

California High School Exit Examination

Technical Report

July 2013–May 2014 Administrations

Prepared by

Educational Testing Service

for

The California Department of Education

October 2014



Table of Contents

EXECUTIVE SUMMARY	1
CHAPTER 1: INTRODUCTION	9
Background	9
<i>Test Purpose</i>	9
<i>Content</i>	9
<i>Target Population</i>	10
<i>Intended Use and Purpose of Test Scores</i>	10
<i>Schedule of Administrations and Participation Rules</i>	10
<i>Significant Developments in the 2013–14 School Year</i>	11
<i>Limitations of the Assessment</i>	12
<i>Groups and Organizations</i>	12
Overview of the Technical Report	13
CHAPTER 2: TEST SPECIFICATIONS	15
Item Development	15
<i>Item Formats</i>	15
<i>Model for Generating Item Statistics</i>	15
<i>Item Banking</i>	16
<i>Item Refresh Rate and Released Test Questions</i>	17
Test Assembly	17
<i>Test Blueprint</i>	17
<i>Test Length</i>	17
<i>Number of Test Forms</i>	18
<i>Content and Process Categories</i>	18
<i>Content Rules and Item Selection</i>	18
<i>Psychometric Criteria</i>	18
<i>Item Arrangement</i>	19
Test Administration	19
<i>Test Security and Confidentiality</i>	19
<i>Procedures to Maintain Standardization</i>	19
<i>Demographic Distributions</i>	20
Test Variations, Accommodations, and Modifications	21
Scores	25
<i>Weighting of Scores</i>	25
<i>Aggregation Procedures</i>	26
<i>Individual Scores</i>	26
<i>Group Scores</i>	26
Equating	27
Appendix 2.A: Results of Testing Variations and Disability Analyses—July 2013	28
Appendix 2.B: Results of Testing Variations and Disability Analyses—October 2013	38
Appendix 2.C: Results of Testing Variations and Disability Analyses—November 2013	51
Appendix 2.D: Results of Testing Variations and Disability Analyses—December 2013	66
Appendix 2.E: Results of Testing Variations and Disability Analyses—February 2014	74
Appendix 2.F: Results of Testing Variations and Disability Analyses—March 2014	88
Appendix 2.G: Results of Testing Variations and Disability Analyses—May 2014	104
CHAPTER 3: ITEM DEVELOPMENT	117
1.0 Item Specifications	117
2.0 Prepare Item Development Plan	119
3.0 Train Item Writers	119
4.0 Order Items Based on Needs Assessment	119
5.0 Internal Item Reviews (Educational Testing Service)	120
<i>Purpose</i>	120
<i>Internal Content Review</i>	120
<i>Internal Bias and Sensitivity Review</i>	121
<i>Internal Editorial Review</i>	122
6.0 External Item Reviews (California Educators and California Department of Education)	122
<i>Purpose</i>	122
<i>Statewide Pupil Assessment Review</i>	122

7.0 Item Banking.....	122
8.0 Create Field-Test Sets.....	123
<i>Stand-Alone Field Testing</i>	123
<i>Embedded Field-Test Items</i>	124
9.0 Field-Test Items.....	124
10.0 Create Operational Forms with California Department of Education Review.....	124
11.0 Administer Operational Test.....	124
CHAPTER 4: TEST DEVELOPMENT.....	125
Test Length.....	125
Rules for Item Selection.....	125
<i>Test Blueprint</i>	125
<i>Content Rules and Item Selection</i>	126
<i>Psychometric Criteria</i>	126
<i>Rules for Item Sequence and Layout</i>	131
CHAPTER 5: TEST ADMINISTRATION.....	132
Test Security and Confidentiality.....	132
<i>Educational Testing Service Office of Testing Integrity</i>	132
<i>Test Development</i>	132
<i>Item Review</i>	133
<i>Item Bank</i>	133
<i>Transfer of Forms and Items to the California Department of Education</i>	134
<i>Printing</i>	134
<i>Test Administration</i>	134
<i>Test Delivery</i>	135
<i>Processing Security</i>	136
<i>Data Management</i>	136
<i>Transfer of Files via Secure Data Exchange</i>	136
<i>Scoring and Analysis</i>	137
<i>Reporting and Posting Results</i>	137
<i>Student Confidentiality</i>	137
<i>Data Security</i>	138
Procedures to Maintain Standardization.....	138
<i>Test Administrators</i>	139
<i>CAHSEE Directions for Administration</i>	139
<i>CAHSEE Local Educational Agency and Test Site Coordinator Manual</i>	140
<i>CAHSEE Online</i>	140
<i>Test Booklets</i>	140
Students with Disabilities.....	140
<i>Identification of Students with Test Variations, Accommodations, or Modifications</i>	141
<i>Scoring</i>	141
Demographic Data Corrections.....	142
Testing Irregularities.....	142
Test Administration Incidents.....	142
CHAPTER 6: ANALYSES.....	143
Overview.....	143
Samples Used for the Analyses.....	144
Classical Item Analyses.....	144
<i>Summary of Item Statistics</i>	148
<i>Procedures for Documenting Items That Fail to Meet the Desired Psychometric Criteria</i>	148
Differential Item Functioning Analyses.....	149
Item Response Theory Analyses (Calibration, Scaling, and Equating).....	152
<i>Measurement Model</i>	152
<i>Item Calibration and Scaling</i>	152
<i>True-Score Equating</i>	153
<i>Equating Braille, Large-Print, and Audio CD Forms</i>	154
<i>Raw-Score to Scale-Score Conversion Tables and Conditional Standard Errors of Measurement</i>	154
<i>Item Response Theory Model-Data Fit Analyses</i>	155
<i>Summaries of Scaled Item Response Theory B-Values</i>	155
Reliability Analyses.....	155
<i>Test Reliabilities and Standard Errors of Measurement</i>	156

<i>Strand Intercorrelations, Reliabilities, and Standard Errors of Measurement</i>	157
<i>Subgroup Reliabilities and Standard Errors of Measurement</i>	157
<i>Writing Prompt and Rater Agreement Summary</i>	158
<i>Decision Classification Analyses</i>	160
Validity Evidence	161
<i>Test Purpose</i>	161
<i>Constructs to Be Measured</i>	162
<i>Intended Test Population</i>	162
<i>Scores Generated and the Interpretations and Uses of These Scores</i>	162
<i>Evidence Based on Content</i>	163
<i>Evidence Based on Relations to Other Variables</i>	166
<i>Evidence Based on Response Processes</i>	168
<i>Evidence Based on Internal Structure</i>	169
<i>Additional Validity Evidence</i>	171
<i>Conclusions</i>	172
Appendix 6.A: CAHSEE Item Review—Description and Examples of Classification Categories	173
Appendix 6.B: Summary Statistics for Operational Items—July 2013	176
Appendix 6.C: Summary Statistics for Operational Items—October 2013.....	181
Appendix 6.D: Summary Statistics for Operational Items—November 2013	186
Appendix 6.E: Summary Statistics for Operational Items—December 2013	191
Appendix 6.F: Summary Statistics for Operational Items—February 2014.....	196
Appendix 6.G: Summary Statistics for Operational Items—March 2014	201
Appendix 6.H: Summary Statistics for Operational Items—May 2014.....	206
Appendix 6.I: Intercorrelations, Reliability Estimates, and Standard Errors of Measurement	211
Appendix 6.J: Rater Agreement Analyses	220
Appendix 6.K: Generalizability Analyses	227
Appendix 6.L: Decision Classification Reliability Analyses	229
Appendix 6.M: Scoring Tables for Operational and Special Test Versions.....	244
Appendix 6.N: Standard Errors of Theta Based on Weighted Raw Scores	265
CHAPTER 7: PERFORMANCE STANDARDS.....	266
Background and Procedures	266
CAHSEE Passing Scores.....	267
Results	268
CHAPTER 8: SCORING AND REPORTING	270
Procedures for Maintaining and Retrieving Individual Scores	270
<i>Scoring and Reporting Specifications</i>	270
<i>Scanning and Scoring</i>	271
Types of Scores and Strand Scores.....	272
<i>Raw Score</i>	272
<i>Strand Score</i>	272
<i>Scale Score</i>	272
<i>Passing Scores</i>	272
<i>Score for Writing Applications</i>	272
Score Verification Procedures	273
<i>Scoring Key Verification Process</i>	273
<i>Monitoring and Quality Control of Writing Scoring</i>	274
<i>Quality Control in Raw-to-Scale Score Conversions</i>	277
Overview of Score Aggregation Procedures.....	277
<i>Individual Scores</i>	277
<i>Group Scores</i>	278
Reports to be Produced and Scores for Each Report.....	279
<i>Types of Score Reports</i>	279
<i>Score Report Contents</i>	279
<i>Score Report Applications</i>	280
Criteria for Interpreting Test Scores.....	281
Criteria for Interpreting Score Reports.....	281
Appendix 8.A: Frequency Distributions and Demographic Summaries—July 2013.....	282
Appendix 8.B: Frequency Distributions and Demographic Summaries—October 2013	290
Appendix 8.C: Frequency Distributions and Demographic Summaries—November 2013	298
Appendix 8.D: Frequency Distributions and Demographic Summaries—December 2013	306
Appendix 8.E: Frequency Distributions and Demographic Summaries—February 2014.....	314

Appendix 8.F: Frequency Distributions and Demographic Summaries—March 2014	322
Appendix 8.G: Frequency Distributions and Demographic Summaries—May 2014.....	330
CHAPTER 9: QUALITY CONTROL PROCEDURES	338
Quality Control of Item Development.....	338
<i>Item Specifications</i>	338
<i>Item Writers</i>	338
<i>Internal Contractor Reviews</i>	338
<i>Content Expert Reviews</i>	339
<i>Statewide Pupil Assessment Review Panel Review</i>	340
<i>Data Review of Field-Tested Items</i>	340
Quality Control of the Item Bank.....	340
Quality Control of Test Materials	341
<i>Collecting Test Materials</i>	341
<i>Processing Test Materials</i>	342
Quality Control of Scanning.....	342
<i>Post-Scanning Edits</i>	343
Quality Control of Image Editing	343
Quality Control of Answer Document Processing and Scoring.....	343
<i>Processing of Answer Documents</i>	343
<i>Scoring and Reporting Specifications</i>	343
<i>Matching Information on CAHSEE Answer Documents</i>	344
<i>Matching Multiple-Choice and Writing Scores for English-Language Arts</i>	344
<i>Storing Answer Documents</i>	344
Quality Control of Psychometric Processes.....	344
<i>Scoring Key Verification Process</i>	344
<i>Quality Control of Item Analyses, Differential Item Functioning and Equating Process</i>	344
<i>Score Verification Process</i>	346
<i>Offloads to Test Development</i>	346
<i>Independent Evaluation of the CAHSEE Program</i>	346
Quality Control of Reporting	346
<i>Excluding Student Scores from Summary Reports</i>	347
CHAPTER 10: HISTORICAL COMPARISONS	348
Examinee Performance	348
Test Characteristics	348
Appendix 10.A—Historical Comparisons on Student Performance	350
Appendix 10.B—Historical Comparisons on Test Characteristics	356
REFERENCES.....	358

List of Tables

Table E.1: Summary of Examinees Tested for Each Administration by Content.....	1
Table E.2: Summary of Passing Rates by Content Area and Test Administration	2
Table E.3.1: CAHSEE Summary Statistics—English-Language Arts (July and October 2013)	3
Table E.3.2: CAHSEE Summary Statistics—English-Language Arts (November and December 2013, February 2014).....	4
Table E.3.3: CAHSEE Summary Statistics—English-Language Arts (March and May 2014).....	5
Table E.4.1: CAHSEE Summary Statistics—Mathematics (July and October 2013)	6
Table E.4.2: CAHSEE Summary Statistics—Mathematics (November and December 2013, February 2014)	7
Table E.4.3: CAHSEE Summary Statistics—Mathematics (March and May 2014).....	8
Table 1.1: Testing Date for Each Administration by Content: 2013–14.....	11
Table 2.1: English-Language Arts and Mathematics Strands	18
Table 2.2: Subgroup Definitions	21
Table 2.3: CAHSEE Modification/Accommodation Table: 2013–14.....	23
Table 2.4: Listing of Tables—Summary Statistics for Testing Variations and Disability.....	25
Table 2.A.1: Summary Statistics by Testing Variations and Disability—ELA, July 2013	28
Table 2.A.2: Summary Statistics by Testing Variations and Disability—Mathematics, July 2013	29
Table 2.A.3: Demographic Summary for All Examinees by Testing Variations—ELA, July 2013	30
Table 2.A.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, July 2013	31
Table 2.A.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, July 2013	32
Table 2.A.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, July 2013.....	33
Table 2.A.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, July 2013	34
Table 2.A.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, July 2013.....	35
Table 2.A.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, July 2013.....	36
Table 2.A.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations— Mathematics, July 2013.....	37
Table 2.B.1: Summary Statistics by Testing Variations and Disability—ELA, October 2013.....	38
Table 2.B.2: Summary Statistics by Testing Variations and Disability—Mathematics, October 2013	39
Table 2.B.3: Demographic Summary for All Examinees by Testing Variations—ELA, October 2013	40
Table 2.B.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, October 2013.....	41
Table 2.B.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, October 2013	42
Table 2.B.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, October 2013	43
Table 2.B.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, October 2013.....	44
Table 2.B.7 (Continued).....	45
Table 2.B.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, October 2013.....	46
Table 2.B.8 (Continued).....	47
Table 2.B.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, October 2013.....	48
Table 2.B.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations— Mathematics, October 2013	50
Table 2.C.1: Summary Statistics by Testing Variations and Disability—ELA, November 2013.....	51
Table 2.C.2: Summary Statistics by Testing Variations and Disability—Mathematics, November 2013	52
Table 2.C.3: Demographic Summary for All Examinees by Testing Variations—ELA, November 2013	53
Table 2.C.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, November 2013	54
Table 2.C.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, November 2013	55
Table 2.C.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, November 2013	56
Table 2.C.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, November 2013.....	57
Table 2.C.7 (Continued).....	58
Table 2.C.7 (Continued).....	59
Table 2.C.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, November 2013.....	60
Table 2.C.8 (Continued).....	61
Table 2.C.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, November 2013.....	62
Table 2.C.9 (Continued).....	63
Table 2.C.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations— Mathematics, November 2013.....	64

Table 2.C.10 (Continued).....	65
Table 2.D.1: Summary Statistics by Testing Variations and Disability—ELA, December 2013.....	66
Table 2.D.2: Summary Statistics by Testing Variations and Disability—Mathematics, December 2013.....	67
Table 2.D.3: Demographic Summary for All Examinees by Testing Variations—ELA, December 2013.....	68
Table 2.D.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, December 2013.....	69
Table 2.D.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, December 2013.....	70
Table 2.D.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, December 2013.....	71
Table 2.D.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, December 2013.....	72
Table 2.D.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, December 2013.....	72
Table 2.D.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, December 2013.....	73
Table 2.D.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations— Mathematics, December 2013.....	73
Table 2.E.1: Summary Statistics by Testing Variations and Disability—ELA, February 2014.....	74
Table 2.E.2: Summary Statistics by Testing Variations and Disability—Mathematics, February 2014.....	75
Table 2.E.3: Demographic Summary for All Examinees by Testing Variations—ELA, February 2014.....	76
Table 2.E.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, February 2014.....	77
Table 2.E.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, February 2014.....	78
Table 2.E.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, February 2014.....	79
Table 2.E.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, February 2014.....	80
Table 2.E.7 (Continued).....	81
Table 2.E.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, February 2014.....	82
Table 2.E.8 (Continued).....	83
Table 2.E.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, February 2014.....	84
Table 2.E.9 (Continued).....	85
Table 2.E.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations— Mathematics, February 2014.....	86
Table 2.E.10 (Continued).....	87
Table 2.F.1: Summary Statistics by Testing Variations and Disability—ELA, March 2014.....	88
Table 2.F.2: Summary Statistics by Testing Variations and Disability—Mathematics, March 2014.....	89
Table 2.F.3: Demographic Summary for All Examinees by Testing Variations—ELA, March 2014.....	90
Table 2.F.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, March 2014.....	91
Table 2.F.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, March 2014.....	92
Table 2.F.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, March 2014.....	93
Table 2.F.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, March 2014.....	94
Table 2.F.7 (Continued).....	95
Table 2.F.7 (Continued).....	96
Table 2.F.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, March 2014.....	97
Table 2.F.8 (Continued).....	98
Table 2.F.8 (Continued).....	99
Table 2.F.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, March 2014.....	100
Table 2.F.9 (Continued).....	101
Table 2.F.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations— Mathematics, March 2014.....	102
Table 2.F.10 (Continued).....	103
Table 2.G.1: Summary Statistics by Testing Variations and Disability—ELA, May 2014.....	104
Table 2.G.2: Summary Statistics by Testing Variations and Disability—Mathematics, May 2014.....	105
Table 2.G.3: Demographic Summary for All Examinees by Testing Variations—ELA, May 2014.....	106
Table 2.G.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, May 2014.....	107
Table 2.G.5: Percentiles of Scale Scores for Students with Testing Variations—ELA, May 2014.....	108
Table 2.G.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, May 2014.....	109
Table 2.G.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, May 2014.....	110
Table 2.G.7 (Continued).....	111
Table 2.G.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics,	

May 2014.....	112
Table 2.G.8 (Continued).....	113
Table 2.G.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, May 2014.....	114
Table 2.G.9 (Continued).....	115
Table 2.G.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations— Mathematics, May 2014	116
Table 4.1: Difficulty (B) and Discrimination (R-bis) Specifications for ELA MC Items.....	129
Table 4.2: Number of Items and Mean B-Value Ranges by Content Strand for ELA	129
Table 4.3: Difficulty (B) and Discrimination (R-bis) Specifications for Mathematics	130
Table 4.4: Number of Items and Mean B-Value Ranges by Content Strand for Mathematics.....	130
Table 6.1: Listing of Summary Tables for Items.....	144
Table 6.2: Flagging Criteria for Classical Item Analyses.....	149
Table 6.3: DIF Categories.....	150
Table 6.B.1: Summary of Operational Item Statistics—ELA, July 2013	176
Table 6.B.2: Summary of Operational Item Statistics—Mathematics, July 2013.....	176
Table 6.B.3: IRT Model Data Fit Distribution of Operational Items—ELA, July 2013	177
Table 6.B.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, July 2013.....	177
Table 6.B.5: Operational Items Containing Significant DIF, July 2013.....	177
Table 6.B.6: Distribution of Operational Item DIF Classifications—ELA, July 2013	178
Table 6.B.7: Distribution of Operational Item DIF Classifications—Mathematics, July 2013.....	179
Table 6.B.8: Listing of CR Item Statistics—ELA, July 2013	180
Table 6.C.1: Summary of Operational Item Statistics—ELA, October 2013.....	181
Table 6.C.2: Summary of Operational Item Statistics—Mathematics, October 2013	181
Table 6.C.3: IRT Model Data Fit Distribution of Operational Items—ELA, October 2013.....	182
Table 6.C.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, October 2013	182
Table 6.C.5: Operational Items Containing Significant DIF, October 2013	182
Table 6.C.6: Distribution of Operational Item DIF Classifications—ELA, October 2013.....	183
Table 6.C.7: Distribution of Operational Item DIF Classifications—Mathematics, October 2013	184
Table 6.C.8: Listing of CR Item Statistics—ELA, October 2013	185
Table 6.D.1: Summary of Operational Item Statistics—ELA, November 2013.....	186
Table 6.D.2: Summary of Operational Item Statistics—Mathematics, November 2013	186
Table 6.D.3: IRT Model Data Fit Distribution of Operational Items—ELA, November 2013.....	187
Table 6.D.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, November 2013	187
Table 6.D.5: Operational Items Containing Significant DIF, November 2013.....	187
Table 6.D.6: Distribution of Operational Item DIF Classifications—ELA, November 2013.....	188
Table 6.D.7: Distribution of Operational Item DIF Classifications—Mathematics, November 2013	189
Table 6.D.8: Listing of CR Item Statistics—ELA, November 2013	190
Table 6.E.1: Summary of Operational Item Statistics—ELA, December 2013.....	191
Table 6.E.2: Summary of Operational Item Statistics—Mathematics, December 2013.....	191
Table 6.E.3: IRT Model Data Fit Distribution of Operational Items—ELA, December 2013.....	192
Table 6.E.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, December 2013	192
Table 6.E.5: Operational Items Containing Significant DIF, December 2013.....	192
Table 6.E.6: Distribution of Operational Item DIF Classifications—ELA, December 2013	193
Table 6.E.7: Distribution of Operational Item DIF Classifications—Mathematics, December 2013.....	194
Table 6.E.8: Listing of CR Item Statistics—ELA, December 2013	195
Table 6.F.1: Summary of Operational Item Statistics—ELA, February 2014	196
Table 6.F.2: Summary of Operational Item Statistics—Mathematics, February 2014.....	196
Table 6.F.3: IRT Model Data Fit Distribution of Operational Items—ELA, February 2014	197
Table 6.F.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, February 2014.....	197
Table 6.F.5: Operational Items Containing Significant DIF, February 2014	197
Table 6.F.6: Distribution of Operational Item DIF Classifications—ELA, February 2014.....	198
Table 6.F.7: Distribution of Operational Item DIF Classifications—Mathematics, February 2014	199
Table 6.F.8: Listing of CR Item Statistics—ELA, February 2014.....	200
Table 6.G.1: Summary of Operational Item Statistics—ELA, March 2014	201
Table 6.G.2: Summary of Operational Item Statistics—Mathematics, March 2014.....	201
Table 6.G.3: IRT Model Data Fit Distribution of Operational Items—ELA, March 2014	202
Table 6.G.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, March 2014.....	202
Table 6.G.5: Operational Items Containing Significant DIF, March 2014	202
Table 6.G.6: Distribution of Operational Item DIF Classifications—ELA, March 2014	203
Table 6.G.7: Distribution of Operational Item DIF Classifications—Mathematics, March 2014.....	204
Table 6.G.8: Listing of CR Item Statistics—ELA, March 2014	205

Table 6.H.1: Summary of Operational Item Statistics—ELA, May 2014.....	206
Table 6.H.2: Summary of Operational Item Statistics—Mathematics, May 2014.....	206
Table 6.H.3: IRT Model Data Fit Distribution of Operational Items—ELA, May 2014.....	207
Table 6.H.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, May 2014.....	207
Table 6.H.5: Operational Items Containing Significant DIF, May 2014.....	207
Table 6.H.6: Distribution of Operational Item DIF Classifications—ELA, May 2014.....	208
Table 6.H.7: Distribution of Operational Item DIF Classifications—Mathematics, May 2014.....	209
Table 6.H.8: Listing of CR Item Statistics—ELA, May 2014.....	210
Table 6.I.1: Intercorrelations and Reliability Estimates by Section—July 2013.....	211
Table 6.I.2: Intercorrelations and Reliability Estimates by Section—October 2013.....	212
Table 6.I.3: Intercorrelations and Reliability Estimates by Section—November 2013.....	213
Table 6.I.4: Intercorrelations and Reliability Estimates by Section—December 2013.....	214
Table 6.I.5: Intercorrelations and Reliability Estimates by Section—February 2014.....	215
Table 6.I.6: Intercorrelations and Reliability Estimates by Section—March 2014.....	216
Table 6.I.7: Intercorrelations and Reliability Estimates by Section—May 2014.....	217
Table 6.I.8: Reliabilities (R_{xx}) and Standard Errors of Measurement (SEMs) of Subgroups for ELA— February 2014.....	218
Table 6.I.9: Reliabilities (R_{xx}) and Standard Errors of Measurement (SEMs) of Subgroups for Mathematics— February 2014.....	218
Table 6.I.10: Reliabilities (R_{xx}) and Standard Errors of Measurement (SEMs) of Subgroups for ELA— March 2014.....	219
Table 6.I.11: Reliabilities (R_{xx}) and Standard Errors of Measurement (SEMs) of Subgroups for Mathematics— March 2014.....	219
Table 6.J.1: Agreement of First and Second Ratings on the ELA Essay Item—July 2013.....	220
Table 6.J.2: Summary Statistics for the ELA Essay Item—July 2013.....	220
Table 6.J.3: Agreement of First and Second Ratings on the ELA Essay Item—October 2013.....	221
Table 6.J.4: Summary Statistics for the ELA Essay Item—October 2013.....	221
Table 6.J.5: Agreement of First and Second Ratings on the ELA Essay Item—November 2013.....	222
Table 6.J.6: Summary Statistics for the ELA Essay Item—November 2013.....	222
Table 6.J.7: Agreement of First and Second Ratings on the ELA Essay Item—December 2013.....	223
Table 6.J.8: Summary Statistics for the ELA Essay Item—December 2013.....	223
Table 6.J.9: Agreement of First and Second Ratings on the ELA Essay Item—February 2014.....	224
Table 6.J.10: Summary Statistics for the ELA Essay Item—February 2014.....	224
Table 6.J.11: Agreement of First and Second Ratings on the ELA Essay Item—March 2014.....	225
Table 6.J.12: Summary Statistics for the ELA Essay Item—March 2014.....	225
Table 6.J.13: Agreement of First and Second Ratings on the ELA Essay Item—May 2014.....	226
Table 6.J.14: Summary Statistics for the ELA Essay Item—May 2014.....	226
Table 6.K.1: Generalizability Results—July 2013.....	227
Table 6.K.2: Generalizability Results—October 2013.....	227
Table 6.K.3: Generalizability Results—November 2013.....	227
Table 6.K.4: Generalizability Results—December 2013.....	227
Table 6.K.5: Generalizability Results—February 2014.....	228
Table 6.K.6: Generalizability Results—March 2014.....	228
Table 6.K.7: Generalizability Results—May 2014.....	228
Table 6.L.1: ESEA Reliability Classifications—July 2013.....	229
Table 6.L.1: ESEA Reliability Classifications—July 2013 (Continued).....	230
Table 6.L.2: Pass/Not Pass Classifications—July 2013.....	231
Table 6.L.3: ESEA Reliability Classifications—October 2013.....	232
Table 6.L.4: Pass/Not Pass Classifications—October 2013.....	233
Table 6.L.5: ESEA Reliability Classifications—November 2013.....	234
Table 6.L.6: Pass/Not Pass Classifications—November 2013.....	235
Table 6.L.7: ESEA Reliability Classifications—December 2013.....	236
Table 6.L.8: Pass/Not Pass Classifications—December 2013.....	237
Table 6.L.9: ESEA Reliability Classifications—February 2014.....	238
Table 6.L.10: Pass/Not Pass Classifications—February 2014.....	239
Table 6.L.11: ESEA Reliability Classifications—March 2014.....	240
Table 6.L.12: Pass/Not Pass Classifications—March 2014.....	241
Table 6.L.13: ESEA Reliability Classifications—May 2014.....	242
Table 6.L.14: Pass/Not Pass Classifications—May 2014.....	243
Table 6.M.1: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, July 2013.....	244
Table 6.M.2: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, July 2013.....	246
Table 6.M.3: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, October 2013.....	247

Table 6.M.4: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, October 2013.....	248
Table 6.M.5: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, November 2013	249
Table 6.M.6: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, November 2013 ..	250
Table 6.M.7: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, December 2013	251
Table 6.M.8: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, December 2013 ..	252
Table 6.M.9: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, February 2014.....	253
Table 6.M.10: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, February 2014 ..	254
Table 6.M.11: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, March 2014	255
Table 6.M.12: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, March 2014	256
Table 6.M.13: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, May 2014	257
Table 6.M.14: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, May 2014.....	258
Table 6.M.15: Braille, LP-Braille, and LP-Braille CD Conversions—ELA— July, October, and November 2013	259
Table 6.M.16: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics—July, October, and November 2013.....	260
Table 6.M.17: Braille, LP-Braille, and LP-Braille CD Conversions—ELA—December 2013 and February 2014	261
Table 6.M.18: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics—December 2013 and February 2014	262
Table 6.M.19: Braille, LP-Braille, and LP-Braille CD Conversions—ELA—March and May 2014	263
Table 6.M.20: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics—March and May 2014	264
Table 7.1: Passing Scores on the February 2004 CAHSEE	267
Table 7.2: Summary of Cut Scores and Passing Rates Based on Equating Samples	269
Table 8.1: Listing of Frequency Distribution and Demographic Summary Tables.....	278
Table 8.2: Types of CAHSEE Reports	279
Table 8.A.1: Frequency Distributions, ELA—July 2013.....	282
Table 8.A.2: Frequency Distributions, Mathematics—July 2013	282
Table 8.A.3: Frequency Distributions, ELA for ESEA—July 2013.....	283
Table 8.A.4: Frequency Distributions, Mathematics for ESEA—July 2013	283
Table 8.A.5: Demographic Summary for All Examinees, ELA—July 2013.....	284
Table 8.A.6: Demographic Summary for All Examinees, Mathematics—July 2013	285
Table 8.A.7: ESEA Demographic Summary for All Examinees, ELA—July 2013	286
Table 8.A.8: ESEA Demographic Summary for All Examinees, Mathematics—July 2013.....	287
Table 8.A.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—July 2013.....	288
Table 8.A.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics— July 2013.....	289
Table 8.B.1: Frequency Distributions, ELA—October 2013	290
Table 8.B.2: Frequency Distributions, Mathematics—October 2013.....	290
Table 8.B.3: Frequency Distributions, ELA for ESEA—October 2013.....	291
Table 8.B.4: Frequency Distributions, Mathematics for ESEA—October 2013	291
Table 8.B.5: Demographic Summary for All Examinees, ELA—October 2013	292
Table 8.B.6: Demographic Summary for All Examinees, Mathematics—October 2013.....	293
Table 8.B.7: ESEA Demographic Summary for All Examinees, ELA—October 2013.....	294
Table 8.B.8: ESEA Demographic Summary for All Examinees, Mathematics—October 2013	295
Table 8.B.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—October 2013.....	296
Table 8.B.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics— October 2013.....	297
Table 8.C.1: Frequency Distributions, ELA—November 2013	298
Table 8.C.2: Frequency Distributions, Mathematics—November 2013.....	298
Table 8.C.3: Frequency Distributions, ELA for ESEA—November 2013.....	299
Table 8.C.4: Frequency Distributions, Mathematics for ESEA—November 2013	299
Table 8.C.5: Demographic Summary for All Examinees, ELA—November 2013	300
Table 8.C.6: Demographic Summary for All Examinees, Mathematics—November 2013.....	301
Table 8.C.7: ESEA Demographic Summary for All Examinees, ELA—November 2013.....	302
Table 8.C.8: ESEA Demographic Summary for All Examinees, Mathematics—November 2013	303
Table 8.C.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—November 2013	304
Table 8.C.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics— November 2013.....	305
Table 8.D.1: Frequency Distributions, ELA—December 2013	306
Table 8.D.2: Frequency Distributions, Mathematics—December 2013.....	306
Table 8.D.3: Frequency Distributions, ELA for ESEA—December 2013.....	307
Table 8.D.4: Frequency Distributions, Mathematics for ESEA—December 2013	307
Table 8.D.5: Demographic Summary for All Examinees, ELA—December 2013	308
Table 8.D.6: Demographic Summary for All Examinees, Mathematics—December 2013.....	309

Table 8.D.7: ESEA Demographic Summary for All Examinees, ELA—December 2013	310
Table 8.D.8: ESEA Demographic Summary for All Examinees, Mathematics—December 2013	311
Table 8.D.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—December 2013	312
Table 8.D.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics— December 2013	313
Table 8.E.1: Frequency Distributions, ELA—February 2014	314
Table 8.E.2: Frequency Distributions, Mathematics—February 2014	314
Table 8.E.3: Frequency Distributions, ELA for ESEA—February 2014	315
Table 8.E.4: Frequency Distributions, Mathematics for ESEA—February 2014	315
Table 8.E.5: Demographic Summary for All Examinees, ELA—February 2014	316
Table 8.E.6: Demographic Summary for All Examinees, Mathematics—February 2014	317
Table 8.E.7: ESEA Demographic Summary for All Examinees, ELA—February 2014	318
Table 8.E.8: ESEA Demographic Summary for All Examinees, Mathematics— February 2014	319
Table 8.E.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—February 2014	320
Table 8.E.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics— February 2014	321
Table 8.F.1: Frequency Distributions, ELA—March 2014	322
Table 8.F.2: Frequency Distributions, Mathematics—March 2014	322
Table 8.F.3: Frequency Distributions, ELA for ESEA—March 2014	323
Table 8.F.4: Frequency Distributions, Mathematics for ESEA—March 2014	323
Table 8.F.5: Demographic Summary for All Examinees, ELA—March 2014	324
Table 8.F.6: Demographic Summary for All Examinees, Mathematics—March 2014	325
Table 8.F.7: ESEA Demographic Summary for All Examinees, ELA—March 2014	326
Table 8.F.8: ESEA Demographic Summary for All Examinees, Mathematics—March 2014	327
Table 8.F.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—March 2014	328
Table 8.F.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics— March 2014	329
Table 8.G.1: Frequency Distributions, ELA—May 2014	330
Table 8.G.2: Frequency Distributions, Mathematics—May 2014	330
Table 8.G.3: Frequency Distributions, ELA for ESEA—May 2014	331
Table 8.G.4: Frequency Distributions, Mathematics for ESEA—May 2014	331
Table 8.G.5: Demographic Summary for All Examinees, ELA—May 2014	332
Table 8.G.6: Demographic Summary for All Examinees, Mathematics—May 2014	333
Table 8.G.7: ESEA Demographic Summary for All Examinees, ELA—May 2014	334
Table 8.G.8: ESEA Demographic Summary for All Examinees, Mathematics—May 2014	335
Table 8.G.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—May 2014	336
Table 8.G.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics— May 2014	337
Table 10.A.1: Number of Examinees Tested, Scale Score Means, and Standard Deviations of the CAHSEE Across 2011–12, 2012–13, and 2013–14	350
Table 10.A.2: Percentage of Students Passing Each Content Area Across 2011–12, 2012–13, and 2013–14	350
Table 10.A.3: Percentage of Below Proficient, Proficient, and Advanced Across 2011–12, 2012–13, and 2013–14	351
Table 10.A.4: Scale Score Distributions Across 2011, 2012, and 2013 for ELA (July to December)	352
Table 10.A.5: Scale Score Distributions Across 2012, 2013, and 2014 for ELA (February to May)	353
Table 10.A.6: Scale Score Distributions Across 2011, 2012, and 2013 for Mathematics (July to December)	354
Table 10.A.7: Scale Score Distributions Across 2012, 2013, and 2014 for Mathematics (February to May)	355
Table 10.B.1: Average Percent Correct of Operational Test Items Across 2011–12, 2012–13, and 2013–14	356
Table 10.B.2: Average IRT <i>b</i> -values of Operational Test Items Across 2011–12, 2012–13, and 2013–14	356
Table 10.B.3: Average Point-Biserial Correlation of Operational Test Items Across 2011–12, 2012–13, and 2013–14	357
Table 10.B.4: Reliabilities and Standard Errors of Measurement (SEMs) of Operational Test Forms Across 2011–12, 2012–13, and 2013–14	357

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 2013 and February, March, and May 2014.

There were 80 operational multiple-choice (MC) items in each mathematics form and 72 operational MC items and one operational constructed-response (CR) item in each ELA form. In addition to the operational items, each mathematics form included 12 field-test or dummy items, and each ELA form included 7 field-test or dummy items. These items were not used for scoring. Each test form also included a set of anchor 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 2013 and the February, March, and May 2014 administrations. The majority of examinees in February and March were first-time examinees. Grade ten students are only allowed to take the test in the February, March, or May administrations. Because students are allowed to take either ELA or mathematics in separate administrations, not all students took the ELA and mathematics examinations in a single administration. Examinees taking only one content area were mostly repeat examinees who did not pass that content area during a previous administration.

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

Administration	Total Examinees*	ELA & Mathematics	ELA Only	Mathematics Only
July 2013	8,572	2,103	3,724	2,745
October 2013	48,467	18,686	16,410	13,371
November 2013	127,049	53,768	40,173	33,108
December 2013	2,391	537	1,033	821
February 2014	178,508	137,132	21,709	19,667
March 2014	393,581	343,806	26,065	23,710
May 2014	54,932	18,721	19,829	16,382

* Total number of examinees consists of examinees taking one or both content areas for each administration. These examinees include only students who received Passed or Not Passed status and do not include students who took the CAHSEE with modifications, were absent, had previously passed, or did not attempt the examination.

¹Anchor 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 2013	5,827	1,248 (21)	4,848	1,286 (27)
October 2013	35,096	13,138 (37)	32,057	12,154 (38)
November 2013	93,941	39,371 (42)	86,876	32,121 (37)
December 2013	1,570	491 (31)	1,358	478 (35)
February 2014	158,841	109,287 (69)	156,799	114,731 (73)
March 2014	369,871	288,018 (78)	367,516	293,674 (80)
May 2014	38,550	12,261 (32)	35,103	11,766 (34)

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

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

Highlights of the results for the 2013–14 CAHSEE administrations included in this report are presented in Tables E.3.1–3.3 and E.4.1–4.3 on the following pages. These statistics indicate satisfactory psychometric properties of the test form constructed for these examinations.

Table E.3.1: CAHSEE Summary Statistics—English-Language Arts (July and October 2013)

Administration	July 2013	October 2013
Scale Score Information		
Number of Examinees	5,827	35,096
Mean	333	342
SD ¹	25	30
Possible Range	275–450	275–450
Obtained Range	275–450	275–450
Median	333	340
Raw Score Information		
Number of Examinees	5,827	35,096
Mean	46.86	49.07
SD	11.86	14.05
Possible Range	0–90	0–90
Obtained Range	0–88	0–90
Median	47	49
Test Information		
Reliability	0.87	0.90
Raw Score Standard Error of Measurement	4.30	4.37
Mean Omits	0.58	0.76
SD Omits	4.69	5.44
Percentage 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	98
All Items - 5 Items	99	98
Item Information²		
Number of Items	72	72
Mean Observed Average Item Score (AIS)	0.53	0.55
Equated Mean Rasch <i>B</i> -Value	–0.01	0.00
Mean R-Biserial	0.40	0.46
SD R-biserial	0.10	0.09
Examinee Information		
ELA-Only Examinees		
Number of Examinees	3,724	16,410
Mean Scale Score	334	342
SD Scale Score	22	24
Median Scale Score	335	344
ELA and Mathematics Examinees		
Number of Examinees	2,103	18,686
Mean Scale Score	331	342
SD Scale Score	29	34
Median Scale Score	331	338

¹SD — Standard Deviation

²Means 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 2013, February 2014)

Administration	November 2013	December 2013	February 2014
Scale Score Information			
Number of Examinees	93,941	1,570	158,841
Mean	344	341	373
SD	32	26	43
Possible Range	275–450	275–450	275–450
Obtained Range	275–450	275–450	275–450
Median	344	340	376
Raw Score Information			
Number of Examinees	93,941	1,570	158,841
Mean	50.86	48.92	62.81
SD	14.55	11.69	16.18
Possible Range	0–90	0–90	0–90
Obtained Range	0–90	11–86	0–90
Median	52	49	67
Test Information			
Reliability	0.91	0.87	0.94
Raw Score Standard Error of Measurement	4.31	4.22	3.84
Mean Omits	0.66	0.27	0.36
SD Omits	4.99	2.54	3.56
Percentage 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	98	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)	0.57	0.54	0.73
Equated Mean Rasch <i>B</i> -Value	–0.05	0.01	–0.16
Mean R-biserial	0.48	0.41	0.57
SD R-biserial	0.09	0.11	0.09
Examinee Information			
ELA-Only Examinees			
Number of Examinees	40,173	1,033	21,709
Mean Scale Score	344	341	337
SD Scale Score	26	22	29
Median Scale Score	346	340	337
ELA and Mathematics Examinees			
Number of Examinees	53,768	537	137,132
Mean Scale Score	344	341	379
SD Scale Score	35	32	42
Median Scale Score	342	338	382

¹Means 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 2014)

Administration	March 2014	May 2014
Scale Score Information		
Number of Examinees	369,871	38,550
Mean	379	338
SD	39	33
Possible Range	275–450	275–450
Obtained Range	275–450	275–450
Median	382	334
Raw Score Information		
Number of Examinees	369,871	38,550
Mean	65.40	48.53
SD	14.73	15.51
Possible Range	0–90	0–90
Obtained Range	0–90	0–90
Median	69	48
Test Information		
Reliability	0.93	0.92
Raw Score Standard Error of Measurement	3.81	4.44
Mean Omits	0.26	0.91
SD Omits	2.89	6.17
Percentage Responding to:		
All Items	94	89
All Items - 1 Item	99	96
All Items - 2 Items	99	98
All Items - 3 Items	99	98
All Items - 4 Items	99	98
All Items - 5 Items	99	98
Item Information¹		
Number of Items	72	72
Mean Observed Average Item Score (AIS)	0.77	0.55
Equated Mean Rasch <i>B</i> -Value	-0.14	-0.11
Mean R-biserial	0.53	0.50
SD R-biserial	0.08	0.09
Examinee Information		
ELA-Only Examinees		
Number of Examinees	26,065	19,829
Mean Scale Score	341	338
SD Scale Score	31	30
Median Scale Score	340	336
ELA and Mathematics Examinees		
Number of Examinees	343,806	18,721
Mean Scale Score	382	337
SD Scale Score	38	36
Median Scale Score	385	332

¹Means 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 2013)

Administration	July 2013	October 2013
Scale Score Information		
Number of Examinees	4,848	32,057
Mean	339	346
SD	20	27
Possible Range	275–450	275–450
Obtained Range	275–450	275–450
Median	339	343
Raw Score Information		
Number of Examinees	4,848	32,057
Mean	35.34	38.29
Standard Deviation	10.16	13.04
Possible Range	0–80	0–80
Obtained Range	2–80	1–80
Median	35	37
Test Information		
Reliability	0.84	0.90
Raw Score Standard Error of Measurement	4.11	4.07
Mean Omits	0.47	0.58
SD Omits	3.79	4.29
Percentage Responding to:		
All Items	87	86
All Items - 1 Item	97	96
All Items - 2 Items	99	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)	0.44	0.48
Equated Mean Rasch <i>B</i> -Value	-0.26	-0.13
Mean R-biserial	0.35	0.44
SD R-biserial	0.10	0.10
Examinee Information		
Mathematics-Only Examinees		
Number of Examinees	2,745	13,371
Mean Scale Score	342	346
SD Scale Score	17	20
Median Scale Score	341	346
ELA and Mathematics Examinees		
Number of Examinees	2,103	18,686
Mean Scale Score	337	345
SD Scale Score	24	31
Median Scale Score	334	339

Table E.4.2: CAHSEE Summary Statistics—Mathematics (November and December 2013, February 2014)

Administration	November 2013	December 2013	February 2014
Scale Score Information			
Number of Examinees	86,876	1,358	156,799
Mean	346	344	379
SD	28	22	41
Possible Range	275–450	275–450	275–450
Obtained Range	275–450	275–450	275–450
Median	342	343	378
Raw Score Information			
Number of Examinees	86,876	1,358	156,799
Mean	39.66	37.46	54.10
Standard Deviation	13.50	10.94	17.30
Possible Range	0–80	0–80	0–80
Obtained Range	0–80	2–78	0–80
Median	38	37	57
Test Information			
Reliability	0.91	0.86	0.96
Raw Score Standard Error of Measurement	4.07	4.12	3.61
Mean Omits	0.50	0.31	0.28
SD Omits	3.91	2.96	2.77
Percentage Responding to:			
All Items	87	88	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	100	99
Item Information			
Number of Items	80	80	80
Mean Observed Average Item Score (AIS)	0.50	0.47	0.68
Equated Mean Rasch <i>B</i> -Value	-0.20	-0.11	-0.19
Mean R-biserial	0.45	0.37	0.58
SD R-biserial	0.11	0.11	0.08
Examinee Information			
Mathematics-Only Examinees			
Number of Examinees	33,108	821	19,667
Mean Scale Score	346	345	345
SD Scale Score	21	19	23
Median Scale Score	346	345	344
ELA and Mathematics Examinees			
Number of Examinees	53,768	537	137,132
Mean Scale Score	346	343	384
SD Scale Score	32	26	41
Median Scale Score	341	340	385

Table E.4.3: CAHSEE Summary Statistics—Mathematics (March and May 2014)

Administration	March 2014	May 2014
Scale Score Information		
Number of Examinees	367,516	35,103
Mean	386	343
SD	40	30
Possible Range	275–450	275–450
Obtained Range	275–450	275–450
Median	385	338
Raw Score Information		
Number of Examinees	367,516	35,103
Mean	57.28	38.47
Standard Deviation	16.02	14.52
Possible Range	0–80	0–80
Obtained Range	0–80	0–80
Median	60	36
Test Information		
Reliability	0.95	0.92
Raw Score Standard Error of Measurement	3.49	4.03
Mean Omits	0.23	0.71
SD Omits	2.25	4.94
Percentage Responding to:		
All Items	91	85
All Items - 1 Item	98	95
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)	0.73	0.48
Equated Mean Rasch <i>B</i> -Value	-0.21	-0.22
Mean R-biserial	0.56	0.48
SD R-biserial	0.09	0.10
Examinee Information		
Mathematics-Only Examinees		
Number of Examinees	23,710	16,382
Mean Scale Score	348	344
SD Scale Score	28	27
Median Scale Score	345	342
ELA and Mathematics Examinees		
Number of Examinees	343,806	18,721
Mean Scale Score	389	342
SD Scale Score	39	33
Median Scale Score	390	336

Chapter 1: Introduction

Background

The California Department of Education (CDE) initiated the development of the California High School Exit Examination (CAHSEE) to ensure that all students graduating from high school demonstrate competency with respect to the State Board of Education (SBE) content standards in reading, writing, and mathematics. The CAHSEE was first administered to ninth-graders on a voluntary basis in March and May 2001. Beginning October 1, 2001, the CDE awarded a contract to Educational Testing Service (ETS) and its subcontractors for the development and administration of the CAHSEE. ETS was awarded the new contract in July 2004 for three years, in August 2008 for four years, and in 2012 for an extension of two years. In 2013–14, 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 2013 and February, March, and May 2014.

Test Purpose

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

Content

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

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

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

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

Target Population

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

Intended Use and Purpose of Test Scores

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

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

Schedule of Administrations and Participation Rules

The CAHSEE was administered seven times in the 2013–14 school year on dates that were determined by the State Superintendent of Public Instruction (SSPI). Schools were required to administer the CAHSEE on the designated dates, as shown in Table 1.1.

²The blueprints for the CAHSEE ELA examinations can be found on the CDE CAHSEE Program Resources Web page <http://www.cde.ca.gov/ta/tg/hs/index.asp>.

³The blueprints for the CAHSEE Mathematics examinations can be found on the CDE CAHSEE Program Resources Web page <http://www.cde.ca.gov/ta/tg/hs/index.asp>.

Table 1.1: Testing Date for Each Administration by Content: 2013–14

Administration	English-Language Arts (Tuesday)	Mathematics (Wednesday)
July 2013	July 23, 2013	July 24, 2013
October 2013	October 1, 2013	October 2, 2013
November 2013	November 5, 2013	November 6, 2013
December 2013	December 7, 2013 ¹	December 14, 2013 ¹
February 2014	February 4, 2014	February 5, 2014
March 2014	March 18, 2014	March 19, 2014
May 2014	May 13, 2014	May 14, 2014

¹Saturday administration

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

- Grade ten students shall be tested only during the census administrations in February or March, or the make-up administration in March or May, as per state requirements.
- Grade eleven students shall have the opportunity to take the part(s) of the CAHSEE not previously passed up to two times per school year and may test in consecutive administrations (e.g., October and November). Grade eleven students cannot participate in the July administration.
- Grade twelve students shall have the opportunity to take the part(s) of the CAHSEE not previously passed at least three times per school year, may take the part(s) not previously passed up to five times per school year, and may test in consecutive administrations.
- Adult Education students shall have the opportunity to take the part(s) of the CAHSEE not previously passed up to three times per school year and may test in consecutive administrations.
- No student who has previously passed the CAHSEE is eligible to retake the exam.

Significant Developments in the 2013–14 School Year

There were no changes in examination content and test administration in the 2013–14 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.

The Academic Performance Index (API), which measures the academic performance and growth of schools on a variety of academic measures, was not produced in 2013-14 and, as such, the 2014 CAHSEE results were not used for API reporting purposes.

Limitations of the Assessment

Score Interpretation

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

Groups and Organizations

State Board of Education

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

The SBE is responsible for the maintenance of such programs as the ESEA for reporting results in terms of the API.

California Department of Education

The CDE oversees California's public school system and is responsible for the education of more than six million (6,000,000) children and young adults in more than 10,000 schools. The CDE's mission is to provide a world-class education for all students from early childhood to adulthood. As part of its mission to promote district and school accountability for improving student achievement as defined by the SBE, the CDE oversees the development and administration of the CAHSEE.

Test Contractors

Educational Testing Service

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

- Overall management of the program.
- Development of all test items and test forms.

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

Pearson Educational Measurement

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

Overview of the Technical Report

This technical report describes the procedures applied to the CAHSEE for the four 2013 and the three 2014 administrations in the 2013–14 school year. This report also presents the results of statistical analyses based on the data from these administrations. The organization of the technical report demonstrates the process for accumulating evidence to support the validity of inferences made from the CAHSEE test scores, which is one of the most fundamental considerations in developing and evaluating tests. The process begins with the test design and continues throughout the entire assessment process, including content specifications, item development, psychometric quality, and inferences made from the results.

This technical report contains nine additional chapters as follows:

- Chapter 2 presents a conceptual overview of processes involved in a testing cycle for a CAHSEE administration. This includes test construction, test administration, generation of test scores, and dissemination of score reports.
- Chapter 3 describes the procedures followed in the development of valid CAHSEE items; the chapter explains the process of field testing new items and the review of items by contractors and content experts.
- Chapter 4 details the content and psychometric criteria applicable to the test assembly of the CAHSEE for the 2013–14 administrations.

- Chapter 5 presents the processes involved in the actual 2013–14 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 2013–14 administrations. These include the classical item analyses, differential item functioning (DIF), item response theory (IRT), and model-fit analyses, as well as documentation of the equating along with CAHSEE score conversion tables. Also summarized in this chapter are the results of reliability analyses. These analyses include assessments of test reliability and the consistency and accuracy of the classifications, including the Pass/Not Pass classifications and the proficiency-level classifications. Finally, this chapter discusses the procedures designed to ensure the validity of the CAHSEE score use and interpretation.
- Chapter 7 describes the standard-setting process conducted for the CAHSEE when the SBE adopted new test blueprints in 2003. Also described is the procedure to establish the CAHSEE reporting scale. In addition, results describing students' proficiency classifications are also provided.
- Chapter 8 details the types of scores and score reports that are produced at the conclusion of each administration of the CAHSEE. Information about the distributions of scores, aggregated by subgroups based on demographics and the use of special services, is also included in this chapter.
- Chapter 9 highlights the importance of controlling and maintaining the quality of the CAHSEE.
- Chapter 10 presents historical comparisons of various item- and test-level results for the past three years and for the baseline year.

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

Chapter 2: Test Specifications

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

Item Development

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

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

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

Item Formats

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

Model for Generating Item Statistics

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

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

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

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 :

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

where:

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

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

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

θ is the ability level for an examinee.

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

Item Banking

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

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

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

Item Refresh Rate and Released Test Questions

The Item Development Plan assumes that about 50 percent of items on an operational ELA form and more than 60 percent of items on an operational mathematics form are refreshed each year; these items remain in the item bank for future use. Previously, a number of items were released to the public. The Released Test Questions (RTQs) show the content and types of questions that are included on the CAHSEE. Because RTQs are released and posted on the Internet for public viewing, they are precluded from future forms. Due to the state budget cuts, no ELA or mathematics RTQs were released in the 2013–14 school year.

Criteria for Selecting Released Test Questions

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

Test Assembly

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

Test Blueprint

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

Test Length

The number of items on the CAHSEE varies by content area. The ELA form consists of 80 items, which includes 72 operational MC items, one operational CR item, and 7 embedded field-test MC items. The mathematics test form consists of 80 operational items and 12 field-test items for a total of 92 items.

Number of Test Forms

One test form was administered for each administration for the 2013–14 school year. No field-test items were included in these forms and the spots normally reserved for field-test items were filled with dummy items that were not scored.

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 2.1.

Table 2.1: English-Language Arts and Mathematics Strands

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

Content Rules and Item Selection

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

Psychometric Criteria

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

- The test must have the desired precision of measurement at all ability levels.
- The test score must be valid and reliable for the intended population and for the various subgroups of test takers.

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

In order to achieve these goals, a set of rules has been developed that outlines the desired psychometric properties of the CAHSEE, which are 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 2013–14 test development are presented in Tables 4.1 through 4.4 in Chapter 4.

Item Arrangement

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

Test Administration

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

Test Security and Confidentiality

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

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

Procedures to Maintain Standardization

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

Test Administrators

ETS employs personnel who facilitate various processes involved in the standardization of a CAHSEE administration cycle. Staff members at school districts who are central to the processes include the CAHSEE LEA coordinators, test examiners, proctors, and scribes. The responsibilities for each staff member are included in the *CAHSEE Local Educational Agency and Test Site Coordinator's Manual (LEATSCM; CDE, 2014a)*, 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 2014b)* includes directions to be read aloud to students as well as procedures the test administrator is to follow to ensure that the validity of the test administration is maintained and the security of the test is protected.

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

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

Answer Documents

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

Demographic Distributions

CAHSEE results are presented by subgroup based on grade, gender, ethnicity, language fluency, economic disadvantage, and special education programs. Table 2.2 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 2.2: 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
Parent Education	Graduate school or post graduate training College graduate Some college High school graduate Not a high school graduate

Test Variations, Accommodations, and Modifications

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

to the CAHSEE are implemented or are determined to be not feasible. Many SWDs and English Learners (ELs) take the CAHSEE under standard conditions; however, some of these students may need assistance when taking the CAHSEE. This assistance takes the form of test variations, accommodations, or modifications. All students may have test administration directions simplified or clarified. In addition, all eligible students may have test variations if these variations are regularly used in the classroom. They must also be allowed to use the accommodations and modifications that are specified in each student's individualized education program (IEP) or Section 504 plan. The accommodations and/or modifications must match those 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 API¹ or AYP calculations. Modifications fundamentally change what is being tested and the construct being measured. If a student takes one or both parts of the CAHSEE with a modification and has received the equivalent of a passing score, the student has not passed that part of the exam but is eligible to request a local waiver of the requirement to successfully pass that part of the exam. In addition, scores for students tested with modifications are counted as Not Pass for API calculations and Not Tested for AYP calculations. The only exception is the calculator use in the mathematics exam. This modification is accepted and counted as tested. The Proficient cut point is a little higher than for those students who did not use a calculator.

Brief descriptions and abbreviations for the different modifications and accommodations are provided in Table 2.4. This table is also provided as a guide for LEA test site coordinators, who will mark all accommodations and modifications that are actually used during the testing in Box 25 of the students' answer documents. The shaded sections and the sections that cannot be marked for any portion of the CAHSEE are not applicable to that portion of the CAHSEE. For example, code Q (Calculators on the mathematics test) is considered a modification for mathematics and therefore cannot be marked for the ELA portion. The two-letter abbreviations included to the right of the description in Table 2.3 are used to reference the modifications and accommodations in Appendices 2.A to 2.G, Tables 3 to 6.

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

¹The API was not produced in 2013-14 and, as such, the 2014 CAHSEE results were not used for API reporting purposes.

Table 2.3: CAHSEE Modification/Accommodation Table: 2013–14

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

Table 2.3 (Continued)

M. Test administered at home or in hospital by test examiner. Accommodation	HH	Z. Leave Blank— <i>Cannot be gridded for CAHSEE</i>	
---	----	---	--

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

Scores for examinees who reported having a disability or who took the CAHSEE with an accommodation or modification were analyzed to investigate the relationships between CAHSEE scores and disability, accommodation, language fluency, and special program participation. Table 2.4 provides a listing of the tables summarizing student results based on disabilities and testing variations for the 2013–14 administrations. To simplify the presentation of these data, all tables for this section are located in Appendix 2.A to Appendix 2.G for the seven administrations (July 2013, October 2013, November 2013, December 2013, February 2014, March 2014, and May 2014), respectively.

Tables 1 and 2 in each appendix provide summary statistics in ELA and mathematics for each disability type and for all accommodated students, as well as separate statistics for accommodations versus modifications. Standard accommodations include students enrolled in an IEP/Section 504 plan who took either a Braille or audio CD form with no additional modifications. The largest disability group reported is Specific Learning Disability. The number of students in this group across the seven administrations ranged from 234 (December 2013) to 28,165 (March 2014) for ELA and 204 (December 2013) to 27,834 (March 2014) for mathematics. For students who tested with accommodations or modifications, the rates of achieving a score of 350 or higher ranged from 11 to 26 percent for ELA and from 15 to 25 percent for mathematics. Students who took the test with modifications are provided scale scores on their reports with Modified written beside the score. It is at the discretion of the local school boards whether each student using modifications and receiving a score of 350 or higher is granted a waiver.

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

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

fluent English proficient students tended to outperform the EL students in most instances.

Table 2.4: Listing of Tables—Summary Statistics for Testing Variations and Disability

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

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

Scores

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

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

Weighting of Scores

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

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

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

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

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

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

Aggregation Procedures

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

Individual Scores

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

Group Scores

Results for the demographic groups for the 2013–14 administrations may be found in Appendices 8.A to 8.G. Summary information is presented by demographic characteristic, including grade, gender, ethnicity, language fluency, economic status, and special education services for ELA and mathematics. Tables 5 and 6 in each appendix provide summary statistics based on all students taking each of the administrations for the ELA and mathematics tests, respectively. The tables show the number of students with valid scores in each group, the number and percent of students in the Pass/Not Pass classifications, mean scale scores, mean percent correct for the strands, and the mean score for writing applications.

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

Equating

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

The procedure used for equating the CAHSEE involves three steps: item calibration, item parameter scaling, and true-score equating. The 2004 February administration is the baseline for equating all CAHSEE test forms. The 2013–14 items were calibrated and placed on the reference scale using a set of linking items selected from the previous year's forms and re-administered on the 2013–14 test forms. The number correct or raw score is converted to a scale score via true-score equating. The raw-score to scale-score conversion reflects the relationship between the difficulty of individual test items that make up each test form and the constant measure of achievement indicated by the reported scale scores. For different test forms, the expected number-correct score for a given level of achievement may vary somewhat due to (usually small) differences in the average difficulty of the items in one form compared to the average difficulty of items in other test forms. This is why the conversion tables for each test administration will differ slightly in relating raw scores to scale scores. Total scores on the CAHSEE are transformed to a reporting scale that ranges from 275 to 450, with the minimum passing score set at 350. The equating specifications and procedures are described in detail in Chapter 6.

Appendix 2.A: Results of Testing Variations and Disability Analyses— July 2013

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

Testing Variations	Number ¹	Mean	SD ²	Percent (≥ 350)
Accommodations	70	316	26	9
Modifications	171	329	22	15
All	241	325	24	13
Disability				
Autism	33	323	20	6
Deaf	-	-	-	-
Deaf-Blindness	-	-	-	-
Emotional Disturbance	47	316	28	13
Hard of Hearing	15	316	29	13
Mental Retardation	19	300	24	5
Multiple Disabilities	-	-	-	-
Orthopedic Impairment	-	-	-	-
Other Health Impairment	70	324	27	14
Specific Learning Disability	617	322	22	11
Speech or Language Impairment	32	325	25	16
Traumatic Brain Injury	-	-	-	-
Visual Impairment	-	-	-	-

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

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

²SD — Standard Deviation

Table 2.A.2: Summary Statistics by Testing Variations and Disability—Mathematics, July 2013

Testing Variations	Number¹	Mean	SD²	Percent (≥350)
Accommodations	60	324	21	10
Modifications	295	335	20	22
All	355	333	20	20
Disability				
Autism	24	330	12	8
Deaf	-	-	-	-
Deaf-Blindness	-	-	-	-
Emotional Disturbance	53	327	24	17
Hard of Hearing	13	325	18	8
Mental Retardation	16	314	16	6
Multiple Disabilities	-	-	-	-
Orthopedic Impairment	-	-	-	-
Other Health Impairment	72	331	18	17
Specific Learning Disability	585	330	18	13
Speech or Language Impairment	25	333	22	20
Traumatic Brain Injury	-	-	-	-
Visual Impairment	-	-	-	-

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

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

²SD — Standard Deviation

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

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading ² Mean Percent Correct			Writing ² Mean Percent Correct		Writing Applications Mean Score ³
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	655	74	11	581	89	322	57	46	48	39	44	1.9
Transfer of T/B Responses to A/D (TS)	-	-	-	-	-	-	-	-	-	-	-	-
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-	-	-
Spell Checker/Grammar Checker Off (SO)	-	-	-	-	-	-	-	-	-	-	-	-
Essay Responses (EO)	-	-	-	-	-	-	-	-	-	-	-	-
Assistive Device No Interference (AN)	-	-	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	35	6	17	29	83	329	64	52	53	40	45	1.9
Supervised Breaks (SB)	60	11	18	49	82	318	54	43	48	37	36	1.8
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	66	12	18	54	82	331	65	53	55	41	49	2.0
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	126	22	17	104	83	330	64	51	54	42	48	1.9
Spell Checker or Grammar Checker (SC)	12	3	25	9	75	332	65	53	55	40	54	2.0
Essay Responses (ER)	-	-	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	30	4	13	26	87	335	69	56	58	43	47	2.1
Writing Only (WO)	-	-	-	-	-	-	-	-	-	-	-	-

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

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

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

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

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics ² Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	638	103	16	535	84	331	44	43	39	35	30
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)	30	4	13	26	87	333	45	53	38	38	26
Supervised Breaks (SB)	50	8	16	42	84	327	46	43	33	33	30
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	11	5	45	6	55	341	46	54	46	43	37
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	75	22	29	53	71	339	51	48	43	43	33
Calculator (CA)	292	64	22	228	78	335	47	47	41	38	31
Arithmetic Table (AT)	37	10	27	27	73	338	49	53	42	42	30
Math Manipulatives (MM)	12	3	25	9	75	340	50	55	38	47	35
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	26	3	12	23	88	335	44	48	38	43	31

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

²PS — 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 2013

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	279	307	325	338	359	372	322	24	655
Transfer of T/B Responses to A/D (TS)	-	-	-	-	-	-	-	-	-	-
Oral Responses Dictated to a Scribe (OR)	-	-	-	-	-	-	-	-	-	-
Spell Checker/Grammar Checker Off (SO)	-	-	-	-	-	-	-	-	-	-
Essay Responses (EO)	-	-	-	-	-	-	-	-	-	-
Assistive Device No Interference (AN)	-	-	-	-	-	-	-	-	-	-
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	-	-	-	-	-	-	-	-	-	-
Test Over More Than One Day (TD)	275	275	315	335	344	361	363	329	24	35
Supervised Breaks (SB)	275	275	291	313	343	362	385	318	29	60
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	291	296	317	333	346	363	391	331	22	66
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	275	291	313	334	344	363	385	330	23	126
Spell Checker or Grammar Checker (SC)	275	275	327	336	350	363	363	332	26	12
Essay Responses (ER)	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	275	309	329	336	346	361	363	335	17	30
Writing Only (WO)	-	-	-	-	-	-	-	-	-	-

¹SD — Standard Deviation

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

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

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	290	301	318	328	343	366	392	331	20	638
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)	275	296	320	340	346	370	378	333	22	30
Supervised Breaks (SB)	275	290	311	325	343	376	378	327	24	50
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	304	304	328	334	362	378	378	341	23	11
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	293	306	322	339	352	376	400	339	22	75
Calculator (CA)	293	306	321	334	346	374	392	335	20	292
Arithmetic Table (AT)	290	293	326	339	350	378	394	338	22	37
Math Manipulatives (MM)	306	306	327	344	350	378	378	340	21	12
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	304	306	324	336	344	353	378	335	17	26

¹SD — Standard Deviation²Results for groups with fewer than 11 students are not reported.

