

**APPENDIX L**  
**2022–2023 EQUATING REPORT**



# Massachusetts Comprehensive Assessment System

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2022–2023: EQUATING REPORT

# 2022–2023 Massachusetts Comprehensive Assessment System

## Equating Report

The purpose of this document is to summarize the psychometric calibration and equating results obtained from Cognia for Next-Gen MCAS. Presented in this report are various program summary statistics and specific results related to the study.

The results of this report are organized as follows:

1. Aggregate Results
  1. Percentage of Students by Achievement Levels Categories
  2. Raw Scores Associated with Cutpoints
  3. Calibration Report
  4. Equating Item Summary Statistics
2. Grade Subject Results
  1. A/A, B/B, Delta, Test Characteristic Curve, Test Information Function, and Cumulative Scale Score Distribution Plots
  2. Lookup Tables
  3. Cumulative Scale Score Distribution Tables
  4. Rescore Analysis Results
  5. Tabled Delta Analysis Results
  6. Tabled B/B Analysis Results
  7. Tabled Beta Analysis Results
  8. Final Item Parameters
  9. Decision Accuracy and Consistency (DAC)
  10. Fit Plots of Watchlist Items

The final results of this equating will be included as part of the 2022 - 2023 Next-Gen MCAS Technical Manual. If requested, Cognia will distribute and/or present this report at the next MCAS TAC.

# Section 1.1

## Percentage of Students by Achievement Levels Categories

Table 1.1.1  
Percentage of Students by Achievement Levels Categories  
Biology

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS
10	2023	49403	12	36	41	12	52	4.3	500.8
	2022	50827	12	40	37	11	48		498.9

Table 1.1.2  
Percentage of Students by Achievement Levels Categories  
English Language Arts

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS
3	2023	60542	14	40	39	7	46	0.3	496.0
	2022	61648	13	41	39	7	46	-6.9	497.1
	2021	50011	8	39	43	10	53	-5.7	500.1
	2019	63602	6	36	48	11	58	5.8	504.8
	2018	43046	6	41	43	10	53	1.0	501.8
	2017	26459	7	41	43	8	52		500.1
4	2023	61836	14	44	36	6	42	1.7	494.7
	2022	62100	14	46	36	4	40	-11.2	493.8
	2021	50867	11	38	45	6	51	-2.7	498.9
	2019	65450	7	39	44	10	54	-0.5	502.6
	2018	69078	7	38	44	10	55	3.5	502.2
	2017	63918	8	41	43	8	51		500.1
5	2023	62316	13	41	41	5	46	3.8	496.0
	2022	63620	11	47	37	5	42	-7.1	495.6
	2021	51362	10	41	41	8	49	-5.0	497.9
	2019	67933	6	39	47	8	54	-1.5	501.9
	2018	69390	6	38	49	7	56	4.4	502.3
	2017	28547	7	42	46	5	51		499.9
6	2023	63574	21	35	36	8	44	1.3	494.0
	2022	63887	20	37	35	8	43	-7.2	494.0
	2021	51319	19	31	37	13	50	-5.7	498.4
	2019	67612	11	33	42	13	56	3.4	502.5
	2018	53988	10	38	42	11	52	-0.7	501.3
	2017	29369	8	39	47	6	53		500.3
7	2023	63711	17	41	34	8	42	-0.3	494.2
	2022	65584	17	40	37	6	42	-3.2	493.7
	2021	51120	17	37	39	7	46	-4.8	495.6
	2019	67462	11	39	42	9	50	3.6	499.8
	2018	66410	13	40	39	8	47	-6.5	497.4
	2017	30209	8	38	48	6	53		500.2
8	2023	65553	20	35	35	10	45	2.2	495.4
	2022	67919	16	40	36	7	43	-0.3	494.8
	2021	50822	15	41	37	7	44	-10.0	496.2
	2019	67350	11	35	42	12	54	1.1	500.6
	2018	69486	13	34	42	10	52	1.1	499.6
	2017	65314	9	40	43	8	51		499.5
10	2023	68104	10	30	44	16	60	0.2	504.2
	2022	65193	7	34	51	9	60	-6.4	502.9
	2021	67110	8	26	46	20	66	2.3	508.1
	2019	67067	6	31	50	14	64		507.3

Table 1.1.3  
Percentage of Students by Achievement Levels Categories  
Mathematics

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS
3	2023	51707	12	39	39	10	49	1.2	499.1
	2022	53433	13	39	40	8	48	9.8	497.5
	2021	45242	20	42	32	6	38	-18.0	491.2
	2019	56176	7	37	45	11	56	7.2	503.0
	2018	43501	11	40	40	9	49	-3.2	499.1
	2017	26659	11	37	44	8	52		499.2
4	2023	52554	10	37	43	10	54	4.0	501.1
	2022	53577	10	40	43	7	50	10.9	498.8
	2021	45553	17	44	34	4	39	-17.8	491.7
	2019	57629	6	37	47	10	57	7.7	503.0
	2018	69779	11	40	42	7	49	-1.9	498.0
	2017	64473	10	39	44	6	51		498.7
5	2023	54159	7	45	42	6	48	5.7	499.3
	2022	55635	10	48	38	5	42	3.1	496.5
	2021	46011	13	47	35	5	39	-15.5	493.5
	2019	60444	5	40	48	6	55	8.0	501.7
	2018	70083	9	45	42	5	47	-2.7	497.7
	2017	29285	8	42	42	8	49		499.4
6	2023	56389	11	42	40	8	47	-0.3	498.1
	2022	56939	9	43	42	6	48	8.9	498.2
	2021	46699	16	45	34	5	39	-18.9	493.4
	2019	61719	6	37	46	12	58	9.6	504.0
	2018	54582	9	43	42	6	48	-4.2	498.4
	2017	29704	9	39	46	6	52		499.7
7	2023	57234	16	41	35	9	44	1.7	496.1
	2022	59311	13	45	34	8	42	2.7	495.5
	2021	46839	13	48	32	7	39	-13.4	494.9
	2019	62495	9	39	41	12	53	5.3	501.0
	2018	66925	12	40	40	8	47	-0.9	497.7
	2017	30144	9	43	40	8	48		498.9
8	2023	59572	14	43	34	9	43	2.3	496.4
	2022	62311	12	48	32	8	40	4.4	495.8
	2021	47150	16	48	32	4	36	-15.1	492.0
	2019	62817	8	41	40	11	51	0.4	501.5
	2018	70044	11	39	42	8	51	1.1	498.9
	2017	66077	9	42	40	9	49		500.3
10	2023	63574	5	41	43	11	54	0.3	502.7
	2022	61296	7	39	41	12	54	-1.4	503.0
	2021	57770	9	36	43	12	55	-7.4	502.2
	2019	64481	6	32	48	14	63		506.9

Table 1.1.4  
 Percentage of Students by Achievement Levels Categories  
 Introductory Physics

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS
10	2023	12822	9	36	38	17	55	3.5	504.4
	2022	12837	8	40	39	13	52		502.0

Table 1.1.5  
 Percentage of Students by Achievement Levels Categories  
 Science

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS
5	2023	54162	11	40	39	10	49	0.3	499.1
	2022	56846	12	39	40	8	48	-0.1	498.5
	2021	45455	12	39	41	8	49	-6.8	498.2
	2019	60476	7	38	45	10	55		502.5
8	2023	59527	13	41	39	7	46	0.2	496.7
	2022	62926	13	41	39	6	46	0.6	496.3
	2021	46950	11	44	36	9	45	-5.3	497.6
	2019	62933	8	41	41	9	50		500.5

# Section 1.2

## Raw Scores Associated with Cutpoints



Table 1.2.1  
Raw Scores Associated with Cutpoints

Subject	Grade	Cut Point	2022 Actual	2023 Actual	2023 Pred
Biology	10	NM-PM	17	17	17
		PM-ME	34	34	35
		ME-EE	50	51	51
English Language Arts	3	NM-PM	14	13	11
		PM-ME	28	28	26
		ME-EE	37	38	37
English Language Arts	4	NM-PM	15	16	14
		PM-ME	29	29	29
		ME-EE	39	38	39
English Language Arts	5	NM-PM	16	17	14
		PM-ME	33	32	31
		ME-EE	43	42	42
English Language Arts	6	NM-PM	19	19	17
		PM-ME	32	31	30
		ME-EE	42	41	41
English Language Arts	7	NM-PM	18	16	15
		PM-ME	32	31	31
		ME-EE	44	43	44
English Language Arts	8	NM-PM	22	22	19
		PM-ME	36	34	33
		ME-EE	45	43	44
English Language Arts	10	NM-PM	19	20	17
		PM-ME	37	35	35
		ME-EE	47	45	46
Mathematics	3	NM-PM	14	14	13
		PM-ME	30	32	31
		ME-EE	43	44	43
Mathematics	4	NM-PM	14	16	16
		PM-ME	33	34	35
		ME-EE	49	48	49
Mathematics	5	NM-PM	13	13	13
		PM-ME	33	32	32
		ME-EE	50	49	49
Mathematics	6	NM-PM	11	12	11
		PM-ME	28	30	29
		ME-EE	48	49	48
Mathematics	7	NM-PM	10	11	10
		PM-ME	25	27	26
		ME-EE	46	47	47
Mathematics	8	NM-PM	12	14	13
		PM-ME	32	32	32
		ME-EE	49	49	49
Mathematics	10	NM-PM	11	10	13
		PM-ME	30	30	32
		ME-EE	52	52	51
Introductory Physics	10	NM-PM	17	17	17
		PM-ME	35	32	34
		ME-EE	51	48	50
Science	5	NM-PM	19	18	18
		PM-ME	34	34	34
		ME-EE	45	45	45
Science	8	NM-PM	16	16	15
		PM-ME	31	31	31
		ME-EE	45	46	46

# Section 1.3

## Calibration Report

## Calibration Report—Executive Summary

FlexMIRT 3.03 was used for the IRT calibration at Cognia. All command files were set up in a way following general settings. The calibration convergence criterion was set to 0.001.

A 3PLM was used for standard four-option selected-response (SR) items, a 2PLM was used for dichotomously-scored short response items, multi-select items, and technology-enhanced items, and a Graded Response Model (GRM) was specified for the polytomously-scored multi-part items and open response items. The logistic version of the IRT models was used. The prior distribution for the guessing parameter was set to be  $\text{beta}(5,17)$ , and  $\text{logNormal}(0, 0.25)$  was used as the prior for the item discrimination parameter. No prior was supplied for the item difficulty parameter.

The calibration went smoothly and was converged in all subjects/grades. In particular, the largest change in parameter values (from one iteration to the next) was decreasing and tended to flatten out towards the end of the calibration process. The IRT model fit was evaluated for each of the items. The resulting parameters demonstrated good model fit for most of the items.

In ELA, a two-stage process was used to bring the item parameters onto the operational scale. First all items except the essays were freely calibrated. Next the items were placed onto scale using the Stocking and Lord procedure. These first two steps are referred to as Stage 1. Next, the essays were brought onto scale with a Fixed Common Item Parameter calibration using FlexMIRT while holding the parameters from Stage 1 fixed. This two-stage process is used to assure that the essay parameter estimation process does not unduly influence the dimensional structure of the initial parameter estimation in Stage 1, providing for greater scale stability.

The first table in this section shows the number of cycles to achieve convergence in Stage 1 of the ELA procedure:

Table 1.3.1.a  
Number of Cycles to Convergence for ELA Calibration with no Essays

Subject	Grade	Initial Cycles
English Language Arts	Grade 3	30
English Language Arts	Grade 4	27
English Language Arts	Grade 5	43
English Language Arts	Grade 6	26
English Language Arts	Grade 7	21
English Language Arts	Grade 8	119
English Language Arts	Grade 10	43

The Stocking and Lord procedure was used to transform non-essay parameter estimates onto the operational scale. These transformation constants were found using the STUIRT program which can be found at the CASMA website: <http://www.education.uiowa.edu/casma/>. The Stocking & Lord transformation constants that were calculated in the second step of Stage 1 are listed in the following table:

Table 1.3.1.b  
Stocking and Lord Constants for ELA Equating with no Essays

Subject	Grade	Slope	Intercept	Num Eq Items	Num Eq Items Rem
English Language Arts	3	1.14	-0.21	18	0
English Language Arts	4	1.07	-0.26	18	0
English Language Arts	5	1.14	-0.21	16	0
English Language Arts	6	1.44	-0.36	16	0
English Language Arts	7	1.22	-0.30	16	0
English Language Arts	8	1.41	-0.21	16	0
English Language Arts	10	1.16	-0.17	16	0

The third table shows the number of cycles to achieve convergence in the equating (FCIP) calibration runs for Stage 2:

Table 1.3.1.c  
Number of Cycles to Convergence for ELA FCIP Calibration with Essays Included

Subject	Grade	Initial Cycles	Equating Cycles
English Language Arts	Grade 3	28	8
English Language Arts	Grade 4	22	7
English Language Arts	Grade 5	44	8
English Language Arts	Grade 6	17	12
English Language Arts	Grade 7	20	9
English Language Arts	Grade 8	42	12
English Language Arts	Grade 10	48	11

The Math and Science tests were equated using a single stage procedure of freely calibrating all items and placing them on the operational scale using the Stocking and Lord procedure. The next table in this section lists the number of cycles to achieve convergence, followed by a table of the Stocking and Lord transformation constants.

Table 1.3.1.d  
Number of Cycles to Convergence for Math and Science

Subject	Grade	Initial Cycles
Biology	Grade 10	23
Mathematics	Grade 3	66
Mathematics	Grade 4	71
Mathematics	Grade 5	50
Mathematics	Grade 6	43
Mathematics	Grade 7	80
Mathematics	Grade 8	33
Mathematics	Grade 10	55
Introductory Physics	Grade 10	66
Science	Grade 5	50
Science	Grade 8	47

Table 1.3.1.e  
Stocking and Lord Constants for Math and Science

Subject	Grade	Slope	Intercept	Num Eq Items	Num Eq Items Rem
Biology	10	0.84	0.26	22	0
Mathematics	3	1.08	-0.03	20	0
Mathematics	4	1.03	0.10	20	0
Mathematics	5	1.01	-0.02	20	0
Mathematics	6	1.03	-0.11	20	0
Mathematics	7	1.11	-0.14	20	0
Mathematics	8	1.10	-0.19	20	0
Mathematics	10	0.97	-0.18	21	0
Introductory Physics	10	0.94	0.29	22	0
Science	5	1.11	-0.17	20	0
Science	8	1.06	-0.17	20	1

Four methods of evaluating the suitability of the equating items were used: delta analysis, b/b analysis, beta analysis, and rescore analysis. As a result of all four analyses, flagged items were reviewed by content personnel and no items were removed from the equating analysis. Results from these analyses are included in Section II of this report.

Items flagged by the delta, b/b, beta, or rescore analyses, or any item that required intervention during the calibration process, were compiled and placed in our item watch list, which includes the final actions taken on these items. The final watch list is presented in the following table:

Table 1.3.2  
Final Items Watch List

Subject	Grade	ItemID	Reason	Action
Biology	10	IA10684 (SC723337422)	beta analysis	retained for equating
Biology	10	IA10989 (SC910635381)	beta analysis	retained for equating
Biology	10	IA11033 (SC914353987)	beta analysis	retained for equating
Biology	10	IA11054 (SC921067241)	beta analysis	retained for equating
English Language Arts	3	IA00286 (EL308842)	beta analysis	retained for equating
English Language Arts	4	IA00289 (EL309792)	beta analysis	retained for equating
English Language Arts	8	IA00063 (EL290814)	beta analysis	retained for equating
Mathematics	4	IA00961 (MA307081)	beta analysis	retained for equating
Mathematics	4	IA01093 (MA623879088)	beta analysis	retained for equating
Mathematics	5	IA00936 (MA306420)	beta analysis	retained for equating
Mathematics	8	IA00865 (MA297656)	beta analysis	retained for equating
Mathematics	8	IA02495 (MA309741)	beta analysis	retained for equating
Mathematics	8	IA05070 (MA804042487)	beta analysis	retained for equating
Introductory Physics	10	IA10704 (SC800964236)	beta analysis	retained for equating
Introductory Physics	10	IA10936 (SC906662706)	beta analysis	retained for equating
Science	5	IA05657 (SC803732869)	beta analysis	retained for equating
Science	5	IA05702 (SC806382697)	beta analysis	retained for equating
Science	8	IA05245 (SC290144)	beta analysis	removed from equating
Science	8	IA05690 (SC804367702)	beta analysis	retained for equating

# Section 1.4

## Equating Item Summary Statistics

Table 1.4.1  
Equating Item Summary Statistics  
(2023 a and b values are unscaled parameters before equating for all tests)

Subject	Grade	Year	P-Value		Point Biserial		a		b	
			Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Biology	10	2023	0.59	0.16	0.47	0.12	0.94	0.27	-0.21	0.80
		Previous	0.57	0.14	0.47	0.12	1.07	0.29	0.05	0.65
English Language Arts	03	2023	0.58	0.13	0.50	0.09	1.09	0.34	-0.02	0.52
		Previous	0.58	0.13	0.49	0.09	1.00	0.36	-0.19	0.56
English Language Arts	04	2023	0.64	0.16	0.43	0.09	0.86	0.19	-0.29	0.81
		Previous	0.63	0.16	0.41	0.09	0.80	0.20	-0.63	0.85
English Language Arts	05	2023	0.69	0.14	0.40	0.07	0.86	0.27	-0.50	0.66
		Previous	0.68	0.14	0.40	0.08	0.76	0.26	-0.79	0.75
English Language Arts	06	2023	0.68	0.11	0.41	0.09	0.86	0.22	-0.42	0.67
		Previous	0.68	0.11	0.41	0.08	0.60	0.15	-0.97	0.99
English Language Arts	07	2023	0.71	0.11	0.42	0.08	0.86	0.21	-0.68	0.65
		Previous	0.70	0.11	0.43	0.08	0.70	0.19	-1.17	0.79
English Language Arts	08	2023	0.64	0.13	0.41	0.08	0.89	0.28	-0.29	0.62
		Previous	0.64	0.12	0.40	0.08	0.62	0.20	-0.58	0.79
English Language Arts	10	2023	0.71	0.10	0.45	0.06	0.90	0.24	-0.76	0.63
		Previous	0.71	0.10	0.43	0.06	0.79	0.20	-1.02	0.68
Mathematics	03	2023	0.65	0.16	0.48	0.11	1.02	0.21	-0.44	0.84
		Previous	0.63	0.16	0.49	0.10	0.91	0.20	-0.50	0.87
Mathematics	04	2023	0.62	0.16	0.51	0.11	1.02	0.27	-0.32	0.61
		Previous	0.59	0.17	0.50	0.11	0.99	0.29	-0.22	0.71
Mathematics	05	2023	0.61	0.19	0.48	0.12	1.01	0.27	-0.32	0.84
		Previous	0.58	0.18	0.48	0.11	0.98	0.29	-0.33	0.81
Mathematics	06	2023	0.56	0.16	0.47	0.14	1.04	0.34	-0.04	0.87
		Previous	0.56	0.16	0.46	0.14	1.03	0.33	-0.11	0.90
Mathematics	07	2023	0.56	0.19	0.53	0.13	1.20	0.32	-0.13	0.72
		Previous	0.56	0.19	0.52	0.13	1.10	0.29	-0.27	0.79
Mathematics	08	2023	0.56	0.14	0.51	0.12	1.21	0.37	0.00	0.59
		Previous	0.56	0.14	0.49	0.12	1.16	0.39	-0.16	0.64



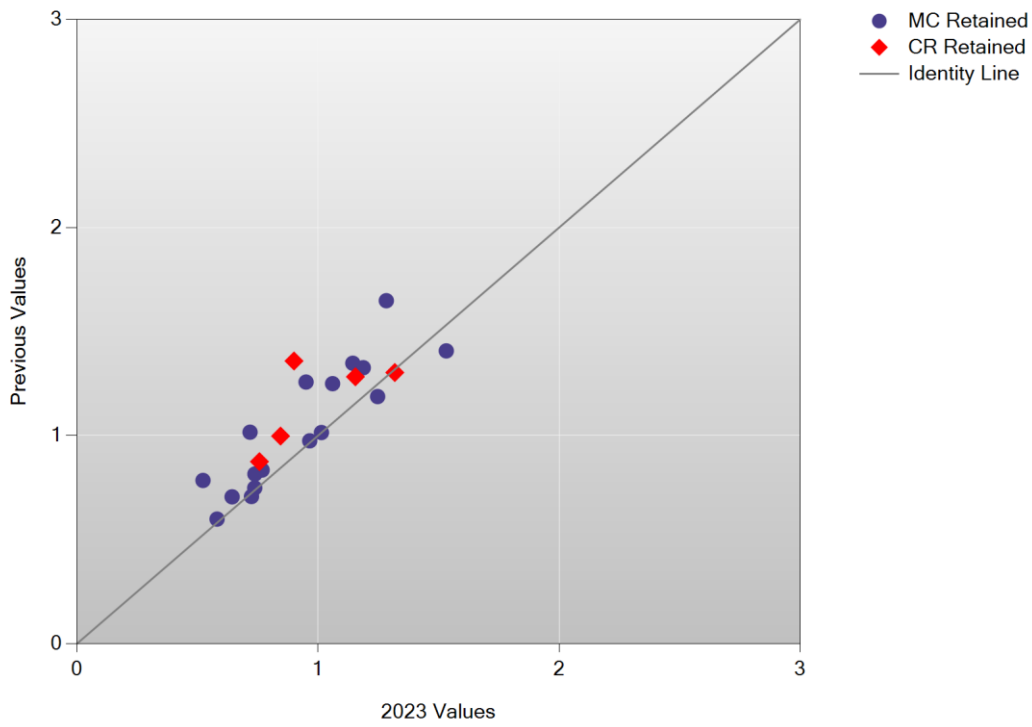
Table 1.4.1 (continued)  
Equating Item Summary Statistics

Subject	Grade	Year	P-Value		Point Biserial		a		b	
			Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Mathematics	10	2023	0.45	0.16	0.45	0.16	1.11	0.45	0.51	0.84
		Previous	0.45	0.16	0.47	0.16	1.11	0.45	0.29	0.80
Introductory Physics	10	2023	0.60	0.14	0.49	0.12	1.01	0.36	-0.29	0.66
		Previous	0.58	0.14	0.49	0.11	1.07	0.38	-0.03	0.61
Science	05	2023	0.64	0.19	0.43	0.10	0.83	0.25	-0.46	0.96
		Previous	0.63	0.19	0.43	0.09	0.72	0.18	-0.67	1.09
Science	08	2023	0.55	0.17	0.42	0.14	0.84	0.34	-0.10	0.97
		Previous	0.56	0.18	0.43	0.13	0.84	0.36	-0.29	1.04

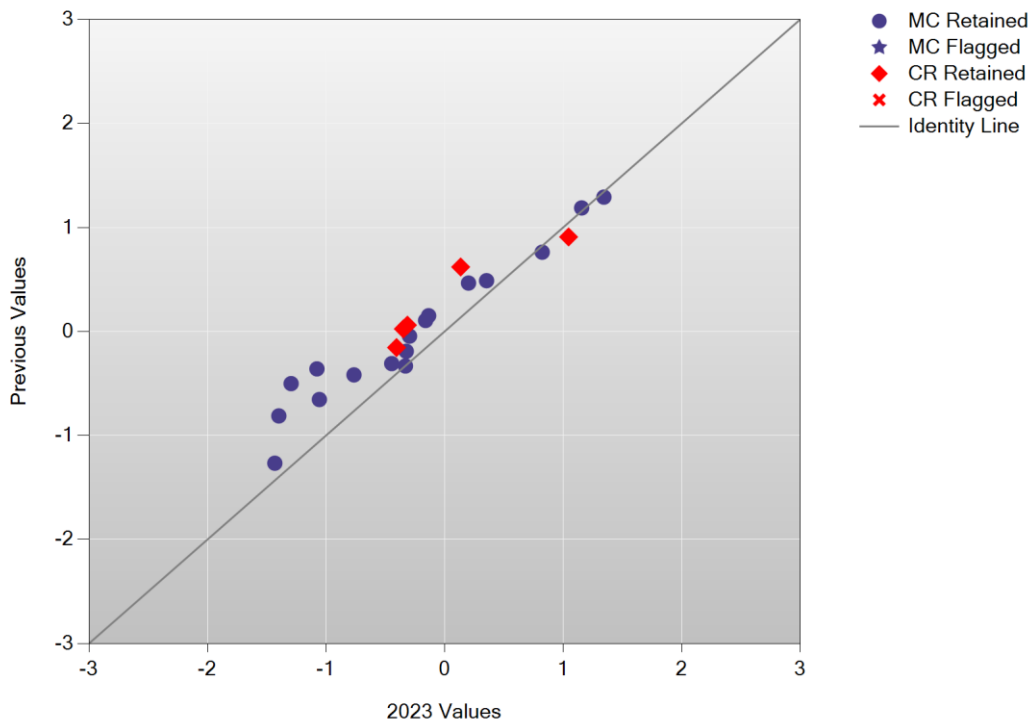
# Section 2.1

A/A, B/B, Delta, Test Characteristic Curve, Test Information Function, and Cumulative Scale Score Distribution Plots

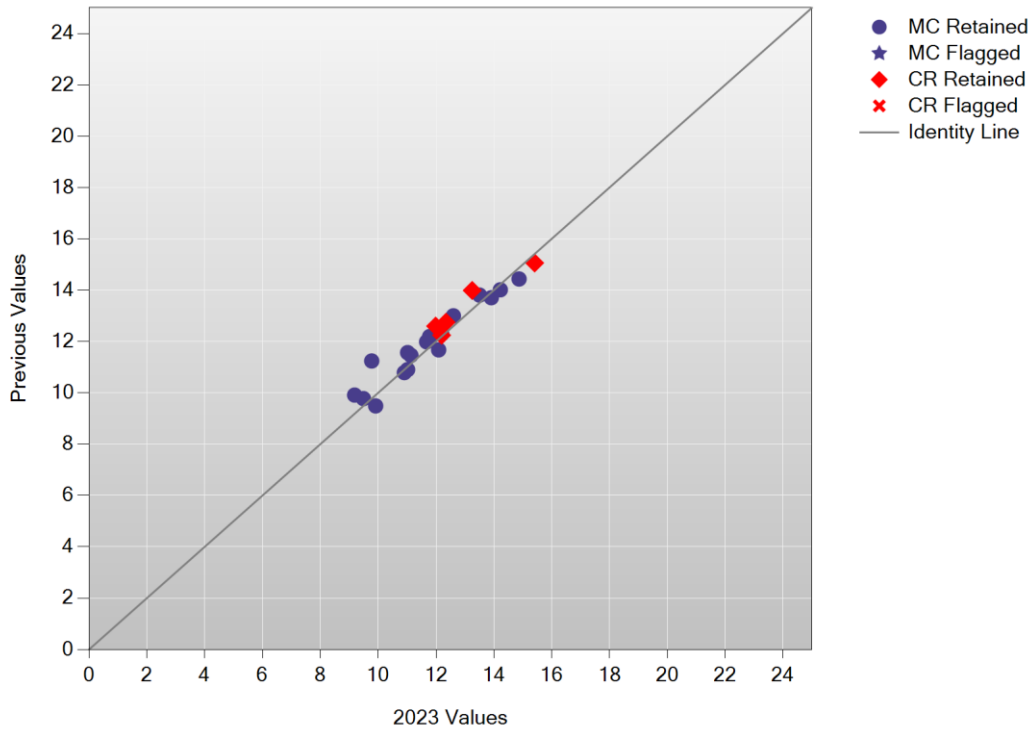
A/A Plot: Biology Grade 10



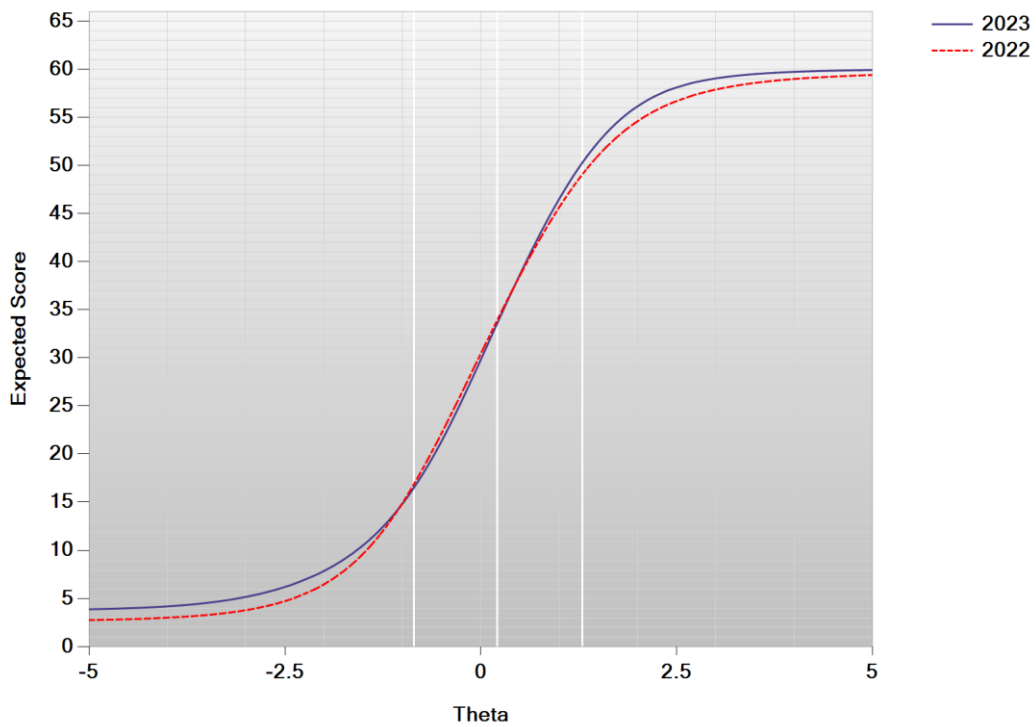
B/B Plot: Biology Grade 10



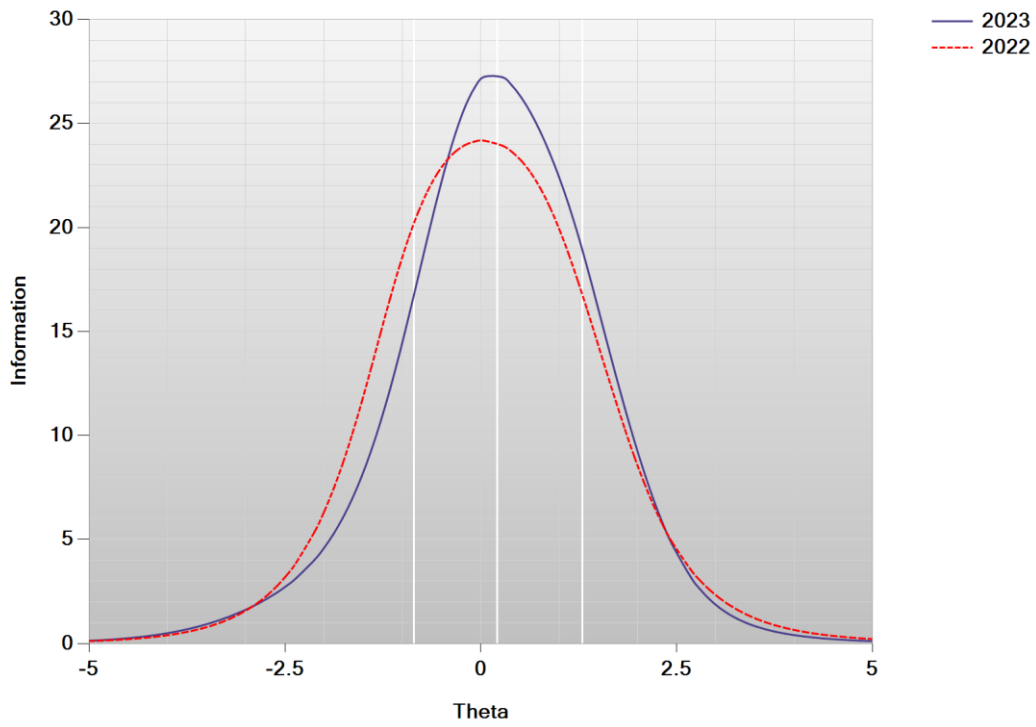
### Delta Plot: Biology Grade 10



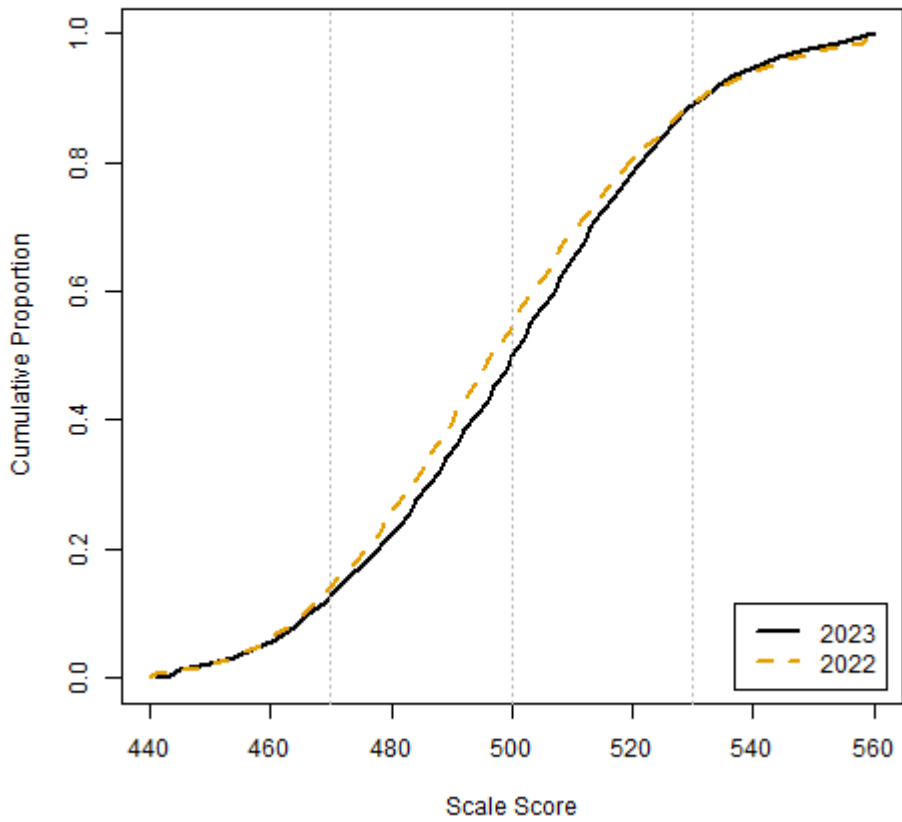
### Test Characteristic Curve: Biology Grade 10



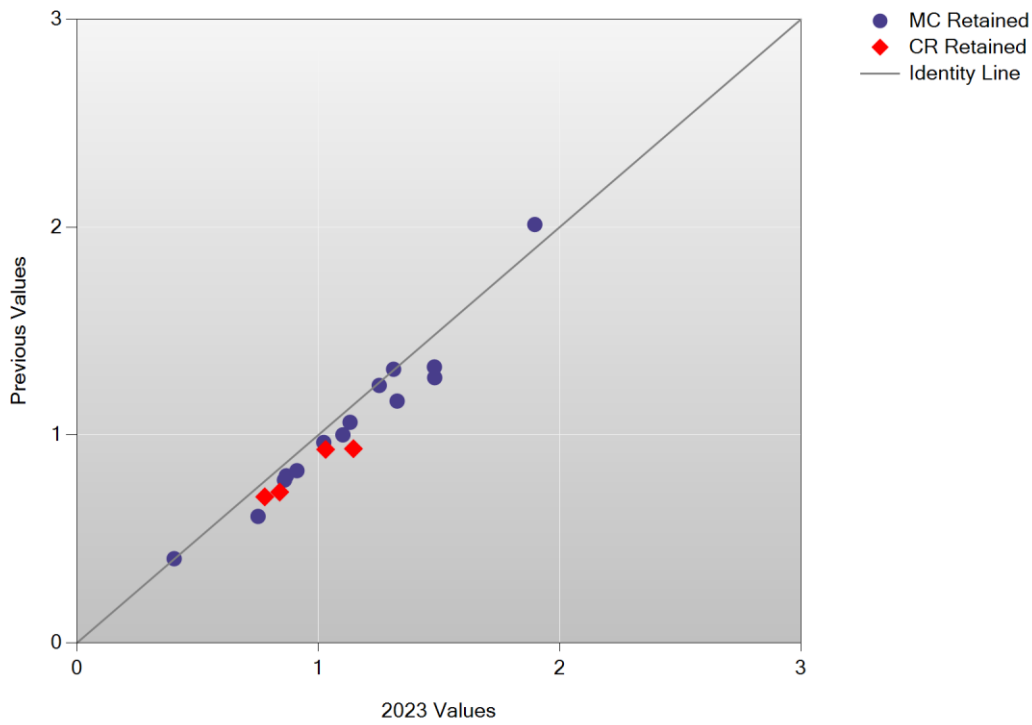
### Test Information Function: Biology Grade 10



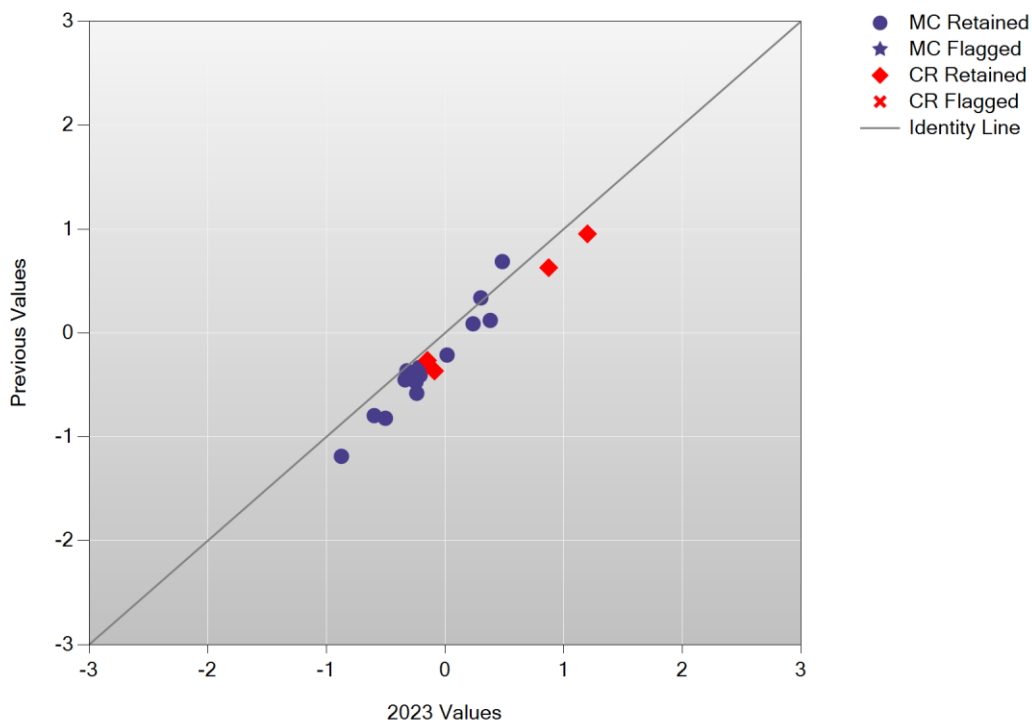
### Cumulative Scale Score Distributions: Biology Grade 10



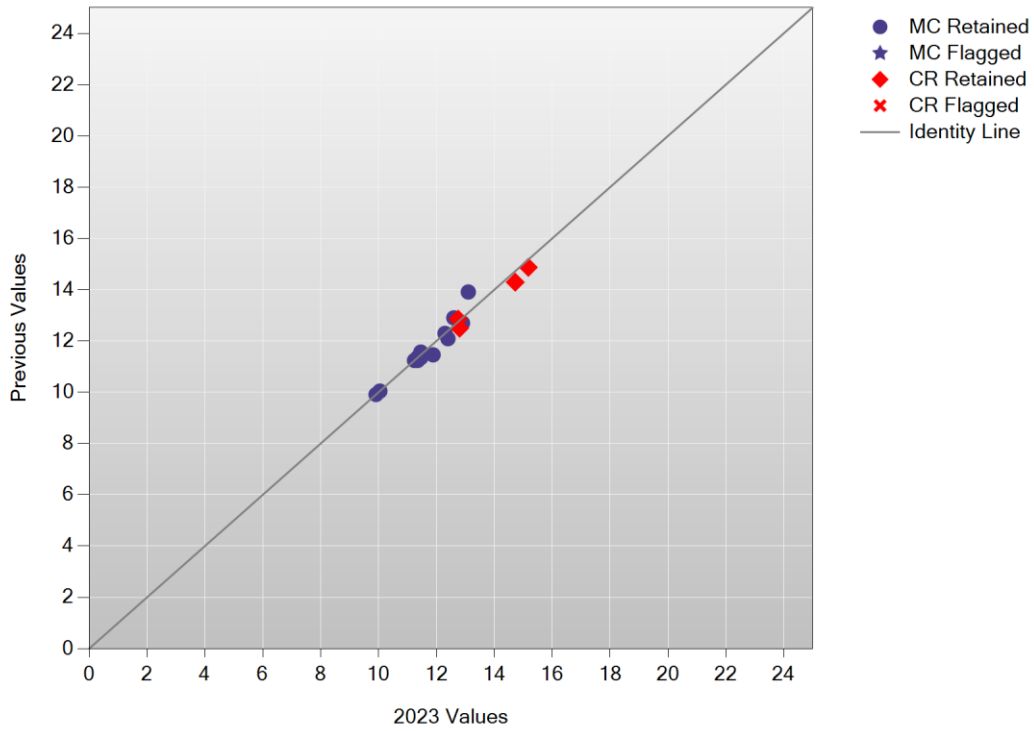
A/A Plot: English Language Arts Grade 3



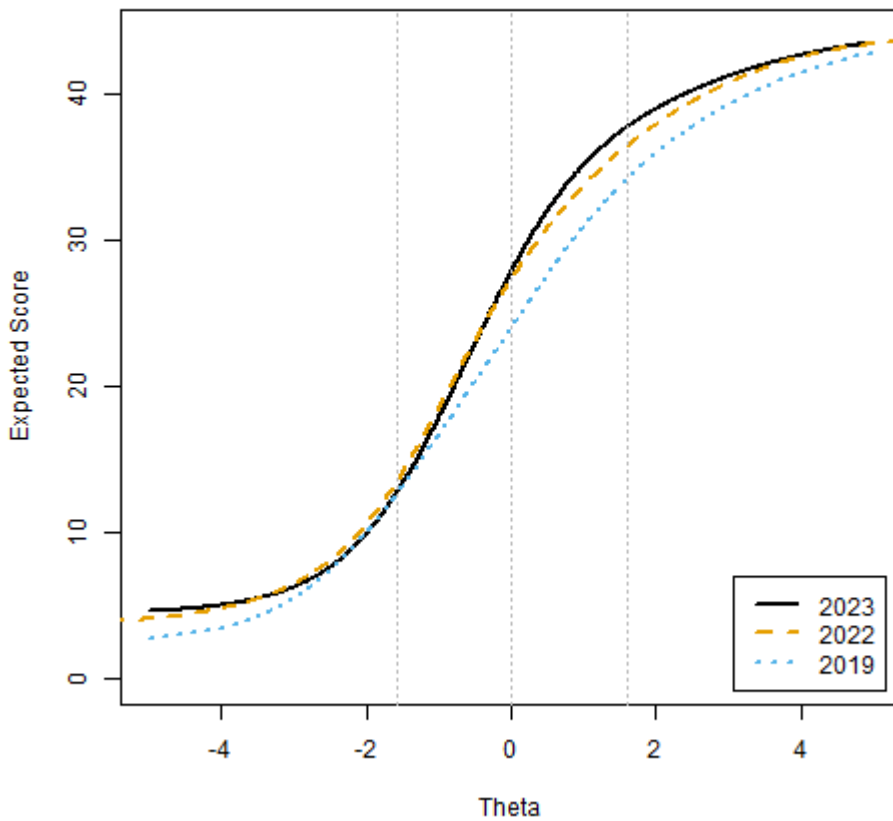
B/B Plot: English Language Arts Grade 3



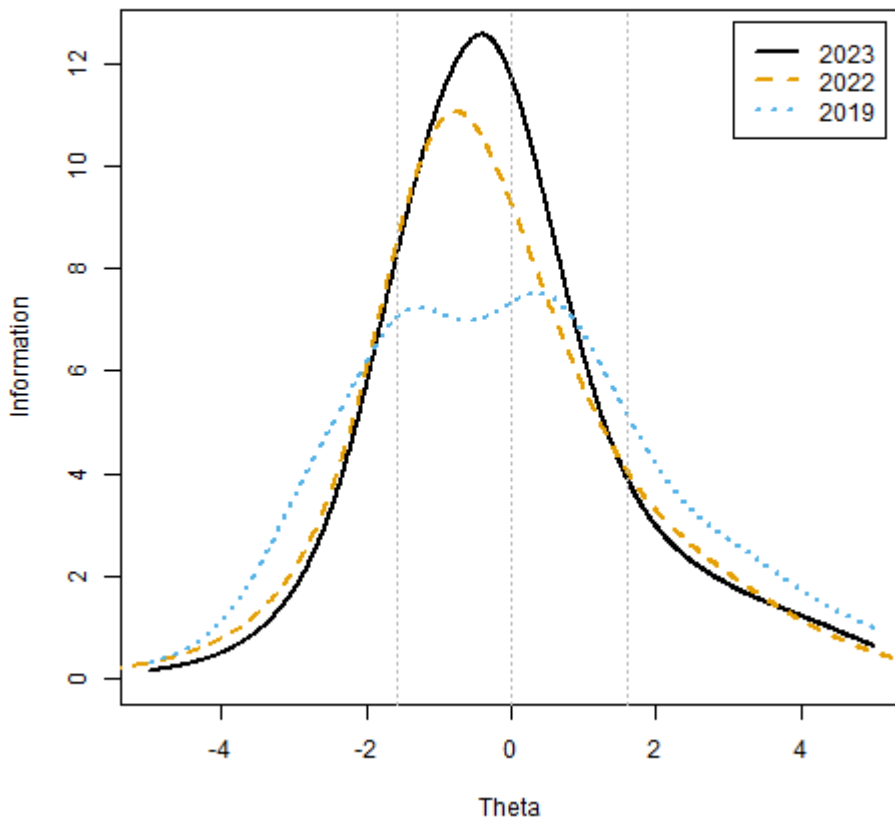
### Delta Plot: English Language Arts Grade 3



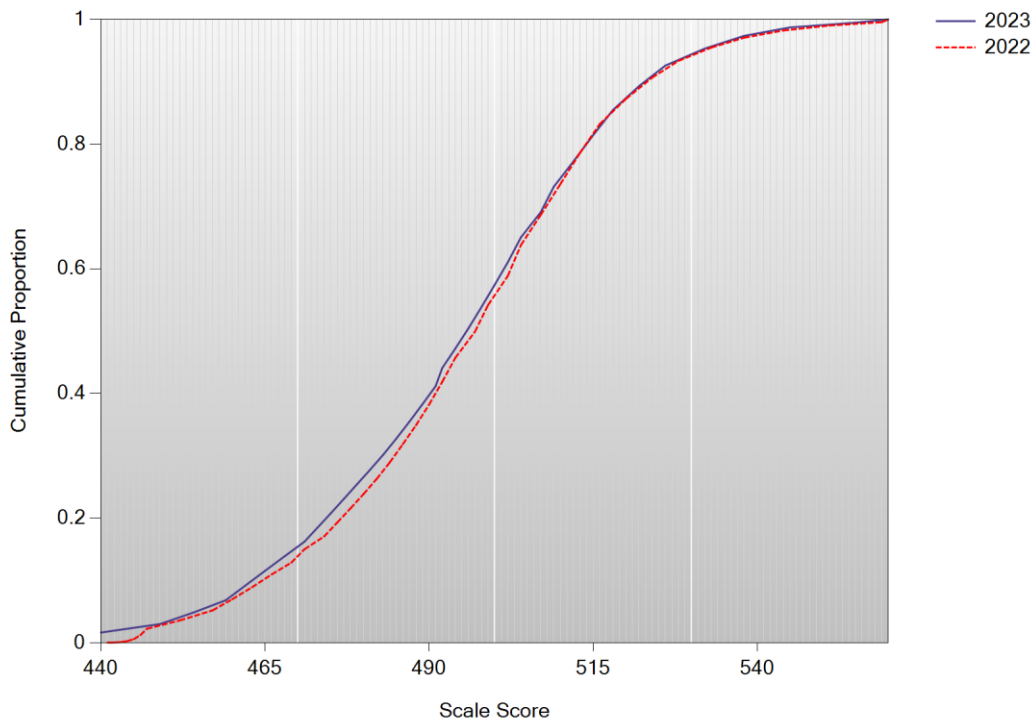
### Test Characteristic Curve: ela03



Test Information Function: ela03

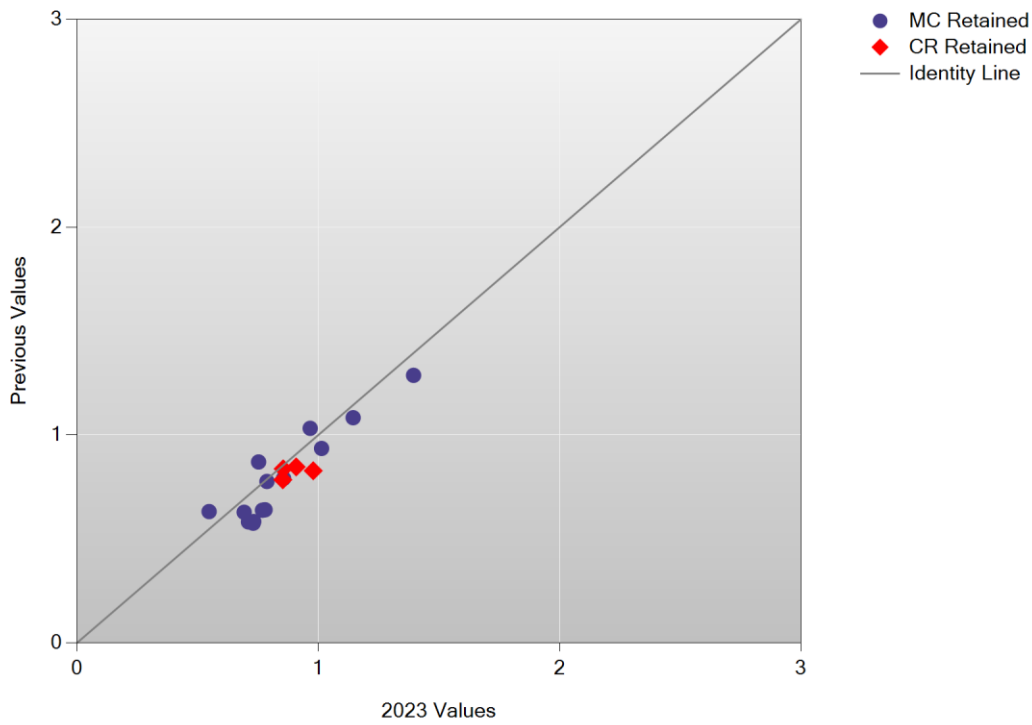


Cumulative Scale Score Distributions: English Language Arts Grade 3

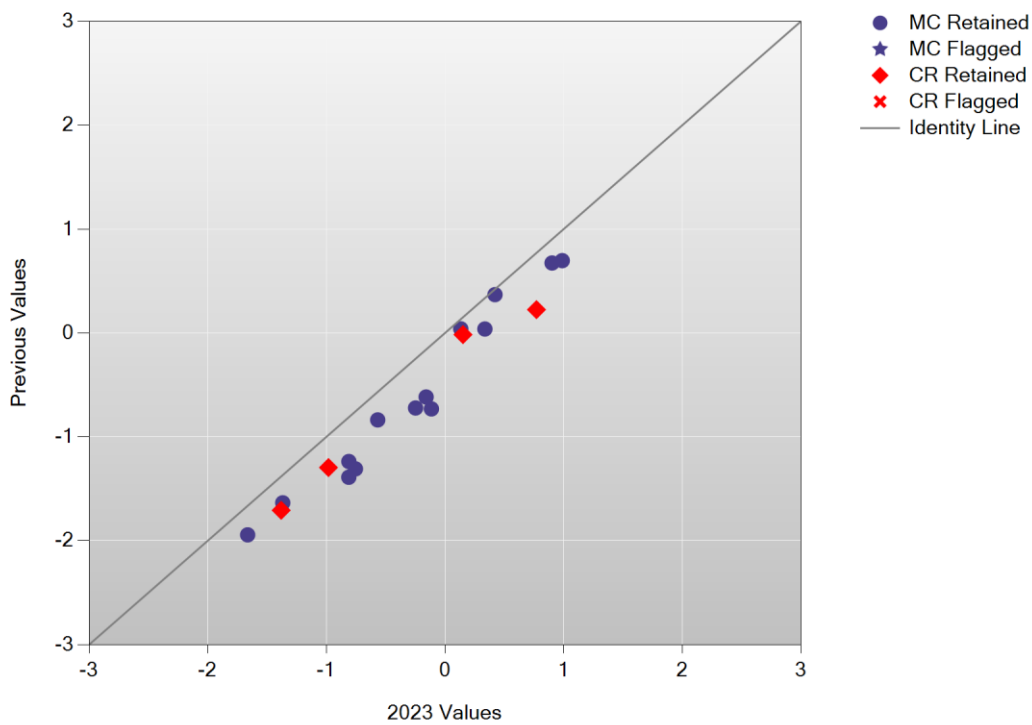




A/A Plot: English Language Arts Grade 4

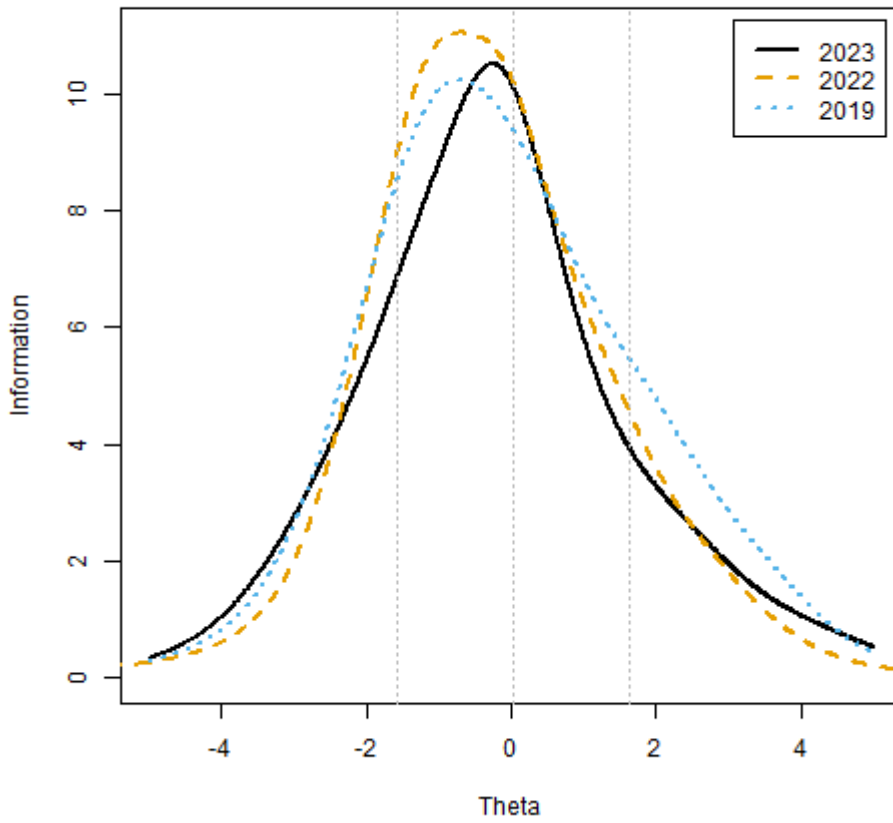


B/B Plot: English Language Arts Grade 4

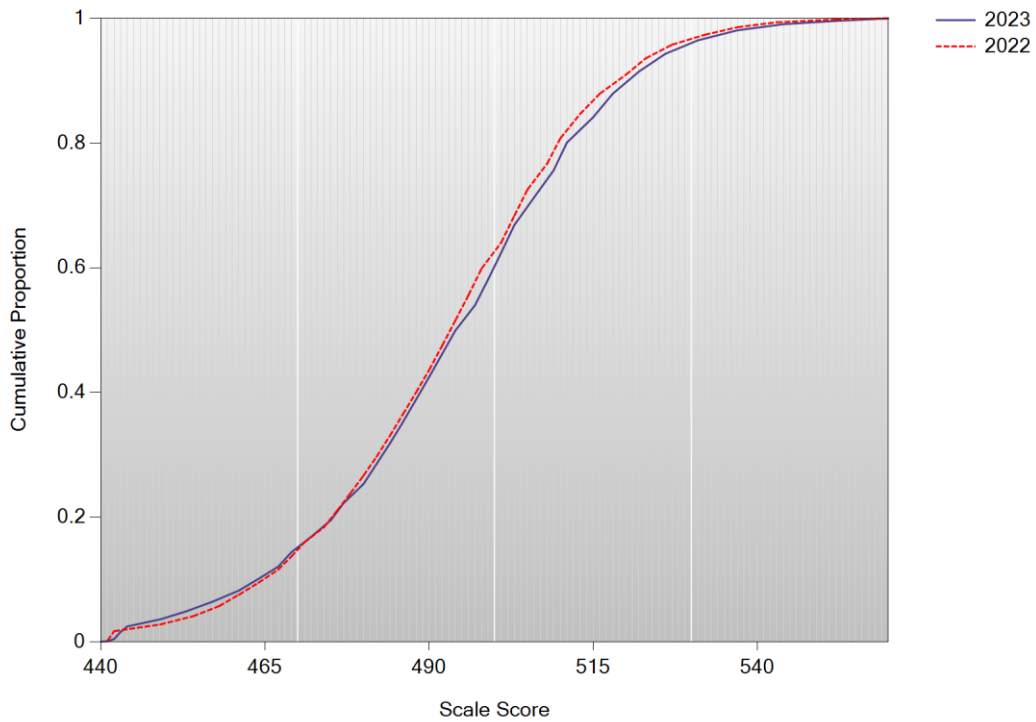




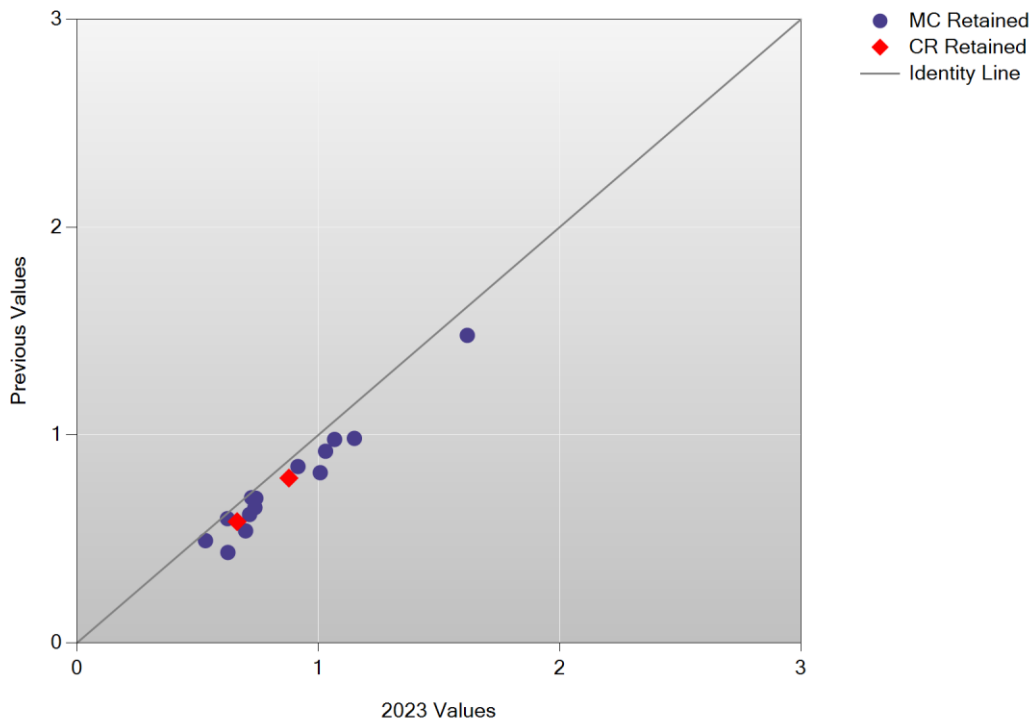
Test Information Function: ela04



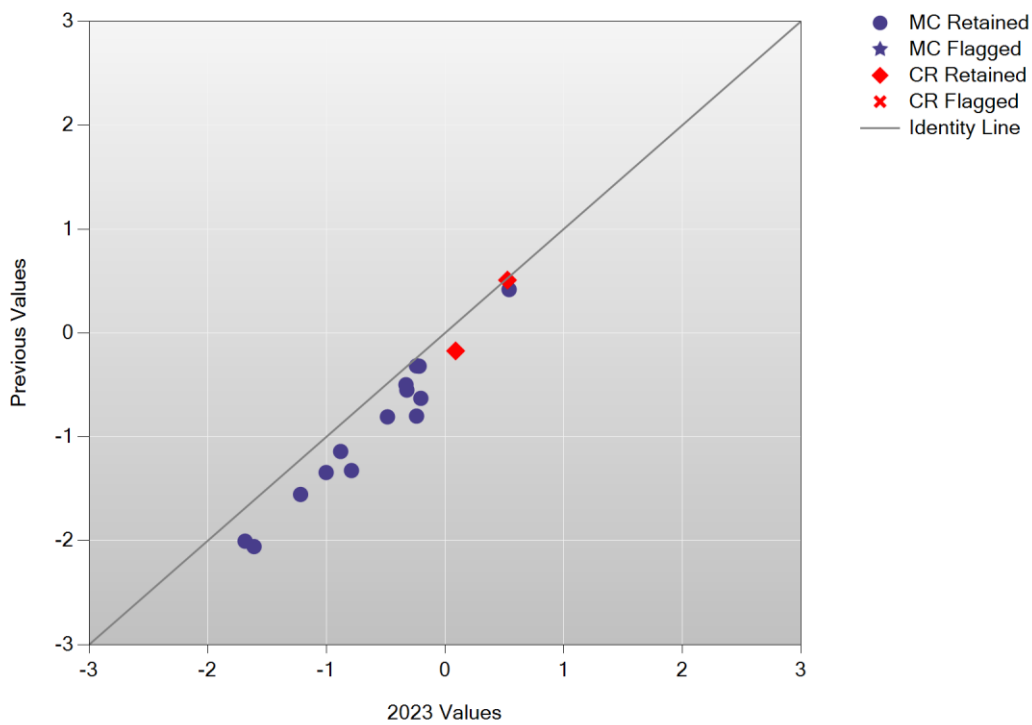
Cumulative Scale Score Distributions: English Language Arts Grade 4



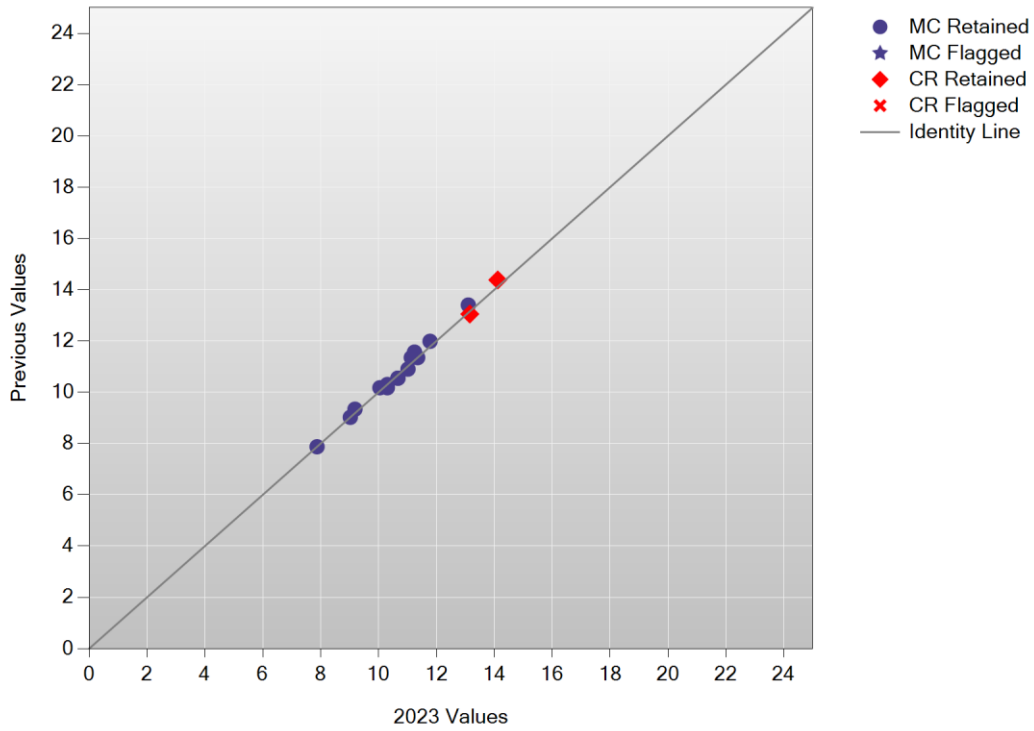
A/A Plot: English Language Arts Grade 5



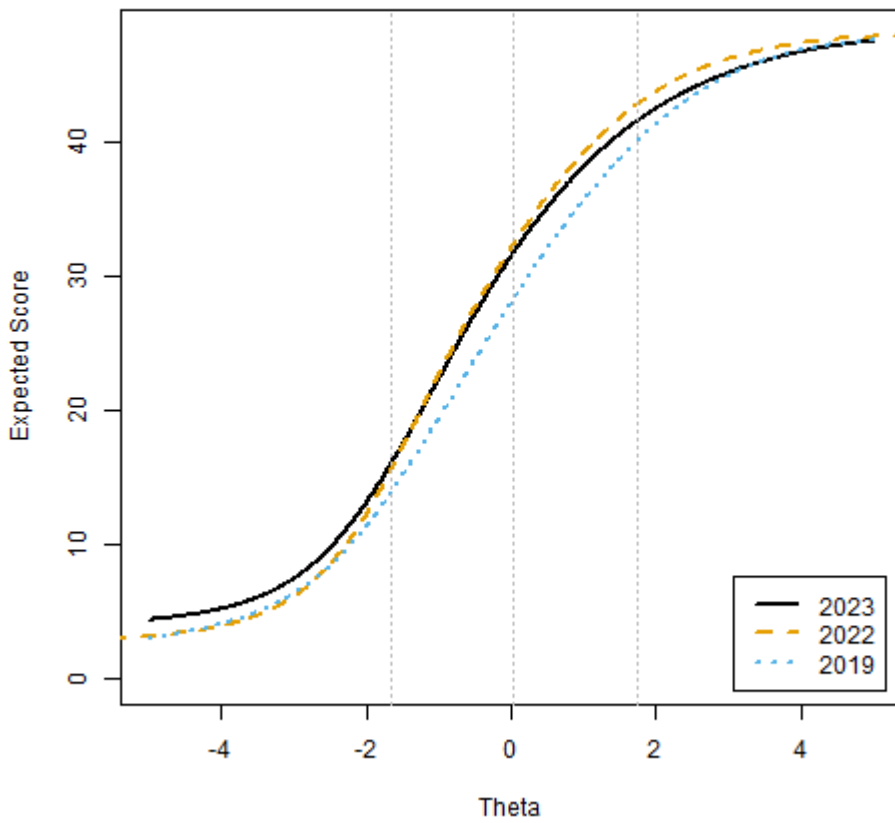
B/B Plot: English Language Arts Grade 5



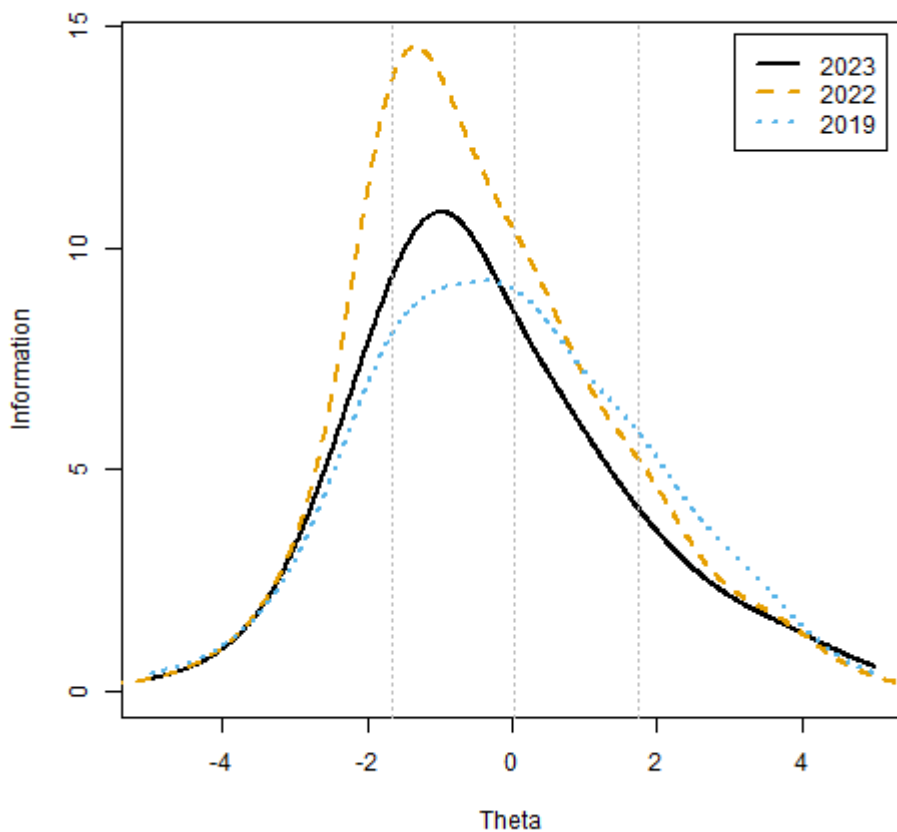
### Delta Plot: English Language Arts Grade 5



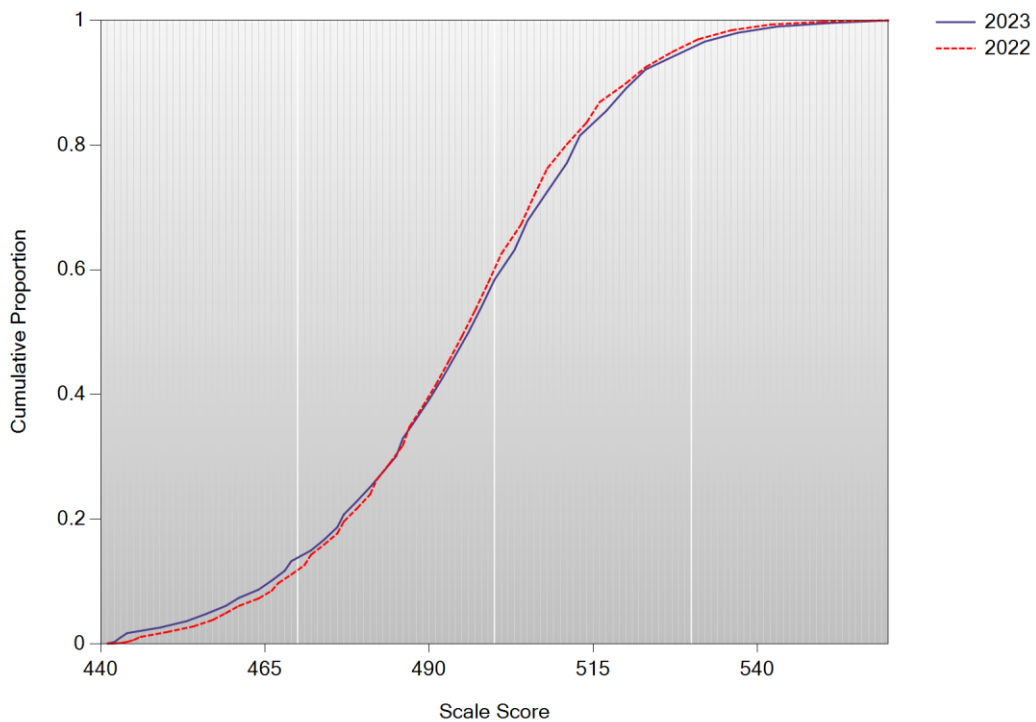
### Test Characteristic Curve: ela05



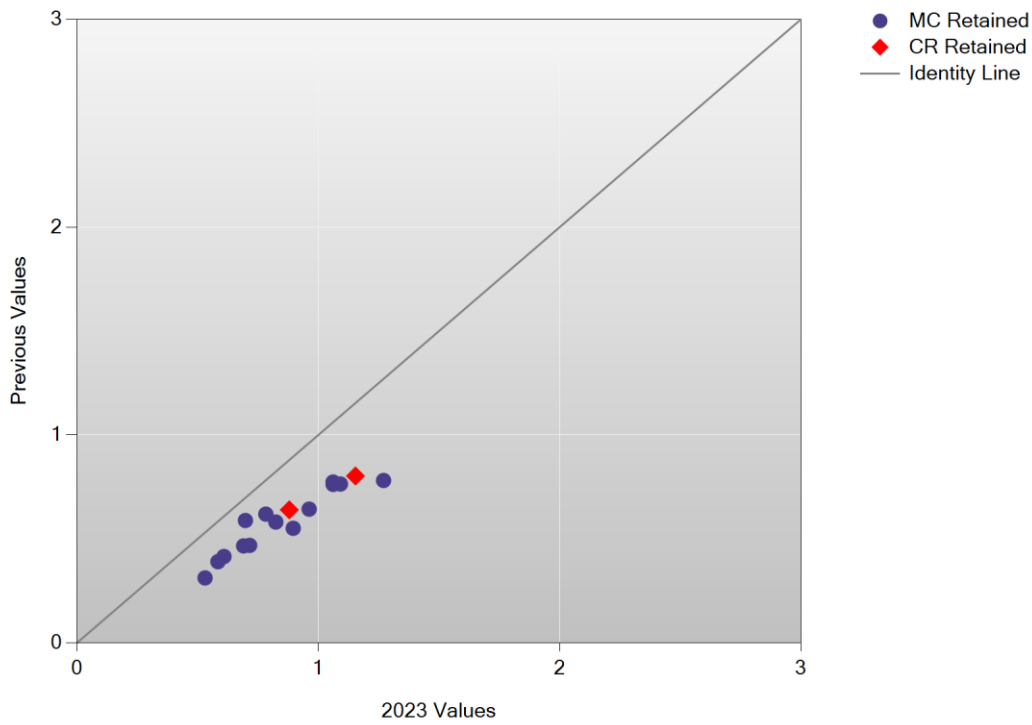
Test Information Function: ela05



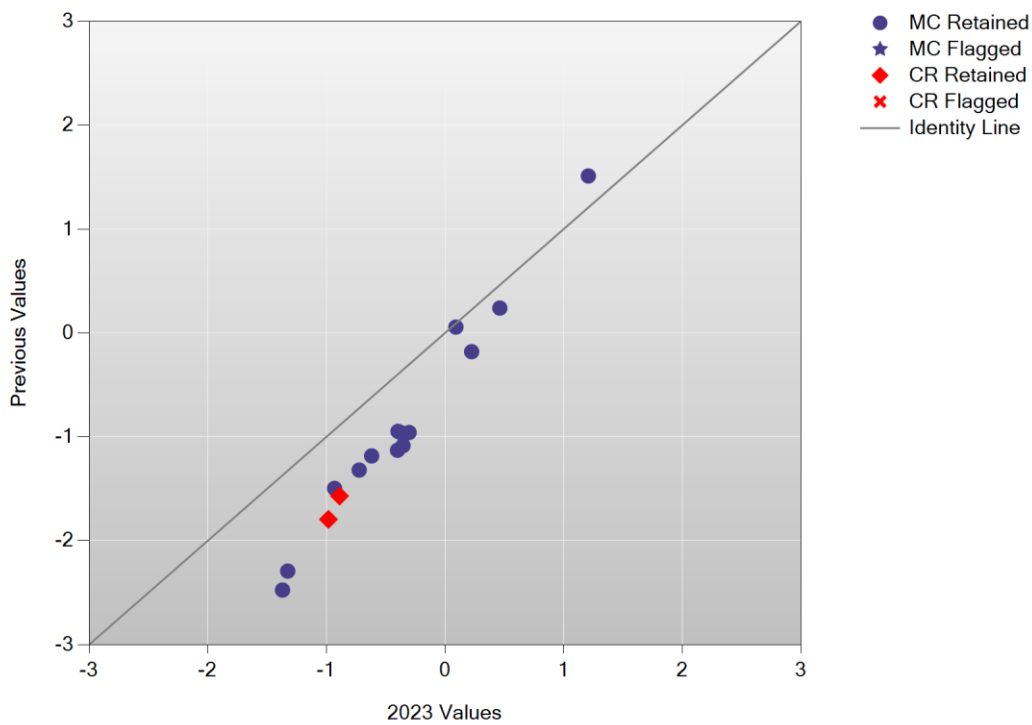
Cumulative Scale Score Distributions: English Language Arts Grade 5



