	311	337	355	392	447	450	365	40	1,079
Pacific Islander	294	311	329	344	360	400	439	348	28	221
Filipino	299	313	335	347	366	418	447	353	30	487
Hispanic or Latino	297	309	327	340	353	378	410	341	22	24,436
African American	291	304	324	338	351	376	414	339	23	4,907
White (not of Hispanic origin)	297	311	333	349	370	422	450	354	33	4,797
Two or More Races	294	307	327	344	360	410	447	348	30	4,093
Unknown	302	309	333	342	358	380	406	346	21	89
Language Fluency										
English-Only Students	294	309	327	344	358	403	447	346	28	19,665
Initially Fluent English Proficient (IFEP)	299	311	333	346	362	406	450	350	28	1,985
Reclassified Fluent English Proficient (RFEP)	307	322	337	347	358	382	422	349	20	3,014
English-Learner Students	297	307	325	338	351	376	418	339	22	13,938
Unknown	299	309	329	342	356	392	427	345	25	1,821
Economically Disadvantaged										
No	299	311	333	347	366	422	450	353	31	9,697
Yes	297	307	325	340	353	376	410	341	22	25,283
Unknown	294	309	327	342	358	400	447	345	28	5,443
Special Education Program Participation										
Students Receiving Services	288	299	315	329	344	366	389	330	21	6,217
Students Not Receiving Services	299	311	331	344	358	397	439	347	26	34,206

¹ Mean scale scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Appendix 8.C: Frequency Distributions and Demographic Summaries—November 2009

Table 8.C.1: Frequency Distributions, ELA—November 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	327	0	327	99
440-449	186	0	513	99
430-439	526	0	1,039	99
420-429	649	1	1,688	98
410-419	1,370	1	3,058	97
400-409	1,100	1	4,158	96
390-399	2,722	3	6,880	94
380-389	2,867	3	9,747	91
370-379	7,312	7	17,059	84
360-369	9,475	9	26,534	75
350-359 ¹	15,412	14	41,946	61
340-349	16,627	15	58,573	45
330-339	14,403	13	72,976	32
320-329	11,190	10	84,166	22
310-319	9,893	9	94,059	12
300-309	6,120	6	100,179	7
290-299	4,024	4	104,203	3
280-289	1,702	2	105,905	1
275-279	1,437	1	107,342	0

¹ Passing Score = 350

Table 8.C.2: Frequency Distributions, Mathematics—November 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	940	1	940	99
440-449	349	0	1,289	99
430-439	750	1	2,039	98
420-429	778	1	2,817	97
410-419	1,217	1	4,034	96
400-409	1,331	1	5,365	95
390-399	2,129	2	7,494	93
380-389	2,765	3	10,259	90
370-379	5,552	5	15,811	85
360-369	9,859	10	25,670	75
350-359 ¹	17,607	17	43,277	58
340-349	19,955	19	63,232	39
330-339	15,201	15	78,433	24
320-329	11,989	12	90,422	12
310-319	8,456	8	98,878	4
300-309	3,080	3	101,958	1
290-299	891	1	102,849	0
280-289	129	0	102,978	0
275-279	243	0	103,221	0

¹ Passing Score = 350

Table 8.C.3: Frequency Distributions, ELA for ESEA—November 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	327	0	327	99
440-449	186	0	513	99
430-439	526	0	1,039	99
420-429	649	1	1,688	98
410-419	1,370	1	3,058	97
403-409 ¹	516	0	3,574	97
390-402	3,306	3	6,880	94
380-389 ²	2,867	3	9,747	91
370-379	7,312	7	17,059	84
360-369	9,475	9	26,534	75
350-359	15,412	14	41,946	61
340-349	16,627	15	58,573	45
330-339	14,403	13	72,976	32
320-329	11,190	10	84,166	22
310-319	9,893	9	94,059	12
300-309	6,120	6	100,179	7
290-299	4,024	4	104,203	3
280-289	1,702	2	105,905	1
275-279	1,437	1	107,342	0

¹ Advanced-Level Cut = 403

² Proficient-Level Cut = 380

Table 8.C.4: Frequency Distributions, Mathematics for ESEA—November 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	940	1	940	99
440-449	349	0	1,289	99
430-439	750	1	2,039	98
422-429 ¹	778	1	2,817	97
410-421	1,217	1	4,034	96
400-409	1,331	1	5,365	95
390-399	2,129	2	7,494	93
380-389 ²	2,765	3	10,259	90
370-379	5,552	5	15,811	85
360-369	9,859	10	25,670	75
350-359	17,607	17	43,277	58
340-349	19,955	19	63,232	39
330-339	15,201	15	78,433	24
320-329	11,989	12	90,422	12
310-319	8,456	8	98,878	4
300-309	3,080	3	101,958	1
290-299	891	1	102,849	0
280-289	129	0	102,978	0
275-279	243	0	103,221	0

¹ Advanced-Level Cut = 422

² Proficient-Level Cut = 380

Table 8.C.5: Demographic Summary for All Examinees, ELA—November 2009

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ²			Writing ²		Writing Applications
							Avg. Percent Correct			Avg. Percent Correct		Mean. Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	107,342	41,946	39	65,396	61	343	59	58	58	48	58	2.1
Grade												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	70,394	30,111	43	40,283	57	345	60	60	60	48	59	2.2
Twelfth	33,056	10,333	31	22,723	69	338	56	55	55	45	55	2.1
Adult Education	3,892	1,502	39	2,390	61	345	58	61	60	51	58	2.2
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	61,603	22,175	36	39,428	64	340	59	58	56	45	56	2.1
Female	45,685	19,756	43	25,929	57	347	59	60	61	51	61	2.2
Unknown	54	15	28	39	72	332	54	51	52	41	50	1.9
Race/Ethnicity												
American Indian or Alaska Native	629	279	44	350	56	346	64	60	60	47	59	2.2
Asian	5,367	2,333	43	3,034	57	346	56	60	59	53	62	2.1
Pacific Islander	629	258	41	371	59	345	60	59	59	48	61	2.2
Filipino	1,634	801	49	833	51	351	64	63	62	52	63	2.3
Hispanic or Latino	70,084	24,665	35	45,419	65	340	57	57	57	46	56	2.1
African American	8,769	3,105	35	5,664	65	339	60	56	56	44	56	2.1
White (not of Hispanic origin)	12,833	7,072	55	5,761	45	357	68	66	64	53	65	2.3
Two or More Races	6,842	3,234	47	3,608	53	350	64	63	61	50	61	2.2
Unknown	555	199	36	356	64	340	51	55	56	52	59	2.1
Language Fluency												
English-Only Students	42,522	19,475	46	23,047	54	348	64	61	60	49	60	2.2
Initially Fluent English Proficient (IFEP)	4,531	2,387	53	2,144	47	352	65	64	63	51	64	2.3
Reclassified Fluent English Proficient (RFEP)	8,168	5,179	63	2,989	37	356	65	66	66	55	68	2.3
English-Learner Students	48,382	13,352	28	35,030	72	335	53	54	55	45	53	2
Unknown	3,739	1,553	42	2,186	58	347	59	61	61	51	58	2.2
Economically Disadvantaged												
No	22,732	11,832	52	10,900	48	354	66	64	63	52	64	2.3
Yes	70,272	23,944	34	46,328	66	339	57	56	56	46	56	2.1
Unknown	14,338	6,170	43	8,168	57	346	61	61	60	50	59	2.2
Special Education Program Participation												
Students Receiving Services	19,248	3,465	18	15,783	82	325	52	48	48	38	46	1.9
Students Not Receiving Services	88,094	38,481	44	49,613	56	347	61	61	61	50	60	2.2

¹ Results for groups with less than 11 students are not reported.

² RW — Word Analysis, RC — Reading Comprehension, RL — Literary Responses/Analysis, WS — Writing Strategies, WC — Writing Conventions

Table 8.C.6: Demographic Summary for All Examinees, Mathematics—November 2009

	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	103,221	43,277	42	59,944	58	348	55	53	53	47	41
Grade											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	67,208	29,893	44	37,315	56	349	56	54	54	47	42
Twelfth	32,173	11,962	37	20,211	63	346	54	51	51	46	39
Adult Education	3,840	1,422	37	2,418	63	347	56	51	52	49	37
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	51,360	21,514	42	29,846	58	348	56	53	52	47	40
Female	51,798	21,740	42	30,058	58	348	55	53	53	47	42
Unknown	63	23	37	40	63	343	51	51	48	46	37
Race/Ethnicity											
American Indian or Alaska Native	687	292	43	395	57	350	58	54	53	47	42
Asian	2,953	1,932	65	1,021	35	372	63	66	65	60	58
Pacific Islander	568	242	43	326	57	349	54	54	53	46	43
Filipino	1,359	747	55	612	45	358	58	59	59	52	49
Hispanic or Latino	66,490	25,609	39	40,881	61	345	53	51	51	45	39
African American	10,389	3,538	34	6,851	66	342	52	50	49	43	38
White (not of Hispanic origin)	13,465	7,454	55	6,011	45	360	64	60	59	53	46
Two or More Races	7,080	3,333	47	3,747	53	354	59	56	55	50	43
Unknown	230	130	57	100	43	354	54	58	57	50	52
Language Fluency											
English-Only Students	47,579	21,142	44	26,437	56	350	58	55	54	47	41
Initially Fluent English Proficient (IFEP)	5,331	2,719	51	2,612	49	355	61	57	57	50	44
Reclassified Fluent English Proficient (RFEP)	9,880	5,451	55	4,429	45	353	61	56	58	50	43
English-Learner Students	36,582	12,448	34	24,134	66	343	50	50	50	45	40
Unknown	3,849	1,517	39	2,332	61	348	57	52	52	49	38
Economically Disadvantaged											
No	24,189	12,557	52	11,632	48	357	61	58	57	51	45
Yes	64,572	24,218	38	40,354	62	344	53	51	50	45	39
Unknown	14,460	6,502	45	7,958	55	352	58	55	55	49	42
Special Education Program Participation											
Students Receiving Services	15,967	3,176	20	12,791	80	332	44	44	41	37	34
Students Not Receiving Services	87,254	40,101	46	47,153	54	351	58	55	55	49	42

¹ Results for groups with less 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 CAHSEE Examinees, ELA—November 2009

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		107,342	97,595	91	6,173	6	3,574	3	9,747	9
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	70,394	63,544	90	4,434	6	2,416	3	6,850	10
	Twelfth	33,056	30,603	93	1,439	4	1,014	3	2,453	7
	Adult Education	3,892	3,448	89	300	8	144	4	444	11
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	61,603	56,857	92	3,211	5	1,535	2	4,746	8
	Female	45,685	40,688	89	2,959	6	2,038	4	4,997	11
	Unknown	54	50	93	3	6	1	2	4	7
Race/Ethnicity	American Indian or Alaskan Native	629	551	88	48	8	30	5	78	12
	Asian	5,367	4,781	89	319	6	267	5	586	11
	Pacific Islander	629	571	91	41	7	17	3	58	9
	Filipino	1,634	1,419	87	124	8	91	6	215	13
	Hispanic or Latino	70,084	66,271	95	2,870	4	943	1	3,813	5
	African American	8,769	8,153	93	427	5	189	2	616	7
	White (not of Hispanic origin)	12,833	9,700	76	1,624	13	1,509	12	3,133	24
	Two or More Races	6,842	5,612	82	709	10	521	8	1,230	18
Unknown	555	537	97	11	2	7	1	18	3	
Language Fluency	English-Only Students	42,522	35,908	84	3,799	9	2,815	7	6,614	16
	Initially Fluent English Proficient (IFEP)	4,531	3,806	84	454	10	271	6	725	16
	Reclassified Fluent English Proficient (RFEP)	8,168	7,224	88	745	9	199	2	944	12
	English-Learner Students	48,382	47,381	98	861	2	140	0	1,001	2
	Unknown	3,739	3,276	88	314	8	149	4	463	12
Economically Disadvantaged	No	22,732	18,271	80	2,421	11	2,040	9	4,461	20
	Yes	70,272	67,074	95	2,487	4	711	1	3,198	5
	Unknown	14,338	12,250	85	1,265	9	823	6	2,088	15
Special Education Program Participation	Receiving Services	19,248	18,965	99	238	1	45	0	283	1
	Not Receiving Services	88,094	78,630	89	5,935	7	3,529	4	9,464	11

¹ Results for groups with less than 11 students are not reported.