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

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Dictionary	Specific Learning Disability	39	328	17	8
IEP or Section 504 Plan	Autism	18	328	12	0
	Emotional Disturbance	36	319	27	14
	Hard of Hearing	12	313	32	17
	Mental Retardation	12	296	26	8
	Other Health Impairment	45	321	20	2
	Specific Learning Disability	432	322	22	11
	Speech or Language Impairment	17	328	26	18
	Specific Learning Disability	79	327	21	11
Oral Presentation	Specific Learning Disability	31	309	26	13
Supervised Breaks	Specific Learning Disability	15	332	14	7
Test Over More Than One Day	Specific Learning Disability	16	337	14	13
Unlisted Accommodation	Specific Learning Disability				

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

²SD — Standard Deviation

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

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	Specific Learning Disability	22	334	20	18
Calculator	Emotional Disturbance	14	337	25	36
	Other Health Impairment	21	332	20	24
	Specific Learning Disability	185	333	18	17
IEP or Section 504 Plan	Autism	15	332	13	13
	Emotional Disturbance	45	329	24	18
	Mental Retardation	11	317	14	9
	Other Health Impairment	48	331	20	17
	Specific Learning Disability	408	329	18	13
	Speech or Language Impairment	16	338	26	31
Oral Presentation	Specific Learning Disability	35	334	18	26
Supervised Breaks	Specific Learning Disability	25	323	21	8
Test Over More Than One Day	Specific Learning Disability	12	340	21	25
Unlisted Accommodation	Specific Learning Disability	11	333	19	9

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

²SD — Standard Deviation

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

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Dictionary	English-Only	36	334	25	25
	English-Learner	25	328	18	12
IEP or Section 504 Plan	English-Only	319	325	26	16
	Initially Fluent English Proficient	13	327	13	0
	Reclassified Fluent English Proficient	26	322	24	8
	English-Learner	269	320	22	8
Oral Presentation	Unknown	28	311	20	0
	English-Only	70	331	23	20
Supervised Breaks	English-Learner	50	327	22	14
	English-Only	38	323	30	26
Test Over More Than One Day	English-Learner	17	307	25	6
	English-Only	22	332	22	18
Unlisted Accommodation	English-Only	18	340	12	17
	English-Learner	12	327	20	8

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

²SD — Standard Deviation

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

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English-Only	26	338	23	23
Calculator	English-Only	155	339	21	28
	Initially Fluent English Proficient	11	334	19	27
	Reclassified Fluent English Proficient	21	336	20	24
IEP or Section 504 Plan	English-Learner	103	329	17	11
	English-Only	347	333	22	19
	Initially Fluent English Proficient	11	334	19	27
	Reclassified Fluent English Proficient	36	327	23	17
	English-Learner	222	328	18	11
Math Manipulatives	Unknown	22	333	21	23
	English-Only	11	338	20	18
Oral Presentation	English-Only	51	341	22	31
	English-Learner	21	333	17	24
Supervised Breaks	English-Only	34	333	25	24
	English-Learner	11	322	13	0
Test Over More Than One Day	English-Only	21	335	19	14
Unlisted Accommodation	English-Only	19	335	17	11

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

²SD — Standard Deviation

Appendix 2.B: Results of Testing Variations and Disability Analyses—October 2013

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

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	1,670	322	26	16
Modifications	2,599	326	23	17
All	4,269	325	24	17
Disability				
Autism	345	325	26	17
Deaf	92	310	21	3
Deaf-Blindness	-	-	-	-
Emotional Disturbance	638	324	31	21
Hard of Hearing	107	321	25	10
Mental Retardation	254	304	17	0
Multiple Disabilities	33	313	23	12
Orthopedic Impairment	71	322	25	13
Other Health Impairment	812	330	26	23
Specific Learning Disability	7,435	326	23	17
Speech or Language Impairment	405	327	22	17
Traumatic Brain Injury	49	324	25	14
Visual Impairment	24	329	27	17

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

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

²SD — Standard Deviation

Table 2.B.2: Summary Statistics by Testing Variations and Disability—Mathematics, October 2013

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	1,412	329	21	15
Modifications	3,534	331	20	17
All	4,946	331	20	16
Disability				
Autism	317	331	21	16
Deaf	67	328	17	12
Deaf-Blindness	-	-	-	-
Emotional Disturbance	673	328	24	17
Hard of Hearing	87	333	21	18
Mental Retardation	257	315	13	2
Multiple Disabilities	25	321	12	0
Orthopedic Impairment	81	330	21	17
Other Health Impairment	870	332	21	22
Specific Learning Disability	6,926	331	19	16
Speech or Language Impairment	335	331	17	14
Traumatic Brain Injury	40	327	16	13
Visual Impairment	29	331	17	10

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

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

²SD — Standard Deviation

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

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading ² Mean Percent Correct			Writing ² Mean Percent Correct		Writing Applications Mean Score ³
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	8,993	1,537	17	7,456	83	325	48	45	50	38	44	1.9
Transfer of T/B Responses to A/D (TS)	50	14	28	36	72	330	50	49	49	42	48	1.9
Oral Responses Dictated to a Scribe (OR)	34	11	32	23	68	331	53	50	53	45	46	1.8
Spell Checker/Grammar Checker Off (SO)	80	19	24	61	76	332	55	51	54	44	48	1.8
Essay Responses (EO)	18	3	17	15	83	330	56	46	53	42	45	1.9
Assistive Device No Interference (AN)	21	6	29	15	71	335	56	48	59	41	50	2.0
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	24	6	25	18	75	339	65	53	56	41	52	2.1
Test Over More Than One Day (TD)	400	77	19	323	81	324	49	44	49	38	43	1.8
Supervised Breaks (SB)	1,846	280	15	1,566	85	323	47	43	49	36	42	1.9
Beneficial Time (BT)	243	36	15	207	85	320	44	42	48	33	40	1.7
Tested at Home or Hospital (HH)	20	4	20	16	80	332	50	52	57	46	43	1.9
Dictionary (DI)	806	137	17	669	83	325	51	44	50	38	43	1.9
Sign Language (SL)	42	3	7	39	93	311	45	37	39	30	34	1.5
Oral Presentation (OP)	2,109	376	18	1,733	82	327	49	46	52	40	44	1.9
Spell Checker or Grammar Checker (SC)	111	29	26	82	74	333	53	49	57	40	48	2.0
Essay Responses (ER)	61	13	21	48	79	333	52	49	53	44	45	2.3
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	17	9	53	8	47	344	65	49	64	51	62	2.1
Unlisted Accommodation (UA)	294	45	15	249	85	325	46	45	50	36	45	1.8
Writing Only (WO)	175	14	8	161	92	314	42	38	42	30	36	1.7

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

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

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

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

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics ² Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	8,724	1,409	16	7,315	84	330	44	43	39	34	32
Transfer of T/B Responses to A/D (TS)	51	13	25	38	75	332	47	41	41	37	32
Oral Responses Dictated to a Scribe (OR)	17	8	47	9	53	346	57	51	45	52	39
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	22	3	14	19	86	332	49	42	42	34	31
Test Over More Than One Day (TD)	268	59	22	209	78	332	44	45	40	35	32
Supervised Breaks (SB)	1,645	260	16	1,385	84	330	44	43	38	34	31
Beneficial Time (BT)	215	37	17	178	83	329	45	44	36	32	29
Tested at Home or Hospital (HH)	24	5	21	19	79	330	47	47	34	35	28
Dictionary for Math (DM)	152	39	26	113	74	337	47	47	42	40	34
Sign Language (SL)	40	8	20	32	80	330	43	42	39	33	33
Oral Presentation (OP)	1,009	193	19	816	81	332	45	44	39	36	33
Calculator (CA)	3,502	593	17	2,909	83	331	44	44	39	35	32
Arithmetic Table (AT)	320	83	26	237	74	337	49	47	43	39	34
Math Manipulatives (MM)	40	12	30	28	70	338	48	49	44	41	34
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	36	4	11	32	89	331	49	46	36	32	27
Unlisted Accommodation (UA)	309	56	18	253	82	332	45	44	40	34	33

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

²PS — 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 2013

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	286	307	325	342	367	384	325	25	8,993
Transfer of T/B Responses to A/D (TS)	275	275	303	331	350	379	420	330	32	50
Oral Responses Dictated to a Scribe (OR)	275	283	307	330	350	376	381	331	29	34
Spell Checker/Grammar Checker Off (SO)	275	300	318	334	347	365	379	332	21	80
Essay Responses (EO)	275	275	315	334	348	381	381	330	27	18
Assistive Device No Interference (AN)	292	294	315	338	350	374	381	335	26	21
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	290	294	321	336	352	376	420	339	29	24
Test Over More Than One Day (TD)	275	277	303	325	344	371	391	324	28	400
Supervised Breaks (SB)	275	283	303	321	340	365	387	323	25	1,846
Beneficial Time (BT)	275	275	298	315	336	367	401	320	29	243
Tested at Home or Hospital (HH)	275	283	310	335	348	391	398	332	31	20
Dictionary (DI)	275	286	307	325	342	365	384	325	24	806
Sign Language (SL)	275	275	292	307	329	363	392	311	27	42
Oral Presentation (OP)	279	294	311	327	344	365	379	327	23	2,109
Spell Checker or Grammar Checker (SC)	275	290	313	336	350	376	395	333	27	111
Essay Responses (ER)	294	303	321	330	344	367	376	333	20	61
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	319	319	330	350	354	374	374	344	15	17
Unlisted Accommodation (UA)	275	286	305	325	342	367	379	325	24	294
Writing Only (WO)	275	275	296	311	330	358	392	314	24	175

¹SD — Standard Deviation

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

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

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	288	302	316	328	343	364	392	330	20	8,724
Transfer of T/B Responses to A/D (TS)	291	294	316	326	350	380	402	332	26	51
Oral Responses Dictated to a Scribe (OR)	309	309	328	346	359	384	384	346	24	17
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	291	309	318	330	345	362	376	332	19	22
Test Over More Than One Day (TD)	291	302	315	328	345	380	399	332	24	268
Supervised Breaks (SB)	288	302	316	328	341	366	399	330	22	1,645
Beneficial Time (BT)	275	302	314	324	339	376	405	329	24	215
Tested at Home or Hospital (HH)	280	288	310	328	342	387	392	330	30	24
Dictionary for Math (DM)	291	302	316	334	350	380	450	337	28	152
Sign Language (SL)	300	305	318	327	336	366	380	330	18	40
Oral Presentation (OP)	291	302	318	328	345	370	402	332	22	1,009
Calculator (CA)	291	305	318	330	343	364	394	331	20	3,502
Arithmetic Table (AT)	297	308	322	336	350	374	409	337	22	320
Math Manipulatives (MM)	297	309	321	333	355	379	389	338	22	40
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	300	305	320	331	337	359	374	331	15	36
Unlisted Accommodation (UA)	284	305	318	330	345	366	399	332	21	309

¹SD — Standard Deviation²Results for groups with fewer than 11 students are not reported.

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

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Beneficial Time	Emotional Disturbance	71	317	32	20
	Other Health Impairment	15	331	30	27
	Specific Learning Disability	124	319	27	11
Dictionary	Autism	28	322	26	14
	Emotional Disturbance	26	333	35	27
	Mental Retardation	18	304	16	0
	Other Health Impairment	57	333	26	30
	Specific Learning Disability	533	325	23	17
Essay Responses (ER)	Speech or Language Impairment	31	319	24	3
	Specific Learning Disability	35	331	15	11
IEP or Section 504 Plan	Autism	278	326	27	18
	Deaf	77	309	21	3
	Emotional Disturbance	557	323	31	20
	Hard of Hearing	78	320	25	9
	Mental Retardation	211	304	16	0
	Multiple Disability	25	307	17	0
	Orthopedic Impairment	60	323	24	13
	Other Health Impairment	633	331	26	23
	Specific Learning Disability	5,829	325	23	16
	Speech or Language Impairment	318	327	22	17
	Traumatic Brain Injury	36	323	24	11
	Visual Impairment	23	330	27	17
	Large Print Version	Visual Impairment	11	335	27
Oral Presentation	Autism	74	323	23	15
	Emotional Disturbance	71	323	26	15
	Hard of Hearing	14	323	21	7
	Mental Retardation	68	308	16	0
	Orthopedic Impairment	24	327	24	17
	Other Health Impairment	152	332	21	22
	Specific Learning Disability	1,426	328	22	19
	Speech or Language Impairment	80	327	20	14
Oral Responses Dictated to a Scribe	Traumatic Brain Injury	14	324	22	7
	Specific Learning Disability	12	335	27	42
Sign Language	Deaf	32	309	26	6
	Other Health Impairment	15	336	26	33
Spell Checker Or Grammar Checker	Deaf	18	308	29	6
	Specific Learning Disability	58	342	22	33
Spell Checker Or Grammar Checker Off	Other Health Impairment	11	337	23	36
	Specific Learning Disability	47	331	20	19
Supervised Breaks	Autism	51	324	26	16
	Deaf	14	304	14	0
	Emotional Disturbance	185	318	32	16
	Hard of Hearing	17	324	19	6
	Mental Retardation	45	304	15	0
	Orthopedic Impairment	13	323	28	15

Table 2.B.7 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
	Other Health Impairment	127	328	23	17
	Specific Learning Disability	1,144	323	24	16
	Speech or Language Impairment	50	323	21	8
Test Over More Than One Day	Autism	13	329	36	31
	Deaf	20	310	30	10
	Emotional Disturbance	59	318	35	20
	Other Health Impairment	18	332	29	33
	Specific Learning Disability	206	325	25	17
	Speech or Language Impairment	15	328	26	13
Transfer of Student T/B Responses to A/D	Autism	11	318	26	9
	Specific Learning Disability	12	331	28	25
Unlisted Accommodation	Emotional Disturbance	12	306	22	0
	Other Health Impairment	16	321	28	13
	Specific Learning Disability	183	326	23	16
	Speech or Language Impairment	15	327	18	7
Unlisted Modification	Specific Learning Disability	12	343	14	58
Writing ONLY	Deaf	49	308	24	4
	Specific Learning Disability	84	317	22	8

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

²SD — Standard Deviation

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

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	Emotional Disturbance	11	316	29	27
	Other Health Impairment	23	339	17	30
	Specific Learning Disability	231	337	19	25
Beneficial Time	Emotional Disturbance	72	324	22	14
	Other Health Impairment	13	322	34	15
	Specific Learning Disability	96	330	21	15
Calculator	Autism	112	330	20	14
	Emotional Disturbance	176	329	25	18
	Hard of Hearing	24	331	20	8
	Mental Retardation	97	316	14	3
	Orthopedic Impairment	31	331	22	23
	Other Health Impairment	295	333	20	22
	Specific Learning Disability	2,275	332	19	17
	Speech or Language Impairment	108	332	17	13
	Traumatic Brain Injury	19	328	17	11
	Dictionary for Math	Specific Learning Disability	91	332	21
IEP or Section 504 Plan	Autism	262	331	22	18
	Deaf	58	328	16	12
	Emotional Disturbance	579	327	24	17
	Hard of Hearing	61	330	22	13
	Mental Retardation	210	315	14	1
	Multiple Disability	21	321	11	0
	Orthopedic Impairment	69	331	21	19
	Other Health Impairment	699	333	21	23
	Specific Learning Disability	5,567	331	19	15
	Speech or Language Impairment	258	330	16	12
	Traumatic Brain Injury	32	327	17	13
	Visual Impairment	27	331	17	11
	Large Print Version	Visual Impairment	12	329	18
Math Manipulatives	Specific Learning Disability	18	342	22	33
Oral Presentation	Autism	38	329	20	13
	Emotional Disturbance	37	333	32	24
	Mental Retardation	39	317	15	5
	Orthopedic Impairment	19	338	20	37
	Other Health Impairment	59	337	22	25
	Specific Learning Disability	677	332	21	18
	Speech or Language Impairment	41	330	20	12
Sign Language	Deaf	24	329	20	21
Supervised Breaks	Autism	49	333	24	20
	Emotional Disturbance	170	328	25	15
	Hard of Hearing	15	329	14	7
	Mental Retardation	41	313	15	2
	Orthopedic Impairment	17	327	28	18

Table 2.B.8 (Continued)

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
	Other Health Impairment	120	332	24	23
	Specific Learning Disability	1,003	330	20	15
	Speech or Language Impairment	47	331	18	15
Test Over More Than One Day	Emotional Disturbance	45	325	26	20
	Other Health Impairment	12	338	30	33
	Specific Learning Disability	144	333	23	22
Transfer of Student T/B Responses to A/D	Specific Learning Disability	12	336	18	33
Unlisted Accommodation	Autism	12	327	12	0
	Emotional Disturbance	18	332	27	28
	Other Health Impairment	19	331	30	32
	Specific Learning Disability	200	333	20	18
	Speech or Language Impairment	13	331	14	8
Unlisted Modification	Specific Learning Disability	28	329	15	7

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

²SD — Standard Deviation

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

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Assistive Device No Interference	English-Only	16	335	28	31
Beneficial Time	English-Only	151	322	30	19
	English-Learner	84	314	25	7
Dictionary	English-Only	407	327	26	20
	Reclassified Fluent English Proficient	39	333	24	23
	English-Learner	332	323	22	13
	Unknown	18	324	27	17
Essay Responses (ER)	English-Only	37	333	22	22
	English-Learner	20	332	16	20
IEP or Section 504 Plan	English-Only	4,824	327	26	20
	Initially Fluent English Proficient	164	333	25	26
	Reclassified Fluent English Proficient	447	335	25	28
	English-Learner	3,453	321	22	11
	Unknown	105	323	27	20
Large Print Version	English-Only	22	341	28	27
Oral Presentation	English-Only	1,115	329	23	21
	Initially Fluent English Proficient	34	332	23	24
	Reclassified Fluent English Proficient	97	335	25	27
	English-Learner	845	324	21	12
	Unknown	18	340	24	33
Oral Responses Dictated to a Scribe	English-Only	25	333	31	40
Sign Language	English-Only	16	318	27	13
	English-Learner	24	302	20	0
Spell Checker Or Grammar Checker	English-Only	65	338	22	34
	English-Learner	39	320	27	8
Spell Checker Or Grammar Checker Off	English-Only	43	336	19	28
	English-Learner	31	325	22	16
Supervised Breaks	English-Only	1,098	324	26	16
	Initially Fluent English Proficient	23	339	22	39
	Reclassified Fluent English Proficient	67	331	28	25
	English-Learner	631	320	23	12
	Unknown	27	312	25	4
Test Over More Than One Day	English-Only	238	326	29	23
	Reclassified Fluent English Proficient	12	341	35	42
	English-Learner	141	319	24	9
Tested At Home Or Hospital	English-Only	11	321	34	18
Transfer of Student T/B Responses to A/D	English-Only	39	334	30	31
Unlisted Accommodation	English-Only	167	324	25	16
	Reclassified Fluent English Proficient	13	336	21	31
	English-Learner	95	326	23	15
	Unknown	15	312	20	7
Unlisted Modification	English-Only	11	343	14	55

Table 2.B.9 (Continued)

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
Writing ONLY	English-Only	98	316	24	11
	English-Learner	70	307	21	1

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

²SD — Standard Deviation

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

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English-Only	203	338	23	29
	English-Learner	88	335	19	19
	Unknown	11	340	15	36
Beneficial Time	English-Only	138	331	26	20
	English-Learner	70	325	18	10
Calculator	English-Only	2,019	332	21	19
	Initially Fluent English Proficient	77	334	21	23
	Reclassified Fluent English Proficient	173	335	19	22
	English-Learner	1,192	329	18	12
Dictionary for Math	English-Only	98	342	31	33
	English-Learner	46	325	17	7
	Unknown	41	332	27	29
IEP or Section 504 Plan	English-Only	5,004	331	21	18
	Initially Fluent English Proficient	176	334	20	22
	Reclassified Fluent English Proficient	445	335	20	23
	English-Learner	2,993	328	18	11
Large Print Version	English-Only	19	334	20	16
	English-Learner	27	342	20	33
	Unknown	106	328	23	20
Math Manipulatives	English-Only	618	334	23	21
	Initially Fluent English Proficient	16	338	21	31
	Reclassified Fluent English Proficient	40	335	22	23
	English-Learner	323	328	19	13
Oral Presentation	English-Only	12	343	17	50
	English-Learner	23	332	19	22
	Unknown	16	329	18	19
Sign Language	English-Only	23	332	19	22
	Initially Fluent English Proficient	1,023	331	23	18
	Reclassified Fluent English Proficient	22	329	14	14
	English-Learner	76	337	21	26
Supervised Breaks	English-Only	502	327	19	11
	Initially Fluent English Proficient	22	322	16	14
	English-Learner	22	322	16	14
Test Over More Than One Day	English-Only	174	335	26	24
	English-Learner	80	325	19	15
Tested At Home Or Hospital	English-Only	12	327	34	17
Transfer of Student T/B Responses to A/D	English-Only	37	331	29	22
Unlisted Accommodation	English-Only	194	334	22	20
	Initially Fluent English Proficient	12	337	20	25
	Reclassified Fluent English Proficient	82	329	18	15
	English-Learner	16	320	21	6
Unlisted Modification	English-Only	26	331	16	12

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

²SD — Standard Deviation

Appendix 2.C: Results of Testing Variations and Disability Analyses—November 2013

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

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	4,368	323	27	18
Modifications	6,230	327	24	19
All	10,598	325	25	18
Disability				
Unknown	-	-	-	-
Autism	1,189	326	26	18
Deaf	255	308	21	4
Deaf-Blindness	-	-	-	-
Emotional Disturbance	1,659	326	35	25
Hard of Hearing	325	327	25	19
Mental Retardation	581	303	19	3
Multiple Disabilities	41	313	25	10
Orthopedic Impairment	209	324	27	22
Other Health Impairment	2,619	330	28	26
Specific Learning Disability	20,181	326	24	18
Speech or Language Impairment	1,244	329	24	19
Traumatic Brain Injury	110	331	32	28
Visual Impairment	77	328	26	21

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

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

²SD — Standard Deviation

Table 2.C.2: Summary Statistics by Testing Variations and Disability—Mathematics, November 2013

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	3,544	329	22	15
Modifications	9,497	332	20	17
All	13,041	331	20	16
Disability				
Unknown	-	-	-	-
Autism	1,058	332	21	15
Deaf	172	327	18	10
Deaf-Blindness	-	-	-	-
Emotional Disturbance	1,771	330	26	18
Hard of Hearing	263	332	20	17
Mental Retardation	540	314	14	2
Multiple Disabilities	37	324	20	14
Orthopedic Impairment	224	329	21	15
Other Health Impairment	2,766	333	22	20
Specific Learning Disability	19,077	330	19	14
Speech or Language Impairment	1,004	332	19	16
Traumatic Brain Injury	104	332	26	19
Visual Impairment	84	335	22	26

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

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

²SD — Standard Deviation

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

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading ² Mean Percent Correct			Writing ² Mean Percent Correct		Writing Applications Mean Score ³
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	23,825	4,528	19	19,297	81	326	52	47	51	39	46	1.9
Transfer of T/B Responses to A/D (TS)	166	37	22	129	78	329	56	50	54	40	46	2.0
Oral Responses Dictated to a Scribe (OR)	42	11	26	31	74	330	59	49	53	44	49	1.6
Spell Checker/Grammar Checker Off (SO)	119	45	38	74	62	337	62	53	59	46	52	2.0
Essay Responses (EO)	52	22	42	30	58	342	64	57	62	47	54	2.1
Assistive Device No Interference (AN)	18	3	17	15	83	325	62	39	53	36	44	2.1
Braille Version (BV)	14	2	14	12	86	324	56	41	49	37	51	2.1
Large Print Version (LV)	60	14	23	46	77	332	60	52	56	42	49	1.9
Test Over More Than One Day (TD)	1,427	275	19	1,152	81	325	51	47	50	39	45	1.9
Supervised Breaks (SB)	4,281	758	18	3,523	82	324	50	45	50	38	44	1.9
Beneficial Time (BT)	564	90	16	474	84	319	48	42	48	35	41	1.7
Tested at Home or Hospital (HH)	54	14	26	40	74	324	56	45	52	38	44	1.7
Dictionary (DI)	1,957	337	17	1,620	83	326	54	46	51	39	46	2.0
Sign Language (SL)	71	6	8	65	92	317	51	39	45	40	40	1.7
Oral Presentation (OP)	5,075	1,028	20	4,047	80	328	54	48	54	40	46	1.9
Spell Checker or Grammar Checker (SC)	388	101	26	287	74	331	55	50	55	42	49	2.1
Essay Responses (ER)	57	20	35	37	65	336	62	54	57	47	47	2.2
Assistive Device (AD)	34	9	26	25	74	332	58	48	54	43	50	2.2
Unlisted Modification (UM)	51	16	31	35	69	338	60	52	60	44	56	2.1
Unlisted Accommodation (UA)	436	100	23	336	77	326	52	47	52	39	44	2.0
Writing Only (WO)	554	64	12	490	88	317	46	41	45	37	41	1.8

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

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

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

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

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics ² Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	23,364	3,604	15	19,760	85	330	45	45	40	36	32
Transfer of T/B Responses to A/D (TS)	125	24	19	101	81	335	47	48	44	39	34
Oral Responses Dictated to a Scribe (OR)	28	6	21	22	79	331	48	44	40	37	32
Braille Version (BV)	21	3	14	18	86	331	39	46	40	33	34
Large Print Version (LV)	45	10	22	35	78	333	49	44	44	36	31
Test Over More Than One Day (TD)	783	139	18	644	82	332	45	45	41	37	34
Supervised Breaks (SB)	3,597	509	14	3,088	86	329	44	44	38	35	31
Beneficial Time (BT)	532	84	16	448	84	327	42	44	37	35	30
Tested at Home or Hospital (HH)	54	9	17	45	83	327	46	45	39	33	24
Dictionary for Math (DM)	363	70	19	293	81	334	46	48	41	39	34
Sign Language (SL)	77	15	19	62	81	334	45	45	45	40	35
Oral Presentation (OP)	2,798	452	16	2,346	84	331	45	45	40	38	33
Calculator (CA)	9,345	1,540	16	7,805	84	332	45	47	40	38	33
Arithmetic Table (AT)	847	182	21	665	79	334	47	48	41	39	34
Math Manipulatives (MM)	115	23	20	92	80	332	47	47	40	38	32
Assistive Device (AD)	19	9	47	10	53	343	58	49	49	46	39
Unlisted Modification (UM)	44	18	41	26	59	343	54	54	47	47	37
Unlisted Accommodation (UA)	460	107	23	353	77	333	48	47	42	38	33

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

²PS — 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 2013

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	285	305	324	344	369	390	326	26	23,825
Transfer of T/B Responses to A/D (TS)	281	291	307	330	348	364	387	329	25	166
Oral Responses Dictated to a Scribe (OR)	275	275	309	328	352	381	424	330	33	42
Spell Checker/Grammar Checker Off (SO)	275	293	313	336	358	384	396	337	28	119
Essay Responses (EO)	276	297	316	344	360	384	450	342	31	52
Assistive Device No Interference (AN)	286	286	313	325	336	358	358	325	19	18
Braille Version (BV)	286	286	313	325	331	377	377	324	23	14
Large Print Version (LV)	283	290	309	332	348	381	399	332	27	60
Test Over More Than One Day (TD)	275	283	305	324	344	369	387	325	26	1,427
Supervised Breaks (SB)	275	283	303	322	342	369	393	324	26	4,281
Beneficial Time (BT)	275	275	295	314	340	369	399	319	29	564
Tested at Home or Hospital (HH)	275	275	291	318	352	390	419	324	38	54
Dictionary (DI)	275	289	309	326	344	364	379	326	23	1,957
Sign Language (SL)	275	283	297	316	336	356	367	317	23	71
Oral Presentation (OP)	276	291	311	328	346	367	381	328	24	5,075
Spell Checker or Grammar Checker (SC)	283	291	313	330	350	374	384	331	25	388
Essay Responses (ER)	275	291	318	342	354	379	381	336	25	57
Assistive Device (AD)	289	291	313	335	352	371	379	332	25	34
Unlisted Modification (UM)	283	287	322	340	356	371	396	338	25	51
Unlisted Accommodation (UA)	275	289	305	324	346	369	406	326	27	436
Writing Only (WO)	275	281	297	314	334	364	381	317	26	554

¹SD — Standard Deviation²Results for groups with fewer than 11 students are not reported.

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

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	316	328	342	366	389	330	21	23,364
Transfer of T/B Responses to A/D (TS)	292	300	320	333	346	380	413	335	25	125
Oral Responses Dictated to a Scribe (OR)	275	292	316	325	348	369	382	331	25	28
Braille Version (BV)	299	301	316	324	330	382	413	331	27	21
Large Print Version (LV)	298	300	316	330	346	364	397	333	21	45
Test Over More Than One Day (TD)	279	300	316	332	346	366	392	332	21	783
Supervised Breaks (SB)	286	300	314	326	341	364	392	329	21	3,597
Beneficial Time (BT)	275	295	312	322	341	368	406	327	25	532
Tested at Home or Hospital (HH)	275	282	305	323	339	403	406	327	30	54
Dictionary for Math (DM)	295	305	318	333	346	368	422	334	21	363
Sign Language (SL)	298	305	318	333	348	373	397	334	22	77
Oral Presentation (OP)	292	303	316	330	342	366	394	331	20	2,798
Calculator (CA)	289	303	318	330	344	366	387	332	20	9,345
Arithmetic Table (AT)	295	303	318	332	348	371	397	334	22	847
Math Manipulatives (MM)	275	298	314	330	346	368	422	332	25	115
Assistive Device (AD)	298	298	328	349	360	366	366	343	18	19
Unlisted Modification (UM)	295	307	327	346	355	380	403	343	24	44
Unlisted Accommodation (UA)	292	303	316	330	348	370	389	333	22	460

¹SD — Standard Deviation

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

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

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Assistive Device	Specific Learning Disability	16	331	24	25
Beneficial Time	Autism	27	316	27	15
	Emotional Disturbance	106	311	33	15
	Mental Retardation	14	296	20	0
	Other Health Impairment	50	326	37	28
	Specific Learning Disability	313	319	25	13
Braille Version	Visual Impairment	14	324	23	14
Dictionary	Autism	85	326	23	14
	Emotional Disturbance	68	322	26	16
	Hard of Hearing	24	326	23	17
	Mental Retardation	44	308	21	5
	Orthopedic Impairment	13	314	25	8
	Other Health Impairment	122	333	25	28
	Specific Learning Disability	1,424	326	23	17
	Speech or Language Impairment	59	324	22	8
Essay Responses (EO)	Orthopedic Impairment	13	347	29	46
	Specific Learning Disability	15	347	24	53
Essay Responses (ER)	Specific Learning Disability	26	336	24	35
IEP or Section 504 Plan	Autism	970	325	26	18
	Deaf	193	308	21	4
	Emotional Disturbance	1,359	326	34	25
	Hard of Hearing	239	326	25	18
	Mental Retardation	487	304	20	3
	Multiple Disability	36	312	26	8
	Orthopedic Impairment	170	323	26	20
	Other Health Impairment	2,057	330	28	25
	Specific Learning Disability	15,834	325	24	18
	Speech or Language Impairment	906	326	24	16
	Traumatic Brain Injury	84	324	28	17
Large Print Version	Visual Impairment	70	328	26	21
	Visual Impairment	28	331	28	21
Oral Presentation	Autism	236	323	23	14
	Emotional Disturbance	154	326	28	21
	Hard of Hearing	47	325	25	19
	Mental Retardation	119	309	21	4
	Orthopedic Impairment	48	326	22	21
	Other Health Impairment	373	332	25	26
	Specific Learning Disability	3,630	329	24	21
	Speech or Language Impairment	209	326	21	11
	Traumatic Brain Injury	23	315	25	9
	Visual Impairment	18	329	23	22
Oral Responses Dictated to a Scribe	Orthopedic Impairment	12	337	27	42
Sign Language	Deaf	50	312	23	6
	Hard of Hearing	18	330	20	17

Table 2.C.7 (Continued)

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)	
Spell Checker Or Grammar Checker	Autism	17	332	28	24	
	Deaf	21	308	21	5	
	Emotional Disturbance	17	321	24	6	
	Other Health Impairment	32	331	29	34	
	Specific Learning Disability	261	334	23	28	
	Speech or Language Impairment	14	337	28	43	
Spell Checker Or Grammar Checker Off	Autism	16	339	26	38	
	Other Health Impairment	19	332	20	32	
	Specific Learning Disability	45	333	32	31	
Supervised Breaks	Autism	152	323	25	16	
	Deaf	12	310	15	0	
	Emotional Disturbance	409	322	34	22	
	Hard of Hearing	43	324	23	14	
	Mental Retardation	109	303	22	5	
	Orthopedic Impairment	31	317	27	16	
	Other Health Impairment	348	329	29	27	
	Specific Learning Disability	2,748	324	25	16	
	Speech or Language Impairment	140	323	23	14	
	Traumatic Brain Injury	14	324	24	14	
	Visual Impairment	14	321	30	21	
	Test Over More Than One Day	Autism	63	325	25	14
		Deaf	38	304	17	3
Emotional Disturbance		90	315	27	13	
Hard of Hearing		14	325	21	7	
Mental Retardation		39	307	21	3	
Orthopedic Impairment		15	324	29	20	
Other Health Impairment		102	332	29	28	
Specific Learning Disability		959	326	26	21	
Speech or Language Impairment		40	326	22	13	
Tested At Home Or Hospital		Emotional Disturbance	11	309	43	18
	Other Health Impairment	11	339	47	45	
	Specific Learning Disability	18	319	30	17	
Transfer of Student T/B Responses to A/D	Autism	11	320	23	9	
	Orthopedic Impairment	12	335	27	25	
	Other Health Impairment	16	329	23	31	
	Specific Learning Disability	73	331	23	25	
	Visual Impairment	21	324	29	14	
Unlisted Accommodation	Autism	16	340	29	38	
	Emotional Disturbance	22	338	39	32	
	Other Health Impairment	40	330	25	35	
	Specific Learning Disability	297	323	25	19	
	Speech or Language Impairment	19	326	20	16	
Unlisted Modification	Specific Learning Disability	42	342	25	38	

Table 2.C.7 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Writing ONLY	Autism	15	322	21	7
	Deaf	104	303	18	2
	Emotional Disturbance	16	332	30	31
	Hard of Hearing	12	322	20	8
	Mental Retardation	25	308	21	8
	Other Health Impairment	31	333	38	29
	Specific Learning Disability	309	321	25	13
	Speech or Language Impairment	12	319	14	0

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

²SD — Standard Deviation

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

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	Autism	30	333	21	17
	Emotional Disturbance	26	336	27	35
	Mental Retardation	19	319	12	0
	Other Health Impairment	71	337	26	23
	Specific Learning Disability	608	334	21	21
	Speech or Language Impairment	19	330	20	16
Beneficial Time	Autism	21	331	25	19
	Emotional Disturbance	103	324	25	17
	Mental Retardation	12	308	22	8
	Other Health Impairment	39	333	30	28
	Specific Learning Disability	306	326	21	12
	Speech or Language Impairment	13	328	17	8
Braille Version	Visual Impairment	16	327	22	13
Calculator	Autism	392	331	20	14
	Deaf	22	335	24	27
	Emotional Disturbance	453	330	24	17
	Hard of Hearing	69	332	22	19
	Mental Retardation	171	318	16	4
	Orthopedic Impairment	84	329	18	13
	Other Health Impairment	845	334	21	21
	Specific Learning Disability	6,374	332	19	16
	Speech or Language Impairment	348	330	17	9
	Traumatic Brain Injury	45	331	24	18
	Visual Impairment	26	339	21	27
Dictionary for Math	Emotional Disturbance	12	348	40	33
	Mental Retardation	16	320	19	6
	Other Health Impairment	25	342	22	24
	Specific Learning Disability	246	333	19	20
IEP or Section 504 Plan	Autism	889	331	21	15
	Deaf	131	327	19	11
	Emotional Disturbance	1,465	330	26	18
	Hard of Hearing	206	332	20	17
	Mental Retardation	452	314	14	2
	Multiple Disability	32	323	20	13
	Orthopedic Impairment	181	328	20	12
	Other Health Impairment	2,211	333	22	20
	Specific Learning Disability	15,322	330	19	14
	Speech or Language Impairment	765	330	18	11
	Traumatic Brain Injury	88	331	25	18
Visual Impairment	76	333	22	22	
Large Print Version	Visual Impairment	24	336	25	29
Math Manipulatives	Other Health Impairment	13	340	36	31
	Specific Learning Disability	65	329	20	15

Table 2.C.8 (Continued)

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Oral Presentation	Autism	133	327	20	8
	Emotional Disturbance	80	330	27	20
	Hard of Hearing	30	336	29	23
	Mental Retardation	80	319	16	4
	Orthopedic Impairment	29	329	24	21
	Other Health Impairment	218	335	20	22
	Specific Learning Disability	1,947	332	20	16
	Speech or Language Impairment	119	330	18	10
	Traumatic Brain Injury	15	330	27	13
	Visual Impairment	13	334	21	23
Sign Language	Deaf	46	333	22	20
	Specific Learning Disability	17	337	21	12
Supervised Breaks	Autism	131	329	19	10
	Emotional Disturbance	370	327	24	15
	Hard of Hearing	25	330	17	4
	Mental Retardation	93	312	15	2
	Orthopedic Impairment	25	329	29	12
	Other Health Impairment	318	331	24	20
	Specific Learning Disability	2,275	329	20	14
	Speech or Language Impairment	101	329	18	10
	Traumatic Brain Injury	12	337	28	25
	Visual Impairment	17	331	27	24
Test Over More Than One Day	Autism	36	334	21	19
	Emotional Disturbance	63	324	23	8
	Mental Retardation	14	312	14	0
	Other Health Impairment	69	334	25	29
	Specific Learning Disability	519	332	20	17
	Speech or Language Impairment	25	337	21	16
Tested At Home Or Hospital	Specific Learning Disability	22	319	21	9
Transfer of Student T/B Responses to A/D	Other Health Impairment	16	338	26	25
	Specific Learning Disability	57	335	21	16
	Visual Impairment	18	334	29	28
Unlisted Accommodation	Autism	22	335	20	23
	Emotional Disturbance	20	340	21	30
	Other Health Impairment	43	341	22	40
	Specific Learning Disability	324	331	21	20
	Speech or Language Impairment	15	326	18	7
Unlisted Modification	Specific Learning Disability	28	346	25	46

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

²SD — Standard Deviation

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

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Assistive Device	English-Only	22	331	26	23
Assistive Device No Interference	English-Only	11	331	19	27
Beneficial Time	English-Only	343	321	30	19
	Reclassified Fluent English Proficient	18	322	29	22
	English-Learner	186	313	25	10
Dictionary	English-Only	938	327	24	19
	Initially Fluent English Proficient	33	332	23	24
	Reclassified Fluent English Proficient	110	336	22	34
	English-Learner	855	323	22	13
	Unknown	21	319	22	10
	English-Only	38	342	33	39
Essay Responses (EO)	English-Only	36	337	26	36
Essay Responses (ER)	English-Learner	15	332	23	20
	English-Only	12,930	327	27	22
IEP or Section 504 Plan	Initially Fluent English Proficient	574	327	26	20
	Reclassified Fluent English Proficient	1,405	338	25	37
	English-Learner	8,727	321	23	12
	Unknown	189	328	29	24
	English-Only	37	335	26	24
Large Print Version	English-Only	2,645	330	25	23
	Initially Fluent English Proficient	86	333	24	21
	Reclassified Fluent English Proficient	268	337	24	38
	English-Learner	2,045	324	22	14
	Unknown	31	334	24	29
Oral Presentation	English-Only	31	331	35	26
Oral Responses Dictated to a Scribe	English-Only	27	319	24	11
	English-Learner	43	314	21	5
Spell Checker Or Grammar Checker	English-Only	190	334	24	27
	Reclassified Fluent English Proficient	28	349	22	57
	English-Learner	159	324	24	18
Spell Checker Or Grammar Checker Off	English-Only	81	339	28	43
	English-Learner	29	326	29	21
Supervised Breaks	English-Only	2,440	325	28	20
	Initially Fluent English Proficient	99	325	27	19
	Reclassified Fluent English Proficient	236	335	26	30
	English-Learner	1,460	319	23	11

Table 2.C.9 (Continued)

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
	Unknown	46	323	30	24
Test Over More Than One Day	English-Only	688	326	27	21
	Initially Fluent English Proficient	62	320	23	6
	Reclassified Fluent English Proficient	68	348	24	53
	English-Learner	605	322	24	15
Tested At Home Or Hospital	English-Only	32	329	40	31
	English-Learner	15	314	33	13
Transfer of Student T/B Responses to A/D	English-Only	103	330	25	21
	Reclassified Fluent English Proficient	15	336	24	47
	English-Learner	40	323	25	18
Unlisted Accommodation	English-Only	284	327	28	24
	Reclassified Fluent English Proficient	14	334	24	43
	English-Learner	127	323	25	17
Unlisted Modification	English-Only	35	341	25	37
	English-Learner	14	328	27	21
Writing ONLY	English-Only	329	319	27	13
	Reclassified Fluent English Proficient	24	332	26	29
	English-Learner	193	313	22	7

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

²SD — Standard Deviation

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

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English-Only	514	335	22	23
	Initially Fluent English Proficient	11	347	18	45
	Reclassified Fluent English Proficient	53	342	21	30
	English-Learner	265	331	20	15
Assistive Device	English-Only	12	343	21	58
Beneficial Time	English-Only	325	328	25	17
	Initially Fluent English Proficient	12	344	41	25
	Reclassified Fluent English Proficient	26	335	28	23
	English-Learner	160	322	21	11
Calculator	English-Only	5,309	333	20	18
	Initially Fluent English Proficient	177	336	20	22
	Reclassified Fluent English Proficient	536	338	20	25
	English-Learner	3,250	329	18	12
	Unknown	73	333	24	12
Dictionary for Math	English-Only	204	337	23	24
	English-Learner	138	329	18	11
IEP or Section 504 Plan	English-Only	13,399	331	22	17
	Initially Fluent English Proficient	584	332	21	18
	Reclassified Fluent English Proficient	1,428	338	20	24
	English-Learner	7,771	327	19	11
	Unknown	182	333	25	16
Large Print Version	English-Only	27	333	19	26
Math Manipulatives	English-Only	73	335	27	22
	English-Learner	33	325	18	12
Oral Presentation	English-Only	1,549	332	21	18
	Initially Fluent English Proficient	42	331	18	14
	Reclassified Fluent English Proficient	151	337	21	23
	English-Learner	1,031	330	20	13
	Unknown	25	332	18	12
Oral Responses Dictated to a Scribe	English-Only	17	330	24	18
Sign Language	English-Only	31	334	21	13
	English-Learner	43	334	22	23
Supervised Breaks	English-Only	2,083	329	21	15
	Initially Fluent English Proficient	92	329	20	15
	Reclassified Fluent English Proficient	217	336	20	25
	English-Learner	1,165	327	20	11

Table 2.C.10 (Continued)

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
	Unknown	40	330	20	13
Test Over More Than One Day	English-Only	393	333	22	21
	Initially Fluent English Proficient	20	329	22	15
	Reclassified Fluent English Proficient	40	337	17	18
	English-Learner	328	329	20	13
Tested At Home Or Hospital	English-Only	32	334	33	22
	English-Learner	18	313	20	6
Transfer of Student T/B Responses to A/D	English-Only	82	333	22	16
	Reclassified Fluent English Proficient	14	347	28	36
	English-Learner	22	340	31	27
Unlisted Accommodation	English-Only	329	334	22	25
	Initially Fluent English Proficient	13	336	21	38
	Reclassified Fluent English Proficient	18	333	27	28
	English-Learner	95	329	20	13
Unlisted Modification	English-Only	24	337	24	33

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

²SD — Standard Deviation

Appendix 2.D: Results of Testing Variations and Disability Analyses—December 2013

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

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	32	340	28	34
Modifications	68	330	21	22
All	100	333	24	26
Disability				
Autism	-	-	-	-
Deaf	-	-	-	-
Deaf-Blindness	-	-	-	-
Emotional Disturbance	-	-	-	-
Hard of Hearing	-	-	-	-
Mental Retardation	-	-	-	-
Multiple Disabilities	-	-	-	-
Orthopedic Impairment	-	-	-	-
Other Health Impairment	23	331	28	26
Specific Learning Disability	234	328	24	21
Speech or Language Impairment	-	-	-	-
Traumatic Brain Injury	-	-	-	-

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

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

²SD — Standard Deviation

Table 2.D.2: Summary Statistics by Testing Variations and Disability—Mathematics, December 2013

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	16	333	18	25
Modifications	72	331	18	19
All	88	332	18	20
Disability				
Autism	-	-	-	-
Deaf	-	-	-	-
Deaf-Blindness	-	-	-	-
Emotional Disturbance	-	-	-	-
Hard of Hearing	-	-	-	-
Mental Retardation	-	-	-	-
Multiple Disabilities	-	-	-	-
Orthopedic Impairment	-	-	-	-
Other Health Impairment	29	329	17	14
Specific Learning Disability	204	332	19	19
Speech or Language Impairment	-	-	-	-
Traumatic Brain Injury	-	-	-	-

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

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

²SD — Standard Deviation

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

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading ² Mean Percent Correct			Writing ² Mean Percent Correct		Writing Applications Mean Score ³
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	217	46	21	171	79	329	47	50	51	38	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)	13	10	77	3	23	360	59	67	70	67	71	2.1
Supervised Breaks (SB)	26	10	38	16	62	341	58	53	62	44	57	2.0
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	25	2	8	23	92	318	42	43	40	35	42	2.0
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	53	14	26	39	74	334	45	54	53	44	54	2.1
Spell Checker or Grammar Checker (SC)	-	-	-	-	-	-	-	-	-	-	-	-
Essay Responses (ER)	-	-	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	-	-	-	-	-	-	-	-	-	-	-	-
Writing Only (WO)	-	-	-	-	-	-	-	-	-	-	-	-

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

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

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

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

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics ² Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	208	43	21	165	79	333	45	42	42	36	34
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)	-	-	-	-	-	-	-	-	-	-	-
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	-	-	-	-	-	-	-	-	-	-	-
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	15	6	40	9	60	341	49	46	49	41	39
Calculator (CA)	72	14	19	58	81	331	44	41	40	36	34
Arithmetic Table (AT)	18	2	11	16	89	334	43	40	43	38	37
Math Manipulatives (MM)	-	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	-	-	-	-	-	-	-	-	-	-	-

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

²PS — 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 2013

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	289	312	330	346	374	385	329	25	217
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)	314	314	350	361	377	390	390	360	21	13
Supervised Breaks (SB)	286	289	322	340	359	387	390	341	29	26
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary (DI)	291	291	308	316	330	350	354	318	18	25
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	294	301	316	338	350	361	377	334	20	53
Spell Checker or Grammar Checker (SC)	-	-	-	-	-	-	-	-	-	-
Essay Responses (ER)	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	-	-	-	-	-	-	-	-	-	-
Writing Only (WO)	-	-	-	-	-	-	-	-	-	-

¹SD — Standard Deviation

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

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

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	291	302	318	332	345	363	373	333	19	208
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)	-	-	-	-	-	-	-	-	-	-
Beneficial Time (BT)	-	-	-	-	-	-	-	-	-	-
Tested at Home or Hospital (HH)	-	-	-	-	-	-	-	-	-	-
Dictionary for Math (DM)	-	-	-	-	-	-	-	-	-	-
Sign Language (SL)	-	-	-	-	-	-	-	-	-	-
Oral Presentation (OP)	310	310	330	341	352	369	369	341	17	15
Calculator (CA)	294	305	316	330	345	363	371	331	18	72
Arithmetic Table (AT)	314	314	325	333	345	359	359	334	13	18
Math Manipulatives (MM)	-	-	-	-	-	-	-	-	-	-
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	-	-	-	-	-	-	-	-	-	-
Unlisted Accommodation (UA)	-	-	-	-	-	-	-	-	-	-

¹SD — Standard Deviation

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

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

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Dictionary	Specific Learning Disability	17	313	16	0
IEP or Section 504 Plan	Other Health Impairment	15	334	30	33
	Specific Learning Disability	168	328	25	21
Oral Presentation	Specific Learning Disability	40	336	21	30
Supervised Breaks	Specific Learning Disability	21	345	28	48
Test Over More Than One Day	Specific Learning Disability	13	360	21	77

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

²SD — Standard Deviation

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

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	Specific Learning Disability	16	335	13	13
Calculator	Specific Learning Disability	54	332	19	20
IEP or Section 504 Plan	Other Health Impairment	20	332	17	15
	Specific Learning Disability	154	333	20	21
Oral Presentation	Specific Learning Disability	14	343	16	43

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

²SD — Standard Deviation

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

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Dictionary	English-Learner	15	316	14	0
IEP or Section 504 Plan	English-Only	87	328	27	23
	English-Learner	115	331	23	21
Oral Presentation	English-Only	17	335	19	24
	English-Learner	34	333	21	29
Supervised Breaks	English-Learner	21	340	31	43
Test Over More Than One Day	English-Learner	12	360	21	75

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

²SD — Standard Deviation

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

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English-Only	11	331	12	9
Calculator	English-Only	38	327	18	13
	English-Learner	29	334	18	24
IEP or Section 504 Plan	English-Only	111	330	19	17
	Reclassified Fluent English Proficient	13	344	18	38
	English-Learner	78	334	20	23

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

²SD — Standard Deviation

Appendix 2.E: Results of Testing Variations and Disability Analyses—February 2014

Table 2.E.1: Summary Statistics by Testing Variations and Disability—ELA, February 2014

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	4,163	326	34	22
Modifications	3,415	322	26	13
All	7,578	325	30	18
Disability				
Unknown	-	-	-	-
Autism	1,064	343	41	38
Deaf	206	309	29	7
Deaf-Blindness	-	-	-	-
Emotional Disturbance	1,584	332	40	32
Hard of Hearing	269	334	40	29
Mental Retardation	510	300	20	2
Multiple Disabilities	42	318	28	12
Orthopedic Impairment	183	338	41	36
Other Health Impairment	2,381	339	36	36
Specific Learning Disability	15,971	326	29	19
Speech or Language Impairment	1,235	341	38	35
Traumatic Brain Injury	89	323	28	16
Visual Impairment	91	351	40	49

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

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

²SD — Standard Deviation

Table 2.E.2: Summary Statistics by Testing Variations and Disability—Mathematics, February 2014

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	3,568	334	29	24
Modifications	5,399	333	21	19
All	8,967	333	25	21
Disability				
Unknown	-	-	-	-
Autism	1,050	352	41	41
Deaf	165	332	27	20
Deaf-Blindness	-	-	-	-
Emotional Disturbance	1,699	336	31	27
Hard of Hearing	255	350	35	41
Mental Retardation	503	315	16	4
Multiple Disabilities	42	326	21	14
Orthopedic Impairment	197	341	32	35
Other Health Impairment	2,495	342	30	35
Specific Learning Disability	15,753	335	25	24
Speech or Language Impairment	1,162	352	37	41
Traumatic Brain Injury	89	332	29	22
Visual Impairment	89	352	40	48

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

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

²SD — Standard Deviation

Table 2.E.3: Demographic Summary for All Examinees by Testing Variations—ELA, February 2014

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading ² Mean Percent Correct			Writing ² Mean Percent Correct		Writing Applications Mean Score ³
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	18,891	4,211	22	14,680	78	328	59	50	52	42	50	1.9
Transfer of T/B Responses to A/D (TS)	195	78	40	117	60	340	66	58	59	48	57	1.9
Oral Responses Dictated to a Scribe (OR)	47	15	32	32	68	337	65	54	59	49	56	1.9
Spell Checker/Grammar Checker Off (SO)	180	66	37	114	63	344	69	59	60	48	58	2.0
Essay Responses (EO)	42	12	29	30	71	330	62	52	53	45	46	1.8
Assistive Device No Interference (AN)	22	6	27	16	73	340	62	58	59	45	58	2.1
Braille Version (BV)	14	4	29	10	71	323	46	48	44	35	46	1.6
Large Print Version (LV)	59	30	51	29	49	351	76	65	63	55	64	2.1
Test Over More Than One Day (TD)	963	127	13	836	87	319	53	44	48	37	45	1.8
Supervised Breaks (SB)	3,594	686	19	2,908	81	325	57	48	50	40	48	1.8
Beneficial Time (BT)	455	64	14	391	86	321	53	46	48	38	45	1.7
Tested at Home or Hospital (HH)	37	9	24	28	76	323	55	50	51	42	43	1.7
Dictionary (DI)	1,052	127	12	925	88	321	58	45	48	38	47	1.9
Sign Language (SL)	50	4	8	46	92	312	50	38	45	33	43	1.7
Oral Presentation (OP)	2,693	364	14	2,329	86	323	59	47	51	39	47	1.9
Spell Checker or Grammar Checker (SC)	190	46	24	144	76	331	62	50	56	44	50	2.0
Essay Responses (ER)	49	13	27	36	73	337	73	52	58	45	50	2.2
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	28	2	7	26	93	313	46	41	45	38	41	1.5
Unlisted Accommodation (UA)	813	207	25	606	75	332	62	52	55	45	52	1.9
Writing Only (WO)	263	24	9	239	91	311	45	41	43	33	40	1.7

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

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

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

Table 2.E.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, February 2014

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics ² Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	18,987	4,811	25	14,176	75	336	48	48	43	40	35
Transfer of T/B Responses to A/D (TS)	146	59	40	87	60	342	52	51	48	43	39
Oral Responses Dictated to a Scribe (OR)	27	13	48	14	52	350	56	54	54	46	45
Braille Version (BV)	12	4	33	8	67	339	58	53	43	36	33
Large Print Version (LV)	56	27	48	29	52	348	54	54	54	45	44
Test Over More Than One Day (TD)	489	92	19	397	81	331	45	45	40	38	31
Supervised Breaks (SB)	3,235	717	22	2,518	78	333	46	46	41	38	33
Beneficial Time (BT)	427	76	18	351	82	328	44	44	38	35	29
Tested at Home or Hospital (HH)	26	6	23	20	77	330	45	45	43	34	29
Dictionary for Math (DM)	118	21	18	97	82	331	44	47	39	37	31
Sign Language (SL)	50	8	16	42	84	331	45	46	41	36	32
Oral Presentation (OP)	1,749	379	22	1,370	78	333	45	49	40	39	33
Calculator (CA)	5,292	1,029	19	4,263	81	333	44	50	40	38	32
Arithmetic Table (AT)	445	91	20	354	80	335	47	51	40	39	33
Math Manipulatives (MM)	82	17	21	65	79	332	47	48	39	37	33
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	61	7	11	54	89	327	41	44	37	34	32
Unlisted Accommodation (UA)	783	208	27	575	73	337	49	49	44	40	36

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

²PS — 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 2014

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	281	303	325	347	388	419	328	33	18,891
Transfer of T/B Responses to A/D (TS)	275	281	311	337	363	406	450	340	38	195
Oral Responses Dictated to a Scribe (OR)	277	283	309	335	356	402	414	337	33	47
Spell Checker/Grammar Checker Off (SO)	275	285	315	337	371	419	450	344	40	180
Essay Responses (EO)	275	275	301	327	352	385	402	330	35	42
Assistive Device No Interference (AN)	283	295	323	332	352	410	414	340	33	22
Braille Version (BV)	275	275	279	321	357	414	414	323	45	14
Large Print Version (LV)	283	289	331	352	379	406	442	351	34	59
Test Over More Than One Day (TD)	275	275	297	317	339	366	394	319	28	963
Supervised Breaks (SB)	275	281	299	321	345	382	414	325	31	3,594
Beneficial Time (BT)	275	277	297	315	337	385	450	321	34	455
Tested at Home or Hospital (HH)	275	275	295	313	347	391	402	323	35	37
Dictionary (DI)	275	281	301	319	339	366	388	321	26	1,052
Sign Language (SL)	275	279	295	306	325	361	388	312	26	50
Oral Presentation (OP)	275	285	305	323	339	366	388	323	25	2,693
Spell Checker or Grammar Checker (SC)	283	289	307	327	349	385	442	331	32	190
Essay Responses (ER)	285	291	311	335	354	402	414	337	32	49
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	275	275	295	308	320	356	406	313	27	28
Unlisted Accommodation (UA)	275	285	307	329	352	394	424	332	33	813
Writing Only (WO)	275	275	291	305	327	363	406	311	28	263

¹SD — Standard Deviation

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

Table 2.E.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, February 2014

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	288	300	316	332	350	390	427	336	28	18,987
Transfer of T/B Responses to A/D (TS)	288	297	316	340	364	395	427	342	32	146
Oral Responses Dictated to a Scribe (OR)	282	294	324	348	368	422	447	350	40	27
Braille Version (BV)	294	294	315	328	363	403	403	339	35	12
Large Print Version (LV)	297	297	321	347	370	410	414	348	31	56
Test Over More Than One Day (TD)	275	297	314	328	344	376	403	331	25	489
Supervised Breaks (SB)	285	300	314	328	346	383	422	333	26	3,235
Beneficial Time (BT)	275	291	310	322	341	376	439	328	28	427
Tested at Home or Hospital (HH)	275	275	307	331	339	392	395	330	32	26
Dictionary for Math (DM)	282	297	316	326	344	370	374	331	23	118
Sign Language (SL)	291	300	318	328	341	374	383	331	22	50
Oral Presentation (OP)	291	302	316	330	346	383	407	333	24	1,749
Calculator (CA)	291	302	318	330	344	370	398	333	21	5,292
Arithmetic Table (AT)	297	305	320	332	346	374	410	335	22	445
Math Manipulatives (MM)	300	302	314	328	346	370	400	332	23	82
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	275	294	310	326	339	364	418	327	25	61
Unlisted Accommodation (UA)	285	300	316	330	352	398	439	337	31	783

¹SD — Standard Deviation²Results for groups with fewer than 11 students are not reported.

Table 2.E.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, February 2014

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)	
Beneficial Time	Autism	23	334	33	22	
	Emotional Disturbance	93	313	32	14	
	Mental Retardation	11	298	16	0	
	Other Health Impairment	38	324	36	18	
	Specific Learning Disability	217	318	27	10	
	Speech or Language Impairment	20	327	35	15	
Dictionary	Autism	35	319	28	14	
	Emotional Disturbance	30	322	29	13	
	Mental Retardation	23	308	30	13	
	Other Health Impairment	48	324	27	17	
	Specific Learning Disability	762	321	25	11	
	Speech or Language Impairment	20	319	18	0	
Essay Responses (ER)	Specific Learning Disability	28	337	31	25	
IEP or Section 504 Plan	Autism	784	339	39	33	
	Deaf	136	305	23	4	
	Emotional Disturbance	1,260	330	39	29	
	Hard of Hearing	199	324	33	20	
	Mental Retardation	408	301	20	2	
	Multiple Disability	36	318	27	11	
	Orthopedic Impairment	131	334	39	33	
	Other Health Impairment	1,673	337	35	34	
	Specific Learning Disability	11,780	324	28	18	
	Speech or Language Impairment	679	329	30	21	
	Traumatic Brain Injury	71	319	26	13	
	Visual Impairment	79	348	36	47	
	Large Print Version	Visual Impairment	30	350	32	50
	Oral Presentation	Autism	140	325	27	17
Emotional Disturbance		69	322	30	17	
Hard of Hearing		18	315	16	0	
Mental Retardation		95	306	19	3	
Orthopedic Impairment		28	317	28	11	
Other Health Impairment		212	326	25	17	
Specific Learning Disability		1,824	324	24	13	
Speech or Language Impairment		123	323	24	11	
Traumatic Brain Injury		14	308	20	7	
Visual Impairment		12	341	47	33	
Sign Language	Deaf	39	310	24	8	
Spell Checker Or Grammar Checker	Autism	11	343	44	36	
	Deaf	17	305	15	0	
	Other Health Impairment	15	340	33	40	
	Specific Learning Disability	113	332	27	24	
Spell Checker Or Grammar Checker Off	Autism	23	354	39	52	
	Emotional Disturbance	12	365	42	58	
	Other Health Impairment	19	363	44	58	
	Specific Learning Disability	74	326	31	18	

Table 2.E.7 (Continued)

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Supervised Breaks	Autism	143	337	36	30
	Deaf	17	309	28	6
	Emotional Disturbance	342	323	37	22
	Hard of Hearing	32	315	24	9
	Mental Retardation	95	300	19	2
	Orthopedic Impairment	25	322	35	20
	Other Health Impairment	351	335	34	31
	Specific Learning Disability	2,163	323	28	16
	Speech or Language Impairment	110	330	33	21
	Traumatic Brain Injury	17	325	32	24
Test Over More Than One Day	Visual Impairment	13	338	40	46
	Autism	35	329	30	23
	Deaf	20	305	15	0
	Emotional Disturbance	96	317	35	17
	Hard of Hearing	12	304	22	0
	Mental Retardation	33	304	19	0
	Orthopedic Impairment	11	325	34	18
	Other Health Impairment	64	330	33	28
	Specific Learning Disability	581	319	26	12
	Speech or Language Impairment	33	322	18	6
Tested At Home Or Hospital	Specific Learning Disability	14	311	22	7
Transfer of Student T/B Responses to A/D	Autism	21	334	39	29
	Orthopedic Impairment	12	335	38	25
	Other Health Impairment	24	347	42	46
	Specific Learning Disability	59	333	34	36
	Visual Impairment	31	353	34	58
Unlisted Accommodation	Autism	42	346	44	40
	Emotional Disturbance	52	326	37	23
	Other Health Impairment	92	345	36	41
	Specific Learning Disability	497	328	28	21
	Speech or Language Impairment	25	333	31	20
Writing ONLY	Autism	13	326	32	23
	Deaf	56	300	18	0
	Other Health Impairment	15	322	31	20
	Specific Learning Disability	118	310	25	8

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

²SD — Standard Deviation

Table 2.E.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, February 2014

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	Autism	13	335	21	15
	Emotional Disturbance	27	330	23	11
	Other Health Impairment	36	336	20	22
	Specific Learning Disability	304	335	22	22
Beneficial Time	Autism	25	344	34	36
	Emotional Disturbance	87	321	27	11
	Other Health Impairment	34	328	27	29
	Specific Learning Disability	207	325	20	13
	Speech or Language Impairment	15	329	28	20
Calculator	Autism	205	337	26	24
	Deaf	12	328	17	17
	Emotional Disturbance	266	332	23	18
	Hard of Hearing	38	335	19	21
	Mental Retardation	141	319	17	5
	Orthopedic Impairment	43	337	25	30
	Other Health Impairment	462	334	23	22
	Specific Learning Disability	3,552	333	21	19
	Speech or Language Impairment	190	333	18	15
	Traumatic Brain Injury	20	321	24	15
	Visual Impairment	12	334	33	33
	Dictionary for Math	Specific Learning Disability	77	327	18
IEP or Section 504 Plan	Autism	772	348	38	37
	Deaf	101	328	22	13
	Emotional Disturbance	1,348	334	30	25
	Hard of Hearing	187	342	30	33
	Mental Retardation	410	315	16	3
	Multiple Disability	35	327	21	17
	Orthopedic Impairment	146	339	30	32
	Other Health Impairment	1,758	340	29	32
	Specific Learning Disability	11,742	333	24	22
	Speech or Language Impairment	641	339	28	25
	Traumatic Brain Injury	72	329	25	19
	Visual Impairment	77	346	33	44
Large Print Version	Visual Impairment	32	353	29	56
Math Manipulatives	Specific Learning Disability	55	329	20	15
Oral Presentation	Autism	82	335	22	22
	Emotional Disturbance	49	329	24	22
	Hard of Hearing	19	340	20	32
	Mental Retardation	67	319	17	6
	Orthopedic Impairment	19	327	20	16
	Other Health Impairment	150	335	26	25
	Specific Learning Disability	1,141	334	24	23

Table 2.E.8 (Continued)

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
	Speech or Language Impairment	85	332	20	9
	Traumatic Brain Injury	11	319	27	18
Sign Language	Deaf	25	326	18	8
Supervised Breaks	Autism	127	347	38	34
	Emotional Disturbance	299	327	28	18
	Hard of Hearing	28	334	24	18
	Mental Retardation	86	314	17	5
	Orthopedic Impairment	25	329	20	20
	Other Health Impairment	332	339	29	30
	Specific Learning Disability	1,971	331	23	20
	Speech or Language Impairment	89	339	29	25
	Traumatic Brain Injury	18	320	24	22
	Visual Impairment	13	344	30	46
Test Over More Than One Day	Autism	14	333	17	14
	Emotional Disturbance	79	328	34	18
	Mental Retardation	18	314	14	6
	Other Health Impairment	38	333	30	24
	Specific Learning Disability	269	332	22	19
	Speech or Language Impairment	12	331	27	17
Transfer of Student T/B Responses to A/D	Autism	15	328	25	13
	Other Health Impairment	13	354	42	54
	Specific Learning Disability	46	333	27	35
	Visual Impairment	23	353	25	65
Unlisted Accommodation	Autism	39	360	47	44
	Emotional Disturbance	61	329	33	23
	Mental Retardation	13	316	16	0
	Other Health Impairment	81	344	32	38
	Specific Learning Disability	470	334	26	23
	Speech or Language Impairment	22	337	19	18
Unlisted Modification	Specific Learning Disability	32	332	28	13

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

²SD — Standard Deviation

Table 2.E.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, February 2014

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Assistive Device No Interference	English-Only	14	342	40	36
Beneficial Time	English-Only	297	324	37	18
	Reclassified Fluent English Proficient	13	326	33	23
	English-Learner	128	312	24	5
Dictionary	English-Only	518	323	26	14
	Initially Fluent English Proficient	29	331	30	24
	Reclassified Fluent English Proficient	47	334	20	19
	English-Learner	451	316	24	8
Essay Responses (EO)	English-Only	27	336	35	37
	English-Learner	12	318	35	17
Essay Responses (ER)	English-Only	33	341	32	30
	English-Learner	15	326	30	13
IEP or Section 504 Plan	English-Only	11,340	332	35	28
	Initially Fluent English Proficient	449	328	33	21
	Reclassified Fluent English Proficient	1,143	342	30	38
	English-Learner	5,780	316	23	8
	Unknown	179	334	34	28
Large Print Version	English-Only	42	353	33	50
Oral Presentation	English-Only	1,429	327	26	17
	Initially Fluent English Proficient	50	326	25	14
	Reclassified Fluent English Proficient	118	329	25	19
	English-Learner	1,074	318	23	8
	Unknown	22	327	28	14
Oral Responses Dictated to a Scribe	English-Only	24	343	40	46
	English-Learner	19	331	24	21
Sign Language	English-Only	37	309	25	8
Spell Checker Or Grammar Checker	English-Only	105	336	35	31
	English-Learner	69	324	25	14
Spell Checker Or Grammar Checker Off	English-Only	129	351	42	44
	English-Learner	39	320	26	13
Supervised Breaks	English-Only	2,271	328	33	24
	Initially Fluent English Proficient	86	328	33	20
	Reclassified Fluent English Proficient	180	335	29	33
	English-Learner	1,031	314	23	7
	Unknown	26	333	40	23
Test Over More Than One Day	English-Only	567	320	30	16
	Initially Fluent English Proficient	62	312	23	3
	Reclassified Fluent English Proficient	35	334	26	34
	English-Learner	296	315	25	8
Tested At Home Or Hospital	English-Only	23	321	32	22
Transfer of Student T/B Responses to A/D	English-Only	156	340	38	41
	Reclassified Fluent English Proficient	14	363	39	71
	English-Learner	18	323	26	11

Table 2.E.9 (Continued)

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
Unlisted Accommodation	English-Only	519	335	35	30
	Initially Fluent English Proficient	15	335	35	20
	Reclassified Fluent English Proficient	41	350	26	46
	English-Learner	212	318	24	9
	Unknown	26	342	32	42
Unlisted Modification	English-Only	18	319	30	11
Writing ONLY	English-Only	162	312	28	10
	Reclassified Fluent English Proficient	14	342	42	50
	English-Learner	77	305	20	1

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

²SD — Standard Deviation

Table 2.E.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—Mathematics, February 2014

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English-Only	282	334	20	20
	Initially Fluent English Proficient	13	345	31	31
	Reclassified Fluent English Proficient	23	333	24	26
	English-Learner	122	334	24	19
Beneficial Time	English-Only	285	330	31	20
	Reclassified Fluent English Proficient	16	332	23	19
	English-Learner	111	322	19	12
Calculator	English-Only	3,090	334	22	21
	Initially Fluent English Proficient	132	336	23	23
	Reclassified Fluent English Proficient	319	340	21	30
	English-Learner	1,711	329	19	14
	Unknown	40	333	18	25
Dictionary for Math	English-Only	64	331	24	16
	English-Learner	45	328	18	13
IEP or Section 504 Plan	English-Only	11,776	338	30	29
	Initially Fluent English Proficient	463	338	30	27
	Reclassified Fluent English Proficient	1,255	347	28	42
	English-Learner	5,319	328	20	13
	Unknown	174	337	28	30
Large Print Version	English-Only	39	349	30	54
Math Manipulatives	English-Only	45	332	21	16
	English-Learner	32	333	25	25
Oral Presentation	English-Only	1,023	335	25	25
	Initially Fluent English Proficient	39	336	20	21
	Reclassified Fluent English Proficient	82	337	27	28
	English-Learner	595	330	22	15
Oral Responses Dictated to a Scribe	English-Only	18	364	40	72
Sign Language	English-Only	34	331	19	12
	English-Learner	11	328	27	18
Supervised Breaks	English-Only	2,076	335	28	25
	Initially Fluent English Proficient	83	338	30	29
	Reclassified Fluent English Proficient	176	343	25	35
	English-Learner	884	326	20	12
	Unknown	16	339	38	38
Test Over More Than One Day	English-Only	284	333	26	21
	Reclassified Fluent English Proficient	25	340	31	32
	English-Learner	168	327	22	13
Tested At Home Or Hospital	English-Only	15	328	31	27

Table 2.E.10 (Continued)

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
Transfer of Student T/B Responses to A/D	English-Only	109	341	31	41
	Reclassified Fluent English Proficient	13	359	32	62
	English-Learner	22	330	29	23
Unlisted Accommodation	English-Only	509	340	33	29
	Initially Fluent English Proficient	16	342	37	50
	Reclassified Fluent English Proficient	37	352	28	43
	English-Learner	195	326	20	11
Unlisted Modification	Unknown	26	344	31	46
	English-Only	40	329	25	13
	English-Learner	15	319	17	0

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

²SD — Standard Deviation

Appendix 2.F: Results of Testing Variations and Disability Analyses— March 2014

Table 2.F.1: Summary Statistics by Testing Variations and Disability—ELA, March 2014

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	7,027	331	33	28
Modifications	4,203	323	25	15
All	11,230	328	31	23
Disability				
Unknown	-	-	-	-
Autism	2,519	348	42	47
Deaf	321	313	33	12
Deaf-Blindness	-	-	-	-
Emotional Disturbance	2,334	336	40	37
Hard of Hearing	536	341	38	39
Mental Retardation	630	300	20	3
Multiple Disabilities	63	313	33	14
Orthopedic Impairment	351	341	40	42
Other Health Impairment	4,968	343	35	42
Specific Learning Disability	28,165	330	29	26
Speech or Language Impairment	2,294	350	42	46
Traumatic Brain Injury	176	340	39	39
Visual Impairment	164	357	42	57

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

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

²SD — Standard Deviation

Table 2.F.2: Summary Statistics by Testing Variations and Disability—Mathematics, March 2014

Testing Variations	N¹	Mean	SD²	Percent (≥350)
Accommodations	5,975	338	30	30
Modifications	7,215	333	23	20
All	13,190	336	27	25
Disability				
Autism	2,500	358	43	49
Deaf	248	336	34	21
Deaf-Blindness	11	332	30	27
Emotional Disturbance	2,480	339	35	30
Hard of Hearing	508	353	36	47
Mental Retardation	621	313	15	2
Multiple Disabilities	64	327	31	14
Orthopedic Impairment	363	344	35	36
Other Health Impairment	5,087	347	33	41
Specific Learning Disability	27,834	338	27	29
Speech or Language Impairment	2,229	361	42	52
Traumatic Brain Injury	165	344	33	39
Visual Impairment	175	361	44	51

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

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

²SD — Standard Deviation

Table 2.F.3: Demographic Summary for All Examinees by Testing Variations—ELA, March 2014

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading ² Mean Percent Correct			Writing ² Mean Percent Correct		Writing Applications Mean Score ³
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	32,395	9,420	29	22,975	71	333	55	54	54	45	52	1.9
Transfer of T/B Responses to A/D (TS)	221	99	45	122	55	344	61	60	60	53	58	2.0
Oral Responses Dictated to a Scribe (OR)	90	31	34	59	66	335	58	51	55	44	54	2.0
Spell Checker/Grammar Checker Off (SO)	203	108	53	95	47	357	68	66	65	56	65	2.2
Essay Responses (EO)	95	41	43	54	57	341	55	58	60	49	56	2.0
Assistive Device No Interference (AN)	81	45	56	36	44	351	66	64	65	56	62	2.1
Braille Version (BV)	32	13	41	19	59	340	62	54	57	49	57	2.0
Large Print Version (LV)	111	55	50	56	50	353	68	63	65	56	60	2.1
Test Over More Than One Day (TD)	2,086	616	30	1,470	70	333	54	54	54	47	54	1.9
Supervised Breaks (SB)	5,648	1,270	22	4,378	78	327	52	51	51	42	49	1.8
Beneficial Time (BT)	806	165	20	641	80	324	51	49	49	40	46	1.7
Tested at Home or Hospital (HH)	85	33	39	52	61	343	61	60	60	51	57	1.9
Dictionary (DI)	1,647	250	15	1,397	85	323	56	47	48	39	47	1.9
Sign Language (SL)	33	2	6	31	94	309	45	39	40	38	39	1.4
Oral Presentation (OP)	3,037	396	13	2,641	87	322	50	47	49	40	46	1.8
Spell Checker or Grammar Checker (SC)	193	38	20	155	80	328	53	52	50	42	49	2.0
Essay Responses (ER)	65	16	25	49	75	330	55	48	50	42	52	2.1
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	83	26	31	57	69	331	53	53	54	45	48	1.9
Unlisted Accommodation (UA)	705	196	28	509	72	333	55	54	54	45	53	1.9
Writing Only (WO)	548	78	14	470	86	320	47	46	45	41	47	1.8

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

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

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

Table 2.F.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, March 2014

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Strands for Mathematics ² Average Percent Correct				
							PS	NS	AF	MG	A1
IEP or Section 504 Plan	32,420	9,957	31	22,463	69	340	50	51	46	43	38
Transfer of T/B Responses to A/D (TS)	193	83	43	110	57	350	56	57	52	49	44
Oral Responses Dictated to a Scribe (OR)	94	37	39	57	61	345	54	55	49	45	41
Braille Version (BV)	34	11	32	23	68	337	46	56	44	41	34
Large Print Version (LV)	109	52	48	57	52	360	58	60	57	52	50
Test Over More Than One Day (TD)	1,504	460	31	1,044	69	339	51	49	46	42	38
Supervised Breaks (SB)	4,966	1,289	26	3,677	74	336	48	48	44	41	36
Beneficial Time (BT)	778	180	23	598	77	333	47	47	41	39	34
Tested at Home or Hospital (HH)	86	33	38	53	62	346	55	54	48	47	40
Dictionary for Math (DM)	160	24	15	136	85	331	43	45	39	41	33
Sign Language (SL)	80	17	21	63	79	335	45	47	43	42	36
Oral Presentation (OP)	2,098	464	22	1,634	78	334	47	47	42	41	35
Calculator (CA)	7,043	1,419	20	5,624	80	333	45	48	41	41	34
Arithmetic Table (AT)	416	85	20	331	80	333	46	47	41	41	34
Math Manipulatives (MM)	89	33	37	56	63	346	55	54	49	47	40
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	95	21	22	74	78	333	45	49	40	41	35
Unlisted Accommodation (UA)	694	199	29	495	71	338	49	50	45	42	37

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

²PS — 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 2014

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	285	307	330	354	394	423	333	34	32,395
Transfer of T/B Responses to A/D (TS)	275	285	310	344	376	413	434	344	41	221
Oral Responses Dictated to a Scribe (OR)	275	285	303	328	359	423	441	335	41	90
Spell Checker/Grammar Checker Off (SO)	279	289	320	354	391	434	448	357	45	203
Essay Responses (EO)	275	285	310	340	371	418	441	341	40	95
Assistive Device No Interference (AN)	283	295	330	352	373	405	448	351	34	81
Braille Version (BV)	275	287	301	338	381	405	434	340	43	32
Large Print Version (LV)	275	289	316	348	385	434	450	353	45	111
Test Over More Than One Day (TD)	275	285	310	332	354	388	405	333	31	2,086
Supervised Breaks (SB)	275	281	303	324	346	385	405	327	31	5,648
Beneficial Time (BT)	275	275	299	320	344	391	409	324	34	806
Tested at Home or Hospital (HH)	275	287	308	338	373	418	428	343	40	85
Dictionary (DI)	275	287	305	322	340	368	391	323	25	1,647
Sign Language (SL)	275	279	295	305	320	350	359	309	23	33
Oral Presentation (OP)	275	285	305	320	338	364	385	322	24	3,037
Spell Checker or Grammar Checker (SC)	275	289	308	326	344	366	397	328	26	193
Essay Responses (ER)	275	289	305	324	346	382	423	330	31	65
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	275	285	301	326	357	394	428	331	36	83
Unlisted Accommodation (UA)	275	285	308	328	352	394	428	333	33	705
Writing Only (WO)	275	281	297	318	338	371	394	320	28	548

¹SD — Standard Deviation

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

Table 2.F.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, March 2014

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	287	301	317	334	356	401	448	340	31	32,420
Transfer of T/B Responses to A/D (TS)	290	298	321	342	378	423	450	350	38	193
Oral Responses Dictated to a Scribe (OR)	290	295	319	339	364	423	450	345	35	94
Braille Version (BV)	290	295	312	328	370	392	392	337	32	34
Large Print Version (LV)	298	301	323	345	392	450	450	360	48	109
Test Over More Than One Day (TD)	280	301	319	336	354	387	419	339	27	1,504
Supervised Breaks (SB)	283	298	315	331	351	390	428	336	29	4,966
Beneficial Time (BT)	276	295	312	329	347	385	423	333	29	778
Tested at Home or Hospital (HH)	290	301	317	336	372	419	450	346	38	86
Dictionary for Math (DM)	280	298	317	330	342	375	423	331	24	160
Sign Language (SL)	295	302	317	331	345	387	423	335	27	80
Oral Presentation (OP)	290	301	317	331	347	378	404	334	24	2,098
Calculator (CA)	290	301	317	331	345	374	404	333	23	7,043
Arithmetic Table (AT)	293	306	319	330	345	372	390	333	21	416
Math Manipulatives (MM)	275	306	323	345	364	404	448	346	31	89
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	283	295	315	331	349	383	423	333	27	95
Unlisted Accommodation (UA)	280	301	315	332	354	398	450	338	31	694

¹SD — Standard Deviation²Results for groups with fewer than 11 students are not reported.

