Maryland School Assessment-Reading:

Grades 3 through 8

Technical Report:
2006 Administration

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INTRODUCTION

The *Maryland School Assessment (MSA)* is a measure of students' reading and mathematics comprehension. The *MSA* replaced the *Maryland School Performance Assessment Program (MSPAP)* to meet the new federal test requirements of the *No Child Left Behind Act (NCLB)* that was reauthorized and renamed from the *Elementary and Secondary Education Act* in 2002.

New academic standards were designed to inform parents, teachers, and educators of what students actually learned in schools and to make schools accountable for teaching contents measured by the *MSA*. To this end, the Maryland State Department of Education (MSDE), in collaboration with hundreds of educators across the state and Harcourt Assessment, Inc. (Harcourt), developed a series of reading tests to measure students' achievement against the new academic standards.

The purpose of the 2006 MSA-Reading *Technical Report* is to provide users and other interested parties with a general overview and statistical results of the MSA-Reading.

The 2006 *Technical Report* is composed of four parts, and the first part contains the following information:

- General overview and purposes of the MSA-Reading
- Development and review of the MSA-Reading
- Test administration
- Operational test analyses
- Field test analyses
- Linking, equating, and scaling
- Score interpretation
- Test validity
- Item bank
- Quality Assurance

The second part provides the 2006 MSA-Reading results for students in grades 3 through 8. It contains information about the cutoff score and pass rate at each performance level for the 2006 reading tests.

The third part contains statistical summaries for the 2006 MSA-Reading. This part outlines the statistical and psychometric characteristics of the 2006 MSA-Reading.

Four appendices provide additional statistical results for the 2006 MSA-Reading: Appendix A contains stratified random sampling results; Appendix B contains scale score histograms and Tukey charts; Appendix C contains both classical and *item response theory (IRT*) item parameters; Appendix D contains test blueprints for grades 3 through 8.

1. OVERVIEW OF THE 2006 *MARYLAND SCHOOL ASSESSMENT-READING*

In 2002, the Maryland State Department of Education (MSDE) took an important step toward raising learning expectations for all students in public schools. The State Board of Education retired the *Maryland School Performance Assessment Program (MSPAP)* and adopted a new testing program known as the *Maryland School Assessment* (*MSA*). The *MSA* was based on the *Voluntary State Curriculum*, which set reasonable academic standards for what teachers were expected to teach and for what students were expected to learn in schools.

From March 13 to March 22, 2006, students in grades 3 through 8 took the 2006 *MSA* in reading (MSA-Reading).

1.1 General Overview of the 2006 MSA-Reading

The 2006 MSA-Reading was designed to provide two types of information. First, *norm-referenced* information was provided by the items from the abbreviated form of the *Stanford Achievement Test Series, Tenth Edition (SAT10)*. For third and fourth grades, for example, the *SAT10* consisted of *Word Study*, *Reading Vocabulary*, and *Reading Comprehension* items. For fifth through eighth grades, on the other hand, the *SAT10* consisted of *Reading Vocabulary* and *Reading Comprehension* items. Second, to produce *criterion-referenced* information, additional items, called augmented items, were written for the *Maryland Reading Standards* (*MRS*) in grades 3 through 8 and were organized under the three reading processes: *General Reading, Literary Reading*, and *Informational Reading*.

The 2006 MSA-Reading produced both norm-referenced and criterion-referenced scores for each student. While norm-referenced scores included only the *SAT10* items, both items selected from the *SAT10* and augmented items created for Maryland comprised criterion-referenced scores. Figure 1.1 shows a schematic of the *SAT10* and augmented items that produced these test scores.

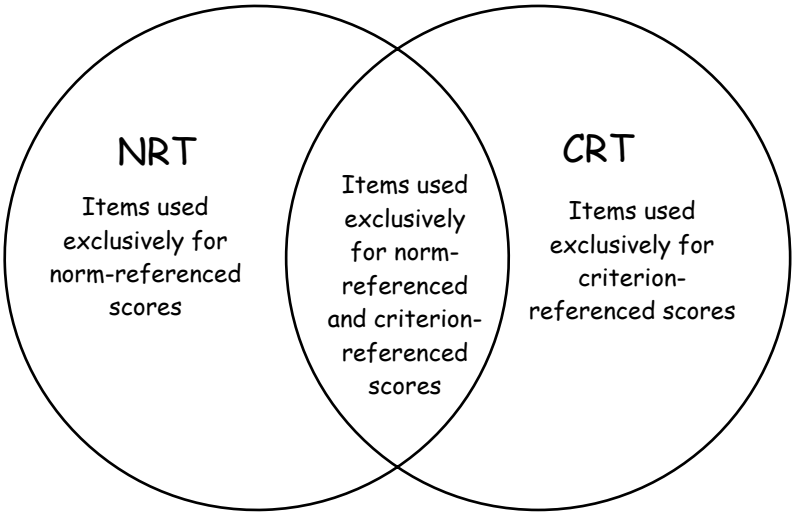


Figure 1.1 Schematic of the 2006 MSA-Reading

1.2 Purposes/Uses of the 2006 MSA-Reading

By measuring students' achievement against the new academic standards, the 2006 MSA-Reading provides two main purposes. First, the MSA-Reading was designed to inform parents, teachers, and educators of what students actually learned in schools by providing specific feedback that can be used to improve the quality of schools, classrooms, and individualized instructional programs and to model effective assessment approaches that can be used in classrooms. Second, the MSA-Reading serves as an accountability tool to measure performance levels of individual students, schools, and districts against the new academic standards.

1.3 *The Voluntary State Curriculum*

Federal law requires that states align their tests with their state content standards. The MSDE worked carefully and rigorously to construct new tests to provide a strong alignment as defined by the U.S. Department of Education.

The *Voluntary State Curriculum* (*VSC*), which defined what students should know and be able to do at each grade level, helped schools understand the standards more clearly, and included more specificity with indicators and objectives. The format of the *VSC* specified standards statements, indicators, and objectives. Standards are broad, measurable statements of what students should know and be able to do. Indicators and objectives provide more specific content knowledge and skills that are unique at each grade level.

While 100% of the standards should be tested, it was not the case that every indicator would necessarily be tested each year. Consequently, the *VSC* specified curricular indicators and objectives that contributed directly to measuring content standards, which were aligned to the *Maryland School Assessment (MSA)*.

1.4 Development and Review of the 2006 MSA-Reading

Developing the 2006 MSA-Reading was a complex process. It required a great deal of involvement from the MSDE, Harcourt, and local school systems. In addition, teachers, administrators, and content specialists from all over Maryland were recruited for different test development committees. These individuals reviewed test forms and items to ensure that they measured students' knowledge and skills fairly and without bias. Table 1.1 identifies which groups were responsible for developing the 2006 MSA-Reading.

Table 1.1 The 2006 MSA-Reading Responsibility for Test Development

Development of the 2006 MSA-Reading	Primary Responsibility
Development of Preliminary Blueprints and Item Specifications	Harcourt; MSDE; NPC
Development of Preliminary Brief Constructed Response Rubrics	MSDE
Item Writing	Harcourt
Item Review	Harcourt; MSDE; NPC; Content Review Committee
Bias Review	Harcourt; MSDE; Bias Review Committee
Construction of Field Test Forms	Harcourt; MSDE
Modification of Special Forms	Harcourt; MSDE
Review of Special Forms	MSDE
Pre-Field Test Training Workshops	Harcourt; MSDE; LEAs
Field Test Administrations	MSDE; LEAs
Construction of Operational Test Forms	Harcourt; MSDE; NPC
Review of Operational Test Forms	MSDE
Final Construction of Operational Test Forms	Harcourt; MSDE

National Psychometric Council

The National Psychometric Council (NPC) took a major role in reviewing and recommending to the MSDE on the development and implementation of the 2006 MSA-Reading program. For example, they made recommendations to the MSDE on issues, such as test blueprints, field test design, item analysis, item selection for scoring purposes, linking, equating and scaling issues, standard setting, and other relevant statistical and psychometric issues. They recommended guidelines and accommodations for students with physical disabilities or limited English proficiency. The MSDE adopted their guidelines and recommendations.

Content Review Committee

During the item review process, the Content Review Committee members were briefed on the item review process. They ensured that the MSA-Reading was appropriately difficult and fair. Committee members were either specialists in reading for test items, or experts in test construction and measurement. They represented all levels of education as well as the ethnic and social diversity of Maryland students. Committee members were from different areas of the state.

The educators' understanding of Maryland curriculum and extensive classroom experience made them a valuable source of information. They reviewed test items and forms and took a holistic view to ensure that tests were fair and balanced across reporting categories.

Bias Review Committee

In addition to the Content Review Committee, a separate Bias Review Committee examined each item on reading tests. They looked for indications of bias that would impact the performance of an identifiable group of students. Committee members discussed and, if necessary, rejected items based on gender, ethnic, religious, or geographical bias.

1.5 Test Structure of the 2006 MSA-Reading

2006 MSA-Reading Test Structure

The 2006 MSA-Reading was composed of the *SAT10* items, augmented (Maryland-specific) operational items, and field test items for future augmentation. The uniqueness of the MSA-Reading was to spiral a relatively large number of Maryland field test items into multiple test forms for each grade in test administration.

As can be seen from Table 1.2, the 2006 MSA-Reading produced four test forms for each grade, and there exist 2 operational forms within each grade. This means that Forms 1 and 3 (Form A) are identical, and Forms 2 and 4 (Form B) are identical.

Tables 1.3 and 1.4 provide information concerning the test design of NRT and CRT and the number of operational and field test items included for each test form. Tables 1.5 through 1.12 provide information concerning the number of items that contribute to each strand (e.g., General, Literary, and Informational Reading).

The descriptive statistics of each operational test form can be found in the section 1.8, Operational Test Analyses.

Table1.2 The 2006 MSA-Reading Test Structure: Grades 3 through 8

	Operational Test Item Sets		Field Test Item Sets			
	A	B	1	2	3	4
Form 1	X		X			
Form 2		X		X		
Form 3	X				X	
Form 4		X				X

Note. Total number of operational test items = 37 (33 *SR* + 4 *BCR*) items. Forms 1 and 3 (Form A) are identical, and Forms 2 and 4 (Form B) are identical in terms of operational test items.

Types of Items

The 2006 MSA-Reading contains two types of items: *selected response* (*SR*) and *brief constructed response* (*BCR*) items. *SR* items required students to select a correct answer from several alternatives. For the 2006 MSA-Reading, students selected an answer from four alternatives. Each *SR* item was scored as right or wrong.

BCR items required students to answer a question with a couple of words, a sentence, or a more elaborated way. For the 2006 MSA-Reading, these items were scored on a general rubric with maximum values between 0 and 3.

Table 1.3 The 2006 MSA-Reading Test Design: Grades 3, 5, and 8

Grade	Strand Title	*SAT10* / Augmented	Item Type	No. of Items of Each Form			
				F1	F2	F3	F4
3	Total NRT	*SAT10*	*SR*	70	70	70	70
	Word Study	*SAT10*	*SR*	20 (2)	20 (2)	20 (2)	20 (2)
	Reading Vocabulary	*SAT10*	*SR*	20 (2)	20 (2)	20 (2)	20 (2)
	Reading Comprehension	*SAT10*	*SR*	30	30	30	30
	Total CRT	*SAT10*, Augmented	*SR*, *BCR*	37 (14)	37 (14)	37 (14)	37 (14)
	General Reading	*SAT10*	*SR*	16	16	16	16
	Literary Reading	*SAT10,* Augmented	*SR*, *BCR*	10 (10)	10 (10)	10	10
	Informational Reading	*SAT10,* Augmented	*SR*, *BCR*	11	11	11 (10)	11 (10)
5	Total NRT	*SAT10*	*SR*	50	50	50	50
	Reading Vocabulary	*SAT10*	*SR*	20 (3)	20 (3)	20 (3)	20 (3)
	Reading Comprehension	*SAT10*	*SR*	30	30	30	30
	Total CRT	*SAT10*, Augmented	*SR*, *BCR*	37 (13)	37 (13)	37 (13)	37 (13)
	General Reading	*SAT10*	*SR*	15	15	15	15
	Literary Reading	*SAT10,* Augmented	*SR*, *BCR*	11	11 (10)	11	11 (10)
	Informational Reading	*SAT10,* Augmented	*SR*, *BCR*	11 (10)	11	11 (10)	11
8	Total NRT	*SAT10*	*SR*	50	50	50	50
	Reading Vocabulary	*SAT10*	*SR*	20 (3)	20 (3)	20 (3)	20 (3)
	Reading Comprehension	*SAT10*	*SR*	30	30	30	30
	Total CRT	*SAT10*, Augmented	*SR*, *BCR*	37 (13)	37 (13)	37 (13)	37 (13)
	General Reading	*SAT10*	*SR*	16	16	16	16
	Literary Reading	*SAT10,* Augmented	*SR*, *BCR*	10	10 (10)	10	10 (10)
	Informational Reading	*SAT10,* Augmented	*SR*, *BCR*	11 (10)	11	11 (10)	11

Note. CRT contains *SAT10* items. *SR* items are selected response items, and *BCR* items are brief constructed response items. The number in parentheses indicates the total number of field test items tested during operational testing.

Table 1.4 The 2006 MSA-Reading Test Design: Grades 4, 6, and 7

Grade	Strand Title	*SAT10* / Augmented	Item Type	No. of Items of Each Form			
				F1	F2	F3	F4
4	Total NRT	*SAT10*	*SR*	70	70	70	70
	Word Study	*SAT10*	*SR*	20 (2)	20 (2)	20 (2)	20 (2)
	Reading Vocabulary	*SAT10*	*SR*	20 (2)	20 (2)	20 (2)	20 (2)
	Reading Comprehension	*SAT10*	*SR*	30	30	30	30
	Total CRT	*SAT10*, Augmented	*SR*, *BCR*	37 (14)	37 (14)	37 (14)	37 (14)
	General Reading	*SAT10*	*SR*	15	15	15	15
	Literary Reading	*SAT10,* Augmented	*SR*, *BCR*	11	11 (10)	11	11 (10)
	Informational Reading	*SAT10,* Augmented	*SR*, *BCR*	11 (10)	11	11 (10)	11
6	Total NRT	*SAT10*	*SR*	50	50	50	50
	Reading Vocabulary	*SAT10*	*SR*	20 (3)	20 (3)	20 (3)	20 (3)
	Reading Comprehension	*SAT10*	*SR*	30	30	30	30
	Total CRT	*SAT10*, Augmented	*SR*, *BCR*	37 (13)	37 (13)	37 (13)	37 (13)
	General Reading	*SAT10*	*SR*	15	15	15	15
	Literary Reading	*SAT10,* Augmented	*SR*, *BCR*	11	11 (10)	11	11 (10)
	Informational Reading	*SAT10,* Augmented	*SR*, *BCR*	11 (10)	11	11 (10)	11
7	Total NRT	*SAT10*	*SR*	50	50	50	50
	Reading Vocabulary	*SAT10*	*SR*	20 (3)	20 (3)	20 (3)	20 (3)
	Reading Comprehension	*SAT10*	*SR*	30	30	30	30
	Total CRT	*SAT10*, Augmented	*SR*, *BCR*	37 (13)	37 (13)	37 (13)	37 (13)
	General Reading	*SAT10*	*SR*	15	15	15	15
	Literary Reading	*SAT10,* Augmented	*SR*, *BCR*	11	11 (10)	11	11 (10)
	Informational Reading	*SAT10,* Augmented	*SR*, *BCR*	11 (10)	11	11 (10)	11

Note. CRT contains *SAT10* items. *SR* items are selected response items, and *BCR* items are brief constructed response items. The number in parentheses indicates the total number of field test items tested during operational testing.

Table 1.5 The 2006 MSA-Reading Item Distribution of Each Strand: Grade 3

	25 Common Items (*SAT10* / Maryland)			Augmented Maryland Items (12 items)								
	GR.	Lit.	Inf.	General Reading			Literary Reading			Informational Reading		
	No. of SR	No. of SR	No. of SR	No. of SR	No. of BCR	No. of Items	No. of SR	No. of *BCR*	No. of Items	No. of SR	No. of *BCR*	No. of Items
F1	16	4	5	0	0	0	4	2	6	4	2	6
F2	16	4	5	0	0	0	4	2	6	4	2	6
F3	16	4	5	0	0	0	4	2	6	4	2	6
F4	16	4	5	0	0	0	4	2	6	4	2	6

Table 1.6 The 2006 MSA-Reading Item Distribution of Each Strand: Grades 4, 6, and 7

	25 Common items (SAT10 / Maryland)			Augmented Maryland Item (12 items)								
	GR.	Lit.	Inf.	General Reading			Literary Reading			Informational Reading		
	No. of SR	No. of SR	No. of SR	No. of SR	No. of BCR	No. of Items	No. of SR	No. of *BCR*	No. of Items	No. of SR	No. of *BCR*	No. of Items
F1	15	5	5	0	0	0	4	2	6	4	2	6
F2	15	5	5	0	0	0	4	2	6	4	2	6
F3	15	5	5	0	0	0	4	2	6	4	2	6
F4	15	5	5	0	0	0	4	2	6	4	2	6

Table 1.7 The 2006 MSA-Reading Item Distribution of Each Strand: Grade 5

	25 Common items (*SAT10* / Maryland)			Augmented Maryland Item (12 items)								
	GR.	Lit.	Inf.	General Reading			Literary Reading			Informational Reading		
	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR
F1	15	5	5	0	0	0	4	2	6	4	2	6
F2	15	5	5	0	0	0	4	2	6	4	2	6
F3	15	5	5	0	0	0	4	2	6	4	2	6
F4	15	5	5	0	0	0	4	2	6	4	2	6

Table 1.8 The 2006 MSA-Reading Item Distribution of Each Strand: Grade 8

	25 Common Items (*SAT10* / Maryland)			Augmented Maryland Items (12 items)								
	GR.	Lit.	Inf.	General Reading			Literary Reading			Informational Reading		
	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR	No. of SR
F1	16	4	5	0	0	0	4	2	6	4	2	6
F2	16	4	5	0	0	0	4	2	6	4	2	6
F3	16	4	5	0	0	0	4	2	6	4	2	6
F4	16	4	5	0	0	0	4	2	6	4	2	6

Table 1.9 The 2006 MSA-Reading Total and Strand Scores: Grade 3

	Total and Each Strand Scores			
	General Reading	Literary Reading	Informational Reading	Total Score
Form 1	16 (16 SR)	14 (8 SR + 6 BCR)	15 (9 SR + 6 BCR)	45
Form 2	16 (16 SR)	14 (8 SR + 6 BCR)	15 (9 SR + 6 BCR)	45
Form 3	16 (16 SR)	14 (8 SR + 6 BCR)	15 (9 SR + 6 BCR)	45
Form 4	16 (16 SR)	14 (8 SR + 6 BCR)	15 (9 SR + 6 BCR)	45

Table 1.10 The 2006 MSA-Reading Total and Strand Scores: Grades 4, 6, and 7

	Total and Each Strand Scores			
	General Reading	Literary Reading	Informational Reading	Total Score
Form 1	15 (15 SR)	15 (9 SR + 6 BCR)	15 (9 SR + 6 BCR)	45
Form 2	15 (15 SR)	15 (9 SR + 6 BCR)	15 (9 SR + 6 BCR)	45
Form 3	15 (15 SR)	15 (9 SR + 6 BCR)	15 (9 SR + 6 BCR)	45
Form 4	15 (15 SR)	15 (9 SR + 6 BCR)	15 (9 SR + 6 BCR)	45

Table 1.11 The 2006 MSA-Reading Total and Strand Scores: Grade 5

	Total and Each Strand Scores			
	General Reading	Literary Reading	Informational Reading	Total Score
Form 1	15 (15 SR)	15 (9 SR + 6 BCR)	15 (9 MC + 6 BCR)	45
Form 2	15 (15 SR)	15 (9 SR + 6 BCR)	15 (9 MC + 6 BCR)	45
Form 3	15 (15 SR)	15 (9 SR + 6 BCR)	15 (9 MC + 6 BCR)	45
Form 4	15 (15 SR)	15 (9 SR + 6 BCR)	15 (9 MC + 6 BCR)	45

Table 1.12 The 2006 MSA-Reading Total and Strand Scores: Grade 8

	Total and Each Strand Scores			
	General Reading	Literary Reading	Informational Reading	Total Score
Form 1	16 (16 SR)	14 (8 SR + 6 BCR)	15 (9 SR + 6 BCR)	45
Form 2	16 (16 SR)	14 (8 SR + 6 BCR)	15 (9 SR + 6 BCR)	45
Form 3	16 (16 SR)	14 (8 SR + 6 BCR)	15 (9 SR + 6 BCR)	45
Form 4	16 (16 SR)	14 (8 SR + 6 BCR)	15 (9 SR + 6 BCR)	45

1.6 Test Administration

Test Administration Preparation and Materials

Pre-test workshops were held in Baltimore for all Local Accountability Coordinators in Maryland prior to the test administration. These workshops provided the representatives of all the local school divisions with an overview of the test's content, security expectations, and procedures for completing the answer documents. They also considered the receipt, distribution, and return of test materials.

For the test examiner, Harcourt provided the following materials:

- Examiner's Manual
- One set of pre-printed student ID labels and one set of generic ID labels for those students who do not have a pre-printed label, or who have one with incorrect information, or how pre-printed labels are damaged. The generic student ID label is to be used in the event that pre-printed labels are damaged. The pre-printed or generic labels are placed on the Answer Book in the area that says "Place Pre-ID Label Here." The label must be applied prior to testing by, or under the supervision of the STC.
- Paper bands for used Answer Books
- Student Roster

For each student, the following materials were provided by Harcourt:

- Test Book
- Answer Book

  Note: For Grade 3, the Test Book and Answer Book are combined into a single book.

For each student, the following additional materials were provided by school or student:

- Two No.2 pencils with erasers
- Scratch paper for pre-writing

Each classroom used for the assessment will also need the following additional materials:

- A sign for the door that says "Testing: Do not Disturb"
- A digital clock or a watch, or clock with a second hand

Two test-related manuals were developed for the administration of the 2006 MSA-Reading: The Test Administration and Coordination Manual (TACM) and the Examiner's Manual (EM). For the 2006 testing season, the TACM contents pertaining to Harcourt were developed by Harcourt staff and produced by MSDE. This manual provided Local Accountability Coordinators (LACs) and building level School Test Coordinators (STCs) with information about the administration, packaging, and return of test materials. The TACM also described any issues specific to grades 3 through 8. One TACM was produced for all administrations in grades 3 through 8. The TACM was distributed one per school at the pre-test workshops and was again included in the shipping materials.

One EM was developed for all administrations in grades 3 through 8 by Harcourt and provided directions for administering the 2006 MSA-Reading at each grade level. It contains information with regards to general information of the test, before testing, during testing, and after testing.

Test Administration Schedule

Specific dates were designated for each content area test. For the 2006 MSA-Reading, the primary testing days were as follows:

- Test materials delivered to schools (Examiner's Manual and Test Books) — February 24 - February 27, 2006
- Reading Primary Testing Window — March 13 - March 22, 2006
- Make-up Testing Window — March 23 - March 28, 2006

If a student was absent on the testing days, a make-up test was administered on any two consecutive days within testing window. If a school had an unscheduled closing or delayed opening that prohibited the administration from occurring on the scheduled testing dates, the STCs were consulted with LACs to determine the testing schedule to be followed.

During the administration of the 2006 MSA-Reading, the MSDE had testing monitors in selected schools observing administration procedures and testing conditions. All monitors had identification cards for security purposes. There were no prior notification of which schools would be monitored, but monitors followed local procedures for reporting to the school's main office and giving proper notification that an MSDE monitor is in the building.

The following sessions were scheduled at any convenient time during the school day, but testing had to be scheduled to allow sufficient time to complete the test. Table 1.13 shows timing sessions allowed for the 2006 MSA-Reading.

Table 1.13 The 2006 MSA-Reading Timing Sessions: Grades 3 through 8

Grade	Form	Session					
		1	2	3	4	5	6
3 & 4	1-4	Q1-Q22	Q23-Q44	Q45-Q74	Q75-Q80	Q81-Q86	Q87-Q96
		22 min.	20 min.	45 min.	30 min.	30 min.	35 min.
5 through 8	1-4	Q1-Q23	Q24-Q53	Q54-Q63	Q64-Q69	Q70-Q75	N/A
		23 min.	45 min.	35 min.	35 min.	35 min.	

Student Participation

All students in grades 3 through 8 must participate in the 2006 MSA-Reading. The only exception was that students with severe cognitive disabilities were assessed by the *Alternate Maryland School Assessment* (ALT-MSA) instead of the regular MSA-Reading.

Testing Accommodations

Testing accommodations for students with disabilities (i.e., students having an Individualized Education Program or a Section 504 Plan) and students for English Language Learners (ELL) had to be approved and documented according to the procedures and requirements outlined in the document entitled "*Maryland Accommodations Manual 2005-2006: A Guide to Selecting, Administrating, and Evaluating the Use of Accommodations for Instruction and Assessment*," (MAM). A copy of the most recent edition of this document is available electronically on the LAC and STC web pages at https://docushare.msde.state.md.us.

No accommodations may be made for students merely because they were members of an instructional group. Any accommodation had to be based on individual needs and not on a category of disability area, level of instruction, environment, or other group characteristics. Responsibility for confirming the need and appropriateness of an accommodation rested with the LAC and school-based staff involved with each student's instructional program. A master list of all students and their accommodations had to be maintained by the principal and submitted to the LAC, who provided a copy to the MSDE upon request. Please refer to Section 1 of the 2006 TACM for further information regarding testing accommodations.

Large-Print and Braille Test Books and Kurzweil™ Test Forms on CD

The 2006 MSA-Reading was administered to those requiring (1) large-print Student Test Books and Answer Books or (2) Braille Test Books, or (3) Kurzweil™ Test Forms on CD. For large-print and Braille Test Books, and Kurzweil™ Test Forms on CD, student responses were transcribed into the regular Answer Book following testing. The pre-printed student ID label was affixed to the regular Answer Book containing the transcribed responses, not the large-print Answer Book or Braille books. If there is no pre-printed student ID label, a generic ID label was applied to the regular Answer Book containing the transcribed responses.

Once the student responses had been transcribed, the transcribe Answer Book was returned for scoring with the regular material. Specific packing instructions are provided in the TACM in section 4 and 7.

Verbatim Reading Accommodation and Kurzweil™ Test Forms on CD

Students who have a verbatim reading accommodation documented in their Individual Education Plan (IEP), ELL Plan, or Section 504 Plan and who receive that accommodation in regular instruction may receive the accommodation on the 2006 MSA-Reading. The accommodation may be provided by a live reader or through technology. If technology is used to provide the verbatim reading accommodation, the software used must be Kurzweil reading software, and official, secure electronic copies of the test must be ordered through the LAC directly from MSDE. MSDE encourages the use of Kurzweil™ software to ensure uniformity in the delivery of the verbatim reading accommodation throughout the state.

Students using Kurzweil™ software must have familiarity with its operation prior to the test administration. Please consult with LAC for the further information on Kurzweil™ and the verbatim reading accommodation.

Security of Test Materials

The following code of ethnics conforms to the Standards for Educational and Psychological Testing developed by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education (Harcourt, 2006):

> It is breach of professional ethics for school personnel to provide verbal or nonverbal clues or answers, teach items on the test, share writing prompts, coach, hint, or in any way influence a student's performance during the testing situation. A breach of ethics may result in invalidation of test results and local education agency or MSDE disciplinary action. (p. 7)

The Test Books and all used Answer Books for the 2006 MSA-Reading were confidential and kept secure at all times. Unauthorized use, duplication, or reproduction of any or all portions of the assessment was prohibited, which is reflected by the following statement (Harcourt, 2006):

> Violation of security can result in prosecution and/or penalties as imposed by the Maryland State Board of Education and/or State Superintendent of Schools in accordance with the COMAR 13A.03.04 and 13A.12.05. (p. 7)

All materials were treated as confidential and placed in locked areas. Secure and non-secure test materials were as follows:

- Secure materials: Test Books and Answer Books
- Non-secure materials: Test Administration and Coordination Manual, Examiner's Manual for Test Administration, unused Answer Books, return address labels, pre-printed student ID labels, and instructions for applying ID labels

Distribution of Materials

Different test forms were administered to students in each classroom participating in reading tests, and each test form was identified by a cover of a different color and number. In addition, the Test Books and Answer Books were spiraled within a classroom. Each student must receive a Test Book and Answer Book that are the same color and have the same form number on the cover (except for Grade 3 where the Test Book and Answer Book are combined in the same document).

1.7 Scoring Procedures

Students' responses to *SR* items were machine-scored, and their responses to *BCR* items were individually read and scored by Harcourt in San Antonio.

Once received by Harcourt, Answer Books were scanned into an electronic imaging system so that the information necessary to score responses was captured and converted into an electronic format. Students' identification and demographic information, school information, and answers to *SR* items were converted to alphanumeric format; hand-written responses were captured in digital image format.

Machine-Scored Items

After students' responses to *SR* items were converted to text format, the scoring key was applied to the captured item responses. Correct answers were assigned a score of one point; incorrect answers were assigned zero points. Students' responses with multiple marks and blank responses (omits) were also assigned zero points.

Hand-Scored Items

Answer Books were scanned into the electronic imaging system, allowing scorers to score these responses online at all scoring sites while maintaining the live documents at the contractor's facility. The imaging system randomly distributed responses, ensuring no one scorer scored a disproportionate number of responses from any one school. This online scoring system maintained a database of actual student responses and the scores associated with those responses. An off-site backup of all images and scores was maintained as well to guard against potential loss of data and images due to system failure. The system also provided continuous, up-to-date monitoring of all scoring activities.

Scorer Qualifications

BCR items were scored by scorers who were trained to stringent requirements and procedures. All applicants for *MSA* scorer positions were required to provide resumes and documentation of completed higher education. They were required to have earned a four-year college degree or higher. As part of the initial recruiting and screening process, applicants responded to a writing prompt and several content specific, open-response questions. The writing sample ensured that all applicants were fluent in writing and reading standard English. If successful on the preliminary screening, applicants participated in introductory workshops. The purpose of these workshops was to familiarize the applicants with general processes and procedures for scoring performance assessments and to provide a final screening activity before they were added to the overall pool of potential scorers for the *MSA* project.

From that pool, potential scorers were assigned to the *MSA* project. *MSA*-specific training and qualifying consisted of having each scorer respond to actual *MSA* items or prompts prior to actual training. Using anchor papers and training sets, scorers then internalized the standards and the scoring scale for the item they were to score and were given qualifying sets. Those who met the qualifying standard were then allowed to score.

Methodology for Scoring the 2006 MSA-Reading *BCR* Items

For the *MSA*, each domain/level had a room director to direct scoring activities. The room director worked closely with the training supervisor and the content training specialist. The room director conducted training to ensure that scorers became experts in their scoring assignment. The main job of the room director was to oversee the actual scoring of the papers, acting as the decision maker for situations in which questions arise during the scoring process. The room director was also responsible for the quality of the scoring within the room. For the MSA-Reading program, those who served as room directors were usually active members of the training material development team, worked with MSDE staff and selected Maryland teachers to finalize scoring guides and training materials, and benchmarked student work.

For each item, scorers were trained to use the same scale to ensure accurate, consistent, and reliable scoring. All *BCR* items received a 0-3 score point range from two independent scorers. Equal or adjacent scores were acceptable. Readers were trained on and scored one item at a time. If the two readers did not assign equal or adjacent scores, the response was routed to a team leader for a third, independent reading to resolve the anomalous scores.

The read-behind application was also used to monitor reader performance. The team leader was provided a random selection of responses from each reader, distributed randomly across all readers. Although it could be tailored for each reader, by default, three percent of all responses scored appeared in the read-behind application. The team leader could agree with the scores and confirm them, disagree and send them back to the reader, or change them.

Training for Scoring Accuracy

The key to accurate scoring of *BCR* items is to train scorers appropriately. The following procedures were employed for training *MSA* project scorers.

Project-specific team leader training was conducted in the days immediately preceding scoring. Team leaders experienced in the scoring process helped train and retrain their team members. In addition, the logistics of the scoring sessions and the routines for resolution reading were discussed. All team leaders were also required to meet the qualifying standards set for the project. These standards were determined in conjunction with the MSDE.

Scorer training for *MSA* scoring began with an overview of the project and continued with the reading and discussion of selected student responses. The training utilized anchor sets, training sets, and qualifying sets, all of which contained MSDE reviewed and approved responses in addition to the *MSA* scoring rubric. Emphasis was placed on the scorer's understanding of how the responses differed from one another in quality and how each response represented the description of its score point as generalized in the scoring guidelines.

Inter-Rater Agreement

The scoring system generated many different kinds of internal monitoring reports that enabled accuracy of *MSA* scoring to be monitored. Teams produced the reports listing team scorers and providing the results of their scoring on an ongoing basis. Information on these reports included the number of responses read by the scorers during the period, the number and percentage of invalid responses (i.e., off-topic or blank responses, refusals to respond, responses in foreign languages), and the number of responses for which there was a subsequent reading. To illustrate, the number of responses with a second reading provided data that allowed for reporting the number and percentage of responses with perfect agreement, the number and percentage of responses for which the first scorer was a point lower than the second scorer, the number and percentage of responses for which the first scorer was a point higher than the second scorer, and the number and percentage of responses differing by more than one score point.

In addition to the scorer reports described above, a daily order status report was generated each day to monitor the progress, logistically, of the overall scoring process through the system. This report was given at the individual, team, and room levels, and showed, by order of completion and prompt, the number and percentage of responses for which first and second (check score) readings were required and completed for each item. These reports were available to team leaders, room directors, and training supervisors. They were also calculated and reported cumulatively for the day, the week, and the entire project. All reports were made available to the *MSA* supervisor every morning, and several of these monitoring reports could be called up online anytime throughout the scoring day. Statistical summaries of inter-rater reliability can be found in section 3.4.

1.8 Operational Test Analyses

To ascertain whether or not two operational test forms generated statistically significant discrepancy, descriptive statistics, such as mean (*M*), standard deviation (*SD*) were calculated for the *SAT10* common items (e.g., 25 items included in the operational test forms). The statistical results of the two test forms were almost identical across all grades, as can be seen from Table 1.14.

Table 1.14 The 2006 MSA-Reading Common Item Descriptive Statistics

Grade	Form	No. of Items	*N*	*M*	*SD*
3	A	25	26,226	18.48	4.61
	B	25	26,598	18.45	4.64
4	A	25	26,525	19.74	3.86
	B	25	26,962	19.70	3.88
5	A	25	27,564	17.84	4.60
	B	25	27,799	17.85	4.55
6	A	25	28,404	18.47	4.80
	B	25	28,649	18.47	4.82
7	A	25	28,971	17.74	4.65
	B	25	29,092	17.74	4.62
8	A	25	30,081	17.32	4.39
	B	25	30,114	17.32	4.36

Note. Form A designates the operational portion of Forms 1 and 3, which is identical. Form B designates the operational portion of Forms 2 and 4, which is identical.

Common Item P-Value Check

Tables 1.15 through 1.20 and Figures 1.2 through 1.7 provide information about how much the p-value of each *SAT10* common item changed in consecutive years. The general conclusion can be drawn from the results that most of the p-values in Year 2006 increased a little compared to those in Year 2005 across all grades except for grades 7 and 8.