Table 8.C.8: ESEA Demographic Summary for All CAHSEE Examinees, Mathematics—November 2009

Subgroup	Group	N Tested¹	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		103,221	92,962	90	7,442	7	2,817	3	10,259	10
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	67,208	60,106	89	5,246	8	1,856	3	7,102	11
	Twelfth	32,173	29,334	91	1,944	6	895	3	2,839	9
	Adult Education	3,840	3,522	92	252	7	66	2	318	8
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	51,360	45,687	89	4,128	8	1,545	3	5,673	11
	Female	51,798	47,219	91	3,308	6	1,271	2	4,579	9
	Unknown	63	56	89	6	10	1	2	7	11
Race/Ethnicity	American Indian or Alaskan Native	687	602	88	62	9	23	3	85	12
	Asian	2,953	1,950	66	478	16	525	18	1,003	34
	Pacific Islander	568	508	89	43	8	17	3	60	11
	Filipino	1,359	1,107	81	180	13	72	5	252	19
	Hispanic or Latino	66,490	62,576	94	3,357	5	557	1	3,914	6
	African American	10,389	9,827	95	463	4	99	1	562	5
	White (not of Hispanic origin)	13,465	10,362	77	2,007	15	1096	8	3,103	23
	Two or More Races	7,080	5,832	82	824	12	424	6	1,248	18
Unknown	230	198	86	28	12	4	2	32	14	
Language Fluency	English-Only Students	47,579	41,297	87	4,448	9	1,834	4	6,282	13
	Initially Fluent English Proficient (IFEP)	5,331	4,566	86	474	9	291	5	765	14
	Reclassified Fluent English Proficient (RFEP)	9,880	9,022	91	717	7	141	1	858	9
	English-Learner Students	36,582	34,604	95	1,513	4	465	1	1,978	5
	Unknown	3,849	3,473	90	290	8	86	2	376	10
Economically Disadvantaged	No	24,189	19,666	81	2,960	12	1,563	6	4,523	19
	Yes	64,572	60,986	94	3,022	5	564	1	3,586	6
	Unknown	14,460	12,310	85	1,460	10	690	5	2,150	15
Special Education Program Participation	Receiving Services	15,967	15,563	97	358	2	46	0	404	3
	Not Receiving Services	87,254	77,399	89	7,084	8	2,771	3	9,855	11

¹ Results for groups with less than 11 students are not reported.

Table 8.C.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—November 2009

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	277	296	323	343	359	396	428	343	30	107,342
Grade⁴										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	279	296	327	344	361	396	428	345	29	70,394
Twelfth	275	292	319	337	355	393	433	338	30	33,056
Adult Education	286	304	327	343	361	399	428	345	28	3,892
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	292	319	341	357	390	423	340	29	61,603
Female	284	300	329	344	363	402	439	347	30	45,685
Unknown	275	275	310	336	352	390	414	332	32	54
Race/Ethnicity										
American Indian or Alaska Native	275	292	323	346	363	402	439	346	32	629
Asian	277	298	327	344	363	402	446	346	31	5,367
Pacific Islander	286	300	329	344	361	390	428	345	28	629
Filipino	290	306	333	348	367	410	439	351	29	1,634
Hispanic or Latino	277	296	323	341	357	382	410	340	26	70,084
African American	275	292	319	341	357	387	418	339	29	8,769
White (not of Hispanic origin)	275	298	331	355	379	428	450	357	38	12,833
Two or More Races	277	296	327	346	370	414	446	350	35	6,842
Unknown	277	298	323	343	357	377	428	340	26	555
Language Fluency										
English-Only Students	275	294	325	346	367	410	446	348	34	42,522
Initially Fluent English Proficient (IFEP)	281	302	333	350	370	410	439	352	31	4,531
Reclassified Fluent English Proficient (RFEP)	290	313	343	357	370	393	423	356	24	8,168
English-Learner Students	277	294	319	337	350	370	387	335	24	48,382
Unknown	281	302	327	344	363	399	428	347	29	3,739
Economically Disadvantaged										
No	281	300	331	350	372	418	446	354	35	22,732
Yes	277	294	321	341	355	379	406	339	26	70,272
Unknown	275	294	325	344	365	406	439	346	33	14,338
Special Education Program Participation										
Students Receiving Services	275	284	306	325	344	365	384	325	25	19,248
Students Not Receiving Services	281	300	329	346	363	399	433	347	29	88,094

¹ Mean scale scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Table 8.C.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—November 2009

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	298	311	331	345	359	401	447	348	27	103,221
Grade⁴										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	298	311	331	347	361	401	447	349	27	67,208
Twelfth	296	308	329	344	358	401	447	346	27	32,173
Adult Education	301	313	331	344	358	390	433	347	24	3,840
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	296	308	329	345	361	404	450	348	29	51,360
Female	301	313	333	345	359	398	447	348	26	51,798
Unknown	296	308	323	335	359	393	450	343	29	63
Race/Ethnicity										
American Indian or Alaska Native	301	315	331	345	363	407	447	350	28	687
Asian	304	317	342	361	401	450	450	372	41	2,953
Pacific Islander	298	313	333	345	361	401	439	349	27	568
Filipino	304	317	338	352	373	422	450	358	31	1,359
Hispanic or Latino	298	311	329	344	358	383	418	345	23	66,490
African American	296	308	327	342	356	381	418	342	23	10,389
White (not of Hispanic origin)	298	313	336	354	377	433	450	360	35	13,465
Two or More Races	296	311	331	347	369	427	450	354	34	7,080
Unknown	298	317	338	352	367	404	450	354	26	230
Language Fluency										
English-Only Students	296	311	331	347	363	410	450	350	30	47,579
Initially Fluent English Proficient (IFEP)	304	315	336	351	365	422	450	355	30	5,331
Reclassified Fluent English Proficient (RFEP)	308	321	340	352	363	390	427	353	22	9,880
English-Learner Students	298	311	327	342	354	381	427	343	24	36,582
Unknown	301	313	331	345	359	398	439	348	26	3,849
Economically Disadvantaged										
No	301	313	335	351	371	427	450	357	33	24,189
Yes	298	311	329	344	358	381	418	344	23	64,572
Unknown	298	311	331	347	365	418	450	352	31	14,460
Special Education Program Participation										
Students Receiving Services	286	301	317	331	345	369	398	332	22	15,967
Students Not Receiving Services	301	315	335	347	363	407	450	351	27	87,254

¹ Mean scale scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Appendix 8.D: Frequency Distributions and Demographic Summaries—December 2009

Table 8.D.1: Frequency Distributions, ELA—December 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	12	0	12	99
440-449	3	0	15	99
430-439	16	1	31	99
420-429	14	1	45	98
410-419	15	1	60	98
400-409	28	1	88	97
390-399	48	2	136	95
380-389	75	3	211	92
370-379	100	4	311	89
360-369	167	6	478	83
350-359 ¹	361	13	839	70
340-349	403	15	1,242	55
330-339	467	17	1,709	38
320-329	364	13	2,073	25
310-319	279	10	2,352	15
300-309	219	8	2,571	7
290-299	99	4	2,670	3
280-289	51	2	2,721	1
275-279	33	1	2,754	0

¹Passing Score = 350

Table 8.D.2: Frequency Distributions, Mathematics—December 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	6	0	6	99
440-449	1	0	7	99
430-439	5	0	12	99
420-429	11	0	23	99
410-419	18	1	41	98
400-409	14	1	55	98
390-399	24	1	79	97
380-389	57	2	136	95
370-379	61	2	197	92
360-369	205	8	402	84
350-359 ¹	368	14	770	70
340-349	565	22	1,335	48
330-339	515	20	1,850	28
320-329	448	18	2,298	10
310-319	143	6	2,441	5
300-309	95	4	2,536	1
290-299	13	1	2,549	0
280-289	4	0	2,553	0
275-279	3	0	2,556	0

¹Passing Score = 350

Table 8.D.3: Frequency Distributions, ELA for ESEA—December 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	12	0	12	99
440-449	3	0	15	99
430-439	16	1	31	99
420-429	14	1	45	98
410-419	15	1	60	98
403-409 ¹	21	1	81	97
390-402	55	2	136	95
380-389 ²	75	3	211	92
370-379	100	4	311	89
360-369	167	6	478	83
350-359	361	13	839	70
340-349	403	15	1,242	55
330-339	467	17	1,709	38
320-329	364	13	2,073	25
310-319	279	10	2,352	15
300-309	219	8	2,571	7
290-299	99	4	2,670	3
280-289	51	2	2,721	1
275-279	33	1	2,754	0

¹ Advanced-Level Cut = 403

² Proficient-Level Cut = 380

Table 8.D.4: Frequency Distributions, Mathematics for ESEA—December 2009

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	6	0	6	99
440-449	1	0	7	99
430-439	5	0	12	99
422-429 ¹	8	0	20	99
410-421	21	1	41	98
400-409	14	1	55	98
390-399	24	1	79	97
380-389 ²	57	2	136	95
370-379	61	2	197	92
360-369	205	8	402	84
350-359	368	14	770	70
340-349	565	22	1,335	48
330-339	515	20	1,850	28
320-329	448	18	2,298	10
310-319	143	6	2,441	5
300-309	95	4	2,536	1
290-299	13	1	2,549	0
280-289	4	0	2,553	0
275-279	3	0	2,556	0

¹ Advanced-Level Cut = 422

² Proficient-Level Cut = 380

Table 8.D.5: Demographic Summary for All Examinees, ELA—December 2009

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ²			Writing ²		Writing Applications
							Avg. Percent Correct			Avg. Percent Correct		Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	2,754	839	30	1,915	70	338	58	60	60	47	56	2.1
Grade³												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	403	167	41	236	59	342	61	62	62	50	58	2.2
Twelfth	1,710	398	23	1,312	77	333	55	57	57	44	53	2.0
Adult Education	641	274	43	367	57	349	66	66	67	53	60	2.2
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	1,371	392	29	979	71	336	59	59	58	46	54	2
Female	1,365	442	32	923	68	340	57	61	62	48	57	2.1
Unknown	18	5	28	13	72	333	50	55	54	44	50	2.0
Race/Ethnicity												
American Indian or Alaska Native	7	-	-	-	-	-	-	-	-	-	-	-
Asian	197	37	19	160	81	328	49	51	55	44	54	1.8
Pacific Islander	14	4	29	10	71	341	47	60	60	53	58	2.3
Filipino	36	12	33	24	67	344	66	60	64	50	59	2.2
Hispanic or Latino	1,826	493	27	1,333	73	336	57	59	58	46	55	2.1
African American	204	62	30	142	70	339	58	62	62	47	54	2.1
White (not of Hispanic origin)	158	83	53	75	47	349	66	66	67	54	58	2.2
Two and More Races	299	141	47	158	53	352	66	65	69	55	60	2.2
Unknown	13	3	23	10	77	335	45	59	63	44	51	2.2
Language Fluency												
English-Only Students	692	288	42	404	58	345	62	65	64	50	58	2.2
Initially Fluent English Proficient (IFEP)	61	37	61	24	39	356	70	72	72	53	65	2.4
Reclassified Fluent English Proficient (RFEP)	87	43	49	44	51	345	64	63	65	48	62	2.2
English-Learner Students	1,347	228	17	1,119	83	329	52	54	54	43	52	2.0
Unknown	567	243	43	324	57	349	65	66	67	54	60	2.2
Economically Disadvantaged												
No	357	137	38	220	62	343	60	62	63	49	58	2.1
Yes	1,631	406	25	1,225	75	333	55	58	57	45	54	2.0
Unknown	766	296	39	470	61	346	63	64	65	52	58	2.1
Special Education Program Participation												
Students Receiving Services	237	39	16	198	84	327	48	53	53	40	50	2.0
Students Not Receiving Services	2,517	800	32	1,717	68	339	59	61	61	48	56	2.1

¹ Results for groups with less than 11 students are not reported.

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

³ Grade 10 students can only take the CAHSEE one time in the spring during the February, March, or May administration

Table 8.D.6: Demographic Summary for All Examinees, Mathematics—December 2009

	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	2,556	770	30	1,786	70	342	54	49	50	48	41
Grade³											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	401	161	40	240	60	345	56	52	52	49	45
Twelfth	1,496	367	25	1,129	75	339	53	47	49	45	40
Adult Education	659	242	37	417	63	347	57	53	53	52	41
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	1,010	297	29	713	71	342	53	50	49	48	39
Female	1,526	470	31	1,056	69	342	55	49	51	47	42
Unknown	20	3	15	17	85	340	51	49	51	43	43
Race/Ethnicity											
American Indian or Alaska Native	5	-	-	-	-	-	-	-	-	-	-
Asian	57	21	37	36	63	345	48	52	55	47	50
Pacific Islander	14	5	36	9	64	341	55	50	47	45	44
Filipino	25	13	52	12	48	354	57	57	60	56	43
Hispanic or Latino	1,579	455	29	1,124	71	341	54	49	50	47	40
African American	364	92	25	272	75	339	53	48	48	44	41
White (not of Hispanic origin)	192	66	34	126	66	346	59	51	52	49	42
Two and More Races	315	113	36	202	64	347	58	53	53	51	41
Unknown	5	-	-	-	-	-	-	-	-	-	-
Language Fluency											
English-Only Students	965	275	28	690	72	342	55	49	50	46	40
Initially Fluent English Proficient (IFEP)	87	38	44	49	56	349	58	54	54	52	45
Reclassified Fluent English Proficient (RFEP)	147	60	41	87	59	346	59	52	53	49	45
English-Learner Students	766	181	24	585	76	338	50	46	48	45	40
Unknown	591	216	37	375	63	347	57	53	53	52	42
Economically Disadvantaged											
No	467	149	32	318	68	344	57	50	51	48	42
Yes	1,323	363	27	960	73	340	53	48	49	46	41
Unknown	766	258	34	508	66	345	56	52	51	50	41
Special Education Program Participation											
Students Receiving Services	161	18	11	143	89	330	47	43	41	38	35
Students Not Receiving Services	2,395	752	31	1,643	69	343	55	50	51	48	41

¹ Results for groups with less than 11 students are not reported.