Table 2.F.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, March 2014

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)	
Assistive Device No Interference	Specific Learning Disability	48	347	30	52	
	Visual Impairment	11	357	41	55	
Beneficial Time	Autism	37	339	42	38	
	Emotional Disturbance	151	315	36	17	
	Mental Retardation	16	298	21	0	
	Other Health Impairment	70	330	37	24	
	Specific Learning Disability	401	321	27	16	
	Speech or Language Impairment	26	317	24	8	
Braille Version	Visual Impairment	25	345	40	44	
Dictionary	Autism	78	332	25	28	
	Emotional Disturbance	47	331	35	40	
	Hard of Hearing	21	327	16	10	
	Mental Retardation	37	312	23	8	
	Orthopedic Impairment	16	313	25	6	
	Other Health Impairment	99	331	30	26	
	Specific Learning Disability	1,218	322	23	12	
	Speech or Language Impairment	41	321	22	12	
	Essay Responses (EO)	Orthopedic Impairment	16	354	46	63
		Other Health Impairment	13	336	45	46
Specific Learning Disability		36	336	25	33	
Essay Responses (ER)	Specific Learning Disability	37	322	21	8	
IEP or Section 504 Plan	Autism	1,713	342	40	40	
	Deaf	214	313	31	12	
	Emotional Disturbance	1,797	334	40	34	
	Hard of Hearing	332	333	34	29	
	Mental Retardation	488	300	20	2	
	Multiple Disability	40	306	27	10	
	Orthopedic Impairment	248	337	39	37	
	Other Health Impairment	3,357	340	34	38	
	Specific Learning Disability	19,939	328	28	23	
	Speech or Language Impairment	1,073	329	30	23	
	Traumatic Brain Injury	109	323	32	19	
	Visual Impairment	120	353	43	52	
	Large Print Version	Orthopedic Impairment	12	336	48	33
Other Health Impairment		11	336	41	27	
Specific Learning Disability		15	350	44	47	
Visual Impairment		57	363	44	58	
Oral Presentation	Autism	148	321	25	14	
	Emotional Disturbance	93	321	33	22	
	Hard of Hearing	24	319	23	4	
	Mental Retardation	97	308	20	3	
	Orthopedic Impairment	31	318	25	13	
	Other Health Impairment	228	322	25	14	
	Specific Learning Disability	2,138	323	23	12	

Table 2.F.7 (Continued)

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
	Speech or Language Impairment	100	323	24	13
	Traumatic Brain Injury	14	324	27	14
	Visual Impairment	15	335	41	27
Oral Responses Dictated to a Scribe	Orthopedic Impairment	18	347	48	50
	Specific Learning Disability	20	334	37	35
Sign Language	Deaf	23	309	23	4
Spell Checker Or Grammar Checker	Autism	17	345	29	29
	Deaf	13	302	18	0
	Other Health Impairment	13	321	30	15
	Specific Learning Disability	116	329	23	22
Spell Checker Or Grammar Checker Off	Autism	32	362	45	63
	Emotional Disturbance	13	363	42	62
	Orthopedic Impairment	11	360	45	64
	Other Health Impairment	31	349	42	42
	Specific Learning Disability	54	352	38	48
Supervised Breaks	Autism	322	336	40	34
	Deaf	31	314	24	6
	Emotional Disturbance	459	324	38	27
	Hard of Hearing	68	328	28	21
	Mental Retardation	131	299	20	2
	Orthopedic Impairment	39	334	40	38
	Other Health Impairment	545	334	32	29
	Specific Learning Disability	3,427	325	27	19
	Speech or Language Impairment	191	323	25	15
	Traumatic Brain Injury	26	322	32	12
	Visual Impairment	36	350	39	47
Test Over More Than One Day	Autism	103	342	35	37
	Deaf	31	301	15	0
	Emotional Disturbance	121	323	37	23
	Hard of Hearing	22	330	36	23
	Mental Retardation	43	299	21	2
	Orthopedic Impairment	23	336	34	35
	Other Health Impairment	214	346	32	47
	Specific Learning Disability	1,372	333	28	28
	Speech or Language Impairment	70	331	32	27
	Visual Impairment	12	360	35	58
Tested At Home Or Hospital	Other Health Impairment	16	342	36	31
	Specific Learning Disability	24	324	25	17
Transfer of Student T/B Responses to A/D	Autism	21	334	40	33
	Orthopedic Impairment	28	352	42	57
	Other Health Impairment	24	338	44	42
	Specific Learning Disability	58	337	33	34
	Visual Impairment	41	351	39	51

Table 2.F.7 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Unlisted Accommodation	Autism	38	342	46	39
	Emotional Disturbance	29	327	39	24
	Other Health Impairment	59	336	35	31
	Specific Learning Disability	427	327	27	22
	Speech or Language Impairment	28	327	20	14
Unlisted Modification	Specific Learning Disability	47	321	27	15
Writing ONLY	Autism	25	329	35	24
	Deaf	85	306	22	5
	Hard of Hearing	19	311	22	5
	Mental Retardation	16	296	17	0
	Other Health Impairment	44	327	31	18
	Specific Learning Disability	302	323	26	15
	Speech or Language Impairment	15	323	23	13

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

²SD — Standard Deviation

Table 2.F.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, March 2014

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)	
Arithmetic Table	Autism	20	340	33	40	
	Emotional Disturbance	14	335	18	21	
	Other Health Impairment	36	331	22	25	
	Specific Learning Disability	293	333	20	19	
Beneficial Time	Autism	35	355	47	43	
	Emotional Disturbance	156	325	29	17	
	Mental Retardation	15	312	14	0	
	Other Health Impairment	81	334	32	32	
	Specific Learning Disability	391	332	23	20	
	Speech or Language Impairment	23	333	26	17	
	Visual Impairment	26	336	29	31	
Calculator	Autism	366	338	26	26	
	Deaf	21	331	21	14	
	Emotional Disturbance	333	336	28	24	
	Hard of Hearing	52	332	23	15	
	Mental Retardation	164	315	16	2	
	Orthopedic Impairment	69	333	25	19	
	Other Health Impairment	692	337	25	27	
	Specific Learning Disability	4,707	333	21	19	
	Speech or Language Impairment	239	332	21	18	
	Traumatic Brain Injury	27	328	19	15	
	Visual Impairment	20	341	29	35	
	Dictionary for Math	Other Health Impairment	12	331	16	8
		Specific Learning Disability	90	330	19	11
IEP or Section 504 Plan	Autism	1,699	352	41	43	
	Deaf	164	336	31	21	
	Emotional Disturbance	1,933	336	33	27	
	Hard of Hearing	322	345	32	35	
	Mental Retardation	485	313	15	2	
	Multiple Disability	42	321	20	7	
	Orthopedic Impairment	257	339	32	30	
	Other Health Impairment	3,465	343	32	36	
	Specific Learning Disability	19,761	336	26	26	
	Speech or Language Impairment	1,048	339	29	30	
	Traumatic Brain Injury	106	333	27	24	
Large Print Version	Orthopedic Impairment	11	337	39	18	
	Other Health Impairment	11	340	40	27	
	Specific Learning Disability	12	348	48	25	
	Visual Impairment	56	371	49	61	

Table 2.F.8 (Continued)

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Math Manipulatives	Specific Learning Disability	42	342	26	33
Oral Presentation	Autism	108	333	27	23
	Emotional Disturbance	68	335	32	24
	Hard of Hearing	19	334	16	11
	Mental Retardation	61	317	19	5
	Orthopedic Impairment	27	330	23	15
	Other Health Impairment	197	336	25	24
	Specific Learning Disability	1,400	334	23	21
	Speech or Language Impairment	82	338	27	27
	Traumatic Brain Injury	18	327	23	28
	Visual Impairment	11	351	29	45
Oral Responses Dictated to a Scribe	Orthopedic Impairment	16	356	47	44
	Other Health Impairment	11	352	23	45
	Specific Learning Disability	22	327	21	23
Sign Language	Deaf	53	335	30	25
	Hard of Hearing	14	331	18	7
Supervised Breaks	Autism	279	349	41	40
	Deaf	18	336	29	22
	Emotional Disturbance	451	330	29	20
	Hard of Hearing	66	340	25	26
	Mental Retardation	113	312	15	1
	Orthopedic Impairment	30	340	25	37
	Other Health Impairment	494	338	30	31
	Specific Learning Disability	2,989	334	25	24
	Speech or Language Impairment	165	335	27	27
	Traumatic Brain Injury	21	333	35	19
	Visual Impairment	31	356	41	55
Test Over More Than One Day	Autism	74	349	35	38
	Emotional Disturbance	120	326	28	17
	Hard of Hearing	12	358	34	50
	Mental Retardation	28	314	17	0
	Orthopedic Impairment	15	336	24	20
	Other Health Impairment	159	345	31	40
	Specific Learning Disability	967	339	25	30
	Speech or Language Impairment	55	340	28	38
Tested At Home Or Hospital	Other Health Impairment	19	339	31	26
	Specific Learning Disability	20	325	25	20
Transfer of Student T/B Responses to A/D	Autism	18	354	42	44
	Orthopedic Impairment	17	352	33	47
	Other Health Impairment	17	349	52	35
	Specific Learning Disability	55	342	30	35
	Visual Impairment	46	354	42	46

Table 2.F.8 (Continued)

Testing Variations	Disability	N¹	Mean	SD²	Percent (≥350)
Unlisted Accommodation	Autism	33	354	50	36
	Emotional Disturbance	38	323	25	13
	Other Health Impairment	67	335	27	28
	Specific Learning Disability	415	334	25	24
	Speech or Language Impairment	25	330	22	8
Unlisted Modification	Specific Learning Disability	51	325	20	12

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

²SD — Standard Deviation

Table 2.F.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, March 2014

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Assistive Device No Interference	English-Only	47	360	33	66
	English-Learner	22	321	22	9
Beneficial Time	English-Only	495	326	35	24
	Reclassified Fluent English Proficient	43	360	28	65
	English-Learner	247	312	24	6
	Unknown	11	318	30	9
Braille Version	English-Only	22	351	43	50
Dictionary	English-Only	679	325	27	19
	Initially Fluent English Proficient	28	338	32	29
	Reclassified Fluent English Proficient	112	344	25	45
	English-Learner	814	319	21	8
	Unknown	14	313	20	7
Essay Responses (EO)	English-Only	71	346	40	45
	English-Learner	13	315	27	23
Essay Responses (ER)	English-Only	43	334	34	30
	English-Learner	17	318	19	6
IEP or Section 504 Plan	English-Only	17,877	338	36	36
	Initially Fluent English Proficient	897	346	37	45
	Reclassified Fluent English Proficient	2,743	349	30	51
	English-Learner	10,555	319	23	11
	Unknown	323	333	37	31
Large Print Version	English-Only	64	359	46	58
	Reclassified Fluent English Proficient	12	365	40	67
	English-Learner	24	326	27	17
Oral Presentation	English-Only	1,422	324	26	15
	Initially Fluent English Proficient	57	327	25	19
	Reclassified Fluent English Proficient	148	338	25	36
	English-Learner	1,389	319	21	8
	Unknown	21	322	24	14
Oral Responses Dictated to a Scribe	English-Only	45	345	45	49
	English-Learner	34	317	21	9
Sign Language	English-Only	11	312	24	9
	English-Learner	22	307	22	5
Spell Checker Or Grammar Checker	English-Only	96	332	26	23
	English-Learner	83	321	24	12
Spell Checker Or Grammar Checker Off	English-Only	146	365	44	63
	English-Learner	39	317	20	5
Supervised Breaks	English-Only	3,116	330	33	27
	Initially Fluent English Proficient	114	338	33	33
	Reclassified Fluent English Proficient	403	345	29	44

Table 2.F.9 (Continued)

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
	English-Learner	1,962	317	24	10
	Unknown	53	316	33	19
Test Over More Than One Day	English-Only	1,033	337	33	36
	Initially Fluent English Proficient	47	353	31	60
	Reclassified Fluent English Proficient	190	358	24	64
	English-Learner	810	321	24	12
Tested At Home Or Hospital	English-Only	57	351	43	47
	English-Learner	22	318	21	14
Transfer of Student T/B Responses to A/D	English-Only	154	348	42	49
	Reclassified Fluent English Proficient	12	368	23	75
	English-Learner	40	318	26	15
Unlisted Accommodation	English-Only	420	335	35	31
	Reclassified Fluent English Proficient	47	359	28	66
	English-Learner	227	322	26	14
Unlisted Modification	English-Only	52	331	31	33
	English-Learner	20	308	23	5
Writing ONLY	English-Only	284	324	30	20
	Initially Fluent English Proficient	11	308	28	9
	Reclassified Fluent English Proficient	28	344	26	39
	English-Learner	223	313	21	4

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

²SD — Standard Deviation

Table 2.F.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—Mathematics, March 2014

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English-Only	206	334	23	22
	Reclassified Fluent English Proficient	28	339	24	32
	English-Learner	167	330	17	16
Beneficial Time	English-Only	480	333	30	25
	Reclassified Fluent English Proficient	39	359	35	64
	English-Learner	237	328	23	14
	Unknown	12	323	19	8
Braille Version	English-Only	21	344	33	43
Calculator	English-Only	3,854	335	24	23
	Initially Fluent English Proficient	165	338	22	24
	Reclassified Fluent English Proficient	452	342	25	36
	English-Learner	2,509	329	19	13
	Unknown	63	334	27	17
Dictionary for Math	English-Only	95	331	27	18
	English-Learner	56	329	17	9
IEP or Section 504 Plan	English-Only	18,346	343	33	34
	Initially Fluent English Proficient	912	352	35	46
	Reclassified Fluent English Proficient	2,850	354	32	51
	English-Learner	9,977	330	23	17
	Unknown	335	339	33	30
Large Print Version	English-Only	66	363	47	53
	English-Learner	23	341	39	30
Math Manipulatives	English-Only	57	345	33	33
	English-Learner	20	338	21	30
Oral Presentation	English-Only	1,078	334	24	22
	Initially Fluent English Proficient	35	337	30	29
	Reclassified Fluent English Proficient	117	348	26	40
	English-Learner	854	332	22	19
	Unknown	14	345	28	29
Oral Responses Dictated to a Scribe	English-Only	49	346	36	39
	English-Learner	32	338	23	38
Sign Language	English-Only	40	340	29	28
	English-Learner	37	329	23	14
Supervised Breaks	English-Only	2,805	336	30	27
	Initially Fluent English Proficient	104	346	32	42
	Reclassified Fluent English Proficient	377	351	28	47
	English-Learner	1,629	331	24	18
	Unknown	51	328	31	22

Table 2.F.10 (Continued)

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Test Over More Than One Day	English-Only	740	339	29	32
	Initially Fluent English Proficient	37	356	25	57
	Reclassified Fluent English Proficient	137	354	28	50
	English-Learner	586	334	23	23
	English-Only	57	353	41	51
Tested At Home Or Hospital	English-Learner	23	326	21	9
	English-Only	139	352	39	47
Transfer of Student T/B Responses to A/D	English-Learner	32	333	25	19
	English-Only	421	338	32	30
Unlisted Accommodation	Initially Fluent English Proficient	12	347	40	33
	Reclassified Fluent English Proficient	51	360	36	59
	English-Learner	205	331	23	18
Unlisted Modification	English-Only	55	329	22	15
	Reclassified Fluent English Proficient	12	363	33	58
	English-Learner	23	322	19	9

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

²SD — Standard Deviation

Appendix 2.G: Results of Testing Variations and Disability Analyses—May 2014

Table 2.G.1: Summary Statistics by Testing Variations and Disability—ELA, May 2014

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	1,485	317	28	12
Modifications	2,343	321	22	11
All	3,828	320	25	11
Disability				
Unknown	-	-	-	-
Autism	460	324	29	17
Deaf	93	309	24	8
Deaf-Blindness	-	-	-	-
Emotional Disturbance	832	322	35	21
Hard of Hearing	131	322	26	11
Mental Retardation	311	302	19	2
Multiple Disabilities	20	312	27	5
Orthopedic Impairment	79	321	29	14
Other Health Impairment	1,048	323	28	17
Specific Learning Disability	7,719	318	23	10
Speech or Language Impairment	452	326	24	17
Traumatic Brain Injury	47	312	20	2
Visual Impairment	34	332	35	29

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

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

²SD — Standard Deviation

Table 2.G.2: Summary Statistics by Testing Variations and Disability—Mathematics, May 2014

Testing Variations	N ¹	Mean	SD ²	Percent (≥350)
Accommodations	1,207	326	24	14
Modifications	3,672	330	20	15
All	4,879	329	21	15
Disability				
Unknown	-	-	-	-
Autism	416	334	28	18
Deaf	63	325	21	10
Deaf-Blindness	-	-	-	-
Emotional Disturbance	934	327	27	16
Hard of Hearing	101	329	20	12
Mental Retardation	296	313	15	2
Multiple Disabilities	17	320	27	6
Orthopedic Impairment	100	329	23	19
Other Health Impairment	1,127	330	25	18
Specific Learning Disability	7,367	326	20	12
Speech or Language Impairment	382	331	23	15
Traumatic Brain Injury	53	322	17	8
Visual Impairment	36	337	27	28

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

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

²SD — Standard Deviation

Table 2.G.3: Demographic Summary for All Examinees by Testing Variations—ELA, May 2014

Testing Variations	N Tested ¹	N (≥350)	Percent (≥350)	N (<350)	Percent (<350)	Mean Scale Score	Reading ² Mean Percent Correct			Writing ² Mean Percent Correct		Writing Applications Mean Score ³
							RW	RC	RL	WS	WC	Essay
IEP or Section 504 Plan	9,024	1,102	12	7,922	88	319	53	42	47	36	44	1.8
Transfer of T/B Responses to A/D (TS)	71	20	28	51	72	328	59	51	53	40	46	1.9
Oral Responses Dictated to a Scribe (OR)	30	6	20	24	80	325	57	46	51	42	49	1.8
Spell Checker/Grammar Checker Off (SO)	72	17	24	55	76	333	58	52	55	44	50	2.1
Essay Responses (EO)	27	3	11	24	89	318	46	43	44	37	40	1.9
Assistive Device No Interference (AN)	28	4	14	24	86	322	56	43	45	40	50	1.8
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	39	12	31	27	69	338	65	53	61	48	52	2.0
Test Over More Than One Day (TD)	266	31	12	235	88	316	50	40	46	34	42	1.7
Supervised Breaks (SB)	1,572	164	10	1,408	90	317	52	41	46	36	43	1.7
Beneficial Time (BT)	308	30	10	278	90	314	50	40	44	33	40	1.6
Tested at Home or Hospital (HH)	31	10	32	21	68	332	61	50	50	48	56	1.7
Dictionary (DI)	784	80	10	704	90	320	57	42	46	36	44	1.9
Sign Language (SL)	37	6	16	31	84	318	57	45	45	39	44	1.5
Oral Presentation (OP)	1,801	230	13	1,571	87	322	56	45	50	37	45	1.9
Spell Checker or Grammar Checker (SC)	131	13	10	118	90	320	53	42	47	35	45	1.9
Essay Responses (ER)	36	8	22	28	78	331	61	52	53	40	48	2.2
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	60	5	8	55	92	320	53	42	47	37	47	1.9
Unlisted Accommodation (UA)	274	36	13	238	87	321	53	44	49	37	44	1.8
Writing Only (WO)	124	12	10	112	90	313	45	40	41	36	42	1.7

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

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

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

Table 2.G.4: Demographic Summary for All Examinees by Testing Variations—Mathematics, May 2014

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	8,952	1,230	14	7,722	86	327	41	47	38	35	30
Transfer of T/B Responses to A/D (TS)	57	19	33	38	67	341	50	52	48	44	38
Oral Responses Dictated to a Scribe (OR)	11	3	27	8	73	336	44	53	43	44	35
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	35	12	34	23	66	344	53	52	48	45	45
Test Over More Than One Day (TD)	204	31	15	173	85	326	40	45	36	35	29
Supervised Breaks (SB)	1,288	178	14	1,110	86	326	40	47	37	34	30
Beneficial Time (BT)	282	38	13	244	87	326	41	47	37	34	27
Tested at Home or Hospital (HH)	29	7	24	22	76	335	44	54	43	37	30
Dictionary for Math (DM)	145	33	23	112	77	335	45	53	42	40	34
Sign Language (SL)	27	2	7	25	93	324	33	52	35	30	30
Oral Presentation (OP)	952	173	18	779	82	332	43	51	40	37	32
Calculator (CA)	3,614	554	15	3,060	85	330	41	52	38	36	30
Arithmetic Table (AT)	405	99	24	306	76	336	48	53	42	41	34
Math Manipulatives (MM)	88	26	30	62	70	335	48	53	43	40	31
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	55	9	16	46	84	330	43	51	41	34	30
Unlisted Accommodation (UA)	235	31	13	204	87	328	41	48	39	34	29

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

²PS — 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 2014

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	275	281	300	317	336	365	394	319	26	9,024
Transfer of T/B Responses to A/D (TS)	275	278	304	323	352	394	426	328	34	71
Oral Responses Dictated to a Scribe (OR)	275	285	310	324	344	367	385	325	26	30
Spell Checker/Grammar Checker Off (SO)	287	294	309	329	347	391	426	333	29	72
Essay Responses (EO)	275	275	300	313	336	385	391	318	29	27
Assistive Device No Interference (AN)	293	293	305	322	328	367	374	322	21	28
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	281	287	310	332	365	404	408	338	34	39
Test Over More Than One Day (TD)	275	275	296	313	334	360	391	316	26	266
Supervised Breaks (SB)	275	281	298	315	332	365	394	317	26	1,572
Beneficial Time (BT)	275	275	296	310	330	360	397	314	26	308
Tested at Home or Hospital (HH)	275	275	302	328	358	412	412	332	41	31
Dictionary (DI)	275	287	302	319	334	358	379	320	22	784
Sign Language (SL)	275	283	296	315	338	374	382	318	28	37
Oral Presentation (OP)	275	287	306	323	338	360	379	322	22	1,801
Spell Checker or Grammar Checker (SC)	283	289	304	321	334	354	360	320	20	131
Essay Responses (ER)	296	302	315	326	347	369	385	331	22	36
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	283	294	304	320	333	354	400	320	21	60
Unlisted Accommodation (UA)	275	285	302	321	338	360	397	321	25	274
Writing Only (WO)	275	283	296	311	330	358	372	313	24	124

¹SD — Standard Deviation

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

Table 2.G.6: Percentiles of Scale Scores for Students with Testing Variations—Mathematics, May 2014

Testing Variations	Percentiles							Mean Scale Score	SD ¹	N Tested ²
	1	5	25	50	75	95	99			
IEP or Section 504 Plan	282	297	313	325	340	365	399	327	22	8,952
Transfer of T/B Responses to A/D (TS)	288	304	325	336	352	396	421	341	27	57
Oral Responses Dictated to a Scribe (OR)	307	307	311	334	350	379	379	336	24	11
Braille Version (BV)	-	-	-	-	-	-	-	-	-	-
Large Print Version (LV)	304	309	325	334	361	421	438	344	31	35
Test Over More Than One Day (TD)	282	288	307	323	340	375	405	326	27	204
Supervised Breaks (SB)	282	297	311	323	338	371	396	326	23	1,288
Beneficial Time (BT)	285	294	309	323	338	371	396	326	24	282
Tested at Home or Hospital (HH)	297	299	309	327	349	393	450	335	35	29
Dictionary for Math (DM)	294	302	319	329	347	375	431	335	25	145
Sign Language (SL)	288	288	311	325	333	352	356	324	18	27
Oral Presentation (OP)	291	302	317	329	343	371	405	332	22	952
Calculator (CA)	288	302	315	327	342	365	393	330	20	3,614
Arithmetic Table (AT)	288	304	319	333	349	375	402	336	23	405
Math Manipulatives (MM)	285	302	318	327	352	386	416	335	26	88
Assistive Device (AD)	-	-	-	-	-	-	-	-	-	-
Unlisted Modification (UM)	285	307	317	327	342	361	388	330	19	55
Unlisted Accommodation (UA)	285	299	313	325	338	359	421	328	23	235

¹SD — Standard Deviation²Results for groups with fewer than 11 students are not reported.

Table 2.G.7: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—ELA, May 2014

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Assistive Device No Interference	Specific Learning Disability	21	323	19	14
Beneficial Time	Autism	17	324	22	12
	Emotional Disturbance	58	312	32	16
	Mental Retardation	11	300	12	0
	Other Health Impairment	18	312	30	11
	Specific Learning Disability	167	315	23	8
Dictionary	Speech or Language Impairment	12	308	14	0
	Autism	26	321	18	12
	Emotional Disturbance	24	325	26	17
	Hard of Hearing	11	329	17	9
	Mental Retardation	22	301	20	5
	Other Health Impairment	29	315	20	3
	Specific Learning Disability	596	319	22	9
	Speech or Language Impairment	19	320	22	5
Essay Responses (EO)	Specific Learning Disability	13	315	29	8
Essay Responses (ER)	Specific Learning Disability	18	331	22	22
IEP or Section 504 Plan	Autism	360	324	28	16
	Deaf	81	308	24	7
	Emotional Disturbance	685	322	35	21
	Hard of Hearing	93	321	25	11
	Mental Retardation	237	302	17	1
	Multiple Disability	16	311	30	6
	Orthopedic Impairment	59	320	26	14
	Other Health Impairment	763	322	26	16
	Specific Learning Disability	5,792	318	23	10
	Speech or Language Impairment	300	322	21	11
	Traumatic Brain Injury	40	314	19	3
	Visual Impairment	29	334	34	31
	Large Print Version	Visual Impairment	17	335	37
Oral Presentation	Autism	81	324	22	15
	Emotional Disturbance	54	322	26	17
	Hard of Hearing	18	317	20	6
	Mental Retardation	62	309	17	2
	Orthopedic Impairment	19	325	24	21
	Other Health Impairment	139	323	20	13
	Specific Learning Disability	1,273	323	22	12
	Speech or Language Impairment	80	321	21	9
Sign Language	Deaf	28	313	27	14
Spell Checker Or Grammar Checker	Deaf	16	308	25	13
	Specific Learning Disability	74	321	16	5
Spell Checker Or Grammar Checker Off	Specific Learning Disability	36	327	22	17

Table 2.G.7 (Continued)

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Supervised Breaks	Autism	73	323	27	14
	Deaf	19	304	27	11
	Emotional Disturbance	180	317	34	17
	Hard of Hearing	20	325	26	10
	Mental Retardation	46	302	17	0
	Orthopedic Impairment	11	317	22	9
	Other Health Impairment	114	319	27	12
	Specific Learning Disability	976	317	23	9
	Speech or Language Impairment	47	318	22	9
Test Over More Than One Day	Autism	14	330	35	14
	Deaf	15	306	23	7
	Emotional Disturbance	40	307	27	8
	Mental Retardation	12	304	12	0
	Other Health Impairment	19	324	28	21
	Specific Learning Disability	127	317	23	10
Transfer of Student T/B Responses to A/D	Specific Learning Disability	26	328	32	27
Unlisted Accommodation	Autism	13	327	26	15
	Emotional Disturbance	26	324	32	19
	Other Health Impairment	25	326	24	16
	Specific Learning Disability	174	320	24	11
Unlisted Modification	Specific Learning Disability	38	321	20	5
Writing ONLY	Deaf	28	307	23	4
	Specific Learning Disability	64	317	25	14

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

²SD — Standard Deviation

Table 2.G.8: Summary of Scale Scores and Passing Rates by Disability and Testing Variations—Mathematics, May 2014

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	Emotional Disturbance	21	337	25	24
	Mental Retardation	13	315	19	8
	Other Health Impairment	27	342	32	37
	Specific Learning Disability	290	336	22	25
Beneficial Time	Autism	14	326	26	14
	Emotional Disturbance	64	323	26	9
	Other Health Impairment	19	325	28	11
	Specific Learning Disability	148	328	22	14
Calculator	Autism	151	332	20	15
	Deaf	14	332	25	29
	Emotional Disturbance	213	329	22	15
	Hard of Hearing	30	332	17	17
	Mental Retardation	105	318	15	2
	Orthopedic Impairment	32	326	15	6
	Other Health Impairment	316	332	22	19
	Specific Learning Disability	2,415	330	20	15
	Speech or Language Impairment	127	332	20	15
	Traumatic Brain Injury	22	324	19	14
	Dictionary for Math	Specific Learning Disability	106	333	23
IEP or Section 504 Plan	Autism	331	332	25	17
	Deaf	54	324	19	9
	Emotional Disturbance	765	327	27	16
	Hard of Hearing	78	328	17	12
	Mental Retardation	229	314	15	1
	Multiple Disability	14	320	30	7
	Orthopedic Impairment	81	329	23	19
	Other Health Impairment	842	330	24	18
	Specific Learning Disability	5,631	326	20	12
	Speech or Language Impairment	276	330	21	13
	Traumatic Brain Injury	46	323	18	9
Visual Impairment	31	337	28	29	
Large Print Version	Visual Impairment	18	345	31	39
Math Manipulatives	Emotional Disturbance	11	325	24	9
	Specific Learning Disability	46	336	25	33
Oral Presentation	Autism	41	334	20	15
	Emotional Disturbance	30	327	26	20
	Hard of Hearing	13	331	22	23
	Mental Retardation	43	319	16	2
	Orthopedic Impairment	14	334	23	14
	Other Health Impairment	92	334	23	21
	Specific Learning Disability	630	332	21	19
	Speech or Language Impairment	41	333	25	17

Table 2.G.8 (Continued)

Testing Variations	Disability	N ¹	Mean	SD ²	Percent (≥350)
	Traumatic Brain Injury	46	323	18	9
	Visual Impairment	31	337	28	29
Large Print Version	Visual Impairment	18	345	31	39
Math Manipulatives	Emotional Disturbance	11	325	24	9
	Specific Learning Disability	46	336	25	33
Oral Presentation	Autism	41	334	20	15
	Emotional Disturbance	30	327	26	20
	Hard of Hearing	13	331	22	23
	Mental Retardation	43	319	16	2
	Orthopedic Impairment	14	334	23	14
	Other Health Impairment	92	334	23	21
	Specific Learning Disability	630	332	21	19
	Speech or Language Impairment	41	333	25	17
Sign Language	Deaf	20	328	17	10
Supervised Breaks	Autism	51	336	30	27
	Deaf	11	314	14	0
	Emotional Disturbance	183	324	26	12
	Mental Retardation	34	314	16	3
	Orthopedic Impairment	11	334	9	9
	Other Health Impairment	121	329	25	20
	Specific Learning Disability	776	326	21	13
	Speech or Language Impairment	31	334	23	19
Test Over More Than One Day	Emotional Disturbance	36	319	29	6
	Mental Retardation	11	314	10	0
	Other Health Impairment	18	328	27	33
	Specific Learning Disability	108	326	24	15
Transfer of Student T/B Responses to A/D	Specific Learning Disability	21	331	17	14
Unlisted Accommodation	Autism	11	335	23	27
	Emotional Disturbance	33	331	24	12
	Other Health Impairment	22	332	14	14
	Specific Learning Disability	138	324	21	9
Unlisted Modification	Emotional Disturbance	14	322	16	7
	Specific Learning Disability	28	327	17	14

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

²SD — Standard Deviation

Table 2.G.9: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—ELA, May 2014

Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Assistive Device No Interference	English-Only	16	318	14	6
Beneficial Time	English-Only	165	317	28	12
	English-Learner	111	311	20	5
	Unknown	21	299	29	5
Dictionary	English-Only	387	322	23	12
	Initially Fluent English Proficient	20	325	22	10
	Reclassified Fluent English Proficient	42	329	25	19
	English-Learner	327	316	21	7
Essay Responses (EO)	English-Only	19	320	27	11
Essay Responses (ER)	English-Only	21	333	21	24
	English-Learner	12	328	21	17
IEP or Section 504 Plan	English-Only	5,052	321	28	15
	Initially Fluent English Proficient	165	323	27	16
	Reclassified Fluent English Proficient	428	329	27	22
	English-Learner	3,182	314	21	6
	Unknown	197	320	27	12
Large Print Version	English-Only	24	343	36	42
Oral Presentation	English-Only	1,020	324	23	14
	Initially Fluent English Proficient	25	321	24	8
	Reclassified Fluent English Proficient	72	334	27	35
	English-Learner	669	318	21	8
	Unknown	15	337	18	27
Oral Responses Dictated to a Scribe	English-Only	20	331	23	20
Sign Language	English-Only	17	322	27	24
	English-Learner	20	315	28	10
Spell Checker Or Grammar Checker	English-Only	55	325	19	15
	English-Learner	69	316	19	7
Spell Checker Or Grammar Checker Off	English-Only	49	335	30	24
	English-Learner	20	326	22	20
Supervised Breaks	English-Only	899	318	27	11
	Initially Fluent English Proficient	19	322	29	11
	Reclassified Fluent English Proficient	80	333	27	26
	English-Learner	529	313	22	7
	Unknown	45	310	28	9
Test Over More Than One Day	English-Only	132	318	30	14
	English-Learner	106	312	22	8
	Unknown	14	315	18	0
Tested At Home Or Hospital	English-Only	21	335	40	33
Transfer of Student T/B Responses to A/D	English-Only	58	327	35	26

Table 2.G.9 (Continued)

Testing Variations	Language Fluency	N¹	Mean	SD²	Percent (≥350)
Unlisted Accommodation	English-Only	174	323	27	15
	English-Learner	91	316	22	9
Unlisted Modification	English-Only	41	324	23	12
	English-Learner	18	312	17	0
Writing ONLY	English-Only	74	318	25	15
	English-Learner	37	305	18	0

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

²SD — Standard Deviation

Table 2.G.10: Summary of Scale Scores and Passing Rates by Language Fluency and Testing Variations—Mathematics, May 2014

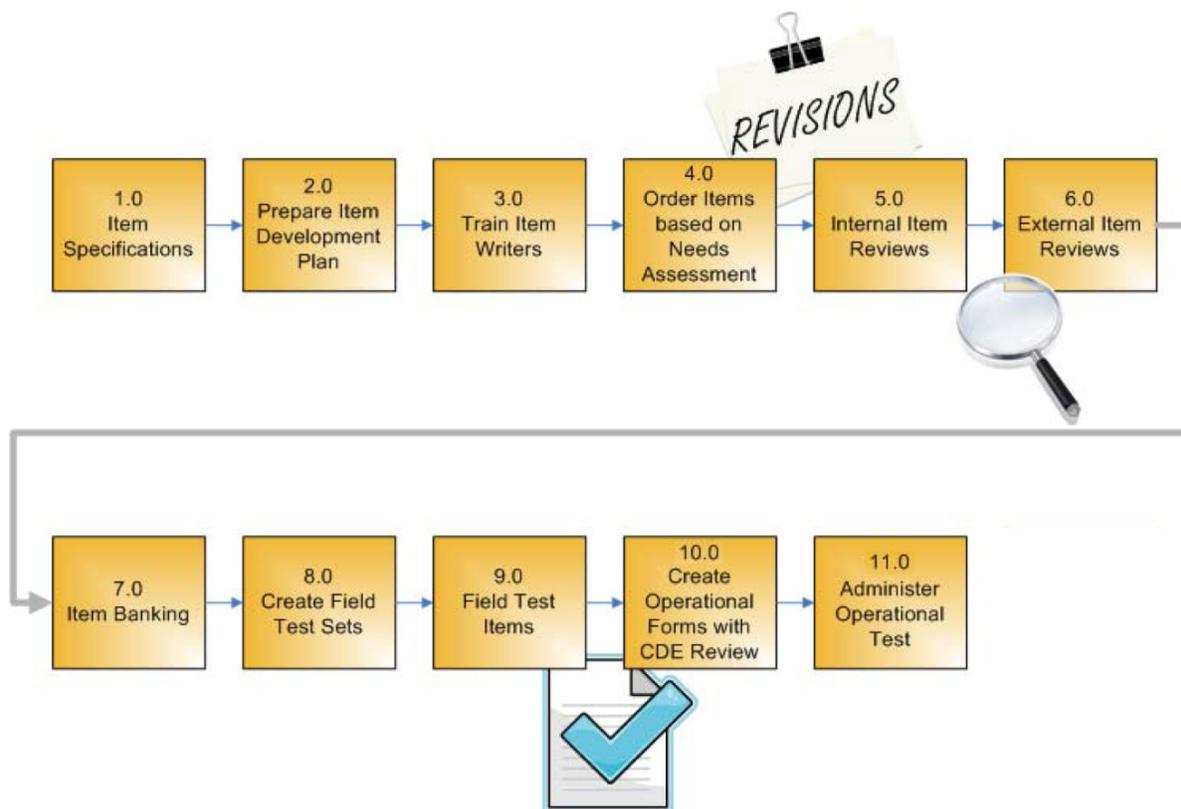
Testing Variations	Language Fluency	N ¹	Mean	SD ²	Percent (≥350)
Arithmetic Table	English-Only	241	337	24	28
	Reclassified Fluent English Proficient	24	342	19	29
	English-Learner	127	332	24	17
Beneficial Time	English-Only	164	326	24	14
	English-Learner	86	327	23	14
	Unknown	21	320	28	5
Calculator	English-Only	2,100	331	21	17
	Initially Fluent English Proficient	65	329	17	11
	Reclassified Fluent English Proficient	208	336	20	23
	English-Learner	1,178	327	19	11
	Unknown	63	334	16	16
Dictionary for Math	English-Only	87	337	26	24
	English-Learner	48	334	27	25
IEP or Section 504 Plan	English-Only	5,291	328	23	15
	Initially Fluent English Proficient	179	330	23	17
	Reclassified Fluent English Proficient	494	335	24	21
	English-Learner	2,785	324	19	9
	Unknown	203	327	20	10
Large Print Version	English-Only	26	344	29	38
Math Manipulatives	English-Only	64	337	28	33
	English-Learner	18	332	25	22
Oral Presentation	English-Only	575	332	23	20
	Initially Fluent English Proficient	14	327	16	7
	Reclassified Fluent English Proficient	49	340	19	37
	English-Learner	302	330	19	12
	Unknown	12	344	29	33
Oral Responses Dictated to a Scribe	English-Only	11	336	24	27
Sign Language	English-Only	14	332	15	14
	English-Learner	11	316	17	0
Supervised Breaks	English-Only	777	326	23	15
	Initially Fluent English Proficient	23	330	24	17
	Reclassified Fluent English Proficient	75	340	27	28
	English-Learner	372	324	21	10
	Unknown	41	320	23	2
Test Over More Than One Day	English-Only	111	325	29	18
	English-Learner	70	324	20	10
	Unknown	11	325	18	0
Tested At Home Or Hospital	English-Only	19	337	40	26
Transfer of Student T/B Responses to A/D	English-Only	48	341	27	33
Unlisted Accommodation	English-Only	157	330	24	14
	English-Learner	66	322	20	9
Unlisted Modification	English-Only	37	334	19	22

¹Results for groups with fewer than 11 students are not reported.²SD — Standard Deviation

Chapter 3: Item Development

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

Figure 3.1: The ETS Item Development Process for the CAHSEE



1.0 Item Specifications

The first step in the item development process was 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 have provided detailed information to item writers who have developed items for the CAHSEE. The specifications include the following:

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

- The expected depth of knowledge (DOK), coded as 1, 2, 3, or 4.
 - DOK level 1 (low) – recall or simple reproduction of information
 - DOK level 2 (medium) – skills and concepts; comprehension and processing of text
 - DOK level 3 (high) – strategic thinking, prediction, elaboration
 - DOK level 4 (CR) – extended reasoning, complex analyses
- The homogeneity of the construct measured by each standard.
- A description of the kinds of item stems appropriate for MC items used to assess each standard.
- Sample items to serve as a guide for the types of MC items that are appropriate for assessing each standard.
- A description of appropriate stimuli (such as charts, tables, graphs, or other illustrations) for mathematics items.
- When applicable, the content limits for the standard (such as one or two variables, maximum place values of numbers) for mathematics items.
- When applicable, a description of appropriate reading passages for ELA items.
- When applicable, a description of specific types of items to be avoided (e.g., negatives should not appear in both the stem and the options for an item).

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

- The acceptable ranges for passage length.
- The expected distribution of passages by genre.
- Guidelines for readability and cognitive load, using standards agreed to by the CDE and ETS.
- Expected use of illustrations.
- The target number of items that should follow each reading passage.
- Writing passages and reading passages to have a readability level appropriate to the tested grade level.
- A list of topics to be avoided.
- Diversity and Fairness of passages.

- Passages and items developed using Universal Design Principles.

2.0 Prepare Item Development Plan

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

The Item Development Plan assumed that a certain percent of items on an operational ELA form and mathematics form are refreshed each year; these items remained in the item bank for future use. Previously, a certain number of items were released to the public. However, due to the state budget cuts, no ELA or mathematics RTQs were released in the 2013–14 testing cycle.

No field-testing took place for the 2013–14 test administrations due to the adoption of the Common Core State Standards and forthcoming changes in the state’s assessment system.

3.0 Train Item Writers

The items selected for each operational form have been written by special panels of item writers with expertise in the California content standards. Applicants for item writing training have been screened by senior ETS content staff and approved by the CDE staff. Only those with strong content and teaching backgrounds have been approved for inclusion in the training. Thus, the participants were particularly experienced in writing test questions to the standards measured by the CAHSEE. However, due to the adoption of the Common Core State Standards and forthcoming changes in the state’s assessment system, no new item development took place during the 2013–14 school year.

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 needed for each standard and to order 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 the California content standards assessed on the CAHSEE, sample stems, sample items, and a checklist for item writers.
- An explanation of the DOK ratings.
- The Internet Web link to the previous RTQs.

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

5.0 Internal Item Reviews (Educational Testing Service)

Purpose

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

Once the items have been written by external item writers, a series of ETS internal reviews are conducted. The reviews helped establish the criteria used to judge the quality of the item content and were designed to ensure that each item is measuring what it is intended to measure. The internal reviews also examined the overall quality of the test items before they were 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 Bias and Sensitivity Review
3. Internal Editorial Review

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

Internal Content Review

Test items and materials underwent three reviews by the content-area assessment specialists. These assessment specialists made sure that the test items and related materials were 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 reviewed each item in terms of the following characteristics:

- Relevance of each item to the purpose of the test.
- Match of each item to the item specifications, including DOK.
- Adherence of each item to the principles of quality item writing.
- Match of each item to the identified standard or standards.
- Difficulty of the item.
- Accuracy of the content of the item.
- Readability of the item or passage.
- Grade-level appropriateness of the item.
- Appropriateness of any illustrations, graphs, or figures.
- Calculator sensitivity in mathematics items.

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

Internal Bias and Sensitivity Review

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

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

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

Internal Editorial Review

After the items were reviewed by the content-area assessment specialists and the bias and sensitivity reviewers, a group of specially trained, project-specific editors reviewed each item in preparation for review by the CAHSEE content review committees and the CDE. The editors checked 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 reviewed newly developed items for accuracy of item content, clarity of phrasing, item quality, and fairness. The review panels were provided with the opportunity to review newly developed items and to make recommendations for the use of items in embedded field tests. For the 2013–14 development cycle, because there were no new items developed, the Content and Bias and Sensitivity Review committees were not convened.

Statewide Pupil Assessment Review

The SPAR was responsible for reviewing and approving test items before they were used operationally or as field-test items. The SPAR examined the items for intrusiveness into students' personal lives such as student and family beliefs, morality, religion, or sexuality. The SPAR panel representatives ensured that the test items conform to the requirements of *EC* Section 60614. The CR writing tasks were also presented for review. At the SPAR panel meetings, items were presented in binders for review. If the SPAR panel rejected specific items and/or CR writing tasks, the items and/or tasks were replaced. For the 2013–14 development cycle, because there were no new items developed, the SPAR panel was not convened.

7.0 Item Banking

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

After field-test or operational use, items may be rejected that do not meet statistical specifications; such items were updated with a status of Rejected for Statistical Reasons and remain unavailable in the bank. The research group at ETS evaluated

each item for difficulty, discrimination, and conformance to the IRT Rasch model. Researchers also determined if each item functions similarly for various subgroups of interest by performing DIF analyses. Field-tested items were temporarily unavailable if any subgroup had C+/- DIF; these items were updated with a status of Operational Ready – Needs DIF Review. Once items were reviewed by California educators at a Data Review meeting (refer to section 10.0) and were accepted as valid measures of the content standards, they were made available and updated in the item bank with a status of Operational Ready.

CAHSEE items used operationally are rested (i.e., items are unusable for two years plus one administration). As items appear on forms, they go into a Resting status and are unavailable until their Wake-up date.

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

ETS currently provides and maintains the electronic item banks for several of the California assessments, including the California Standards Tests (CST), California Modified Assessment (CMA), California Alternate Performance Assessment (CAPA), Standards-based Tests in Spanish (STS), and CAHSEE. The CST, CMA, CAPA, STS, and CAHSEE item banks are currently consolidated in the California Item Banking system. ETS works with the CDE to obtain the data for those assessments under contract with other vendors for inclusion in the item bank, using the tools previously developed. ETS provides the item banking application using the LAN architecture and the relational database management system, SQL 2000, already deployed. ETS provides updated versions of the item bank to the CDE on an ongoing basis and works with the CDE to determine the optimum process if a change in databases is desired.

8.0 Create Field-Test Sets

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

Stand-Alone Field Testing

Continual development and field testing of writing prompt items are essential to maintaining a robust item bank. Due to the time required to complete the writing prompt items, separate testing was 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 2013 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 contained the same operational items and different field-test items. Only field-test data from the February and March administrations were used to evaluate the item performance.

9.0 Field-Test Items

Since there was no field-testing in 2013–14, a single form was administered for each administration.

10.0 Create Operational Forms with California Department of Education Review

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

11.0 Administer Operational Test

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

Chapter 4: Test Development

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

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

Test Length

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

Each ELA form consists of 80 items, which include 72 operational MC items, one operational CR item, and seven embedded field-test MC items. Each mathematics form consists of 92 items, which include 80 operational MC items and 12 field-test MC items.

Rules for Item Selection

Test Blueprint

ETS has developed all CAHSEE test items to conform to the SBE-approved content standards and CAHSEE blueprints. The test blueprints for the CAHSEE can be found on the CDE CAHSEE Program Resources Web page at <http://www.cde.ca.gov/ta/tg/hs/index.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 2.1 in Chapter 2.

Content Rules and Item Selection

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

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

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

Psychometric Criteria

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

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

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

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

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

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

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

Figure 4.1: Example of Test Characteristic Curves

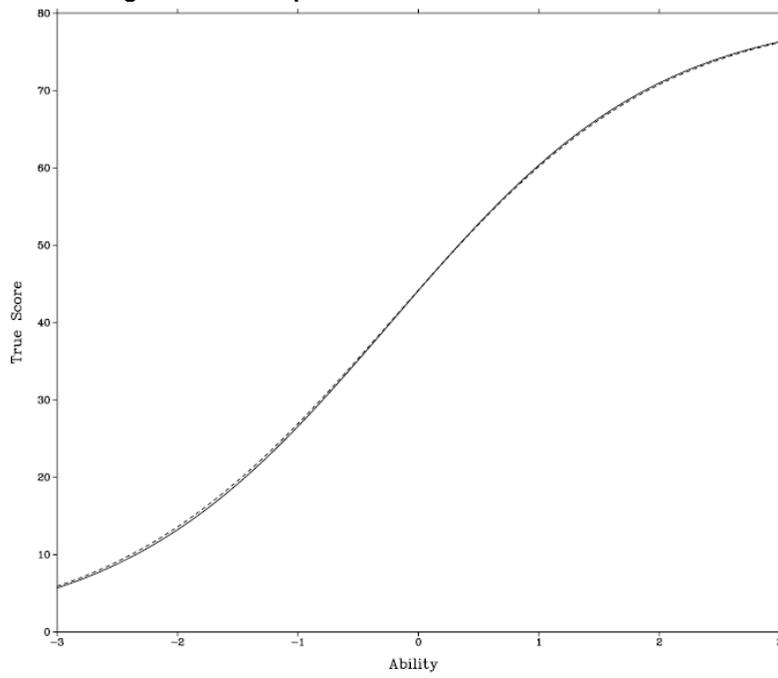


Table 4.1: Difficulty (B) and Discrimination (R-bis) Specifications for ELA MC Items

Low B	High B	Specifications
-1.75	-1.50	0 – 1
-1.50	-1.25	1 – 2
-1.25	-1.00	2 – 4
-1.00	-0.75	4 – 6
-0.75	-0.50	7 – 9
-0.50	-0.25	9 – 13
-0.25	0.00	10 – 14
0.00	0.25	9 – 13
0.25	0.50	7 – 12
0.50	0.75	7 – 10
0.75	1.00	2 – 5
1.00	1.25	2 – 5
1.25	1.50	1 – 3
1.50	1.75	0 – 2
No. MC Items		72
MC Mean		-0.10 – 0.10
MC SD¹		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

¹SD — Standard Deviation.**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 SD¹		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 SD¹		0.10 – 0.15

¹SD — Standard Deviation.**Table 4.4: Number of Items and Mean B-Value Ranges by Content Strand for Mathematics**

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

Rules for Item Sequence and Layout

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

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

Chapter 5: Test Administration

Test Security and Confidentiality

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

Educational Testing Service Office of Testing Integrity

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

The OTI's mission is to

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

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

Test Development

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

- Only authorized individuals have access to test content at any step in the test development, item review, and data analysis processes.
- Test developers keep all hard copy test content, computer disk copies, art, film, proofs, and plates in locked storage when not in use.

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

Item Review

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

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

Item Bank

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

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

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

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

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

Transfer of Forms and Items to the California Department of Education

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

Printing

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

Test Administration

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

Test Delivery

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

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

- The CAHSEE LEA coordinators are required to sign and submit a *CAHSEE Test Security Agreement* form to the CAHSEE Technical Assistance Center before ETS can ship any testing materials to the district.
- Test site coordinators must sign and submit a *CAHSEE Test Security Agreement* form to the CAHSEE LEA coordinator before any testing materials can be delivered to the school/test site.
- Anyone having access to the test materials must sign and submit a *CAHSEE Test Security Affidavit* form to the test site coordinator before receiving access to any testing materials.
- All testing is conducted on specific dates as determined by the SSPI. To ensure security throughout the state, test sessions must begin between the hours of 8 and 10 a.m. Test sites that must test outside this window must advise the CDE of their planned testing schedule.
- Test security during testing is managed by the CAHSEE LEA coordinator as well as the CAHSEE test site coordinator. All students are seated facing the same direction and with spacing at least four feet from center of desk to center of desk. Any information on bulletin boards, chalkboards, whiteboards, or charts that could be used by students to help answer questions on the test is removed or covered.
- If a security breach occurs at a test site before, during, or after a CAHSEE administration and is determined to be a violation of the *Test Security Agreement*,

the LEA coordinator records all pertinent information on the *Test Security Breach Report* supplied in the *CAHSEE LEATSCM* (CDE, 2014a) and faxes or e-mails the form immediately to ETS. ETS, in consultation with the CDE CAHSEE offices, then launches an investigation.

- Any irregularities in test security may result in the invalidation of student test results.
- Procedures for test site security are documented in the *LEATSCM* (CDE, 2014a) and are reviewed annually with the CDE CAHSEE Office.

Processing Security

Pearson has established the following security safeguards at their sites:

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

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

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

Data Management

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

Transfer of Files via Secure Data Exchange

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

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

Scoring and Analysis

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

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

Reporting and Posting Results

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

Student Confidentiality

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

- Pre-ID files
- Reports
- Essays

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

Data Security

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

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

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

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

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

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

Procedures to Maintain Standardization

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

Test Administrators

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

The responsibilities for district and test site staff members are included in the *CAHSEE LEATSCM* (CDE, 2014a). The manual is described in a later section.

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

CAHSEE LEA Coordinator

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

Test Examiner

The CAHSEE is administered by test examiners who may be assisted by test proctors and scribes. A test examiner is an employee of a school district or an employee of a nonpublic, nonsectarian school (NPS). The test examiner has been trained to administer the tests and has signed a *CAHSEE Test Security Affidavit*. Test examiners must follow the directions in the *CAHSEE DFA* (CDE, 2014b) exactly.

Test Proctor

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

Scribe

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

CAHSEE Directions for Administration

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

CAHSEE Local Educational Agency and Test Site Coordinator Manual

Test administration procedures found in the *CAHSEE LEATSCM* must be followed so all students have an equal opportunity to demonstrate their academic achievements. The *CAHSEE LEATSCM* (CDE, 2014a) contributes to this goal by providing information about the responsibilities of district and test site coordinators, as well as those of the other staff involved in the administration cycle. However, the manual is not intended as a substitute for the *California Code of Regulations*, Title 5, *EC*, or to detail all of the coordinator's responsibilities.

CAHSEE Online

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

Test Booklets

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

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

Students with Disabilities

All students participate in the CAHSEE Program, including SWDs. Per the California *EC* Section 60852.3, eligible SWDs are exempted from meeting the CAHSEE requirement until alternative means to the CAHSEE are implemented or are determined to be not feasible. During the test, students may use testing variations that are regularly used in the classroom and any accommodations or modifications specified in their IEPs or Section 504 plans. Examples of test variations available only to students who regularly use them in the classroom include special or adaptive

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

Identification of Students with Test Variations, Accommodations, or Modifications

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

Scoring

The purpose of test variations and accommodations is to enable students to take the CAHSEE but not to give them an advantage over other students or to improve their scores. However, testing with a modification (e.g., calculators on the mathematics test, test questions read aloud on the ELA test) impacts the construct being measured and affects the comparability of test scores. If a student takes one or both parts of the CAHSEE with a modification and has received the equivalent of a passing score, the student has not passed that part of the exam but is eligible to request a local waiver of the requirement to meet the high school graduation requirements. In addition, scores for students tested with modifications contribute 200 points for API⁵ calculations, and these students are not counted as tested for AYP. Test administration variations and accommodations do not result in changes to students’ scores for API or AYP calculations, and these students are counted as Tested. The only exception is the calculator use in the mathematics exam. This modification is accepted and counted as

⁵ The API was not produced in 2013-14 and, as such, the 2014 CAHSEE results were not used for API reporting purposes.

tested. The Proficient cut point is a little higher than that for those students who did not use a calculator.

Demographic Data Corrections

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

Testing Irregularities

Testing irregularities are circumstances that may compromise the reliability and validity of test results. If more than five percent of the students tested are involved, a school's API⁶ is invalidated.

In the event of an administration irregularity, the test site coordinator completes a *Test Administration Incident Form* that details all pertinent information and immediately notifies ETS and the CDE. This form is kept at the school or district office for one year following the test. If the school and/or district determines that a student's answer document should be invalidated due to cheating, the Score Code field on the answer document is coded I. This invalidates the student's score for that portion of the test, and the student's testing status is reported as Score Invalidated. The information and procedures to assist in identifying irregularities and notifying the CDE are provided in the *CAHSEE LEATSCM* (CDE, 2014a).

Test Administration Incidents

A test administration incident is any event that occurs before, during, or after test administration that does not conform to the instructions stated in the *DFA* and the *CAHSEE LEATSCM* (CDE, 2014a). These events include test administration errors, disruptions, and student cheating. Except in the case of cheating, test administration incidents generally do not affect test results. These administration incidents are not reported to the CDE or the CAHSEE program testing contractor. The CAHSEE test site coordinator should immediately notify the CAHSEE LEA coordinator of any test administration incidents that occur. It is recommended by the CDE that districts and schools maintain records of these incidents.

⁶ The API was not produced in 2013-14 and, as such, the 2014 CAHSEE results were not used for API reporting purposes.

Chapter 6: Analyses

Overview

This chapter summarizes item- and test-level statistics obtained for the CAHSEE administered in 2013–14. The statistics presented in this chapter are divided into five sections and are presented in the following order:

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

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

1. Appendices 6.B through 6.H present item-level statistics for operational items. Included are the following summary tables:
 - a. Item characteristics, including IRT Rasch item difficulty statistics (b -values) and point-biserial correlations for items in each operational test.
 - b. The distribution of items based on their fit to the Rasch model.
 - c. DIF analyses that list items flagged for significant DIF and the distributions of items across DIF categories.
 - d. Summary of the ELA CR item that incorporates the polyserial correlation, DIF results, and the IRT b -value and step parameters.
2. Appendices 6.I through 6.L present results of the reliability analyses. Appendix 6.I presents the estimates of intercorrelations, reliability, and standard errors of measurement for total test scores and strand scores for the population as a whole and for selected subgroups. Appendix 6.J presents inter-rater reliability results and Appendix 6.K presents generalizability analyses for the ELA writing prompts. The results of the classification consistency and classification accuracy of the Pass/Not Pass designations and ESEA performance levels are shown in Appendix 6.L.
3. Appendix 6.M 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.H for information pertaining to the operational items.

Table 6.1: Listing of Summary Tables for Items

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

Note: x = Administration, where B = July, C = October, D = November, E = December, F = February, G = March, H = May.

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. Classical item analyses and item-level DIF results were based on a sample with a minimum of 70 percent of students. The IRT analyses for the operational items were based on a sample, also used in the equating, that comprised a minimum of 90 percent of students.

Classical Item Analyses

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

Classical item difficulty (“*p*-value”):

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

Item discrimination:

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

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

Point-biserial correlations are computed as:

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

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 the CAHSEE are based on a polyserial regression model (Drasgow, 1988; Lewis & Thayer, 1996), which assumes that performance on an item is determined by the examinee's position on an underlying latent variable that is normally distributed at a given criterion score level. Based on this model, the polyserial correlation can be estimated as:

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

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 question correctly, while negative values indicate that the students who do poorly on the test have a higher probability of answering the question correctly. Therefore, negative correlations can indicate serious problems with the item content (e.g., multiple correct answers or unusually difficult or complex content) or that students have not been taught the instructional content pertaining to that item.

Percentage of students choosing each response option:

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

Percentage of students omitting an item:

This statistic is useful for identifying problems with test features such as testing time and item/test layout. Typically, the expectation is that if students have an adequate amount of testing time and are motivated to respond to the test questions, at least 95 percent of students should attempt to answer each question. When omit percentages exceed 5 percent for a series of items at the end of a timed section, this may indicate that there was insufficient time for students to complete all items. Alternatively, if the omit percentage is greater than 5 for a single item, this could be an indication of an item/test page layout problem. For example, students might accidentally skip an item that follows an item containing a lengthy stem.

Examples of the item analyses produced for the CAHSEE are provided in Figures 6.1 and 6.2 for two items that have been released. For each item, statistical information is presented on the right and the graphical display is presented on the left. The keyed answer is flagged with an asterisk. Statistical information includes the number and percentage of examinees choosing each

option and their mean and standard deviation on the total or criterion score. The proportion of the top 20 percent choosing each option is presented on the far right column. Numbers of students reaching (Rch) or not reaching (NR) the item are also included. In addition, *p*-value (average item score), *r*-biserial (correlation with criterion), and percent reached are presented. Point-biserial correlations are not provided in these plots, but they are included in the CAHSEE client item bank.