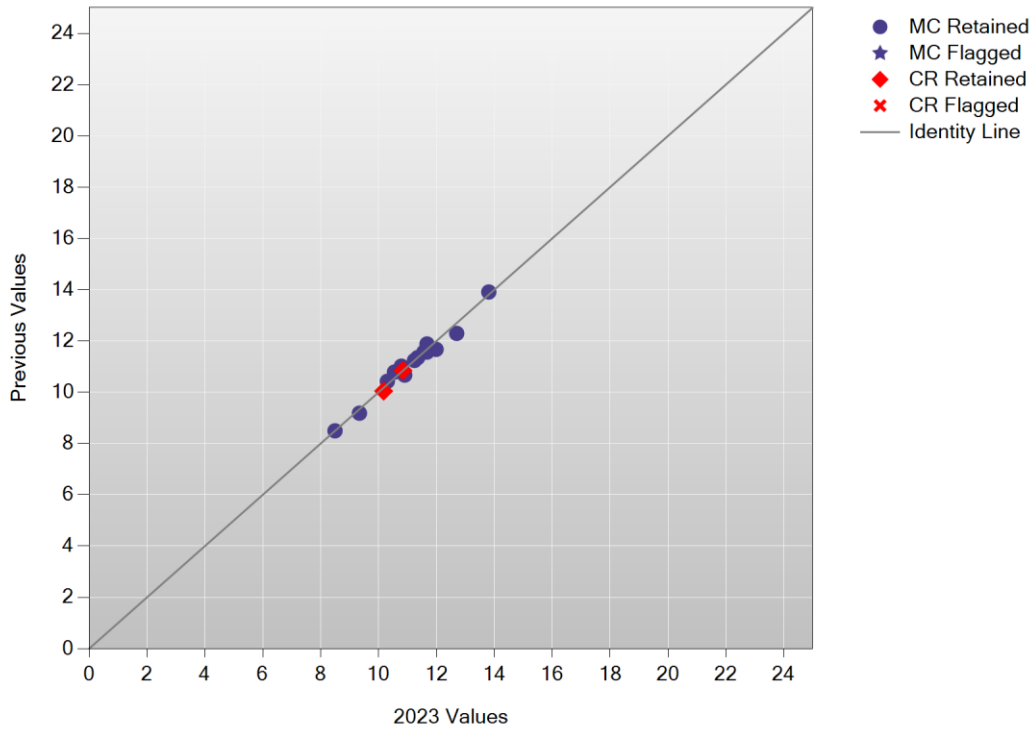
A/A Plot: English Language Arts Grade 6



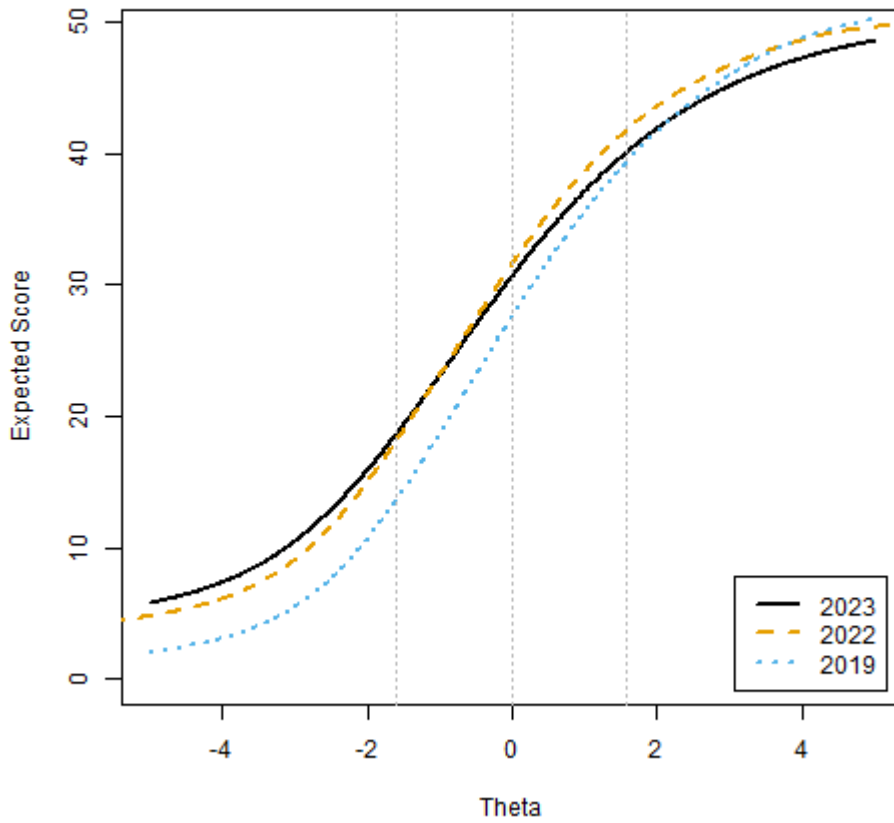
B/B Plot: English Language Arts Grade 6



### Delta Plot: English Language Arts Grade 6

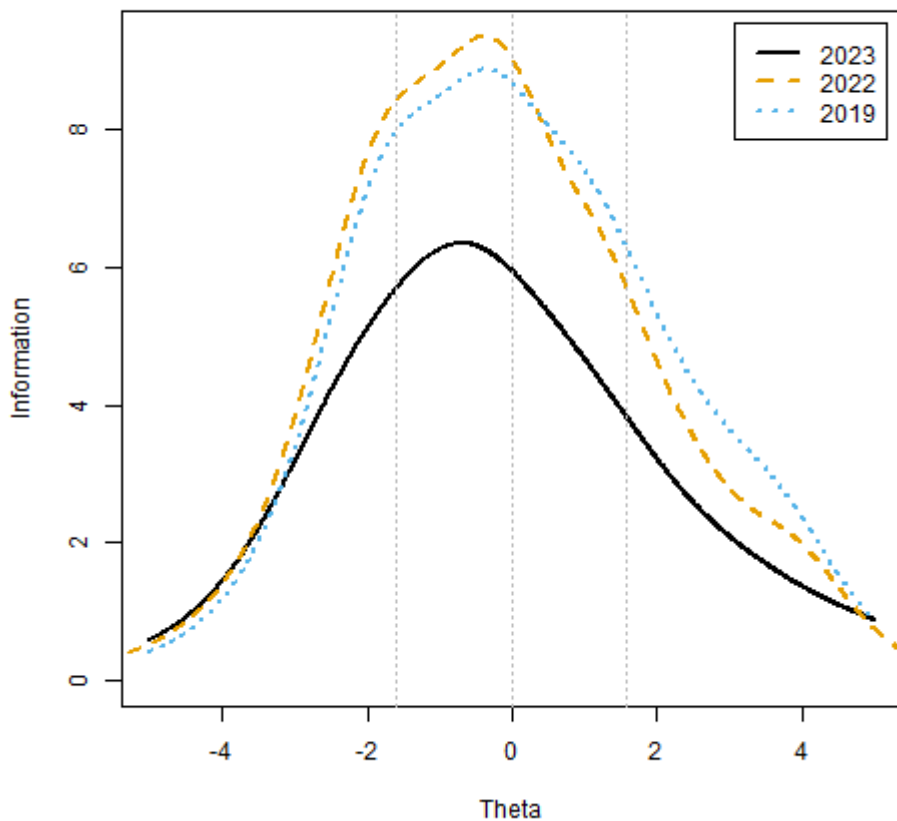


### Test Characteristic Curve: ela06

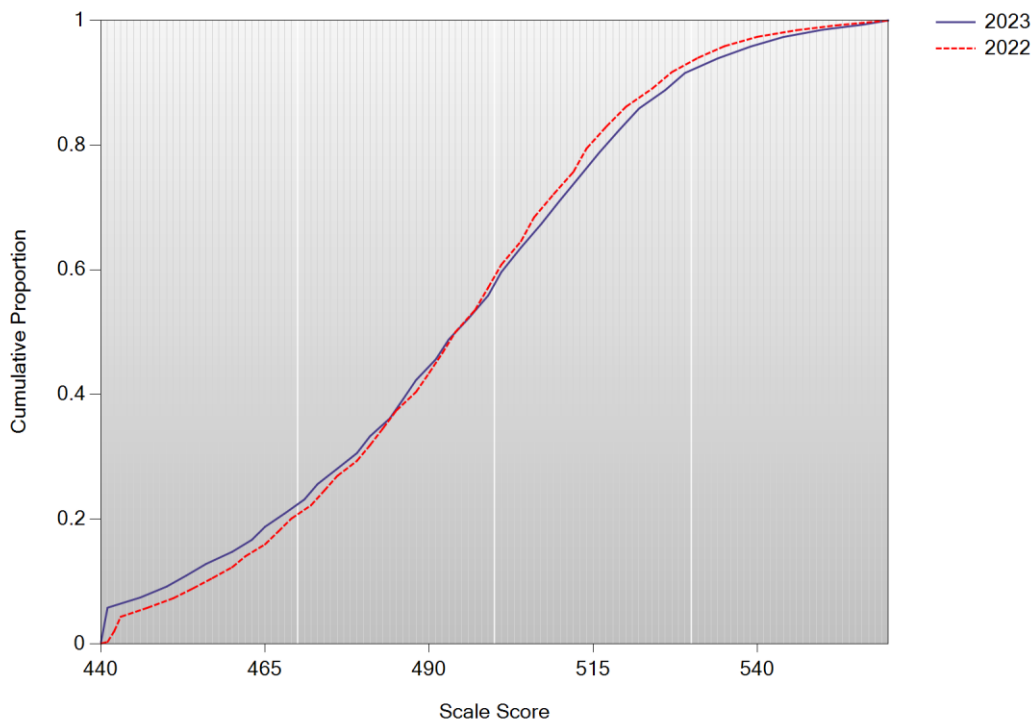




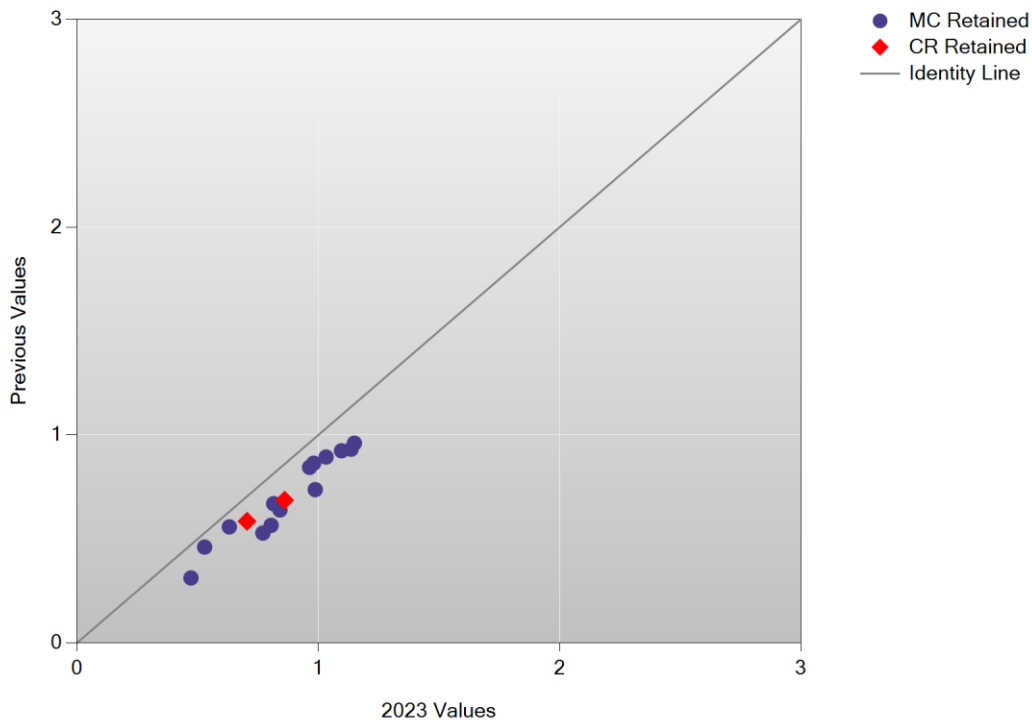
Test Information Function: ela06



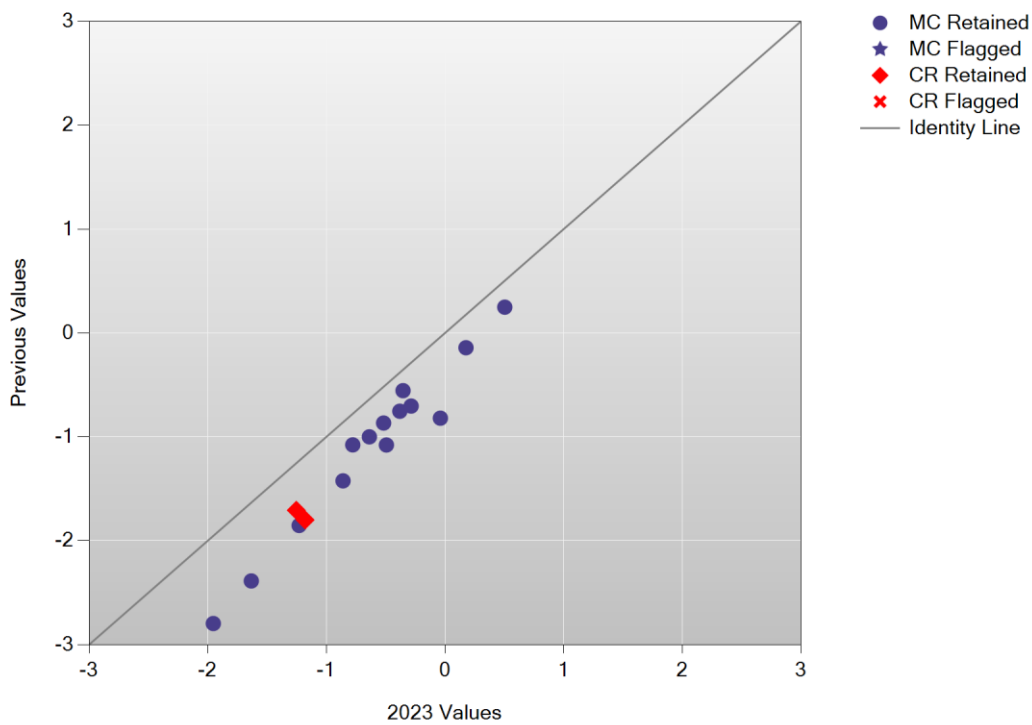
Cumulative Scale Score Distributions: English Language Arts Grade 6



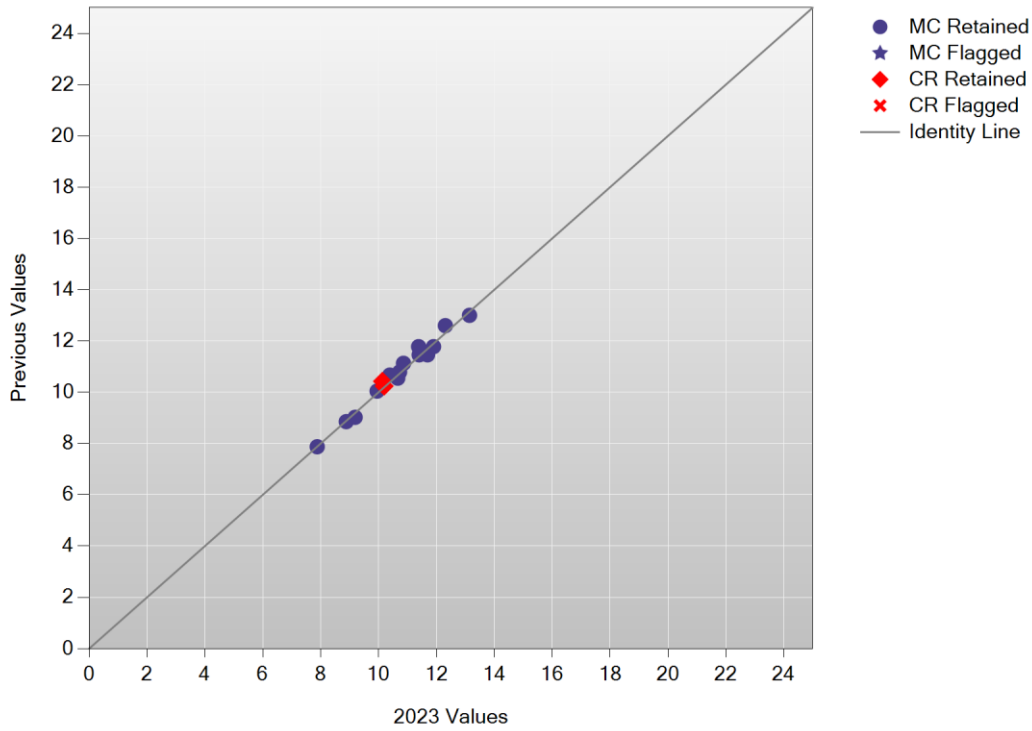
A/A Plot: English Language Arts Grade 7



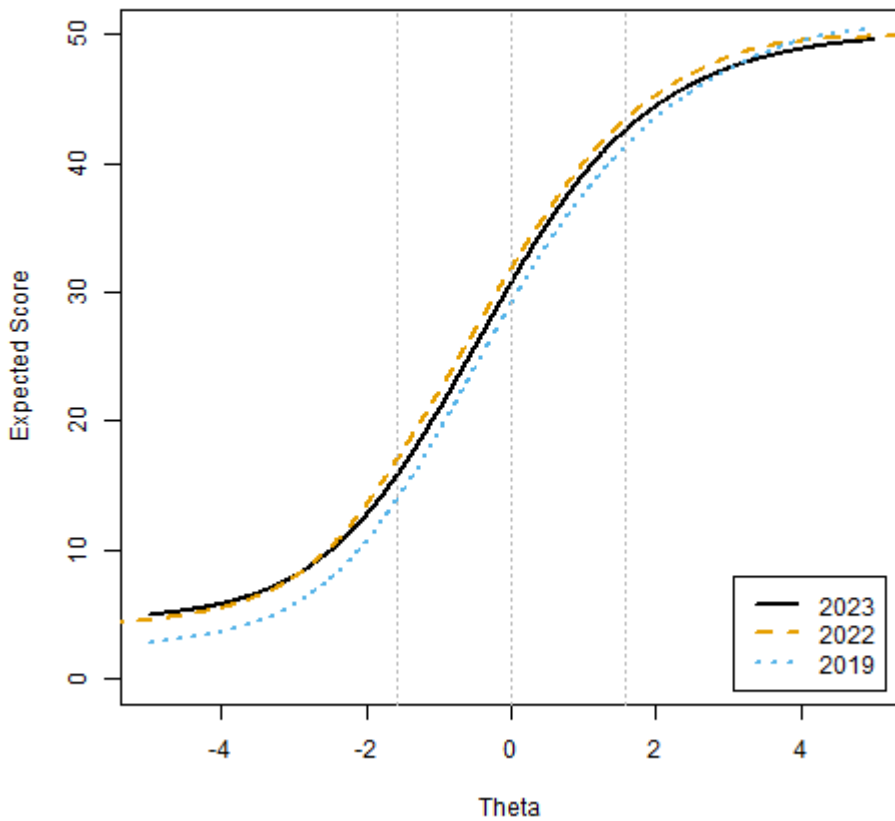
B/B Plot: English Language Arts Grade 7



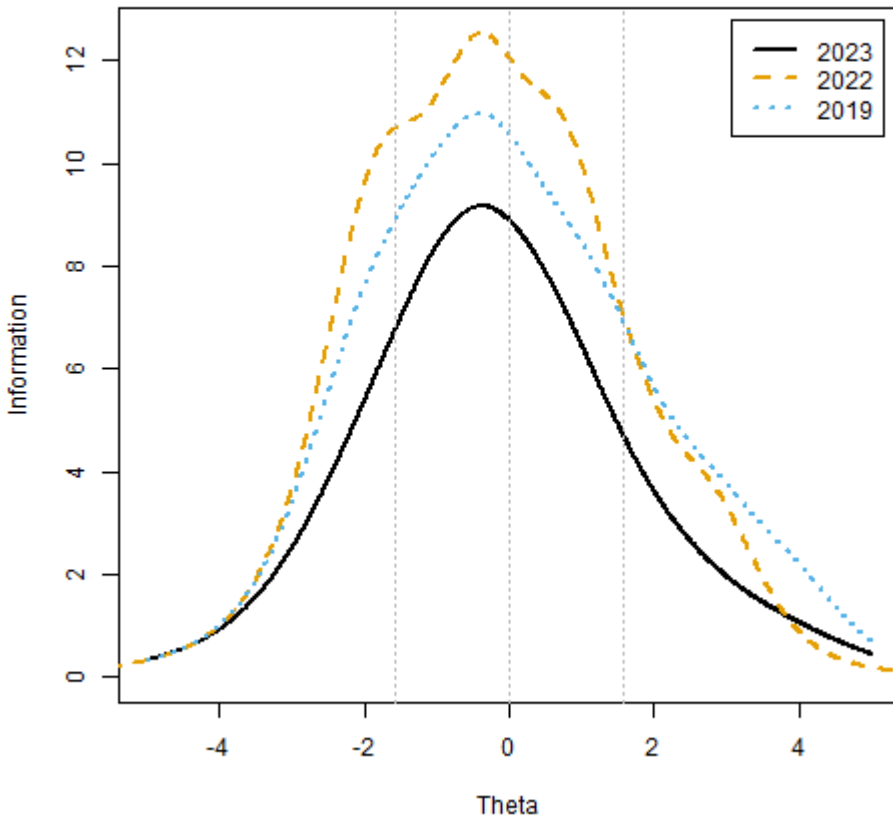
### Delta Plot: English Language Arts Grade 7



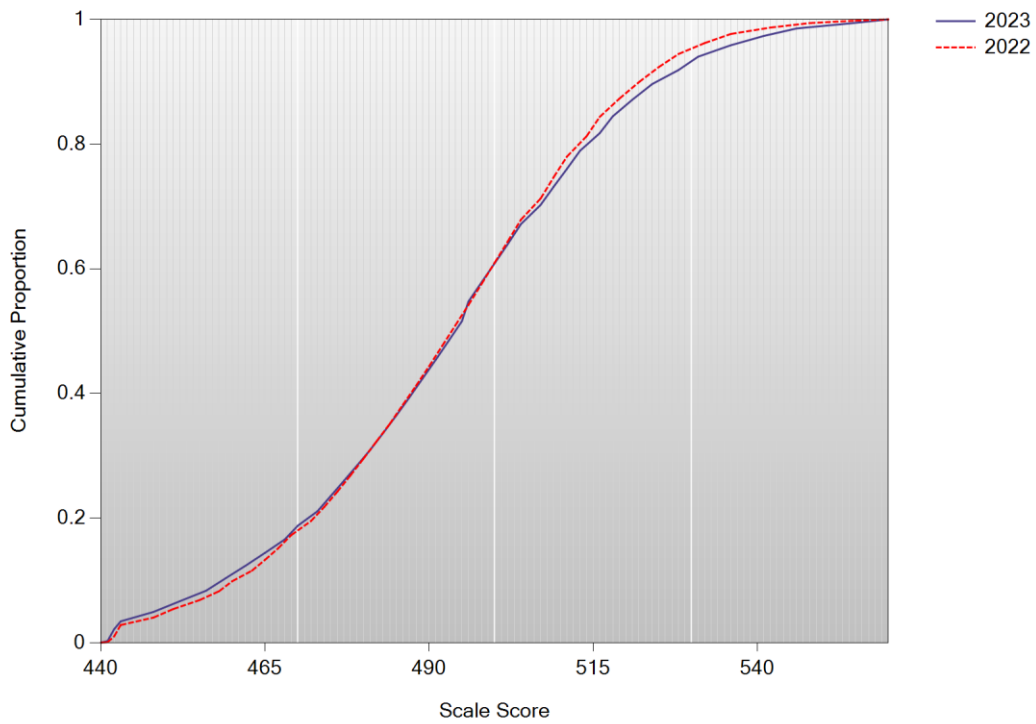
### Test Characteristic Curve: ela07



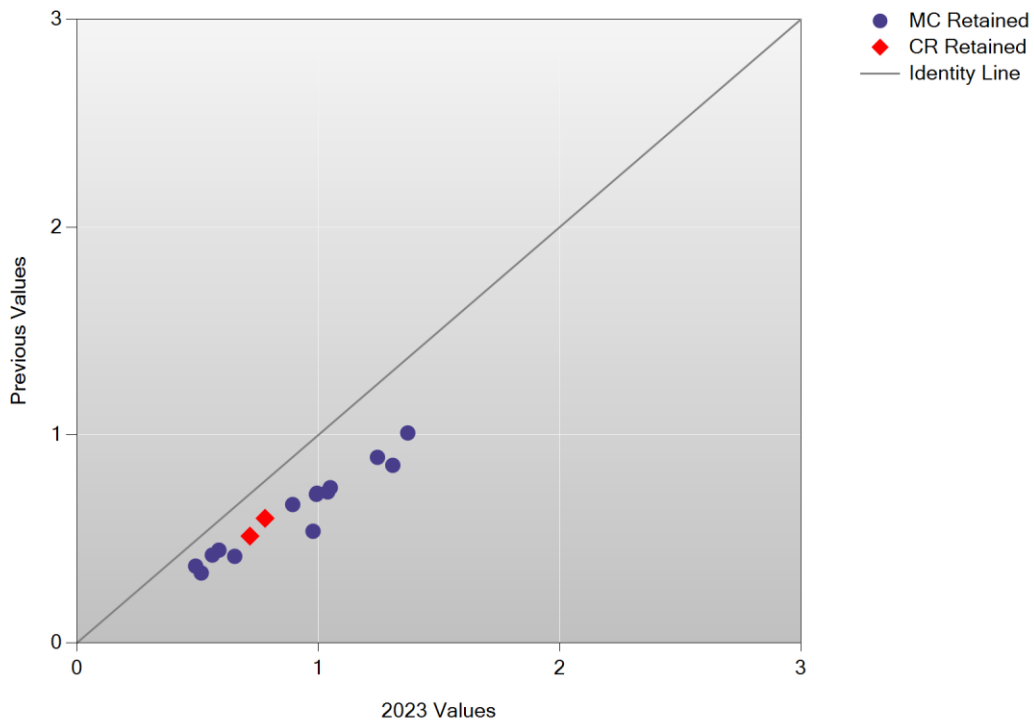
Test Information Function: ela07



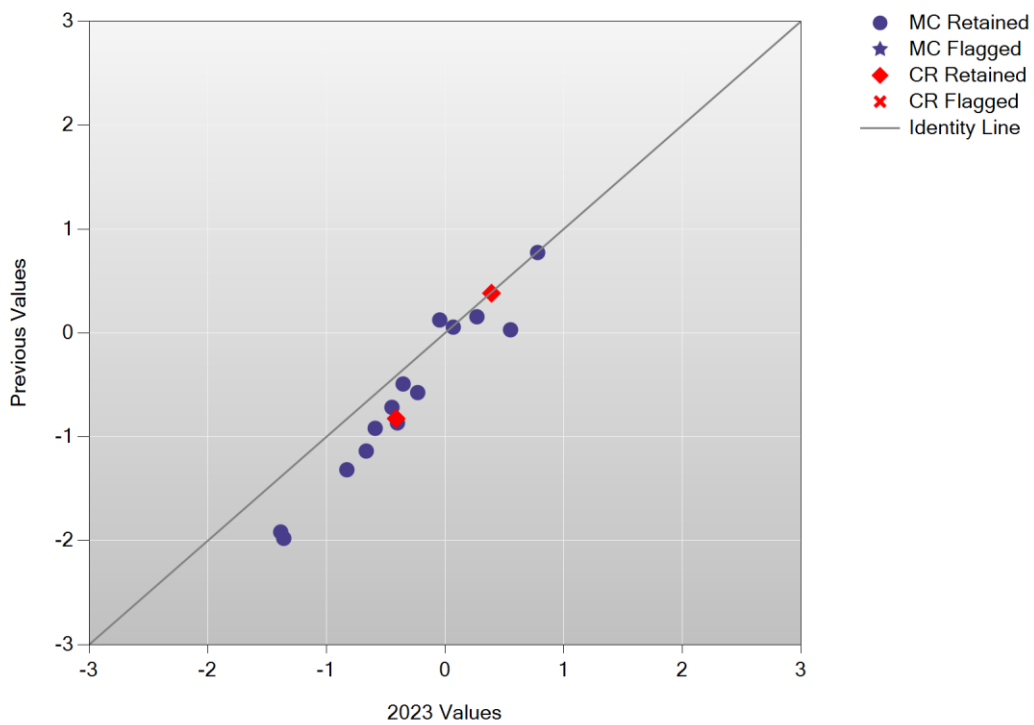
Cumulative Scale Score Distributions: English Language Arts Grade 7



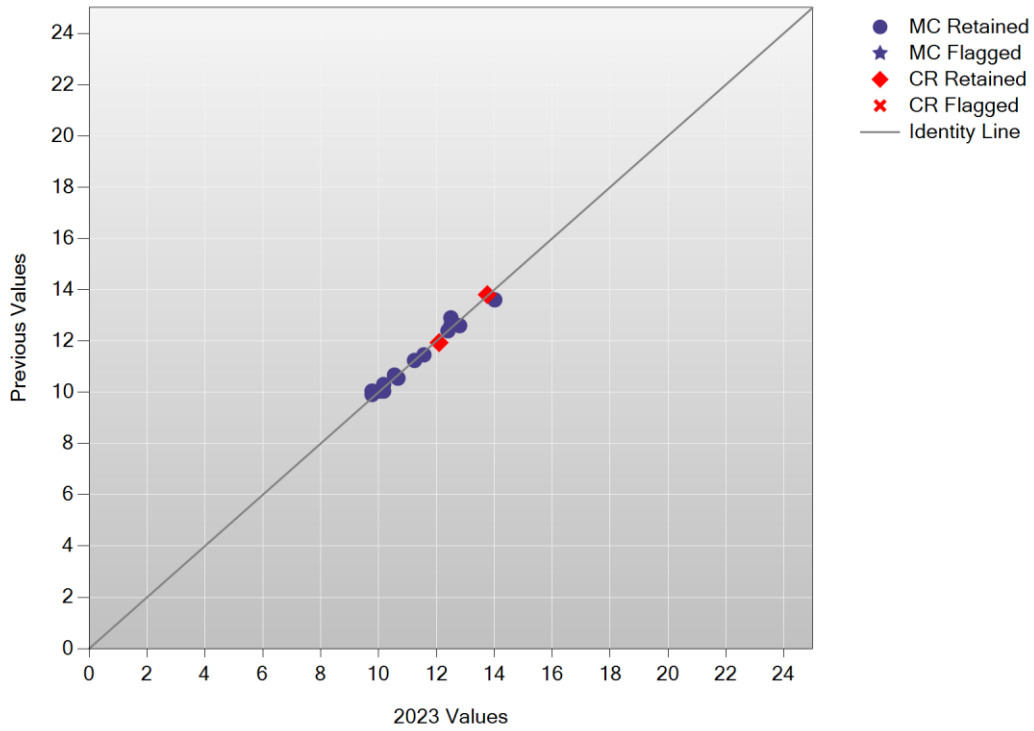
A/A Plot: English Language Arts Grade 8



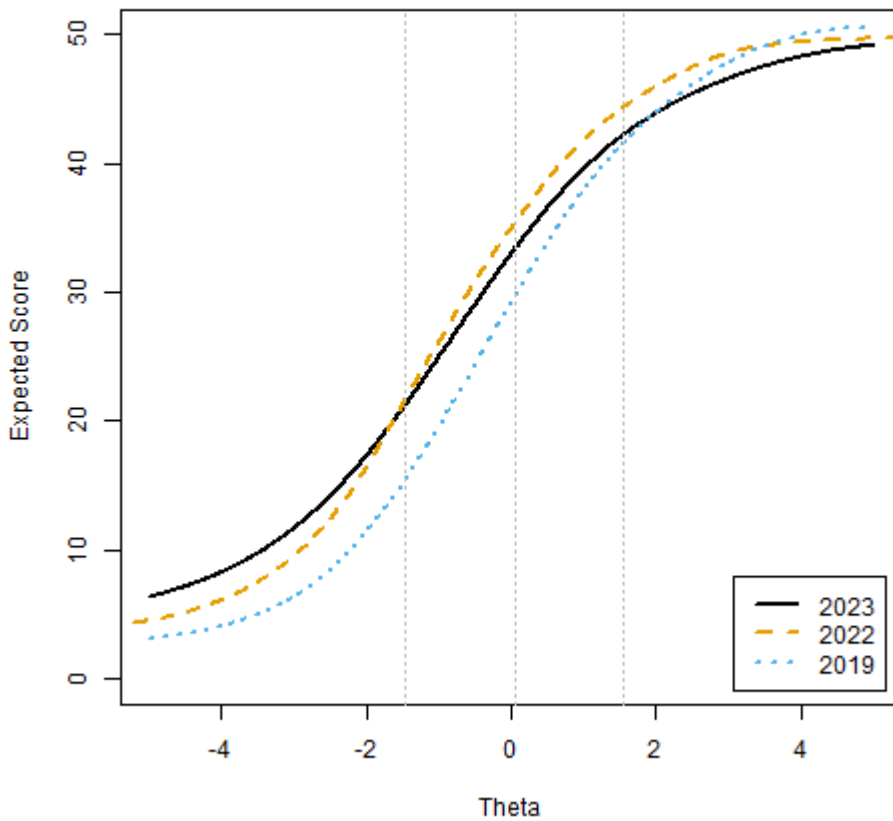
B/B Plot: English Language Arts Grade 8



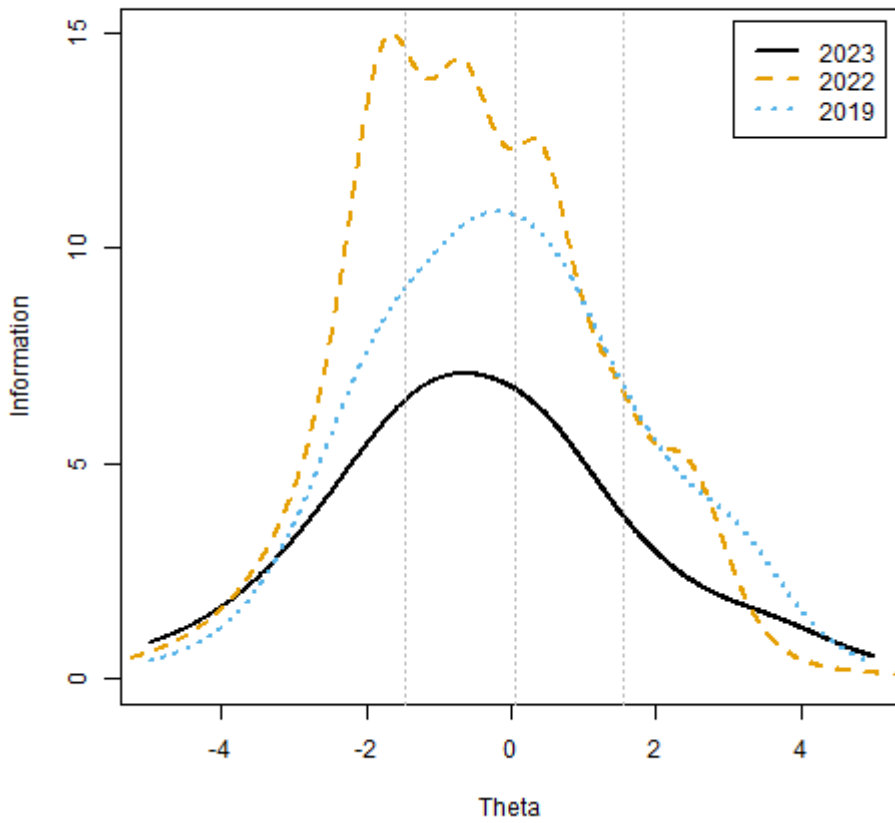
### Delta Plot: English Language Arts Grade 8



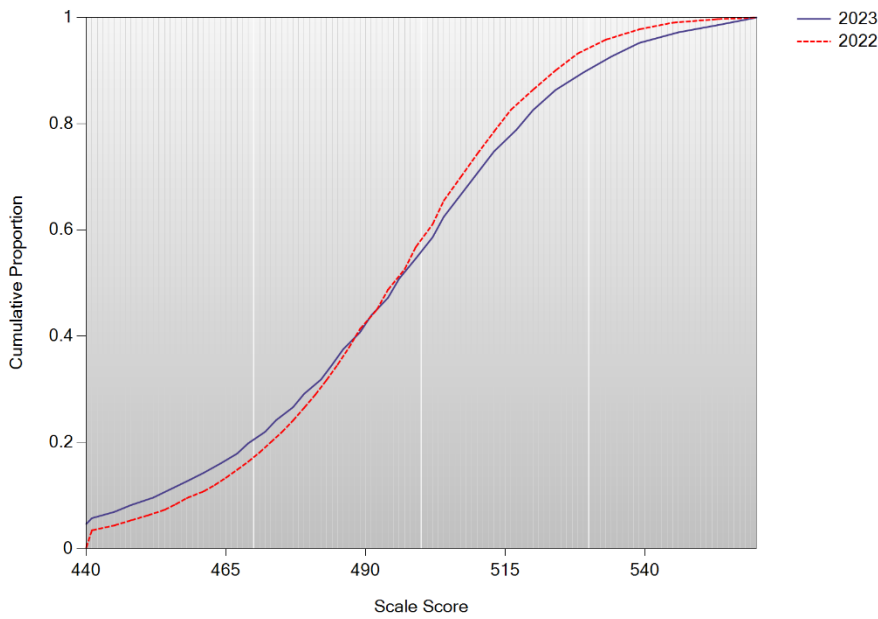
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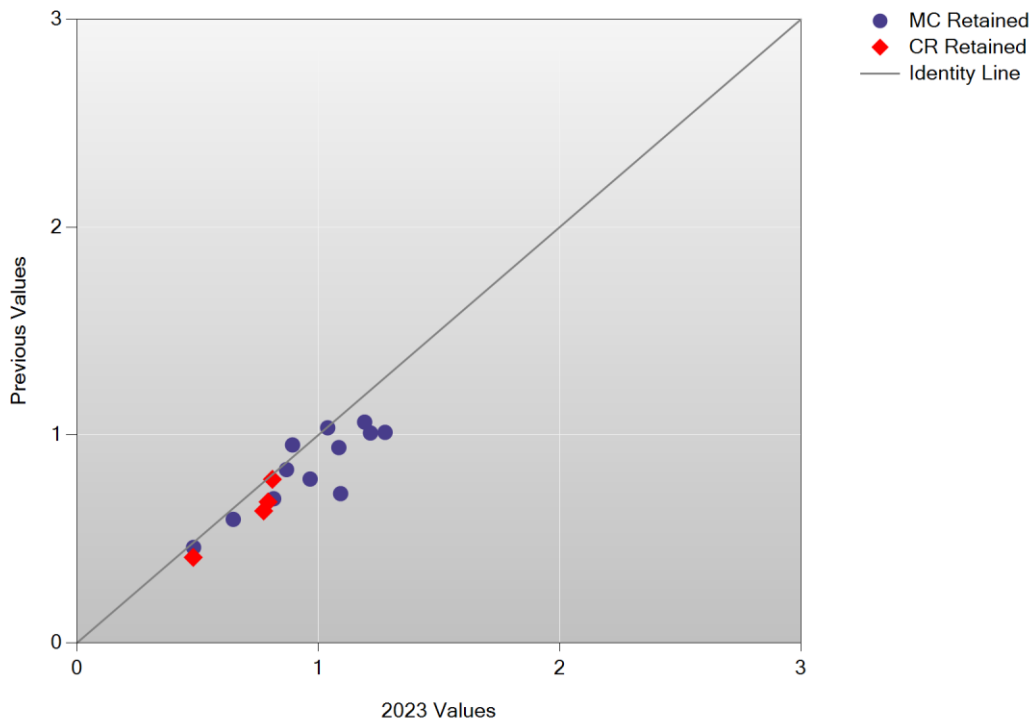
Test Information Function: ela08



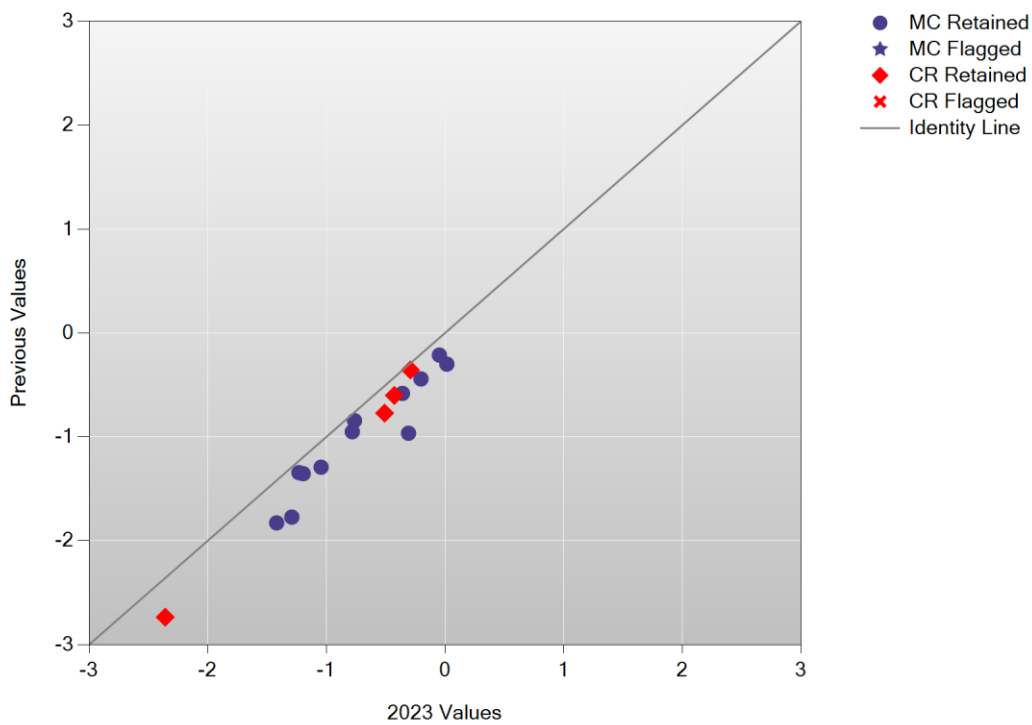
Cumulative Scale Score Distributions: English Language Arts Grade 8



A/A Plot: English Language Arts Grade 10

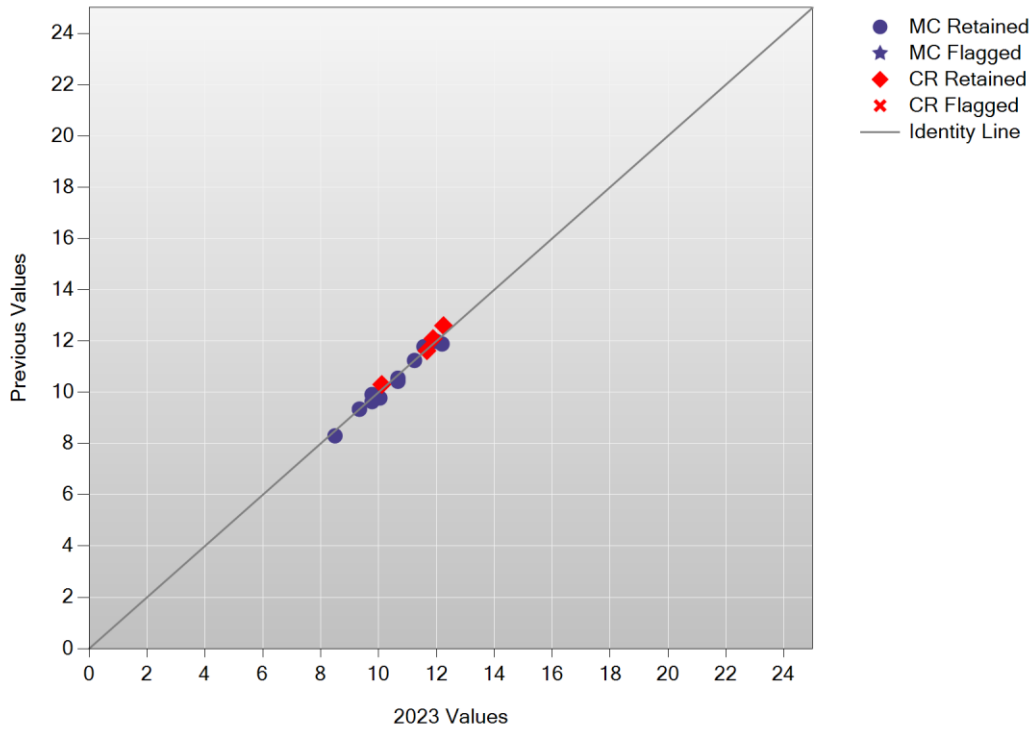


B/B Plot: English Language Arts Grade 10

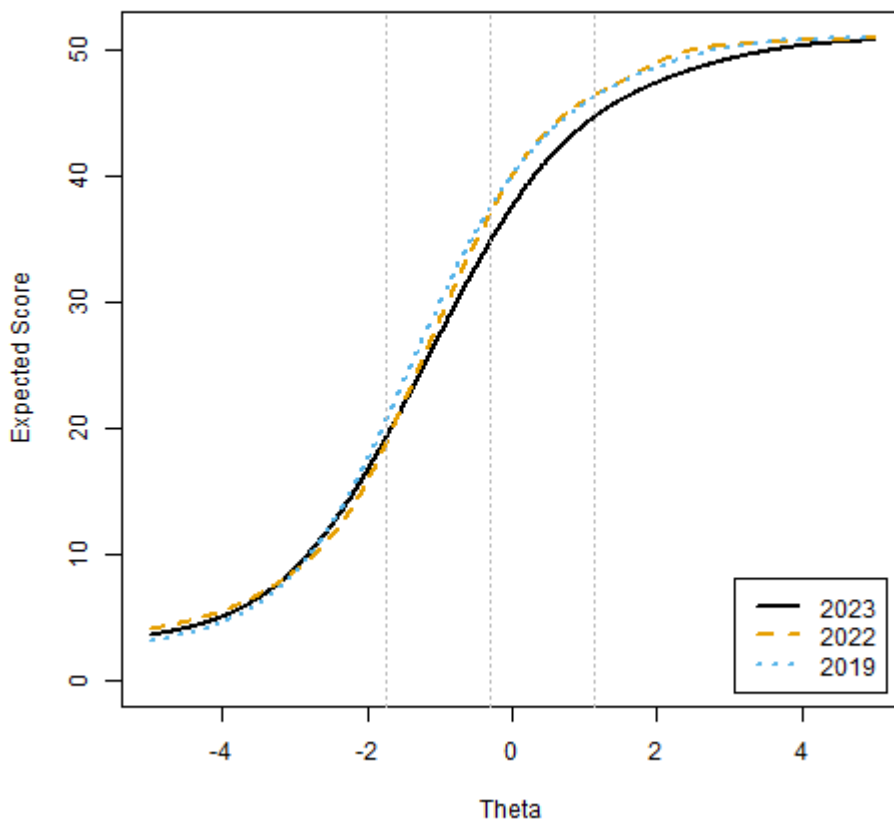




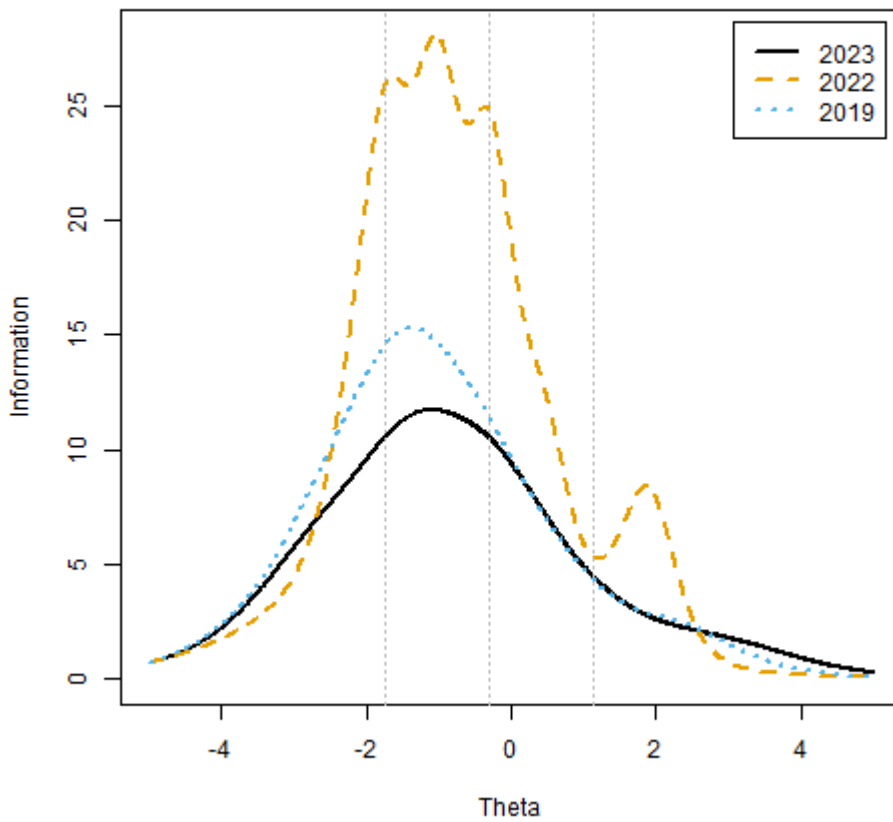
### Delta Plot: English Language Arts Grade 10



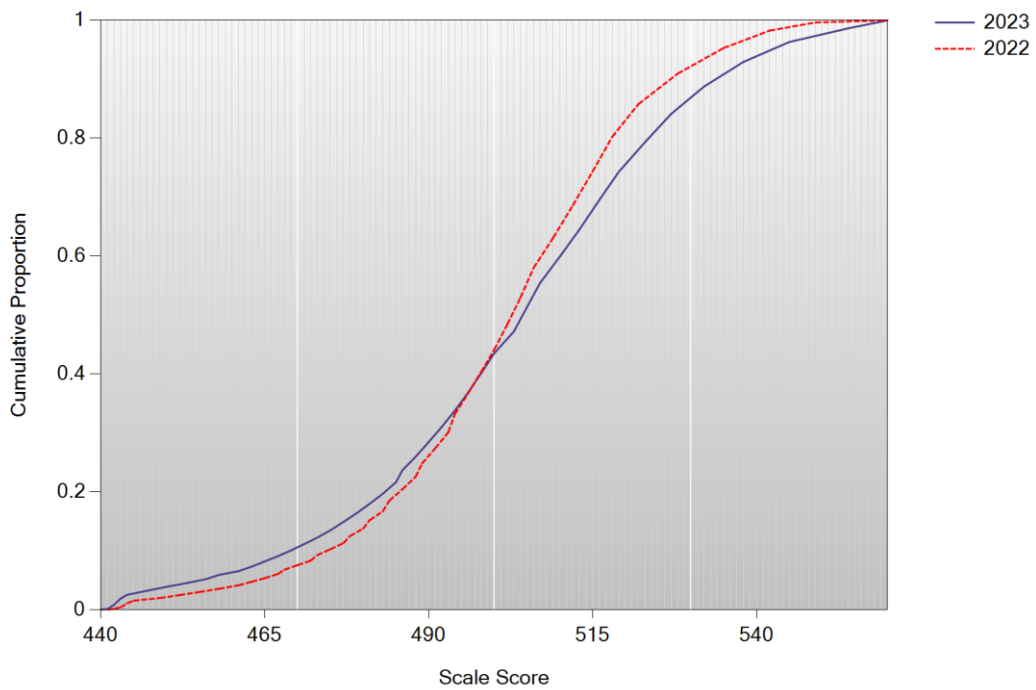
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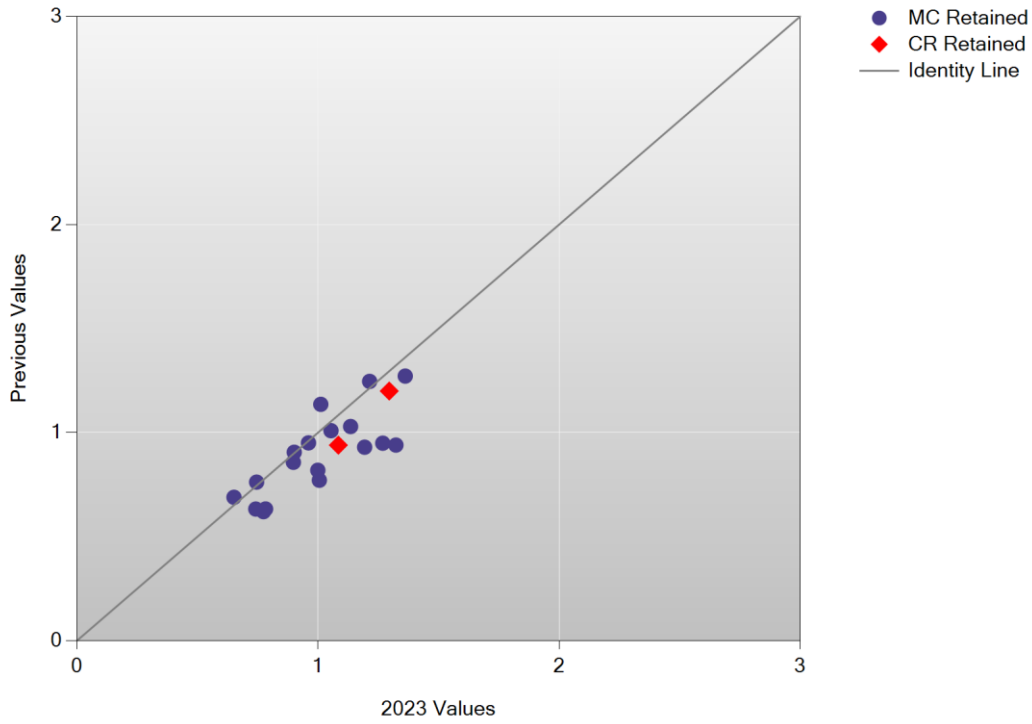
Test Information Function: ela10



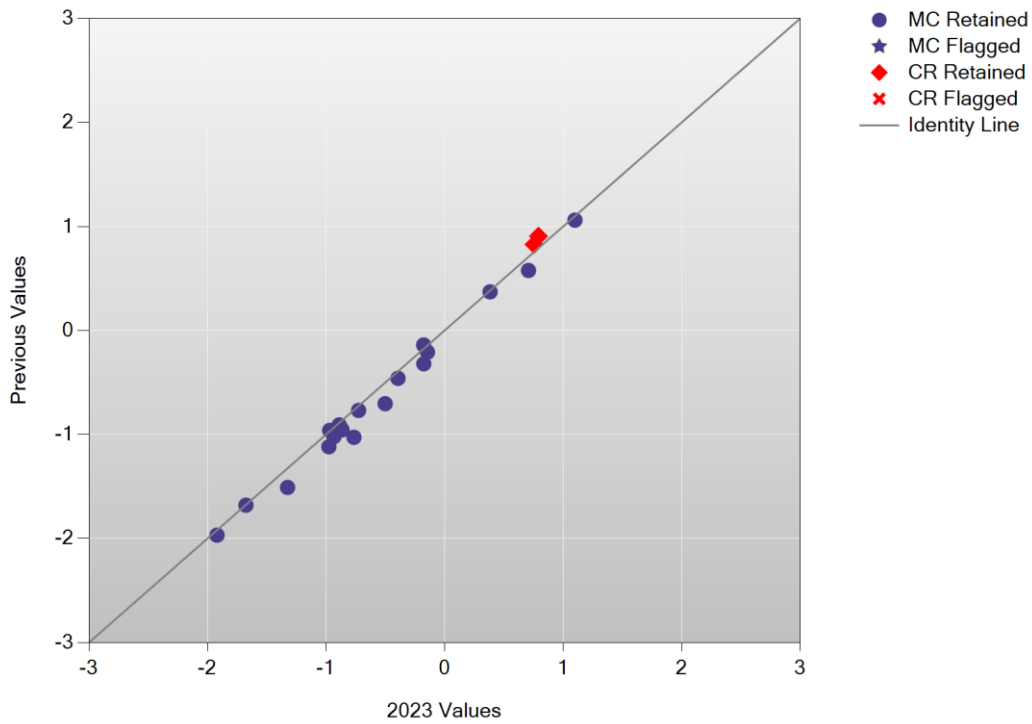
Cumulative Scale Score Distributions: English Language Arts Grade 10



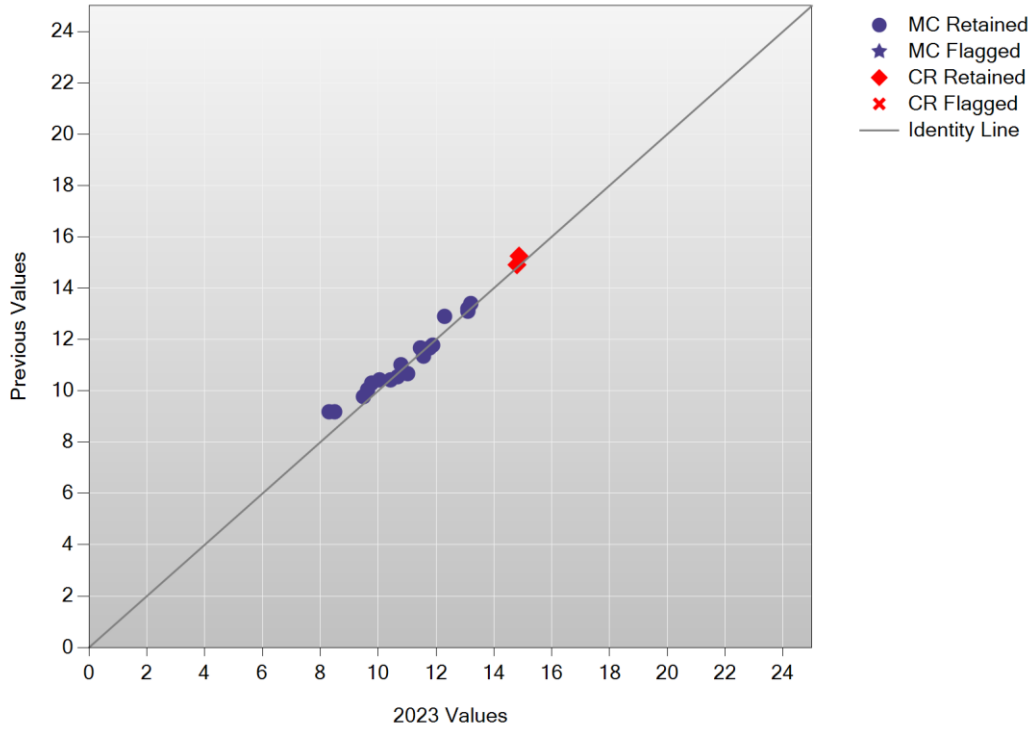
A/A Plot: Mathematics Grade 3



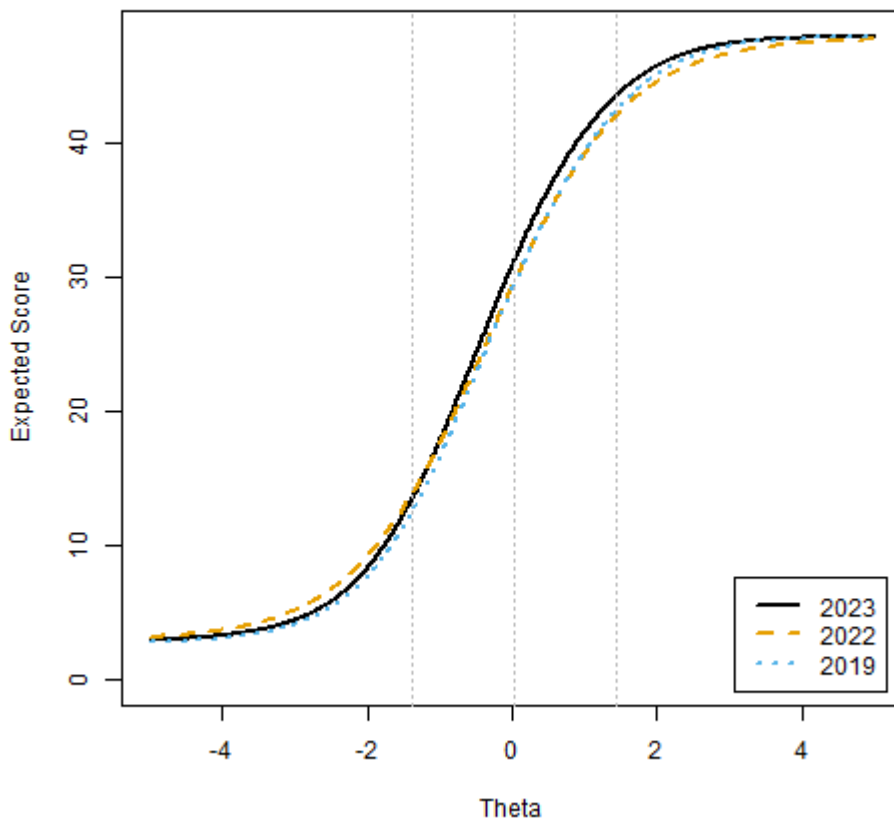
B/B Plot: Mathematics Grade 3



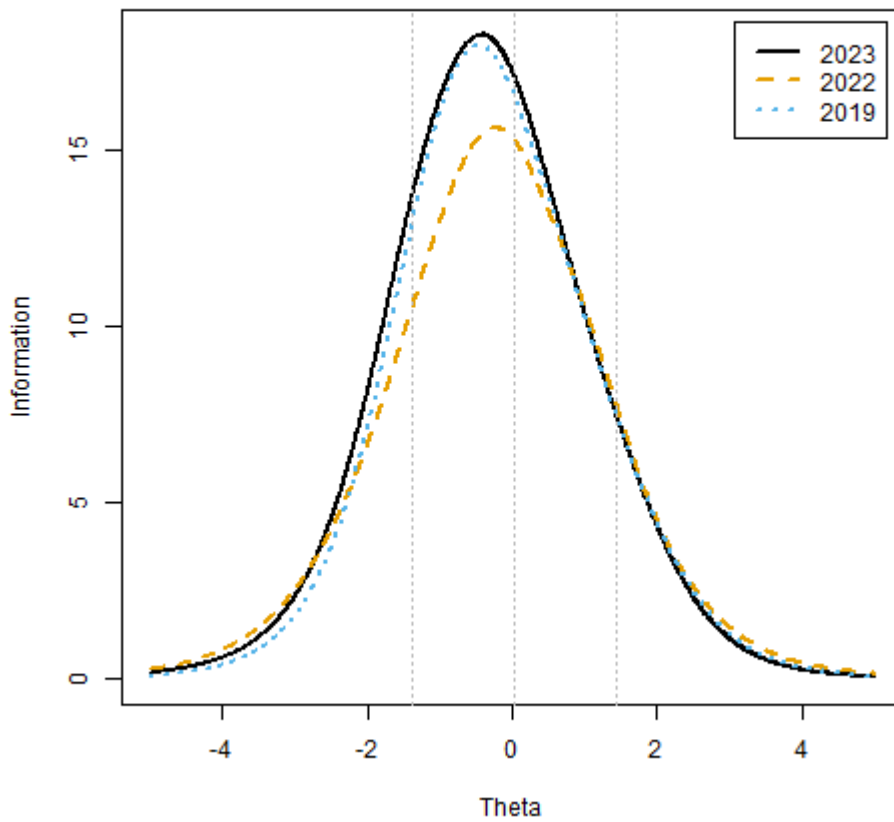
### Delta Plot: Mathematics Grade 3



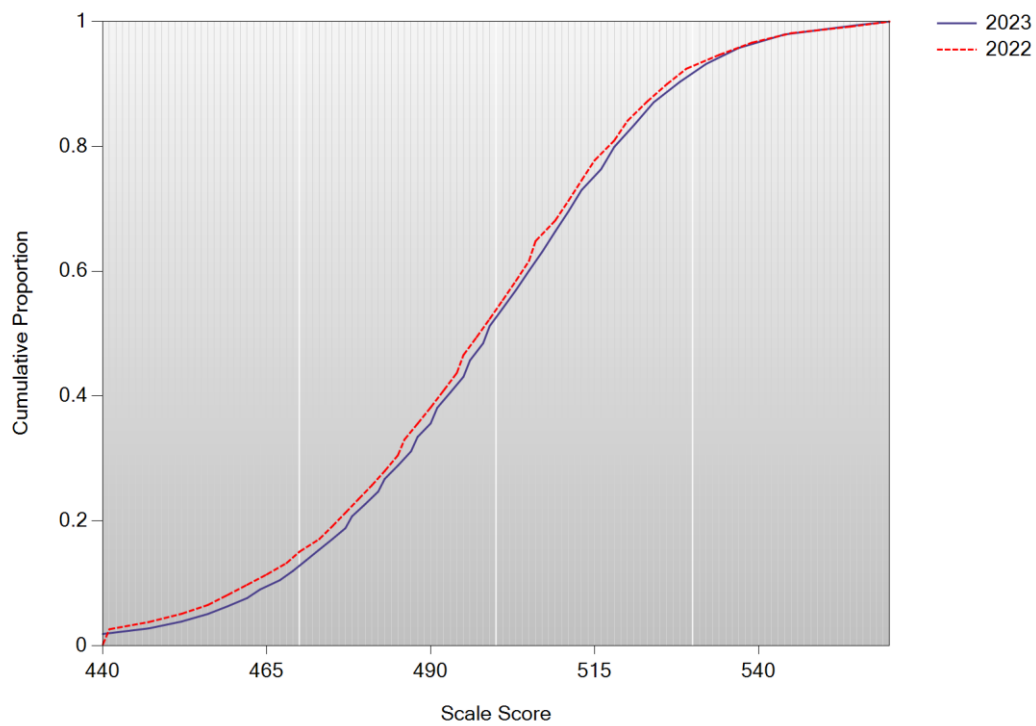
### Test Characteristic Curve: mat03



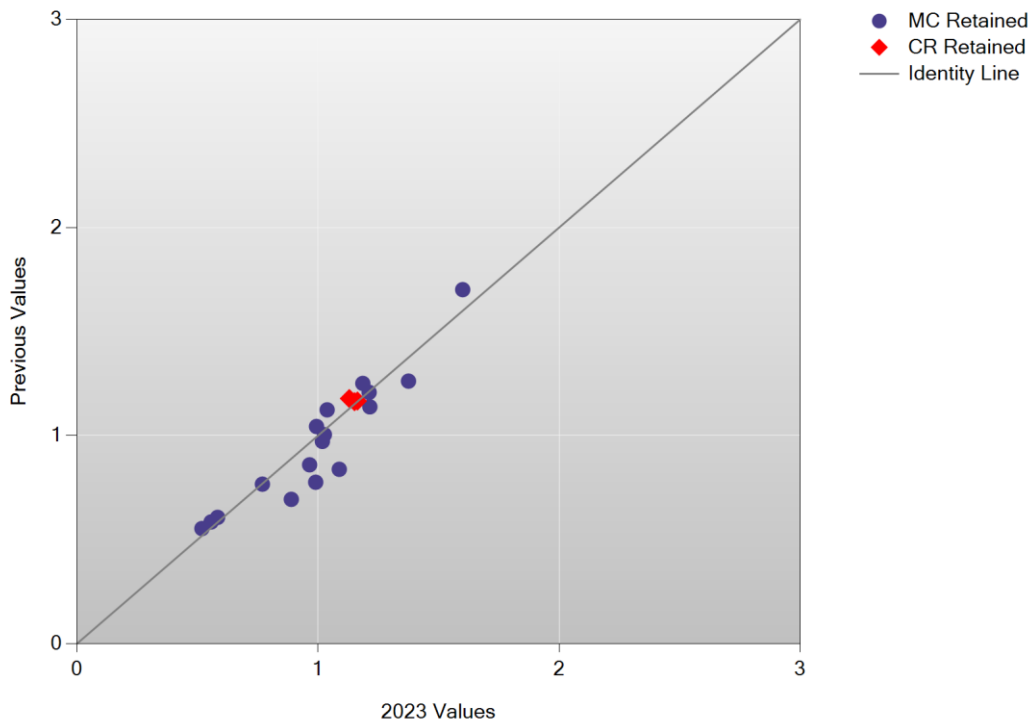
Test Information Function: mat03



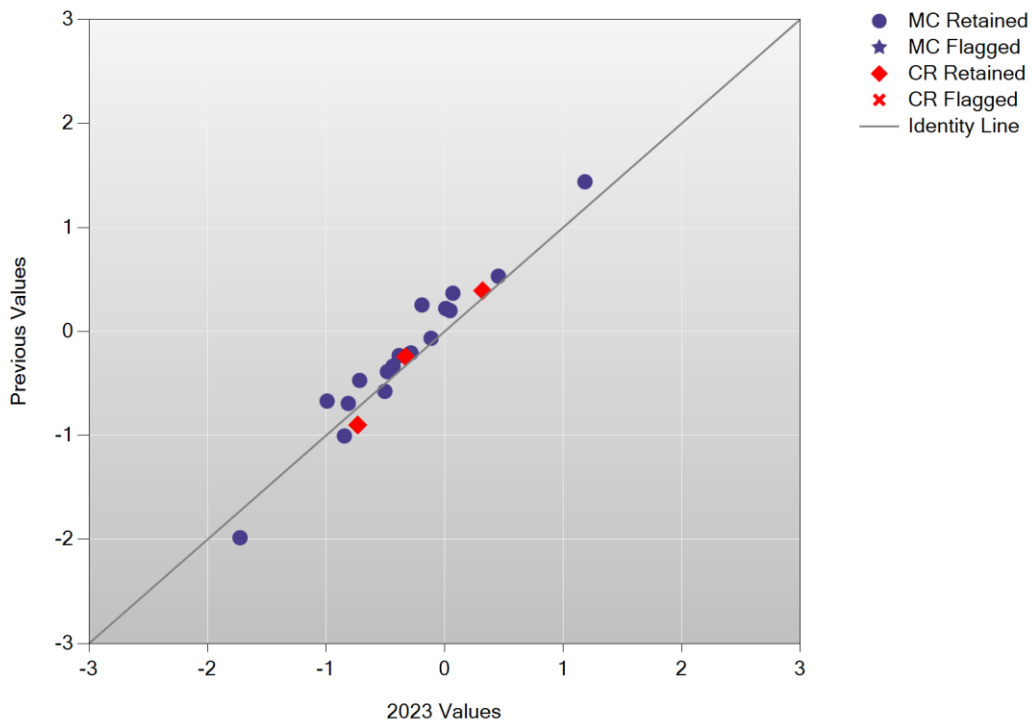
Cumulative Scale Score Distributions: Mathematics Grade 3