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

³ Grade 10 students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Table 8.D.7: ESEA Demographic Summary for All CAHSEE Examinees, ELA —December 2009

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		2,754	2,543	92	130	5	81	3	211	8
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	403	364	90	28	7	11	3	39	10
	Twelfth	1,710	1,647	96	42	2	21	1	63	4
	Adult Education	641	532	83	60	9	49	8	109	17
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	1,371	1,282	94	59	4	30	2	89	6
	Female	1,365	1,245	91	71	5	49	4	120	9
	Unknown	18	16	89	-	-	2	11	2	11
Race/Ethnicity	American Indian or Alaskan Native	-	-	-	-	-	-	-	2	29
	Asian	197	192	97	4	2	1	1	5	3
	Pacific Islander	14	13	93			1	7	1	7
	Filipino	36	34	94			2	6	2	6
	Hispanic or Latino	1,826	17,31	95	68	4	27	1	95	5
	African American	204	188	92	13	6	3	1	16	8
	White (not of Hispanic origin)	158	130	82	16	10	12	8	28	18
	Two or More Races	299	238	80	26	9	35	12	61	20
Unknown	13	12	92	1	8			1	8	
Language Fluency	English-Only Students	692	611	88	50	7	31	4	81	12
	Initially Fluent English Proficient (IFEP)	61	50	82	10	16	1	2	11	18
	Reclassified Fluent English Proficient (RFEP)	87	85	98	1	1	1	1	2	2
	English-Learner Students	1,347	1,336	99	11	1	-	-	11	1
	Unknown	567	461	81	58	10	48	8	106	19
Economically Disadvantaged	No	357	313	88	27	8	17	5	44	12
	Yes	1,631	1,577	97	43	3	11	1	54	3
	Unknown	766	653	85	60	8	53	7	113	15
Special Education Program Participation	Receiving Services	237	234	99	3	1	-	-	3	1
	Not Receiving Services	2,517	2,309	92	127	5	81	3	208	8

¹ Results for groups with less than 11 students are not reported.

Table 8.D.8: ESEA Demographic Summary for All CAHSEE Examinees, Mathematics—December 2009

Subgroup	Group	N Tested¹	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		2,556	2,420	95	116	5	20	1	136	5
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	401	370	92	28	7	3	1	31	8
	Twelfth	1,496	1,453	97	35	2	8	1	43	3
	Adult Education	659	597	91	53	8	9	1	62	9
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	1,010	946	94	50	5	14	1	64	6
	Female	1,526	1,455	95	65	4	6	0	71	5
	Unknown	20	19	95	1	5	-	-	1	5
Race/Ethnicity	American Indian or Alaskan Native	5	-	-	-	-	-	-	-	-
	Asian	57	51	89	5	9	1	2	6	11
	Pacific Islander	14	13	93	1	7	-	-	1	7
	Filipino	25	21	84	2	8	2	8	4	16
	Hispanic or Latino	1,579	1,519	96	55	3	5	0	60	4
	African American	364	354	97	10	3	-	-	10	3
	White (not of Hispanic origin)	192	170	89	17	9	5	3	22	11
	Two or More Races	315	284	90	24	8	7	2	31	10
Unknown	5	-	-	-	-	-	-	-	-	
Language Fluency	English-Only Students	965	914	95	43	4	8	1	51	5
	Initially Fluent English Proficient (IFEP)	87	79	91	6	7	2	2	8	9
	Reclassified Fluent English Proficient (RFEP)	147	144	98	3	2	-	-	3	2
	English-Learner Students	766	752	98	13	2	1	0	14	2
	Unknown	591	531	90	51	9	9	2	60	10
Economically Disadvantaged	No	467	429	92	31	7	7	1	38	8
	Yes	1,323	1,288	97	33	2	2	0	35	3
	Unknown	766	703	92	52	7	11	1	63	8
Special Education Program Participation	Receiving Services	161	161	100	-	-	-	-	-	-
	Not Receiving Services	2,395	2,259	94	116	5	20	1	136	6

¹ Results for groups with less than 11 students are not reported.

Table 8.D.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—December 2009

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	279	296	321	336	352	388	430	338	28	2,754
Grade⁴										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	281	296	321	342	360	388	424	342	29	403
Twelfth	277	293	317	334	348	372	409	333	25	1,710
Adult Education	289	304	326	344	365	414	450	349	33	641
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	277	294	317	336	352	385	424	336	28	1,371
Female	281	296	322	338	354	391	437	340	29	1,365
Unknown	279	279	307	318	352	450	450	333	45	18
Race/Ethnicity										
American Indian or Alaska Native	309	309	311	354	388	388	388	350	33	7
Asian	275	289	311	328	344	367	394	328	25	197
Pacific Islander	298	298	326	337	352	424	424	341	30	14
Filipino	311	311	324	339	353	414	437	344	26	36
Hispanic or Latino	279	296	319	336	350	380	409	336	25	1,826
African American	283	296	322	340	352	388	409	339	26	204
White (not of Hispanic origin)	275	293	324	350	367	419	444	349	35	158
Two or More Races	279	298	324	346	372	430	450	352	37	299
Unknown	298	298	328	332	348	385	385	335	25	13
Language Fluency										
English-Only Students	281	298	326	344	360	401	430	345	30	692
Initially Fluent English Proficient (IFEP)	309	326	342	354	363	391	450	356	24	61
Reclassified Fluent English Proficient (RFEP)	275	296	330	348	360	372	409	345	23	87
English-Learner Students	277	293	315	330	344	360	377	329	21	1,347
Unknown	287	304	324	344	365	419	450	349	34	567
Economically Disadvantaged										
No	275	293	324	342	358	401	437	343	32	357
Yes	279	294	317	334	348	372	394	333	24	1,631
Unknown	281	302	324	340	360	414	450	346	33	766
Special Education Program Participation										
Students Receiving Services	275	287	311	328	342	360	388	327	23	237
Students Not Receiving Services	279	296	321	338	354	391	430	339	29	2,517

¹ Mean scale scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Table 8.D.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—December 2009

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	300	312	329	340	352	380	415	342	21	2,556
Grade⁴										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	303	316	331	344	358	387	411	345	22	401
Twelfth	300	309	327	338	349	369	407	339	20	1,496
Adult Education	303	314	331	344	356	395	424	347	24	659
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	298	307	326	340	352	387	424	342	24	1,010
Female	303	314	331	340	352	378	407	342	19	1,526
Unknown	312	316	330	339	344	377	387	340	16	20
Race/Ethnicity										
American Indian or Alaska Native	-	-	-	-	-	-	-	-	-	5
Asian	289	309	329	338	358	404	424	345	27	57
Pacific Islander	318	318	327	335	354	389	389	341	19	14
Filipino	286	316	331	351	356	424	444	354	34	25
Hispanic or Latino	300	312	327	340	351	373	407	341	20	1,579
African American	305	312	328	338	351	369	395	339	17	364
White (not of Hispanic origin)	303	314	329	340	354	404	450	346	27	192
Two or More Races	303	312	331	342	358	395	430	347	25	315
Unknown	-	-	-	-	-	-	-	-	-	5
Language Fluency										
English-Only Students	303	312	327	338	352	380	420	342	21	965
Initially Fluent English Proficient (IFEP)	305	312	333	345	362	404	450	349	27	87
Reclassified Fluent English Proficient (RFEP)	305	316	336	347	356	371	407	346	18	147
English-Learner Students	298	309	327	338	349	364	389	338	18	766
Unknown	303	314	331	342	358	395	430	347	24	591
Economically Disadvantaged										
No	303	314	327	340	354	395	424	344	24	467
Yes	300	312	327	340	351	369	395	340	18	1,323
Unknown	298	312	331	342	354	389	430	345	24	766
Special Education Program Participation										
Students Receiving Services	298	303	322	331	340	356	367	330	16	161
Students Not Receiving Services	300	314	329	342	352	382	415	343	21	2,395

¹ Mean scale scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Appendix 8.E: Frequency Distributions and Demographic Summaries—February 2010

Table 8.E.1: Frequency Distributions, ELA—February 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	6,750	4	6,750	96
440-449	2,735	2	9,485	94
430-439	6,873	4	16,358	90
420-429	7,819	5	24,177	86
410-419	8,523	5	32,700	81
400-409	13,006	8	45,706	73
390-399	12,874	8	58,580	66
380-389	16,087	9	74,667	56
370-379	14,445	8	89,112	48
360-369	13,545	8	102,657	40
350-359 ¹	16,190	9	118,847	31
340-349	14,355	8	133,202	22
330-339	11,657	7	144,859	15
320-329	8,858	5	153,717	10
310-319	6,798	4	160,515	6
300-309	4,899	3	165,414	3
290-299	3,197	2	168,611	2
280-289	1,662	1	170,273	1
275-279	1,050	1	171,323	0

¹ Passing Score = 350

Table 8.E.2: Frequency Distributions, Mathematics—February 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	9,423	6	9,423	94
440-449	3,390	2	12,813	92
430-439	7,176	4	19,989	88
420-429	7,007	4	26,996	84
410-419	7,140	4	34,136	80
400-409	10,308	6	44,444	74
390-399	10,034	6	54,478	68
380-389	15,728	9	70,206	58
370-379	11,891	7	82,097	51
360-369	14,075	8	96,172	43
350-359 ¹	16,876	10	113,048	33
340-349	17,137	10	130,185	23
330-339	12,968	8	143,153	15
320-329	11,034	7	154,187	8
310-319	8,442	5	162,629	3
300-309	3,872	2	166,501	1
290-299	1,369	1	167,870	0
280-289	297	0	168,167	0
275-279	196	0	168,363	0

¹ Passing Score = 350

Table 8.E.3: Frequency Distributions, ELA for ESEA—February 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	6,750	4	6,750	96
440-449	2,735	2	9,485	94
430-439	6,873	4	16,358	90
420-429	7,819	5	24,177	86
410-419	8,523	5	32,700	81
403-409 ¹	8,648	5	41,348	76
390-402	17,232	10	58,580	66
380-389 ²	16,087	9	74,667	56
370-379	14,445	8	89,112	48
360-369	13,545	8	102,657	40
350-359	16,190	9	118,847	31
340-349	14,355	8	133,202	22
330-339	11,657	7	144,859	15
320-329	8,858	5	153,717	10
310-319	6,798	4	160,515	6
300-309	4,899	3	165,414	3
290-299	3,197	2	168,611	2
280-289	1,662	1	170,273	1
275-279	1,050	1	171,323	0

¹ Advanced-Level Cut = 403

² Proficient-Level Cut = 380

Table 8.E.4: Frequency Distributions, Mathematics for ESEA—February 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	9,423	6	9,423	94
440-449	3,390	2	12,813	92
430-439	7,176	4	19,989	88
422-429 ¹	3,532	2	23,521	86
410-421	10,615	6	34,136	80
400-409	10,308	6	44,444	74
390-399	10,034	6	54,478	68
380-389 ²	15,728	9	70,206	58
370-379	11,891	7	82,097	51
360-369	14,075	8	96,172	43
350-359	16,876	10	113,048	33
340-349	17,137	10	130,185	23
330-339	12,968	8	143,153	15
320-329	11,034	7	154,187	8
310-319	8,442	5	162,629	3
300-309	3,872	2	166,501	1
290-299	1,369	1	167,870	0
280-289	297	0	168,167	0
275-279	196	0	168,363	0