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

Figure 6.1: CAHSEE Item Analysis — Mathematics Item

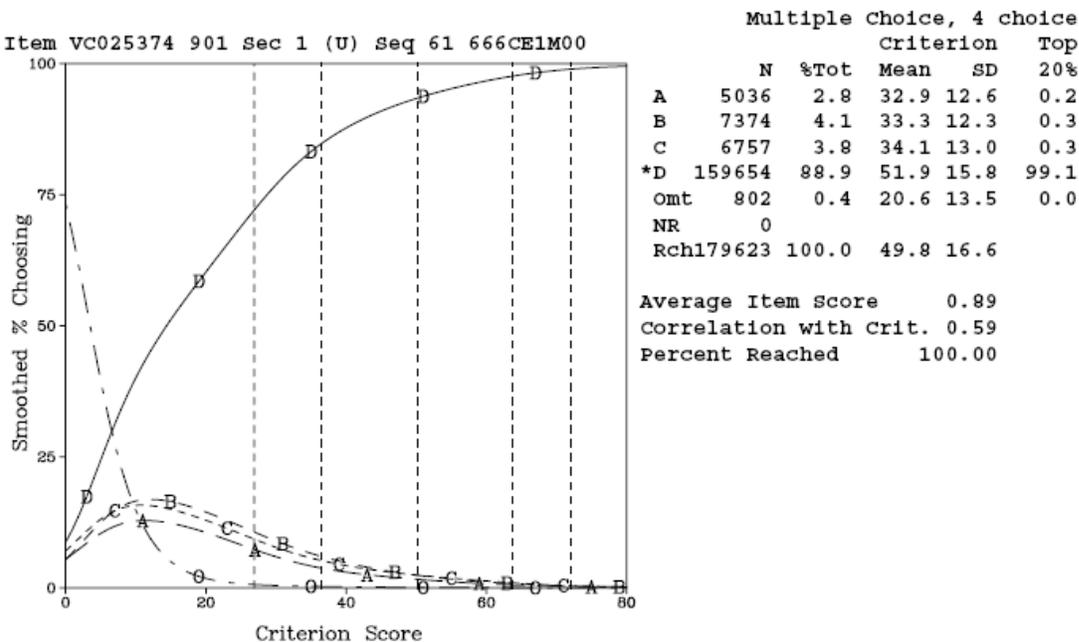
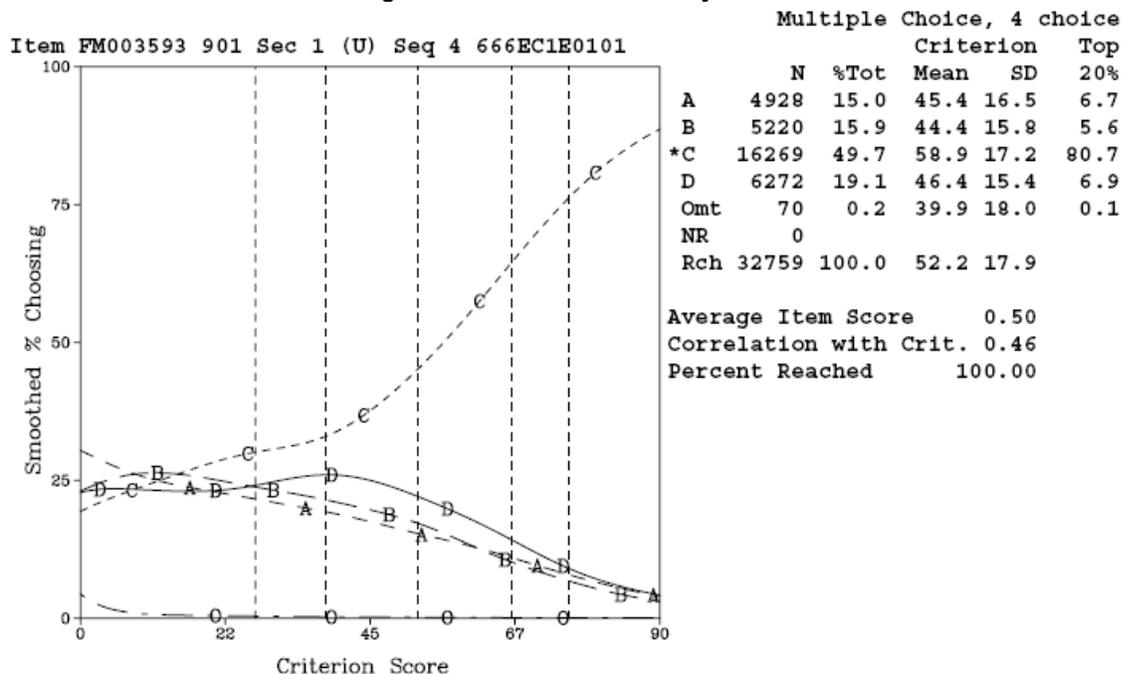


Figure 6.2: CAHSEE Item Analysis — ELA Item



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 items are provided for ELA and mathematics overall and by content strand. Tables 1 and 2 of Appendices 6.B through 6.H provide summary statistics for the point-biserial correlations and the IRT *b*-values for the operational items for the seven administrations in 2013–14. When there is only one item in the strand (e.g., WA in Table 6.B.1), the standard deviation (SD) of the statistic is not available.

Table 8 of the same appendices summarizes the statistics for ELA essays used in the July 2013 through May 2014 administrations. These statistics include the polyserial correlation, the DIF results for specified group comparisons, and the IRT *b*-values and step parameters for each score point.

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

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

Table 6.2: Flagging Criteria for Classical Item Analyses

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

ETS uses two DIF detection methods: the Mantel-Haenszel approach and the standardization approach. As part of the Mantel-Haenszel procedure, the statistic described by Holland and Thayer (1988), known as MH D-DIF, is used.⁵ This statistic is expressed as the differences between the focal and reference groups after conditioning on the total test score. This statistic is reported on the delta scale, which

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

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

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):

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

is a normalized transformation of item difficulty (proportion correct) with a mean of 13 and a standard deviation of 4. Negative MH D-DIF statistics favor the reference group and positive values favor the focal group. The classification logic used for flagging items is based on a combination of absolute differences and significance testing. Items that are not statistically different based on the MH D-DIF ($p > 0.05$) are considered to have similar performance between the two studied groups; these items are considered to be functioning appropriately. For items where the statistical test indicates significant differences ($p < 0.05$), the effect size is used to determine the direction and severity of the DIF. For the ELA CR item, the Mantel-Haenszel procedure was executed where item categories are treated as integer scores and a Chi-square test was carried out with one degree of freedom. The male and white groups are considered as reference groups, and the female and other ethnic groups are categorized as focal groups.

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

Table 6.3: DIF Categories

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

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

- A) If the Mantel Chi-square p -value > 0.05 , or if the Mantel Chi-square p -value < 0.05 but the absolute value of the Standardized Mean Difference $|SMD/SD| \leq 0.17$, then the item is classified as A.
- B) If the Mantel Chi-square p -value < 0.05 and $0.17 < |SMD/SD| \leq 0.25$, then the item is classified as B.
- C) If the Mantel Chi-square p -value < 0.05 and $|SMD/SD| > 0.25$, then the item is classified as C.

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

All DIF analyses were performed according to the procedures specified in the document “CAHSEE DIF Procedures” dated February 22, 2002. DIF comparison groups are based on gender (Male compared to Female), ethnicity (White compared to American Indian, Asian, Pacific Islander, Filipino, Combined Asian,⁶ Hispanic, and African American), and English language proficiency (English proficient compared to EL⁷). Operational items flagged for C DIF are reviewed by an expert committee consisting of CAHSEE item development staff, the CDE staff responsible for the CAHSEE, external educators identified by the CDE, and additional CDE content experts in ELA and mathematics, as needed, to ensure that the items are free from any bias before being used to compute final test scores. Some items were flagged for DIF in more than one administration. If an item passed the review process by the CAHSEE DIF Review Panel, it is not reviewed a second time.

Details of the results for each administration can be found in Tables 5, 6, and 7 of Appendices 6.B to 6.H for the operational items in the seven administrations.

⁶Combined Asian group includes students from Asian, Filipino, and Pacific Islander groups.

⁷According to “CAHSEE DIF Procedures,” DIF analyses were performed for ELs on mathematics items only. From September 2005, DIF analyses were also performed for ELs on ELA items.

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

The CAHSEE tests are equated to a reference form using a common-item nonequivalent groups design and methods based on IRT. The “base” or “reference” scale for the CAHSEE was established in the February 2004 administration. The 2013 (2014) items were placed on the reference scale through a set of linking items that appeared in the 2012 (2013) operational forms and were re-administered in 2013 (2014). 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 GENASYM for the IRT item calibration and equating work. As part of this system, a proprietary version of the PARSCALE computer program (Muraki & Bock, 1995) is used and parameterized to produce item calibrations. Research conducted at ETS suggests that PARSCALE calibrations produce results that are virtually identical to results based on WINSTEPS (Way, Kubiak, Henderson, & Julian, 2002), which is a program often used to perform Rasch scaling.

Item Calibration and Scaling

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

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

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

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

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

where abilities are grouped in the intervals of 0.1 between -3 and 3, θ_j is the mean of the abilities in the interval j , N_g is the number of intervals, w_j is a weight equal to the proportion of estimated abilities from the transformed new form in interval j , $P_n(\theta_j)$ is the probability of a correct response for the transformed new form item at ability level θ_j , and $P_r(\theta_j)$ is the probability of a correct response at ability level θ_j for the reference form (i.e., the item bank estimates). Any linking items for which the difference WRMSD is greater than 0.125 are eliminated from the anchor set. This criterion was established in early CAHSEE calibrations, has produced reasonable results over time, and has been used satisfactorily for CAHSEE administrations and other testing programs.

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

True-Score Equating

Once the items for the 2013–14 administrations were calibrated and linked to the operational theta scale, IRT true-score equating procedures were utilized to transform the new forms to the base form scale established in February 2004. The true-score equating procedure is based on the relationship between raw scores and ability. For mathematics, which consists entirely of MC items, this is the well-known relationship defined in Lord (1980; eq. 4–5):

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

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

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

For both ELA and mathematics, the 2013–14 forms were linked back to the scale established in February 2004.

Complete raw-score to scale-score conversion tables for the 2013–14 CAHSEE are presented in Appendix 6.M. The raw scores and corresponding rounded and unrounded converted scale scores are listed in those tables. For all the 2013–14 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 2013 operational form was used as the Braille, Braille large-print, and Braille audio CD forms for the July, October, and November 2013 administrations for both ELA and mathematics. The December 2013 operational form was used for the December 2013 and February 2014 administrations, and the March 2014 operational form was used for the March and May 2014 administrations of the Braille, Braille large-print, and Braille audio CD forms for both tests. The Braille versions included operational items from standard administrations; therefore, no special equating analyses were required.

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

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

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

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

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.

The evaluation of model fit is performed on operational items before scoring tables are produced and released.

The distributions of the operational items across the IRT model-data fit classifications are presented in Tables 3 and 4 of Appendices 6.B through 6.H for each of the seven administrations, respectively.

Summaries of Scaled Item Response Theory B-Values

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

Reliability Analyses

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

areas and between different substrands; generalizability analyses results on the essay prompts; and the results from the classification accuracy and consistency analyses.

Test Reliabilities and Standard Errors of Measurement

The variance in the distributions of test scores, essentially the differences among individuals, is partly due to real differences in the knowledge, skill, or ability being tested (true variance) and partly due to random errors in the measurement process (error variance). The number used to describe reliability is an estimate of the proportion of the total variance that is true variance. Several different ways of estimating this proportion exist. The estimates of reliability reported in this report are internal-consistency measures. Therefore, they apply only to the test form being analyzed. They do not take into account form-to-form variation due to equating limitations or lack of parallelism, nor are they responsive to day-to-day variation due, for example, to the examinee's state of health or the testing environment. Reliability coefficients range from 0 to 1. The higher the reliability coefficient for a set of scores, the more likely individuals would be to obtain very similar scores if they took another form of the test. The formula for the internal consistency reliability, as measured by Cronbach's Alpha (Cronbach, 1951), is reported below:

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

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):

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

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 0.84 to 0.96. Reliabilities for the MC strands for ELA ranged from 0.40 to 0.85, while the strand reliabilities for mathematics ranged from 0.37 to 0.86. The reliabilities for the ELA CR (unweighted) item score ranged from 0.25 to 0.42.

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

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

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 SEMs for the ELA total raw scores and the mathematics raw scores across the 2013–14 administrations ranged from 3.81 to 4.44 and 3.49 to 4.12, respectively. The reliabilities and SEMs of the test scores may be found in Appendix 6.I, Tables 1 through 7.

Strand Intercorrelations, Reliabilities, and Standard Errors of Measurement

Intercorrelations are the correlations between the raw scores obtained on the different tests or strands by individual test takers. Intercorrelations, reliabilities, and SEM estimates for both assessments and for the content strands within each assessment are reported in Appendix 6.I. 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 2013–14 administrations, the correlations between ELA strands (including the essay) ranged from 0.31 to 0.81, while the correlations between mathematics strands ranged from 0.23 to 0.82. The reliabilities of the ELA strands (including the essay) ranged from 0.25 to 0.85, and the reliability of the mathematics strands ranged from 0.37 to 0.86. The SEM for the MC strands for ELA ranged from 0.9 to 2.04, while the SEM for mathematics strands ranged from 1.37 to 2.06. The SEM for the ELA CR items ranged from 0.38 to 0.51.

Subgroup Reliabilities and Standard Errors of Measurement

Reliabilities (R_{XX}) and SEM estimates are reported for subgroups from the February and March 2014 census administrations, where larger case counts are available. Table 6.I.8 shows R_{XX} and SEM for the MC total and the composite score for gender, ethnicity, English-proficient and EL, and accommodation and non-accommodation

groups for the ELA February 2014 administration. Table 6.I.9 provides the same information for the mathematics test of the February 2014 administration. Tables 6.I.10 and 6.I.11 provide R_{XX} and SEM for the subgroups for ELA and mathematics for the March 2014 administration. The sample sizes for these R_{XX} also appear in these tables.

Reliability estimates for the ELA composite (MC + Essay) scores are similar for the gender groups across the two census administrations. The SEM is slightly lower for the female group than for the male group. In general, R_{XX} are similar for the ethnic groups; the SEM are similar for most groups, with a range of 2.78 (Asian, March) to 3.50 (African American, February) for the MC total and a range of 3.56 (Asian, March) to 4.04 (African American, February) for the composite.

The R_{XX} for ELA is slightly lower for the accommodation group than the non-accommodation group for both February and March. The SEM is higher for the accommodation group. R_{XX} for the EL group is lower than that for the English-proficient group. SEM is higher for the EL group than the English-proficient group. All R_{XX} are greater than or equal to 0.89.

R_{XX} and SEM for the mathematics total score are similar for gender groups. R_{XX} for ethnic groups is similar; the SEM is similar for most groups, with a range of 2.70 (Asian, March) to 3.90 (African American, February). The R_{XX} for the accommodation group is slightly lower than for the non-accommodation group, and the SEM is slightly higher. R_{XX} for the English-proficient group is slightly higher than that for the EL group, whereas the SEM is higher for the EL group than for the English-proficient group. All R_{XX} are greater than or equal to 0.92.

Writing Prompt and Rater Agreement Summary

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

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

Rater Agreement

An important part of the analysis of any multiple-rated CR item is the degree to which the individual rater scores agree. Tables 1, 3, 5, 7, 9, 11, and 13 in Appendix 6.J 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 2014 administrations had about 1 percent of CR item scores result in discrepant scores.

Tables 2, 4, 6, 8, 10, 12, and 14 in Appendix 6.J 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 0.17 to 0.29. The correlation between first and second ratings across the seven administrations ranged from 0.57 to 0.76.

The even-numbered tables also summarize the reasons given for CR items that received a score of zero. Zero scores are given if a CR item is left blank or the response is illegible, does not address the topic, is a cartoon/drawing, uses inappropriate content, or is not written in English. During the seven administrations, the percentage of zero scores received on the CR item ranged from 1 to 4 percent, with the majority of zero scores assessed because of CR items that were either left blank or written off topic. The lowest percentage of zero scores for the CR item was in the December 2013, February 2014, and the March 2014 administrations, and the largest percentage was in the May 2014 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 $P \times R$ design, was used for the generalizability analyses. This design assumes that the examinee could be rated by any rater in the pool of raters. Theoretically, this is correct, but the practicality of producing scores in a timely manner prevents this from happening operationally. Therefore, the generalizability and dependability coefficients produced will be conservative estimates of score generalizability. The analyses were conducted using the GENOVA software group (Brennan, 2001; Crick & Brennan, 1983). A generalizability study (g-study) was performed to estimate variance components for selected sources of variation, also known as “facets.” A decision study (d-study) was performed to estimate the generalizability and dependability coefficients for the operational design.

The results of the generalizability analyses are presented in Appendix 6.K. Generalizability coefficients for the CR item ranged from 0.73 to 0.86 across the seven administrations. The rater facet was consistently estimated to have minimal effect on score variance across the seven administrations.

The fluctuation in generalizability coefficients across administrations can be attributed to the changes in the amount of variation resulting from differences among students. Generally, as facets other than universe and person are found to contribute to the score variance, the generalizability coefficient will decrease, indicating that score differences are a function of more than individual differences in the construct being

assessed. Therefore, more of the student's score is due to error, and score reliability is reduced. However, when the person variance is examined across administrations, the percentage of variance attributable to individual differences is very similar and large. The final interaction term is confounded with undifferentiated error that is not accounted for in the current design and represents the second largest source of score variance.

Decision Classification Analyses

The method used for estimating the reliability of classification decisions is described in Livingston and Lewis (1995) and is implemented using the proprietary computer program RELCLASS-COMP (Version 4.14). The program provides two statistics that describe the reliability of classifications based on test scores from an administration of one form. Decision *consistency* describes the extent to which examinees are classified in the same way as they would be on the basis of a single form of a test other than the one for which data are available. Decision *accuracy* describes the extent to which examinees are classified in the same way as they would be on the basis of the average of all possible forms of a test.

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

The reliability of classification results for the ESEA cut scores at the Advanced and Proficient levels for both accuracy and consistency are reported in Appendix 6L, 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 0.94 to 1.00. 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 0.92 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 0.98, 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 0.97, 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 levels for both accuracy and consistency are reported in Appendix 6L, Tables 2, 4, 6, 8, 10, 12, and 14. Across the seven administrations, the decision accuracy for ELA at the

Pass/Not Pass levels ranged from 0.91 to 0.94, while the decision accuracy for mathematics at the Pass/Not Pass levels ranged from 0.90 to 0.96. The decision consistency for ELA at the Pass/Not Pass levels ranged from 0.87 to 0.92, while the decision consistency for mathematics at the Pass/Not Pass levels ranged from 0.86 to 0.94. The magnitude of the estimates (0.86 or above) reflects a high level of accuracy and consistency in the student classifications.

Validity Evidence

Validity refers to the degree to which evidence supports a proposed interpretation or use of a set of scores, and it is one of the most fundamental considerations in developing and evaluating tests (AERA, APA, & NCME, 1999). Validity is not based on a single study or type of study but involves an ongoing process of gathering evidence supporting the interpretation or use of the resulting test scores. The process is iterative in nature and begins with the test design and continues throughout the entire assessment process, including design, content specifications, item development, examination of psychometric quality, and inferences made from the results.

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

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

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

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

Test Purpose

As mentioned in Chapter 1, the purpose of the CAHSEE is to assess student achievement in public high schools and to ensure that students who graduate from public high schools can demonstrate minimum competency in reading, writing, and

mathematics as defined by the grade ten content standards in ELA and mathematics. Additionally, the CAHSEE is used in determining AYP that applies toward meeting the requirement of the federal ESEA of 2001, which is to have all students score Proficient or above by 2014.

Constructs to Be Measured

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

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

Intended Test Population

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

Scores Generated and the Interpretations and Uses of These Scores

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

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

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

- Communicating with parents and guardians about the students’ achievements and if the students fulfill one or both part(s) of the CAHSEE for the graduation requirement.
- Informing decisions needed to provide additional assistance for students who did not pass one or both part(s) of the CAHSEE.
- Providing data for state and federal accountability programs for schools.

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

Evidence Based on Content

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

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

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

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

Specifications and blueprints—ETS maintains item development specifications for both CAHSEE tests. The item specifications describe the characteristics of the items that should be written to measure each content standard. A thorough description of the specifications can be found in Chapter 4. Once the items are developed, ETS selects all CAHSEE test items to conform to the SBE-approved California content standards and test blueprints. Test blueprints for the components of the CAHSEE program were proposed by ETS, reviewed and approved by the CDE, and presented to the SBE for adoption. There have been no recent changes in the blueprints. The content blueprints for the CAHSEE can be found on the CDE CAHSEE Program Resources Web page at <http://www.cde.ca.gov/ta/tg/hs/index.asp>.

Item development process—Detailed descriptions of the content and psychometric criteria applicable to the construction of the 2013–14 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 underwent multiple review cycles and involved multiple groups of reviewers. The content review was conducted by external reviewers. The content review committees were responsible for reviewing all newly developed items for alignment to the California content standards. Additionally, the SPAR was responsible for reviewing and approving test items before they were used operationally or in field tests. The SPAR examined the items for intrusiveness into students’ personal lives such as student and family beliefs, morality, religion, or sexuality. More information about the SPAR is given in Chapter 3.

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

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

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

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

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

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

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

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

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

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

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

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

Evidence Based on Relations to Other Variables

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

Relationship Between CAHSEE and CST Results

Studies have been undertaken to examine the relationship between student scores on the CST and CAHSEE. Student performance on the CAHSEE and CST has been examined using special populations of students. The CDE's independent evaluator, HumRRO, has addressed the consistency of test results for students struggling to pass the CAHSEE and for SWDs. Results suggest the CST results were good indicators of how students performed on the CAHSEE, demonstrating consistency of test results across testing programs.

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

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

To examine the performance of SWDs, the 2007 CAHSEE results were compared with the 2006 CST results. Results indicate that the majority of students who took the grade nine or ten CST in 2006 scored in the Far Below Basic and Below Basic categories for ELA and had very little success in passing the CAHSEE. Students who scored in the higher CST performance categories (i.e., Basic, Proficient, Advanced)

had an increased chance of passing the CAHSEE. Similar results were found for the grade ten SWDs in 2007 who had taken the general mathematics test and the Algebra I end-of-course tests in 2006. Approximately 80 percent of students who scored in the Far Below Basic and Below Basic categories on the CST mathematics test in 2006 had low rates of passing the CAHSEE mathematics test in 2007, although they had more success in passing the CAHSEE if they were in the bottom two categories on the Algebra I test than did students in the same categories on the general mathematics test (Wise, 2007).

Relationship Between CAHSEE Performance and Post-Secondary School Outcomes

HumRRO conducted a special study to address what post high school outcomes might be linked to CAHSEE performance, and how well and in what ways CAHSEE might predict post high school performance (Becker and Wiley, 2012). The study looked at short and long term post high school outcome variables, college enrollment rates, and college degree completion. A total of twelve volunteer LEAs participated in the study.

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

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

Differential Item Functioning

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

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

Across all 2013–14 administrations a few operational items were flagged for significant DIF per administration. Of the 41 items that were flagged, 33 were ELA

items and 8 were mathematics items. All items were submitted for DIF panel review and determined to be valid measures of the intended construct. DIF analysis of the CAHSEE items is described earlier in this chapter (refer to *Differential Item Analysis* section). Details of the results of the DIF analysis for each administration can be found in Tables 5, 6, and 7 of Appendices 6.B through 6.H.

Intercorrelations between Content Areas

To the degree that students' content area scores correlate as expected, evidence of the validity regarding those scores as measures of the intended constructs is provided. The correlations between scores on the ELA and mathematics tests are presented in Appendix 6.I. Results appear to be consistent with expectations. In general, students' ELA scores correlate moderately with their mathematics scores (range of 0.57 to 0.72) for the non-census administrations and correlate higher for the census administrations where there is larger variance in the ability of students, which leads to higher correlations (i.e., 0.82 and 0.80 for the February and March administrations, respectively).

In addition, intercorrelations between the strands and the total test scores are presented in the same tables. In general, moderate correlations between the test scores and strand scores of the same content area are expected since, by design, the strands measure various aspects of the same construct, whereas intercorrelations between the test scores and strand scores of different content areas are expected to be less strong because the strands measure aspects of different constructs. The findings reflect these expectations. Using the February administration as an example, the mean intercorrelations between the content area scores and the strand scores were 0.85 and 0.90 for ELA and mathematics, respectively. The mean intercorrelation between the ELA score and mathematics strands was 0.74, and the mean intercorrelation between the mathematics score and the ELA strands was 0.69.

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.K.

A decision study (d-study) was conducted to look at the generalizability-coefficients (g-coefficients) for the writing scores; the g-coefficients ranged from 0.73 to 0.86 across administrations. The largest variance component was attributed to the "person" variation, which is the desired variation to occur among the examinee or "person" scores. Variation attributable to the construct-irrelevant rater variable was negligible.

Evidence Based on Response Processes

As noted in the AERA, APA, and NCME's *Standards for Educational and Psychological Testing* (1999), additional support for a particular score interpretation or use can be provided by theoretical and empirical evidence indicating that examinees

are using the intended response processes when responding to the items in a test. This evidence may be gathered from interacting with examinees in order to understand what processes underlie their item responses. Finally, evidence may also be derived from evidence provided by observers or judges involved in the scoring of examinee responses.

Inter-Rater Agreement

Rater consistency for the ELA writing prompt is critical to the CAHSEE writing scores and their interpretations. These findings provide evidence of the degree to which raters agree in their observations about the qualities evident in students' essay responses. As described in this chapter under *Writing Prompt and Rater Agreement Summary*, two raters scored each examinee response. The raters demonstrated exact agreement for 71 to 83 percent of student papers across the administrations and demonstrated exact or adjacent agreement for 100 percent of the papers across the administrations. Details of the analyses are provided in Appendix 6.J in this chapter.

Evidence Based on Internal Structure

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

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

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

Classical and IRT Item Statistics

Point-biserial correlations calculated for the items in a test show the degree to which the items discriminate between students with low and high scores on a test. To the degree that the correlations are high, evidence that the items assess the same construct is provided. The distributions of point-biserial correlations for the items in the CAHSEE are presented in Appendices 6.B through 6.H, Table 1 for ELA and Table 2 for mathematics. This mean correlation ranged from 0.31 to 0.47 for ELA and from 0.27 to 0.48 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 reliabilities for ELA were 0.94 and 0.93 for the February and March administrations, respectively. The mean reliabilities for mathematics were 0.96 and 0.95 for the February and March administrations, respectively.

Subgroup reliability—High reliability of CAHSEE scores was observed for groups defined by gender, ethnicity, accommodation status, and English Language Proficiency status. Reliabilities and SEM estimates are reported for demographic groups for the February and March 2014 census administrations, where larger samples were available. For both administrations and content areas, results indicate similar reliability estimates within gender and ethnic groups. The reliabilities for the accommodation groups are slightly lower than those for the non-accommodation groups, and the reliabilities for the EL group are lower than those for the English-proficient group. It can be noted that a reduced range (i.e., a reduced standard deviation of scores) is normally associated with a reduction in reliability, and this likely occurred for some of the CAHSEE subgroups.

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

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

Intercorrelations of Strands

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

Intercorrelations between CAHSEE ELA and mathematics raw scores at the strand level are provided for each administration in Appendix 6.I. For the census administrations, the ELA MC strands exhibit mean correlations of 0.73 (SD = 0.04) and 0.68 (SD = 0.08) for the February and March administrations, respectively. The mathematics strands exhibit mean correlations of 0.76 (SD = 0.05) and 0.76 (SD = 0.03) for the February and March administrations, respectively.

The mean intercorrelations between the ELA and mathematics strand scores are 0.64 (SD = 0.11) and 0.61 (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 ten CST and the CAHSEE ELA component scores. Four ELA strand scores for each test were included in the analyses. For reading, the scores were for a) word analysis, fluency, and systematic vocabulary development; and b) reading comprehension. For writing, the scores were for a) writing strategies; and b) writing applications. Principal components extraction was followed by Promax rotation. Results indicated that the component scores for the low and high stakes subtests clearly loaded on separate factors in the two-factor solution.

Additional Validity Evidence

In addition to the validation documentation gathered and maintained by the CDE, other empirical information in support of the CAHSEE is described below.

- Chapter 4 outlines the statistical criteria used to ensure that the test forms are comparable across administrations, providing additional evidence supporting inferences based on the comparability of the scores on different test forms.
- The section on IRT Analyses in the current chapter describes the calibration, scaling, and equating procedures used to place scores on the base scale developed in February 2004, thereby supporting the validity of inferences based on comparability of test scores.

- The current chapter also provides validity evidence supporting the quality of the test items with summary information for classical item analyses, DIF, and model-data fit for the operational 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. For example, the finding that socioeconomic status is related to achievement is a common finding across testing programs.

Conclusions

Conclusions about the validity of the CAHSEE for a particular use depend upon the definition of that use, but a wide variety of evidence is available for examining the validity of the CAHSEE testing program. As summarized in this chapter, this evidence covers the design of the content of the test, the alignment of the items to the state standards, judgmental and statistical review of item quality, the accuracy of classification decisions based on this assessment, and the credibility of statistical analyses based on CAHSEE results.

Appendix 6.A: CAHSEE Item Review—Description and Examples of Classification Categories

The categories used by ETS statisticians to classify items for the CAHSEE, based on an evaluation of how well each item fits the Rasch model, are described below. The flagging scheme has categories of A, B, C, D, and F. Descriptors for each category are provided below. The IRT ICCs and empirical data (item-ability regressions) for six items are shown on the next page (Figure 6.3), starting from the upper-left corner. These six items illustrate the span of the rating categories. The item number in the calibration and the ETS identification number for each item (accession number) are listed next to one of the descriptions for the five possible categories provided below. This number can be used to identify the corresponding item-ability regression plot in the figure.

Flag A (Item 93, FM002619901; Item 95, FM002640901)

- Good fit of theoretical curve to empirical data along the entire ability range; may have some small divergence at the extremes.
- Small Chi-square value relative to the other items in the calibration with similar sample sizes.

Flag B (Item 96, FM002641901)

- Good fit at the passing score.
- Theoretical curve within error range across most of ability range; may have some small divergence at the extremes.
- Acceptable Chi-square value relative to the other items in the calibration with similar sample sizes.

Flag C (Item 97, FM002767901)

- Acceptable fit at the passing score.
- Theoretical curve within error range at some regions and slightly outside of error range at remaining regions of ability range.
- Moderate Chi-square value relative to the other items in the calibration with similar sample sizes.

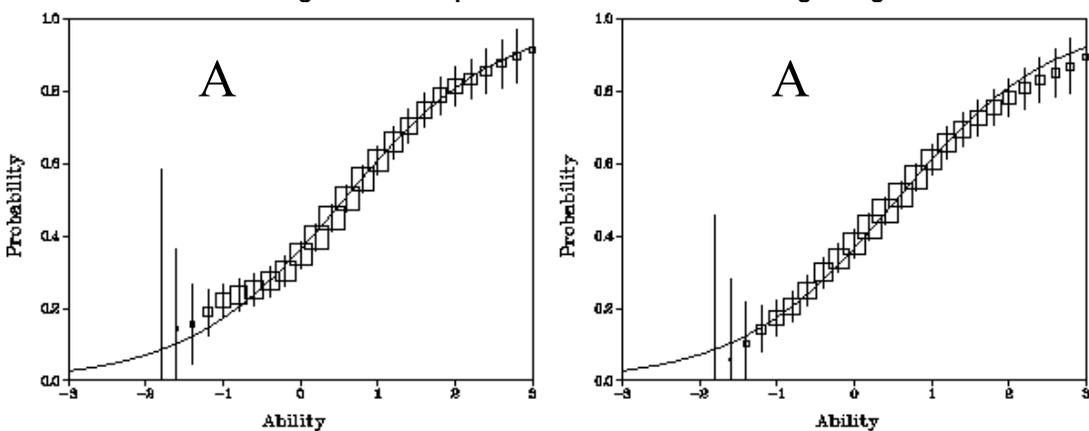
Flag D (Item 94, FM002620901)

- Fit at the passing score may be slightly out of error range.
- Theoretical curve outside of error range at some regions across ability range.
- Empirical curve may have a zero slope at and around the passing score.
- Large Chi-square value relative to the other items in the calibration with similar sample sizes.
- Items receiving a D fit value also receive a Use Status code of R. These items require additional examination and can be used if deemed appropriate.

Flag F (Item 98, FM002768901)

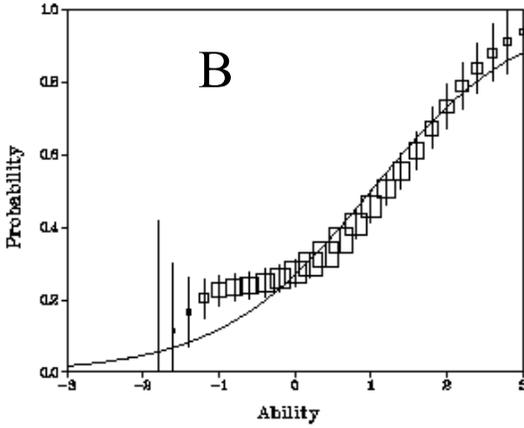
- Fit at the passing score outside error range.
- Theoretical curve outside of error range at most regions across ability range.
- Probability of answering item correctly may be greater at lower ability than higher ability (U-shaped empirical curve).
- Very large Chi-square value (sometimes larger than three digits) relative to the other items with similar sample sizes.
- Items receiving an F fit value also receive a Use Status code of X, an indication the item should not be used in its current form and must be revised and field-tested again before operational use.

Figure 6.3: Samples of CAHSEE Item-Fit Rating Categories

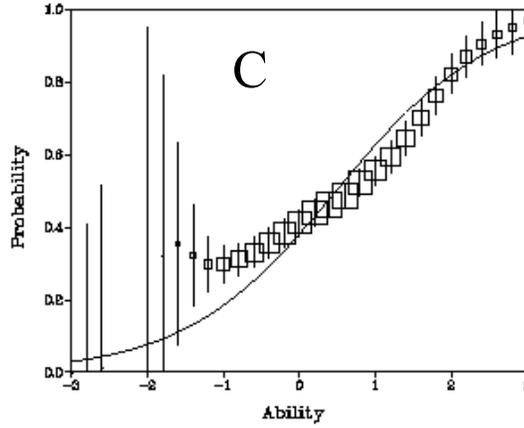


No.93 FM002619901 4 Choice P+=0.494
a=0.588 F, b=0.561, c=0.000 F, CHI=11.85

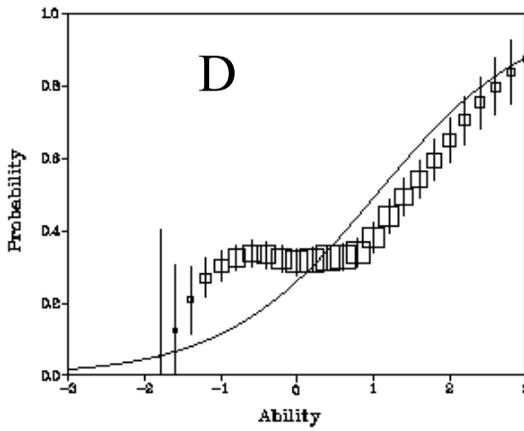
No.95 FM002640901 4 Choice P+=0.496
a=0.588 F, b=0.550, c=0.000 F, CHI=10.50



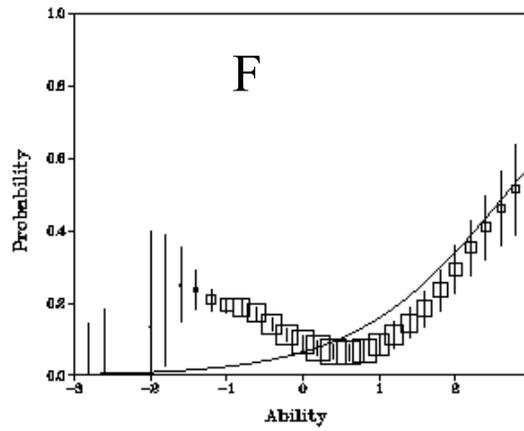
No.96 FM002641901 4 Choice $P+=0.402$
 $a=0.588$ F, $b=1.003$, $c=0.000$ F, $CHI=116.63$



No.97 FM002767901 4 Choice $P+=0.506$
 $a=0.588$ F, $b=0.486$, $c=0.000$ F, $CHI=151.58$



No.94 FM002620901 4 Choice $P+=0.395$
 $a=0.588$ F, $b=1.040$, $c=0.000$ F, $CHI=480.45$



No.98 FM002768901 4 Choice $P+=0.136$
 $a=0.588$ F, $b=2.664$, $c=0.000$ F, $CHI=720.60$

Appendix 6.B: Summary Statistics for Operational Items—July 2013

Table 6.B.1: Summary of Operational Item Statistics—ELA, July 2013

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.09	0.59	-1.53	1.30	0.31	0.07	0.17	0.59
RC	18	-0.08	0.53	-1.53	0.80	0.29	0.07	0.18	0.44
RL	20	-0.18	0.68	-1.37	1.30	0.31	0.06	0.17	0.41
RW	7	-0.53	0.57	-1.31	0.33	0.34	0.06	0.24	0.42
WA	1	0.02	N/A	0.02	0.02	0.59	N/A	0.59	0.59
WC	15	-0.01	0.57	-1.06	0.91	0.33	0.06	0.19	0.40
WS	12	0.18	0.45	-0.68	0.75	0.28	0.07	0.17	0.36

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

Table 6.B.2: Summary of Operational Item Statistics—Mathematics, July 2013

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.14	0.69	-2.06	1.29	0.27	0.08	0.08	0.46
A1	12	0.40	0.24	0.01	0.70	0.20	0.06	0.08	0.29
AF	20	-0.23	0.72	-1.81	1.17	0.28	0.08	0.11	0.37
MG	18	0.02	0.59	-0.74	1.29	0.30	0.09	0.16	0.46
MR	8	0.05	0.81	-1.27	1.17	0.25	0.12	0.10	0.38
NS	17	-0.29	0.80	-2.06	0.98	0.25	0.07	0.15	0.37
PS	13	-0.51	0.63	-1.56	0.72	0.29	0.08	0.10	0.41

¹A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.B.3: IRT Model Data Fit Distribution of Operational Items—ELA, July 2013

IRT review category	Status	Item count	Percent ¹
A	Use	44	60
B	Use	19	26
C	Use	10	14
Total		73	100

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

Table 6.B.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, July 2013

IRT review category	Status	Item count	Percent ¹
A	Use	32	40
B	Use	35	44
C	Use	10	13
D	Review	3	4
Total		80	100

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

Table 6.B.5: Operational Items Containing Significant DIF, July 2013

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	VE338230	L747K012	0	18	A	S	S	S	S	S	B-	C-	A
ELA	VE338233	L747K015	0	19	A	S	S	S	S	S	A	A	C-
ELA	VE645315	L897L001	0	22	C-	S	S	S	S	S	C-	C-	B-
ELA	VE046835	L6OSA821	0	79	A	S	S	S	S	S	A	C-	B-
MATH	VE359351	M40349	0	23	C-	S	S	S	S	S	A	B-	A

Note: Items with C values (positive and negative) were reviewed by the DIF review committee prior to scoring. S indicates that DIF was not performed due to insufficient sample size.

Table 6.B.6: Distribution of Operational Item DIF Classifications—ELA, July 2013

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C DIF Across All Analyses ¹	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C ⁻²	1	1	0	0	0	0	0	0	0	0	0	0	1	1	3	4	1	1	4	5
B-	1	1	0	0	0	0	0	0	0	0	0	0	2	3	1	1	4	5		
A	71	97	0	0	0	0	0	0	0	0	0	0	68	93	63	86	66	90		
B+	0	0	0	0	0	0	0	0	0	0	0	0	2	3	6	8	2	3		
C ⁺²	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N ³	0	0	73	100	73	100	73	100	73	100	73	100	0	0	0	0	0	0		
Total ⁴	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	4	5

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.B.7: Distribution of Operational Item DIF Classifications—Mathematics, July 2013

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C DIF Across All Analyses ¹			
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.		
C ⁻²	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
B-	4	5	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0				
A	73	91	0	0	0	0	0	0	0	0	0	0	79	99	75	94	80	100				
B+	2	3	0	0	0	0	0	0	0	0	0	0	1	1	3	4	0	0				
C ⁺²	0	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	80	100	0	0	0	0	0	0				
Total ⁴	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	1	1

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.B.8: Listing of CR Item Statistics—ELA, July 2013

Accession number	VE359108
CAHSEE ID	L7OSA1886
Polyserial correlation	0.68
IRT <i>b</i> -value	0.02130
Step category 1 ¹	5.99042
Step category 2	0.80358
Step category 3	3.38077
Step category 4	-1.82443
Step category 5	-1.41564
Step category 6	-3.38163
Step category 7	-3.55307
DIF category, Male-Female	A
DIF category, White-American Indian	S ³
DIF category, White-Asian	S
DIF category, White-Pacific Islander	S
DIF category, White-Filipino	S
DIF category, White-Combined Asian	S
DIF category, White-Hispanic	A
DIF category, White-African American	A
Least favorable DIF category among all focal groups ²	A

¹Step categories refer to the parameters describing each item category in the polytomous item calibrations.

²This 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 2013

Table 6.C.1: Summary of Operational Item Statistics—ELA, October 2013

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	0.02	0.63	-2.06	1.25	0.36	0.08	0.20	0.65
RC	18	-0.00	0.57	-0.89	1.25	0.37	0.09	0.20	0.50
RL	20	-0.20	0.66	-2.06	0.61	0.34	0.06	0.23	0.43
RW	7	-0.04	0.74	-0.91	0.77	0.34	0.10	0.24	0.46
WA	1	0.80	N/A	0.80	0.80	0.65	N/A	0.65	0.65
WC	15	-0.04	0.58	-0.85	0.77	0.38	0.07	0.27	0.47
WS	12	0.44	0.49	-0.32	1.14	0.36	0.06	0.28	0.47

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

Table 6.C.2: Summary of Operational Item Statistics—Mathematics, October 2013

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.13	0.66	-2.09	1.48	0.34	0.07	0.19	0.50
A1	12	0.31	0.35	-0.43	0.91	0.30	0.06	0.19	0.37
AF	20	-0.23	0.63	-1.29	0.96	0.36	0.05	0.22	0.44
MG	18	0.09	0.73	-0.88	1.48	0.36	0.09	0.20	0.48
MR	8	-0.23	0.48	-0.88	0.53	0.32	0.08	0.22	0.44
NS	17	-0.31	0.63	-2.09	0.54	0.32	0.08	0.22	0.45
PS	13	-0.45	0.60	-1.30	0.78	0.34	0.07	0.25	0.50

¹A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.C.3: IRT Model Data Fit Distribution of Operational Items—ELA, October 2013

IRT review category	Status	Item count	Percent ¹
A	Use	10	14
B	Use	22	30
C	Use	41	56
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, October 2013

IRT review category	Status	Item count	Percent ¹
A	Use	16	20
B	Use	20	25
C	Use	42	53
D	Review	2	3
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, October 2013

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	VE045080	L625H010	0	14	A	A	A	S	A	A	A	A	C-
ELA	VE580016	L881K012	0	25	A	A	B-	S	B-	C-	A	A	A
ELA	VE044892	L618H008	0	42	A	A	A	S	C+	A	A	A	A
ELA	VE339137	L7OSA1687	0	64	A	A	C+	S	B+	B+	A	A	A
ELA	VC018270	L20SA061	0	65	A	A	C+	S	A	B+	A	A	A
ELA	VE046443	L6OSA1150	0	74	A	A	B-	S	B-	B-	A	C-	B+
MATH	VC025221	M23144	0	5	C-	A	B-	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, October 2013

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C 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	1	1	0	0	1	1	1	1	3	4
B-	0	0	1	1	9	12	0	0	6	8	6	8	0	0	1	1	3	4		
A	73	100	72	99	59	81	0	0	61	84	62	85	73	100	71	97	67	92		
B+	0	0	0	0	3	4	0	0	5	7	4	5	0	0	0	0	2	3		
C ⁺²	0	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

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.C.7: Distribution of Operational Item DIF Classifications—Mathematics, October 2013

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C DIF Across All Analyses ¹		
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	
C- ²	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
B-	3	4	2	3	5	6	0	0	3	4	2	3	0	0	1	1	0	0			
A	75	94	78	98	71	89	0	0	72	90	76	95	80	100	79	99	80	100			
B+	1	1	0	0	4	5	0	0	5	6	2	3	0	0	0	0	0	0			
C+ ²	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Small N ³	0	0	0	0	0	0	80	100	0	0	0	0	0	0	0	0	0	0			
Total ⁴	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	1	1	

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.C.8: Listing of CR Item Statistics—ELA, October 2013

Accession number	VE358927
CAHSEE ID	L7OSA1508
Polyserial correlation	0.73
IRT <i>b</i> -value	0.80152
Step category 1 ¹	1.78313
Step category 2	1.36504
Step category 3	3.79295
Step category 4	-1.20099
Step category 5	-0.86869
Step category 6	-2.53105
Step category 7	-2.34040
DIF category, Male-Female	A
DIF category, White-American Indian	A
DIF category, White-Asian	A
DIF category, White-Pacific Islander	S ³
DIF category, White-Filipino	A
DIF category, White-Combined Asian	A
DIF category, White-Hispanic	A
DIF category, White-African American	A
Least favorable DIF category among all focal groups ²	A

¹Step categories refer to the parameters describing each item category in the polytomous item calibrations.

²This 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.D: Summary Statistics for Operational Items—November 2013

Table 6.D.1: Summary of Operational Item Statistics—ELA, November 2013

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.05	0.64	-1.80	1.42	0.38	0.08	0.21	0.66
RC	18	-0.07	0.43	-1.14	0.70	0.39	0.07	0.23	0.50
RL	20	-0.26	0.80	-1.80	1.42	0.38	0.08	0.25	0.50
RW	7	-0.18	0.90	-1.28	0.94	0.35	0.09	0.21	0.45
WA	1	0.75	N/A	0.75	0.75	0.66	N/A	0.66	0.66
WC	15	-0.05	0.52	-0.99	0.63	0.39	0.05	0.25	0.46
WS	12	0.34	0.40	-0.39	0.91	0.35	0.05	0.27	0.44

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

Table 6.D.2: Summary of Operational Item Statistics—Mathematics, November 2013

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.20	0.62	-1.63	1.36	0.35	0.08	0.15	0.52
A1	12	0.24	0.44	-0.40	0.74	0.33	0.08	0.18	0.45
AF	20	-0.29	0.59	-1.27	1.10	0.37	0.06	0.26	0.45
MG	18	0.00	0.70	-1.40	1.36	0.37	0.08	0.25	0.52
MR	8	-0.29	0.79	-1.27	1.10	0.37	0.07	0.22	0.43
NS	17	-0.37	0.58	-1.63	0.40	0.32	0.08	0.15	0.42
PS	13	-0.51	0.53	-1.10	0.47	0.35	0.07	0.22	0.44

¹A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.D.3: IRT Model Data Fit Distribution of Operational Items—ELA, November 2013

IRT review category	Status	Item count	Percent ¹
A	Use	28	38
B	Use	37	51
C	Use	8	11
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, November 2013

IRT review category	Status	Item count	Percent ¹
A	Use	31	39
B	Use	32	40
C	Use	16	20
D	Review	1	1
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, November 2013

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-English Learner
ELA	VC021228	L395E004	0	27	B-	A	C-	C-	C-	C-	C-	C-	A
ELA	VE580185	L8OSA1914	0	68	A	A	A	C+	C+	B+	A	A	A
ELA	VE339044	L7OSA1579	0	73	A	A	C+	B+	C+	B+	A	A	A
ELA	VE359031	L7OSA1809	0	79	A	A	C-	B-	C-	C-	A	A	A
MATH	VC025666	M30374	0	2	A	A	C-	A	B-	B-	A	A	B-
MATH	VC392775	M40016	0	10	C-	A	B-	A	B-	B-	A	A	A
MATH	VC392814	M40061	0	47	B-	A	C-	C-	C-	C-	A	A	A
MATH	VE048563	M51462	0	81	A	A	C+	B+	C+	C+	A	B+	A

Note: Items with C values (positive and negative) were reviewed by the DIF review committee prior to scoring.

Table 6.D.6: Distribution of Operational Item DIF Classifications—ELA, November 2013

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses ¹	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C ⁻²	0	0	0	0	2	3	1	1	2	3	2	3	1	1	1	1	0	0	2	3
B-	3	4	0	0	2	3	3	4	6	8	2	3	1	1	1	1	1	1		
A	70	96	73	100	67	92	66	90	60	82	65	89	71	97	71	97	72	99		
B+	0	0	0	0	1	1	2	3	3	4	4	5	0	0	0	0	0	0		
C ⁺²	0	0	0	0	1	1	1	1	2	3	0	0	0	0	0	0	0	0	2	3
Small N ³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total ⁴	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	4	5

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.D.7: Distribution of Operational Item DIF Classifications—Mathematics, November 2013

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses ¹	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C ⁻²	1	1	0	0	2	3	1	1	1	1	1	1	0	0	0	0	0	0	3	4
B-	2	3	0	0	2	3	1	1	4	5	3	4	0	0	0	0	1	1		
A	76	95	80	100	75	94	76	95	73	91	74	93	80	100	79	99	79	99		
B+	1	1	0	0	0	0	2	3	1	1	1	1	0	0	1	1	0	0		
C ⁺²	0	0	0	0	1	1	0	0	1	1	1	1	0	0	0	0	0	0	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	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	4	5

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.D.8: Listing of CR Item Statistics—ELA, November 2013

Accession number	VE358929
CAHSEE ID	L7OSA1510
Polyserial correlation	0.75
IRT <i>b</i> -value	0.74895
Step category 1 ¹	1.87844
Step category 2	1.39578
Step category 3	3.85346
Step category 4	-1.00543
Step category 5	-0.81265
Step category 6	-2.70443
Step category 7	-2.60519
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

¹Step categories refer to the parameters describing each item category in the polytomous item calibrations.

²This 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 2013

Table 6.E.1: Summary of Operational Item Statistics—ELA, December 2013

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	0.02	0.71	-2.29	1.37	0.32	0.08	0.13	0.59
RC	18	-0.18	0.74	-1.86	1.07	0.31	0.10	0.13	0.43
RL	20	-0.06	0.83	-2.29	1.37	0.32	0.06	0.17	0.38
RW	7	0.06	0.65	-0.70	0.86	0.30	0.07	0.24	0.41
WA	1	0.47	N/A	0.47	0.47	0.59	N/A	0.59	0.59
WC	15	-0.07	0.60	-0.90	0.89	0.31	0.06	0.21	0.41
WS	12	0.50	0.47	-0.17	1.28	0.31	0.06	0.23	0.42

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

Table 6.E.2: Summary of Operational Item Statistics—Mathematics, December 2013

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.11	0.68	-1.92	1.61	0.29	0.08	0.11	0.44
A1	12	0.21	0.40	-0.67	0.74	0.24	0.08	0.12	0.37
AF	20	-0.25	0.66	-1.35	0.95	0.30	0.08	0.15	0.43
MG	18	0.14	0.80	-0.92	1.61	0.27	0.09	0.11	0.44
MR	8	-0.17	0.68	-0.89	0.95	0.26	0.07	0.15	0.37
NS	17	-0.11	0.49	-0.87	0.67	0.30	0.07	0.20	0.43
PS	13	-0.53	0.76	-1.92	0.75	0.30	0.05	0.21	0.39

¹A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.E.3: IRT Model Data Fit Distribution of Operational Items—ELA, December 2013

IRT review category	Status	Item count	Percent ¹
A	Use	26	36
B	Use	27	37
C	Use	19	26
D	Review	1	1
Total		73	100

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

Table 6.E.4: IRT Model Data Fit Distribution of Operational Items—Mathematics, December 2013

IRT review category	Status	Item count	Percent ¹
A	Use	28	35
B	Use	31	39
C	Use	21	26
Total		80	100

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

Table 6.E.5: Operational Items Containing Significant DIF, December 2013

Test	Accession No.	CAHSEE ID	Form	Item No.	Male-Female	White-American Indian	White-Asian	White-Pacific Islander	White-Filipino	White-Combined Asian	White-Hispanic	White-African American	Native English-Learner
ELA	VE045080	L625H010	0	16	S	S	S	S	S	S	S	S	C-
ELA	VC138461	L320G004	0	54	S	S	S	S	S	S	S	S	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.E.6: Distribution of Operational Item DIF Classifications—ELA, December 2013

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses ¹	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C ⁻²	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
B-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3		
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	93		
B+	0	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	1	1	1	1
Small N ³	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	0	0		
Total ⁴	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	2	3

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.E.7: Distribution of Operational Item DIF Classifications—Mathematics, December 2013

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses ¹	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C ⁻²	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	98		
B+	0	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	0	0
Small N ³	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	0	0

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.E.8: Listing of CR Item Statistics—ELA, December 2013

Accession number	VE359120
CAHSEE ID	L7OSA1898
Polyserial correlation	0.67
IRT <i>b</i> -value	0.47020
Step category 1 ¹	4.45117
Step category 2	1.41592
Step category 3	3.64672
Step category 4	-1.27856
Step category 5	-1.12426
Step category 6	-3.22670
Step category 7	-3.88430
DIF category, Male-Female	S ³
DIF category, White-American Indian	S
DIF category, White-Asian	S
DIF category, White-Pacific Islander	S
DIF category, White-Filipino	S
DIF category, White-Combined Asian	S
DIF category, White-Hispanic	S
DIF category, White-African American	S
DIF category, English Proficient-English Learner	B-
Least favorable DIF category among all focal groups ²	B-

¹Step categories refer to the parameters describing each item category in the polytomous item calibrations.

²This 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.F: Summary Statistics for Operational Items—February 2014

Table 6.F.1: Summary of Operational Item Statistics—ELA, February 2014

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.15	0.75	-1.87	1.76	0.47	0.08	0.25	0.72
RC	18	-0.12	0.63	-1.07	1.29	0.46	0.08	0.25	0.54
RL	20	-0.36	0.70	-1.87	0.80	0.47	0.07	0.30	0.57
RW	7	-0.66	0.53	-1.67	-0.04	0.50	0.05	0.41	0.54
WA	1	1.03	N/A	1.03	1.03	0.72	N/A	0.72	0.72
WC	15	-0.11	0.81	-1.37	1.48	0.44	0.09	0.27	0.60
WS	12	0.33	0.81	-0.83	1.76	0.47	0.08	0.29	0.60

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

Table 6.F.2: Summary of Operational Item Statistics—Mathematics, February 2014

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.19	0.67	-1.78	1.40	0.48	0.08	0.26	0.62
A1	12	0.31	0.60	-0.81	1.40	0.47	0.11	0.26	0.60
AF	20	-0.27	0.58	-1.78	0.67	0.48	0.07	0.35	0.62
MG	18	-0.08	0.63	-1.66	0.93	0.50	0.07	0.36	0.60
MR	8	-0.55	0.83	-1.78	0.34	0.43	0.06	0.36	0.51
NS	17	-0.33	0.64	-1.40	0.58	0.48	0.07	0.38	0.61
PS	13	-0.51	0.74	-1.73	0.53	0.44	0.06	0.30	0.55

¹A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.F.3: IRT Model Data Fit Distribution of Operational Items—ELA, February 2014

IRT review category	Status	Item count	Percent ¹
A	Use	29	40
B	Use	29	40
C	Use	13	18
D	Review	2	3
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, February 2014

IRT review category	Status	Item count	Percent ¹
A	Use	30	38
B	Use	32	40
C	Use	17	21
D	Review	1	1
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, February 2014

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	VF539290	L981M002	0	5	B-	A	C-	B-	B-	C-	A	A	B-
ELA	VF539302	L981M014	0	7	B-	A	C-	C-	C-	C-	B-	B-	A
ELA	VE579682	L842L007	0	55	A	A	C-	A	C-	C-	A	A	B-
ELA	VE339157	L7OSA1737	0	75	A	A	C-	C-	C-	C-	B-	C-	B-
ELA	VF539684	L9OSA2336	0	79	A	A	C+	A	B+	C+	A	A	A
MATH	VE580768	M61949	0	4	C-	A	A	A	A	A	A	A	A

Note: Items with C values (positive and negative) were reviewed by the DIF review committee prior to scoring.

Table 6.F.6: Distribution of Operational Item DIF Classifications—ELA, February 2014

DIF category	Male-Female		White-American Indian		White-Asian		White-Pacific Islander		White-Filipino		White-Combined Asian		White-Hispanic		White-African American		English Proficient-English Learner		Total C Items Across All Analyses ¹	
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.
C ⁻²	0	0	0	0	4	5	2	3	3	4	4	5	0	0	1	1	0	0	4	5
B-	4	5	0	0	6	8	2	3	4	5	2	3	2	3	1	1	5	7		
A	67	92	73	100	58	79	66	90	59	81	61	84	70	96	71	97	66	90		
B+	2	3	0	0	4	5	3	4	7	10	5	7	1	1	0	0	2	3		
C ⁺²	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	1	1
Small N ³	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	0	0		
Total ⁴	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	5	7

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.F.7: Distribution of Operational Item DIF Classifications—Mathematics, February 2014

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	0	0	1	1
B-	1	1	0	0	5	6	2	3	3	4	3	4	0	0	1	1	1	1			
A	75	94	80	100	74	93	77	96	76	95	76	95	80	100	79	99	79	99			
B+	3	4	0	0	1	1	1	1	1	1	1	1	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	0
Small N ³	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	1	1	

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.F.8: Listing of CR Item Statistics—ELA, February 2014

Accession number	VE359102
CAHSEE ID	L7OSA1880
Polyserial correlation	0.82
IRT <i>b</i> -value	1.02984
Step category 1 ¹	2.77398
Step category 2	1.59090
Step category 3	3.74827
Step category 4	-1.04598
Step category 5	-1.02201
Step category 6	-3.04331
Step category 7	-3.00186
DIF category, Male-Female	A
DIF category, White-American Indian	A
DIF category, White-Asian	A
DIF category, White-Pacific Islander	B+
DIF category, White-Filipino	B+
DIF category, White-Combined Asian	A
DIF category, White-Hispanic	A
DIF category, White-African American	A
DIF category, English Proficient-English Learner	A
Least favorable DIF category among all focal groups ²	B+

¹Step categories refer to the parameters describing each item category in the polytomous item calibrations.

²This 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 2014

Table 6.G.1: Summary of Operational Item Statistics—ELA, March 2014

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.12	0.72	-1.83	1.61	0.44	0.08	0.27	0.72
RC	18	-0.29	0.68	-1.83	0.67	0.43	0.07	0.33	0.60
RL	20	-0.21	0.71	-1.58	1.03	0.43	0.08	0.31	0.55
RW	7	-0.15	0.93	-1.27	0.99	0.39	0.08	0.27	0.50
WA	1	1.01	N/A	1.01	1.01	0.72	N/A	0.72	0.72
WC	15	-0.12	0.69	-1.08	1.61	0.43	0.07	0.30	0.54
WS	12	0.18	0.65	-0.92	1.31	0.47	0.06	0.36	0.59

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

Table 6.G.2: Summary of Operational Item Statistics—Mathematics, March 2014

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.21	0.76	-2.16	1.56	0.46	0.08	0.23	0.60
A1	12	0.20	0.64	-0.86	1.20	0.49	0.07	0.36	0.60
AF	20	-0.34	0.74	-1.52	1.43	0.47	0.08	0.30	0.59
MG	18	-0.06	0.85	-1.57	1.56	0.47	0.07	0.29	0.55
MR	8	-0.42	0.64	-1.50	0.59	0.49	0.06	0.40	0.56
NS	17	-0.37	0.75	-2.16	0.77	0.43	0.07	0.30	0.56
PS	13	-0.41	0.67	-1.73	0.65	0.44	0.11	0.23	0.56

¹A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.G.3: IRT Model Data Fit Distribution of Operational Items—ELA, March 2014

IRT review category	Status	Item count	Percent ¹
A	Use	42	58
B	Use	15	21
C	Use	16	22
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, March 2014

IRT review category	Status	Item count	Percent ¹
A	Use	35	44
B	Use	11	14
C	Use	34	43
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, March 2014

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	VE579386	L818L002	0	6	B-	A	B-	B-	C-	B-	B-	A	A
ELA	VE579394	L818L010	0	10	A	A	B-	A	A	B-	A	A	C-
ELA	VE645390	L8OSA2087	0	69	A	A	C-	A	C-	C-	B-	A	C-
ELA	VE580279	L8OSA2009	0	76	A	A	B-	A	B-	B-	C-	A	A
ELA	VF539596	L9OSA2196	0	79	A	A	C-	A	A	B-	A	B-	A
MATH	VE047505	M50402	0	31	C-	A	B-	A	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.G.6: Distribution of Operational Item DIF Classifications—ELA, March 2014

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	2	3	1	1	1	1	0	0	2	3	5	7
B-	2	3	0	0	7	10	2	3	5	7	8	11	3	4	1	1	1	1		
A	70	96	73	100	60	82	70	96	63	86	62	85	68	93	72	99	70	96		
B+	1	1	0	0	4	5	1	1	3	4	2	3	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	0
Small N ³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total ⁴	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	73	100	5	7

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.G.7: Distribution of Operational Item DIF Classifications—Mathematics, March 2014

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	1	1	0	0	0	0	0	0	0	0	1	1
B-	6	8	0	0	2	3	1	1	3	4	4	5	0	0	2	3	0	0		
A	72	90	80	100	75	94	79	99	74	93	73	91	77	96	77	96	80	100		
B+	1	1	0	0	3	4	0	0	2	3	3	4	3	4	1	1	0	0		
C ⁺²	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N ³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total ⁴	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	80	100	1	1

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.G.8: Listing of CR Item Statistics—ELA, March 2014

Accession number	VE359101
CAHSEE ID	L7OSA1879
Polyserial correlation	0.82
IRT <i>b</i> -value	1.01091
Step category 1 ¹	2.68610
Step category 2	1.29884
Step category 3	3.83978
Step category 4	-1.00635
Step category 5	-0.91996
Step category 6	-3.01601
Step category 7	-2.88240
DIF category, Male-Female	A
DIF category, White-American Indian	A
DIF category, White-Asian	A
DIF category, White-Pacific Islander	A
DIF category, White-Filipino	B+
DIF category, White-Combined Asian	A
DIF category, White-Hispanic	A
DIF category, White-African American	A
DIF category, English Proficient-English Learner	A
Least favorable DIF category among all focal groups ²	B+

¹Step categories refer to the parameters describing each item category in the polytomous item calibrations.

²This 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 2014

Table 6.H.1: Summary of Operational Item Statistics—ELA, May 2014

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	73	-0.10	0.62	-1.85	1.29	0.39	0.07	0.24	0.68
RC	18	0.01	0.51	-0.91	0.96	0.38	0.07	0.24	0.49
RL	20	-0.33	0.68	-1.85	0.52	0.41	0.06	0.29	0.48
RW	7	-0.38	0.40	-0.75	0.47	0.39	0.04	0.34	0.45
WA	1	0.74	N/A	0.74	0.74	0.68	N/A	0.68	0.68
WC	15	-0.16	0.63	-1.22	0.99	0.38	0.08	0.25	0.51
WS	12	0.27	0.56	-0.68	1.29	0.39	0.07	0.29	0.49

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

Table 6.H.2: Summary of Operational Item Statistics—Mathematics, May 2014

Content area ¹	Number of items	IRT <i>b</i> -value				Point-Biserial/Pearson Correlation			
		Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Overall	80	-0.22	0.62	-1.51	1.25	0.38	0.07	0.19	0.52
A1	12	0.31	0.57	-0.52	1.25	0.33	0.07	0.19	0.43
AF	20	-0.27	0.56	-1.42	0.78	0.40	0.07	0.30	0.52
MG	18	-0.10	0.49	-1.00	1.00	0.41	0.07	0.24	0.52
MR	8	-0.35	0.67	-1.16	0.78	0.37	0.05	0.31	0.47
NS	17	-0.46	0.55	-1.51	0.40	0.34	0.06	0.24	0.49
PS	13	-0.47	0.72	-1.41	0.88	0.38	0.04	0.30	0.44

¹A1 = Algebra I, AF = Algebra & Functions, MG = Measurement & Geometry, MR = Mathematical Reasoning (Items in this category are also classified under one of the other identified strands), NS = Number Sense, PS = Probability/Statistics.

Table 6.H.3: IRT Model Data Fit Distribution of Operational Items—ELA, May 2014

IRT review category	Status	Item count	Percent ¹
A	Use	10	14
B	Use	21	29
C	Use	39	53
D	Review	3	4
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, May 2014

IRT review category	Status	Item count	Percent ¹
A	Use	17	21
B	Use	17	21
C	Use	44	55
D	Review	2	3
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, May 2014

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	VF075357	L911M001	0	1	B-	A	C-	S	B-	C-	B-	B-	C-
ELA	VF075359	L911M003	0	2	B-	A	C-	S	B-	C-	C-	A	C-
ELA	VF075363	L911M007	0	3	A	A	C-	S	C-	C-	A	A	C-
ELA	VE338518	L765J002	0	19	A	A	C-	S	C-	C-	B-	B-	A
ELA	VE645365	L8OSA2062	0	69	A	A	A	S	C-	C-	A	A	A
ELA	VC017478	L10SA477	0	77	A	A	C+	S	B+	B+	A	A	A
ELA	VE046870	L6OSA856	0	79	A	A	C-	S	C-	C-	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, May 2014

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	5	7	0	0	4	5	6	8	1	1	0	0	3	4	6	8
B-	3	4	0	0	1	1	0	0	4	5	0	0	2	3	2	3	4	5		
A	70	96	73	100	61	84	0	0	59	81	63	86	70	96	71	97	65	89		
B+	0	0	0	0	5	7	0	0	6	8	4	5	0	0	0	0	1	1		
C ⁺²	0	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	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	7	10

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.H.7: Distribution of Operational Item DIF Classifications—Mathematics, May 2014

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-	1	1	0	0	4	5	0	0	1	1	0	0	0	0	0	0	0	0	0			
A	78	98	80	100	71	89	0	0	76	95	78	98	80	100	80	100	80	100	80	100		
B+	1	1	0	0	5	6	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	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	0	0

¹Items that are identified with C DIF in more than one comparison are counted once in the total C DIF column.

²Items with C DIF values (positive or negative) were reviewed by the DIF review committee prior to scoring.

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

⁴Total percentage may differ slightly from the sum of the category percentages due to rounding.