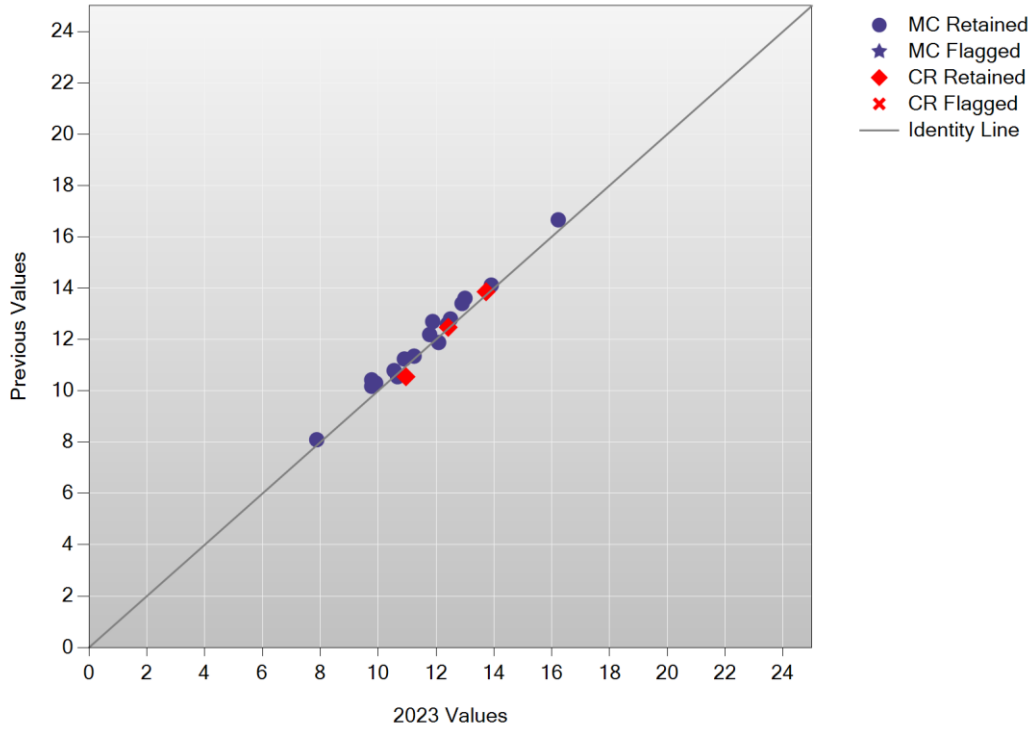
A/A Plot: Mathematics Grade 4



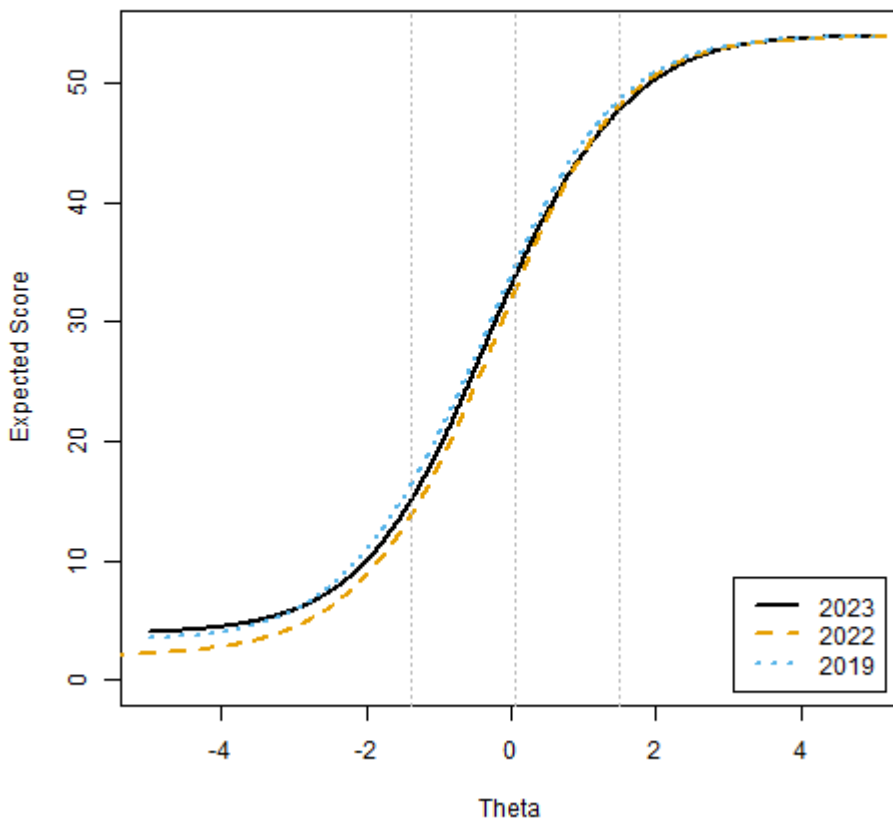
B/B Plot: Mathematics Grade 4



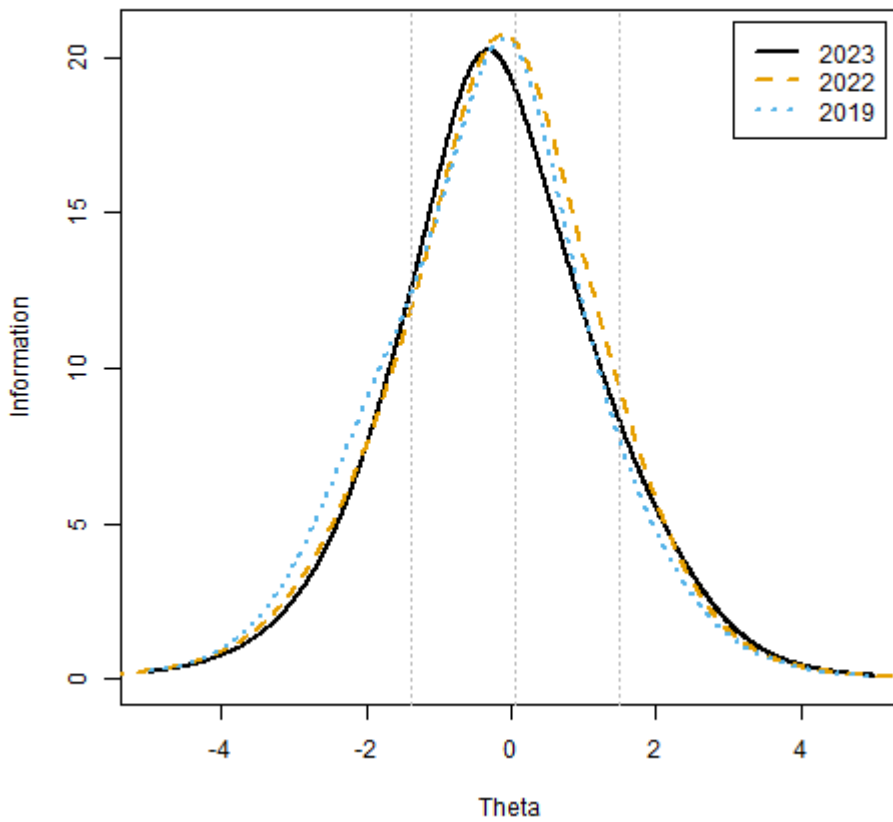
### Delta Plot: Mathematics Grade 4



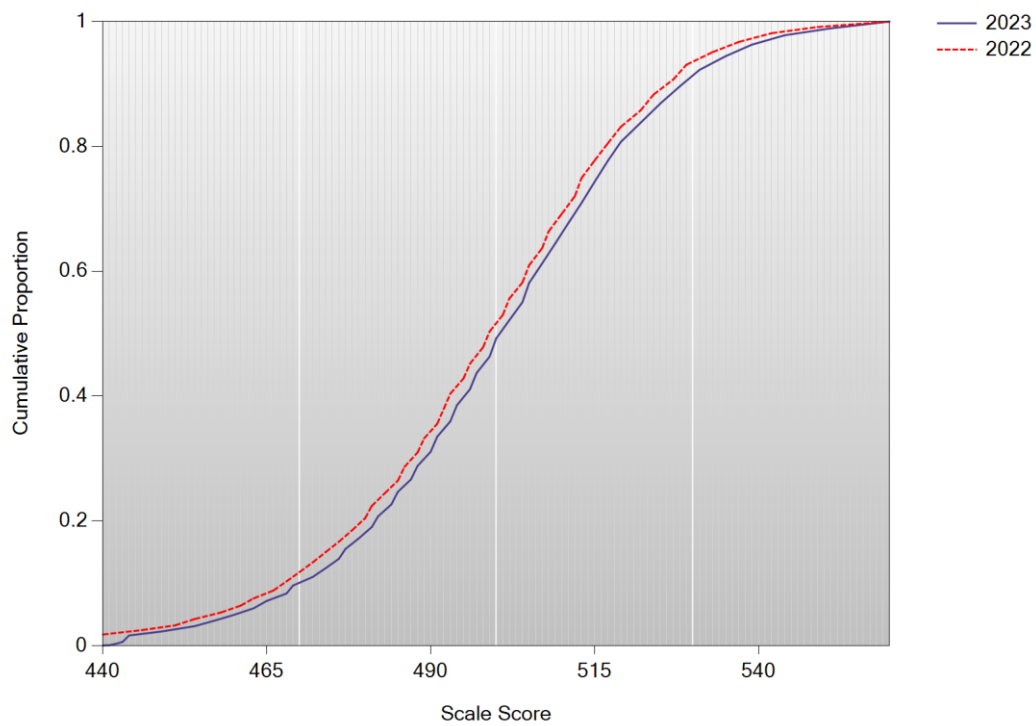
### Test Characteristic Curve: mat04



Test Information Function: mat04

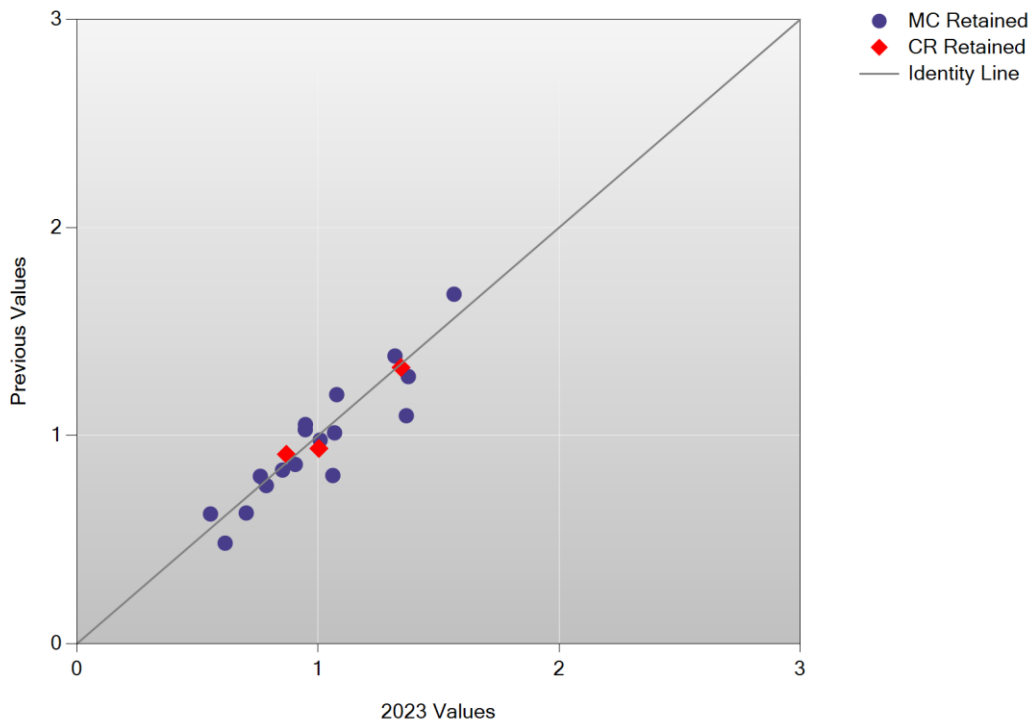


Cumulative Scale Score Distributions: Mathematics Grade 4

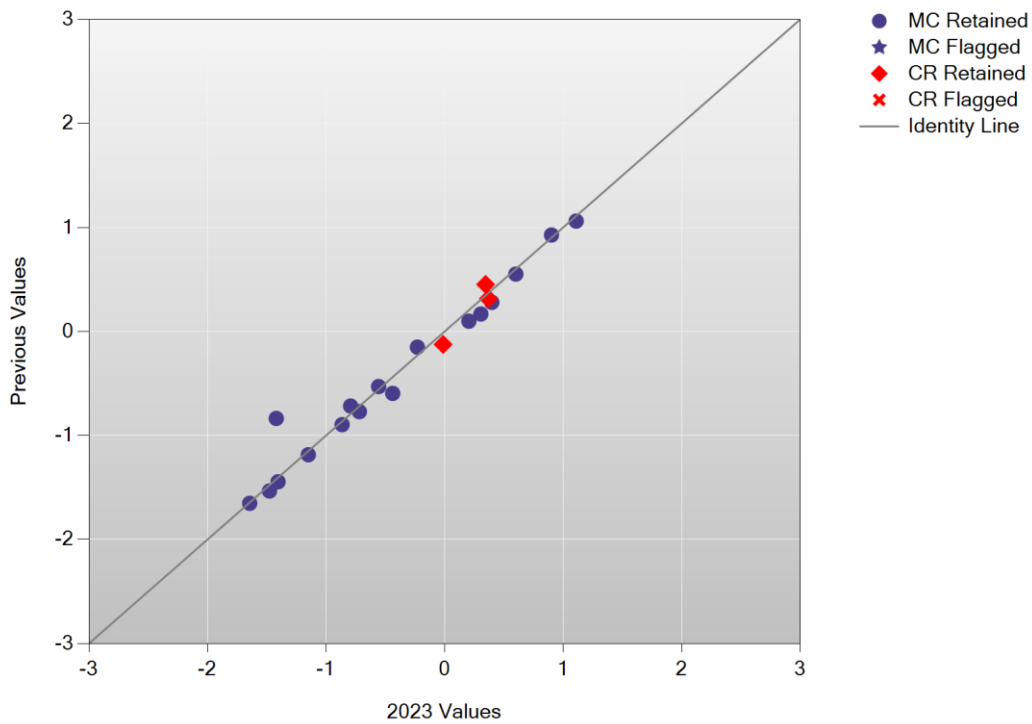




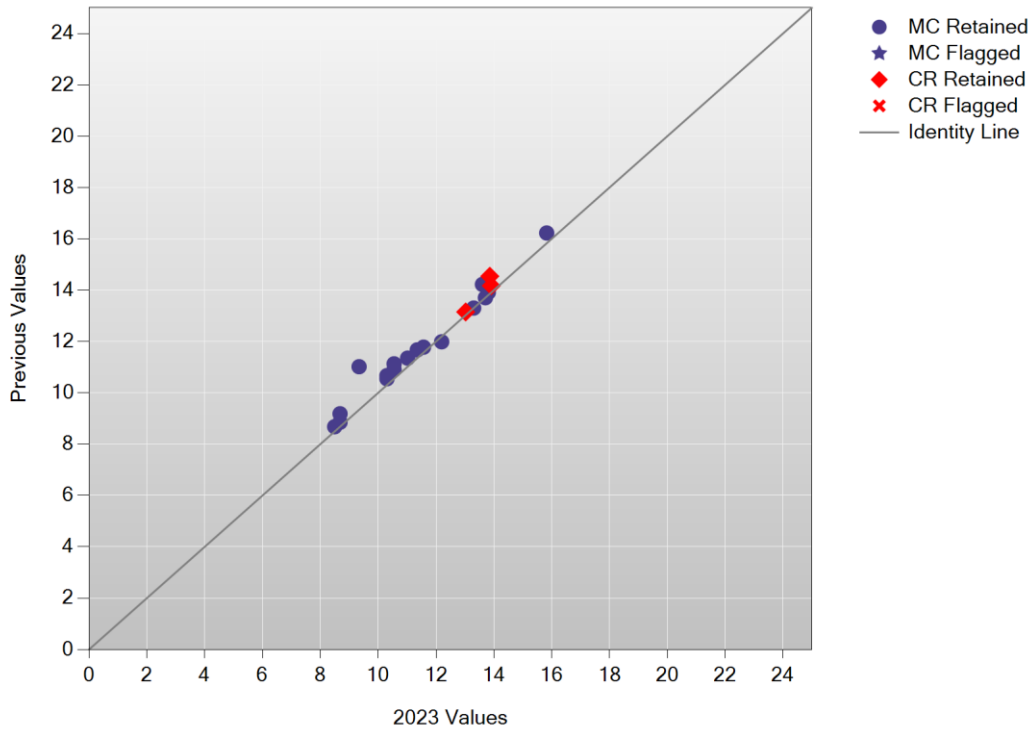
A/A Plot: Mathematics Grade 5



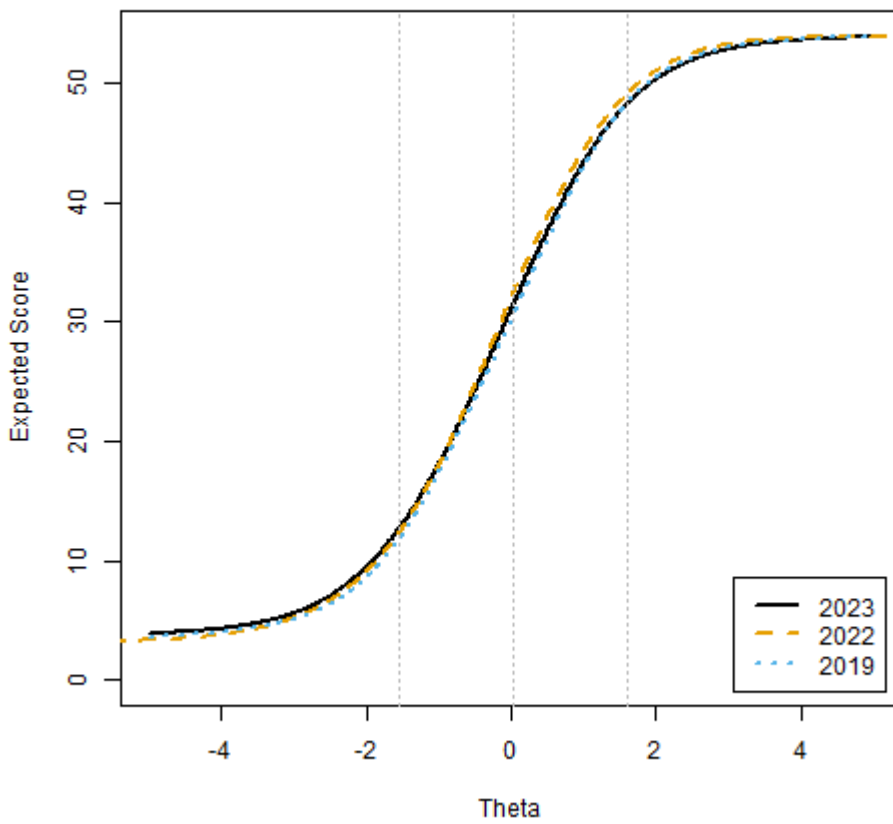
B/B Plot: Mathematics Grade 5



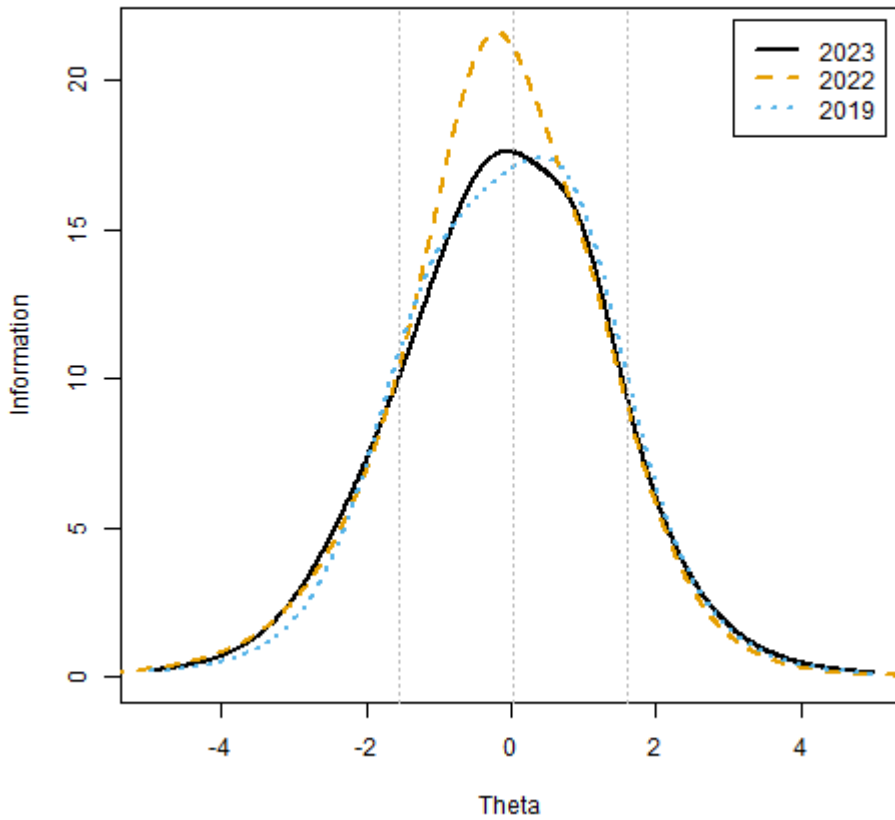
Delta Plot: Mathematics Grade 5



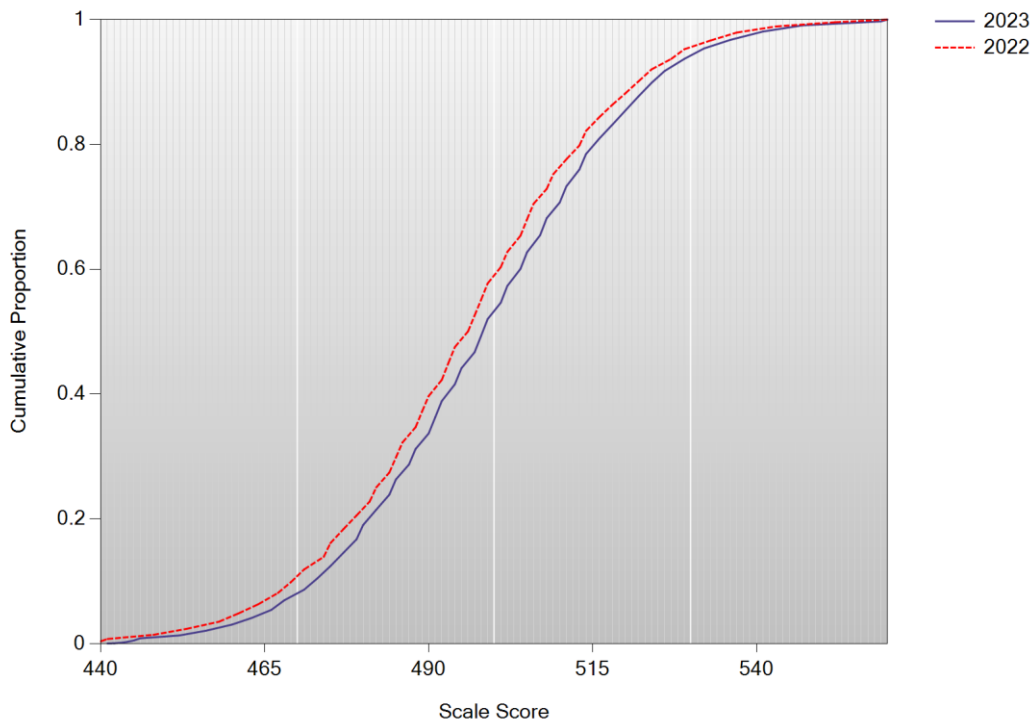
Test Characteristic Curve: mat05



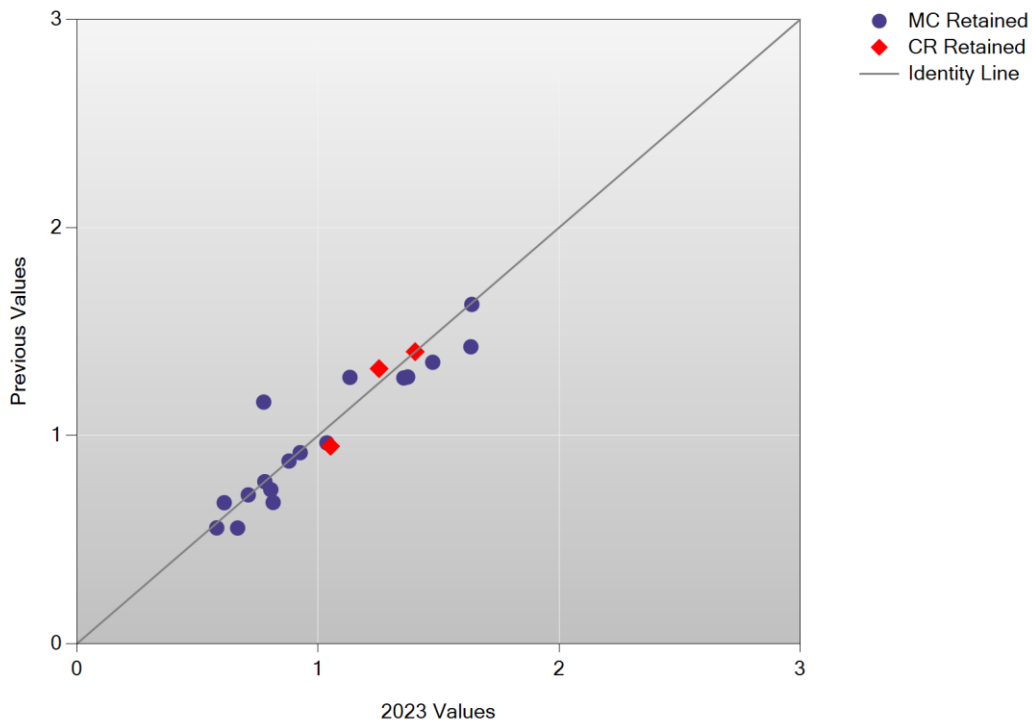
Test Information Function: mat05



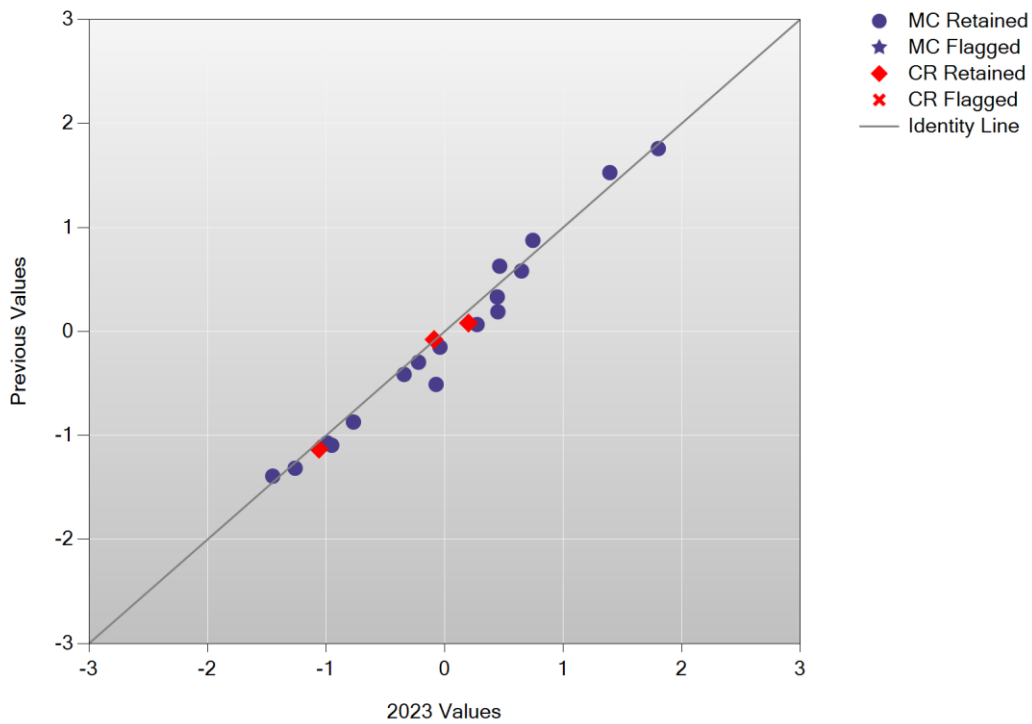
Cumulative Scale Score Distributions: Mathematics Grade 5



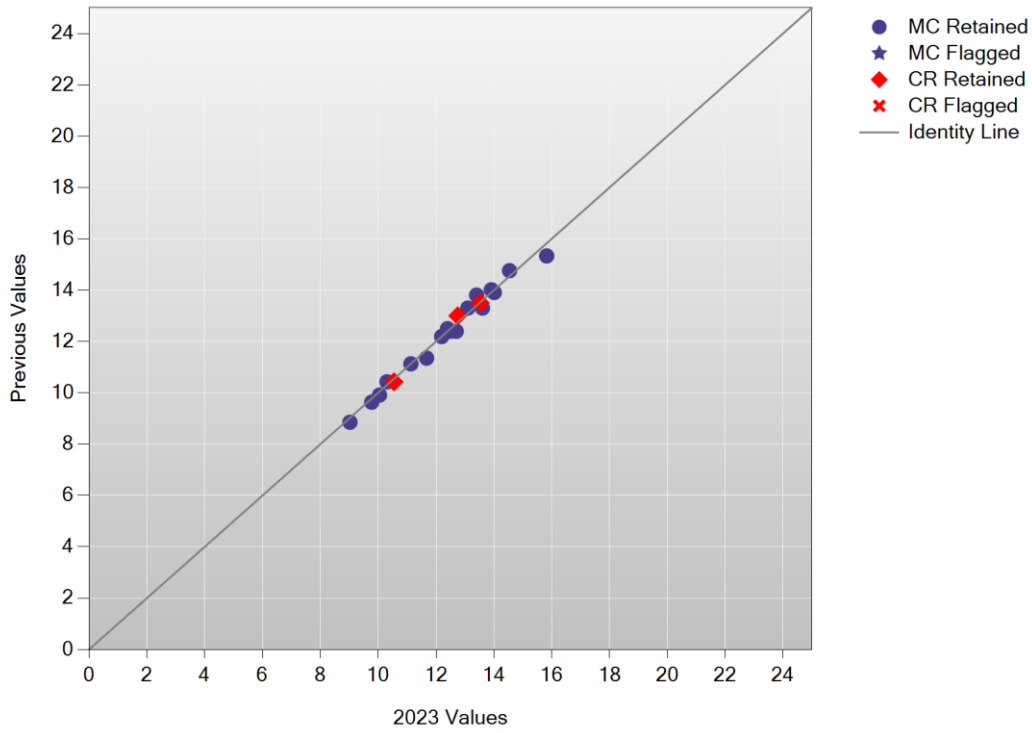
A/A Plot: Mathematics Grade 6



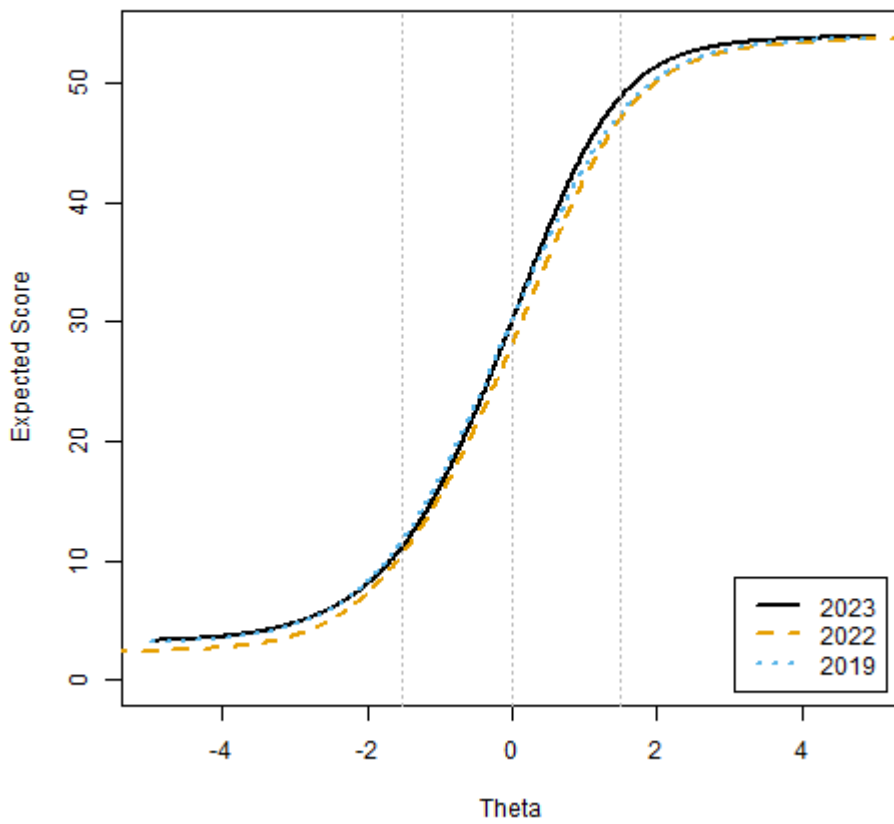
B/B Plot: Mathematics Grade 6



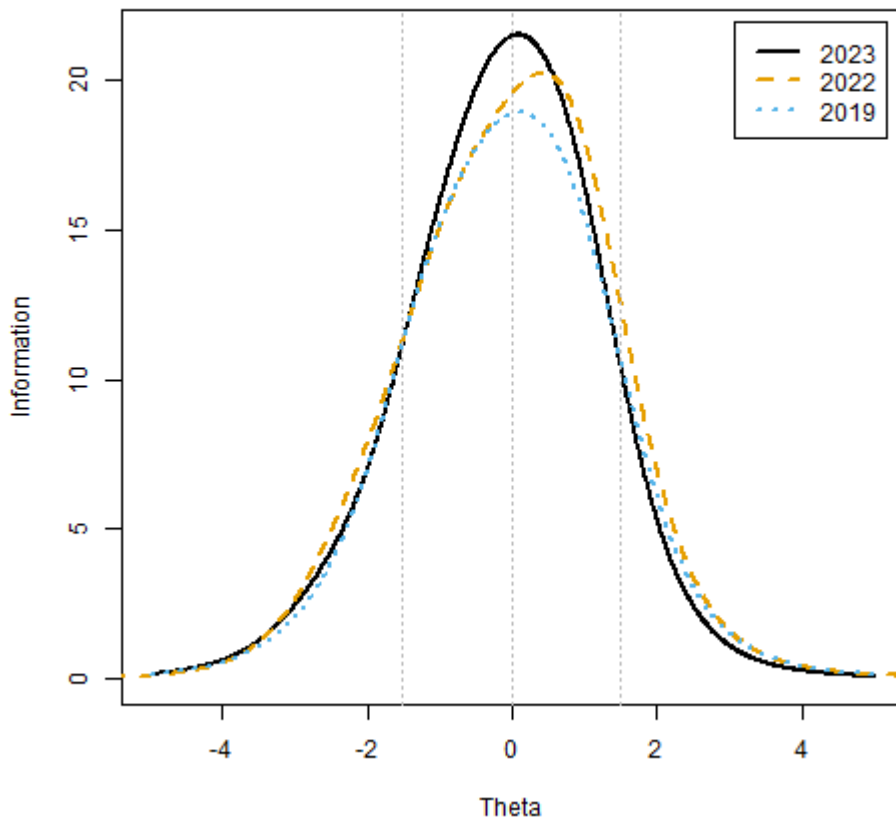
Delta Plot: Mathematics Grade 6



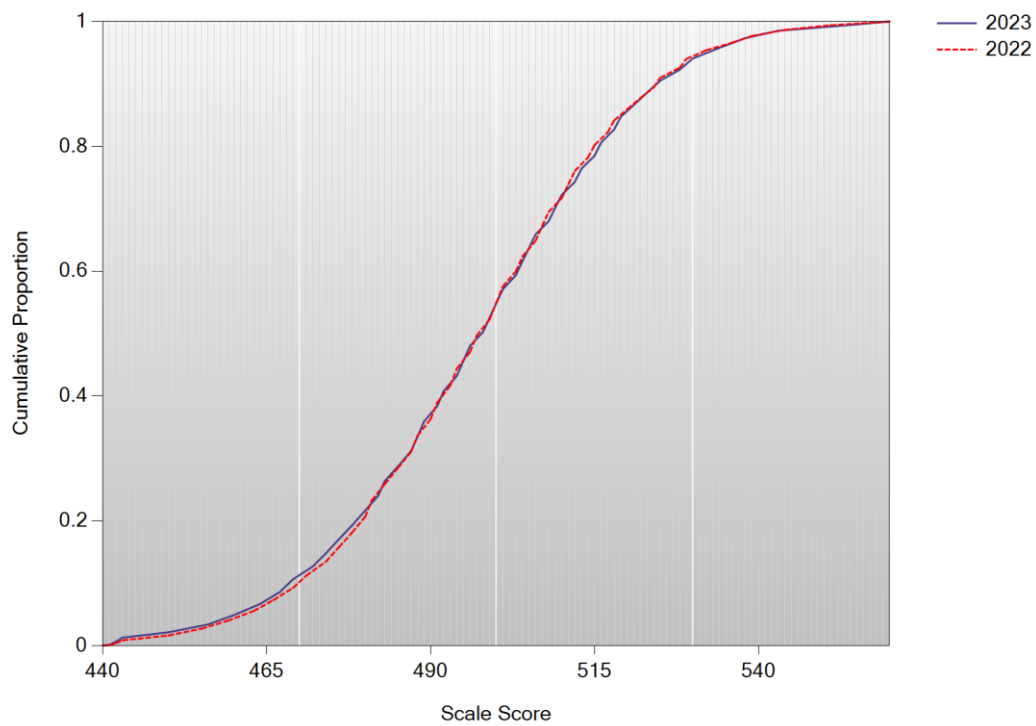
Test Characteristic Curve: mat06



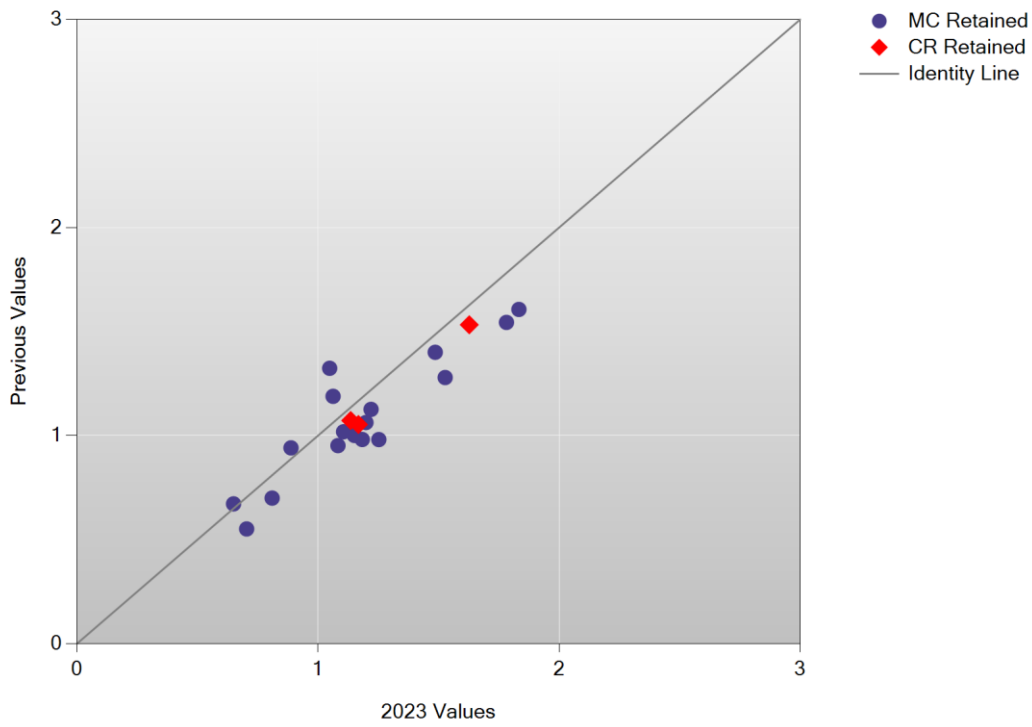
Test Information Function: mat06



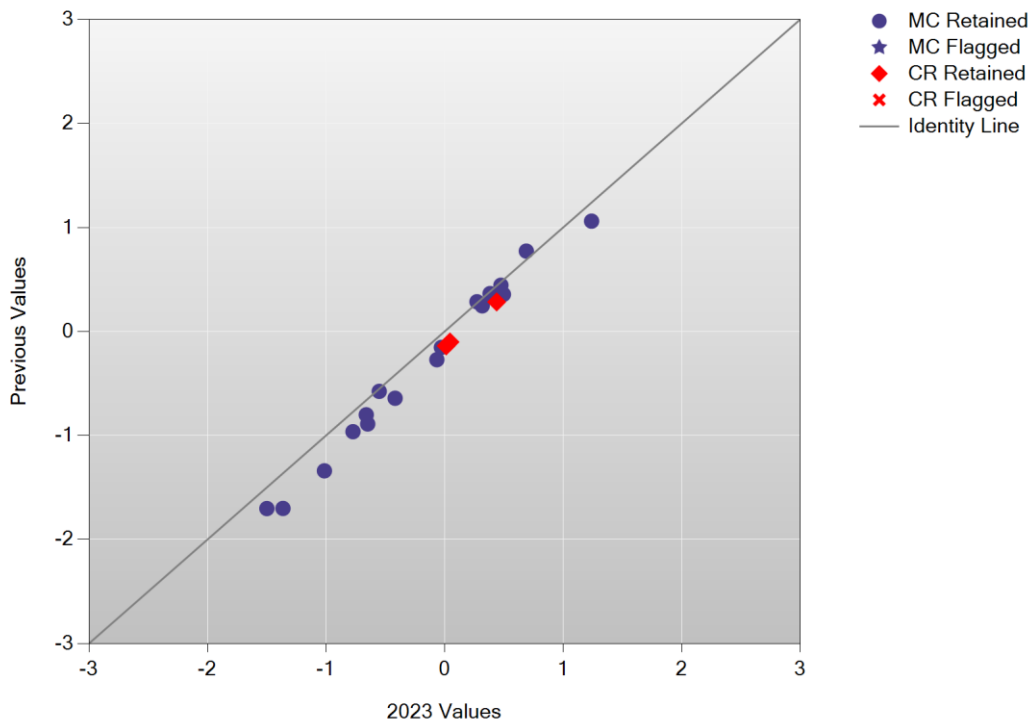
Cumulative Scale Score Distributions: Mathematics Grade 6



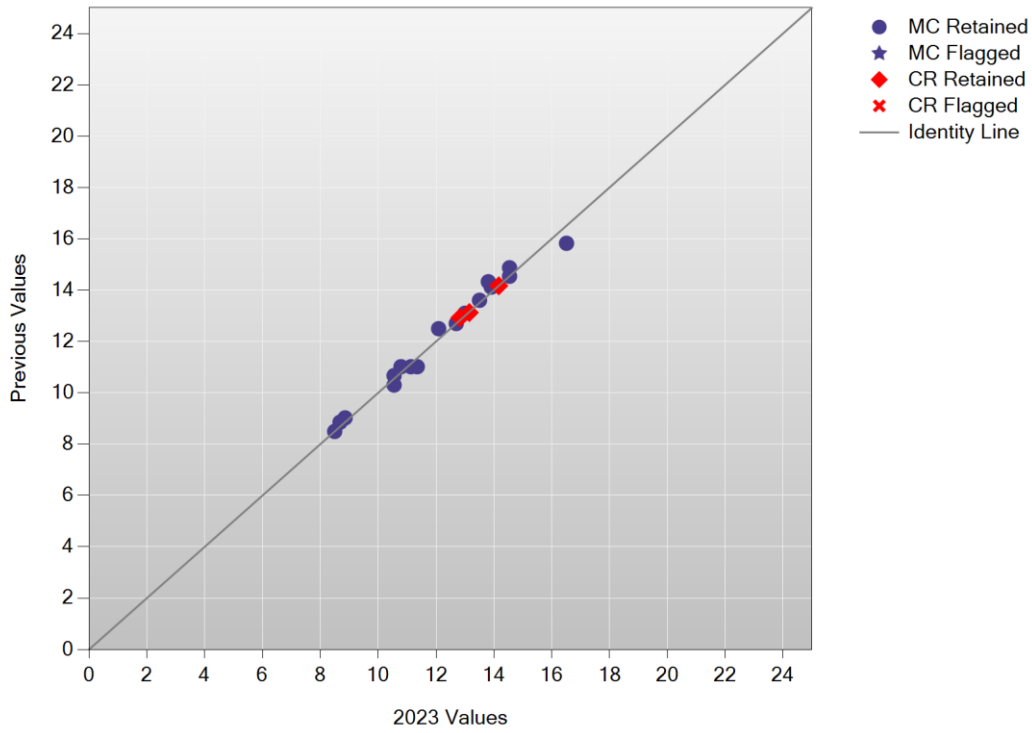
A/A Plot: Mathematics Grade 7



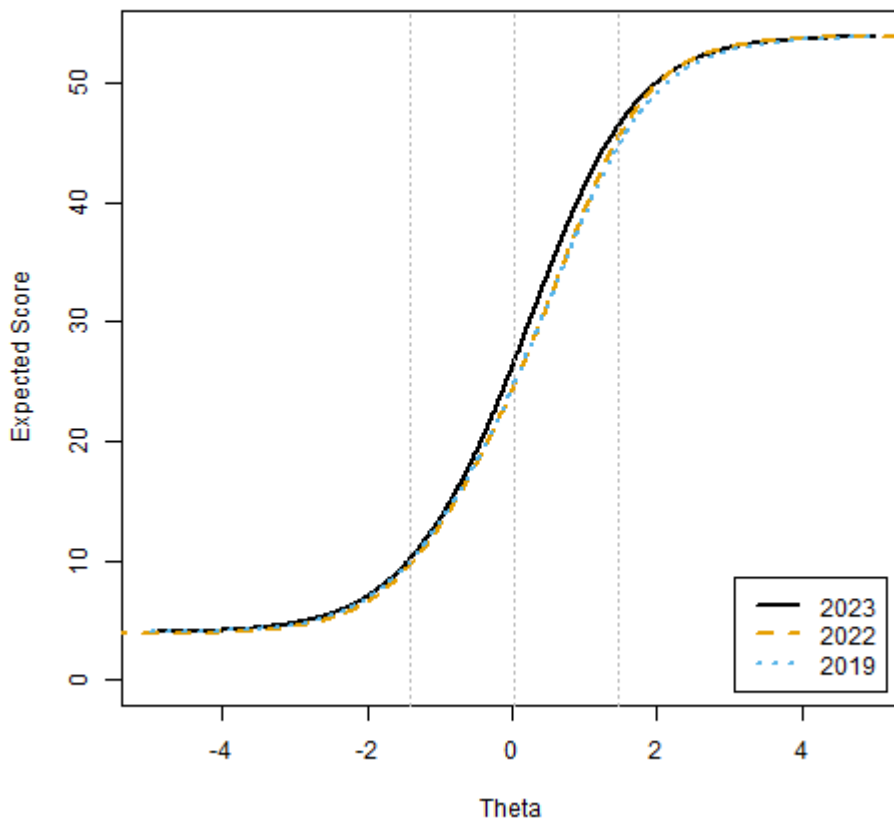
B/B Plot: Mathematics Grade 7



Delta Plot: Mathematics Grade 7

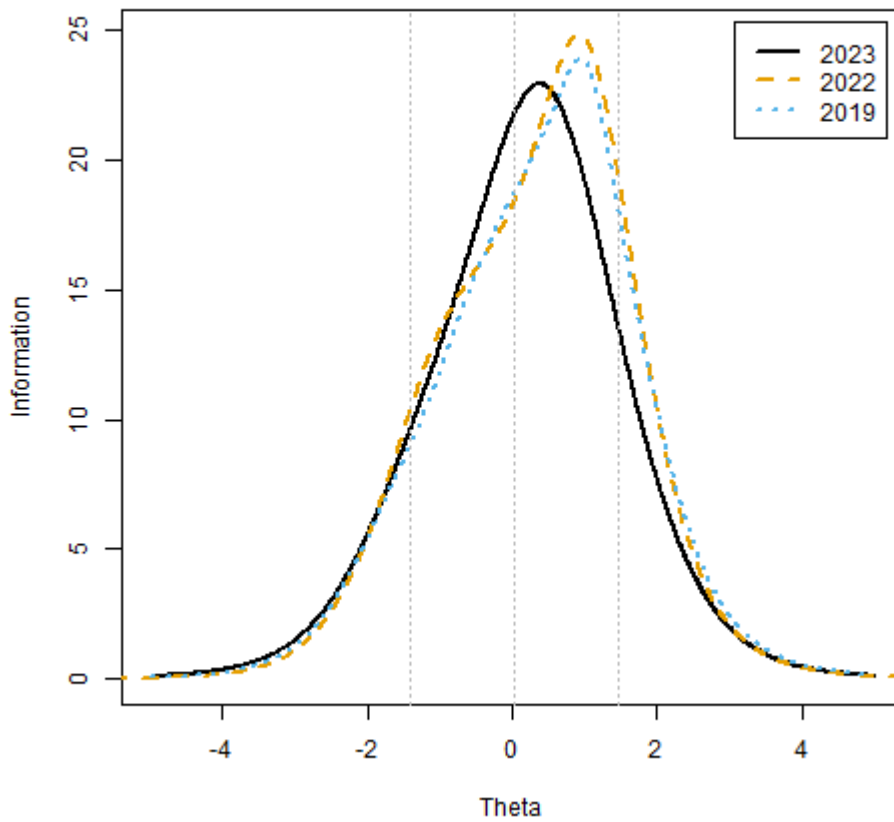


Test Characteristic Curve: mat07

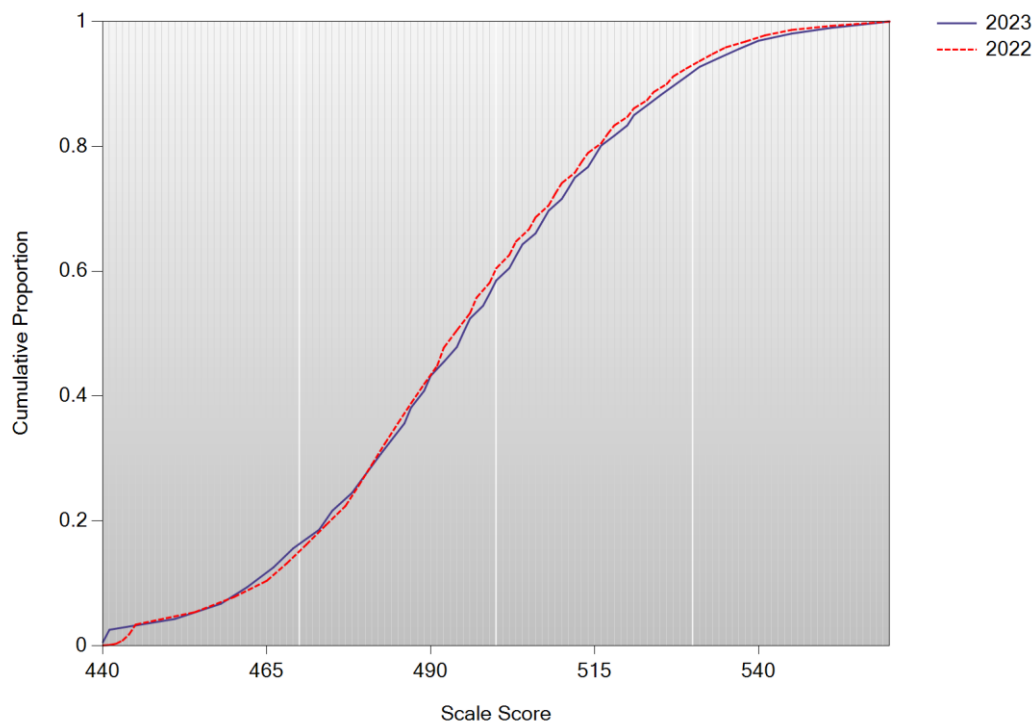




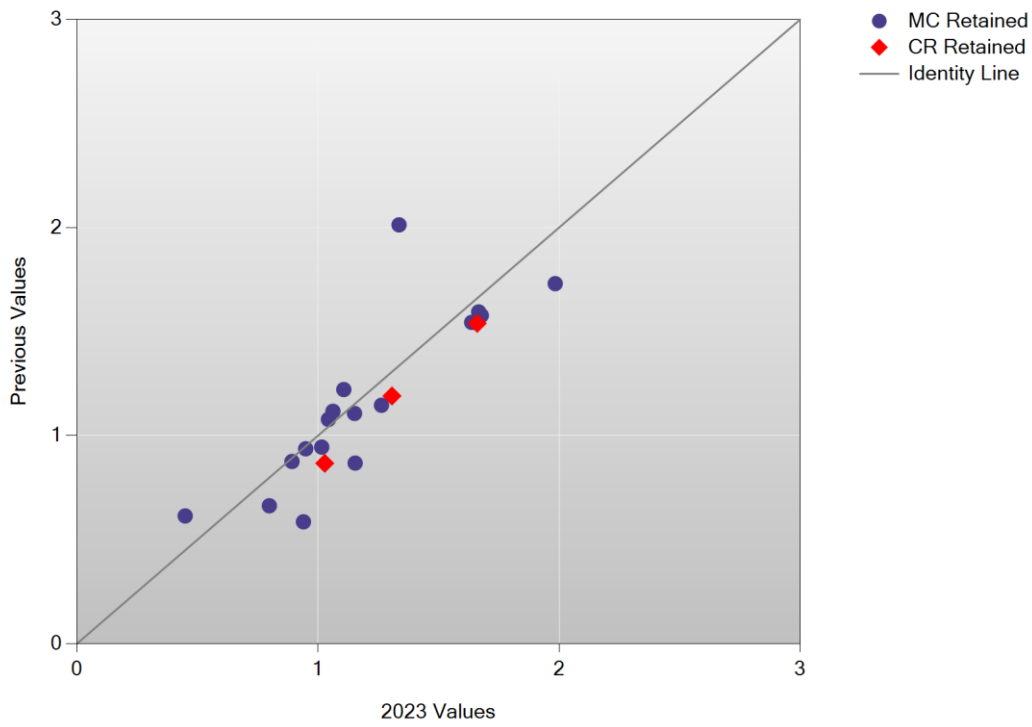
Test Information Function: mat07



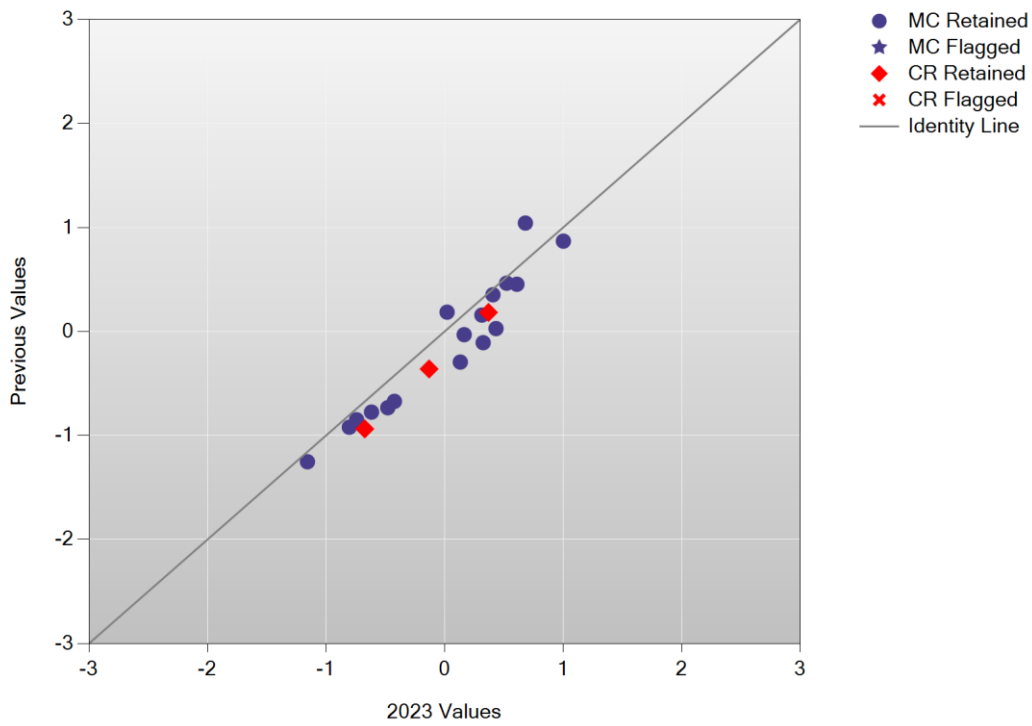
Cumulative Scale Score Distributions: Mathematics Grade 7



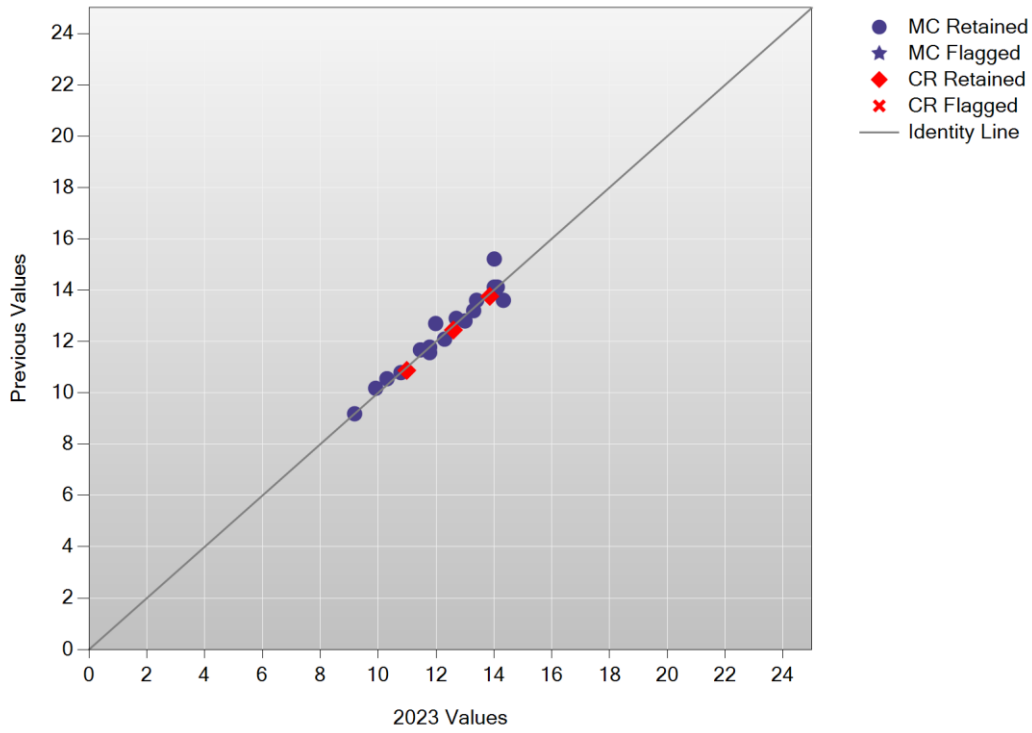
A/A Plot: Mathematics Grade 8



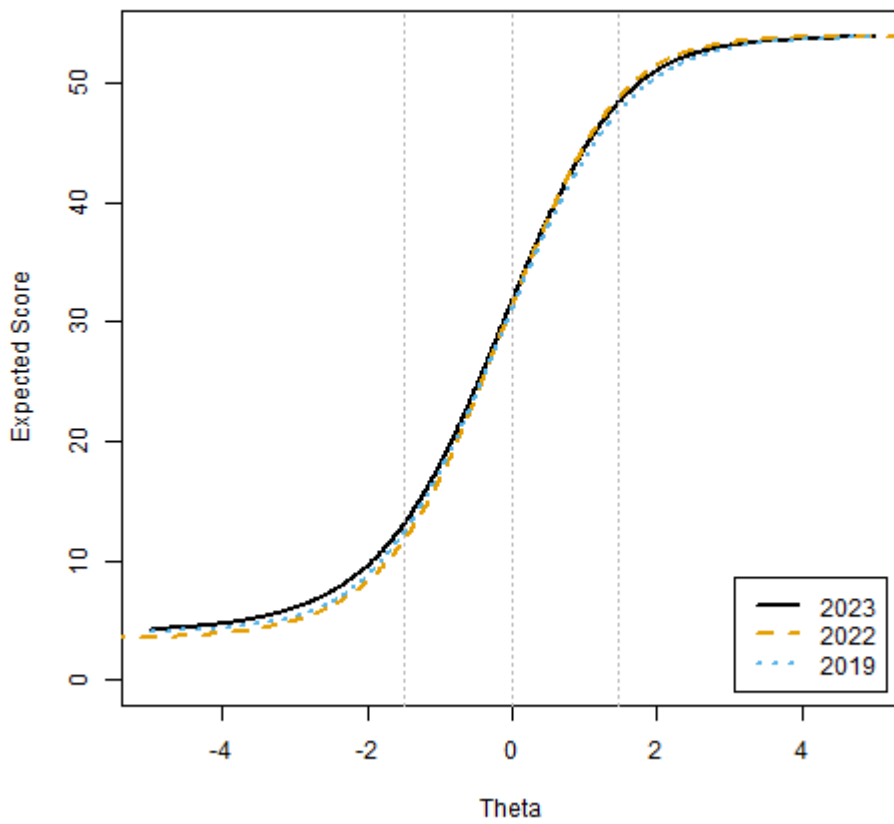
B/B Plot: Mathematics Grade 8



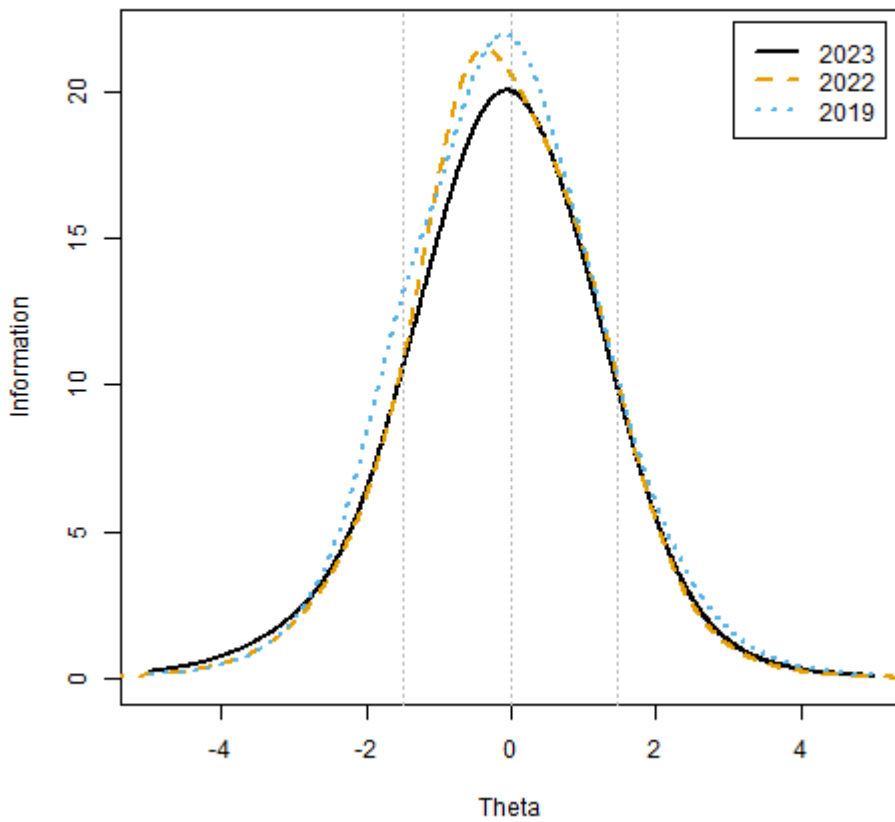
Delta Plot: Mathematics Grade 8



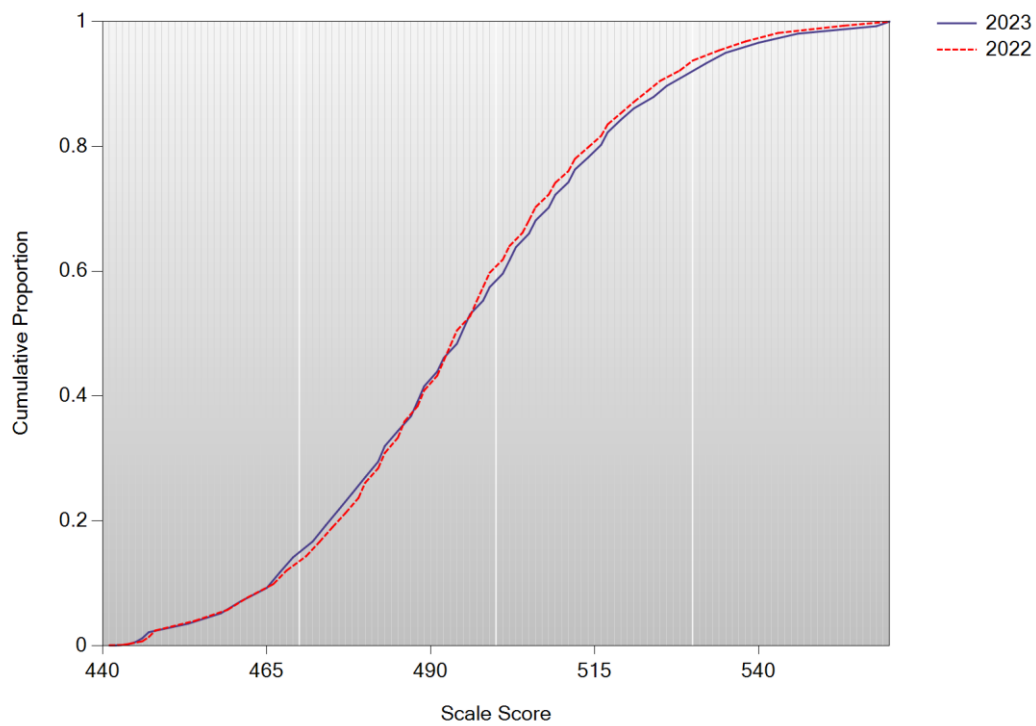
Test Characteristic Curve: mat08



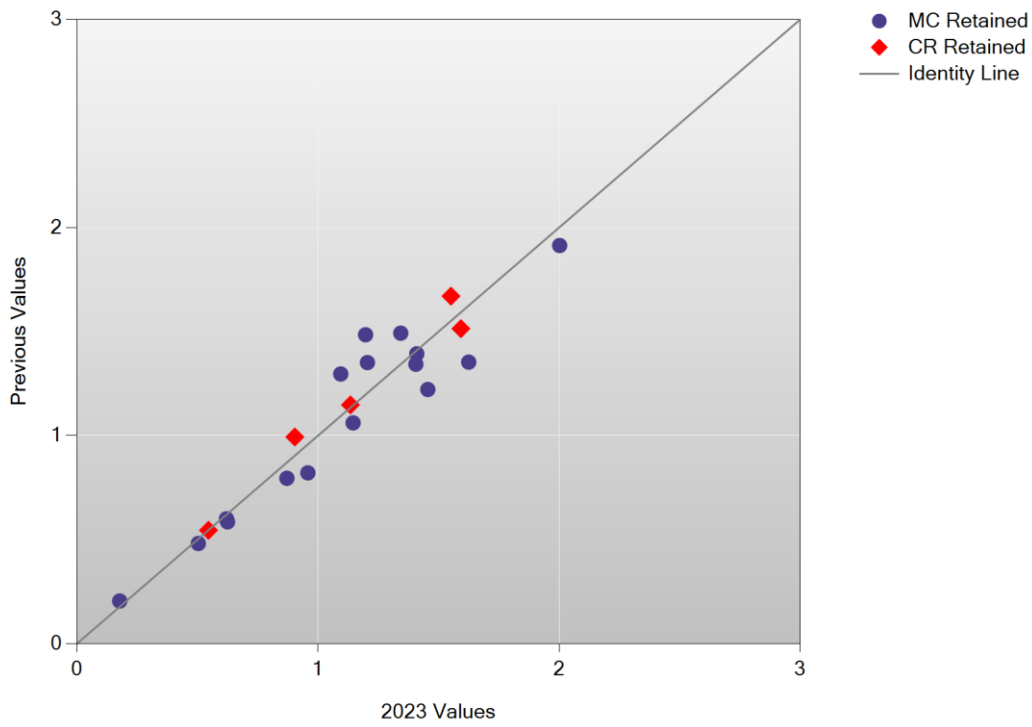
Test Information Function: mat08



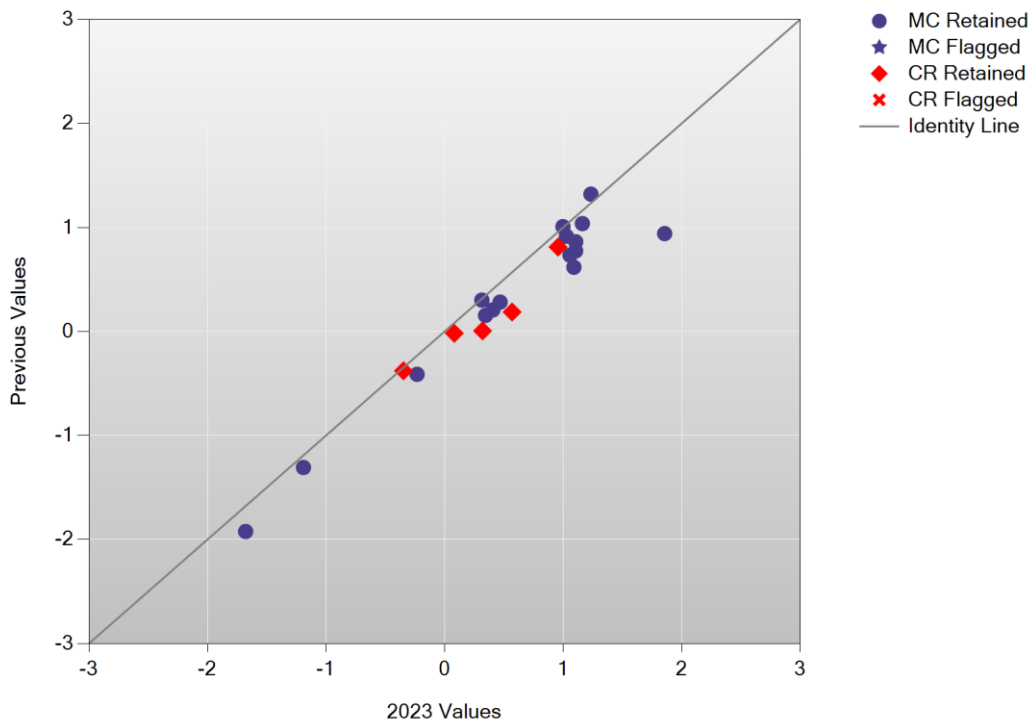
Cumulative Scale Score Distributions: Mathematics Grade 8



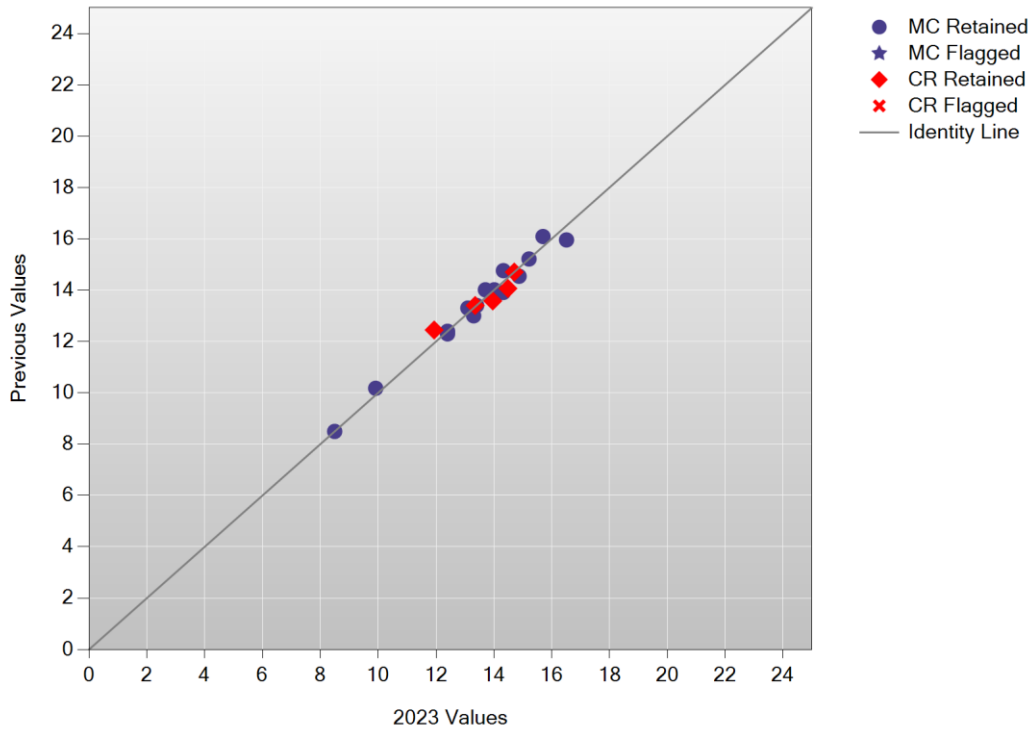
A/A Plot: Mathematics Grade 10



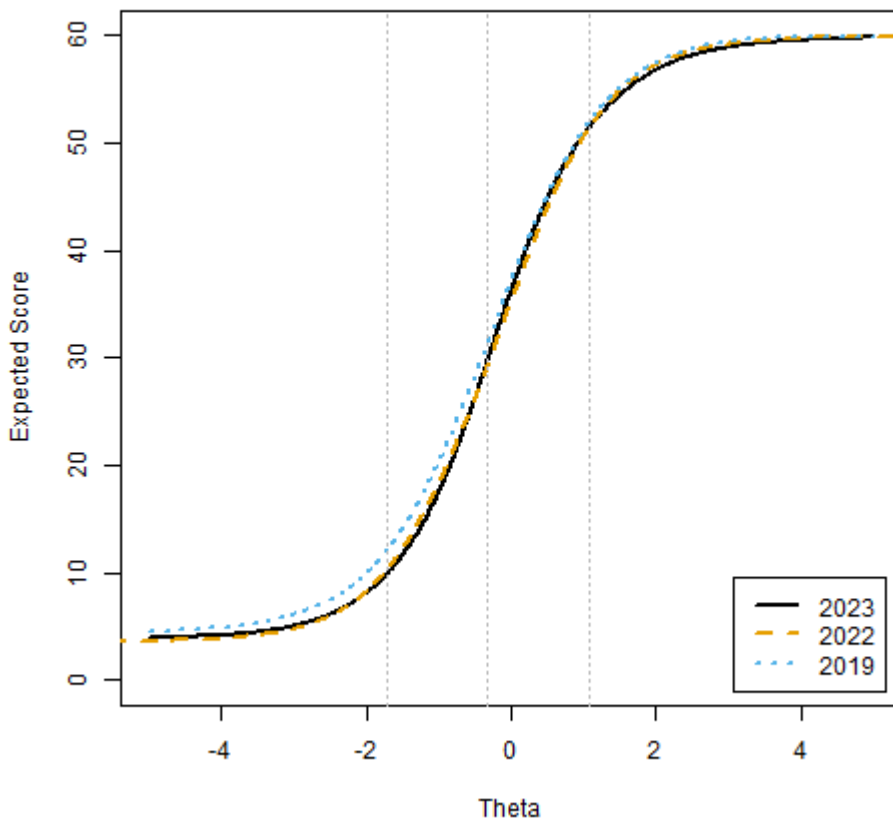
B/B Plot: Mathematics Grade 10



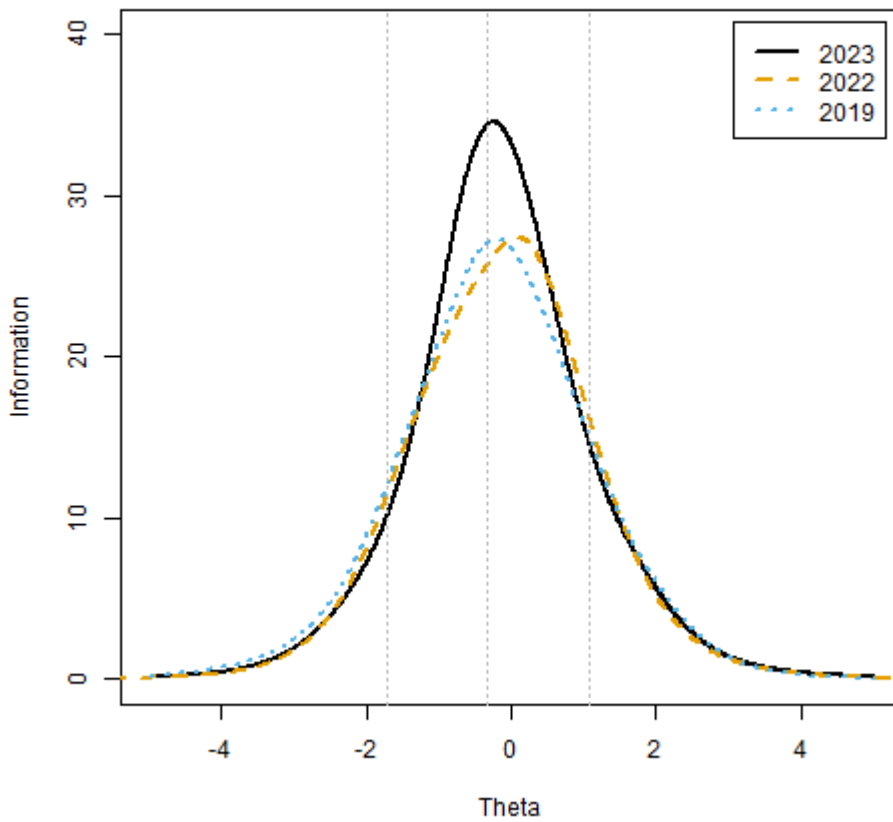
### Delta Plot: Mathematics Grade 10



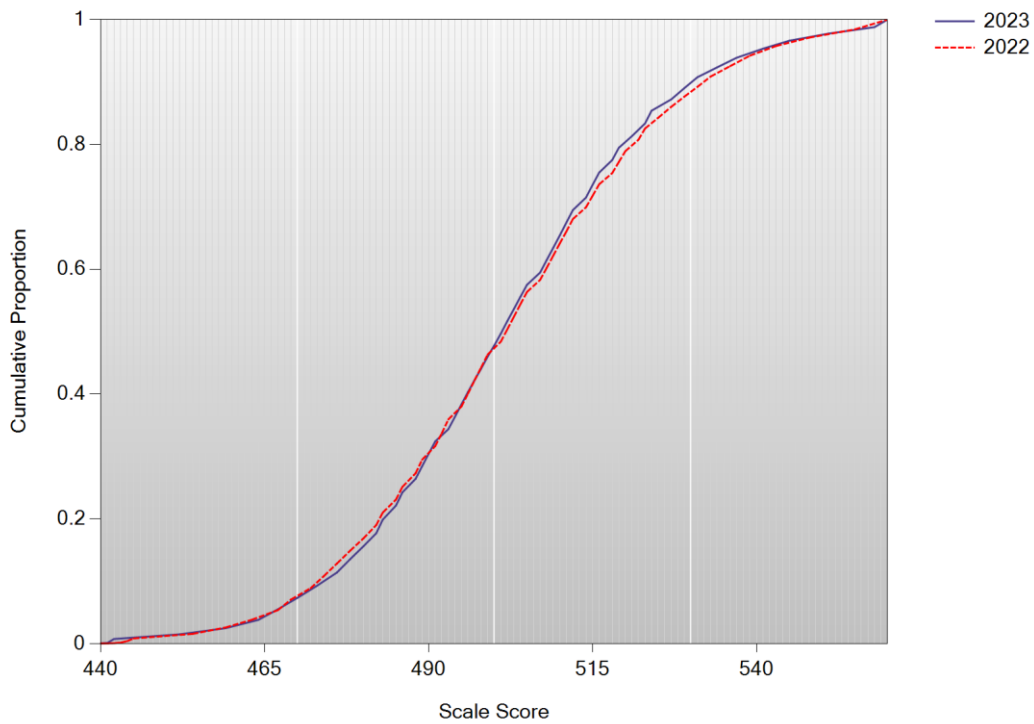
### Test Characteristic Curve: mat10



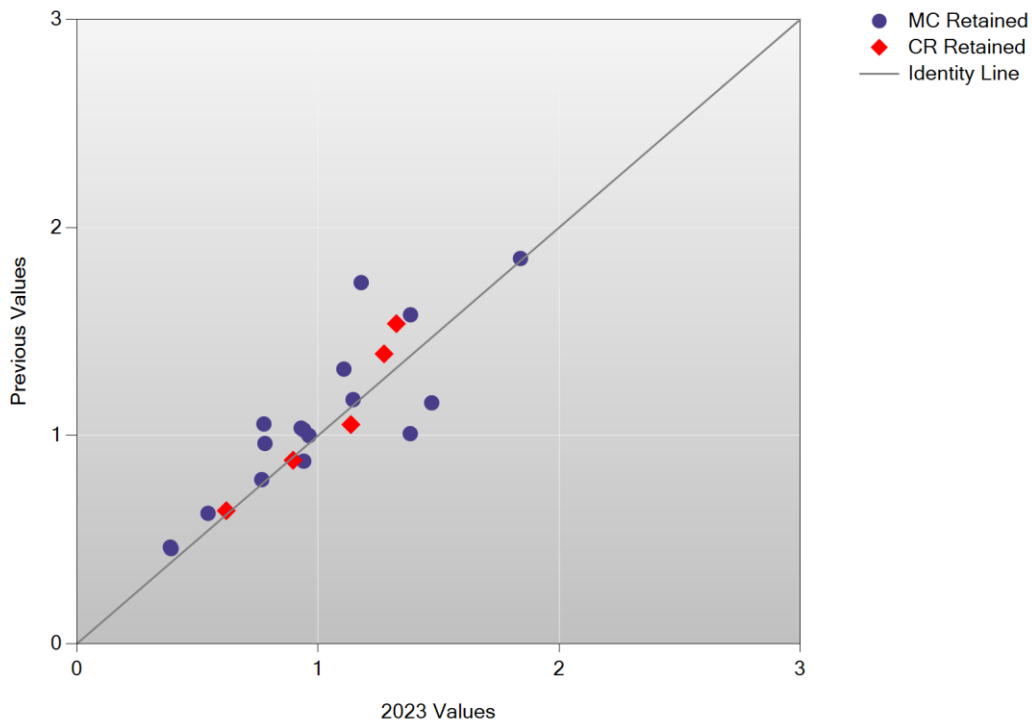
Test Information Function: mat10



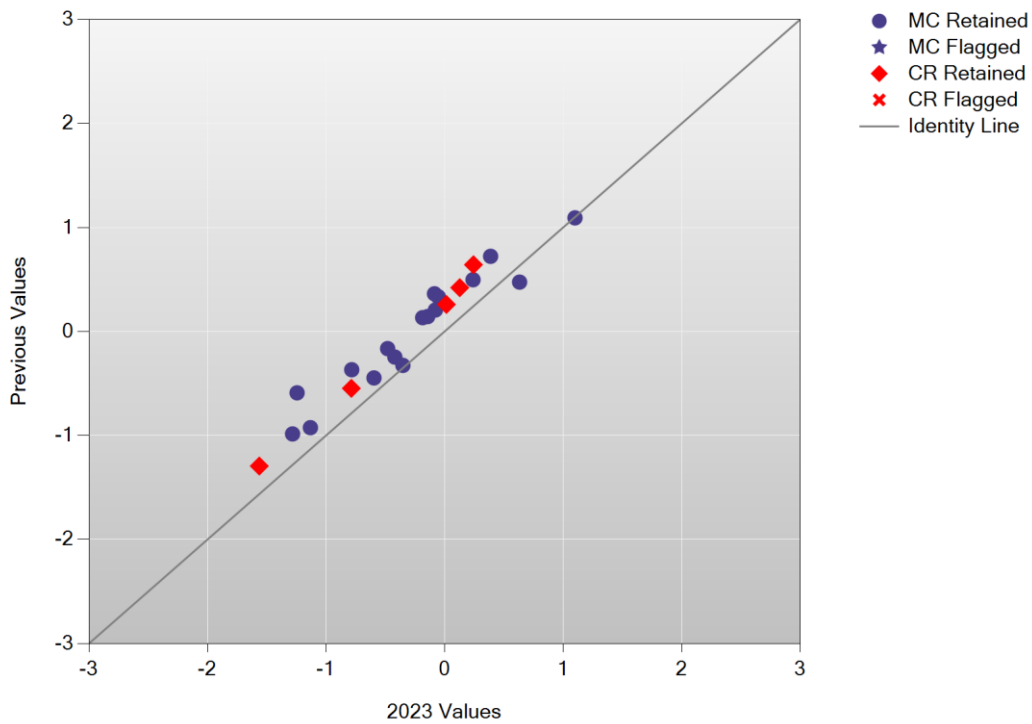
Cumulative Scale Score Distributions: Mathematics Grade 10