¹ Advanced-Level Cut = 422

² Proficient-Level Cut = 380

Table 8.E.5: Demographic Summary for All Examinees, ELA February 2010

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ²			Writing ²		Writing Applications
							Avg. Percent Correct			Avg. Percent Correct		Mean. Score
							RW	RC	RL	WS	WC	
Total Examinees	171,323	118,847	69	52,476	31	372	76	69	76	65	69	2.4
Grade												
Tenth	125,422	103,931	83	21,491	17	385	82	75	82	72	75	2.5
Eleventh	19,450	6,839	35	12,611	65	339	61	54	62	46	54	2.0
Twelfth	23,340	6,725	29	16,615	71	336	59	52	59	44	52	2.0
Adult Education	3,111	1,352	43	1,759	57	349	66	61	65	53	58	2.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	90,806	58,949	65	31,857	35	367	74	67	74	63	67	2.3
Female	80,463	59,870	74	20,593	26	379	78	72	79	68	73	2.5
Unknown	54	28	52	26	48	354	65	60	67	57	59	2.1
Race/Ethnicity												
American Indian or Alaska Native	1,337	943	71	394	29	370	77	69	76	64	67	2.4
Asian	14,582	12,086	83	2,496	17	392	80	77	83	76	80	2.6
Pacific Islander	1,128	793	70	335	30	371	74	68	76	64	70	2.4
Filipino	4,685	3,992	85	693	15	389	82	77	82	75	78	2.7
Hispanic or Latino	78,499	44,976	57	33,523	43	358	70	63	71	57	63	2.2
African American	13,041	7,793	60	5,248	40	359	71	63	72	59	63	2.3
White (not of Hispanic origin)	47,638	41,439	87	6,199	13	393	85	78	85	77	79	2.6
Two or More Races	9,588	6,293	66	3,295	34	369	75	68	74	64	67	2.3
Unknown	825	532	64	293	36	364	66	65	72	65	70	2.3
Language Fluency												
English-Only Students	97,108	75,454	78	21,654	22	381	81	73	80	70	73	2.5
Initially Fluent English Proficient (IFEP)	10,947	9,126	83	1,821	17	388	82	76	83	73	77	2.6
Reclassified Fluent English Proficient (RFEP)	22,467	20,146	90	2,321	10	386	82	77	83	73	77	2.6
English-Learner Students	37,736	12,729	34	25,007	66	338	59	54	61	46	54	2.0
Unknown	3,065	1,392	45	1,673	55	350	67	61	66	54	58	2.1
Economically Disadvantaged												
No	67,228	57,707	86	9,521	14	392	84	78	84	76	79	2.6
Yes	88,912	51,778	58	37,134	42	358	70	63	71	58	63	2.2
Unknown	15,183	9,362	62	5,821	38	365	73	66	73	61	66	2.3
Special Education Program Participation												
Students Receiving Services	18,658	5,184	28	13,474	72	333	58	49	57	43	49	1.9
Students Not Receiving Services	152,665	113,663	74	39,002	26	377	78	72	79	68	72	2.5

¹ Results for groups with less 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 2010

	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	168,363	113,048	67	55,315	33	373	70	70	69	62	54
Grade											
Tenth	124,938	100,958	81	23,980	19	384	76	77	76	68	61
Eleventh	18,433	5,471	30	12,962	70	340	53	52	50	44	36
Twelfth	21,641	5,415	25	16,226	75	337	52	49	49	44	34
Adult Education	3,351	1,204	36	2,147	64	345	58	53	53	50	36
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	84,951	57,067	67	27,884	33	373	70	71	69	62	54
Female	83,342	55,941	67	27,401	33	372	70	68	70	61	55
Unknown	70	40	57	30	43	357	62	60	61	56	43
Race/Ethnicity											
American Indian or Alaska Native	1,349	909	67	440	33	368	69	69	68	60	51
Asian	13,261	12,020	91	1,241	9	407	82	85	86	79	75
Pacific Islander	1,139	748	66	391	34	368	68	68	69	59	54
Filipino	4,531	3,857	85	674	15	390	77	79	80	71	66
Hispanic or Latino	75,995	41,523	55	34,472	45	358	64	62	62	54	47
African American	13,987	7,034	50	6,953	50	354	61	61	59	51	45
White (not of Hispanic origin)	47,718	40,471	85	7,247	15	391	79	80	79	72	63
Two or More Races	9,741	5,969	61	3,772	39	367	68	68	65	59	50
Unknown	642	517	81	125	19	381	73	74	77	67	63
Language Fluency											
English-Only Students	99,923	72,109	72	27,814	28	377	73	73	72	64	56
Initially Fluent English Proficient (IFEP)	11,256	8,870	79	2,386	21	386	76	76	77	68	62
Reclassified Fluent English Proficient (RFEP)	23,287	19,498	84	3,789	16	386	78	77	78	68	63
English-Learner Students	30,651	11,342	37	19,309	63	345	54	54	54	48	41
Unknown	3,246	1,229	38	2,017	62	346	58	55	54	50	37
Economically Disadvantaged											
No	67,930	55,951	82	11,979	18	390	78	79	78	71	64
Yes	85,220	48,278	57	36,942	43	360	64	63	63	55	48
Unknown	15,213	8,819	58	6,394	42	364	66	65	64	58	49
Special Education Program Participation											
Students Receiving Services	16,273	4,341	27	11,932	73	337	50	51	47	42	35
Students Not Receiving Services	152,090	108,707	71	43,383	29	376	72	72	72	64	56

¹ Results for groups with less 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 CAHSEE Examinees, ELA—February 2010

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		171,323	96,656	56	33,319	19	41,348	24	74,667	44
Grade	Tenth	125,422	53,653	43	31,403	25	40,366	32	71,769	57
	Eleventh	19,450	18,067	93	925	5	458	2	1,383	7
	Twelfth	23,340	22,273	95	717	3	350	1	1,067	5
	Adult Education	3,111	2,663	86	274	9	174	6	448	14
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	90,806	55,989	62	16,982	19	17,835	20	34,817	38
	Female	80,463	40,624	50	16,335	20	23,504	29	39,839	50
	Unknown	54	43	80	2	4	9	17	11	20
Race/Ethnicity	American Indian or Alaskan Native	1,337	794	59	264	20	279	21	543	41
	Asian	14,582	5,368	37	2,893	20	6,321	43	9,214	63
	Pacific Islander	1,128	663	59	237	21	228	20	465	41
	Filipino	4,685	1,755	37	1,207	26	1,723	37	2,930	63
	Hispanic or Latino	78,499	57,287	73	12,596	16	8,616	11	21,212	27
	African American	13,041	9,188	70	2,210	17	1,643	13	3,853	30
	White (not of Hispanic origin)	47,638	15,448	32	12,021	25	20,169	42	32,190	68
	Two or More Races	9,588	5,600	58	1,740	18	2,248	23	3,988	42
Unknown	825	553	67	151	18	121	15	272	33	
Language Fluency	English-Only Students	97,108	44,526	46	21,778	22	30,804	32	52,582	54
	Initially Fluent English Proficient (IFEP)	10,947	4,330	40	2,642	24	3,975	36	6,617	60
	Reclassified Fluent English Proficient (RFEP)	22,467	9,507	42	6,941	31	6,019	27	12,960	58
	English-Learner Students	37,736	35,722	95	1,675	4	339	1	2,014	5
	Unknown	3,065	2,571	84	283	9	211	7	494	16
Economically Disadvantaged	No	67,228	22,904	34	16,192	24	28,132	42	44,324	66
	Yes	88,912	63,996	72	14,669	16	10,247	12	24,916	28
	Unknown	15,183	9,756	64	2,458	16	2,969	20	5,427	36
Special Education Program Participation	Receiving Services	18,658	17,125	92	1,034	6	499	3	1,533	8
	Not Receiving Services	152,665	79,531	52	32,285	21	40,849	27	73,134	48

¹ Results for groups with less than 11 students are not reported.

Table 8.E.8: ESEA Demographic Summary for All CAHSEE Examinees, Mathematics— February 2010

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		168,363	98,157	58	46,685	28	23,521	14	70,206	42
Grade	Tenth	124,938	56,822	45	44,896	36	23,220	19	68,116	55
	Eleventh	18,433	17,413	94	873	5	147	1	1,020	6
	Twelfth	21,641	20,864	96	655	3	122	1	777	4
	Adult Education	3,351	3,058	91	261	8	32	1	293	9
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	84,951	48,143	57	23,861	28	12,947	15	36,808	43
	Female	83,342	49,958	60	22,817	27	10,567	13	33,384	40
	Unknown	70	56	80	7	10	7	10	14	20
Race/Ethnicity	American Indian or Alaskan Native	1,349	841	62	398	30	110	8	508	38
	Asian	13,261	3,182	24	4,531	34	5,548	42	10,079	76
	Pacific Islander	1,139	703	62	335	29	101	9	436	38
	Filipino	4,531	1,739	38	1,811	40	981	22	2,792	62
	Hispanic or Latino	75,995	56,406	74	15,482	20	4,107	5	19,589	26
	African American	13,987	10,929	78	2,533	18	525	4	3,058	22
	White (not of Hispanic origin)	47,718	17,872	37	18,925	40	10,921	23	29,846	63
	Two or More Races	9,741	6,184	63	2,413	25	1,144	12	3,557	37
	Unknown	642	301	47	257	40	84	13	341	53
Language Fluency	English-Only Students	99,923	52,596	53	31,307	31	16,020	16	47,327	47
	Initially Fluent English Proficient (IFEP)	11,256	4,979	44	3,671	33	2,606	23	6,277	56
	Reclassified Fluent English Proficient (RFEP)	23,287	10,445	45	8,499	36	4,343	19	12,842	55
	English-Learner Students	30,651	27,229	89	2,922	10	500	2	3,422	11
	Unknown	3,246	2,908	90	286	9	52	2	338	10
Economically Disadvantaged	No	67,930	26,833	40	24,813	37	16,284	24	41,097	60
	Yes	85,220	61,054	72	18,461	22	5,705	7	24,166	28
	Unknown	15,213	10,270	68	3,411	22	1,532	10	4,943	32
Special Education Program Participation	Receiving Services	16,273	14,764	91	1,252	8	257	2	1,509	9
	Not Receiving Services	152,090	83,393	55	45,433	30	23,264	15	68,697	45

¹Results for groups with less than 11 students are not reported.

Table 8.E.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—February 2010

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	285	305	342	373	402	445	450	372	41	171,323
Grade⁴										
Tenth	293	318	361	386	413	450	450	385	38	125,422
Eleventh	275	293	320	340	357	386	422	339	28	19,450
Twelfth	275	291	318	336	352	378	413	336	27	23,340
Adult Education	287	305	330	346	363	405	433	349	30	3,111
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	281	301	338	366	395	439	450	367	40	90,806
Female	291	312	348	378	409	450	450	379	40	80,463
Unknown	275	275	324	355	375	439	445	354	45	54
Race/Ethnicity										
American Indian or Alaska Native	285	305	344	370	398	439	450	370	39	1,337
Asian	293	318	361	395	427	450	450	392	41	14,582
Pacific Islander	289	307	344	370	395	439	450	371	38	1,128
Filipino	303	326	366	392	418	450	450	389	36	4,685
Hispanic or Latino	283	301	332	355	381	422	445	358	36	78,499
African American	276	299	334	359	383	422	450	359	37	13,041
White (not of Hispanic origin)	293	324	370	395	422	450	450	393	37	47,638
Two or More Races	276	299	338	368	402	445	450	369	43	9,588
Unknown	289	307	338	361	389	427	450	364	36	825
Language Fluency										
English-Only Students	287	310	352	383	413	450	450	381	41	97,108
Initially Fluent English Proficient (IFEP)	297	320	361	389	418	450	450	388	38	10,947
Reclassified Fluent English Proficient (RFEP)	310	338	366	383	405	439	450	386	30	22,467
English-Learner Students	278	295	320	340	355	381	402	338	26	37,736
Unknown	285	303	330	346	366	413	439	350	32	3,065
Economically Disadvantaged										
No	297	322	368	395	422	450	450	392	38	67,228
Yes	281	301	334	357	383	422	450	358	36	88,912
Unknown	281	301	336	361	395	439	450	365	41	15,183
Special Education Program Participation										
Students Receiving Services	275	287	309	330	352	392	422	333	32	18,658
Students Not Receiving Services	291	312	348	378	405	445	450	377	39	152,665

¹ Mean Scale Scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 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 2010

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	299	313	341	369	401	450	450	373	40	168,363
Grade⁴										
Tenth	304	321	358	382	411	450	450	384	38	124,938
Eleventh	294	306	323	338	352	382	420	340	24	18,433
Twelfth	291	304	323	336	350	371	408	337	22	21,641
Adult Education	299	311	329	341	358	389	420	345	24	3,351
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	297	311	340	371	404	450	450	373	42	84,951
Female	302	317	341	367	398	445	450	372	38	83,342
Unknown	285	306	329	354	373	450	450	357	40	70
Race/Ethnicity										
American Indian or Alaska Native	299	313	341	367	392	437	450	368	36	1,349
Asian	311	334	380	411	445	450	450	407	38	13,261
Pacific Islander	299	313	341	367	392	437	450	368	36	1,139
Filipino	313	330	363	389	420	450	450	390	36	4,531
Hispanic or Latino	299	311	334	354	380	425	450	358	34	75,995
African American	294	309	330	350	375	415	450	354	33	13,987
White (not of Hispanic origin)	306	325	365	392	420	450	450	391	38	47,718
Two or More Races	294	309	334	361	395	445	450	367	41	9,741
Unknown	311	329	358	380	404	445	450	381	34	642
Language Fluency										
English-Only Students	299	315	347	375	408	450	450	377	40	99,923
Initially Fluent English Proficient (IFEP)	304	321	354	384	420	450	450	386	41	11,256
Reclassified Fluent English Proficient (RFEP)	315	330	359	384	411	450	450	386	36	23,287
English-Learner Students	297	306	325	341	359	398	430	345	28	30,651
Unknown	297	311	329	343	358	395	430	346	26	3,246
Economically Disadvantaged										
No	306	325	361	389	420	450	450	390	39	67,930
Yes	297	311	334	356	382	430	450	360	36	85,220
Unknown	297	311	334	358	389	445	450	364	39	15,213
Special Education Program Participation										
Students Receiving Services	285	299	315	330	350	395	437	337	30	16,273
Students Not Receiving Services	304	319	345	373	404	450	450	376	39	152,090

¹ Mean Scale Scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 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 2010