Table 1.15 Common Item P-Value Comparison for Year 2005 vs. Year 2006: Grade 3

Item Number	Item Type	Y05 FA	Y05 FB	Y06 FA	Y06 FB
2	SR	0.93	0.94	0.94	0.94
6	SR	0.89	0.89	0.90	0.91
7	SR	0.68	0.68	0.69	0.70
11	SR	0.85	0.86	0.87	0.87
13	SR	0.64	0.65	0.70	0.70
17	SR	0.86	0.86	0.85	0.85
20	SR	0.70	0.71	0.74	0.73
22	SR	0.39	0.40	0.43	0.43
25	SR	0.67	0.66	0.68	0.68
32	SR	0.49	0.48	0.50	0.51
34	SR	0.71	0.72	0.74	0.74
35	SR	0.70	0.70	0.72	0.71
37	SR	0.77	0.77	0.79	0.78
45	SR	0.76	0.76	0.78	0.78
48	SR	0.91	0.92	0.92	0.92
53	SR	0.65	0.66	0.67	0.66
59	SR	0.68	0.68	0.68	0.68
60	SR	0.48	0.49	0.48	0.48
61	SR	0.81	0.81	0.83	0.82
62	SR	0.90	0.90	0.91	0.91
63	SR	0.84	0.84	0.85	0.85
65	SR	0.56	0.57	0.56	0.56
72	SR	0.76	0.77	0.78	0.78
73	SR	0.80	0.80	0.81	0.81
74	SR	0.63	0.64	0.65	0.65

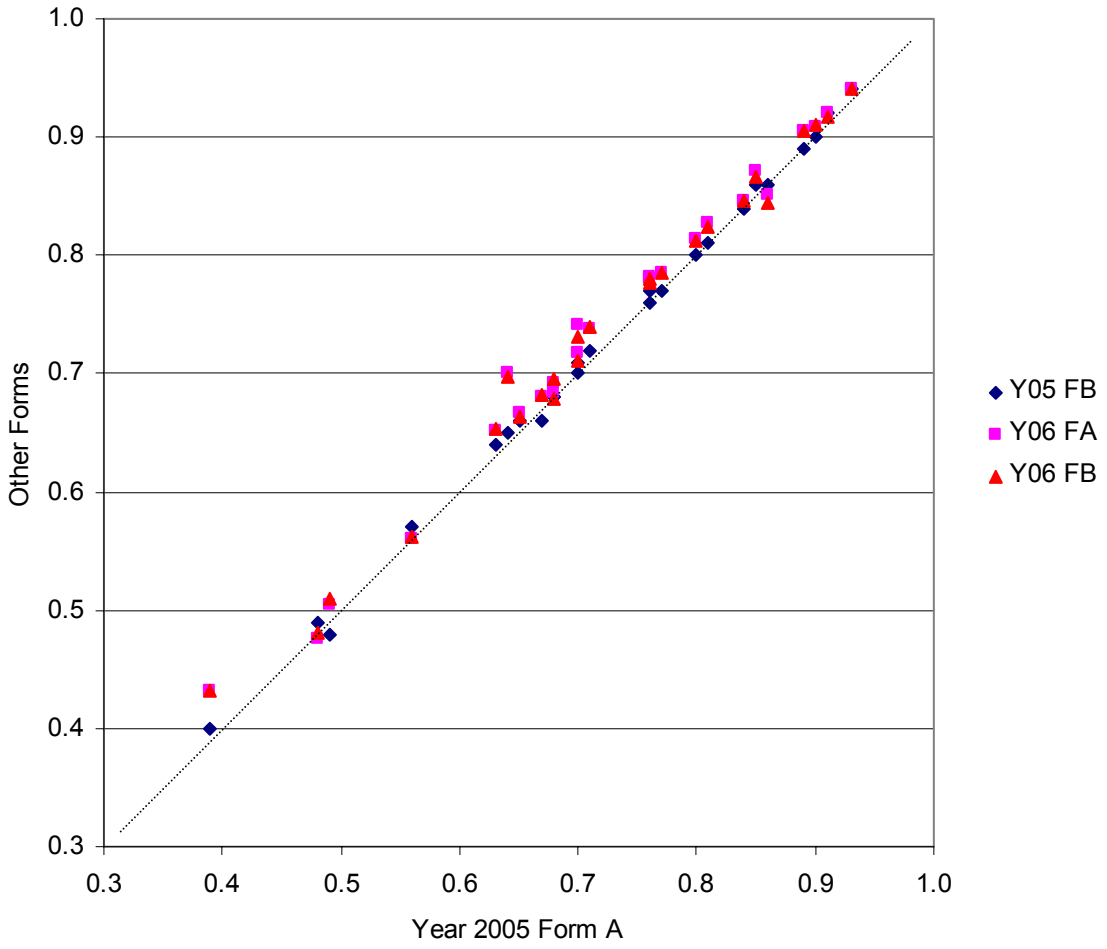


Figure 1.2 Common Item P-value Scatter Plots for Year 2005 vs. Year 2006: Grade 3

Table 1.16 Common Item P-Value Comparison for Year 2005 vs. Year 2006: Grade 4

Item Number	Item Type	Y05 FA	Y05 FB	Y06 FA	Y06 FB
1	SR	0.99	0.99	0.99	0.99
5	SR	0.93	0.94	0.94	0.94
11	SR	0.80	0.81	0.84	0.83
12	SR	0.89	0.90	0.89	0.89
20	SR	0.76	0.78	0.79	0.80
25	SR	0.83	0.85	0.86	0.86
26	SR	0.77	0.79	0.81	0.81
32	SR	0.91	0.92	0.91	0.92
39	SR	0.83	0.85	0.83	0.83
42	SR	0.70	0.71	0.71	0.72
45	SR	0.79	0.80	0.83	0.83
46	SR	0.76	0.78	0.76	0.76
47	SR	0.84	0.86	0.86	0.86
48	SR	0.81	0.82	0.82	0.82
49	SR	0.43	0.45	0.45	0.45
50	SR	0.94	0.95	0.95	0.95
51	SR	0.81	0.83	0.82	0.82
54	SR	0.81	0.83	0.84	0.83
55	SR	0.94	0.95	0.94	0.94
56	SR	0.61	0.61	0.62	0.62
57	SR	0.51	0.52	0.51	0.51
58	SR	0.38	0.37	0.38	0.38
59	SR	0.91	0.91	0.92	0.92
66	SR	0.76	0.78	0.79	0.78
68	SR	0.62	0.65	0.66	0.66

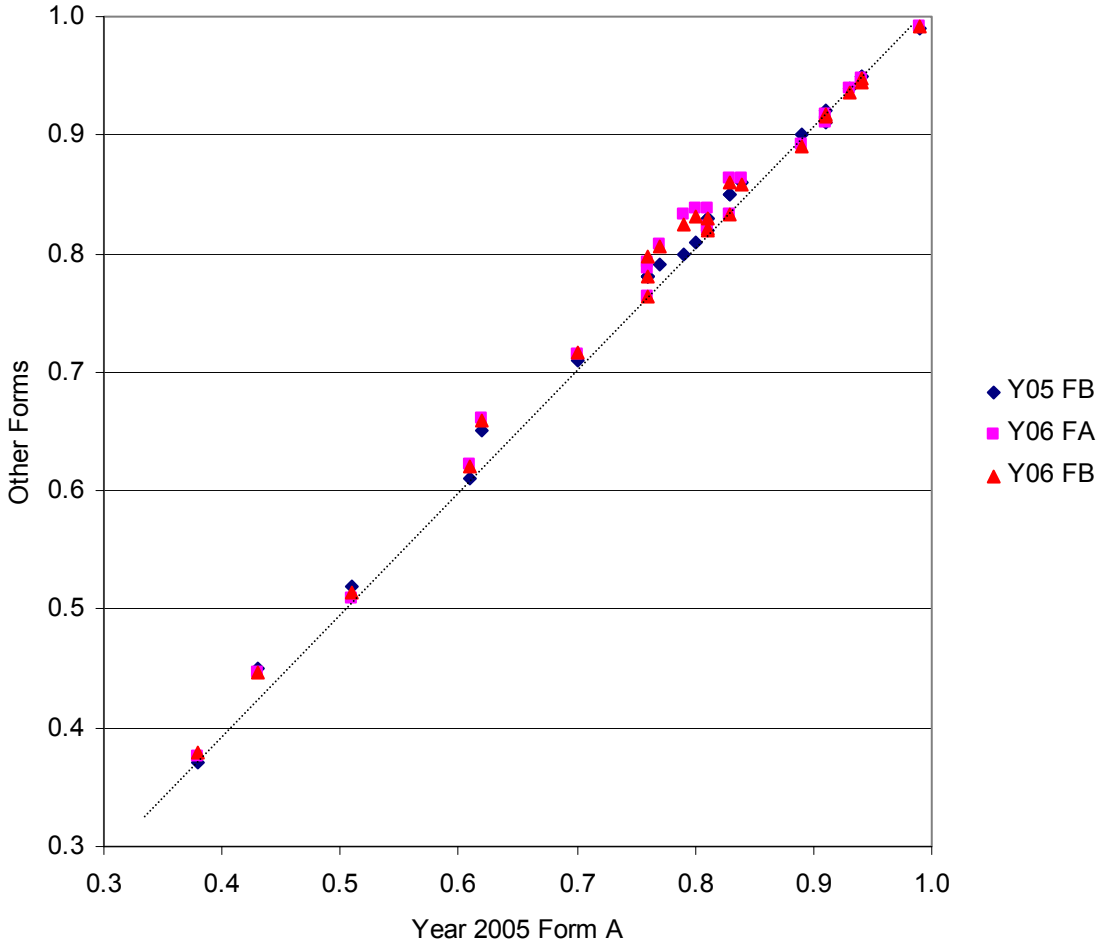


Figure 1.3 Common Item P-value Scatter Plots for Year 2005 vs. Year 2006: Grade 4

Table 1.17 Common Item P-Value Comparison for Year 2005 vs. Year 2006: Grade 5

Item Number	Item Type	Y05 FA	Y05 FB	Y06 FA	Y06 FB
4	SR	0.58	0.58	0.61	0.62
5	SR	0.55	0.55	0.57	0.57
6	SR	0.61	0.61	0.64	0.63
10	SR	0.91	0.91	0.91	0.91
11	SR	0.88	0.88	0.91	0.91
12	SR	0.84	0.84	0.84	0.85
14	SR	0.85	0.85	0.85	0.84
18	SR	0.82	0.82	0.83	0.83
19	SR	0.79	0.79	0.80	0.80
21	SR	0.75	0.76	0.75	0.75
24	SR	0.81	0.81	0.82	0.82
26	SR	0.59	0.59	0.59	0.59
28	SR	0.73	0.72	0.73	0.73
29	SR	0.71	0.72	0.70	0.70
31	SR	0.54	0.54	0.54	0.55
34	SR	0.58	0.59	0.60	0.59
35	SR	0.70	0.69	0.70	0.70
36	SR	0.80	0.80	0.81	0.81
37	SR	0.38	0.38	0.44	0.43
38	SR	0.65	0.66	0.67	0.68
40	SR	0.68	0.67	0.68	0.68
44	SR	0.76	0.76	0.77	0.77
47	SR	0.64	0.63	0.66	0.66
48	SR	0.55	0.56	0.57	0.57
52	SR	0.85	0.84	0.85	0.85

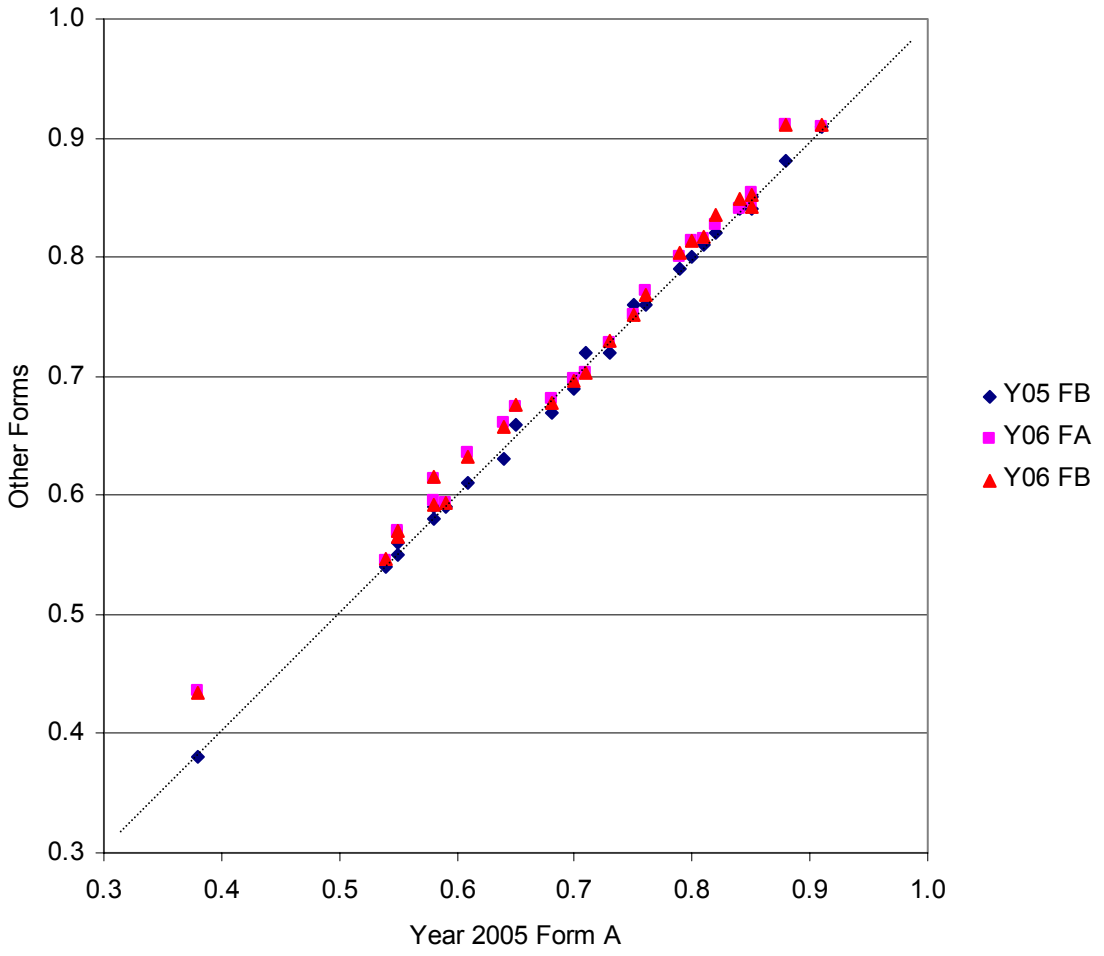


Figure 1.4 Common Item P-value Scatter Plots for Year 2005 vs. Year 2006: Grade 5

Table 1.18 Common Item P-Value Comparison for Year 2005 vs. Year 2006: Grade 6

Item Number	Item Type	Y05 FA	Y05 FB	Y06 FA	Y06 FB
1	SR	0.78	0.79	0.79	0.79
5	SR	0.52	0.53	0.54	0.54
8	SR	0.59	0.6	0.63	0.63
10	SR	0.91	0.92	0.92	0.92
11	SR	0.74	0.74	0.75	0.75
15	SR	0.73	0.74	0.76	0.76
18	SR	0.78	0.8	0.81	0.81
20	SR	0.83	0.84	0.84	0.84
24	SR	0.88	0.89	0.89	0.88
25	SR	0.77	0.78	0.78	0.78
26	SR	0.69	0.71	0.70	0.71
27	SR	0.69	0.7	0.71	0.71
28	SR	0.64	0.65	0.68	0.68
31	SR	0.77	0.78	0.80	0.80
32	SR	0.64	0.65	0.66	0.66
33	SR	0.65	0.66	0.69	0.69
35	SR	0.86	0.86	0.86	0.86
36	SR	0.34	0.34	0.34	0.33
37	SR	0.83	0.84	0.83	0.83
38	SR	0.62	0.63	0.64	0.63
39	SR	0.78	0.79	0.79	0.79
40	SR	0.81	0.82	0.82	0.82
41	SR	0.59	0.60	0.61	0.61
42	SR	0.87	0.88	0.87	0.87
43	SR	0.76	0.77	0.77	0.76

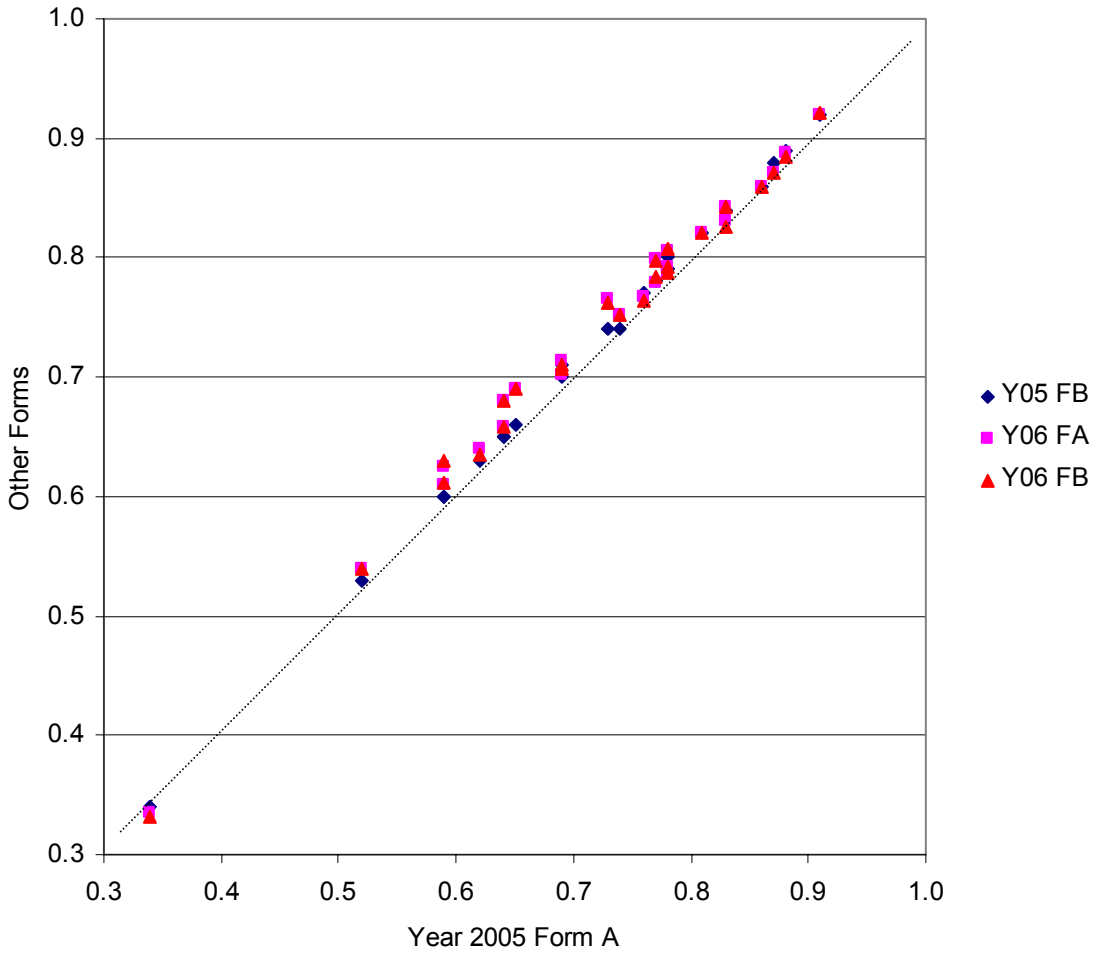


Figure 1.5 Common Item P-value Scatter Plots for Year 2005 vs. Year 2006: Grade 6

Table 1.19 Common Items P-Value Comparison for Year 2005 vs. Year 2006: Grade 7

Item Number	Item Type	Y05 FA	Y05 FB	Y06 FA	Y06 FB
1	SR	0.90	0.89	0.90	0.90
3	SR	0.84	0.84	0.85	0.85
6	SR	0.44	0.45	0.49	0.49
8	SR	0.42	0.42	0.41	0.41
11	SR	0.60	0.60	0.61	0.62
15	SR	0.68	0.68	0.70	0.70
18	SR	0.64	0.63	0.66	0.65
22	SR	0.84	0.84	0.84	0.84
25	SR	0.88	0.88	0.88	0.88
26	SR	0.54	0.54	0.53	0.54
29	SR	0.77	0.76	0.77	0.77
30	SR	0.54	0.53	0.53	0.53
31	SR	0.64	0.63	0.65	0.65
34	SR	0.58	0.57	0.57	0.57
35	SR	0.86	0.85	0.87	0.87
36	SR	0.61	0.61	0.63	0.62
39	SR	0.90	0.89	0.90	0.90
40	SR	0.72	0.71	0.73	0.73
41	SR	0.76	0.75	0.76	0.76
42	SR	0.61	0.61	0.65	0.65
43	SR	0.86	0.86	0.88	0.88
44	SR	0.78	0.77	0.78	0.77
45	SR	0.73	0.72	0.73	0.73
46	SR	0.73	0.73	0.74	0.74
47	SR	0.68	0.68	0.69	0.69

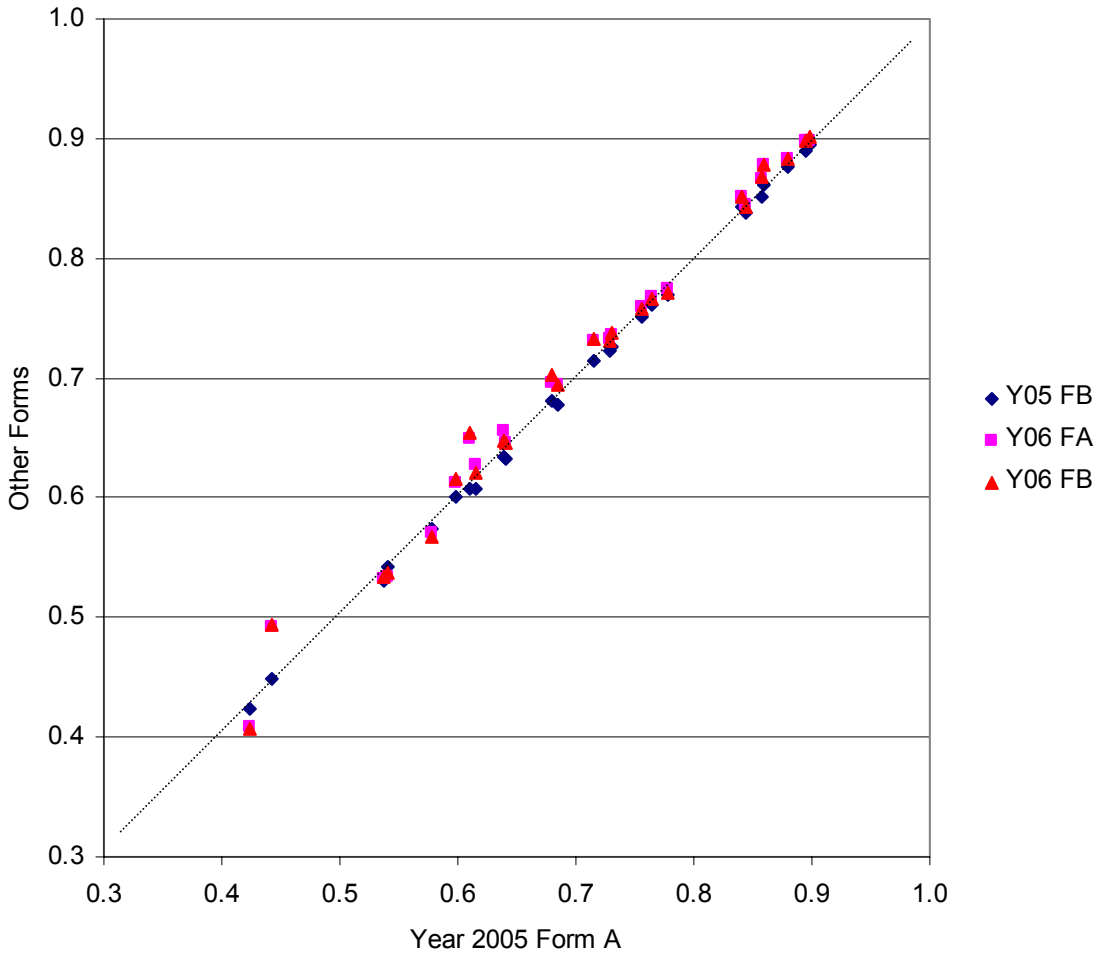


Figure 1.6 Common Item P-value Scatter Plots for Year 2005 vs. Year 2006: Grade 7

Table 1.20 Common Item P-Value Comparison for Year 2005 vs. Year 2006: Grade 8

Item Number	Item Type	Y05 FA	Y05 FB	Y06 FA	Y06 FB
3	SR	0.65	0.65	0.66	0.66
6	SR	0.50	0.50	0.54	0.54
8	SR	0.58	0.57	0.56	0.57
10	SR	0.92	0.92	0.93	0.94
25	SR	0.97	0.97	0.97	0.97
26	SR	0.56	0.57	0.56	0.56
27	SR	0.57	0.57	0.59	0.59
28	SR	0.80	0.80	0.82	0.82
29	SR	0.64	0.63	0.63	0.63
32	SR	0.72	0.72	0.74	0.74
33	SR	0.60	0.59	0.62	0.61
34	SR	0.65	0.64	0.65	0.64
35	SR	0.49	0.50	0.49	0.50
36	SR	0.65	0.64	0.65	0.64
38	SR	0.78	0.78	0.78	0.79
39	SR	0.55	0.54	0.53	0.53
40	SR	0.73	0.73	0.73	0.73
41	SR	0.76	0.76	0.75	0.75
42	SR	0.52	0.52	0.53	0.53
44	SR	0.83	0.83	0.84	0.84
47	SR	0.74	0.74	0.74	0.75
49	SR	0.80	0.80	0.79	0.80
51	SR	0.73	0.72	0.73	0.73
52	SR	0.74	0.74	0.74	0.74
53	SR	0.74	0.74	0.74	0.75

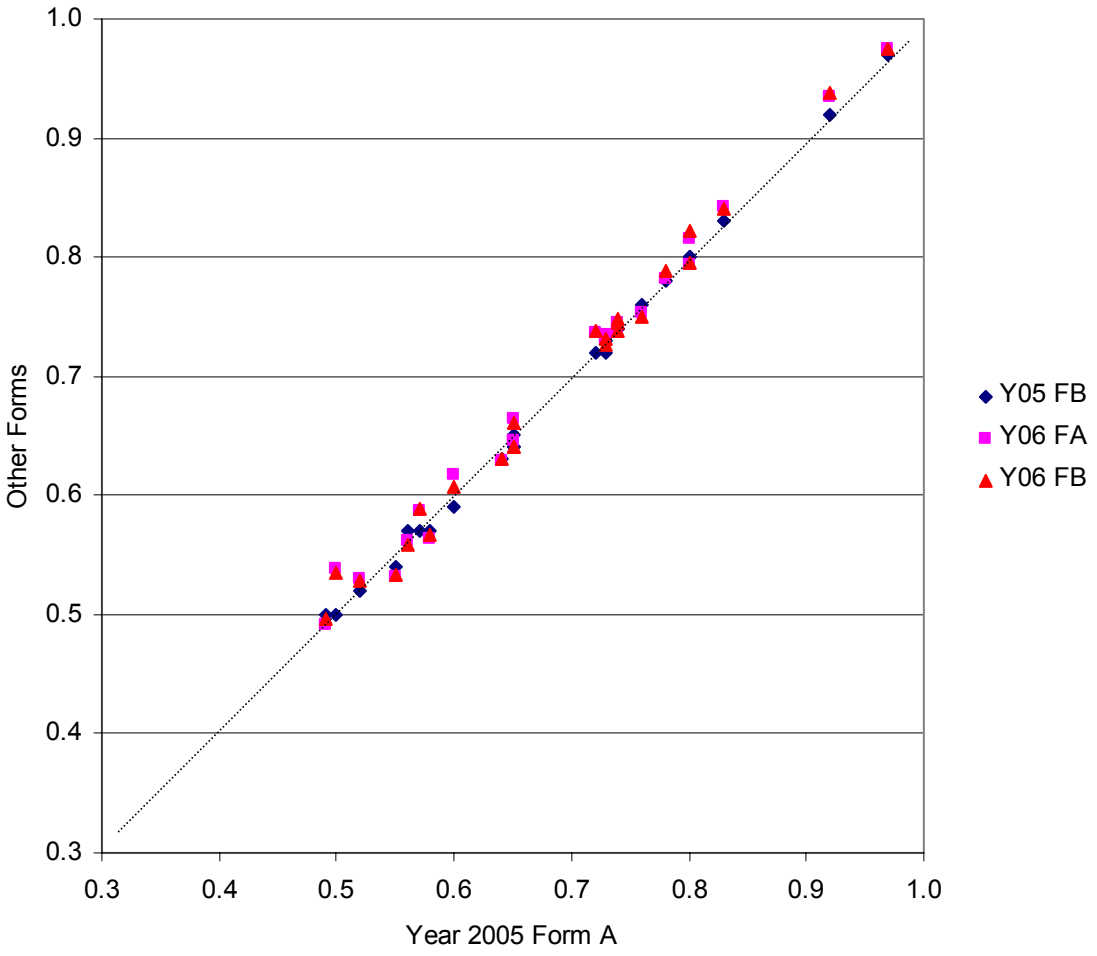


Figure 1.7 Common Item P-value Scatter Plots for Year 2005 vs. Year 2006: Grade 8

Validation Check with Augmented Items

To collect information about how much the same items that appear on the test forms in consecutive years (one year as field test items and the next year as operational test items) changed in terms of item difficulty, the p-values of those items were calculated.

Table 1.21 depicts which field test forms in previous year corresponds to which operational test forms in 2006. It should be noted that Year 2006 Forms 1 and 3 are the same, and Year 2006 Forms 2 and 4 are the same except for the field test portion. It should be also noted that in Tables 1.22 through 1.57, item numbers are given by those of Year 2006. More detailed information about the specific test design and construction of Year 2006 can be obtained from section 1.5.

In terms of item p-value analysis, generally, most of the p-values in Year 2006 increased somewhat compared to those in Year 2004 for grades 3 through 5. However, some of p-values increased and others decreased compared to those in Year 2004 for grades 6 through 8. In terms of IRT item difficulty analysis, most of the items in Year 2006 became easier compared to those in Year 2004 for grades 3 thought 5. For grades 6 through 8, however, some of items in Year 2006 became easier and others became harder compared to those in Year 2004.

Table 1.21 Form Identification for Items Appearing Year 2004 and Year 2006

Grade	Year 2004	Year 2006
3	Form 1, 4 Form 2, 3	Form A (1, 3) Form B (2, 4)
4	Form 3 Form 5	Form A (1, 3) Form B (2, 4)
5	Form 2, 1 Form 3, 4	Form A (1, 3) Form B (2, 4)
6	Form 3 Form 6	Form A (1, 3) Form B (2, 4)
7	Form 5 Form 2	Form A (1, 3) Form B (2, 4)
8	Form 2, 1 Form 4, 3	Form A (1, 3) Form B (2, 4)

Note. Form A designates the operational portion of Forms 1 and 3, which is identical. Form B designates the operational portion of Forms 2 and 4, which is identical.

Table 1.22 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 3 Form A

Item Number	Item Type	Year 04	Year 06
75	SR	0.32	0.36
76	BCR	0.43	0.47
77	SR	0.33	0.40
78	SR	0.42	0.47
79	BCR	0.31	0.36
80	SR	0.88	0.85
81	SR	0.53	0.52
82	BCR	0.37	0.46
83	SR	0.49	0.52
84	SR	0.56	0.61
85	BCR	0.19	0.38
86	SR	0.58	0.61

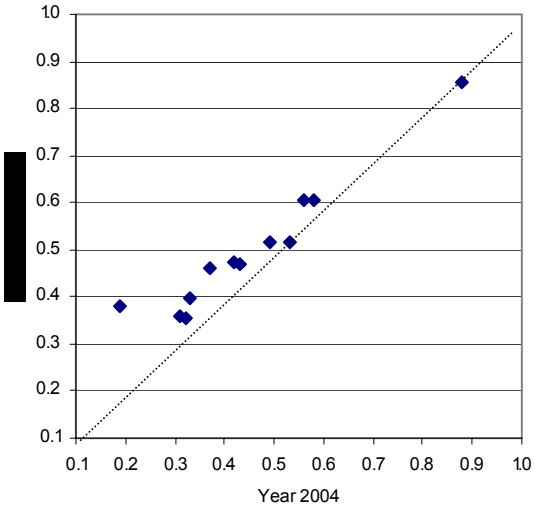


Table 1.23 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 3 Form A

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	76	BCR	13,848	1.28	0.97	26.36	20.92	42.10	7.63	2.27
2004	79	BCR	13,848	0.93	0.70	21.87	55.53	16.57	1.59	3.31
2004	82	BCR	14,031	1.12	0.63	10.94	66.17	19.67	2.32	0.86
2004	85	BCR	14,031	0.57	0.74	54.07	30.41	10.99	1.40	2.50
2006	76	BCR	26,226	1.40	0.89	17.58	32.01	39.95	9.64	0.83
2006	79	BCR	26,226	1.06	0.66	15.41	60.35	20.70	1.70	1.85
2006	82	BCR	26,226	1.36	0.70	8.65	48.97	37.71	4.18	0.50
2006	85	BCR	26,226	1.13	0.84	25.48	36.09	33.73	3.24	1.47

Table 1.24 Augmented IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 3 Form A

Year	Item #	Item Type	Item Difficulty	Step 0-1	Step 1-2	Step 2-3
2004	75	SR	1.7759			
2004	76	BCR	1.4431	-0.8781	-1.1247	2.0028
2004	77	SR	1.7457			
2004	78	SR	1.2559			
2004	79	BCR	2.2156	-2.6060	0.3361	2.2699
2004	80	SR	-1.5537			
2004	81	SR	0.7081			
2004	82	BCR	1.6506	-3.0975	0.7138	2.3836
2004	83	SR	0.8714			
2004	84	SR	0.5551			
2004	85	BCR	2.7259	-1.3185	-0.1755	1.4940
2004	86	SR	0.4119			
2006	75	SR	1.8752			
2006	76	BCR	1.3750	-1.4285	-0.4967	1.9252
2006	77	SR	1.6577			
2006	78	SR	1.2642			
2006	79	BCR	2.2940	-2.9788	0.255	2.7238
2006	80	SR	-1.1624			
2006	81	SR	1.0970			
2006	82	BCR	1.3417	-2.4862	0.0275	2.4587
2006	83	SR	0.9931			
2006	84	SR	0.5344			
2006	85	BCR	2.1956	-1.4753	-0.7929	2.2682
2006	86	SR	0.5404			

Figure 1.8 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 3 Form A

Table 1.25 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 3 Form B

Item Number	Item Type	Year 04	Year 06
75	SR	0.72	0.79
76	BCR	0.42	0.57
77	SR	0.53	0.54
78	SR	0.42	0.46
79	BCR	0.45	0.58
80	SR	0.59	0.68
81	SR	0.57	0.64
82	BCR	0.29	0.36
83	SR	0.68	0.76
84	SR	0.78	0.78
85	BCR	0.32	0.28
86	SR	0.84	0.87

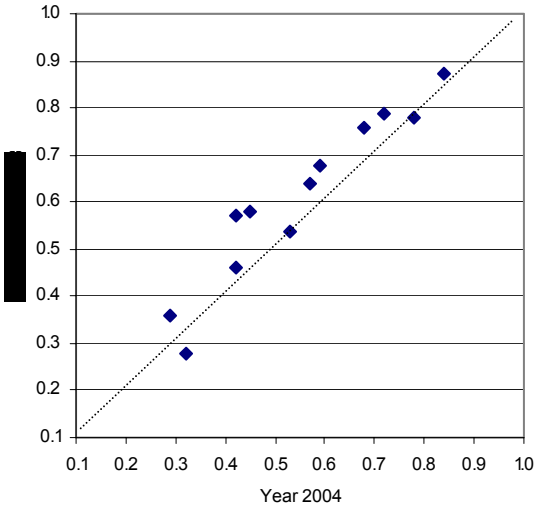


Table 1.26 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 3 Form B

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	76	BCR	14,257	1.26	0.81	15.14	47.61	28.91	6.73	1.52
2004	79	BCR	14,257	1.35	0.80	11.31	47.33	32.29	7.75	1.17
2004	82	BCR	14,453	0.88	0.79	34.20	41.36	20.80	1.57	1.84
2004	85	BCR	14,453	0.95	0.69	23.07	57.59	15.87	1.76	1.27
2006	76	BCR	26,598	1.713	0.74	5.12	28.93	53.66	11.69	0.59
2006	79	BCR	26,598	1.732	0.74	4.62	28.41	53.96	12.29	0.72
2006	82	BCR	26,598	1.074	0.84	28.28	37.02	31.54	2.44	0.72
2006	85	BCR	26,598	0.839	0.70	32.60	50.54	15.41	0.85	0.59

Table 1.27 Augment IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 3 Form B

Year	Item #	Item Type	Item Difficulty	Step 0-1	Step 1-2	Step 2-3
2004	75	SR	-0.2936			
2004	76	BCR	1.3638	-2.2254	0.2507	1.9747
2004	77	SR	0.7381			
2004	78	SR	1.2858			
2004	79	BCR	1.1503	-2.3705	0.2723	2.0982
2004	80	SR	0.3978			
2004	81	SR	0.5603			
2004	82	BCR	2.4280	-1.9943	-0.3342	2.3285
2004	83	SR	-0.0136			
2004	84	SR	-0.6799			
2004	85	BCR	2.2338	-2.5924	0.4360	2.1564
2004	86	SR	-1.1769			
2006	75	SR	-0.4802			
2006	76	BCR	0.6842	-2.3942	-0.3050	2.6991
2006	77	SR	0.9423			
2006	78	SR	1.3945			
2006	79	BCR	0.6398	-2.4476	-0.3177	2.7653
2006	80	SR	0.2226			
2006	81	SR	0.3851			
2006	82	BCR	2.3762	-2.0143	-0.6846	2.6989
2006	83	SR	-0.1964			
2006	84	SR	-0.4580			
2006	85	BCR	2.9716	-2.5427	-0.0230	2.5657
2006	86	SR	-1.2787			

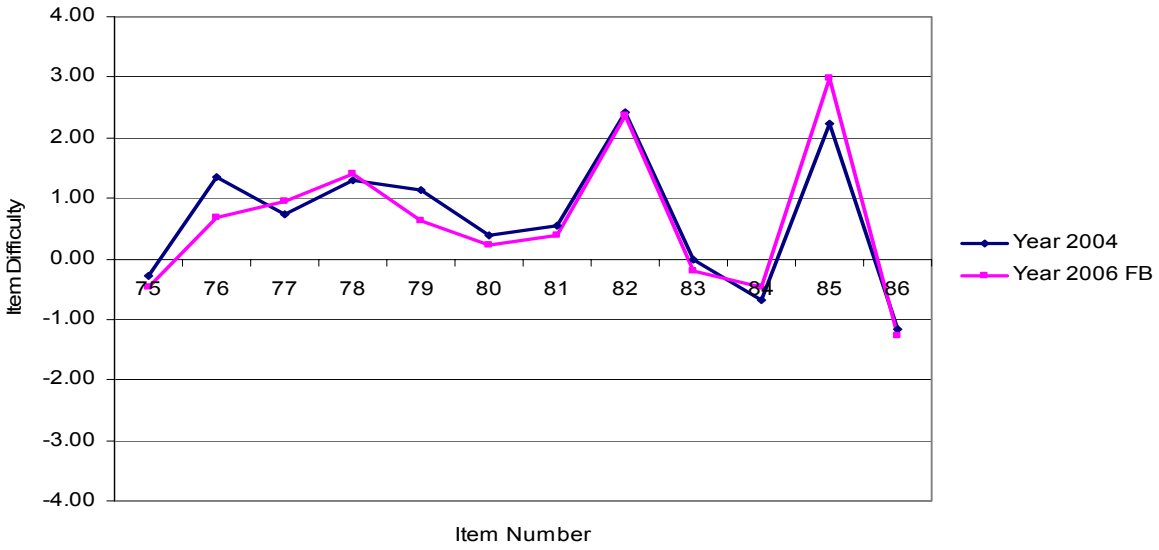


Figure 1.9 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 3 Form B

Table 1.28 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 4 Form A

Item Number	Item Type	Year 04	Year 06
75	SR	0.47	0.64
76	BCR	0.48	0.58
77	SR	0.5	0.64
78	SR	0.87	0.89
79	BCR	0.43	0.44
80	SR	0.74	0.77
81	SR	0.8	0.85
82	BCR	0.38	0.48
83	SR	0.64	0.69
84	SR	0.54	0.52
85	BCR	0.35	0.38
86	SR	0.62	0.65

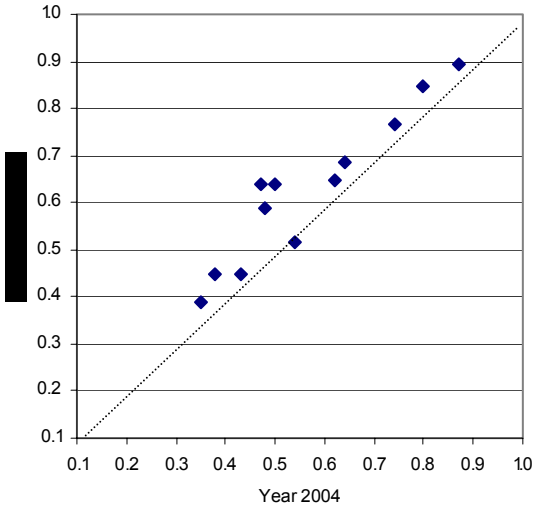


Table 1.29 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 4 Form A

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	76	BCR	7,747	1.44	0.75	9.00	42.00	43.00	6.00	1.00
2004	79	BCR	7,747	1.29	0.66	7.00	59.00	30.00	3.00	1.00
2004	82	BCR	7,747	1.13	0.51	4.00	76.00	17.00	1.00	1.00
2004	85	BCR	7,747	1.04	0.66	18.00	59.00	21.00	1.00	1.00
2006	76	BCR	26,525	1.74	0.64	3.40	25.85	63.45	7.10	0.20
2006	79	BCR	26,525	1.33	0.58	3.17	61.23	33.06	1.95	0.58
2006	82	BCR	26,525	1.37	0.61	1.77	61.57	31.36	4.29	1.01
2006	85	BCR	26,525	1.15	0.74	17.13	51.31	27.83	2.71	1.02

Table 1.30 Augment IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 4 Form A

Year	Item #	Item Type	Item Difficulty	Step 0-1	Step 1-2	Step 2-3
2004	75	SR	1.3690			
2004	76	BCR	1.4292	-2.5337	-0.1760	2.7097
2004	77	SR	1.2470			
2004	78	SR	-1.0996			
2004	79	BCR	1.7178	-3.3188	0.4627	2.8560
2004	80	SR	-0.0954			
2004	81	SR	-0.4727			
2004	82	BCR	2.0618	-4.2151	1.0606	3.1546
2004	83	SR	0.5126			
2004	84	SR	1.0287			
2004	85	BCR	2.6985	-3.1719	-0.0674	3.2394
2004	86	SR	0.6520			
2006	75	SR	0.7360			
2006	76	BCR	0.9784	-2.3393	-0.7611	3.1004
2006	77	SR	0.6290			
2006	78	SR	-1.1070			
2006	79	BCR	1.6854	-3.9815	0.5619	3.4196
2006	80	SR	-0.0328			
2006	81	SR	-0.6355			
2006	82	BCR	1.2777	-4.0371	1.1534	2.8837
2006	83	SR	0.5619			
2006	84	SR	1.3741			
2006	85	BCR	2.3791	-2.6197	0.0462	2.5735
2006	86	SR	0.6148			