A/A Plot: Introductory Physics Grade 10

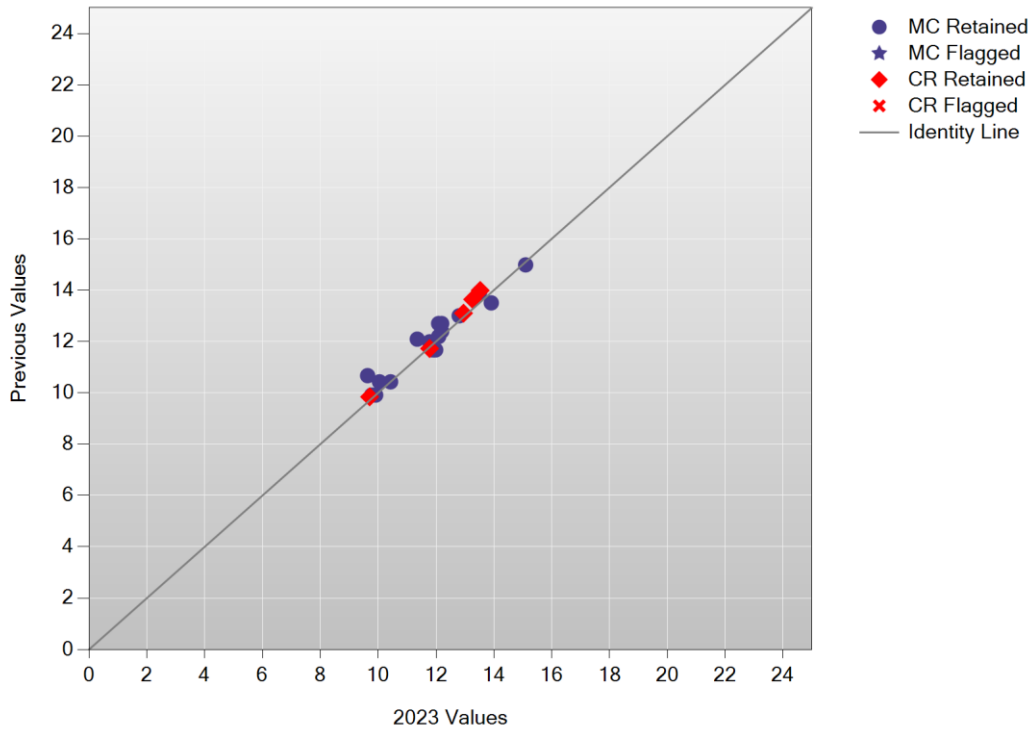


B/B Plot: Introductory Physics Grade 10

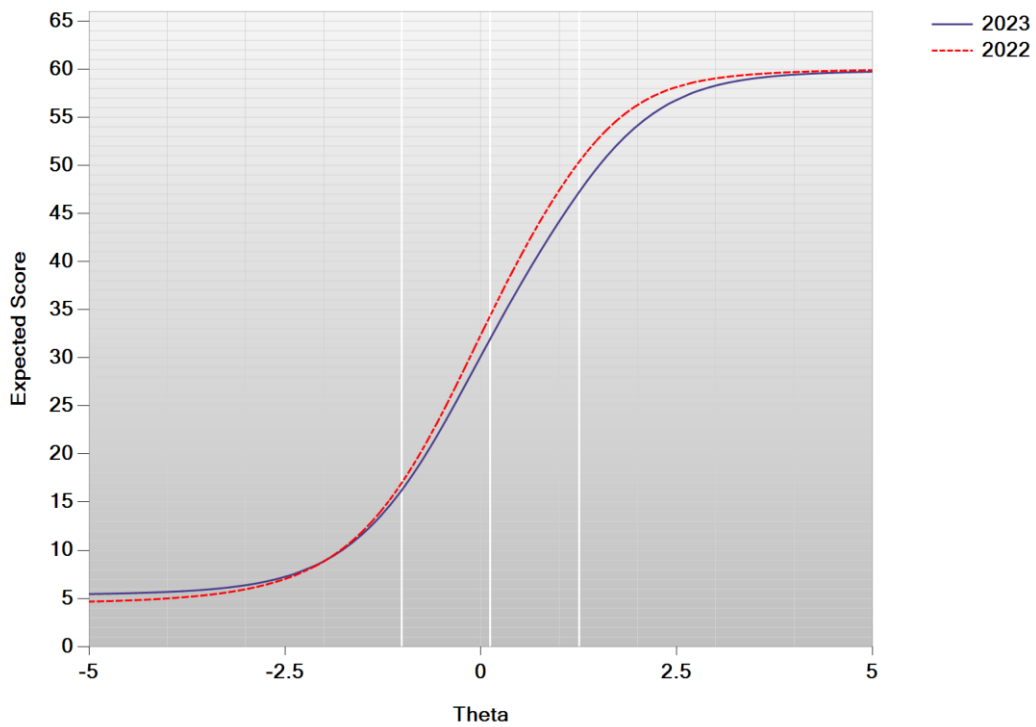




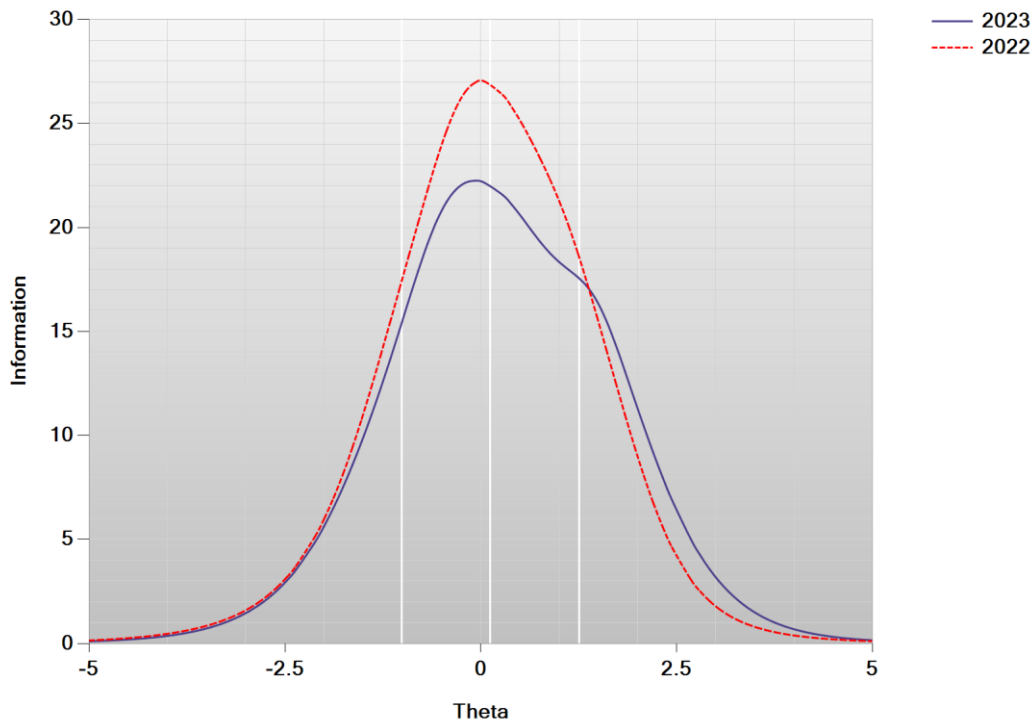
Delta Plot: Introductory Physics Grade 10



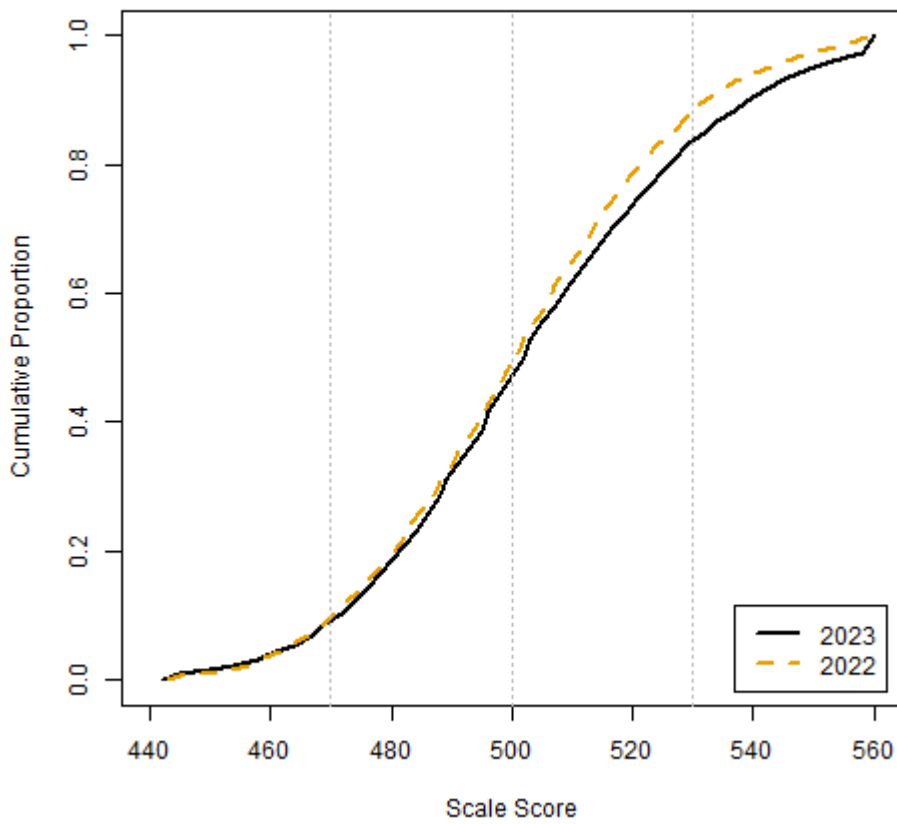
Test Characteristic Curve: Introductory Physics Grade 10



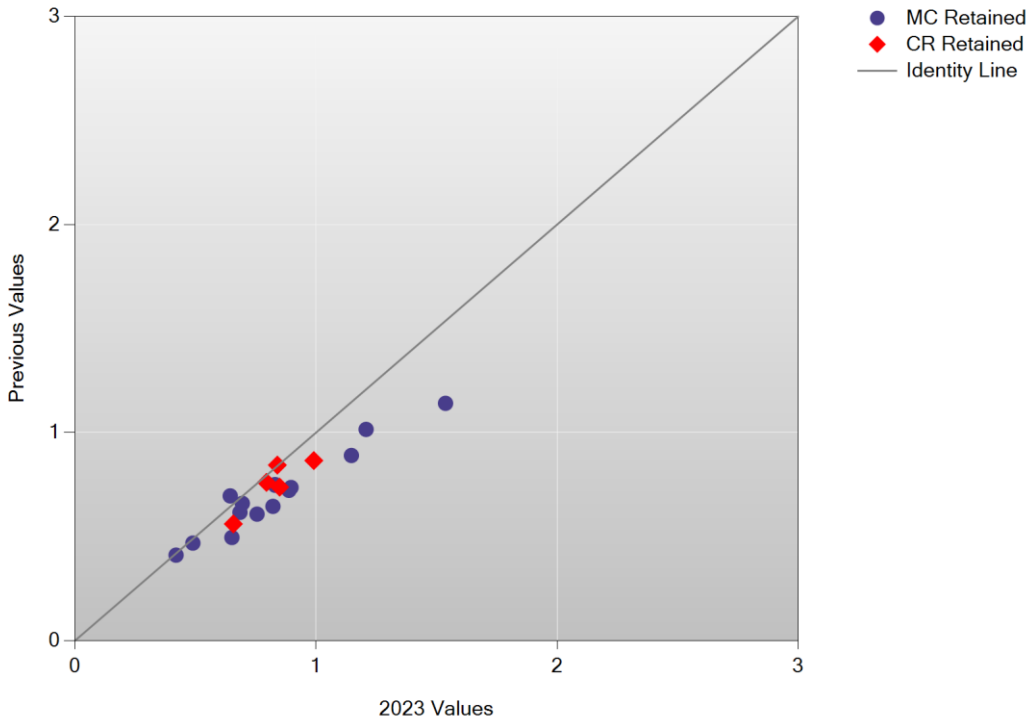
### Test Information Function: Introductory Physics Grade 10



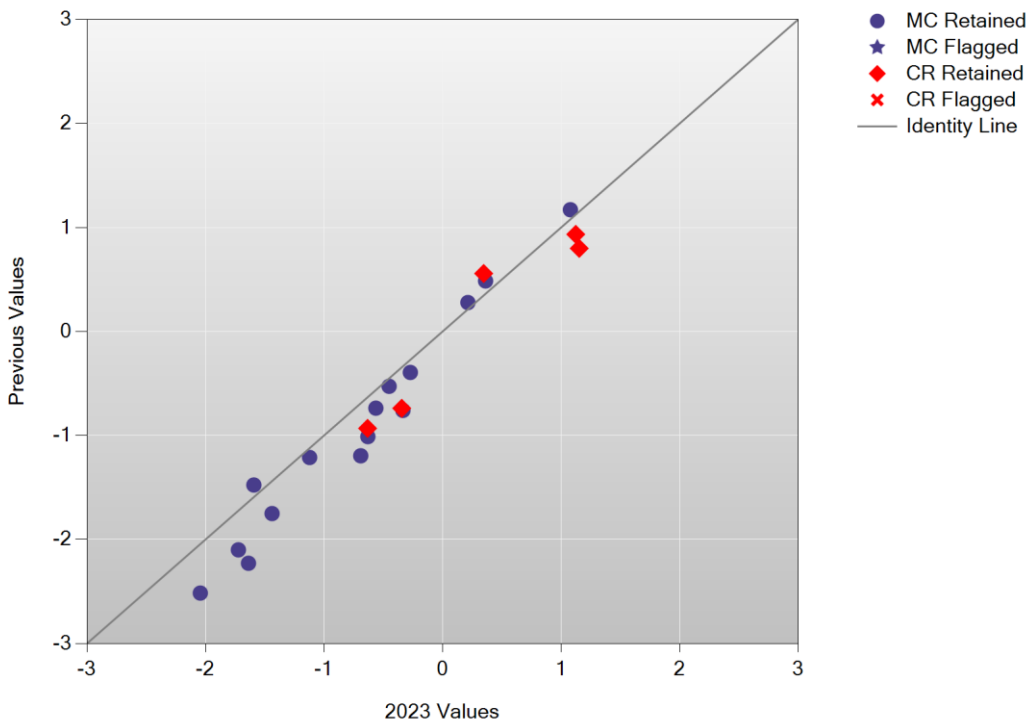
### Cumulative Scale Score Distributions: Introductory Physics Grade 10



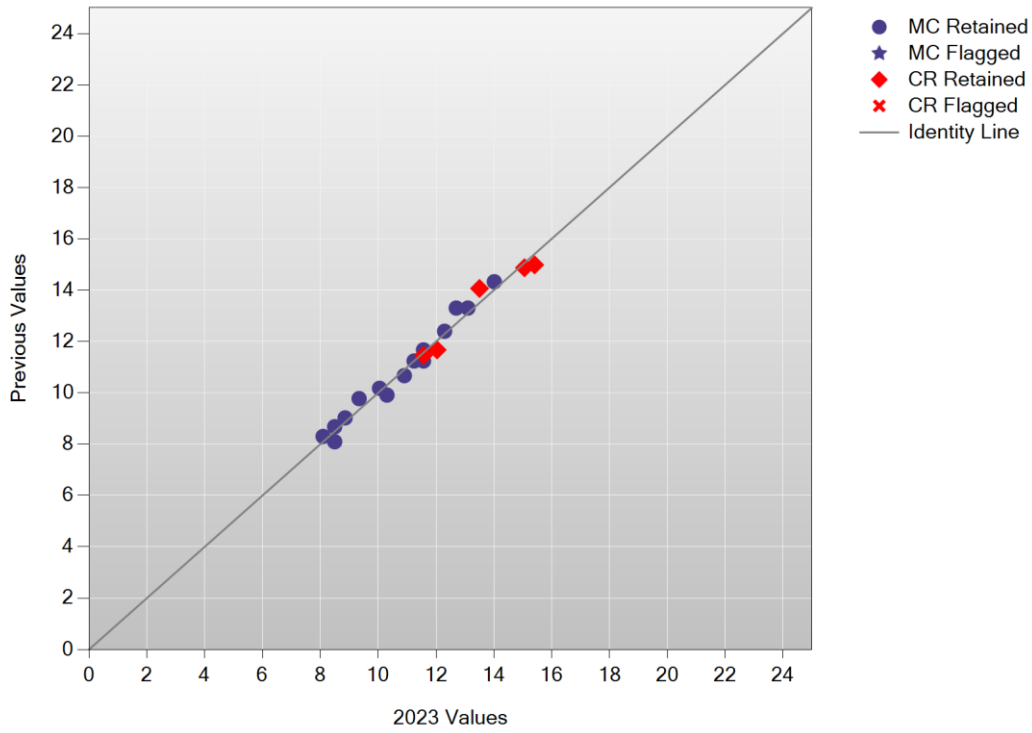
A/A Plot: Science Grade 5



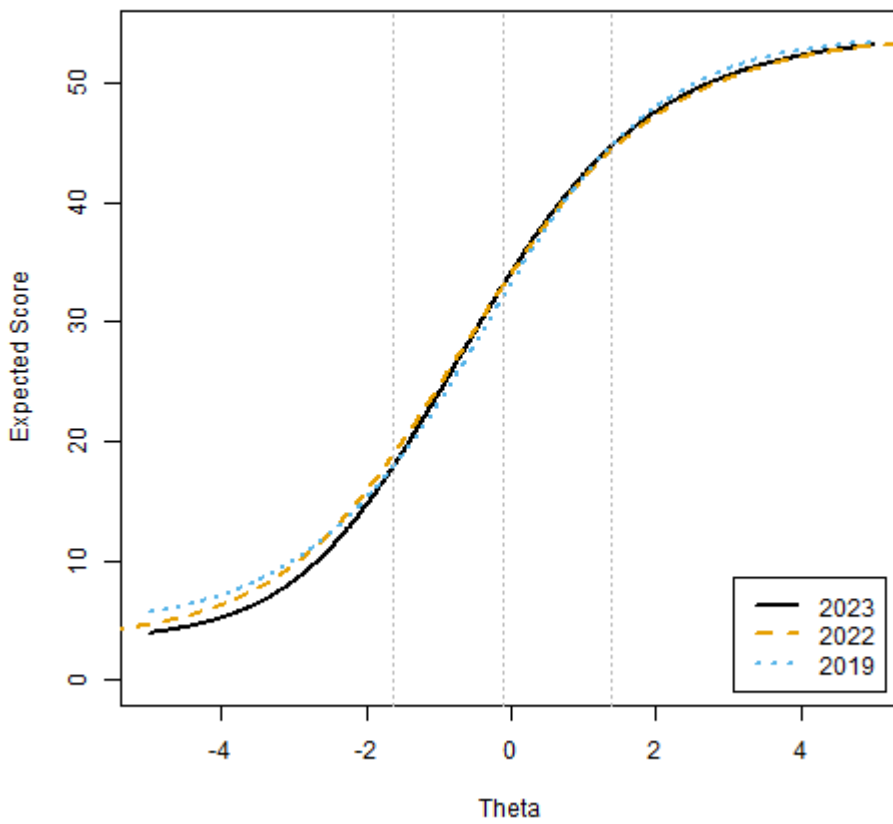
B/B Plot: Science Grade 5



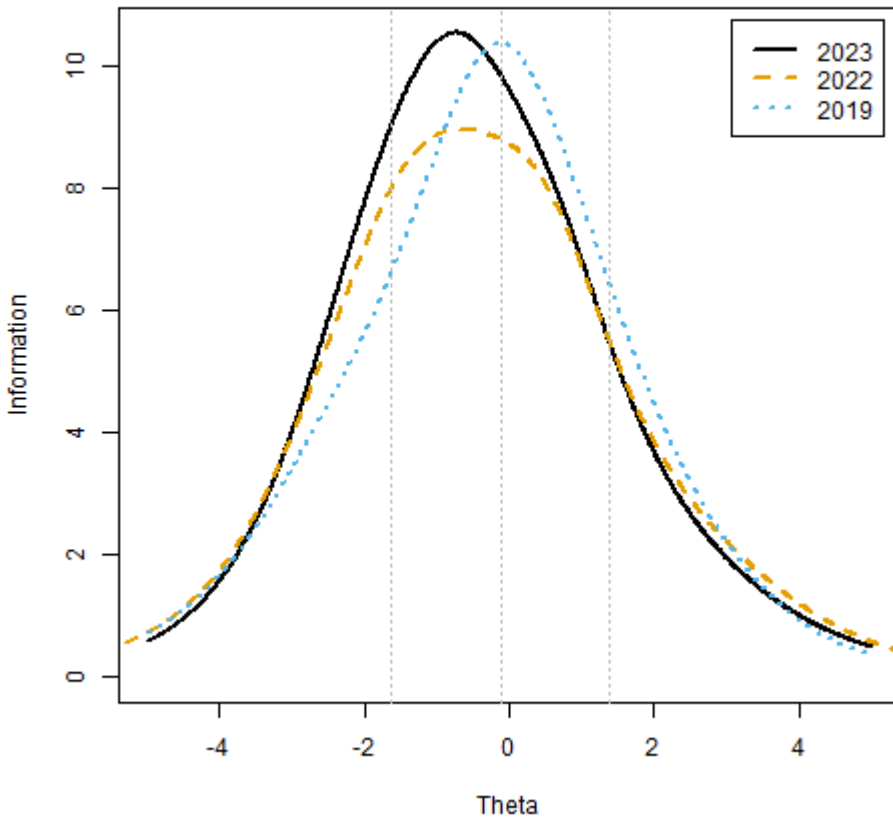
Delta Plot: Science Grade 5



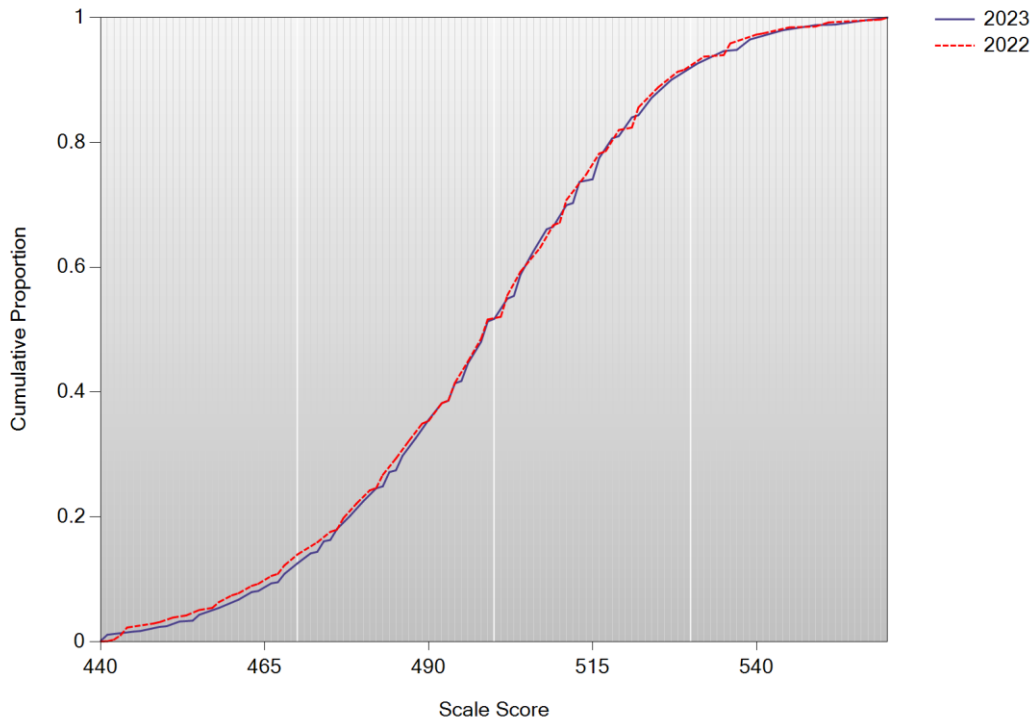
Test Characteristic Curve: sci05



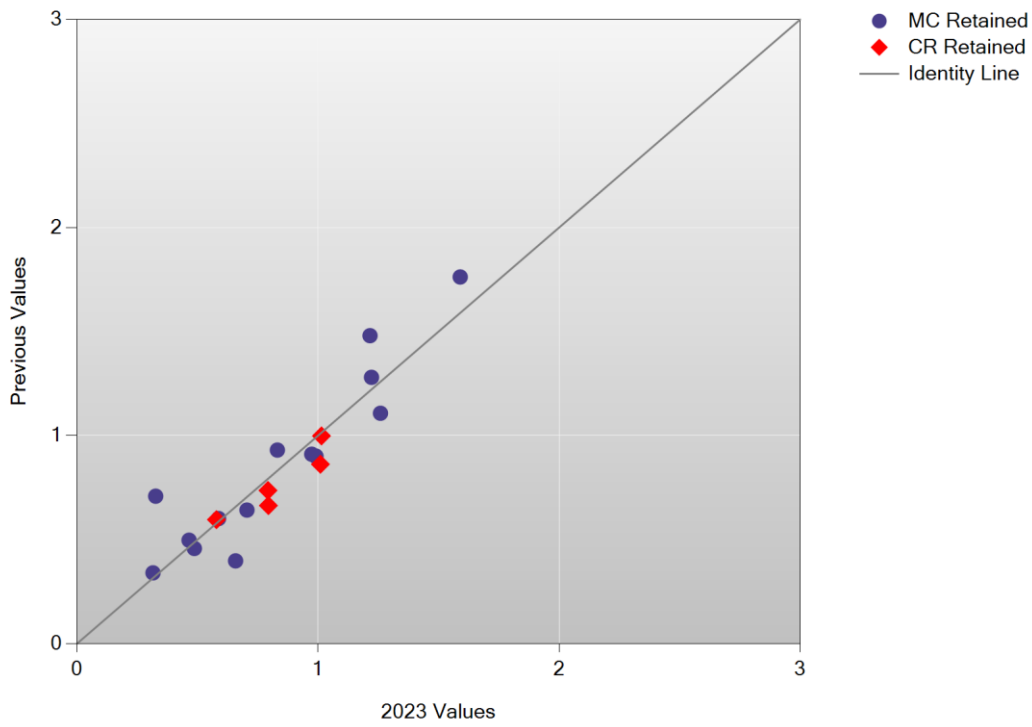
Test Information Function: sci05



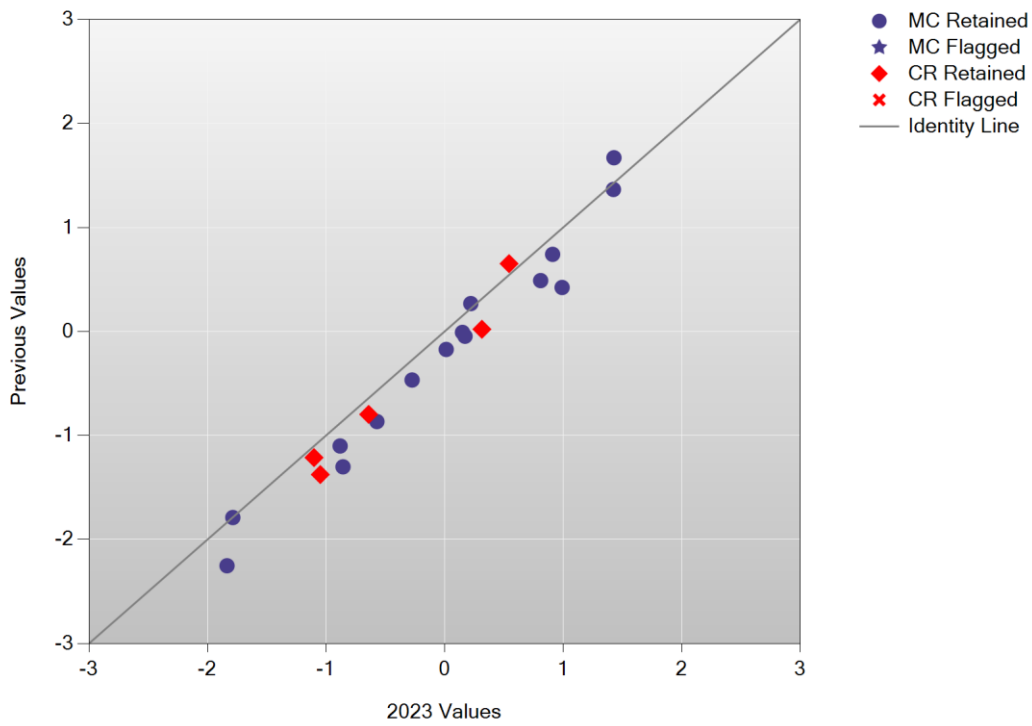
Cumulative Scale Score Distributions: Science Grade 5



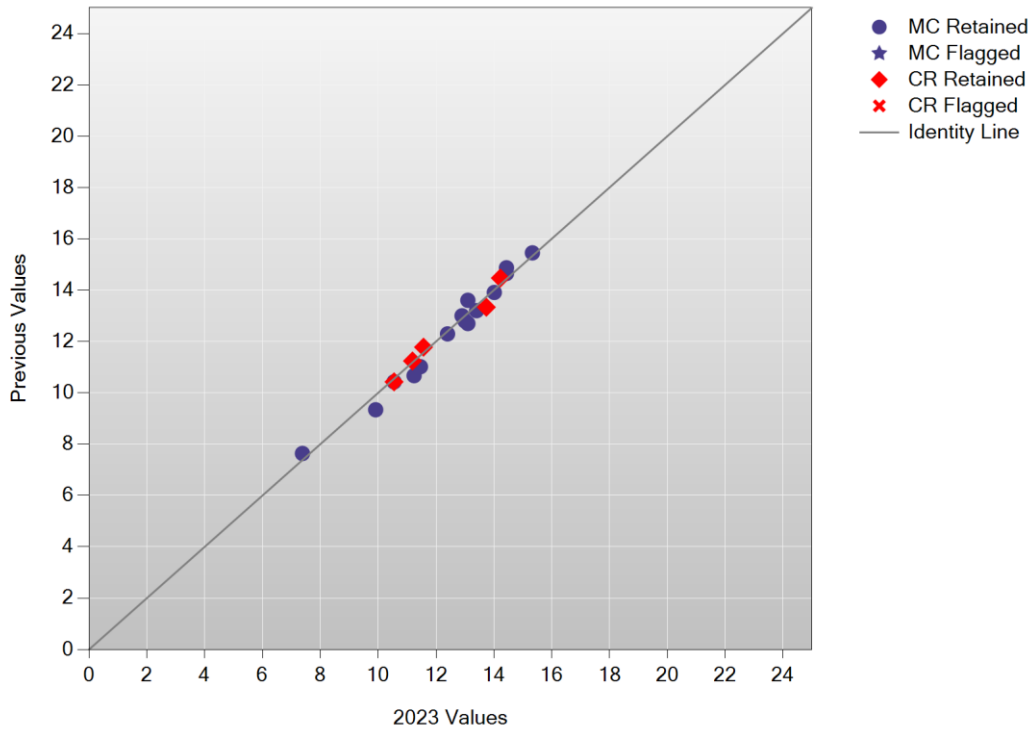
A/A Plot: Science Grade 8



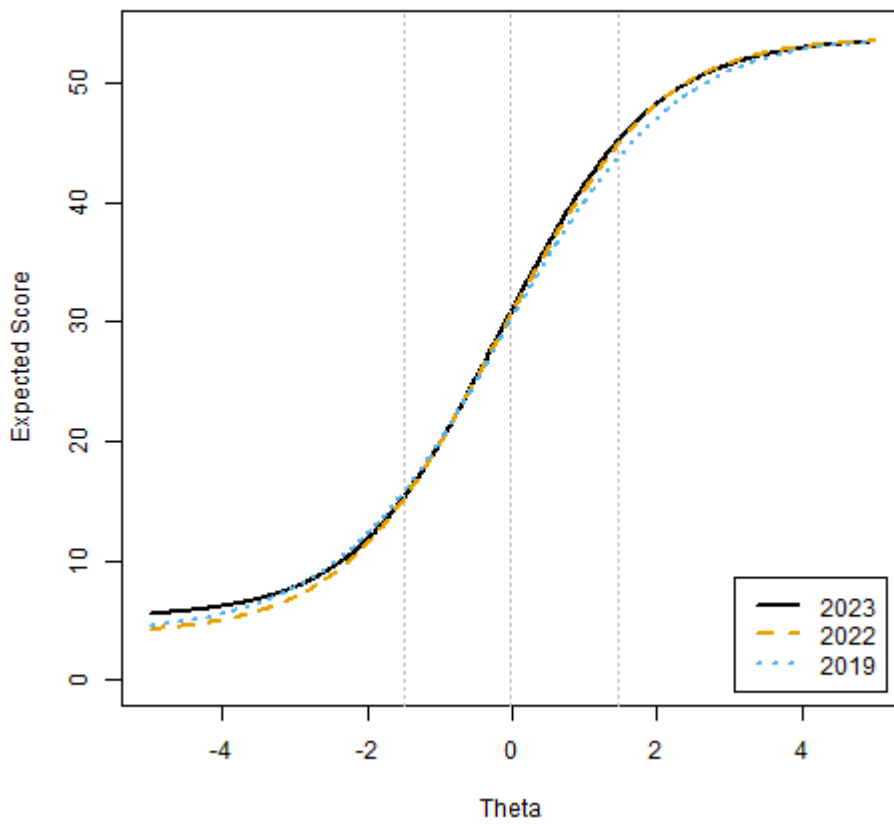
B/B Plot: Science Grade 8



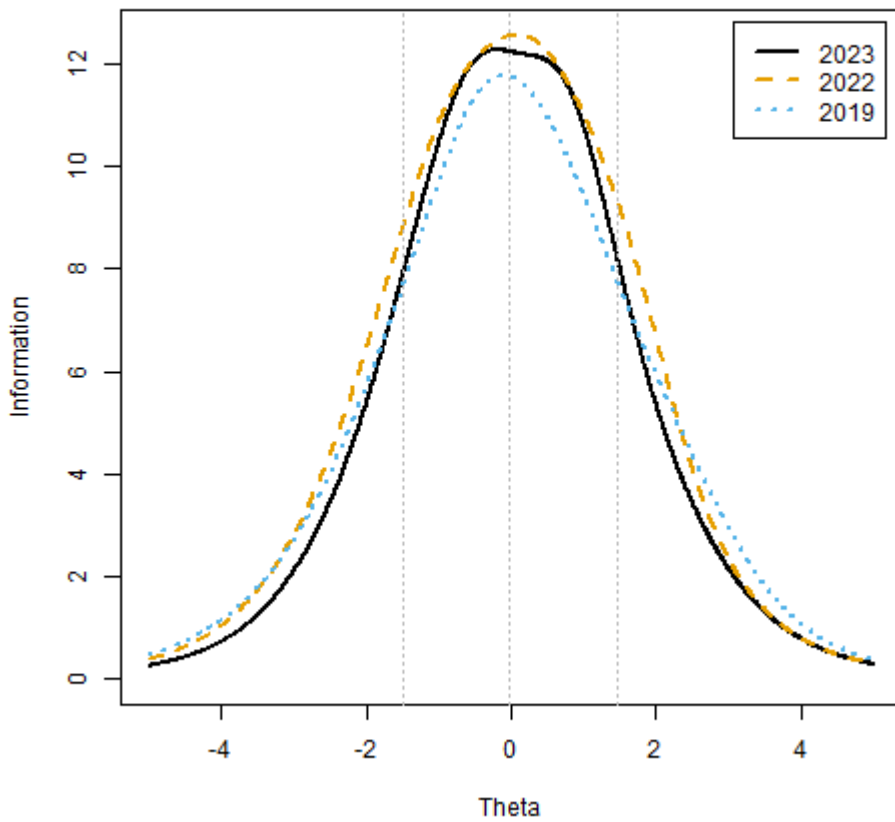
Delta Plot: Science Grade 8



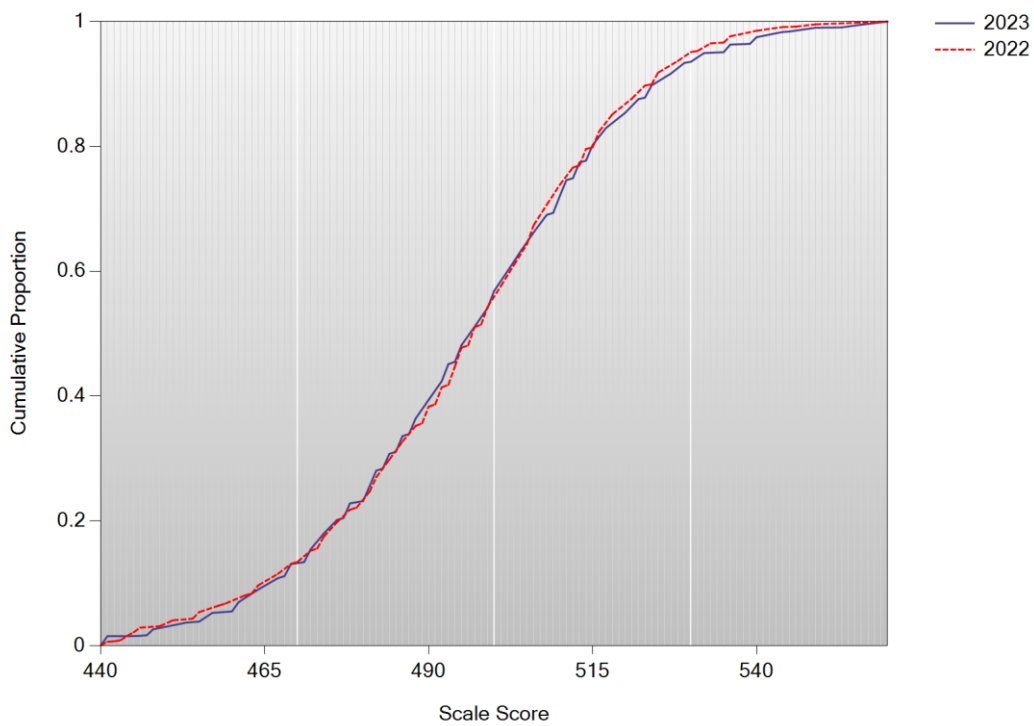
Test Characteristic Curve: sci08



Test Information Function: sci08



Cumulative Scale Score Distributions: Science Grade 8





# Section 2.2

## Lookup Tables

Table 2.2.1  
 Raw Score to Scale Score Lookup Table  
 Biology Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-1.925	5.00	10.0	440	1	440	1
1	-1.906	5.11	10.0	441	1	440	1
2	-1.888	5.22	10.0	441	1	440	1
3	-1.869	5.33	10.0	442	1	440	1
4	-1.850	5.45	10.0	442	1	440	1
5	-1.831	5.57	10.0	443	1	441	1
6	-1.813	5.69	10.0	443	1	441	1
7	-1.794	5.82	10.0	444	1	441	1
8	-1.775	5.94	10.0	444	1	446	1
9	-1.756	6.08	10.0	445	1	450	1
10	-1.582	7.47	10.0	450	1	453	1
11	-1.433	8.91	9.3	454	1	456	1
12	-1.302	10.39	8.7	457	1	459	1
13	-1.186	11.86	8.1	461	1	461	1
14	-1.081	13.31	7.6	464	1	464	1
15	-0.985	14.73	7.3	466	1	466	1
16	-0.896	16.10	7.0	469	1	468	1
17	-0.813	17.41	6.7	471	2	470	2
18	-0.735	18.65	6.5	473	2	472	2
19	-0.661	19.81	6.3	475	2	474	2
20	-0.590	20.90	6.1	477	2	476	2
21	-0.523	21.90	6.0	479	2	478	2
22	-0.458	22.81	5.8	481	2	479	2
23	-0.395	23.65	5.7	483	2	481	2
24	-0.334	24.40	5.6	484	2	483	2
25	-0.274	25.08	5.6	486	2	485	2
26	-0.216	25.66	5.5	488	2	486	2
27	-0.158	26.17	5.5	489	2	488	2
28	-0.102	26.58	5.4	491	2	490	2
29	-0.045	26.91	5.4	492	2	491	2
30	0.010	27.15	5.4	494	2	493	2
31	0.066	27.30	5.3	496	2	495	2
32	0.122	27.38	5.3	497	2	496	2
33	0.177	27.38	5.3	499	2	498	2
34	0.233	27.32	5.3	500	3	500	3
35	0.289	27.20	5.4	502	3	501	3
36	0.346	27.02	5.4	503	3	503	3
37	0.403	26.81	5.4	505	3	505	3

Table 2.2.1 (continued)  
 Raw Score to Scale Score Lookup Table  
 Biology Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
38	0.460	26.54	5.4	507	3	507	3
39	0.519	26.24	5.4	508	3	508	3
40	0.578	25.89	5.5	510	3	510	3
41	0.639	25.50	5.5	512	3	512	3
42	0.700	25.06	5.6	513	3	514	3
43	0.764	24.57	5.6	515	3	516	3
44	0.828	24.03	5.7	517	3	518	3
45	0.895	23.44	5.8	519	3	520	3
46	0.964	22.78	5.8	521	3	522	3
47	1.035	22.04	5.9	523	3	525	3
48	1.110	21.22	6.1	525	3	527	3
49	1.188	20.30	6.2	527	3	529	3
50	1.271	19.25	6.4	529	3	532	4
51	1.360	18.05	6.6	532	4	535	4
52	1.456	16.71	6.8	534	4	539	4
53	1.561	15.20	7.2	537	4	542	4
54	1.679	13.52	7.6	541	4	547	4
55	1.813	11.65	8.2	544	4	552	4
56	1.973	9.57	9.0	549	4	558	4
57	2.175	7.23	10.0	554	4	560	4
58	2.375	5.30	10.0	560	4	560	4
59	2.375	5.30	10.0	560	4	560	4
60	2.375	5.30	10.0	560	4	560	4

Table 2.2.2  
Raw Score to Scale Score Lookup Table  
English Language Arts Grade 3

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-3.173	1.40	10.0	440	1	440	1
1	-3.170	1.41	10.0	440	1	441	1
2	-3.166	1.42	10.0	440	1	442	1
3	-3.162	1.42	10.0	440	1	443	1
4	-3.158	1.43	10.0	440	1	444	1
5	-3.154	1.44	10.0	440	1	445	1
6	-3.150	1.45	10.0	440	1	446	1
7	-2.707	2.51	10.0	449	1	447	1
8	-2.408	3.62	9.9	454	1	452	1
9	-2.178	4.73	8.7	459	1	457	1
10	-1.987	5.78	7.8	462	1	460	1
11	-1.823	6.75	7.2	465	1	463	1
12	-1.677	7.64	6.8	468	1	466	1
13	-1.543	8.44	6.5	471	2	469	1
14	-1.419	9.15	6.2	473	2	471	2
15	-1.302	9.78	6.0	475	2	474	2
16	-1.191	10.35	5.9	477	2	476	2
17	-1.084	10.84	5.7	479	2	478	2
18	-0.981	11.28	5.6	481	2	480	2
19	-0.880	11.65	5.5	483	2	482	2
20	-0.780	11.97	5.4	485	2	484	2
21	-0.682	12.23	5.4	487	2	486	2
22	-0.585	12.41	5.3	489	2	488	2
23	-0.487	12.53	5.3	491	2	490	2
24	-0.390	12.56	5.3	492	2	492	2
25	-0.291	12.49	5.3	494	2	494	2
26	-0.190	12.33	5.4	496	2	497	2
27	-0.087	12.07	5.4	498	2	499	2
28	0.020	11.69	5.5	500	3	502	3
29	0.131	11.21	5.6	502	3	504	3
30	0.247	10.63	5.8	504	3	507	3
31	0.371	9.94	6.0	507	3	510	3
32	0.503	9.17	6.2	509	3	513	3
33	0.646	8.31	6.5	512	3	516	3
34	0.803	7.40	6.9	515	3	520	3
35	0.979	6.45	7.4	518	3	524	3
36	1.179	5.48	8.0	522	3	528	3
37	1.411	4.55	8.8	526	3	533	4
38	1.685	3.69	9.8	532	4	538	4
39	2.015	2.96	10.0	538	4	544	4
40	2.415	2.38	10.0	545	4	551	4
41	2.905	1.91	10.0	555	4	559	4
42	3.196	1.70	10.0	560	4	560	4
43	3.196	1.70	10.0	560	4	560	4
44	3.196	1.70	10.0	560	4	560	4

Table 2.2.3  
 Raw Score to Scale Score Lookup Table  
 English Language Arts Grade 4

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-3.153	2.42	10.0	440	1	440	1
1	-3.130	2.47	10.0	440	1	440	1
2	-3.106	2.52	10.0	441	1	441	1
3	-3.083	2.57	10.0	441	1	441	1
4	-3.059	2.63	10.0	442	1	441	1
5	-3.036	2.68	10.0	442	1	442	1
6	-3.012	2.73	10.0	443	1	442	1
7	-2.989	2.78	10.0	443	1	442	1
8	-2.965	2.84	10.0	444	1	449	1
9	-2.681	3.51	10.0	449	1	454	1
10	-2.443	4.13	9.3	453	1	458	1
11	-2.236	4.72	8.7	457	1	461	1
12	-2.050	5.28	8.2	461	1	464	1
13	-1.880	5.82	7.8	464	1	467	1
14	-1.723	6.34	7.5	467	1	469	1
15	-1.576	6.84	7.2	469	1	471	2
16	-1.437	7.32	7.0	472	2	474	2
17	-1.305	7.77	6.8	475	2	476	2
18	-1.178	8.21	6.6	477	2	478	2
19	-1.056	8.62	6.4	480	2	480	2
20	-0.937	9.02	6.3	482	2	482	2
21	-0.822	9.40	6.1	484	2	484	2
22	-0.708	9.74	6.0	486	2	486	2
23	-0.596	10.05	5.9	488	2	488	2
24	-0.485	10.29	5.9	490	2	490	2
25	-0.374	10.46	5.8	492	2	492	2
26	-0.262	10.52	5.8	494	2	494	2
27	-0.148	10.47	5.8	497	2	496	2
28	-0.032	10.28	5.9	499	2	498	2
29	0.088	9.96	6.0	501	3	501	3
30	0.213	9.51	6.1	503	3	503	3
31	0.346	8.93	6.3	506	3	505	3
32	0.487	8.25	6.6	509	3	508	3
33	0.639	7.50	6.9	511	3	510	3
34	0.805	6.70	7.3	515	3	513	3
35	0.989	5.90	7.8	518	3	516	3
36	1.194	5.14	8.3	522	3	520	3
37	1.426	4.44	8.9	526	3	523	3
38	1.689	3.83	9.6	531	4	527	3
39	1.992	3.30	10.0	537	4	532	4
40	2.346	2.80	10.0	544	4	537	4
41	2.773	2.24	10.0	552	4	543	4
42	3.215	1.71	10.0	560	4	552	4
43	3.215	1.71	10.0	560	4	560	4
44	3.215	1.71	10.0	560	4	560	4

Table 2.2.4  
 Raw Score to Scale Score Lookup Table  
 English Language Arts Grade 5

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-3.360	2.14	10.0	440	1	440	1
1	-3.330	2.22	10.0	441	1	441	1
2	-3.300	2.30	10.0	441	1	442	1
3	-3.270	2.39	10.0	442	1	443	1
4	-3.239	2.48	10.0	442	1	444	1
5	-3.209	2.57	10.0	443	1	445	1
6	-3.179	2.66	10.0	443	1	446	1
7	-3.149	2.75	10.0	444	1	450	1
8	-2.870	3.76	9.1	449	1	454	1
9	-2.648	4.70	8.2	453	1	457	1
10	-2.462	5.57	7.5	456	1	459	1
11	-2.299	6.36	7.0	459	1	461	1
12	-2.152	7.08	6.6	461	1	464	1
13	-2.018	7.73	6.3	464	1	466	1
14	-1.892	8.33	6.0	466	1	467	1
15	-1.773	8.86	5.9	468	1	469	1
16	-1.660	9.33	5.7	469	1	471	2
17	-1.551	9.74	5.7	472	2	472	2
18	-1.445	10.09	5.6	474	2	474	2
19	-1.341	10.37	5.5	476	2	476	2
20	-1.239	10.58	5.4	477	2	477	2
21	-1.137	10.73	5.4	479	2	479	2
22	-1.036	10.80	5.4	481	2	481	2
23	-0.935	10.80	5.4	483	2	482	2
24	-0.833	10.74	5.4	485	2	484	2
25	-0.730	10.61	5.4	486	2	486	2
26	-0.626	10.43	5.5	488	2	487	2
27	-0.519	10.19	5.5	490	2	489	2
28	-0.410	9.90	5.6	492	2	491	2
29	-0.297	9.58	5.7	494	2	493	2
30	-0.181	9.22	5.8	496	2	495	2
31	-0.060	8.84	5.9	498	2	497	2
32	0.066	8.45	6.1	500	3	499	2
33	0.197	8.05	6.2	503	3	501	3
34	0.335	7.65	6.4	505	3	504	3
35	0.480	7.25	6.6	508	3	506	3
36	0.633	6.84	6.8	511	3	508	3
37	0.796	6.41	7.0	513	3	511	3
38	0.971	5.96	7.2	517	3	514	3
39	1.160	5.49	7.6	520	3	516	3
40	1.366	4.98	7.9	523	3	520	3
41	1.594	4.46	8.4	528	3	523	3
42	1.851	3.92	8.9	532	4	527	3
43	2.145	3.36	9.6	537	4	531	4
44	2.493	2.79	10.0	543	4	536	4
45	2.921	2.25	10.0	551	4	542	4
46	3.430	1.77	10.0	560	4	550	4
47	3.430	1.77	10.0	560	4	560	4
48	3.430	1.77	10.0	560	4	560	4

Table 2.2.5  
Raw Score to Scale Score Lookup Table  
English Language Arts Grade 6

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-3.171	2.84	10.0	440	1	440	1
1	-3.166	2.85	10.0	440	1	440	1
2	-3.160	2.86	10.0	440	1	441	1
3	-3.155	2.87	10.0	440	1	441	1
4	-3.150	2.88	10.0	440	1	441	1
5	-3.144	2.89	10.0	441	1	442	1
6	-3.139	2.91	10.0	441	1	442	1
7	-3.133	2.92	10.0	441	1	442	1
8	-3.128	2.93	10.0	441	1	443	1
9	-3.122	2.94	10.0	441	1	443	1
10	-3.117	2.95	10.0	441	1	447	1
11	-2.880	3.44	10.0	446	1	451	1
12	-2.669	3.87	9.6	450	1	454	1
13	-2.479	4.26	9.2	453	1	457	1
14	-2.302	4.59	8.9	456	1	460	1
15	-2.137	4.89	8.6	460	1	462	1
16	-1.980	5.15	8.4	463	1	465	1
17	-1.829	5.38	8.2	465	1	467	1
18	-1.685	5.59	8.0	468	1	469	1
19	-1.544	5.77	7.9	471	2	472	2
20	-1.407	5.93	7.8	473	2	474	2
21	-1.273	6.07	7.7	476	2	476	2
22	-1.140	6.18	7.6	479	2	479	2
23	-1.009	6.27	7.6	481	2	481	2
24	-0.879	6.32	7.5	484	2	483	2
25	-0.750	6.35	7.5	486	2	485	2
26	-0.620	6.35	7.5	488	2	488	2
27	-0.489	6.32	7.6	491	2	490	2
28	-0.358	6.25	7.6	493	2	492	2
29	-0.224	6.16	7.6	496	2	494	2
30	-0.088	6.04	7.7	499	2	497	2
31	0.051	5.90	7.8	501	3	499	2
32	0.193	5.74	7.9	504	3	501	3
33	0.340	5.56	8.1	507	3	504	3
34	0.492	5.37	8.2	510	3	506	3
35	0.649	5.16	8.4	513	3	509	3
36	0.814	4.94	8.5	516	3	512	3
37	0.986	4.70	8.8	519	3	514	3
38	1.168	4.44	9.0	522	3	517	3
39	1.360	4.16	9.3	526	3	520	3
40	1.567	3.86	9.7	529	3	524	3
41	1.790	3.53	10.0	534	4	527	3
42	2.035	3.18	10.0	539	4	531	4
43	2.306	2.83	10.0	544	4	535	4
44	2.611	2.47	10.0	550	4	540	4
45	2.961	2.13	10.0	556	4	546	4
46	3.150	1.97	10.0	560	4	552	4
47	3.150	1.97	10.0	560	4	560	4
48	3.150	1.97	10.0	560	4	560	4
49	3.150	1.97	10.0	560	4	560	4
50	3.150	1.97	10.0	560	4	560	4

Table 2.2.6  
Raw Score to Scale Score Lookup Table  
English Language Arts Grade 7

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-3.131	2.23	10.0	440	1	440	1
1	-3.113	2.27	10.0	440	1	440	1
2	-3.095	2.31	10.0	441	1	441	1
3	-3.078	2.34	10.0	441	1	441	1
4	-3.060	2.38	10.0	441	1	442	1
5	-3.043	2.42	10.0	442	1	442	1
6	-3.025	2.46	10.0	442	1	442	1
7	-3.007	2.50	10.0	442	1	443	1
8	-2.990	2.54	10.0	443	1	443	1
9	-2.713	3.23	10.0	448	1	448	1
10	-2.485	3.87	9.7	452	1	451	1
11	-2.289	4.46	9.0	456	1	455	1
12	-2.115	5.01	8.5	459	1	458	1
13	-1.958	5.52	8.1	462	1	460	1
14	-1.813	5.99	7.8	465	1	463	1
15	-1.677	6.43	7.5	468	1	465	1
16	-1.549	6.84	7.3	470	2	467	1
17	-1.428	7.22	7.1	473	2	469	1
18	-1.311	7.57	6.9	475	2	472	2
19	-1.199	7.89	6.8	477	2	474	2
20	-1.090	8.18	6.7	479	2	476	2
21	-0.984	8.43	6.6	481	2	478	2
22	-0.880	8.65	6.5	483	2	480	2
23	-0.777	8.84	6.4	485	2	482	2
24	-0.676	8.98	6.4	487	2	484	2
25	-0.576	9.08	6.3	489	2	486	2
26	-0.476	9.15	6.3	491	2	488	2
27	-0.377	9.17	6.3	493	2	490	2
28	-0.277	9.15	6.3	495	2	492	2
29	-0.176	9.09	6.3	496	2	494	2
30	-0.074	8.99	6.4	498	2	496	2
31	0.029	8.86	6.4	500	3	498	2
32	0.134	8.69	6.5	502	3	500	3
33	0.242	8.49	6.6	504	3	502	3
34	0.352	8.26	6.6	507	3	504	3
35	0.467	7.99	6.8	509	3	507	3
36	0.585	7.69	6.9	511	3	509	3
37	0.709	7.35	7.0	513	3	511	3
38	0.840	6.97	7.2	516	3	514	3
39	0.979	6.55	7.5	518	3	516	3
40	1.127	6.09	7.7	521	3	519	3
41	1.287	5.58	8.1	524	3	522	3
42	1.463	5.05	8.5	528	3	525	3
43	1.659	4.49	9.0	531	4	528	3
44	1.880	3.91	9.7	536	4	532	4
45	2.137	3.33	10.0	541	4	536	4
46	2.442	2.76	10.0	546	4	542	4
47	2.822	2.18	10.0	554	4	548	4
48	3.153	1.79	10.0	560	4	555	4
49	3.153	1.79	10.0	560	4	560	4
50	3.153	1.79	10.0	560	4	560	4



Table 2.2.7  
 Raw Score to Scale Score Lookup Table  
 English Language Arts Grade 8

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-2.964	3.32	10.0	440	1	440	1
1	-2.962	3.32	10.0	440	1	440	1
2	-2.959	3.33	10.0	440	1	440	1
3	-2.957	3.33	10.0	440	1	440	1
4	-2.955	3.33	10.0	440	1	440	1
5	-2.953	3.34	10.0	440	1	441	1
6	-2.950	3.34	10.0	440	1	441	1
7	-2.948	3.35	10.0	440	1	441	1
8	-2.946	3.35	10.0	440	1	441	1
9	-2.943	3.36	10.0	440	1	441	1
10	-2.941	3.36	10.0	440	1	441	1
11	-2.939	3.37	10.0	440	1	445	1
12	-2.937	3.37	10.0	441	1	448	1
13	-2.729	3.80	10.0	445	1	451	1
14	-2.539	4.22	9.7	448	1	454	1
15	-2.364	4.62	9.3	452	1	456	1
16	-2.201	4.99	8.9	455	1	458	1
17	-2.048	5.33	8.6	458	1	461	1
18	-1.901	5.65	8.4	461	1	463	1
19	-1.761	5.94	8.2	464	1	465	1
20	-1.626	6.20	8.0	467	1	467	1
21	-1.495	6.42	7.9	469	1	469	1
22	-1.367	6.61	7.7	472	2	471	2
23	-1.242	6.77	7.6	474	2	473	2
24	-1.118	6.89	7.6	477	2	475	2
25	-0.995	6.98	7.5	479	2	477	2
26	-0.873	7.05	7.5	482	2	479	2
27	-0.752	7.08	7.5	484	2	481	2
28	-0.630	7.09	7.5	486	2	483	2
29	-0.507	7.07	7.5	489	2	485	2
30	-0.383	7.03	7.5	491	2	487	2
31	-0.258	6.97	7.5	494	2	489	2
32	-0.130	6.89	7.6	496	2	492	2
33	0.001	6.78	7.6	499	2	494	2
34	0.135	6.64	7.7	502	3	497	2
35	0.273	6.47	7.8	504	3	499	2
36	0.417	6.25	8.0	507	3	502	3
37	0.567	5.99	8.1	510	3	504	3
38	0.726	5.67	8.4	513	3	507	3
39	0.894	5.29	8.6	517	3	510	3
40	1.076	4.87	9.0	520	3	513	3
41	1.275	4.40	9.5	524	3	516	3
42	1.495	3.90	10.0	529	3	520	3
43	1.741	3.40	10.0	534	4	524	3
44	2.022	2.91	10.0	539	4	528	3
45	2.347	2.45	10.0	546	4	533	4
46	2.730	2.05	10.0	553	4	539	4
47	3.066	1.79	10.0	560	4	545	4
48	3.066	1.79	10.0	560	4	553	4
49	3.066	1.79	10.0	560	4	560	4
50	3.066	1.79	10.0	560	4	560	4

Table 2.2.8  
 Raw Score to Scale Score Lookup Table  
 English Language Arts Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-3.157	5.10	9.3	440	1	440	1
1	-3.138	5.18	9.2	440	1	441	1
2	-3.119	5.25	9.2	441	1	441	1
3	-3.100	5.33	9.1	441	1	442	1
4	-3.081	5.40	9.0	442	1	442	1
5	-3.062	5.48	9.0	442	1	443	1
6	-3.044	5.56	8.9	442	1	443	1
7	-3.025	5.63	8.8	443	1	444	1
8	-3.006	5.71	8.8	443	1	444	1
9	-2.987	5.78	8.7	444	1	445	1
10	-2.822	6.44	8.3	447	1	449	1
11	-2.673	7.01	7.9	450	1	452	1
12	-2.536	7.52	7.7	453	1	455	1
13	-2.408	8.00	7.4	456	1	458	1
14	-2.288	8.45	7.2	458	1	461	1
15	-2.173	8.89	7.0	461	1	463	1
16	-2.064	9.32	6.9	463	1	465	1
17	-1.960	9.73	6.7	465	1	467	1
18	-1.859	10.12	6.6	467	1	468	1
19	-1.761	10.49	6.5	469	1	470	2
20	-1.665	10.81	6.4	471	2	472	2
21	-1.572	11.10	6.3	473	2	473	2
22	-1.480	11.33	6.2	475	2	475	2
23	-1.390	11.51	6.2	477	2	477	2
24	-1.300	11.63	6.2	479	2	478	2
25	-1.211	11.71	6.1	481	2	480	2
26	-1.122	11.74	6.1	483	2	481	2
27	-1.033	11.72	6.1	485	2	483	2
28	-0.943	11.67	6.1	486	2	484	2
29	-0.853	11.59	6.2	488	2	486	2
30	-0.762	11.49	6.2	490	2	488	2
31	-0.669	11.35	6.2	492	2	489	2
32	-0.575	11.19	6.3	494	2	491	2
33	-0.479	10.99	6.3	496	2	493	2
34	-0.380	10.75	6.4	498	2	494	2
35	-0.278	10.46	6.5	500	3	496	2
36	-0.172	10.11	6.6	503	3	498	2
37	-0.062	9.70	6.7	505	3	500	3
38	0.054	9.21	6.9	507	3	502	3
39	0.177	8.65	7.1	510	3	504	3
40	0.309	8.01	7.4	513	3	506	3
41	0.452	7.31	7.8	516	3	509	3
42	0.609	6.56	8.2	519	3	512	3
43	0.785	5.78	8.7	523	3	515	3
44	0.985	4.99	9.4	527	3	518	3
45	1.219	4.20	10.0	532	4	522	3
46	1.498	3.46	10.0	538	4	528	3
47	1.843	2.81	10.0	545	4	535	4
48	2.280	2.31	10.0	554	4	542	4
49	2.559	2.10	10.0	560	4	549	4
50	2.559	2.10	10.0	560	4	559	4
51	2.559	2.10	10.0	560	4	560	4

Table 2.2.9  
Raw Score to Scale Score Lookup Table  
Mathematics Grade 3

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-2.782	3.14	10.0	440	1	440	1
1	-2.781	3.14	10.0	440	1	440	1
2	-2.780	3.15	10.0	440	1	440	1
3	-2.780	3.15	10.0	440	1	441	1
4	-2.779	3.15	10.0	440	1	441	1
5	-2.778	3.16	10.0	440	1	441	1
6	-2.467	4.72	9.8	447	1	441	1
7	-2.238	6.23	8.6	452	1	447	1
8	-2.055	7.66	7.7	456	1	452	1
9	-1.900	8.99	7.1	459	1	456	1
10	-1.764	10.22	6.7	462	1	459	1
11	-1.643	11.34	6.3	464	1	462	1
12	-1.532	12.36	6.1	467	1	465	1
13	-1.428	13.27	5.9	469	1	468	1
14	-1.331	14.10	5.7	471	2	470	2
15	-1.239	14.83	5.5	473	2	473	2
16	-1.151	15.48	5.4	475	2	475	2
17	-1.066	16.06	5.3	477	2	477	2
18	-0.984	16.56	5.2	478	2	479	2
19	-0.904	17.00	5.2	480	2	481	2
20	-0.825	17.37	5.1	482	2	483	2
21	-0.748	17.67	5.1	483	2	485	2
22	-0.672	17.92	5.0	485	2	486	2
23	-0.597	18.10	5.0	487	2	488	2
24	-0.522	18.22	5.0	488	2	490	2
25	-0.447	18.28	5.0	490	2	492	2
26	-0.372	18.27	5.0	491	2	494	2
27	-0.297	18.20	5.0	493	2	495	2
28	-0.222	18.06	5.0	495	2	497	2
29	-0.145	17.85	5.1	496	2	499	2
30	-0.067	17.57	5.1	498	2	501	3
31	0.012	17.23	5.1	499	2	503	3
32	0.094	16.82	5.2	501	3	505	3
33	0.177	16.34	5.3	503	3	506	3
34	0.264	15.79	5.4	505	3	509	3
35	0.354	15.18	5.5	507	3	511	3
36	0.449	14.51	5.6	509	3	513	3
37	0.548	13.78	5.8	511	3	515	3
38	0.653	12.99	5.9	513	3	518	3
39	0.766	12.15	6.1	516	3	520	3
40	0.888	11.25	6.4	518	3	523	3
41	1.021	10.29	6.7	521	3	526	3
42	1.169	9.28	7.0	524	3	529	3
43	1.337	8.18	7.5	528	3	534	4
44	1.531	6.97	8.1	532	4	539	4
45	1.769	5.59	9.0	537	4	545	4
46	2.086	3.97	10.0	544	4	554	4
47	2.600	2.05	10.0	555	4	560	4
48	2.837	1.46	10.0	560	4	560	4

Table 2.2.10 Raw Score to Scale Score Lookup Table - Mathematics Grade 4

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-2.812	3.15	10.0	440	1	440	1
1	-2.783	3.25	10.0	441	1	440	1
2	-2.755	3.36	10.0	441	1	440	1
3	-2.726	3.47	10.0	442	1	440	1
4	-2.698	3.58	10.0	442	1	440	1
5	-2.670	3.70	10.0	443	1	440	1
6	-2.641	3.82	10.0	444	1	446	1
7	-2.613	3.94	10.0	444	1	451	1
8	-2.364	5.16	9.2	449	1	454	1
9	-2.165	6.35	8.3	454	1	458	1
10	-1.996	7.49	7.6	457	1	461	1
11	-1.849	8.59	7.1	460	1	463	1
12	-1.718	9.63	6.7	463	1	466	1
13	-1.598	10.63	6.4	465	1	468	1
14	-1.488	11.58	6.2	468	1	470	2
15	-1.385	12.50	5.9	469	1	472	2
16	-1.288	13.40	5.7	472	2	474	2
17	-1.196	14.27	5.5	474	2	476	2
18	-1.108	15.11	5.4	476	2	478	2
19	-1.024	15.92	5.2	477	2	480	2
20	-0.943	16.70	5.1	479	2	481	2
21	-0.865	17.42	5.0	481	2	483	2
22	-0.789	18.08	4.9	482	2	485	2
23	-0.715	18.67	4.8	484	2	486	2
24	-0.642	19.17	4.8	485	2	488	2
25	-0.570	19.59	4.7	487	2	489	2
26	-0.499	19.90	4.7	488	2	491	2
27	-0.429	20.11	4.7	490	2	492	2
28	-0.359	20.22	4.7	491	2	493	2
29	-0.289	20.23	4.7	493	2	495	2
30	-0.218	20.15	4.7	494	2	496	2
31	-0.147	19.97	4.7	496	2	498	2
32	-0.075	19.70	4.7	497	2	499	2
33	-0.002	19.35	4.8	499	2	501	3
34	0.073	18.92	4.8	500	3	502	3
35	0.149	18.42	4.9	502	3	504	3
36	0.228	17.85	5.0	504	3	505	3
37	0.309	17.24	5.0	505	3	507	3
38	0.393	16.58	5.1	507	3	508	3
39	0.480	15.88	5.3	509	3	510	3
40	0.570	15.15	5.4	511	3	512	3
41	0.665	14.39	5.5	513	3	513	3
42	0.765	13.61	5.7	515	3	515	3
43	0.871	12.79	5.9	517	3	517	3
44	0.983	11.93	6.1	519	3	519	3
45	1.104	11.03	6.3	522	3	522	3
46	1.234	10.08	6.6	525	3	524	3
47	1.377	9.10	6.9	528	3	527	3
48	1.534	8.08	7.4	531	4	529	3
49	1.712	7.04	7.9	535	4	533	4
50	1.918	5.95	8.6	539	4	537	4
51	2.166	4.77	9.6	544	4	542	4
52	2.493	3.41	10.0	551	4	549	4
53	2.920	2.04	10.0	560	4	560	4
54	2.920	2.04	10.0	560	4	560	4

Table 2.2.11 Raw Score to Scale Score Lookup Table - Mathematics Grade 5

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-3.126	2.25	10.0	440	1	440	1
1	-3.078	2.40	10.0	441	1	440	1
2	-3.029	2.55	10.0	442	1	440	1
3	-2.981	2.71	10.0	443	1	440	1
4	-2.932	2.87	10.0	444	1	440	1
5	-2.884	3.05	10.0	445	1	441	1
6	-2.835	3.23	10.0	446	1	448	1
7	-2.518	4.58	8.9	452	1	453	1
8	-2.278	5.77	7.9	456	1	458	1
9	-2.082	6.83	7.3	460	1	461	1
10	-1.914	7.79	6.8	463	1	464	1
11	-1.765	8.67	6.5	466	1	467	1
12	-1.631	9.51	6.2	468	1	469	1
13	-1.509	10.31	5.9	471	2	471	2
14	-1.396	11.07	5.7	473	2	474	2
15	-1.290	11.81	5.5	475	2	475	2
16	-1.190	12.52	5.4	477	2	477	2
17	-1.095	13.19	5.2	479	2	479	2
18	-1.005	13.83	5.1	480	2	481	2
19	-0.918	14.43	5.0	482	2	482	2
20	-0.834	14.98	4.9	484	2	484	2
21	-0.753	15.48	4.8	485	2	485	2
22	-0.673	15.94	4.8	487	2	486	2
23	-0.596	16.34	4.7	488	2	488	2
24	-0.519	16.69	4.7	490	2	489	2
25	-0.444	16.98	4.6	491	2	490	2
26	-0.370	17.22	4.6	492	2	492	2
27	-0.296	17.40	4.6	494	2	493	2
28	-0.223	17.53	4.5	495	2	494	2
29	-0.150	17.60	4.5	497	2	496	2
30	-0.077	17.63	4.5	498	2	497	2
31	-0.003	17.62	4.5	499	2	498	2
32	0.070	17.58	4.5	501	3	499	2
33	0.145	17.50	4.6	502	3	501	3
34	0.220	17.39	4.6	504	3	502	3
35	0.295	17.27	4.6	505	3	504	3
36	0.373	17.14	4.6	507	3	505	3
37	0.451	17.00	4.6	508	3	506	3
38	0.531	16.84	4.6	510	3	508	3
39	0.613	16.66	4.7	511	3	509	3
40	0.697	16.44	4.7	513	3	511	3
41	0.783	16.15	4.7	514	3	513	3
42	0.873	15.77	4.8	516	3	514	3
43	0.967	15.24	4.9	518	3	516	3
44	1.067	14.55	5.0	520	3	518	3
45	1.173	13.66	5.2	522	3	520	3
46	1.288	12.57	5.4	524	3	522	3
47	1.415	11.28	5.7	526	3	524	3
48	1.558	9.84	6.1	529	3	527	3
49	1.723	8.29	6.6	532	4	529	3
50	1.920	6.66	7.4	536	4	533	4
51	2.170	4.98	8.5	541	4	537	4
52	2.516	3.27	10.0	547	4	543	4
53	3.101	1.54	10.0	559	4	552	4
54	3.176	1.39	10.0	560	4	560	4