Table 6.H.8: Listing of CR Item Statistics—ELA, May 2014

Accession number	VE359097
CAHSEE ID	L7OSA1875
Polyserial correlation	0.75
IRT <i>b</i> -value	0.73764
Step category 1 ¹	2.04562
Step category 2	1.23949
Step category 3	3.51391
Step category 4	-0.99119
Step category 5	-0.71064
Step category 6	-2.66032
Step category 7	-2.43688
DIF category, Male-Female	A
DIF category, White-American Indian	A
DIF category, White-Asian	A
DIF category, White-Pacific Islander	S ³
DIF category, White-Filipino	A
DIF category, White-Combined Asian	A
DIF category, White-Hispanic	A
DIF category, White-African American	A
Least favorable DIF category among all focal groups ²	A

¹Step categories refer to the parameters describing each item category in the polytomous item calibrations.

²This 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.I: Intercorrelations, Reliability Estimates, and Standard Errors of Measurement

Table 6.I.1: Intercorrelations and Reliability Estimates by Section—July 2013

	ELA	Essay	Word Anal.	Read. Comp.	Lit. Resp. & Anal.	Writing Strat.	Writing Conv.	Math	Prob. & Stat.	Number Sense	Alg. & Func.	Meas. & Geom.	A1
ELA	1.00	-	-	-	-	-	-	-	-	-	-	-	-
Essay	0.60	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.69	0.32	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.80	0.36	0.51	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.83	0.38	0.54	0.59	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.70	0.31	0.38	0.47	0.46	1.00	-	-	-	-	-	-	-
Writing Conventions	0.77	0.41	0.44	0.48	0.52	0.50	1.00	-	-	-	-	-	-
Mathematics	0.57	0.33	0.40	0.49	0.47	0.47	0.47	1.00	-	-	-	-	-
Probability and Statistics	0.51	0.30	0.38	0.42	0.42	0.39	0.42	0.73	1.00	-	-	-	-
Number Sense	0.45	0.27	0.35	0.39	0.38	0.35	0.37	0.75	0.47	1.00	-	-	-
Algebra & Functions	0.49	0.28	0.34	0.42	0.41	0.41	0.40	0.82	0.50	0.48	1.00	-	-
Measurement & Geometry	0.47	0.25	0.33	0.40	0.39	0.41	0.39	0.81	0.49	0.48	0.55	1.00	-
Algebra 1	0.25	0.18	0.14	0.22	0.20	0.21	0.21	0.56	0.23	0.30	0.37	0.33	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	46.86	2.05	4.31	9.34	10.86	5.55	7.56	35.34	6.82	8.02	9.25	7.37	3.88
SD	11.86	0.45	1.66	3.19	3.58	2.35	3.06	10.16	2.48	2.72	3.23	3.20	1.99
Reliability	0.87	0.25	0.50	0.61	0.68	0.52	0.67	0.84	0.55	0.52	0.60	0.64	0.37
SEM	4.30	0.39	1.17	1.99	2.04	1.62	1.77	4.11	1.66	1.89	2.05	1.93	1.57

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

Correlations for the ELA section are reported for 5,824 examinees completing the ELA section.

Correlations for the mathematics section are reported for 4,848 examinees completing the mathematics section.

Correlations between ELA and mathematics are reported for 2,103 examinees taking both sections.

Table 6.1.2: Intercorrelations and Reliability Estimates by Section—October 2013

	ELA	Essay	Word Anal.	Read. Comp.	Lit. Resp. & Anal.	Writing Strat.	Writing Conv.	Math	Prob. & Stat.	Number Sense	Alg. & Func.	Meas. & Geom.	A1
ELA	1.00	-	-	-	-	-	-	-	-	-	-	-	-
Essay	0.65	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.69	0.36	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.87	0.44	0.57	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.86	0.46	0.58	0.69	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.79	0.41	0.49	0.63	0.59	1.00	-	-	-	-	-	-	-
Writing Conventions	0.81	0.45	0.47	0.62	0.59	0.59	1.00	-	-	-	-	-	-
Math	0.70	0.46	0.51	0.61	0.59	0.58	0.62	1.00	-	-	-	-	-
Probability and Statistics	0.61	0.40	0.46	0.54	0.54	0.50	0.53	0.77	1.00	-	-	-	-
Number Sense	0.59	0.39	0.44	0.51	0.51	0.48	0.52	0.81	0.57	1.00	-	-	-
Algebra & Functions	0.63	0.42	0.45	0.56	0.54	0.53	0.56	0.88	0.60	0.62	1.00	-	-
Measurement & Geometry	0.61	0.39	0.44	0.54	0.51	0.52	0.54	0.85	0.58	0.60	0.67	1.00	-
Algebra 1	0.47	0.34	0.33	0.41	0.38	0.41	0.43	0.71	0.40	0.49	0.57	0.52	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	49.07	2.06	3.93	10.01	11.85	5.58	8.44	38.30	7.10	8.72	10.01	7.87	4.60
SD	14.05	0.56	1.62	3.69	3.80	2.69	3.37	13.04	2.74	3.22	3.96	3.65	2.44
Reliability	0.90	0.30	0.47	0.73	0.72	0.66	0.74	0.90	0.65	0.65	0.74	0.74	0.58
SEM	4.37	0.46	1.18	1.91	2.00	1.57	1.71	4.07	1.63	1.89	2.02	1.88	1.58

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

Correlations for ELA section are reported for 35,071 examinees completing ELA section.

Correlations for Math section are reported for 32,030 examinees completing Math section.

Correlations between ELA and Math are reported for 18,669 examinees taking both sections.

Table 6.1.3: Intercorrelations and Reliability Estimates by Section—November 2013

	ELA	Essay	Word Anal.	Read. Comp.	Lit. Resp. & Anal.	Writing Strat.	Writing Conv.	Math	Prob. & Stat.	Number Sense	Alg. & Func.	Meas. & Geom.	A1
ELA	1.00	-	-	-	-	-	-	-	-	-	-	-	-
Essay	0.66	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.70	0.38	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.87	0.46	0.58	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.86	0.48	0.58	0.70	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.77	0.41	0.47	0.61	0.55	1.00	-	-	-	-	-	-	-
Writing Conventions	0.82	0.48	0.49	0.62	0.60	0.60	1.00	-	-	-	-	-	-
Mathematics	0.70	0.47	0.53	0.61	0.58	0.62	0.59	1.00	-	-	-	-	-
Probability and Statistics	0.62	0.42	0.47	0.54	0.54	0.52	0.52	0.79	1.00	-	-	-	-
Number Sense	0.61	0.42	0.48	0.53	0.54	0.51	0.51	0.81	0.59	1.00	-	-	-
Algebra & Functions	0.63	0.42	0.47	0.55	0.52	0.56	0.54	0.89	0.63	0.64	1.00	-	-
Measurement & Geometry	0.60	0.40	0.45	0.52	0.49	0.56	0.51	0.86	0.59	0.60	0.70	1.00	-
Algebra 1	0.49	0.35	0.36	0.42	0.39	0.46	0.43	0.75	0.46	0.51	0.62	0.60	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	50.86	2.12	4.15	10.42	12.25	5.92	8.60	39.66	7.32	9.01	10.29	8.21	4.85
SD	14.55	0.56	1.62	3.87	4.13	2.68	3.42	13.50	2.82	3.24	3.99	3.73	2.51
Reliability	0.91	0.32	0.50	0.76	0.79	0.65	0.75	0.91	0.67	0.66	0.74	0.74	0.61
SEM	4.31	0.46	1.15	1.91	1.90	1.59	1.71	4.07	1.62	1.89	2.03	1.88	1.57

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

Correlations for the ELA section are reported for 93,882 examinees completing the ELA section.

Correlations for the mathematics section are reported for 86,826 examinees completing the mathematics section.

Correlations between ELA and mathematics are reported for 53,731 examinees taking both sections.

Table 6.I.4: Intercorrelations and Reliability Estimates by Section—December 2013

	ELA	Essay	Word Anal.	Read. Comp.	Lit. Resp. & Anal.	Writing Strat.	Writing Conv.	Math	Prob. & Stat.	Number Sense	Alg. & Func.	Meas. & Geom.	A1
ELA	1.00	-	-	-	-	-	-	-	-	-	-	-	-
Essay	0.59	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.64	0.31	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.82	0.35	0.48	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.84	0.42	0.46	0.62	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.74	0.33	0.41	0.54	0.52	1.00	-	-	-	-	-	-	-
Writing Conventions	0.76	0.37	0.40	0.54	0.52	0.47	1.00	-	-	-	-	-	-
Mathematics	0.64	0.46	0.47	0.54	0.53	0.55	0.52	1.00	-	-	-	-	-
Probability and Statistics	0.58	0.41	0.42	0.52	0.50	0.47	0.45	0.73	1.00	-	-	-	-
Number Sense	0.55	0.37	0.43	0.46	0.47	0.50	0.45	0.79	0.52	1.00	-	-	-
Algebra & Functions	0.55	0.39	0.41	0.46	0.46	0.48	0.45	0.85	0.51	0.57	1.00	-	-
Measurement & Geometry	0.48	0.34	0.35	0.42	0.40	0.40	0.41	0.76	0.48	0.46	0.55	1.00	-
Algebra 1	0.36	0.33	0.27	0.26	0.29	0.31	0.30	0.64	0.30	0.39	0.49	0.38	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	48.92	2.13	3.78	10.56	11.18	5.34	8.50	37.47	7.24	7.91	9.99	7.58	4.75
SD	11.69	0.43	1.57	3.15	3.55	2.43	2.86	10.94	2.53	3.13	3.45	2.98	2.20
Reliability	0.87	0.25	0.40	0.63	0.68	0.56	0.62	0.86	0.59	0.63	0.65	0.59	0.47
SEM	4.22	0.38	1.22	1.91	2.00	1.60	1.76	4.12	1.61	1.92	2.06	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 these computations.

Correlations for the ELA section are reported for 1,570 examinees completing the ELA section.

Correlations for the mathematics section are reported for 1,357 examinees completing the mathematics section.

Correlations between ELA and mathematics are reported for 536 examinees taking both sections.

Table 6.1.5: Intercorrelations and Reliability Estimates by Section—February 2014

	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	0.72	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.82	0.50	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.90	0.56	0.74	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.92	0.57	0.75	0.81	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.87	0.56	0.67	0.74	0.77	1.00	-	-	-	-	-	-	-
Writing Conventions	0.87	0.57	0.66	0.72	0.75	0.73	1.00	-	-	-	-	-	-
Mathematics	0.82	0.58	0.63	0.74	0.75	0.73	0.73	1.00	-	-	-	-	-
Probability and Statistics	0.75	0.50	0.60	0.69	0.69	0.65	0.66	0.85	1.00	-	-	-	-
Number Sense	0.73	0.51	0.57	0.67	0.66	0.65	0.65	0.91	0.73	1.00	-	-	-
Algebra & Functions	0.78	0.55	0.60	0.70	0.71	0.69	0.70	0.93	0.76	0.80	1.00	-	-
Measurement & Geometry	0.74	0.53	0.57	0.67	0.68	0.66	0.67	0.92	0.74	0.79	0.82	1.00	-
Algebra 1	0.68	0.51	0.51	0.61	0.62	0.61	0.62	0.87	0.66	0.74	0.78	0.77	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	62.82	2.30	5.62	13.09	15.15	7.83	10.79	54.10	9.43	11.88	13.82	11.86	7.11
SD	16.18	0.59	1.66	3.95	4.28	2.89	3.27	17.30	2.89	4.04	4.61	4.51	3.10
Reliability	0.94	0.42	0.70	0.83	0.85	0.76	0.79	0.96	0.77	0.84	0.85	0.86	0.78
SEM	3.84	0.45	0.90	1.64	1.65	1.41	1.50	3.61	1.39	1.62	1.79	1.70	1.47

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

Correlations for the ELA section are reported for 158,767 examinees completing the ELA section.

Correlations for the mathematics section are reported for 156,727 examinees completing the mathematics section.

Correlations between ELA and mathematics are reported for 137,076 examinees taking both sections.

Table 6.I.6: Intercorrelations and Reliability Estimates by Section—March 2014

	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	0.72	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.72	0.43	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.90	0.54	0.63	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.91	0.55	0.64	0.79	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.87	0.54	0.57	0.74	0.74	1.00	-	-	-	-	-	-	-
Writing Conventions	0.87	0.56	0.57	0.71	0.73	0.72	1.00	-	-	-	-	-	-
Mathematics	0.80	0.55	0.57	0.71	0.71	0.71	0.70	1.00	-	-	-	-	-
Probability and Statistics	0.72	0.48	0.52	0.65	0.65	0.63	0.63	0.86	1.00	-	-	-	-
Number Sense	0.72	0.49	0.52	0.64	0.64	0.62	0.63	0.90	0.73	1.00	-	-	-
Algebra & Functions	0.75	0.50	0.52	0.67	0.66	0.66	0.66	0.93	0.76	0.79	1.00	-	-
Measurement & Geometry	0.72	0.51	0.51	0.64	0.64	0.65	0.64	0.91	0.73	0.76	0.80	1.00	-
Algebra 1	0.67	0.48	0.47	0.59	0.59	0.61	0.60	0.88	0.69	0.74	0.78	0.77	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	65.41	2.38	5.28	14.06	15.40	8.58	11.35	57.28	9.73	12.56	14.72	12.44	7.84
SD	14.73	0.59	1.48	3.51	3.83	2.84	3.07	16.01	2.82	3.51	4.27	4.08	3.11
Reliability	0.93	0.40	0.53	0.80	0.81	0.78	0.78	0.95	0.77	0.79	0.84	0.83	0.80
SEM	3.81	0.46	1.01	1.55	1.66	1.34	1.45	3.49	1.37	1.60	1.70	1.66	1.40

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

Correlations for the ELA section are reported for 369,729 examinees completing the ELA section.

Correlations for the mathematics section are reported for 367,376 examinees completing the mathematics section.

Correlations between ELA and mathematics are reported for 343,688 examinees taking both sections.

Table 6.1.7: Intercorrelations and Reliability Estimates by Section—May 2014

	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	0.69	1.00	-	-	-	-	-	-	-	-	-	-	-
Word Analysis	0.72	0.41	1.00	-	-	-	-	-	-	-	-	-	-
Reading Comprehension	0.86	0.49	0.63	1.00	-	-	-	-	-	-	-	-	-
Literary Response & Analysis	0.89	0.50	0.61	0.73	1.00	-	-	-	-	-	-	-	-
Writing Strategies	0.81	0.45	0.52	0.64	0.67	1.00	-	-	-	-	-	-	-
Writing Conventions	0.81	0.50	0.50	0.60	0.65	0.64	1.00	-	-	-	-	-	-
Mathematics	0.72	0.48	0.52	0.64	0.64	0.64	0.63	1.00	-	-	-	-	-
Probability and Statistics	0.67	0.45	0.49	0.60	0.60	0.57	0.57	0.81	1.00	-	-	-	-
Number Sense	0.61	0.41	0.46	0.55	0.53	0.53	0.53	0.83	0.62	1.00	-	-	-
Algebra & Functions	0.67	0.44	0.48	0.59	0.59	0.59	0.59	0.90	0.68	0.68	1.00	-	-
Measurement & Geometry	0.64	0.42	0.45	0.57	0.56	0.57	0.56	0.88	0.65	0.65	0.74	1.00	-
Algebra 1	0.51	0.35	0.34	0.44	0.44	0.46	0.46	0.75	0.49	0.54	0.62	0.60	1.00
Number of Items	73	1	7	18	20	12	15	80	13	17	20	18	12
Mean	48.53	2.04	4.23	9.43	11.75	5.64	8.32	38.47	6.95	9.01	9.82	8.20	4.51
SD	15.51	0.64	1.83	3.88	4.34	2.79	3.38	14.52	2.92	3.39	4.32	4.03	2.50
Reliability	0.92	0.35	0.60	0.76	0.80	0.69	0.75	0.92	0.70	0.69	0.79	0.78	0.62
SEM	4.44	0.51	1.16	1.92	1.94	1.55	1.71	4.03	1.59	1.89	2.00	1.89	1.54

Note: All correlations are for raw scores. Students who took Braille, Large Print, and Audio CD forms are not included in the computations.
 Correlations for the ELA section are reported for 37,813 examinees completing the ELA section.
 Correlations for the mathematics section are reported for 34,973 examinees completing the mathematics section.
 Correlations between ELA and mathematics are reported for 18,535 examinees taking both sections.

Table 6.1.8: Reliabilities (R_{xx}) and Standard Errors of Measurement (SEMs) of Subgroups for ELA—February 2014

	Total MC N = 158,841		Composite (MC + Essay) N = 158,841	
	R_{xx}	SEM	R_{xx}	SEM
Gender				
Male	0.95	3.34	0.94	3.93
Female	0.94	3.18	0.94	3.73
Race/Ethnicity				
American Indian or Alaska Native	0.95	3.35	0.94	3.96
Asian	0.95	2.99	0.95	3.70
Pacific Islander	0.94	3.37	0.93	3.94
Filipino	0.93	2.97	0.92	3.58
Hispanic or Latino	0.94	3.49	0.94	3.97
African American	0.94	3.50	0.94	4.04
White (not of Hispanic origin)	0.94	2.87	0.93	3.58
Two or More Races	0.95	3.06	0.94	3.75
Language Fluency				
English Proficient Students	0.94	3.07	0.93	3.70
English Learner Students	0.89	3.88	0.89	4.32
Special Education Program Participation				
Students Receiving Services	0.93	3.80	0.92	4.37
Students Not Receiving Services	0.94	3.18	0.93	3.76

Table 6.1.9: Reliabilities (R_{xx}) and Standard Errors of Measurement (SEMs) of Subgroups for Mathematics—February 2014

	Total N = 156,799	
	R_{xx}	SEM
Gender		
Male	0.96	3.60
Female	0.95	3.61
Race/Ethnicity		
American Indian or Alaska Native	0.95	3.79
Asian	0.95	2.89
Pacific Islander	0.95	3.69
Filipino	0.95	3.29
Hispanic or Latino	0.95	3.83
African American	0.94	3.90
White (not of Hispanic origin)	0.95	3.34
Two or More Races	0.96	3.47
Language Fluency		
English Proficient Students	0.95	3.50
English Learner Students	0.92	4.07
Special Education Program Participation		
Students Receiving Services	0.92	4.05
Students Not Receiving Services	0.95	3.55

Table 6.I.10: Reliabilities (R_{xx}) and Standard Errors of Measurement (SEMs) of Subgroups for ELA—March 2014

	Total MC N = 369,871		Composite (MC + Essay) N = 369,871	
	R_{xx}	SEM	R_{xx}	SEM
Gender				
Male	0.94	3.27	0.94	3.87
Female	0.93	3.12	0.93	3.71
Race/Ethnicity				
American Indian or Alaska Native	0.94	3.29	0.93	3.93
Asian	0.94	2.78	0.93	3.56
Pacific Islander	0.94	3.31	0.93	3.89
Filipino	0.92	2.91	0.91	3.58
Hispanic or Latino	0.93	3.38	0.93	3.89
African American	0.94	3.43	0.94	4.00
White (not of Hispanic origin)	0.93	2.83	0.91	3.58
Two or More Races	0.95	3.00	0.94	3.73
Language Fluency				
English Proficient Students	0.92	3.04	0.91	3.69
English Learner Students	0.90	3.88	0.89	4.31
Special Education Program Participation				
Students Receiving Services	0.93	3.79	0.92	4.36
Students Not Receiving Services	0.93	3.12	0.92	3.73

Table 6.I.11: Reliabilities (R_{xx}) and Standard Errors of Measurement (SEMs) of Subgroups for Mathematics—March 2014

	Total N = 367,516	
	R_{xx}	SEM
Gender		
Male	0.96	3.47
Female	0.95	3.50
Race/Ethnicity		
American Indian or Alaska Native	0.95	3.64
Asian	0.95	2.70
Pacific Islander	0.95	3.58
Filipino	0.94	3.13
Hispanic or Latino	0.95	3.66
African American	0.95	3.80
White (not of Hispanic origin)	0.95	3.21
Two or More Races	0.96	3.34
Language Fluency		
English Proficient Students	0.95	3.38
English Learner Students	0.92	4.01
Special Education Program Participation		
Students Receiving Services	0.93	4.00
Students Not Receiving Services	0.95	3.43

Appendix 6.J: Rater Agreement Analyses

Table 6.J.1: Agreement of First and Second Ratings on the ELA Essay Item—July 2013

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	105	0	0	0	0	105	2
1	0	142	93	1	0	236	4
2	0	90	4,276	385	2	4,753	82
3	0	1	384	309	15	709	12
4	0	0	1	15	5	21	0
Total	105	233	4,754	710	22	5,824	100
Percent	2	4	82	12	0	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	4,837	83	83
1	982	17	100
2	5	0	100
3	0	0	100
4	0	0	100

Table 6.J.2: Summary Statistics for the ELA Essay Item—July 2013

	First Rating	Second Rating
Mean	2.05	2.05
Standard Deviation	0.50	0.50
Mean Absolute Difference Between First and Second Ratings: 0.17		
Correlation of First and Second Ratings: 0.65		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	66
Illegible	0
Off Topic	36
Cartoon/Inappropriate	3
Not in English	0
Total	105

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.J.3: Agreement of First and Second Ratings on the ELA Essay Item—October 2013

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	1,027	0	0	0	0	1,027	3
1	0	1,114	616	0	0	1,730	5
2	0	636	23,786	2,404	41	26,867	77
3	0	3	2,422	2,296	215	4,936	14
4	0	0	62	239	210	511	1
Total	1,027	1,753	26,886	4,939	466	35,071	100
Percent	3	5	77	14	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	28,433	81	81
1	6,532	19	100
2	106	0	100
3	0	0	100
4	0	0	100

Table 6.J.4: Summary Statistics for the ELA Essay Item—October 2013

	First Rating	Second Rating
Mean	2.06	2.06
Standard Deviation	0.60	0.60
Mean Absolute Difference Between First and Second Ratings: 0.19		
Correlation of First and Second Ratings: 0.72		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	717
Illegible	0
Off Topic	274
Cartoon/Inappropriate	22
Not in English	14
Total	1,027

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.J.5: Agreement of First and Second Ratings on the ELA Essay Item—November 2013

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	2,318	0	0	0	0	2,318	2
1	0	2,632	1,503	5	0	4,140	4
2	0	1,409	59,681	7,782	151	69,023	74
3	0	2	7,912	8,491	713	17,118	18
4	0	1	110	698	475	1,284	1
Total	2,318	4,044	69,206	16,976	1,339	93,883	100
Percent	2	4	74	18	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	73,596	78	78
1	20,017	21	100
2	268	0	100
3	1	0	100
4	0	0	100

Table 6.J.6: Summary Statistics for the ELA Essay Item—November 2013

	First Rating	Second Rating
Mean	2.12	2.12
Standard Deviation	0.61	0.60
Mean Absolute Difference Between First and Second Ratings: 0.22		
Correlation of First and Second Ratings: 0.69		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	1,670
Illegible	0
Off Topic	541
Cartoon/Inappropriate	55
Not in English	52
Total	2,318

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.J.7: Agreement of First and Second Ratings on the ELA Essay Item—December 2013

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	13	0	0	0	0	13	1
1	0	25	19	0	0	44	3
2	0	27	1,094	126	1	1,248	79
3	0	0	135	112	8	255	16
4	0	0	0	3	7	10	1
Total	13	52	1,248	241	16	1,570	100
Percent	1	3	79	15	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	1,251	80	80
1	318	20	100
2	1	0	100
3	0	0	100
4	0	0	100

Table 6.J.8: Summary Statistics for the ELA Essay Item—December 2013

	First Rating	Second Rating
Mean	2.13	2.12
Standard Deviation	0.48	0.50
Mean Absolute Difference Between First and Second Ratings: 0.20		
Correlation of First and Second Ratings: 0.57		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	8
Illegible	0
Off Topic	5
Cartoon/Inappropriate	0
Not in English	0
Total	13

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.J.9: Agreement of First and Second Ratings on the ELA Essay Item—February 2014

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	1,964	0	0	0	0	1,964	1
1	0	3,866	2,075	11	0	5,952	4
2	0	2,048	79,645	15,950	293	97,936	62
3	0	11	16,549	28,591	2,807	47,958	30
4	0	0	350	2,929	1,678	4,957	3
Total	1,964	5,925	98,619	47,481	4,778	158,767	100
Percent	1	4	62	30	3	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	115,744	73	73
1	42,358	27	100
2	665	0	100
3	0	0	100
4	0	0	100

Table 6.J.10: Summary Statistics for the ELA Essay Item—February 2014

	First Rating	Second Rating
Mean	2.30	2.30
Standard Deviation	0.65	0.65
Mean Absolute Difference Between First and Second Ratings: 0.28		
Correlation of First and Second Ratings: 0.66		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	1,323
Illegible	0
Off Topic	571
Cartoon/Inappropriate	32
Not in English	38
Total	1,964

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.J.11: Agreement of First and Second Ratings on the ELA Essay Item—March 2014

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	3,226	0	0	0	0	3,226	1
1	0	6,650	3,163	36	0	9,849	3
2	0	3,167	168,411	40,196	853	212,627	58
3	0	24	41,140	79,986	7,971	129,121	35
4	0	1	840	8,371	5,694	14,906	4
Total	3,226	9,842	213,554	128,589	14,518	369,729	100
Percent	1	3	58	35	4	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	263,967	71	71
1	104,008	28	100
2	1,753	0	100
3	1	0	100
4	0	0	100

Table 6.J.12: Summary Statistics for the ELA Essay Item—March 2014

	First Rating	Second Rating
Mean	2.39	2.38
Standard Deviation	0.65	0.65
Mean Absolute Difference Between First and Second Ratings: 0.29		
Correlation of First and Second Ratings: 0.64		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	2,152
Illegible	0
Off Topic	938
Cartoon/Inappropriate	71
Not in English	65
Total	3,226

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.J.13: Agreement of First and Second Ratings on the ELA Essay Item—May 2014

(Cell Entry = Number of Examinee Responses)

First Rating	Second Rating					Overall	
	0	1	2	3	4	Total	Percent
0	1,534	0	0	0	0	1,534	4
1	0	2,048	898	6	0	2,952	8
2	0	913	23,427	2,665	38	27,043	70
3	0	1	2,857	3,267	282	6,407	17
4	0	0	52	302	227	581	2
Total	1,534	2,962	27,234	6,240	547	38,517	100
Percent	4	8	71	16	1	100	

Differences Between First and Second Ratings on Essay

Difference	Frequency	Percent	Cumulative Percent
0	30,503	79	79
1	7,917	21	100
2	97	0	100
3	0	0	100
4	0	0	100

Table 6.J.14: Summary Statistics for the ELA Essay Item—May 2014

	First Rating	Second Rating
Mean	2.04	2.03
Standard Deviation	0.68	0.67
Mean Absolute Difference Between First and Second Ratings: 0.21		
Correlation of First and Second Ratings: 0.76		

Summary of Essays Receiving Final Score of Zero

Essay	N
Blank	1,006
Illegible	0
Off Topic	444
Cartoon/Inappropriate	56
Not in English	28
Total	1,534

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.K: Generalizability Analyses

Table 6.K.1: Generalizability Results—July 2013

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	5,759	0.39691	0.15544	64.37
Rater (R)	1	0.00009	-0.00001	0.00
PR,e	5,759	0.08604	0.08604	35.63
Generalizability Coefficient				0.78
Dependability Coefficient				0.78

Table 6.K.2: Generalizability Results—October 2013

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	33,465	0.61048	0.25498	71.72
Rater (R)	1	0.15544	0.00000	0.00
PR,e	33,465	0.10052	0.10052	28.28
Generalizability Coefficient				0.84
Dependability Coefficient				0.84

Table 6.K.3: Generalizability Results—November 2013

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	89,784	0.61281	0.24964	68.74
Rater (R)	1	0.00180	0.00000	0.00
PR,e	89,784	0.11353	0.11353	31.26
Generalizability Coefficient				0.81
Dependability Coefficient				0.81

Table 6.K.4: Generalizability Results—December 2013

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	1,538	0.37862	0.13780	57.23
Rater (R)	1	0.03931	-0.00004	-0.02
PR,e	1,538	0.10303	0.10303	42.79
Generalizability Coefficient				0.73
Dependability Coefficient				0.73

Table 6.K.5: Generalizability Results—February 2014

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	154,770	0.68724	0.27202	65.51
Rater (R)	1	1.86598	0.00001	0.00
PR,e	154,770	0.14319	0.14319	34.49
Generalizability Coefficient				0.79
Dependability Coefficient				0.79

Table 6.K.6: Generalizability Results—March 2014

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	362,998	0.68349	0.26604	63.73
Rater (R)	1	2.28860	0.00000	0.00
PR,e	362,998	0.15141	0.15141	36.27
Generalizability Coefficient				0.78
Dependability Coefficient				0.78

Table 6.K.7: Generalizability Results—May 2014

Person x Rater: CR Item Design

Facets	Degrees of Freedom	Mean Squares	Variance Components	Percent of Total Variance
Person (P)	37,118	0.79456	0.34297	75.94
Rater (R)	1	0.82847	0.00002	0.00
PR,e	37,118	0.10863	0.10863	24.05
Generalizability Coefficient				0.86
Dependability Coefficient				0.86

Appendix 6.L: Decision Classification Reliability Analyses

Table 6.L.1: ESEA Reliability Classifications—July 2013
English-Language Arts
Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (77–90)	0.00	0.00	0.00	0.01
Proficient (69–76)	0.00	0.01	0.01	0.02
Below Proficient (0–68)	0.00	0.00	0.96	0.97
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.98

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (77–90)	0.00	0.00	0.00	0.01
Proficient (69–76)	0.00	0.01	0.01	0.02
Below Proficient (0–68)	0.00	0.01	0.95	0.97
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.97

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.00	0.00	0.00	0.01
Proficient (57–71)	0.00	0.02	0.01	0.03
Below Proficient (0–56)	0.00	0.01	0.96	0.97
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				1.00
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.98

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.L.1: ESEA Reliability Classifications—July 2013 (Continued)
Mathematics
Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.00	0.00	0.00	0.01
Proficient (57–71)	0.00	0.02	0.01	0.03
Below Proficient (0–56)	0.00	0.02	0.95	0.97
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				1.00
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.97

¹Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.L.2: Pass/Not Pass Classifications—July 2013
English-Language Arts
Decision Accuracy

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
56–90	0.18	0.04	0.22
0–55	0.05	0.73	0.78
Estimated Proportion Correctly Classified			0.91

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
56–90	0.17	0.05	0.22
0–55	0.08	0.71	0.78
Estimated Proportion Consistently Classified			0.87

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
41–80	0.22	0.05	0.27
0–40	0.04	0.69	0.73
Estimated Proportion Correctly Classified			0.91

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
41–80	0.21	0.06	0.27
0–40	0.07	0.66	0.73
Estimated Proportion Consistently Classified			0.87

¹Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.L.3: ESEA Reliability Classifications—October 2013
English-Language Arts
Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (76–90)	0.02	0.02	0.01	0.04
Proficient (68–75)	0.00	0.04	0.01	0.05
Below Proficient (0–67)	0.00	0.02	0.88	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

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (76–90)	0.02	0.01	0.01	0.04
Proficient (68–75)	0.00	0.03	0.02	0.05
Below Proficient (0–67)	0.00	0.03	0.87	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

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.00	0.01	0.01	0.03
Proficient (57–71)	0.00	0.05	0.02	0.07
Below Proficient (0–56)	0.00	0.01	0.89	0.90
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.96

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.00	0.01	0.01	0.03
Proficient (57–71)	0.00	0.05	0.02	0.07
Below Proficient (0–56)	0.00	0.03	0.87	0.90
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.94

¹Total percentage may not equal the sum of the category percentages due to rounding.

**Table 6.L.4: Pass/Not Pass Classifications—October 2013
English-Language Arts
Decision Accuracy**

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
54–90	0.34	0.04	0.39
0–53	0.05	0.57	0.61
Estimated Proportion Correctly Classified			0.91

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
54–90	0.33	0.06	0.39
0–53	0.07	0.54	0.61
Estimated Proportion Consistently Classified			0.87

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
41–80	0.37	0.02	0.39
0–40	0.08	0.54	0.61
Estimated Proportion Correctly Classified			0.90

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
41–80	0.35	0.04	0.39
0–40	0.10	0.51	0.61
Estimated Proportion Consistently Classified			0.86

¹Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.L.5: ESEA Reliability Classifications—November 2013
English-Language Arts
Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (76–90)	0.03	0.02	0.01	0.05
Proficient (69–75)	0.00	0.04	0.02	0.06
Below Proficient (0–68)	0.00	0.02	0.86	0.89
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.97
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.95

¹ True score

² Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (76–90)	0.03	0.02	0.01	0.05
Proficient (69–75)	0.01	0.03	0.02	0.06
Below Proficient (0–68)	0.01	0.04	0.85	0.89
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.96
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.93

¹ Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.00	0.01	0.02	0.03
Proficient (58–71)	0.00	0.06	0.02	0.08
Below Proficient (0–57)	0.00	0.02	0.87	0.89
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.97
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.95

¹ True score

² Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.00	0.01	0.01	0.03
Proficient (58–71)	0.00	0.06	0.02	0.08
Below Proficient (0–57)	0.00	0.03	0.86	0.89
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.97
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.93

¹ Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.L.6: Pass/Not Pass Classifications—November 2013
English-Language Arts
Decision Accuracy

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
55–90	0.38	0.05	0.43
0–54	0.04	0.53	0.57
Estimated Proportion Correctly Classified			0.91

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
55–90	0.37	0.06	0.43
0–54	0.06	0.50	0.57
Estimated Proportion Consistently Classified			0.87

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics
Decision Accuracy

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
43–80	0.36	0.02	0.38
0–42	0.07	0.55	0.62
Estimated Proportion Correctly Classified			0.91

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
43–80	0.34	0.04	0.38
0–42	0.09	0.53	0.62
Estimated Proportion Consistently Classified			0.87

¹Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.L.7: ESEA Reliability Classifications—December 2013
English-Language Arts
Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (75–90)	0.01	0.01	0.01	0.03
Proficient (68–74)	0.00	0.02	0.01	0.04
Below Proficient (0–67)	0.00	0.01	0.92	0.94
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.97

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (75–90)	0.01	0.01	0.01	0.03
Proficient (68–74)	0.00	0.02	0.02	0.04
Below Proficient (0–67)	0.00	0.02	0.91	0.94
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.95

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.00	0.00	0.00	0.01
Proficient (57–71)	0.00	0.04	0.01	0.05
Below Proficient (0–56)	0.00	0.01	0.93	0.94
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.97

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.00	0.00	0.00	0.01
Proficient (57–71)	0.00	0.04	0.02	0.05
Below Proficient (0–56)	0.00	0.02	0.92	0.94
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.99
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.96

¹Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.L.8: Pass/Not Pass Classifications—December 2013
English-Language Arts
Decision Accuracy

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
54–90	0.27	0.04	0.31
0–53	0.06	0.63	0.69
Estimated Proportion Correctly Classified			0.91

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
54–90	0.26	0.05	0.31
0–53	0.08	0.61	0.69
Estimated Proportion Consistently Classified			0.87

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
41–80	0.30	0.06	0.35
0–40	0.04	0.60	0.65
Estimated Proportion Correctly Classified			0.90

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
41–80	0.28	0.07	0.35
0–40	0.07	0.58	0.65
Estimated Proportion Consistently Classified			0.86

¹Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.L.9: ESEA Reliability Classifications—February 2014
English-Language Arts
Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (76–90)	0.22	0.04	0.00	0.26
Proficient (69–75)	0.04	0.12	0.05	0.21
Below Proficient (0–68)	0.00	0.03	0.50	0.53
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.93
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.92

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (76–90)	0.21	0.05	0.00	0.26
Proficient (69–75)	0.05	0.10	0.06	0.21
Below Proficient (0–68)	0.00	0.04	0.49	0.53
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.90
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.90

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.17	0.03	0.00	0.20
Proficient (58–71)	0.02	0.24	0.04	0.30
Below Proficient (0–57)	0.00	0.02	0.48	0.50
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.95
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.94

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.16	0.03	0.00	0.20
Proficient (58–71)	0.03	0.22	0.05	0.30
Below Proficient (0–57)	0.00	0.04	0.47	0.50
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.93
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.92

¹Total percentage may not equal the sum of the category percentages due to rounding.

**Table 6.L.10: Pass/Not Pass Classifications—February 2014
English-Language Arts
Decision Accuracy**

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
57–90	0.67	0.03	0.70
0–56	0.03	0.27	0.30
Estimated Proportion Correctly Classified			0.94

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
57–90	0.66	0.04	0.70
0–56	0.04	0.26	0.30
Estimated Proportion Consistently Classified			0.92

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
42–80	0.73	0.02	0.74
0–41	0.03	0.22	0.26
Estimated Proportion Correctly Classified			0.95

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
42–80	0.71	0.03	0.74
0–41	0.04	0.22	0.26
Estimated Proportion Consistently Classified			0.93

¹Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.L.11: ESEA Reliability Classifications—March 2014
English-Language Arts
Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (76–90)	0.25	0.04	0.00	0.29
Proficient (69–75)	0.04	0.13	0.06	0.23
Below Proficient (0–68)	0.00	0.02	0.46	0.48
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.92
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.92

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (76–90)	0.24	0.05	0.00	0.29
Proficient (69–75)	0.06	0.11	0.07	0.23
Below Proficient (0–68)	0.00	0.04	0.44	0.48
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.89
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.89

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.19	0.03	0.00	0.23
Proficient (58–71)	0.02	0.28	0.04	0.34
Below Proficient (0–57)	0.00	0.03	0.40	0.43
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.94
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.94

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (72–80)	0.19	0.04	0.00	0.23
Proficient (58–71)	0.04	0.25	0.05	0.34
Below Proficient (0–57)	0.00	0.04	0.39	0.43
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.92
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.91

¹Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.L.12: Pass/Not Pass Classifications—March 2014
English-Language Arts
Decision Accuracy

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
56–90	0.75	0.04	0.79
0–55	0.02	0.19	0.21
Estimated Proportion Correctly Classified			0.94

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
56–90	0.74	0.05	0.79
0–55	0.03	0.18	0.21
Estimated Proportion Consistently Classified			0.92

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
43–80	0.79	0.02	0.81
0–42	0.03	0.17	0.19
Estimated Proportion Correctly Classified			0.96

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
43–80	0.78	0.03	0.81
0–42	0.03	0.16	0.19
Estimated Proportion Consistently Classified			0.94

¹Total percentage may not equal the sum of the category percentages due to rounding.

Table 6.L.13: ESEA Reliability Classifications—May 2014
English-Language Arts
Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (77–90)	0.03	0.01	0.01	0.05
Proficient (70–76)	0.00	0.04	0.02	0.06
Below Proficient (0–69)	0.00	0.01	0.88	0.89
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.97
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.96

¹True score²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (77–90)	0.03	0.01	0.01	0.05
Proficient (70–76)	0.01	0.03	0.02	0.06
Below Proficient (0–69)	0.00	0.03	0.86	0.89
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.97
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.94

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹				
Placement (Raw Score)	Category			Total ²
	Advanced	Proficient	Below Proficient	
Advanced (73–80)	0.00	0.01	0.01	0.03
Proficient (59–72)	0.00	0.07	0.02	0.09
Below Proficient (0–58)	0.00	0.01	0.88	0.89
Estimated Proportion Correctly Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Correctly Classified for Proficient or Above vs. Below				0.96

¹True score²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form				
Placement (Raw Score)	Category			Total ¹
	Advanced	Proficient	Below Proficient	
Advanced (73–80)	0.00	0.01	0.01	0.03
Proficient (59–72)	0.00	0.06	0.03	0.09
Below Proficient (0–58)	0.00	0.02	0.86	0.89
Estimated Proportion Consistently Classified for Advanced vs. Proficient or Below				0.98
Estimated Proportion Consistently Classified for Proficient or Above vs. Below				0.94

¹Total percentage may not equal the sum of the category percentages due to rounding.

**Table 6.L.14: Pass/Not Pass Classifications—May 2014
English-Language Arts
Decision Accuracy**

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
56–90	0.29	0.03	0.33
0–55	0.05	0.63	0.67
Estimated Proportion Correctly Classified			0.92

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
56–90	0.28	0.04	0.33
0–55	0.07	0.61	0.67
Estimated Proportion Consistently Classified			0.89

¹Total percentage may not equal the sum of the category percentages due to rounding.

Mathematics

Decision Accuracy

Classification on All Forms Average ¹			
Placement (Raw Score)	Category		Total ²
	Pass	Not Pass	
43–80	0.33	0.01	0.34
0–42	0.07	0.59	0.66
Estimated Proportion Correctly Classified			0.92

¹True score

²Total percentage may not equal the sum of the category percentages due to rounding.

Decision Consistency

Classification on Alternate Form			
Placement (Raw Score)	Category		Total ¹
	Pass	Not Pass	
43–80	0.32	0.03	0.34
0–42	0.09	0.57	0.66
Estimated Proportion Consistently Classified			0.88

¹Total percentage may not equal the sum of the category percentages due to rounding.

Appendix 6.M: Scoring Tables for Operational and Special Test Versions

Table 6.M.1: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, July 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24	44	326.7654	327	8
89	503.7262	450	24	43	324.8167	325	8
88	481.5005	450	24	42	322.8618	323	8
87	467.0763	450	24	41	320.8972	321	8
86	456.3841	450	24	40	318.9249	319	8
85	447.6526	448	23	39	316.9368	317	8
84	440.1996	440	21	38	314.9355	315	8
83	433.6123	434	19	37	312.9159	313	8
82	427.7101	428	17	36	310.8772	311	9
81	422.3579	422	16	35	308.8174	309	9
80	417.4658	417	15	34	306.7306	307	9
79	412.9611	413	14	33	304.6160	305	9
78	408.7819	409	13	32	302.4712	302	9
77	404.8811	405 (Advanced)	13	31	300.2953	300	9
76	401.2231	401	12	30	298.0821	298	9
75	397.7681	398	12	29	295.8314	296	9
74	394.4882	394	12	28	293.5381	294	9
73	391.3611	391	11	27	291.2004	291	9
72	388.3690	388	11	26	288.8158	289	10
71	385.4932	385	11	25	286.3692	286	10
70	382.7205	383	11	24	283.8642	284	10
69	380.0365	380 (Proficient)	10	23	281.2937	281	10
68	377.4428	377	10	22	278.6555	279	10
67	374.9188	375	10	21	275.9379	276	11
66	372.4614	372	10	20	273.1347	275	11
65	370.0632	370	10	19	270.2344	275	11
64	367.7210	368	9	18	267.2215	275	11
63	365.4254	365	9	17	264.0816	275	11
62	363.1749	363	9	16	260.7691	275	11
61	360.9643	361	9	15	257.2649	275	11
60	358.7921	359	9	14	253.5325	275	11
59	356.6522	357	9	13	249.5139	275	11
58	354.5415	355	9	12	245.1356	275	11
57	352.4597	352	9	11	240.2954	275	11
56	350.4007	350 (Pass)	9	10	234.8473	275	11
55	348.3659	348	9	9	228.5777	275	11
54	346.3492	346	9	8	221.1371	275	11
53	344.3520	344	8	7	211.7350	275	11
52	342.3678	342	8	6	199.4695	275	11
51	340.3979	340	8	5	182.4365	275	11
50	338.4354	338	8	4	167.2631	275	11
49	336.4834	336	8	3	157.7049	275	11

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
48	334.5346	335	8
47	332.5922	333	8
46	330.6510	331	8
45	328.7090	329	8

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
2	152.3125	275	11
1	149.1828	275	11
0	147.2238	275	11

Table 6.M.2: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, July 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18	39	346.2448	346	8
79	495.0053	450	18	38	344.4541	344	8
78	473.0255	450	18	37	342.6586	343	8
77	459.1392	450	18	36	340.8555	341	8
76	449.1778	449	18	35	339.0442	339	8
75	441.3336	441	17	34	337.2185	337	8
74	434.8230	435	15	33	335.3813	335	8
73	429.2238	429	14	32	333.5261	334	8
72	424.2896	424 (Advanced)	13	31	331.6557	332	8
71	419.8619	420	12	30	329.7605	330	8
70	415.8289	416	11	29	327.8424	328	8
69	412.1181	412	11	28	325.8954	326	8
68	408.6696	409	10	27	323.9160	324	8
67	405.4394	405	10	26	321.9062	322	8
66	402.3962	402	10	25	319.8557	320	8
65	399.5117	400	9	24	317.7611	318	8
64	396.7625	397	9	23	315.6203	316	8
63	394.1302	394	9	22	313.4242	313	8
62	391.6061	392	9	21	311.1698	311	9
61	389.1786	389	9	20	308.8500	309	9
60	386.8284	387	9	19	306.4565	306	9
59	384.5503	385	9	18	303.9786	304	9
58	382.3342	382	8	17	301.4057	301	9
57	380.1761	380 (Proficient)	8	16	298.7274	299	9
56	378.0671	378	8	15	295.9265	296	10
55	376.0041	376	8	14	292.9882	293	10
54	373.9818	374	8	13	289.8886	290	10
53	371.9954	372	8	12	286.6027	287	10
52	370.0421	370	8	11	283.0964	283	11
51	368.1160	368	8	10	279.3278	279	12
50	366.2148	366	8	9	275.2404	275	12
49	364.3383	364	8	8	270.7348	275	12
48	362.4820	362	8	7	265.7099	275	12
47	360.6406	361	8	6	260.0088	275	12
46	358.8149	359	8	5	253.3867	275	12
45	357.0003	357	8	4	245.4229	275	12
44	355.1964	355	8	3	235.3296	275	12
43	353.4001	353	8	2	221.3337	275	12
42	351.6083	352	8	1	197.7713	275	12
41	349.8192	350 (Pass)	8	0	171.7079	275	12
40	348.0340	348	8				

Table 6.M.3: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, October 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	23	44	330.4321	330	8
89	501.0231	450	23	43	328.5086	329	8
88	478.2840	450	23	42	326.5867	327	8
87	464.8473	450	23	41	324.6641	325	8
86	455.0560	450	23	40	322.7409	323	8
85	447.1774	447	22	39	320.8151	321	9
84	440.4815	440	20	38	318.8899	319	9
83	434.5985	435	18	37	316.9594	317	9
82	429.3304	429	17	36	315.0282	315	9
81	424.5089	425	15	35	313.0931	313	9
80	420.0490	420	14	34	311.1558	311	9
79	415.8899	416	14	33	309.2162	309	9
78	411.9832	412	13	32	307.2734	307	9
77	408.2891	408	13	31	305.3290	305	9
76	404.7876	405 (Advanced)	12	30	303.3818	303	9
75	401.4506	401	12	29	301.4345	301	9
74	398.2568	398	12	28	299.4824	299	10
73	395.1897	395	11	27	297.5251	298	10
72	392.2358	392	11	26	295.5633	296	10
71	389.3846	389	11	25	293.5916	294	10
70	386.6251	387	11	24	291.6091	292	10
69	383.9474	384	10	23	289.6134	290	10
68	381.3432	381 (Proficient)	10	22	287.5969	288	10
67	378.8082	379	10	21	285.5542	286	11
66	376.3357	376	10	20	283.4785	283	11
65	373.9200	374	10	19	281.3622	281	11
64	371.5558	372	9	18	279.1981	279	11
63	369.2417	369	9	17	276.9503	277	11
62	366.9708	367	9	16	274.6231	275	12
61	364.7407	365	9	15	272.1994	275	12
60	362.5465	363	9	14	269.6580	275	12
59	360.3877	360	9	13	266.9731	275	12
58	358.2605	358	9	12	264.1149	275	12
57	356.1604	356	9	11	261.0019	275	12
56	354.0857	354	9	10	257.6156	275	12
55	352.0353	352	9	9	253.8908	275	12
54	350.0039	350 (Pass)	9	8	249.7346	275	12
53	347.9953	348	9	7	245.0216	275	12
52	346.0015	346	8	6	239.5746	275	12
51	344.0246	344	8	5	233.1210	275	12
50	342.0583	342	8	4	225.2114	275	12
49	340.1036	340	8	3	215.0021	275	12
48	338.1566	338	8	2	200.6041	275	12
47	336.2182	336	8	1	175.9828	275	12
46	334.2841	334	8	0	147.2238	275	12
45	332.3567	332	8				

Table 6.M.4: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, October 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18	39	346.3310	346	8
79	495.2489	450	18	38	344.5601	345	8
78	473.4486	450	18	37	342.7854	343	8
77	459.4657	450	18	36	341.0040	341	8
76	449.4470	449	18	35	339.2154	339	8
75	441.5585	442	17	34	337.4136	337	8
74	435.0106	435	16	33	335.6010	336	8
73	429.3785	429	14	32	333.7718	334	8
72	424.4148	424 (Advanced)	13	31	331.9277	332	8
71	419.9604	420	12	30	330.0608	330	8
70	415.9032	416	11	29	328.1715	328	8
69	412.1703	412	11	28	326.2549	326	8
68	408.7019	409	10	27	324.3068	324	8
67	405.4537	405	10	26	322.3288	322	8
66	402.3943	402	10	25	320.3123	320	8
65	399.4954	399	10	24	318.2525	318	8
64	396.7333	397	9	23	316.1480	316	8
63	394.0899	394	9	22	313.9893	314	8
62	391.5541	392	9	21	311.7735	312	9
61	389.1184	389	9	20	309.4940	309	9
60	386.7614	387	9	19	307.1412	307	9
59	384.4781	384	9	18	304.7053	305	9
58	382.2580	382	8	17	302.1725	302	9
57	380.0976	380 (Proficient)	8	16	299.5380	300	9
56	377.9874	378	8	15	296.7794	297	9
55	375.9247	376	8	14	293.8842	294	10
54	373.9040	374	8	13	290.8286	291	10
53	371.9204	372	8	12	287.5857	288	10
52	369.9711	370	8	11	284.1225	284	11
51	368.0499	368	8	10	280.3954	280	11
50	366.1554	366	8	9	276.3480	276	12
49	364.2866	364	8	8	271.9088	275	13
48	362.4390	362	8	7	266.9735	275	13
47	360.6076	361	8	6	261.3630	275	13
46	358.7929	359	8	5	254.7848	275	13
45	356.9905	357	8	4	246.8555	275	13
44	355.1998	355	8	3	236.7777	275	13
43	353.4179	353	8	2	222.7545	275	13
42	351.6416	352	8	1	199.0368	275	13
41	349.8690	350 (Pass)	8	0	171.7079	275	13
40	348.1016	348	8				

Table 6.M.5: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, November 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24	44	327.9818	328	8
89	502.5245	450	24	43	326.0565	326	8
88	479.9342	450	24	42	324.1301	324	8
87	466.3320	450	24	41	322.2024	322	8
86	456.2130	450	24	40	320.2730	320	8
85	447.9240	448	22	39	318.3410	318	9
84	440.7938	441	20	38	316.4057	316	9
83	434.4746	434	19	37	314.4662	314	9
82	428.7878	429	17	36	312.5233	313	9
81	423.5943	424	16	35	310.5758	311	9
80	418.8129	419	15	34	308.6252	309	9
79	414.3823	414	14	33	306.6678	307	9
78	410.2496	410	13	32	304.7075	305	9
77	406.3714	406	13	31	302.7429	303	9
76	402.7238	403 (Advanced)	12	30	300.7770	301	9
75	399.2692	399	12	29	298.8057	299	9
74	395.9831	396	12	28	296.8306	297	10
73	392.8446	393	11	27	294.8522	295	10
72	389.8375	390	11	26	292.8672	293	10
71	386.9468	387	11	25	290.8767	291	10
70	384.1574	384	11	24	288.8778	289	10
69	381.4581	381 (Proficient)	10	23	286.8574	287	10
68	378.8412	379	10	22	284.8184	285	10
67	376.2982	376	10	21	282.7544	283	11
66	373.8218	374	10	20	280.6612	281	11
65	371.4044	371	10	19	278.5325	279	11
64	369.0442	369	9	18	276.3579	276	11
63	366.7320	367	9	17	274.1060	275	11
62	364.4662	364	9	16	271.7728	275	11
61	362.2394	362	9	15	269.3484	275	11
60	360.0525	360	9	14	266.8146	275	11
59	357.8997	358	9	13	264.1498	275	11
58	355.7777	356	9	12	261.2638	275	11
57	353.6839	354	9	11	258.1672	275	11
56	351.6162	352	9	10	254.8108	275	11
55	349.5702	350 (Pass)	9	9	251.1289	275	11
54	347.5465	348	9	8	247.0333	275	11
53	345.5404	346	9	7	242.3963	275	11
52	343.5513	344	8	6	236.9772	275	11
51	341.5754	342	8	5	230.5643	275	11
50	339.6107	340	8	4	222.7146	275	11
49	337.6571	338	8	3	212.5941	275	11
48	335.7105	336	8	2	198.3487	275	11
47	333.7714	334	8	1	174.0619	275	11
46	331.8390	332	8	0	147.2238	275	11
45	329.9093	330	8				

Table 6.M.6: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, November 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18	39	344.0399	344	8
79	493.2673	450	18	38	342.2793	342	8
78	470.1613	450	18	37	340.5146	341	8
77	456.4258	450	18	36	338.7443	339	8
76	446.5071	447	18	35	336.9639	337	8
75	438.6809	439	17	34	335.1751	335	8
74	432.1759	432	15	33	333.3724	333	8
73	426.5798	427	14	32	331.5577	332	8
72	421.6470	422 (Advanced)	13	31	329.7225	330	8
71	417.2209	417	12	30	327.8693	328	8
70	413.1882	413	11	29	325.9916	326	8
69	409.4796	409	11	28	324.0851	324	8
68	406.0320	406	10	27	322.1537	322	8
67	402.8063	403	10	26	320.1876	320	8
66	399.7671	400	10	25	318.1830	318	8
65	396.8857	397	9	24	316.1392	316	8
64	394.1396	394	9	23	314.0470	314	8
63	391.5148	392	9	22	311.9045	312	8
62	388.9987	389	9	21	309.7056	310	8
61	386.5730	387	9	20	307.4429	307	9
60	384.2304	384	9	19	305.1088	305	9
59	381.9586	382	9	18	302.6900	303	9
58	379.7537	380 (Proficient)	8	17	300.1834	300	9
57	377.6040	378	8	16	297.5698	298	9
56	375.5081	376	8	15	294.8391	295	9
55	373.4579	373	8	14	291.9732	292	10
54	371.4493	371	8	13	288.9484	289	10
53	369.4790	369	8	12	285.7388	286	10
52	367.5384	368	8	11	282.3052	282	11
51	365.6297	366	8	10	278.6079	279	11
50	363.7497	364	8	9	274.5879	275	12
49	361.8916	362	8	8	270.1715	275	12
48	360.0538	360	8	7	265.2446	275	12
47	358.2340	358	8	6	259.6467	275	12
46	356.4294	356	8	5	253.1323	275	12
45	354.6385	355	8	4	245.2800	275	12
44	352.8577	353	8	3	235.3005	275	12
43	351.0855	351 (Pass)	8	2	221.4154	275	12
42	349.3196	349	8	1	197.9403	275	12
41	347.5590	348	8	0	171.7079	275	12
40	345.7988	346	8				

Table 6.M.7: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, December 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24	44	330.3092	330	8
89	512.0567	450	24	43	328.3095	328	8
88	496.8126	450	24	42	326.3035	326	8
87	479.5790	450	24	41	324.2876	324	8
86	467.7573	450	24	40	322.2602	322	9
85	457.7463	450	24	39	320.2194	320	9
84	449.1292	449	22	38	318.1627	318	9
83	441.6013	442	20	37	316.0891	316	9
82	434.9427	435	18	36	313.9939	314	9
81	429.0114	429	17	35	311.8765	312	9
80	423.6765	424	15	34	309.7318	310	9
79	418.8297	419	14	33	307.5604	308	9
78	414.3827	414	14	32	305.3593	305	9
77	410.2674	410	13	31	303.1260	303	9
76	406.4282	406	12	30	300.8563	301	9
75	402.8332	403 (Advanced)	12	29	298.5451	299	9
74	399.4385	399	12	28	296.1939	296	9
73	396.2155	396	11	27	293.7995	294	10
72	393.1407	393	11	26	291.3595	291	10
71	390.1958	390	11	25	288.8738	289	10
70	387.3653	387	11	24	286.3242	286	10
69	384.6327	385	10	23	283.7164	284	10
68	381.9870	382 (Proficient)	10	22	281.0463	281	11
67	379.4176	379	10	21	278.3119	278	11
66	376.9197	377	10	20	275.5039	276	11
65	374.4830	374	10	19	272.6170	275	11
64	372.1010	372	10	18	269.6409	275	11
63	369.7696	370	9	17	266.5632	275	11
62	367.4844	367	9	16	263.3705	275	11
61	365.2382	365	9	15	260.0442	275	11
60	363.0288	363	9	14	256.5674	275	11
59	360.8521	361	9	13	252.8605	275	11
58	358.7056	359	9	12	248.9076	275	11
57	356.5856	357	9	11	244.6605	275	11
56	354.4890	354	9	10	240.0569	275	11
55	352.4134	352	9	9	235.0235	275	11
54	350.3546	350 (Pass)	9	8	229.4684	275	11
53	348.3142	348	9	7	222.9457	275	11
52	346.2861	346	9	6	215.4083	275	11
51	344.2726	344	8	5	206.6415	275	11
50	342.2666	342	8	4	196.6267	275	11
49	340.2690	340	8	3	181.9080	275	11
48	338.2743	338	8	2	168.4257	275	11
47	336.2841	336	8	1	156.8746	275	11
46	334.2930	334	8	0	147.2238	275	11
45	332.3030	332	8				

Table 6.M.8: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, December 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18	39	346.7288	347	8
79	495.9801	450	18	38	344.9417	345	8
78	474.8482	450	18	37	343.1513	343	8
77	460.6677	450	18	36	341.3547	341	8
76	450.5606	450	18	35	339.5507	340	8
75	442.6153	443	17	34	337.7347	338	8
74	436.0265	436	16	33	335.9071	336	8
73	430.3607	430	14	32	334.0640	334	8
72	425.3684	425 (Advanced)	13	31	332.2055	332	8
71	420.8883	421	12	30	330.3256	330	8
70	416.8085	417	11	29	328.4235	328	8
69	413.0538	413	11	28	326.4940	326	8
68	409.5659	410	10	27	324.5339	325	8
67	406.2979	406	10	26	322.5437	323	8
66	403.2295	403	10	25	320.5164	321	8
65	400.3218	400	10	24	318.4461	318	8
64	397.5491	398	9	23	316.3314	316	8
63	394.8932	395	9	22	314.1636	314	8
62	392.3422	392	9	21	311.9391	312	9
61	389.8868	390	9	20	309.6517	310	9
60	387.5115	388	9	19	307.2929	307	9
59	385.2091	385	9	18	304.8540	305	9
58	382.9715	383	8	17	302.3160	302	9
57	380.7923	381 (Proficient)	8	16	299.6774	300	9
56	378.6654	379	8	15	296.9156	297	9
55	376.5845	377	8	14	294.0182	294	10
54	374.5469	375	8	13	290.9622	291	10
53	372.5461	373	8	12	287.7192	288	10
52	370.5795	371	8	11	284.2576	284	11
51	368.6426	369	8	10	280.5335	281	11
50	366.7305	367	8	9	276.4905	276	12
49	364.8443	365	8	8	272.0568	275	13
48	362.9813	363	8	7	267.1284	275	13
47	361.1327	361	8	6	261.5472	275	13
46	359.3025	359	8	5	254.9827	275	13
45	357.4839	357	8	4	247.0688	275	13
44	355.6772	356	8	3	237.0061	275	13
43	353.8793	354	8	2	222.9940	275	13
42	352.0873	352	8	1	199.2663	275	13
41	350.2984	350 (Pass)	8	0	171.7079	275	13
40	348.5146	349	8				

Table 6.M.9: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, February 2014

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	22	44	324.7782	325	9
89	510.1031	450	22	43	322.8109	323	9
88	494.6733	450	22	42	320.8482	321	9
87	478.7259	450	22	41	318.8928	319	9
86	467.6038	450	22	40	316.9381	317	9
85	458.1575	450	22	39	314.9879	315	9
84	449.7803	450	22	38	313.0383	313	9
83	442.2851	442	21	37	311.0903	311	9
82	435.5294	436	19	36	309.1430	309	9
81	429.4142	429	17	35	307.1943	307	9
80	423.8379	424	16	34	305.2453	305	9
79	418.7447	419	15	33	303.2938	303	9
78	414.0338	414	14	32	301.3420	301	9
77	409.6394	410	14	31	299.3845	299	9
76	405.5136	406 (Advanced)	13	30	297.4204	297	9
75	401.6241	402	13	29	295.4511	295	9
74	397.9326	398	12	28	293.4710	293	10
73	394.4136	394	12	27	291.4804	291	10
72	391.0472	391	12	26	289.4775	289	10
71	387.8195	388	11	25	287.4562	287	10
70	384.7249	385	11	24	285.4134	285	10
69	381.7362	382 (Proficient)	11	23	283.3452	283	10
68	378.8445	379	10	22	281.2465	281	10
67	376.0416	376	10	21	279.1160	279	11
66	373.3200	373	10	20	276.9219	277	11
65	370.6713	371	10	19	274.6714	275	11
64	368.1003	368	10	18	272.3585	275	11
63	365.5893	366	10	17	269.9730	275	11
62	363.1361	363	9	16	267.5035	275	11
61	360.7346	361	9	15	264.8855	275	11
60	358.3826	358	9	14	262.1368	275	11
59	356.0734	356	9	13	259.2396	275	11
58	353.8064	354	9	12	256.1721	275	11
57	351.5781	352 (Pass)	9	11	252.8520	275	11
56	349.3815	349	9	10	249.2219	275	11
55	347.2190	347	9	9	245.2608	275	11
54	345.0846	345	9	8	240.8953	275	11
53	342.9751	343	9	7	236.0323	275	11
52	340.8892	341	9	6	230.3530	275	11
51	338.8209	339	9	5	223.6403	275	11
50	336.7762	337	9	4	215.4775	275	11
49	334.7440	335	9	3	204.9987	275	11
48	332.7287	333	9	2	190.1408	275	11
47	330.7269	331	9	1	168.8496	275	11
46	328.7347	329	8	0	147.2238	275	11
45	326.7527	327	8				

Table 6.M.10: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, February 2014

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18	39	344.4083	344	8
79	493.6384	450	18	38	342.6267	343	8
78	470.6060	450	18	37	340.8399	341	8
77	456.9102	450	18	36	339.0473	339	8
76	447.0180	447	18	35	337.2428	337	8
75	439.2119	439	17	34	335.4293	335	8
74	432.7232	433	15	33	333.6005	334	8
73	427.1405	427	14	32	331.7592	332	8
72	422.2212	422 (Advanced)	13	31	329.8961	330	8
71	417.8113	418	12	30	328.0140	328	8
70	413.7909	414	11	29	326.1059	326	8
69	410.0925	410	11	28	324.1692	324	8
68	406.6527	407	10	27	322.2061	322	8
67	403.4328	403	10	26	320.2073	320	8
66	400.3981	400	10	25	318.1690	318	8
65	397.5200	398	9	24	316.0905	316	8
64	394.7759	395	9	23	313.9623	314	8
63	392.1508	392	9	22	311.7828	312	8
62	389.6330	390	9	21	309.5459	310	9
61	387.2045	387	9	20	307.2440	307	9
60	384.8572	385	9	19	304.8696	305	9
59	382.5810	383	9	18	302.4081	302	9
58	380.3697	380 (Proficient)	8	17	299.8573	300	9
57	378.2146	378	8	16	297.1967	297	9
56	376.1108	376	8	15	294.4173	294	10
55	374.0532	374	8	14	291.4999	291	10
54	372.0360	372	8	13	288.4209	288	10
53	370.0561	370	8	12	285.1554	285	10
52	368.1068	368	8	11	281.6677	282	11
51	366.1866	366	8	10	277.9146	278	11
50	364.2944	364	8	9	273.8386	275	12
49	362.4251	362	8	8	269.3647	275	12
48	360.5738	361	8	7	264.3795	275	12
47	358.7407	359	8	6	258.7250	275	12
46	356.9214	357	8	5	252.1560	275	12
45	355.1152	355	8	4	244.2547	275	12
44	353.3190	353	8	3	234.2390	275	12
43	351.5293	352	8	2	220.3490	275	12
42	349.7454	350 (Pass)	8	1	196.9680	275	12
41	347.9672	348	8	0	171.7079	275	12
40	346.1874	346	8				

Table 6.M.11: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, March 2014

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24	44	325.8194	326	8
89	508.7371	450	24	43	323.8751	324	9
88	492.1979	450	24	42	321.9357	322	9
87	476.6633	450	24	41	320.0018	320	9
86	465.3592	450	24	40	318.0704	318	9
85	456.0424	450	24	39	316.1432	316	9
84	447.9129	448	22	38	314.2166	314	9
83	440.6112	441	20	37	312.2929	312	9
82	434.0490	434	19	36	310.3688	310	9
81	428.0938	428	17	35	308.4453	308	9
80	422.6579	423	16	34	306.5193	307	9
79	417.6669	418	15	33	304.5933	305	9
78	413.0532	413	14	32	302.6647	303	9
77	408.7532	409	13	31	300.7347	301	9
76	404.7298	405 (Advanced)	13	30	298.7979	299	9
75	400.9387	401	13	29	296.8547	297	9
74	397.3455	397	12	28	294.9045	295	10
73	393.9240	394	12	27	292.9421	293	10
72	390.6538	391	11	26	290.9677	291	10
71	387.5316	388	11	25	288.9739	289	10
70	384.5244	385	11	24	286.9532	287	10
69	381.6206	382 (Proficient)	11	23	284.9049	285	10
68	378.8112	379	10	22	282.8214	283	10
67	376.0873	376	10	21	280.6996	281	11
66	373.4414	373	10	20	278.5326	279	11
65	370.8649	371	10	19	276.3105	276	11
64	368.3572	368	10	18	274.0081	275	11
63	365.9099	366	9	17	271.6158	275	11
62	363.5181	364	9	16	269.1281	275	11
61	361.1735	361	9	15	266.5302	275	11
60	358.8760	359	9	14	263.8050	275	11
59	356.6185	357	9	13	260.8983	275	11
58	354.3986	354	9	12	257.7782	275	11
57	352.2133	352	9	11	254.4317	275	11
56	350.0564	350 (Pass)	9	10	250.8127	275	11
55	347.9346	348	9	9	246.8640	275	11
54	345.8374	346	9	8	242.4916	275	11
53	343.7651	344	9	7	237.4902	275	11
52	341.7125	342	9	6	231.7643	275	11
51	339.6783	340	9	5	225.0508	275	11
50	337.6615	338	9	4	216.9028	275	11
49	335.6584	336	8	3	206.4733	275	11
48	333.6693	334	8	2	191.7848	275	11
47	331.6932	332	8	1	169.6771	275	11
46	329.7269	330	8	0	147.2238	275	11
45	327.7692	328	8				