Table 8.F.1: Frequency Distributions, ELA—March 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	16,863	4	16,863	96
440-449	7,069	2	23,932	94
430-439	17,570	4	41,502	89
420-429	20,527	5	62,029	84
410-419	22,493	6	84,522	79
400-409	34,700	9	119,222	70
390-399	33,524	9	152,746	61
380-389	31,876	8	184,622	53
370-379	37,678	10	222,300	43
360-369	33,007	8	255,307	35
350-359 ¹	35,279	9	290,586	26
340-349	29,868	8	320,454	18
330-339	23,624	6	344,078	12
320-329	17,163	4	361,241	8
310-319	12,151	3	373,392	5
300-309	8,616	2	382,008	3
290-299	6,563	2	388,571	1
280-289	2,675	1	391,246	0
275-279	1,875	0	393,121	0

¹ Passing Score = 350

Table 8.F.2: Frequency Distributions, Mathematics—March 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	33,829	9	33,829	91
440-449	9,242	2	43,071	89
430-439	9,432	2	52,503	86
420-429	27,208	7	79,711	79
410-419	17,686	5	97,397	75
400-409	25,766	7	123,163	68
390-399	32,878	8	156,041	60
380-389	31,367	8	187,408	52
370-379	36,091	9	223,499	42
360-369	39,142	10	262,641	32
350-359 ¹	29,700	8	292,341	25
340-349	32,305	8	324,646	16
330-339	22,761	6	347,407	11
320-329	18,806	5	366,213	6
310-319	14,291	4	380,504	2
300-309	5,879	2	386,383	1
290-299	1,458	0	387,841	0
280-289	434	0	388,275	0
275-279	315	0	388,590	0

¹ Passing Score = 350

Table 8.F.3: Frequency Distributions, ELA for ESEA—March 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	16,863	4	16,863	96
440-449	7,069	2	23,932	94
430-439	17,570	4	41,502	89
420-429	20,527	5	62,029	84
410-419	22,493	6	84,522	79
403-409 ¹	23,228	6	107,750	73
390-402	44,996	11	152,746	61
380-389 ²	31,876	8	184,622	53
370-379	37,678	10	222,300	43
360-369	33,007	8	255,307	35
350-359	35,279	9	290,586	26
340-349	29,868	8	320,454	18
330-339	23,624	6	344,078	12
320-329	17,163	4	361,241	8
310-319	12,151	3	373,392	5
300-309	8,616	2	382,008	3
290-299	6,563	2	388,571	1
280-289	2,675	1	391,246	0
275-279	1,875	0	393,121	0

¹ Advanced-Level Cut = 403

² Proficient-Level Cut = 380

Table 8.F.4: Frequency Distributions, Mathematics for ESEA—March 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	33,829	9	33,829	91
440-449	9,242	2	43,071	89
430-439	9,432	2	52,503	86
422-429 ¹	18,334	5	70,837	82
410-421	26,560	7	97,397	75
400-409	25,766	7	123,163	68
390-399	32,878	8	156,041	60
380-389 ²	31,367	8	187,408	52
370-379	36,091	9	223,499	42
360-369	39,142	10	262,641	32
350-359	29,700	8	292,341	25
340-349	32,305	8	324,646	16
330-339	22,761	6	347,407	11
320-329	18,806	5	366,213	6
310-319	14,291	4	380,504	2
300-309	5,879	2	386,383	1
290-299	1,458	0	387,841	0
280-289	434	0	388,275	0
275-279	315	0	388,590	0

¹ Advanced-Level Cut = 422

² Proficient-Level Cut = 380

Table 8.F.5: Demographic Summary for All Examinees, ELA—March 2010

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ²			Writing ²		Writing Applications
							Avg. Percent Correct			Avg. Percent Correct		Mean. Score
							RW	RC	RL	WS	WC	
Total Examinees	393,121	290,586	74	102,535	26	376	73	78	76	66	74	2.4
Grade												
Tenth	343,135	275,699	80	67,436	20	382	76	81	79	69	77	2.5
Eleventh	29,325	9,551	33	19,774	67	339	59	61	58	44	58	2.0
Twelfth	16,698	3,649	22	13,049	78	332	57	57	52	40	54	2.0
Adult Education	3,963	1,687	43	2,276	57	349	68	68	62	50	60	2.1
Unknown	.	.	.	.	.	.	.	.	.	.	.	.
Gender												
Male	203,552	142,242	70	61,310	30	371	72	76	74	64	71	2.3
Female	189,503	148,316	78	41,187	22	382	75	80	78	69	77	2.5
Unknown	66	28	42	38	58	344	61	65	59	48	56	2.0
Race/Ethnicity												
American Indian or Alaska Native	2,472	1,843	75	629	25	375	73	78	77	66	73	2.4
Asian	29,857	26,010	87	3,847	13	400	81	86	85	78	84	2.7
Pacific Islander	2,242	1,651	74	591	26	372	69	77	75	64	73	2.4
Filipino	9,649	8,450	88	1,199	12	393	78	85	83	74	82	2.7
Hispanic or Latino	213,222	141,408	66	71,814	34	366	70	74	71	60	70	2.3
African American	27,850	17,982	65	9,868	35	363	68	73	72	60	68	2.3
White (not of Hispanic origin)	90,891	80,987	89	9,904	11	395	81	85	84	77	81	2.6
Two or More Races	15,441	11,405	74	4,036	26	379	74	78	77	67	74	2.5
Unknown	1,497	850	57	647	43	357	59	69	67	57	69	2.2
Language Fluency												
English-Only Students	200,948	162,756	81	38,192	19	384	76	81	80	71	77	2.5
Initially Fluent English Proficient (IFEP)	31,572	27,999	89	3,573	11	394	80	85	84	75	81	2.6
Reclassified Fluent English Proficient (RFEP)	76,868	70,088	91	6,780	9	387	78	84	82	73	81	2.5
English-Learner Students	79,492	27,868	35	51,624	65	340	60	62	57	45	59	2.0
Unknown	4,241	1,875	44	2,366	56	349	67	68	63	50	61	2.1
Economically Disadvantaged												
No	136,081	119,930	88	16,151	12	394	80	85	84	76	81	2.6
Yes	220,350	143,663	65	76,687	35	365	69	74	71	60	70	2.3
Unknown	36,690	26,993	74	9,697	26	378	75	78	76	67	74	2.4
Special Education Program Participation												
Students Receiving Services	37,926	11,620	31	26,306	69	335	55	58	56	43	54	1.9
Students Not Receiving Services	355,195	278,966	79	76,229	21	380	75	80	78	69	76	2.5

¹ Results for groups with less than 11 students are not reported.

² RW — Word Analysis, RC — Reading Comprehension, RL — Literary Responses/Analysis, WS — Writing Strategies, WC — Writing Conventions

Table 8.F.6: Demographic Summary for All Examinees, Mathematics—March 2010

	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	388,590	292,341	75	96,249	25	381	74	69	72	65	58
Grade											
Tenth	341,649	278,069	81	63,580	19	386	77	72	75	68	61
Eleventh	27,314	8,855	32	18,459	68	342	54	47	50	44	35
Twelfth	15,352	3,799	25	11,553	75	338	51	44	47	42	33
Adult Education	4,275	1,618	38	2,657	62	347	57	49	54	50	35
Unknown	.	.	.	.	.	.	.	.	.	.	.
Gender											
Male	196,626	147,048	75	49,578	25	381	74	69	72	65	57
Female	191,893	145,263	76	46,630	24	380	74	68	72	64	59
Unknown	71	30	42	41	58	346	56	50	52	46	40
Race/Ethnicity											
American Indian or Alaska Native	2,486	1,824	73	662	27	376	73	67	70	63	55
Asian	28,309	26,704	94	1,605	6	418	87	86	88	83	81
Pacific Islander	2,178	1,649	76	529	24	378	72	68	72	64	58
Filipino	9,408	8,442	90	966	10	399	81	78	81	75	70
Hispanic or Latino	210,312	143,689	68	66,623	32	370	69	64	67	60	52
African American	28,689	17,126	60	11,563	40	362	65	59	62	54	48
White (not of Hispanic origin)	90,649	80,702	89	9,947	11	397	83	77	81	74	66
Two or More Races	15,335	11,222	73	4,113	27	381	74	69	72	65	57
Unknown	1,224	983	80	241	20	381	70	70	73	66	63
Language Fluency											
English-Only Students	202,631	160,531	79	42,100	21	385	77	71	75	67	60
Initially Fluent English Proficient (IFEP)	31,861	27,664	87	4,197	13	397	81	77	80	73	67
Reclassified Fluent English Proficient (RFEP)	78,038	69,497	89	8,541	11	391	80	75	79	71	65
English-Learner Students	71,603	32,875	46	38,728	54	351	56	52	56	49	43
Unknown	4,457	1,774	40	2,683	60	348	58	50	54	50	36
Economically Disadvantaged											
No	136,215	119,143	87	17,072	13	397	82	77	80	73	67
Yes	215,495	146,363	68	69,132	32	370	69	64	67	60	53
Unknown	36,880	26,835	73	10,045	27	380	74	68	72	64	57
Special Education Program Participation											
Students Receiving Services	33,889	11,101	33	22,788	67	341	51	47	49	43	37
Students Not Receiving Services	354,701	281,240	79	73,461	21	384	76	71	74	67	60

¹ Results for groups with less 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 CAHSEE Examinees, ELA—March 2010

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		393,121	208,499	53	76,872	20	107,750	27	184,622	47
Grade	Tenth	343,135	161,808	47	74,909	22	106,418	31	181,327	53
	Eleventh	29,325	27,368	93	1,199	4	758	3	1,957	7
	Twelfth	16,698	16,035	96	403	2	260	2	663	4
	Adult Education	3,963	3,288	83	361	9	314	8	675	17
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	203,552	118,288	58	38,738	19	46,526	23	85,264	42
	Female	189,503	90,156	48	38,128	20	61,219	32	99,347	52
	Unknown	66	55	83	6	9	5	8	11	17
Race/Ethnicity	American Indian or Alaskan Native	2,472	1,300	53	527	21	645	26	1,172	47
	Asian	29,857	8,536	29	5,068	17	16,253	54	21,321	71
	Pacific Islander	2,242	1,335	60	405	18	502	22	907	40
	Filipino	9,649	3,246	34	2,204	23	4,199	44	6,403	66
	Hispanic or Latino	213,222	138,463	65	39,404	18	35,355	17	74,759	35
	African American	27,850	18,523	67	4,972	18	4,355	16	9,327	33
	White (not of Hispanic origin)	90,891	28,337	31	21,199	23	41,355	45	62,554	69
	Two or More Races	15,441	7,647	50	2,855	18	4,939	32	7,794	50
	Unknown	1,497	1,112	74	238	16	147	10	385	26
Language Fluency	English-Only Students	200,948	87,710	44	43,365	22	69,873	35	113,238	56
	Initially Fluent English Proficient (IFEP)	31,572	10,892	34	7,124	23	13,556	43	20,680	66
	Reclassified Fluent English Proficient (RFEP)	76,868	32,333	42	21,829	28	22,706	30	44,535	58
	English-Learner Students	79,492	74,067	93	4,146	5	1,279	2	5,425	7
	Unknown	4,241	3,497	82	408	10	336	8	744	18
Economically Disadvantaged	No	136,081	44,631	33	30,339	22	61,111	45	91,450	67
	Yes	220,350	145,418	66	39,563	18	35,369	16	74,932	34
	Unknown	36,690	18,450	50	6,970	19	11,270	31	18,240	50
Special Education Program Participation	Receiving Services	37,926	34,368	91	2,348	6	1,210	3	3,558	9
	Not Receiving Services	355,195	174,131	49	74,524	21	106,540	30	181,064	51

¹ Results for groups with less than 11 students are not reported.

Table 8.F.8: ESEA Demographic Summary for All CAHSEE Examinees, Mathematics—March 2010

Subgroup	Group	N Tested¹	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		388,590	201,182	52	116,571	30	70,837	18	187,408	48
Grade	Tenth	341,649	156,937	46	114,446	33	70,266	21	184,712	54
	Eleventh	27,314	25,660	94	1,309	5	345	1	1,654	6
	Twelfth	15,352	14,719	96	486	3	147	1	633	4
	Adult Education	4,275	3,866	90	330	8	79	2	409	10
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	196,626	99,284	50	58,500	30	38,842	20	97,342	50
	Female	191,893	101,839	53	58,060	30	31,994	17	90,054	47
	Unknown	71	59	83	11	15	1	1	12	17
Race/Ethnicity	American Indian or Alaskan Native	2,486	1,378	55	766	31	342	14	1,108	45
	Asian	28,309	4,575	16	8,113	29	15,621	55	23,734	84
	Pacific Islander	2,178	1,180	54	685	31	313	14	998	46
	Filipino	9,408	2,865	30	3,706	39	2,837	30	6,543	70
	Hispanic or Latino	210,312	132,942	63	56,802	27	20,568	10	77,370	37
	African American	28,689	20,481	71	6,382	22	1,826	6	8,208	29
	White (not of Hispanic origin)	90,649	29,255	32	35,407	39	25,987	29	61,394	68
	Two or More Races	15,335	7,894	51	4,265	28	3,176	21	7,441	49
	Unknown	1,224	612	50	445	36	167	14	612	50
Language Fluency	English-Only Students	202,631	93,429	46	66,859	33	42,343	21	109,202	54
	Initially Fluent English Proficient (IFEP)	31,861	11,451	36	10,627	33	9,783	31	20,410	64
	Reclassified Fluent English Proficient (RFEP)	78,038	31,711	41	29,765	38	16,562	21	46,327	59
	English-Learner Students	71,603	60,640	85	8,913	12	2,050	3	10,963	15
	Unknown	4,457	3,951	89	407	9	99	2	506	11
Economically Disadvantaged	No	136,215	46,370	34	48,984	36	40,861	30	89,845	66
	Yes	215,495	135,661	63	57,171	27	22,663	11	79,834	37
	Unknown	36,880	19,151	52	10,416	28	7,313	20	17,729	48
Special Education	Receiving Services	33,889	30,142	89	2,951	9	796	2	3,747	11
Program Participation	Not Receiving Services	354,701	171,040	48	113,620	32	70,041	20	183,661	52

¹ Results for groups with less than 11 students are not reported.