Figure 1.10 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 4 Form A

Table 1.31 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 4 Form B

Item Number	Item Type	Year 04	Year 06
75	SR	0.74	0.80
76	BCR	0.33	0.42
77	SR	0.65	0.68
78	SR	0.82	0.85
79	BCR	0.34	0.42
80	SR	0.66	0.69
81	SR	0.64	0.73
82	BCR	0.38	0.42
83	SR	0.43	0.54
84	SR	0.64	0.72
85	BCR	0.44	0.44
86	SR	0.8	0.85

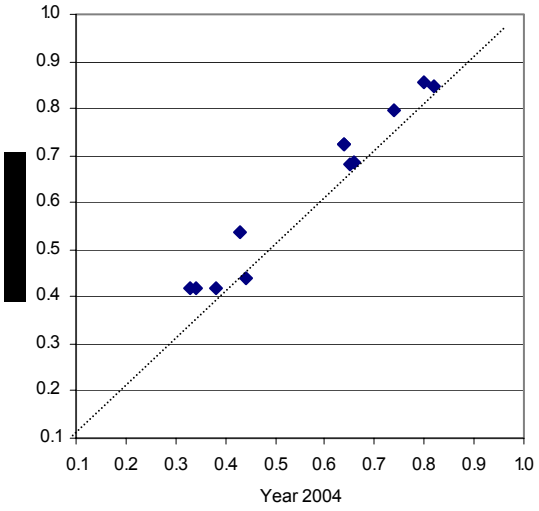


Table 1.32 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 4 Form B

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	76	76	9,713	0.98	0.73	25.00	51.00	21.00	2.00	1.00
2004	79	79	9,713	1.02	0.70	20.00	56.00	21.00	1.00	2.00
2004	82	82	9,713	1.14	0.83	26.00	40.00	32.00	3.00	1.00
2004	85	85	9,713	1.32	0.77	12.00	46.00	35.00	5.00	2.00
2006	76	76	26,962	1.26	0.65	9.48	56.47	31.97	1.81	0.26
2006	79	79	26,962	1.26	0.66	9.72	55.10	32.51	1.80	0.87
2006	82	82	26,962	1.25	0.81	19.82	37.50	39.10	3.00	0.58
2006	85	85	26,962	1.33	0.67	7.23	54.48	34.20	3.23	0.85

Table 1.33 Augment IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 4 Form B

Year	Item #	Item Type	Item Difficulty	SE	Step 0-1	Step 1-2	Step 2-3
2004	75	SR	2004	75	SR	-0.1043	
2004	76	BCR	2004	76	BCR	2.6650	-2.5647
2004	77	SR	2004	77	SR	0.4494	
2004	78	SR	2004	78	SR	-0.6284	
2004	79	BCR	2004	79	BCR	2.6116	-2.8658
2004	80	SR	2004	80	SR	0.3713	
2004	81	SR	2004	81	SR	0.4865	
2004	82	BCR	2004	82	BCR	2.2232	-2.0313
2004	83	SR	2004	83	SR	1.6255	
2004	84	SR	2004	84	SR	0.5176	
2004	85	BCR	2004	85	BCR	1.6908	-2.5316
2004	86	SR	2004	86	SR	-0.5626	
2006	75	SR	2006	75	SR	-0.1933	
2006	76	BCR	2006	76	BCR	2.3102	-3.2953
2006	77	SR	2006	77	SR	0.4553	
2006	78	SR	2006	78	SR	-0.6226	
2006	79	BCR	2006	79	BCR	2.2776	-3.4091
2006	80	SR	2006	80	SR	0.4683	
2006	81	SR	2006	81	SR	0.2553	
2006	82	BCR	2006	82	BCR	2.1761	-2.1192
2006	83	SR	2006	83	SR	1.2656	
2006	84	SR	2006	84	SR	0.2504	
2006	85	BCR	2006	85	BCR	1.7439	-3.0317
2006	86	SR	2006	86	SR	-0.7797	

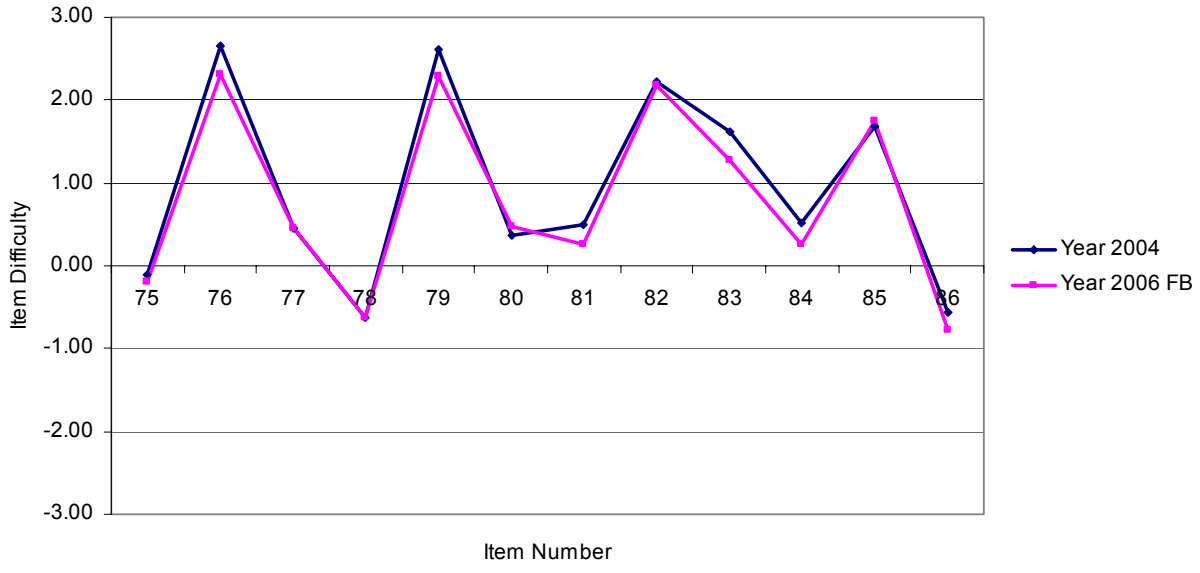


Figure 1.11 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 4 Form B

Table 1.34 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 5 Form A

Item Number	Item Type	Year 04	Year 06
64	SR	0.80	0.85
65	BCR	0.19	0.26
66	SR	0.22	0.51
67	SR	0.75	0.78
68	BCR	0.25	0.29
69	SR	0.7	0.71
70	SR	0.74	0.81
71	BCR	0.27	0.30
72	SR	0.79	0.82
73	SR	0.64	0.71
74	BCR	0.21	0.33
75	SR	0.58	0.60

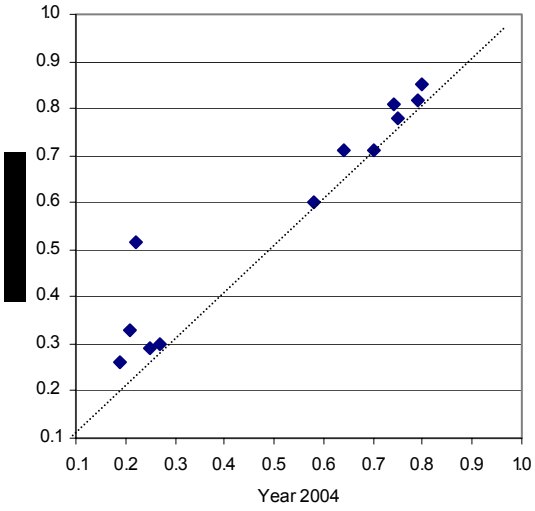


Table 1.35 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 5 Form A

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	65	BCR	14,620	0.57	0.78	57.99	27.38	11.54	2.26	0.63
2004	68	BCR	14,620	0.75	0.69	36.85	47.85	12.51	0.63	1.85
2004	71	BCR	14,285	0.80	0.88	44.62	31.94	17.40	4.57	1.32
2004	74	BCR	14,285	0.63	0.88	56.18	23.01	13.53	4.38	2.60
2006	65	BCR	27,564	0.78	0.82	44.45	35.98	16.57	2.83	0.17
2006	68	BCR	27,564	0.86	0.75	34.16	46.80	16.73	1.80	0.51
2006	71	BCR	27,564	0.89	0.96	44.22	28.56	19.70	7.11	0.40
2006	74	BCR	27,564	0.98	0.95	39.54	27.26	27.12	5.63	0.45

Table 1.36 Augment IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 5 Form A

Year	Item #	Item Type	Item Difficulty	Step 0-1	Step 1-2	Step 2-3
2004	64	SR	-0.8656			
2004	65	BCR	2.5552	-0.9905	-0.1896	1.1801
2004	66	SR	1.1332			
2004	67	SR	-0.5303			
2004	68	BCR	2.7468	-2.3469	0.0003	2.3466
2004	69	SR	-0.2254			
2004	70	SR	-0.4542			
2004	71	BCR	2.0258	-1.0572	-0.1447	1.2020
2004	72	SR	-0.7772			
2004	73	SR	0.0906			
2004	74	BCR	2.2226	-0.5767	-0.3073	0.8840
2004	75	SR	0.3917			
2006	64	SR	-1.0182			
2006	65	BCR	2.3136	-1.2533	-0.0171	1.2703
2006	66	SR	0.947			
2006	67	SR	-0.454			
2006	68	BCR	2.5966	-2.1019	-0.0754	2.1773
2006	69	SR	-0.1528			
2006	70	SR	-0.6995			
2006	71	BCR	1.9336	-0.84	-0.1247	0.9647
2006	72	SR	-0.7553			
2006	73	SR	-0.2062			
2006	74	BCR	1.9017	-0.7689	-0.7023	1.4712
2006	75	SR	0.5646			

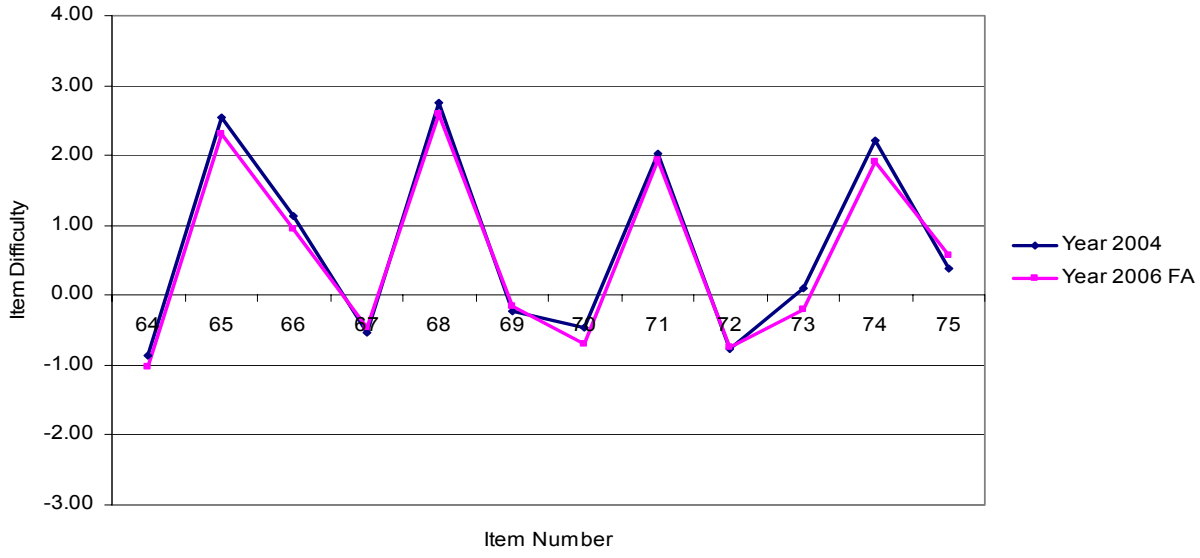


Figure 1.12 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 5 Form A

Table 1.37 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 5 Form B

Item Number	Item Type	Year 04	Year 06
64	SR	0.7	0.75
65	BCR	0.33	0.48
66	SR	0.49	0.61
67	SR	0.68	0.66
68	BCR	0.36	0.51
69	SR	0.67	0.65
70	SR	0.65	0.71
71	BCR	0.48	0.48
72	SR	0.86	0.93
73	SR	0.57	0.65
74	BCR	0.35	0.45
75	SR	0.59	0.70

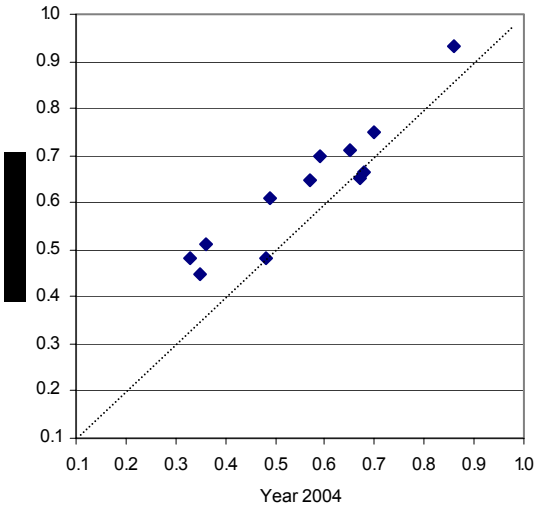


Table 1.38 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 5 Form B

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	65	BCR	14,823	1.00	0.80	28.28	44.81	22.76	3.14	0.78
2004	68	BCR	14,823	1.09	0.83	25.17	41.71	27.86	3.89	1.22
2004	71	BCR	14,898	1.45	0.73	7.11	45.95	39.76	6.49	0.50
2004	74	BCR	14,898	1.04	0.86	27.90	39.17	25.92	4.46	2.28
2006	65	BCR	27,799	1.44	0.74	7.90	46.63	38.62	6.63	0.21
2006	68	BCR	27,799	1.52	0.78	8.09	40.89	40.91	9.69	0.41
2006	71	BCR	27,799	1.43	0.68	6.91	47.29	41.62	4.03	0.17
2006	74	BCR	27,799	1.34	0.85	17.81	36.76	38.43	6.66	0.34

Table 1.39 Augment IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 5 Form B

Year	Item #	Item Type	Item Difficulty	Step 0-1	Step 1-2	Step 2-3
2004	64	SR	-0.2229			
2004	65	BCR	1.8587	-1.8499	-0.0541	1.9040
2004	66	SR	0.8246			
2004	67	SR	-0.1606			
2004	68	BCR	1.6819	-1.7764	-0.2201	1.9965
2004	69	SR	-0.0997			
2004	70	SR	0.0280			
2004	71	BCR	0.8740	-2.6119	0.1205	2.4914
2004	72	SR	-1.4482			
2004	73	SR	0.4253			
2004	74	BCR	1.7185	-1.6049	-0.1821	1.7870
2004	75	SR	0.3241			
2006	64	SR	-0.3068			
2006	65	BCR	1.0519	-2.6658	0.1169	2.5489
2006	66	SR	0.4808			
2006	67	SR	0.1529			
2006	68	BCR	0.8502	-2.326	0.1756	2.1504
2006	69	SR	0.1262			
2006	70	SR	-0.1249			
2006	71	BCR	1.1994	-2.6475	-0.0668	2.7143
2006	72	SR	-2.0815			
2006	73	SR	0.2654			
2006	74	BCR	1.341	-1.8955	-0.3138	2.2094
2006	75	SR	-0.065			

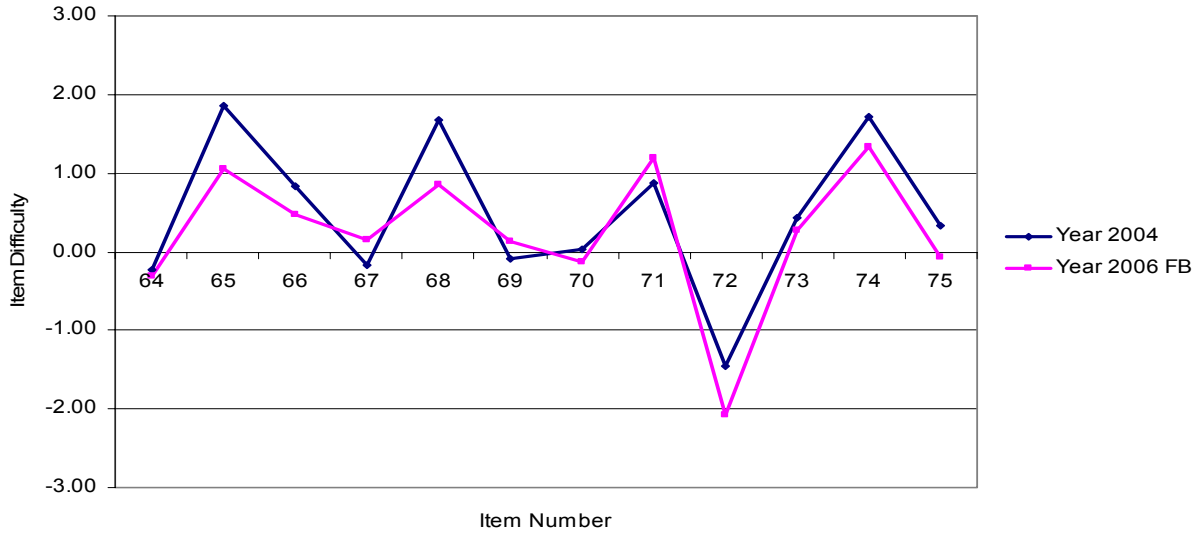


Figure 1.13 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 5 Form B

Table 1.40 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 6 Form A

Item Number	Item Type	Year 04	Year 06
64	SR	0.8	0.81
65	BCR	0.53	0.58
66	SR	0.75	0.80
67	SR	0.7	0.78
68	BCR	0.5	0.54
69	SR	0.79	0.86
70	SR	0.52	0.56
71	BCR	0.41	0.45
72	SR	0.63	0.63
73	SR	0.5	0.54
74	BCR	0.42	0.46
75	SR	0.74	0.75

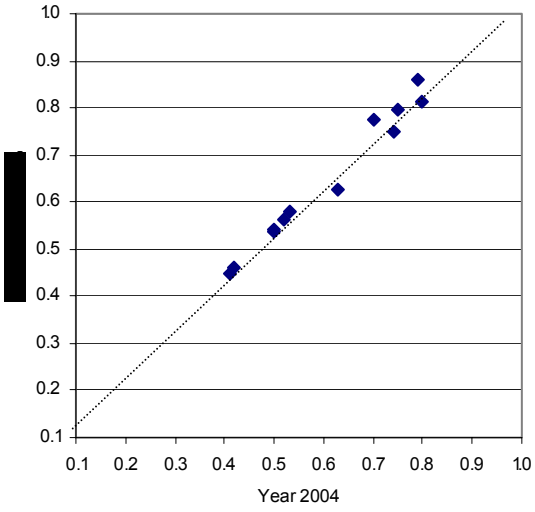


Table 1.41 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 6 Form A

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	65	BCR	9,164	1.59	0.81	10.00	29.00	51.00	10.00	1.00
2004	68	BCR	9,164	1.50	0.80	9.00	35.00	45.00	8.00	2.00
2004	71	BCR	9,164	1.24	0.87	18.00	43.00	29.00	8.00	2.00
2004	74	BCR	9,164	1.25	0.80	13.00	50.00	26.00	7.00	3.00
2006	65	BCR	28,404	1.74	0.82	8.49	23.06	53.00	14.85	0.61
2006	68	BCR	28,404	1.62	0.84	8.34	31.16	45.44	13.39	1.67
2006	71	BCR	28,404	1.35	0.85	13.88	41.20	34.01	8.51	2.41
2006	74	BCR	28,404	1.37	0.82	10.62	47.74	30.60	9.36	1.68

Table 1.42 Augment IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 6 Form A

Year	Item #	Item Type	Item Difficulty	Step 0-1	Step 1-2	Step 2-3
2004	64	SR	-0.6790			
2004	65	BCR	1.0322	-1.9857	-0.6245	2.6102
2004	66	SR	-0.3534			
2004	67	SR	-0.0172			
2004	68	BCR	1.1418	-2.2044	-0.3197	2.5240
2004	69	SR	-0.5987			
2004	70	SR	0.9636			
2004	71	BCR	1.6559	-2.0871	0.0943	1.9928
2004	72	SR	0.3540			
2004	73	SR	1.0527			
2004	74	BCR	1.5460	-2.5530	0.4383	2.1147
2004	75	SR	-0.4396			
2006	64	SR	-0.7845			
2006	65	BCR	0.7544	-1.6612	-0.7996	2.4609
2006	66	SR	-0.6621			
2006	67	SR	-0.5052			
2006	68	BCR	0.9164	-2.1024	-0.2168	2.3192
2006	69	SR	-1.1569			
2006	70	SR	0.8595			
2006	71	BCR	1.5965	-2.0626	-0.1137	2.1763
2006	72	SR	0.5291			
2006	73	SR	0.971			
2006	74	BCR	1.4307	-2.5648	0.3469	2.2179
2006	75	SR	-0.3015			

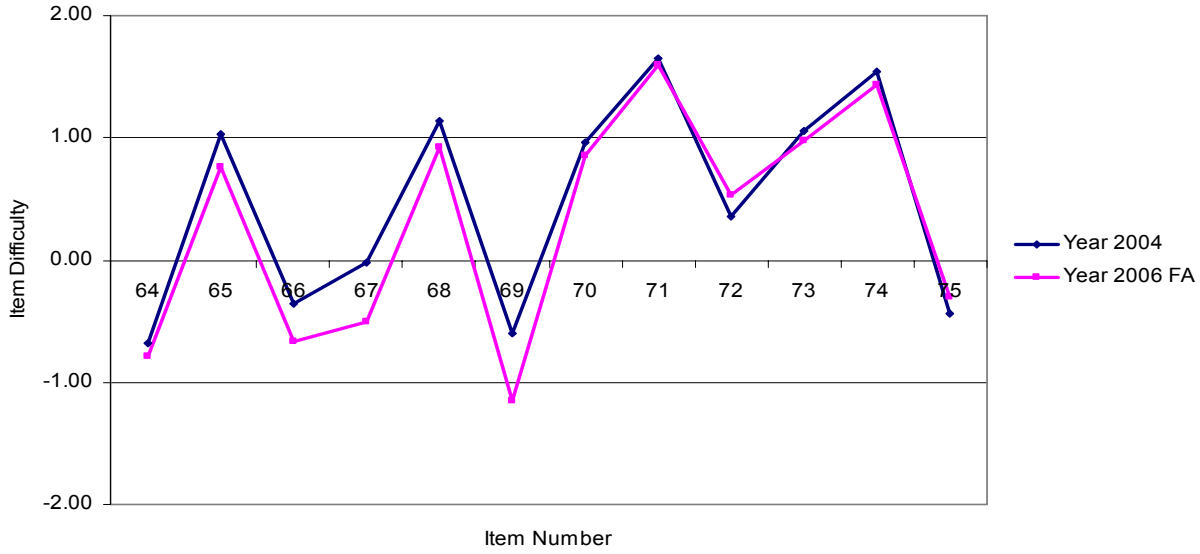


Figure 1.14 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 6 Form A

Table 1.43 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 6 Form B

Item Number	Item Type	Year 04	Year 06
64	SR	0.64	0.65
65	BCR	0.49	0.49
66	SR	0.47	0.40
67	SR	0.76	0.76
68	BCR	0.54	0.50
69	SR	0.65	0.66
70	SR	0.77	0.79
71	BCR	0.49	0.49
72	SR	0.69	0.73
73	SR	0.7	0.75
74	BCR	0.41	0.44
75	SR	0.54	0.59

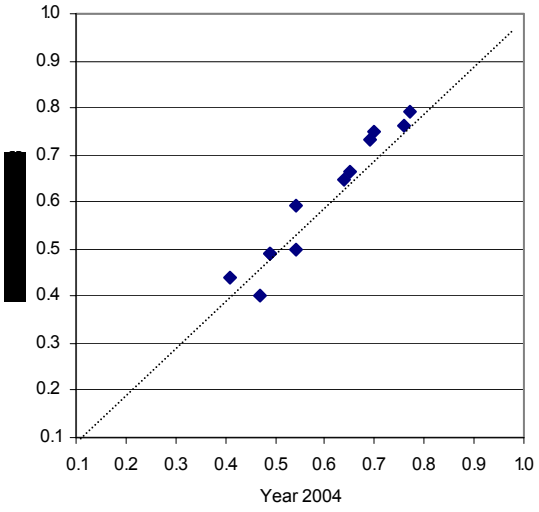


Table 1.44 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 6 Form B

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	65	BCR	8,316	1.48	0.73	4.00	53.00	33.00	9.00	0.00
2004	68	BCR	8,316	1.61	0.81	5.00	41.00	38.00	15.00	0.00
2004	71	BCR	8,316	1.47	0.64	4.00	47.00	45.00	3.00	0.00
2004	74	BCR	8,316	1.22	0.67	9.00	60.00	27.00	3.00	0.00
2006	65	BCR	28,649	1.48	0.74	6.02	46.01	39.33	7.84	0.81
2006	68	BCR	28,649	1.51	0.80	8.05	41.07	39.68	10.23	0.96
2006	71	BCR	28,649	1.48	0.73	3.98	50.90	35.19	8.89	1.04
2006	74	BCR	28,649	1.31	0.81	14.05	46.30	31.24	7.24	1.16

Table 1.45 Augment IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 6 Form B

Year	Item #	Item Type	Item Difficulty	Step 0-1	Step 1-2	Step 2-3
2004	64	SR	0.3216			
2004	65	BCR	0.8703	-3.0883	0.6514	2.4369
2004	66	SR	1.1647			
2004	67	SR	-0.4427			
2004	68	BCR	0.6120	-2.6263	0.4063	2.2200
2004	69	SR	0.2208			
2004	70	SR	-0.5047			
2004	71	BCR	1.1962	-3.4863	-0.0302	3.5165
2004	72	SR	-0.0761			
2004	73	SR	-0.0271			
2004	74	BCR	1.6366	-3.0348	0.3984	2.6364
2004	75	SR	0.8130			
2006	64	SR	0.3986			
2006	65	BCR	1.1549	-2.7461	0.2196	2.5265
2006	66	SR	1.6809			
2006	67	SR	-0.3898			
2006	68	BCR	1.1549	-2.3228	0.1131	2.2097
2006	69	SR	0.3131			
2006	70	SR	-0.5405			
2006	71	BCR	0.8605	-3.1284	0.634	2.4944
2006	72	SR	-0.0986			
2006	73	SR	-0.2304			
2006	74	BCR	1.5776	-2.2744	0.1386	2.1358
2006	75	SR	0.6061			

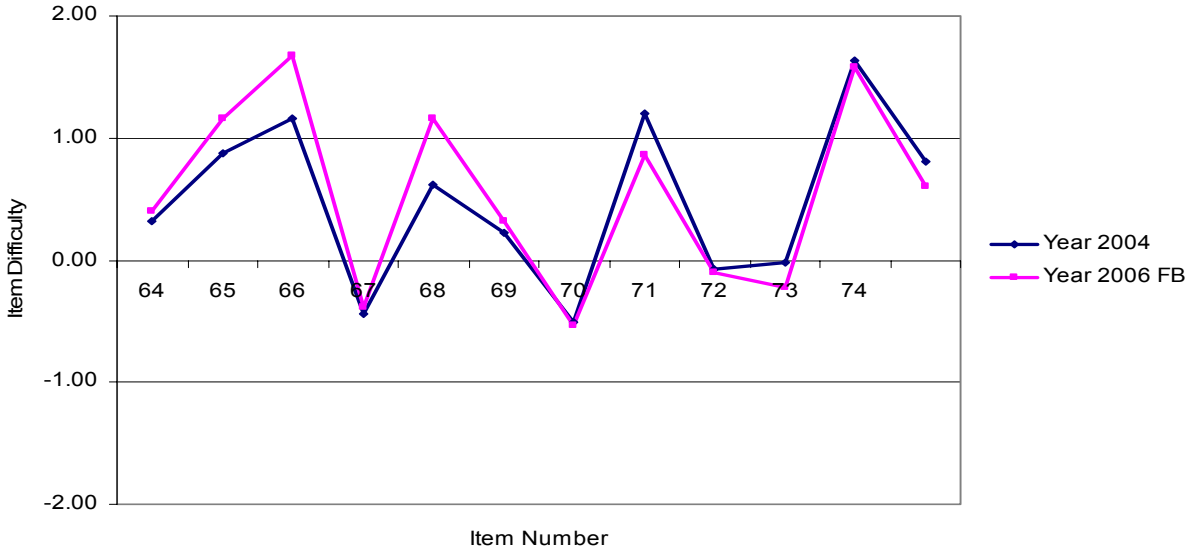


Figure 1.15 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 6 Form B

Table 1.46 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 7 Form A

Item Number	Item Type	Year 04	Year 06
64	SR	0.87	0.91
65	BCR	0.49	0.49
66	SR	0.65	0.70
67	SR	0.81	0.85
68	BCR	0.47	0.47
69	SR	0.59	0.67
70	SR	0.73	0.75
71	BCR	0.35	0.35
72	SR	0.58	0.58
73	SR	0.51	0.55
74	BCR	0.4	0.38
75	SR	0.75	0.77

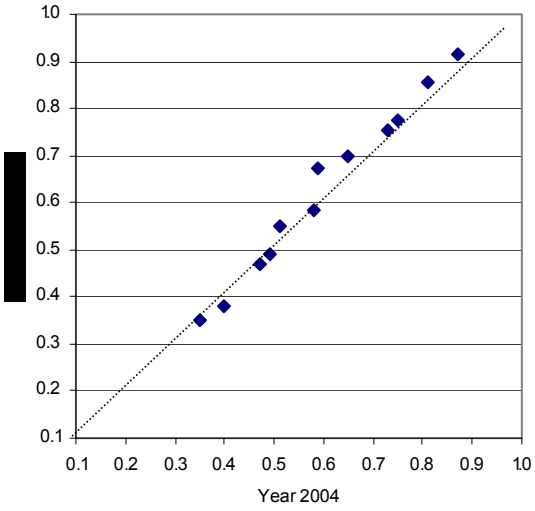


Table 1.47 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 7 Form A

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	65	BCR	10,294	1.47	0.67	6.00	40.00	50.00	2.00	2.00
2004	68	BCR	10,294	1.41	0.67	4.00	43.00	47.00	1.00	5.00
2004	71	BCR	10,294	1.05	0.92	30.00	31.00	29.00	5.00	4.00
2004	74	BCR	10,294	1.21	0.79	13.00	44.00	32.00	4.00	6.00
2006	65	BCR	28,971	1.46	0.70	6.12	45.19	42.61	5.19	0.89
2006	68	BCR	28,971	1.42	0.76	8.68	43.47	40.12	5.95	1.78
2006	71	BCR	28,971	1.04	0.90	31.54	30.82	31.06	3.80	2.78
2006	74	BCR	28,971	1.13	0.72	14.99	53.38	26.45	2.26	2.91

Table 1.48 Augment IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 7 Form A

Year	Item #	Item Type	Item Difficulty	Step 0-1	Step 1-2	Step 2-3
2004	64	SR	-1.5710			
2004	65	BCR	1.2210	-3.0206	-0.5566	3.5772
2004	66	SR	0.0619			
2004	67	SR	-0.9871			
2004	68	BCR	1.4049	-3.5021	-0.5748	4.0769
2004	69	SR	0.4061			
2004	70	SR	-0.3893			
2004	71	BCR	1.7628	-1.2708	-0.5003	1.7711
2004	72	SR	0.4424			
2004	73	SR	0.7913			
2004	74	BCR	1.5169	-2.3487	-0.1430	2.4918
2004	75	SR	-0.5758			
2006	64	SR	-1.7846			
2006	65	BCR	1.1441	-2.8844	-0.0732	2.9576
2006	66	SR	-0.0952			
2006	67	SR	-1.2273			
2006	68	BCR	1.1302	-2.4373	-0.0697	2.5069
2006	69	SR	0.0612			
2006	70	SR	-0.433			
2006	71	BCR	1.9406	-1.3567	-0.6052	1.9619
2006	72	SR	0.5856			
2006	73	SR	0.6895			
2006	74	BCR	1.7263	-2.8109	-0.0529	2.8638
2006	75	SR	-0.4891			

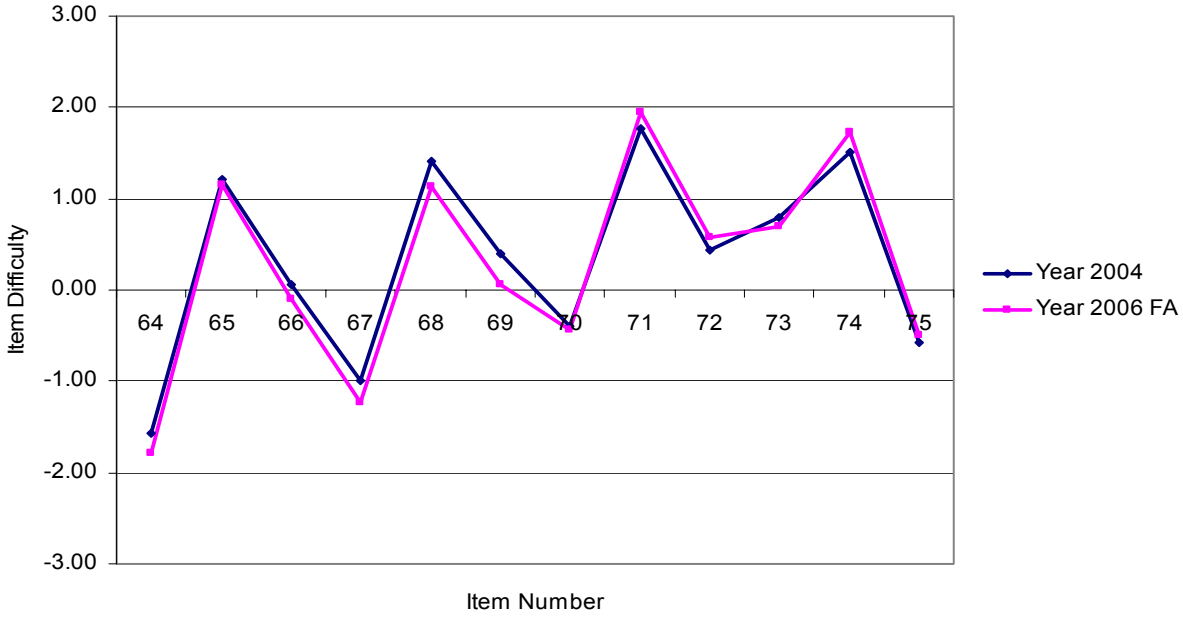


Figure 1.16 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 7 Form A

Table 1.49 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 7 Form B

Item Number	Item Type	Year 04	Year 06 Form
64	SR	0.74	0.78
65	BCR	0.41	0.36
66	SR	0.52	0.52
67	SR	0.65	0.71
68	BCR	0.5	0.38
69	SR	0.82	0.83
70	SR	0.71	0.67
71	BCR	0.36	0.40
72	SR	0.67	0.71
73	SR	0.55	0.59
74	BCR	0.39	0.35
75	SR	0.65	0.67

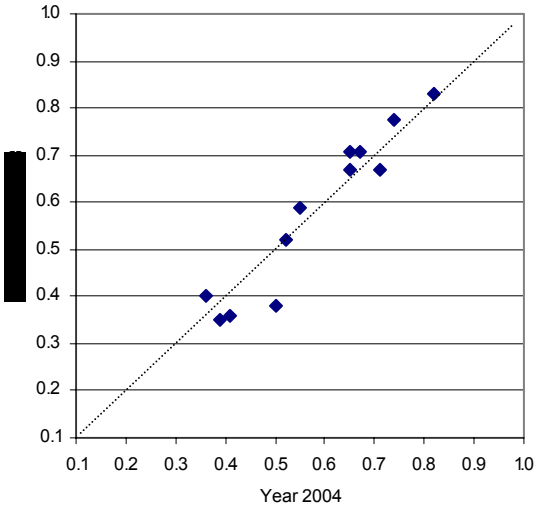


Table 1.50 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 7 Form B

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	65	BCR	10,374	1.23	0.82	17.00	43.00	33.00	5.00	2.00
2004	68	BCR	10,374	1.49	0.82	10.00	36.00	44.00	9.00	2.00
2004	71	BCR	10,374	1.07	0.49	5.00	78.00	14.00	1.00	2.00
2004	74	BCR	10,374	1.18	0.71	14.00	52.00	31.00	2.00	2.00
2006	65	BCR	29,092	1.09	0.68	14.90	61.77	19.14	3.09	1.11
2006	68	BCR	29,092	1.14	0.81	20.08	48.13	25.01	5.20	1.57
2006	71	BCR	29,092	1.20	0.67	9.63	59.95	25.41	3.22	1.78
2006	74	BCR	29,092	1.05	0.71	18.71	57.41	20.04	2.60	1.23

Table 1.51 Augment IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 7 Form B

Year	Item #	Item Type	Item Difficulty	SE	Step 0-1	Step 1-2	Step 2-3
2004	64	SR	-0.4770				-0.4770
2004	65	BCR	1.5318	-2.0735	-0.1637	2.2372	1.5318
2004	66	SR	0.7653				0.7653
2004	67	SR	0.1011				0.1011
2004	68	BCR	0.9211	-1.9817	-0.2420	2.2237	0.9211
2004	69	SR	-1.0063				-1.0063
2004	70	SR	-0.2358				-0.2358
2004	71	BCR	2.0013	-4.3040	1.0537	3.2503	2.0013
2004	72	SR	-0.0001				-0.0001
2004	73	SR	0.6095				0.6095
2004	74	BCR	1.8820	-2.8585	-0.1985	3.0570	1.8820
2004	75	SR	0.1027				0.1027
2006	64	SR	-0.5582				-0.5582
2006	65	BCR	1.8451	-2.795	0.7037	2.0913	1.8451
2006	66	SR	0.918				0.918
2006	67	SR	-0.1129				-0.1129
2006	68	BCR	1.7181	-2.0719	0.2852	1.7867	1.7181
2006	69	SR	-0.9443				-0.9443
2006	70	SR	0.0137				0.0137
2006	71	BCR	1.7183	-3.1613	0.4508	2.7104	1.7183
2006	72	SR	-0.1371				-0.1371
2006	73	SR	0.5586				0.5586
2006	74	BCR	1.9503	-2.5459	0.3053	2.2406	1.9503
2006	75	SR	0.0481				0.0481