Table 6.M.12: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, March 2014

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18	39	343.4215	343	8
79	494.7828	450	18	38	341.6001	342	8
78	472.4508	450	18	37	339.7754	340	8
77	458.5141	450	18	36	337.9434	338	8
76	448.4766	448	18	35	336.1036	336	8
75	440.5514	441	17	34	334.2531	334	8
74	433.9574	434	16	33	332.3916	332	8
73	428.2760	428	14	32	330.5135	331	8
72	423.2607	423 (Advanced)	13	31	328.6189	329	8
71	418.7542	419	12	30	326.7032	327	8
70	414.6432	415	11	29	324.7625	325	8
69	410.8570	411	11	28	322.7976	323	8
68	407.3337	407	10	27	320.8025	321	8
67	404.0323	404	10	26	318.7727	319	8
66	400.9191	401	10	25	316.7065	317	8
65	397.9653	398	10	24	314.5975	315	8
64	395.1478	395	9	23	312.4420	312	8
63	392.4505	392	9	22	310.2350	310	8
62	389.8629	390	9	21	307.9706	308	9
61	387.3665	387	9	20	305.6416	306	9
60	384.9529	385	9	19	303.2369	303	9
59	382.6121	383	9	18	300.7518	301	9
58	380.3378	380 (Proficient)	9	17	298.1725	298	9
57	378.121	378	8	16	295.4877	295	9
56	375.9573	376	8	15	292.6837	293	10
55	373.8409	374	8	14	289.7409	290	10
54	371.7664	372	8	13	286.638	287	10
53	369.7308	370	8	12	283.3479	283	10
52	367.7260	368	8	11	279.8368	280	11
51	365.7528	366	8	10	276.0600	276	12
50	363.8091	364	8	9	271.9638	275	12
49	361.8878	362	8	8	267.4693	275	12
48	359.9873	360	8	7	262.4649	275	12
47	358.1049	358	8	6	256.7974	275	12
46	356.2384	356	8	5	250.2210	275	12
45	354.3858	354	8	4	242.3233	275	12
44	352.5438	353	8	3	232.3339	275	12
43	350.7097	351 (Pass)	8	2	218.5212	275	12
42	348.8837	349	8	1	195.3724	275	12
41	347.0613	347	8	0	171.7079	275	12
40	345.2409	345	8				

Table 6.M.13: Operational, Large Print, Audio Books, and Audio CD Conversions—ELA, May 2014

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24	44	326.4922	326	8
89	499.8272	450	24	43	324.6063	325	8
88	476.9437	450	24	42	322.7241	323	8
87	463.3117	450	24	41	320.8430	321	8
86	453.2641	450	24	40	318.9663	319	8
85	445.0804	445	22	39	317.0875	317	9
84	438.0567	438	20	38	315.2116	315	9
83	431.8374	432	19	37	313.3338	313	9
82	426.2290	426	17	36	311.4567	311	9
81	421.1046	421	16	35	309.5785	310	9
80	416.3833	416	15	34	307.6990	308	9
79	412.0027	412	14	33	305.8177	306	9
78	407.9092	408	13	32	303.9343	304	9
77	404.0755	404 (Advanced)	13	31	302.0492	302	9
76	400.4610	400	12	30	300.1604	300	9
75	397.0363	397	12	29	298.2651	298	9
74	393.7773	394	12	28	296.3635	296	9
73	390.6648	391	11	27	294.4534	294	10
72	387.6893	388	11	26	292.5314	293	10
71	384.8257	385	11	25	290.5967	291	10
70	382.0618	382 (Proficient)	11	24	288.6461	289	10
69	379.3861	379	10	23	286.6677	287	10
68	376.7926	377	10	22	284.6536	285	10
67	374.2718	374	10	21	282.6023	283	10
66	371.8153	372	10	20	280.5096	281	11
65	369.4198	369	10	19	278.3666	278	11
64	367.0781	367	9	18	276.1629	276	11
63	364.7855	365	9	17	273.8784	275	11
62	362.5367	363	9	16	271.4872	275	11
61	360.3304	360	9	15	268.9876	275	11
60	358.1620	358	9	14	266.3611	275	11
59	356.0266	356	9	13	263.5844	275	11
58	353.9230	354	9	12	260.6194	275	11
57	351.8486	352	9	11	257.3896	275	11
56	349.7981	350 (Pass)	9	10	253.8846	275	11
55	347.7747	348	9	9	250.0382	275	11
54	345.7711	346	9	8	245.7657	275	11
53	343.7880	344	9	7	240.9522	275	11
52	341.8206	342	8	6	235.4312	275	11
51	339.8684	340	8	5	228.9479	275	11
50	337.9292	338	8	4	221.0640	275	11
49	336.0017	336	8	3	210.8805	275	11
48	334.0838	334	8	2	196.6452	275	11
47	332.1766	332	8	1	172.5425	275	11
46	330.2761	330	8	0	147.2238	275	11
45	328.3812	328	8				

Table 6.M.14: Operational, Large Print, Audio Books, and Audio CD Conversions—Mathematics, May 2014

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	19	39	343.3090	343	8
79	492.6095	450	19	38	341.5492	342	8
78	469.4052	450	19	37	339.7860	340	8
77	455.6332	450	19	36	338.0154	338	8
76	445.6999	446	18	35	336.2368	336	8
75	437.8681	438	17	34	334.4479	334	8
74	431.3620	431	15	33	332.6472	333	8
73	425.7672	426 (Advanced)	14	32	330.8317	331	8
72	420.8375	421	13	31	328.9978	329	8
71	416.4143	416	12	30	327.1442	327	8
70	412.3863	412	11	29	325.2661	325	8
69	408.6813	409	11	28	323.3624	323	8
68	405.2384	405	10	27	321.4308	321	8
67	402.0170	402	10	26	319.4648	319	8
66	398.9816	399	10	25	317.4615	317	8
65	396.1034	396	9	24	315.4179	315	8
64	393.3618	393	9	23	313.3267	313	8
63	390.7413	391	9	22	311.1851	311	8
62	388.2266	388	9	21	308.9871	309	8
61	385.8027	386	9	20	306.7251	307	9
60	383.4613	383	9	19	304.3908	304	9
59	381.1917	381 (Proficient)	9	18	301.9727	302	9
58	378.9880	379	8	17	299.4660	299	9
57	376.8404	377	8	16	296.8519	297	9
56	374.7466	375	8	15	294.1205	294	9
55	372.6981	373	8	14	291.2525	291	10
54	370.6916	371	8	13	288.2247	288	10
53	368.7230	369	8	12	285.0121	285	10
52	366.7835	367	8	11	281.5790	282	11
51	364.8775	365	8	10	277.8823	278	11
50	363.0002	363	8	9	273.8645	275	12
49	361.1425	361	8	8	269.4503	275	12
48	359.3079	359	8	7	264.5264	275	12
47	357.4897	357	8	6	258.9341	275	12
46	355.6877	356	8	5	252.4276	275	12
45	353.8988	354	8	4	244.5877	275	12
44	352.1200	352	8	3	234.6286	275	12
43	350.3483	350 (Pass)	8	2	220.7816	275	12
42	348.5855	349	8	1	197.3970	275	12
41	346.8249	347	8	0	171.7079	275	12
40	345.0666	345	8				

Table 6.M.15: Braille, LP-Braille, and LP-Braille CD Conversions—ELA— July, October, and November 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24	44	326.7654	327	8
89	503.7262	450	24	43	324.8167	325	8
88	481.5005	450	24	42	322.8618	323	8
87	467.0763	450	24	41	320.8972	321	8
86	456.3841	450	24	40	318.9249	319	8
85	447.6526	448	23	39	316.9368	317	8
84	440.1996	440	21	38	314.9355	315	8
83	433.6123	434	19	37	312.9159	313	8
82	427.7101	428	17	36	310.8772	311	9
81	422.3579	422	16	35	308.8174	309	9
80	417.4658	417	15	34	306.7306	307	9
79	412.9611	413	14	33	304.6160	305	9
78	408.7819	409	13	32	302.4712	302	9
77	404.8811	405 (Advanced)	13	31	300.2953	300	9
76	401.2231	401	12	30	298.0821	298	9
75	397.7681	398	12	29	295.8314	296	9
74	394.4882	394	12	28	293.5381	294	9
73	391.3611	391	11	27	291.2004	291	9
72	388.3690	388	11	26	288.8158	289	10
71	385.4932	385	11	25	286.3692	286	10
70	382.7205	383	11	24	283.8642	284	10
69	380.0365	380 (Proficient)	10	23	281.2937	281	10
68	377.4428	377	10	22	278.6555	279	10
67	374.9188	375	10	21	275.9379	276	11
66	372.4614	372	10	20	273.1347	275	11
65	370.0632	370	10	19	270.2344	275	11
64	367.7210	368	9	18	267.2215	275	11
63	365.4254	365	9	17	264.0816	275	11
62	363.1749	363	9	16	260.7691	275	11
61	360.9643	361	9	15	257.2649	275	11
60	358.7921	359	9	14	253.5325	275	11
59	356.6522	357	9	13	249.5139	275	11
58	354.5415	355	9	12	245.1356	275	11
57	352.4597	352	9	11	240.2954	275	11
56	350.4007	350 (Pass)	9	10	234.8473	275	11
55	348.3659	348	9	9	228.5777	275	11
54	346.3492	346	9	8	221.1371	275	11
53	344.3520	344	8	7	211.7350	275	11
52	342.3678	342	8	6	199.4695	275	11
51	340.3979	340	8	5	182.4365	275	11
50	338.4354	338	8	4	167.2631	275	11
49	336.4834	336	8	3	157.7049	275	11
48	334.5346	335	8	2	152.3125	275	11
47	332.5922	333	8	1	149.1828	275	11
46	330.6510	331	8	0	147.2238	275	11
45	328.7090	329	8				

Table 6.M.16: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics—July, October, and November 2013

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18	39	346.2448	346	8
79	495.0053	450	18	38	344.4541	344	8
78	473.0255	450	18	37	342.6586	343	8
77	459.1392	450	18	36	340.8555	341	8
76	449.1778	449	18	35	339.0442	339	8
75	441.3336	441	17	34	337.2185	337	8
74	434.8230	435	15	33	335.3813	335	8
73	429.2238	429	14	32	333.5261	334	8
72	424.2896	424 (Advanced)	13	31	331.6557	332	8
71	419.8619	420	12	30	329.7605	330	8
70	415.8289	416	11	29	327.8424	328	8
69	412.1181	412	11	28	325.8954	326	8
68	408.6696	409	10	27	323.9160	324	8
67	405.4394	405	10	26	321.9062	322	8
66	402.3962	402	10	25	319.8557	320	8
65	399.5117	400	9	24	317.7611	318	8
64	396.7625	397	9	23	315.6203	316	8
63	394.1302	394	9	22	313.4242	313	8
62	391.6061	392	9	21	311.1698	311	9
61	389.1786	389	9	20	308.8500	309	9
60	386.8284	387	9	19	306.4565	306	9
59	384.5503	385	9	18	303.9786	304	9
58	382.3342	382	8	17	301.4057	301	9
57	380.1761	380 (Proficient)	8	16	298.7274	299	9
56	378.0671	378	8	15	295.9265	296	10
55	376.0041	376	8	14	292.9882	293	10
54	373.9818	374	8	13	289.8886	290	10
53	371.9954	372	8	12	286.6027	287	10
52	370.0421	370	8	11	283.0964	283	11
51	368.1160	368	8	10	279.3278	279	12
50	366.2148	366	8	9	275.2404	275	12
49	364.3383	364	8	8	270.7348	275	12
48	362.4820	362	8	7	265.7099	275	12
47	360.6406	361	8	6	260.0088	275	12
46	358.8149	359	8	5	253.3867	275	12
45	357.0003	357	8	4	245.4229	275	12
44	355.1964	355	8	3	235.3296	275	12
43	353.4001	353	8	2	221.3337	275	12
42	351.6083	352	8	1	197.7713	275	12
41	349.8192	350 (Pass)	8	0	171.7079	275	12
40	348.0340	348	8				

Table 6.M.17: Braille, LP-Braille, and LP-Braille CD Conversions—ELA—December 2013 and February 2014

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24	44	330.3092	330	8
89	512.0567	450	24	43	328.3095	328	8
88	496.8126	450	24	42	326.3035	326	8
87	479.5790	450	24	41	324.2876	324	8
86	467.7573	450	24	40	322.2602	322	9
85	457.7463	450	24	39	320.2194	320	9
84	449.1292	449	22	38	318.1627	318	9
83	441.6013	442	20	37	316.0891	316	9
82	434.9427	435	18	36	313.9939	314	9
81	429.0114	429	17	35	311.8765	312	9
80	423.6765	424	15	34	309.7318	310	9
79	418.8297	419	14	33	307.5604	308	9
78	414.3827	414	14	32	305.3593	305	9
77	410.2674	410	13	31	303.1260	303	9
76	406.4282	406	12	30	300.8563	301	9
75	402.8332	403 (Advanced)	12	29	298.5451	299	9
74	399.4385	399	12	28	296.1939	296	9
73	396.2155	396	11	27	293.7995	294	10
72	393.1407	393	11	26	291.3595	291	10
71	390.1958	390	11	25	288.8738	289	10
70	387.3653	387	11	24	286.3242	286	10
69	384.6327	385	10	23	283.7164	284	10
68	381.9870	382 (Proficient)	10	22	281.0463	281	11
67	379.4176	379	10	21	278.3119	278	11
66	376.9197	377	10	20	275.5039	276	11
65	374.4830	374	10	19	272.6170	275	11
64	372.1010	372	10	18	269.6409	275	11
63	369.7696	370	9	17	266.5632	275	11
62	367.4844	367	9	16	263.3705	275	11
61	365.2382	365	9	15	260.0442	275	11
60	363.0288	363	9	14	256.5674	275	11
59	360.8521	361	9	13	252.8605	275	11
58	358.7056	359	9	12	248.9076	275	11
57	356.5856	357	9	11	244.6605	275	11
56	354.4890	354	9	10	240.0569	275	11
55	352.4134	352	9	9	235.0235	275	11
54	350.3546	350 (Pass)	9	8	229.4684	275	11
53	348.3142	348	9	7	222.9457	275	11
52	346.2861	346	9	6	215.4083	275	11
51	344.2726	344	8	5	206.6415	275	11
50	342.2666	342	8	4	196.6267	275	11
49	340.2690	340	8	3	181.9080	275	11
48	338.2743	338	8	2	168.4257	275	11
47	336.2841	336	8	1	156.8746	275	11
46	334.2930	334	8	0	147.2238	275	11
45	332.3030	332	8				

Table 6.M.18: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics—December 2013 and February 2014

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18	39	346.7288	347	8
79	495.9801	450	18	38	344.9417	345	8
78	474.8482	450	18	37	343.1513	343	8
77	460.6677	450	18	36	341.3547	341	8
76	450.5606	450	18	35	339.5507	340	8
75	442.6153	443	17	34	337.7347	338	8
74	436.0265	436	16	33	335.9071	336	8
73	430.3607	430	14	32	334.0640	334	8
72	425.3684	425 (Advanced)	13	31	332.2055	332	8
71	420.8883	421	12	30	330.3256	330	8
70	416.8085	417	11	29	328.4235	328	8
69	413.0538	413	11	28	326.4940	326	8
68	409.5659	410	10	27	324.5339	325	8
67	406.2979	406	10	26	322.5437	323	8
66	403.2295	403	10	25	320.5164	321	8
65	400.3218	400	10	24	318.4461	318	8
64	397.5491	398	9	23	316.3314	316	8
63	394.8932	395	9	22	314.1636	314	8
62	392.3422	392	9	21	311.9391	312	9
61	389.8868	390	9	20	309.6517	310	9
60	387.5115	388	9	19	307.2929	307	9
59	385.2091	385	9	18	304.8540	305	9
58	382.9715	383	8	17	302.3160	302	9
57	380.7923	381 (Proficient)	8	16	299.6774	300	9
56	378.6654	379	8	15	296.9156	297	9
55	376.5845	377	8	14	294.0182	294	10
54	374.5469	375	8	13	290.9622	291	10
53	372.5461	373	8	12	287.7192	288	10
52	370.5795	371	8	11	284.2576	284	11
51	368.6426	369	8	10	280.5335	281	11
50	366.7305	367	8	9	276.4905	276	12
49	364.8443	365	8	8	272.0568	275	13
48	362.9813	363	8	7	267.1284	275	13
47	361.1327	361	8	6	261.5472	275	13
46	359.3025	359	8	5	254.9827	275	13
45	357.4839	357	8	4	247.0688	275	13
44	355.6772	356	8	3	237.0061	275	13
43	353.8793	354	8	2	222.9940	275	13
42	352.0873	352	8	1	199.2663	275	13
41	350.2984	350 (Pass)	8	0	171.7079	275	13
40	348.5146	349	8				

Table 6.M.19: Braille, LP-Braille, and LP-Braille CD Conversions—ELA—March and May 2014

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
90	525.5854	450	24	44	325.8194	326	8
89	508.7371	450	24	43	323.8751	324	9
88	492.1979	450	24	42	321.9357	322	9
87	476.6633	450	24	41	320.0018	320	9
86	465.3592	450	24	40	318.0704	318	9
85	456.0424	450	24	39	316.1432	316	9
84	447.9129	448	22	38	314.2166	314	9
83	440.6112	441	20	37	312.2929	312	9
82	434.0490	434	19	36	310.3688	310	9
81	428.0938	428	17	35	308.4453	308	9
80	422.6579	423	16	34	306.5193	307	9
79	417.6669	418	15	33	304.5933	305	9
78	413.0532	413	14	32	302.6647	303	9
77	408.7532	409	13	31	300.7347	301	9
76	404.7298	405 (Advanced)	13	30	298.7979	299	9
75	400.9387	401	13	29	296.8547	297	9
74	397.3455	397	12	28	294.9045	295	10
73	393.9240	394	12	27	292.9421	293	10
72	390.6538	391	11	26	290.9677	291	10
71	387.5316	388	11	25	288.9739	289	10
70	384.5244	385	11	24	286.9532	287	10
69	381.6206	382 (Proficient)	11	23	284.9049	285	10
68	378.8112	379	10	22	282.8214	283	10
67	376.0873	376	10	21	280.6996	281	11
66	373.4414	373	10	20	278.5326	279	11
65	370.8649	371	10	19	276.3105	276	11
64	368.3572	368	10	18	274.0081	275	11
63	365.9099	366	9	17	271.6158	275	11
62	363.5181	364	9	16	269.1281	275	11
61	361.1735	361	9	15	266.5302	275	11
60	358.8760	359	9	14	263.8050	275	11
59	356.6185	357	9	13	260.8983	275	11
58	354.3986	354	9	12	257.7782	275	11
57	352.2133	352	9	11	254.4317	275	11
56	350.0564	350 (Pass)	9	10	250.8127	275	11
55	347.9346	348	9	9	246.8640	275	11
54	345.8374	346	9	8	242.4916	275	11
53	343.7651	344	9	7	237.4902	275	11
52	341.7125	342	9	6	231.7643	275	11
51	339.6783	340	9	5	225.0508	275	11
50	337.6615	338	9	4	216.9028	275	11
49	335.6584	336	8	3	206.4733	275	11
48	333.6693	334	8	2	191.7848	275	11
47	331.6932	332	8	1	169.6771	275	11
46	329.7269	330	8	0	147.2238	275	11
45	327.7692	328	8				

Table 6.M.20: Braille, LP-Braille, and LP-Braille CD Conversions—Mathematics—March and May 2014

Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM	Raw Score	Unrounded Scale Score	Rounded Scale Score	CSEM
80	517.0695	450	18	39	343.4215	343	8
79	494.7828	450	18	38	341.6001	342	8
78	472.4508	450	18	37	339.7754	340	8
77	458.5141	450	18	36	337.9434	338	8
76	448.4766	448	18	35	336.1036	336	8
75	440.5514	441	17	34	334.2531	334	8
74	433.9574	434	16	33	332.3916	332	8
73	428.2760	428	14	32	330.5135	331	8
72	423.2607	423 (Advanced)	13	31	328.6189	329	8
71	418.7542	419	12	30	326.7032	327	8
70	414.6432	415	11	29	324.7625	325	8
69	410.8570	411	11	28	322.7976	323	8
68	407.3337	407	10	27	320.8025	321	8
67	404.0323	404	10	26	318.7727	319	8
66	400.9191	401	10	25	316.7065	317	8
65	397.9653	398	10	24	314.5975	315	8
64	395.1478	395	9	23	312.4420	312	8
63	392.4505	392	9	22	310.2350	310	8
62	389.8629	390	9	21	307.9706	308	9
61	387.3665	387	9	20	305.6416	306	9
60	384.9529	385	9	19	303.2369	303	9
59	382.6121	383	9	18	300.7518	301	9
58	380.3378	380 (Proficient)	9	17	298.1725	298	9
57	378.121	378	8	16	295.4877	295	9
56	375.9573	376	8	15	292.6837	293	10
55	373.8409	374	8	14	289.7409	290	10
54	371.7664	372	8	13	286.638	287	10
53	369.7308	370	8	12	283.3479	283	10
52	367.7260	368	8	11	279.8368	280	11
51	365.7528	366	8	10	276.0600	276	12
50	363.8091	364	8	9	271.9638	275	12
49	361.8878	362	8	8	267.4693	275	12
48	359.9873	360	8	7	262.4649	275	12
47	358.1049	358	8	6	256.7974	275	12
46	356.2384	356	8	5	250.2210	275	12
45	354.3858	354	8	4	242.3233	275	12
44	352.5438	353	8	3	232.3339	275	12
43	350.7097	351 (Pass)	8	2	218.5212	275	12
42	348.8837	349	8	1	195.3724	275	12
41	347.0613	347	8	0	171.7079	275	12
40	345.2409	345	8				

Appendix 6.N: Standard Errors of Theta Based on Weighted Raw Scores

Let:

$i = 1$ represent dichotomous items (with scores U_j) scaled with Rasch model, with ICC $P_{j1}(\theta)$;

$i = 2$ represent polytomous items (with scores Y_j) scaled with Rasch partial-credit model;

item j has m_j levels; score for k -th level is $k-1$, with ICC $P_{j2k}(\theta)$

w_{ji} = weight for the j -th item of type i

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

$\hat{\theta}$ = 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) used for transforming the standard errors to other metrics.

Chapter 7: Performance Standards

Background and Procedures

The CAHSEE was offered for the first time in spring 2001 (March and May) to volunteer ninth-graders (class of 2004). At that time, the SBE set the passing score at 350 on a scale of 250 to 450 based on recommendations produced in a standard-setting workshop conducted by the American Institutes for Research (AIR) with test results from March 2001. In order to conduct a census testing of all tenth-graders, Assembly Bill (AB) 1609 was passed in October 2001 to prohibit ninth-graders from taking the CAHSEE. The SBE directed the CDE to conduct a standard-setting on the first census administration of the CAHSEE, which was in spring 2003.

Subsequently, in July 2003, the SBE made the passing of both the CAHSEE ELA and mathematics examinations a diploma requirement for the class of 2006 and adopted revised test blueprints for the CAHSEE. In September 2003, a standard-setting workshop was performed using CAHSEE test items that were constructed to meet the new content blueprints and difficulty specifications. The Bookmark Method for setting passing scores was implemented. The Bookmark Method has widespread support in the measurement profession and has withstood legal challenges (see, for example, Lewis, et al., 1998 & Mitzel, et al., 2001).

The Bookmark Method typically uses three rounds of standard-setting in which panelists are instructed to set one passing score at the Just Sufficient level on the items reviewed (ELA or mathematics). During the standard-setting workshop, the panelists were asked to review the item booklet, in which items were ordered from easiest to hardest based on item difficulty, and then to find the point that defined the knowledge and skills needed to just pass the CAHSEE.

Two standard-setting panels for each subject were convened for the workshop. One panel in each subject was primarily composed of California educators (e.g., English or mathematics teachers), while the other panel was primarily composed of community members (e.g., business representatives, district or school administrators, and college professors). Panelists were selected based on their knowledge of the subject matter assessed, familiarity with students in the respective grade levels, an understanding of large-scale assessments, and an appreciation of the consequences of setting these passing scores. Panelists represented diverse geographic regions, major racial/ethnic subgroups, and both genders.

The standard-setting panelists were first given rigorous training, which included an overview of the CAHSEE and the Bookmark Method. Once panelists were comfortable with the procedure, they were asked to place a bookmark at the point in the ordered test book at which they felt students had demonstrated sufficient knowledge and skills in a certain subject area. Panelists typically placed the first bookmark independently and then received information on how their bookmark placement compared with those of their peers. There was then a small-group

discussion followed by a second bookmark placement. Finally, there was a large-group discussion followed by a presentation of consequence or impact data—for example, what percentage of students would pass the test given the current median passing score—followed by the third (last) bookmark placement.

CAHSEE Passing Scores

In November 2003, after reviewing the results of the September standard-setting study, the SBE set new passing scores on the CAHSEE. These scores corresponded to specific score levels on the test forms used in the standard settings: 55 percent correct on the mathematics portion (44 raw score points out of 80) and 60 percent of the points on the ELA portion (54 raw score points out of 90), corresponding to theta values of -0.0701 for mathematics and 0.5356 for ELA. Following the February 2004 administration, the cut-score theta levels were applied to determine the raw score equivalent of the CAHSEE passing scores and to establish the new CAHSEE reporting scale.

For the February 2004 administration, items were calibrated and linked to the CAHSEE item bank scale. IRT-based equating procedures were used to determine the theta levels corresponding to each raw score. The passing scores on the February test forms were set at the raw scores corresponding to the theta levels that were closest to the cut-score theta levels (0.5356 for ELA and -0.0701 for mathematics). Table 7.1 shows that the raw scores associated with passing on the February 2004 form were 54 for ELA and 43 for mathematics.⁸

Table 7.1: Passing Scores on the February 2004 CAHSEE

English-Language Arts			Mathematics	
Raw Score	Theta		Raw Score	Theta
53	0.4724		42	-0.1249
54	0.5290	← 350 ⇒	43	-0.0685
55	0.5863		44	-0.0118

The new reporting scales for the ELA and mathematics assessments were established. The reporting scale was obtained by establishing linear scaling parameters to transform the theta values corresponding to each raw score to the reporting scale. The transformation constants associated with these scoring tables are as follows:

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

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

The resulting scale has several notable characteristics:

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

⁸Since raw scores are integers and the theta metric is continuous, the cut-score theta levels will usually fall between the thetas at adjacent raw scores. In this situation, the raw scores corresponding to the theta level closest to the values of 0.5356 for ELA and -0.0701 for mathematics were chosen as the raw-score cut points.

2. The Proficient cut score to be used for ESEA accountability purposes has been set at 380 for both ELA and mathematics. On the theta scale, the Proficient cut scores were 1.4152 and 0.8762, respectively. These translate to scale scores of 379.88 for ELA and 380.50 for mathematics on the new scale. To simplify the communication of these important ESEA cut scores to a wide audience, 380 is used for both ELA and mathematics.
3. The Advanced cut scores to be used for ESEA accountability purposes were thetas of 2.1056 for ELA and 2.1456 for mathematics, which translate to 403 and 422, respectively.
4. The minimum and maximum scale scores were set at 275 and 450 for both ELA and mathematics.

Since the February 2004 administration, the raw-score to scale-score conversions have been maintained through the use of IRT-based equating procedures. The following rule is followed in determining the raw cut score a student must achieve to be classified as Passing, Proficient, or Advanced. For each administration, scale scores and raw scores that correspond to these cuts are identified. First, the scale score that is equal to or greater than the cut point (e.g., 350) is located. If 350 is not found in the conversion, the next higher score (e.g., 351) is used as the cutoff point. The corresponding raw score associated with that rounded scale score is defined to be the raw score equivalent of that cut.

Results

Table 7.2 is a summary of the raw score cuts and overall passing rates based on equating samples for each administration during the 2013–14 school year. For each administration, the passing rate for each proficiency level is the percentage of examinees earning a score at or above the raw score cut for that level. For example, for the October 2013 administration, 37 percent of examinees who took the ELA examination received a raw score of 54 or higher and thereby passed the ELA examination. Of those who passed, 9 percent of examinees received a score of 68 or higher and passed the Proficient cut point, while 4 percent scored 76 or above and passed the Advanced cut point.

Among examinees who took the mathematics exam, 38 percent passed by attaining a raw score of 41 or higher. Of those who passed, 9 percent were at or above the Proficient cut point with a raw score of 57 or higher, while 3 percent were at or above the Advanced cut point with a raw score of 72 or higher.

Table 7.2: Summary of Cut Scores and Passing Rates Based on Equating Samples

Administration	Levels	ELA		Mathematics	
		Raw Score Cut	Percent Passing ¹	Raw Score Cut	Percent Passing ¹
July 2013	Pass	56	22	41	27
	Proficient And Above	69	3	57	3
	Advanced And Above	77	1	72	0
October 2013	Pass	54	37	41	38
	Proficient And Above	68	9	57	9
	Advanced And Above	76	4	72	3
November 2013	Pass	55	42	43	37
	Proficient And Above	69	11	58	11
	Advanced And Above	76	5	72	3
December 2013	Pass	54	31	41	35
	Proficient And Above	68	6	57	6
	Advanced And Above	75	3	72	1
February 2014	Pass	57	69	42	73
	Proficient And Above	69	46	58	49
	Advanced And Above	76	26	72	19
March 2014	Pass	56	79	43	80
	Proficient And Above	69	52	58	56
	Advanced And Above	76	30	72	23
May 2014	Pass	56	32	43	33
	Proficient And Above	70	11	59	11
	Advanced And Above	77	5	73	2

¹Percentage of examinees at or above the cut score.

Chapter 8: Scoring and Reporting

ETS conforms to high standards of quality and fairness (ETS, 2002) when scoring tests and reporting scores. Such standards dictate that ETS provide accurate and understandable assessment results to the intended recipients. It is also the mission of ETS to provide appropriate guidelines for score interpretation and to provide cautions about the limitations in the meaning and use of the test scores. Finally, attempts are made to ensure sufficient data are collected for the major subgroups of students. These data are necessary for conducting analyses that ensure equitable results for various groups of test takers.

Procedures for Maintaining and Retrieving Individual Scores

Items for the CAHSEE mathematics and ELA examinations, except for the writing prompt in each ELA form, are MC. Students are presented with an item and asked to select the correct option from four possible choices. Students mark their choices on an answer document. All MC items are machine scored. Responses to the writing task are scored by trained readers.

In order to score and report the CAHSEE results, ETS follows an established set of written procedures. These specifications are presented in the next sections.

Scoring and Reporting Specifications

ETS develops standardized scoring procedures and specifications so that test materials are processed and scored accurately. These documents include the following:

- **General Reporting Specifications**—Provides the calculation rules for the information presented on CAHSEE summary reports and defines the appropriate codes to use when a student does not take or complete a test or when a score will not be reported.
- **Score Key and Score Conversion**—Defines file formats and information that is provided for scoring; defines the process of converting raw scores to scale scores.
- **Form Planner Specifications**—Describes the contents of files that contain keys required for scoring. Specifically, the form planner specification document defines each column in the form planner, the values contained in the columns, and the naming conventions for the form planners. The form planners contain the information about an assembled test form, including the test name and administration month and year. The form planners also contain information about each item, including item identification, sequence number, item type (i.e., operational, linking, field test), scoring key, strand-score identification, standards, classical statistics (i.e., p -value, biserial and point biserial correlations,

percentage of students choosing each option), and IRT statistics (i.e., *b*-value, IRT fit rating).

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

The scoring specifications are reviewed and revised by the CDE and ETS. After a version that both parties agree to is finalized, the CDE issues a formal approval of the scoring and reporting specifications.

Scanning and Scoring

Answer documents are scanned by Pearson and scored by ETS in accordance with the scoring specifications that have been approved by the CDE. Each school district must return scorable materials within five working days after the administration date for each test and non-scorable materials within ten working days.

Pearson scans the mathematics and ELA answer document sheets and transmits electronic files of all information captured to ETS for scoring and reporting. This includes demographic information and MC item data. Pearson also sends the data file images to ETS for use in the OSN system. These files consist of the images of the students' constructed responses as well as the unique PAS identification numbers. The identification numbers allow for the absolute matching of CR scores to other student data including demographic information and responses from MC items.

Scoring Multiple-Choice Items

ETS maintains all scoring keys with its SKM system. Prior to scoring, information on all test items and the test keys are loaded into the SKM system from test form planners created from the item bank. The keys are "locked" to ensure that they cannot be used in scoring until the appropriate quality control checks have been completed. When the final quality control check is completed and no errors have been identified, the test keys are "unlocked" for use in the scoring process.

Scoring Writing Tasks

All student responses to the ELA writing tasks are scored in the OSN system, a distributed, Web-based scoring system that enables a large number of raters to view and score assigned responses from remote locations. All identifying information from the responses sent to raters is removed so that neither the identity of the student nor the student's school is revealed to the rater; the rater sees only the student response.

Types of Scores and Strand Scores

Raw Score

For mathematics, the total raw score equals the sum of the examinee’s scores on the MC test items. In ELA, the total raw score equals the weighted sum of the examinee’s scores on both the MC items and the writing task. The weighting scheme for raw scores is described in detail in Chapter 2.

Strand Score

The items on the mathematics and ELA examinations are aggregated into groups, referred to as Reporting Strands. A strand score or subscore is the total item score in the reporting strand. A description of the CAHSEE reporting strands is provided in Table 2.1 of Chapter 2.

Scale Score

Raw scores on each CAHSEE examination are transformed to three-digit scale scores using the equating process described in Chapter 6. Scale scores range from 275 to 450 for both mathematics and ELA. The scale scores of students who have been tested in different administrations in a given content area can be compared. However, the raw scores cannot be meaningfully compared, because these scores are affected by the difficulty of the test taken as well as by the ability of the student.

Passing Scores

A passing score is 350 for both ELA and mathematics. A student will pass either of the tests if the total score is 350 or higher.

As part of the reporting requirements for the ESEA, cut scores defining Proficient and Advanced performance on the CAHSEE were set for both ELA and mathematics. The ESEA Proficient cut score is 380 for both ELA and mathematics. The Advanced cut score is 403 for ELA and 422 for mathematics. These values are used to classify tenth-grade students taking the CAHSEE into the Proficient and Above category as part of California’s assessment of AYP.

Score for Writing Applications

The score for Writing Applications shows the total number of points that an examinee received on the essay. Each essay is rated by two readers using a 1–4 scale. Students can also receive a “non-scorable” (NS) score of 0 if they do not write enough to score, write off the topic, write illegibly, or write in a language other than English. The scores from both readers must be the same or within one score point of each other. If the difference between the two scores is more than one score point,⁹ the

⁹If an essay received an NS from a reader and a score of 1, 2, 3, or 4 from another reader, scores are considered discrepant and the essay will receive a score from the third reader.

score for that essay is considered discrepant, and a scoring leader provides a third score, which becomes the score of record. Otherwise, the writing score is obtained by averaging two scores.

Score Verification Procedures

ETS takes various measures to be certain that the scoring keys are applied to the student responses as expected and that the student scores are computed accurately.

Scoring Key Verification Process

Scoring keys, provided in the form planners, are produced and verified thoroughly by performing various quality control checks before and after they are loaded into the SKM system. The form planners contain the information about an assembled test form including scoring keys, test name, administration year, strand-score identification, and the standards and statistics associated with each item. The various checks that are performed before the keys are finalized are listed below:

1. The form planners are checked for accuracy against the Form Planner Specifications document and the Score Key and Score Conversion document before the keys are loaded into the SKM system.
2. The printed lists of the scoring keys are checked again once the keys have been loaded into the SKM system.
3. The sequence of linking items¹⁰ 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.

¹⁰Linking items are used to link the scores on the current administration's test forms to scores obtained on the base forms to adjust for the difficulty level of the forms across administrations. This is accomplished during the equating process, as discussed in Chapter 2.

Monitoring and Quality Control of Writing Scoring

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

The Online Scoring Network™

All student responses to the ELA writing tasks are scored in the OSN system, a distributed, Web-based scoring system that enables a large number of scorers to view and score assigned responses from remote locations. The distributed OSN is as reliable as a center-based solution and is more flexible:

- All scorers are trained with a consistent set of materials and must pass a certification test before they are admitted to the CAHSEE reader pool.
- Scorers must successfully score a calibration set of papers before each scoring session. Failure to do so locks them out of scoring for that session.
- Trained scoring leaders remotely monitor the scoring progress of each scorer using virtual monitoring tools and real-time score-performance data.
- The system is password protected and scorers can access the system only during their scheduled reading blocks.
- The OSN improves the efficiency of the scoring process. Specifically, essays are sorted and distributed by topic to promote efficiency. In addition, each response is systematically routed for first and second reads and discrepancy resolutions, thereby ensuring that it is read by different scorers.
- The OSN allows authorized personnel to actively monitor the scoring process dynamically.

Training Scoring Leaders and Readers

Individuals who are selected to serve as scoring leaders or readers must be college graduates who possess at least a bachelor's degree. Each prospective scorer is required to participate in a systematic and multi-tiered virtual training program that ensures the application of uniform scoring standards. Scoring leaders are experienced scorers who have had additional training. During operational scoring, scoring leaders monitor and assist readers throughout each scoring session over the Internet.

Scoring Leader Training

Scoring leaders are trained using the Live Meeting approach, which is a dynamic and collaborative Web-based training model that is effective, efficient, and secure. ETS trains scoring leader personnel in advance of each administration.

During the training session, scoring leaders review a comprehensive set of CAHSEE training materials assembled by the CAHSEE Scoring Manager. The Scoring Manager presents scoring guides, anchor papers representative of each score point, and decision set papers that cover ambiguities and problematic approaches to each CR topic. Throughout the training session, scoring leaders can engage the Scoring Manager by way of a conference call or live meeting.

Reader Training

Once recruited, CAHSEE readers are trained by using extensive materials provided over the CAHSEE tutorial Web site. Pre-operational training focuses on general instruction on how to apply the program's scoring guide criteria and on practice in certification tests. Readers log on to a tutorial site for Web-based training, where they are provided information about the writing task, scoring rubrics, scoring rationales, anchor papers, and the standards to be maintained. Anchor papers are selected to demonstrate clear examples of each score point.

At the completion of the training process, readers take a certification test that consists of a set of pre-scored responses. If readers achieve the required exact agreement rate, they are admitted to the reader pool. Readers are permitted to score only those topics on which they have been trained and certified.

System Training

Scorers have different levels of experience working on computers. OSN has established simple step-by-step procedures that guide readers through every aspect of the scoring process. In addition, an ETS Web site currently includes one section dedicated to OSN system functionality and provides detailed guides for readers.

All CAHSEE readers log on, certify, and perform a system test well in advance of operational scoring. This ensures that the equipment is functioning as it should and that the readers are familiar with the OSN system and the scoring process well before they view live items.

Scorer Qualification

ETS maintains a pool of more than 74,000 readers, more than 800 of whom are currently trained and experienced in the scoring of CAHSEE writing tasks. Most are educators who hold full-time teaching positions. Preference is given to those with a bachelor's degree in English or a related field. The recruiting and training plan includes a commitment to the CDE to maintain a 20 percent participation rate by California English teachers in the CAHSEE reader pool.

Scorers continue to qualify throughout the operational scoring process. The structure of a typical CAHSEE scoring session, whether a half day or a full day, is standardized. Prior to each scoring session, certified readers are required to demonstrate ongoing proficiency by scoring a set of calibration papers, which consists of pre-scored responses to one topic arranged in an electronic folder. The calibration results are automatically calculated. Failure to satisfy this requirement prohibits a reader from scoring that day. Readers must calibrate for each day of operational scoring. During the scoring session, scoring leaders will monitor scorer performance dynamically and target sub-standard scorers for additional training and calibration.

Accuracy Monitoring

The monitoring functions of the OSN provide a useful method for overseeing the accuracy of scoring and the performance of individual topics. The OSN produces a variety of reports with extensive data on both readers and topics, as well as an overview of the progress and accuracy of the overall scoring process. Most reader performance data are available immediately. A content specialist or a scoring leader is able to view statistical tabulations of reader performance within any given time period. Scoring leaders even have the capability of monitoring readers while they are actively scoring a group of essays.

The OSN can produce reports to show the degree to which readers are consistent in scores that they assign. The consistency is measured in terms of the percentage of instances in which the first and second readers' scores are exact, adjacent, and discrepant; this is a commonly used measure of inter-rater reliability. In addition, the overall mean and the percentage of scores awarded at each score point reveal whether the reader is fulfilling the performance standard of using the full range or whether the reader is scoring too low, too high, or too exclusively in the middle. If a reader's rate of agreement begins to decline, the reader is retrained by a scoring leader and closely monitored thereafter. If the reader's performance does not improve, the reader is released.

In addition to a statistical depiction of reader performance, the OSN monitoring function also provides a statistical portrait of topic performance. Test development staff are able to see over time whether a given topic is performing well by considering:

- The number/percentage of exact, adjacent, and discrepant scores awarded for papers on that topic
- The average rate at which papers for this topic are read
- The mean score overall
- The percentage of scores awarded at each point
- The number and percentage of scoring iterations (indicating how many third and fourth readings were required)

Data are also available on a particular type of paper (monitor, production, etc.) within a specified time period. As is the case with reader performance, the goal is to ensure a higher rate of exact scores than adjacent scores, a low percentage of discrepancies,

and a distribution of scores over the whole range. An additional aim is to have comparable mean scores across topics.

Quality Control in Raw-to-Scale Score Conversions

ETS psychometricians employ special procedures that adjust for item difficulty differences across test forms. As a result of this process, scoring tables are produced. These tables map the current administration's raw score to an appropriate scale score. The Information Technology (IT) Division utilizes these tables to generate scale scores for each student.

After score conversion is completed, both the IT Division and the Statistical Analysis Division independently generate a raw-score to scale-score mapping report and verify the accuracy of the score conversion against the original scoring tables.

Overview of Score Aggregation Procedures

In order to provide meaningful results to the stakeholders, the CAHSEE scores for a given content area are aggregated at the school, independently testing charter school, district, and state levels. The aggregated scores are generated for individual and group scores. The following section presents the types of aggregation performed on CAHSEE scores.

Individual Scores

The tables referenced in this section provide state-level summary statistics describing student performance in each CAHSEE administration.

Score Distributions and Summary Statistics

Summary statistics for individual scores are presented in Tables E.3.1 to E.4.3, in the Executive Summary chapter. Included in the tables are the number of items in each test, the number of students taking each test, and the means and standard deviations of student scores expressed in terms of both raw scores and scale scores. The percentage of students passing each CAHSEE content area is presented in Table E.2.

Frequency distributions of scale scores for ELA and mathematics are presented in Tables 1 and 2 in Appendices 8.A to 8.G. The results are reported in terms of score intervals. The passing line indicates the Pass/Not Pass cuts. Similar distributions of scale scores for ELA and mathematics, with the ESEA cuts indicated, are presented in Tables 3 and 4 in Appendices 8.A to 8.G. The first line indicates the Advanced level cut, while the second line indicates the Proficient level cut.

The numbers in the summary tables may not match exactly the results reported on the CDE's Web site, as there may be small differences in the samples used to compute the statistics. The statistics in these tables may differ slightly from the statewide statistics reported on the CDE Web site, because school districts may conduct data correction after the data file is generated for the analyses in this chapter.

Group Scores

Statistics summarizing student performance by content area and test administration for selected groups of students are provided in Tables 5 (ELA) and 6 (mathematics) in Appendices 8.A to 8.G. In the tables, students are grouped by demographic characteristics, including grade, gender, ethnicity, English proficiency, need for special education services, and economic status.¹¹ The tables show the numbers of valid cases in each group as well as scale score means and standard deviations for each demographic group. Table 2.2 in Chapter 2 defines the demographic groups included in the tables.

Similar summary statistics for demographic groups are presented in Tables 7 and 8 in Appendices 8.A to 8.G. These summary statistics display the percentages of examinees classified as Below Proficient, Proficient, and Advanced according to the ESEA classifications. Selected percentiles, scale score means, and standard deviations for the subgroups are presented for all students in Tables 9 and 10 for ELA and mathematics, respectively.

Table 8.1 provides a listing of the frequency distribution and demographic summary tables found in the Appendices. To simplify the presentation of these data, all tables for this section are located from Appendix 8.A to Appendix 8.G.

Table 8.1: Listing of Frequency Distribution and Demographic Summary Tables

Table ¹	Content	Label
8.x.1	Frequency Distributions Highlighted at Pass Line—ELA	Frequency Distributions—ELA
8.x.2	Frequency Distributions Highlighted at Pass Line—Mathematics	Frequency Distributions—Mathematics
8.x.3	Frequency Distributions Highlighted at ESEA Cuts—ELA	Frequency Distributions—ELA for ESEA
8.x.4	Frequency Distributions Highlighted at ESEA Cuts—Mathematics	Frequency Distributions—Mathematics for ESEA
8.x.5	Scale Score Summary Statistics and Passing Rates for All Examinees—ELA	Demographic Summary for All Examinees—ELA
8.x.6	Scale Score Summary Statistics and Passing Rates for All Examinees—Mathematics	Demographic Summary for All Examinees—Mathematics
8.x.7	ESEA Summary for All Examinees—ELA	ESEA Demographic Summary for All Examinees—ELA
8.x.8	ESEA Summary for All Examinees—Mathematics	ESEA Demographic Summary for All Examinees—Mathematics
8.x.9	Scale Score Percentiles for All Examinees—ELA	Examinee Demographics Showing Mean Scale Score at Each Percentile—ELA
8.x.10	Scale Score Percentiles for All Examinees—Mathematics	Examinee Demographics Showing Mean Scale Score at Each Percentile—Mathematics

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

¹¹Students' economic status was determined by considering the education level of their parents and whether or not they are eligible to participate in the NSLP.

Reports to be Produced and Scores for Each Report

The scores of the CAHSEE ELA and mathematics tests provide results or score summaries that are reported for different purposes. The three major purposes include:

1. Communicating with parents and guardians about students' achievements and whether the students fulfill one or both part(s) of the CAHSEE graduation requirement.
2. Informing decisions needed to provide additional assistance for students who did not pass one or both part(s) of the CAHSEE.
3. Providing data for state and federal accountability programs for schools.

A detailed description of the uses and applications of the CAHSEE score reports is presented in the next section.

Types of Score Reports

There are three categories of CAHSEE score reports. These categories and the specific reports in each category are given in the table below.

Table 8.2: Types of CAHSEE Reports

1. Individual Reports	<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 ◦ District-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, who in turn forward them to the appropriate schools. In the case of the CAHSEE Student and Parent Report, the report is mailed to the child's parents or guardians and a copy is retained in the student's file. Internet reports are described on the CDE Web site and are accessible to the public online at <http://cahsee.cde.ca.gov/>.

Score Report Contents

The CAHSEE Student and Parent Report provides the student's scale score and the score in relation to the passing score for each test taken by the student. Scale scores are reported on a scale ranging from 275 to 450.

The score report also provides strand scores that indicate how the student performed on each of the content strands assessed. The number of questions in the strand and the number answered correctly are provided on the score report. ELA strand score

results are grouped under the broader categories of Reading and Writing. Reports for SWDs and ELs who use modifications include a notation that indicates that the student was tested with modifications. Modifications change what is being tested and therefore, change the meaning of these scores. If students use modifications, their scores are counted differently from non-modified test scores on summary reports. Students who use a modification and earn the equivalent of a passing score on one or both parts of the CAHSEE do not pass but may be eligible for a local waiver of the CAHSEE requirement. Tests for students who use accommodations that are specified in their IEPs or Section 504 plans are reported in the same way as non-accommodated tests.

Aggregate reports comprise a series of student, demographic, and geographic summaries that inform LEAs and state officials and their constituencies of student performance across defined subgroups. Aggregated reports following each administration are prepared in PDF format and are printed, packed, and shipped by expedited delivery to LEAs. Reports are also posted in each LEA's secure folder on the CAHSEE Web site. The aggregated results following each administration are not publicly distributed. At the CDE's direction, these reports include complete performance distributions for each of the designated subgroups, regardless of the size of the subgroup. The aggregate results are available to the public via DataQuest. Results for groups with fewer than 11 students are not reported.

ETS also provides the CDE with data files that meet the quarterly CAHSEE results reporting requirements as well as the state (API¹²) and federal (AYP) accountability reporting timeline requirements. CD-ROMs or DVDs containing these data files with encryption software are delivered to the CDE so that the CDE can generate reports as well as conduct additional analyses to inform decision makers about student achievement and programs delivered to students.

Score Report Applications

The results for the CAHSEE are used primarily to identify students who are not developing high school graduate-level competencies in reading, writing, and mathematics that are essential after high school. Beginning in the 2005–06 school year, with the exception of eligible SWDs, no student received a public high school diploma without passing the CAHSEE and meeting all other state and district requirements for graduation.

Counties, school districts, and schools are encouraged to use the summary results and other standards-based evidence of student achievement to develop and implement an ongoing process for refining classroom instruction and school programs. The goal is to work with school staff to identify patterns of student performance and identify program areas needing improvement.

In addition, the state and federal governments use the CAHSEE results as a measure of school and school district accountability. The state accountability program is the

¹² The API was not produced in 2013-14 and, as such, the 2014 CAHSEE results were not used for API reporting purposes.

Public Schools Accountability Act; the federal accountability program is the ESEA. The use of CAHSEE results for these accountability programs is intended to be independent of how the CAHSEE is used for individual student accountability.

Criteria for Interpreting Test Scores

A school district may use CAHSEE results to help make decisions about student graduation. However, it is important to remember that a single test can provide only limited information. Other relevant graduation requirements should be considered as well. It is also important to note that a student's score in a content area contains measurement error and could vary if the student were retested.

Criteria for Interpreting Score Reports

The information presented on various reports must be interpreted with caution when making performance comparisons. When comparing scale score and performance level results for the CAHSEE, the user is limited to comparisons within the same content area. This is because the underlying scales are different for each content area. Comparing scores obtained in different content areas should be avoided because the results are not on the same scale. Comparisons between raw scores and cluster scores should be limited to comparisons within not only content area but also test administration. The user may compare scores for the same content area within a school, between schools, or between a school and its district, its county, or the state. The user can also make comparisons within the same content area across administrations.

Appendix 8.A: Frequency Distributions and Demographic Summaries—July 2013

Table 8.A.1: Frequency Distributions, ELA—July 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	2	0	2	99
440–449	5	0	7	99
430–439	5	0	12	99
420–429	11	0	23	99
410–419	18	0	41	99
400–409	28	0	69	99
390–399	41	1	110	98
380–389	86	1	196	97
370–379	152	3	348	94
360–369	296	5	644	89
350–359 ¹	604	10	1,248	79
340–349	1,003	17	2,251	61
330–339	1,055	18	3,306	43
320–329	920	16	4,226	27
310–319	653	11	4,879	16
300–309	426	7	5,305	9
290–299	230	4	5,535	5
280–289	160	3	5,695	2
270–279	132	2	5,827	0

¹Passing Score = 350

Table 8.A.2: Frequency Distributions, Mathematics—July 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	10	0	10	99
440–449	5	0	15	99
430–439	2	0	17	99
420–429	15	0	32	99
410–419	10	0	42	99
400–409	29	1	71	99
390–399	26	1	97	98
380–389	66	1	163	97
370–379	130	3	293	94
360–369	274	6	567	88
350–359 ¹	719	15	1,286	73
340–349	965	20	2,251	54
330–339	1,202	25	3,453	29
320–329	766	16	4,219	13
310–319	395	8	4,614	5
300–309	173	4	4,787	1
290–299	46	1	4,833	0
280–289	4	0	4,837	0
270–279	11	0	4,848	0

¹Passing Score = 350

Table 8.A.3: Frequency Distributions, ELA for ESEA—July 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	2	0	2	99
440–449	5	0	7	99
430–439	5	0	12	99
420–429	11	0	23	99
410–419	18	0	41	99
403–409 ¹	15	0	56	99
390–402	54	1	110	98
380–389 ²	86	1	196	97
370–379	152	3	348	94
360–369	296	5	644	89
350–359	604	10	1,248	79
340–349	1,003	17	2,251	61
330–339	1,055	18	3,306	43
320–329	920	16	4,226	27
310–319	653	11	4,879	16
300–309	426	7	5,305	9
290–299	230	4	5,535	5
280–289	160	3	5,695	2
270–279	132	2	5,827	0

¹Advanced-Level Cut = 403

²Proficient-Level Cut = 380

Table 8.A.4: Frequency Distributions, Mathematics for ESEA—July 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	10	0	10	99
440–449	5	0	15	99
430–439	2	0	17	99
422–429 ¹	8	0	25	99
410–421	17	0	42	99
400–409	29	1	71	99
390–399	26	1	97	98
380–389 ²	66	1	163	97
370–379	130	3	293	94
360–369	274	6	567	88
350–359	719	15	1,286	73
340–349	965	20	2,251	54
330–339	1,202	25	3,453	29
320–329	766	16	4,219	13
310–319	395	8	4,614	5
300–309	173	4	4,787	1
290–299	46	1	4,833	0
280–289	4	0	4,837	0
270–279	11	0	4,848	0

¹Advanced-Level Cut = 422

²Proficient-Level Cut = 380

Table 8.A.5: Demographic Summary for All Examinees, ELA—July 2013

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ² Avg. Percent Correct			Writing ² Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	5,827	1,248	21	4,579	79	333	62	52	54	46	50	2.1
Grade												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-	-	-
Twelfth	4,856	981	20	3,875	80	331	60	51	53	45	50	2.0
Adult Education	971	267	27	704	73	340	68	57	59	52	53	2.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	3,094	654	21	2,440	79	331	63	51	53	45	49	2.0
Female	2,729	593	22	2,136	78	334	60	53	55	47	52	2.1
Unknown	4	-	-	-	-	-	-	-	-	-	-	-
Race/Ethnicity												
American Indian or Alaska Native	18	6	33	12	67	334	71	49	53	48	57	2.1
Asian	647	101	16	546	84	328	53	51	49	48	48	2.0
Pacific Islander	41	7	17	34	83	337	62	51	56	48	58	2.2
Filipino	115	27	23	88	77	335	65	53	53	51	52	2.1
Hispanic or Latino	3,910	780	20	3,130	80	332	62	52	55	46	50	2.0
African American	504	142	28	362	72	334	65	51	56	46	51	2.1
White (not of Hispanic origin)	393	143	36	250	64	342	70	58	59	49	56	2.1
Two or More Races	199	42	21	157	79	335	63	53	55	45	51	2.1
Language Fluency												
English-Only Students	1,591	474	30	1,117	70	337	67	53	57	46	53	2.1
Initially Fluent English Proficient (IFEP)	107	24	22	83	78	336	67	52	56	46	56	2.1
Reclassified Fluent English Proficient (RFEP)	195	81	42	114	58	345	70	58	61	52	61	2.2
English-Learner Students	3,020	423	14	2,597	86	328	57	49	51	45	48	2.0
Unknown	914	246	27	668	73	339	66	56	58	50	52	2.1
Economically Disadvantaged												
No	805	208	26	597	74	336	64	53	55	47	53	2.1
Yes	3,821	719	19	3,102	81	330	60	50	53	45	49	2.0
Unknown	1,201	321	27	880	73	338	66	55	58	50	53	2.1
Special Education Program Participation												
Students Receiving Services	710	83	12	627	88	321	56	45	47	39	43	1.9
Students Not Receiving Services	5,117	1,165	23	3,952	77	334	62	53	55	47	51	2.1

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

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

Table 8.A.6: Demographic Summary for All Examinees, Mathematics—July 2013

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Strands for Mathematics ²				
							Average Percent Correct				
							PS	NS	AF	MG	A1
Total Examinees	4,848	1,286	27	3,562	73	339	52	47	46	41	32
Grade											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-	-
Twelfth	4,032	1,001	25	3,031	75	338	51	46	45	40	32
Adult Education	816	285	35	531	65	346	57	51	50	47	33
Unknown											
Gender											
Male	2,211	606	27	1,605	73	339	52	47	46	41	32
Female	2,631	679	26	1,952	74	340	53	47	47	41	32
Unknown	6	-	-	-	-	-	-	-	-	-	-
Race/Ethnicity											
American Indian or Alaska Native	21	6	29	15	71	337	53	45	44	38	33
Asian	125	54	43	71	57	355	54	57	55	49	44
Pacific Islander	31	9	29	22	71	337	51	45	45	40	33
Filipino	57	17	30	40	70	340	48	49	47	41	36
Hispanic or Latino	3,467	853	25	2,614	75	338	52	46	46	40	32
African American	574	146	25	428	75	338	52	46	46	41	32
White (not of Hispanic origin)	375	137	37	238	63	346	58	51	50	45	36
Two or More Races	198	64	32	134	68	343	54	50	48	44	34
Language Fluency											
English-Only Students	1,888	505	27	1,383	73	339	53	47	46	41	32
Initially Fluent English Proficient (IFEP)	130	45	35	85	65	344	56	50	50	43	34
Reclassified Fluent English Proficient (RFEP)	384	117	30	267	70	343	57	50	49	42	32
English-Learner Students	1,697	360	21	1,337	79	336	49	45	44	38	32
Unknown	749	259	35	490	65	346	57	51	50	46	34
Economically Disadvantaged											
No	719	226	31	493	69	342	54	50	48	42	34
Yes	3,116	719	23	2,397	77	337	51	46	45	39	32
Unknown	1,013	341	34	672	66	344	56	50	49	45	34
Special Education Program Participation											
Students Receiving Services	551	56	10	495	90	327	42	40	38	33	29
Students Not Receiving Services	4,297	1,230	29	3,067	71	341	54	48	47	42	33

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

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

Table 8.A.7: ESEA Demographic Summary for All Examinees, ELA—July 2013

Subgroup	Group	N Tested ¹	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		5,827	5,631	97	140	2	56	1	196	3
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	-	-	-	-	-	-	-	-	-
	Twelfth	4,856	4,720	97	99	2	37	1	136	3
	Adult Education	971	911	94	41	4	19	2	60	6
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	3,094	2,983	96	82	3	29	1	111	4
	Female	2,729	2,644	97	58	2	27	1	85	3
	Unknown	4	4	100						
Race/Ethnicity	American Indian or Alaskan Native	18	17	94	1	6			1	6
	Asian	647	631	98	11	2	5	1	16	2
	Pacific Islander	41	38	93	2	5	1	2	3	7
	Filipino	115	111	97	3	3	1	1	4	3
	Hispanic or Latino	3,910	3,818	98	78	2	14	-	92	2
	African American	504	489	97	14	3	1	-	15	3
	White (not of Hispanic origin)	393	344	88	24	6	25	6	49	12
	Two or More Races	199	183	92	7	4	9	5	16	8
Language Fluency	English-Only Students	1,591	1,495	94	67	4	29	2	96	6
	Initially Fluent English Proficient (IFEP)	107	98	92	6	6	3	3	9	8
	Reclassified Fluent English Proficient (RFEP)	195	174	89	18	9	3	2	21	11
	English-Learner Students	3,020	3,005	100	15	-			15	-
	Unknown	914	859	94	34	4	21	2	55	6
Economically Disadvantaged	No	805	762	95	26	3	17	2	43	5
	Yes	3,821	3,737	98	68	2	16	-	84	2
	Unknown	1,201	1,132	94	46	4	23	2	69	6
Special Education Program Participation	Receiving Services	710	708	100	1	-	1	-	2	-
	Not Receiving Services	5,117	4,923	96	139	3	55	1	194	4

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

Table 8.A.8: ESEA Demographic Summary for All Examinees, Mathematics—July 2013

Subgroup	Group	N Tested ¹	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		4,848	4,685	97	138	3	25	1	163	3
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	-	-	-	-	-	-	-	-	-
	Twelfth	4,032	3,920	97	97	2	15	-	112	3
	Adult Education	816	765	94	41	5	10	1	51	6
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	2,211	2,114	96	81	4	16	1	97	4
	Female	2,631	2,565	97	57	2	9	-	66	3
	Unknown	6	6	100						
Race/Ethnicity	American Indian or Alaskan Native	21	20	95	1	5			1	5
	Asian	125	102	82	13	10	10	8	23	18
	Pacific Islander	31	31	100						
	Filipino	57	54	95	3	5			3	5
	Hispanic or Latino	3,467	3,386	98	76	2	5	-	81	2
	African American	574	565	98	9	2			9	2
	White (not of Hispanic origin)	375	340	91	28	7	7	2	35	9
	Two or More Races	198	187	94	8	4	3	2	11	6
Language Fluency	English-Only Students	1,888	1,824	97	55	3	9	-	64	3
	Initially Fluent English Proficient (IFEP)	130	127	98	2	2	1	1	3	2
	Reclassified Fluent English Proficient (RFEP)	384	367	96	16	4	1	-	17	4
	English-Learner Students	1,697	1,672	99	23	1	2	-	25	1
	Unknown	749	695	93	42	6	12	2	54	7
Economically Disadvantaged	No	719	687	96	22	3	10	1	32	4
	Yes	3,116	3,047	98	65	2	4	-	69	2
	Unknown	1,013	951	94	51	5	11	1	62	6
Special Education Program Participation	Receiving Services	551	545	99	6	1			6	1
	Not Receiving Services	4,297	4,140	96	132	3	25	1	157	4

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

Table 8.A.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—July 2013

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	275	289	319	333	346	372	401	333	25	5,827
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-
Twelfth	275	289	316	333	346	370	398	331	25	4,856
Adult Education	289	307	325	338	350	383	417	340	24	971
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	286	315	333	346	375	401	331	26	3,094
Female	276	296	321	335	348	372	401	334	23	2,729
Unknown	315	315	319	330	356	375	375	337	27	4
Race/Ethnicity										
American Indian or Alaska Native	275	275	309	340	363	383	383	334	31	18
Asian	275	289	313	329	342	368	401	328	25	647
Pacific Islander	294	300	323	335	348	385	409	337	25	41
Filipino	275	300	321	336	348	370	401	335	23	115
Hispanic or Latino	275	291	319	333	346	368	391	332	23	3,910
African American	275	284	319	336	350	372	385	334	26	504
White (not of Hispanic origin)	275	286	321	340	361	409	440	342	35	393
Two or More Races	275	291	317	331	348	394	448	335	31	199
Language Fluency										
English-Only Students	275	286	321	336	352	383	417	337	28	1,591
Initially Fluent English Proficient (IFEP)	275	286	321	336	348	380	413	336	28	107
Reclassified Fluent English Proficient (RFEP)	275	298	329	344	361	394	413	345	27	195
English-Learner Students	275	289	315	331	342	359	372	328	21	3,020
Unknown	281	298	323	337	350	383	417	339	25	914
Economically Disadvantaged										
No	275	289	319	336	350	380	422	336	27	805
Yes	275	289	315	331	344	368	388	330	24	3,821
Unknown	281	300	323	336	350	383	413	338	25	1,201
Special Education Program Participation										
Students Receiving Services	275	279	302	323	338	359	370	321	24	710
Students Not Receiving Services	275	294	321	335	348	375	405	334	24	5,117

¹Mean scale scores are reported at each percentile.

²SD — Standard Deviation.

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

Table 8.A.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—July 2013

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	299	311	327	339	350	372	405	339	20	4,848
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	-	-	-	-	-	-	-	-	-	-
Twelfth	299	309	326	337	348	370	400	338	20	4,032
Adult Education	306	318	334	343	355	385	424	346	21	816
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	296	306	324	337	350	376	412	339	22	2,211
Female	301	313	328	339	350	368	394	340	18	2,631
Unknown	330	330	335	346	348	362	362	345	11	6
Race/Ethnicity										
American Indian or Alaska Native	304	304	318	335	352	362	412	337	25	21
Asian	309	313	332	344	362	441	450	355	35	125
Pacific Islander	301	306	326	341	352	359	361	337	16	31
Filipino	309	311	326	335	352	382	389	340	20	57
Hispanic or Latino	299	309	326	337	348	368	394	338	19	3,467
African American	296	311	326	337	350	368	387	338	18	574
White (not of Hispanic origin)	299	311	330	343	357	400	441	346	26	375
Two or More Races	304	313	328	339	353	380	449	343	22	198
Language Fluency										
English-Only Students	299	309	326	337	350	372	402	339	20	1,888
Initially Fluent English Proficient (IFEP)	301	316	334	343	353	374	389	344	19	130
Reclassified Fluent English Proficient (RFEP)	287	313	332	343	353	376	405	343	20	384
English-Learner Students	299	309	324	335	346	362	387	336	18	1,697
Unknown	304	316	332	343	355	392	429	346	23	749
Economically Disadvantaged										
No	301	313	330	341	353	374	435	342	22	719
Yes	296	309	325	337	348	368	392	337	19	3,116
Unknown	304	313	332	343	353	385	424	344	22	1,013
Special Education Program Participation										
Students Receiving Services	279	301	316	326	337	357	380	327	18	551
Students Not Receiving Services	301	311	328	339	352	372	409	341	20	4,297

¹Mean scale scores are reported at each percentile.

²SD — Standard Deviation.