Table 8.F.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—March 2010

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	288	309	348	376	403	446	450	376	40	393,121
Grade⁴										
Tenth	292	317	357	381	407	446	450	382	38	343,135
Eleventh	275	294	322	338	354	387	421	339	28	29,325
Twelfth	275	290	317	332	346	376	411	332	26	16,698
Adult Education	284	305	328	344	366	411	446	349	32	3,963
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	282	305	342	370	400	438	450	371	39	203,552
Female	294	317	354	381	411	450	450	382	39	189,503
Unknown	275	288	315	338	370	403	450	344	37	66
Race/Ethnicity										
American Indian or Alaska Native	284	307	348	378	403	438	450	375	39	2,472
Asian	296	324	373	407	432	450	450	400	40	29,857
Pacific Islander	288	313	348	370	396	438	450	372	37	2,242
Filipino	305	330	370	396	421	450	450	393	36	9,649
Hispanic or Latino	286	307	340	366	390	426	450	366	36	213,222
African American	280	301	338	363	390	426	450	363	37	27,850
White (not of Hispanic origin)	296	328	373	396	421	450	450	395	36	90,891
Two or More Races	282	305	348	381	411	450	450	379	43	15,441
Unknown	282	301	332	354	381	416	438	357	34	1,497
Language Fluency										
English-Only Students	288	315	359	387	411	450	450	384	39	200,948
Initially Fluent English Proficient (IFEP)	303	332	370	396	421	450	450	394	36	31,572
Reclassified Fluent English Proficient (RFEP)	320	342	366	384	407	438	450	387	29	76,868
English-Learner Students	278	296	322	340	357	384	407	340	27	79,492
Unknown	280	301	328	346	368	411	438	349	33	4,241
Economically Disadvantaged										
No	298	328	370	396	421	450	450	394	37	136,081
Yes	284	305	340	363	390	426	450	365	36	220,350
Unknown	282	307	348	378	407	450	450	378	42	36,690
Special Education Program Participation										
Students Receiving Services	275	288	311	332	354	393	426	335	32	37,926
Students Not Receiving Services	294	318	354	381	407	446	450	380	38	355,195

¹ Mean Scale Scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 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 2010

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	303	319	350	379	412	450	450	381	40	388,590
Grade⁴										
Tenth	305	323	358	384	416	450	450	386	39	341,649
Eleventh	295	308	327	340	354	386	429	342	25	27,314
Twelfth	292	305	323	336	349	375	420	338	23	15,352
Adult Education	303	312	330	343	358	399	442	347	26	4,275
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	300	317	349	379	412	450	450	381	41	196,626
Female	305	321	350	377	408	450	450	380	38	191,893
Unknown	275	300	319	341	367	399	435	346	32	71
Race/Ethnicity										
American Indian or Alaska Native	300	315	349	375	402	450	450	376	38	2,486
Asian	317	347	396	429	450	450	450	418	35	28,309
Pacific Islander	303	321	350	377	405	450	450	378	37	2,178
Filipino	315	336	373	402	429	450	450	399	36	9,408
Hispanic or Latino	303	315	343	367	394	442	450	370	36	210,312
African American	295	310	336	358	384	429	450	362	35	28,689
White (not of Hispanic origin)	310	332	371	399	429	450	450	397	37	90,649
Two or More Races	300	315	347	379	416	450	450	381	42	15,335
Unknown	308	323	356	380.5	405	450	450	381	35	1,224
Language Fluency										
English-Only Students	303	319	356	384	416	450	450	385	40	202,631
Initially Fluent English Proficient (IFEP)	310	330	367	396	429	450	450	397	39	31,861
Reclassified Fluent English Proficient (RFEP)	321	338	367	389	416	450	450	391	34	78,038
English-Learner Students	298	310	329	347	367	408	450	351	30	71,603
Unknown	298	310	330	343	361	402	442	348	28	4,457
Economically Disadvantaged										
No	310	330	369	399	429	450	450	397	38	136,215
Yes	300	315	341	367	396	442	450	370	37	215,495
Unknown	300	317	347	377	412	450	450	380	42	36,880
Special Education Program Participation										
Students Receiving Services	289	303	319	336	358	402	442	341	31	33,889
Students Not Receiving Services	308	323	354	382	412	450	450	384	39	354,701

¹ Mean Scale Scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 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 2010

Table 8.G.1: Frequency Distributions, ELA—May 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	194	0	194	99
440-449	256	1	450	99
430-439	170	0	620	98
420-429	434	1	1,054	97
410-419	719	2	1,773	96
400-409	819	2	2,592	94
390-399	881	2	3,473	91
380-389	1,445	4	4,918	88
370-379	1,841	5	6,759	83
360-369	3,214	8	9,973	76
350-359 ¹	4,464	11	14,437	65
340-349	5,224	13	19,661	52
330-339	6,093	15	25,754	37
320-329	4,216	10	29,970	26
310-319	3,734	9	33,704	17
300-309	3,274	8	36,978	9
290-299	2,085	5	39,063	4
280-289	973	2	40,036	2
275-279	733	2	40,769	0

¹ Passing Score = 350

Table 8.G.2: Frequency Distributions, Mathematics—May 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	201	1	201	99
440-449	106	0	307	99
430-439	215	1	522	99
420-429	240	1	762	98
410-419	303	1	1,065	97
400-409	533	1	1,598	96
390-399	820	2	2,418	94
380-389	964	2	3,382	91
370-379	1,616	4	4,998	87
360-369	2,436	6	7,434	81
350-359 ¹	5,094	13	12,528	68
340-349	5,774	15	18,302	53
330-339	7,591	19	25,893	34
320-329	5,414	14	31,307	20
310-319	4,456	11	35,763	8
300-309	2,110	5	37,873	3
290-299	768	2	38,641	1
280-289	146	0	38,787	0
275-279	152	0	38,939	0

¹ Passing Score = 350

Table 8.G.3: Frequency Distributions, ELA for ESEA—May 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	194	0	194	99
440-449	256	1	450	99
430-439	170	0	620	98
420-429	434	1	1,054	97
410-419	719	2	1,773	96
403-409 ¹	540	1	2,313	94
390-402	1,160	3	3,473	91
380-389 ²	1,445	4	4,918	88
370-379	1,841	5	6,759	83
360-369	3,214	8	9,973	76
350-359	4,464	11	14,437	65
340-349	5,224	13	19,661	52
330-339	6,093	15	25,754	37
320-329	4,216	10	29,970	26
310-319	3,734	9	33,704	17
300-309	3,274	8	36,978	9
290-299	2,085	5	39,063	4
280-289	973	2	40,036	2
275-279	733	2	40,769	0

¹ Advanced-Level Cut = 403

² Proficient-Level Cut = 380

Table 8.G.4: Frequency Distributions, Mathematics for ESEA—May 2010

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	201	1	201	99
440-449	106	0	307	99
430-439	215	1	522	99
422-429 ¹	131	0	653	98
410-421	412	1	1,065	97
400-409	533	1	1,598	96
390-399	820	2	2,418	94
380-389 ²	964	2	3,382	91
370-379	1,616	4	4,998	87
360-369	2,436	6	7,434	81
350-359	5,094	13	12,528	68
340-349	5,774	15	18,302	53
330-339	7,591	19	25,893	34
320-329	5,414	14	31,307	20
310-319	4,456	11	35,763	8
300-309	2,110	5	37,873	3
290-299	768	2	38,641	1
280-289	146	0	38,787	0
275-279	152	0	38,939	0

¹ Advanced-Level Cut = 422

² Proficient-Level Cut = 380

Table 8.G.5: Demographic Summary for All Examinees, ELA—May 2010

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ²			Writing ²		Writing Applications
							Avg. Percent Correct			Avg. Percent Correct		Mean Score
							RW	RC	RL	WS	WC	
Total Examinees	40,769	14,437	35	26,332	65	341	62	51	57	44	55	2.1
Grade												
Tenth	9,618	5,514	57	4,104	43	358	69	61	66	53	63	2.3
Eleventh	14,247	4,732	33	9,515	67	338	61	50	56	42	55	2.1
Twelfth	14,196	2,976	21	11,220	79	331	56	46	51	38	50	2.0
Adult Education	2,708	1,215	45	1,493	55	350	68	59	62	51	60	2.2
Unknown												
Gender												
Male	23,640	7,732	33	15,908	67	338	61	50	55	42	53	2.0
Female	17,089	6,691	39	10,398	61	346	63	54	60	47	59	2.2
Unknown	40	14	35	26	65	335	62	48	53	41	51	2.0
Race/Ethnicity												
American Indian or Alaska Native	259	104	40	155	60	341	63	51	57	44	53	2.1
Asian	1,479	492	33	987	67	343	60	52	55	47	60	2.1
Pacific Islander	213	85	40	128	60	343	64	51	58	43	58	2.2
Filipino	452	194	43	258	57	349	66	56	60	48	62	2.3
Hispanic or Latino	25,648	7,939	31	17,709	69	337	60	49	55	42	54	2.1
African American	3,273	1,001	31	2,272	69	335	60	48	54	40	50	2
White (not of Hispanic origin)	5,411	2,814	52	2,597	48	355	69	60	64	52	62	2.3
Two or More Races	3,889	1,786	46	2,103	54	349	66	56	61	49	58	2.2
Unknown	145	22	15	123	85	330	53	44	46	42	56	2.0
Language Fluency												
English-Only Students	17,519	7,579	43	9,940	57	347	65	54	60	46	57	2.2
Initially Fluent English Proficient (IFEP)	1,522	713	47	809	53	350	65	56	62	48	61	2.3
Reclassified Fluent English Proficient (RFEP)	2,361	1,412	60	949	40	357	69	61	67	53	66	2.3
English-Learner Students	16,600	3,499	21	13,101	79	331	56	45	51	38	51	2.0
Unknown	2,767	1,234	45	1,533	55	349	67	58	62	50	59	2.2
Economically Disadvantaged												
No	8,498	4,277	50	4,221	50	355	68	59	64	51	62	2.3
Yes	26,217	7,671	29	18,546	71	336	59	48	54	41	53	2.0
Unknown	6,054	2,489	41	3,565	59	345	64	55	59	47	57	2.1
Special Education Program Participation												
Students Receiving Services	8,047	1,186	15	6,861	85	321	51	39	45	33	44	1.8
Students Not Receiving Services	32,722	13,251	40	19,471	60	346	64	54	60	47	58	2.2

¹ Results for groups with less than 11 students are not reported.