Table 2.2.12 Raw Score to Scale Score Lookup Table - Mathematics Grade 6

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-3.028	2.38	10.0	440	1	440	1
1	-3.001	2.46	10.0	441	1	441	1
2	-2.974	2.54	10.0	441	1	442	1
3	-2.947	2.62	10.0	442	1	442	1
4	-2.920	2.70	10.0	442	1	443	1
5	-2.893	2.79	10.0	443	1	450	1
6	-2.512	4.20	9.7	450	1	455	1
7	-2.234	5.54	8.4	456	1	459	1
8	-2.014	6.91	7.6	460	1	463	1
9	-1.831	8.28	6.9	464	1	466	1
10	-1.674	9.64	6.4	467	1	469	1
11	-1.537	10.92	6.0	469	1	471	2
12	-1.413	12.11	5.7	472	2	474	2
13	-1.301	13.20	5.5	474	2	476	2
14	-1.198	14.18	5.3	476	2	478	2
15	-1.101	15.07	5.1	478	2	480	2
16	-1.009	15.88	5.0	480	2	481	2
17	-0.923	16.63	4.9	482	2	483	2
18	-0.840	17.31	4.8	483	2	485	2
19	-0.760	17.94	4.7	485	2	487	2
20	-0.683	18.52	4.6	487	2	488	2
21	-0.609	19.05	4.6	488	2	490	2
22	-0.537	19.53	4.5	489	2	491	2
23	-0.466	19.95	4.4	491	2	493	2
24	-0.397	20.33	4.4	492	2	494	2
25	-0.329	20.65	4.4	494	2	496	2
26	-0.263	20.92	4.3	495	2	497	2
27	-0.197	21.14	4.3	496	2	499	2
28	-0.132	21.31	4.3	498	2	500	3
29	-0.067	21.43	4.3	499	2	501	3
30	-0.003	21.51	4.3	500	3	503	3
31	0.061	21.54	4.3	501	3	504	3
32	0.125	21.53	4.3	503	3	506	3
33	0.189	21.48	4.3	504	3	507	3
34	0.254	21.38	4.3	505	3	508	3
35	0.319	21.23	4.3	506	3	510	3
36	0.384	21.04	4.3	508	3	511	3
37	0.451	20.79	4.4	509	3	512	3
38	0.519	20.48	4.4	510	3	514	3
39	0.588	20.11	4.4	512	3	515	3
40	0.659	19.66	4.5	513	3	517	3
41	0.732	19.12	4.5	515	3	518	3
42	0.808	18.48	4.6	516	3	520	3
43	0.888	17.74	4.7	518	3	522	3
44	0.971	16.88	4.8	519	3	524	3
45	1.061	15.89	5.0	521	3	525	3
46	1.157	14.75	5.2	523	3	528	3
47	1.263	13.46	5.4	525	3	529	3
48	1.381	11.99	5.7	528	3	532	4
49	1.516	10.32	6.2	530	4	536	4
50	1.679	8.46	6.8	534	4	539	4
51	1.886	6.37	7.9	538	4	544	4
52	2.180	4.10	9.8	543	4	551	4
53	2.708	1.77	10.0	554	4	560	4
54	3.011	1.10	10.0	560	4	560	4

Table 2.2.13 Raw Score to Scale Score Lookup Table - Mathematics Grade 7

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-2.859	1.84	10.0	440	1	440	1
1	-2.852	1.86	10.0	440	1	441	1
2	-2.844	1.88	10.0	440	1	442	1
3	-2.837	1.90	10.0	440	1	443	1
4	-2.829	1.92	10.0	441	1	444	1
5	-2.822	1.94	10.0	441	1	445	1
6	-2.319	3.80	10.0	451	1	454	1
7	-2.008	5.49	8.9	458	1	460	1
8	-1.777	6.97	7.9	462	1	465	1
9	-1.590	8.27	7.2	466	1	468	1
10	-1.430	9.42	6.8	469	1	471	2
11	-1.290	10.47	6.4	473	2	474	2
12	-1.164	11.45	6.1	475	2	477	2
13	-1.050	12.38	5.9	478	2	479	2
14	-0.944	13.28	5.7	480	2	481	2
15	-0.846	14.14	5.5	482	2	483	2
16	-0.753	14.97	5.4	484	2	485	2
17	-0.666	15.76	5.2	486	2	487	2
18	-0.583	16.53	5.1	487	2	489	2
19	-0.503	17.27	5.0	489	2	491	2
20	-0.427	17.98	4.9	490	2	492	2
21	-0.353	18.66	4.8	492	2	494	2
22	-0.282	19.30	4.7	494	2	496	2
23	-0.213	19.91	4.7	495	2	497	2
24	-0.145	20.48	4.6	496	2	499	2
25	-0.079	21.00	4.5	498	2	500	3
26	-0.014	21.47	4.5	499	2	502	3
27	0.050	21.88	4.4	500	3	503	3
28	0.114	22.23	4.4	502	3	505	3
29	0.177	22.51	4.4	503	3	506	3
30	0.239	22.73	4.4	504	3	508	3
31	0.302	22.86	4.3	506	3	509	3
32	0.364	22.93	4.3	507	3	510	3
33	0.427	22.91	4.3	508	3	512	3
34	0.490	22.81	4.3	510	3	513	3
35	0.554	22.62	4.4	511	3	514	3
36	0.619	22.35	4.4	512	3	516	3
37	0.686	21.99	4.4	514	3	517	3
38	0.754	21.53	4.5	515	3	518	3
39	0.824	20.99	4.5	516	3	520	3
40	0.896	20.34	4.6	518	3	521	3
41	0.971	19.60	4.7	520	3	523	3
42	1.050	18.75	4.8	521	3	524	3
43	1.132	17.80	4.9	523	3	526	3
44	1.220	16.73	5.1	525	3	527	3
45	1.315	15.56	5.3	527	3	529	3
46	1.417	14.27	5.5	529	3	531	4
47	1.530	12.87	5.8	531	4	533	4
48	1.656	11.36	6.2	534	4	535	4
49	1.802	9.74	6.7	537	4	538	4
50	1.976	8.00	7.3	540	4	541	4
51	2.194	6.13	8.4	545	4	545	4
52	2.495	4.12	10.0	551	4	551	4
53	2.922	2.24	10.0	560	4	560	4
54	2.922	2.24	10.0	560	4	560	4

Table 2.2.14 Raw Score to Scale Score Lookup Table - Mathematics Grade 8

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-2.983	2.23	10.0	440	1	440	1
1	-2.932	2.35	10.0	441	1	441	1
2	-2.881	2.47	10.0	442	1	443	1
3	-2.830	2.61	10.0	443	1	444	1
4	-2.778	2.75	10.0	444	1	446	1
5	-2.727	2.90	10.0	445	1	447	1
6	-2.676	3.06	10.0	446	1	448	1
7	-2.625	3.23	10.0	447	1	454	1
8	-2.336	4.42	9.6	453	1	459	1
9	-2.110	5.68	8.5	458	1	462	1
10	-1.923	6.95	7.6	461	1	466	1
11	-1.764	8.20	7.0	465	1	468	1
12	-1.624	9.38	6.6	467	1	471	2
13	-1.499	10.50	6.2	469	1	473	2
14	-1.385	11.54	5.9	472	2	475	2
15	-1.279	12.52	5.7	474	2	477	2
16	-1.180	13.43	5.5	476	2	479	2
17	-1.087	14.28	5.3	478	2	480	2
18	-0.998	15.07	5.2	480	2	482	2
19	-0.914	15.81	5.1	482	2	483	2
20	-0.832	16.49	5.0	483	2	485	2
21	-0.754	17.11	4.9	485	2	486	2
22	-0.677	17.68	4.8	487	2	488	2
23	-0.603	18.18	4.7	488	2	489	2
24	-0.531	18.63	4.7	489	2	491	2
25	-0.459	19.01	4.6	491	2	492	2
26	-0.389	19.32	4.6	492	2	493	2
27	-0.320	19.58	4.6	494	2	494	2
28	-0.251	19.78	4.5	495	2	496	2
29	-0.183	19.92	4.5	496	2	497	2
30	-0.115	20.00	4.5	498	2	498	2
31	-0.048	20.02	4.5	499	2	499	2
32	0.021	19.98	4.5	501	3	501	3
33	0.089	19.89	4.5	502	3	502	3
34	0.158	19.73	4.5	503	3	504	3
35	0.228	19.52	4.6	505	3	505	3
36	0.299	19.25	4.6	506	3	506	3
37	0.371	18.92	4.6	508	3	508	3
38	0.445	18.54	4.7	509	3	509	3
39	0.521	18.09	4.7	511	3	511	3
40	0.599	17.58	4.8	512	3	512	3
41	0.681	17.01	4.9	514	3	514	3
42	0.766	16.36	5.0	516	3	516	3
43	0.855	15.64	5.1	517	3	517	3
44	0.949	14.83	5.2	519	3	519	3
45	1.050	13.93	5.4	521	3	521	3
46	1.159	12.93	5.6	524	3	523	3
47	1.278	11.80	5.9	526	3	525	3
48	1.411	10.54	6.2	529	3	528	3
49	1.563	9.12	6.7	532	4	530	4
50	1.744	7.52	7.4	535	4	534	4
51	1.972	5.73	8.4	540	4	538	4
52	2.291	3.74	10.0	546	4	543	4
53	2.854	1.62	10.0	558	4	553	4
54	2.966	1.37	10.0	560	4	560	4



Table 2.2.15  
Raw Score to Scale Score Lookup Table  
Mathematics Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-3.124	1.61	10.0	440	1	440	1
1	-3.101	1.67	10.0	440	1	441	1
2	-3.078	1.73	10.0	441	1	442	1
3	-3.055	1.79	10.0	441	1	443	1
4	-3.033	1.85	10.0	442	1	444	1
5	-3.010	1.92	10.0	442	1	445	1
6	-2.540	3.72	10.0	452	1	454	1
7	-2.245	5.40	9.2	459	1	459	1
8	-2.024	7.01	8.1	464	1	463	1
9	-1.847	8.64	7.3	467	1	467	1
10	-1.699	10.29	6.7	470	2	469	1
11	-1.571	11.97	6.2	473	2	472	2
12	-1.458	13.67	5.8	476	2	474	2
13	-1.357	15.38	5.5	478	2	476	2
14	-1.266	17.09	5.2	480	2	478	2
15	-1.182	18.81	4.9	482	2	480	2
16	-1.105	20.50	4.7	483	2	482	2
17	-1.032	22.15	4.5	485	2	483	2
18	-0.964	23.75	4.4	486	2	485	2
19	-0.899	25.27	4.3	488	2	486	2
20	-0.838	26.71	4.1	489	2	488	2
21	-0.778	28.04	4.0	490	2	489	2
22	-0.722	29.25	4.0	491	2	491	2
23	-0.666	30.35	3.9	493	2	492	2
24	-0.613	31.32	3.8	494	2	493	2
25	-0.560	32.16	3.8	495	2	495	2
26	-0.509	32.88	3.7	496	2	496	2
27	-0.458	33.47	3.7	497	2	497	2
28	-0.408	33.93	3.7	498	2	498	2
29	-0.359	34.27	3.7	499	2	499	2
30	-0.310	34.49	3.6	500	3	501	3
31	-0.260	34.59	3.6	501	3	502	3
32	-0.211	34.57	3.6	502	3	503	3
33	-0.162	34.44	3.6	503	3	504	3
34	-0.112	34.21	3.7	504	3	505	3
35	-0.062	33.88	3.7	505	3	507	3
36	-0.011	33.44	3.7	507	3	508	3
37	0.041	32.90	3.7	508	3	509	3

Table 2.2.15 (continued)  
 Raw Score to Scale Score Lookup Table  
 Mathematics Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
38	0.094	32.27	3.8	509	3	510	3
39	0.148	31.54	3.8	510	3	511	3
40	0.203	30.71	3.9	511	3	512	3
41	0.260	29.78	3.9	512	3	514	3
42	0.320	28.74	4.0	514	3	515	3
43	0.381	27.60	4.1	515	3	516	3
44	0.445	26.35	4.2	516	3	518	3
45	0.513	25.00	4.3	518	3	519	3
46	0.584	23.57	4.4	519	3	520	3
47	0.660	22.06	4.6	521	3	522	3
48	0.741	20.48	4.7	523	3	523	3
49	0.829	18.86	4.9	524	3	525	3
50	0.924	17.19	5.2	527	3	527	3
51	1.028	15.50	5.4	529	3	529	3
52	1.144	13.80	5.8	531	4	531	4
53	1.273	12.11	6.1	534	4	533	4
54	1.421	10.48	6.6	537	4	536	4
55	1.592	8.86	7.2	541	4	539	4
56	1.795	7.18	8.0	545	4	543	4
57	2.052	5.31	9.3	551	4	548	4
58	2.415	3.24	10.0	558	4	555	4
59	2.490	2.91	10.0	560	4	560	4
60	2.490	2.91	10.0	560	4	560	4

Table 2.2.16  
Raw Score to Scale Score Lookup Table  
Introductory Physics Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-2.145	4.70	10.0	440	1	440	1
1	-2.126	4.82	10.0	441	1	441	1
2	-2.106	4.94	10.0	441	1	441	1
3	-2.087	5.06	10.0	442	1	442	1
4	-2.068	5.18	10.0	442	1	442	1
5	-2.049	5.31	10.0	443	1	443	1
6	-2.029	5.44	10.0	443	1	443	1
7	-2.010	5.57	10.0	444	1	444	1
8	-1.991	5.71	10.0	444	1	444	1
9	-1.972	5.84	10.0	445	1	445	1
10	-1.773	7.39	9.7	450	1	449	1
11	-1.609	8.86	8.9	454	1	453	1
12	-1.468	10.24	8.3	458	1	457	1
13	-1.343	11.55	7.8	461	1	460	1
14	-1.231	12.80	7.4	464	1	463	1
15	-1.128	14.00	7.1	467	1	465	1
16	-1.032	15.14	6.8	469	1	468	1
17	-0.942	16.23	6.6	472	2	470	2
18	-0.857	17.24	6.4	474	2	472	2
19	-0.776	18.17	6.2	476	2	474	2
20	-0.699	19.02	6.1	478	2	476	2
21	-0.624	19.77	5.9	480	2	478	2
22	-0.552	20.41	5.9	482	2	480	2
23	-0.481	20.95	5.8	484	2	482	2
24	-0.412	21.38	5.7	486	2	483	2
25	-0.344	21.72	5.7	488	2	485	2
26	-0.276	21.96	5.6	489	2	487	2
27	-0.210	22.13	5.6	491	2	488	2
28	-0.144	22.22	5.6	493	2	490	2
29	-0.077	22.25	5.6	495	2	491	2
30	-0.011	22.22	5.6	496	2	493	2
31	0.055	22.14	5.6	498	2	495	2
32	0.121	22.02	5.6	500	3	496	2
33	0.188	21.86	5.7	502	3	498	2
34	0.256	21.65	5.7	503	3	499	2
35	0.324	21.40	5.7	505	3	501	3
36	0.393	21.11	5.8	507	3	502	3
37	0.463	20.78	5.8	509	3	504	3

Table 2.2.16 (continued)  
 Raw Score to Scale Score Lookup Table  
 Introductory Physics Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
38	0.534	20.43	5.8	511	3	506	3
39	0.606	20.07	5.9	513	3	507	3
40	0.679	19.69	6.0	515	3	509	3
41	0.754	19.33	6.0	517	3	511	3
42	0.830	18.99	6.1	519	3	513	3
43	0.907	18.67	6.1	521	3	514	3
44	0.986	18.39	6.2	523	3	516	3
45	1.067	18.13	6.2	525	3	518	3
46	1.149	17.88	6.3	527	3	520	3
47	1.234	17.63	6.3	529	3	522	3
48	1.322	17.31	6.4	532	4	524	3
49	1.414	16.88	6.4	534	4	527	3
50	1.510	16.27	6.6	537	4	529	3
51	1.612	15.43	6.7	539	4	531	4
52	1.723	14.35	7.0	542	4	534	4
53	1.843	13.05	7.3	545	4	537	4
54	1.978	11.55	7.8	549	4	540	4
55	2.132	9.89	8.4	553	4	544	4
56	2.315	8.04	9.3	558	4	548	4
57	2.395	7.30	9.8	560	4	554	4
58	2.395	7.30	9.8	560	4	560	4
59	2.395	7.30	9.8	560	4	560	4
60	2.395	7.30	9.8	560	4	560	4

Table 2.2.17  
 Raw Score to Scale Score Lookup Table  
 Science Grade 5

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-3.130	3.57	10.0	440	1	440	1
1	-3.123	3.59	10.0	440	1	440	1
2	-3.115	3.61	10.0	440	1	441	1
3	-3.108	3.64	10.0	440	1	441	1
4	-3.100	3.66	10.0	441	1	442	1
5	-3.093	3.69	10.0	441	1	442	1
6	-3.085	3.71	10.0	441	1	442	1
7	-3.077	3.73	10.0	441	1	443	1
8	-3.070	3.76	10.0	441	1	443	1
9	-2.855	4.49	9.4	445	1	444	1
10	-2.669	5.18	8.7	449	1	444	1
11	-2.502	5.82	8.2	452	1	448	1
12	-2.351	6.41	7.9	455	1	451	1
13	-2.211	6.96	7.5	458	1	455	1
14	-2.079	7.46	7.3	461	1	458	1
15	-1.955	7.92	7.1	463	1	460	1
16	-1.836	8.34	6.9	466	1	463	1
17	-1.723	8.72	6.7	468	1	466	1
18	-1.613	9.07	6.6	470	2	468	1
19	-1.506	9.38	6.5	472	2	470	2
20	-1.402	9.65	6.4	474	2	473	2
21	-1.300	9.89	6.3	476	2	475	2
22	-1.199	10.10	6.3	478	2	477	2
23	-1.100	10.27	6.2	480	2	479	2
24	-1.002	10.39	6.2	482	2	481	2
25	-0.905	10.48	6.1	484	2	483	2
26	-0.808	10.53	6.1	486	2	485	2
27	-0.711	10.54	6.1	488	2	487	2
28	-0.614	10.51	6.1	490	2	489	2
29	-0.517	10.44	6.2	492	2	492	2
30	-0.419	10.34	6.2	494	2	494	2
31	-0.319	10.20	6.2	496	2	496	2
32	-0.219	10.04	6.3	498	2	498	2
33	-0.116	9.85	6.3	499	2	499	2
34	-0.012	9.65	6.4	502	3	502	3
35	0.094	9.42	6.5	504	3	504	3
36	0.203	9.18	6.6	506	3	507	3
37	0.316	8.91	6.7	508	3	509	3

Table 2.2.17 (continued)  
 Raw Score to Scale Score Lookup Table  
 Science Grade 5

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
38	0.432	8.61	6.8	511	3	511	3
39	0.552	8.29	6.9	513	3	514	3
40	0.678	7.92	7.1	516	3	516	3
41	0.809	7.50	7.3	518	3	519	3
42	0.949	7.03	7.5	521	3	522	3
43	1.097	6.51	7.8	524	3	525	3
44	1.258	5.94	8.2	527	3	528	3
45	1.432	5.34	8.6	531	4	532	4
46	1.626	4.72	9.1	535	4	536	4
47	1.842	4.10	9.8	539	4	540	4
48	2.090	3.49	10.0	544	4	545	4
49	2.379	2.89	10.0	549	4	551	4
50	2.726	2.32	10.0	556	4	558	4
51	2.907	2.07	10.0	560	4	560	4
52	2.907	2.07	10.0	560	4	560	4
53	2.907	2.07	10.0	560	4	560	4
54	2.907	2.07	10.0	560	4	560	4

Table 2.2.18  
 Raw Score to Scale Score Lookup Table  
 Science Grade 8

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
0	-2.978	2.16	10.0	440	1	440	1
1	-2.971	2.18	10.0	440	1	441	1
2	-2.963	2.19	10.0	440	1	441	1
3	-2.956	2.21	10.0	440	1	442	1
4	-2.949	2.23	10.0	441	1	443	1
5	-2.942	2.24	10.0	441	1	444	1
6	-2.935	2.26	10.0	441	1	444	1
7	-2.928	2.27	10.0	441	1	445	1
8	-2.921	2.29	10.0	441	1	446	1
9	-2.598	3.14	10.0	448	1	451	1
10	-2.346	3.97	10.0	453	1	455	1
11	-2.138	4.78	9.3	457	1	458	1
12	-1.959	5.56	8.6	461	1	462	1
13	-1.801	6.31	8.1	464	1	464	1
14	-1.658	7.03	7.7	467	1	467	1
15	-1.527	7.71	7.3	469	1	469	1
16	-1.406	8.36	7.0	472	2	472	2
17	-1.291	8.97	6.8	474	2	474	2
18	-1.183	9.54	6.6	476	2	476	2
19	-1.080	10.07	6.4	478	2	478	2
20	-0.981	10.54	6.2	481	2	481	2
21	-0.885	10.96	6.1	482	2	482	2
22	-0.792	11.32	6.0	484	2	484	2
23	-0.700	11.62	6.0	486	2	486	2
24	-0.610	11.86	5.9	488	2	488	2
25	-0.522	12.03	5.8	490	2	490	2
26	-0.434	12.16	5.8	492	2	492	2
27	-0.347	12.23	5.8	493	2	494	2
28	-0.260	12.27	5.8	495	2	495	2
29	-0.173	12.27	5.8	497	2	497	2
30	-0.086	12.26	5.8	499	2	499	2
31	0.002	12.23	5.8	500	3	501	3
32	0.090	12.21	5.8	502	3	503	3
33	0.178	12.18	5.8	504	3	505	3
34	0.268	12.16	5.8	506	3	506	3
35	0.358	12.14	5.8	508	3	508	3
36	0.450	12.10	5.8	510	3	510	3
37	0.544	12.03	5.9	511	3	512	3

Table 2.2.18 (continued)  
 Raw Score to Scale Score Lookup Table  
 Science Grade 8

Raw Score	Theta	Information	SE (Scale Score)	2023		2022	
				Scale Score	Achievement Levels	Scale Score	Achievement Levels
38	0.640	11.90	5.9	513	3	514	3
39	0.738	11.71	5.9	515	3	516	3
40	0.839	11.43	6.0	517	3	518	3
41	0.945	11.05	6.1	520	3	521	3
42	1.056	10.56	6.2	522	3	523	3
43	1.173	9.96	6.4	524	3	525	3
44	1.297	9.26	6.7	527	3	528	3
45	1.432	8.46	7.0	529	3	530	4
46	1.580	7.59	7.4	532	4	533	4
47	1.745	6.67	7.9	536	4	536	4
48	1.932	5.71	8.5	540	4	540	4
49	2.149	4.74	9.3	544	4	544	4
50	2.411	3.76	10.0	549	4	549	4
51	2.745	2.77	10.0	556	4	555	4
52	2.937	2.31	10.0	560	4	560	4
53	2.937	2.31	10.0	560	4	560	4
54	2.937	2.31	10.0	560	4	560	4



# Section 2.3

## Cumulative Scale Score Distribution Tables

Table 2.3.1 Cumulative Scale Score Distribution - Biology Grade 10

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
441	NM	1	0.00002	0.00002
442	NM	7	0.00014	0.00016
443	NM	64	0.00130	0.00146
444	NM	290	0.00587	0.00733
445	NM	270	0.00547	0.01279
450	NM	403	0.00816	0.02095
454	NM	580	0.01174	0.03269
457	NM	628	0.01271	0.04540
461	NM	761	0.01540	0.06081
464	NM	837	0.01694	0.07775
466	NM	933	0.01889	0.09663
469	NM	946	0.01915	0.11578
471	PM	989	0.02002	0.13580
473	PM	971	0.01965	0.15546
475	PM	899	0.01820	0.17365
477	PM	992	0.02008	0.19373
479	PM	1010	0.02044	0.21418
481	PM	1004	0.02032	0.23450
483	PM	1045	0.02115	0.25565
484	PM	1050	0.02125	0.27691
486	PM	1103	0.02233	0.29923
488	PM	1075	0.02176	0.32099
489	PM	1030	0.02085	0.34184
491	PM	1097	0.02221	0.36405
492	PM	1013	0.02050	0.38455
494	PM	1070	0.02166	0.40621
496	PM	1156	0.02340	0.42961
497	PM	1183	0.02395	0.45356
499	PM	1168	0.02364	0.47720
500	ME	1182	0.02393	0.50112
502	ME	1173	0.02374	0.52487
503	ME	1221	0.02472	0.54958
505	ME	1214	0.02457	0.57416
507	ME	1200	0.02429	0.59845
508	ME	1244	0.02518	0.62363
510	ME	1259	0.02548	0.64911
512	ME	1243	0.02516	0.67427
513	ME	1213	0.02455	0.69882
515	ME	1240	0.02510	0.72392
517	ME	1152	0.02332	0.74724
519	ME	1182	0.02393	0.77117
521	ME	1183	0.02395	0.79511
523	ME	1145	0.02318	0.81829
525	ME	1119	0.02265	0.84094
527	ME	1083	0.02192	0.86286
529	ME	1016	0.02057	0.88343
532	EE	899	0.01820	0.90163
534	EE	823	0.01666	0.91828
537	EE	866	0.01753	0.93581
541	EE	739	0.01496	0.95077
544	EE	656	0.01328	0.96405
549	EE	648	0.01312	0.97717
554	EE	473	0.00957	0.98674
560	EE	655	0.01326	1.00000

Table 2.3.2  
Cumulative Scale Score Distribution  
English Language Arts Grade 3

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	980	0.01619	0.01619
449	NM	823	0.01359	0.02978
454	NM	1098	0.01814	0.04792
459	NM	1210	0.01999	0.06790
462	NM	1431	0.02364	0.09154
465	NM	1433	0.02367	0.11521
468	NM	1420	0.02345	0.13866
471	PM	1403	0.02317	0.16184
473	PM	1377	0.02274	0.18458
475	PM	1371	0.02265	0.20723
477	PM	1405	0.02321	0.23044
479	PM	1421	0.02347	0.25391
481	PM	1413	0.02334	0.27725
483	PM	1460	0.02412	0.30136
485	PM	1570	0.02593	0.32729
487	PM	1646	0.02719	0.35448
489	PM	1710	0.02824	0.38273
491	PM	1743	0.02879	0.41152
492	PM	1758	0.02904	0.44055
494	PM	1896	0.03132	0.47187
496	PM	1965	0.03246	0.50433
498	PM	2085	0.03444	0.53877
500	ME	2145	0.03543	0.57420
502	ME	2185	0.03609	0.61029
504	ME	2424	0.04004	0.65033
507	ME	2429	0.04012	0.69045
509	ME	2480	0.04096	0.73141
512	ME	2465	0.04072	0.77213
515	ME	2546	0.04205	0.81418
518	ME	2436	0.04024	0.85442
522	ME	2337	0.03860	0.89302
526	ME	1989	0.03285	0.92587
532	EE	1651	0.02727	0.95314
538	EE	1237	0.02043	0.97357
545	EE	821	0.01356	0.98713
555	EE	466	0.00770	0.99483
560	EE	313	0.00517	1.00000

Table 2.3.3  
Cumulative Scale Score Distribution  
English Language Arts Grade 4

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	4	0.00006	0.00006
441	NM	29	0.00047	0.00053
442	NM	223	0.00361	0.00414
443	NM	711	0.01150	0.01564
444	NM	537	0.00868	0.02432
449	NM	700	0.01132	0.03564
453	NM	802	0.01297	0.04861
457	NM	952	0.01540	0.06401
461	NM	1104	0.01785	0.08186
464	NM	1165	0.01884	0.10070
467	NM	1207	0.01952	0.12022
469	NM	1424	0.02303	0.14325
472	PM	1527	0.02469	0.16794
475	PM	1645	0.02660	0.19455
477	PM	1727	0.02793	0.22248
480	PM	1876	0.03034	0.25281
482	PM	1999	0.03233	0.28514
484	PM	1996	0.03228	0.31742
486	PM	2134	0.03451	0.35193
488	PM	2235	0.03614	0.38807
490	PM	2248	0.03635	0.42443
492	PM	2308	0.03732	0.46175
494	PM	2304	0.03726	0.49901
497	PM	2523	0.04080	0.53981
499	PM	2564	0.04146	0.58128
501	ME	2663	0.04307	0.62435
503	ME	2729	0.04413	0.66848
506	ME	2741	0.04433	0.71280
509	ME	2698	0.04363	0.75644
511	ME	2736	0.04425	0.80068
515	ME	2513	0.04064	0.84132
518	ME	2348	0.03797	0.87929
522	ME	2199	0.03556	0.91486
526	ME	1749	0.02828	0.94314
531	EE	1348	0.02180	0.96494
537	EE	989	0.01599	0.98093
544	EE	605	0.00978	0.99072
552	EE	323	0.00522	0.99594
560	EE	251	0.00406	1.00000

Table 2.3.4  
Cumulative Scale Score Distribution  
English Language Arts Grade 5

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
441	NM	16	0.00026	0.00026
442	NM	130	0.00209	0.00234
443	NM	475	0.00762	0.00997
444	NM	429	0.00688	0.01685
449	NM	553	0.00887	0.02572
453	NM	633	0.01016	0.03588
456	NM	727	0.01167	0.04755
459	NM	805	0.01292	0.06047
461	NM	799	0.01282	0.07329
464	NM	826	0.01326	0.08654
466	NM	898	0.01441	0.10095
468	NM	993	0.01593	0.11689
469	NM	961	0.01542	0.13231
472	PM	1069	0.01715	0.14946
474	PM	1079	0.01731	0.16678
476	PM	1235	0.01982	0.18660
477	PM	1280	0.02054	0.20714
479	PM	1330	0.02134	0.22848
481	PM	1406	0.02256	0.25104
483	PM	1534	0.02462	0.27566
485	PM	1570	0.02519	0.30085
486	PM	1770	0.02840	0.32926
488	PM	1910	0.03065	0.35991
490	PM	1957	0.03140	0.39131
492	PM	2126	0.03412	0.42543
494	PM	2297	0.03686	0.46229
496	PM	2309	0.03705	0.49934
498	PM	2574	0.04131	0.54065
500	ME	2730	0.04381	0.58446
503	ME	2916	0.04679	0.63125
505	ME	2942	0.04721	0.67846
508	ME	2904	0.04660	0.72506
511	ME	2876	0.04615	0.77121
513	ME	2749	0.04411	0.81533
517	ME	2453	0.03936	0.85469
520	ME	2242	0.03598	0.89067
523	ME	1909	0.03063	0.92130
528	ME	1542	0.02474	0.94605
532	EE	1242	0.01993	0.96598
537	EE	879	0.01411	0.98009
543	EE	621	0.00997	0.99005
551	EE	358	0.00574	0.99580
560	EE	262	0.00420	1.00000

Table 2.3.5  
Cumulative Scale Score Distribution  
English Language Arts Grade 6

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	147	0.00231	0.00231
441	NM	3513	0.05526	0.05757
446	NM	1044	0.01642	0.07399
450	NM	1111	0.01748	0.09147
453	NM	1126	0.01771	0.10918
456	NM	1184	0.01862	0.12780
460	NM	1240	0.01950	0.14731
463	NM	1226	0.01928	0.16659
465	NM	1328	0.02089	0.18748
468	NM	1362	0.02142	0.20891
471	PM	1425	0.02241	0.23132
473	PM	1562	0.02457	0.25589
476	PM	1572	0.02473	0.28062
479	PM	1589	0.02499	0.30561
481	PM	1726	0.02715	0.33276
484	PM	1808	0.02844	0.36120
486	PM	1927	0.03031	0.39151
488	PM	1983	0.03119	0.42270
491	PM	2106	0.03313	0.45583
493	PM	2048	0.03221	0.48805
496	PM	2141	0.03368	0.52172
499	PM	2336	0.03674	0.55847
501	ME	2386	0.03753	0.59600
504	ME	2508	0.03945	0.63545
507	ME	2333	0.03670	0.67215
510	ME	2525	0.03972	0.71186
513	ME	2436	0.03832	0.75018
516	ME	2448	0.03851	0.78869
519	ME	2272	0.03574	0.82443
522	ME	2177	0.03424	0.85867
526	ME	1878	0.02954	0.88821
529	ME	1744	0.02743	0.91564
534	EE	1487	0.02339	0.93903
539	EE	1210	0.01903	0.95806
544	EE	975	0.01534	0.97340
550	EE	742	0.01167	0.98507
556	EE	505	0.00794	0.99302
560	EE	444	0.00698	1.00000

Table 2.3.6  
Cumulative Scale Score Distribution  
English Language Arts Grade 7

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	2	0.00003	0.00003
441	NM	161	0.00253	0.00256
442	NM	1208	0.01896	0.02152
443	NM	800	0.01256	0.03408
448	NM	968	0.01519	0.04927
452	NM	1087	0.01706	0.06633
456	NM	1074	0.01686	0.08319
459	NM	1281	0.02011	0.10329
462	NM	1270	0.01993	0.12323
465	NM	1326	0.02081	0.14404
468	NM	1369	0.02149	0.16553
470	PM	1408	0.02210	0.18763
473	PM	1482	0.02326	0.21089
475	PM	1543	0.02422	0.23511
477	PM	1544	0.02423	0.25934
479	PM	1564	0.02455	0.28389
481	PM	1593	0.02500	0.30889
483	PM	1743	0.02736	0.33625
485	PM	1793	0.02814	0.36440
487	PM	1847	0.02899	0.39339
489	PM	1927	0.03025	0.42363
491	PM	1907	0.02993	0.45356
493	PM	1972	0.03095	0.48452
495	PM	1981	0.03109	0.51561
496	PM	2024	0.03177	0.54738
498	PM	1956	0.03070	0.57808
500	ME	1958	0.03073	0.60881
502	ME	1960	0.03076	0.63958
504	ME	2038	0.03199	0.67156
507	ME	1961	0.03078	0.70234
509	ME	1872	0.02938	0.73173
511	ME	1805	0.02833	0.76006
513	ME	1854	0.02910	0.78916
516	ME	1801	0.02827	0.81743
518	ME	1728	0.02712	0.84455
521	ME	1706	0.02678	0.87133
524	ME	1589	0.02494	0.89627
528	ME	1429	0.02243	0.91870
531	EE	1365	0.02142	0.94012
536	EE	1178	0.01849	0.95861
541	EE	945	0.01483	0.97344
546	EE	767	0.01204	0.98548
554	EE	507	0.00796	0.99344
560	EE	418	0.00656	1.00000

Table 2.3.7  
Cumulative Scale Score Distribution  
English Language Arts Grade 8

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	3036	0.04631	0.04631
441	NM	711	0.01085	0.05716
445	NM	770	0.01175	0.06891
448	NM	842	0.01284	0.08175
452	NM	930	0.01419	0.09594
455	NM	1005	0.01533	0.11127
458	NM	1002	0.01529	0.12655
461	NM	1041	0.01588	0.14243
464	NM	1150	0.01754	0.15998
467	NM	1230	0.01876	0.17874
469	NM	1280	0.01953	0.19827
472	PM	1400	0.02136	0.21962
474	PM	1458	0.02224	0.24187
477	PM	1582	0.02413	0.26600
479	PM	1661	0.02534	0.29134
482	PM	1751	0.02671	0.31805
484	PM	1830	0.02792	0.34596
486	PM	1927	0.02940	0.37536
489	PM	2081	0.03175	0.40711
491	PM	2079	0.03171	0.43882
494	PM	2172	0.03313	0.47195
496	PM	2361	0.03602	0.50797
499	PM	2511	0.03830	0.54628
502	ME	2614	0.03988	0.58615
504	ME	2528	0.03856	0.62472
507	ME	2684	0.04094	0.66566
510	ME	2697	0.04114	0.70680
513	ME	2691	0.04105	0.74785
517	ME	2666	0.04067	0.78852
520	ME	2446	0.03731	0.82584
524	ME	2463	0.03757	0.86341
529	ME	2169	0.03309	0.89650
534	EE	1963	0.02995	0.92644
539	EE	1685	0.02570	0.95215
546	EE	1309	0.01997	0.97211
553	EE	886	0.01352	0.98563
560	EE	942	0.01437	1.00000



Table 2.3.8  
Cumulative Scale Score Distribution  
English Language Arts Grade 10

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	2	0.00003	0.00003
441	NM	38	0.00056	0.00059
442	NM	502	0.00737	0.00796
443	NM	711	0.01044	0.01840
444	NM	444	0.00652	0.02492
447	NM	461	0.00677	0.03169
450	NM	456	0.00670	0.03838
453	NM	425	0.00624	0.04462
456	NM	460	0.00675	0.05138
458	NM	490	0.00719	0.05857
461	NM	441	0.00648	0.06505
463	NM	525	0.00771	0.07276
465	NM	601	0.00882	0.08158
467	NM	608	0.00893	0.09051
469	NM	662	0.00972	0.10023
471	PM	731	0.01073	0.11096
473	PM	745	0.01094	0.12190
475	PM	843	0.01238	0.13428
477	PM	968	0.01421	0.14849
479	PM	1009	0.01482	0.16331
481	PM	1095	0.01608	0.17939
483	PM	1163	0.01708	0.19646
485	PM	1323	0.01943	0.21589
486	PM	1394	0.02047	0.23636
488	PM	1551	0.02277	0.25913
490	PM	1710	0.02511	0.28424
492	PM	1754	0.02575	0.31000
494	PM	1885	0.02768	0.33767
496	PM	2053	0.03015	0.36782
498	PM	2257	0.03314	0.40096
500	ME	2308	0.03389	0.43485
503	ME	2525	0.03708	0.47193
505	ME	2820	0.04141	0.51333
507	ME	2796	0.04105	0.55439
510	ME	3028	0.04446	0.59885
513	ME	3144	0.04616	0.64501
516	ME	3377	0.04959	0.69460
519	ME	3289	0.04829	0.74289
523	ME	3426	0.05031	0.79320
527	ME	3274	0.04807	0.84127
532	EE	3156	0.04634	0.88761
538	EE	2844	0.04176	0.92937
545	EE	2306	0.03386	0.96323
554	EE	1582	0.02323	0.98646
560	EE	922	0.01354	1.00000

Table 2.3.9  
Cumulative Scale Score Distribution  
Mathematics Grade 3

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	952	0.01841	0.01841
447	NM	462	0.00893	0.02735
452	NM	567	0.01097	0.03831
456	NM	626	0.01211	0.05042
459	NM	633	0.01224	0.06266
462	NM	685	0.01325	0.07591
464	NM	721	0.01394	0.08985
467	NM	764	0.01478	0.10463
469	NM	771	0.01491	0.11954
471	PM	874	0.01690	0.13644
473	PM	882	0.01706	0.15350
475	PM	876	0.01694	0.17044
477	PM	910	0.01760	0.18804
478	PM	977	0.01889	0.20694
480	PM	1005	0.01944	0.22637
482	PM	1048	0.02027	0.24664
483	PM	1058	0.02046	0.26710
485	PM	1096	0.02120	0.28830
487	PM	1173	0.02269	0.31098
488	PM	1200	0.02321	0.33419
490	PM	1120	0.02166	0.35585
491	PM	1293	0.02501	0.38086
493	PM	1277	0.02470	0.40555
495	PM	1293	0.02501	0.43056
496	PM	1368	0.02646	0.45702
498	PM	1406	0.02719	0.48421
499	PM	1430	0.02766	0.51186
501	ME	1481	0.02864	0.54051
503	ME	1495	0.02891	0.56942
505	ME	1609	0.03112	0.60054
507	ME	1562	0.03021	0.63075
509	ME	1694	0.03276	0.66351
511	ME	1647	0.03185	0.69536
513	ME	1775	0.03433	0.72969
516	ME	1743	0.03371	0.76340
518	ME	1839	0.03557	0.79896
521	ME	1800	0.03481	0.83377
524	ME	1892	0.03659	0.87037
528	ME	1697	0.03282	0.90319
532	EE	1486	0.02874	0.93192
537	EE	1334	0.02580	0.95772
544	EE	1117	0.02160	0.97933
555	EE	768	0.01485	0.99418
560	EE	301	0.00582	1.00000

Table 2.3.10  
Cumulative Scale Score Distribution  
Mathematics Grade 4

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	1	0.00002	0.00002
441	NM	22	0.00042	0.00044
442	NM	117	0.00223	0.00266
443	NM	162	0.00308	0.00575
444	NM	542	0.01031	0.01606
449	NM	337	0.00641	0.02247
454	NM	445	0.00847	0.03094
457	NM	458	0.00871	0.03965
460	NM	493	0.00938	0.04904
463	NM	556	0.01058	0.05961
465	NM	622	0.01184	0.07145
468	NM	618	0.01176	0.08321
469	NM	673	0.01281	0.09602
472	PM	723	0.01376	0.10977
474	PM	747	0.01421	0.12399
476	PM	784	0.01492	0.13890
477	PM	830	0.01579	0.15470
479	PM	876	0.01667	0.17137
481	PM	960	0.01827	0.18963
482	PM	924	0.01758	0.20722
484	PM	986	0.01876	0.22598
485	PM	1070	0.02036	0.24634
487	PM	1043	0.01985	0.26618
488	PM	1134	0.02158	0.28776
490	PM	1194	0.02272	0.31048
491	PM	1272	0.02420	0.33468
493	PM	1292	0.02458	0.35927
494	PM	1346	0.02561	0.38488
496	PM	1359	0.02586	0.41074
497	PM	1357	0.02582	0.43656
499	PM	1396	0.02656	0.46312
500	ME	1530	0.02911	0.49224
502	ME	1530	0.02911	0.52135
504	ME	1520	0.02892	0.55027
505	ME	1597	0.03039	0.58066
507	ME	1660	0.03159	0.61225
509	ME	1683	0.03202	0.64427
511	ME	1719	0.03271	0.67698
513	ME	1684	0.03204	0.70902
515	ME	1787	0.03400	0.74303
517	ME	1753	0.03336	0.77638
519	ME	1609	0.03062	0.80700
522	ME	1608	0.03060	0.83760
525	ME	1614	0.03071	0.86831
528	ME	1461	0.02780	0.89611
531	EE	1386	0.02637	0.92248
535	EE	1158	0.02203	0.94451
539	EE	971	0.01848	0.96299
544	EE	790	0.01503	0.97802
551	EE	580	0.01104	0.98906
560	EE	575	0.01094	1.00000

Table 2.3.11 Cumulative Scale Score Distribution - Mathematics Grade 5

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
441	NM	2	0.00004	0.00004
442	NM	12	0.00022	0.00026
443	NM	44	0.00081	0.00107
444	NM	76	0.00140	0.00247
445	NM	123	0.00227	0.00475
446	NM	191	0.00353	0.00827
452	NM	252	0.00465	0.01292
456	NM	405	0.00748	0.02040
460	NM	533	0.00984	0.03024
463	NM	577	0.01065	0.04090
466	NM	700	0.01292	0.05382
468	NM	841	0.01553	0.06935
471	PM	913	0.01686	0.08621
473	PM	973	0.01797	0.10417
475	PM	1065	0.01966	0.12384
477	PM	1167	0.02155	0.14539
479	PM	1169	0.02158	0.16697
480	PM	1239	0.02288	0.18985
482	PM	1327	0.02450	0.21435
484	PM	1304	0.02408	0.23843
485	PM	1324	0.02445	0.26287
487	PM	1300	0.02400	0.28688
488	PM	1346	0.02485	0.31173
490	PM	1345	0.02483	0.33656
491	PM	1403	0.02591	0.36247
492	PM	1411	0.02605	0.38852
494	PM	1461	0.02698	0.41550
495	PM	1389	0.02565	0.44115
497	PM	1387	0.02561	0.46676
498	PM	1423	0.02627	0.49303
499	PM	1459	0.02694	0.51997
501	ME	1423	0.02627	0.54624
502	ME	1452	0.02681	0.57305
504	ME	1479	0.02731	0.60036
505	ME	1439	0.02657	0.62693
507	ME	1484	0.02740	0.65433
508	ME	1477	0.02727	0.68160
510	ME	1370	0.02530	0.70690
511	ME	1395	0.02576	0.73266
513	ME	1465	0.02705	0.75971
514	ME	1339	0.02472	0.78443
516	ME	1325	0.02447	0.80890
518	ME	1213	0.02240	0.83129
520	ME	1234	0.02278	0.85408
522	ME	1232	0.02275	0.87683
524	ME	1177	0.02173	0.89856
526	ME	1033	0.01907	0.91763
529	ME	1046	0.01931	0.93694
532	EE	906	0.01673	0.95367
536	EE	741	0.01368	0.96736
541	EE	726	0.01340	0.98076
547	EE	533	0.00984	0.99060
559	EE	350	0.00646	0.99706
560	EE	159	0.00294	1.00000

Table 2.3.12 Cumulative Scale Score Distribution - Mathematics Grade 6

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	3	0.00005	0.00005
441	NM	54	0.00096	0.00101
442	NM	295	0.00523	0.00624
443	NM	351	0.00622	0.01247
450	NM	487	0.00864	0.02110
456	NM	702	0.01245	0.03355
460	NM	858	0.01522	0.04877
464	NM	1005	0.01782	0.06659
467	NM	1084	0.01922	0.08581
469	NM	1143	0.02027	0.10608
472	PM	1153	0.02045	0.12653
474	PM	1178	0.02089	0.14742
476	PM	1291	0.02289	0.17032
478	PM	1246	0.02210	0.19241
480	PM	1336	0.02369	0.21611
482	PM	1352	0.02398	0.24008
483	PM	1327	0.02353	0.26362
485	PM	1312	0.02327	0.28688
487	PM	1386	0.02458	0.31146
488	PM	1302	0.02309	0.33455
489	PM	1393	0.02470	0.35925
491	PM	1380	0.02447	0.38373
492	PM	1363	0.02417	0.40790
494	PM	1370	0.02430	0.43219
495	PM	1370	0.02430	0.45649
496	PM	1334	0.02366	0.48015
498	PM	1268	0.02249	0.50263
499	PM	1301	0.02307	0.52571
500	ME	1273	0.02258	0.54828
501	ME	1272	0.02256	0.57084
503	ME	1274	0.02259	0.59343
504	ME	1264	0.02242	0.61585
505	ME	1195	0.02119	0.63704
506	ME	1225	0.02172	0.65876
508	ME	1198	0.02125	0.68001
509	ME	1215	0.02155	0.70156
510	ME	1173	0.02080	0.72236
512	ME	1171	0.02077	0.74312
513	ME	1181	0.02094	0.76407
515	ME	1178	0.02089	0.78496
516	ME	1188	0.02107	0.80603
518	ME	1191	0.02112	0.82715
519	ME	1142	0.02025	0.84740
521	ME	1076	0.01908	0.86648
523	ME	1104	0.01958	0.88606
525	ME	1070	0.01898	0.90503
528	ME	1009	0.01789	0.92293
530	EE	1015	0.01800	0.94093
534	EE	942	0.01671	0.95763
538	EE	893	0.01584	0.97347
543	EE	662	0.01174	0.98521
554	EE	524	0.00929	0.99450
560	EE	310	0.00550	1.00000

Table 2.3.13  
Cumulative Scale Score Distribution  
Mathematics Grade 7

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	298	0.00521	0.00521
441	NM	1140	0.01992	0.02512
451	NM	993	0.01735	0.04247
458	NM	1394	0.02436	0.06683
462	NM	1521	0.02658	0.09341
466	NM	1804	0.03152	0.12493
469	NM	1743	0.03045	0.15538
473	PM	1730	0.03023	0.18561
475	PM	1738	0.03037	0.21597
478	PM	1633	0.02853	0.24451
480	PM	1633	0.02853	0.27304
482	PM	1629	0.02846	0.30150
484	PM	1572	0.02747	0.32897
486	PM	1543	0.02696	0.35592
487	PM	1443	0.02521	0.38114
489	PM	1539	0.02689	0.40803
490	PM	1382	0.02415	0.43217
492	PM	1279	0.02235	0.45452
494	PM	1361	0.02378	0.47830
495	PM	1335	0.02333	0.50162
496	PM	1280	0.02236	0.52399
498	PM	1176	0.02055	0.54454
499	PM	1125	0.01966	0.56419
500	ME	1197	0.02091	0.58511
502	ME	1126	0.01967	0.60478
503	ME	1109	0.01938	0.62416
504	ME	1068	0.01866	0.64282
506	ME	1011	0.01766	0.66048
507	ME	1041	0.01819	0.67867
508	ME	1045	0.01826	0.69693
510	ME	1071	0.01871	0.71564
511	ME	963	0.01683	0.73247
512	ME	1005	0.01756	0.75003
514	ME	966	0.01688	0.76690
515	ME	970	0.01695	0.78385
516	ME	989	0.01728	0.80113
518	ME	902	0.01576	0.81689
520	ME	957	0.01672	0.83361
521	ME	931	0.01627	0.84988
523	ME	899	0.01571	0.86559
525	ME	911	0.01592	0.88150
527	ME	867	0.01515	0.89665
529	ME	865	0.01511	0.91177
531	EE	887	0.01550	0.92726
534	EE	829	0.01448	0.94175
537	EE	816	0.01426	0.95601
540	EE	757	0.01323	0.96923
545	EE	648	0.01132	0.98055
551	EE	525	0.00917	0.98973
560	EE	588	0.01027	1.00000

Table 2.3.14 Cumulative Scale Score Distribution - Mathematics Grade 8

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
441	NM	2	0.00003	0.00003
442	NM	7	0.00012	0.00015
443	NM	37	0.00062	0.00077
444	NM	86	0.00144	0.00222
445	NM	201	0.00337	0.00559
446	NM	353	0.00593	0.01152
447	NM	583	0.00979	0.02130
453	NM	806	0.01353	0.03483
458	NM	995	0.01670	0.05153
461	NM	1134	0.01904	0.07057
465	NM	1291	0.02167	0.09224
467	NM	1488	0.02498	0.11722
469	NM	1430	0.02400	0.14122
472	PM	1511	0.02536	0.16659
474	PM	1549	0.02600	0.19259
476	PM	1509	0.02533	0.21792
478	PM	1521	0.02553	0.24345
480	PM	1550	0.02602	0.26947
482	PM	1504	0.02525	0.29472
483	PM	1477	0.02479	0.31951
485	PM	1451	0.02436	0.34387
487	PM	1405	0.02358	0.36745
488	PM	1409	0.02365	0.39111
489	PM	1443	0.02422	0.41533
491	PM	1411	0.02369	0.43901
492	PM	1309	0.02197	0.46099
494	PM	1343	0.02254	0.48353
495	PM	1416	0.02377	0.50730
496	PM	1401	0.02352	0.53082
498	PM	1302	0.02186	0.55268
499	PM	1288	0.02162	0.57430
501	ME	1289	0.02164	0.59593
502	ME	1236	0.02075	0.61668
503	ME	1290	0.02165	0.63834
505	ME	1301	0.02184	0.66018
506	ME	1247	0.02093	0.68111
508	ME	1229	0.02063	0.70174
509	ME	1223	0.02053	0.72227
511	ME	1194	0.02004	0.74231
512	ME	1219	0.02046	0.76277
514	ME	1143	0.01919	0.78196
516	ME	1213	0.02036	0.80232
517	ME	1200	0.02014	0.82247
519	ME	1190	0.01998	0.84244
521	ME	1094	0.01836	0.86081
524	ME	1092	0.01833	0.87914
526	ME	1053	0.01768	0.89681
529	ME	1070	0.01796	0.91478
532	EE	1084	0.01820	0.93297
535	EE	1009	0.01694	0.94991
540	EE	958	0.01608	0.96599
546	EE	868	0.01457	0.98056
558	EE	717	0.01204	0.99260
560	EE	441	0.00740	1.00000

Table 2.3.15 Cumulative Scale Score Distribution - Mathematics Grade 10

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	5	0.00008	0.00008
441	NM	54	0.00085	0.00093
442	NM	398	0.00626	0.00719
452	NM	474	0.00746	0.01464
459	NM	622	0.00978	0.02443
464	NM	844	0.01328	0.03770
467	NM	1083	0.01704	0.05474
470	PM	1175	0.01848	0.07322
473	PM	1241	0.01952	0.09274
476	PM	1329	0.02090	0.11365
478	PM	1348	0.02120	0.13485
480	PM	1298	0.02042	0.15527
482	PM	1356	0.02133	0.17660
483	PM	1389	0.02185	0.19845
485	PM	1430	0.02249	0.22094
486	PM	1354	0.02130	0.24224
488	PM	1371	0.02157	0.26380
489	PM	1289	0.02028	0.28408
490	PM	1270	0.01998	0.30406
491	PM	1259	0.01980	0.32386
493	PM	1246	0.01960	0.34346
494	PM	1246	0.01960	0.36306
495	PM	1286	0.02023	0.38329
496	PM	1256	0.01976	0.40304
497	PM	1209	0.01902	0.42206
498	PM	1169	0.01839	0.44045
499	PM	1233	0.01939	0.45984
500	ME	1132	0.01781	0.47765
501	ME	1196	0.01881	0.49646
502	ME	1285	0.02021	0.51667
503	ME	1233	0.01939	0.53607
504	ME	1254	0.01973	0.55579
505	ME	1214	0.01910	0.57489
507	ME	1246	0.01960	0.59449
508	ME	1275	0.02006	0.61454
509	ME	1244	0.01957	0.63411
510	ME	1263	0.01987	0.65398
511	ME	1310	0.02061	0.67458
512	ME	1276	0.02007	0.69466
514	ME	1277	0.02009	0.71474
515	ME	1290	0.02029	0.73503
516	ME	1247	0.01961	0.75465
518	ME	1282	0.02017	0.77481
519	ME	1247	0.01961	0.79443
521	ME	1186	0.01866	0.81308
523	ME	1295	0.02037	0.83345
524	ME	1299	0.02043	0.85389
527	ME	1155	0.01817	0.87205
529	ME	1144	0.01799	0.89005
531	EE	1116	0.01755	0.90760
534	EE	1005	0.01581	0.92341
537	EE	981	0.01543	0.93884
541	EE	920	0.01447	0.95331
545	EE	805	0.01266	0.96598
551	EE	733	0.01153	0.97751
558	EE	656	0.01032	0.98783
560	EE	774	0.01217	1.00000



Table 2.3.16  
Cumulative Scale Score Distribution  
Introductory Physics Grade 10

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
442	NM	1	0.00008	0.00008
443	NM	19	0.00148	0.00156
444	NM	56	0.00437	0.00593
445	NM	44	0.00343	0.00936
450	NM	67	0.00523	0.01458
454	NM	94	0.00733	0.02192
458	NM	130	0.01014	0.03205
461	NM	135	0.01053	0.04258
464	NM	148	0.01154	0.05413
467	NM	203	0.01583	0.06996
469	NM	208	0.01622	0.08618
472	PM	229	0.01786	0.10404
474	PM	265	0.02067	0.12471
476	PM	253	0.01973	0.14444
478	PM	269	0.02098	0.16542
480	PM	280	0.02184	0.18726
482	PM	279	0.02176	0.20902
484	PM	295	0.02301	0.23202
486	PM	332	0.02589	0.25792
488	PM	349	0.02722	0.28513
489	PM	340	0.02652	0.31165
491	PM	332	0.02589	0.33754
493	PM	318	0.02480	0.36235
495	PM	322	0.02511	0.38746
496	PM	366	0.02854	0.41600
498	PM	382	0.02979	0.44580
500	ME	360	0.02808	0.47387
502	ME	362	0.02823	0.50211
503	ME	336	0.02620	0.52831
505	ME	351	0.02737	0.55569
507	ME	308	0.02402	0.57971
509	ME	325	0.02535	0.60505
511	ME	322	0.02511	0.63017
513	ME	319	0.02488	0.65505
515	ME	331	0.02582	0.68086
517	ME	308	0.02402	0.70488
519	ME	272	0.02121	0.72610
521	ME	289	0.02254	0.74864
523	ME	262	0.02043	0.76907
525	ME	282	0.02199	0.79106
527	ME	235	0.01833	0.80939
529	ME	249	0.01942	0.82881
532	EE	253	0.01973	0.84854
534	EE	228	0.01778	0.86632
537	EE	235	0.01833	0.88465
539	EE	200	0.01560	0.90025
542	EE	218	0.01700	0.91725
545	EE	197	0.01536	0.93262
549	EE	197	0.01536	0.94798
553	EE	174	0.01357	0.96155
558	EE	154	0.01201	0.97356
560	EE	339	0.02644	1.00000

Table 2.3.17  
Cumulative Scale Score Distribution  
Science Grade 5

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	66	0.00122	0.00122
441	NM	520	0.00960	0.01082
445	NM	271	0.00500	0.01582
446	NM	50	0.00092	0.01675
449	NM	363	0.00670	0.02345
450	NM	50	0.00092	0.02437
452	NM	410	0.00757	0.03194
454	NM	75	0.00138	0.03333
455	NM	513	0.00947	0.04280
458	NM	593	0.01095	0.05375
461	NM	715	0.01320	0.06695
463	NM	662	0.01222	0.07917
464	NM	91	0.00168	0.08085
466	NM	668	0.01233	0.09318
467	NM	98	0.00181	0.09499
468	NM	723	0.01335	0.10834
470	PM	922	0.01702	0.12536
472	PM	858	0.01584	0.14121
473	PM	131	0.00242	0.14362
474	PM	912	0.01684	0.16046
475	PM	121	0.00223	0.16270
476	PM	938	0.01732	0.18002
478	PM	1147	0.02118	0.20119
480	PM	1257	0.02321	0.22440
482	PM	1138	0.02101	0.24541
483	PM	174	0.00321	0.24862
484	PM	1234	0.02278	0.27141
485	PM	156	0.00288	0.27429
486	PM	1249	0.02306	0.29735
488	PM	1524	0.02814	0.32549
490	PM	1614	0.02980	0.35529
492	PM	1440	0.02659	0.38187
493	PM	218	0.00402	0.38590
494	PM	1508	0.02784	0.41374
495	PM	201	0.00371	0.41745
496	PM	1551	0.02864	0.44609
498	PM	1853	0.03421	0.48030
499	PM	1763	0.03255	0.51285
500	ME	227	0.00419	0.51704
502	ME	1748	0.03227	0.54932

Table 2.3.17 (continued)  
 Cumulative Scale Score Distribution  
 Science Grade 5

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
503	ME	248	0.00458	0.55389
504	ME	1845	0.03406	0.58796
506	ME	2054	0.03792	0.62588
508	ME	1883	0.03477	0.66065
509	ME	223	0.00412	0.66476
511	ME	1864	0.03442	0.69918
512	ME	190	0.00351	0.70269
513	ME	1836	0.03390	0.73659
515	ME	223	0.00412	0.74070
516	ME	1841	0.03399	0.77469
518	ME	1719	0.03174	0.80643
519	ME	188	0.00347	0.80990
521	ME	1631	0.03011	0.84002
522	ME	188	0.00347	0.84349
524	ME	1505	0.02779	0.87128
527	ME	1558	0.02877	0.90004
531	EE	1422	0.02625	0.92630
535	EE	1078	0.01990	0.94620
537	EE	110	0.00203	0.94823
539	EE	899	0.01660	0.96483
544	EE	801	0.01479	0.97962
549	EE	443	0.00818	0.98780
552	EE	52	0.00096	0.98876
556	EE	328	0.00606	0.99481
560	EE	281	0.00519	1.00000

Table 2.3.18  
Cumulative Scale Score Distribution  
Science Grade 8

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	16	0.00027	0.00027
441	NM	866	0.01455	0.01482
442	NM	1	0.00002	0.01483
443	NM	5	0.00008	0.01492
445	NM	8	0.00013	0.01505
446	NM	27	0.00045	0.01551
447	NM	54	0.00091	0.01641
448	NM	570	0.00958	0.02599
453	NM	630	0.01058	0.03657
455	NM	100	0.00168	0.03825
457	NM	830	0.01394	0.05219
460	NM	140	0.00235	0.05455
461	NM	884	0.01485	0.06940
464	NM	1209	0.02031	0.08971
467	NM	1080	0.01814	0.10785
468	NM	194	0.00326	0.11111
469	NM	1156	0.01942	0.13053
471	PM	187	0.00314	0.13367
472	PM	1223	0.02055	0.15422
474	PM	1499	0.02518	0.17940
476	PM	1289	0.02165	0.20105
477	PM	185	0.00311	0.20416
478	PM	1403	0.02357	0.22773
480	PM	217	0.00365	0.23137
481	PM	1438	0.02416	0.25553
482	PM	1465	0.02461	0.28014
483	PM	202	0.00339	0.28354
484	PM	1403	0.02357	0.30710
485	PM	203	0.00341	0.31051
486	PM	1486	0.02496	0.33548
487	PM	205	0.00344	0.33892
488	PM	1470	0.02469	0.36362
490	PM	1794	0.03014	0.39375
492	PM	1782	0.02994	0.42369
493	PM	1622	0.02725	0.45094
494	PM	212	0.00356	0.45450
495	PM	1586	0.02664	0.48114
497	PM	1767	0.02968	0.51083
499	PM	1812	0.03044	0.54127
500	ME	1626	0.02732	0.56858

Table 2.3.18 (continued)  
 Cumulative Scale Score Distribution  
 Science Grade 8

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
502	ME	1841	0.03093	0.59951
504	ME	1897	0.03187	0.63138
506	ME	1815	0.03049	0.66187
508	ME	1682	0.02826	0.69012
509	ME	192	0.00323	0.69335
510	ME	1601	0.02690	0.72024
511	ME	1521	0.02555	0.74580
512	ME	186	0.00312	0.74892
513	ME	1500	0.02520	0.77412
514	ME	178	0.00299	0.77711
515	ME	1479	0.02485	0.80196
517	ME	1602	0.02691	0.82887
520	ME	1496	0.02513	0.85400
522	ME	1288	0.02164	0.87564
523	ME	147	0.00247	0.87811
524	ME	1158	0.01945	0.89756
527	ME	1156	0.01942	0.91698
529	ME	997	0.01675	0.93373
530	EE	106	0.00178	0.93551
532	EE	831	0.01396	0.94947
535	EE	86	0.00144	0.95091
536	EE	726	0.01220	0.96311
539	EE	63	0.00106	0.96417
540	EE	636	0.01068	0.97485
544	EE	501	0.00842	0.98327
545	EE	41	0.00069	0.98396
549	EE	363	0.00610	0.99005
553	EE	32	0.00054	0.99059
556	EE	262	0.00440	0.99499
560	EE	298	0.00501	1.00000

# Section 2.4

## Rescore Analysis Results

This section shows the results of rescore analyses. Rescore analyses are conducted on human-scored items to ensure consistency in scoring across years. To detect rater drift, 200 student responses from a previous administration are *rescored* using raters during the current administration. Then, the resulting scores from the current year are compared to the previous scores (on the same set of 200 student responses). Effect sizes (i.e., Cohen’s *d*) are calculated using the means and standard deviations of the two sets of scores. The threshold for flagging an item is 0.5.

Table 2.4.1  
Rescore Analysis  
English Language Arts Grade 3

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA00287	3	1.16500	0.96000	0.83140	0.84971	-0.24657	False
IA00288	3	1.02000	0.87000	0.77628	0.73880	-0.19323	False

Table 2.4.2  
Rescore Analysis  
English Language Arts Grade 4

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA00225	3	1.44000	1.44500	0.83057	0.69959	0.00602	False
IA00226	3	1.20000	1.20000	0.78298	0.76349	0.00000	False

Table 2.4.3  
Rescore Analysis  
Mathematics Grade 3

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA01080	3	1.01000	0.97500	0.86233	0.91573	-0.04059	False
IA01081	3	0.78500	0.82000	0.89036	0.89533	0.03931	False

Table 2.4.4  
Rescore Analysis  
Mathematics Grade 4

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA00789	4	1.41000	1.38500	1.32312	1.41307	-0.01889	False
IA01057	4	2.13000	2.20000	1.20847	1.19041	0.05792	False

Table 2.4.5  
Rescore Analysis  
Mathematics Grade 5

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA01032	4	1.41500	1.45000	1.22486	1.30999	0.02857	False
IA02736	4	1.86000	1.95500	1.44250	1.45726	0.06586	False

Table 2.4.6  
Rescore Analysis  
Mathematics Grade 6

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA00881	4	1.82000	1.78500	1.64350	1.59105	-0.02130	False
IA00972	4	2.92000	2.90000	1.12245	1.07507	-0.01782	False

Table 2.4.7  
Rescore Analysis  
Mathematics Grade 7

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA01069	4	2.13500	2.15000	1.15909	1.17661	0.01294	False
IA02722	4	2.22000	2.12500	1.59194	1.56898	-0.05968	False

Table 2.4.8  
Rescore Analysis  
Mathematics Grade 8

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA00864	4	2.72000	2.70500	1.50764	1.53942	-0.00995	False
IA01066	4	2.12000	2.13000	1.64595	1.67545	0.00608	False



# Section 2.5

## Tabled Delta Analysis Results

Table 2.5.1  
Delta Analysis  
Biology Grade 10

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA10582 (SC129438142)	0.52500	0.56500	12.74917	12.34537	2	False	-0.39851
IA10635 (SC313409)	0.40250	0.47500	13.98753	13.25083	4	False	1.26093
IA10656 (SC630544518)	0.60000	0.63000	11.98661	11.67259	1	False	-1.00645
IA10684 (SC723337422)	0.81000	0.78000	9.48841	9.91123	1	False	1.94108
IA10696 (SC800163004)	0.79000	0.81000	9.77432	9.48841	1	False	-0.71214
IA10747 (SC804071827)	0.54000	0.60000	12.59827	11.98661	2	False	0.29176
IA10808 (SC815940509)	0.43000	0.41000	13.70550	13.91018	1	False	-0.42078
IA10809 (SC815948686)	0.58000	0.62000	12.19243	11.77808	1	False	-0.56899
IA10810 (SC815948962)	0.40000	0.38000	14.01339	14.22192	1	False	-0.52217
IA10926 (SC906349045)	0.57500	0.58000	12.24353	12.19243	2	False	-0.79263
IA10927 (SC906351730)	0.78000	0.83000	9.91123	9.18334	1	False	-0.29623
IA10930 (SC906544336)	0.64000	0.69000	11.56616	11.01660	1	False	-0.31756
IA10989 (SC910635381)	0.67000	0.79000	11.24035	9.77432	1	False	2.85315
IA10994 (SC910746953)	0.70000	0.69000	10.90240	11.01660	1	False	0.30316
IA10995 (SC910749140)	0.42000	0.45000	13.80757	13.50265	1	False	-0.35766
IA10998 (SC910752674)	0.30333	0.27333	15.05935	15.41105	3	False	-0.39925
IA11005 (SC911354147)	0.50000	0.54000	13.00000	12.59827	1	False	-0.31208
IA11014 (SC912353814)	0.71000	0.70000	10.78646	10.90240	1	False	0.35278
IA11031 (SC914149827)	0.57000	0.58000	12.29450	12.19243	1	False	-0.99485
IA11033 (SC914353987)	0.36000	0.32000	14.43384	14.87080	1	False	0.14116
IA11042 (SC915956318)	0.65000	0.68000	11.45872	11.12920	1	False	-1.14836
IA11054 (SC921067241)	0.63000	0.59000	11.67259	12.08982	1	False	1.10364

Table 2.5.2  
Delta Analysis  
English Language Arts Grade 3

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00279 (EL308822)	0.78000	0.78000	9.91123	9.91123	1	False	-0.86431
IA00280 (EL308824)	0.66000	0.66000	11.35015	11.35015	1	False	-0.73854
IA00281 (EL308826)	0.59000	0.56000	12.08982	12.39612	1	False	0.30730
IA00282 (EL308827)	0.65000	0.61000	11.45872	11.88272	1	False	0.91086
IA00283 (EL308835)	0.57000	0.57000	12.29450	12.29450	1	False	-0.65601
IA00284 (EL308837)	0.66000	0.66000	11.35015	11.35015	1	False	-0.73854
IA00285 (EL308838)	0.77000	0.77000	10.04461	10.04461	1	False	-0.85265
IA00286 (EL308842)	0.41000	0.49000	13.91018	13.10028	1	False	3.25869
IA00287 (EL308855)	0.37333	0.33333	14.29215	14.72291	3	False	0.69467
IA00288 (EL308857)	0.32000	0.29333	14.87080	15.17469	3	False	0.05303
IA00443 (EL626042844)	0.66000	0.65000	11.35015	11.45872	1	False	-0.54932
IA00444 (EL626043062)	0.67000	0.67000	11.24035	11.24035	1	False	-0.74814
IA00445 (EL626043435)	0.51500	0.52500	12.84957	12.74917	2	False	-0.13974
IA00446 (EL626049849)	0.53000	0.51000	12.69892	12.89972	1	False	-0.23747
IA00450 (EL626050679)	0.67000	0.66000	11.24035	11.35015	1	False	-0.53399
IA00451 (EL626050927)	0.51000	0.54000	12.89972	12.59827	1	False	0.80144
IA00452 (EL626051097)	0.55000	0.52000	12.49735	12.79939	2	False	0.25178
IA00453 (EL626051328)	0.64000	0.65000	11.56616	11.45872	1	False	-0.21905

Table 2.5.3  
Delta Analysis  
English Language Arts Grade 4

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00218 (EL307705)	0.81000	0.83000	9.48841	9.18334	1	False	0.70702
IA00219 (EL307709)	0.77000	0.76000	10.04461	10.17479	1	False	-0.38548
IA00220 (EL307710)	0.43000	0.48000	13.70550	13.20061	1	False	1.53502
IA00221 (EL307713)	0.52000	0.53000	12.79939	12.69892	1	False	-0.89187
IA00222 (EL307714)	0.76000	0.75000	10.17479	10.30204	1	False	-0.39087
IA00223 (EL307719)	0.56000	0.59000	12.39612	12.08982	1	False	0.42844
IA00224 (EL307724)	0.75000	0.73000	10.30204	10.54875	1	False	0.36485
IA00225 (EL307728)	0.45333	0.48000	13.46898	13.20061	3	False	0.08678
IA00226 (EL307729)	0.41667	0.41333	13.84171	13.87591	3	False	-0.60884
IA00289 (EL309792)	0.64000	0.58000	11.56616	12.19243	1	False	2.85068
IA00407 (EL624647403)	0.41000	0.42000	13.91018	13.80757	1	False	-0.98789
IA00408 (EL624647580)	0.58000	0.57000	12.19243	12.29450	1	False	-0.34889
IA00411 (EL624652450)	0.78000	0.76000	9.91123	10.17479	1	False	0.43125
IA00412 (EL624652621)	0.90000	0.91000	7.87379	7.63698	1	False	0.44126
IA00414 (EL624652989)	0.43000	0.43000	13.70550	13.70550	1	False	-0.83503
IA00415 (EL624653348)	0.67000	0.67000	11.24035	11.24035	1	False	-1.07768
IA00416 (EL624653492)	0.72000	0.73000	10.66863	10.54875	2	False	-0.56131
IA00419 (EL624654711)	0.80000	0.80500	9.63352	9.56153	2	False	-0.75744

Table 2.5.4  
Delta Analysis  
English Language Arts Grade 5

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00495 (EL626304658)	0.75000	0.75000	10.30204	10.30204	1	False	-1.34700
IA00497 (EL626304969)	0.73000	0.72000	10.54875	10.66863	1	False	0.57721
IA00500 (EL626332335)	0.66000	0.66000	11.35015	11.35015	1	False	-0.75796
IA00501 (EL626332592)	0.84000	0.84000	9.02217	9.02217	1	False	-1.75129
IA00502 (EL626333002)	0.82000	0.83000	9.33854	9.18334	1	False	0.38243
IA00505 (EL626355215)	0.60000	0.62000	11.98661	11.77808	1	False	-0.31145
IA00506 (EL626355557)	0.64000	0.67000	11.56616	11.24035	1	False	1.67163
IA00508 (EL626356291)	0.36500	0.39000	14.38050	14.11728	2	False	-0.84227
IA00638 (EL627351056)	0.66000	0.68000	11.35015	11.12920	1	False	0.23105
IA01669 (EL711809263)	0.76000	0.77000	10.17479	10.04461	1	False	-0.46024
IA01670 (EL711809592)	0.76000	0.75000	10.17479	10.30204	1	False	0.47674
IA01671 (EL711827203)	0.90000	0.90000	7.87379	7.87379	1	False	-1.10590
IA01672 (EL711827807)	0.73000	0.72000	10.54875	10.66863	1	False	0.57721
IA01679 (EL711868011)	0.49500	0.48500	13.05013	13.15043	2	False	1.69129
IA01680 (EL711900602)	0.70000	0.69000	10.90240	11.01660	1	False	0.69129
IA01691 (EL712167015)	0.46000	0.49000	13.40173	13.10028	1	False	0.27724

Table 2.5.5  
Delta Analysis  
English Language Arts Grade 6

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00173 (EL303496)	0.74000	0.75000	10.42662	10.30204	1	False	-0.01385
IA00174 (EL303500)	0.64000	0.63000	11.56616	11.67259	1	False	-0.65780
IA00175 (EL303504)	0.61000	0.63000	11.88272	11.67259	1	False	0.85814
IA00176 (EL303508)	0.71000	0.73000	10.78646	10.54875	1	False	1.02461
IA00177 (EL303510)	0.87000	0.87000	8.49444	8.49444	1	False	-1.26973
IA00178 (EL303513)	0.66000	0.66000	11.35015	11.35015	1	False	-1.06074
IA00179 (EL303514)	0.63000	0.60000	11.67259	11.98661	1	False	1.19165
IA00180 (EL303518)	0.57000	0.53000	12.29450	12.69892	1	False	1.95480
IA00515 (EL626864414)	0.83000	0.82000	9.18334	9.33854	1	False	-0.04704
IA00517 (EL626864724)	0.69000	0.71000	11.01660	10.78646	1	False	0.97368
IA00518 (EL626865003)	0.67000	0.67000	11.24035	11.24035	1	False	-1.06877
IA00520 (EL626865416)	0.41000	0.42000	13.91018	13.80757	1	False	0.04453
IA00522 (EL626865773)	0.72000	0.70000	10.66863	10.90240	1	False	0.54710
IA00523 (EL626865942)	0.64000	0.64000	11.56616	11.56616	1	False	-1.04493
IA00528 (EL626867605)	0.77000	0.76000	10.04461	10.17479	2	False	-0.33393
IA00530 (EL626868748)	0.70500	0.70500	10.84466	10.84466	2	False	-1.09773

Table 2.5.6  
Delta Analysis  
English Language Arts Grade 7

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00065 (EL292160)	0.73000	0.72051	10.54875	10.66252	1	False	0.17679
IA00066 (EL292163)	0.65000	0.62829	11.45872	11.69065	1	False	1.38684
IA00067 (EL292168)	0.50000	0.48588	13.00000	13.14156	1	False	0.76163
IA00068 (EL292170)	0.71000	0.71518	10.78646	10.72565	1	False	-1.39867
IA00069 (EL292172)	0.62000	0.65699	11.77808	11.38290	1	False	1.52278
IA00070 (EL292176)	0.62000	0.60853	11.77808	11.89802	1	False	0.39862
IA00081 (EL293802)	0.68000	0.70373	11.12920	10.85933	1	False	0.45617
IA00082 (EL293804)	0.54000	0.56885	12.59827	12.30619	1	False	0.46340
IA00257 (EL308358)	0.85000	0.84836	8.85427	8.88234	1	False	-0.83962
IA00258 (EL308360)	0.75500	0.75852	10.23876	10.19375	2	False	-1.32675
IA00262 (EL308382)	0.65000	0.65515	11.45872	11.40300	1	False	-1.26156
IA00265 (EL308389)	0.90000	0.89974	7.87379	7.87982	1	False	-1.17423
IA00269 (EL308397)	0.84000	0.82967	9.02217	9.18848	1	False	0.45563
IA00655 (EL628647210)	0.72000	0.74311	10.66863	10.38814	1	False	0.61580
IA00657 (EL628647689)	0.77000	0.77721	10.04461	9.94882	1	False	-1.00103
IA00658 (EL628653398)	0.74000	0.76319	10.42662	10.13353	2	False	0.76420