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

Appendix 8.B: Frequency Distributions and Demographic Summaries—October 2013

Table 8.B.1: Frequency Distributions, ELA—October 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	158	0	158	99
440–449	138	0	296	99
430–439	100	0	396	99
420–429	380	1	776	98
410–419	294	1	1,070	97
400–409	499	1	1,569	96
390–399	613	2	2,182	94
380–389	977	3	3,159	91
370–379	1,660	5	4,819	86
360–369	3,448	10	8,267	76
350–359 ¹	4,871	14	13,138	63
340–349	5,460	16	18,598	47
330–339	4,915	14	23,513	33
320–329	3,675	10	27,188	23
310–319	3,009	9	30,197	14
300–309	2,259	6	32,456	8
290–299	1,671	5	34,127	3
280–289	514	1	34,641	1
270–279	455	1	35,096	0

¹Passing Score = 350

Table 8.B.2: Frequency Distributions, Mathematics—October 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	258	1	258	99
440–449	203	1	461	99
430–439	116	0	577	98
420–429	346	1	923	97
410–419	244	1	1,167	96
400–409	368	1	1,535	95
390–399	553	2	2,088	93
380–389	879	3	2,967	91
370–379	1,469	5	4,436	86
360–369	2,551	8	6,987	78
350–359 ¹	5,167	16	12,154	62
340–349	5,335	17	17,489	45
330–339	6,291	20	23,780	26
320–329	4,059	13	27,839	13
310–319	2,429	8	30,268	6
300–309	1,411	4	31,679	1
290–299	216	1	31,895	1
280–289	75	0	31,970	0
270–279	87	0	32,057	0

¹Passing Score = 350

Table 8.B.3: Frequency Distributions, ELA for ESEA—October 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	158	0	158	99
440–449	138	0	296	99
430–439	100	0	396	99
420–429	380	1	776	98
410–419	294	1	1,070	97
403–409 ¹	307	1	1,377	96
390–402	805	2	2,182	94
380–389 ²	977	3	3,159	91
370–379	1,660	5	4,819	86
360–369	3,448	10	8,267	76
350–359	4,871	14	13,138	63
340–349	5,460	16	18,598	47
330–339	4,915	14	23,513	33
320–329	3,675	10	27,188	23
310–319	3,009	9	30,197	14
300–309	2,259	6	32,456	8
290–299	1,671	5	34,127	3
280–289	514	1	34,641	1
270–279	455	1	35,096	0

¹Advanced-Level Cut = 403²Proficient-Level Cut = 380**Table 8.B.4: Frequency Distributions, Mathematics for ESEA—October 2013**

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	258	1	258	99
440–449	203	1	461	99
430–439	116	0	577	98
422–429 ¹	223	1	800	98
410–421	367	1	1,167	96
400–409	368	1	1,535	95
390–399	553	2	2,088	93
380–389 ²	879	3	2,967	91
370–379	1,469	5	4,436	86
360–369	2,551	8	6,987	78
350–359	5,167	16	12,154	62
340–349	5,335	17	17,489	45
330–339	6,291	20	23,780	26
320–329	4,059	13	27,839	13
310–319	2,429	8	30,268	6
300–309	1,411	4	31,679	1
290–299	216	1	31,895	1
280–289	75	0	31,970	0
270–279	87	0	32,057	0

¹Advanced-Level Cut = 422²Proficient-Level Cut = 380

Table 8.B.5: Demographic Summary for All Examinees, ELA—October 2013

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ² Avg. Percent Correct			Writing ² Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	35,096	13,138	37	21,958	63	342	56	56	59	46	56	2.1
Grade												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	11,719	4,997	43	6,722	57	345	58	57	61	48	58	2.1
Twelfth	21,814	7,478	34	14,336	66	340	55	54	58	45	55	2.0
Adult Education	1,563	663	42	900	58	348	62	60	63	51	59	2.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	20,241	7,253	36	12,988	64	340	56	54	58	46	55	2.0
Female	14,804	5,868	40	8,936	60	345	56	57	61	48	58	2.1
Unknown	51	17	33	34	67	343	57	57	58	47	56	2.0
Race/Ethnicity												
American Indian or Alaska Native	274	107	39	167	61	340	59	55	59	46	53	2.0
Asian	2,675	991	37	1,684	63	343	55	56	57	47	62	2.1
Pacific Islander	228	81	36	147	64	343	55	56	60	45	57	2.2
Filipino	531	218	41	313	59	347	59	57	61	50	61	2.2
Hispanic or Latino	22,014	7,575	34	14,439	66	339	54	54	58	45	55	2.0
African American	3,810	1,338	35	2,472	65	339	57	54	59	44	53	2.0
White (not of Hispanic origin)	4,575	2,345	51	2,230	49	354	65	62	65	53	62	2.2
Two or More Races	989	483	49	506	51	352	62	61	64	52	61	2.2
Language Fluency												
English-Only Students	14,208	6,233	44	7,975	56	347	60	58	62	49	57	2.1
Initially Fluent English Proficient (IFEP)	895	491	55	404	45	356	63	63	66	54	64	2.3
Reclassified Fluent English Proficient (RFEP)	2,349	1,394	59	955	41	353	62	63	66	54	65	2.2
English-Learner Students	15,726	4,144	26	11,582	74	334	51	51	55	42	53	2.0
Unknown	1,918	876	46	1,042	54	349	62	61	63	51	59	2.1
Economically Disadvantaged												
No	6,933	3,469	50	3,464	50	353	62	61	64	52	62	2.2
Yes	24,193	7,924	33	16,269	67	338	54	53	57	44	54	2.0
Unknown	3,970	1,745	44	2,225	56	348	60	59	62	50	59	2.1
Special Education Program Participation												
Students Receiving Services	7,901	1,344	17	6,557	83	325	48	44	50	37	45	1.9
Students Not Receiving Services	27,195	11,794	43	15,401	57	347	59	59	62	49	60	2.1

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

²RW — 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 2013

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Strands for Mathematics ²				
							Average Percent Correct				
							PS	NS	AF	MG	A1
Total Examinees	32,057	12,154	38	19,903	62	346	55	51	50	44	38
Grade											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	11,092	4,684	42	6,408	58	348	56	53	52	44	40
Twelfth	19,541	6,925	35	12,616	65	345	54	50	49	43	38
Adult Education	1,424	545	38	879	62	346	58	50	50	47	34
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	16,192	6,238	39	9,954	61	346	55	52	49	44	38
Female	15,807	5,894	37	9,913	63	346	55	50	51	43	39
Unknown	58	22	38	36	62	343	54	50	48	42	37
Race/Ethnicity											
American Indian or Alaska Native	273	101	37	172	63	343	55	51	49	42	35
Asian	1,157	680	59	477	41	370	60	64	64	58	56
Pacific Islander	200	76	38	124	62	346	53	53	53	43	40
Filipino	439	201	46	238	54	352	56	55	55	47	44
Hispanic or Latino	20,269	6,892	34	13,377	66	342	53	49	48	42	36
African American	4,165	1,378	33	2,787	67	341	52	49	48	40	37
White (not of Hispanic origin)	4,553	2,327	51	2,226	49	356	62	58	56	50	44
Two or More Races	1,001	499	50	502	50	355	60	56	55	50	43
Language Fluency											
English-Only Students	15,347	6,287	41	9,060	59	348	57	53	51	44	39
Initially Fluent English Proficient (IFEP)	1,014	521	51	493	49	357	61	58	56	50	44
Reclassified Fluent English Proficient (RFEP)	2,913	1,481	51	1,432	49	351	60	55	54	47	39
English-Learner Students	10,937	3,052	28	7,885	72	340	49	47	47	40	36
Unknown	1,846	813	44	1,033	56	350	58	53	53	49	38
Economically Disadvantaged											
No	6,888	3,518	51	3,370	49	356	61	57	56	50	44
Yes	21,389	7,023	33	14,366	67	341	52	49	48	41	36
Unknown	3,780	1,613	43	2,167	57	351	57	54	53	48	40
Special Education Program Participation											
Students Receiving Services	6,521	1,009	15	5,512	85	330	43	42	39	33	32
Students Not Receiving Services	25,536	11,145	44	14,391	56	350	57	54	53	46	40

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

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

Table 8.B.7: ESEA Demographic Summary for All Examinees, ELA—October 2013

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		35,096	31,937	91	1,782	5	1,377	4	3,159	9
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	11,719	10,479	89	730	6	510	4	1,240	11
	Twelfth	21,814	20,091	92	929	4	794	4	1,723	8
	Adult Education	1,563	1,367	87	123	8	73	5	196	13
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	20,241	18,648	92	970	5	623	3	1,593	8
	Female	14,804	13,244	89	810	5	750	5	1,560	11
	Unknown	51	45	88	2	4	4	8	6	12
Race/Ethnicity	American Indian or Alaskan Native	274	251	92	15	5	8	3	23	8
	Asian	2,675	2,445	91	110	4	120	4	230	9
	Pacific Islander	228	209	92	14	6	5	2	19	8
	Filipino	531	461	87	40	8	30	6	70	13
	Hispanic or Latino	22,014	20,743	94	860	4	411	2	1,271	6
	African American	3,810	3,515	92	192	5	103	3	295	8
	White (not of Hispanic origin)	4,575	3,528	77	441	10	606	13	1,047	23
	Two or More Races	989	785	79	110	11	94	10	204	21
Language Fluency	English-Only Students	14,208	12,135	85	1,068	8	1,005	7	2,073	15
	Initially Fluent English Proficient (IFEP)	895	714	80	82	9	99	11	181	20
	Reclassified Fluent English Proficient (RFEP)	2,349	2,083	89	196	8	70	3	266	11
	English-Learner Students	15,726	15,380	98	269	2	77	0	346	2
	Unknown	1,918	1,625	85	167	9	126	7	293	15
Economically Disadvantaged	No	6,933	5,602	81	609	9	722	10	1,331	19
	Yes	24,193	22,981	95	855	4	357	1	1,212	5
	Unknown	3,970	3,354	84	318	8	298	8	616	16
Special Education Program Participation	Receiving Services	7,901	7,789	99	94	1	18	0	112	1
	Not Receiving Services	27,195	24,148	89	1,688	6	1,359	5	3,047	11

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

Table 8.B.8: ESEA Demographic Summary for All Examinees, Mathematics—October 2013

Subgroup	Group	N Tested ¹	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		32,057	29,090	91	2,167	7	800	2	2,967	9
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	11,092	9,930	90	880	8	282	3	1,162	10
	Twelfth	19,541	17,832	91	1,200	6	509	3	1,709	9
	Adult Education	1,424	1,328	93	87	6	9	1	96	7
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	16,192	14,611	90	1,153	7	428	3	1,581	10
	Female	15,807	14,426	91	1,010	6	371	2	1,381	9
	Unknown	58	53	91	4	7	1	2	5	9
Race/Ethnicity	American Indian or Alaskan Native	273	256	94	15	5	2	1	17	6
	Asian	1,157	757	65	186	16	214	18	400	35
	Pacific Islander	200	180	90	18	9	2	1	20	10
	Filipino	439	370	84	54	12	15	3	69	16
	Hispanic or Latino	20,269	19,197	95	904	4	168	1	1,072	5
	African American	4,165	3,926	94	207	5	32	1	239	6
	White (not of Hispanic origin)	4,553	3,594	79	663	15	296	7	959	21
	Two or More Races	1,001	810	81	120	12	71	7	191	19
Language Fluency	English-Only Students	15,347	13,569	88	1,287	8	491	3	1,778	12
	Initially Fluent English Proficient (IFEP)	1,014	832	82	104	10	78	8	182	18
	Reclassified Fluent English Proficient (RFEP)	2,913	2,690	92	199	7	24	1	223	8
	English-Learner Students	10,937	10,400	95	387	4	150	1	537	5
	Unknown	1,846	1,599	87	190	10	57	3	247	13
Economically Disadvantaged	No	6,888	5,550	81	886	13	452	7	1,338	19
	Yes	21,389	20,335	95	887	4	167	1	1,054	5
	Unknown	3,780	3,205	85	394	10	181	5	575	15
Special Education Program Participation	Receiving Services	6,521	6,428	99	87	1	6	0	93	1
	Not Receiving Services	25,536	22,662	89	2,080	8	794	3	2,874	11

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

Table 8.B.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—October 2013

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	277	296	323	340	358	398	435	342	30	35,096
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	277	296	325	344	363	398	435	345	31	11,719
Twelfth	275	294	321	340	356	395	435	340	30	21,814
Adult Education	290	307	330	344	363	401	429	348	28	1,563
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	292	319	340	356	392	429	340	30	20,241
Female	283	301	327	342	360	405	440	345	30	14,804
Unknown	275	288	325	342	354	416	450	343	35	51
Race/Ethnicity										
American Indian or Alaska Native	275	292	319	340	358	392	416	340	30	274
Asian	281	299	325	342	358	398	447	343	30	2,675
Pacific Islander	288	303	327	342	356	392	420	343	26	228
Filipino	286	303	329	344	363	405	435	347	31	531
Hispanic or Latino	279	296	321	340	354	384	416	339	27	22,014
African American	275	292	319	340	356	389	420	339	29	3,810
White (not of Hispanic origin)	275	296	329	350	376	429	450	354	39	4,575
Two or More Races	277	294	327	348	374	420	450	352	37	989
Language Fluency										
English-Only Students	275	294	325	344	365	412	447	347	35	14,208
Initially Fluent English Proficient (IFEP)	288	305	332	352	374	425	450	356	34	895
Reclassified Fluent English Proficient (RFEP)	288	309	340	354	367	395	425	353	25	2,349
English-Learner Students	279	294	319	336	350	369	392	334	24	15,726
Unknown	281	301	329	346	365	408	435	349	31	1,918
Economically Disadvantaged										
No	279	299	329	350	372	425	450	353	36	6,933
Yes	277	296	321	338	354	381	412	338	26	24,193
Unknown	275	296	325	344	365	412	450	348	34	3,970
Special Education Program Participation										
Students Receiving Services	275	286	305	325	342	365	384	325	25	7,901
Students Not Receiving Services	283	301	329	346	363	401	440	347	30	27,195

¹Mean scale scores are reported at each percentile.²SD — Standard Deviation.³Results for groups with fewer than 11 students are not reported.

Table 8.B.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—October 2013

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	297	309	328	343	357	399	449	346	27	32,057
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	297	309	330	345	361	402	449	348	28	11,092
Twelfth	297	309	328	341	355	399	449	345	27	19,541
Adult Education	302	316	332	345	355	384	412	346	21	1,424
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	294	307	326	343	359	402	449	346	28	16,192
Female	300	312	330	343	357	397	442	346	26	15,807
Unknown	297	302	324	341	355	402	450	343	28	58
Race/Ethnicity										
American Indian or Alaska Native	294	309	328	341	357	382	416	343	24	273
Asian	297	316	337	355	409	450	450	370	43	1,157
Pacific Islander	305	312	330	343	358	394	431	346	25	200
Filipino	305	312	332	346	364	412	449	352	30	439
Hispanic or Latino	297	309	328	341	353	380	420	342	23	20,269
African American	291	307	326	339	353	382	416	341	24	4,165
White (not of Hispanic origin)	297	312	334	350	372	429	450	356	35	4,553
Two or More Races	294	312	332	348	368	435	450	355	35	1,001
Language Fluency										
English-Only Students	294	309	328	345	361	409	449	348	29	15,347
Initially Fluent English Proficient (IFEP)	302	314	334	350	368	435	450	357	34	1,014
Reclassified Fluent English Proficient (RFEP)	302	320	337	350	361	384	416	351	21	2,913
English-Learner Students	297	309	324	337	350	378	429	340	24	10,937
Unknown	302	314	332	346	362	409	449	350	28	1,846
Economically Disadvantaged										
No	300	312	334	350	370	429	450	356	34	6,888
Yes	297	309	326	341	353	378	416	341	23	21,389
Unknown	294	312	330	345	362	420	450	351	32	3,780
Special Education Program Participation										
Students Receiving Services	284	302	316	328	343	362	384	330	20	6,521
Students Not Receiving Services	302	314	332	346	361	405	450	350	28	25,536

¹Mean scale scores are reported at each percentile.

²SD — Standard Deviation.

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

Appendix 8.C: Frequency Distributions and Demographic Summaries—November 2013

Table 8.C.1: Frequency Distributions, ELA—November 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	350	0	350	99
440–449	450	0	800	99
430–439	328	0	1,128	99
420–429	793	1	1,921	98
410–419	1,467	2	3,388	96
400–409	1,191	1	4,579	95
390–399	2,808	3	7,387	92
380–389	2,755	3	10,142	89
370–379	5,368	6	15,510	83
360–369	10,315	11	25,825	73
350–359 ¹	13,546	14	39,371	58
340–349	13,375	14	52,746	44
330–339	11,421	12	64,167	32
320–329	8,979	10	73,146	22
310–319	7,069	8	80,215	15
300–309	5,979	6	86,194	8
290–299	4,258	5	90,452	4
280–289	2,109	2	92,561	1
270–279	1,380	1	93,941	0

¹Passing Score = 350

Table 8.C.2: Frequency Distributions, Mathematics—November 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	750	1	750	99
440–449	322	0	1,072	99
430–439	676	1	1,748	98
420–429	747	1	2,495	97
410–419	789	1	3,284	96
400–409	1,679	2	4,963	94
390–399	1,364	2	6,327	93
380–389	2,852	3	9,179	89
370–379	3,379	4	12,558	86
360–369	8,472	10	21,030	76
350–359 ¹	11,091	13	32,121	63
340–349	16,130	19	48,251	44
330–339	15,558	18	63,809	27
320–329	10,822	12	74,631	14
310–319	7,871	9	82,502	5
300–309	3,173	4	85,675	1
290–299	768	1	86,443	1
280–289	218	0	86,661	0
270–279	215	0	86,876	0

¹Passing Score = 350

Table 8.C.3: Frequency Distributions, ELA for ESEA—November 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	350	0	350	99
440–449	450	0	800	99
430–439	328	0	1,128	99
420–429	793	1	1,921	98
410–419	1,467	2	3,388	96
403–409 ¹	1,191	1	4,579	95
390–402	2,808	3	7,387	92
380–389 ²	2,755	3	10,142	89
370–379	5,368	6	15,510	83
360–369	10,315	11	25,825	73
350–359	13,546	14	39,371	58
340–349	13,375	14	52,746	44
330–339	11,421	12	64,167	32
320–329	8,979	10	73,146	22
310–319	7,069	8	80,215	15
300–309	5,979	6	86,194	8
290–299	4,258	5	90,452	4
280–289	2,109	2	92,561	1
270–279	1,380	1	93,941	0

¹Advanced-Level Cut = 403²Proficient-Level Cut = 380**Table 8.C.4: Frequency Distributions, Mathematics for ESEA—November 2013**

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	750	1	750	99
440–449	322	0	1,072	99
430–439	676	1	1,748	98
422–429 ¹	747	1	2,495	97
410–421	789	1	3,284	96
400–409	1,679	2	4,963	94
390–399	1,364	2	6,327	93
380–389 ²	2,852	3	9,179	89
370–379	3,379	4	12,558	86
360–369	8,472	10	21,030	76
350–359	11,091	13	32,121	63
340–349	16,130	19	48,251	44
330–339	15,558	18	63,809	27
320–329	10,822	12	74,631	14
310–319	7,871	9	82,502	5
300–309	3,173	4	85,675	1
290–299	768	1	86,443	1
280–289	218	0	86,661	0
270–279	215	0	86,876	0

¹Advanced-Level Cut = 422²Proficient-Level Cut = 380

Table 8.C.5: Demographic Summary for All Examinees, ELA—November 2013

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ² Avg. Percent Correct			Writing ² Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	93,941	39,371	42	54,570	58	344	59	58	61	49	57	2.1
Grade												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	59,161	27,228	46	31,933	54	346	61	59	63	50	59	2.1
Twelfth	31,551	10,751	34	20,800	66	338	56	55	58	47	54	2.1
Adult Education	3,229	1,392	43	1,837	57	347	64	61	63	54	57	2.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	54,707	21,102	39	33,605	61	340	60	56	60	48	55	2.1
Female	39,143	18,238	47	20,905	53	348	59	60	64	52	61	2.2
Unknown	91	31	34	60	66	339	59	55	60	48	53	2.0
Race/Ethnicity												
American Indian or Alaska Native	673	279	41	394	59	342	62	57	62	46	55	2.1
Asian	5,249	2,326	44	2,923	56	347	59	60	60	56	61	2.1
Pacific Islander	637	302	47	335	53	348	60	60	63	52	61	2.2
Filipino	1,600	805	50	795	50	352	62	62	63	58	63	2.3
Hispanic or Latino	61,507	23,937	39	37,570	61	340	57	57	60	47	56	2.1
African American	8,623	3,221	37	5,402	63	339	56	55	60	46	54	2.1
White (not of Hispanic origin)	13,530	7,442	55	6,088	45	357	69	63	68	55	63	2.3
Two or More Races	2,122	1,059	50	1,063	50	353	65	62	66	54	61	2.2
Language Fluency												
English-Only Students	38,207	18,286	48	19,921	52	349	63	60	65	51	59	2.2
Initially Fluent English Proficient (IFEP)	3,213	1,933	60	1,280	40	359	66	66	70	56	66	2.3
Reclassified Fluent English Proficient (RFEP)	8,672	5,845	67	2,827	33	357	65	67	70	57	68	2.3
English-Learner Students	39,940	11,508	29	28,432	71	334	53	53	55	45	52	2.0
Unknown	3,909	1,799	46	2,110	54	349	64	61	64	54	58	2.2
Economically Disadvantaged												
No	19,983	10,982	55	9,001	45	356	67	63	67	55	64	2.3
Yes	65,338	24,482	37	40,856	63	339	57	56	59	47	55	2.1
Unknown	8,620	3,907	45	4,713	55	347	63	60	63	52	58	2.1
Special Education Program Participation												
Students Receiving Services	22,519	4,315	19	18,204	81	325	51	47	51	39	46	1.9
Students Not Receiving Services	71,422	35,056	49	36,366	51	349	62	61	65	53	61	2.2

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

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

Table 8.C.6: Demographic Summary for All Examinees, Mathematics—November 2013

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Strands for Mathematics ²				
							Average Percent Correct				
							PS	NS	AF	MG	A1
Total Examinees	86,876	32,121	37	54,755	63	346	56	53	51	46	40
Grade											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	55,036	22,063	40	32,973	60	348	57	54	53	46	42
Twelfth	28,885	8,954	31	19,931	69	343	55	51	49	44	38
Adult Education	2,955	1,104	37	1,851	63	347	59	55	52	49	36
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	44,490	16,184	36	28,306	64	345	55	54	50	45	40
Female	42,289	15,902	38	26,387	62	347	57	52	52	46	41
Unknown	97	35	36	62	64	345	58	55	49	45	38
Race/Ethnicity											
American Indian or Alaska Native	618	209	34	409	66	344	56	53	50	44	38
Asian	2,872	1,729	60	1,143	40	372	64	64	66	62	58
Pacific Islander	539	239	44	300	56	350	57	55	54	49	45
Filipino	1,313	664	51	649	49	356	59	57	58	54	49
Hispanic or Latino	56,925	18,748	33	38,177	67	343	55	51	50	43	38
African American	9,375	2,772	30	6,603	70	341	53	50	47	42	37
White (not of Hispanic origin)	13,148	6,787	52	6,361	48	358	63	60	58	53	46
Two or More Races	2,086	973	47	1,113	53	355	61	58	56	50	45
Language Fluency											
English-Only Students	40,145	16,100	40	24,045	60	348	58	55	52	46	41
Initially Fluent English Proficient (IFEP)	3,609	1,840	51	1,769	49	358	63	59	58	53	47
Reclassified Fluent English Proficient (RFEP)	10,091	4,996	50	5,095	50	352	62	56	56	49	43
English-Learner Students	29,324	7,608	26	21,716	74	339	50	48	47	41	38
Unknown	3,707	1,577	43	2,130	57	352	60	57	55	51	40
Economically Disadvantaged											
No	19,922	9,975	50	9,947	50	357	62	59	58	52	46
Yes	58,782	18,804	32	39,978	68	342	54	51	49	43	38
Unknown	8,172	3,342	41	4,830	59	351	59	56	54	49	41
Special Education Program Participation											
Students Receiving Services	18,130	2,593	14	15,537	86	329	44	43	40	35	32
Students Not Receiving Services	68,746	29,528	43	39,218	57	351	59	55	55	48	43

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

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

Table 8.C.7: ESEA Demographic Summary for All Examinees, ELA—November 2013

Subgroup	Group	N Tested ¹	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		93,941	83,799	89	5,563	6	4,579	5	10,142	11
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	59,161	52,080	88	3,990	7	3,091	5	7,081	12
	Twelfth	31,551	28,889	92	1,336	4	1,326	4	2,662	8
	Adult Education	3,229	2,830	88	237	7	162	5	399	12
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	54,707	49,717	91	2,929	5	2,061	4	4,990	9
	Female	39,143	33,998	87	2,629	7	2,516	6	5,145	13
	Unknown	91	84	92	5	5	2	2	7	8
Race/Ethnicity	American Indian or Alaskan Native	673	598	89	47	7	28	4	75	11
	Asian	5,249	4,549	87	304	6	396	8	700	13
	Pacific Islander	637	556	87	57	9	24	4	81	13
	Filipino	1,600	1,327	83	132	8	141	9	273	17
	Hispanic or Latino	61,507	57,267	93	2,897	5	1,343	2	4,240	7
	African American	8,623	7,840	91	467	5	316	4	783	9
	White (not of Hispanic origin)	13,530	10,009	74	1,470	11	2,051	15	3,521	26
	Two or More Races	2,122	1,653	78	189	9	280	13	469	22
Language Fluency	English-Only Students	38,207	31,705	83	3,156	8	3,346	9	6,502	17
	Initially Fluent English Proficient (IFEP)	3,213	2,419	75	396	12	398	12	794	25
	Reclassified Fluent English Proficient (RFEP)	8,672	7,351	85	938	11	383	4	1,321	15
	English-Learner Students	39,940	39,036	98	736	2	168	0	904	2
	Unknown	3,909	3,288	84	337	9	284	7	621	16
Economically Disadvantaged	No	19,983	15,371	77	2,019	10	2,593	13	4,612	23
	Yes	65,338	61,132	94	2,874	4	1,332	2	4,206	6
	Unknown	8,620	7,296	85	670	8	654	8	1,324	15
Special Education Program Participation	Receiving Services	22,519	22,095	98	314	1	110	0	424	2
	Not Receiving Services	71,422	61,704	86	5,249	7	4,469	6	9,718	14

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

Table 8.C.8: ESEA Demographic Summary for All Examinees, Mathematics—November 2013

Subgroup	Group	N Tested ¹	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		86,876	77,697	89	6,684	8	2,495	3	9,179	11
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	55,036	48,683	88	4,704	9	1,649	3	6,353	12
	Twelfth	28,885	26,302	91	1,773	6	810	3	2,583	9
	Adult Education	2,955	2,712	92	207	7	36	1	243	8
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	44,490	39,560	89	3,567	8	1,363	3	4,930	11
	Female	42,289	38,052	90	3,105	7	1,132	3	4,237	10
	Unknown	97	85	88	12	12			12	12
Race/Ethnicity	American Indian or Alaskan Native	618	562	91	45	7	11	2	56	9
	Asian	2,872	1,785	62	508	18	579	20	1,087	38
	Pacific Islander	539	464	86	60	11	15	3	75	14
	Filipino	1,313	1,070	81	168	13	75	6	243	19
	Hispanic or Latino	56,925	53,394	94	2,990	5	541	1	3,531	6
	African American	9,375	8,733	93	534	6	108	1	642	7
	White (not of Hispanic origin)	13,148	10,029	76	2,086	16	1,033	8	3,119	24
	Two or More Races	2,086	1,660	80	293	14	133	6	426	20
Language Fluency	English-Only Students	40,145	34,722	86	3,893	10	1,530	4	5,423	14
	Initially Fluent English Proficient (IFEP)	3,609	2,830	78	464	13	315	9	779	22
	Reclassified Fluent English Proficient (RFEP)	10,091	9,110	90	825	8	156	2	981	10
	English-Learner Students	29,324	27,860	95	1,122	4	342	1	1,464	5
	Unknown	3,707	3,175	86	380	10	152	4	532	14
Economically Disadvantaged	No	19,922	15,664	79	2,791	14	1,467	7	4,258	21
	Yes	58,782	55,073	94	3,079	5	630	1	3,709	6
	Unknown	8,172	6,960	85	814	10	398	5	1,212	15
Special Education Program Participation	Receiving Services	18,130	17,834	98	258	1	38	0	296	2
	Not Receiving Services	68,746	59,863	87	6,426	9	2,457	4	8,883	13

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

Table 8.C.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—November 2013

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	276	293	322	344	360	399	434	344	32	93,941
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	276	295	326	346	364	403	434	346	32	59,161
Twelfth	275	291	316	338	356	396	434	338	31	31,551
Adult Education	287	305	328	344	362	403	429	347	28	3,229
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	291	318	340	358	393	429	340	31	54,707
Female	281	299	328	346	364	406	441	348	32	39,143
Unknown	275	281	314	342	360	399	424	339	32	91
Race/Ethnicity										
American Indian or Alaska Native	275	289	318	344	362	393	424	342	32	673
Asian	279	297	326	346	362	414	448	347	33	5,249
Pacific Islander	281	299	330	348	364	396	419	348	29	637
Filipino	286	303	332	350	369	414	448	352	32	1,600
Hispanic or Latino	276	293	322	342	358	387	414	340	28	61,507
African American	275	289	316	340	358	393	424	339	31	8,623
White (not of Hispanic origin)	276	295	328	354	381	429	450	357	40	13,530
Two or More Races	275	293	326	348	376	424	450	353	39	2,122
Language Fluency										
English-Only Students	275	293	324	348	369	414	448	349	36	38,207
Initially Fluent English Proficient (IFEP)	283	301	336	356	379	424	450	359	35	3,213
Reclassified Fluent English Proficient (RFEP)	291	313	344	358	371	399	424	357	25	8,672
English-Learner Students	275	291	316	336	352	371	390	334	25	39,940
Unknown	279	299	328	346	367	410	434	349	32	3,909
Economically Disadvantaged										
No	279	297	330	354	376	424	450	356	37	19,983
Yes	275	293	320	340	358	384	414	339	28	65,338
Unknown	275	295	324	346	364	410	441	347	34	8,620
Special Education Program Participation										
Students Receiving Services	275	285	305	324	344	367	390	325	26	22,519
Students Not Receiving Services	281	299	330	348	364	406	441	349	31	71,422

¹Mean scale scores are reported at each percentile.²SD — Standard Deviation.³Results for groups with fewer than 11 students are not reported.

Table 8.C.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—November 2013

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	298	307	328	342	358	403	447	346	28	86,876
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	298	310	330	344	360	403	447	348	28	55,036
Twelfth	295	307	324	339	355	400	447	343	28	28,885
Adult Education	305	316	333	344	356	392	427	347	23	2,955
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	295	307	326	342	358	403	447	345	30	44,490
Female	300	312	330	344	358	400	447	347	27	42,289
Unknown	295	303	324	342	364	394	413	345	27	97
Race/Ethnicity										
American Indian or Alaska Native	295	307	326	341	356	397	447	344	27	618
Asian	303	316	337	360	409	450	450	372	44	2,872
Pacific Islander	303	310	332	346	364	403	439	350	28	539
Filipino	303	316	335	351	371	422	450	356	31	1,313
Hispanic or Latino	298	307	326	341	355	382	417	343	24	56,925
African American	292	305	324	339	353	387	422	341	25	9,375
White (not of Hispanic origin)	298	310	333	351	376	432	450	358	36	13,148
Two or More Races	298	310	332	348	371	427	450	355	34	2,086
Language Fluency										
English-Only Students	295	307	328	344	362	413	450	348	31	40,145
Initially Fluent English Proficient (IFEP)	300	312	335	351	373	439	450	358	35	3,609
Reclassified Fluent English Proficient (RFEP)	305	318	337	349	364	394	432	352	23	10,091
English-Learner Students	295	307	324	337	351	378	422	339	24	29,324
Unknown	303	314	333	346	364	413	450	352	29	3,707
Economically Disadvantaged										
No	300	312	333	351	371	432	450	357	35	19,922
Yes	295	307	326	341	355	384	422	342	24	58,782
Unknown	298	310	330	344	364	417	450	351	31	8,172
Special Education Program Participation										
Students Receiving Services	286	300	316	328	342	364	387	329	20	18,130
Students Not Receiving Services	300	314	333	346	362	409	450	351	28	68,746

¹Mean scale scores are reported at each percentile.²SD — Standard Deviation.³Results for groups with fewer than 11 students are not reported.

Appendix 8.D: Frequency Distributions and Demographic Summaries—December 2013

Table 8.D.1: Frequency Distributions, ELA—December 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	4	0	4	99
440–449	1	0	5	99
430–439	3	0	8	99
420–429	9	1	17	99
410–419	17	1	34	98
400–409	10	1	44	97
390–399	30	2	74	95
380–389	30	2	104	93
370–379	88	6	192	88
360–369	100	6	292	81
350–359 ¹	199	13	491	69
340–349	302	19	793	49
330–339	273	17	1,066	32
320–329	219	14	1,285	18
310–319	145	9	1,430	9
300–309	69	4	1,499	5
290–299	47	3	1,546	2
280–289	17	1	1,563	0
270–279	7	0	1,570	0

¹Passing Score = 350

Table 8.D.2: Frequency Distributions, Mathematics—December 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	3	0	3	99
440–449	0	0	3	99
430–439	3	0	6	99
420–429	5	0	11	99
410–419	9	1	20	99
400–409	16	1	36	97
390–399	21	2	57	96
380–389	20	1	77	94
370–379	48	4	125	91
360–369	97	7	222	84
350–359 ¹	256	19	478	65
340–349	336	25	814	40
330–339	242	18	1,056	22
320–329	151	11	1,207	11
310–319	109	8	1,316	3
300–309	31	2	1,347	1
290–299	6	0	1,353	0
280–289	3	0	1,356	0
270–279	2	0	1,358	0

¹Passing Score = 350

Table 8.D.3: Frequency Distributions, ELA for ESEA—December 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	4	0	4	99
440–449	1	0	5	99
430–439	3	0	8	99
420–429	9	1	17	99
410–419	17	1	34	98
403–409 ¹	10	1	44	97
390–402	30	2	74	95
380–389 ²	30	2	104	93
370–379	88	6	192	88
360–369	100	6	292	81
350–359	199	13	491	69
340–349	302	19	793	49
330–339	273	17	1,066	32
320–329	219	14	1,285	18
310–319	145	9	1,430	9
300–309	69	4	1,499	5
290–299	47	3	1,546	2
280–289	17	1	1,563	0
270–279	7	0	1,570	0

¹Advanced-Level Cut = 403

²Proficient-Level Cut = 380

Table 8.D.4: Frequency Distributions, Mathematics for ESEA—December 2013

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	3	0	3	99
440–449	0	0	3	99
430–439	3	0	6	99
422–429 ¹	2	0	8	99
410–421	12	1	20	99
400–409	16	1	36	97
390–399	21	2	57	96
380–389 ²	20	1	77	94
370–379	48	4	125	91
360–369	97	7	222	84
350–359	256	19	478	65
340–349	336	25	814	40
330–339	242	18	1,056	22
320–329	151	11	1,207	11
310–319	109	8	1,316	3
300–309	31	2	1,347	1
290–299	6	0	1,353	0
280–289	3	0	1,356	0
270–279	2	0	1,358	0

¹Advanced-Level Cut = 422

²Proficient-Level Cut = 380

Table 8.D.5: Demographic Summary for All Examinees, ELA—December 2013

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ² Avg. Percent Correct			Writing ² Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	1,570	491	31	1,079	69	341	54	59	56	44	57	2.1
Grade												
Tenth	-	-	-	-	-	-	-	-	-	-	-	-
Eleventh	181	85	47	96	53	349	56	62	62	47	62	2.2
Twelfth	1,053	274	26	779	74	337	52	56	54	42	55	2.1
Adult Education	336	132	39	204	61	348	59	65	59	51	59	2.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-
Gender												
Male	782	230	29	552	71	339	54	58	55	43	56	2.1
Female	787	260	33	527	67	342	54	60	57	46	58	2.1
Unknown	1	-	-	-	-	-	-	-	-	-	-	-
Race/Ethnicity												
American Indian or Alaska Native	8	-	-	-	-	-	-	-	-	-	-	-
Asian	155	30	19	125	81	335	46	56	50	42	58	2.0
Pacific Islander	8	-	-	-	-	-	-	-	-	-	-	-
Filipino	26	8	31	18	69	342	57	59	52	45	65	2.2
Hispanic or Latino	1,043	316	30	727	70	340	54	58	56	45	55	2.1
African American	165	50	30	115	70	340	53	57	56	41	57	2.1
White (not of Hispanic origin)	96	50	52	46	48	356	60	66	63	50	63	2.4
Two or More Races	69	31	45	38	55	353	64	63	62	51	61	2.3
Language Fluency												
English-Only Students	417	176	42	241	58	348	58	61	61	46	61	2.2
Initially Fluent English Proficient (IFEP)	17	13	76	4	24	364	60	65	69	57	71	2.7
Reclassified Fluent English Proficient (RFEP)	63	36	57	27	43	349	57	64	61	49	64	2.2
English-Learner Students	801	155	19	646	81	333	50	55	52	41	53	2.0
Unknown	272	111	41	161	59	348	59	65	59	50	59	2.2
Economically Disadvantaged												
No	153	67	44	86	56	350	59	62	62	47	61	2.3
Yes	997	264	26	733	74	337	52	57	54	43	55	2.1
Unknown	420	160	38	260	62	346	58	63	58	48	58	2.2
Special Education Program Participation												
Students Receiving Services	222	44	20	178	80	328	46	49	50	38	49	2.0
Students Not Receiving Services	1,348	447	33	901	67	343	55	60	57	46	58	2.1

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

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

Table 8.D.6: Demographic Summary for All Examinees, Mathematics—December 2013

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Strands for Mathematics ²				
							Average Percent Correct				
							PS	NS	AF	MG	A1
Total Examinees	1,358	478	35	880	65	344	56	47	50	42	40
Grade											
Tenth	-	-	-	-	-	-	-	-	-	-	-
Eleventh	159	68	43	91	57	348	57	49	52	43	44
Twelfth	851	247	29	604	71	341	53	45	48	40	39
Adult Education	348	163	47	185	53	350	62	50	54	47	40
Unknown	-	-	-	-	-	-	-	-	-	-	-
Gender											
Male	572	184	32	388	68	343	54	47	49	42	38
Female	783	291	37	492	63	345	57	46	51	42	41
Unknown	3	-	-	-	-	-	-	-	-	-	-
Race/Ethnicity											
American Indian or Alaska Native	11	6	55	5	45	349	58	57	51	40	43
Asian	39	15	38	24	62	349	56	46	53	45	50
Pacific Islander	9	-	-	-	-	-	-	-	-	-	-
Filipino	19	6	32	13	68	343	48	44	51	43	41
Hispanic or Latino	870	300	34	570	66	343	55	46	49	42	39
African American	213	63	30	150	70	343	55	45	50	39	40
White (not of Hispanic origin)	123	52	42	71	58	350	59	51	52	46	42
Two or More Races	74	32	43	42	57	347	60	48	51	45	37
Language Fluency											
English-Only Students	490	172	35	318	65	345	56	47	50	42	40
Initially Fluent English Proficient (IFEP)	24	11	46	13	54	350	64	53	53	46	39
Reclassified Fluent English Proficient (RFEP)	102	39	38	63	62	347	58	49	52	43	41
English-Learner Students	433	113	26	320	74	339	50	43	47	39	39
Unknown	309	143	46	166	54	349	61	49	54	46	40
Economically Disadvantaged											
No	167	67	40	100	60	348	58	49	53	44	42
Yes	777	228	29	549	71	341	53	45	48	40	39
Unknown	414	183	44	231	56	349	60	49	53	46	40
Special Education Program Participation											
Students Receiving Services	192	36	19	156	81	332	44	41	41	34	34
Students Not Receiving Services	1,166	442	38	724	62	346	58	47	51	43	41

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

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

Table 8.D.7: ESEA Demographic Summary for All Examinees, ELA —December 2013

Subgroup	Group	N Tested ¹	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		1,570	1,466	93	60	4	44	3	104	7
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	181	166	92	9	5	6	3	15	8
	Twelfth	1,053	1,010	96	21	2	22	2	43	4
	Adult Education	336	290	86	30	9	16	5	46	14
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	782	734	94	25	3	23	3	48	6
	Female	787	732	93	35	4	20	3	55	7
	Unknown	1	-	-	-	-	-	-	-	-
Race/Ethnicity	American Indian or Alaskan Native	8	-	-	-	-	-	-	-	-
	Asian	155	150	97	2	1	3	2	5	3
	Pacific Islander	8	-	-	-	-	-	-	-	-
	Filipino	26	25	96	0	0	1	4	1	4
	Hispanic or Latino	1,043	993	95	35	3	15	1	50	5
	African American	165	154	93	8	5	3	2	11	7
	White (not of Hispanic origin)	96	74	77	8	8	14	15	22	23
	Two or More Races	69	54	78	7	10	8	12	15	22
Language Fluency	English-Only Students	417	363	87	28	7	26	6	54	13
	Initially Fluent English Proficient (IFEP)	17	14	82	1	6	2	12	3	18
	Reclassified Fluent English Proficient (RFEP)	63	61	97	2	3	0	0	2	3
	English-Learner Students	801	792	99	8	1	1	0	9	1
	Unknown	272	236	87	21	8	15	6	36	13
Economically Disadvantaged	No	153	135	88	5	3	13	8	18	12
	Yes	997	963	97	20	2	14	1	34	3
	Unknown	420	368	88	35	8	17	4	52	12
Special Education Program Participation	Receiving Services	222	217	98	5	2	0	0	5	2
	Not Receiving Services	1,348	1,249	93	55	4	44	3	99	7

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

Table 8.D.8: ESEA Demographic Summary for All Examinees, Mathematics—December 2013

Subgroup	Group	N Tested ¹	N Below Proficient	Percent Below Proficient	N Proficient	Percent Proficient	N Advanced	Percent Advanced	N Above Proficient	Percent Above Proficient
Total Examinees		1,358	1,281	94	69	5	8	1	77	6
Grade	Tenth	-	-	-	-	-	-	-	-	-
	Eleventh	159	145	91	13	8	1	1	14	9
	Twelfth	851	824	97	24	3	3	0	27	3
	Adult Education	348	312	90	32	9	4	1	36	10
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	572	539	94	30	5	3	1	33	6
	Female	783	739	94	39	5	5	1	44	6
	Unknown	3	-	-	-	-	-	-	-	-
Race/Ethnicity	American Indian or Alaskan Native	11	10	91	1	9	0	0	1	9
	Asian	39	34	87	4	10	1	3	5	13
	Pacific Islander	9	9	100						
	Filipino	19	17	89	2	11	0	0	2	11
	Hispanic or Latino	870	825	95	43	5	2	0	45	5
	African American	213	206	97	7	3			7	3
	White (not of Hispanic origin)	123	110	89	9	7	4	3	13	11
	Two or More Races	74	70	95	3	4	1	1	4	5
Language Fluency	English-Only Students	490	460	94	27	6	3	1	30	6
	Initially Fluent English Proficient (IFEP)	24	21	88	3	13	0	0	3	13
	Reclassified Fluent English Proficient (RFEP)	102	96	94	6	6	0	0	6	6
	English-Learner Students	433	422	97	10	2	1	0	11	3
	Unknown	309	282	91	23	7	4	1	27	9
Economically Disadvantaged	No	167	155	93	9	5	3	2	12	7
	Yes	777	748	96	29	4	0	0	29	4
	Unknown	414	378	91	31	7	5	1	36	9
Special Education Program Participation	Receiving Services	192	190	99	2	1	0	0	2	1
	Not Receiving Services	1,166	1,091	94	67	6	8	1	75	6

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

Table 8.D.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—December 2013

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	286	301	324	340	354	387	424	341	26	1,570
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	286	305	330	348	370	390	419	349	27	181
Twelfth	286	299	322	336	350	377	419	337	24	1,053
Adult Education	296	312	330	344	361	399	435	348	28	336
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	286	299	324	338	352	387	429	339	27	782
Female	291	305	326	340	354	387	424	342	25	787
Unknown	406	406	406	406	406	406	406	406		1
Race/Ethnicity										
American Indian or Alaska Native	332	332	336	349	364	379	379	351	18	8
Asian	294	301	322	334	346	372	410	335	21	155
Pacific Islander	305	305	319	332	344	354	354	331	17	8
Filipino	291	312	332	339	350	374	410	342	22	26
Hispanic or Latino	289	301	324	340	352	379	410	340	24	1,043
African American	275	291	326	342	357	385	414	340	27	165
White (not of Hispanic origin)	289	303	327	350	378	429	450	356	38	96
Two or More Races	289	312	330	346	377	419	450	353	34	69
Language Fluency										
English-Only Students	281	301	328	344	361	410	429	348	30	417
Initially Fluent English Proficient (IFEP)	324	324	350	359	370	424	424	364	27	17
Reclassified Fluent English Proficient (RFEP)	275	303	338	350	365	379	393	349	24	63
English-Learner Students	289	299	320	334	346	365	382	333	20	801
Unknown	291	308	330	344	362	403	449	348	29	272
Economically Disadvantaged										
No	286	303	332	344	363	419	429	350	31	153
Yes	286	299	322	338	350	377	410	337	24	997
Unknown	296	308	326	342	360	396	435	346	28	420
Special Education Program Participation										
Students Receiving Services	275	286	310	326	346	374	385	328	25	222
Students Not Receiving Services	294	305	326	340	354	390	424	343	26	1,348

¹Mean scale scores are reported at each percentile.²SD — Standard Deviation.³Results for groups with fewer than 11 students are not reported.

Table 8.D.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—December 2013

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	300	312	330	343	354	385	413	344	22	1,358
Grade										
Tenth	-	-	-	-	-	-	-	-	-	-
Eleventh	302	314	332	345	359	392	421	348	24	159
Twelfth	297	312	330	341	352	373	410	341	20	851
Adult Education	310	318	334	349	359	398	425	350	24	348
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	294	307	330	343	354	385	417	343	23	572
Female	305	314	332	343	356	385	413	345	21	783
Unknown	350	350	350	354	377	377	377	360	15	3
Race/Ethnicity										
American Indian or Alaska Native	314	314	323	350	367	406	406	349	28	11
Asian	305	312	330	343	363	421	450	349	31	39
Pacific Islander	310	310	334	340	359	367	367	343	18	9
Filipino	321	321	325	336	354	392	392	343	21	19
Hispanic or Latino	300	312	330	343	354	381	410	343	21	870
African American	297	314	332	341	352	375	403	343	19	213
White (not of Hispanic origin)	307	314	332	345	365	395	436	350	27	123
Two or More Races	300	310	334	348	354	381	450	347	23	74
Language Fluency										
English-Only Students	302	312	332	343	354	385	421	345	22	490
Initially Fluent English Proficient (IFEP)	318	323	338	349	363	388	388	350	20	24
Reclassified Fluent English Proficient (RFEP)	288	316	336	347	357	385	410	347	22	102
English-Learner Students	300	310	328	340	350	365	395	339	19	433
Unknown	310	318	334	349	359	395	425	349	23	309
Economically Disadvantaged										
No	305	314	332	345	357	388	450	348	25	167
Yes	300	310	330	340	352	377	403	341	19	777
Unknown	300	314	334	347	357	398	425	349	24	414
Special Education Program Participation										
Students Receiving Services	288	302	318	330	345	361	383	332	19	192
Students Not Receiving Services	305	314	332	345	356	388	417	346	22	1,166

¹Mean scale scores are reported at each percentile.²SD — Standard Deviation.³Results for groups with fewer than 11 students are not reported.

Appendix 8.E: Frequency Distributions and Demographic Summaries—February 2014

Table 8.E.1: Frequency Distributions, ELA—February 2014

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	6,820	4	6,820	96
440–449	3,064	2	9,884	94
430–439	3,664	2	13,548	91
420–429	8,235	5	21,783	86
410–419	14,198	9	35,981	77
400–409	9,796	6	45,777	71
390–399	14,199	9	59,976	62
380–389	12,784	8	72,760	54
370–379	14,293	9	87,053	45
360–369	11,906	8	98,959	38
350–359 ¹	10,328	7	109,287	31
340–349	11,553	7	120,840	24
330–339	10,210	6	131,050	18
320–329	8,046	5	139,096	12
310–319	6,338	4	145,434	8
300–309	5,034	3	150,468	5
290–299	4,138	3	154,606	3
280–289	2,500	2	157,106	1
270–279	1,735	1	158,841	0

¹Passing Score = 350

Table 8.E.2: Frequency Distributions, Mathematics—February 2014

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	11,063	7	11,063	93
440–449	3,865	2	14,928	90
430–439	7,768	5	22,696	86
420–429	7,648	5	30,344	81
410–419	11,119	7	41,463	74
400–409	10,562	7	52,025	67
390–399	12,975	8	65,000	59
380–389	11,639	7	76,639	51
370–379	12,771	8	89,410	43
360–369	11,628	7	101,038	36
350–359 ¹	13,693	9	114,731	27
340–349	11,186	7	125,917	20
330–339	12,020	8	137,937	12
320–329	8,273	5	146,210	7
310–319	6,439	4	152,649	3
300–309	2,911	2	155,560	1
290–299	826	1	156,386	0
280–289	243	0	156,629	0
270–279	170	0	156,799	0

¹Passing Score = 350

Table 8.E.3: Frequency Distributions, ELA for ESEA—February 2014

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	6,820	4	6,820	96
440–449	3,064	2	9,884	94
430–439	3,664	2	13,548	91
420–429	8,235	5	21,783	86
410–419	14,198	9	35,981	77
403–409 ¹	4,822	3	40,803	74
390–402	19,173	12	59,976	62
380–389 ²	12,784	8	72,760	54
370–379	14,293	9	87,053	45
360–369	11,906	8	98,959	38
350–359	10,328	7	109,287	31
340–349	11,553	7	120,840	24
330–339	10,210	6	131,050	18
320–329	8,046	5	139,096	12
310–319	6,338	4	145,434	8
300–309	5,034	3	150,468	5
290–299	4,138	3	154,606	3
280–289	2,500	2	157,106	1
270–279	1,735	1	158,841	0

¹Advanced-Level Cut = 403²Proficient-Level Cut = 380**Table 8.E.4: Frequency Distributions, Mathematics for ESEA—February 2014**

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	11,063	7	11,063	93
440–449	3,865	2	14,928	90
430–439	7,768	5	22,696	86
422–429 ¹	7,648	5	30,344	81
410–421	11,119	7	41,463	74
400–409	10,562	7	52,025	67
390–399	12,975	8	65,000	59
380–389 ²	11,639	7	76,639	51
370–379	12,771	8	89,410	43
360–369	11,628	7	101,038	36
350–359	13,693	9	114,731	27
340–349	11,186	7	125,917	20
330–339	12,020	8	137,937	12
320–329	8,273	5	146,210	7
310–319	6,439	4	152,649	3
300–309	2,911	2	155,560	1
290–299	826	1	156,386	0
280–289	243	0	156,629	0
270–279	170	0	156,799	0

¹Advanced-Level Cut = 422²Proficient-Level Cut = 380

Table 8.E.5: Demographic Summary for All Examinees, ELA—February 2014

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ² Avg. Percent Correct			Writing ² Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	158,841	109,287	69	49,554	31	373	80	73	76	65	72	2.3
Grade												
Tenth	120,259	100,446	84	19,813	16	386	87	79	82	72	78	2.4
Eleventh	14,834	3,897	26	10,937	74	334	62	54	57	45	54	1.9
Twelfth	21,028	3,990	19	17,038	81	329	58	50	54	43	52	1.9
Adult Education	2,720	954	35	1,766	65	344	65	60	63	53	58	2.0
Unknown												
Gender												
Male	84,152	54,375	65	29,777	35	367	79	71	73	63	69	2.2
Female	74,555	54,847	74	19,708	26	379	82	75	79	68	75	2.4
Unknown	134	65	49	69	51	356	73	65	69	57	65	2.1
Race/Ethnicity												
American Indian or Alaska Native	1,272	847	67	425	33	366	81	72	73	63	68	2.2
Asian	14,622	11,382	78	3,240	22	389	83	78	81	72	79	2.5
Pacific Islander	1,061	712	67	349	33	368	79	70	74	63	70	2.3
Filipino	4,929	4,139	84	790	16	391	87	80	84	73	80	2.5
Hispanic or Latino	76,034	43,999	58	32,035	42	360	75	67	71	59	67	2.2
African American	12,661	7,050	56	5,611	44	356	75	66	69	57	63	2.1
White (not of Hispanic origin)	42,778	36,861	86	5,917	14	393	89	82	84	75	80	2.5
Two or More Races	5,484	4,297	78	1,187	22	384	86	78	80	71	76	2.4
Language Fluency												
English-Only Students	89,062	69,242	78	19,820	22	382	85	77	80	70	75	2.4
Initially Fluent English Proficient (IFEP)	9,296	8,157	88	1,139	12	395	89	82	85	75	82	2.6
Reclassified Fluent English Proficient (RFEP)	27,089	23,900	88	3,189	12	386	87	80	83	72	79	2.4
English-Learner Students	30,022	6,604	22	23,418	78	331	57	51	56	44	54	1.9
Unknown	3,372	1,384	41	1,988	59	348	68	62	65	54	60	2.0
Economically Disadvantaged												
No	59,032	51,718	88	7,314	12	395	90	82	85	76	81	2.5
Yes	89,557	51,509	58	38,048	42	359	74	67	70	59	66	2.2
Unknown	10,252	6,060	59	4,192	41	364	76	69	71	62	67	2.2
Special Education Program Participation												
Students Receiving Services	20,453	5,091	25	15,362	75	330	60	51	54	43	51	1.9
Students Not Receiving Services	138,388	104,196	75	34,192	25	379	83	76	79	69	75	2.4

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

²RW — 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 2014

	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	156,799	114,731	73	42,068	27	379	73	70	69	66	59
Grade											
Tenth	119,803	103,326	86	16,477	14	392	78	77	76	73	66
Eleventh	14,429	4,741	33	9,688	67	341	54	48	48	43	37
Twelfth	20,013	5,609	28	14,404	72	338	53	46	46	42	35
Adult Education	2,554	1,055	41	1,499	59	347	61	50	51	50	37
Unknown											
Gender											
Male	79,849	56,972	71	22,877	29	379	72	70	68	65	58
Female	76,811	57,689	75	19,122	25	380	73	70	70	66	60
Unknown	139	70	50	69	50	355	60	57	56	51	47
Race/Ethnicity											
American Indian or Alaska Native	1,275	842	66	433	34	368	68	66	63	60	52
Asian	13,165	12,177	92	988	8	413	84	86	84	84	79
Pacific Islander	1,031	774	75	257	25	376	70	69	69	64	59
Filipino	4,874	4,352	89	522	11	398	80	79	79	77	71
Hispanic or Latino	75,002	47,749	64	27,253	36	366	67	63	63	59	52
African American	13,243	7,521	57	5,722	43	359	63	59	59	54	49
White (not of Hispanic origin)	42,777	37,027	87	5,750	13	395	80	79	77	75	67
Two or More Races	5,432	4,289	79	1,143	21	387	76	74	73	70	63
Language Fluency											
English-Only Students	90,903	70,269	77	20,634	23	384	75	72	71	68	61
Initially Fluent English Proficient (IFEP)	9,564	8,317	87	1,247	13	399	81	80	79	76	70
Reclassified Fluent English Proficient (RFEP)	28,192	24,882	88	3,310	12	392	79	77	77	73	67
English-Learner Students	24,946	9,772	39	15,174	61	346	55	51	50	47	41
Unknown	3,194	1,491	47	1,703	53	352	62	54	54	52	41
Economically Disadvantaged											
No	59,337	52,346	88	6,991	12	398	81	80	79	76	70
Yes	87,396	56,021	64	31,375	36	367	67	64	63	59	53
Unknown	10,066	6,364	63	3,702	37	370	69	65	64	61	53
Special Education Program Participation											
Students Receiving Services	18,457	5,354	29	13,103	71	338	50	48	45	41	37
Students Not Receiving Services	138,342	109,377	79	28,965	21	385	76	73	72	69	62

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

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

Table 8.E.7: ESEA Demographic Summary for All Examinees, ELA—February 2014

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		158,841	86,081	54	31,957	20	40,803	26	72,760	46
Grade	Tenth	120,259	49,552	41	30,614	25	40,093	33	70,707	59
	Eleventh	14,834	13,943	94	605	4	286	2	891	6
	Twelfth	21,028	20,202	96	512	2	314	1	826	4
	Adult Education	2,720	2,384	88	226	8	110	4	336	12
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	84,152	50,052	59	16,286	19	17,814	21	34,100	41
	Female	74,555	35,938	48	15,646	21	22,971	31	38,617	52
	Unknown	134	91	68	25	19	18	13	43	32
Race/Ethnicity	American Indian or Alaskan Native	1,272	792	62	257	20	223	18	480	38
	Asian	14,622	5,451	37	2,860	20	6,311	43	9,171	63
	Pacific Islander	1,061	661	62	206	19	194	18	400	38
	Filipino	4,929	1,732	35	1,191	24	2,006	41	3,197	65
	Hispanic or Latino	76,034	52,181	69	13,281	17	10,572	14	23,853	31
	African American	12,661	9,113	72	2,051	16	1,497	12	3,548	28
	White (not of Hispanic origin)	42,778	13,874	32	10,839	25	18,065	42	28,904	68
	Two or More Races	5,484	2,277	42	1,272	23	1,935	35	3,207	58
Language Fluency	English-Only Students	89,062	39,666	45	20,444	23	28,952	33	49,396	55
	Initially Fluent English Proficient (IFEP)	9,296	2,936	32	2,285	25	4,075	44	6,360	68
	Reclassified Fluent English Proficient (RFEP)	27,089	11,746	43	8,020	30	7,323	27	15,343	57
	English-Learner Students	30,022	28,952	96	862	3	208	1	1,070	4
	Unknown	3,372	2,781	82	346	10	245	7	591	18
Economically Disadvantaged	No	59,032	18,025	31	14,687	25	26,320	45	41,007	69
	Yes	89,557	61,663	69	15,578	17	12,316	14	27,894	31
	Unknown	10,252	6,393	62	1,692	17	2,167	21	3,859	38
Special Education Program Participation	Receiving Services	20,453	18,879	92	1,055	5	519	3	1,574	8
	Not Receiving Services	138,388	67,202	49	30,902	22	40,284	29	71,186	51

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

Table 8.E.8: ESEA Demographic Summary for All Examinees, Mathematics— February 2014

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		156,799	80,160	51	46,295	30	30,344	19	76,639	49
Grade	Tenth	119,803	45,009	38	44,804	37	29,990	25	74,794	62
	Eleventh	14,429	13,570	94	693	5	166	1	859	6
	Twelfth	20,013	19,230	96	619	3	164	1	783	4
	Adult Education	2,554	2,351	92	179	7	24	1	203	8
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	79,849	41,022	51	22,625	28	16,202	20	38,827	49
	Female	76,811	39,032	51	23,648	31	14,131	18	37,779	49
	Unknown	139	106	76	22	16	11	8	33	24
Race/Ethnicity	American Indian or Alaskan Native	1,275	797	63	335	26	143	11	478	37
	Asian	13,165	2,459	19	3,939	30	6,767	51	10,706	81
	Pacific Islander	1,031	559	54	319	31	153	15	472	46
	Filipino	4,874	1,478	30	1,841	38	1,555	32	3,396	70
	Hispanic or Latino	75,002	48,860	65	19,131	26	7,011	9	26,142	35
	African American	13,243	9,634	73	2,776	21	833	6	3,609	27
	White (not of Hispanic origin)	42,777	14,101	33	16,148	38	12,528	29	28,676	67
	Two or More Races	5,432	2,272	42	1,806	33	1,354	25	3,160	58
Language Fluency	English-Only Students	90,903	41,729	46	29,446	32	19,728	22	49,174	54
	Initially Fluent English Proficient (IFEP)	9,564	2,998	31	3,223	34	3,343	35	6,566	69
	Reclassified Fluent English Proficient (RFEP)	28,192	10,713	38	10,891	39	6,588	23	17,479	62
	English-Learner Students	24,946	21,989	88	2,378	10	579	2	2,957	12
	Unknown	3,194	2,731	86	357	11	106	3	463	14
Economically Disadvantaged	No	59,337	18,150	31	21,910	37	19,277	32	41,187	69
	Yes	87,396	55,700	64	22,227	25	9,469	11	31,696	36
	Unknown	10,066	6,310	63	2,158	21	1,598	16	3,756	37
Special Education Program Participation	Receiving Services	18,457	16,687	90	1,394	8	376	2	1,770	10
	Not Receiving Services	138,342	63,473	46	44,901	32	29,968	22	74,869	54

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

Table 8.E.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—February 2014

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	279	299	341	376	406	442	450	373	43	158,841
Grade⁴										
Tenth	287	317	363	388	414	450	450	386	37	120,259
Eleventh	275	287	313	335	352	385	419	334	30	14,834
Twelfth	275	285	309	329	345	373	414	329	28	21,028
Adult Education	283	299	323	341	361	398	424	344	30	2,720
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	295	337	368	398	436	450	367	42	84,152
Female	285	307	347	382	410	450	450	379	42	74,555
Unknown	285	293	327	349	388	424	450	356	40	134
Race/Ethnicity										
American Indian or Alaska Native	275	291	339	368	394	429	450	366	41	1,272
Asian	283	305	356	398	424	450	450	389	45	14,622
Pacific Islander	275	301	343	368	394	429	450	368	38	1,061
Filipino	297	323	368	394	419	450	450	391	37	4,929
Hispanic or Latino	277	295	331	358	388	424	450	360	39	76,034
African American	275	291	329	356	385	419	450	356	39	12,661
White (not of Hispanic origin)	287	319	371	398	419	450	450	393	38	42,778
Two or More Races	283	305	356	388	414	450	450	384	42	5,484
Language Fluency										
English-Only Students	281	305	356	385	414	450	450	382	41	89,062
Initially Fluent English Proficient (IFEP)	291	327	373	398	424	450	450	395	37	9,296
Reclassified Fluent English Proficient (RFEP)	305	335	366	385	406	442	450	386	31	27,089
English-Learner Students	275	285	311	331	347	376	398	331	27	30,022
Unknown	279	295	323	343	368	410	442	348	35	3,372
Economically Disadvantaged										
No	293	325	373	398	424	450	450	395	37	59,032
Yes	275	293	331	358	388	424	450	359	40	89,557
Unknown	275	293	331	363	398	442	450	364	44	10,252
Special Education Program Participation										
Students Receiving Services	275	281	305	327	349	391	419	330	33	20,453
Students Not Receiving Services	285	309	352	382	410	442	450	379	40	138,388

¹Mean scale scores are reported at each percentile.²SD — Standard Deviation³Results for groups with fewer than 11 students are not reported.⁴Grade ten students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Table 8.E.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—February 2014

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	300	316	346	378	410	450	450	379	41	156,799
Grade⁴										
Tenth	307	326	366	392	422	450	450	392	37	119,803
Eleventh	291	305	324	339	353	383	422	341	25	14,429
Twelfth	291	305	322	337	352	374	414	338	23	20,013
Adult Education	300	314	332	344	357	387	418	347	23	2,554
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	297	312	344	378	410	450	450	379	43	79,849
Female	302	318	350	378	410	450	450	380	39	76,811
Unknown	294	302	328	350	378	433	450	355	37	139
Race/Ethnicity										
American Indian or Alaska Native	300	312	339	364	395	439	450	368	38	1,275
Asian	314	339	390	422	450	450	450	413	37	13,165
Pacific Islander	300	316	350	376	400	447	450	376	38	1,031
Filipino	310	332	372	400	427	450	450	398	37	4,874
Hispanic or Latino	297	312	339	362	392	433	450	366	37	75,002
African American	294	307	334	355	383	427	450	359	36	13,243
White (not of Hispanic origin)	307	326	368	398	427	450	450	395	38	42,777
Two or More Races	302	320	355	387	418	450	450	387	41	5,432
Language Fluency										
English-Only Students	300	316	352	385	414	450	450	384	41	90,903
Initially Fluent English Proficient (IFEP)	307	328	370	400	433	450	450	399	40	9,564
Reclassified Fluent English Proficient (RFEP)	316	335	366	390	418	450	450	392	35	28,192
English-Learner Students	294	307	326	343	361	400	439	346	29	24,946
Unknown	297	312	334	346	364	410	447	352	29	3,194
Economically Disadvantaged										
No	310	330	372	400	427	450	450	398	38	59,337
Yes	297	312	339	362	395	439	450	367	38	87,396
Unknown	297	312	337	362	400	450	450	370	41	10,066
Special Education Program Participation										
Students Receiving Services	288	300	316	334	353	395	439	338	30	18,457
Students Not Receiving Services	305	322	353	385	414	450	450	385	39	138,342

¹Mean scale scores are reported at each percentile.²SD — Standard Deviation³Results for groups with fewer than 11 students are not reported.⁴Grade ten students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Appendix 8.F: Frequency Distributions and Demographic Summaries—March 2014

Table 8.F.1: Frequency Distributions, ELA—March 2014

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	13,370	4	13,370	96
440–449	14,302	4	27,672	93
430–439	9,099	2	36,771	90
420–429	20,497	6	57,268	85
410–419	23,582	6	80,850	78
400–409	37,199	10	118,049	68
390–399	37,043	10	155,092	58
380–389	33,883	9	188,975	49
370–379	38,646	10	227,621	38
360–369	30,792	8	258,413	30
350–359 ¹	29,605	8	288,018	22
340–349	22,549	6	310,567	16
330–339	17,171	5	327,738	11
320–329	13,134	4	340,872	8
310–319	10,066	3	350,938	5
300–309	7,787	2	358,725	3
290–299	5,745	2	364,470	1
280–289	3,281	1	367,751	1
270–279	2,120	1	369,871	0

¹Passing Score = 350

Table 8.F.2: Frequency Distributions, Mathematics—March 2014

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	31,388	9	31,388	91
440–449	20,876	6	52,264	86
430–439	10,226	3	62,490	83
420–429	20,169	5	82,659	78
410–419	29,262	8	111,921	70
400–409	28,085	8	140,006	62
390–399	35,148	10	175,154	52
380–389	31,922	9	207,076	44
370–379	33,904	9	240,980	34
360–369	28,529	8	269,509	27
350–359 ¹	24,165	7	293,674	20
340–349	24,473	7	318,147	13
330–339	16,968	5	335,115	9
320–329	14,014	4	349,129	5
310–319	11,026	3	360,155	2
300–309	5,046	1	365,201	1
290–299	1,721	0	366,922	0
280–289	331	0	367,253	0
270–279	263	0	367,516	0

¹Passing Score = 350

Table 8.F.3: Frequency Distributions, ELA for ESEA—March 2014

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	13,370	4	13,370	96
440–449	14,302	4	27,672	93
430–439	9,099	2	36,771	90
420–429	20,497	6	57,268	85
410–419	23,582	6	80,850	78
403–409 ¹	24,699	7	105,549	71
390–402	49,543	13	155,092	58
380–389 ²	33,883	9	188,975	49
370–379	38,646	10	227,621	38
360–369	30,792	8	258,413	30
350–359	29,605	8	288,018	22
340–349	22,549	6	310,567	16
330–339	17,171	5	327,738	11
320–329	13,134	4	340,872	8
310–319	10,066	3	350,938	5
300–309	7,787	2	358,725	3
290–299	5,745	2	364,470	1
280–289	3,281	1	367,751	1
270–279	2,120	1	369,871	0

¹Advanced-Level Cut = 403²Proficient-Level Cut = 380**Table 8.F.4: Frequency Distributions, Mathematics for ESEA—March 2014**

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	31,388	9	31,388	91
440–449	20,876	6	52,264	86
430–439	10,226	3	62,490	83
422–429 ¹	20,169	5	82,659	78
410–421	29,262	8	111,921	70
400–409	28,085	8	140,006	62
390–399	35,148	10	175,154	52
380–389 ²	31,922	9	207,076	44
370–379	33,904	9	240,980	34
360–369	28,529	8	269,509	27
350–359	24,165	7	293,674	20
340–349	24,473	7	318,147	13
330–339	16,968	5	335,115	9
320–329	14,014	4	349,129	5
310–319	11,026	3	360,155	2
300–309	5,046	1	365,201	1
290–299	1,721	0	366,922	0
280–289	331	0	367,253	0
270–279	263	0	367,516	0