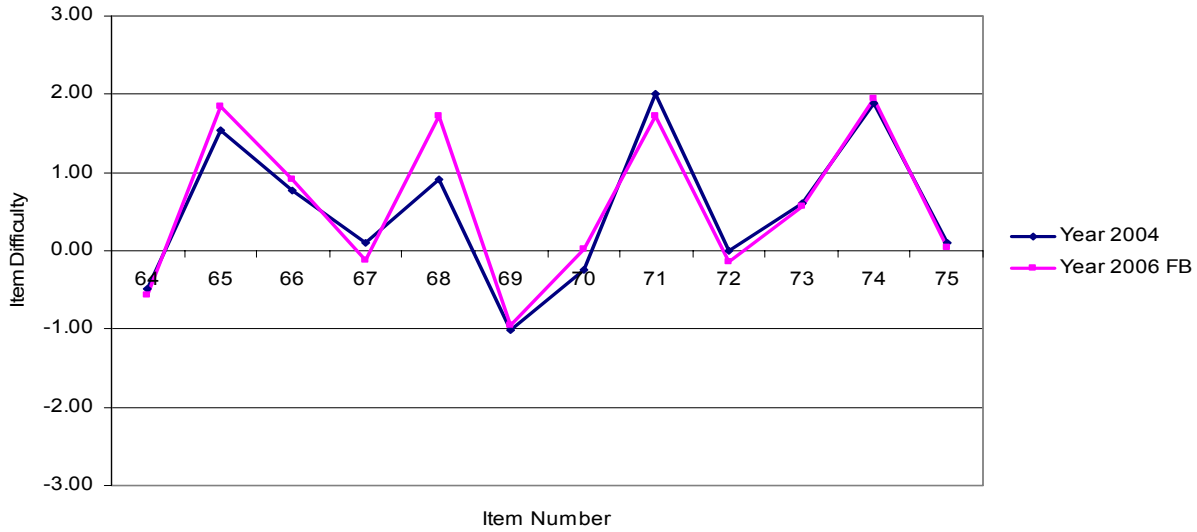


Figure 1.17 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 7 Form B

Table 1.52 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 8 Form A

Item Number	Item Type	Year 04	Year 06 Form A
64	SR	0.87	0.90
65	BCR	0.39	0.44
66	SR	0.63	0.66
67	SR	0.69	0.61
68	BCR	0.38	0.46
69	SR	0.71	0.68
70	SR	0.69	0.72
71	BCR	0.34	0.34
72	SR	0.4	0.51
73	SR	0.69	0.74
74	BCR	0.28	0.29
75	SR	0.41	0.37

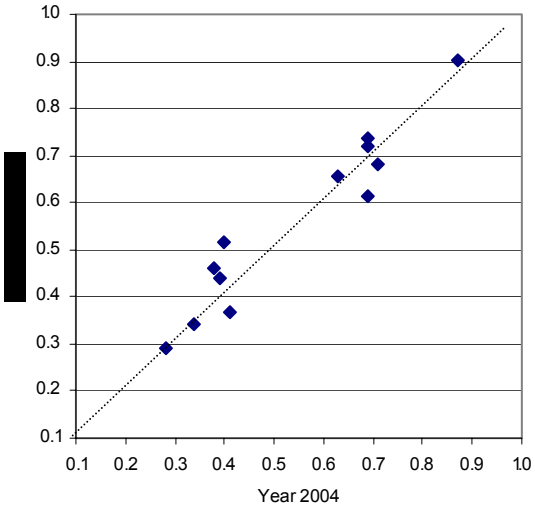


Table 1.53 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 8 Form A

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	65	BCR	15,598	1.16	0.72	14.79	50.60	29.98	1.80	2.42
2004	68	BCR	15,598	1.13	0.80	21.36	40.59	32.98	2.21	2.39
2004	71	BCR	15,445	1.02	0.78	24.64	45.48	25.36	1.88	2.43
2004	74	BCR	15,445	0.85	0.77	33.23	44.20	17.53	1.79	2.93
2006	65	BCR	30,081	1.31	0.64	6.59	54.06	36.47	1.46	1.42
2006	68	BCR	30,081	1.39	0.75	13.11	33.60	50.08	1.67	1.54
2006	71	BCR	30,081	1.02	0.68	19.31	55.86	21.92	0.62	2.29
2006	74	BCR	30,081	0.87	0.61	22.83	62.60	11.42	0.44	2.70

Table 1.54 Augment IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 8 Form A

Year	Item #	Item Type	Item Difficulty	Step 0-1	Step 1-2	Step 2-3
2004	64	SR	-1.3632			
2004	65	BCR	1.8554	-2.5559	-0.1922	2.7481
2004	66	SR	0.2885			
2004	67	SR	-0.0464			
2004	68	BCR	1.9142	-1.9938	-0.5610	2.5548
2004	69	SR	-0.1629			
2004	70	SR	-0.0263			
2004	71	BCR	2.1267	-2.0999	-0.2942	2.3941
2004	72	SR	1.3751			
2004	73	SR	-0.0425			
2004	74	BCR	2.3523	-1.8864	-0.0644	1.9508
2004	75	SR	1.3740			
2006	64	SR	-1.6346			
2006	65	BCR	1.5784	-3.4976	-0.0444	3.542
2006	66	SR	0.2805			
2006	67	SR	0.4273			
2006	68	BCR	1.9023	-2.3884	-1.218	3.6064
2006	69	SR	0.1416			
2006	70	SR	-0.0685			
2006	71	BCR	2.4814	-2.9633	-0.2938	3.257
2006	72	SR	0.8998			
2006	73	SR	-0.321			
2006	74	BCR	3.0578	-3.1564	0.0909	3.0655
2006	75	SR	1.6341			

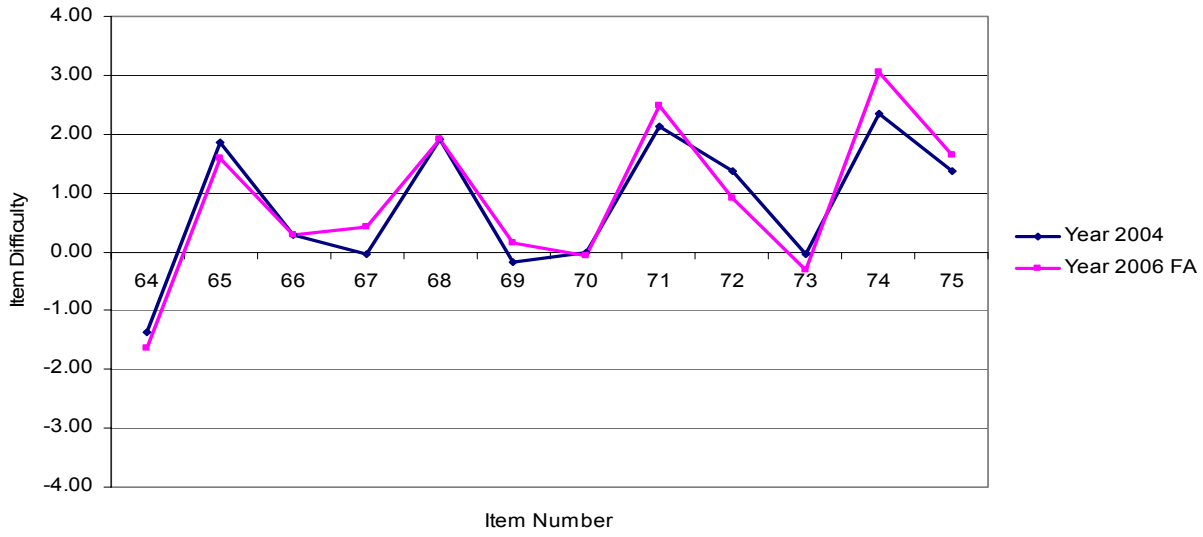


Figure 1.18 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 8 Form A

Table 1.55 Augmented Item P-Value Comparison for Year 2004 vs. Year 2006: Grade 8 Form B

Item Number	Item Type	Year 04	Year 06 Form B
64	SR	0.32	0.29
65	BCR	0.32	0.42
66	SR	0.6	0.68
67	SR	0.29	0.34
68	BCR	0.44	0.45
69	SR	0.72	0.74
70	SR	0.7	0.73
71	BCR	0.47	0.51
72	SR	0.56	0.61
73	SR	0.61	0.60
74	BCR	0.32	0.37
75	SR	0.58	0.68

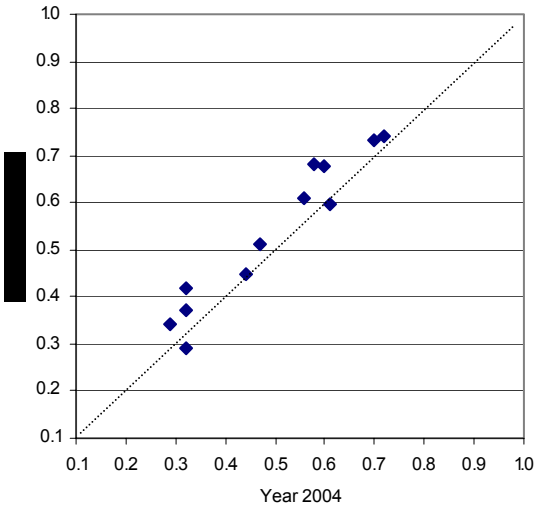


Table 1.56 BCR Item Score-Point Distribution Comparison for Year 2004 vs. Year 2006: Grade 8 Form B

Year	Item #	Item Type	N	Mean	SD	Score-Point Distribution (%)				
						0	1	2	3	Omit
2004	65	BCR	15,477	0.97	0.80	25.65	43.37	23.14	2.46	4.23
2004	68	BCR	15,477	1.33	0.72	8.15	46.69	38.65	3.13	3.00
2004	71	BCR	15,612	1.40	0.63	3.81	52.09	39.88	2.74	1.36
2004	74	BCR	15,612	0.96	0.74	24.48	49.69	20.94	1.36	3.25
2006	65	BCR	30,114	1.27	0.70	8.48	53.62	32.04	3.23	2.63
2006	68	BCR	30,114	1.36	0.62	2.73	58.36	34.03	3.32	1.55
2006	71	BCR	30,114	1.53	0.62	0.69	49.16	44.00	5.12	1.03
2006	74	BCR	30,114	1.10	0.58	8.62	69.69	17.99	1.34	2.37

Table 1.57 Augment IRT Item Difficulty Comparison for Year 2004 vs. Year 2006: Grade 8 Form B

Year	Item #	Item Type	Item Difficulty	Step 0-1	Step 1-2	Step 2-3
2004	64	SR	1.8326			
2004	65	BCR	2.0588	-1.8536	-0.1674	2.0210
2004	66	SR	0.4466			
2004	67	SR	1.9679			
2004	68	BCR	1.3824	-2.6490	-0.1448	2.7938
2004	69	SR	-0.1851			
2004	70	SR	-0.1013			
2004	71	BCR	1.1119	-3.3482	0.1342	3.2140
2004	72	SR	0.6239			
2004	73	SR	0.3885			
2004	74	BCR	2.2336	-2.2763	-0.1232	2.3995
2004	75	SR	0.4861			
2006	64	SR	1.9752			
2006	65	BCR	1.4114	-2.8752	0.2244	2.6508
2006	66	SR	0.1651			
2006	67	SR	1.7412			
2006	68	BCR	0.9791	-3.6999	0.5978	3.1022
2006	69	SR	-0.3197			
2006	70	SR	-0.2048			
2006	71	BCR	0.3490	-4.1063	0.7652	3.3411
2006	72	SR	0.4009			
2006	73	SR	0.4872			
2006	74	BCR	1.9880	-3.359	0.5613	2.7977
2006	75	SR	0.0525			

Figure 1.19 Augmented IRT Item Difficulty Comparison Plot for Year 2004 vs. Year 2006: Grade 8 Form B

1.9 Field Test Analyses

All field test items embedded in operational forms are subjected to rigorous analyses for their properties because these analyses will provide information about which items would be included as a part of operational items in the future. All statistical results concerning field test items were stored in the 2006 item bank. The following field test analyses were conducted:

- Classical item analyses for *SR* and *BCR* items
- *Differential item functioning* (*DIF*) analyses
- *IRT* analyses

Classical Item Analyses for *SR* and *BCR* items

Classical item analyses for *SR* and *BCR* items were conducted within each field test form.

SR items for further scrutiny were flagged if:

- An item distractor was unselected by all students (i.e., nonfunctional distractor), or selected by a large number of high ability students, with low selection from other ability groupings (i.e., ambiguous distractor).
- An item *p*-value was less than .20 or greater than .90.
- An item point-biserial was less than .10 (i.e., poorly discriminating). If an item point-biserial was close to zero or negative, the item was checked for a miskeyed answer.

BCR items for further scrutiny were flagged if:

- An item did not elicit the full range of rubric scores.
- The ratio of mean item score to maximum score was less than .20 or greater than .90.
- An item-total correlation was less than .10.

Dropping any items needed a careful decision. For example, an item that was flagged as being difficult (*p*-value less than .20) and poorly discriminating (point-biserial less than .10) was considered for dropping. If the item represented important content that had not been extensively taught, however, it would be justified to retain the item.

Differential Item Functioning Analyses

Differential item functioning (*DIF*) analyses are primarily designed to detect differential item performance across subgroups of a population while controlled for ability.

For the 2006 MSA-Reading *DIF* analyses, the reference group was either male or Caucasian students, and the focal group was either female or African-American students. Because the 2006 MSA-Reading included both the *SAT10* items and the "Maryland-specific" items on each field test form, the total item score on a collection of items was used as the matching variable.

Any *SR* and *BCR* items that were flagged as showing *DIF* were subjected to further examination. For each of these items, for example, reading experts judged if the differential difficulty of the item was unfairly related to group membership:

- If the difficulty of the item is unfairly related to group membership, then the item should not be used at all.

- If the difficulty of the item is related to group membership, then the item should only be used if there is no other item matching the test blueprint.

For further information about the *DIF* procedures used for the 2006 MSA-Reading, please see section 3.7.

Item Response Theory Analyses

To put field test items on the same scale of the operational test items, they were calibrated with fixing the parameters of the operational test items within each test form. Then, item difficulties, step difficulties, and fit statistics were stored in the 2006 item bank.

Item Selection for Operational Test

The selection of items to be included in the final test forms of the 2006 MSA-Reading required a careful consideration based on test blueprints, classical item analyses and *DIF* analyses. Harcourt suggested the following guidelines to choose items included in the final test forms:

- Avoid the use of the items with *p*-values less than .20 and greater than .90.
- Avoid the use of the *BCR* items with score distributions that do not elicit the full range of rubric scores.
- Avoid the use of items with point-biserial or item-total correlation less than .10.
- Avoid the inclusion of items with *DIF* classifications "C" for the *SR* items and "CC" for the *BCR* items *unless* they have been deemed acceptable by the external review of reading experts.

In applying these guidelines, a balance should be made between being too harsh, and thus dropping items that may affect the content representativeness of the entire set of field test items and being too lenient and allowing items with poor model fit that might affect resulting measures. In addition, reading specialists from the MSDE reviewed the final test forms of the 2006 MSA-Reading.

The 2006 MSA-Reading produced two operational test forms for all grades, and reading specialists from the MSDE reviewed and determined the content validity and equivalency of the test forms for each grade level.

1.10 Linking, Equating, and Scaling Procedures

Linking Procedures

To link different test forms at each grade level, linking steps recommended by the National Psychometric Council were taken into consideration. For the 2006 MSA-Reading, items that appeared on each test form were included as potential linking items, but only *SR* items were considered as potential linking items.

First, the following calculations were made (SDE, 2001):

- The mean and standard deviation of the linking pool's item difficulties for each form
- The ratio of the standard deviations between form 1 and the rest of the forms
- The correlation between test form 1 and other test form item difficulties
- The difference between test form 1 and other test form item difficulties for each item in the linking pool
- The mean of the differences calculated above
- The median of the differences
- The interquartile range of the differences
- The robust Z for each item in the linking pool where the robust Z is defined as (the difference between the test form1 and other test form item difficulty minus the median of the differences) / (interquartile range multiplied by 0.74).

Once the above calculations were made, the following guidelines were taken in determining possible sets of linking items to be used for the Rasch equating (SDE, 2001):

- Do not include those items with an absolute value of robust Z exceeding 1.645. In addition, if one difficulty or step from a *SR* item is eliminated from the pool based on robust Z, all other difficulties are also removed.
- Do not eliminate more than 20 percent of the pool linking items.
- Consider that the ratio of the standard deviations of the test form 1 and other test form item difficulties should be in the 90 to 110 percent range.
- It is assumed that the correlation of the test form 1 and other test form item difficulties is greater than .95.

Toward this end, Harcourt provided Rasch item difficulties, item difficulty plots, and robust Z values and identified items that were to be deleted based on the definition. The Figures 1.20 through 1.36 depicts common item difficulty between the base form and either form A or B.

Table 1.58 Common Linking Item Difficulties of Year 2003 vs. Year 2006 MSA-Reading: Grade 3

Item No.	Y2003 Base (F1)	Y2006 Form A	Y2006 Form B
2	-2.33	-2.2217	-2.1608
6	-1.10	-1.7481	-1.5533
7	.15	-.0460	0.2022
11	-.93	-1.2975	-1.2005
13*	.93	-.0742	0.074
17	-1.08	-1.2064	-0.9136
20*	.45	-.3791	-0.1514
22*	2.29	1.2869	1.5074
25	-.08	.0231	0.1952
32	1.00	.8621	1.1142
34	-.11	-.3073	-0.1949
35	.24	-.1948	0.0248
37	-.15	-.5824	-0.5691
45	-.03	-.5639	-0.3601
48	-1.80	-2.0352	-1.7523
53	.00	.0983	0.3037
59	.03	-.0502	0.1691
60	.93	1.0994	1.2082
61	-1.06	-.9675	-0.7763
62	-1.43	-1.7281	-1.7441
63	-.91	-1.1678	-0.9366
65	.65	.6378	0.8931
73	-.40	-.9385	-0.7319
74	.59	.1435	0.3713
Form Statistics			
Mean	-.173	-.473	-.291
SD	1.030	.957	.980
Comparison of each Form with Base Form (Form 1)			
Corr w Base	1.000	.944	.943
SD ratio	100%	93%	95%
Mean Diff	.000	-.300	-.118
Median Diff	.000	-.247	-.056
IQR Diff	.000	.405	.498

Based on Robust Z and item difficulty plot, items 13, 20, and 22 were dropped from the possible item linking pool.

The following correlation and SD ratio are based on dropping those three items.

Comparison of each Form with Base Form (Form 1)			
Corr w Base	1.000	.965	.964
SD ratio	100%	105%	108%

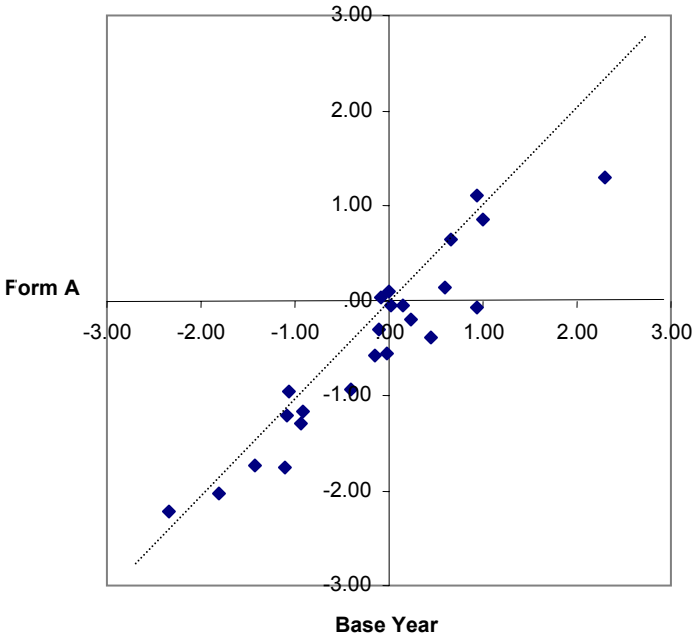


Figure 1.20 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 3 Form A

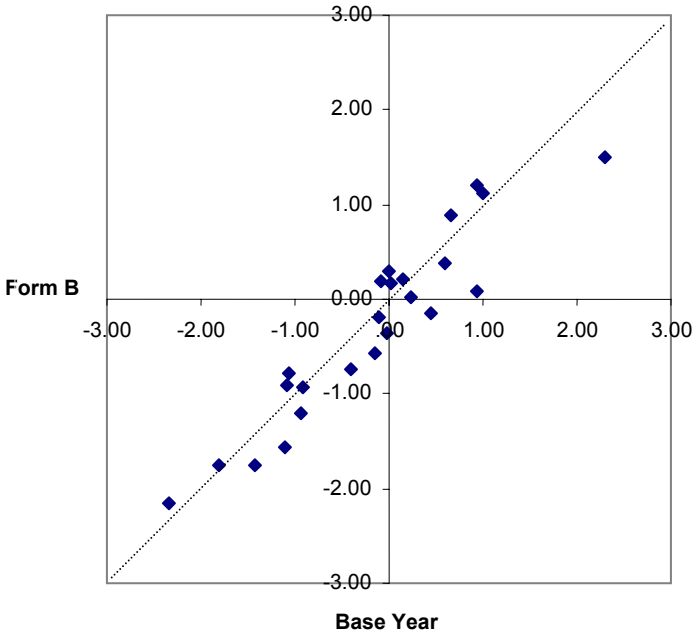


Figure 1.21 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 3 Form B

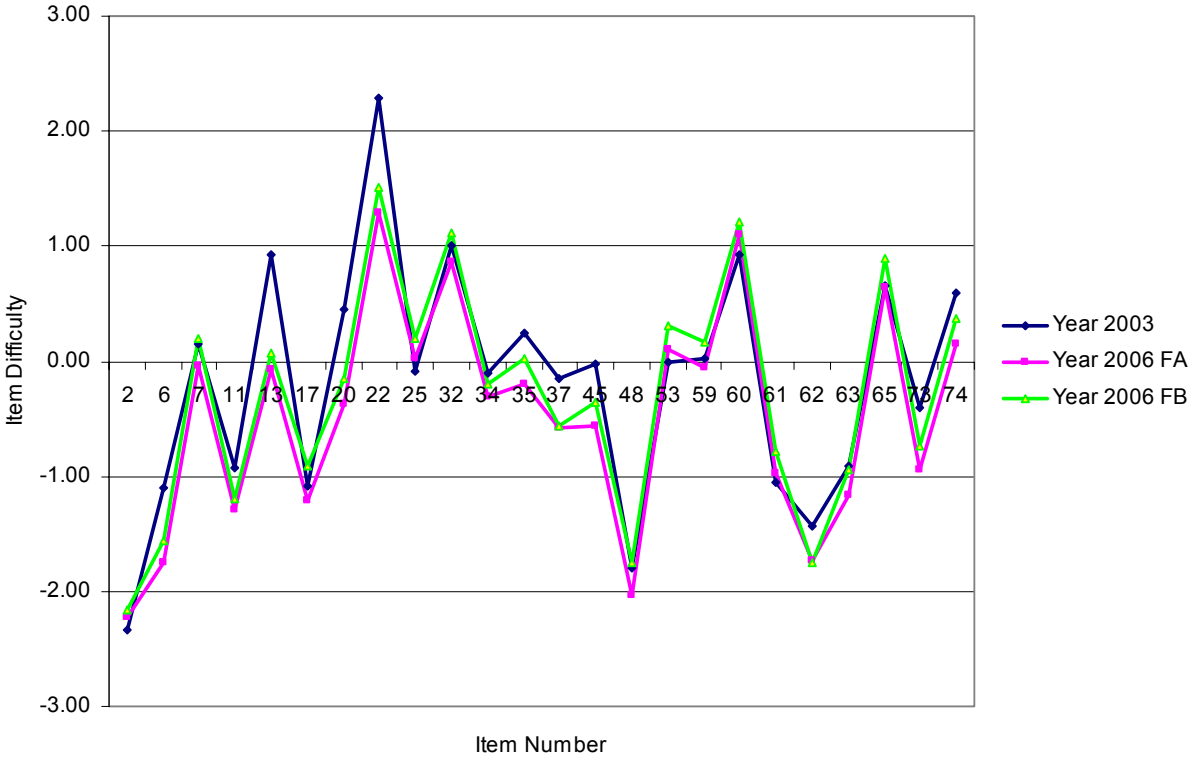


Figure 1.22 Free Calibration Item Difficulty Comparison of Year 2003 vs. Year 2006: Grade 3

Table 1.59 Common Linking Item Difficulties of Year 2004 vs. Year 2006 MSA-Reading: Grade 4

Item No.	Y2004 Base (F6)	Y2006 Form A	Y2006 Form B
1	-3.9886	-3.8231	-3.9066
5	-1.7739	-1.7228	-1.6938
11*	-.1033	-.5047	-.4057
12	-1.2892	-1.0338	-1.0410
20	.0403	-.0725	-.1099
25	-.6252	-.6340	-.7314
26	-.2092	-.1554	-.2806
32	-1.4440	-1.1908	-1.3613
39*	-.6775	-.3788	-.5506
42	.2123	.3289	.3599
45	-.3429	-.4119	-.3897
46*	.2842	.0505	.0064
47	-.7393	-.6939	-.6969
48	-.3247	-.3907	-.3475
49*	1.5832	1.9089	1.7958
50	-1.9501	-1.9303	-2.0754
51	-.4109	-.2687	-.3198
54	-.5286	-.5196	-.4356
55	-1.8443	-1.8715	-1.9449
56	.8212	.9071	.9059
57	1.3188	1.4889	1.4697
58	2.0024	2.1709	2.1145
59	-1.4991	-1.3618	-1.4458
66	-.1689	-.1411	-.0735
68	.7087	.7127	.7313
Form Statistics			
Mean	-.438	-.382	-.417
SD	1.278	1.283	1.297
Comparison of each Form with Base Form (Form 6)			
Corr w Base	1.000	.992	.994
SD ratio	100%	100%	102%
Mean Diff	.000	.056	.021
Median Diff	.000	.051	.080
IQR Diff	.000	.174	.167

Items 11, 39, 46, and 49 were dropped from the possible item linking pool based on Robust Z and item difficulty plot.

The following correlation and SD ratio are based on dropping those three items.

Comparison of each Form with Base Form (Form 1)			
Corr w Base	1.000	.997	.997
SD ratio	100%	100%	101%

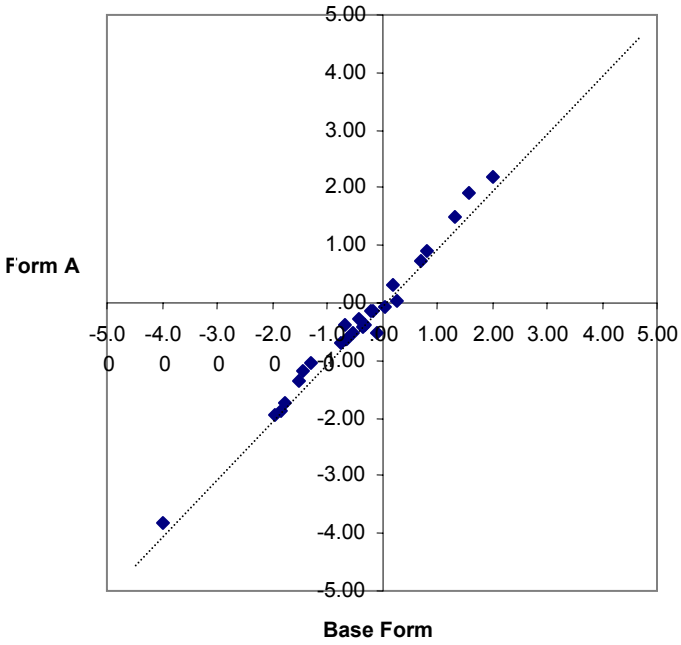


Figure 1.23 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 4 Form A

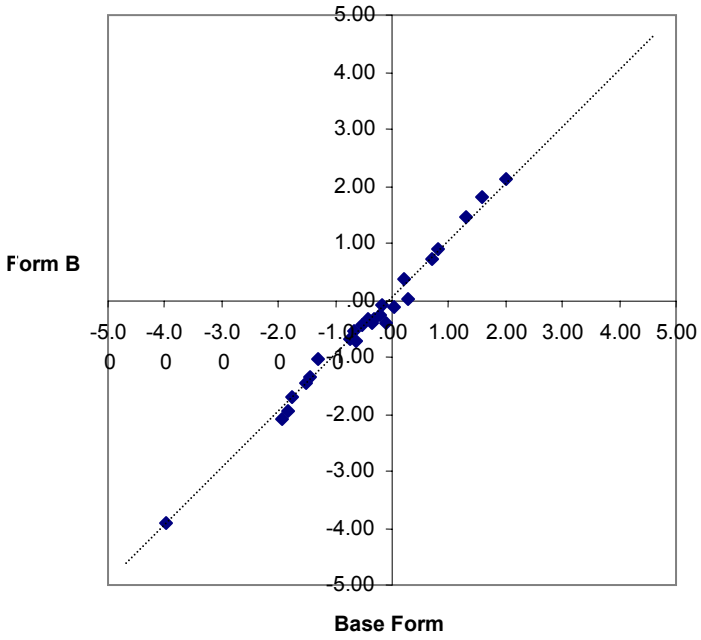


Figure 1.24 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 4 Form B

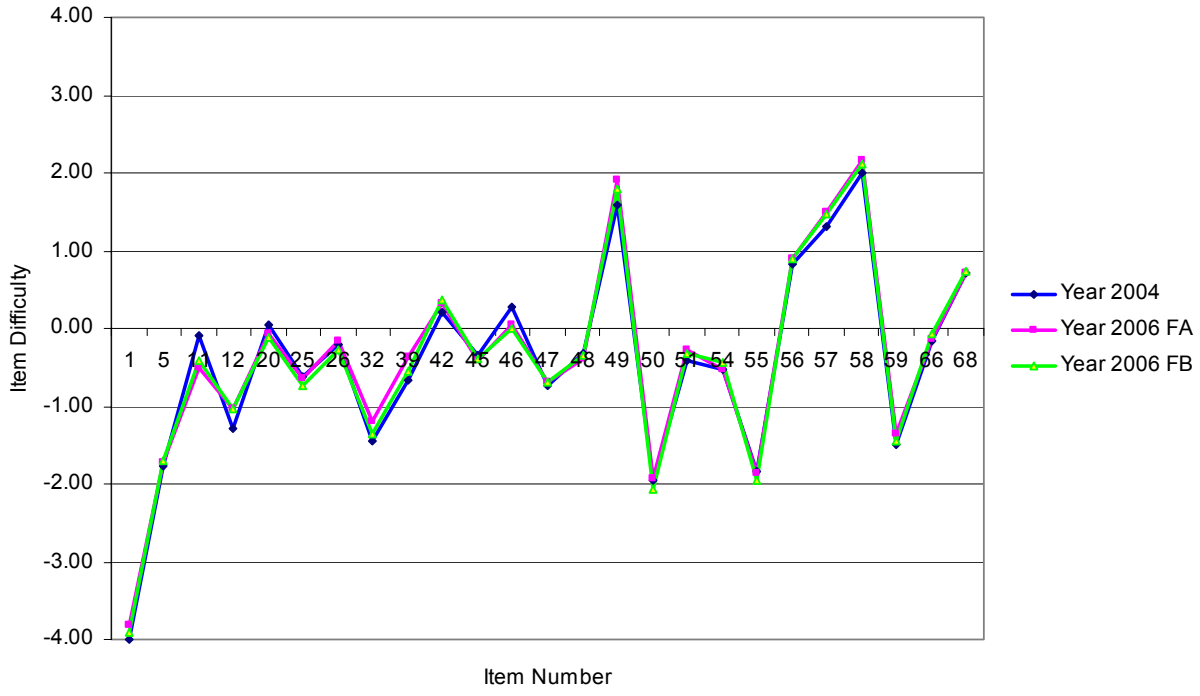


Figure 1.25 Free Calibration Item Difficulty Comparison of Year 2004 vs. Year 2006: Grade 4

Table 1.60 Common Linking Item Difficulties of Year 2003 vs. Year 2006 MSA-Reading: Grade 5

Item No.	Y2003 Base (F1)	Y2006 Form A	Y2006 Form B
4	0.51	.4147	0.4772
5	0.56	.6097	0.7896
6	0.37	.3035	0.3272
10	-1.52	-1.7119	-1.7231
11*	-0.96	-1.7383	-1.8206
12	-1.11	-.9585	-0.9181
14	-1.14	-1.0752	-0.9838
18	-0.71	-.9307	-0.8648
19	-0.47	-.6201	-0.6959
21	-0.37	-.4385	-0.1772
26	0.49	.4751	0.6755
28	-0.19	-.1962	-0.104
31*	0.28	.6733	0.788
34	0.45	.4805	0.6781
36	-0.65	-.8250	-0.6017
37	1.44	1.1868	1.3339
40	-0.02	.1028	0.1668
44	-0.38	-.6341	-0.4829
48	0.69	.5100	0.6602
52*	-0.92	-1.3117	-1.1437
Form Statistics			
Mean	-.183	-.284	-.181
SD	.767	.856	.899
Comparison of each Form with Base Form (Form 1)			
Corr w Base	1.000	.963	.956
SD ratio	100%	112%	117%
Mean Diff	.000	-.102	.002
Median Diff	.000	-.082	.009
IQR Diff	.000	.234	.306

Items 11, 31, and 52 were dropped from the possible item linking pool based on Robust Z and item difficulty plot.

The following correlation and SD ratio are based on dropping those three items.

Comparison of each Form with Base Form (Form 1)			
Corr w Base	1.000	.986	.981
SD ratio	100%	100%	104%

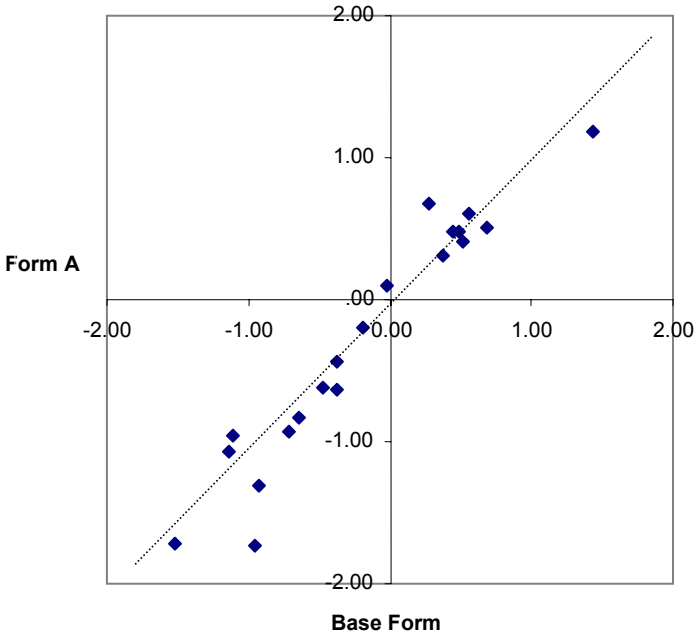


Figure 1.26 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 5 Form A

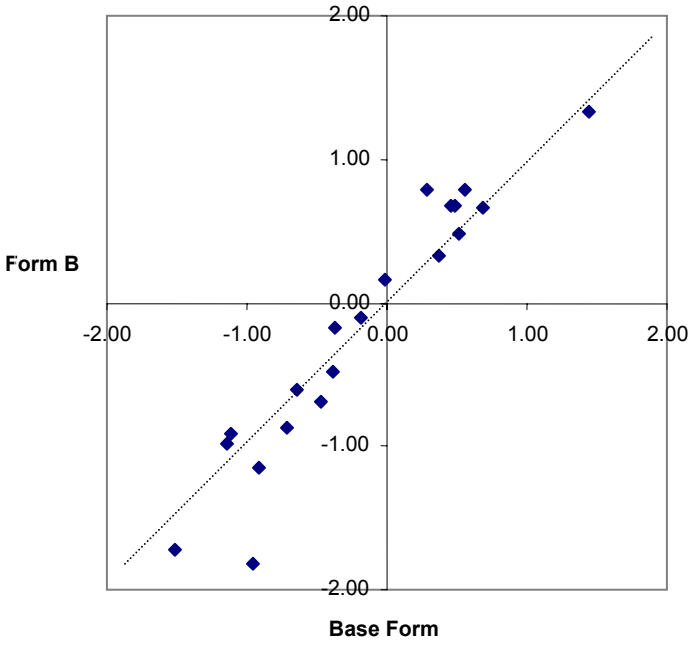


Figure 1.27 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 5 Form B

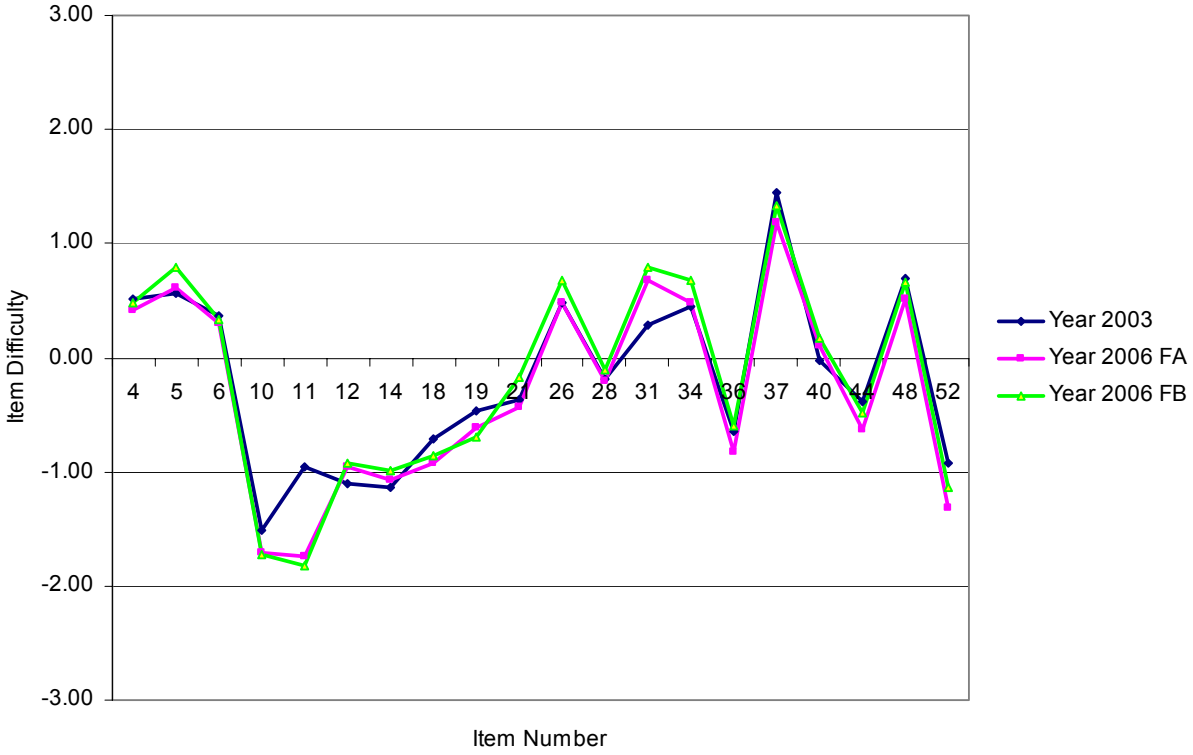


Figure 2.28 Free Calibration Item Difficulty Comparison of Year 2003 vs. Year 2006: Grade 5

Table 1.61Common Linking Item Difficulties of Year 2004 vs. Year 2006 MSA-Reading: Grade 6

Item No.	Y2004 Base (F4)	Y2006 Form A	Y2006 Form B
1	-.6467	-.4033	-.4874
5	.9241	1.0849	.9242
8	.7190	.5413	.5378
10	-1.8289	-1.8550	-1.8274
11	-.2987	-.0877	-.3378
15	-.2270	-.2510	-.2873
18	-.5273	-.5600	-.6897
20	-.9466	-.9754	-.9255
24*	-1.6635	-1.3910	-1.3502
25	-.4965	-.2947	-.4882
26	-.0437	.1501	.0189
27	.0022	.0819	.0238
28	.2939	.2734	.1015
31*	-.3341	-.5392	-.5760
32	.2820	.3547	.3281
33*	.3824	.2115	.0878
35	-1.2626	-1.0768	-1.0954
36	1.8873	2.1203	2.0874
37	-1.0083	-.7242	-.8469
38	.5459	.5090	.4606
39	-.4554	-.4054	-.6039
40	-.8703	-.7552	-.7449
41	.6399	.6185	.5689
42	-1.4312	-1.2528	-1.2651
43	-.4922	-.2781	-.3540
Form Statistics			
Mean	-.274	-.196	-.270
SD	.869	.847	.827
Comparison of each Form with Base Form (Form 4)			
Corr w Base	1.000	.986	.985
SD ratio	100%	97%	95%
Mean Diff	.000	.078	.005
Median Diff	.000	.080	.008
IQR Diff	.000	.228	.224

Items 24, 31, and 33 were dropped from the possible item linking pool based on Robust Z and item difficulty plot.