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

Table 8.G.6: Demographic Summary for All Examinees, Mathematics—May 2010

	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	38,939	12,528	32	26,411	68	341	54	52	50	44	37
Grade											
Tenth	8,921	4,789	54	4,132	46	356	61	61	58	53	46
Eleventh	13,164	3,861	29	9,303	71	339	52	51	48	42	36
Twelfth	13,813	2,867	21	10,946	79	334	50	48	45	39	33
Adult Education	3,041	1,011	33	2,030	67	343	58	52	52	46	35
Unknown											
Gender											
Male	19,506	6,242	32	13,264	68	341	52	53	48	44	36
Female	19,377	6,271	32	13,106	68	342	55	52	51	44	39
Unknown	56	15	27	41	73	339	55	51	47	42	33
Race/Ethnicity											
American Indian or Alaska Native	256	85	33	171	67	342	55	53	49	45	38
Asian	778	392	50	386	50	360	58	62	60	53	51
Pacific Islander	199	68	34	131	66	341	53	53	52	42	37
Filipino	365	166	45	199	55	351	58	56	58	48	44
Hispanic or Latino	23,955	6,726	28	17,229	72	338	52	50	48	42	35
African American	3,878	942	24	2,936	76	335	51	50	46	38	35
White (not of Hispanic origin)	5,281	2,517	48	2,764	52	353	60	59	56	51	44
Two or More Races	4,185	1,612	39	2,573	61	346	57	55	52	47	39
Unknown	42	20	48	22	52	345	51	55	58	40	44
Language Fluency											
English-Only Students	19,189	6,944	36	12,245	64	344	56	54	51	45	38
Initially Fluent English Proficient (IFEP)	1,695	677	40	1,018	60	348	58	56	53	48	40
Reclassified Fluent English Proficient (RFEP)	2,823	1,264	45	1,559	55	350	60	57	56	49	42
English-Learner Students	12,187	2,572	21	9,615	79	334	47	48	45	40	35
Unknown	3,045	1,071	35	1,974	65	344	57	52	52	46	36
Economically Disadvantaged											
No	8,854	3,847	43	5,007	57	351	59	58	55	49	42
Yes	23,695	6,460	27	17,235	73	338	51	50	47	42	36
Unknown	6,390	2,221	35	4,169	65	343	56	53	51	45	37
Special Education Program Participation											
Students Receiving Services	6,682	810	12	5,872	88	325	42	43	38	33	30
Students Not Receiving Services	32,257	11,718	36	20,539	64	345	56	54	52	46	39

¹ Results for groups with less 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 CAHSEE Examinees, ELA—May 2010

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		40,769	35,851	88	2,605	6	2,313	6	4,918	12
Grade	Tenth	9,618	6,617	69	1,438	15	1,563	16	3,001	31
	Eleventh	14,247	13,194	93	635	4	418	3	1,053	7
	Twelfth	14,196	13,727	97	306	2	163	1	469	3
	Adult Education	2,708	2,313	85	226	8	169	6	395	15
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	23,640	21,185	90	1,403	6	1,052	4	2,455	10
	Female	17,089	14,633	86	1,197	7	1,259	7	2,456	14
	Unknown	40	33	83	5	13	2	5	7	18
Race/Ethnicity	American Indian or Alaskan Native	259	215	83	26	10	18	7	44	17
	Asian	1,479	1,296	88	67	5	116	8	183	12
	Pacific Islander	213	186	87	15	7	12	6	27	13
	Filipino	452	386	85	34	8	32	7	66	15
	Hispanic or Latino	25,648	23,695	92	1,222	5	731	3	1,953	8
	African American	3,273	2,982	91	183	6	108	3	291	9
	White (not of Hispanic origin)	5,411	3,918	72	622	11	871	16	1,493	28
	Two or More Races	3,889	3,032	78	433	11	424	11	857	22
	Unknown	145	141	97	3	2	1	1	4	3
Language Fluency	English-Only Students	17,519	14,139	81	1,657	9	1,723	10	3,380	19
	Initially Fluent English Proficient (IFEP)	1,522	1,233	81	142	9	147	10	289	19
	Reclassified Fluent English Proficient (RFEP)	2,361	1,839	78	329	14	193	8	522	22
	English-Learner Students	16,600	16,316	98	238	1	46	0	284	2
	Unknown	2,767	2,324	84	239	9	204	7	443	16
Economically Disadvantaged	No	8,498	6,300	74	952	11	1,246	15	2,198	26
	Yes	26,217	24,453	93	1,162	4	602	2	1,764	7
	Unknown	6,054	5,098	84	491	8	465	8	956	16
Special Education Program Participation	Receiving Services	8,047	7,854	98	142	2	51	1	193	2
	Not Receiving Services	32,722	27,997	86	2,463	8	2,262	7	4,725	14

¹ Results for groups with less than 11 students are not reported.

Table 8.G.8: ESEA Demographic Summary for All CAHSEE Examinees, Mathematics— May 2010

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		38,939	35,557	91	2,729	7	653	2	3,382	9
Grade	Tenth	8,921	6,729	75	1,700	19	492	6	2,192	25
	Eleventh	13,164	12,504	95	552	4	108	1	660	5
	Twelfth	13,813	13,487	98	289	2	37	0	326	2
	Adult Education	3,041	2,837	93	188	6	16	1	204	7
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	19,506	17,665	91	1,474	8	367	2	1,841	9
	Female	19,377	17,840	92	1,253	6	284	1	1,537	8
	Unknown	56	52	93	2	4	2	4	4	7
Race/Ethnicity	American Indian or Alaskan	256	227	89	24	9	5	2	29	11
	Asian	778	565	73	130	17	83	11	213	27
	Pacific Islander	199	186	93	11	6	2	1	13	7
	Filipino	365	308	84	40	11	17	5	57	16
	Hispanic or Latino	23,955	22,707	95	1,121	5	127	1	1,248	5
	African American	3,878	3,704	96	152	4	22	1	174	4
	White (not of Hispanic origin)	5,281	4,210	80	780	15	291	6	1,071	20
	Two or More Races	4,185	3,613	86	466	11	106	3	572	14
Unknown	42	37	88	5	12	-	-	5	12	
Language Fluency	English-Only Students	19,189	16,929	88	1,767	9	493	3	2,260	12
	Initially Fluent English Proficient (IFEP)	1,695	1,490	88	154	9	51	3	205	12
	Reclassified Fluent English Proficient (RFEP)	2,823	2,461	87	311	11	51	2	362	13
	English-Learner Students	12,187	11,869	97	283	2	35	0	318	3
	Unknown	3,045	2,808	92	214	7	23	1	237	8
Economically Disadvantaged	No	8,854	7,302	82	1,134	13	418	5	1,552	18
	Yes	23,695	22,460	95	1,094	5	141	1	1,235	5
	Unknown	6,390	5,795	91	501	8	94	1	595	9
Special Education Program	Receiving Services	6,682	6,541	98	125	2	16	0	141	2
	Not Receiving Services	32,257	29,016	90	2,604	8	637	2	3,241	10

¹ Results for groups with less than 11 students are not reported.

Table 8.G.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—May 2010

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	275	293	318	339	358	407	441	341	33	40,769
Grade⁴										
Tenth	275	293	324	358	388	429	450	358	42	9,618
Eleventh	275	293	318	339	356	388	424	338	29	14,247
Twelfth	275	291	313	331	346	371	407	331	26	14,196
Adult Education	289	307	331	346	364	407	434	350	29	2,708
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	289	315	335	356	400	434	338	33	23,640
Female	281	299	324	343	362	415	448	346	33	17,089
Unknown	277	288	301	320	366	402	424	335	39	40
Race/Ethnicity										
American Indian or Alaska Native	275	289	311	339	364	407	441	341	37	259
Asian	277	297	320	339	356	419	450	343	35	1,479
Pacific Islander	275	293	322	343	360	403	424	343	32	213
Filipino	291	309	330	345	363	411	441	349	31	452
Hispanic or Latino	275	293	318	337	354	388	419	337	29	25,648
African American	275	285	311	333	354	394	429	335	33	3,273
White (not of Hispanic origin)	275	293	324	352	383	434	450	355	42	5,411
Two or More Races	275	291	318	345	376	424	448	349	39	3,889
Unknown	275	293	316	331	345	367	400	330	24	145
Language Fluency										
English-Only Students	275	289	318	343	369	419	448	347	39	17,519
Initially Fluent English Proficient (IFEP)	275	295	324	346	371	419	450	350	36	1,522
Reclassified Fluent English Proficient (RFEP)	279	303	337	356	378	411	434	357	32	2,361
English-Learner Students	275	293	315	331	346	367	385	331	23	16,600
Unknown	281	303	330	346	367	411	434	349	31	2,767
Economically Disadvantaged										
No	277	295	326	350	380	429	450	355	40	8,498
Yes	275	291	315	335	352	385	415	336	29	26,217
Unknown	275	293	322	343	364	415	441	345	35	6,054
Special Education Program Participation										
Students Receiving Services	275	283	303	318	339	367	391	321	26	8,047
Students Not Receiving Services	277	297	324	343	362	411	441	346	33	32,722

¹ Mean Scale Scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 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 2010

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	290	303	324	339	353	396	438	341	28	38,939
Grade⁴										
Tenth	290	303	328	353	378	426	450	356	37	8,921
Eleventh	290	303	324	337	351	381	416	339	24	13,164
Twelfth	290	303	320	334	346	366	399	334	21	13,813
Adult Education	298	312	330	341	353	385	416	343	22	3,041
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	287	303	320	337	355	399	438	341	29	19,506
Female	296	308	326	339	353	393	431	342	26	19,377
Unknown	280	306	318	335	351	402	438	339	30	56
Race/Ethnicity										
American Indian or Alaska Native	284	301	324	340	355	402	438	342	29	256
Asian	293	310	332	350	385	450	450	360	41	778
Pacific Islander	277	303	326	339	353	383	426	341	25	199
Filipino	301	312	330	348	364	416	450	351	31	365
Hispanic or Latino	293	303	322	337	351	381	412	338	24	23,955
African American	284	303	318	334	348	376	408	335	24	3,878
White (not of Hispanic origin)	293	306	328	348	372	426	450	353	35	5,281
Two or More Races	287	306	324	341	360	408	446	346	31	4,185
Unknown	287	301	324	343.5	366	385	388	345	26	42
Language Fluency										
English-Only Students	290	303	324	339	359	405	446	344	31	19,189
Initially Fluent English Proficient (IFEP)	298	310	330	343	359	405	450	348	29	1,695
Reclassified Fluent English Proficient (RFEP)	298	312	334	346	362	402	438	350	27	2,823
English-Learner Students	290	303	320	334	346	368	399	334	21	12,187
Unknown	296	310	328	341	355	390	421	344	24	3,045
Economically Disadvantaged										
No	293	308	328	344	366	421	450	351	34	8,854
Yes	290	303	322	335	350	381	412	338	24	23,695
Unknown	287	306	326	339	357	396	431	343	27	6,390
Special Education Program Participation										
Students Receiving Services	280	296	310	322	337	362	396	325	22	6,682
Students Not Receiving Services	296	308	328	341	357	399	438	345	27	32,257

¹ Mean Scale Scores are reported at each percentile.

² SD — Standard Deviation

³ Results for groups with less than 11 students are not reported.

⁴ Grade 10 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 that 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, and to help 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 their products. ETS established an Office of Quality Assurance that 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 that 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 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 copy editing 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 the 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 will read 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 that 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 very important. 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 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 SGIDs 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.” Early return answer documents, numbering 300 to 500, are scanned and a quality control (QC) 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 could not 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 CAHSEE district 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 scan 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 of the batches 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 assures that the scored record matches the physical answer document.

Scoring and Reporting Specifications

ETS develops standardized scoring procedures and specifications to assure 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 multiple-choice 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 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 ones 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. CDE also performs a replication of the equating results. 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 are 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

The Human Resources Research Organization (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 it 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 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: 2007–08, 2008–09, and 2009–10. The indicators of examinee performance include the mean and standard deviation of scale scores, the percentage of examinees classified into the passing-, proficient-, and advanced-performance levels, and the observed score distributions. Test characteristics are compared by looking at the mean proportion correct, mean IRT b -value, mean point-biserial correlation, and the overall score reliability and SEM for each CAHSEE operational test form.

Examinee Performance

Given in Table 10.A.1 for the ELA and mathematics tests are the number of examinees assessed and the means and standard deviations of examinees' scale scores in 2007–08, 2008–09, and 2009–10.

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 percentage 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. 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 proportion correct values and the mean equated IRT b -values^{11, 12} for the items on the ELA and mathematics tests. The mean proportion correct is affected both by the difficulty of the items and the abilities of the students taking them. The mean equated IRT b -values 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 standard errors of measurement expressed in raw score units appear in Table 10.B.4 for both content areas across administrations and years. Like the average proportion correct, point-biserial correlations and reliabilities are affected by both item characteristics and student characteristics.

¹¹ These statistics are based on the equating samples.

¹² Comparisons of mean b -values should only be made within a given subject test (e.g. ELA or mathematics).