Table 2.5.7  
Delta Analysis  
English Language Arts Grade 8

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00056 (EL290795)	0.77000	0.79000	10.04461	9.77432	1	False	0.46444
IA00057 (EL290798)	0.78000	0.79000	9.91123	9.77432	1	False	-0.77635
IA00058 (EL290799)	0.75000	0.76000	10.30204	10.17479	1	False	-0.71010
IA00059 (EL290800)	0.67000	0.67000	11.24035	11.24035	1	False	-1.17573
IA00060 (EL290801)	0.77000	0.76000	10.04461	10.17479	1	False	0.45062
IA00061 (EL290805)	0.56000	0.56000	12.39612	12.39612	1	False	-1.02786
IA00062 (EL290808)	0.54000	0.55000	12.59827	12.49735	1	False	-0.04969
IA00063 (EL290814)	0.44000	0.40000	13.60388	14.01339	1	False	1.55263
IA00368 (EL623873883)	0.72000	0.73000	10.66863	10.54875	1	False	-0.63283
IA00371 (EL623951471)	0.60500	0.59000	11.93476	12.08982	2	False	-0.06445
IA00373 (EL623952377)	0.42000	0.42500	13.80757	13.75647	2	False	-0.02219
IA00374 (EL623952612)	0.73000	0.72000	10.54875	10.66863	1	False	0.16237
IA00378 (EL623955555)	0.51000	0.55000	12.89972	12.49735	1	False	2.75458
IA00379 (EL623955757)	0.54000	0.52000	12.59827	12.79939	1	False	0.08738
IA00383 (EL623959265)	0.65000	0.64000	11.45872	11.56616	1	False	-0.30324
IA00699 (EL632808123)	0.77000	0.77000	10.04461	10.04461	1	False	-0.70958



Table 2.5.8  
Delta Analysis  
English Language Arts Grade 10

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA04110 (EL807953958)	0.54000	0.57500	12.59827	12.24353	2	False	1.24220
IA04111 (EL807957225)	0.79000	0.77000	9.77432	10.04461	1	False	0.64584
IA04132 (EL808046697)	0.88000	0.87000	8.30005	8.49444	1	False	-1.06177
IA04260 (EL811034362)	0.73000	0.72000	10.54875	10.66863	1	False	-0.50686
IA04297 (EL811428116)	0.61000	0.58000	11.88272	12.19243	1	False	2.34297
IA04412 (EL813438114)	0.74000	0.72000	10.42662	10.66863	1	False	0.73495
IA04439 (EL816956706)	0.67000	0.67000	11.24035	11.24035	1	False	-1.38075
IA04440 (EL817235657)	0.63500	0.63000	11.61950	11.67259	2	False	-0.58004
IA06629 (EL811608986)	0.75000	0.76500	10.30204	10.11008	2	False	0.87484
IA06631 (EL811610832)	0.59000	0.61000	12.08982	11.88272	2	False	-0.04123
IA06633 (EL811612272)	0.60000	0.60000	11.98661	11.98661	1	False	-0.93029
IA06635 (EL811612951)	0.80000	0.79000	9.63352	9.77432	1	False	-0.83403
IA06636 (EL811614524)	0.82000	0.82000	9.33854	9.33854	1	False	-0.61124
IA06638 (EL811616340)	0.62000	0.64000	11.77808	11.56616	1	False	0.19882
IA06641 (EL811617473)	0.78000	0.79000	9.91123	9.77432	1	False	0.51783
IA06642 (EL811618006)	0.82000	0.82000	9.33854	9.33854	1	False	-0.61124

Table 2.5.9  
Delta Analysis  
Mathematics Grade 3

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00769 (MA203641)	0.83000	0.88000	9.18334	8.30005	1	False	1.57790
IA00799 (MA260559)	0.49000	0.49000	13.10028	13.10028	1	False	-0.68268
IA00834 (MA293457)	0.79000	0.81000	9.77432	9.48841	1	False	-1.18663
IA00838 (MA293524)	0.74000	0.77000	10.42662	10.04461	1	False	-0.71070
IA00850 (MA297405)	0.69000	0.71000	11.01660	10.78646	1	False	-1.27010
IA00852 (MA297438)	0.63000	0.65000	11.67259	11.45872	1	False	-1.22450
IA00924 (MA306310)	0.46000	0.48000	13.40173	13.20061	1	False	-0.76288
IA00925 (MA306315)	0.75000	0.79000	10.30204	9.77432	1	False	0.02711
IA00930 (MA306359)	0.66000	0.64000	11.35015	11.56616	1	False	1.00353
IA00932 (MA306375)	0.48000	0.49000	13.20061	13.10028	1	False	-1.24771
IA00993 (MA310834)	0.63000	0.62000	11.67259	11.77808	1	False	0.31624
IA01019 (MA311277)	0.74000	0.74000	10.42662	10.42662	1	False	0.13604
IA01071 (MA623063509)	0.73000	0.72000	10.54875	10.66863	1	False	0.73703
IA01080 (MA623654449)	0.31667	0.32667	14.90816	14.79655	3	False	-0.77820
IA01081 (MA623656013)	0.28667	0.32000	15.25260	14.87080	3	False	0.76601
IA02323 (MA301611A)	0.83000	0.87000	9.18334	8.49444	1	False	0.54281
IA04760 (MA713752330)	0.77000	0.80000	10.04461	9.63352	1	False	-0.67277
IA04813 (MA735572247)	0.72000	0.69000	10.66863	11.01660	1	False	1.91484
IA04828 (MA735653938)	0.51000	0.57000	12.89972	12.29450	1	False	1.23523
IA04844 (MA735735757)	0.62000	0.61000	11.77808	11.88272	1	False	0.27944

Table 2.5.10  
Delta Analysis  
Mathematics Grade 4

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00789 (MA250543)	0.41500	0.42750	13.85881	13.73097	4	False	-0.21097
IA00828 (MA287237)	0.76000	0.79000	10.17479	9.77432	1	False	-0.21310
IA00841 (MA293718)	0.71000	0.73000	10.78646	10.54875	1	False	-1.20028
IA00861 (MA297629)	0.89000	0.90000	8.09389	7.87379	1	False	-0.93982
IA00869 (MA297988)	0.18000	0.21000	16.66146	16.22568	1	False	-0.88035
IA00906 (MA301811)	0.73000	0.72000	10.54875	10.66863	1	False	0.72683
IA00958 (MA307055)	0.46000	0.51000	13.40173	12.89972	1	False	-0.07774
IA00961 (MA307081)	0.53000	0.61000	12.69892	11.88272	1	False	1.76423
IA00963 (MA307085)	0.67000	0.70000	11.24035	10.90240	1	False	-0.70292
IA01048 (MA311534)	0.54000	0.56000	12.59827	12.39612	1	False	-0.79230
IA01049 (MA311537)	0.66000	0.67000	11.35015	11.24035	1	False	-0.44462
IA01055 (MA311572)	0.52000	0.55000	12.79939	12.49735	1	False	-1.11038
IA01057 (MA311581)	0.55250	0.55750	12.47208	12.42146	4	False	0.03411
IA01093 (MA623879088)	0.73000	0.69500	10.54875	10.95971	2	False	2.34659
IA02175 (MA286769)	0.75000	0.78000	10.30204	9.91123	1	False	-0.28381
IA02819 (MA713583365)	0.61000	0.59000	11.88272	12.08982	1	False	1.38976
IA02841 (MA713774890)	0.44000	0.50000	13.60388	13.00000	1	False	0.46221
IA02902 (MA714251321)	0.39000	0.41000	14.11728	13.91018	1	False	-0.61762
IA04661 (MA307327)	0.74000	0.79000	10.42662	9.77432	1	False	1.15474
IA04965 (MA800867144)	0.58000	0.62000	12.19243	11.77808	1	False	-0.40454

Table 2.5.11  
Delta Analysis  
Mathematics Grade 5

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00771 (MA204911)	0.73000	0.75000	10.54875	10.30204	1	False	-0.36791
IA00776 (MA221207)	0.66000	0.69000	11.35015	11.01660	1	False	-0.75606
IA00803 (MA262207)	0.72000	0.75000	10.66863	10.30204	1	False	-0.80042
IA00806 (MA272292)	0.47000	0.47000	13.30108	13.30108	1	False	0.20796
IA00826 (MA287178)	0.85000	0.86000	8.85427	8.67872	1	False	0.05888
IA00872 (MA298003)	0.63000	0.66000	11.67259	11.35015	1	False	-0.75092
IA00880 (MA298106)	0.21000	0.24000	16.22568	15.82521	1	False	-0.25178
IA00885 (MA299556)	0.68000	0.73000	11.12920	10.54875	1	False	-0.15522
IA00936 (MA306420)	0.69000	0.82000	11.01660	9.33854	1	False	3.67778
IA00943 (MA306466)	0.62000	0.64000	11.77808	11.56616	1	False	-0.37481
IA00989 (MA307638)	0.86000	0.87000	8.67872	8.49444	1	False	0.04665
IA01020 (MA311280)	0.43000	0.43000	13.70550	13.70550	1	False	0.16559
IA01029 (MA311337)	0.83000	0.86000	9.18334	8.67872	1	False	-0.62473
IA01032 (MA311366)	0.38500	0.41000	14.16950	13.91018	4	False	-0.79139
IA01149 (MA624347774)	0.41000	0.42000	13.91018	13.80757	1	False	-0.21527
IA01155 (MA624357395)	0.35000	0.41500	14.54128	13.85881	2	False	0.55958
IA02552 (MA311324)	0.38000	0.44000	14.22192	13.60388	1	False	0.30044
IA02736 (MA704359678)	0.48500	0.49750	13.15043	13.02507	4	False	-0.21541
IA04970 (MA800974344)	0.70000	0.73000	10.90240	10.54875	1	False	-0.77957
IA05002 (MA801652356)	0.60000	0.58000	11.98661	12.19243	1	False	1.06661

Table 2.5.12  
Delta Analysis  
Mathematics Grade 6

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00777 (MA221667)	0.85000	0.84000	8.85427	9.02217	1	False	-0.66392
IA00778 (MA221669)	0.80000	0.79000	9.63352	9.77432	1	False	-0.78936
IA00804 (MA264305)	0.74000	0.75000	10.42662	10.30204	1	False	0.13826
IA00817 (MA280989)	0.47000	0.49000	13.30108	13.10028	1	False	0.42433
IA00818 (MA282268)	0.40000	0.41000	14.01339	13.91018	1	False	-0.37124
IA00819 (MA282277)	0.47000	0.44000	13.30108	13.60388	1	False	0.77408
IA00827 (MA287186)	0.56000	0.55000	12.39612	12.49735	1	False	-0.81368
IA00845 (MA296349)	0.56000	0.53000	12.39612	12.69892	1	False	0.68564
IA00881 (MA298139)	0.45000	0.44750	13.50265	13.52792	4	False	-1.27053
IA00899 (MA301508)	0.33000	0.35000	14.75965	14.54128	1	False	0.41244
IA00972 (MA307339)	0.74000	0.73000	10.42662	10.54875	4	False	-0.85072
IA00992 (MA309941)	0.41000	0.40000	13.91018	14.01339	1	False	-0.65100
IA01058 (MA311658)	0.42000	0.46000	13.80757	13.40173	1	False	1.89995
IA02037 (MA217493)	0.66000	0.63000	11.35015	11.67259	1	False	0.72951
IA02597 (MA311693)	0.78000	0.77000	9.91123	10.04461	1	False	-0.81737
IA02698 (MA703179529)	0.28000	0.24000	15.33137	15.82521	1	False	2.39358
IA04745 (MA703231515)	0.50000	0.52500	13.00000	12.74917	2	False	0.82584
IA04884 (MA736365836)	0.68000	0.68000	11.12920	11.12920	1	False	-0.85706
IA05126 (MA805103779)	0.55000	0.56000	12.49735	12.39612	1	False	-0.23778
IA05135 (MA805171807)	0.58000	0.58000	12.19243	12.19243	1	False	-0.96097

Table 2.5.13  
Delta Analysis  
Mathematics Grade 7

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00796 (MA259267)	0.44000	0.45000	13.60388	13.50265	1	False	-0.66698
IA00831 (MA288414)	0.72000	0.73000	10.66863	10.54875	1	False	-0.76147
IA00847 (MA296358)	0.53000	0.53000	12.69892	12.69892	1	False	-0.75606
IA00909 (MA301846)	0.87000	0.87000	8.49444	8.49444	1	False	-0.47584
IA00910 (MA301854)	0.35000	0.35000	14.54128	14.54128	1	False	-0.87885
IA00945 (MA306538)	0.69000	0.71000	11.01660	10.78646	1	False	-0.14051
IA00948 (MA306600)	0.84000	0.85000	9.02217	8.85427	1	False	-0.61087
IA00949 (MA306605)	0.49000	0.50000	13.10028	13.00000	1	False	-0.70573
IA01006 (MA311093)	0.85000	0.86000	8.85427	8.67872	1	False	-0.58063
IA01011 (MA311109)	0.39000	0.41000	14.11728	13.91018	1	False	-0.05878
IA01016 (MA311125)	0.55000	0.59000	12.49735	12.08982	1	False	0.92001
IA01017 (MA311135)	0.75000	0.73000	10.30204	10.54875	1	False	0.74130
IA01018 (MA311140)	0.37000	0.42000	14.32741	13.80757	1	False	1.65088
IA01069 (MA316886)	0.50750	0.51750	12.92480	12.82448	4	False	-0.71720
IA01097 (MA623950280)	0.32000	0.35000	14.87080	14.54128	1	False	0.65517
IA01108 (MA624149677)	0.38500	0.38500	14.16950	14.16950	2	False	-0.85408
IA02722 (MA703943185)	0.48750	0.48500	13.12535	13.15043	4	False	-0.64850
IA04486 (MA227988)	0.69000	0.68000	11.01660	11.12920	1	False	-0.03340
IA04538 (MA282218)	0.69000	0.66000	11.01660	11.35015	1	False	1.16452
IA04593 (MA298192)	0.24000	0.19000	15.82521	16.51159	1	False	2.75701

Table 2.5.14  
Delta Analysis  
Mathematics Grade 8

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00849 (MA296757)	0.62000	0.62000	11.77808	11.77808	1	False	-0.72911
IA00858 (MA297513)	0.76000	0.78000	10.17479	9.91123	1	False	-0.07380
IA00864 (MA297652)	0.70250	0.69250	10.87358	10.98820	4	False	-0.37359
IA00865 (MA297656)	0.53000	0.60000	12.69892	11.98661	1	False	1.38560
IA00903 (MA301674)	0.73000	0.75000	10.54875	10.30204	1	False	-0.15975
IA00905 (MA301702)	0.44000	0.46000	13.60388	13.40173	1	False	-0.52420
IA00979 (MA307472)	0.63000	0.65000	11.67259	11.45872	1	False	-0.35344
IA00985 (MA307570)	0.51000	0.53000	12.89972	12.69892	1	False	-0.48230
IA01033 (MA311384)	0.59000	0.57000	12.08982	12.29450	1	False	0.03372
IA01037 (MA311414)	0.39000	0.39000	14.11728	14.11728	1	False	-0.57377
IA01042 (MA311448)	0.52000	0.50000	12.79939	13.00000	1	False	0.06608
IA01044 (MA311463)	0.64000	0.62000	11.56616	11.77808	1	False	0.02515
IA01066 (MA314812)	0.55500	0.54000	12.44678	12.59827	4	False	-0.13547
IA01125 (MA624247061)	0.42500	0.41500	13.75647	13.85881	2	False	-0.22670
IA02495 (MA309741)	0.44000	0.37000	13.60388	14.32741	1	False	2.01547
IA04665 (MA307399)	0.48000	0.47000	13.20061	13.30108	1	False	-0.27038
IA04678 (MA309738)	0.39000	0.40000	14.11728	14.01339	1	False	-0.91454
IA05057 (MA803856437)	0.83000	0.83000	9.18334	9.18334	1	False	-0.90141
IA05059 (MA803856627)	0.71000	0.71000	10.78646	10.78646	1	False	-0.79496
IA05070 (MA804042487)	0.29000	0.40000	15.21354	14.01339	1	False	2.98739

Table 2.5.15  
Delta Analysis  
Mathematics Grade 10

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA04800 (MA717740737)	0.40000	0.43000	14.01339	13.70550	1	False	0.66893
IA04810 (MA735534256)	0.33500	0.33500	14.70459	14.70459	2	False	-1.01411
IA04819 (MA735579095)	0.57000	0.56000	12.29450	12.39612	1	False	-0.78106
IA04824 (MA735632759)	0.46000	0.46000	13.40173	13.40173	1	False	-1.35230
IA04842 (MA735734830)	0.40000	0.40000	14.01339	14.01339	1	False	-1.19353
IA04846 (MA735743236)	0.76000	0.78000	10.17479	9.91123	1	False	-0.59560
IA04847 (MA735745569)	0.43000	0.40000	13.70550	14.01339	1	False	0.10044
IA04871 (MA736059227)	0.50000	0.47000	13.00000	13.30108	1	False	0.24236
IA04913 (MA800433428)	0.56000	0.56000	12.39612	12.39612	1	False	-1.42215
IA04991 (MA801426792)	0.33000	0.37000	14.75965	14.32741	1	False	1.61483
IA04993 (MA801434971)	0.22000	0.25000	16.08877	15.69796	1	False	1.70924
IA04997 (MA801564574)	0.39500	0.35500	14.06524	14.48742	2	False	0.69842
IA05048 (MA803762212)	0.47000	0.49000	13.30108	13.10028	1	False	-0.16374
IA05096 (MA804566054)	0.55500	0.60500	12.44678	11.93476	2	False	1.49711
IA05117 (MA804678931)	0.35000	0.32000	14.54128	14.87080	1	False	0.01429
IA05144 (MA805372590)	0.41000	0.37000	13.91018	14.32741	1	False	0.70873
IA05145 (MA805373539)	0.23000	0.19000	15.95539	16.51159	1	False	1.01846
IA05147 (MA805376549)	0.87000	0.87000	8.49444	8.49444	1	False	-0.40939
IA05155 (MA806051920)	0.29000	0.29000	15.21354	15.21354	1	False	-0.88201
IA05165 (MA806383722)	0.46000	0.46500	13.40173	13.35138	4	False	-1.04769
IA05170 (MA806408603)	0.44250	0.40500	13.57854	13.96170	4	False	0.58876



Table 2.5.16  
Delta Analysis  
Introductory Physics Grade 10

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA03500 (SC717283221)	0.62500	0.62000	11.72544	11.77808	2	False	0.00238
IA05503 (SC701073429)	0.56000	0.58000	12.39612	12.19243	1	False	-1.28789
IA05859 (SC800552298)	0.60000	0.62000	11.98661	11.77808	1	False	-1.30567
IA10657 (SC630578145)	0.63000	0.60000	11.67259	11.98661	1	False	1.27807
IA10680 (SC717246368)	0.78500	0.79500	9.84323	9.70443	2	False	-0.62365
IA10702 (SC800954781)	0.58000	0.59000	12.19243	12.08982	1	False	-0.82517
IA10704 (SC800964236)	0.45000	0.41000	13.50265	13.91018	1	False	1.43769
IA10788 (SC814181163)	0.53000	0.58000	12.69892	12.19243	1	False	0.22865
IA10802 (SC815652038)	0.40250	0.44750	13.98753	13.52792	4	False	0.20814
IA10919 (SC906339928)	0.41000	0.45000	13.91018	13.50265	1	False	-0.05670
IA10920 (SC906340047)	0.49000	0.50500	13.10028	12.94987	2	False	-1.20262
IA10921 (SC906340140)	0.74000	0.74000	10.42662	10.42662	1	False	-0.04434
IA10922 (SC906340259)	0.78000	0.79000	9.91123	9.77432	1	False	-0.62537
IA10923 (SC906340744)	0.43667	0.47333	13.63770	13.26757	3	False	-0.28177
IA10931 (SC906631611)	0.53000	0.59000	12.69892	12.08982	1	False	0.72608
IA10936 (SC906662706)	0.72000	0.80000	10.66863	9.63352	1	False	2.46555
IA10941 (SC906953250)	0.31000	0.30000	14.98340	15.09760	1	False	-0.22203
IA10943 (SC906965456)	0.74000	0.77000	10.42662	10.04461	1	False	-0.73955
IA10958 (SC908950033)	0.78000	0.78000	9.91123	9.91123	1	False	0.03838
IA10980 (SC910170718)	0.59000	0.66000	12.08982	11.35015	1	False	1.26133
IA10983 (SC910436447)	0.50000	0.52000	13.00000	12.79939	1	False	-1.20592
IA11025 (SC913743446)	0.63000	0.61000	11.67259	11.88272	1	False	0.77442

Table 2.5.17  
Delta Analysis  
Science Grade 5

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA05192 (SC264893)	0.31000	0.27333	14.98340	15.41105	3	False	1.26844
IA05466 (SC628483066)	0.89000	0.87000	8.09389	8.49444	1	False	0.86704
IA05523 (SC718127878)	0.67000	0.67000	11.24035	11.24035	1	False	-1.50097
IA05526 (SC735264282)	0.86000	0.87000	8.67872	8.49444	1	False	-0.61377
IA05530 (SC735267831)	0.79000	0.82000	9.77432	9.33854	1	False	0.90289
IA05545 (SC735535118)	0.47000	0.49000	13.30108	13.10028	1	False	-0.66868
IA05560 (SC736074266)	0.78000	0.75000	9.91123	10.30204	1	False	0.86861
IA05562 (SC736074942)	0.63000	0.59500	11.67259	12.03830	2	False	0.77331
IA05628 (SC802729980)	0.63000	0.64000	11.67259	11.56616	1	False	-1.19653
IA05630 (SC802758131)	0.72000	0.70000	10.66863	10.90240	1	False	-0.07603
IA05631 (SC802758561)	0.56000	0.57000	12.39612	12.29450	1	False	-1.25077
IA05634 (SC802761427)	0.32000	0.30333	14.87080	15.05935	3	False	-0.21267
IA05657 (SC803732869)	0.39500	0.45000	14.06524	13.50265	2	False	1.54077
IA05661 (SC803837124)	0.67000	0.64000	11.24035	11.56616	1	False	0.51215
IA05662 (SC803844809)	0.65000	0.64000	11.45872	11.56616	2	False	-0.82968
IA05664 (SC803847645)	0.76000	0.77000	10.17479	10.04461	1	False	-0.99890
IA05678 (SC804048131)	0.88000	0.89000	8.30005	8.09389	1	False	-0.46573
IA05681 (SC804060300)	0.37000	0.40000	14.32741	14.01339	1	False	-0.00397
IA05688 (SC804141602)	0.84000	0.85000	9.02217	8.85427	1	False	-0.72667
IA05702 (SC806382697)	0.47000	0.53000	13.30108	12.69892	1	False	1.81116

Table 2.5.18  
Delta Analysis  
Science Grade 8

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA05243 (SC289702)	0.32000	0.36000	14.87080	14.43384	1	False	0.77898
IA05245 (SC290144)	0.53000	0.49000	12.69892	13.10028	1	False	0.74902
IA05499 (SC633066301)	0.91000	0.92000	7.63698	7.37971	1	False	1.83060
IA05522 (SC717662167)	0.50000	0.51000	13.00000	12.89972	1	False	-0.72940
IA05550 (SC735560046)	0.27000	0.28000	15.45125	15.33137	1	False	-1.33899
IA05551 (SC735569222)	0.52000	0.50000	12.79939	13.00000	1	False	-0.45254
IA05555 (SC735663104)	0.34000	0.36000	14.64985	14.43384	1	False	-0.51064
IA05581 (SC800285340)	0.41000	0.40000	13.91018	14.01339	1	False	-0.71933
IA05649 (SC803174786)	0.69000	0.65000	11.01660	11.45872	1	False	0.49815
IA05665 (SC803856876)	0.82000	0.78000	9.33854	9.91123	1	False	0.79947
IA05675 (SC803981496)	0.72000	0.67000	10.66863	11.24035	1	False	1.18955
IA05687 (SC804132888)	0.74000	0.73000	10.42662	10.54875	2	False	-1.32751
IA05690 (SC804367702)	0.44000	0.49000	13.60388	13.10028	1	False	1.56504
IA05693 (SC804372985)	0.67000	0.67500	11.24035	11.18495	2	False	-0.48075
IA05718 (SC807245653)	0.74000	0.73000	10.42662	10.54875	1	False	-1.32751
IA05720 (SC807247887)	0.57000	0.56000	12.29450	12.39612	1	False	-1.21017
IA05727 (SC809171062)	0.48000	0.46000	13.20061	13.40173	1	False	-0.32996
IA05729 (SC809178849)	0.35667	0.38000	14.46953	14.22192	3	False	-0.26314
IA05750 (SC814258458)	0.46667	0.42667	13.33461	13.73947	3	False	0.95981
IA05777 (SC816343670)	0.62000	0.64000	11.77808	11.56616	2	False	0.31930

# Section 2.6

## Tabled B/B Analysis Results

Table 2.6.1  
b/b Analysis  
Biology Grade 10

Item Id	Old b	New b	Std Dist	Flag
IA10582 (SC129438142)	0.06140	-0.31340	-0.26123	False
IA10635 (SC313409)	0.62070	0.13535	1.53706	False
IA10656 (SC630544518)	0.10580	-0.16050	-0.96443	False
IA10684 (SC723337422)	-1.26640	-1.43240	1.93552	False
IA10696 (SC800163004)	-0.65410	-1.05650	-0.86542	False
IA10747 (SC804071827)	0.02510	-0.34800	-0.33845	False
IA10808 (SC815940509)	1.29250	1.34420	-1.07316	False
IA10809 (SC815948686)	-0.04430	-0.29600	-0.86957	False
IA10810 (SC815948962)	0.76270	0.82350	-0.05947	False
IA10926 (SC906349045)	-0.15460	-0.40530	-0.66498	False
IA10927 (SC906351730)	-0.81160	-1.39860	-0.29274	False
IA10930 (SC906544336)	-0.35940	-1.07730	1.46069	False
IA10989 (SC910635381)	-0.50130	-1.29490	1.75282	False
IA10994 (SC910746953)	-0.30860	-0.44620	0.42644	False
IA10995 (SC910749140)	0.46570	0.20180	-0.33772	False
IA10998 (SC910752674)	0.90940	1.04620	0.22624	False
IA11005 (SC911354147)	0.15180	-0.13470	-0.73641	False
IA11014 (SC912353814)	-0.19020	-0.32340	0.24630	False
IA11031 (SC914149827)	0.48900	0.35410	-0.98136	False
IA11033 (SC914353987)	1.18850	1.15630	-0.71565	False
IA11042 (SC915956318)	-0.41720	-0.76480	-0.89405	False
IA11054 (SC921067241)	-0.33160	-0.33030	1.46954	False

Table 2.6.2  
b/b Analysis  
English Language Arts Grade 3

Item Id	Old b	New b	Std Dist	Flag
IA00279 (EL308822)	-1.18760	-0.87340	-0.55775	False
IA00280 (EL308824)	-0.45090	-0.33680	-0.18995	False
IA00281 (EL308826)	0.12140	0.38150	0.20141	False
IA00282 (EL308827)	-0.58060	-0.23860	0.51369	False
IA00283 (EL308835)	-0.21220	0.01710	-0.59857	False
IA00284 (EL308837)	-0.40770	-0.21030	-1.25578	False
IA00285 (EL308838)	-0.79560	-0.59680	-0.94841	False
IA00286 (EL308842)	0.68750	0.48310	2.84228	False
IA00287 (EL308855)	0.62903	0.87387	0.57357	False
IA00288 (EL308857)	0.95470	1.20053	0.95909	False
IA00443 (EL626042844)	-0.82100	-0.50270	-0.08327	False
IA00444 (EL626043062)	-0.47130	-0.24520	-0.93803	False
IA00445 (EL626043435)	-0.26400	-0.14830	-0.42518	False
IA00446 (EL626049849)	0.08860	0.23660	-1.26727	False
IA00450 (EL626050679)	-0.33230	-0.21730	-0.33765	False
IA00451 (EL626050927)	0.33820	0.30180	0.95599	False
IA00452 (EL626051097)	-0.36570	-0.08895	-0.12844	False
IA00453 (EL626051328)	-0.36360	-0.32110	0.68429	False

Table 2.6.3  
b/b Analysis  
English Language Arts Grade 4

Item Id	Old b	New b	Std Dist	Flag
IA00218 (EL307705)	-1.63480	-1.36810	0.01561	False
IA00219 (EL307709)	-1.30830	-0.75530	0.53035	False
IA00220 (EL307710)	0.36960	0.42110	1.42753	False
IA00221 (EL307713)	0.03850	0.33620	-1.46460	False
IA00222 (EL307714)	-1.38880	-0.81150	0.78469	False
IA00223 (EL307719)	0.04010	0.13280	1.12192	False
IA00224 (EL307724)	-0.83660	-0.56750	-0.53412	False
IA00225 (EL307728)	-0.01553	0.15157	0.21907	False
IA00226 (EL307729)	0.22513	0.77117	1.44036	False
IA00289 (EL309792)	-0.73060	-0.11490	1.69771	False
IA00407 (EL624647403)	0.69700	0.98800	-1.47171	False
IA00408 (EL624647580)	-0.61600	-0.15950	-0.23717	False
IA00411 (EL624652450)	-1.23730	-0.81050	-1.01637	False
IA00412 (EL624652621)	-1.94330	-1.66390	0.05607	False
IA00414 (EL624652989)	0.67400	0.90240	-1.00344	False
IA00415 (EL624653348)	-0.72190	-0.24810	-0.08772	False
IA00416 (EL624653492)	-1.29545	-0.98225	-0.79216	False
IA00419 (EL624654711)	-1.70685	-1.38085	-0.68600	False

Table 2.6.4  
b/b Analysis  
English Language Arts Grade 5

Item Id	Old b	New b	Std Dist	Flag
IA00495 (EL626304658)	-1.32450	-0.78860	1.24122	False
IA00497 (EL626304969)	-0.62920	-0.20410	0.97243	False
IA00500 (EL626332335)	-0.80010	-0.24030	2.46249	False
IA00501 (EL626332592)	-2.05630	-1.61000	-1.16952	False
IA00502 (EL626333002)	-1.55440	-1.21770	-0.58302	False
IA00505 (EL626355215)	-0.31660	-0.24020	0.73092	False
IA00506 (EL626355557)	-0.49820	-0.32940	-0.18018	False
IA00508 (EL626356291)	0.50945	0.52635	0.09440	False
IA00638 (EL627351056)	-0.31920	-0.21860	0.41474	False
IA01669 (EL711809263)	-1.14070	-0.88000	-0.28961	False
IA01670 (EL711809592)	-0.80730	-0.48550	-0.70357	False
IA01671 (EL711827203)	-2.00420	-1.68540	0.43006	False
IA01672 (EL711827807)	-1.34330	-1.00210	-1.00680	False
IA01679 (EL711868011)	-0.17220	0.08940	-0.40572	False
IA01680 (EL711900602)	-0.54940	-0.32200	-0.86835	False
IA01691 (EL712167015)	0.41820	0.54010	-1.13950	False

Table 2.6.5  
b/b Analysis  
English Language Arts Grade 6

Item Id	Old b	New b	Std Dist	Flag
IA00173 (EL303496)	-1.31980	-0.72360	-0.11057	False
IA00174 (EL303500)	-1.08450	-0.35410	1.11142	False
IA00175 (EL303504)	0.05690	0.09160	1.99640	False
IA00176 (EL303508)	-1.49590	-0.93120	1.56865	False
IA00177 (EL303510)	-2.47490	-1.37010	-0.39480	False
IA00178 (EL303513)	-0.95990	-0.37020	-0.77446	False
IA00179 (EL303514)	-0.18000	0.22420	0.53263	False
IA00180 (EL303518)	0.24010	0.46220	-0.31321	False
IA00515 (EL626864414)	-2.29240	-1.32600	-1.09959	False
IA00517 (EL626864724)	-1.18330	-0.61830	-0.36323	False
IA00518 (EL626865003)	-1.12900	-0.40060	0.79950	False
IA00520 (EL626865416)	1.51200	1.20810	-0.58371	False
IA00522 (EL626865773)	-0.95790	-0.30290	0.46945	False
IA00523 (EL626865942)	-0.94700	-0.39630	-1.43052	False
IA00528 (EL626867605)	-1.79435	-0.98285	-1.24707	False
IA00530 (EL626868748)	-1.56920	-0.88885	-0.16089	False

Table 2.6.6  
b/b Analysis  
English Language Arts Grade 7

Item Id	Old b	New b	Std Dist	Flag
IA00065 (EL292160)	-1.07830	-0.49410	0.28880	False
IA00066 (EL292163)	-0.81990	-0.03900	2.98005	False
IA00067 (EL292168)	0.24900	0.50380	-0.72789	False
IA00068 (EL292170)	-0.99950	-0.63780	0.08614	False
IA00069 (EL292172)	-0.55490	-0.35390	0.98455	False
IA00070 (EL292176)	-0.70340	-0.28570	-0.81208	False
IA00081 (EL293802)	-0.86670	-0.51780	-0.03542	False
IA00082 (EL293804)	-0.14160	0.17670	-0.79907	False
IA00257 (EL308358)	-1.85270	-1.22970	-0.81706	False
IA00258 (EL308360)	-1.79950	-1.17955	-0.74535	False
IA00262 (EL308382)	-0.75300	-0.38100	-0.51677	False
IA00265 (EL308389)	-2.79690	-1.95330	-0.24585	False
IA00269 (EL308397)	-2.38720	-1.63330	-0.42701	False
IA00655 (EL628647210)	-1.07690	-0.77780	0.93304	False
IA00657 (EL628647689)	-1.42330	-0.86010	-0.62796	False
IA00658 (EL628653398)	-1.70655	-1.25400	0.48189	False

Table 2.6.7  
b/b Analysis  
English Language Arts Grade 8

Item Id	Old b	New b	Std Dist	Flag
IA00056 (EL290795)	-1.91590	-1.38520	-0.38054	False
IA00057 (EL290798)	-1.97670	-1.35960	-0.76962	False
IA00058 (EL290799)	-0.71570	-0.44760	-0.45879	False
IA00059 (EL290800)	-0.49090	-0.35340	0.32782	False
IA00060 (EL290801)	-0.86570	-0.40120	0.19333	False
IA00061 (EL290805)	0.05680	0.06920	0.34393	False
IA00062 (EL290808)	0.15650	0.26900	-0.86242	False
IA00063 (EL290814)	0.77490	0.78060	-0.68233	False
IA00368 (EL623873883)	-0.91740	-0.58870	-0.60772	False
IA00371 (EL623951471)	-0.82355	-0.41210	-0.23527	False
IA00373 (EL623952377)	0.38275	0.39235	-0.35165	False
IA00374 (EL623952612)	-1.13630	-0.66400	-0.33024	False
IA00378 (EL623955555)	0.12560	-0.04470	1.98938	False
IA00379 (EL623955757)	0.03080	0.55220	2.74224	False
IA00383 (EL623959265)	-0.57360	-0.23020	-0.35047	False
IA00699 (EL632808123)	-1.31650	-0.82770	-0.56763	False

Table 2.6.8  
b/b Analysis  
English Language Arts Grade 10

Item Id	Old b	New b	Std Dist	Flag
IA04110 (EL807953958)	-0.35580	-0.29165	0.44458	False
IA04111 (EL807957225)	-1.82820	-1.41920	-0.09302	False
IA04132 (EL808046697)	-1.77250	-1.29180	0.66408	False
IA04260 (EL811034362)	-0.84350	-0.76340	0.63429	False
IA04297 (EL811428116)	-0.30010	0.01520	0.06400	False
IA04412 (EL813438114)	-0.96480	-0.30780	3.00601	False
IA04439 (EL816956706)	-0.58180	-0.35920	-0.97854	False
IA04440 (EL817235657)	-0.77145	-0.50895	-0.80170	False
IA06629 (EL811608986)	-2.73620	-2.35875	-0.98469	False
IA06631 (EL811610832)	-0.60130	-0.42735	-0.47793	False
IA06633 (EL811612272)	-0.44200	-0.20250	-0.79584	False
IA06635 (EL811612951)	-0.95050	-0.78150	-0.17835	False
IA06636 (EL811614524)	-1.35450	-1.19580	0.21399	False
IA06638 (EL811616340)	-0.21270	-0.04770	-0.66669	False
IA06641 (EL811617473)	-1.29180	-1.04460	-0.71617	False
IA06642 (EL811618006)	-1.34450	-1.23170	0.66597	False



Table 2.6.9  
b/b Analysis  
Mathematics Grade 3

Item Id	Old b	New b	Std Dist	Flag
IA00769 (MA203641)	-1.96785	-1.92040	0.13183	False
IA00799 (MA260559)	0.37165	0.38390	-1.03904	False
IA00834 (MA293457)	-1.02068	-0.93390	-1.39267	False
IA00838 (MA293524)	-0.96025	-0.96950	0.48479	False
IA00850 (MA297405)	-0.76843	-0.72590	-0.73934	False
IA00852 (MA297438)	-0.46005	-0.39330	-1.35136	False
IA00924 (MA306310)	1.06135	1.09990	-0.69949	False
IA00925 (MA306315)	-0.95483	-0.86560	-1.28871	False
IA00930 (MA306359)	-0.70412	-0.50150	1.25461	False
IA00932 (MA306375)	0.57731	0.70770	0.80323	False
IA00993 (MA310834)	-0.32025	-0.17550	0.37167	False
IA01019 (MA311277)	-0.90789	-0.88930	-0.13220	False
IA01071 (MA623063509)	-1.11798	-0.97640	-0.34069	False
IA01080 (MA623654449)	0.90717	0.79200	1.15619	False
IA01081 (MA623656013)	0.82747	0.75467	0.34651	False
IA02323 (MA301611A)	-1.67972	-1.67600	0.80060	False
IA04760 (MA713752330)	-1.50904	-1.32490	0.22047	False
IA04813 (MA735572247)	-1.02722	-0.76520	2.21840	False
IA04828 (MA735653938)	-0.13916	-0.17710	0.41097	False
IA04844 (MA735735757)	-0.20812	-0.14470	-1.21577	False

Table 2.6.10  
b/b Analysis  
Mathematics Grade 4

Item Id	Old b	New b	Std Dist	Flag
IA00789 (MA250543)	0.39264	0.32140	0.19720	False
IA00828 (MA287237)	-1.00453	-0.84530	0.63616	False
IA00841 (MA293718)	-0.20587	-0.28400	-0.93557	False
IA00861 (MA297629)	-1.98288	-1.72590	0.14776	False
IA00869 (MA297988)	1.43941	1.18430	-0.27173	False
IA00906 (MA301811)	-0.47012	-0.71660	0.89852	False
IA00958 (MA307055)	0.36789	0.07010	0.07476	False
IA00961 (MA307081)	0.25488	-0.19080	2.12184	False
IA00963 (MA307085)	-0.38578	-0.48250	-1.12181	False
IA01048 (MA311534)	0.20108	0.04570	-1.19000	False
IA01049 (MA311537)	-0.23132	-0.38380	-0.69460	False
IA01055 (MA311572)	-0.06492	-0.11410	-0.32705	False
IA01057 (MA311581)	-0.24249	-0.32923	-1.10722	False
IA01093 (MA623879088)	-0.89879	-0.73315	0.90123	False
IA02175 (MA286769)	-0.69178	-0.81270	-0.28408	False
IA02819 (MA713583365)	-0.57544	-0.50380	0.29114	False
IA02841 (MA713774890)	0.22164	0.00960	-0.74185	False
IA02902 (MA714251321)	0.53170	0.45370	0.35584	False
IA04661 (MA307327)	-0.66913	-0.99140	2.19433	False
IA04965 (MA800867144)	-0.33270	-0.43500	-1.14485	False

Table 2.6.11  
b/b Analysis  
Mathematics Grade 5

Item Id	Old b	New b	Std Dist	Flag
IA00771 (MA204911)	-1.18544	-1.14990	-0.26895	False
IA00776 (MA221207)	-0.77091	-0.71900	-0.28627	False
IA00803 (MA262207)	-0.71683	-0.79320	-0.30460	False
IA00806 (MA272292)	0.16842	0.30560	0.08547	False
IA00826 (MA287178)	-1.44487	-1.40520	-0.13547	False
IA00872 (MA298003)	-0.59493	-0.43800	0.54304	False
IA00880 (MA298106)	1.06174	1.11020	-0.69602	False
IA00885 (MA299556)	-0.52914	-0.55660	-0.65079	False
IA00936 (MA306420)	-0.83569	-1.42050	3.98800	False
IA00943 (MA306466)	0.09940	0.20500	-0.15781	False
IA00989 (MA307638)	-1.53346	-1.47740	0.03791	False
IA01020 (MA311280)	0.55217	0.60080	-0.81529	False
IA01029 (MA311337)	-1.65213	-1.64470	-0.33203	False
IA01032 (MA311366)	0.31569	0.37018	-0.67579	False
IA01149 (MA624347774)	0.28042	0.39840	-0.12074	False
IA01155 (MA624357395)	0.45272	0.34610	0.39637	False
IA02552 (MA311324)	0.92804	0.90200	-0.11108	False
IA02736 (MA704359678)	-0.12435	-0.01200	-0.01549	False
IA04970 (MA800974344)	-0.89563	-0.86460	-0.41717	False
IA05002 (MA801652356)	-0.15010	-0.22960	-0.06328	False

Table 2.6.12  
b/b Analysis  
Mathematics Grade 6

Item Id	Old b	New b	Std Dist	Flag
IA00777 (MA221667)	-1.39100	-1.45010	0.93006	False
IA00778 (MA221669)	-1.07161	-0.99080	-0.72912	False
IA00804 (MA264305)	-1.31464	-1.26100	-0.33555	False
IA00817 (MA280989)	0.33230	0.44460	-0.41010	False
IA00818 (MA282268)	0.87654	0.74490	0.83104	False
IA00819 (MA282277)	0.06705	0.27390	0.52148	False
IA00827 (MA287186)	-0.15051	-0.03900	-0.60911	False
IA00845 (MA296349)	0.18948	0.44960	1.15353	False
IA00881 (MA298139)	0.08142	0.20220	-0.41608	False
IA00899 (MA301508)	0.58200	0.64890	-0.80919	False
IA00972 (MA307339)	-1.13141	-1.05963	-0.60664	False
IA00992 (MA309941)	1.75926	1.80310	-0.59777	False
IA01058 (MA311658)	0.62836	0.46490	1.27760	False
IA02037 (MA217493)	-0.50899	-0.07170	2.81975	False
IA02597 (MA311693)	-1.09414	-0.95220	-0.64765	False
IA02698 (MA703179529)	1.52821	1.39440	0.59791	False
IA04745 (MA703231515)	-0.07723	-0.08855	-0.11151	False
IA04884 (MA736365836)	-0.87050	-0.76920	-1.00485	False
IA05126 (MA805103779)	-0.29546	-0.22020	-0.97429	False
IA05135 (MA805171807)	-0.41273	-0.34190	-0.87951	False

Table 2.6.13  
b/b Analysis  
Mathematics Grade 7

Item Id	Old b	New b	Std Dist	Flag
IA00796 (MA259267)	0.36479	0.38380	0.00009	False
IA00831 (MA288414)	-0.57561	-0.55170	1.87147	False
IA00847 (MA296358)	-0.27118	-0.06520	0.03125	False
IA00909 (MA301846)	-1.70161	-1.36350	0.11234	False
IA00910 (MA301854)	0.35704	0.49630	-0.20844	False
IA00945 (MA306538)	-0.96347	-0.77320	-1.21566	False
IA00948 (MA306600)	-1.33959	-1.01400	0.58306	False
IA00949 (MA306605)	-0.15288	-0.02730	-1.40887	False
IA01006 (MA311093)	-1.70269	-1.49980	0.04948	False
IA01011 (MA311109)	0.77310	0.68930	1.55176	False
IA01016 (MA311125)	0.24681	0.31730	-0.95954	False
IA01017 (MA311135)	-0.80092	-0.66110	-0.37437	False
IA01018 (MA311140)	0.28610	0.27290	0.92266	False
IA01069 (MA316886)	-0.13840	0.01365	-0.95464	False
IA01097 (MA623950280)	0.44499	0.47540	-0.43702	False
IA01108 (MA624149677)	0.28427	0.43955	0.01403	False
IA02722 (MA703943185)	-0.10107	0.04570	-0.99977	False
IA04486 (MA227988)	-0.64182	-0.41750	-0.32101	False
IA04538 (MA282218)	-0.88898	-0.64870	-0.46833	False
IA04593 (MA298192)	1.06123	1.24020	2.21152	False

Table 2.6.14  
b/b Analysis  
Mathematics Grade 8

Item Id	Old b	New b	Std Dist	Flag
IA00849 (MA296757)	-0.67172	-0.42370	-0.64723	False
IA00858 (MA297513)	-0.92047	-0.80400	-0.18698	False
IA00864 (MA297652)	-0.93695	-0.67328	-0.69607	False
IA00865 (MA297656)	0.18595	0.02110	1.49715	False
IA00903 (MA301674)	-0.84896	-0.74230	-0.15130	False
IA00905 (MA301702)	0.35314	0.40760	-0.53651	False
IA00979 (MA307472)	-0.29387	0.13240	1.17505	False
IA00985 (MA307570)	0.46466	0.52340	-0.65198	False
IA01033 (MA311384)	-0.03049	0.16520	-0.65574	False
IA01037 (MA311414)	0.15802	0.31440	-0.86734	False
IA01042 (MA311448)	-0.10728	0.32520	1.35992	False
IA01044 (MA311463)	-0.73317	-0.47920	-0.63825	False
IA01066 (MA314812)	-0.36007	-0.13078	-0.59274	False
IA01125 (MA624247061)	0.18351	0.37075	-0.57980	False
IA02495 (MA309741)	0.02810	0.43390	1.22151	False
IA04665 (MA307399)	0.45471	0.61020	-0.66745	False
IA04678 (MA309738)	0.86892	1.00240	-0.56987	False
IA05057 (MA803856437)	-1.25271	-1.15710	0.22788	False
IA05059 (MA803856627)	-0.77502	-0.61670	-0.65453	False
IA05070 (MA804042487)	1.04291	0.68160	2.61427	False

Table 2.6.15  
b/b Analysis  
Mathematics Grade 10

Item Id	Old b	New b	Std Dist	Flag
IA04800 (MA717740737)	0.30217	0.31440	0.39151	False
IA04810 (MA735534256)	0.81211	0.95725	-0.29925	False
IA04819 (MA735579095)	-0.41188	-0.23220	-0.93395	False
IA04824 (MA735632759)	0.28275	0.46830	-0.75826	False
IA04842 (MA735734830)	0.91616	1.02740	-0.03789	False
IA04846 (MA735743236)	-1.30768	-1.19080	-0.88412	False
IA04847 (MA735745569)	0.61826	1.09090	0.62278	False
IA04871 (MA736059227)	0.15503	0.34570	-0.83848	False
IA04913 (MA800433428)	1.03795	1.16220	-0.07936	False
IA04991 (MA801426792)	1.00858	0.99870	0.79428	False
IA04993 (MA801434971)	1.32106	1.23460	1.41286	False
IA04997 (MA801564574)	0.18751	0.57035	0.18743	False
IA05048 (MA803762212)	0.20803	0.40750	-0.87722	False
IA05096 (MA804566054)	-0.37784	-0.34700	0.02142	False
IA05117 (MA804678931)	0.73352	1.05800	-0.39598	False
IA05144 (MA805372590)	0.94140	1.85650	3.42238	False
IA05145 (MA805373539)	0.77425	1.10570	-0.36484	False
IA05147 (MA805376549)	-1.92328	-1.67870	0.04380	False
IA05155 (MA806051920)	0.86285	1.10640	-0.92962	False
IA05165 (MA806383722)	-0.01714	0.08215	-0.29865	False
IA05170 (MA806408603)	0.00606	0.32030	-0.19884	False

Table 2.6.16  
b/b Analysis  
Introductory Physics Grade 10

Item Id	Old b	New b	Std Dist	Flag
IA03500 (SC717283221)	-0.54675	-0.78625	-0.61381	False
IA05503 (SC701073429)	0.20670	-0.07780	-0.91590	False
IA05859 (SC800552298)	-0.16430	-0.48080	-0.90003	False
IA10657 (SC630578145)	-0.24570	-0.41990	-0.20947	False
IA10680 (SC717246368)	-1.29390	-1.56340	-0.30297	False
IA10702 (SC800954781)	0.14390	-0.14280	-0.94523	False
IA10704 (SC800964236)	0.47510	0.63260	2.50379	False
IA10788 (SC814181163)	0.33380	-0.05300	0.20589	False
IA10802 (SC815652038)	0.64207	0.24378	0.57173	False
IA10919 (SC906339928)	0.72320	0.38820	0.00797	False
IA10920 (SC906340047)	0.25990	0.01545	-1.27110	False
IA10921 (SC906340140)	-0.32570	-0.35180	1.32972	False
IA10922 (SC906340259)	-0.98510	-1.28300	-0.83749	False
IA10923 (SC906340744)	0.42153	0.12790	-0.64981	False
IA10931 (SC906631611)	0.36280	-0.08540	0.84062	False
IA10936 (SC906662706)	-0.58990	-1.24470	2.11970	False
IA10941 (SC906953250)	1.09300	1.10020	0.50397	False
IA10943 (SC906965456)	-0.36730	-0.78350	-0.07336	False
IA10958 (SC908950033)	-0.92500	-1.13220	0.01617	False
IA10980 (SC910170718)	0.13340	-0.18500	-0.63831	False
IA10983 (SC910436447)	0.49770	0.23990	-0.94428	False
IA11025 (SC913743446)	-0.44660	-0.59590	0.20220	False

Table 2.6.17  
b/b Analysis  
Science Grade 5

Item Id	Old b	New b	Std Dist	Flag
IA05192 (SC264893)	0.79927	1.15280	1.51265	False
IA05466 (SC628483066)	-2.22893	-1.63780	0.44487	False
IA05523 (SC718127878)	-0.39351	-0.27210	-0.95141	False
IA05526 (SC735264282)	-2.09984	-1.72300	-1.42885	False
IA05530 (SC735267831)	-1.47629	-1.59280	2.46562	False
IA05545 (SC735535118)	0.27843	0.21360	0.06680	False
IA05560 (SC736074266)	-1.19534	-0.69090	0.75676	False
IA05562 (SC736074942)	-0.73855	-0.34445	0.21749	False
IA05628 (SC802729980)	-0.73736	-0.56300	-1.07431	False
IA05630 (SC802758131)	-0.75867	-0.33460	0.47729	False
IA05631 (SC802758561)	-0.52690	-0.45120	-0.37629	False
IA05634 (SC802761427)	0.93466	1.12393	0.11614	False
IA05657 (SC803732869)	0.55763	0.34700	1.13302	False
IA05661 (SC803837124)	-1.01072	-0.63060	-0.21065	False
IA05662 (SC803844809)	-0.93155	-0.63290	-0.89020	False
IA05664 (SC803847645)	-1.21143	-1.12220	0.24280	False
IA05678 (SC804048131)	-2.51521	-2.04410	-0.99549	False
IA05681 (SC804060300)	1.17115	1.07810	-0.64116	False
IA05688 (SC804141602)	-1.75067	-1.43900	-1.26038	False
IA05702 (SC806382697)	0.48628	0.36240	0.39531	False

Table 2.6.18  
b/b Analysis  
Science Grade 8

Item Id	Old b	New b	Std Dist	Flag
IA05243 (SC289702)	1.36616	1.42440	-0.92952	False
IA05245 (SC290144)	0.42343	0.99150	2.58405	False
IA05499 (SC633066301)	-1.78899	-1.78670	1.35047	False
IA05522 (SC717662167)	-0.17244	0.01360	-1.03338	False
IA05550 (SC735560046)	0.74179	0.91140	-0.65278	False
IA05551 (SC735569222)	-0.04589	0.17220	-0.68622	False
IA05555 (SC735663104)	1.67091	1.42880	1.47337	False
IA05581 (SC800285340)	0.48953	0.81030	0.50014	False
IA05649 (SC803174786)	-1.30133	-0.85720	0.53679	False
IA05665 (SC803856876)	-2.25255	-1.83570	-0.23991	False
IA05675 (SC803981496)	-0.86584	-0.57110	-0.49640	False
IA05687 (SC804132888)	-1.37550	-1.04860	-0.51126	False
IA05690 (SC804367702)	0.26849	0.22090	0.60463	False
IA05693 (SC804372985)	-1.21265	-1.10135	0.08646	False
IA05718 (SC807245653)	-1.10093	-0.88150	-0.90494	False
IA05720 (SC807247887)	-0.46650	-0.27420	-1.03412	False
IA05727 (SC809171062)	-0.00859	0.15060	-1.01130	False
IA05729 (SC809178849)	0.65243	0.54427	0.90526	False
IA05750 (SC814258458)	0.02174	0.31520	-0.00103	False
IA05777 (SC816343670)	-0.79702	-0.64030	-0.54032	False

# Section 2.7

## Tabled Beta Analysis Results

Table 2.7.1  
Beta Analysis  
Biology Grade 10

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA10582 (SC129438142)	3	1.05000	1.13000	ON13	ON14	0.01612	False
IA10635 (SC313409)	5	1.61000	1.90000	ON04	ON03	0.04740	False
IA10656 (SC630544518)	2	0.60000	0.63000	ON04	ON06	0.00987	False
IA10684 (SC723337422)	2	0.81000	0.78000	ON10	ON06	-0.05091	True
IA10696 (SC800163004)	2	0.79000	0.81000	ON12	ON11	-0.00209	False
IA10747 (SC804071827)	3	1.08000	1.20000	ON03	ON15	0.01730	False
IA10808 (SC815940509)	2	0.43000	0.41000	ON11	ON08	-0.02482	False
IA10809 (SC815948686)	2	0.58000	0.62000	ON04	ON10	0.01922	False
IA10810 (SC815948962)	2	0.40000	0.38000	ON03	ON02	-0.02850	False
IA10926 (SC906349045)	3	1.15000	1.16000	ON13	ON04	-0.01710	False
IA10927 (SC906351730)	2	0.78000	0.83000	ON02	ON05	0.02860	False
IA10930 (SC906544336)	2	0.64000	0.69000	ON06	ON13	0.04668	False
IA10989 (SC910635381)	2	0.67000	0.79000	ON04	ON08	0.10074	True
IA10994 (SC910746953)	2	0.70000	0.69000	ON13	ON14	-0.02909	False
IA10995 (SC910749140)	2	0.42000	0.45000	ON12	ON14	0.00465	False
IA10998 (SC910752674)	4	0.91000	0.82000	ON12	ON14	-0.03641	False
IA11005 (SC911354147)	2	0.50000	0.54000	ON07	ON02	0.00145	False
IA11014 (SC912353814)	2	0.71000	0.70000	ON04	ON12	-0.04471	False
IA11031 (SC914149827)	2	0.57000	0.58000	ON11	ON10	-0.00826	False
IA11033 (SC914353987)	2	0.36000	0.32000	ON07	ON03	-0.05177	True
IA11042 (SC915956318)	2	0.65000	0.68000	ON12	ON07	-0.00419	False
IA11054 (SC921067241)	2	0.63000	0.59000	ON13	ON14	-0.05887	True

Table 2.7.2  
Beta Analysis  
English Language Arts Grade 3

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00279 (EL308822)	2	0.78000	0.78000	ON03	ON03	0.00181	False
IA00280 (EL308824)	2	0.66000	0.66000	ON03	ON03	0.01213	False
IA00281 (EL308826)	2	0.59000	0.56000	ON03	ON03	-0.02565	False
IA00282 (EL308827)	2	0.65000	0.61000	ON03	ON03	-0.03644	False
IA00283 (EL308835)	2	0.57000	0.57000	ON03	ON03	0.00748	False
IA00284 (EL308837)	2	0.66000	0.66000	ON03	ON03	0.00326	False
IA00285 (EL308838)	2	0.77000	0.77000	ON03	ON03	0.00105	False
IA00286 (EL308842)	2	0.41000	0.49000	ON03	ON03	0.09562	True
IA00287 (EL308855)	4	1.12000	1.00000	ON03	ON03	-0.02951	False
IA00288 (EL308857)	4	0.96000	0.88000	ON03	ON03	-0.01706	False
IA00443 (EL626042844)	2	0.66000	0.65000	ON04	ON04	-0.00156	False
IA00444 (EL626043062)	2	0.67000	0.67000	ON04	ON04	0.00933	False
IA00445 (EL626043435)	3	1.03000	1.05000	ON04	ON04	0.02025	False
IA00446 (EL626049849)	2	0.53000	0.51000	ON04	ON04	-0.01027	False
IA00450 (EL626050679)	2	0.67000	0.66000	ON04	ON04	0.00993	False
IA00451 (EL626050927)	2	0.51000	0.54000	ON04	ON04	0.03056	False
IA00452 (EL626051097)	3	1.10000	1.04000	ON04	ON04	-0.01435	False
IA00453 (EL626051328)	2	0.64000	0.65000	ON04	ON04	0.02038	False



Table 2.7.3  
Beta Analysis  
English Language Arts Grade 4

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00218 (EL307705)	2	0.81000	0.83000	ON03	ON03	0.01254	False
IA00219 (EL307709)	2	0.77000	0.76000	ON03	ON03	-0.01018	False
IA00220 (EL307710)	2	0.43000	0.48000	ON03	ON03	0.04259	False
IA00221 (EL307713)	2	0.52000	0.53000	ON03	ON03	0.00436	False
IA00222 (EL307714)	2	0.76000	0.75000	ON03	ON03	-0.00578	False
IA00223 (EL307719)	2	0.56000	0.59000	ON03	ON03	0.01970	False
IA00224 (EL307724)	2	0.75000	0.73000	ON03	ON03	-0.01615	False
IA00225 (EL307728)	4	1.36000	1.44000	ON03	ON03	0.01917	False
IA00226 (EL307729)	4	1.25000	1.24000	ON03	ON03	-0.01178	False
IA00289 (EL309792)	2	0.64000	0.58000	ON03	ON03	-0.05748	True
IA00407 (EL624647403)	2	0.41000	0.42000	ON04	ON04	-0.00533	False
IA00408 (EL624647580)	2	0.58000	0.57000	ON04	ON04	-0.01509	False
IA00411 (EL624652450)	2	0.78000	0.76000	ON04	ON04	-0.02399	False
IA00412 (EL624652621)	2	0.90000	0.91000	ON04	ON04	0.01028	False
IA00414 (EL624652989)	2	0.43000	0.43000	ON04	ON04	-0.00387	False
IA00415 (EL624653348)	2	0.67000	0.67000	ON04	ON04	-0.01364	False
IA00416 (EL624653492)	3	1.44000	1.46000	ON04	ON04	0.00631	False
IA00419 (EL624654711)	3	1.60000	1.61000	ON04	ON04	0.00563	False

Table 2.7.4  
Beta Analysis  
English Language Arts Grade 5

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00495 (EL626304658)	2	0.75000	0.75000	ON03	ON03	-0.01253	False
IA00497 (EL626304969)	2	0.73000	0.72000	ON03	ON03	-0.01012	False
IA00500 (EL626332335)	2	0.66000	0.66000	ON03	ON03	-0.00490	False
IA00501 (EL626332592)	2	0.84000	0.84000	ON03	ON03	-0.00450	False
IA00502 (EL626333002)	2	0.82000	0.83000	ON03	ON03	0.00188	False
IA00505 (EL626355215)	2	0.60000	0.62000	ON03	ON03	0.01512	False
IA00506 (EL626355557)	2	0.64000	0.67000	ON03	ON03	0.01867	False
IA00508 (EL626356291)	3	0.73000	0.78000	ON03	ON03	0.01949	False
IA00638 (EL627351056)	2	0.66000	0.68000	ON03	ON03	0.01137	False
IA01669 (EL711809263)	2	0.76000	0.77000	ON04	ON04	0.00565	False
IA01670 (EL711809592)	2	0.76000	0.75000	ON04	ON04	-0.01361	False
IA01671 (EL711827203)	2	0.90000	0.90000	ON04	ON04	0.00270	False
IA01672 (EL711827807)	2	0.73000	0.72000	ON04	ON04	-0.01497	False
IA01679 (EL711868011)	3	0.99000	0.97000	ON04	ON04	-0.01713	False
IA01680 (EL711900602)	2	0.70000	0.69000	ON04	ON04	-0.01796	False
IA01691 (EL712167015)	2	0.46000	0.49000	ON04	ON04	0.02173	False

Table 2.7.5  
Beta Analysis  
English Language Arts Grade 6

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00173 (EL303496)	2	0.74000	0.75000	ON04	ON04	0.00197	False
IA00174 (EL303500)	2	0.64000	0.63000	ON04	ON04	-0.00988	False
IA00175 (EL303504)	2	0.61000	0.63000	ON04	ON04	0.03108	False
IA00176 (EL303508)	2	0.71000	0.73000	ON04	ON04	0.02470	False
IA00177 (EL303510)	2	0.87000	0.87000	ON04	ON04	-0.00571	False
IA00178 (EL303513)	2	0.66000	0.66000	ON04	ON04	-0.00245	False
IA00179 (EL303514)	2	0.63000	0.60000	ON04	ON04	-0.03293	False
IA00180 (EL303518)	2	0.57000	0.53000	ON04	ON04	-0.04121	False
IA00515 (EL626864414)	2	0.83000	0.82000	ON03	ON03	0.00010	False
IA00517 (EL626864724)	2	0.69000	0.71000	ON03	ON03	0.03048	False
IA00518 (EL626865003)	2	0.67000	0.67000	ON03	ON03	-0.00034	False
IA00520 (EL626865416)	2	0.41000	0.42000	ON03	ON03	0.00940	False
IA00522 (EL626865773)	2	0.72000	0.70000	ON03	ON03	-0.01567	False
IA00523 (EL626865942)	2	0.64000	0.64000	ON03	ON03	0.00973	False
IA00528 (EL626867605)	3	1.54000	1.52000	ON03	ON03	-0.00381	False
IA00530 (EL626868748)	3	1.41000	1.41000	ON03	ON03	0.00486	False

Table 2.7.6  
Beta Analysis  
English Language Arts Grade 7

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00065 (EL292160)	2	0.73000	0.72051	ON04	ON04	-0.02028	False
IA00066 (EL292163)	2	0.65000	0.62829	ON04	ON04	-0.03191	False
IA00067 (EL292168)	2	0.50000	0.48588	ON04	ON04	-0.00818	False
IA00068 (EL292170)	2	0.71000	0.71518	ON04	ON04	0.00436	False
IA00069 (EL292172)	2	0.62000	0.65699	ON04	ON04	0.03377	False
IA00070 (EL292176)	2	0.62000	0.60853	ON04	ON04	-0.01409	False
IA00081 (EL293802)	2	0.68000	0.70373	ON04	ON04	0.02489	False
IA00082 (EL293804)	2	0.54000	0.56885	ON04	ON04	0.02950	False
IA00257 (EL308358)	2	0.85000	0.84836	ON03	ON03	-0.00959	False
IA00258 (EL308360)	3	1.51000	1.51705	ON03	ON03	-0.00391	False
IA00262 (EL308382)	2	0.65000	0.65515	ON03	ON03	0.00053	False
IA00265 (EL308389)	2	0.90000	0.89974	ON03	ON03	-0.00639	False
IA00269 (EL308397)	2	0.84000	0.82967	ON03	ON03	-0.01947	False
IA00655 (EL628647210)	2	0.72000	0.74311	ON03	ON03	0.01708	False
IA00657 (EL628647689)	2	0.77000	0.77721	ON03	ON03	-0.00660	False
IA00658 (EL628653398)	3	1.48000	1.52639	ON03	ON03	0.01185	False

Table 2.7.7  
 Beta Analysis  
 English Language Arts Grade 8

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00056 (EL290795)	2	0.77000	0.79000	ON04	ON04	0.03591	False
IA00057 (EL290798)	2	0.78000	0.79000	ON04	ON04	0.01306	False
IA00058 (EL290799)	2	0.75000	0.76000	ON04	ON04	0.01272	False
IA00059 (EL290800)	2	0.67000	0.67000	ON04	ON04	0.00331	False
IA00060 (EL290801)	2	0.77000	0.76000	ON04	ON04	-0.01902	False
IA00061 (EL290805)	2	0.56000	0.56000	ON04	ON04	0.00570	False
IA00062 (EL290808)	2	0.54000	0.55000	ON04	ON04	0.00728	False
IA00063 (EL290814)	2	0.44000	0.40000	ON04	ON04	-0.05278	True
IA00368 (EL623873883)	2	0.72000	0.73000	ON03	ON03	0.01526	False
IA00371 (EL623951471)	3	1.21000	1.18000	ON03	ON03	-0.01466	False
IA00373 (EL623952377)	3	0.84000	0.85000	ON03	ON03	0.00548	False
IA00374 (EL623952612)	2	0.73000	0.72000	ON03	ON03	-0.01059	False
IA00378 (EL623955555)	2	0.51000	0.55000	ON03	ON03	0.03766	False
IA00379 (EL623955757)	2	0.54000	0.52000	ON03	ON03	-0.02420	False
IA00383 (EL623959265)	2	0.65000	0.64000	ON03	ON03	-0.00713	False
IA00699 (EL632808123)	2	0.77000	0.77000	ON03	ON03	0.00064	False

Table 2.7.8  
Beta Analysis  
English Language Arts Grade 10

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA04110 (EL807953958)	3	1.08000	1.15000	ON01	ON03	0.02899	False
IA04111 (EL807957225)	2	0.79000	0.77000	ON01	ON03	-0.02209	False
IA04132 (EL808046697)	2	0.88000	0.87000	ON01	ON03	-0.00940	False
IA04260 (EL811034362)	2	0.73000	0.72000	ON01	ON04	-0.00597	False
IA04297 (EL811428116)	2	0.61000	0.58000	ON01	ON04	-0.04111	False
IA04412 (EL813438114)	2	0.74000	0.72000	ON01	ON03	-0.02356	False
IA04439 (EL816956706)	2	0.67000	0.67000	ON01	ON04	-0.00296	False
IA04440 (EL817235657)	3	1.27000	1.26000	ON01	ON04	-0.01390	False
IA06629 (EL811608986)	3	1.50000	1.53000	ON01	ON03	0.01602	False
IA06631 (EL811610832)	3	1.18000	1.22000	ON01	ON03	0.01683	False
IA06633 (EL811612272)	2	0.60000	0.60000	ON01	ON03	-0.00866	False
IA06635 (EL811612951)	2	0.80000	0.79000	ON01	ON03	-0.00647	False
IA06636 (EL811614524)	2	0.82000	0.82000	ON01	ON03	-0.00380	False
IA06638 (EL811616340)	2	0.62000	0.64000	ON01	ON03	0.01187	False
IA06641 (EL811617473)	2	0.78000	0.79000	ON01	ON03	0.01343	False
IA06642 (EL811618006)	2	0.82000	0.82000	ON01	ON03	0.00337	False

Table 2.7.9  
Beta Analysis  
Mathematics Grade 3

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00769 (MA203641)	2	0.83000	0.88000	ON19	ON19	0.03796	False
IA00799 (MA260559)	2	0.49000	0.49000	ON05	ON05	-0.00792	False
IA00834 (MA293457)	2	0.79000	0.81000	ON03	ON03	-0.01471	False
IA00838 (MA293524)	2	0.74000	0.77000	ON07	ON07	0.01914	False
IA00850 (MA297405)	2	0.69000	0.71000	ON09	ON09	0.01376	False
IA00852 (MA297438)	2	0.63000	0.65000	ON06	ON06	0.00331	False
IA00924 (MA306310)	2	0.46000	0.48000	ON14	ON14	0.01234	False
IA00925 (MA306315)	2	0.75000	0.79000	ON02	ON02	0.02920	False
IA00930 (MA306359)	2	0.66000	0.64000	ON04	ON04	-0.04767	False
IA00932 (MA306375)	2	0.48000	0.49000	ON13	ON13	0.00173	False
IA00993 (MA310834)	2	0.63000	0.62000	ON18	ON18	-0.03100	False
IA01019 (MA311277)	2	0.74000	0.74000	ON17	ON17	-0.00705	False
IA01071 (MA623063509)	2	0.73000	0.72000	ON16	ON16	-0.01847	False
IA01080 (MA623654449)	4	0.95000	0.98000	ON21	ON21	0.00039	False
IA01081 (MA623656013)	4	0.86000	0.96000	ON08	ON08	0.00980	False
IA02323 (MA301611A)	2	0.83000	0.87000	ON15	ON15	0.01100	False
IA04760 (MA713752330)	2	0.77000	0.80000	ON11	ON11	0.01359	False
IA04813 (MA735572247)	2	0.72000	0.69000	ON12	ON12	-0.03889	False
IA04828 (MA735653938)	2	0.51000	0.57000	ON10	ON10	0.02588	False
IA04844 (MA735735757)	2	0.62000	0.61000	ON20	ON20	-0.02290	False

Table 2.7.10  
Beta Analysis  
Mathematics Grade 4

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00789 (MA250543)	5	1.66000	1.71000	ON20	ON20	-0.00600	False
IA00828 (MA287237)	2	0.76000	0.79000	ON06	ON06	0.00209	False
IA00841 (MA293718)	2	0.71000	0.73000	ON08	ON08	0.00094	False
IA00861 (MA297629)	2	0.89000	0.90000	ON21	ON21	-0.00679	False
IA00869 (MA297988)	2	0.18000	0.21000	ON16	ON16	0.00972	False
IA00906 (MA301811)	2	0.73000	0.72000	ON09	ON09	-0.02302	False
IA00958 (MA307055)	2	0.46000	0.51000	ON10	ON10	0.02794	False
IA00961 (MA307081)	2	0.53000	0.61000	ON13	ON13	0.06627	True
IA00963 (MA307085)	2	0.67000	0.70000	ON15	ON15	0.00835	False
IA01048 (MA311534)	2	0.54000	0.56000	ON12	ON12	-0.00296	False
IA01049 (MA311537)	2	0.66000	0.67000	ON18	ON18	0.00484	False
IA01055 (MA311572)	2	0.52000	0.55000	ON19	ON19	-0.01331	False
IA01057 (MA311581)	5	2.21000	2.23000	ON11	ON11	0.00099	False
IA01093 (MA623879088)	3	1.46000	1.39000	ON14	ON14	-0.06007	True
IA02175 (MA286769)	2	0.75000	0.78000	ON03	ON03	0.01259	False
IA02819 (MA713583365)	2	0.61000	0.59000	ON17	ON17	-0.03460	False
IA02841 (MA713774890)	2	0.44000	0.50000	ON05	ON05	0.03494	False
IA02902 (MA714251321)	2	0.39000	0.41000	ON04	ON04	-0.00018	False
IA04661 (MA307327)	2	0.74000	0.79000	ON07	ON07	0.02060	False
IA04965 (MA800867144)	2	0.58000	0.62000	ON02	ON02	0.01522	False



Table 2.7.11  
Beta Analysis  
Mathematics Grade 5

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00771 (MA204911)	2	0.73000	0.75000	ON08	ON08	0.00127	False
IA00776 (MA221207)	2	0.66000	0.69000	ON20	ON20	-0.00314	False
IA00803 (MA262207)	2	0.72000	0.75000	ON05	ON05	0.00079	False
IA00806 (MA272292)	2	0.47000	0.47000	ON23	ON23	-0.02252	False
IA00826 (MA287178)	2	0.85000	0.86000	ON06	ON06	-0.01229	False
IA00872 (MA298003)	2	0.63000	0.66000	ON07	ON07	0.00290	False
IA00880 (MA298106)	2	0.21000	0.24000	ON04	ON04	-0.00626	False
IA00885 (MA299556)	2	0.68000	0.73000	ON18	ON18	0.01118	False
IA00936 (MA306420)	2	0.69000	0.82000	ON09	ON09	0.09850	True
IA00943 (MA306466)	2	0.62000	0.64000	ON11	ON11	-0.00584	False
IA00989 (MA307638)	2	0.86000	0.87000	ON12	ON12	-0.00494	False
IA01020 (MA311280)	2	0.43000	0.43000	ON13	ON13	-0.02726	False
IA01029 (MA311337)	2	0.83000	0.86000	ON17	ON17	0.00483	False
IA01032 (MA311366)	5	1.54000	1.64000	ON19	ON19	-0.00854	False
IA01149 (MA624347774)	2	0.41000	0.42000	ON16	ON16	-0.01537	False
IA01155 (MA624357395)	3	0.70000	0.83000	ON03	ON03	0.02620	False
IA02552 (MA311324)	2	0.38000	0.44000	ON14	ON14	0.03076	False
IA02736 (MA704359678)	5	1.94000	1.99000	ON02	ON02	-0.02408	False
IA04970 (MA800974344)	2	0.70000	0.73000	ON10	ON10	0.00232	False
IA05002 (MA801652356)	2	0.60000	0.58000	ON19	ON15	0.03161	False

Table 2.7.12  
Beta Analysis  
Mathematics Grade 6

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00777 (MA221667)	2	0.85000	0.84000	ON10	ON10	-0.01390	False
IA00778 (MA221669)	2	0.80000	0.79000	ON11	ON11	-0.00538	False
IA00804 (MA264305)	2	0.74000	0.75000	ON17	ON17	-0.00487	False
IA00817 (MA280989)	2	0.47000	0.49000	ON14	ON14	0.00970	False
IA00818 (MA282268)	2	0.40000	0.41000	ON05	ON05	0.00829	False
IA00819 (MA282277)	2	0.47000	0.44000	ON03	ON03	-0.02477	False
IA00827 (MA287186)	2	0.56000	0.55000	ON09	ON09	-0.01653	False
IA00845 (MA296349)	2	0.56000	0.53000	ON16	ON16	-0.01955	False
IA00881 (MA298139)	5	1.80000	1.79000	ON03	ON03	-0.00455	False
IA00899 (MA301508)	2	0.33000	0.35000	ON06	ON06	0.00756	False
IA00972 (MA307339)	5	2.96000	2.92000	ON02	ON02	-0.00705	False
IA00992 (MA309941)	2	0.41000	0.40000	ON02	ON02	-0.00518	False
IA01058 (MA311658)	2	0.42000	0.46000	ON13	ON13	0.04330	False
IA02037 (MA217493)	2	0.66000	0.63000	ON03	ON03	-0.02956	False
IA02597 (MA311693)	2	0.78000	0.77000	ON04	ON04	0.00179	False
IA02698 (MA703179529)	2	0.28000	0.24000	06	ON15	0.02843	False
IA04745 (MA703231515)	3	1.00000	1.05000	ON03	ON03	0.02932	False
IA04884 (MA736365836)	2	0.68000	0.68000	ON12	ON12	0.00331	False
IA05126 (MA805103779)	2	0.55000	0.56000	ON07	ON07	0.01207	False
IA05135 (MA805171807)	2	0.58000	0.58000	ON08	ON08	0.01130	False

Table 2.7.13  
Beta Analysis  
Mathematics Grade 7

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00796 (MA259267)	2	0.44000	0.45000	ON08	ON08	0.00721	False
IA00831 (MA288414)	2	0.72000	0.73000	ON18	ON18	0.00873	False
IA00847 (MA296358)	2	0.53000	0.53000	ON17	ON17	-0.01687	False
IA00909 (MA301846)	2	0.87000	0.87000	ON13	ON13	0.00272	False
IA00910 (MA301854)	2	0.35000	0.35000	ON07	ON07	-0.01418	False
IA00945 (MA306538)	2	0.69000	0.71000	ON21	ON21	0.02100	False
IA00948 (MA306600)	2	0.84000	0.85000	ON11	ON11	0.00366	False
IA00949 (MA306605)	2	0.49000	0.50000	ON05	ON05	0.00588	False
IA01006 (MA311093)	2	0.85000	0.86000	ON20	ON20	0.00979	False
IA01011 (MA311109)	2	0.39000	0.41000	ON12	ON12	0.01785	False
IA01016 (MA311125)	2	0.55000	0.59000	ON19	ON19	0.02234	False
IA01017 (MA311135)	2	0.75000	0.73000	ON14	ON14	-0.01428	False
IA01018 (MA311140)	2	0.37000	0.42000	ON10	ON10	0.03499	False
IA01069 (MA316886)	5	2.03000	2.07000	ON03	ON03	-0.00073	False
IA01097 (MA623950280)	2	0.32000	0.35000	ON06	ON06	0.01919	False
IA01108 (MA624149677)	3	0.77000	0.77000	ON04	ON04	-0.01757	False
IA02722 (MA703943185)	5	1.95000	1.94000	ON02	ON02	-0.00334	False
IA04486 (MA227988)	2	0.69000	0.68000	ON09	ON09	-0.00233	False
IA04538 (MA282218)	2	0.69000	0.66000	ON16	ON16	-0.02638	False
IA04593 (MA298192)	2	0.24000	0.19000	0102	ON15	-0.03773	False