The following correlation and SD ratio are based on dropping those three items.

Comparison of each Form with Base Form (Form 1)			
Corr w Base	1.000	.990	.990
SD ratio	100%	99%	97%

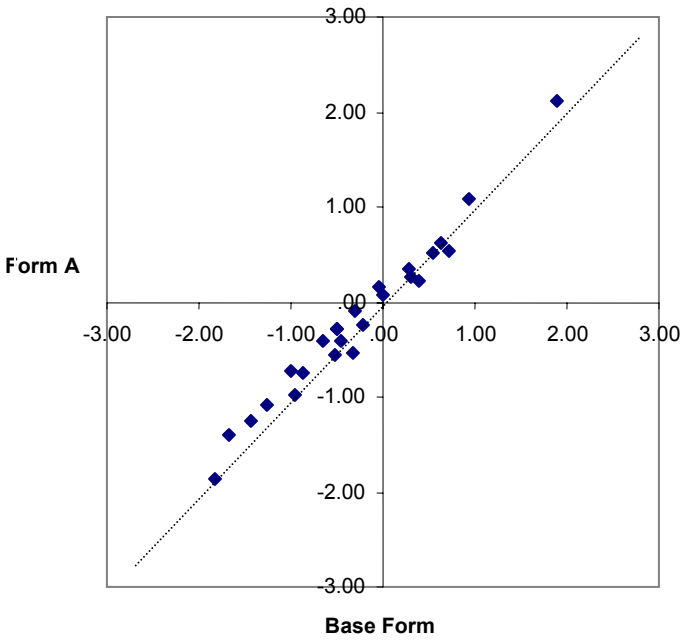


Figure 1.29 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 6 Form A

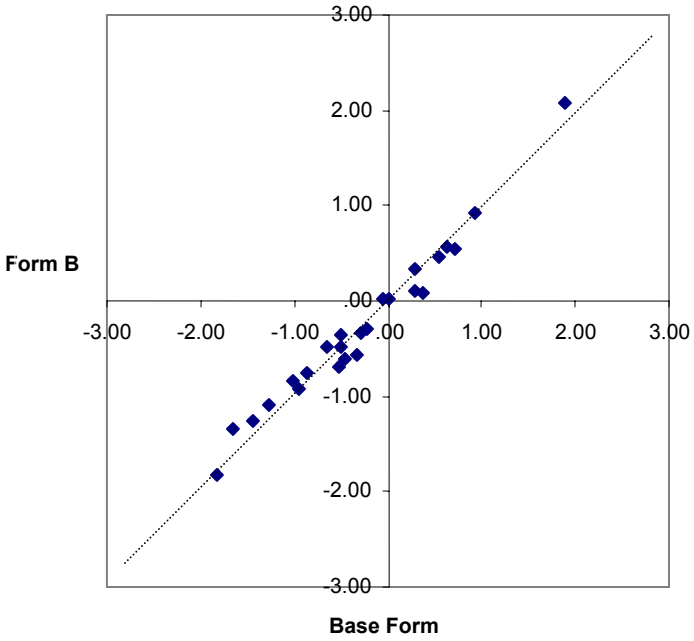


Figure 1.30 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 6 Form B

Figure 1.31 Free Calibration Item Difficulty Comparison of Year 2004 vs. Year 2006: Grade 6

Table 1.62 Common Linking Item Difficulties of Year 2004 vs. Year 2006 MSA-Reading: Grade 7

Item No.	Y2004 Base (F2)	Y2006 Form A	Y2006 Form B
1	-1.6474	-1.4811	-1.7641
3	-1.1065	-1.1586	-1.1233
6*	1.2004	1.0849	1.0168
8*	1.1216	1.4927	1.3616
11	.3792	.4647	.4084
15	.0457	.0493	-.1176
18	.1649	.2263	.2563
22	-1.1073	-1.0620	-1.1020
25	-1.5119	-1.3979	-1.4638
26*	.6159	.8420	.8142
29	-.4347	-.4512	-.6148
30	.8787	.8526	.7804
31	.2107	.2335	.2181
34	.5308	.6617	.5743
35	-1.3415	-1.3056	-1.3196
36	.5246	.4547	.3341
39*	-1.8027	-1.5104	-1.5867
40	-.2783	-.1237	-.3624
41	-.5500	-.3480	-.4329
42	.2337	.2780	.1463
43	-1.3703	-1.2956	-1.4505
44	-.5760	-.4833	-.6033
45	-.3503	-.1236	-.3450
46	-.3690	-.1798	-.3836
47	-.0528	-.0206	-.0657
Form Statistics			
Mean	-.264	-.172	-.273
SD	.878	.867	.877
Comparison of each Form with Base Form (Form 2)			
Corr w Base	1.000	.991	.991
SD ratio	100%	99%	100%
Mean Diff	.000	.092	-.009
Median Diff	.000	.075	-.013
IQR Diff	.000	.144	.131

Items 6, 8, 26, and 39 were dropped from the possible item linking pool based on Robust Z and item difficulty plot.

The following correlation and SD ratio are based on dropping those three items.

Comparison of each Form with Base Form (Form 1)			
Corr w Base	1.000	.994	.993
SD ratio	100%	98%	99%

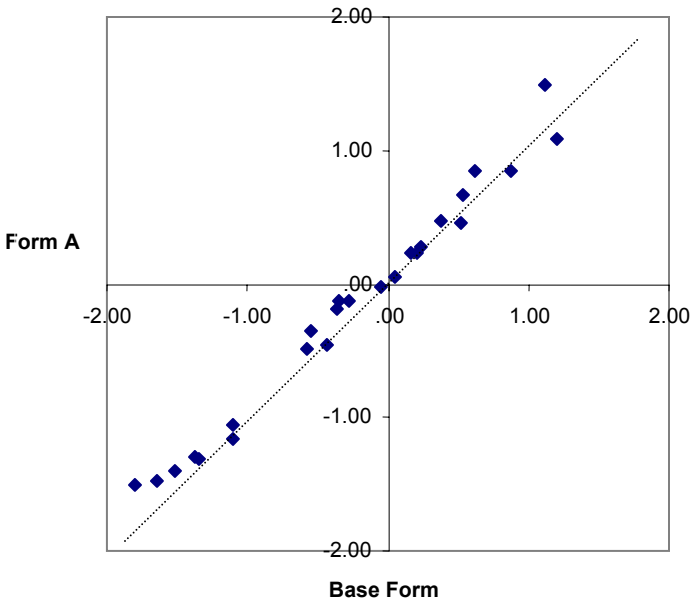


Figure 1.32 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 7 Form A

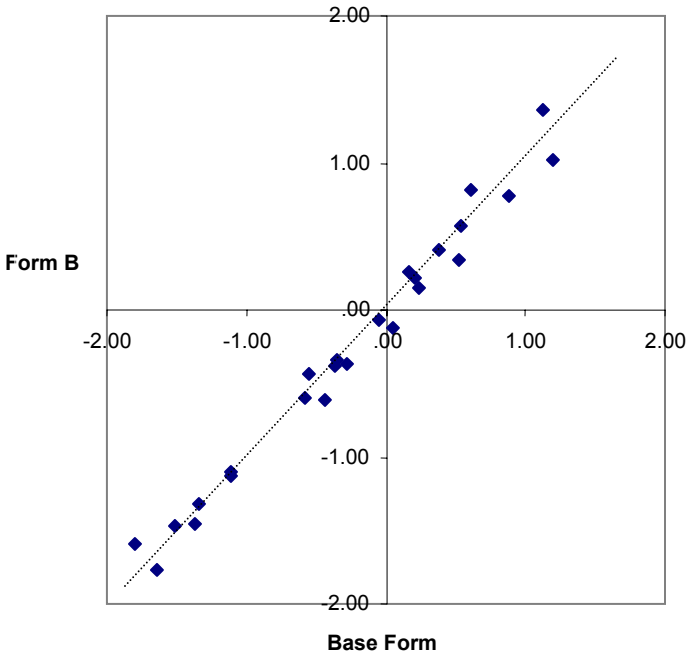


Figure 1.33 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 7 Form B

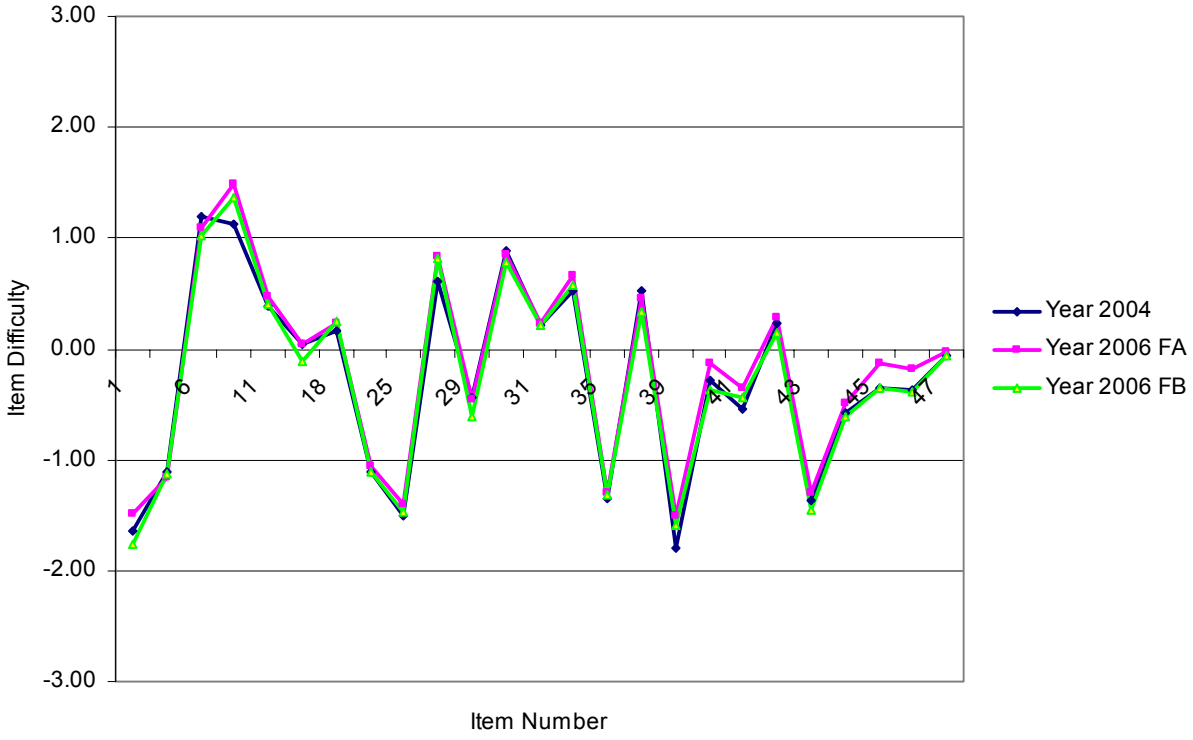


Figure 2.34 Free Calibration Item Difficulty Comparison of Year 2004 vs. Year 2006: Grade 7

Table 1.63 Common Linking Item Difficulties of Year 2003 vs. Year 2006 MSA-Reading: Grade 8

Item No.	Y2003 Base (F1)	Y2006 Form A	Y2006 Form B
3	.07	-.0360	0.0606
6	.96	.6827	0.6075
8*	.51	.5782	0.4672
10*	-1.57	-2.3709	-2.5351
25*	-3.60	-3.3923	-3.3387
26	.64	.5062	0.4894
28	-.80	-.9836	-1.005
29	.39	.2136	0.1904
32	-.19	-.4646	-0.4013
34	.20	.1114	0.1694
35	.98	.7601	0.8729
36	.29	.0687	0.1776
38	-.46	-.8314	-0.6519
40	-.24	-.4846	-0.3782
41	-.49	-.5262	-0.4384
44	-1.02	-1.2175	-1.0895
47	-.16	-.5280	-0.4728
49*	-.22	-.8512	-0.7983
51	-.05	-.3867	-0.314
52	-.16	-.4514	-0.4492
53	-.18	-.4680	-0.4442
Form Statistics			
Mean	-.243	-.480	-.442
SD	.984	.986	.991
Comparison of each Form with Base Form (Form 1)			
Corr w Base	1.000	.976	.970
SD ratio	100%	100%	101%
Mean Diff	.000	-.237	-.199
Median Diff	.000	-.221	-.192
IQR Diff	.000	.158	.195

Items 8, 10, 25, and 49 were dropped from the possible item linking pool based on Robust Z and item difficulty plot.

The following correlation and SD ratio are based on dropping those three items.

Comparison of each Form with Base Form (Form 1)			
Corr w Base	1.000	.985	.979
SD ratio	100%	102%	99%

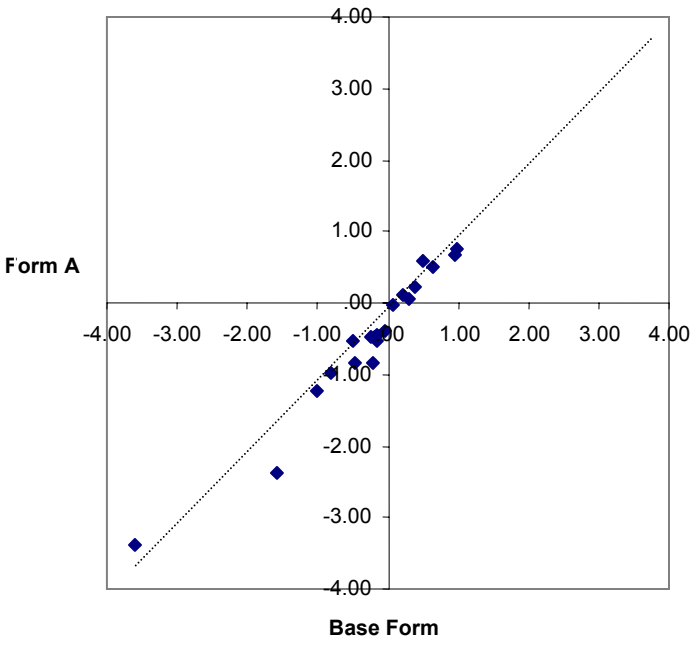


Figure 1.35 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 8 Form A

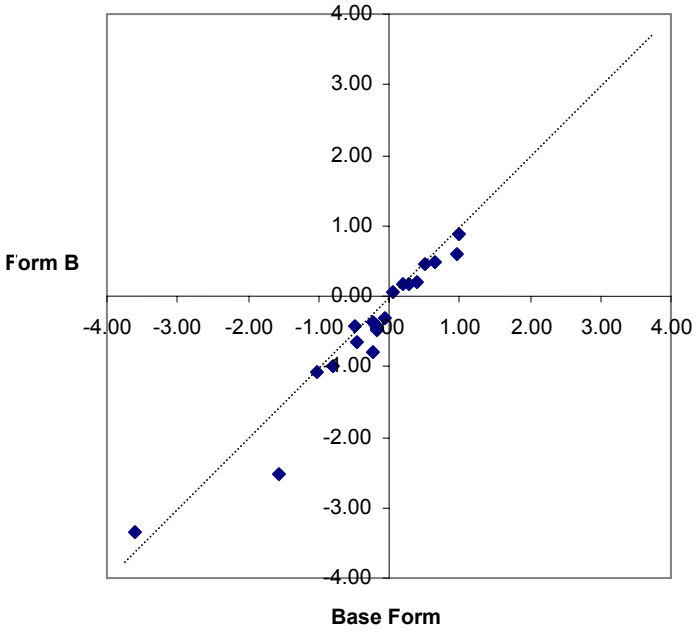


Figure 1.36 Item Difficulty Plot of Base Year Form vs. Current Year Form: Grade 8 Form B

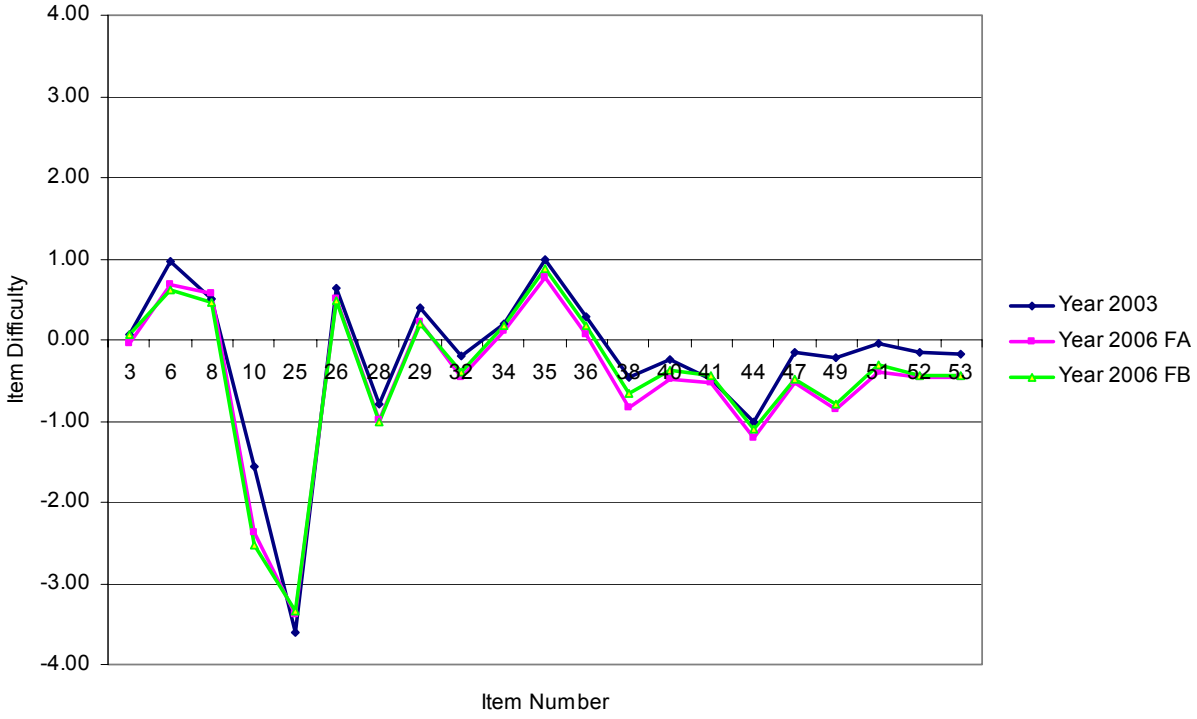


Figure 1.37 Free Calibration Item Difficulty Comparison of Year 2003 vs. Year 2006: Grade 8

Equating Procedures

Equating different test forms ensures that students taking one form of a test are neither advantaged nor disadvantaged when compared to students taking a different form of a test.

For the 2006 MSA-Reading, items selected through the linking procedures were used to equate all different test forms in each grade. Because each test form included a subset of unique items, linking items served as anchor items. Thus, whenever a new test form is constructed in the future, the new form will be equal in difficulty to the previous form via linking items. The design to collect data for the 2006 MSA-Reading was common item, non-equivalent groups.

In order to obtain parameter estimates for both the unique items on each form and the linking items, the Rasch model (or Partial Credit model for *BCR* items) was used. For the 2006 MSA-Reading, the common items whose calibrations were known were anchored or fixed to their known estimates during the calibration of other forms that were to be put on the scale of the first form. In treating these common item parameters as known they were fixed, and the remaining item parameters (for the unique items of each form) were also forced onto the same scale as the anchored (fixed) items.

The final step consisted of obtaining ability score or theta for each raw score point on a form. This was done by iteratively solving the expression:

$$True\,Score = \sum_{i=1}^{I}\sum_{j=0}^{m_i} j \cdot P_{ij}(\theta)$$

where

$P_{ij}(\theta)$ = the probability of a correct response for each of the $i = 1, \ldots, I$ items given that the item categories are numbered $0, \ldots, m_i$.

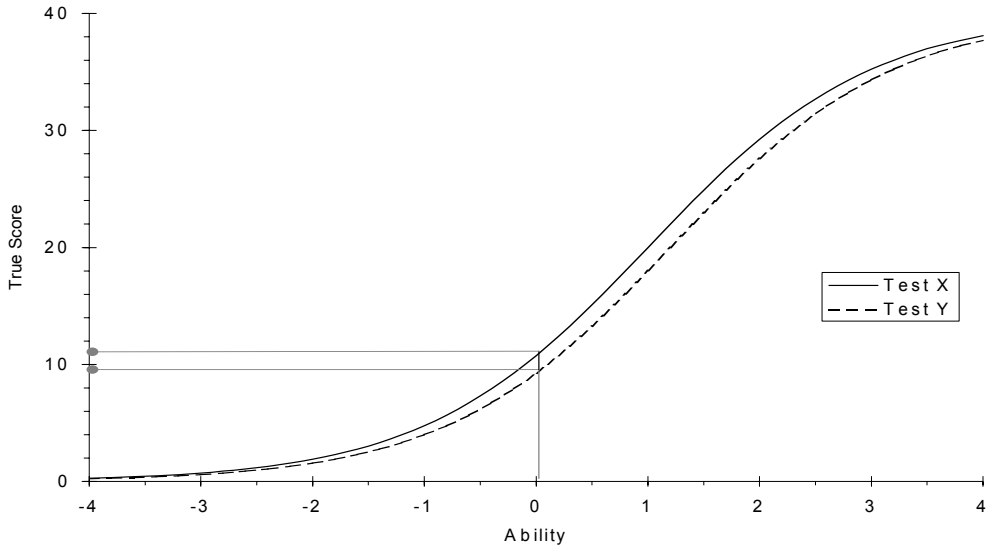


Figure 1.38 True Score Equating

Figure 1.38 illustrates these ideas for two hypothetical test forms, X and Y. In the figure, the true scores on each of the forms are plotted against ability using the true score equation. By drawing a line from the ability (here shown for an ability of 0) to each of the respective curves and moving across to the true score scale, one can find the pairs of true scores that are equated to one another. According to Lord and Wingersky (1984), the procedure applied to true scores can be transferred to observed scores without any major anomalies in the resulting outcomes.

Reporting Scale Scores

In order to facilitate the use and interpretation of the results of the 2006 MSA-Reading, scale scores were generated based on the information given by both the MSDE and the NPC. For grade 4, for example, the following is the formula to convert each student' ability or theta to scale score:

$$ReportingAbilityScaleScore = 32.8271 \cdot theta + 362.7449$$

$$ReportingSEM = 32.8271 \cdot SEM$$

where

theta = the *IRT* ability estimate, and

SEM = the conditional *SEM* of the ability estimate.

Table 1.64 depicts the slope and intercept to use for each grade. It should be noted that the minimum of the scale score was set to 240, and the maximum of the scale score was set to 650.

Table 1.64 The 2006 MSA-Reading Slope and Intercept: Grades 3 through 8

Grade	Slope	Intercept
3	32.4123	384.8579
4	32.8271	362.7449
5	33.0171	380.0082
6	30.4732	373.0575
7	31.9262	377.0054
8	30.3891	376.8316

1.11 Score Interpretation

To help provide appropriate interpretation of the 2006 MSA-Reading test scores, two types of scores were created: 240-650 scale scores, and performance levels and descriptions.

240-650 Scale Scores

As explained in section 1.10, Linking, Equating, and Scaling, the 2006 MSA-Reading produced scale scores that ranged between 240 and 650. Those scale scores have the same meaning within the same grade, but those scores are not comparable across grade levels.

It should be noted that those scale scores have only simple meaning that higher scale scores represent higher performance in reading tests. Thus, performance levels and descriptions can give a specific interpretation other than a simple interpretation because they were developed to bring meaning to those scale scores.

Performance Levels and Descriptions

As previously explained, performance levels and descriptions provide specific information about students' performance levels and help interpret the 2006 MSA-Reading scale scores. They describe what students at a particular level generally know and can be applicable to all students within each grade level. As Table 2.1 shows a range of scale scores at each performance level, for example, grade 4 reading scale scores from 371 to 436 indicate the level of *Proficient*, and students at this level can read grade appropriate text and demonstrate the ability to comprehend literature and informational passages. Further information about the 2006 MSA-Reading score interpretation can be obtained from the MSDE.

1.12 Test Validity

As noted in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999), "validity is the most important consideration in test evaluation."

Messick (1989) defined validity as follows:

> Validity is an integrated evaluative judgment of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores or other modes of assessment. (p.5)

This definition implies that test validation is the process of accumulating evidence to support intended use of test scores. Consequently, test validation is a series of on-going and independent processes that are essentially independent investigations of the appropriate use or interpretation of test scores from a particular measurement procedure (Suen, 1990).

In addition, test validation embraces all of the experimental, statistical, and philosophical means by which hypotheses and scientific theories can be evaluated. This is the reason that validity is now recognized as a unitary concept (Messick, 1989).

To investigate the validity evidence of the 2006 MSA-Reading, content-related evidence, evidence of internal structure, and evidence of unidimensionality were collected.

Content-Related Evidence

Content validity is frequently defined in terms of the sampling adequacy of test items. That is, content validity is the extent to which the items in a test adequately represent the domain of items or the construct of interest (Suen, 1990). Consequently, content validity provides judgmental evidence in support of the domain relevance and representativeness of the content in the test (Messick, 1989).

The 2006 MSA-Reading blueprints provide extensive evidence regarding the alignment between the content in the 2006 MSA-Reading and the *VSC*. These blueprints are presented in Appendix D.

Evidence of Internal Structure

The 2006 MSA-Reading has three reading processes: *General Reading*, *Literary Reading*, and *Informational Reading*. As can be seen from Tables 4.3 through 4.8, there exist moderately strong intercorrelations among the reading processes.

Evidence of Unidimensionality

Measurement implies order and magnitude on a single dimension (Andrich, 1989). Consequently, in the case of scholastic achievement, this requires a linear scale to reflect this idea of measurement. Such a test is considered to be unidimensional (Andrich, 1988, 1989). However, unidimensionality cannot be strictly met in a real testing situation because students' cognitive, personality, and test-taking factors usually have a unique influence on their test performance to some level (Andrich, 1988; Hambleton, Swaminathan, & Rogers, 1991). Consequently, what is required for unidimensionality to be met is an investigation of the

presence of a dominant factor that influences test performance. This dominant factor is considered as the ability measured by the test (Andrich, 1988; Hambleton et al., 1991; Ryan, 1983).

To check the unidimensionality of the 2006 MSA-Reading, polychoric correlation coefficients were computed with *LISREL 8.5* (Jöreskog & Sörbom, 1993) because they were polytomously scored on reading tests. Principal component analysis was then applied to produce eigenvalues. The first and the second principal component eigenvalues were compared without rotation. Table 1.65 summarizes the results of the first and second principal component eigenvalues of the 2006 MSA-Reading.

The rule of thumb to determine the unidimensionality of a test requires that the eigenvalue of the first component or factor should be at least three times larger than the second one. As can be seen, the size of the eigenvalue of the first component meets the criterion for the unidimensionality. Thus, we can conclude that the assumption of unidimensionality for the 2006 MSA-Reading was met.

Table 1.65 The 2006 MSA-Reading Eigenvalues between the First and Second Components

Grade	Form	Number of Items	First Eigenvalue	Second Eigenvalue
3	A	37	10.91	1.47
	B	37	12.05	1.46
4	A	37	11.34	1.40
	B	37	12.17	1.36
5	A	37	10.38	1.34
	B	37	10.58	1.48
6	A	37	13.49	1.35
	B	37	12.50	1.46
7	A	37	10.89	1.38
	B	37	10.97	1.37
8	A	37	9.75	1.46
	B	37	9.09	1.67

Note. Form A designates the operational portion of Forms 1 and 3, which is identical. Form B designates the operational portion of Forms 2 and 4, which is identical.

1.13 Item Bank Construction

The number of test forms to be constructed each year and the need to replace items that would be released to the public necessitated the availability of a large pool of items. The 2006 MSA-Reading item bank continues to be maintained by Harcourt as computer files and paper copies. This enables test items to be readily available to both Harcourt and MSDE staff for reference, test construction, test book design, and printing.

Harcourt maintains a computerized statistical item bank to store supporting and identification information on each item. The information stored in this item bank for each item is as follows:

- CID
- Test administration year and season
- Test form
- Grade level
- Item type
- Item stem and options
- Passage code and title
- Subject code and description
- Process code and description
- Standard code and description
- Indicator code and description
- Objective code and description
- Item status
- Item statistics

The item bank Rasch scale statistics were re-calibrated using all of the students' test responses. Thus, the re-calibrated scale would serve as the base scale.

1.14 Quality Control Procedures

A standard quality procedure at Harcourt Assessment is to create a test deck for all programs. The test deck begins when Quality Assurance enters mock data into the enrollment system, which is transferred to the materials requisition system; the order is packaged by our Distribution Center, and shipped to the Quality Assurance Department. We then review the packing list against the data entered, the materials algorithms applied, the materials packaged against the packing list, and the actual packaging of the documents. These documents are then used to create a test deck of mock data along with advance copies of documents that are received from the printer. Advance printer copies are inclusive of documents throughout the print run to assure we are randomly testing printed documents. The Maryland test deck will be a comprehensive set of all documents that will:

- Verify all scan positions for item responses and demographics to verify scanning setup and scan densities
- Verify all constructed response score points, zoning of image, reader scoring, reader resolution, and reader check scores
- Verify the handling of blank documents through the system
- Test all demographic and item edits
- Verify pre-id bar code read, match and no-match
- Verify attemptedness rules applied by subtest
- Verify duplicate student handling (same test duplicate, different test duplicate)
- Verify duplicate student with different demographics rules applied
- Verify the document counts to the enrollment, pre-id and actual document receipt
- Verify pre-id matching and application to student record
- Verify various raw score points and access to dummy and live scoring tables
- Verify cut scores applied
- Verify valid score on one subtest and invalid score on other subtest
- Verify scoring applied to Braille and Large Print
- Verify valid multiple choice and invalid constructed response
- Verify valid constructed response and invalid multiple choice
- Verify all special scoring rules
- Verify all summary programs for rounding
- Verify summary inclusion and exclusion (Braille, standard and non-standard student summarization)
- Verify each scoring level for group reporting
- Verify all reporting programs for accuracy in all text and data presented
- Verify class, school, district, and state summary data on home reports
- Verify all data file programs to assure valid information in every field

- Verify data descriptions for accuracy against data file
- Create compare programs to allow for update of files

The Maryland test deck is the first order processed through the Maryland system to verify all aspects of the materials packaging, scanning, editing, scoring, summary, and reporting. Pre-determined conditions are included in the test deck to assure the programs are processing all data to meet the requirements of the program with zero defects. Processing of live orders cannot proceed until each phase of the test deck has been approved by our Quality Assurance Department. An Issues Log with sign-off approvals is utilized to assure we are addressing any issues that arise in the review of the test deck data across all functional groups at Harcourt.

Prior to release of any order for reporting we will receive a preliminary file from Scoring Operations to run a key check TRIAN to assure that all scoring keys have been determined and applied accurately. Any item that is not performing as expected will be flagged and reviewed by our content specialist and psychometrician. Upon completion of the key check, we will proceed to run the pilot level reports.

We will run the pilot district utilizing live data. The pilot district will include multiple buildings, all grades, and any unique accommodations. A formal pilot review process is conducted with expert Harcourt staff prior to release of the information to the MSDE.

Upon completion of the processing of all district level data, Harcourt Scoring Operations will provide the Quality Assurance Department with a state level data file(s) and state data for review and approval. Harcourt Quality Assurance programmers duplicate all data independently to assure accurate interpretation of the expected results. A series of SAS programs will be run on these files to assure 100% accuracy. These include but are not limited to:

- Statewide Duplicate Student
- Statewide FD of Demographic Variables
- District/Building/N-Count
- Statewide RS/SS/Cut Score tables
- Proc Means to verify summary statistics
- Item Response listing to verify all constructed responses are scored and within the valid range
- Normative data check for all raw scores
- Reader Resolution report to verify all readings and resolution combinations

Upon complete review and approval by Quality Assurance, we will post the statewide student files to a secure FTP site for review by the MSDE. MSDE staff is always welcome to have staff in San Antonio to work directly with our QA staff as they are reviewing the data. We have found this to be very beneficial and also expedite the review of the state level data.

Harcourt understands the importance of providing accurate, reliable, and valid data to the MSDE. We strive to continually improve our processes and verification efficiency to meet our scheduled delivery dates for state reporting.

In addition to the routine procedure from the Quality Assurance Department, Harcourt Psychometric & Research Services purses the complete independent replication policy for

equating results in order to maintain zero-defect equating results. The equating results include generation of Raw Score-Scale Score (RS-SS) conversion tables for Maryland students. In generating RS-SS tables, the lead psychometrician first generates them, and then the back-up psychometrician generates the same tables independently. Two results from the lead and the back-up psychometrician are compared. This procedure is repeated until their results match 100%.

2. CURRENT RESULTS OF THE 2006 MSA-READING

This section provides information about the 2006 MSA-Reading results for students in grades 3 through 8. Table 2.1 contains information about the cutoff score of each performance level, and Table 2.2 contains the pass rate of each performance level based on the cutoff score.

Table 2.1 The 2006 MSA-Reading Cut Scores: Grades 3 through 8

Grade	Cut Score of Performance Level	
	Proficient	Advanced
3	388	456
4	371	437
5	384	425
6	381	421
7	385	425
8	391	425

Table 2.2 The 2006 MSA-Reading Pass Rates: Grades 3 through 8

Grade	*N*	Percentage of Performance Level		
		Basic	Proficient	Advanced
3	60,047	21.71	63.19	15.10
4	61,165	17.96	58.82	23.22
5	63,129	23.36	42.89	33.76
6	64,183	27.96	37.77	34.27
7	65,194	28.60	45.22	26.18
8	67,027	32.62	43.27	24.11

Note. Percentages may not add to 100% due to rounding.

3. OVERVIEW OF STATISTICAL SUMMARIES

This section provides general information about statistical and psychometric summaries used for the 2006 MSA-Reading program. Actual statistical results described in this section appear in section 4 and appendices.

3.1 Classical Descriptive Statistics

Table 4.1 contains the classical descriptive statistics of each form for each grade and includes:

- Form number
- Number of items
- Numbers of students
- Means and standard deviations of raw scores
- *Stratified Cronbach Alpha*
- *Standard error of measurement* (*SEM*)

Stratified Cronbach Alpha

The 2006 MSA-Reading tests included both *SR* and *BCR* items. Consequently, it was asked to use an adequate reliability coefficient that addressed the important factor, different item type. The following formula depicts the reliability coefficient, *Stratified Cronbach Alpha*:

$$Stratified\ \ a = 1 - \frac{\sum \sigma_i^2 (1 - \rho_{ii'})}{\sigma_t^2}$$

where

σ_i^2 = variance of score on cluster *i*,

σ_t^2 = variance of total score, and

$\rho_{ii'}$ = reliability coefficient of score on cluster *i*.

These tests were initially considered to be *classically congeneric* (i.e., besides having unequal means and unequal variances in error and observed scores, the test forms also have heterogeneity of true-score variances) where the tasks within the examinations were stratified based on the type of item (i.e., multiple-choice, short answers, extended responses, and extended writing) and by the scoring rubric attached to these items.

Upon examining the variance/covariance matrices, however, it became apparent that in some cases the part covariance of a part was not heterogeneous with respect to other part variances (e.g., the covariance between multiple-choice items and extended responses and between multiple-choice items and extended writing for grade 3 writing). It was, therefore, determined that although the test forms were *congenerically parallel*, they were not *classically congeneric*

(Qualls, 1995). For the 2006 MSA-Reading, therefore, the test forms were divided into two strata made up of *SR* and *BCR* items, and the *Stratified Cronbach Alpha* was used as the reliability coefficient.

Standard Error of Measurement (Based on Classical Test Theory)

The *standard error of measurement* (*SEM*) is the standard deviation of errors of measurement that are associated with test scores from a particular group of examinees. In here, a measurement error is the difference between an examinee's actual or obtained score and the theoretical true score counterparts. Consequently, the *SEM* is commonly used in interpreting and reporting individual test scores and score differences on tests (Harvill, 1991).

Classical test theory is based on the following assumptions (Andrich & Luo, 2004):

- Each person *v* has a true score on the construct, usually denoted by the variable T_v
- The best overall indicator of the person's true score is the sum of the scores on the items and is usually denoted by the variable X_v
- This observed score will have an error for each person which is usually denoted by E_v
- These errors are not correlated with the true score
- Across a population of people, the errors sum to 0 and they are normally distributed.

From these assumptions, the following equations can be derived:

$$X_v = T_v + E_v .$$

Therefore,

$$S_x^2 = S_t^2 + S_e^2$$

where

S_x^2 = the variance of the observed score in a population of persons,

S_t^2 = the variance of their true score variance, and

S_e^2 = the error variance.

The reliability of the test can be calculated by the following formula:

$$r_{xx} = \frac{s_t^2}{s_x^2} = \frac{s_x^2 - s_e^2}{s_x^2} .$$

Thus, the *SEM* is calculated by the following formula:

$$S_e = S_x \sqrt{1 - r_{xx}} .$$

For example, consider a student with a score of 90 from a sample of students with a mean score of 60 and variance of 225 on a test with reliability of 0.80. According to the formulas provided above, the obtained score is 90, and its *SEM* is 6.71. Thus, an approximate 68% score band for estimating this students' true score is from 83.29 (90 - 6.71) to 96.71 (90 + 6.71).

Note that this equation is only useful to estimate true score when the test reliability is reasonably high and the obtained score for the examinee is not an extreme deviate from the mean of the appropriate reference group. When we use this equation, consequently, we should be careful with statements so that they do not imply greater precision than is actually involved (Harvill, 1991).

Conditional Standard Error of Measurement (Based on Item Response Theory)

Unlike the *SEM* based on the classical test theory, the *SEM* based on the *item response theory* (*IRT*) is not the same for all persons. For example, if a person gets few or a large number of items correct, the standard error is greater than if the person gets moderate number of items correct. This implies that the standard error of measurement depends on the total score (Andrich & Luo, 2004).

Under the Rasch model, the *SEM* for each person is as follows:

$$\sigma_{\hat{\beta}} = \frac{1}{\sqrt{\sum_{i=1}^{L} p_{vi}(1 - p_{vi})}}$$

where

v = subscript for a person,

i = subscript for an item,

L = length of the test,

$\hat{\beta}$ = ability estimate, and

p_{vi} = the probability that a person answers an item correctly and defined as follows:

$p_{vi} = \frac{e^{\beta_v - \delta_i}}{1 + e^{\beta_v - \delta_i}}$ where β_v is person's ability and δ_i is item's difficulty.