Appendix 10.A—Historical Comparisons on Student Performance

Table 10.A.1: Number of Examinees Tested, Scale Score Means, and Standard Deviations of CAHSEE across 2007–08, 2008–09, and 2009–10

Subject	Admin	Number of Students (with valid scores)			Scale Score Mean and Standard Deviation (SD)					
					2007–08		2008–09		2009–10	
		2007–08	2008–09	2009–10	Mean	SD	Mean	SD	Mean	SD
English– Language Arts	July	12,959	13,373	12,912	338	25	337	26	335	25
	October	44,351	43,955	41,570	342	31	342	29	340	31
	November	116,439	108,722	107,342	342	30	343	33	343	30
	December	3,631	3,544	2,754	341	28	338	29	338	28
	February	195,737	195,091	171,323	371	41	371	41	372	41
	March	374,545	372,707	393,121	372	39	374	39	376	40
	May	47,136	42,781	40,769	341	33	340	33	341	33
Mathematics	July	12,413	13,237	12,388	342	22	340	22	343	21
	October	44,121	44,958	40,423	341	26	343	26	344	26
	November	117,242	109,445	103,221	345	27	345	27	348	27
	December	3,832	3,544	2,556	342	23	345	22	342	21
	February	196,937	196,387	168,363	372	40	373	40	373	40
	March	374,364	371,704	388,590	377	40	378	39	381	40
	May	47,084	42,546	38,939	341	28	342	28	341	28

Table 10.A.2: Percentage of Students Passing Each Content Area across 2007–08, 2008–09, and 2009–10

Admin	Percent Passing					
	English–Language Arts			Mathematics		
	2007–08	2008–09	2009–10	2007–08	2008–09	2009–10
July	30	30	24	31	29	33
October	39	37	34	30	33	34
November	40	40	39	39	38	42
December	35	30	30	31	36	30
February	67	67	69	67	67	67
March	72	73	74	71	74	75
May	36	33	35	32	31	32

Table 10.A.3: Percentage of Below Proficient, Proficient, and Advanced across 2007–08, 2008–09, and 2009–10

Subject	Admin	Below Proficient			Proficient			Advanced		
		2007–08	2008–09	2009–10	2007–08	2008–09	2009–10	2007–08	2008–09	2009–10
English– Language Arts	July	95	95	95	3	3	3	2	2	2
	October	90	91	91	6	5	5	4	4	4
	November	90	88	91	6	7	6	3	5	3
	December	92	93	92	8	4	5	3	3	3
	February	59	58	56	17	17	20	24	25	24
	March	54	55	53	23	22	20	23	23	27
	May	88	89	88	7	6	6	5	5	6
Mathematics	July	96	96	96	4	4	3	1	1	1
	October	93	93	92	5	5	6	1	2	2
	November	92	91	90	8	7	7	2	2	3
	December	94	94	95	6	5	4	1	1	1
	February	60	59	58	27	26	28	14	15	14
	March	56	53	52	28	30	30	17	17	18
	May	91	90	91	7	8	7	2	2	2

Table 10.A.4: Scale Score Distributions across 2007, 2008, and 2009 for ELA (July to December)

Scale Score Distribution	July			October			November			December		
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
450	12	15	15	176	161	237	323	637	327	6	8	12
440 – 449	18	10	20	94	180	229	427	695	186	8	9	3
430 – 439	34	35	12	205	109	122	319	440	526	13	18	16
420 – 429	40	47	35	284	300	320	683	1,002	649	19	20	14
410 – 419	62	52	53	372	571	537	1,460	1,954	1,370	27	26	15
400 – 409	99	96	102	673	420	380	1,215	1,577	1,100	53	32	28
390 – 399	135	198	134	830	1,070	744	2,278	2,744	2,722	66	55	48
380 – 389	231	214	228	1,703	1,048	1,312	4,601	3,614	2,867	110	90	75
370 – 379	409	470	383	2,601	2,776	1,999	7,458	6,817	7,312	171	158	100
360 – 369	1,006	1,055	631	3,985	3,632	3,043	10,955	9,430	9,475	255	241	167
350 – 359	1,800	1,761	1,482	6,270	6,102	5,398	17,204	14,656	15,412	554	416	361
340 – 349	2,281	2,218	2,164	6,601	6,733	6,092	17,510	15,210	16,627	609	552	403
330 – 339	2,157	2,241	2,298	5,707	6,096	5,839	14,625	13,541	14,403	582	559	467
320 – 329	1,912	1,769	1,935	4,576	5,684	4,923	11,140	10,920	11,190	446	482	364
310 – 319	1,114	1,344	1,612	3,424	3,447	3,975	10,016	8,496	9,893	326	336	279
300 – 309	832	1,074	904	3,197	2,866	3,403	6,389	6,813	6,120	175	247	219
290 – 299	458	451	519	1,844	1,660	1,577	5,640	5,682	4,024	119	164	99
280 – 289	225	169	226	1,031	699	863	2,170	2,583	1,702	55	78	51
275 – 279	134	154	159	778	401	577	2,026	1,911	1,437	37	53	33

Table 10.A.5: Scale Score Distributions across 2008, 2009, and 2010 for ELA (February to May)

Scale Score Distribution	February			March			May		
	2008	2009	2010	2008	2009	2010	2008	2009	2010
450	7,536	7,532	6,750	9,728	13,087	16,863	265	254	194
440 – 449	3,238	3,505	2,735	4,810	5,998	7,069	120	117	256
430 – 439	7,414	8,335	6,873	13,298	15,260	17,570	340	306	170
420 – 429	8,765	9,677	7,819	16,886	9,057	20,527	408	424	434
410 – 419	9,805	10,095	8,523	19,469	29,937	22,493	499	545	719
400 – 409	15,317	15,349	13,006	31,946	21,199	34,700	899	911	819
390 – 399	14,917	14,517	12,874	32,953	31,916	33,524	1,101	1,014	881
380 – 389	14,107	13,347	16,087	42,264	40,500	31,876	1,833	1,240	1,445
370 – 379	17,368	15,879	14,445	28,261	36,498	37,678	2,326	1,957	1,841
360 – 369	15,512	17,951	13,545	40,840	32,263	33,007	3,448	3,503	3,214
350 – 359	18,120	13,654	16,190	27,846	34,885	35,279	5,779	3,778	4,464
340 – 349	16,883	16,214	14,355	28,792	29,126	29,868	6,873	5,721	5,224
330 – 339	13,774	14,670	11,657	22,273	23,128	23,624	6,303	6,965	6,093
320 – 329	10,599	11,753	8,858	17,030	16,789	17,163	5,083	4,889	4,216
310 – 319	9,130	10,438	6,798	15,163	14,345	12,151	3,930	3,985	3,734
300 – 309	5,296	5,830	4,899	9,672	8,379	8,616	3,527	3,008	3,274
290 – 299	3,756	3,444	3,197	6,936	5,609	6,563	2,068	2,169	2,085
280 – 289	2,370	1,673	1,662	3,816	2,813	2,675	1,309	1,161	973
275 – 279	1,830	1,228	1,050	2,562	1,918	1,875	1,025	834	733

Table 10.A.6: Scale Score Distributions across 2007, 2008, and 2009 for Mathematics (July to December)

Scale Score Distribution	July			October			November			December		
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
450	21	28	31	195	231	218	731	680	940	12	14	6
440 – 449	22	14	6	101	166	95	275	319	349	7	5	1
430 – 439	9	22	14	196	95	239	643	681	750	14	13	5
420 – 429	35	31	24	230	240	228	720	807	778	15	8	11
410 – 419	38	46	63	306	391	382	792	1,285	1,217	18	17	18
400 – 409	78	81	74	415	454	470	1,282	1,392	1,331	39	42	14
390 – 399	130	121	127	722	477	534	2,169	2,111	2,129	34	41	24
380 – 389	191	216	182	834	1,133	1,101	2,913	2,832	2,765	85	61	57
370 – 379	443	443	448	1,734	1,503	1,902	6,037	5,416	5,552	117	129	61
360 – 369	1,130	834	1,195	3,202	4,284	3,251	10,830	9,208	9,859	324	379	205
350 – 359	1,791	1,978	1,909	5,121	5,973	5,398	19,619	16,540	17,607	507	550	368
340 – 349	2,751	2,746	2,972	8,233	9,158	8,202	18,488	16,689	19,955	832	831	565
330 – 339	2,171	2,366	2,184	7,293	7,384	6,700	19,986	20,525	15,201	693	675	515
320 – 329	1,748	1,999	1,712	7,686	6,136	6,291	14,009	14,690	11,989	555	458	448
310 – 319	1,244	1,419	1,047	4,871	4,544	2,930	11,030	10,617	8,456	397	242	143
300 – 309	458	614	297	2,122	1,921	1,743	5,441	4,208	3,080	140	62	95
290 – 299	112	225	65	544	589	562	1,786	965	891	25	11	13
280 – 289	15	32	15	218	159	99	293	282	129	12	5	4
275 – 279	26	22	23	98	120	78	198	198	243	6	1	3

Table 10.A.7: Scale Score Distributions across 2008, 2009, and 2010 for Mathematics (February to May)

Scale Score Distribution	February			March			May		
	2008	2009	2010	2008	2009	2010	2008	2009	2010
450	8,381	9,981	9,423	23,201	25,088	33,829	272	292	201
440 – 449	6,965	3,833	3,390	16,158	15,389	9,242	122	142	106
430 – 439	3,875	8,066	7,176	8,118	7,868	9,432	302	308	215
420 – 429	7,545	7,961	7,007	15,531	15,392	27,208	356	294	240
410 – 419	11,715	11,820	7,140	23,050	24,046	17,686	376	392	303
400 – 409	11,732	11,493	10,308	22,720	24,184	25,766	706	594	533
390 – 399	15,053	10,994	10,034	29,423	24,349	32,878	981	975	820
380 – 389	13,911	17,347	15,728	28,270	38,479	31,367	1,214	1,096	964
370 – 379	16,140	13,280	11,891	33,195	28,657	36,091	1,915	1,745	1,616
360 – 369	15,719	19,254	14,075	31,468	39,875	39,142	2,830	2,488	2,436
350 – 359	20,035	16,980	16,876	36,497	31,088	29,700	5,802	4,907	5,094
340 – 349	16,896	21,278	17,137	29,274	33,834	32,305	6,677	7,358	5,774
330 – 339	18,870	16,246	12,968	30,496	23,294	22,761	8,620	7,070	7,591
320 – 329	13,462	13,318	11,034	20,984	18,599	18,806	6,743	6,705	5,414
310 – 319	10,660	9,284	8,442	13,486	13,416	14,291	5,814	5,129	4,456
300 – 309	4,243	3,716	3,872	9,737	5,714	5,879	2,860	2,371	2,110
290 – 299	1,107	1,155	1,369	1,930	1,834	1,458	1,024	425	768
280 – 289	343	186	297	553	324	434	236	127	146
275 – 279	285	195	196	273	274	315	234	128	152

Appendix 10.B—Historical Comparisons on Test Characteristics

Table 10.B.1: Average Proportion Correct of Operational Test Items across 2007–08, 2008–09, and 2009–10

Subject	Admin	Average <i>p</i> -value		
		2007–08	2008–09	2009–10
English– Language Arts	July	0.53	0.53	0.53
	October	0.58	0.56	0.56
	November	0.59	0.59	0.56
	December	0.56	0.56	0.57
	February	0.72	0.71	0.71
	March	0.72	0.73	0.74
	May	0.56	0.56	0.53
Mathematics	July	0.46	0.46	0.45
	October	0.47	0.48	0.48
	November	0.49	0.48	0.50
	December	0.46	0.47	0.48
	February	0.63	0.64	0.65
	March	0.65	0.67	0.67
	May	0.47	0.47	0.47

Table 10.B.2: Average IRT *b*-values of Operational Test Items across 2007–08, 2008–09, and 2009–10

Subject	Admin	Average IRT <i>b</i> -value		
		2007–08	2008–09	2009–10
English– Language Arts	July	0.02	-0.01	-0.09
	October	-0.12	-0.05	-0.10
	November	-0.16	-0.19	-0.03
	December	-0.06	-0.18	-0.17
	February	-0.17	-0.08	-0.06
	March	-0.10	-0.09	-0.12
	May	-0.08	-0.12	0.05
Mathematics	July	-0.17	-0.23	-0.10
	October	-0.26	-0.23	-0.21
	November	-0.23	-0.19	-0.17
	December	-0.16	-0.11	-0.27
	February	-0.18	-0.22	-0.28
	March	-0.18	-0.22	-0.16
	May	-0.24	-0.23	-0.24

Table 10.B.3 Average Point-Biserial Correlation of Operational Test Items across 2007–08, 2008–09, and 2009–10

Subject	Admin	Average Point-Biserial Correlation		
		2007–08	2008–09	2009–10
English– Language Arts	July	0.32	0.32	0.31
	October	0.37	0.35	0.36
	November	0.36	0.38	0.36
	December	0.33	0.35	0.34
	February	0.46	0.45	0.45
	March	0.43	0.42	0.43
	May	0.38	0.38	0.39
Mathematics	July	0.28	0.29	0.28
	October	0.32	0.32	0.33
	November	0.34	0.34	0.34
	December	0.30	0.28	0.28
	February	0.46	0.46	0.46
	March	0.47	0.46	0.46
	May	0.35	0.35	0.34

Table 10.B.4 Reliabilities and Standard Errors of Measurement (SEM) of Operational Test Forms across 2007–08, 2008–09, and 2009–10

Subject	Admin	Reliability			SEM		
		2007–08	2008–09	2009–10	2007–08	2008–09	2009–10
English– Language Arts	July	0.87	0.87	0.87	4.48	4.40	4.38
	October	0.90	0.89	0.91	4.41	4.63	4.35
	November	0.90	0.87	0.90	4.43	4.40	4.38
	December	0.88	0.89	0.89	4.27	4.33	4.42
	February	0.94	0.94	0.92	4.08	3.99	4.38
	March	0.93	0.93	0.93	3.98	3.98	3.91
	May	0.91	0.91	0.92	4.42	4.38	4.49
Mathematics	July	0.86	0.87	0.85	4.13	4.12	4.11
	October	0.89	0.89	0.89	4.09	4.04	4.07
	November	0.90	0.87	0.90	4.07	4.12	4.08
	December	0.87	0.85	0.85	4.07	4.13	4.15
	February	0.95	0.95	0.95	3.75	3.71	3.68
	March	0.95	0.95	0.95	3.67	3.63	3.61
	May	0.91	0.91	0.91	4.07	4.08	4.06

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