Table 2.7.14  
Beta Analysis  
Mathematics Grade 8

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00849 (MA296757)	2	0.62000	0.62000	ON17	ON17	-0.00824	False
IA00858 (MA297513)	2	0.76000	0.78000	ON04	ON04	0.02203	False
IA00864 (MA297652)	5	2.81000	2.77000	ON03	ON03	-0.00570	False
IA00865 (MA297656)	2	0.53000	0.60000	ON11	ON11	0.06613	True
IA00903 (MA301674)	2	0.73000	0.75000	ON13	ON13	0.00976	False
IA00905 (MA301702)	2	0.44000	0.46000	ON07	ON07	0.00912	False
IA00979 (MA307472)	2	0.63000	0.65000	ON13	ON13	0.01897	False
IA00985 (MA307570)	2	0.51000	0.53000	ON18	ON18	-0.00342	False
IA01033 (MA311384)	2	0.59000	0.57000	ON08	ON08	-0.01183	False
IA01037 (MA311414)	2	0.39000	0.39000	ON10	ON10	0.00026	False
IA01042 (MA311448)	2	0.52000	0.50000	ON05	ON05	-0.04553	False
IA01044 (MA311463)	2	0.64000	0.62000	ON15	ON15	-0.00589	False
IA01066 (MA314812)	5	2.22000	2.16000	ON02	ON02	-0.00571	False
IA01125 (MA624247061)	3	0.85000	0.83000	ON14	ON14	-0.00690	False
IA02495 (MA309741)	2	0.44000	0.37000	ON15	ON15	-0.06741	True
IA04665 (MA307399)	2	0.48000	0.47000	ON16	ON16	-0.03019	False
IA04678 (MA309738)	2	0.39000	0.40000	ON04	ON04	-0.00306	False
IA05057 (MA803856437)	2	0.83000	0.83000	ON12	ON12	-0.00165	False
IA05059 (MA803856627)	2	0.71000	0.71000	ON09	ON09	0.00568	False
IA05070 (MA804042487)	2	0.29000	0.40000	ON04	ON04	0.10769	True

Table 2.7.15  
Beta Analysis  
Mathematics Grade 10

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA04800 (MA717740737)	2	0.40000	0.43000	ON11	ON11	0.03504	False
IA04810 (MA735534256)	3	0.67000	0.67000	ON02	ON02	0.00614	False
IA04819 (MA735579095)	2	0.57000	0.56000	ON10	ON10	-0.00646	False
IA04824 (MA735632759)	2	0.46000	0.46000	ON17	ON17	0.01575	False
IA04842 (MA735734830)	2	0.40000	0.40000	ON09	ON09	0.01732	False
IA04846 (MA735743236)	2	0.76000	0.78000	ON10	ON20	0.02022	False
IA04847 (MA735745569)	2	0.43000	0.40000	ON06	ON06	-0.03047	False
IA04871 (MA736059227)	2	0.50000	0.47000	ON03	ON03	-0.02415	False
IA04913 (MA800433428)	2	0.56000	0.56000	ON11	ON11	0.00135	False
IA04991 (MA801426792)	2	0.33000	0.37000	ON14	ON14	0.04790	False
IA04993 (MA801434971)	2	0.22000	0.25000	ON07	ON07	0.03833	False
IA04997 (MA801564574)	3	0.79000	0.71000	ON08	ON08	-0.04375	False
IA05048 (MA803762212)	2	0.47000	0.49000	ON16	ON16	0.02575	False
IA05096 (MA804566054)	3	1.11000	1.21000	ON05	ON05	0.04079	False
IA05117 (MA804678931)	2	0.35000	0.32000	ON19	ON19	-0.02735	False
IA05144 (MA805372590)	2	0.41000	0.37000	ON20	ON10	-0.04147	False
IA05145 (MA805373539)	2	0.23000	0.19000	ON13	ON13	-0.02609	False
IA05147 (MA805376549)	2	0.87000	0.87000	ON12	ON12	0.00858	False
IA05155 (MA806051920)	2	0.29000	0.29000	ON18	ON18	-0.00263	False
IA05165 (MA806383722)	5	1.84000	1.86000	ON04	ON04	0.01810	False
IA05170 (MA806408603)	5	1.77000	1.62000	ON07	ON07	-0.03069	False

Table 2.7.16  
Beta Analysis  
Introductory Physics Grade 10

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA03500 (SC717283221)	3	1.25000	1.24000	ON08	ON03	-0.02116	False
IA05503 (SC701073429)	2	0.56000	0.58000	ON08	ON07	0.00771	False
IA05859 (SC800552298)	2	0.60000	0.62000	ON05	ON11	-0.00262	False
IA10657 (SC630578145)	2	0.63000	0.60000	ON02	ON13	-0.04174	False
IA10680 (SC717246368)	3	1.57000	1.59000	ON09	ON11	-0.00494	False
IA10702 (SC800954781)	2	0.58000	0.59000	ON09	ON08	-0.00810	False
IA10704 (SC800964236)	2	0.45000	0.41000	ON05	ON12	-0.05659	True
IA10788 (SC814181163)	2	0.53000	0.58000	ON11	ON05	0.02334	False
IA10802 (SC815652038)	5	1.61000	1.79000	ON07	ON02	0.02648	False
IA10919 (SC906339928)	2	0.41000	0.45000	ON03	ON14	0.02079	False
IA10920 (SC906340047)	3	0.98000	1.01000	ON02	ON14	-0.01758	False
IA10921 (SC906340140)	2	0.74000	0.74000	ON02	ON14	-0.01672	False
IA10922 (SC906340259)	2	0.78000	0.79000	ON02	ON14	-0.01157	False
IA10923 (SC906340744)	4	1.31000	1.42000	ON02	ON14	0.00579	False
IA10931 (SC906631611)	2	0.53000	0.59000	ON03	ON12	0.03284	False
IA10936 (SC906662706)	2	0.72000	0.80000	ON05	ON03	0.06780	True
IA10941 (SC906953250)	2	0.31000	0.30000	ON07	ON06	-0.04172	False
IA10943 (SC906965456)	2	0.74000	0.77000	ON12	ON09	0.01162	False
IA10958 (SC908950033)	2	0.78000	0.78000	ON09	ON10	-0.02272	False
IA10980 (SC910170718)	2	0.59000	0.66000	ON02	ON06	0.02929	False
IA10983 (SC910436447)	2	0.50000	0.52000	ON13	ON13	-0.00479	False
IA11025 (SC913743446)	2	0.63000	0.61000	ON11	ON04	-0.04104	False

Table 2.7.17  
Beta Analysis  
Science Grade 5

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA05192 (SC264893)	4	0.93000	0.82000	ON16	ON08	-0.03583	False
IA05466 (SC628483066)	2	0.89000	0.87000	ON17	ON10	-0.03188	False
IA05523 (SC718127878)	2	0.67000	0.67000	ON08	ON05	0.00644	False
IA05526 (SC735264282)	2	0.86000	0.87000	ON09	ON05	0.01059	False
IA05530 (SC735267831)	2	0.79000	0.82000	ON02	ON10	0.02783	False
IA05545 (SC735535118)	2	0.47000	0.49000	ON19	ON09	0.03544	False
IA05560 (SC736074266)	2	0.78000	0.75000	ON15	ON10	-0.02625	False
IA05562 (SC736074942)	3	1.26000	1.19000	ON06	ON03	-0.03743	False
IA05628 (SC802729980)	2	0.63000	0.64000	ON02	ON02	0.02554	False
IA05630 (SC802758131)	2	0.72000	0.70000	ON02	ON02	-0.01651	False
IA05631 (SC802758561)	2	0.56000	0.57000	ON02	ON02	0.01494	False
IA05634 (SC802761427)	4	0.96000	0.91000	ON02	ON02	-0.01283	False
IA05657 (SC803732869)	3	0.79000	0.90000	ON12	ON08	0.05202	True
IA05661 (SC803837124)	2	0.67000	0.64000	ON14	ON09	-0.02623	False
IA05662 (SC803844809)	3	1.30000	1.28000	ON18	ON12	-0.01706	False
IA05664 (SC803847645)	2	0.76000	0.77000	ON06	ON04	0.01281	False
IA05678 (SC804048131)	2	0.88000	0.89000	ON05	ON03	0.00990	False
IA05681 (SC804060300)	2	0.37000	0.40000	ON13	ON08	0.03008	False
IA05688 (SC804141602)	2	0.84000	0.85000	ON18	ON12	0.01040	False
IA05702 (SC806382697)	2	0.47000	0.53000	ON10	ON05	0.06111	True

Table 2.7.18  
Beta Analysis  
Science Grade 8

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA05243 (SC289702)	2	0.32000	0.36000	ON12	ON06	0.02936	False
IA05245 (SC290144)	2	0.53000	0.49000	ON04	ON11	-0.05502	True
IA05499 (SC633066301)	2	0.91000	0.92000	ON05	ON08	0.00982	False
IA05522 (SC717662167)	2	0.50000	0.51000	ON18	ON12	-0.00007	False
IA05550 (SC735560046)	2	0.27000	0.28000	ON17	ON11	0.00409	False
IA05551 (SC735569222)	2	0.52000	0.50000	ON16	ON10	-0.00999	False
IA05555 (SC735663104)	2	0.34000	0.36000	ON03	ON07	0.02486	False
IA05581 (SC800285340)	2	0.41000	0.40000	ON11	ON05	-0.01384	False
IA05649 (SC803174786)	2	0.69000	0.65000	ON14	ON12	-0.03044	False
IA05665 (SC803856876)	2	0.82000	0.78000	ON13	ON07	-0.03644	False
IA05675 (SC803981496)	2	0.72000	0.67000	ON06	ON10	-0.03711	False
IA05687 (SC804132888)	3	1.48000	1.46000	ON10	ON03	-0.01423	False
IA05690 (SC804367702)	2	0.44000	0.49000	ON15	ON06	0.05908	True
IA05693 (SC804372985)	3	1.34000	1.35000	ON09	ON10	0.00708	False
IA05718 (SC807245653)	2	0.74000	0.73000	ON02	ON04	0.00580	False
IA05720 (SC807247887)	2	0.57000	0.56000	ON02	ON04	-0.00361	False
IA05727 (SC809171062)	2	0.48000	0.46000	ON02	ON04	0.00434	False
IA05729 (SC809178849)	4	1.07000	1.14000	ON02	ON04	0.03451	False
IA05750 (SC814258458)	4	1.40000	1.28000	ON07	ON07	-0.02679	False
IA05777 (SC816343670)	3	1.24000	1.28000	ON08	ON02	0.02206	False



# Section 2.8

## Final Item Parameters

Table 2.8.1  
IRT Parameters for Dichotomous Items  
Biology Grade 10

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA05324 (SC306327)	0.73128	0.02026	-0.14510	0.04998	0.13220	0.02250
IA05421 (SC316159)	0.60615	0.02040	0.58643	0.04288	0.10500	0.01650
IA05884 (SC802460401)	0.67466	0.01407	-0.57046	0.04764	0.01740	0.02400
IA10719 (SC802140161)	1.18888	0.02490	0.16893	0.01805	0.20460	0.00920
IA10740 (SC803772254)	1.09899	0.02040	-0.17836	0.02148	0.08830	0.01270
IA10821 (SC831345559)	0.87357	0.02173	-0.08183	0.03561	0.16430	0.01710
IA10834 (SC903434684)	0.73395	0.01498	-1.15454	0.06177	0.04080	0.03760
IA10840 (SC903665008)	1.09111	0.02680	-0.19985	0.03126	0.29040	0.01540
IA10844 (SC903668548)	1.56482	0.03390	-0.00250	0.01638	0.32130	0.00870
IA10991 (SC910651771)	1.29143	0.03601	1.17277	0.01270	0.22840	0.00440
IA11017 (SC912737872)	1.41015	0.02799	0.24624	0.01354	0.19800	0.00720
IA11055 (SC924640143)	0.79177	0.02638	-0.33116	0.06511	0.31430	0.02590
IA12928 (SC294820)	1.22095	0.02469	-0.01997	0.01856	0.13840	0.01070
IA12930 (SC295278)	1.02802	0.01983	-0.01588	0.02056	0.06830	0.01140
IA12931 (SC296662)	1.25366	0.01583	0.16241	0.00894	0.00050	0.00350
IA12933 (SC299071)	1.40826	0.03728	1.00309	0.01245	0.27870	0.00460
IA12935 (SC299739)	1.17137	0.01688	0.09780	0.01195	0.01350	0.00590
IA12940 (SC301337)	1.04089	0.02293	-0.33166	0.03051	0.12850	0.01800
IA12945 (SC304863)	1.34172	0.02954	0.93087	0.01070	0.15150	0.00430
IA12947 (SC304901)	0.80858	0.01090	-0.10205	0.01530	0.00120	0.00690
IA12948 (SC304905)	0.62535	0.01709	0.07172	0.04748	0.03060	0.02050
IA12952 (SC310087)	0.78361	0.01892	-0.53167	0.05115	0.07160	0.02760
IA12960 (SC313347)	0.60024	0.02518	0.39209	0.06620	0.24510	0.02160
IA12990 (SC317087)	0.99911	0.02328	0.43798	0.01922	0.15620	0.00910
IA12999 (SC632554377)	1.41522	0.02820	-0.17770	0.01822	0.21290	0.01100
IA13007 (SC706031065)	0.66460	0.01815	-1.06201	0.09336	0.10250	0.04830
IA13010 (SC707646320)	0.80274	0.01822	-0.15596	0.03511	0.03690	0.01830
IA06024 (SC815749586)	0.79528	0.00985	-0.04630	0.00894	0.00000	0.00000
IA10727 (SC802367082)	1.06544	0.01175	0.58275	0.00769	0.00000	0.00000
IA10838 (SC903436569)	0.72213	0.00992	-0.90203	0.01521	0.00000	0.00000
IA10843 (SC903667486)	0.49164	0.00795	0.48872	0.01312	0.00000	0.00000
IA11019 (SC913054446)	0.96690	0.01062	0.38909	0.00777	0.00000	0.00000

Table 2.8.2  
IRT Parameters for Polytomous Items  
Biology Grade 10

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA10832 (SC903432965)	0.73001	0.00795	-0.10055	0.00953	0.98737	0.01838	-0.98737	0.01439	0.00000	0.00000
IA10839 (SC903436994)	1.24079	0.01048	0.17570	0.00472	0.94441	0.01063	-0.13173	0.00811	-0.81268	0.00938
IA10842 (SC903667169)	1.44370	0.01182	0.01770	0.00467	1.00950	0.01061	0.04678	0.00795	-1.05628	0.00929
IA10999 (SC910985231)	0.74527	0.00816	0.68547	0.00961	1.02131	0.01420	-1.02131	0.01878	0.00000	0.00000
IA11001 (SC911246035)	1.52093	0.01224	0.89082	0.00423	1.01301	0.00777	0.23585	0.00777	-0.33268	0.00929
IA11013 (SC912238529)	0.75857	0.00844	-0.18033	0.00901	0.85460	0.01761	-0.85460	0.01330	0.00000	0.00000
IA11037 (SC915044062)	0.91893	0.01217	-1.74873	0.01685	0.74598	0.03500	-0.74598	0.02188	0.00000	0.00000
IA11051 (SC920841277)	0.69667	0.00830	-0.69303	0.01212	1.07610	0.02539	-1.07610	0.01536	0.00000	0.00000
IA12937 (SC299759)	1.56820	0.01231	0.48529	0.00404	1.09553	0.00868	0.36593	0.00732	-0.23111	0.00767
IA12978 (SC316255)	1.88914	0.01505	0.32742	0.00331	0.78855	0.00754	0.37723	0.00679	-0.31317	0.00687

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA10839 (SC903436994)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA10842 (SC903667169)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA11001 (SC911246035)	-0.91618	0.01229	0.00000	0.00000	n/a	n/a
IA12937 (SC299759)	-1.23035	0.01175	0.00000	0.00000	n/a	n/a
IA12978 (SC316255)	-0.85262	0.00829	0.00000	0.00000	n/a	n/a

Table 2.8.3  
IRT Parameters for Dichotomous Items  
English Language Arts Grade 3

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA09406 (EL015503476)	1.06961	0.00000	-0.20230	0.00000	0.21540	0.00000
IA09410 (EL015607246)	1.09647	0.00000	0.17350	0.00000	0.25430	0.00000
IA09411 (EL015611981)	0.49324	0.00000	0.67290	0.00000	0.14920	0.00000
IA09413 (EL015628878)	1.19706	0.00000	0.01890	0.00000	0.23060	0.00000
IA09414 (EL015629502)	0.82634	0.00000	-1.05020	0.00000	0.22350	0.00000
IA09415 (EL015630515)	0.34874	0.00000	1.16130	0.00000	0.14010	0.00000
IA09540 (EL028131763)	1.05173	0.00000	-0.63480	0.00000	0.21450	0.00000
IA09543 (EL028160220)	0.78989	0.00000	0.15690	0.00000	0.23380	0.00000
IA09548 (EL028217140)	0.58242	0.00000	-0.62910	0.00000	0.06020	0.00000
IA09549 (EL028217627)	0.88477	0.00000	-0.43430	0.00000	0.26350	0.00000
IA09602 (EL028709466)	0.69859	0.00000	0.45830	0.00000	0.24870	0.00000
IA09603 (EL028717847)	0.66814	0.00000	-0.57490	0.00000	0.08020	0.00000
IA09605 (EL028823014)	0.82704	0.00000	-0.22520	0.00000	0.21730	0.00000
IA09611 (EL028907379)	1.18031	0.00000	-0.29150	0.00000	0.27800	0.00000
IA09614 (EL028914863)	0.63892	0.00000	0.23000	0.00000	0.21440	0.00000
IA09826 (EL909469479)	1.16208	0.00000	-1.06660	0.00000	0.10130	0.00000
IA09827 (EL909470939)	0.85850	0.00000	0.33710	0.00000	0.23580	0.00000
IA09828 (EL909472828)	0.83827	0.00000	-0.74870	0.00000	0.15680	0.00000
IA09829 (EL909473433)	0.82263	0.00000	-0.47020	0.00000	0.10470	0.00000
IA09831 (EL909478450)	1.22122	0.00000	-1.52500	0.00000	0.11040	0.00000
IA09832 (EL909479176)	0.83445	0.00000	-1.52760	0.00000	0.20110	0.00000
IA09833 (EL909480023)	0.56531	0.00000	-0.79240	0.00000	0.00650	0.00000
IA09835 (EL909865165)	1.13686	0.00000	-0.87310	0.00000	0.23530	0.00000
IA09836 (EL909869416)	0.99882	0.00000	-1.23690	0.00000	0.00620	0.00000
IA09846 (EL912636232)	1.03239	0.00000	-1.08140	0.00000	0.08390	0.00000
IA09847 (EL919652746)	1.35926	0.00000	-0.36560	0.00000	0.13980	0.00000

Table 2.8.4  
IRT Parameters for Polytomous Items  
English Language Arts Grade 3

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA09439 (EL019650296)	0.60135	0.00000	-1.66395	0.00000	0.89665	0.00000	-0.89665	0.00000	0.00000	0.00000
IA09547 (EL028215856)	0.76508	0.00000	-0.29635	0.00000	0.54835	0.00000	-0.54835	0.00000	0.00000	0.00000
IA09604 (EL028753268)	0.88777	0.00000	-0.94790	0.00000	0.86670	0.00000	-0.86670	0.00000	0.00000	0.00000
IA09608 (EL028832702)	0.71470	0.00000	1.00717	0.00000	2.11047	0.00000	0.28657	0.00000	-2.39703	0.00000
IA09838A (EL909882556#SCORE_TRAIT_Conv)	0.77984	0.00882	0.65813	0.01091	1.81453	0.01713	0.00783	0.01629	-1.82237	0.02949
IA09838D (EL909882556#SCORE_TRAIT_Ideadev)	0.82334	0.00911	1.46605	0.01717	2.75175	0.02185	0.82665	0.02067	-0.89345	0.03050
IA09840 (EL911945550)	1.00394	0.00000	-1.07355	0.00000	0.49495	0.00000	-0.49495	0.00000	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA09608 (EL028832702)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA09838A (EL909882556#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA09838D (EL909882556#SCORE_TRAIT_Ideadev)	-2.68495	0.06376	0.00000	0.00000	n/a	n/a

Table 2.8.5  
IRT Parameters for Dichotomous Items  
English Language Arts Grade 4

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA08906 (EL006458075)	0.90941	0.00000	-2.21740	0.00000	0.04800	0.00000
IA08926 (EL006549511)	1.04803	0.00000	-0.41950	0.00000	0.17380	0.00000
IA09165 (EL007440160)	0.60517	0.00000	-1.87480	0.00000	0.01720	0.00000
IA09168 (EL007444742)	1.08348	0.00000	-1.17900	0.00000	0.12930	0.00000
IA09170 (EL007446608)	0.62816	0.00000	-1.41940	0.00000	0.02740	0.00000
IA09172 (EL007452066)	1.17972	0.00000	-1.57190	0.00000	0.19250	0.00000
IA09235 (EL009344832)	0.72575	0.00000	-0.17090	0.00000	0.23140	0.00000
IA09359 (EL013314332)	0.66384	0.00000	0.18260	0.00000	0.20750	0.00000
IA09370 (EL014208236)	1.01793	0.00000	-0.94110	0.00000	0.15010	0.00000
IA09446 (EL024031609)	0.39018	0.00000	0.20110	0.00000	0.14970	0.00000
IA09447 (EL024132276)	1.13804	0.00000	-0.97200	0.00000	0.18360	0.00000
IA09449 (EL024134327)	1.14874	0.00000	-0.49270	0.00000	0.13330	0.00000
IA09453 (EL024148759)	0.67784	0.00000	-2.04860	0.00000	0.03350	0.00000
IA09454 (EL024437543)	0.52728	0.00000	0.02380	0.00000	0.10540	0.00000
IA09455 (EL024440140)	0.47713	0.00000	-1.34260	0.00000	0.02990	0.00000
IA09456 (EL024442344)	0.73422	0.00000	0.71270	0.00000	0.19320	0.00000
IA09459 (EL024455037)	0.35720	0.00000	-1.37420	0.00000	0.04180	0.00000
IA09462 (EL024527106)	0.38372	0.00000	-0.52480	0.00000	0.11310	0.00000
IA09463 (EL024532504)	0.67913	0.00000	1.24720	0.00000	0.22750	0.00000
IA09618 (EL029280667)	0.96143	0.00000	-0.07630	0.00000	0.21080	0.00000
IA09623 (EL029415206)	1.20071	0.00000	-0.13550	0.00000	0.31820	0.00000
IA09624 (EL029417376)	1.35438	0.00000	-0.31450	0.00000	0.29870	0.00000
IA09625 (EL029429384)	0.77484	0.00000	0.56180	0.00000	0.25430	0.00000
IA09647 (EL030430678)	1.23627	0.00000	-0.02300	0.00000	0.28440	0.00000
IA09655 (EL030741768)	1.18107	0.00000	-0.15410	0.00000	0.25440	0.00000
IA09673 (EL033943069)	0.96755	0.00000	-0.71200	0.00000	0.24670	0.00000

Table 2.8.6  
IRT Parameters for Polytomous Items  
English Language Arts Grade 4

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA09177A (EL007459900#SCORE_TRAIT_Conv)	0.91182	0.01058	0.08870	0.01131	2.45650	0.02315	-0.28880	0.01503	-2.16770	0.02780
IA09177D (EL007459900#SCORE_TRAIT_Ideadev)	0.82387	0.00964	1.32518	0.01872	3.17928	0.02529	0.84528	0.02187	-1.21303	0.03519
IA09178 (EL007464016)	0.42234	0.00000	-1.74475	0.00000	0.17395	0.00000	-0.17395	0.00000	0.00000	0.00000
IA09234 (EL009343264)	0.87190	0.00000	-0.66810	0.00000	0.47850	0.00000	-0.47850	0.00000	0.00000	0.00000
IA09460 (EL024480931)	0.66655	0.00000	-0.46665	0.00000	0.41175	0.00000	-0.41175	0.00000	0.00000	0.00000
IA09465 (EL024539092)	0.70323	0.00000	-0.31373	0.00000	2.36107	0.00000	0.10907	0.00000	-2.47013	0.00000
IA09619 (EL029323184)	0.64027	0.00000	-0.13125	0.00000	1.07315	0.00000	-1.07315	0.00000	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA09177A (EL007459900#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA09177D (EL007459900#SCORE_TRAIT_Ideadev)	-2.81153	0.06822	0.00000	0.00000	n/a	n/a
IA09465 (EL024539092)	0.00000	0.00000	n/a	n/a	n/a	n/a

Table 2.8.7  
IRT Parameters for Dichotomous Items  
English Language Arts Grade 5

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA01339 (EL624175088)	0.87454	0.00000	-1.48780	0.00000	0.09500	0.00000
IA01341 (EL624176741)	0.42287	0.00000	-0.00190	0.00000	0.04620	0.00000
IA01342 (EL624177026)	0.26185	0.00000	-3.09710	0.00000	0.03400	0.00000
IA01344 (EL624178677)	0.47554	0.00000	-0.77190	0.00000	0.19040	0.00000
IA01345 (EL624179162)	0.85603	0.00000	-1.69160	0.00000	0.07410	0.00000
IA01346 (EL624179855)	0.57066	0.00000	-1.29120	0.00000	0.06040	0.00000
IA01348 (EL624180347)	0.65326	0.00000	-0.85290	0.00000	0.31190	0.00000
IA01349 (EL624180539)	0.87084	0.00000	-0.97360	0.00000	0.32450	0.00000
IA01387 (EL627148548)	0.98742	0.00000	-0.64460	0.00000	0.22670	0.00000
IA09629 (EL029961019)	0.79553	0.00000	-0.93320	0.00000	0.21550	0.00000
IA09632 (EL029974201)	1.09359	0.00000	-0.76900	0.00000	0.14060	0.00000
IA09634 (EL029980757)	0.73398	0.00000	-0.14600	0.00000	0.19580	0.00000
IA09637 (EL030062229)	0.92357	0.00000	-1.08780	0.00000	0.20340	0.00000
IA09638 (EL030080040)	0.70364	0.00000	-1.32730	0.00000	0.04630	0.00000
IA09639 (EL030171711)	0.72569	0.00000	-0.92760	0.00000	0.10760	0.00000
IA09643 (EL030337822)	0.64327	0.00000	1.32270	0.00000	0.21250	0.00000
IA09650 (EL030483081)	0.95026	0.00000	-1.38560	0.00000	0.21460	0.00000
IA09652 (EL030659380)	0.89430	0.00000	0.82610	0.00000	0.18520	0.00000
IA09659 (EL033541180)	0.82610	0.00000	-1.98660	0.00000	0.10900	0.00000
IA09660 (EL033604260)	1.17925	0.00000	-1.15570	0.00000	0.22780	0.00000
IA09663 (EL033665287)	0.43316	0.00000	-0.27560	0.00000	0.13480	0.00000
IA09664 (EL033679189)	0.73780	0.00000	-0.63230	0.00000	0.05290	0.00000
IA09668 (EL033800505)	0.28954	0.00000	-0.27400	0.00000	0.01230	0.00000
IA09671 (EL033843854)	1.12651	0.00000	0.66240	0.00000	0.27850	0.00000



Table 2.8.8  
IRT Parameters for Polytomous Items  
English Language Arts Grade 5

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA01340 (EL624176168)	1.13516	0.00000	-1.84640	0.00000	0.28310	0.00000	-0.28310	0.00000	0.00000	0.00000
IA01343 (EL624177447)	0.60905	0.00000	-1.32425	0.00000	0.92935	0.00000	-0.92935	0.00000	0.00000	0.00000
IA01350A (EL624182427#SCORE_TRAIT_Conv)	0.84762	0.00899	-0.30340	0.00893	1.84900	0.02036	-0.04490	0.01319	-1.80410	0.01920
IA01350D (EL624182427#SCORE_TRAIT_Ideadev)	0.82257	0.00876	0.51043	0.01243	2.76723	0.02313	0.89883	0.01596	-0.77548	0.02003
IA09630 (EL029964018)	0.58795	0.00000	-0.79505	0.00000	0.39235	0.00000	-0.39235	0.00000	0.00000	0.00000
IA09645A (EL030400392#SCORE_TRAIT_Conv)	0.85814	0.00935	0.48343	0.00941	1.72723	0.01605	-0.10457	0.01447	-1.62267	0.02439
IA09645D (EL030400392#SCORE_TRAIT_Ideadev)	0.83633	0.00917	1.25553	0.01502	2.70733	0.02081	0.66523	0.01879	-0.80828	0.02705
IA09649 (EL030463527)	0.81346	0.00000	-0.84670	0.00000	0.42830	0.00000	-0.42830	0.00000	0.00000	0.00000
IA09661 (EL033646585)	0.98383	0.00000	-0.92450	0.00000	0.62430	0.00000	-0.62430	0.00000	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA01350A (EL624182427#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA01350D (EL624182427#SCORE_TRAIT_Ideadev)	-2.89058	0.04361	0.00000	0.00000	n/a	n/a
IA09645A (EL030400392#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA09645D (EL030400392#SCORE_TRAIT_Ideadev)	-2.56428	0.05470	0.00000	0.00000	n/a	n/a

Table 2.8.9  
IRT Parameters for Dichotomous Items  
English Language Arts Grade 6

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA03973 (EL806979864)	0.62034	0.00000	-1.52900	0.00000	0.08280	0.00000
IA03974 (EL807001596)	0.52205	0.00000	-0.38080	0.00000	0.27790	0.00000
IA03975 (EL807002174)	0.34139	0.00000	-2.02870	0.00000	0.02940	0.00000
IA03977 (EL807009150)	0.50370	0.00000	-0.87910	0.00000	0.33410	0.00000
IA03979 (EL807010236)	0.76919	0.00000	0.69010	0.00000	0.22430	0.00000
IA03981 (EL807011414)	0.37025	0.00000	-0.72710	0.00000	0.10170	0.00000
IA03982 (EL807011890)	0.54897	0.00000	-0.67320	0.00000	0.24070	0.00000
IA04006 (EL807061702)	0.19453	0.00000	-2.42500	0.00000	0.04900	0.00000
IA04141 (EL808245411)	0.70994	0.00000	-0.53070	0.00000	0.37100	0.00000
IA08942 (EL006639933)	0.66455	0.00000	0.15750	0.00000	0.21240	0.00000
IA08960 (EL006738734)	0.41922	0.00000	-0.01390	0.00000	0.05610	0.00000
IA08964 (EL006742548)	0.43186	0.00000	1.16040	0.00000	0.07560	0.00000
IA09078 (EL007074213)	0.62381	0.00000	-1.99180	0.00000	0.15380	0.00000
IA09079 (EL007074445)	0.50312	0.00000	-1.35130	0.00000	0.05370	0.00000
IA09081 (EL007075911)	0.75262	0.00000	-1.64430	0.00000	0.02950	0.00000
IA09082 (EL007076177)	0.46655	0.00000	-1.35100	0.00000	0.21310	0.00000
IA09084 (EL007077078)	0.91834	0.00000	-1.26660	0.00000	0.27560	0.00000
IA09086 (EL007077860)	0.58430	0.00000	-0.31260	0.00000	0.20680	0.00000
IA09087 (EL007078526)	0.58801	0.00000	-1.32100	0.00000	0.12630	0.00000
IA09186 (EL008281454)	0.26008	0.00000	0.07310	0.00000	0.15830	0.00000
IA09190 (EL008445593)	0.72169	0.00000	-1.00420	0.00000	0.15020	0.00000
IA09239 (EL009514238)	0.59012	0.00000	-0.67510	0.00000	0.14980	0.00000
IA09242 (EL009564267)	0.35750	0.00000	-0.35830	0.00000	0.02340	0.00000
IA09254 (EL009978066)	0.64539	0.00000	-0.91640	0.00000	0.14300	0.00000

Table 2.8.10  
IRT Parameters for Polytomous Items  
English Language Arts Grade 6

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA03984A (EL807016586#SCORE_TRAIT_Conv)	0.77084	0.00794	-0.43287	0.00887	1.83833	0.02025	-0.11027	0.01413	-1.72807	0.01829
IA03984D (EL807016586#SCORE_TRAIT_Ideadev)	0.79976	0.00794	0.77488	0.01041	3.20388	0.02105	1.26028	0.01507	-0.20432	0.01713
IA04007 (EL807062301)	0.46302	0.00000	-0.18550	0.00000	0.22650	0.00000	-0.22650	0.00000	0.00000	0.00000
IA04142 (EL808246461)	0.27901	0.00000	-1.86625	0.00000	3.25905	0.00000	-3.25905	0.00000	0.00000	0.00000
IA09048A (EL007051004#SCORE_TRAIT_Conv)	0.73486	0.00770	-0.57440	0.00922	1.78280	0.02112	0.02920	0.01482	-1.81200	0.01881
IA09048D (EL007051004#SCORE_TRAIT_Ideadev)	0.76955	0.00776	1.47268	0.01865	3.34588	0.02425	1.75298	0.02170	0.05118	0.02503
IA09185 (EL008181021)	0.57331	0.00000	-1.69175	0.00000	1.53755	0.00000	-1.53755	0.00000	0.00000	0.00000
IA09188 (EL008355)	0.77266	0.00000	-1.42415	0.00000	0.90245	0.00000	-0.90245	0.00000	0.00000	0.00000
IA09237 (EL009438210)	0.31440	0.00000	-0.19545	0.00000	1.88105	0.00000	-1.88105	0.00000	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA03984A (EL807016586#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA03984D (EL807016586#SCORE_TRAIT_Ideadev)	-1.52582	0.02534	-2.73402	0.04056	0.00000	0.00000
IA09048A (EL007051004#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA09048D (EL007051004#SCORE_TRAIT_Ideadev)	-1.56992	0.03730	-3.58012	0.08575	0.00000	0.00000

Table 2.8.11  
IRT Parameters for Dichotomous Items  
English Language Arts Grade 7

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA01781 (EL713378067)	0.41881	0.00000	-1.95130	0.00000	0.01160	0.00000
IA01791 (EL713476504)	0.57872	0.00000	0.49710	0.00000	0.20410	0.00000
IA01793 (EL713479099)	0.87790	0.00000	-0.29150	0.00000	0.23630	0.00000
IA01794 (EL713479631)	0.85397	0.00000	-1.07190	0.00000	0.27300	0.00000
IA01795 (EL713480064)	0.60982	0.00000	-0.40250	0.00000	0.17530	0.00000
IA01797 (EL713480958)	0.58207	0.00000	-1.31520	0.00000	0.07040	0.00000
IA01798 (EL713481518)	0.89847	0.00000	-0.46660	0.00000	0.21040	0.00000
IA01964 (EL723632935)	0.59248	0.00000	-0.18310	0.00000	0.20920	0.00000
IA01973 (EL730170770)	1.01640	0.00000	-1.25480	0.00000	0.21290	0.00000
IA08887 (EL006357067)	0.86114	0.00000	-0.85190	0.00000	0.24240	0.00000
IA08897 (EL006439224)	0.40988	0.00000	0.10130	0.00000	0.15890	0.00000
IA08903 (EL006446884)	0.66226	0.00000	0.17790	0.00000	0.17550	0.00000
IA08905 (EL006454205)	0.81287	0.00000	-1.54300	0.00000	0.08150	0.00000
IA08913 (EL006537445)	0.41952	0.00000	-0.33260	0.00000	0.06070	0.00000
IA08919 (EL006544709)	0.90958	0.00000	0.88220	0.00000	0.21010	0.00000
IA08922 (EL006545529)	0.49124	0.00000	-0.39990	0.00000	0.13030	0.00000
IA08923 (EL006546235)	0.55750	0.00000	-0.66960	0.00000	0.19680	0.00000
IA08928 (EL006560393)	0.79242	0.00000	0.22860	0.00000	0.29540	0.00000
IA08943 (EL006640130)	0.88101	0.00000	-0.07710	0.00000	0.20670	0.00000
IA09023 (EL006977006)	0.84815	0.00000	-0.26420	0.00000	0.29910	0.00000
IA09298 (EL011362473)	0.62845	0.00000	-2.24710	0.00000	0.02570	0.00000
IA09299 (EL011363661)	0.69747	0.00000	-0.99970	0.00000	0.21660	0.00000
IA09434 (EL016833358)	0.83286	0.00000	-0.26690	0.00000	0.20860	0.00000
IA09818 (EL113429887)	0.90805	0.00000	-0.96150	0.00000	0.22570	0.00000

Table 2.8.12  
IRT Parameters for Polytomous Items  
English Language Arts Grade 7

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA01776 (EL713370326)	0.45426	0.00000	-1.41715	0.00000	1.29335	0.00000	-1.29335	0.00000	0.00000	0.00000
IA01779A (EL713375305#SCORE_TRAIT_Conv)	0.98301	0.00999	-0.53300	0.00649	1.30260	0.01525	-0.20460	0.01110	-1.09800	0.01226
IA01779D (EL713375305#SCORE_TRAIT_Ideadev)	0.85726	0.00952	0.81368	0.00715	1.19008	0.01189	0.83168	0.01245	0.23998	0.01362
IA01788 (EL713475622)	0.66725	0.00000	-0.30075	0.00000	0.59135	0.00000	-0.59135	0.00000	0.00000	0.00000
IA08948A (EL006653237#SCORE_TRAIT_Conv)	0.86138	0.00888	-0.55247	0.00742	1.35863	0.01728	0.02813	0.01229	-1.38677	0.01454
IA08948D (EL006653237#SCORE_TRAIT_Ideadev)	0.85461	0.00841	0.72594	0.01147	3.09444	0.02168	1.37284	0.01529	-0.03846	0.01653
IA09028 (EL006978834)	0.49730	0.00000	-0.47815	0.00000	0.50925	0.00000	-0.50925	0.00000	0.00000	0.00000
IA09297 (EL011353608)	0.46814	0.00000	0.28525	0.00000	1.23695	0.00000	-1.23695	0.00000	0.00000	0.00000
IA09437 (EL017655451)	0.84697	0.00000	-1.33035	0.00000	0.33205	0.00000	-0.33205	0.00000	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA01779A (EL713375305#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA01779D (EL713375305#SCORE_TRAIT_Ideadev)	-0.59402	0.01752	-1.66772	0.02725	0.00000	0.00000
IA08948A (EL006653237#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA08948D (EL006653237#SCORE_TRAIT_Ideadev)	-1.39926	0.02437	-3.02956	0.04877	0.00000	0.00000

Table 2.8.13  
IRT Parameters for Dichotomous Items  
English Language Arts Grade 8

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA08951 (EL006655733)	0.79571	0.00000	-0.04280	0.00000	0.14300	0.00000
IA09049 (EL007061131)	0.36673	0.00000	-2.31380	0.00000	0.01520	0.00000
IA09050 (EL007061194)	0.50870	0.00000	-1.40660	0.00000	0.04270	0.00000
IA09054 (EL007061650)	0.29359	0.00000	-0.61170	0.00000	0.41620	0.00000
IA09058 (EL007062053)	0.69588	0.00000	-0.19040	0.00000	0.24910	0.00000
IA09127 (EL007253045)	0.95773	0.00000	-1.07280	0.00000	0.17980	0.00000
IA09131 (EL007256618)	0.54386	0.00000	-1.20140	0.00000	0.13300	0.00000
IA09133 (EL007257202)	0.18436	0.00000	-2.72570	0.00000	0.04970	0.00000
IA09134 (EL007257390)	0.49859	0.00000	-0.69550	0.00000	0.16760	0.00000
IA09138 (EL007335795)	0.41534	0.00000	-1.45940	0.00000	0.00990	0.00000
IA09139 (EL007335808)	0.89459	0.00000	0.07270	0.00000	0.24000	0.00000
IA09141 (EL007350397)	0.64256	0.00000	0.05730	0.00000	0.20310	0.00000
IA09145 (EL007353056)	0.86978	0.00000	0.37970	0.00000	0.22700	0.00000
IA09194 (EL008544460)	0.51411	0.00000	-0.70520	0.00000	0.09560	0.00000
IA09218 (EL009149967)	0.44844	0.00000	-2.24180	0.00000	0.01140	0.00000
IA09222 (EL009246409)	0.81511	0.00000	-1.17170	0.00000	0.23340	0.00000
IA09226 (EL009308236)	1.03780	0.00000	-1.71090	0.00000	0.07350	0.00000
IA09227 (EL009308819)	0.32934	0.00000	-0.50140	0.00000	0.03150	0.00000
IA09233 (EL009343097)	0.40664	0.00000	-3.25630	0.00000	0.01840	0.00000
IA09245 (EL009737508)	0.88083	0.00000	0.14520	0.00000	0.28790	0.00000
IA09426 (EL016259168)	0.82916	0.00000	-1.46820	0.00000	0.12560	0.00000
IA09427 (EL016259978)	0.42404	0.00000	-0.15520	0.00000	0.23020	0.00000
IA09430 (EL016352526)	0.16514	0.00000	-1.30970	0.00000	0.02290	0.00000
IA09443 (EL022460231)	0.90165	0.00000	-0.90080	0.00000	0.20030	0.00000

Table 2.8.14  
IRT Parameters for Polytomous Items  
English Language Arts Grade 8

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA08949 (EL006653570)	0.31117	0.00000	-1.60220	0.00000	2.46880	0.00000	-2.46880	0.00000	0.00000	0.00000
IA09059 (EL007062608)	0.37901	0.00000	-2.24165	0.00000	0.30075	0.00000	-0.30075	0.00000	0.00000	0.00000
IA09060A (EL007062902#SCORE_TRAIT_Conv)	0.78912	0.00811	-1.19327	0.00950	1.66493	0.02489	-0.06457	0.01562	-1.60037	0.01484
IA09060D (EL007062902#SCORE_TRAIT_Ideadev)	0.76796	0.00747	0.30384	0.00932	3.07344	0.02426	1.39484	0.01567	-0.04396	0.01449
IA09122 (EL007243506)	0.67014	0.00000	-0.64940	0.00000	0.33070	0.00000	-0.33070	0.00000	0.00000	0.00000
IA09130A (EL007253494#SCORE_TRAIT_Conv)	0.88618	0.00894	-0.74167	0.00764	1.43813	0.01837	0.02393	0.01315	-1.46207	0.01381
IA09130D (EL007253494#SCORE_TRAIT_Ideadev)	0.87701	0.00847	0.70690	0.00959	2.76460	0.01865	1.44720	0.01437	0.03640	0.01467
IA09197 (EL008553781)	0.38372	0.00000	-2.34500	0.00000	2.06490	0.00000	-2.06490	0.00000	0.00000	0.00000
IA09224 (EL009257746)	0.42099	0.00000	-1.12025	0.00000	1.77075	0.00000	-1.77075	0.00000	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA09060A (EL007062902#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA09060D (EL007062902#SCORE_TRAIT_Ideadev)	-1.51256	0.02045	-2.91176	0.03381	0.00000	0.00000
IA09130A (EL007253494#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA09130D (EL007253494#SCORE_TRAIT_Ideadev)	-1.34850	0.02110	-2.89970	0.03929	0.00000	0.00000

Table 2.8.15  
IRT Parameters for Dichotomous Items  
English Language Arts Grade 10

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA06950 (EL910037105)	0.54768	0.00000	-1.23020	0.00000	0.16880	0.00000
IA06952 (EL910038096)	0.57507	0.00000	-2.04100	0.00000	0.02280	0.00000
IA06976 (EL910182760)	0.19882	0.00000	-1.22500	0.00000	0.03920	0.00000
IA06977 (EL910186190)	0.59024	0.00000	-1.81600	0.00000	0.01790	0.00000
IA07013 (EL910752412)	0.93374	0.00000	-1.38330	0.00000	0.13310	0.00000
IA07034 (EL910856535)	0.81405	0.00000	-0.28630	0.00000	0.25590	0.00000
IA07038 (EL910859790)	1.34227	0.00000	-0.08780	0.00000	0.16020	0.00000
IA07328 (EL915848124)	0.46243	0.00000	-1.12330	0.00000	0.03390	0.00000
IA07331 (EL915856523)	0.31993	0.00000	-1.02040	0.00000	0.00060	0.00000
IA09712 (EL108655218)	0.58025	0.00000	-0.98000	0.00000	0.27630	0.00000
IA09714 (EL108735624)	0.64668	0.00000	-0.42090	0.00000	0.25000	0.00000
IA09719 (EL108748372)	1.22875	0.00000	-1.55690	0.00000	0.11650	0.00000
IA09720 (EL108755819)	0.76255	0.00000	-1.22150	0.00000	0.10920	0.00000
IA09723 (EL108759765)	0.61781	0.00000	-0.46300	0.00000	0.17660	0.00000
IA09724 (EL108762851)	1.02381	0.00000	-0.82910	0.00000	0.21970	0.00000
IA09745 (EL110674270)	1.21358	0.00000	-1.25760	0.00000	0.17810	0.00000
IA09771 (EL111645342)	0.92499	0.00000	-1.84350	0.00000	0.17430	0.00000
IA09772 (EL111647089)	0.79265	0.00000	-1.36700	0.00000	0.21080	0.00000
IA09775 (EL111666619)	0.66467	0.00000	-1.18070	0.00000	0.08470	0.00000
IA09777 (EL111730630)	0.59918	0.00000	-2.09240	0.00000	0.01170	0.00000
IA09822 (EL117657201)	0.78307	0.00000	-1.73860	0.00000	0.02150	0.00000



Table 2.8.16  
IRT Parameters for Polytomous Items  
English Language Arts Grade 10

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA06961A (EL910055845#SCORE_TRAIT_Conv)	1.03868	0.01099	-1.42180	0.00876	1.13280	0.02349	-0.02950	0.01510	-1.10330	0.01186
IA06961D (EL910055845#SCORE_TRAIT_Ideadev)	0.96661	0.00947	-0.04948	0.00996	2.84892	0.02691	1.43982	0.01670	0.30982	0.01316
IA06975 (EL910161517)	0.58266	0.00000	-1.35830	0.00000	0.79210	0.00000	-0.79210	0.00000	0.00000	0.00000
IA07009 (EL910748365)	0.62728	0.00000	-0.18415	0.00000	1.19375	0.00000	-1.19375	0.00000	0.00000	0.00000
IA07030 (EL910841373)	0.59512	0.00000	-0.33470	0.00000	0.29710	0.00000	-0.29710	0.00000	0.00000	0.00000
IA09708A (EL108631124#SCORE_TRAIT_Conv)	1.12040	0.01188	-1.48853	0.00831	1.06227	0.02203	-0.04073	0.01459	-1.02153	0.01139
IA09708D (EL108631124#SCORE_TRAIT_Ideadev)	1.01370	0.00958	-0.33414	0.00728	2.34196	0.02317	1.17496	0.01481	0.14276	0.01112
IA09709 (EL108640648)	0.66467	0.00000	-1.59825	0.00000	1.62635	0.00000	-1.62635	0.00000	0.00000	0.00000
IA09711 (EL108650704)	0.70541	0.00000	-0.66595	0.00000	0.18295	0.00000	-0.18295	0.00000	0.00000	0.00000
IA09768 (EL111540952)	0.82787	0.00000	-1.53750	0.00000	0.93420	0.00000	-0.93420	0.00000	0.00000	0.00000
IA09769 (EL111562949)	0.60259	0.00000	-0.92670	0.00000	0.30900	0.00000	-0.30900	0.00000	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA06961A (EL910055845#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA06961D (EL910055845#SCORE_TRAIT_Ideadev)	-1.17958	0.01560	-3.41898	0.03948	0.00000	0.00000
IA09708A (EL108631124#SCORE_TRAIT_Conv)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA09708D (EL108631124#SCORE_TRAIT_Ideadev)	-0.83724	0.01158	-2.82244	0.02403	0.00000	0.00000

Table 2.8.17 IRT Parameters for Dichotomous Items—Mathematics Grade 3

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA00793 (MA253641)	1.12128	0.02082	-0.79544	0.02332	0.21380	0.01140
IA00801 (MA260962)	0.60921	0.01475	-0.51911	0.04804	0.10020	0.01780
IA02033 (MA212474)	1.14535	0.02044	-1.01840	0.02353	0.14340	0.01280
IA02052 (MA227232)	1.16909	0.01952	-0.45936	0.01692	0.17760	0.00790
IA02056 (MA227485)	0.69692	0.01583	0.54518	0.02050	0.08730	0.00740
IA02515 (MA310880)	0.89842	0.02689	1.12776	0.01800	0.24630	0.00510
IA04473 (MA207001)	0.89782	0.01578	-0.94705	0.02885	0.09690	0.01430
IA04681 (MA310870)	1.08609	0.02694	0.41678	0.01865	0.34330	0.00610
IA07601 (MA306285)	0.84340	0.01653	-0.17707	0.02353	0.15510	0.00940
IA07801 (MA900372676)	1.09520	0.02163	0.19132	0.01572	0.22380	0.00600
IA09906 (MA001049099)	0.66375	0.02136	0.78854	0.02841	0.24390	0.00880
IA09912 (MA001056175)	0.90953	0.01556	0.12192	0.01518	0.06990	0.00600
IA09920 (MA001137862)	0.76355	0.01306	-0.87916	0.03058	0.01750	0.01440
IA10018 (MA001633319)	0.70440	0.01480	-0.36002	0.03221	0.09270	0.01280
IA10334 (MA297500)	1.11792	0.02504	0.33740	0.01594	0.25850	0.00590
IA12370 (MA202994)	0.84903	0.01735	-1.02296	0.03861	0.17800	0.01780
IA02516 (MA310884)	0.99486	0.01019	-0.54406	0.00878	0.00000	0.00000
IA02521 (MA310889)	0.85662	0.00987	-1.12750	0.01247	0.00000	0.00000
IA02682 (MA703056978)	0.87815	0.00938	-0.36827	0.00933	0.00000	0.00000
IA04754 (MA713536927)	0.72153	0.00851	-1.09584	0.01323	0.00000	0.00000
IA04834 (MA735663821)	0.88433	0.00900	0.08201	0.00889	0.00000	0.00000
IA04851 (MA735756531)	0.93333	0.00992	0.30671	0.00878	0.00000	0.00000
IA04860 (MA735954511)	0.97046	0.01014	-0.06429	0.00846	0.00000	0.00000
IA07645 (MA309747)	1.20021	0.01225	-0.33519	0.00792	0.00000	0.00000
IA07814 (MA900425126)	0.71367	0.00791	-0.00996	0.00976	0.00000	0.00000
IA09854 (MA000749172)	0.97556	0.01025	-0.65055	0.00933	0.00000	0.00000
IA09894 (MA001038775)	0.70522	0.00949	-1.41825	0.01605	0.00000	0.00000
IA09904 (MA001047582)	0.84248	0.00965	-1.35589	0.01366	0.00000	0.00000
IA09961 (MA001335228)	1.02841	0.01041	-0.20234	0.00824	0.00000	0.00000
IA09964 (MA001338241)	0.69540	0.00813	-1.31902	0.01507	0.00000	0.00000
IA09967 (MA001344527)	0.31317	0.00645	-2.20937	0.04414	0.00000	0.00000
IA09977 (MA001439533)	0.72766	0.00857	-1.20168	0.01377	0.00000	0.00000
IA10392 (MA703078093)	1.14421	0.01393	-1.51054	0.01247	0.00000	0.00000
IA10405 (MA734752477)	0.78138	0.00965	-1.15472	0.01301	0.00000	0.00000
IA10407 (MA735736004A)	0.81748	0.00878	-0.36827	0.00943	0.00000	0.00000
IA10480 (MA935136577)	0.71031	0.00829	-0.93132	0.01247	0.00000	0.00000

Table 2.8.18  
IRT Parameters for Polytomous Items  
Mathematics Grade 3

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA02202 (MA293460A)	1.07563	0.00884	-0.24944	0.00518	0.84075	0.01124	0.01851	0.00955	-0.85926	0.01020
IA04548 (MA286750A)	1.07064	0.00867	-0.21535	0.00567	1.12156	0.01262	0.07483	0.00974	-1.19639	0.01148
IA04686 (MA310899A)	1.07270	0.00884	-0.02196	0.00633	1.41093	0.01303	0.22886	0.01022	-1.63979	0.01437
IA07524 (MA253711A)	1.14822	0.00916	0.10912	0.00567	1.22296	0.01129	0.09836	0.00956	-1.32132	0.01291

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA02202 (MA293460A)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA04548 (MA286750A)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA04686 (MA310899A)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA07524 (MA253711A)	0.00000	0.00000	n/a	n/a	n/a	n/a

Table 2.8.19  
IRT Parameters for Dichotomous Items  
Mathematics Grade 4

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA00787 (MA247691)	0.99750	0.02482	-1.35704	0.05133	0.28770	0.02610
IA00812 (MA279759)	0.72728	0.01091	-0.98136	0.03012	0.00700	0.01440
IA00960 (MA307075)	1.29635	0.02931	-1.47885	0.03715	0.26380	0.02390
IA02072 (MA247705)	0.70575	0.01539	0.02727	0.02929	0.11320	0.01140
IA02432 (MA307060)	0.81618	0.02153	0.25051	0.02867	0.29240	0.00980
IA04580 (MA297614)	0.47756	0.01165	-1.08599	0.08228	0.03430	0.02990
IA04653 (MA307067)	1.36202	0.02409	-0.67171	0.01677	0.13680	0.00970
IA05045 (MA803747806)	1.24988	0.02278	-0.23425	0.01646	0.20590	0.00800
IA07659 (MA311543)	1.02232	0.02005	-0.37086	0.02401	0.24370	0.01070
IA08145 (MA903571693)	1.19813	0.01625	0.04984	0.01025	0.04450	0.00420
IA08183 (MA903776098)	1.44802	0.02937	0.75855	0.01066	0.18960	0.00380
IA10047 (MA001750121)	1.19399	0.02374	0.04777	0.01646	0.24610	0.00710
IA10077 (MA002034926)	1.09855	0.02414	-0.39787	0.02587	0.34460	0.01070
IA10097 (MA002135528)	0.55930	0.01602	0.20787	0.04523	0.12000	0.01530
IA10101 (MA002139080)	0.97478	0.03255	1.08683	0.01956	0.36630	0.00560
IA10104 (MA002140372)	1.10367	0.02477	-0.28206	0.02494	0.36500	0.00990
IA10224 (MA003747173)	0.46177	0.01511	0.04601	0.06965	0.08040	0.02160
IA12450 (MA301798)	0.61565	0.01261	-0.84517	0.04988	0.04130	0.02110
IA12462 (MA303324)	1.56816	0.02437	0.04404	0.00983	0.11870	0.00450
IA12478 (MA306990)	1.38133	0.03408	0.96119	0.01232	0.25950	0.00400
IA01054 (MA311567)	0.97852	0.01034	-0.40801	0.00869	0.00000	0.00000
IA02582 (MA311568)	0.79720	0.00903	-0.70918	0.01097	0.00000	0.00000
IA04887 (MA736377105)	1.06725	0.01091	-0.26230	0.00807	0.00000	0.00000
IA04942 (MA800727128)	0.74665	0.00841	0.06329	0.00942	0.00000	0.00000
IA05066 (MA803956738)	0.99074	0.01051	-0.64232	0.00942	0.00000	0.00000
IA07924 (MA900756471)	1.10605	0.01113	-0.36030	0.00807	0.00000	0.00000
IA07963 (MA900846441)	0.87866	0.00966	0.43959	0.00880	0.00000	0.00000
IA09849 (MA000732007)	0.77988	0.00852	-0.16056	0.00931	0.00000	0.00000
IA10060 (MA001851276)	0.84833	0.00932	-0.74747	0.01076	0.00000	0.00000
IA10093 (MA002128911)	0.82856	0.00949	-0.71528	0.01087	0.00000	0.00000
IA10111 (MA002145158)	0.61946	0.00818	-1.42100	0.01863	0.00000	0.00000
IA10151 (MA002334462)	1.00647	0.01057	-0.46131	0.00880	0.00000	0.00000
IA10213 (MA003540652)	1.09622	0.01346	-1.21174	0.01201	0.00000	0.00000
IA10222 (MA003744055)	1.71103	0.01818	-0.53893	0.00735	0.00000	0.00000

Table 2.8.20  
IRT Parameters for Polytomous Items  
Mathematics Grade 4

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA02457 (MA307317)	1.00738	0.00790	0.02081	0.00564	1.48299	0.01383	0.87539	0.01115	-0.50427	0.00993
IA02742 (MA704653374)	0.63309	0.00659	-1.00449	0.01176	1.06416	0.02426	-1.06416	0.01553	0.00000	0.00000
IA04568 (MA293812)	0.99914	0.00801	0.40161	0.00578	1.69169	0.01323	0.83891	0.01036	-0.94489	0.01222
IA04621 (MA303335)	0.95785	0.00756	-0.08846	0.00598	1.96074	0.01712	0.40008	0.01046	-0.60804	0.01029
IA04757 (MA713677363)	0.66229	0.00716	-1.38291	0.01295	0.96434	0.02691	-0.96434	0.01677	0.00000	0.00000
IA04975 (MA801035466)	1.09054	0.00858	0.05410	0.00537	1.71169	0.01468	0.46719	0.00978	-0.52841	0.00961

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA02457 (MA307317)	-1.85412	0.01487	0.00000	0.00000	n/a	n/a
IA04568 (MA293812)	-1.58571	0.01541	0.00000	0.00000	n/a	n/a
IA04621 (MA303335)	-1.75277	0.01434	0.00000	0.00000	n/a	n/a
IA04975 (MA801035466)	-1.65047	0.01315	0.00000	0.00000	n/a	n/a

Table 2.8.21  
IRT Parameters for Dichotomous Items  
Mathematics Grade 5

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA00871 (MA297992)	1.06449	0.02427	0.07599	0.02025	0.29230	0.00790
IA02322 (MA301602)	0.96549	0.01908	-1.08193	0.03597	0.11560	0.02120
IA02385 (MA306408)	1.81114	0.04393	0.95962	0.01008	0.21840	0.00300
IA02398 (MA306458)	0.89764	0.01622	0.33607	0.01471	0.06630	0.00600
IA04604 (MA301157)	1.03270	0.03045	0.34867	0.02418	0.46080	0.00700
IA04931 (MA800650803)	1.25497	0.02736	0.86329	0.01189	0.19090	0.00380
IA04932 (MA800651876)	1.22738	0.02024	0.01784	0.01209	0.08830	0.00560
IA05072 (MA804073907)	1.43700	0.03226	0.83789	0.01129	0.21780	0.00360
IA07576 (MA301169)	0.78900	0.01692	0.71616	0.01592	0.06480	0.00600
IA07890 (MA900727061)	0.51673	0.01645	-0.40498	0.07809	0.11770	0.02640
IA07974 (MA900982012)	0.35191	0.01651	-0.54857	0.17896	0.11250	0.04460
IA09862 (MA000846578)	0.93550	0.01867	-0.12414	0.02237	0.18930	0.00960
IA09867 (MA000859040)	1.02103	0.03110	0.08939	0.02942	0.48460	0.00860
IA09870 (MA000927731)	0.89408	0.01231	0.01815	0.01290	0.00310	0.00520
IA09876 (MA000937699)	1.12336	0.02830	0.97907	0.01401	0.22420	0.00430
IA09882 (MA000953421)	1.41162	0.02637	-0.38533	0.01632	0.25880	0.00820
IA09884 (MA000957282)	1.15941	0.01972	-0.34714	0.01703	0.15300	0.00860
IA12452 (MA301830)	0.85534	0.02386	0.43653	0.02519	0.31520	0.00830
IA00876 (MA298032)	0.86006	0.00933	0.41618	0.00887	0.00000	0.00000
IA02734 (MA704359624)	0.39089	0.00677	-1.85805	0.03194	0.00000	0.00000
IA04971 (MA800975677)	0.95586	0.00998	-0.28728	0.00846	0.00000	0.00000
IA04983 (MA801235389)	0.72547	0.00846	-0.76996	0.01139	0.00000	0.00000
IA04999 (MA801646735)	1.17225	0.01383	-0.96081	0.00937	0.00000	0.00000
IA05071 (MA804073329)	0.88859	0.00922	0.19792	0.00836	0.00000	0.00000
IA08213 (MA904453014)	0.75406	0.00863	-0.68400	0.01058	0.00000	0.00000
IA09863 (MA000846693)	0.91706	0.00957	0.08949	0.00816	0.00000	0.00000
IA09877 (MA000938134)	0.66643	0.00823	-0.99114	0.01340	0.00000	0.00000
IA09883 (MA000955730)	0.81030	0.00863	-0.34915	0.00917	0.00000	0.00000
IA09898 (MA001042212)	0.56795	0.00712	-0.16323	0.01098	0.00000	0.00000
IA09918 (MA001066377)	1.15346	0.01237	-0.73469	0.00877	0.00000	0.00000
IA09926 (MA001142456)	0.59450	0.00758	-0.55341	0.01169	0.00000	0.00000
IA10188 (MA002837526)	0.91922	0.01044	-0.82155	0.01008	0.00000	0.00000
IA10284 (MA006336846)	0.52163	0.00758	-0.84382	0.01562	0.00000	0.00000
IA10481 (MA935150419)	0.95825	0.01003	-0.22883	0.00836	0.00000	0.00000

Table 2.8.22  
IRT Parameters for Polytomous Items  
Mathematics Grade 5

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA07728 (MA802371654)	1.24949	0.00939	-0.30580	0.00486	1.52968	0.01397	0.49862	0.00950	-0.56347	0.00865
IA08179 (MA903746975)	1.14605	0.00898	-0.67760	0.00571	1.67380	0.01863	0.27968	0.01072	-0.51326	0.00932
IA08243 (MA908434516)	0.67629	0.00683	0.07825	0.00945	1.12825	0.01599	-1.12825	0.01673	0.00000	0.00000
IA09886 (MA000965213)	0.68650	0.00694	0.15585	0.00935	1.13207	0.01560	-1.13207	0.01676	0.00000	0.00000
IA10152 (MA002343629)	1.14238	0.00881	0.04311	0.00508	1.54011	0.01274	0.54452	0.00927	-0.37014	0.00911
IA10278 (MA005852277)	0.83381	0.00712	-0.02317	0.00664	1.62901	0.01716	0.90056	0.01284	-0.46776	0.01108

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA07728 (MA802371654)	-1.46483	0.01055	0.00000	0.00000	n/a	n/a
IA08179 (MA903746975)	-1.44022	0.01021	0.00000	0.00000	n/a	n/a
IA10152 (MA002343629)	-1.71449	0.01358	0.00000	0.00000	n/a	n/a
IA10278 (MA005852277)	-2.06181	0.01734	0.00000	0.00000	n/a	n/a

Table 2.8.23  
IRT Parameters for Dichotomous Items  
Mathematics Grade 6

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA02145 (MA282127)	1.22191	0.02110	0.41646	0.01144	0.16020	0.00420
IA02464 (MA307338)	0.88150	0.01409	-0.73768	0.02422	0.08650	0.01170
IA02470 (MA307363)	0.55614	0.01728	-1.72886	0.12863	0.18480	0.05050
IA05125 (MA805101277)	1.19579	0.04227	1.40764	0.01752	0.32770	0.00350
IA07619 (MA307340)	0.61084	0.01551	0.40058	0.02824	0.07530	0.01040
IA07694 (MA736509125)	0.71015	0.01363	-0.95484	0.04071	0.03610	0.01940
IA07740 (MA805104566)	1.38608	0.02641	0.41522	0.01144	0.22120	0.00420
IA07742 (MA805111429)	0.93346	0.02424	0.35750	0.02226	0.36290	0.00700
IA07772 (MA900283487)	1.11228	0.01677	-0.48259	0.01494	0.07170	0.00740
IA09952 (MA001264865)	0.84094	0.01517	-0.13278	0.01989	0.06960	0.00840
IA09990 (MA001529070)	1.14485	0.02367	0.09809	0.01618	0.27880	0.00630
IA10012 (MA001585164)	1.07544	0.02464	-0.15175	0.02195	0.34940	0.00820
IA10159 (MA002536621)	0.51091	0.03092	1.69035	0.04277	0.34420	0.01000
IA10161 (MA002538062)	0.76793	0.01278	-1.71278	0.04628	0.03000	0.02730
IA10276 (MA005664640)	1.24838	0.02264	0.40110	0.01154	0.17590	0.00430
IA12436 (MA296382)	1.23178	0.03040	0.72802	0.01412	0.32580	0.00430
IA00782 (MA223217)	0.83792	0.00873	-0.29934	0.00866	0.00000	0.00000
IA00974 (MA307362)	1.07680	0.01118	-1.05821	0.00969	0.00000	0.00000
IA01129 (MA624248796)	0.61421	0.00724	-0.53072	0.01103	0.00000	0.00000
IA02284 (MA299673)	0.93877	0.00953	-0.73118	0.00928	0.00000	0.00000
IA02691 (MA703149512)	0.72110	0.00799	-0.85507	0.01113	0.00000	0.00000
IA04875 (MA736063629)	0.87277	0.00884	0.13436	0.00876	0.00000	0.00000
IA04885 (MA736368137)	1.00254	0.01032	-0.70490	0.00855	0.00000	0.00000
IA05128 (MA805109765)	0.46990	0.00667	-0.13783	0.01319	0.00000	0.00000
IA05141 (MA805280170)	0.75316	0.00833	-0.91577	0.01113	0.00000	0.00000
IA07692 (MA736452404)	0.66018	0.00753	0.25670	0.01062	0.00000	0.00000
IA08104 (MA902758854)	0.47446	0.00719	-1.23177	0.01855	0.00000	0.00000
IA09997 (MA001549477)	0.74654	0.00861	-1.05131	0.01196	0.00000	0.00000
IA10001 (MA001554177)	0.65990	0.00764	-0.41271	0.01010	0.00000	0.00000
IA10011 (MA001577731)	0.90682	0.00953	-0.56669	0.00866	0.00000	0.00000
IA10014 (MA001604473)	1.15472	0.01084	0.25289	0.00763	0.00000	0.00000
IA10210 (MA003477341)	0.94447	0.00941	-0.13361	0.00794	0.00000	0.00000
IA10230 (MA003861140)	0.68688	0.00759	-0.32108	0.00979	0.00000	0.00000
IA10414 (MA800385560)	1.00938	0.01078	-0.61729	0.00876	0.00000	0.00000



Table 2.8.24  
IRT Parameters for Polytomous Items  
Mathematics Grade 6

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA04565 (MA290253)	1.42578	0.01032	0.19043	0.00405	1.25833	0.00928	0.32589	0.00783	-0.53440	0.00873
IA04596 (MA298252)	1.43496	0.01112	0.35992	0.00373	0.73337	0.00776	0.14816	0.00785	-0.25019	0.00830
IA04912 (MA800203270)	1.45281	0.01181	0.32900	0.00516	0.46560	0.00837	-0.46560	0.00947	0.00000	0.00000
IA07810 (MA900378821)	1.17280	0.00907	-0.17772	0.00570	2.31002	0.01784	-0.04566	0.00920	-0.73641	0.00977
IA10413 (MA800301627)	1.45903	0.01055	-0.17138	0.00384	1.08822	0.00966	0.31080	0.00781	-0.42272	0.00781
IA10435 (MA900578720)	0.97339	0.00793	-0.04549	0.00660	0.80804	0.01130	-0.80804	0.01155	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA04565 (MA290253)	-1.04983	0.01022	0.00000	0.00000	n/a	n/a
IA04596 (MA298252)	-0.63133	0.00933	0.00000	0.00000	n/a	n/a
IA07810 (MA900378821)	-1.52795	0.01232	0.00000	0.00000	n/a	n/a
IA10413 (MA800301627)	-0.97629	0.00891	0.00000	0.00000	n/a	n/a

Table 2.8.25

## IRT Parameters for Dichotomous Items—Mathematics Grade 7

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA00920 (MA304467)	1.18324	0.02198	-0.36628	0.01702	0.17490	0.00730
IA00952 (MA306626)	1.19069	0.03830	1.15262	0.01714	0.41290	0.00370
IA00953 (MA306627)	0.92129	0.01585	0.33553	0.01402	0.08710	0.00500
IA02039 (MA219417)	0.95305	0.01516	0.24050	0.01313	0.07100	0.00480
IA02526 (MA311074)	1.12317	0.02615	1.07628	0.01402	0.22650	0.00340
IA04501 (MA259175)	0.56784	0.02346	0.61316	0.05030	0.40090	0.01140
IA04513 (MA272764)	1.03832	0.03154	0.88200	0.01981	0.44740	0.00450
IA04541 (MA282221)	1.26951	0.02969	1.00651	0.01280	0.22810	0.00330
IA04587 (MA298072)	1.33952	0.02367	0.53215	0.01068	0.15100	0.00340
IA07778 (MA900336138)	1.41908	0.02420	0.64710	0.00990	0.12450	0.00290
IA07843 (MA900557823)	0.67853	0.01585	-0.13238	0.03450	0.17520	0.01210
IA08188 (MA903983773)	0.74441	0.01902	1.00796	0.01869	0.15570	0.00560
IA08189 (MA904000450)	0.74832	0.02251	1.18366	0.02103	0.24160	0.00560
IA08199 (MA904169987)	0.90719	0.01939	0.73656	0.01558	0.18040	0.00480
IA09888 (MA000971342)	1.16226	0.02198	-0.12514	0.01580	0.17180	0.00620
IA10256 (MA005170212)	0.91443	0.02309	0.19555	0.02459	0.38570	0.00720
IA10270 (MA005207399)	1.13157	0.02002	-0.01743	0.01558	0.23900	0.00600
IA02876 (MA713848056)	0.88801	0.00861	0.24006	0.00879	0.00000	0.00000
IA02885 (MA713849125)	0.96425	0.00930	-0.42013	0.00835	0.00000	0.00000
IA02887 (MA713849162)	0.81336	0.00803	0.26265	0.00935	0.00000	0.00000
IA04689 (MA311092)	1.44803	0.01442	0.35489	0.00734	0.00000	0.00000
IA04770 (MA713848251)	0.60705	0.00676	0.20668	0.01090	0.00000	0.00000
IA04773 (MA713848348)	0.90291	0.00866	0.02296	0.00846	0.00000	0.00000
IA05115 (MA804676692)	1.37840	0.01374	0.47106	0.00768	0.00000	0.00000
IA07848 (MA900567252)	0.86017	0.00851	0.28112	0.00901	0.00000	0.00000
IA07897 (MA900739359)	1.03055	0.01014	-0.27347	0.00812	0.00000	0.00000
IA07905 (MA900743031)	0.89202	0.00856	0.20456	0.00901	0.00000	0.00000
IA07908 (MA900749529)	0.81346	0.00814	-0.21517	0.00890	0.00000	0.00000
IA10027 (MA001678587)	0.70505	0.00724	0.01473	0.00957	0.00000	0.00000
IA10032 (MA001702061)	1.17013	0.01342	-1.33714	0.01035	0.00000	0.00000
IA10050 (MA001759197)	0.50640	0.00713	-1.09334	0.01536	0.00000	0.00000
IA10081 (MA002046543)	0.88415	0.00888	0.25719	0.00879	0.00000	0.00000
IA10252 (MA005077116)	0.68577	0.00719	0.05545	0.00990	0.00000	0.00000
IA12459 (MA302328)	0.94385	0.00919	-0.07563	0.00823	0.00000	0.00000

Table 2.8.26  
IRT Parameters for Polytomous Items  
Mathematics Grade 7

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA01160 (MA624562376)	0.57339	0.00544	0.00827	0.01115	1.37090	0.01871	-1.37090	0.01989	0.00000	0.00000
IA07679 (MA717248260)	1.16152	0.00845	0.30521	0.00542	1.90985	0.01218	0.32487	0.00922	-0.49022	0.01042
IA07730 (MA802907874)	1.33048	0.00962	0.45877	0.00445	1.25222	0.00907	0.39107	0.00840	-0.55008	0.00995
IA10090 (MA002119133)	1.40962	0.00999	-0.23823	0.00406	1.11071	0.01009	0.39344	0.00839	-0.39527	0.00820
IA10445 (MA900765087)	1.05168	0.00888	-0.90890	0.00805	1.08019	0.01607	-1.08019	0.01144	0.00000	0.00000
IA12412 (MA261648)	1.31764	0.00993	0.17009	0.00398	0.83703	0.00855	0.23203	0.00816	-0.10757	0.00835

Item ID	Parameters and Measures of Standard Error						
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)	
IA07679 (MA717248260)	-1.74450	0.01566	0.00000	0.00000	n/a	n/a	
IA07730 (MA802907874)	-1.09321	0.01198	0.00000	0.00000	n/a	n/a	
IA10090 (MA002119133)	-1.10888	0.00948	0.00000	0.00000	n/a	n/a	
IA12412 (MA261648)	-0.96149	0.01036	0.00000	0.00000	n/a	n/a	

Table 2.8.27  
IRT Parameters for Dichotomous Items  
Mathematics Grade 8

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA00792 (MA252991)	1.56012	0.05282	0.60178	0.01809	0.63240	0.00340
IA00859 (MA297517)	0.95291	0.02814	0.92010	0.01875	0.35830	0.00470
IA02480 (MA307585)	1.00019	0.02095	-0.87045	0.03088	0.29480	0.01340
IA04553 (MA287538)	0.80660	0.01908	-0.67104	0.03971	0.30600	0.01440
IA04594 (MA298198)	0.64952	0.01636	0.62958	0.02371	0.13920	0.00780
IA05094 (MA804535837)	1.32586	0.03395	0.66278	0.01456	0.39130	0.00390
IA08003 (MA901143033)	1.35086	0.02921	0.25821	0.01346	0.31960	0.00460
IA10039 (MA001736920)	0.83773	0.01855	-0.17294	0.02658	0.25550	0.00950
IA10064 (MA001865159)	0.96762	0.01572	-0.02900	0.01412	0.07910	0.00570
IA10132 (MA002180558)	1.13963	0.02089	-0.29206	0.01677	0.22030	0.00710
IA10134 (MA002181298)	1.00995	0.01929	-0.33949	0.01985	0.20080	0.00840
IA10231 (MA003932801)	0.87568	0.01455	-0.79049	0.02471	0.07170	0.01200
IA10477 (MA908446890)	1.00344	0.02132	-0.63883	0.02757	0.31530	0.01100
IA10478 (MA908450808)	1.03644	0.01594	0.07611	0.01279	0.10480	0.00480
IA12461 (MA303244)	0.88405	0.02431	1.09315	0.01732	0.23050	0.00450
IA12480 (MA307586)	0.58023	0.01151	-0.36287	0.03541	0.01180	0.01350
IA02938 (MA715919661)	0.34726	0.00618	-1.64142	0.02691	0.00000	0.00000
IA02940 (MA715919716)	0.95382	0.00981	-1.00821	0.00993	0.00000	0.00000
IA02943 (MA715919788)	1.00344	0.00970	0.10953	0.00849	0.00000	0.00000
IA02947 (MA715919853)	1.15295	0.01109	-0.17195	0.00761	0.00000	0.00000
IA04779 (MA715919758)	0.47992	0.00624	-0.64258	0.01313	0.00000	0.00000
IA07568 (MA297651)	0.81902	0.00821	-0.29349	0.00893	0.00000	0.00000
IA07701 (MA800472975)	0.91203	0.00895	0.12652	0.00871	0.00000	0.00000
IA07707 (MA800659905)	0.59873	0.00656	0.73226	0.01335	0.00000	0.00000
IA07733 (MA804043870)	1.00792	0.00981	0.21828	0.00816	0.00000	0.00000
IA08010 (MA901253257)	0.53557	0.00618	0.08141	0.01180	0.00000	0.00000
IA08088 (MA902308680)	1.14794	0.01082	-0.12562	0.00761	0.00000	0.00000
IA08226 (MA905179612)	0.98601	0.00917	0.62627	0.00949	0.00000	0.00000
IA10041 (MA001737758)	0.86518	0.00874	-0.40280	0.00893	0.00000	0.00000
IA10042 (MA001737991)	0.38782	0.00565	-0.18430	0.01445	0.00000	0.00000
IA10130 (MA002177981)	0.82776	0.00826	-0.74560	0.00960	0.00000	0.00000
IA10201 (MA003128642)	0.57938	0.00650	-0.27540	0.01070	0.00000	0.00000
IA10234 (MA003936639)	1.04539	0.01045	-0.68560	0.00849	0.00000	0.00000
IA12479 (MA307492)	1.08169	0.01093	-0.94832	0.00904	0.00000	0.00000