A confidence band can be found for use in interpreting the ability estimate. For example, an approximate 68% confidence interval for $\hat{\beta}$ is given by

$$\hat{\beta} \pm SEM$$

Note that the standard error for item difficulty is smallest when the probability of passing is close to the probability of failing. That is, when an item is near the threshold level for many persons in the sample, the standard error is small (Embretson & Reise, 2000).

3.2 Scale Score Descriptive Statistics

Table 4.2 provides information about scale score descriptive statistics of each form for each grade and includes:

- Form number
- Number of items
- Numbers of students
- Mean and standard deviation of scale scores
- 10% quantile (P10), 25% quantile (Q1), median (P50), 75% quantile (Q3), 90% quantile, and IQR (Interquantile Range= Q3-Q1)
- Conditional *standard errors of measurement* (*SEM*) for the proficient and advanced cut scores

In addition, Appendix A provides frequency distributions and histograms of the scale scores of the 2006 MSA-Reading.

3.3 Classical and *IRT* Item Parameters

Appendix C provides both classical and *IRT*-based item parameters and includes:

- Item type (*SR* or *BCR*)
- *P*-value: in order for *p*-values of the *BCR* items to be comparable with *p*-values of the *SR* items they were calculated as modified proportions of the maximum obtainable domain scores.
- Point-biserial correlation: a computationally simplified Person's *r* between the scored item and the total score
- Rasch difficulty estimate
- Standard error of the Rasch difficulty
- Mean-square infit
- Mean-square outfit

Item sequence numbers represents merely those items that were chosen to be in the final "score form."

Fit Statistics for Rasch Model

Fit statistics are used for evaluating the goodness-of-fit of a model to the data. Fit statistics are calculated by comparing the observed and expected trace lines obtained for an item after parameter estimates are obtained using a particular model. *WINSTEPS* provides two kinds of fit statistics called *mean-squares* that show the size of the randomness or amount of distortion of the measurement system.

Outfit mean-squares are influenced by outliers and are usually easy to diagnose and remedy. *Infit* mean-squares, on the other hand, are influenced by response patterns and are harder to diagnose and remedy. Table 3.1 provides a guideline for evaluating mean-square fit statistics (Linacre & Wright, 2000).

In general, mean-squares near 1.0 indicate little distortion of the measurement system, while values less than 1.0 indicate observations are too predictable (redundancy, model overfit). Values greater than 1.0 indicate unpredictability (unmodeled noise, model underfit).

Table 3.1 Criteria to Evaluate Mean-Square Fit Statistics

Mean-Square	Interpretation
> 2.0	Distorts or degrades the measurement system
1.5 – 2.0	Unproductive for construction of measurement, but not degrading
0.5 – 1.5	Productive for measurement
< 0.5	Unproductive for measurement, but not degrading. May produce misleadingly good reliabilities and separations

3.4 Inter-Rater Reliability

Tables 4.27 through 4.32 contain information about the scoring agreement between rater 1 and rater 2. When the two readers assigned the same score to a student's answer, the scores were in perfect agreement. Scores differed by one score point were adjacent, and scores differed by two or more score points were in discrepancy. For further information about inter-rater agreement, please see section 1.7. For the 2006 MSA-Reading, the adjacent agreement rates were above 95%, and perfect agreement rates were above 65% except for several items across all grades.

3.5 Correlations among Reading Processes

The 2006 MSA-Reading consisted of three reading processes (strands): *General Reading*, *Literary Reading*, and *Informational Reading*. Tables 4.3 through 4.8 contain correlation coefficients among these reading processes. We can generally conclude that the three strands have a moderately strong correlation among them.

3.6 Decision Accuracy and Consistency at the Cut Scores

Tables 4.9 through 4.14 contain the results of analyses performed to estimate the accuracy and consistency of the decisions for passing (proficient) on the 2006 MSA-Reading. The analyses make use of the methods outlined and implemented in Livingston and Lewis (1995), Haertel (1996), and Young and Yoon (1998).

The *accuracy* of a decision is the extent to which it would agree with the decisions that would be made if each student could somehow be tested with all possible parallel forms of the assessments. The *consistency* of a decision is the extent to which it would agree with the decisions that would be made if the students had taken a different form of the examination, equal in difficulty and covering the same content as the form they actually took.

Students can be misclassified in one of two ways. Students who were below the proficiency cut score, but were classified (on the basis of the assessment) as being above a cut score, are considered to be *false positives*. Students who were above the proficiency cut score, but were classified as being below a cut score, are considered to be *false negatives*.

For the 2006 MSA-Reading, Tables 4.9 through 4.14 include:

- Performance level
- Accuracy classifications
- False positives
- False negatives
- Consistency classifications

The tables illustrate the general rule that decision consistency is less than decision accuracy.

3.7 Differential Item Functioning

This section provides information about *differential item functioning* (*DIF*) analyses used for the 2006 MSA-Reading. For the 2006 MSA-Reading *DIF* analyses, the *reference* group was either male or Caucasian students, and the *focal* group was either female or African-American students.

Since the 2006 MSA-Reading was a mixed-format examination, comprising of both *BCR* and *SR* items, the *DIF* procedure used consists of Mantel's (1963) extension of the Mantel-Haenszel procedure (the Mantel Chi-square) for the *BCR* items and the Mantel-Haenszel procedure (Mantel & Haenszel, 1959) for the *SR* items.

Brief Constructed Response (BCR) Items

To help interpret the Mantel Chi-square (Mantel χ^2), the Educational Testing Service (ETS) *DIF* procedure uses the Mantel statistic in conjunction with the *standardized mean difference* (*SMD*).

Mantel Statistic

The Mantel χ^2 is simply a conditional mean comparison of the ordered response categories for reference and focal groups combined over values of the matching variable score. By "ordered" we mean that a response of 1 on an item is better than 0, 2 is better than 1, and so on. "Conditional," on the other hand, refers to the comparison of members from the two groups who received the same score on the matching variable, i.e., the total test score in our analysis.

Table 3.2 shows a $2 \times T \times K$ contingency table, where T is the number of response categories and K is the number of levels of the matching variable. The values, y_1, y_2, …, y_T are the T scores that can be gained on the item. The values, n_{Ftk} and n_{Rtk}, represent the numbers of focal and reference groups who are at the k^{th} level of the matching variable and gain an item score of y_t. The "+" indicates total number over a particular index (Zwick, Donoghue, & Grima, 1993).

Table 3.2 $2 \times T$ Contingency Table at the k^{th} level

Group	Item Score				Total
	y_1	y_2		y_T	
Reference	n_{R1k}	n_{R2k}	…	n_{RTk}	n_{R+k}
Focal	n_{F1k}	n_{F2k}	…	n_{FTk}	n_{F+k}
Total	n_{+1k}	n_{+2k}	…	n_{+Tk}	n_{++k}

Note. This table was cited from Zwick, et al. (1993)

The Mantel statistics is defined as the following formula:

$$\text{Mantel } \chi^2 = \frac{(\sum_k F_k - \sum_k E(F_k))^2}{\sum_k Var(F_k)}$$

where

F_k = the sum of scores for the focal group at the k^{th} level of the matching variable and is defined as follows:

$$F_k = \sum_t y_t n_{Ftk},$$

The expectation of F_k under the null hypothesis is

$$E(F_k) = \frac{n_{F+k}}{n_{++k}} \sum_t y_t n_{+tk}.$$

And, the variance of F_k under the null hypothesis is as follows:

$$Var(F_k) = \frac{n_{R+k} n_{F+k}}{n_{++k}^2 (n_{++k} - 1)} \left[(n_{++k} \sum_t y_t^2 n_{+tk}) - (\sum_t y_t n_{+tk})^2 \right].$$

Under H_0, the Mantel statistic has a chi-square distribution with one degree of freedom. In *DIF* applications, rejecting H_0 suggests that the students of the reference and focal groups who are similar in overall test performance tend to differ in their mean performance. In the case of dichotomous items, on the other hand, the statistics is identical to the Mantel-Haenszel (1959) statistic without the continuity correction (Zwick, Donoghue, & Grima, 1993).

Standardized Mean Difference (SMD)

A summary statistic to accompany the Mantel approach is the *standardized mean difference* (*SMD*) between the reference and focal groups proposed by Dorans and Schmitt (1991). This statistic compares the means of the reference and focal groups, adjusting for differences in the distribution of the reference and focal group members across the values of the matching variable.

$$SMD = \sum_k p_{Fk} m_{Fk} - \sum_k p_{Fk} m_{Rk}$$

where

$p_{Fk} = \frac{n_{F+k}}{n_{F++}}$, the proportion of the focal group members who are at the k^{th} level of the matching variable,

$m_{RK} = \frac{1}{n_{F+k}} \times (\sum_t y_t n_{Ftk})$, the mean item score of the focal group members at the k^{th} level, and

m_{Rk} = the analogous value for the reference group.

As can be seen from the equation above, the *SMD* is the difference between the unweighted item mean of the focal group and the weighted item mean of the reference group. The weights for the reference group are applied to make the weighted number of the reference group students the same as in the focal group within the same ability. A negative *SMD* value implies that the focal group has a lower mean item score than the reference group, conditional on the matching variable.

DIF classification for BCR items

The *SMD* is divided by the total group item standard deviation to obtain an effect-size value for the *SMD*. This effect-size *SMD* is then examined in conjunction with the Mantel χ^2 to obtain *DIF* classifications that are depicted in Table 3.3 below.

Table 3.3 *DIF* Classification for BCR Items

Category	Description	Criterion
AA	No *DIF*	Non-significant Mantel χ^2 or Significant Mantel χ^2 and |SMD/SD| ≤ .17
BB	Weak *DIF*	Significant Mantel χ^2 and .17 < |SMD/SD| ≤ .25
CC	Strong *DIF*	Significant Mantel χ^2 and .25 < |SMD/SD|

Note. SD is the total group standard deviation of the item score in its original metric.

Selected Response (SR) Items

For the *SR* items, the Mantel-Haenszel Chi-square (M-H χ^2) in conjunction with the M-H odds ratio that is transferred to what ETS calls, the delta scale (D).

The Odds Ratio

The odds of a correct response (proportion passing divided by proportion failing) are *P/Q* or *P/(1-P)*. The odds ratio, on the other hand, is simply the odds of a correct response of the reference group divided by the odds of a correct response of the focal group.

For a given item, the odds ratio is defined as follows:

$$\alpha_{M-H} = \frac{P_r / Q_r}{P_f / Qf}.$$

And, the corresponding null hypothesis is that the odds of getting the item correct are equal for the two groups. Thus, the odds ratio is equal to 1:

$$H_0: \alpha_{M-H} = \frac{P_r / Q_r}{P_f / Qf} = 1.$$

The Delta Scale

In order to make the odds ratio symmetrical around zero with its range being in the interval $-\infty$ to $+\infty$, the odds ratio is transformed into a log odds ratio as per the following:

$$\beta_{M-H} = \ln(\alpha_{\text{M-H}}).$$

The simple natural logarithm transformation of this odds ratio is symmetrical about zero in which zero has the interpretation of equal odds. This *DIF* measure is a signed index where a positive value signifies *DIF* in favor of the reference group while a negative value indicates *DIF* in favor of the focal group. β_{M-H} also has the advantage of being transformed linearly to other interval scale metrics (Camilli & Shepard, 1994). This fact is utilized by ETS in creating their delta scale (D), which is defined as follows:

$$\text{D} = -2.35 \cdot \beta_{M-H}.$$

DIF classification for SR items

The following table depicts *DIF* classifications for SR items to examine the M-H χ^2 in conjunction with the delta scale (D):

Table 3.4 *DIF* Classification for SR Items

Category	Description	Criterion
A	No *DIF*	Non-significant M-H χ^2 or |D| < 1.0
C	Strong *DIF*	Significant M-H χ^2 and $\|D\| \geq 1.5$
B	Weak *DIF*	Otherwise classified as B

3.8 Equating and Scaling

Tables 4.15 through 4.26 contain information about raw score to scale score conversion tables for the 2006 MSA-Reading. Conditional standard errors for the scale scores are also included.

The Rasch and Partial Credit *IRT* Models

The most basic expression of the Rasch model is in the *item characteristic curve* (ICC). It shows the probability of a correct response to an item as a function of the ability level. The probability of a correct response is bounded by 1 (certainty of a correct response) and 0 (certainty of an incorrect response). The ability is, in theory, unbounded. In practice, the ability scale ranges from - 4 to + 4 logits for heterogeneous ability groups.

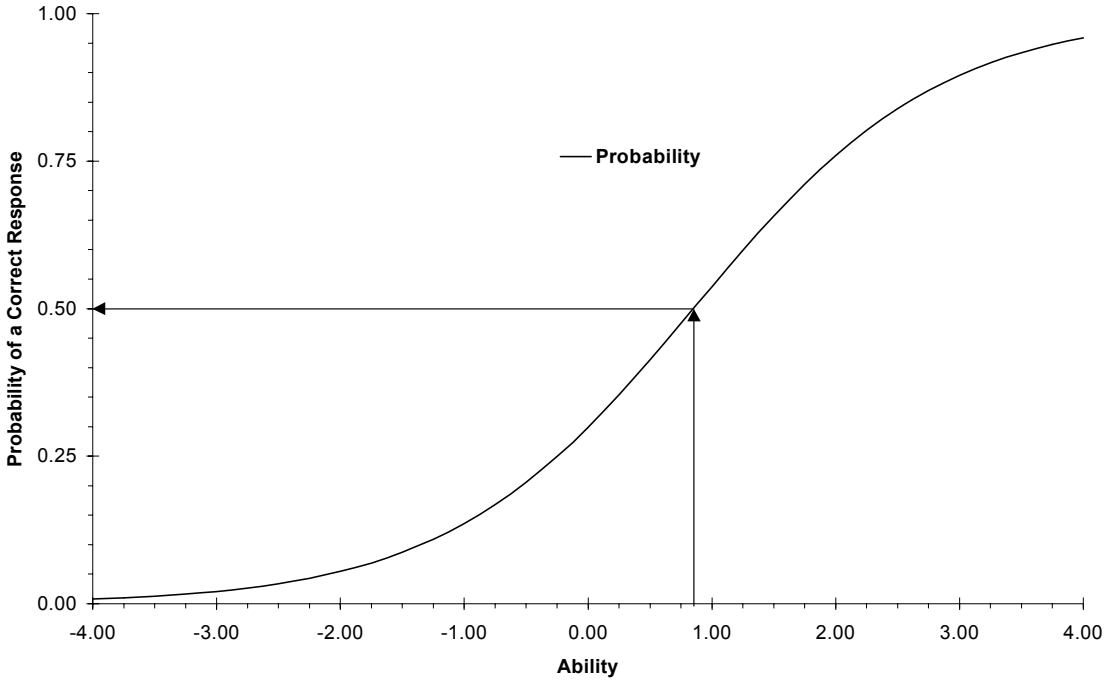
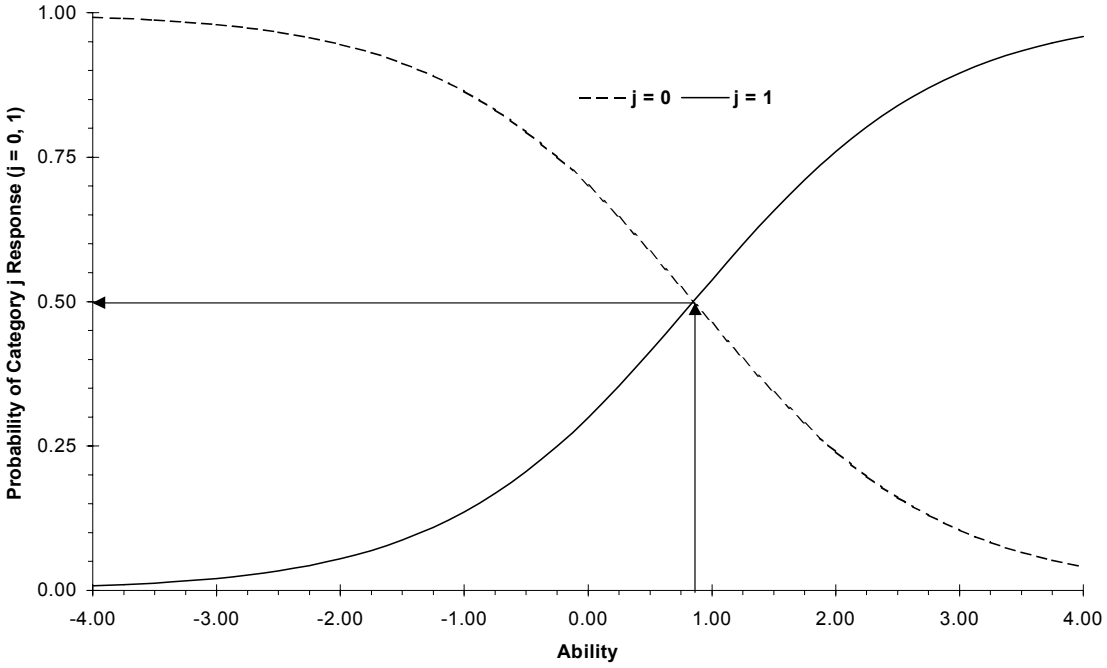


Figure 3.1 Item Characteristic Curve

As an example, consider Figure 3.1 which depicts a item that falls at approximately 0.85 on the ability (horizontal) scale. When a person answers an item at the same level as their ability, then that person has a probability of roughly 50% of answering the item correctly. Another way of expressing this is that if we have a group of 100 people, all of whom have an ability of 0.85, we would expect about 50% of them to answer the item correctly. A person whose ability was above 0.85 would a higher probability of getting the item right, while a person whose ability is below 0.85 would have a lower probability of getting the item right. This makes intuitive sense and is the basic formulation of Rasch measurement for test items having only 2 possible categories (i.e., wrong or right).



Figugure 3.2 Category Response Curves for a One-Step Item

Figure 3.2 extends this formulation to show the probabilities of obtaining a wrong answer or a right answer. The curve on the left ($j = 0$) shows the probability of getting a score of "0" while the curve on the right ($j = 1$) shows the probability of getting a score of "1". The point at which the two curves cross indicates the transition point on the ability scale where the most likely response changes from a "0" to a "1". Here, the probability of answering the item correctly is 50%.

The key step in the formulation, and the point at which the Rasch dichotomous model merges with the PCM, requires us to assume an additional response category. Suppose that, rather than scoring items as completely wrong or completely right, we add a category representing answers

that, though not totally correct, are still clearly not totally incorrect. These relationships are shown in Figure 3.3.

The left-most curve ($j = 0$) in Figure 3.3 represents the probability for all examinees getting a score of "0" (completely incorrect) on the item, given their ability. Those of very low ability (e.g., below - 2) are very likely to be in this category and, in fact, are more likely to be in this category than the other two. Those receiving a "1" (partial credit) tend to fall in the middle range of abilities (the middle curve, $j = 1$). The final, right-most curve ($j = 2$) represents the probability for those receiving scores of "2" (completely correct). Very high-ability people are clearly more likely to be in this category than in any other, but there are still some of average and low ability that can get full credit for the item.

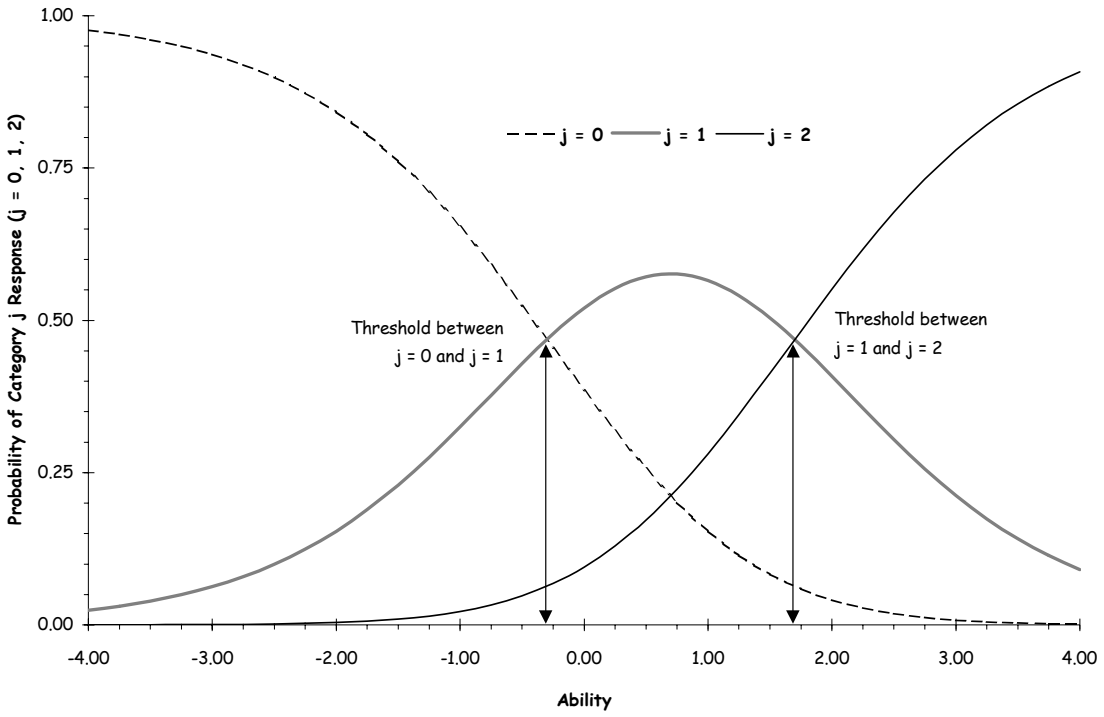


Figure 3.3 Category Response Curves for a Two-Step Item

Although the actual computations are quite complex, the points at which lines cross each other have a similar interpretation as for the dichotomous case. Consider the point at which the $j = 0$ line crosses the $j = 1$ line, indicated by the left arrow. For abilities to the left of (or less than) this point, the probability is greatest for a "0" response. To the right of (or above) this point, and up to the point at which the $j = 1$ and $j = 2$ lines cross (marked by the right arrow), the most likely response is a "1". For abilities to the right of this point, the most likely response is a "2".

Note that the probability of scoring a "1" response ($j = 1$) declines in both directions as ability decreases to the low extreme or increases to the high extreme. These points then may be thought of as the difficulties of crossing the *thresholds* between categories.

An important implication of the formulation can be summarized as: If the commonly used Rasch model applied to dichotomously (right/wrong) scored items can be thought of as simply a special case of the PCM, then the act of scaling multiple-choice items together with polytomous items, whether they have three or more response categories, is a straightforward process of applying the measurement model. The quality of the scaling then can be assessed in terms of known procedures.

One important property of the PCM is its ability to separate the estimation of item/task parameters from the person parameters. With the PCM, as with the Rasch model, the total score given by the sum of the categories in which a person responds is a sufficient statistic for estimating person ability (i.e., no additional information need be estimated). The total number of responses across examinees in a particular category is a sufficient statistic for estimating the step difficulty for that category. Thus with PCM, the same total score will yield the same ability estimate for different examinees.

The PCM is a direct extension of the dichotomous one-parameter *IRT* model developed by Rasch (Rasch, 1980). For an item/task involving m_i score categories, one general expression for the probability of scoring x on item/task i is given by

$$P_{nix} = \exp\sum_{j=0}^{x}\left(\theta_n - D_{ij}\right) / \sum_{k=0}^{m_i}\left[\exp\sum_{j=0}^{k}\left(\theta_n - D_{ij}\right)\right]$$

where

$x = 0, 1, ..., m_i$, and by definition, $\sum_{j=0}^{0}\left(\theta - D_{ij}\right) = 0$.

The above equation gives the probability of scoring x on the i-th test item as a function of ability (θ) and the difficulty of the m_i steps of the task (Masters, 1982).

According to this model, the probability of an examinee scoring in a particular category (step) is the sum of the logit (log-odds) differences between θ and D_{ij} of all the completed steps, divided by the sum of the differences of all the steps of a task. Thissen and Steinberg (1986) refers to this model as a divide-by-total model. The parameters estimated by this model are (1) an ability estimate for each person (or ability estimate at each raw score level) and (2) m_i threshold (difficulty) estimates for each task with $m_i + 1$ score categories.

4. THE 2006 MSA-READING STATISTICAL SUMMARY

Table 4.1 The 2006 MSA-Reading Classical Descriptive Statistics: Grades 3 through 8

Grade	Form	No. of Items	*N*	*M*	*SD*	Reliability	*SEM*
3	A	37	26,226	27.78	7.26	0.87	2.64
	B	37	26,598	29.32	7.57	0.88	2.57
4	A	37	26,525	30.97	6.30	0.86	2.35
	B	37	26,962	30.64	6.79	0.88	2.39
5	A	37	27,564	27.15	7.41	0.86	2.81
	B	37	27,799	29.23	7.23	0.86	2.69
6	A	37	28,404	30.26	8.27	0.91	2.55
	B	37	28,649	29.59	7.87	0.90	2.54
7	A	37	28,971	28.59	7.32	0.87	2.62
	B	37	29,092	27.70	7.40	0.88	2.58
8	A	37	30,081	27.09	6.92	0.85	2.67
	B	37	30,114	27.25	6.61	0.85	2.59

.

Table 4.2 The 2006 MSA-Reading Scale Score Descriptive Statistics: Grades 3 through 8

Grade	Form	*N*	*M*	*SD*	*P10*	*Q1*	*Mdn*	*Q3*	*P90*	*IQR*	*SEM* at Cut-Points	
											Prof.	Adv.
3	A	27,745	419.7	34.5	375	395	419	442	466	47	11	15
	B	27,944	421.3	38.8	372	395	420	446	469	51	11	15
	Overall	55,689	420.5	36.7	372	395	420	446	469	51	N/A	N/A
4	A	28,265	408.4	37.1	358	385	411	430	455	45	12	16
	B	28,384	409.0	39.8	356	382	411	438	457	56	12	16
	Overall	56,649	408.7	38.5	358	385	411	431	457	46	N/A	N/A
5	A	31,568	409.2	34.4	367	386	410	431	453	45	11	12
	B	31,561	408.5	35.4	361	384	407	431	457	47	11	13
	Overall	63,129	408.9	34.9	363	386	410	431	453	45	N/A	N/A
6	A	32,168	404.3	41.2	351	375	405	431	452	56	10	13
	B	32,015	404.1	38.0	356	378	405	429	448	51	11	13
	Overall	64,183	404.2	39.6	352	375	405	431	452	56	N/A	N/A
7	A	32,701	402.8	36.6	354	377	405	428	447	51	11	13
	B	32,493	404.0	37.2	354	377	405	430	448	53	11	13
	Overall	65,194	403.4	36.9	354	377	405	428	448	51	N/A	N/A
8	A	33,608	403.6	32.3	364	382	403	425	442	43	10	12
	B	33,419	402.9	30.8	365	384	403	424	440	40	11	12
	Overall	67,027	403.3	31.5	364	384	403	424	442	40	N/A	N/A

Table 4.3 The 2006 MSA-Reading Strand Correlations: Grade 3

Form	*N*	1	2	3
Form A				
1. General Reading	26,226	1.00		
2. Literary Reading	26,226	0.63	1.00	
3. Information Reading	26,226	0.64	0.66	1.00
Form B				
1. General Reading	26,598	1.00		
2. Literary Reading	26,598	0.65	1.00	
3. Information Reading	26,598	0.68	0.70	1.00

Table 4.4 The 2006 MSA-Reading Strand Correlations: Grade 4

Form	*N*	1	2	3
Form A				
1. General Reading	26,525	1.00		
2. Literary Reading	26,525	0.61	1.00	
3. Information Reading	26,525	0.65	0.64	1.00
Form B				
1. General Reading	26,962	1.00		
2. Literary Reading	26,962	0.65	1.00	
3. Information Reading	26,962	0.69	0.69	1.00

Table 4.5 The 2006 MSA-Reading Strand Correlations: Grade 5

Form	*N*	1	2	3
Form A				
1. General Reading	27,564	1.00		
2. Literary Reading	27,564	0.65	1.00	
3. Information Reading	27,564	0.65	0.65	1.00
Form B				
1. General Reading	27,799	1.00		
2. Literary Reading	27,799	0.66	1.00	
3. Information Reading	27,799	0.63	0.67	1.00

.

Table 4.6 The 2006 MSA-Reading Strand Correlations: Grade 6

Form	*N*	1	2	3
Form A				
1. General Reading	28,404	1.00		
2. Literary Reading	28,404	0.74	1.00	
3. Information Reading	28,404	0.71	0.73	1.00
Form B				
1. General Reading	28,649	1.00		
2. Literary Reading	28,649	0.73	1.00	
3. Information Reading	28,649	0.68	0.69	1.00

Table 4.7 The 2006 MSA-Reading Strand Correlations: Grade 7

Form	*N*	1	2	3
Form A				
1. General Reading	28,971	1.00		
2. Literary Reading	28,971	0.67	1.00	
3. Information Reading	28,971	0.65	0.66	1.00
Form B				
1. General Reading	29,092	1.00		
2. Literary Reading	29,092	0.69	1.00	
3. Information Reading	29,092	0.66	0.67	1.00

Table 4.8 The 2006 MSA-Reading Strand Correlations: Grade 8

Form	*N*	1	2	3
Form A				
1. General Reading	30,081	1.00		
2. Literary Reading	30,081	0.62	1.00	
3. Information Reading	30,081	0.63	0.64	1.00
Form B				
1. General Reading	30,114	1.00		
2. Literary Reading	30,114	0.59	1.00	
3. Information Reading	30,114	0.60	0.61	1.00

Table 4.9 The 2006 MSA-Reading Decision Accuracy and Consistency Indices: Grade 3

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	*B : PA*	0.91	0.04	0.05	0.88
	BP : A	0.93	0.04	0.03	0.90
B	*B : PA*	0.92	0.03	0.05	0.89
	BP : A	0.93	0.04	0.03	0.91

Note. B:PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.10 The 2006 MSA-Reading Decision Accuracy and Consistency Indices: Grade 4

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	*B : PA*	0.93	0.03	0.04	0.90
	BP : A	0.90	0.06	0.04	0.87
B	*B : PA*	0.93	0.03	0.04	0.90
	BP : A	0.91	0.05	0.04	0.88

Note. B:PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.11 The 2006 MSA-Reading Decision Accuracy and Consistency Indices: Grade 5

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	*B : PA*	0.90	0.04	0.06	0.86
	BP : A	0.89	0.06	0.05	0.85
B	*B : PA*	0.91	0.04	0.06	0.87
	BP : A	0.89	0.06	0.05	0.85

Note. B:PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.12 The 2006 MSA-Reading Decision Accuracy and Consistency Indices: Grade 6

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	*B : PA*	0.91	0.04	0.04	0.88
	BP : A	0.91	0.05	0.04	0.88
B	*B : PA*	0.91	0.04	0.05	0.87
	BP : A	0.91	0.05	0.04	0.87

Note. B:PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.13 The 2006 MSA-Reading Decision Accuracy and Consistency Indices: Grade 7

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	*B : PA*	0.89	0.04	0.06	0.85
	BP : A	0.90	0.06	0.04	0.86
B	*B : PA*	0.90	0.04	0.06	0.86
	BP : A	0.91	0.06	0.04	0.87

Note. B:PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.14 The 2006 MSA-Reading Decision Accuracy and Consistency Indices: Grade 8

Form	Performance Cut	Accuracy	False Positive	False Negative	Consistency
A	*B : PA*	0.89	0.05	0.06	0.84
	BP : A	0.90	0.06	0.04	0.86
B	*B : PA*	0.88	0.05	0.07	0.84
	BP : A	0.90	0.06	0.04	0.86

Note. B:PA denotes the cut between Basic and Proficient, while BP:A denotes the cut between Proficient and Advanced.

Table 4.15 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 3 Form A

	Form A			
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS - 1*SEM*	SS + 1*SEM*
0	240[a]	47	240 [a]	277
1	253	33	240 [a]	286
2	277	24	253	301
3	292	20	272	312
4	304	18	286	322
5	313	16	297	329
6	321	15	306	336
7	327	14	313	341
8	334	14	320	348
9	339	13	326	352
10	345	13	332	358
11	350	13	337	363
12	354	12	342	366
13	359	12	347	371
14	363	12	351	375
15	367	12	355	379
16	371	11	360	382
17	375	11	364	386
18	379	11	368	390
19	383	11	372	394
20	387	11	376	398
21	391	11	380	402
22	395	11	384	406
23	399	11	388	410
24	403	11	392	414
25	406	11	395	417
26	410	11	399	421
27	414	11	403	425
28	419	12	407	431
29	423	12	411	435
30	427	12	415	439
31	432	12	420	444
32	437	13	424	450
33	442	13	429	455
34	447	13	434	460
35	453	14	439	467
36	459	15	444	474
37	466	15	451	481
38	474	16	458	490
39	483	18	465	501
40	493	19	474	512
41	505	21	484	526
42	520	23	497	543
43	540	27	513	567
44	569	36	533	605
45	595	48	547	643

Note. [a]LOSS was set to 240.

Table 4.16 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 3 Form B

	Form B			
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS – 1*SEM*	SS + 1*SEM*
0	240 [a]	46	240 [a]	270
1	248	33	240 [a]	281
2	272	24	248	296
3	287	20	267	307
4	298	18	280	316
5	307	16	291	323
6	314	15	299	329
7	321	14	307	335
8	327	14	313	341
9	333	13	320	346
10	338	13	325	351
11	343	12	331	355
12	348	12	336	360
13	352	12	340	364
14	356	12	344	368
15	360	11	349	371
16	364	11	353	375
17	368	11	357	379
18	372	11	361	383
19	376	11	365	387
20	380	11	369	391
21	384	11	373	395
22	387	11	376	398
23	391	11	380	402
24	395	11	384	406
25	399	11	388	410
26	403	11	392	414
27	407	12	395	419
28	411	12	399	423
29	415	12	403	427
30	420	12	408	432
31	425	12	413	437
32	429	13	416	442
33	435	13	422	448
34	440	14	426	454
35	446	14	432	460
36	453	15	438	468
37	461	16	445	477
38	469	17	452	486
39	479	18	461	497
40	490	20	470	510
41	504	22	482	526
42	521	25	496	546
43	544	29	515	573
44	577	37	540	614
45	604	49	555	650[b]

Note. [a]LOSS was set to 240. [b]HOSS was set to 650.

Table 4.17 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 4 Form A

	Form A			
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS – 1*SEM*	SS + 1*SEM*
0	240 [a]	48	240 [a]	240 [a]
1	240 [a]	35	240 [a]	240 [a]
2	240 [a]	26	240 [a]	257
3	248	22	240 [a]	270
4	261	19	242	280
5	271	18	253	289
6	280	16	264	296
7	288	15	273	303
8	295	15	280	310
9	301	14	287	315
10	307	14	293	321
11	312	13	299	325
12	318	13	305	331
13	323	13	310	336
14	327	12	315	339
15	332	12	320	344
16	337	12	325	349
17	341	12	329	353
18	345	12	333	357
19	350	12	338	362
20	354	12	342	366
21	358	12	346	370
22	363	12	351	375
23	367	12	355	379
24	371	12	359	383
25	376	12	364	388
26	380	12	368	392
27	385	12	373	397
28	390	13	377	403
29	395	13	382	408
30	400	13	387	413
31	405	13	392	418
32	411	14	397	425
33	417	14	403	431
34	423	15	408	438
35	430	15	415	445
36	438	16	422	454
37	446	17	429	463
38	455	18	437	473
39	466	19	447	485
40	477	20	457	497
41	491	22	469	513
42	507	24	483	531
43	528	28	500	556
44	558	36	522	594
45	584	49	535	633

Note. [a]LOSS was set to 240.

Table 4.18 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 4 Form B

	Form B			
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS – 1*SEM*	SS + 1*SEM*
0	240 [a]	48	240 [a]	240 [a]
1	240 [a]	35	240 [a]	245
2	240 [a]	26	240 [a]	264
3	255	22	240 [a]	277
4	267	19	248	286
5	277	17	260	294
6	286	16	270	302
7	293	15	278	308
8	299	14	285	313
9	306	14	292	320
10	311	13	298	324
11	316	13	303	329
12	321	13	308	334
13	326	12	314	338
14	331	12	319	343
15	335	12	323	347
16	339	12	327	351
17	344	12	332	356
18	348	12	336	360
19	352	12	340	364
20	356	12	344	368
21	360	12	348	372
22	364	12	352	376
23	369	12	357	381
24	373	12	361	385
25	377	12	365	389
26	382	12	370	394
27	386	12	374	398
28	391	12	379	403
29	396	13	383	409
30	401	13	388	414
31	406	13	393	419
32	411	14	397	425
33	417	14	403	431
34	424	15	409	439
35	431	15	416	446
36	438	16	422	454
37	447	17	430	464
38	457	19	438	476
39	468	20	448	488
40	482	22	460	504
41	499	25	474	524
42	519	27	492	546
43	543	30	513	573
44	576	37	539	613
45	603	49	554	650 [b]

Note. [a]LOSS was set to 240. [b]HOSS was set to 650.

Table 4.19 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 5 Form A

	Form A			
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS - 1*SEM*	SS + 1*SEM*
0	240[a]	47	240[a]	273
1	250	34	240[a]	284
2	274	24	250	298
3	289	20	269	309
4	300	18	282	318
5	309	16	293	325
6	317	15	302	332
7	323	14	309	337
8	329	14	315	343
9	335	13	322	348
10	340	13	327	353
11	345	13	332	358
12	350	12	338	362
13	354	12	342	366
14	358	12	346	370
15	363	12	351	375
16	367	12	355	379
17	371	11	360	382
18	375	11	364	386
19	378	11	367	389
20	382	11	371	393
21	386	11	375	397
22	390	11	379	401
23	394	11	383	405
24	398	11	387	409
25	402	11	391	413
26	406	11	395	417
27	410	12	398	422
28	414	12	402	426
29	418	12	406	430
30	422	12	410	434
31	427	12	415	439
32	431	12	419	443
33	436	13	423	449
34	441	13	428	454
35	447	14	433	461
36	453	14	439	467
37	459	15	444	474
38	466	16	450	482
39	474	17	457	491
40	483	18	465	501
41	494	20	474	514
42	507	22	485	529
43	525	27	498	552
44	554	36	518	590
45	580	49	531	629

Note. [a]LOSS was set to 240.

Table 4.20 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 5 Form B

	Form B			
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS – 1*SEM*	SS + 1*SEM*
0	240[a]	47	240[a]	264
1	240	34	240[a]	274
2	265	24	241	289
3	280	20	260	300
4	291	18	273	309
5	300	16	284	316
6	308	15	293	323
7	314	15	299	329
8	320	14	306	334
9	326	13	313	339
10	331	13	318	344
11	336	12	324	348
12	341	12	329	353
13	345	12	333	357
14	349	12	337	361
15	353	12	341	365
16	357	11	346	368
17	361	11	350	372
18	365	11	354	376
19	369	11	358	380
20	373	11	362	384
21	376	11	365	387
22	380	11	369	391
23	384	11	373	395
24	388	11	377	399
25	391	11	380	402
26	395	11	384	406
27	399	11	388	410
28	403	12	391	415
29	407	12	395	419
30	412	12	400	424
31	416	12	404	428
32	421	13	408	434
33	426	13	413	439
34	431	13	418	444
35	436	14	422	450
36	442	14	428	456
37	449	15	434	464
38	457	16	441	473
39	465	17	448	482
40	475	19	456	494
41	486	20	466	506
42	500	23	477	523
43	518	27	491	545
44	546	35	511	581
45	571	48	523	619

Note. [a]LOSS was set to 240.