¹Advanced-Level Cut = 422²Proficient-Level Cut = 380

Table 8.F.5: Demographic Summary for All Examinees, ELA—March 2014

	N Tested ¹	N Pass	Percent Pass	N Not Pass	Percent Not Pass	Mean Scale Score	Reading ² Avg. Percent Correct			Writing ² Avg. Percent Correct		Writing Applications Mean Score
							RW	RC	RL	WS	WC	Essay
Total Examinees	369,871	288,018	78	81,853	22	379	75	78	77	72	76	2.4
Grade												
Tenth	331,433	277,494	84	53,939	16	385	78	81	80	75	78	2.4
Eleventh	21,207	6,488	31	14,719	69	336	58	57	56	47	55	2.0
Twelfth	14,789	3,042	21	11,747	79	329	55	52	51	42	52	1.9
Adult Education	2,442	994	41	1,448	59	346	68	63	62	53	58	2.0
Unknown												
Gender												
Male	191,058	141,663	74	49,395	26	374	75	76	75	69	73	2.3
Female	178,618	146,260	82	32,358	18	385	76	80	79	74	79	2.5
Unknown	195	95	49	100	51	352	64	65	64	56	63	2.0
Race/Ethnicity												
American Indian or Alaska Native	2,230	1,662	75	568	25	374	74	76	76	68	73	2.3
Asian	30,171	26,201	87	3,970	13	401	81	85	83	81	84	2.7
Pacific Islander	2,067	1,555	75	512	25	374	72	76	75	69	74	2.4
Filipino	9,801	8,715	89	1,086	11	396	79	84	83	80	82	2.6
Hispanic or Latino	208,225	150,623	72	57,602	28	370	72	75	73	68	72	2.3
African American	23,648	15,768	67	7,880	33	365	71	71	71	63	70	2.2
White (not of Hispanic origin)	84,331	75,705	90	8,626	10	396	82	85	84	79	84	2.5
Two or More Races	9,398	7,789	83	1,609	17	388	79	81	81	75	80	2.5
Language Fluency												
English-Only Students	190,812	160,332	84	30,480	16	387	78	81	81	75	79	2.5
Initially Fluent English Proficient (IFEP)	29,586	27,375	93	2,211	7	398	83	86	85	81	83	2.6
Reclassified Fluent English Proficient (RFEP)	86,281	78,798	91	7,483	9	386	79	83	81	77	79	2.5
English-Learner Students	58,506	19,062	33	39,444	67	336	58	58	56	48	55	2.0
Unknown	4,686	2,451	52	2,235	48	355	69	67	66	58	63	2.1
Economically Disadvantaged												
No	125,359	113,954	91	11,405	9	398	82	85	85	80	84	2.6
Yes	220,149	155,610	71	64,539	29	368	72	74	72	67	71	2.3
Unknown	24,363	18,454	76	5,909	24	380	76	78	77	71	75	2.4
Special Education Program Participation												
Students Receiving Services	38,542	12,520	32	26,022	68	335	56	56	56	47	54	1.9
Students Not Receiving Services	331,329	275,498	83	55,831	17	384	78	81	79	74	78	2.4

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

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

Table 8.F.6: Demographic Summary for All Examinees, Mathematics—March 2014

	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	367,516	293,674	80	73,842	20	386	75	74	74	69	65
Grade											
Tenth	330,344	281,710	85	48,634	15	391	77	76	76	72	68
Eleventh	20,683	7,184	35	13,499	65	343	54	52	49	46	39
Twelfth	14,051	3,765	27	10,286	73	338	52	49	46	43	36
Adult Education	2,438	1,015	42	1,423	58	349	61	55	52	52	38
Unknown											
Gender											
Male	186,343	147,809	79	38,534	21	387	75	74	73	69	65
Female	180,976	145,772	81	35,204	19	386	75	73	74	69	65
Unknown	197	93	47	104	53	358	60	60	57	52	49
Race/Ethnicity											
American Indian or Alaska Native	2,240	1,680	75	560	25	379	72	71	70	65	60
Asian	28,657	27,226	95	1,431	5	420	87	87	87	86	84
Pacific Islander	2,010	1,575	78	435	22	382	73	72	72	67	64
Filipino	9,618	8,791	91	827	9	405	82	81	82	78	77
Hispanic or Latino	207,258	155,333	75	51,925	25	377	71	70	70	65	60
African American	24,261	15,647	64	8,614	36	366	66	65	63	58	54
White (not of Hispanic origin)	84,052	75,611	90	8,441	10	401	82	81	81	77	73
Two or More Races	9,420	7,811	83	1,609	17	393	78	77	76	72	69
Language Fluency											
English-Only Students	192,067	159,322	83	32,745	17	391	77	76	76	71	67
Initially Fluent English Proficient (IFEP)	29,775	27,339	92	2,436	8	404	83	82	82	78	75
Reclassified Fluent English Proficient (RFEP)	87,800	79,449	90	8,351	10	394	79	78	79	73	70
English-Learner Students	53,249	25,042	47	28,207	53	351	56	56	55	51	46
Unknown	4,625	2,522	55	2,103	45	360	64	61	59	57	47
Economically Disadvantaged											
No	125,196	113,723	91	11,473	9	403	82	81	81	78	75
Yes	218,004	161,199	74	56,805	26	377	71	69	69	64	60
Unknown	24,316	18,752	77	5,564	23	386	75	74	73	69	64
Special Education Program Participation											
Students Receiving Services	35,455	12,526	35	22,929	65	343	52	52	49	45	40
Students Not Receiving Services	332,061	281,148	85	50,913	15	391	77	76	76	72	68

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

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

Table 8.F.7: ESEA Demographic Summary for All Examinees, ELA—March 2014

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		369,871	180,896	49	83,426	23	105,549	29	188,975	51
Grade	Tenth	331,433	144,771	44	82,019	25	104,643	32	186,662	56
	Eleventh	21,207	19,813	93	854	4	540	3	1,394	7
	Twelfth	14,789	14,205	96	336	2	248	2	584	4
	Adult Education	2,442	2,107	86	217	9	118	5	335	14
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	191,058	103,221	54	42,245	22	45,592	24	87,837	46
	Female	178,618	77,536	43	41,151	23	59,931	34	101,082	57
	Unknown	195	139	71	30	15	26	13	56	29
Race/Ethnicity	American Indian or Alaskan Native	2,230	1,225	55	505	23	500	22	1,005	45
	Asian	30,171	8,456	28	5,454	18	16,261	54	21,715	72
	Pacific Islander	2,067	1,154	56	448	22	465	22	913	44
	Filipino	9,801	3,011	31	2,350	24	4,440	45	6,790	69
	Hispanic or Latino	208,225	123,793	59	46,539	22	37,893	18	84,432	41
	African American	23,648	15,166	64	4,687	20	3,795	16	8,482	36
	White (not of Hispanic origin)	84,331	24,535	29	21,337	25	38,459	46	59,796	71
	Two or More Races	9,398	3,556	38	2,106	22	3,736	40	5,842	62
Language Fluency	English-Only Students	190,812	75,902	40	46,188	24	68,722	36	114,910	60
	Initially Fluent English Proficient (IFEP)	29,586	8,593	29	7,801	26	13,192	45	20,993	71
	Reclassified Fluent English Proficient (RFEP)	86,281	37,469	43	26,287	30	22,525	26	48,812	57
	English-Learner Students	58,506	55,418	95	2,497	4	591	1	3,088	5
	Unknown	4,686	3,514	75	653	14	519	11	1,172	25
Economically Disadvantaged	No	125,359	34,784	28	30,998	25	59,577	48	90,575	72
	Yes	220,149	134,479	61	47,396	22	38,274	17	85,670	39
	Unknown	24,363	11,633	48	5,032	21	7,698	32	12,730	52
Special Education Program Participation	Receiving Services	38,542	34,648	90	2,613	7	1,281	3	3,894	10
	Not Receiving Services	331,329	146,248	44	80,813	24	104,268	31	185,081	56

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

Table 8.F.8: ESEA Demographic Summary for All Examinees, Mathematics—March 2014

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		367,516	160,440	44	124,417	34	82,659	22	207,076	56
Grade	Tenth	330,344	125,679	38	122,499	37	82,166	25	204,665	62
	Eleventh	20,683	19,207	93	1,153	6	323	2	1,476	7
	Twelfth	14,051	13,365	95	554	4	132	1	686	5
	Adult Education	2,438	2,189	90	211	9	38	2	249	10
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	186,343	79,945	43	62,631	34	43,767	23	106,398	57
	Female	180,976	80,355	44	61,750	34	38,871	21	100,621	56
	Unknown	197	140	71	36	18	21	11	57	29
Race/Ethnicity	American Indian or Alaskan Native	2,240	1,151	51	735	33	354	16	1,089	49
	Asian	28,657	4,078	14	7,642	27	16,937	59	24,579	86
	Pacific Islander	2,010	955	48	724	36	331	16	1,055	52
	Filipino	9,618	2,306	24	3,719	39	3,593	37	7,312	76
	Hispanic or Latino	207,258	109,772	53	69,057	33	28,429	14	97,486	47
	African American	24,261	15,744	65	6,429	26	2,088	9	8,517	35
	White (not of Hispanic origin)	84,052	23,017	27	32,897	39	28,138	33	61,035	73
	Two or More Races	9,420	3,417	36	3,214	34	2,789	30	6,003	64
Language Fluency	English-Only Students	192,067	74,422	39	68,603	36	49,042	26	117,645	61
	Initially Fluent English Proficient (IFEP)	29,775	7,756	26	10,808	36	11,211	38	22,019	74
	Reclassified Fluent English Proficient (RFEP)	87,800	30,577	35	36,737	42	20,486	23	57,223	65
	English-Learner Students	53,249	44,262	83	7,404	14	1,583	3	8,987	17
	Unknown	4,625	3,423	74	865	19	337	7	1,202	26
Economically Disadvantaged	No	125,196	32,527	26	46,593	37	46,076	37	92,669	74
	Yes	218,004	117,070	54	70,409	32	30,525	14	100,934	46
	Unknown	24,316	10,843	45	7,415	30	6,058	25	13,473	55
Special Education Program Participation	Receiving Services	35,455	30,627	86	3,761	11	1,067	3	4,828	14
	Not Receiving Services	332,061	129,813	39	120,656	36	81,592	25	202,248	61

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

Table 8.F.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—March 2014

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	285	308	352	382	409	448	450	379	39	369,871
Grade⁴										
Tenth	291	318	361	385	409	448	450	385	37	331,433
Eleventh	275	289	316	336	352	388	423	336	30	21,207
Twelfth	275	287	310	328	346	376	413	329	28	14,789
Adult Education	285	301	326	342	364	401	428	346	30	2,442
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	281	303	348	376	401	441	450	374	39	191,058
Female	293	316	359	388	413	448	450	385	38	178,618
Unknown	275	279	322	348	385	434	450	352	45	195
Race/Ethnicity										
American Indian or Alaska Native	283	307	348	376	401	441	450	374	38	2,230
Asian	293	322	376	409	434	450	450	401	41	30,171
Pacific Islander	285	307	350	376	401	441	450	374	38	2,067
Filipino	299	330	373	397	423	450	450	396	36	9,801
Hispanic or Latino	283	305	346	371	394	428	450	370	37	208,225
African American	276	299	340	366	391	428	450	365	38	23,648
White (not of Hispanic origin)	295	328	376	401	423	450	450	396	36	84,331
Two or More Races	283	310	364	394	418	450	450	388	41	9,398
Language Fluency										
English-Only Students	289	316	364	391	413	448	450	387	38	190,812
Initially Fluent English Proficient (IFEP)	307	340	376	397	423	450	450	398	34	29,586
Reclassified Fluent English Proficient (RFEP)	316	340	366	385	405	441	450	386	29	86,281
English-Learner Students	275	291	316	336	354	382	405	336	28	58,506
Unknown	276	297	328	351	382	418	450	355	37	4,686
Economically Disadvantaged										
No	299	334	376	401	423	450	450	398	35	125,359
Yes	283	303	344	371	394	428	450	368	37	220,149
Unknown	281	305	350	382	413	448	450	380	42	24,363
Special Education Program Participation										
Students Receiving Services	275	285	308	332	357	394	428	335	34	38,542
Students Not Receiving Services	293	320	361	385	409	448	450	384	37	331,329

¹Mean scale scores are reported at each percentile.²SD — Standard Deviation³Results for groups with fewer than 11 students are not reported.⁴Grade ten students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Table 8.F.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—March 2014

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	303	319	356	385	419	450	450	386	40	367,516
Grade⁴										
Tenth	306	325	364	392	419	450	450	391	38	330,344
Eleventh	293	306	327	342	356	387	434	343	26	20,683
Twelfth	293	303	323	336	351	378	419	338	24	14,051
Adult Education	301	317	332	345	360	395	428	349	25	2,438
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	301	317	356	387	419	450	450	387	41	186,343
Female	306	323	356	385	415	450	450	386	39	180,976
Unknown	287	301	327	347	385	441	450	358	42	197
Race/Ethnicity										
American Indian or Alaska Native	303	317	350	378	407	448	450	379	38	2,240
Asian	319	351	398	434	450	450	450	420	34	28,657
Pacific Islander	306	319	353	383	407	450	450	382	37	2,010
Filipino	315	338	380	407	434	450	450	405	36	9,618
Hispanic or Latino	301	317	349	376	404	448	450	377	37	207,258
African American	295	310	338	364	390	434	450	366	37	24,261
White (not of Hispanic origin)	308	332	376	404	434	450	450	401	37	84,052
Two or More Races	303	321	364	395	428	450	450	393	41	9,420
Language Fluency										
English-Only Students	303	321	362	392	423	450	450	391	40	192,067
Initially Fluent English Proficient (IFEP)	315	340	378	407	441	450	450	404	37	29,775
Reclassified Fluent English Proficient (RFEP)	319	340	370	392	419	450	450	394	34	87,800
English-Learner Students	295	308	329	347	370	407	448	351	31	53,249
Unknown	295	312	334	353	380	428	450	360	35	4,625
Economically Disadvantaged										
No	312	336	378	407	434	450	450	403	37	125,196
Yes	301	317	349	376	404	448	450	377	38	218,004
Unknown	301	319	353	385	419	450	450	386	42	24,316
Special Education Program Participation										
Students Receiving Services	290	301	319	338	362	407	448	343	33	35,455
Students Not Receiving Services	310	329	364	390	419	450	450	391	38	332,061

¹Mean scale scores are reported at each percentile.²SD — Standard Deviation³Results for groups with fewer than 11 students are not reported.⁴Grade ten students can only take the CAHSEE one time in the spring during the February, March, or May administration.

Appendix 8.G: Frequency Distributions and Demographic Summaries—May 2014

Table 8.G.1: Frequency Distributions, ELA—May 2014

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	148	0	148	99
440–449	86	0	234	99
430–439	235	1	469	99
420–429	348	1	817	98
410–419	448	1	1,265	97
400–409	812	2	2,077	95
390–399	959	2	3,036	92
380–389	1,005	3	4,041	90
370–379	1,642	4	5,683	85
360–369	2,596	7	8,279	79
350–359 ¹	3,982	10	12,261	68
340–349	4,838	13	17,099	56
330–339	5,094	13	22,193	42
320–329	4,455	12	26,648	31
310–319	4,528	12	31,176	19
300–309	2,945	8	34,121	11
290–299	2,293	6	36,414	6
280–289	1,248	3	37,662	2
270–279	888	2	38,550	0

¹Passing Score = 350

Table 8.G.2: Frequency Distributions, Mathematics—May 2014

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	288	1	288	99
440–449	128	0	416	99
430–439	299	1	715	98
420–429	336	1	1,051	97
410–419	378	1	1,429	96
400–409	602	2	2,031	94
390–399	879	3	2,910	92
380–389	1,024	3	3,934	89
370–379	1,501	4	5,435	85
360–369	2,228	6	7,663	78
350–359 ¹	4,103	12	11,766	66
340–349	5,733	16	17,499	50
330–339	5,235	15	22,734	35
320–329	4,724	13	27,458	22
310–319	4,100	12	31,558	10
300–309	2,238	6	33,796	4
290–299	962	3	34,758	1
280–289	205	1	34,963	0
270–279	140	0	35,103	0

¹Passing Score = 350

Table 8.G.3: Frequency Distributions, ELA for ESEA—May 2014

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	148	0	148	99
440–449	86	0	234	99
430–439	235	1	469	99
420–429	348	1	817	98
410–419	448	1	1,265	97
403–409 ¹	534	1	1,799	95
390–402	1,237	3	3,036	92
380–389 ²	1,005	3	4,041	90
370–379	1,642	4	5,683	85
360–369	2,596	7	8,279	79
350–359	3,982	10	12,261	68
340–349	4,838	13	17,099	56
330–339	5,094	13	22,193	42
320–329	4,455	12	26,648	31
310–319	4,528	12	31,176	19
300–309	2,945	8	34,121	11
290–299	2,293	6	36,414	6
280–289	1,248	3	37,662	2
270–279	888	2	38,550	0

¹Advanced-Level Cut = 403

²Proficient-Level Cut = 380

Table 8.G.4: Frequency Distributions, Mathematics for ESEA—May 2014

Scale Score	Frequency	Percent	Cumulative Frequency	Percent Below
450	288	1	288	99
440–449	128	0	416	99
430–439	299	1	715	98
422–429 ¹	154	0	869	98
410–421	560	2	1,429	96
400–409	602	2	2,031	94
390–399	879	3	2,910	92
380–389 ²	1,024	3	3,934	89
370–379	1,501	4	5,435	85
360–369	2,228	6	7,663	78
350–359	4,103	12	11,766	66
340–349	5,733	16	17,499	50
330–339	5,235	15	22,734	35
320–329	4,724	13	27,458	22
310–319	4,100	12	31,558	10
300–309	2,238	6	33,796	4
290–299	962	3	34,758	1
280–289	205	1	34,963	0
270–279	140	0	35,103	0

¹Advanced-Level Cut = 422

²Proficient-Level Cut = 380

Table 8.G.5: Demographic Summary for All Examinees, ELA—May 2014

	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	38,550	12,261	32	26,289	68	338	60	52	59	47	55	2.0
Grade												
Tenth	8,769	5,269	60	3,500	40	358	74	64	69	59	65	2.2
Eleventh	13,419	3,759	28	9,660	72	334	60	51	57	45	54	2.0
Twelfth	13,810	2,332	17	11,478	83	326	52	45	52	41	51	1.9
Adult Education	2,552	901	35	1,651	65	343	60	56	65	51	58	2.1
Unknown												
Gender												
Male	21,957	6,306	29	15,651	71	334	60	51	56	45	53	2.0
Female	16,478	5,932	36	10,546	64	342	61	54	62	49	59	2.1
Unknown	115	23	20	92	80	329	56	46	56	41	50	1.9
Race/Ethnicity												
American Indian or Alaska Native	314	116	37	198	63	339	69	56	59	47	53	2.0
Asian	2,118	588	28	1,530	72	337	53	52	56	50	60	2.0
Pacific Islander	223	80	36	143	64	341	63	55	60	48	58	2.2
Filipino	491	190	39	301	61	346	63	56	62	54	62	2.2
Hispanic or Latino	24,074	6,482	27	17,592	73	333	57	50	57	44	54	2.0
African American	3,657	1,007	28	2,650	72	333	61	51	56	44	51	2.0
White (not of Hispanic origin)	6,332	3,259	51	3,073	49	354	73	62	66	56	63	2.2
Two or More Races	1,341	539	40	802	60	344	67	57	61	51	58	2.1
Language Fluency												
English-Only Students	16,337	6,688	41	9,649	59	344	68	57	61	50	58	2.1
Initially Fluent English Proficient (IFEP)	1,127	591	52	536	48	355	71	62	68	56	63	2.3
Reclassified Fluent English Proficient (RFEP)	2,703	1,462	54	1,241	46	352	70	61	68	55	63	2.2
English-Learner Students	15,384	2,435	16	12,949	84	326	50	45	53	41	51	1.9
Unknown	2,999	1,085	36	1,914	64	342	60	56	63	51	58	2.1
Economically Disadvantaged												
No	6,807	3,515	52	3,292	48	355	72	62	67	56	64	2.2
Yes	26,735	6,917	26	19,818	74	332	57	49	56	44	53	2.0
Unknown	5,008	1,829	37	3,179	63	342	62	55	62	50	57	2.0
Special Education Program Participation												
Students Receiving Services	8,970	1,102	12	7,868	88	319	52	42	46	36	44	1.8
Students Not Receiving Services	29,580	11,159	38	18,421	62	343	63	56	63	50	59	2.1

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

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

Table 8.G.6: Demographic Summary for All Examinees, Mathematics—May 2014

	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	35,103	11,766	34	23,337	66	343	53	53	49	46	38
Grade											
Tenth	8,202	4,874	59	3,328	41	363	63	64	61	58	48
Eleventh	12,894	3,939	31	8,955	69	340	52	51	48	43	36
Twelfth	11,557	2,064	18	9,493	82	332	47	47	42	38	32
Adult Education	2,450	889	36	1,561	64	345	58	54	50	49	36
Unknown											
Gender											
Male	17,685	5,686	32	11,999	68	342	52	53	48	45	36
Female	17,299	6,044	35	11,255	65	345	55	53	51	46	39
Unknown	119	36	30	83	70	339	53	50	46	42	34
Race/Ethnicity											
American Indian or Alaska Native	319	117	37	202	63	345	55	55	50	48	38
Asian	888	510	57	378	43	368	62	65	63	60	54
Pacific Islander	204	84	41	120	59	346	54	56	51	47	41
Filipino	360	180	50	180	50	357	60	60	59	55	46
Hispanic or Latino	21,962	6,307	29	15,655	71	339	51	51	47	43	36
African American	4,005	1,088	27	2,917	73	337	50	50	45	41	35
White (not of Hispanic origin)	6,023	2,963	49	3,060	51	357	61	60	57	54	44
Two or More Races	1,342	517	39	825	61	347	56	55	51	48	39
Language Fluency											
English-Only Students	17,233	6,504	38	10,729	62	346	55	55	51	47	39
Initially Fluent English Proficient (IFEP)	1,185	572	48	613	52	354	60	59	56	52	43
Reclassified Fluent English Proficient (RFEP)	3,321	1,571	47	1,750	53	353	61	58	56	52	42
English-Learner Students	10,453	2,053	20	8,400	80	333	46	47	43	39	33
Unknown	2,911	1,066	37	1,845	63	346	57	54	50	49	37
Economically Disadvantaged											
No	6,746	3,368	50	3,378	50	357	61	60	58	54	45
Yes	23,544	6,616	28	16,928	72	339	51	51	46	43	35
Unknown	4,813	1,782	37	3,031	63	346	56	54	50	48	38
Special Education Program Participation											
Students Receiving Services	7,405	889	12	6,516	88	325	40	44	37	33	30
Students Not Receiving Services	27,698	10,877	39	16,821	61	348	57	55	52	49	40

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

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

Table 8.G.7: ESEA Demographic Summary for All Examinees, ELA—May 2014

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		38,550	34,509	90	2,242	6	1,799	5	4,041	10
Grade	Tenth	8,769	6,108	70	1,392	16	1,269	14	2,661	30
	Eleventh	13,419	12,606	94	482	4	331	2	813	6
	Twelfth	13,810	13,494	98	204	1	112	1	316	2
	Adult Education	2,552	2,301	90	164	6	87	3	251	10
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	21,957	20,083	91	1,126	5	748	3	1,874	9
	Female	16,478	14,317	87	1,113	7	1,048	6	2,161	13
	Unknown	115	109	95	3	3	3	3	6	5
Race/Ethnicity	American Indian or Alaskan Native	314	277	88	28	9	9	3	37	12
	Asian	2,118	1,923	91	76	4	119	6	195	9
	Pacific Islander	223	198	89	13	6	12	5	25	11
	Filipino	491	405	82	42	9	44	9	86	18
	Hispanic or Latino	24,074	22,554	94	983	4	537	2	1,520	6
	African American	3,657	3,384	93	181	5	92	3	273	7
	White (not of Hispanic origin)	6,332	4,653	73	795	13	884	14	1,679	27
	Two or More Races	1,341	1,115	83	124	9	102	8	226	17
Language Fluency	English-Only Students	16,337	13,539	83	1,470	9	1,328	8	2,798	17
	Initially Fluent English Proficient (IFEP)	1,127	858	76	131	12	138	12	269	24
	Reclassified Fluent English Proficient (RFEP)	2,703	2,230	83	307	11	166	6	473	17
	English-Learner Students	15,384	15,237	99	125	1	22	-	147	1
	Unknown	2,999	2,645	88	209	7	145	5	354	12
Economically Disadvantaged	No	6,807	5,032	74	828	12	947	14	1,775	26
	Yes	26,735	25,127	94	1,051	4	557	2	1,608	6
	Unknown	5,008	4,350	87	363	7	295	6	658	13
Special Education Program	Receiving Services	8,970	8,801	98	118	1	51	1	169	2
	Not Receiving Services	29,580	25,708	87	2,124	7	1,748	6	3,872	13

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

Table 8.G.8: ESEA Demographic Summary for All Examinees, Mathematics—May 2014

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		35,103	31,169	89	3,065	9	869	2	3,934	11
Grade	Tenth	8,202	5,559	68	1,995	24	648	8	2,643	32
	Eleventh	12,894	12,082	94	655	5	157	1	812	6
	Twelfth	11,557	11,272	98	240	2	45	-	285	2
	Adult Education	2,450	2,256	92	175	7	19	1	194	8
	Unknown	-	-	-	-	-	-	-	-	-
Gender	Male	17,685	15,663	89	1,543	9	479	3	2,022	11
	Female	17,299	15,396	89	1,518	9	385	2	1,903	11
	Unknown	119	110	92	4	3	5	4	9	8
Race/Ethnicity	American Indian or Alaska Native	319	276	87	37	12	6	2	43	13
	Asian	888	582	66	169	19	137	15	306	34
	Pacific Islander	204	175	86	26	13	3	1	29	14
	Filipino	360	271	75	66	18	23	6	89	25
	Hispanic or Latino	21,962	20,421	93	1,320	6	221	1	1,541	7
	African American	4,005	3,789	95	192	5	24	1	216	5
	White (not of Hispanic origin)	6,023	4,503	75	1,112	18	408	7	1,520	25
	Two or More Races	1,342	1,152	86	143	11	47	4	190	14
Language Fluency	English-Only Students	17,233	14,696	85	1,959	11	578	3	2,537	15
	Initially Fluent English Proficient (IFEP)	1,185	957	81	144	12	84	7	228	19
	Reclassified Fluent English Proficient (RFEP)	3,321	2,776	84	441	13	104	3	545	16
	English-Learner Students	10,453	10,134	97	262	3	57	1	319	3
	Unknown	2,911	2,606	90	259	9	46	2	305	10
Economically Disadvantaged	No	6,746	5,089	75	1,173	17	484	7	1,657	25
	Yes	23,544	21,848	93	1,427	6	269	1	1,696	7
	Unknown	4,813	4,232	88	465	10	116	2	581	12
Special Education Program Participation	Receiving Services	7,405	7,235	98	140	2	30	-	170	2
	Not Receiving Services	27,698	23,934	86	2,925	11	839	3	3,764	14

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

Table 8.G.9: Examinee Demographics Showing Mean Scale Score at Each Percentile, ELA—May 2014

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	275	289	315	334	356	400	432	338	33	38,550
Grade⁴										
Tenth	275	291	328	358	388	426	450	358	40	8,769
Eleventh	275	289	315	334	352	388	421	334	29	13,419
Twelfth	275	287	310	326	342	367	397	326	25	13,810
Adult Education	285	302	325	340	356	394	426	343	28	2,552
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	275	285	311	332	352	394	426	334	32	21,957
Female	276	294	319	338	358	408	438	342	34	16,478
Unknown	275	285	308	332	344	382	408	329	29	115
Race/Ethnicity										
American Indian or Alaska Native	275	289	317	338	360	391	421	339	33	314
Asian	275	291	315	334	352	404	445	337	33	2,118
Pacific Islander	285	294	319	338	358	404	421	341	32	223
Filipino	278	294	323	342	365	416	445	346	35	491
Hispanic or Latino	275	289	313	332	350	388	416	333	29	24,074
African American	275	283	310	332	352	391	416	333	31	3,657
White (not of Hispanic origin)	275	293	323	350	384	426	450	354	41	6,332
Two or More Races	275	287	319	340	367	412	445	344	36	1,341
Language Fluency										
English-Only Students	275	289	317	340	367	412	445	344	37	16,337
Initially Fluent English Proficient (IFEP)	276	298	328	352	379	421	445	355	37	1,127
Reclassified Fluent English Proficient (RFEP)	278	300	332	352	372	404	426	352	31	2,703
English-Learner Students	275	287	310	326	342	363	379	326	23	15,384
Unknown	275	293	321	340	360	400	426	342	32	2,999
Economically Disadvantaged										
No	276	294	326	350	382	426	450	355	40	6,807
Yes	275	287	311	332	350	385	416	332	29	26,735
Unknown	275	289	319	338	360	404	438	342	34	5,008
Special Education Program Participation										
Students Receiving Services	275	278	298	315	336	365	391	319	26	8,970
Students Not Receiving Services	275	294	321	340	360	408	438	343	33	29,580

¹Mean scale scores are reported at each percentile.

²SD — Standard Deviation

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

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

Table 8.G.10: Examinee Demographics Showing Mean Scale Score at Each Percentile, Mathematics—May 2014

	Percentiles ¹							Mean Scale Score	SD ²	N Tested ³
	1	5	25	50	75	95	99			
Total Examinees	291	304	323	338	357	405	446	343	30	35,103
Grade⁴										
Tenth	288	304	333	359	388	438	450	363	39	8,202
Eleventh	288	304	323	338	354	386	426	340	26	12,894
Twelfth	288	302	317	331	345	367	402	332	22	11,557
Adult Education	299	313	331	342	357	391	421	345	24	2,450
Unknown	-	-	-	-	-	-	-	-	-	-
Gender										
Male	285	302	319	336	356	405	446	342	32	17,685
Female	294	307	325	340	357	405	438	345	29	17,299
Unknown	294	302	319	334	352	402	438	339	30	119
Race/Ethnicity										
American Indian or Alaska Native	291	304	325	342	361	405	450	345	31	319
Asian	291	311	334	357	399	450	450	368	43	888
Pacific Islander	294	307	325	343	365	402	426	346	30	204
Filipino	294	309	333	350	379	431	450	357	37	360
Hispanic or Latino	291	304	321	336	352	388	426	339	26	21,962
African American	285	302	319	334	350	383	416	337	26	4,005
White (not of Hispanic origin)	291	304	329	349	381	431	450	357	38	6,023
Two or More Races	285	304	327	342	361	412	450	347	32	1,342
Language Fluency										
English-Only Students	288	304	323	342	361	412	450	346	33	17,233
Initially Fluent English Proficient (IFEP)	294	307	329	349	371	438	450	354	37	1,185
Reclassified Fluent English Proficient (RFEP)	297	311	333	347	367	412	446	353	30	3,321
English-Learner Students	288	302	317	333	345	371	409	333	23	10,453
Unknown	297	309	329	342	357	399	438	346	27	2,911
Economically Disadvantaged										
No	291	307	331	349	379	431	450	357	38	6,746
Yes	288	302	321	336	352	388	426	339	27	23,544
Unknown	291	304	325	342	359	402	446	346	30	4,813
Special Education Program Participation										
Students Receiving Services	282	297	311	323	338	363	399	325	22	7,405
Students Not Receiving Services	294	307	329	343	361	409	446	348	31	27,698

¹Mean scale scores are reported at each percentile.

²SD — Standard Deviation

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

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

Chapter 9: Quality Control Procedures

ETS implements rigorous quality control procedures throughout the test development, administration, scoring, and reporting processes. As part of this effort, ETS maintains the Office of Professional Standards, which resides in the legal department. The office publishes and maintains the *ETS Standards for Quality and Fairness*, with the purposes of helping design, develop, and deliver technically sound, fair, and useful products and services. The office also helps the public and auditors evaluate those products and services.

In addition, every department that is involved in the testing cycle designs and implements an independent set of procedures to ensure the quality of its products. ETS established the Office of Quality Assurance, which provides tools and oversight to assist program managers in this endeavor. In the next sections, these procedures are described.

Quality Control of Item Development

The item development process for the CAHSEE prior to the 2013–14 administrations is described in detail in Chapter 3. The following sections highlight elements of the process devoted specifically to quality control of the items that were previously developed and used during the 2013–14 administrations.

Item Specifications

ETS maintained item development specifications for the CAHSEE and developed an item development plan to guide the writing of the items for both content areas. Item writing emphasis was determined in consultation with the CDE. Adherence to these specifications ensured the maintenance of quality and consistency of the item development process.

Item Writers

The items for the CAHSEE were written by panels of item writers with a thorough understanding of the California content standards. The item writers were carefully screened and selected by senior content staff. Only those with strong content and teaching backgrounds were invited to participate in an extensive training program for item writers.

Internal Contractor Reviews

Once items were written, ETS assessment specialists made sure that each item underwent an internal review process. Every step of this process was designed to produce items that exceed industry standards for quality. It included 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 helped to ensure that all items met the specifications at each step of the process.

Content Review

ETS assessment specialists made 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 were created during the internal content review period so that assessment specialists could evaluate the correctness and appropriateness of the art early in the item development process. ETS selected visual stimuli that were relevant to the item content and that were easily understood.

Editorial Review

Another step in the ETS internal review process involved a team of specially trained editors who checked 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 included cycles of copyediting and proofreading.

Bias and Sensitivity Review

One of the final steps in the internal review process was to have all items and stimuli reviewed for bias and sensitivity. Only staff members who had participated in ETS Fairness Training conducted this bias and sensitivity review. These staff members had been trained to identify and eliminate test questions that contained 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 read each item before it was 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 were reviewed by content review committees and bias and sensitivity review committees. The review committees were advisory panels to ETS on areas related to item development for the CAHSEE.

Content Review Meetings for CAHSEE Items

The content review committee reviewed the newly developed items prior to field testing to check 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 reviewed newly developed items prior to field testing to screen for potential bias that might affect the performance of a particular group of students.

Statewide Pupil Assessment Review Panel Review

The SPAR panel was responsible for reviewing and approving test items before they were used as operational or field-test items. The SPAR examined the items for intrusiveness into students' personal lives such as student and family beliefs, morality, religion, or sexuality. The SPAR panel representatives ensured that the test items conform to the requirements of *EC* Section 60614. The CR writing tasks were also presented to the SPAR panel for review. If the SPAR panel rejected specific items and/or CR writing tasks, the items and/or tasks were replaced.

Data Review of Field-Tested Items

Newly developed items were field tested to obtain statistical information about item performance. The information was used to evaluate items that were on operational test forms. The CDE defines the criteria for acceptable or unacceptable item statistics. These criteria ensure that each item (1) had an appropriate level of difficulty for the target population; (2) discriminated well between examinees who differ in ability; and (3) conformed well to the statistical model underlying the measurement of the intended constructs.

Data Review Committee members reviewed and discussed the items that had been flagged for C-level DIF. Some of the items had also been flagged for poor statistics and did not meet the psychometric criteria for item quality.

The panel members also used the results of analyses for DIF to make judgments about the appropriateness of items for various subgroups. The panelists responded 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 made recommendations about whether to accept or reject each item for inclusion in the CAHSEE item bank.

Quality Control of the Item Bank

After the completion of the analyses, items are placed in the item bank with their statistics. ETS delivers the items to the CDE through the CAHSEE electronic item bank. The item bank database is maintained by a staff of application systems programmers, led by the Item Bank Manager. All processes are logged; all change requests, including item bank updates for item availability status, are tracked; and all output and CAHSEE item bank deliveries undergo quality-control for accuracy.

The quality of the item bank and secure transfer of the CAHSEE item bank to the CDE are critical. The ETS internal item bank database resides on a server within the ETS firewall; access to the SQL, the server database, is strictly controlled by means of system administration. The electronic item banking application includes a login/password system to authorize access to the database or designated portions of the database. In addition, only users authorized to access the specific database are able to use the item bank. Users are authorized by a designated administrator at the CDE and at ETS.

The SFTP is the current method to deliver the CAHSEE electronic item bank to the CDE. All files posted on the SFTP site by the item bank staff are encrypted with a password.

The measures taken for ensuring the accuracy, confidentiality, and security of electronic files are as follows:

- Electronic forms of test content, documentation, and item banks are backed up electronically, with the backup media kept off-site, to prevent loss from a system breakdown or a natural disaster.
- The off-site backup files are kept in secure storage with access limited to authorized personnel only.
- Advanced network security measures are used to prevent unauthorized electronic access to the item bank.

Quality Control of Test Materials

Collecting Test Materials

Once the tests are administered, school districts return scorable materials within five working days and non-scorable materials within ten working days after the last testing day of each test administration period. Districts are provided color-coded labels identifying scorable and non-scorable materials and labels with bar-coded information identifying the school and district. The school districts apply the appropriate labels and number the cartons prior to returning the materials to the processing center. Scorable materials are returned via overnight carrier and non-scorable materials are returned by a designated overland carrier.

The use of the color-coded labels streamlines the return process. All scorable materials are delivered to the Pearson scanning and scoring facilities in Iowa City, Iowa. The non-scorable materials, including test booklets, are returned to the Security Processing Department in Pearson's Cedar Rapids, Iowa, facility. ETS and Pearson closely monitor the return of materials. The CAHSEE Support Center at ETS contacts school districts that do not return their materials in a timely manner and works with them to facilitate the return of the test materials.

Processing Test Materials

Upon receipt of the test materials, Pearson uses precise inventory and test processing systems, in addition to quality assurance procedures, to maintain an up-to-date accounting of all the testing materials within their facilities. The materials are removed carefully from the shipping cartons and examined for a number of conditions, including physical damage, shipping errors, and omissions. A visual inspection to compare the number of students recorded on the School and Grade Identification (SGID) sheets with the number of answer documents in the stack is also conducted.

Pearson's image scanning process captures security information electronically and compares scorable material quantities reported on the SGID sheets to actual documents scanned. School districts are contacted by phone if there are any missing shipments or if the quantity of materials returned appears to be less than expected.

Quality Control of Scanning

The CAHSEE has multiple administrations each school year, but the answer document remains the same for each administration. As such, there are two scanning quality control initiatives. The first initiative takes place during the development of the scannable form. The second initiative takes place prior to the scanning process for each of the seven administrations.

Before any CAHSEE answer documents are distributed for use, Pearson conducts a complete check of the scanning system using the new document. Pearson creates test decks of approximately 25 answer documents for ELA and mathematics marked to cover response ranges, demographic data, blanks, double marks, and other responses. Fictitious students are created to verify that each marking possibility is processed correctly by the scanning program. The output file generated as a result of this activity is thoroughly checked against each answer document after each stage to verify that the scanner is capturing marks correctly. When the program output is confirmed to match the expected results, a scan program release form is signed, and the scan program is placed in the production environment under configuration management.

For each test administration, Pearson conducts what it calls the "blue dot file." Early return answer documents, numbering 300 to 500, are scanned, and a quality control file is created. The Quality Assurance Office pulls random documents from the blue dot batch and performs one-to-one matches of the documents to the scan files, verifying that the scan program is capturing the data accurately. Not until this check is complete and signed off does full processing begin for that particular administration.

The intensity levels of each scanner are constantly monitored throughout each administration for quality control purposes. Intensity diagnostic sheets are run before and during each batch to verify that the scanner is working properly. In the event that a scanner fails to properly pick up data on the diagnostic sheets, the scanner is recalibrated before it can resume processing student documents.

Documents received in poor condition (torn, folded, or water-stained) that cannot be fed through the high-speed scanners are either scanned using a flatbed scanner or keyed into the system manually.

Post-Scanning Edits

After scanning, there are opportunities for demographic data to be edited:

- After scanning by Pearson online editors.
- After student results are posted by the CAHSEE LEA coordinators (online demographic data corrections).

Online corrections are limited to those changes that do not change a student's reporting status or score. Corrections may be made throughout the year up until the time ETS prepares annual reports for the CDE. If the nature of the correction is such that the student's reporting status is changed (removal of a test modification, for example), the changes are authorized by the CDE and ETS makes the corrections. Corrected data are used for quarterly and annual reporting and for technical reports.

Quality Control of Image Editing

When ETS receives the blue dot file from Pearson, the MC items are scored in the SKM system and essay images are uploaded to the OSN. The images are reviewed by online scoring leaders to confirm that the images have been saved correctly. Pearson does not begin processing answer documents until they have received this confirmation from ETS.

Quality Control of Answer Document Processing and Scoring

Processing of Answer Documents

Once processing begins, Pearson sends scanned files several times each day to ETS for scoring. The files contain several batches of up to 1,500 records per batch. Within each batch, several records at the beginning, middle, and end are identified for QC. Photocopies are made of the identified answer documents and sent to the ETS resolutions area, where they are compared with the electronic file. Any discrepancies are reported to program management for resolution. The record is put on hold until the discrepancy is resolved. This procedure ensures that the scored record matches the physical answer document.

Scoring and Reporting Specifications

ETS develops standardized scoring procedures and specifications to ensure testing materials are processed and scored accurately. These documents include:

- General Reporting Specifications
- Form Planner Specifications

- **Matching Criteria for MC and Writing Answer Documents**

Each document is explained in detail in Chapter 8. The scoring specifications are reviewed and revised by the CDE and ETS each year. After the specifications are finalized, the CDE issues a formal approval of the scoring and reporting specifications.

Matching Information on CAHSEE Answer Documents

Answer documents are designed to produce a single, complete record for each student. The record includes demographic data and scanned responses. The scored responses and the total test scores are computed and merged into the same record. All scores must comply with ETS scoring specifications.

CAHSEE answer documents contain unique numbered lithocodes that are scannable and eye-readable. The lithocodes allow all pages of the document to be linked throughout processing, even after the documents have been separated into single sheets for scanning.

Matching Multiple-Choice and Writing Scores for English-Language Arts

Each student record is assigned a unique ETS identification number. When essay scores are uploaded to the CAHSEE database, they are matched with their associated MC scores.

Storing Answer Documents

After the answer documents have been scanned, they are palletized and placed in the secure storage facilities at Pearson. The materials are stored for one year from the date of the exam. At that time, ETS requests permission to salvage the materials. After receiving CDE approval, the materials are salvaged in a secure manner.

Quality Control of Psychometric Processes

Scoring Key Verification Process

ETS takes various necessary measures to ascertain that the scoring keys are applied to the student responses as expected and that the student scores are computed accurately. As described in detail in Chapter 8 (see Scoring Key Verification Process section), various quality control checks are performed before keys are finalized in the SKM system.

Quality Control of Item Analyses, Differential Item Functioning and Equating Process

The psychometric analyses conducted at ETS undergo comprehensive quality checks by a team of psychometricians and data analysts. Detailed checklists are employed by members of the team for each of the statistical procedures performed on the

CAHSEE. Quality assurance checks also include comparisons of the current year's statistics to those from previous years. The results of preliminary classical item analyses provide a check on scoring keys that are also reviewed by a senior psychometrician. The items that are flagged for questionable statistical attributes are sent to test development staff for their review; their comments are reviewed by the psychometricians before items are approved for inclusion in the equating process.

In addition to the team of psychometricians and data analysts, the results of the equating process are reviewed by a psychometric manager and a senior psychometric advisor. Several pieces of informative analyses are provided to facilitate the process. The CDE also performs a replication of the equating results. The CDE replicates both content areas for the census administrations and may replicate one content area for the non-census administrations.

A few additional checks are performed for each process, as described below:

Calibrations

During the calibration process, checks are made to ascertain that the correct options for the analyses are selected. Checks are also made on the number of items, the number of examinees with valid scores, IRT Rasch item difficulties, standard errors for the Rasch item difficulties, and the match of selected statistics to the results on the same statistics obtained during preliminary item analyses. Psychometricians also perform detailed reviews of plots and statistics to investigate model fit.

Scaling

During the scaling process, checks are made on the number of linking items, their average item difficulty, the number of items dropped during the stability check of the scaling process, Rasch item difficulties, standard errors of the Rasch item difficulty estimates, and the scaling constant.

Scoring Tables

Once the equating activities are complete and raw-to-scale scoring tables are generated, the psychometricians carry out quality control checks on each scoring table. Scoring tables are checked to verify that all raw scores are included in the tables, that scale scores increase as raw scores increase, and that the cut points for Pass, Proficient, and Advanced levels are correctly identified. As a check on the reasonableness of the cut scores, psychometricians compare passing rates of all students and students in various demographic subgroups from the current administration with passing rates from the same administration in previous years. After all quality control steps are completed and any differences are resolved, a psychometric manager and a senior psychometric advisor inspect the equating process and scoring tables as the final step in quality control.

Score Verification Process

ETS utilizes the raw-to-scale scoring tables to compute scale scores for each student. ETS verifies the scale scores by reviewing longitudinal data for reasonableness. The results are used to look at the trends for the state. The results of the longitudinal analyses are provided to the CDE and jointly discussed. If any anomalies in the results were to arise, they would be investigated further and discussed. After obtaining explanations that satisfy both the CDE and ETS, scores would then be released.

Offloads to Test Development

The statistics based on classical item analyses, DIF analyses, and IRT analyses are provided to test development staff in specially designed Excel spreadsheets called Statistical Offloads. These statistics are used for future test assembly. Before their release, the item statistic offloads are checked by the psychometric staff to make sure they are accurately combined from various analyses.

Independent Evaluation of the CAHSEE Program

HumRRO has functioned as the independent evaluator of the CAHSEE program since January 2000. During this time, HumRRO has analyzed and reported on a wide range of topics. The evaluation reports cover analyses of test results, analyses of questionnaire responses, and other evaluation activities. The annual and biennial evaluation reports may be found on the CDE CAHSEE Independent Evaluation Reports Web page at <http://www.cde.ca.gov/ta/tg/hs/evaluations.asp>.

Quality Control of Reporting

Quality control of reporting is carried out by two support centers at ETS. The Enterprise Scoring and Reporting (ENSR) and DQS groups work in tandem to monitor quality control of all CAHSEE reports. Quality control procedures are performed for data and production quality. The steps include:

- Data validation and verification of all extract files used for statistical analysis and production of student detail files and LEA summary reports.
- DQS replication of the summary report data to compare them to the data created by the IT group. The quality control check is completed before ENSR produces the summary report files (i.e., PDF files) that are printed and distributed to LEAs.
- Comparison of a sampling of student data on the Individual Student Report against data in the CAHSEE student data base. This comparison includes student name, birth date, student ID, grade, County District School (CDS) code, and test results. The comparison is completed before reports are distributed.
- Comparison of summary report PDF files created from IT generated data files against summary reports created from DQS replicated summary data.

- Confirmation of the number of printed Individual Student Report impressions against the number of records on the file sent to the printer.

All reports are required to include a single, accurate CDS code, a school name, a district name, and a county name. The CDE Master File, provided monthly by the CDE, is used to validate school identity and authorization to administer the CAHSEE. Reports are not released for distribution or for posting on CAHSEE Online until all quality control processes are completed and quality standards have been met.

Excluding Student Scores from Summary Reports

ETS provides specifications to the CDE that document when to exclude student scores from accountability reporting. These specifications include the logic for handling answer documents that, for example, indicate the student tested but marked no answers, did not complete the test due to a medical emergency, or tested using modifications. The methods for handling other anomalies are also covered in the specifications.

Chapter 10: Historical Comparisons

Historical comparisons of the CAHSEE results are routinely performed to identify the trends in examinee performance and test characteristics over time. Such comparisons are performed over a period of the three most recent years of administration: 2011–12, 2012–13, and 2013–2014. The indicators of examinee performance include the means and standard deviations of scale scores; the percentages of examinees classified into the Pass, Proficient, and Advanced performance levels; and the observed score distributions. Test characteristics are compared by looking at the mean percent correct, mean IRT b -value, mean point-biserial correlations of operational items, and the overall score reliability and SEM for each CAHSEE operational test form.

Examinee Performance

Table 10.A.1 shows the number of examinees assessed and the means and standard deviations of examinees' scale scores in 2011–12, 2012–13, and 2013–2014 for the ELA and mathematics tests.

Students taking the CAHSEE are classified into Pass/Not Pass as well as ESEA performance levels: Below Proficient, Proficient, and Advanced. The percentages of students passing each content area are presented in Table 10.A.2. The percentages of students assigned to ESEA performance levels are presented in Table 10.A.3. Although passing the CAHSEE is a requirement for graduation, the SBE established the Proficient level as the desired achievement goal for all students by 2014. This goal for all students is consistent with school growth targets for state accountability and federal requirements under the ESEA.

The distributions of scale scores observed in the three most recent years are shown in Table 10.A.4 through Table 10.A.7. Scale score distributions for the summer and fall administrations are found in Table 10.A.4 for ELA and Table 10.A.6 for mathematics. Scale score distributions for the winter and spring administrations are found in Table 10.A.5 for ELA and Table 10.A.7 for mathematics. For the CAHSEE, a minimum score of 350 is required to pass the exam, and a minimum score of 380 is required to reach the proficient level of performance.

Test Characteristics

The results of the CAHSEE over the past several years indicate that the CAHSEE tests meet the technical criteria established in professional standards for high-stakes tests. Table 10.B.1 and Table 10.B.2 present, respectively, the average percent correct values and the mean equated IRT b -values^{12, 13} for the items on the ELA and mathematics tests. The mean percent correct is affected both by the difficulty of the items and the abilities of the students taking them. The mean equated IRT b -values

¹²These statistics are based on the equating samples.

¹³Comparisons of mean b -values should be made only within a given subject test (e.g., ELA or mathematics).

reflect only average item difficulty. The average point-biserial correlations for the items on the ELA and mathematics tests are presented in Table 10.B.3. The reliabilities and SEMs expressed in raw score units appear in Table 10.B.4 for both content areas across administrations and years. Like the average percent correct, point-biserial correlations and reliabilities are affected by both item characteristics and student characteristics.

Appendix 10.A—Historical Comparisons on Student Performance

Table 10.A.1: Number of Examinees Tested, Scale Score Means, and Standard Deviations of the CAHSEE Across 2011–12, 2012–13, and 2013–14

Subject	Admin	Number of Students (with valid scores)			Scale Score Mean and Standard Deviation (SD)					
		2011–12	2012–13	2013–14	2011–12		2012–13		2013–14	
					Mean	SD	Mean	SD	Mean	SD
English- Language Arts	July	7,166	6,624	5,827	337	25	337	25	333	25
	October	36,343	42,422	35,096	341	30	339	30	342	30
	November	93,601	88,798	93,941	344	32	343	31	344	32
	December	2,319	1,944	1,570	339	26	337	27	341	26
	February	157,272	148,085	158,841	371	41	371	42	373	43
	March	388,104	390,567	369,871	378	39	380	39	379	39
	May	39,166	37,829	38,550	337	34	341	33	338	33
Mathematics	July	6,910	5,771	4,848	339	21	335	21	339	20
	October	35,680	39,577	32,057	345	27	344	26	346	27
	November	93,368	81,425	86,876	347	27	345	28	346	28
	December	2,087	1,577	1,358	343	21	345	21	344	22
	February	154,181	144,375	156,799	375	40	376	40	379	41
	March	383,396	385,597	367,516	384	39	385	40	386	40
	May	36,368	34,990	35,103	344	30	346	29	343	30

Table 10.A.2: Percentage of Students Passing Each Content Area Across 2011–12, 2012–13, and 2013–14

Admin	Percentage Passing					
	English-Language Arts			Mathematics		
	2011–12	2012–13	2013–14	2011–12	2012–13	2013–14
July	27	26	21	27	17	27
October	36	32	37	38	35	38
November	39	38	42	42	36	37
December	29	26	31	34	36	35
February	68	67	69	69	70	73
March	78	77	78	79	79	80
May	29	35	32	35	37	34

Table 10.A.3: Percentage of Below Proficient, Proficient, and Advanced Across 2011–12, 2012–13, and 2013–14

Subject	Admin	Below Proficient			Proficient			Advanced		
		2011–12	2012–13	2013–14	2011–12	2012–13	2013–14	2011–12	2012–13	2013–14
English-Language Arts	July	95	96	97	3	3	2	2	1	1
	October	91	91	91	5	5	5	4	4	4
	November	89	89	89	6	7	6	5	4	5
	December	94	94	93	4	4	4	2	2	3
	February	57	57	54	18	17	20	25	26	26
	March	50	48	49	22	22	23	28	30	29
	May	88	89	90	7	6	6	5	5	5
Mathematics	July	97	97	97	2	2	3	1	1	1
	October	91	92	91	7	6	7	2	2	2
	November	91	90	89	7	7	8	2	2	3
	December	95	95	94	4	4	5	1	1	1
	February	57	55	51	28	28	30	15	17	19
	March	46	45	44	34	33	34	20	22	22
May	89	89	89	8	8	9	3	3	2	

Table 10.A.4: Scale Score Distributions Across 2011, 2012, and 2013 for ELA (July to December)

Scale Score Distribution	July			October			November			December		
	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013
450	7	3	2	145	151	158	399	305	350	9	5	4
440–449	8	9	5	82	92	138	547	406	450	4	3	1
430–439	13	9	5	180	194	100	747	622	328	1	5	3
420–429	26	15	11	257	110	380	945	741	793	7	7	9
410–419	39	27	18	325	516	294	1,107	847	1,467	20	9	17
400–409	59	48	28	548	434	499	1,869	1,556	1,191	18	18	10
390–399	63	60	41	646	789	613	2,206	1,878	2,808	29	25	30
380–389	142	120	86	1,065	1,331	977	2,893	3,437	2,755	41	47	30
370–379	211	177	152	1,578	1,903	1,660	5,471	4,988	5,368	87	50	88
360–369	495	497	296	3,328	2,868	3,448	10,139	7,162	10,315	124	145	100
350–359	881	727	604	5,031	5,137	4,871	10,263	12,105	13,546	322	186	199
340–349	1,277	1,445	1,003	5,717	6,500	5,460	13,489	12,960	13,375	431	354	302
330–339	1,334	1,114	1,055	5,296	6,486	4,915	14,184	11,366	11,421	406	351	273
320–329	988	873	920	4,035	5,007	3,675	9,016	10,878	8,979	299	265	219
310–319	744	663	653	3,067	4,621	3,009	7,264	7,128	7,069	231	206	145
300–309	449	453	426	2,233	2,743	2,259	6,589	5,480	5,979	152	137	69
290–299	255	203	230	1,539	1,831	1,671	3,518	3,934	4,258	76	63	47
280–289	109	101	160	765	960	514	1,816	1,859	2,109	41	35	17
275–279	66	80	132	506	749	455	1,139	1,146	1,380	21	33	7

Table 10.A.5: Scale Score Distributions Across 2012, 2013, and 2014 for ELA (February to May)

Scale Score Distribution	February			March			May		
	2012	2013	2014	2012	2013	2014	2012	2013	2014
450	4,418	4,946	6,820	12,321	16,200	13,370	219	119	148
440–449	2,125	4,948	3,064	6,634	7,664	14,302	120	194	86
430–439	5,590	6,202	3,664	17,291	19,545	9,099	129	126	235
420–429	7,012	6,978	8,235	21,600	23,230	20,497	402	331	348
410–419	12,020	7,471	14,198	24,517	25,800	23,582	742	675	448
400–409	8,254	11,350	9,796	38,878	39,434	37,199	588	539	812
390–399	16,183	11,044	14,199	38,878	37,643	37,043	926	1,238	959
380–389	11,339	10,194	12,784	35,307	33,524	33,883	1,447	1,047	1,005
370–379	13,273	12,111	14,293	40,633	38,102	38,646	1,568	1,661	1,642
360–369	14,166	13,595	11,906	32,708	37,370	30,792	1,900	2,988	2,596
350–359	13,190	10,455	10,328	32,185	23,958	29,605	3,328	4,356	3,982
340–349	12,135	12,162	11,553	20,296	24,895	22,549	4,591	5,235	4,838
330–339	10,555	10,309	10,210	19,484	19,447	17,171	6,240	5,013	5,094
320–329	8,515	7,863	8,046	14,897	14,720	13,134	4,749	4,195	4,455
310–319	6,864	7,311	6,338	11,117	11,126	10,066	4,602	4,017	4,528
300–309	5,140	4,584	5,034	8,468	8,273	7,787	3,165	2,666	2,945
290–299	3,505	3,407	4,138	6,427	5,474	5,745	2,295	1,857	2,293
280–289	1,793	1,837	2,500	3,821	2,621	3,281	1,228	922	1,248
275–279	1,195	1,318	1,735	2,642	1,541	2,120	927	650	888

Table 10.A.6: Scale Score Distributions Across 2011, 2012, and 2013 for Mathematics (July to December)

Scale Score Distribution	July			October			November			December		
	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013
450	13	15	10	240	234	258	672	680	750	5	3	3
440–449	9	6	5	86	96	203	324	300	322	2	5	0
430–439	15	11	2	213	224	116	673	303	676	3	3	3
420–429	17	8	15	223	247	346	678	657	747	4	2	5
410–419	11	23	10	243	371	244	722	1,074	789	10	6	9
400–409	46	19	29	628	469	368	1,204	1,207	1,679	13	15	16
390–399	61	37	26	458	526	553	1,919	1,297	1,364	14	21	21
380–389	65	39	66	993	1,153	879	2,602	2,220	2,852	46	19	20
370–379	171	101	130	1,645	1,702	1,469	5,248	3,835	3,379	83	77	48
360–369	393	230	274	3,001	2,885	2,551	8,758	6,300	8,472	170	124	97
350–359	1,066	511	719	5,811	5,866	5,167	16,041	11,845	11,091	368	289	256
340–349	1,375	1,108	965	5,780	7,675	5,335	15,111	14,657	16,130	424	385	336
330–339	1,625	1,457	1,202	6,497	6,407	6,291	15,875	14,260	15,558	463	273	242
320–329	983	1,068	766	4,477	5,519	4,059	10,421	9,976	10,822	268	227	151
310–319	667	769	395	3,428	3,969	2,429	7,950	7,609	7,871	123	95	109
300–309	275	259	173	1,401	1,568	1,411	3,507	3,552	3,173	70	28	31
290–299	82	77	46	347	442	216	1,223	1,197	768	19	1	6
280–289	13	20	4	103	114	75	226	226	218	1	2	3
275–279	23	13	11	106	110	87	214	230	215	1	2	2

Table 10.A.7: Scale Score Distributions Across 2012, 2013, and 2014 for Mathematics (February to May)

Scale Score Distribution	February			March			May		
	2012	2013	2014	2012	2013	2014	2012	2013	2014
450	9,313	8,133	11,063	26,965	32,129	31,388	365	271	288
440–449	3,453	6,432	3,865	20,015	20,903	20,876	118	250	128
430–439	6,898	3,348	7,768	10,041	10,409	10,226	310	147	299
420–429	6,902	6,419	7,648	20,063	20,579	20,169	338	264	336
410–419	6,541	9,347	11,119	29,883	30,251	29,262	388	514	378
400–409	9,506	8,756	10,562	28,511	28,633	28,085	618	546	602
390–399	12,030	11,401	12,975	36,138	35,859	35,148	899	860	879
380–389	11,366	10,604	11,639	33,616	32,213	31,922	1,054	1,024	1,024
370–379	13,099	11,997	12,771	36,969	35,255	33,904	1,677	1,605	1,501
360–369	12,483	11,242	11,628	32,189	30,426	28,529	2,360	3,135	2,228
350–359	15,432	13,946	13,693	27,803	26,584	24,165	4,426	4,303	4,103
340–349	13,060	11,736	11,186	29,090	27,795	24,473	5,848	6,644	5,733
330–339	13,516	12,741	12,020	19,067	19,005	16,968	5,195	6,262	5,235
320–329	8,808	8,589	8,273	17,547	15,474	14,014	5,761	4,373	4,724
310–319	6,833	5,293	6,439	8,491	11,799	11,026	3,469	2,659	4,100
300–309	3,331	3,431	2,911	4,908	5,717	5,046	2,669	1,645	2,238
290–299	1,181	594	826	1,548	1,915	1,721	542	276	962
280–289	228	185	243	286	339	331	199	110	205
275–279	201	181	170	266	312	263	132	102	140

Appendix 10.B—Historical Comparisons on Test Characteristics

Table 10.B.1: Average Percent Correct of Operational Test Items Across 2011–12, 2012–13, and 2013–14

Subject	Admin	Average <i>p</i> -value		
		2011–12	2012–13	2013–14
English- Language Arts	July	0.53	0.53	0.53
	October	0.56	0.57	0.55
	November	0.58	0.57	0.57
	December	0.54	0.56	0.54
	February	0.70	0.70	0.73
	March	0.76	0.75	0.77
	May	0.55	0.55	0.55
Mathematics	July	0.46	0.44	0.44
	October	0.48	0.48	0.48
	November	0.51	0.50	0.50
	December	0.46	0.48	0.47
	February	0.66	0.66	0.68
	March	0.71	0.71	0.73
	May	0.48	0.49	0.48

Table 10.B.2: Average IRT *b*-values of Operational Test Items Across 2011–12, 2012–13, and 2013–14

Subject	Admin	Average IRT <i>b</i> -value		
		2011–12	2012–13	2013–14
English- Language Arts	July	-0.01	-0.01	-0.01
	October	-0.05	-0.15	0.00
	November	-0.09	-0.05	-0.05
	December	-0.04	-0.15	0.01
	February	-0.01	-0.05	-0.16
	March	-0.16	-0.06	-0.14
	May	-0.11	-0.04	-0.11
Mathematics	July	-0.24	-0.26	-0.26
	October	-0.19	-0.17	-0.13
	November	-0.24	-0.27	-0.20
	December	-0.15	-0.17	-0.11
	February	-0.24	-0.18	-0.19
	March	-0.20	-0.21	-0.21
	May	-0.22	-0.15	-0.22

Table 10.B.3: Average Point-Biserial Correlation of Operational Test Items Across 2011–12, 2012–13, and 2013–14

Subject	Admin	Average Point-Biserial Correlation		
		2011–12	2012–13	2013–14
English-Language Arts	July	0.31	0.31	0.31
	October	0.36	0.36	0.36
	November	0.37	0.37	0.38
	December	0.31	0.31	0.31
	February	0.46	0.46	0.47
	March	0.44	0.43	0.43
	May	0.40	0.39	0.39
Mathematics	July	0.27	0.27	0.27
	October	0.34	0.33	0.34
	November	0.34	0.35	0.35
	December	0.28	0.27	0.29
	February	0.46	0.47	0.48
	March	0.45	0.46	0.46
	May	0.37	0.36	0.38

Table 10.B.4: Reliabilities and Standard Errors of Measurement (SEMs) of Operational Test Forms Across 2011–12, 2012–13, and 2013–14

Subject	Admin	Reliability			SEM		
		2011–12	2012–13	2013–14	2011–12	2012–13	2013–14
English-Language Arts	July	0.87	0.87	0.87	4.40	4.32	4.30
	October	0.90	0.90	0.90	4.37	4.36	4.37
	November	0.91	0.91	0.91	4.36	4.37	4.31
	December	0.87	0.88	0.87	4.25	4.23	4.22
	February	0.94	0.94	0.94	4.05	3.99	3.84
	March	0.93	0.93	0.93	3.81	3.80	3.81
	May	0.92	0.92	0.92	4.48	4.36	4.44
Mathematics	July	0.85	0.84	0.84	4.16	4.14	4.11
	October	0.90	0.90	0.90	4.10	4.11	4.07
	November	0.90	0.91	0.91	4.10	4.10	4.07
	December	0.85	0.84	0.86	4.14	4.15	4.12
	February	0.95	0.95	0.96	3.67	3.66	3.61
	March	0.95	0.95	0.95	3.56	3.53	3.49
	May	0.92	0.91	0.92	4.05	4.08	4.03

References

- AERA, APA, & NCME. (1999). *Standards for educational and psychological testing*. Washington, DC: American Educational Research Association.
- Becker, D. E., & Wiley, R. H. (2012). Post High School Outcomes Study. In D. E. Becker, L. L. Wise, M. M. Hardoin, and C. Watters (Eds.). *Independent Evaluation of the California High School Exit Examination (CAHSEE): 2012 Evaluation Report*. (FR-12–54). Alexandria, VA: Human Resources Research Organization.
- California Department of Education. (2006). *Mathematics Framework for California Public Schools*. Sacramento, CA: California Department of Education.
- California Department of Education. (2014a). *California High School Exit Examination Local Educational Agency and Test Site Coordinator Manual (July 2013–May 2014)*. Sacramento, CA: California Department of Education.
- California Department of Education. (2014b). *California High School Exit Examination Directions for Administration (July 2013–May 2014)*. Sacramento, CA: California Department of Education.
- California Department of Education. (2014c). *Content Standards*. <http://www.cde.ca.gov/be/st/ss/index.asp>
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, *56*, 81–105.
- Cronbach, L. J. (1951). Coefficient alpha and the independent structure of tests. *Psychometrika*, *16*, 292–334.
- Cronbach, L. J. (1971). Test validation. In R. L. Thorndike (Ed.). *Educational Measurement* (2nd ed.). Washington, DC: American Council on Education.
- Cronbach, L. J., Gleser, G. C., Nanda, H., & Rajaratnam, N. (1972). *The dependability of behavioral measurements: Theory of generalizability for scores and profiles*. New York: Wiley.
- Dragow, F. (1988). Polychoric and polyserial correlations. In L. Kotz and N. L. Johnson (Eds.), *Encyclopedia of statistical sciences (Vol. 7)*. New York: Wiley.
- Educational Testing Service. (2002). *ETS Standards for Quality and Fairness*. Office of Testing Integrity, Princeton, NJ: Educational Testing Service.
- Feldt, L. S., & Brennan, R. L. (1989). Reliability. In R.L. Linn (Ed.), *Educational Measurement* (3rd ed.). Phoenix, AZ: Oryx Press.
- Gaffney, T., & Perryman, C. (July, 2009). *A longitudinal look at the factor structure of educational achievement tests*. Paper presented at the International Meeting of the Psychometric Society. University of Cambridge: Cambridge, UK.
- Kane, M. T. (2006). Validation. In R. Brennan (Ed.), *Educational Measurement* (4th ed.). Washington, DC: American Council on Education and National Council on Measurement in Education.

- Lewis, D. M., Green, D. R., Mitzel, H. C., Baum, K., & Patz, R. J. (April 1998). *The bookmark standard setting procedure: Methodology and recent implementations*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.
- Lewis, C., & Thayer, D. T. (1996). Unpublished Seminar Notes.
- Livingston, S. A., & Lewis, C. (1995). Estimating the consistency and accuracy of classification based on test scores. *Journal of Educational Measurement*, 32, 179–197.
- Lord, F. M. (1980). *Application of item response theory to practical testing problems*. Hillsdale, NJ: Lawrence Erlbaum.
- Messick, S. (1989). Validity. In R. L. Linn (Ed.), *Educational Measurement* (3rd ed.) (pp.13–103). New York: Macmillan.
- Mitzel, H. C., Lewis, D. M., Patz, R. J., & Green, D. R. (2001). The Bookmark procedure: Psychological perspectives. In G. J. Cizek (Ed.), *Setting performance standards: Concepts, methods, and perspectives*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Muraki, E. (1992). A generalized partial credit model: Application of an EM algorithm. *Applied Psychological Measurement*, 17, 159–176.
- Muraki, E. and Bock, R. D. (1995). *PARSCALE: Parameter scaling of rating data* (Version 2.2). Chicago, IL: Scientific Software, Inc.
- Patrick, R., & Way, D. (March, 2008). *Field testing and equating designs for state educational assessments*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.
- Stocking, M. L., & Lord, F. M. (1983). Developing a common metric in item response theory. *Applied Psychological Measurement*, 7, 201–210.
- Taylor, L., Johnstone, C., & Hardoin, M. M. (2011). 2011 review of CAHSEE test quality. In D. E. Becker, L. L. Wise, M. M. Hardoin, and C. Watters (Eds.). *Independent Evaluation of the California High School Exit Examination (CAHSEE): 2011 Evaluation Report*. (FR-11–51). Alexandria, VA: Human Resources Research Organization.
- United States Department of Education (2009). *Standards and assessments peer review guidance: Information and examples for meeting requirements of the No Child Left Behind Act of 2001*. Retrieved September 21, 2009, from <http://www.ed.gov/policy/elsec/guid/saaprguidance.pdf>. [Note: the preceding Web address is no longer valid.]
- Webb, N. L. (2005). *Web alignment tool: Training manual*. Madison, WI: Wisconsin Center for Education Research.
- Wise, L. L. (2007). A closer look at specific populations. In D. E. Becker & C. Watters (Eds.). *Independent Evaluation of the California High School Exit Examination (CAHSEE): 2007 Evaluation Report*. (FR-07-69). Alexandria, VA: Human Resources Research Organization.