Table 2.8.28  
IRT Parameters for Polytomous Items  
Mathematics Grade 8

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA04612 (MA301714)	1.49568	0.01109	0.33851	0.00393	0.88458	0.00818	0.25445	0.00798	-0.25578	0.00857
IA04717 (MA311433)	1.30576	0.00938	0.28498	0.00485	1.69865	0.01105	0.29479	0.00866	-0.55669	0.00988
IA07709 (MA800738445)	1.34030	0.00938	-0.13560	0.00415	1.09100	0.01005	0.41300	0.00848	-0.30712	0.00828
IA10143 (MA002243883)	0.85052	0.00800	-1.11945	0.00897	0.70661	0.01795	-0.70661	0.01266	0.00000	0.00000
IA10290 (MA010701848)	0.92280	0.00725	-1.44190	0.00694	1.52132	0.02197	0.47648	0.01504	-0.45530	0.01166
IA10455 (MA902278325)	0.76050	0.00688	-0.23167	0.00761	0.83279	0.01349	-0.83279	0.01286	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA04612 (MA301714)	-0.88325	0.01027	0.00000	0.00000	n/a	n/a
IA04717 (MA311433)	-1.43675	0.01327	0.00000	0.00000	n/a	n/a
IA07709 (MA800738445)	-1.19688	0.01015	0.00000	0.00000	n/a	n/a
IA10290 (MA010701848)	-1.54250	0.01088	0.00000	0.00000	n/a	n/a

Table 2.8.29  
IRT Parameters for Dichotomous Items  
Mathematics Grade 10

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA02616 (MA314988)	0.77576	0.01580	-0.64590	0.03466	0.13670	0.01560
IA02623 (MA315436)	1.46627	0.03191	-0.02432	0.01408	0.40760	0.00530
IA04617 (MA303279)	1.84743	0.02961	-0.36278	0.00903	0.14920	0.00490
IA04740 (MA315737)	1.01015	0.01623	-0.73202	0.02068	0.08450	0.01130
IA04783 (MA717049810)	1.17660	0.01350	-0.34977	0.00942	0.01010	0.00400
IA07751 (MA805406621)	0.55821	0.01211	-0.29540	0.03990	0.01540	0.01530
IA10185 (MA002776824)	0.96952	0.01520	-0.61736	0.01884	0.03730	0.01010
IA12413 (MA273263)	1.72427	0.02713	-0.44346	0.01029	0.18790	0.00560
IA12422 (MA281703)	0.88076	0.02470	0.38095	0.02340	0.38690	0.00710
IA12425 (MA287711)	1.64283	0.02991	-0.88261	0.01651	0.30850	0.00980
IA12441 (MA299944)	0.92768	0.01798	0.00462	0.01767	0.15650	0.00750
IA12448 (MA301385)	1.59676	0.02192	-0.07869	0.00854	0.12130	0.00380
IA12453 (MA301994)	1.28414	0.02791	-0.52706	0.02175	0.44890	0.00860
IA12455 (MA302009)	0.67876	0.01907	0.45464	0.02806	0.23620	0.00920
IA12460 (MA303236)	1.35117	0.01756	-0.30394	0.00952	0.05440	0.00460
IA12500 (MA311971)	0.74331	0.00932	-0.65153	0.01689	0.00140	0.00730
IA12501 (MA312323)	0.82475	0.01974	0.33327	0.02068	0.22050	0.00750
IA12504 (MA313775)	1.19192	0.02028	-1.57798	0.03107	0.05410	0.02520
IA12506 (MA313793)	1.00173	0.01889	-0.06218	0.01680	0.17550	0.00730
IA12507 (MA314947)	1.42794	0.02531	-0.81212	0.01680	0.19640	0.01010
IA12509 (MA315396)	1.88921	0.03130	0.31619	0.00816	0.20290	0.00310
IA12511 (MA315401)	1.24508	0.02119	-0.58386	0.01738	0.22680	0.00890
IA02821 (MA713647003)	0.84085	0.00836	0.18016	0.00845	0.00000	0.00000
IA05138 (MA805276190)	1.08505	0.00969	0.05899	0.00709	0.00000	0.00000
IA08054 (MA901757179)	1.39204	0.01253	-0.01354	0.00641	0.00000	0.00000
IA09859 (MA000774815)	1.49824	0.01350	-0.23161	0.00621	0.00000	0.00000
IA09954 (MA001272700)	0.83098	0.00817	-0.15413	0.00796	0.00000	0.00000
IA09957 (MA001275174)	1.26234	0.01120	-0.15520	0.00651	0.00000	0.00000
IA10166 (MA002634895)	0.55294	0.00666	-0.13131	0.01039	0.00000	0.00000
IA10202 (MA003332783)	0.46684	0.00642	1.05205	0.01884	0.00000	0.00000
IA10203 (MA003336082)	1.17212	0.01048	-0.46133	0.00689	0.00000	0.00000
IA12516 (MA315759)	1.17497	0.01054	-0.72532	0.00748	0.00000	0.00000

Table 2.8.30  
IRT Parameters for Polytomous Items  
Mathematics Grade 10

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA02861 (MA713808267)	1.27536	0.00872	-0.03075	0.00528	2.14425	0.01395	0.53554	0.00853	-0.82288	0.00963
IA09969 (MA001368680)	0.69281	0.00654	-0.54094	0.00849	0.94869	0.01619	-0.94869	0.01304	0.00000	0.00000
IA09988 (MA001478687)	0.47483	0.00545	0.65911	0.01405	1.38813	0.01908	-1.38813	0.02864	0.00000	0.00000
IA10083 (MA002057230)	0.99423	0.00902	-1.38754	0.00784	0.54755	0.01553	-0.54755	0.01131	0.00000	0.00000
IA10087 (MA002069968)	1.66203	0.01144	-0.52772	0.00333	0.79841	0.00872	0.16848	0.00713	-0.24057	0.00679
IA10193 (MA002880198)	0.95784	0.00805	0.40682	0.00634	0.69455	0.00966	-0.69455	0.01217	0.00000	0.00000
IA10389 (MA316870)	0.73253	0.00666	0.17841	0.00830	1.02500	0.01285	-1.02500	0.01576	0.00000	0.00000
IA10399 (MA717336908)	1.26198	0.00999	-0.40497	0.00502	0.55056	0.00909	-0.55056	0.00830	0.00000	0.00000
IA12432 (MA294334)	1.87686	0.01314	0.09559	0.00317	0.74703	0.00689	0.24758	0.00655	-0.19147	0.00680
IA12488 (MA308930)	1.64417	0.01126	0.37672	0.00382	0.91252	0.00729	0.44958	0.00705	-0.17297	0.00763

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA02861 (MA713808267)	-1.85691	0.01404	0.00000	0.00000	n/a	n/a
IA10087 (MA002069968)	-0.72632	0.00696	0.00000	0.00000	n/a	n/a
IA12432 (MA294334)	-0.80315	0.00803	0.00000	0.00000	n/a	n/a
IA12488 (MA308930)	-1.18914	0.01143	0.00000	0.00000	n/a	n/a

Table 2.8.31  
IRT Parameters for Dichotomous Items  
Introductory Physics Grade 10

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA05488 (SC630642496)	1.15201	0.04122	-1.19929	0.07401	0.15220	0.05850
IA05699 (SC805343036)	1.63151	0.07081	0.30395	0.02648	0.31270	0.01250
IA05893 (SC803254164)	1.26832	0.05504	0.90050	0.02629	0.23600	0.00970
IA05894 (SC803255498)	1.13109	0.07025	1.21973	0.03527	0.36900	0.01030
IA05897 (SC803313338)	1.62315	0.08696	1.38954	0.02320	0.23660	0.00630
IA10692 (SC736226112)	2.31892	0.24663	1.42837	0.03069	0.59800	0.00590
IA10776 (SC813625710)	1.41605	0.08872	1.19886	0.03022	0.40300	0.00850
IA10876 (SC904262622)	1.08579	0.05064	1.07321	0.02957	0.21350	0.01020
IA10878 (SC904339575)	1.35698	0.07691	1.44746	0.02826	0.29750	0.00730
IA10883 (SC904349855)	1.20291	0.03820	-0.40112	0.03995	0.10300	0.02540
IA11041 (SC915751239)	1.23741	0.04078	-0.33348	0.03509	0.06140	0.02220
IA11044 (SC916955396)	0.64915	0.02319	-0.72672	0.08608	0.04540	0.04110
IA12902 (SC230808)	1.61781	0.05536	-0.41226	0.02994	0.12730	0.02080
IA12908 (SC280839)	0.93473	0.04669	0.35055	0.05305	0.27810	0.02110
IA12910 (SC287048)	1.05701	0.04851	-0.03193	0.05137	0.23550	0.02490
IA12924 (SC293975)	1.19380	0.06478	0.30751	0.04425	0.38180	0.01750
IA12944 (SC304783)	1.17011	0.05335	0.21797	0.04023	0.28620	0.01820
IA12949 (SC305503)	1.30175	0.04084	-0.06580	0.02835	0.09010	0.01620
IA12964 (SC313738)	1.44803	0.08696	1.24780	0.02919	0.38770	0.00810
IA12965 (SC315642)	1.42842	0.05617	0.24492	0.02826	0.25060	0.01390
IA12982 (SC316347)	1.14975	0.04015	-0.40739	0.04472	0.11750	0.02760
IA05858 (SC800542273)	0.83156	0.02067	-0.52724	0.02255	0.00000	0.00000
IA05863 (SC801152950)	0.75791	0.01847	-0.52303	0.02367	0.00000	0.00000
IA05902 (SC803633622)	0.65097	0.01860	-0.60686	0.02788	0.00000	0.00000
IA05934 (SC805732725)	0.17933	0.01219	-0.27444	0.07045	0.00000	0.00000
IA06023 (SC814931121)	1.06040	0.02375	-0.17443	0.01675	0.00000	0.00000
IA10560 (SC005926735)	0.94233	0.02080	0.04554	0.01665	0.00000	0.00000
IA10564 (SC007257568)	0.90470	0.02532	-1.31409	0.03593	0.00000	0.00000
IA10710 (SC801643310)	0.80397	0.01879	-0.14318	0.01918	0.00000	0.00000
IA10938 (SC906755093)	0.90539	0.02111	-0.27762	0.01890	0.00000	0.00000
IA10949 (SC907464800)	1.28202	0.02564	-0.30812	0.01656	0.00000	0.00000
IA10972 (SC909633335)	0.41810	0.01364	0.44598	0.02844	0.00000	0.00000



Table 2.8.32  
IRT Parameters for Polytomous Items  
Introductory Physics Grade 10

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA05899 (SC803424446)	0.74019	0.01521	0.81260	0.01802	0.94604	0.02708	-0.94604	0.03487	0.00000	0.00000
IA05901 (SC803432596)	1.21076	0.01986	-0.25149	0.01164	1.12435	0.02884	0.08583	0.02001	-1.21018	0.01986
IA10705 (SC801132834)	0.95484	0.01992	-0.63521	0.01772	0.70957	0.03609	-0.70957	0.02413	0.00000	0.00000
IA10780 (SC813853029)	0.71833	0.01602	-0.24207	0.02062	0.96396	0.04126	-0.96396	0.02914	0.00000	0.00000
IA10879 (SC904340389)	0.98249	0.01854	-0.08681	0.01383	0.70896	0.02629	-0.70896	0.02136	0.00000	0.00000
IA10886 (SC904352276)	0.95352	0.01703	0.92136	0.01321	1.21508	0.02253	0.02807	0.02185	-1.24315	0.03333
IA10971 (SC909552364)	0.82552	0.01860	-0.68443	0.01998	0.62265	0.04070	-0.62265	0.02718	0.00000	0.00000
IA12911 (SC287206)	1.27724	0.01992	0.53984	0.00977	1.48858	0.02338	0.61435	0.01772	-0.63741	0.01923
IA12941 (SC301782)	1.08195	0.01747	0.87994	0.01171	1.80734	0.02541	0.37464	0.01901	-0.59353	0.02336
IA12985 (SC316441)	1.61259	0.02501	0.78589	0.00843	1.32192	0.01850	0.23231	0.01550	-0.37799	0.01726

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA05901 (SC803432596)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA10886 (SC904352276)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA12911 (SC287206)	-1.46552	0.02604	0.00000	0.00000	n/a	n/a
IA12941 (SC301782)	-1.58846	0.03451	0.00000	0.00000	n/a	n/a
IA12985 (SC316441)	-1.17625	0.02329	0.00000	0.00000	n/a	n/a

Table 2.8.33  
IRT Parameters for Dichotomous Items  
Science Grade 5

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA03052 (SC294524)	0.67519	0.01372	-0.34959	0.02951	0.07980	0.01120
IA03124 (SC315987)	0.70883	0.01690	0.28269	0.02285	0.11470	0.00830
IA03147 (SC627204024)	1.14462	0.02708	0.63450	0.01387	0.21140	0.00450
IA03155 (SC629148346)	0.90664	0.02146	-2.14613	0.06646	0.15150	0.04090
IA03165 (SC629551835)	0.77973	0.01833	0.17297	0.02341	0.21210	0.00800
IA03194 (SC630756314)	1.07202	0.01696	-0.84551	0.01808	0.08000	0.00880
IA05573 (SC736232773)	0.64758	0.01054	-1.84469	0.04882	0.01810	0.02390
IA05586 (SC801062661)	0.90034	0.01892	-1.33134	0.03950	0.18200	0.01920
IA05591 (SC801064879)	0.39042	0.01669	0.42836	0.07777	0.12690	0.02020
IA05625 (SC802352255)	0.75213	0.01796	-0.47296	0.03606	0.24920	0.01270
IA05755 (SC814668478)	0.86611	0.01632	-1.47158	0.03961	0.12150	0.02040
IA08524 (SC804037841)	0.81661	0.02029	-0.01087	0.02707	0.26860	0.00920
IA08537 (SC809002676)	0.78392	0.01881	-2.16088	0.08044	0.17140	0.04380
IA08605 (SC904845052)	0.39148	0.01616	0.03850	0.09453	0.14330	0.02370
IA10513 (SC001657113)	0.70020	0.01754	-2.22878	0.09508	0.15800	0.04860
IA10518 (SC002002025)	1.09671	0.02824	0.65403	0.01564	0.29070	0.00480
IA10595 (SC291284)	0.85954	0.01881	-1.46403	0.04771	0.21080	0.02260
IA12943 (SC304600)	0.66422	0.01574	-0.25928	0.03495	0.15630	0.01230
IA12950 (SC309964)	1.01999	0.01775	-0.56970	0.01853	0.09870	0.00840
IA12969 (SC315956)	0.87644	0.01531	-0.55406	0.02119	0.07700	0.00920
IA03095 (SC315784)	0.56502	0.00763	-1.65952	0.01875	0.00000	0.00000
IA05558 (SC736074020)	0.61351	0.00864	-2.10230	0.02330	0.00000	0.00000
IA05587 (SC801063145)	0.52210	0.00662	-0.87791	0.01387	0.00000	0.00000
IA05623 (SC802343884)	0.73846	0.00901	-1.69979	0.01598	0.00000	0.00000
IA05672 (SC803937429)	0.65542	0.00768	-0.91696	0.01187	0.00000	0.00000
IA05724 (SC808520381)	0.41369	0.00625	1.14452	0.02208	0.00000	0.00000
IA08564 (SC903833986)	0.59485	0.00710	-0.69906	0.01187	0.00000	0.00000
IA10488 (SC000640531)	0.64345	0.00737	-0.39174	0.01043	0.00000	0.00000
IA10502 (SC000876847)	0.62236	0.00763	-1.43330	0.01553	0.00000	0.00000
IA10563 (SC006940380)	0.61255	0.00710	-0.29445	0.01065	0.00000	0.00000
IA10742 (SC803868033)	0.57514	0.00721	-1.11267	0.01420	0.00000	0.00000
IA10763 (SC809480016)	0.61759	0.00747	-1.47846	0.01609	0.00000	0.00000

Table 2.8.34  
IRT Parameters for Polytomous Items  
Science Grade 5

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA03138 (SC62523872)	0.65563	0.00684	0.38565	0.01066	1.16127	0.01604	-1.16127	0.02061	0.00000	0.00000
IA03235 (SC632638762)	0.83463	0.00827	-1.44728	0.00934	0.56493	0.01841	-0.56493	0.01359	0.00000	0.00000
IA03279 (SC711452664)	0.74921	0.00721	-1.03162	0.00961	1.08177	0.01931	-1.08177	0.01347	0.00000	0.00000
IA05569 (SC736182092)	0.50329	0.00562	-0.02562	0.01372	2.34594	0.02858	0.13302	0.01851	-2.47897	0.03315
IA05592 (SC801065906)	0.48400	0.00572	1.01061	0.01914	3.19645	0.03024	-0.32696	0.02782	-2.86949	0.05202
IA05598 (SC801629720)	0.85026	0.00800	0.77892	0.00678	0.87787	0.01108	-0.14005	0.01310	-0.73782	0.01604
IA08526 (SC804065269)	0.47568	0.00572	-0.11987	0.01669	1.89955	0.02803	-1.89955	0.02975	0.00000	0.00000
IA08542 (SC809483803)	0.57970	0.00604	-0.55239	0.00986	0.91408	0.01859	-0.91408	0.01543	0.00000	0.00000
IA10798 (SC814972728)	0.70830	0.00684	0.48617	0.01117	1.96595	0.01815	0.36102	0.01513	-2.32697	0.03062

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA05569 (SC736182092)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA05592 (SC801065906)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA05598 (SC801629720)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA10798 (SC814972728)	0.00000	0.00000	n/a	n/a	n/a	n/a

Table 2.8.35  
IRT Parameters for Dichotomous Items  
Science Grade 8

Item ID	Parameters and Measures of Standard Error					
	a	SE(a)	b	SE(b)	c	SE(c)
IA02996 (SC289633)	0.83075	0.01390	-0.59278	0.02252	0.04160	0.01030
IA03018 (SC291776)	0.46376	0.01340	-1.20432	0.10233	0.07510	0.03470
IA03133 (SC316056)	1.14340	0.03059	1.14235	0.01448	0.22560	0.00340
IA05534 (SC735347597)	0.69761	0.01741	-0.24986	0.03573	0.16580	0.01320
IA05614 (SC802143530)	0.64111	0.02703	1.43380	0.02822	0.24870	0.00680
IA05617 (SC802144364)	0.66046	0.01396	0.04359	0.02474	0.04510	0.00950
IA05666 (SC803872056)	1.37937	0.02953	0.66295	0.01152	0.24630	0.00360
IA08391 (SC299423)	0.74621	0.01813	0.12848	0.02696	0.23970	0.00910
IA08567 (SC903843634)	1.01282	0.01963	-0.95400	0.02770	0.18850	0.01370
IA08582 (SC903854067)	1.43960	0.02319	-0.58782	0.01300	0.14950	0.00660
IA08619 (SC909357115)	0.84248	0.01974	0.57099	0.01787	0.20870	0.00600
IA10499 (SC000757503)	0.96483	0.02174	-0.11857	0.02283	0.32560	0.00810
IA10899 (SC905284974)	0.47705	0.01691	0.66930	0.04366	0.13750	0.01320
IA10900 (SC905334273)	1.20602	0.02269	-0.36075	0.01702	0.26180	0.00740
IA11078 (SC933775118)	0.71068	0.01251	-0.34849	0.02357	0.01150	0.00980
IA11083 (SC933938027)	1.02333	0.01985	-0.33041	0.02114	0.28140	0.00830
IA11085 (SC933941764)	0.65356	0.01262	-1.47875	0.05508	0.03710	0.02650
IA12913 (SC288298)	0.81173	0.02169	-0.64014	0.04313	0.35130	0.01470
IA12914 (SC288343)	1.51289	0.03643	0.69604	0.01184	0.28010	0.00370
IA12916 (SC289731)	0.72647	0.01318	-1.18804	0.03922	0.02320	0.01920
IA12918 (SC291714)	0.77258	0.02397	1.12808	0.01987	0.23030	0.00550
IA12919 (SC291825)	1.29011	0.03348	1.05779	0.01311	0.22950	0.00320
IA12953 (SC310230)	1.00176	0.02280	0.42532	0.01628	0.23890	0.00570
IA12958 (SC313155)	0.52510	0.01885	0.11019	0.05835	0.24370	0.01630
IA12959 (SC313164)	1.19990	0.02341	0.26210	0.01279	0.21590	0.00480
IA12972 (SC316009)	1.08234	0.02358	-1.27906	0.03594	0.29310	0.01800
IA05685 (SC804130460)	1.18450	0.01257	-1.00231	0.00856	0.00000	0.00000
IA05781 (SC832348897)	0.47872	0.00634	-0.77514	0.01343	0.00000	0.00000
IA08496 (SC631443367)	0.28707	0.00534	-0.09404	0.01808	0.00000	0.00000
IA08531 (SC804373650)	0.75217	0.00801	-0.87556	0.01036	0.00000	0.00000
IA08579 (SC903853174)	0.54356	0.00640	-0.02628	0.01099	0.00000	0.00000
IA10690 (SC735656788)	0.23608	0.00512	0.42341	0.02484	0.00000	0.00000

Table 2.8.36  
IRT Parameters for Polytomous Items  
Science Grade 8

Item ID	Parameters and Measures of Standard Error									
	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)
IA05306 (SC304510)	0.86956	0.00745	0.15875	0.00643	1.29563	0.01246	-0.06667	0.01079	-1.22896	0.01498
IA05495 (SC631658368)	0.76151	0.00729	-0.08231	0.00811	0.92053	0.01375	-0.92053	0.01435	0.00000	0.00000
IA05621 (SC802269586)	0.73242	0.00667	0.41439	0.00699	1.19228	0.01224	-0.02868	0.01198	-1.16360	0.01714
IA08512 (SC803667588)	0.58666	0.00601	0.56295	0.01059	1.04104	0.01504	-1.04104	0.02113	0.00000	0.00000
IA08541 (SC809260838)	0.40397	0.00517	-0.14637	0.01570	1.50881	0.02727	-1.50881	0.02710	0.00000	0.00000
IA08583 (SC903855126)	0.86106	0.00729	0.35780	0.00810	1.49986	0.01315	0.42764	0.01148	-1.92750	0.02195
IA10500 (SC000777619)	0.90649	0.00784	-1.07430	0.00800	0.82148	0.01600	-0.82148	0.01134	0.00000	0.00000
IA11067 (SC932754119)	0.69088	0.00656	-0.38686	0.00815	0.83332	0.01499	-0.83332	0.01318	0.00000	0.00000
IA11093 (SC934045224)	0.67069	0.00623	-0.69539	0.00790	1.43432	0.01963	-0.09754	0.01278	-1.33678	0.01414

Item ID	Parameters and Measures of Standard Error					
	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA05306 (SC304510)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA05621 (SC802269586)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA08583 (SC903855126)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA11093 (SC934045224)	0.00000	0.00000	n/a	n/a	n/a	n/a

# Section 2.9

## Decision Accuracy and Consistency (DAC)

Table 2.9.1  
 DAC Results  
 Biology Grade 10

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
49403	0.93	0.65	Overall	0.83	0.76	0.09	0.08
			Cut 1	0.96	0.94	0.02	0.02
			Cut 2	0.92	0.89	0.05	0.03
			Cut 3	0.96	0.94	0.02	0.02
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.82	0.74		
			Perf 2	0.81	0.75		
			Perf 3	0.85	0.79		
			Perf 4	0.83	0.72		

Table 2.9.2  
 DAC Results  
 English Language Arts Grade 3

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
60542	0.91	0.61	Overall	0.82	0.74	0.09	0.09
			Cut 1	0.95	0.93	0.02	0.03
			Cut 2	0.91	0.87	0.05	0.04
			Cut 3	0.96	0.94	0.02	0.01
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.84	0.73		
			Perf 2	0.81	0.75		
			Perf 3	0.83	0.77		
			Perf 4	0.77	0.61		

Table 2.9.3  
 DAC Results  
 English Language Arts Grade 4

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
61836	0.90	0.59	Overall	0.81	0.73	0.10	0.09
			Cut 1	0.95	0.92	0.02	0.03
			Cut 2	0.90	0.86	0.05	0.05
			Cut 3	0.96	0.95	0.03	0.01
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.83	0.72		
			Perf 2	0.82	0.76		
			Perf 3	0.80	0.73		
			Perf 4	0.74	0.54		

Table 2.9.4  
 DAC Results  
 English Language Arts Grade 5

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
62316	0.91	0.61	Overall	0.82	0.75	0.10	0.08
			Cut 1	0.95	0.93	0.02	0.03
			Cut 2	0.91	0.87	0.05	0.04
			Cut 3	0.96	0.95	0.03	0.01
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.83	0.74		
			Perf 2	0.81	0.75		
			Perf 3	0.84	0.78		
			Perf 4	0.72	0.52		

Table 2.9.5  
 DAC Results  
 English Language Arts Grade 6

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
63574	0.91	0.56	Overall	0.78	0.69	0.11	0.11
			Cut 1	0.94	0.91	0.03	0.03
			Cut 2	0.91	0.87	0.05	0.05
			Cut 3	0.94	0.91	0.03	0.03
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.85	0.77		
			Perf 2	0.77	0.69		
			Perf 3	0.78	0.70		
			Perf 4	0.64	0.48		

Table 2.9.6  
 DAC Results  
 English Language Arts Grade 7

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
63711	0.91	0.60	Overall	0.81	0.73	0.10	0.09
			Cut 1	0.94	0.92	0.03	0.03
			Cut 2	0.91	0.87	0.05	0.05
			Cut 3	0.96	0.94	0.03	0.02
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.83	0.73		
			Perf 2	0.81	0.75		
			Perf 3	0.79	0.72		
			Perf 4	0.78	0.62		

Table 2.9.7  
 DAC Results  
 English Language Arts Grade 8

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
65553	0.91	0.57	Overall	0.78	0.69	0.11	0.11
			Cut 1	0.94	0.91	0.03	0.03
			Cut 2	0.91	0.87	0.04	0.05
			Cut 3	0.94	0.91	0.03	0.03
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.85	0.76		
			Perf 2	0.78	0.69		
			Perf 3	0.77	0.69		
			Perf 4	0.70	0.55		

Table 2.9.8  
 DAC Results  
 English Language Arts Grade 10

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
68104	0.91	0.58	Overall	0.80	0.71	0.10	0.10
			Cut 1	0.96	0.94	0.02	0.02
			Cut 2	0.91	0.87	0.05	0.04
			Cut 3	0.93	0.90	0.04	0.03
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.83	0.71		
			Perf 2	0.77	0.69		
			Perf 3	0.82	0.75		
			Perf 4	0.78	0.67		



Table 2.9.9  
 DAC Results  
 Mathematics Grade 3

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
51707	0.93	0.65	Overall	0.83	0.76	0.08	0.08
			Cut 1	0.96	0.94	0.02	0.02
			Cut 2	0.92	0.88	0.04	0.04
			Cut 3	0.96	0.94	0.02	0.02
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.84	0.74		
			Perf 2	0.84	0.78		
			Perf 3	0.83	0.78		
			Perf 4	0.80	0.67		

Table 2.9.10  
 DAC Results  
 Mathematics Grade 4

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
52554	0.93	0.66	Overall	0.84	0.78	0.08	0.08
			Cut 1	0.96	0.95	0.01	0.02
			Cut 2	0.92	0.89	0.04	0.04
			Cut 3	0.96	0.94	0.02	0.02
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.85	0.74		
			Perf 2	0.83	0.77		
			Perf 3	0.85	0.80		
			Perf 4	0.82	0.70		

Table 2.9.11  
 DAC Results  
 Mathematics Grade 5

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
54159	0.93	0.67	Overall	0.86	0.80	0.08	0.06
			Cut 1	0.97	0.95	0.02	0.02
			Cut 2	0.92	0.88	0.05	0.04
			Cut 3	0.97	0.96	0.02	0.01
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.76	0.66		
			Perf 2	0.86	0.82		
			Perf 3	0.87	0.82		
			Perf 4	0.82	0.68		

Table 2.9.12  
 DAC Results  
 Mathematics Grade 6

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
56389	0.94	0.69	Overall	0.86	0.80	0.07	0.07
			Cut 1	0.96	0.95	0.01	0.02
			Cut 2	0.92	0.89	0.04	0.04
			Cut 3	0.97	0.96	0.02	0.01
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.85	0.75		
			Perf 2	0.86	0.81		
			Perf 3	0.86	0.81		
			Perf 4	0.83	0.72		

Table 2.9.13  
 DAC Results  
 Mathematics Grade 7

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
57234	0.94	0.68	Overall	0.85	0.78	0.08	0.08
			Cut 1	0.95	0.93	0.02	0.03
			Cut 2	0.93	0.90	0.04	0.04
			Cut 3	0.97	0.95	0.02	0.01
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.86	0.78		
			Perf 2	0.85	0.79		
			Perf 3	0.84	0.78		
			Perf 4	0.84	0.73		

Table 2.9.14  
 DAC Results  
 Mathematics Grade 8

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
59572	0.94	0.67	Overall	0.84	0.78	0.09	0.07
			Cut 1	0.95	0.92	0.03	0.03
			Cut 2	0.93	0.90	0.04	0.03
			Cut 3	0.97	0.96	0.02	0.01
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.80	0.72		
			Perf 2	0.85	0.79		
			Perf 3	0.85	0.79		
			Perf 4	0.85	0.73		

Table 2.9.15  
 DAC Results  
 Mathematics Grade 10

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
63574	0.95	0.69	Overall	0.86	0.80	0.07	0.07
			Cut 1	0.97	0.95	0.01	0.02
			Cut 2	0.93	0.90	0.04	0.03
			Cut 3	0.97	0.95	0.02	0.02
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.73	0.58		
			Perf 2	0.86	0.82		
			Perf 3	0.88	0.84		
			Perf 4	0.85	0.76		

Table 2.9.16  
 DAC Results  
 Introductory Physics Grade 10

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
12822	0.94	0.64	Overall	0.82	0.75	0.10	0.07
			Cut 1	0.95	0.93	0.03	0.02
			Cut 2	0.92	0.89	0.05	0.03
			Cut 3	0.95	0.93	0.03	0.02
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.68	0.58		
			Perf 2	0.81	0.75		
			Perf 3	0.85	0.79		
			Perf 4	0.88	0.79		

Table 2.9.17  
 DAC Results  
 Science Grade 5

N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
54162	0.91	0.59	Overall	0.81	0.73	0.10	0.09
			Cut 1	0.95	0.93	0.02	0.03
			Cut 2	0.90	0.87	0.05	0.05
			Cut 3	0.95	0.93	0.03	0.02
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.81	0.68		
			Perf 2	0.82	0.76		
			Perf 3	0.80	0.73		
			Perf 4	0.79	0.65		

Table 2.9.18  
 DAC Results  
 Science Grade 8

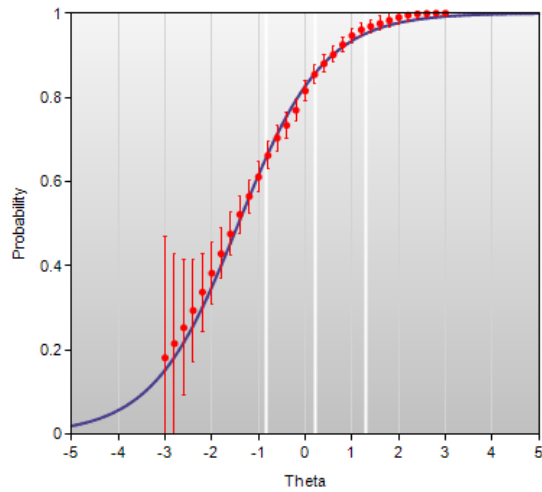
N	Reliability	Kappa		Accuracy	Consistency	F Pos	F Neg
59527	0.91	0.62	Overall	0.82	0.75	0.09	0.09
			Cut 1	0.95	0.93	0.02	0.03
			Cut 2	0.91	0.87	0.05	0.04
			Cut 3	0.96	0.95	0.02	0.01
			Cut 4	1.00	1.00	0.00	0.00
			Perf 1	0.84	0.73		
			Perf 2	0.82	0.76		
			Perf 3	0.83	0.77		
			Perf 4	0.76	0.59		

# Section 2.10

## Fit Plots of Watchlist Items

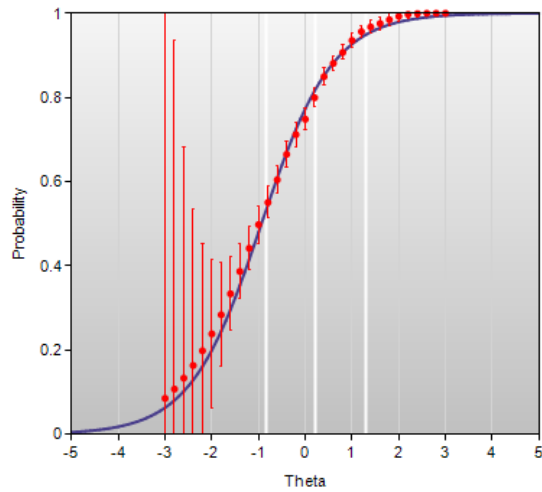
# Initial Calibration

Biology Grade 10: IA10684



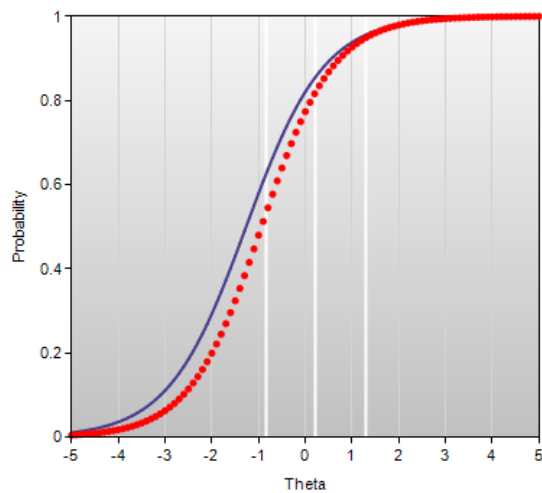
# Final Calibration

Biology Grade 10: IA10684



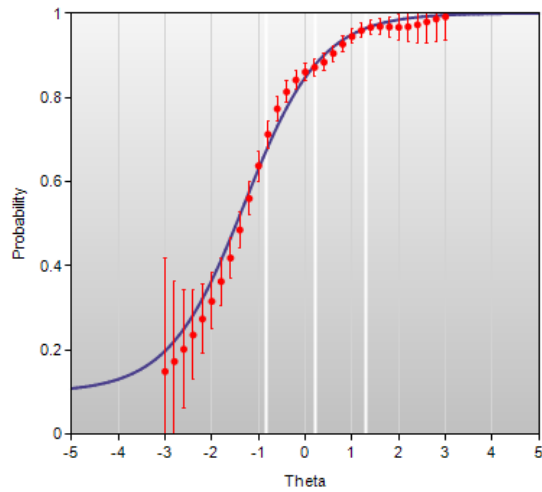
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Biology Grade 10: IA10684 (SC723337422)



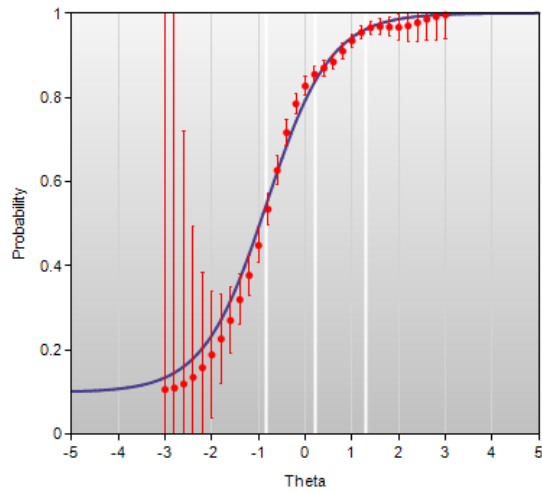
# Initial Calibration

Biology Grade 10: IA10989



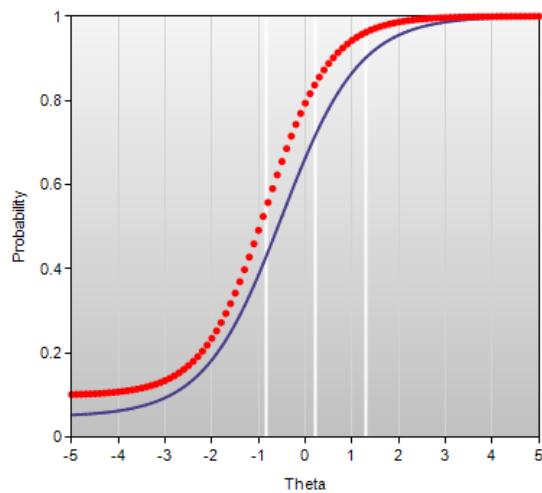
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Biology Grade 10: IA10989



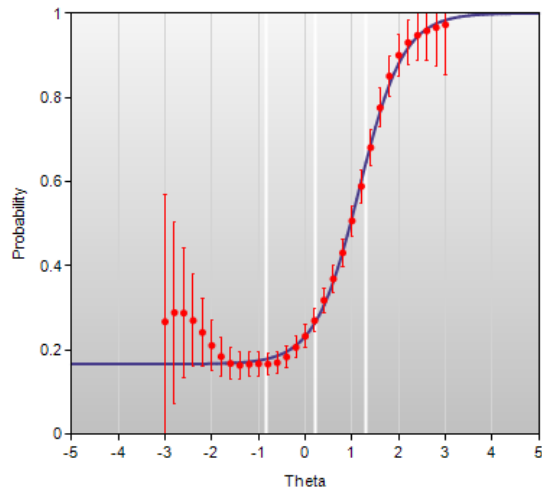
# Beta Chart

Biology Grade 10: IA10989 (SC910635381)



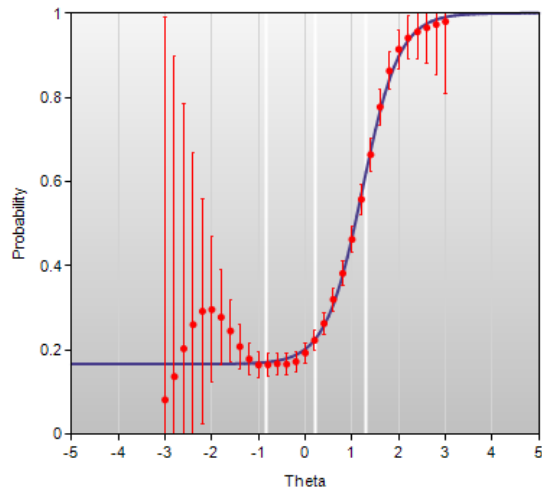
# Initial Calibration

Biology Grade 10: IA11033



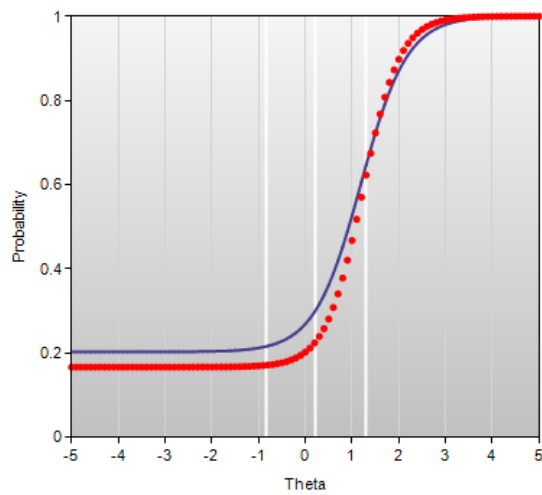
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Biology Grade 10: IA11033



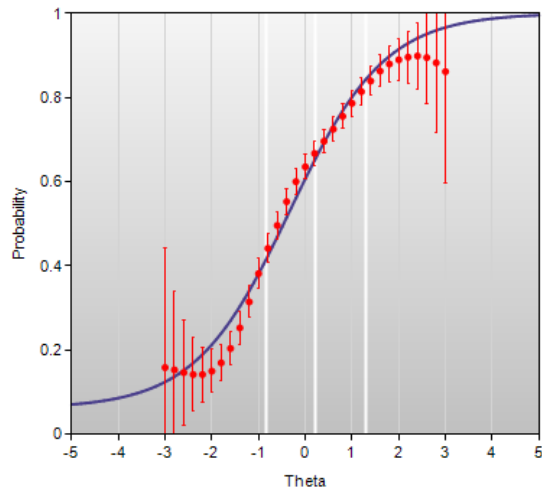
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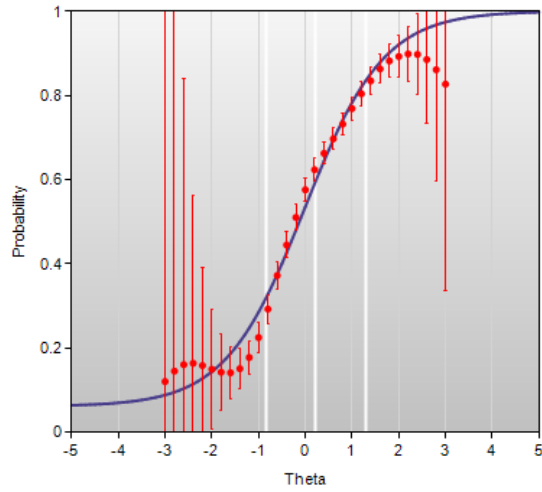
# Initial Calibration

Biology Grade 10: IA11054



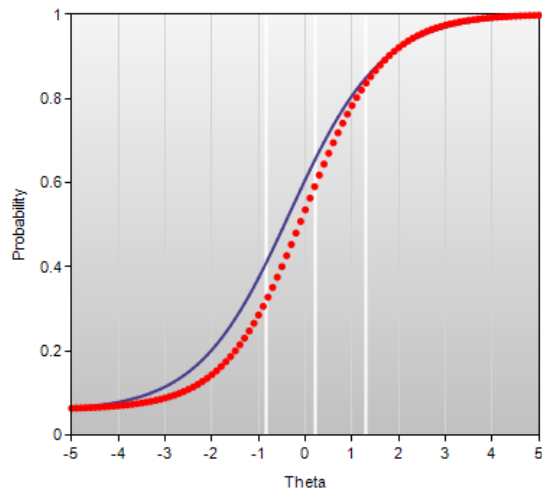
# Final Calibration

Biology Grade 10: IA11054



# Beta Chart

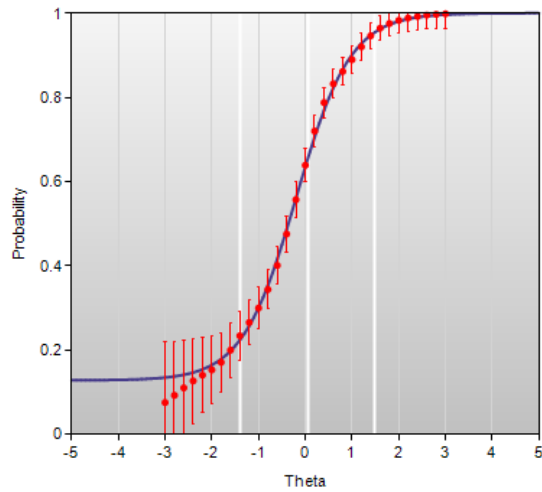
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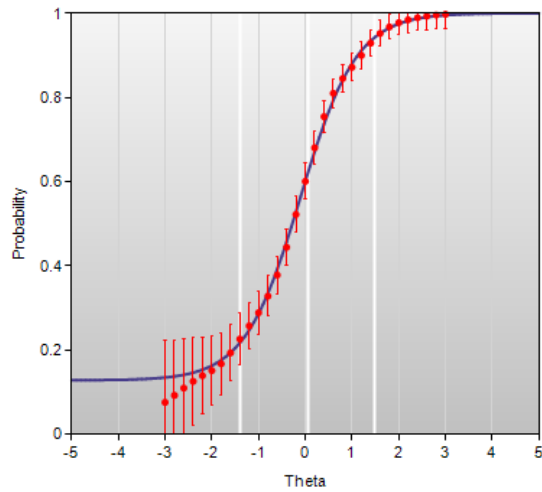
# Initial Calibration

Mathematics Grade 4: IA00961



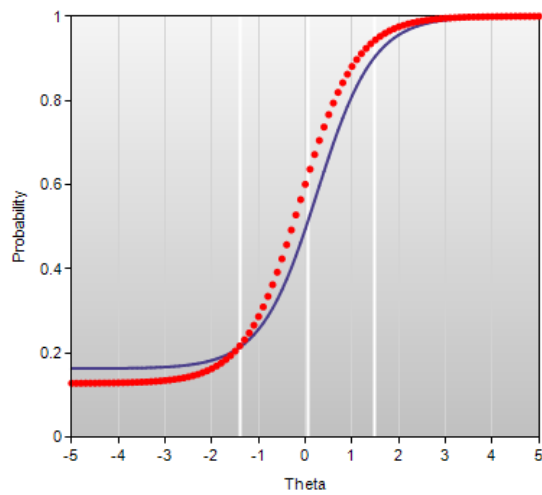
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Mathematics Grade 4: IA00961



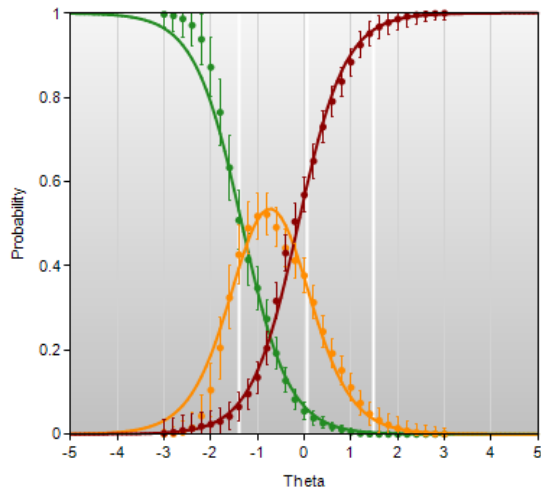
# Beta Chart

Mathematics Grade 4: IA00961 (MA307081)



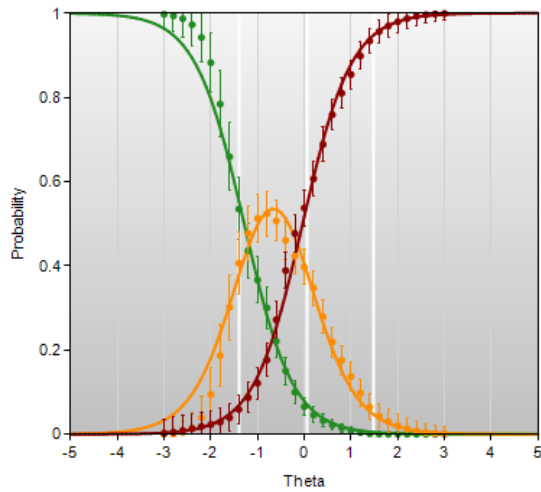
# Initial Calibration

Mathematics Grade 4: IA01093



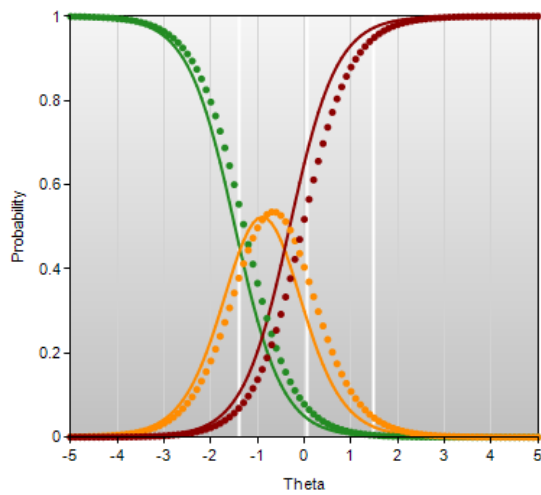
# Final Calibration

Mathematics Grade 4: IA01093



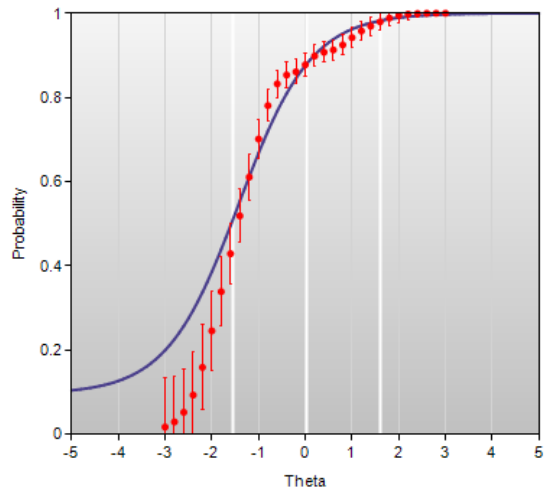
# Beta Chart

Mathematics Grade 4: IA01093 (MA623879088)



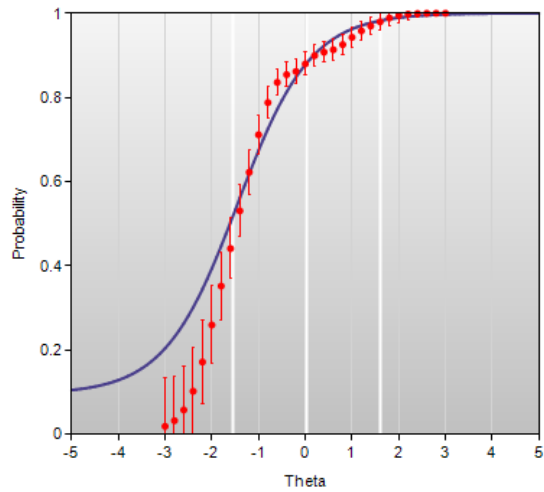
# Initial Calibration

Mathematics Grade 5: IA00936



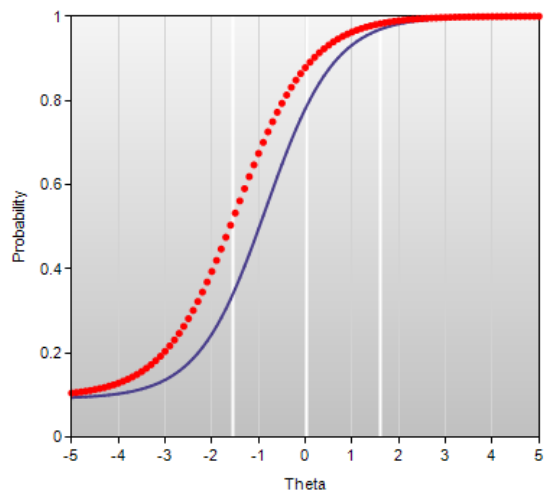
# Final Calibration

Mathematics Grade 5: IA00936



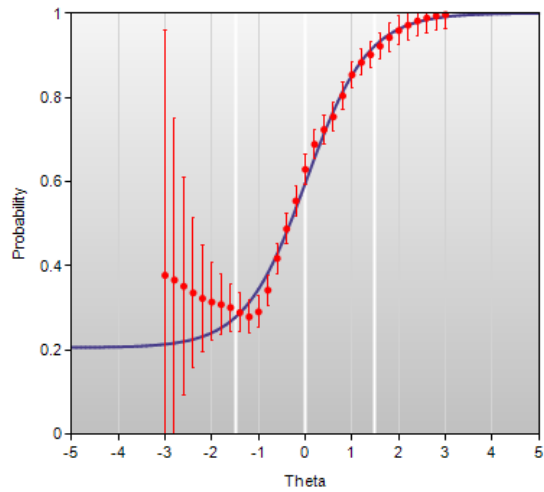
# Beta Chart

Mathematics Grade 5: IA00936 (MA306420)



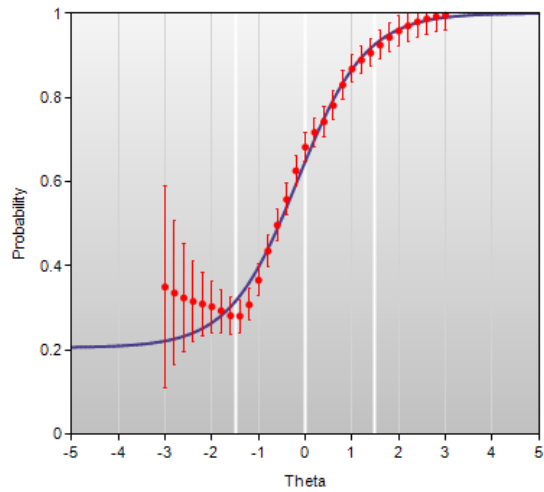
# Initial Calibration

Mathematics Grade 8: IA00865



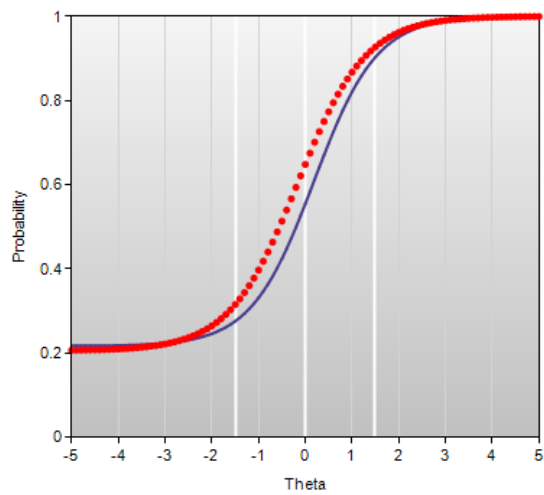
# Final Calibration

Mathematics Grade 8: IA00865



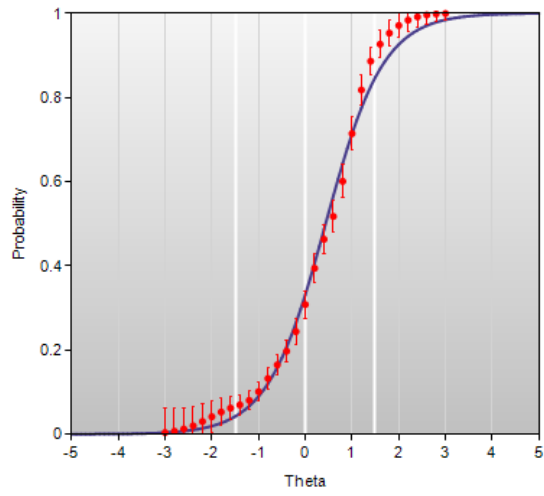
# Beta Chart

Mathematics Grade 8: IA00865 (MA297656)



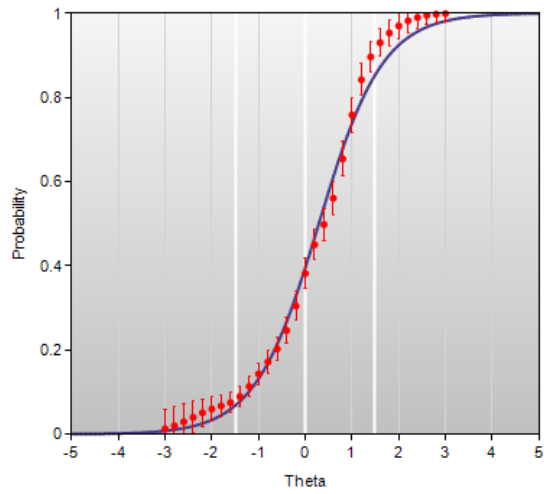
# Initial Calibration

Mathematics Grade 8: IA02495



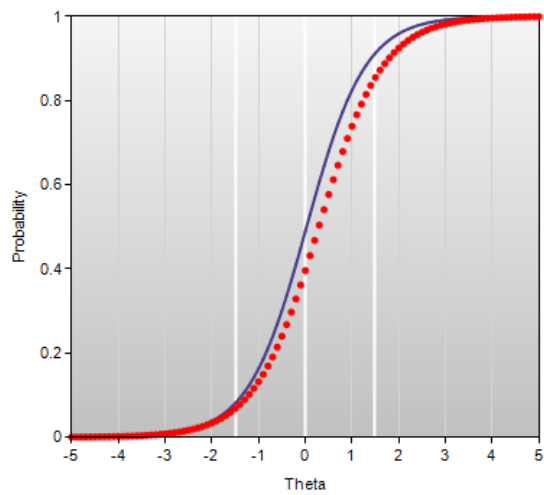
# Final Calibration

Mathematics Grade 8: IA02495



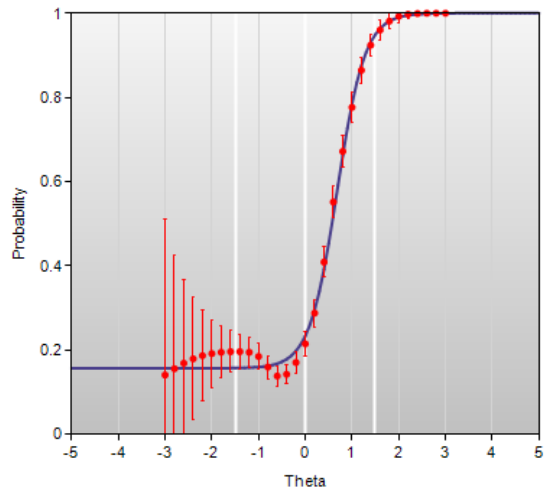
# Beta Chart

Mathematics Grade 8: IA02495 (MA309741)



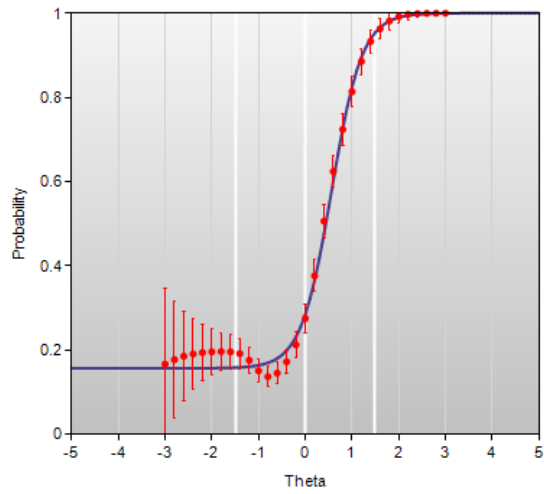
# Initial Calibration

Mathematics Grade 8: IA05070



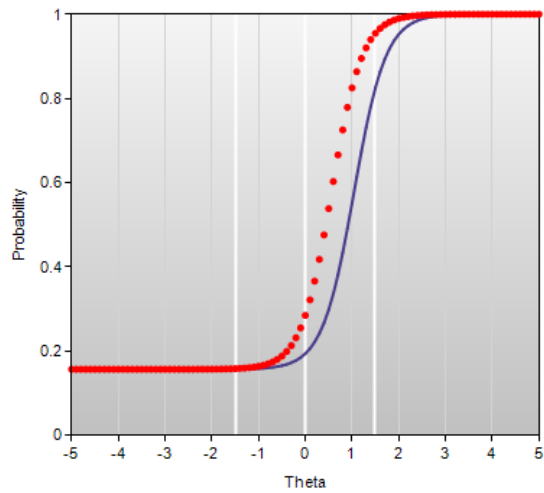
# Final Calibration

Mathematics Grade 8: IA05070



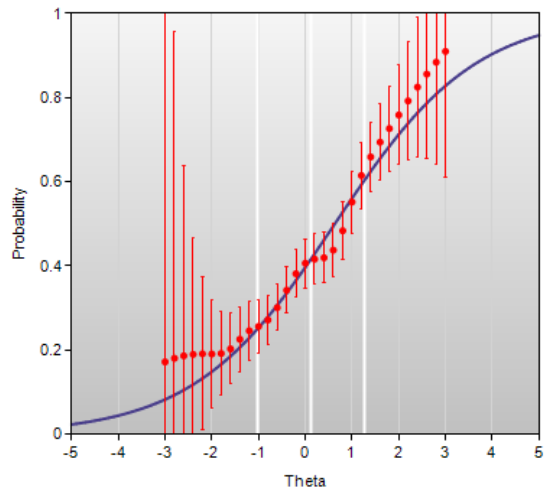
# Beta Chart

Mathematics Grade 8: IA05070 (MA804042487)



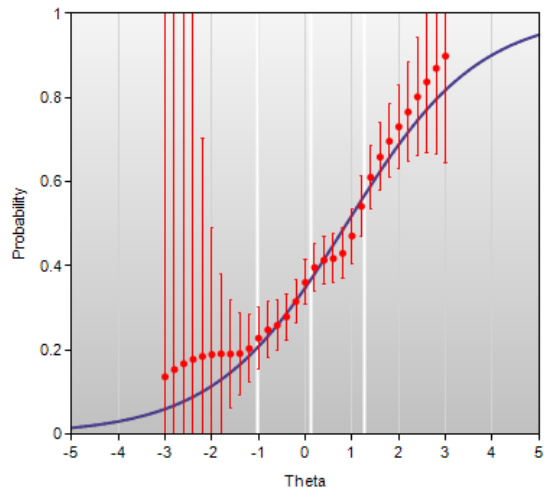
# Initial Calibration

Introductory Physics Grade 10: IA10704



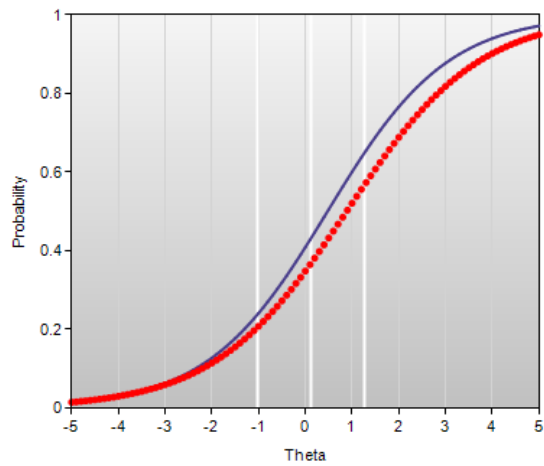
# Final Calibration

Introductory Physics Grade 10: IA10704



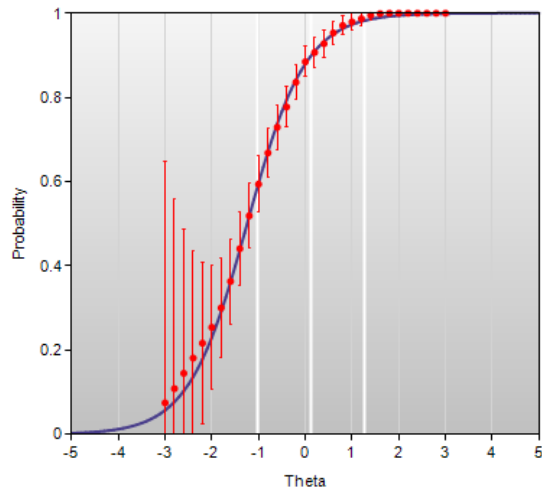
# Beta Chart

Introductory Physics Grade 10: IA10704  
(SC800964236)



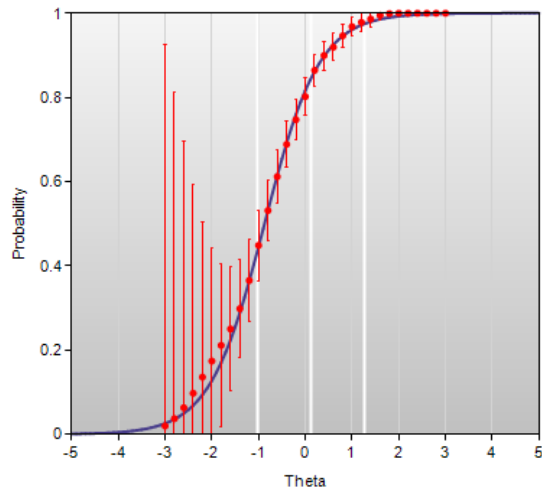
# Initial Calibration

Introductory Physics Grade 10: IA10936



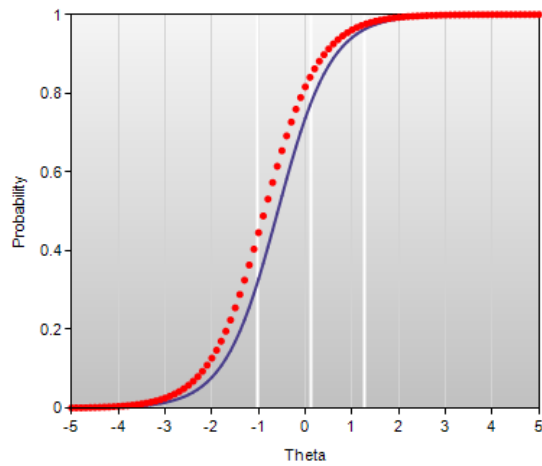
# Final Calibration

Introductory Physics Grade 10: IA10936



# Beta Chart

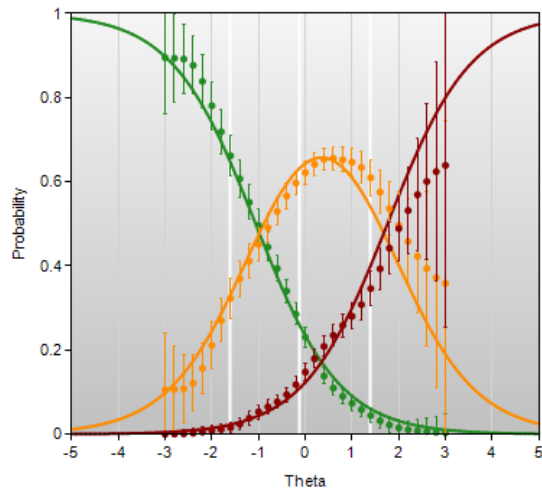
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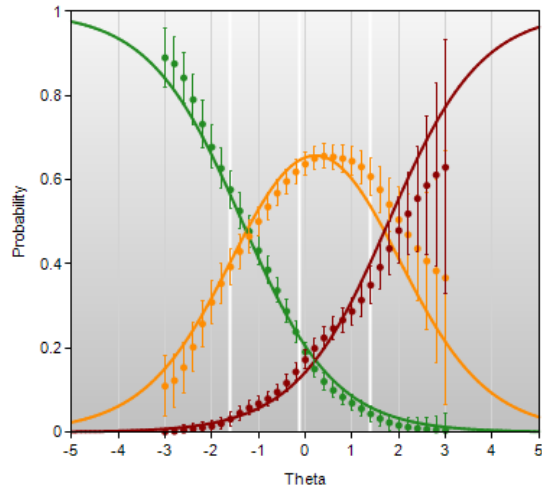
# Initial Calibration

Science Grade 5: IA05657



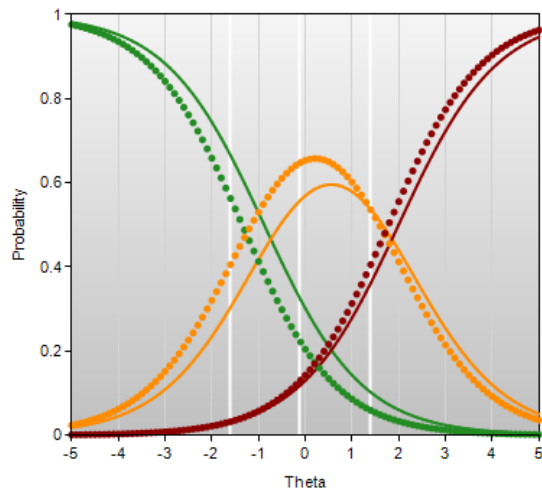
# Final Calibration

Science Grade 5: IA05657



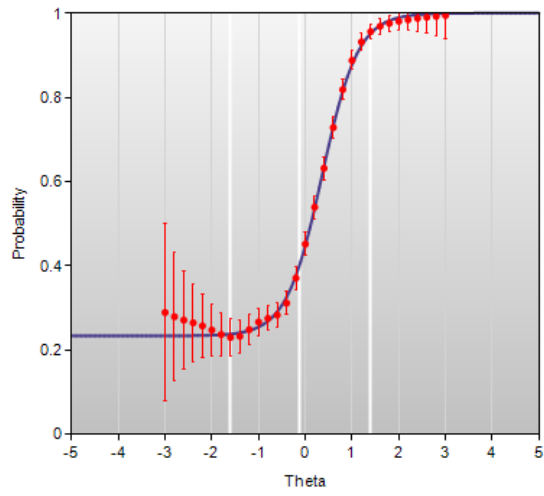
# Beta Chart

Science Grade 5: IA05657 (SC803732869)



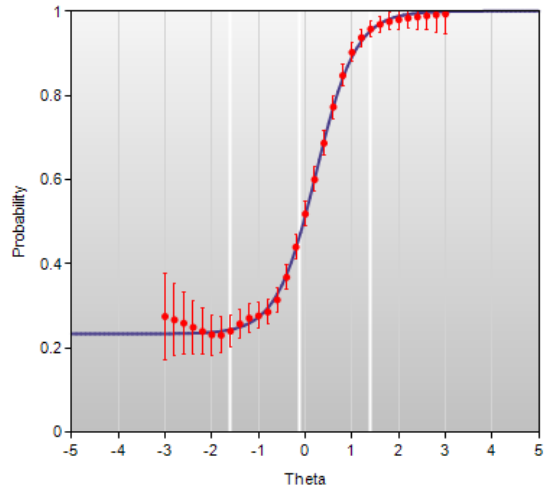
# Initial Calibration

Science Grade 5: IA05702



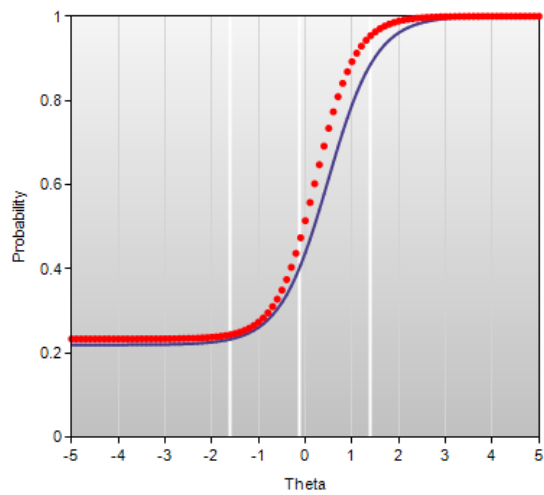
# Final Calibration

Science Grade 5: IA05702



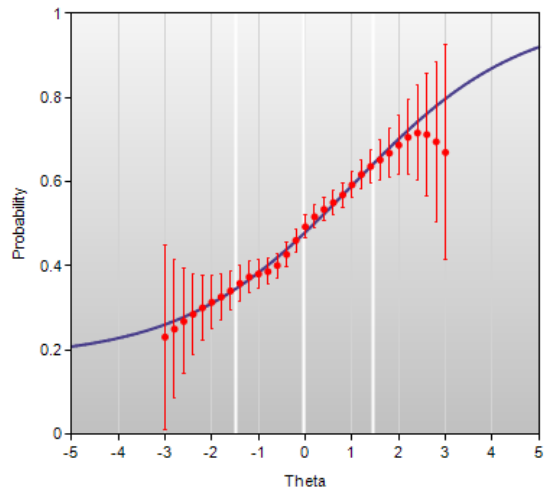
# Beta Chart

Science Grade 5: IA05702 (SC806382697)



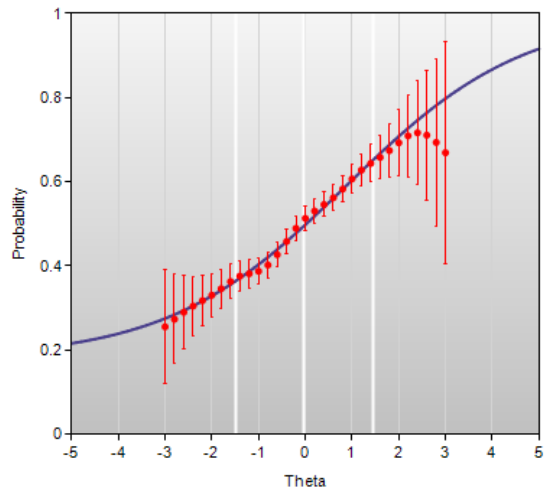
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Science Grade 8: IA05245



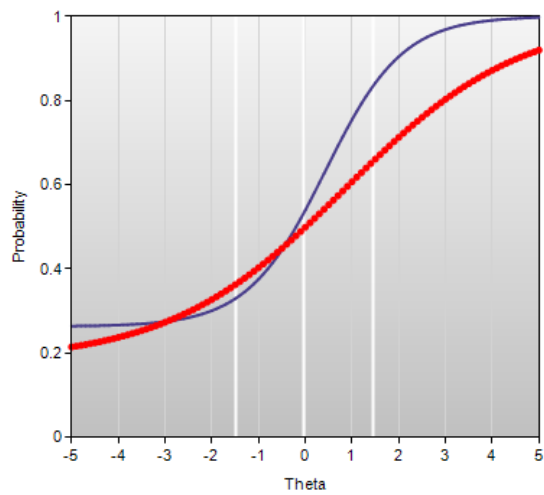
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Science Grade 8: IA05245



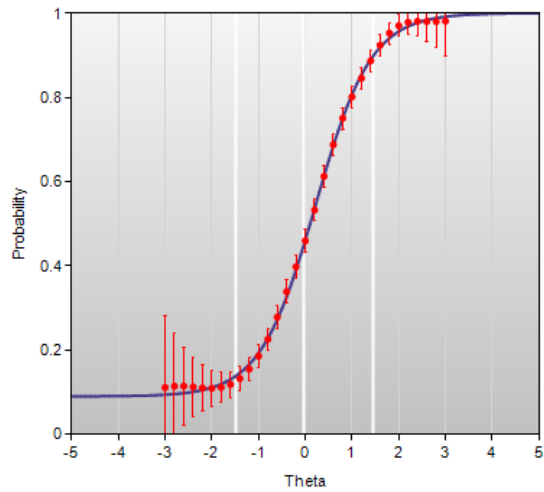
# Beta Chart

Science Grade 8: IA05245 (SC290144)



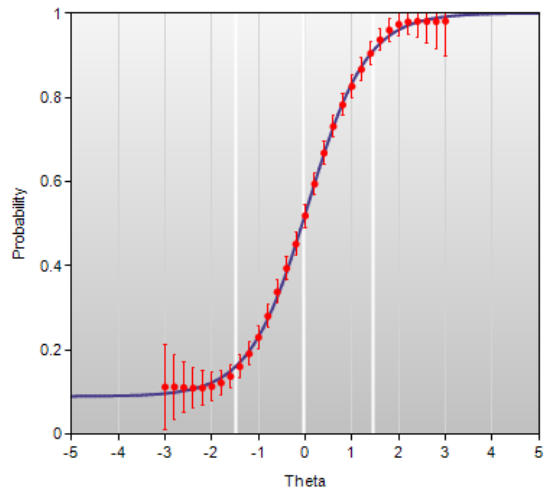
# Initial Calibration

Science Grade 8: IA05690



# Final Calibration

Science Grade 8: IA05690



# Beta Chart

Science Grade 8: IA05690 (SC804367702)