Table 4.21 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 6 Form A

	Form A			
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS – 1*SEM*	SS + 1*SEM*
0	240[a]	44	240[a]	268
1	246	31	240[a]	277
2	268	22	246	290
3	282	19	263	301
4	292	16	276	308
5	300	15	285	315
6	306	14	292	320
7	312	13	299	325
8	318	13	305	331
9	323	12	311	335
10	327	12	315	339
11	332	11	321	343
12	336	11	325	347
13	340	11	329	351
14	343	11	332	354
15	347	10	337	357
16	351	10	341	361
17	354	10	344	364
18	358	10	348	368
19	361	10	351	371
20	364	10	354	374
21	368	10	358	378
22	371	10	361	381
23	375	10	365	385
24	378	10	368	388
25	382	10	372	392
26	385	11	374	396
27	389	11	378	400
28	393	11	382	404
29	397	11	386	408
30	401	11	390	412
31	405	12	393	417
32	410	12	398	422
33	414	12	402	426
34	419	13	406	432
35	425	13	412	438
36	431	14	417	445
37	437	14	423	451
38	444	15	429	459
39	452	16	436	468
40	461	17	444	478
41	471	19	452	490
42	484	21	463	505
43	500	24	476	524
44	525	32	493	557
45	549	44	505	593

Note. [a]LOSS was set to 240.

Table 4.22 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 6 Form B

	Form B			
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS – 1*SEM*	SS + 1*SEM*
0	240[a]	44	240[a]	266
1	244	31	240[a]	275
2	267	23	244	290
3	280	19	261	299
4	291	17	274	308
5	299	15	284	314
6	306	14	292	320
7	312	13	299	325
8	318	13	305	331
9	323	12	311	335
10	328	12	316	340
11	332	12	320	344
12	337	11	326	348
13	341	11	330	352
14	345	11	334	356
15	349	11	338	360
16	352	11	341	363
17	356	11	345	367
18	360	10	350	370
19	363	10	353	373
20	367	10	357	377
21	370	10	360	380
22	374	10	364	384
23	378	10	368	388
24	381	11	370	392
25	385	11	374	396
26	389	11	378	400
27	393	11	382	404
28	396	11	385	407
29	401	11	390	412
30	405	11	394	416
31	409	12	397	421
32	414	12	402	426
33	418	12	406	430
34	423	13	410	436
35	429	13	416	442
36	435	14	421	449
37	441	14	427	455
38	448	15	433	463
39	456	16	440	472
40	464	17	447	481
41	475	18	457	493
42	487	20	467	507
43	503	24	479	527
44	527	32	495	559
45	550	44	506	594

Note. [a]LOSS was set to 240.

Table 4.23 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 7 Form A

	Form A			
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS – 1*SEM*	SS + 1*SEM*
0	240[a]	46	240[a]	264
1	241	33	240[a]	274
2	265	24	241	289
3	279	20	259	299
4	290	17	273	307
5	298	16	282	314
6	306	15	291	321
7	312	14	298	326
8	318	13	305	331
9	324	13	311	337
10	329	13	316	342
11	333	12	321	345
12	338	12	326	350
13	342	12	330	354
14	346	11	335	357
15	351	11	340	362
16	354	11	343	365
17	358	11	347	369
18	362	11	351	373
19	366	11	355	377
20	370	11	359	381
21	374	11	363	385
22	377	11	366	388
23	381	11	370	392
24	385	11	374	396
25	389	11	378	400
26	393	11	382	404
27	396	11	385	407
28	401	11	390	412
29	405	12	393	417
30	409	12	397	421
31	413	12	401	425
32	418	12	406	430
33	423	13	410	436
34	428	13	415	441
35	434	14	420	448
36	440	15	425	455
37	447	15	432	462
38	455	16	439	471
39	464	18	446	482
40	475	19	456	494
41	487	21	466	508
42	503	23	480	526
43	522	27	495	549
44	551	35	516	586
45	576	47	529	623

Note. [a]LOSS was set to 240.

Table 4.24 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 7 Form B

	Form B			
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS – 1*SEM*	SS + 1*SEM*
0	240[a]	46	240[a]	268
1	245	33	240[a]	278
2	269	24	245	293
3	283	20	263	303
4	294	17	277	311
5	302	16	286	318
6	310	15	295	325
7	316	14	302	330
8	322	13	309	335
9	327	13	314	340
10	332	12	320	344
11	337	12	325	349
12	342	12	330	354
13	346	12	334	358
14	350	11	339	361
15	354	11	343	365
16	358	11	347	369
17	362	11	351	373
18	366	11	355	377
19	370	11	359	381
20	373	11	362	384
21	377	11	366	388
22	381	11	370	392
23	385	11	374	396
24	389	11	378	400
25	393	11	382	404
26	397	11	386	408
27	401	12	389	413
28	405	12	393	417
29	410	12	398	422
30	414	12	402	426
31	419	13	406	432
32	424	13	411	437
33	430	13	417	443
34	436	14	422	450
35	442	14	428	456
36	448	15	433	463
37	456	16	440	472
38	463	16	447	479
39	472	17	455	489
40	482	18	464	500
41	493	20	473	513
42	507	22	485	529
43	525	26	499	551
44	551	34	517	585
45	576	47	529	623

Note. [a]LOSS was set to 240.

Table 4.25 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 8 Form A

		Form A		
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS – 1*SEM*	SS + 1*SEM*
0	240[a]	44	240[a]	269
1	248	32	240[a]	280
2	272	23	249	295
3	287	20	267	307
4	298	17	281	315
5	307	16	291	323
6	315	15	300	330
7	322	14	308	336
8	328	13	315	341
9	333	13	320	346
10	338	12	326	350
11	343	12	331	355
12	348	11	337	359
13	352	11	341	363
14	356	11	345	367
15	360	11	349	371
16	364	11	353	375
17	367	11	356	378
18	371	10	361	381
19	374	10	364	384
20	378	10	368	388
21	382	10	372	392
22	385	10	375	395
23	389	10	379	399
24	392	10	382	402
25	396	11	385	407
26	400	11	389	411
27	403	11	392	414
28	407	11	396	418
29	412	11	401	423
30	416	12	404	428
31	420	12	408	432
32	425	12	413	437
33	430	13	417	443
34	436	13	423	449
35	442	14	428	456
36	449	15	434	464
37	457	16	441	473
38	467	18	449	485
39	479	20	459	499
40	493	22	471	515
41	510	24	486	534
42	531	26	505	557
43	554	28	526	582
44	585	34	551	619
45	610	46	564	650[b]

Note. [a]LOSS was set to 240. [b]HOSS was set to 650.

Table 4.26 The 2006 MSA-Reading Raw Score to Scale Score Conversion Table: Grade 8 Form B

		Form B		
Raw Score	Scale Score (SS)	Standard Error (*SEM*)	SS – 1*SEM*	SS + 1*SEM*
0	240[a]	45	240[a]	255
1	240[a]	33	240[a]	266
2	259	24	240[a]	283
3	275	21	254	296
4	288	19	269	307
5	298	17	281	315
6	307	16	291	323
7	315	15	300	330
8	321	14	307	335
9	328	13	315	341
10	333	13	320	346
11	338	12	326	350
12	343	12	331	355
13	348	12	336	360
14	352	11	341	363
15	357	11	346	368
16	361	11	350	372
17	365	11	354	376
18	369	11	358	380
19	372	11	361	383
20	376	11	365	387
21	380	11	369	391
22	384	11	373	395
23	387	11	376	398
24	391	11	380	402
25	395	11	384	406
26	399	11	388	410
27	403	11	392	414
28	407	11	396	418
29	411	11	400	422
30	415	12	403	427
31	420	12	408	432
32	424	12	412	436
33	429	12	417	441
34	434	13	421	447
35	440	13	427	453
36	446	14	432	460
37	453	15	438	468
38	461	16	445	477
39	469	17	452	486
40	479	18	461	497
41	490	19	471	509
42	504	21	483	525
43	521	25	496	546
44	547	33	514	580
45	571	45	526	616

Note. [a]LOSS was set to 240.

Table 4. 27 The 2006 MSA-Reading Score Difference between Rater 1 and Rater 2: Grade 3

Form	Item No.	Perfect		Adjacent		Discrepancy		Total	
		N	%	*N*	%	*N*	%	*N*	%
A	76	21,274	81.1	4,845	18.5	107	0.4	26,226	100.0
	79	18,368	70.0	7,583	28.9	275	1.0	26,226	100.0
	82	19,443	74.1	6,341	24.2	442	1.7	26,226	100.0
	85	17,325	66.1	8,276	31.6	625	2.4	26,226	100.0
B	76	17,841	67.1	8,414	31.6	343	1.3	26,598	100.0
	79	18,526	69.7	7,739	29.1	333	1.3	26,598	100.0
	82	18,595	69.9	7,511	28.2	492	1.8	26,598	100.0
	85	19,422	73.0	6,952	26.1	224	0.8	26,598	100.0

Table 4. 28 The 2006 MSA-Reading Score Difference between Rater 1 and Rater 2: Grade 4

Form	Item No.	Perfect		Adjacent		Discrepancy		Total	
		N	%	*N*	%	*N*	%	*N*	%
A	76	17,643	66.5	8,539	32.2	343	1.3	26,525	100.0
	79	20,072	75.7	6,314	23.8	139	0.5	26,525	100.0
	82	20,061	75.6	6,255	23.6	209	0.8	26,525	100.0
	85	18,961	71.5	7,367	27.8	187	0.7	26,515	100.0
B	76	18,079	67.1	8,684	32.2	199	0.7	26,962	100.0
	79	18,405	68.3	8,353	31.0	204	0.8	26,962	100.0
	82	17,862	66.2	8,614	31.9	486	1.8	26,962	100.0
	85	17,896	66.4	8,602	31.9	464	1.7	26,962	100.0

Table 4. 29 The 2006 MSA-Reading Score Difference between Rater 1 and Rater 2: Grade 5

Form	Item No.	Perfect		Adjacent		Discrepancy		Total	
		N	%	*N*	%	*N*	%	*N*	%
A	65	18,007	65.3	8,422	30.6	1,135	4.1	27,564	100.0
	68	17,752	64.4	9,058	32.9	754	2.7	27,564	100.0
	71	19,083	69.2	7,939	28.8	542	2.0	27,564	100.0
	74	17,998	65.3	8,335	30.2	1,231	4.5	27,564	100.0
B	65	17,869	64.3	9,566	34.4	364	1.3	27,799	100.0
	68	17,715	63.7	9,700	34.9	384	1.4	27,799	100.0
	71	19,940	71.7	7,681	27.6	178	0.6	27,799	100.0
	74	19,898	71.6	7,746	27.9	155	0.6	27,799	100.0

Table 4. 31 The 2006 MSA-Reading Score Difference between Rater 1 and Rater 2: Grade 6

Form	Item No.	Perfect		Adjacent		Discrepancy		Total	
		N	%	*N*	%	*N*	%	*N*	%
A	65	19562	68.9	8564	30.2	278	1.0	28404	100.0
	68	19491	68.6	8603	30.3	310	1.1	28404	100.0
	71	18156	63.9	9381	33.0	867	3.1	28404	100.0
	74	20239	71.3	7527	26.5	638	2.2	28404	100.0
B	65	18573	64.8	9636	33.6	440	1.5	28649	100.0
	68	19038	66.5	9150	31.9	461	1.6	28649	100.0
	71	18240	63.7	9745	34.0	664	2.3	28649	100.0
	74	17911	62.5	10166	35.5	572	2.0	28649	100.0

Table 4. 31 The 2006 MSA-Reading Score Difference between Rater 1 and Rater 2: Grade 7

Form	Item No.	Perfect		Adjacent		Discrepancy		Total	
		N	%	*N*	%	*N*	%	*N*	%
A	65	19,118	66.0	9,521	32.9	332	1.1	28,971	100.0
	68	17,926	61.9	10,387	35.9	658	2.3	28,971	100.0
	71	22,526	77.8	5,911	20.4	534	1.8	28,971	100.0
	74	19,696	68.0	8,963	30.9	312	1.1	28,971	100.0
B	65	20,013	68.8	8,540	29.4	539	1.9	29,092	100.0
	68	18,333	63.0	9,795	33.7	964	3.3	29,092	100.0
	71	18,582	63.9	9,661	33.2	849	2.9	29,092	100.0
	74	20,450	70.3	8,343	28.7	299	1.0	29,092	100.0

Table 4. 32 The 2006 MSA-Reading Score Difference between Rater 1 and Rater 2: Grade 8

Form	Item No.	Perfect		Adjacent		Discrepancy		Total	
		N	%	*N*	%	*N*	%	*N*	%
A	65	20,313	67.5	9,525	31.7	243	0.8	30,081	100.0
	68	18,837	62.6	10,673	35.5	571	1.9	30,081	100.0
	71	21,209	70.5	8,398	27.9	474	1.6	30,081	100.0
	74	20,331	67.6	9,518	31.6	232	0.8	30,081	100.0
B	65	21,053	69.9	8,877	29.5	184	0.6	30,114	100.0
	68	21,851	72.6	8,145	27.0	118	0.4	30,114	100.0
	71	21,345	70.9	8,657	28.7	112	0.4	30,114	100.0
	74	22,930	76.1	7,003	23.3	181	0.6	30,114	100.0

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APPENDIX A: THE 2006 MSA-READING STRATIFIED RANDOM SAMPLING

Table A.1 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 3 LEA

LEA	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	344	1.14	32	1.07	**0.07**	338	1.13	32	1.07	**0.06**
2	2612	8.69	257	8.57	**0.12**	2612	8.71	257	8.57	**0.14**
3	3680	12.24	369	12.30	**-0.06**	3680	12.27	369	12.30	**-0.03**
4	603	2.01	60	2.00	**0.01**	604	2.01	60	2.00	**0.01**
5	211	0.70	17	0.57	**0.13**	209	0.70	17	0.57	**0.13**
6	986	3.28	101	3.37	**-0.09**	981	3.27	101	3.37	**-0.10**
7	576	1.92	56	1.87	**0.05**	576	1.92	56	1.87	**0.05**
8	939	3.12	89	2.97	**0.15**	933	3.11	89	2.97	**0.14**
9	166	0.55	15	0.50	**0.05**	166	0.55	15	0.50	**0.05**
10	1434	4.77	144	4.80	**-0.03**	1427	4.76	144	4.80	**-0.04**
11	144	0.48	16	0.53	**-0.05**	152	0.51	16	0.53	**-0.02**
12	1460	4.86	144	4.80	**0.06**	1460	4.87	144	4.80	**0.07**
13	1786	5.94	173	5.77	**0.17**	1767	5.89	173	5.77	**0.12**
14	83	0.28	8	0.27	**0.01**	84	0.28	8	0.27	**0.01**
15	4812	16.01	489	16.30	**-0.29**	4793	15.98	489	16.30	**-0.32**
16	4498	14.96	464	15.47	**-0.51**	4537	15.12	464	15.47	**-0.35**
17	255	0.85	28	0.93	**-0.08**	259	0.86	28	0.93	**-0.07**
18	573	1.91	56	1.87	**0.04**	573	1.91	56	1.87	**0.04**
19	90	0.30	10	0.33	**-0.03**	91	0.30	10	0.33	**-0.03**
20	150	0.50	14	0.47	**0.03**	148	0.49	14	0.47	**0.02**
21	778	2.59	75	2.50	**0.09**	781	2.60	75	2.50	**0.10**
22	562	1.87	51	1.70	**0.17**	559	1.86	51	1.70	**0.16**
23	226	0.75	21	0.70	**0.05**	221	0.74	21	0.70	**0.04**
24	52	0.17	5	0.17	**0.00**	46	0.15	5	0.17	**-0.02**
30	2905	9.66	291	9.70	**-0.04**	2869	9.56	291	9.70	**-0.14**
31	135	0.45	15	0.50	**-0.05**	135	0.45	15	0.50	**-0.05**
Total	30060	100.00	3000	100.00	0.00	30001	100	3000	100.00	0.00

Note: 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City; 31. Edison Partnership

Table A.2 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 3 Ethnicity

Race	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	158	0.53	19	0.63	**-0.11**	131	0.44	8	0.27	**0.17**
2	1653	5.50	166	5.53	**-0.03**	1686	5.62	183	6.10	**-0.48**
3	11276	37.51	1149	38.30	**-0.79**	11296	37.65	1166	38.87	**-1.21**
4	14435	48.02	1413	47.10	**0.92**	14339	47.80	1397	46.57	**1.23**
5	2486	8.27	245	8.17	**0.10**	2497	8.32	238	7.93	**0.39**
Miss	52	0.17	8	0.27	**-0.09**	52	0.17	8	0.27	**-0.09**
Total	30,060	100.00	3000	100.00	0.00	30,001	100.00	3000	100.00	0.00

Note: 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.3 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 3 Gender

Gender	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
F	14511	48.27	1459	48.63	**-0.36**	14625	48.65	1435	47.83	**0.82**
M	15508	51.59	1534	51.13	**0.46**	15328	51.09	1559	51.97	**-0.88**
Miss	41	0.14	7	0.23	**-0.10**	48	0.16	6	0.20	**-0.04**
Total	30,060	100.00	3000	100.00	0.00	30,001	100.00	3000	100.00	0.00

Note: F. Female; M. Male; Miss: Missing

Table A.4 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 4 LEA

LEA	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	333	1.09	31	1.03	**0.06**	331	1.08	31	1.03	**0.05**
2	2688	8.77	259	8.63	**0.14**	2644	8.66	259	8.63	**0.03**
3	3809	12.42	372	12.40	**0.02**	3783	12.39	372	12.40	**-0.01**
4	635	2.07	61	2.03	**0.04**	632	2.07	61	2.03	**0.04**
5	177	0.58	18	0.60	**-0.02**	177	0.58	18	0.60	**-0.02**
6	910	2.97	100	3.33	**-0.36**	890	2.91	100	3.33	**-0.42**
7	583	1.90	56	1.87	**0.03**	585	1.92	56	1.87	**0.05**
8	925	3.02	87	2.90	**0.12**	915	3.00	87	2.90	**0.10**
9	153	0.50	14	0.47	**0.03**	155	0.51	14	0.47	**0.04**
10	1482	4.83	142	4.73	**0.10**	1470	4.81	142	4.73	**0.08**
11	170	0.55	17	0.57	**-0.02**	168	0.55	17	0.57	**-0.02**
12	1483	4.84	142	4.73	**0.11**	1470	4.81	142	4.73	**0.08**
13	1832	5.97	180	6.00	**-0.03**	1823	5.97	180	6.00	**-0.03**
14	74	0.24	8	0.27	**-0.03**	75	0.25	8	0.27	**-0.02**
15	4988	16.27	483	16.10	**0.17**	4979	16.31	483	16.10	**0.21**
16	4665	15.21	464	15.47	**-0.26**	4707	15.42	464	15.47	**-0.05**
17	287	0.94	25	0.83	**0.11**	289	0.95	25	0.83	**0.12**
18	585	1.91	56	1.87	**0.04**	585	1.92	56	1.87	**0.05**
19	108	0.35	9	0.30	**0.05**	104	0.34	9	0.30	**0.04**
20	150	0.49	15	0.50	**-0.01**	149	0.49	15	0.50	**-0.01**
21	782	2.55	70	2.33	**0.22**	777	2.54	70	2.33	**0.21**
22	519	1.69	49	1.63	**0.06**	525	1.72	49	1.63	**0.09**
23	221	0.72	20	0.67	**0.05**	220	0.72	20	0.67	**0.05**
24	71	0.23	7	0.23	**0.00**	63	0.21	7	0.23	**-0.02**
30	2892	9.43	299	9.97	**-0.54**	2878	9.43	299	9.97	**-0.54**
31	142	0.46	16	0.53	**-0.07**	140	0.46	16	0.53	**-0.07**
Total	30,664	100.00	3000	100.00	0.00	30,534	100.00	3000	100.00	0.00

Note: 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City; 31. Edison Partnership

Table A.5 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 4 Ethnicity

Race	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	110	0.36	10	0.33	**0.03**	113	0.37	10	0.33	**0.04**
2	1646	5.37	157	5.23	**0.13**	1625	5.32	170	5.67	**-0.34**
3	11532	37.61	1164	38.80	**-1.19**	11384	37.28	1126	37.53	**-0.25**
4	14822	48.34	1420	47.33	**1.00**	14857	48.66	1445	48.17	**0.49**
5	2492	8.13	244	8.13	**-0.01**	2485	8.14	242	8.07	**0.07**
Miss	62	0.20	5	0.17	**0.04**	70	0.23	7	0.23	**0.00**
Total	30,664	100.00	3000	100.00	0.00	30,534	100.00	3000	100.00	0.00

Note: 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.6 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 4 Gender

Gender	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
F	14959	48.78	1443	48.63	**-0.36**	15017	49.18	1443	48.10	**1.08**
M	15674	51.12	1554	51.13	**0.46**	15478	50.69	1554	51.80	**-1.11**
Miss	31	0.10	3	0.23	**-0.10**	39	0.13	3	0.10	**0.03**
Total	30,664	100.00	3000	100.00	0.00	30,534	100.00	3000	100.00	0.00

Note: F. Female; M. Male; Miss: Missing

Table A.7 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 5 LEA

LEA	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	332	1.05	32	1.03	**0.02**	326	1.03	32	1.07	**-0.04**
2	2728	8.64	254	8.63	**0.01**	2743	8.68	254	8.46	**0.22**
3	3934	12.46	361	12.4	**0.06**	3923	12.42	361	12.03	**0.39**
4	653	2.07	60	2.03	**0.04**	647	2.05	60	2.00	**0.05**
5	195	0.62	18	0.60	**0.02**	197	0.62	18	0.60	**0.02**
6	1053	3.33	101	3.33	**0.00**	1051	3.33	101	3.36	**-0.03**
7	610	1.93	57	1.87	**0.06**	607	1.92	57	1.90	**0.02**
8	965	3.06	90	2.90	**0.16**	953	3.02	90	3.00	**0.02**
9	153	0.48	16	0.47	**0.01**	156	0.49	16	0.53	**-0.04**
10	1509	4.78	137	4.73	**0.05**	1517	4.80	137	4.56	**0.24**
11	183	0.58	16	0.57	**0.01**	184	0.58	16	0.53	**0.05**
12	1520	4.81	145	4.73	**0.08**	1520	4.81	145	4.83	**-0.02**
13	1943	6.15	171	6.00	**0.15**	1934	6.12	171	5.70	**0.42**
14	80	0.25	8	0.27	**-0.02**	77	0.24	8	0.27	**-0.03**
15	5073	16.06	467	16.10	**-0.04**	5073	16.06	467	15.56	**0.50**
16	4802	15.20	484	15.47	**-0.27**	4820	15.26	484	16.12	**-0.86**
17	268	0.85	26	0.83	**0.02**	268	0.85	26	0.87	**-0.02**
18	606	1.92	59	1.87	**0.05**	592	1.87	59	1.97	**-0.10**
19	90	0.28	11	0.30	**-0.02**	88	0.28	11	0.37	**-0.09**
20	158	0.50	14	0.50	**0.00**	155	0.49	14	0.47	**0.02**
21	744	2.36	70	2.33	**0.03**	747	2.36	70	2.33	**0.03**
22	537	1.70	53	1.63	**0.07**	535	1.69	53	1.77	**-0.08**
23	226	0.72	22	0.67	**0.05**	222	0.70	22	0.73	**-0.03**
24	105	0.33	9	0.23	**0.10**	91	0.29	9	0.30	**-0.01**
30	2965	9.39	306	9.97	**-0.58**	3017	9.55	306	10.19	**-0.64**
31	153	0.48	15	0.53	**-0.05**	151	0.48	15	0.50	**-0.02**
Total	31,585	100.00	3002	100.00	0.00	31,594	100.00	3002	100.00	0.00

Note: 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City; 31. Edison Partnership

Table A.8 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 5 Ethnicity

Race	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	130	0.41	10	0.33	**0.08**	122	0.39	7	0.23	**0.15**
2	1614	5.11	136	4.53	**0.58**	1654	5.24	140	4.66	**0.57**
3	11982	37.94	1172	39.04	**-1.10**	12052	38.15	1196	39.84	**-1.69**
4	15444	48.90	1436	47.83	**1.06**	15288	48.39	1437	47.87	**0.52**
5	2357	7.46	240	7.99	**-0.53**	2416	7.65	213	7.10	**0.55**
Miss	58	0.18	8	0.27	**-0.08**	62	0.20	9	0.30	**-0.10**
Total	31,585	100.00	3002	100.00	0.00	31,594	100.00	3002	100.00	0.00

Note: 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.9 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 5 Gender

Gender	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
F	15445	48.90	1451	48.33	**0.57**	15337	48.54	1477	49.20	**-0.66**
M	16098	50.97	1546	51.50	**-0.53**	16222	51.35	1522	50.70	**0.65**
Miss	42	0.13	5	0.17	**-0.03**	35	0.11	3	0.10	**0.01**
Total	31,585	100.00	3002	100.00	0.00	31,594	100.00	3002	100.00	0.00

Note: F. Female; M. Male; Miss: Missing

Table A.10 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 6 LEA

LEA	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	334	1.03	34	1.13	**-0.10**	329	1.02	34	1.13	**-0.11**
2	2739	8.48	250	8.33	**0.15**	2689	8.37	250	8.33	**0.04**
3	3895	12.06	368	12.26	**-0.20**	3860	12.01	368	12.26	**-0.25**
4	676	2.09	62	2.07	**0.02**	667	2.08	62	2.07	**0.01**
5	200	0.62	18	0.60	**0.02**	198	0.62	18	0.60	**0.02**
6	1107	3.43	103	3.43	**0.00**	1120	3.49	103	3.43	**0.06**
7	649	2.01	61	2.03	**-0.02**	638	1.99	61	2.03	**-0.04**
8	997	3.09	92	3.07	**0.02**	1007	3.13	92	3.07	**0.06**
9	175	0.54	16	0.53	**0.01**	171	0.53	16	0.53	**0.00**
10	1479	4.58	137	4.57	**0.01**	1475	4.59	137	4.57	**0.02**
11	183	0.57	19	0.63	**-0.06**	182	0.57	19	0.63	**-0.06**
12	1537	4.76	136	4.53	**0.23**	1530	4.76	136	4.53	**0.23**
13	1877	5.81	176	5.86	**-0.05**	1872	5.83	176	5.86	**-0.03**
14	91	0.28	9	0.30	**-0.02**	87	0.27	9	0.30	**-0.03**
15	4986	15.44	462	15.39	**0.05**	4977	15.49	462	15.39	**0.10**
16	5143	15.93	478	15.93	**0.00**	5143	16.01	478	15.93	**0.08**
17	291	0.90	26	0.87	**0.03**	288	0.90	26	0.87	**0.03**
18	646	2.00	54	1.80	**0.20**	648	2.02	54	1.80	**0.22**
19	128	0.40	11	0.37	**0.03**	127	0.40	11	0.37	**0.03**
20	157	0.49	17	0.57	**-0.08**	157	0.49	17	0.57	**-0.08**
21	792	2.45	70	2.33	**0.12**	780	2.43	70	2.33	**0.10**
22	506	1.57	48	1.60	**-0.03**	508	1.58	48	1.60	**-0.02**
23	249	0.77	22	0.73	**0.04**	248	0.77	22	0.73	**0.04**
24	153	0.47	15	0.50	**-0.03**	118	0.37	15	0.50	**-0.13**
30	3159	9.78	306	10.2	**-0.42**	3171	9.87	306	10.20	**-0.33**
31	136	0.42	11	0.37	**0.05**	137	0.43	11	0.37	**0.06**
Total	32,285	100.00	3001	100.00	0.00	32,127	100.00	3001	100.00	0.00

Note: 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City; 31. Edison Partnership

Table A.11 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 6 Ethnicity

Race	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	140	0.43	16	0.53	**-0.10**	106	0.33	15	0.50	**-0.17**
2	1568	4.86	156	5.20	**-0.34**	1645	5.12	133	4.43	**0.69**
3	12714	39.38	1180	39.32	**0.06**	12697	39.52	1197	39.89	**-0.37**
4	15484	47.96	1418	47.25	**0.71**	15187	47.27	1422	47.38	**-0.11**
5	2270	7.03	220	7.33	**-0.30**	2377	7.40	225	7.50	**-0.10**
Miss	109	0.34	11	0.37	**-0.03**	115	0.36	9	0.30	**0.06**
Total	32,285	100.00	3001	100.00	0.00	32,127	100.00	3001	100.00	0.00

Note: 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.12 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 6 Gender

Gender	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
F	15553	48.17	1422	47.38	**0.79**	15480	48.18	1430	47.65	**0.53**
M	16683	51.67	1577	52.55	**-0.87**	16590	51.64	1567	52.22	**-0.58**
Miss	49	0.15	2	0.07	**0.09**	57	0.18	4	0.13	**0.04**
Total	32,285	100.00	3001	100.00	0.00	32,127	100.00	3001	100.00	0.00

Note: F. Female; M. Male; Miss: Missing

Table A.13 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 7 LEA

LEA	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	373	1.13	33	1.10	**0.03**	365	1.12	33	1.10	**0.02**
2	2795	8.50	257	8.57	**-0.07**	2695	8.25	257	8.57	**-0.32**
3	4050	12.32	371	12.37	**-0.05**	4021	12.31	371	12.37	**-0.06**
4	692	2.11	61	2.03	**0.08**	683	2.09	61	2.03	**0.06**
5	202	0.61	19	0.63	**-0.02**	199	0.61	19	0.63	**-0.02**
6	1148	3.49	102	3.40	**0.09**	1141	3.49	102	3.40	**0.09**
7	665	2.02	58	1.93	**0.09**	665	2.04	58	1.93	**0.11**
8	1047	3.19	89	2.97	**0.22**	1054	3.23	89	2.97	**0.26**
9	168	0.51	16	0.53	**-0.02**	165	0.51	16	0.53	**-0.02**
10	1507	4.58	137	4.57	**0.01**	1501	4.60	137	4.57	**0.03**
11	209	0.64	16	0.53	**0.11**	209	0.64	16	0.53	**0.11**
12	1505	4.58	138	4.60	**-0.02**	1491	4.57	138	4.60	**-0.03**
13	1963	5.97	170	5.67	**0.30**	1958	6.00	170	5.67	**0.33**
14	88	0.27	9	0.30	**-0.03**	87	0.27	9	0.30	**-0.03**
15	5121	15.58	462	15.40	**0.18**	5099	15.61	462	15.40	**0.21**
16	5095	15.50	481	16.03	**-0.53**	5087	15.58	481	16.03	**-0.45**
17	303	0.92	26	0.87	**0.05**	294	0.90	26	0.87	**0.03**
18	604	1.84	55	1.83	**0.01**	603	1.85	55	1.83	**0.02**
19	118	0.36	11	0.37	**-0.01**	118	0.36	11	0.37	**-0.01**
20	178	0.54	15	0.50	**0.04**	178	0.55	15	0.50	**0.05**
21	784	2.39	71	2.37	**0.02**	784	2.40	71	2.37	**0.03**
22	538	1.64	49	1.63	**0.01**	536	1.64	49	1.63	**0.01**
23	245	0.75	24	0.80	**-0.05**	246	0.75	24	0.80	**-0.05**
24	231	0.70	19	0.63	**0.07**	225	0.69	19	0.63	**0.06**
30	3243	9.87	311	10.37	**-0.50**	3252	9.96	311	10.37	**-0.41**
Total	32,872	100.00	3000	100.00	0.00	32,656	100.00	3000	100.00	0.00

Note: 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City

Table A.14 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 7 Ethnicity

Race	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	132	0.40	16	0.53	**-0.13**	119	0.36	10	0.33	**0.03**
2	1589	4.83	148	4.93	**-0.10**	1577	4.83	141	4.70	**0.13**
3	12965	39.44	1173	39.10	**0.34**	12880	39.44	1209	40.30	**-0.86**
4	15824	48.14	1420	47.33	**0.80**	15734	48.18	1439	47.97	**0.21**
5	2235	6.80	227	7.57	**-0.77**	2230	6.83	193	6.43	**0.40**
Miss	127	0.39	16	0.53	**-0.15**	116	0.36	8	0.27	**0.09**
Total	32,872	100.00	3000	100.00	0.00	32,656	100.00	3000	100.00	0.00

Note: 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.15 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 7 Gender

Gender	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
F	15984	48.62	1441	48.03	**0.59**	15873	48.61	1440	48.00	**0.61**
M	16836	51.22	1553	51.77	**-0.55**	16732	51.24	1554	51.80	**-0.56**
Miss	52	0.16	6	0.20	**-0.04**	51	0.16	6	0.20	**-0.04**
Total	32,872	100.00	3000	100.00	0.00	32,656	100.00	3000	100.00	0.00

Note: F. Female; M. Male; Miss: Missing

Table A.16 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 8 LEA

LEA	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	370	1.09	34	1.13	**-0.04**	367	1.09	34	1.13	**-0.04**
2	2898	8.57	252	8.40	**0.17**	2822	8.40	252	8.40	**0.00**
3	4197	12.41	378	12.60	**-0.19**	4172	12.42	378	12.6	**-0.18**
4	702	2.08	63	2.10	**-0.02**	695	2.07	63	2.10	**-0.03**
5	222	0.66	20	0.67	**-0.01**	216	0.64	20	0.67	**-0.03**
6	1162	3.44	105	3.50	**-0.06**	1157	3.44	105	3.50	**-0.06**
7	657	1.94	58	1.93	**0.01**	657	1.96	58	1.93	**0.03**
8	1045	3.09	92	3.07	**0.02**	1045	3.11	92	3.07	**0.04**
9	179	0.53	16	0.53	**0.00**	177	0.53	16	0.53	**0.00**
10	1560	4.61	137	4.57	**0.04**	1558	4.64	137	4.57	**0.07**
11	177	0.52	18	0.60	**-0.08**	179	0.53	18	0.60	**-0.07**
12	1582	4.68	140	4.67	**0.01**	1579	4.70	140	4.67	**0.03**
13	1948	5.76	172	5.73	**0.03**	1946	5.79	172	5.73	**0.06**
14	95	0.28	9	0.30	**-0.02**	91	0.27	9	0.30	**-0.03**
15	5255	15.54	462	15.40	**0.14**	5278	15.71	462	15.40	**0.31**
16	5291	15.65	475	15.83	**-0.18**	5255	15.64	475	15.83	**-0.19**
17	306	0.91	28	0.93	**-0.02**	301	0.90	28	0.93	**-0.03**
18	631	1.87	54	1.80	**0.07**	627	1.87	54	1.80	**0.07**
19	129	0.38	9	0.30	**0.08**	127	0.38	9	0.30	**0.08**
20	173	0.51	16	0.53	**-0.02**	175	0.52	16	0.53	**-0.01**
21	805	2.38	72	2.40	**-0.02**	802	2.39	72	2.40	**-0.01**
22	538	1.59	46	1.53	**0.06**	541	1.61	46	1.53	**0.08**
23	273	0.81	23	0.77	**0.04**	274	0.82	23	0.77	**0.05**
24	300	0.89	25	0.83	**0.06**	268	0.80	25	0.83	**-0.03**
30	3313	9.80	296	9.87	**-0.07**	3294	9.80	296	9.87	**-0.07**
Total	33,808	100.00	3000	100.00	0.00	33,603	100.00	3000	100.00	0.00

Note: 1. Allegany; 2. Anne Arundel; 3. Baltimore; 4. Calvert; 5. Caroline; 6. Carroll; 7. Cecil; 8. Charles; 9. Dorchester; 10. Frederick; 11. Garrett; 12. Harford; 13. Howard; 14. Kent; 15. Montgomery; 16. Prince George's; 17. Queen Anne's; 18. St. Mary's; 19. Somerset; 20. Talbot; 21. Washington; 22. Wicomico; 23. Worcester; 24. LEA 24; 30. Baltimore City

Table A.17 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 8 Ethnicity

Race	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
1	112	0.33	11	0.37	**-0.04**	109	0.32	13	0.43	**-0.11**
2	1635	4.84	148	4.93	**-0.10**	1623	4.83	139	4.63	**0.20**
3	13177	38.98	1173	39.10	**-0.12**	13111	39.02	1161	38.70	**0.32**
4	16563	48.99	1457	48.57	**0.42**	16462	48.99	1489	49.63	**-0.64**
5	2176	6.44	197	6.57	**-0.13**	2164	6.44	190	6.33	**0.11**
Miss	145	0.43	14	0.47	**-0.04**	134	0.40	8	0.27	**0.13**
Total	33808	100.00	3000	100.00	0.00	33603	100.00	3000	100.00	0.00

Note: 1. American Indian; 2. Asian American; 3. African American; 4. White; 5. Hispanic; Miss: Missing

Table A.18 The 2006 MSA-Reading Population and Stratified Random Sampling (S.R.S.): Grade 8 Gender

Gender	Operational Form A					Operational Form B				
	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.	2006 Pop.	% of 2006 Pop.	2006 S. R. S.	% of 2006 S. R. S.	% of Differ.
F	16344	48.34	1457	48.57	**-0.22**	16299	48.50	1465	48.83	**-0.33**
M	17392	51.44	1535	51.17	**0.28**	17245	51.32	1531	51.03	**0.29**
Miss	72	0.21	8	0.27	**-0.05**	59	0.18	4	0.13	**0.04**
Total	33,808	100.00	3000	100.00	0.00	33,603	100.00	3000	100.00	0.00

Note: F. Female; M. Male; Miss: Missing

APPENDIX B: SCALE SCORE HISTOGRAMS AND TUKEY CHARTS

Year 2003 Grade=3

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240	*	175	175	0.27	0.27
250		3	178	0.00	0.28
260		3	181	0.00	0.28
270		15	196	0.02	0.30
280		21	217	0.03	0.34
290		31	248	0.05	0.38
300	*	102	350	0.16	0.54
310	*	227	577	0.35	0.89
320	***	519	1096	0.81	1.70
330	*****	1075	2171	1.67	3.37
340	**********	2017	4188	3.13	6.50
350	**********	3126	7314	4.85	11.34
360	**********	4782	12096	7.42	18.76
370	**********	5482	17578	8.50	27.26
380	**********	6300	23878	9.77	37.04
390	**********	6025	29903	9.35	46.38
400	**********	6565	36468	10.18	56.56
410	**********	5755	42223	8.93	65.49
420	**********	5027	47250	7.80	73.29
430	**********	4773	52023	7.40	80.69
440	**********	3782	55805	5.87	86.56
450	**********	3057	58862	4.74	91.30
460	*********	1896	60758	2.94	94.24
470	*******	1395	62153	2.16	96.40
480	****	892	63045	1.38	97.79
490	****	737	63782	1.14	98.93
500	*	281	64063	0.44	99.37
510	*	201	64264	0.31	99.68
520		67	64331	0.10	99.78
530		56	64387	0.09	99.87
540		28	64415	0.04	99.91
550		20	64435	0.03	99.94
560		22	64457	0.03	99.98
570		0	64457	0.00	99.98
580		10	64467	0.02	99.99
590		2	64469	0.00	100.00
600		2	64471	0.00	100.00
610		0	64471	0.00	100.00
620		0	64471	0.00	100.00
630		0	64471	0.00	100.00
640		0	64471	0.00	100.00
650		0	64471	0.00	100.00

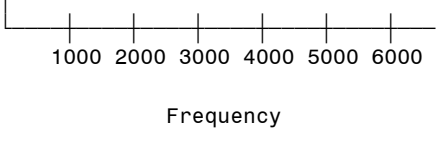


Figure B.1 Year 2003 Scale Score Distribution: Grade3

Year 2006 Grade=3 Form=A

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240		1	1	0.00	0.00
250		0	1	0.00	0.00
260		0	1	0.00	0.00
270		0	1	0.00	0.00
280		1	2	0.00	0.01
290		3	5	0.01	0.02
300		5	10	0.02	0.04
310		13	23	0.05	0.08
320		24	47	0.09	0.17
330	*	108	155	0.39	0.56
340	*	102	257	0.37	0.93
350	********	568	825	2.05	2.97
360	*********	683	1508	2.46	5.44
370	**********	935	2443	3.37	8.81
380	*************************	1945	4388	7.01	15.82
390	**********************	1684	6072	6.07	21.89
400	***	3129	9201	11.28	33.16
410	**	3769	12970	13.58	46.75
420	**********************************	2716	15686	9.79	56.54
430	***********************************	2825	18511	10.18	66.72
440	**********************************	2793	21304	10.07	76.79
450	*********************************	2529	23833	9.12	85.90
460	**************	1048	24881	3.78	89.68
470	**********************	1605	26486	5.78	95.46
480	*******	540	27026	1.95	97.41
490	*****	342	27368	1.23	98.64
500		0	27368	0.00	98.64
510	***	213	27581	0.77	99.41
520	**	113	27694	0.41	99.82
530		0	27694	0.00	99.82
540		37	27731	0.13	99.95
550		0	27731	0.00	99.95
560		0	27731	0.00	99.95
570		13	27744	0.05	100.00
580		0	27744	0.00	100.00
590		0	27744	0.00	100.00
600		1	27745	0.00	100.00
610		0	27745	0.00	100.00
620		0	27745	0.00	100.00
630		0	27745	0.00	100.00
640		0	27745	0.00	100.00
650		0	27745	0.00	100.00

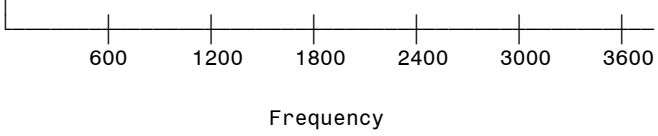


Figure B.2 Year 2006 Scale Score Distribution: Grade 3 Form A

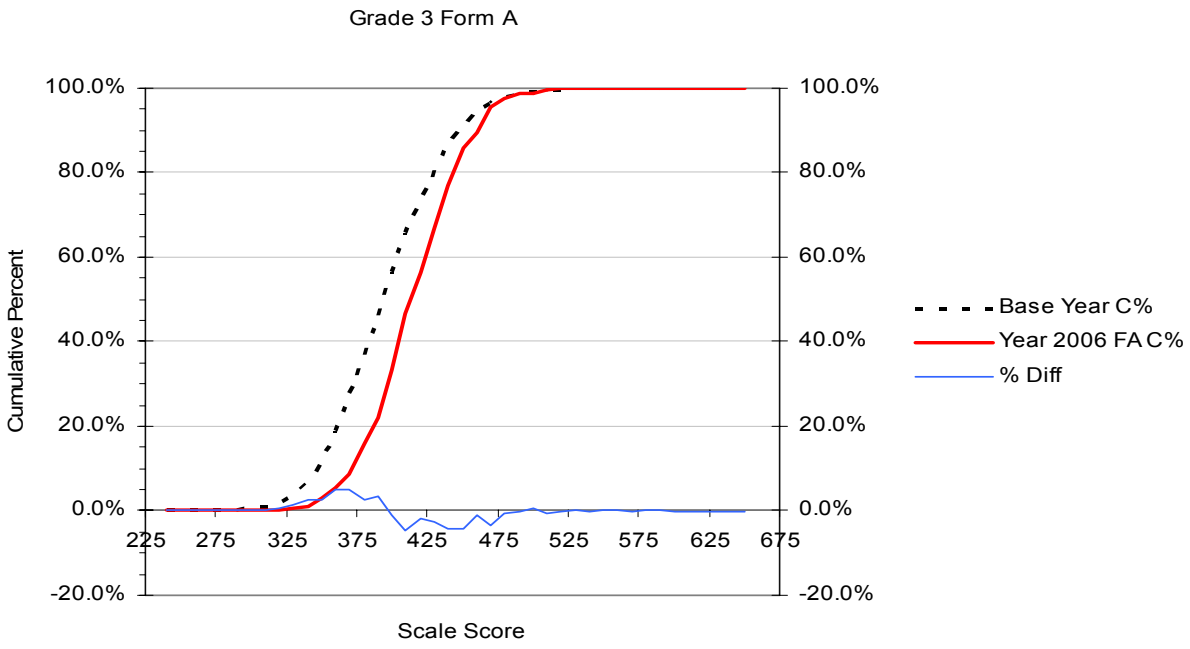


Figure B.3. Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 3 Form A

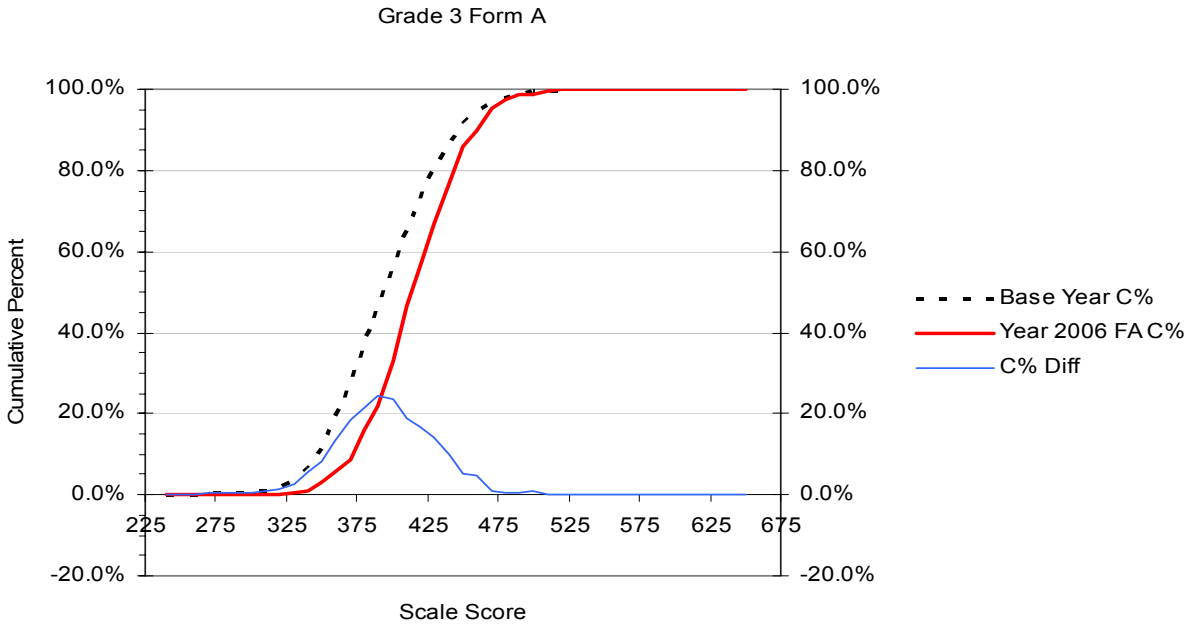


Figure B.4. Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 3 Form A

Year 2006 Grade=3 Form=B

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240		0	0	0.00	0.00
250		3	3	0.01	0.01
260		0	3	0.00	0.01
270		1	4	0.00	0.01
280		0	4	0.00	0.01
290		1	5	0.00	0.02
300		7	12	0.03	0.04
310		27	39	0.10	0.14
320		31	70	0.11	0.25
330	**	143	213	0.51	0.76
340	****	281	494	1.01	1.77
350	******	464	958	1.66	3.43
360	**********	1132	2090	4.05	7.48
370	**********	1056	3146	3.78	11.26
380	**********	1995	5141	7.14	18.40
390	**********	1637	6778	5.86	24.26
400	**********	2932	9710	10.49	34.75
410	**********	2220	11930	7.94	42.69
420	**********	2455	14385	8.79	51.48
430	**********	2754	17139	9.86	61.33
440	**********	2878	20017	10.30	71.63
450	**********	2948	22965	10.55	82.18
460	**********	1285	24250	4.60	86.78
470	**********	1177	25427	4.21	90.99
480	**********	1018	26445	3.64	94.64
490	**********	730	27175	2.61	97.25
500	******	438	27613	1.57	98.82
510		0	27613	0.00	98.82
520	***	207	27820	0.74	99.56
530		0	27820	0.00	99.56
540	*	98	27918	0.35	99.91
550		0	27918	0.00	99.91
560		0	27918	0.00	99.91
570		0	27918	0.00	99.91
580		21	27939	0.08	99.98
590		0	27939	0.00	99.98
600		5	27944	0.02	100.00
610		0	27944	0.00	100.00
620		0	27944	0.00	100.00
630		0	27944	0.00	100.00
640		0	27944	0.00	100.00
650		0	27944	0.00	100.00

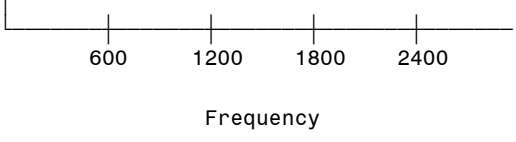


Figure B.5 Year 2006 Scale Score Distribution: Grade 3 Form B

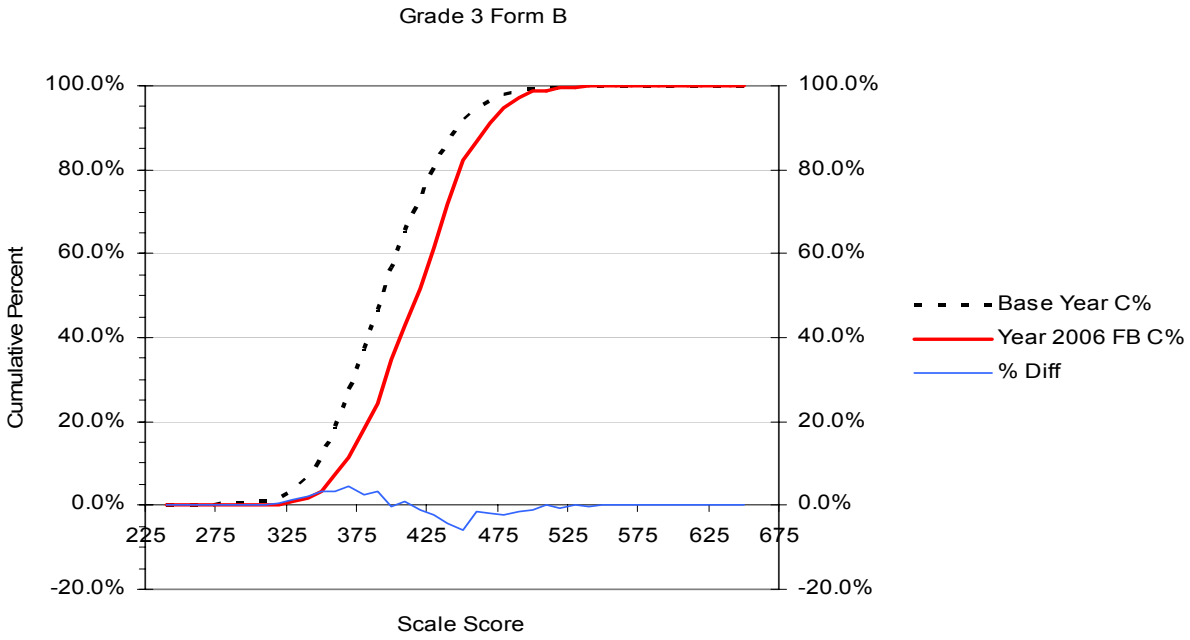


Figure B.6. Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 3 Form B

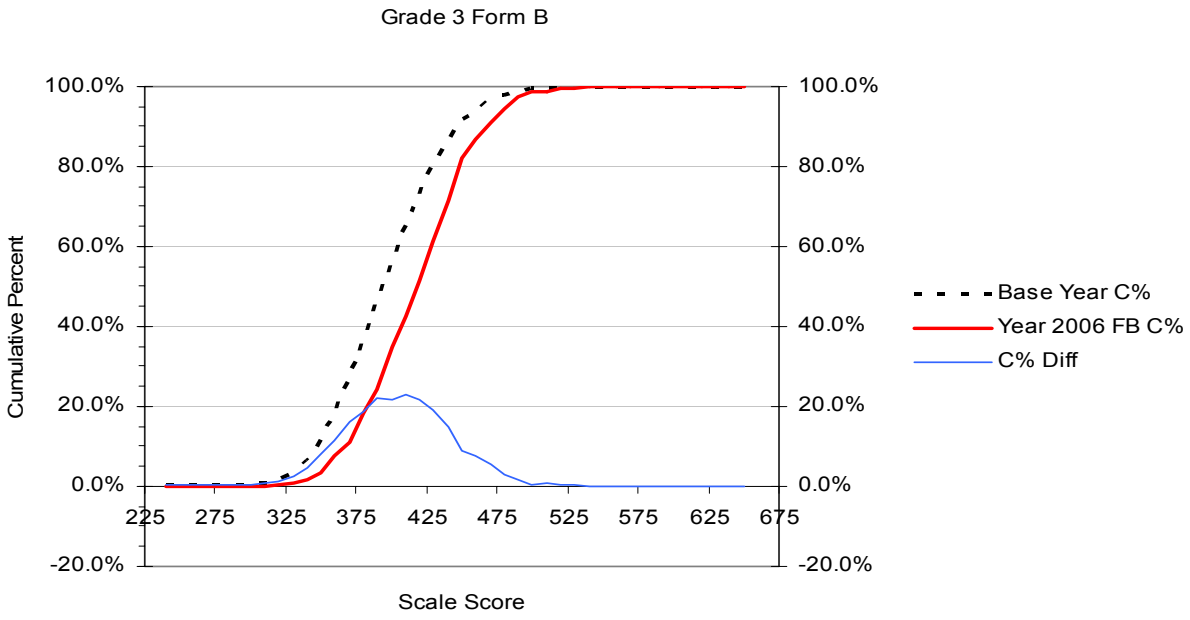


Figure B.7. Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 3 Form B

Year 2004 Grade=4

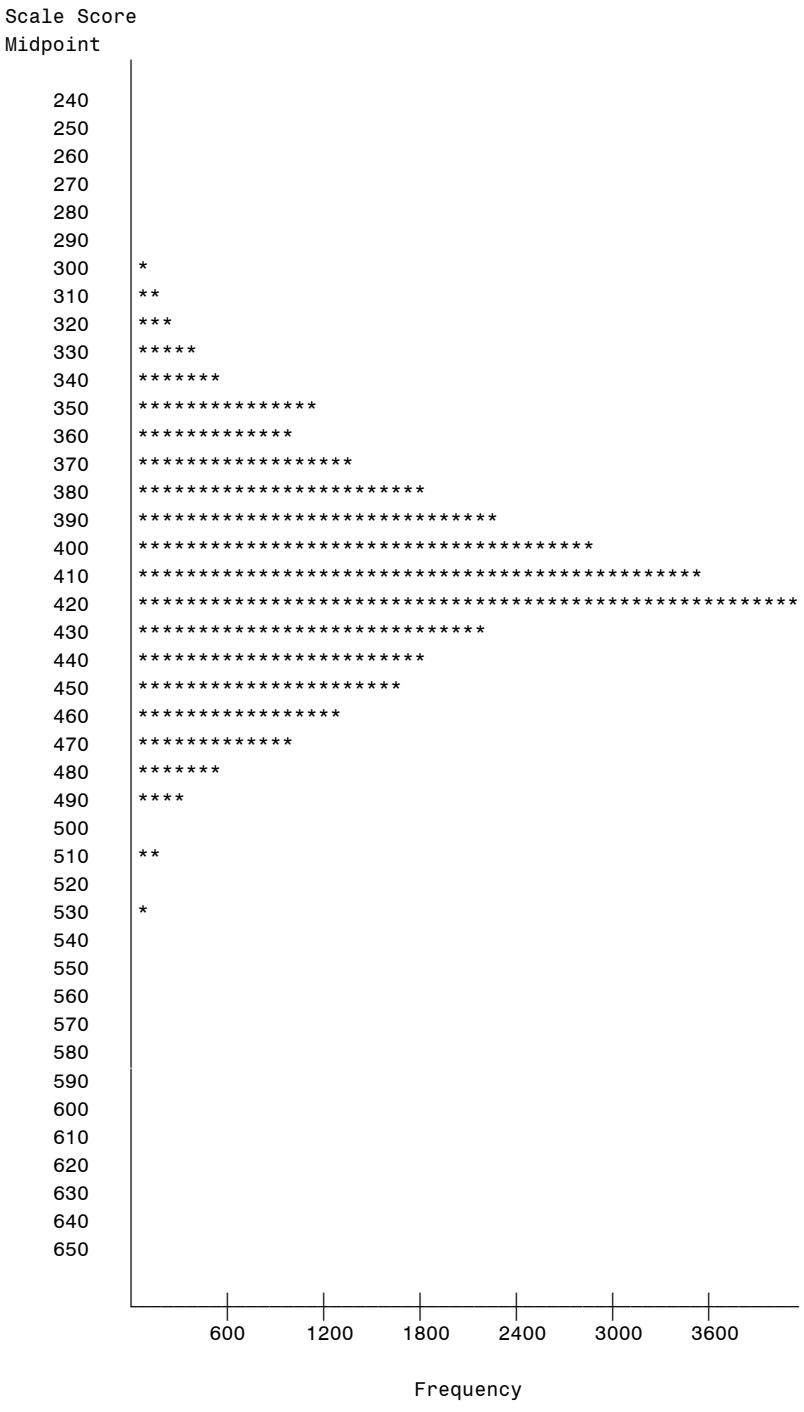
Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240		72	72	0.12	0.12
250		3	75	0.00	0.12
260		1	76	0.00	0.12
270		11	87	0.02	0.14
280		75	162	0.12	0.26
290		75	237	0.12	0.38
300	*	273	510	0.44	0.83
310	**	347	857	0.56	1.39
320	****	896	1753	1.45	2.84
330	********	1516	3269	2.46	5.30
340	**********	2255	5524	3.65	8.95
350	**********	2552	8076	4.13	13.08
360	**********	3552	11628	5.75	18.84
370	**********	4251	15879	6.89	25.72
380	**********	4738	20617	7.68	33.40
390	**********	5806	26423	9.41	42.80
400	**********	6760	33183	10.95	53.76
410	**********	4626	37809	7.49	61.25
420	**********	7417	45226	12.02	73.26
430	**********	4696	49922	7.61	80.87
440	**********	4619	54541	7.48	88.35
450	**********	2514	57055	4.07	92.43
460	*********	1852	58907	3.00	95.43
470	*******	1352	60259	2.19	97.62
480	***	659	60918	1.07	98.68
490	*	239	61157	0.39	99.07
500	*	297	61454	0.48	99.55
510	*	110	61564	0.18	99.73
520		77	61641	0.12	99.86
530		31	61672	0.05	99.91
540		26	61698	0.04	99.95
550		9	61707	0.01	99.96
560		4	61711	0.01	99.97
570		8	61719	0.01	99.98
580		4	61723	0.01	99.99
590		7	61730	0.01	100.00
600		0	61730	0.00	100.00
610		0	61730	0.00	100.00
620		0	61730	0.00	100.00
630		0	61730	0.00	100.00
640		0	61730	0.00	100.00
650		0	61730	0.00	100.00

1000 2000 3000 4000 5000 6000 7000

Frequency

Figure B.8 Year 2004 Scale Score Distribution: Grade 4

Year 2006 Grade=4 Form=A



Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	5	5	0.02	0.02
250	0	5	0.00	0.02
260	7	12	0.02	0.04
270	5	17	0.02	0.06
280	8	25	0.03	0.09
290	15	40	0.05	0.14
300	53	93	0.19	0.33
310	157	250	0.56	0.88
320	262	512	0.93	1.81
330	347	859	1.23	3.04
340	493	1352	1.74	4.78
350	1098	2450	3.88	8.67
360	1000	3450	3.54	12.21
370	1350	4800	4.78	16.98
380	1763	6563	6.24	23.22
390	2254	8817	7.97	31.19
400	2842	11659	10.05	41.25
410	3554	15213	12.57	53.82
420	4141	19354	14.65	68.47
430	2142	21496	7.58	76.05
440	1834	23330	6.49	82.54
450	1653	24983	5.85	88.39
460	1311	26294	4.64	93.03
470	966	27260	3.42	96.44
480	531	27791	1.88	98.32
490	290	28081	1.03	99.35
500	0	28081	0.00	99.35
510	121	28202	0.43	99.78
520	0	28202	0.00	99.78
530	49	28251	0.17	99.95
540	0	28251	0.00	99.95
550	0	28251	0.00	99.95
560	12	28263	0.04	99.99
570	0	28263	0.00	99.99
580	2	28265	0.01	100.00
590	0	28265	0.00	100.00
600	0	28265	0.00	100.00
610	0	28265	0.00	100.00
620	0	28265	0.00	100.00
630	0	28265	0.00	100.00
640	0	28265	0.00	100.00
650	0	28265	0.00	100.00

Figure B.9 Year 2006 Scale Score Distribution: Grade 4 Form A

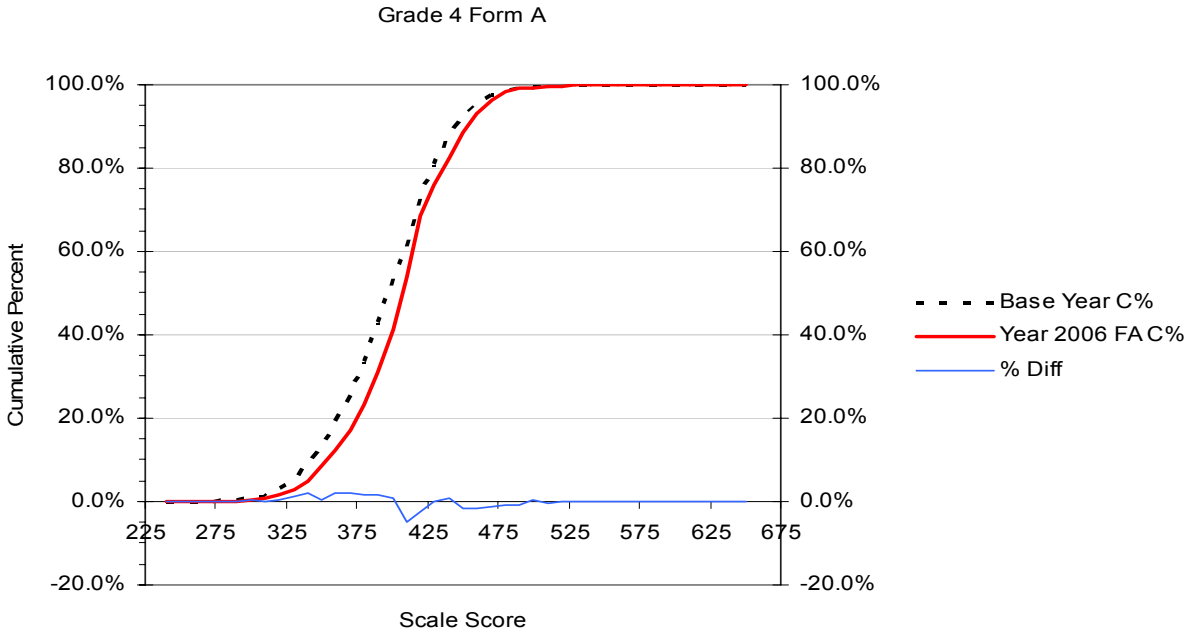


Figure B.10. Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 4 Form A

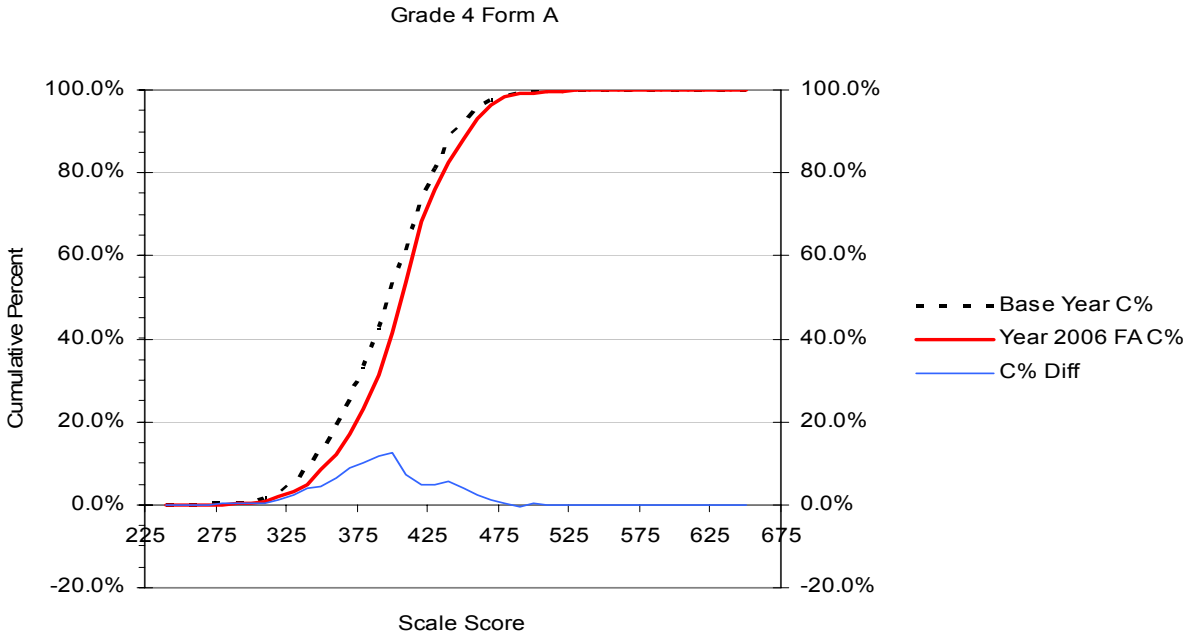


Figure B.11. Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Cumulative percent Differences between CDFs: Grade 4 Form A

Year 2006 Grade=4 Form=B

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240		2	2	0.01	0.01
250		0	2	0.00	0.01
260		4	6	0.01	0.02
270		2	8	0.01	0.03
280		5	13	0.02	0.05
290		36	49	0.13	0.17
300		35	84	0.12	0.30
310	**	148	232	0.52	0.82
320	***	246	478	0.87	1.68
330	*****	376	854	1.32	3.01
340	**********	852	1706	3.00	6.01
350	**********	771	2477	2.72	8.73
360	**********	1586	4063	5.59	14.31
370	**********	1438	5501	5.07	19.38
380	**********	1790	7291	6.31	25.69
390	**********	2229	9520	7.85	33.54
400	**********	2794	12314	9.84	43.38
410	**********	3248	15562	11.44	54.83
420	**********	3649	19211	12.86	67.68
430	**********	1918	21129	6.76	74.44
440	**********	1814	22943	6.39	80.83
450	**********	1660	24603	5.85	86.68
460	**********	1412	26015	4.97	91.65
470	**********	1068	27083	3.76	95.42
480	*********	692	27775	2.44	97.85
490		0	27775	0.00	97.85
500	*****	374	28149	1.32	99.17
510		0	28149	0.00	99.17
520	**	173	28322	0.61	99.78
530		0	28322	0.00	99.78
540	*	51	28373	0.18	99.96
550		0	28373	0.00	99.96
560		0	28373	0.00	99.96
570		0	28373	0.00	99.96
580		10	28383	0.04	100.00
590		0	28383	0.00	100.00
600		1	28384	0.00	100.00
610		0	28384	0.00	100.00
620		0	28384	0.00	100.00
630		0	28384	0.00	100.00
640		0	28384	0.00	100.00
650		0	28384	0.00	100.00

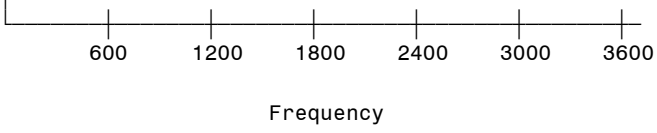


Figure B.12 Year 2006 Scale Score Distribution: Grade 4 Form B

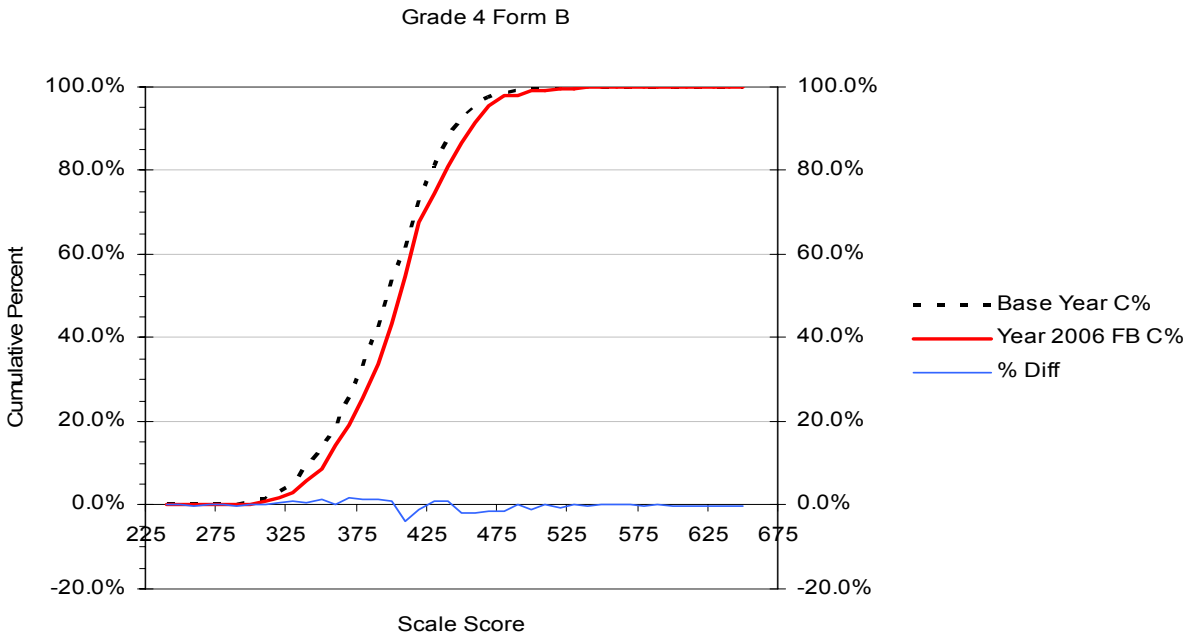


Figure B.13. Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 4 Form B

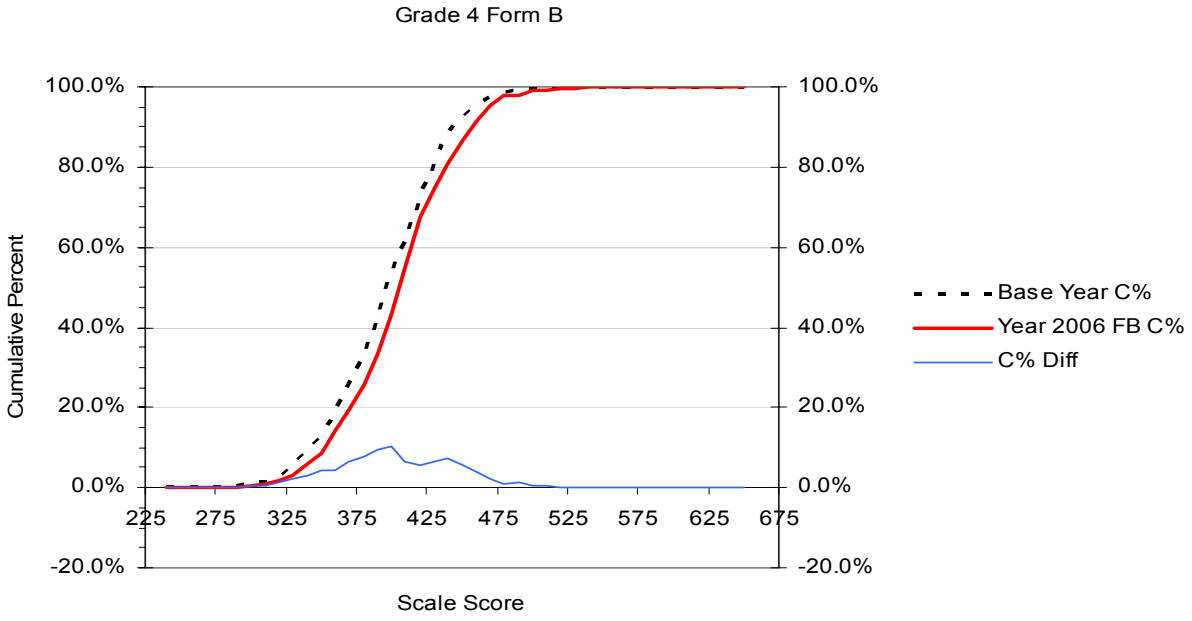


Figure B.14. Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 4 Form B

Year 2003 Grade=5

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240	*	134	134	0.20	0.20
250		4	138	0.01	0.20
260		14	152	0.02	0.22
270		15	167	0.02	0.25
280		36	203	0.05	0.30
290		59	262	0.09	0.39
300	*	160	422	0.24	0.62
310	**	395	817	0.58	1.21
320	****	721	1538	1.06	2.27
330	*******	1342	2880	1.98	4.25
340	**********	2255	5135	3.33	7.58
350	**********	2989	8124	4.41	12.00
360	**********	4227	12351	6.24	18.24
370	**********	5685	18036	8.39	26.63
380	**********	5646	23682	8.34	34.97
390	**********	6664	30346	9.84	44.81
400	**********	6750	37096	9.97	54.78
410	**********	6814	43910	10.06	64.84
420	**********	5659	49569	8.36	73.19
430	**********	5052	54621	7.46	80.65
440	**********	4698	59319	6.94	87.59
450	**********	2996	62315	4.42	92.02
460	**********	1996	64311	2.95	94.96
470	*******	1463	65774	2.16	97.12
480	****	720	66494	1.06	98.19
490	**	452	66946	0.67	98.85
500	**	383	67329	0.57	99.42
510	*	147	67476	0.22	99.64
520	*	121	67597	0.18	99.82
530		58	67655	0.09	99.90
540		20	67675	0.03	99.93
550		17	67692	0.03	99.96
560		14	67706	0.02	99.98
570		12	67718	0.02	99.99
580		2	67720	0.00	100.00
590		2	67722	0.00	100.00
600		0	67722	0.00	100.00
610		0	67722	0.00	100.00
620		0	67722	0.00	100.00
630		0	67722	0.00	100.00
640		0	67722	0.00	100.00
650		0	67722	0.00	100.00

1000 2000 3000 4000 5000 6000

Frequency

Figure B.15 Year 2003 Scale Score Distribution: Grade 5

Year 2006 Grade=5 Form=A

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240		3	3	0.01	0.01
250		2	5	0.01	0.02
260		0	5	0.00	0.02
270		4	9	0.01	0.03
280		0	9	0.00	0.03
290		5	14	0.02	0.04
300		16	30	0.05	0.10
310		34	64	0.11	0.20
320	**	157	221	0.50	0.70
330	*	141	362	0.45	1.15
340	****	434	796	1.37	2.52
350	**********	1186	1982	3.76	6.28
360	**********	1168	3150	3.70	9.98
370	**********	1505	4655	4.77	14.75
380	**********	2864	7519	9.07	23.82
390	**********	3459	10978	10.96	34.78
400	**********	2623	13601	8.31	43.08
410	**********	4458	18059	14.12	57.21
420	**********	3077	21136	9.75	66.95
430	**********	2928	24064	9.28	76.23
440	**********	2717	26781	8.61	84.84
450	**********	2143	28924	6.79	91.62
460	********	816	29740	2.58	94.21
470	**********	1174	30914	3.72	97.93
480	***	321	31235	1.02	98.95
490	**	170	31405	0.54	99.48
500		0	31405	0.00	99.48
510	*	102	31507	0.32	99.81
520		0	31507	0.00	99.81
530		42	31549	0.13	99.94
540		0	31549	0.00	99.94
550		15	31564	0.05	99.99
560		0	31564	0.00	99.99
570		0	31564	0.00	99.99
580		4	31568	0.01	100.00
590		0	31568	0.00	100.00
600		0	31568	0.00	100.00
610		0	31568	0.00	100.00
620		0	31568	0.00	100.00
630		0	31568	0.00	100.00
640		0	31568	0.00	100.00
650		0	31568	0.00	100.00

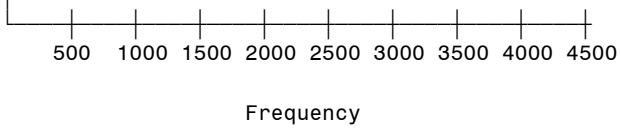


Figure B.16 Year 2006 Scale Score Distribution: Grade 5 Form A

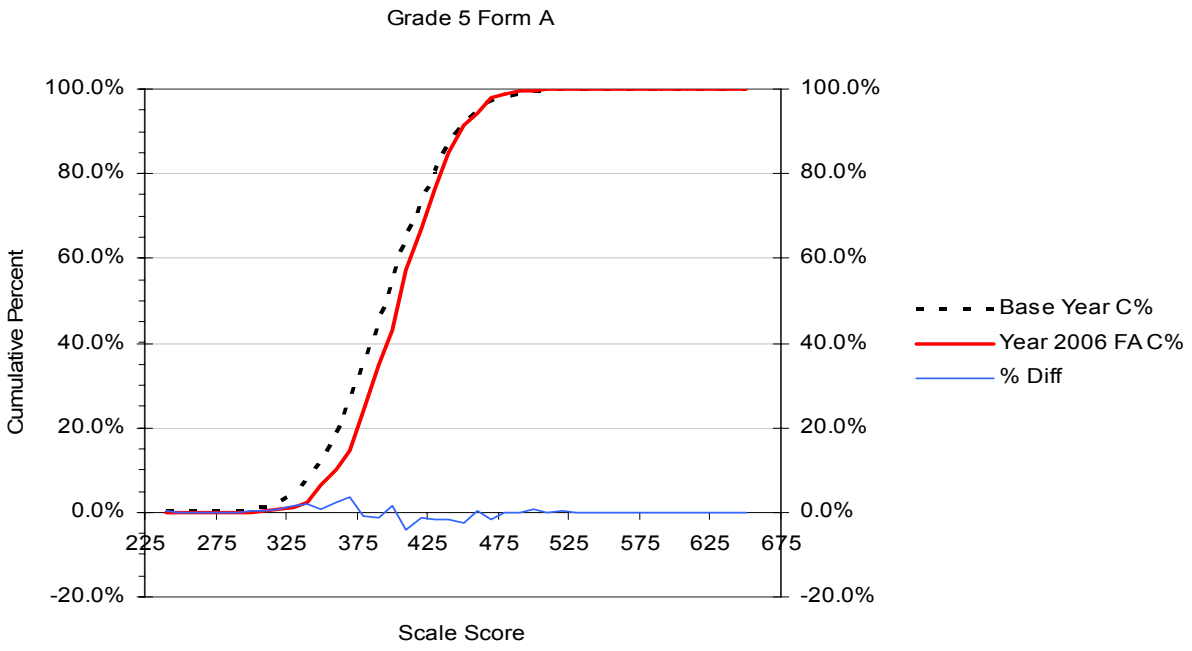


Figure B.17. Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 5 Form A

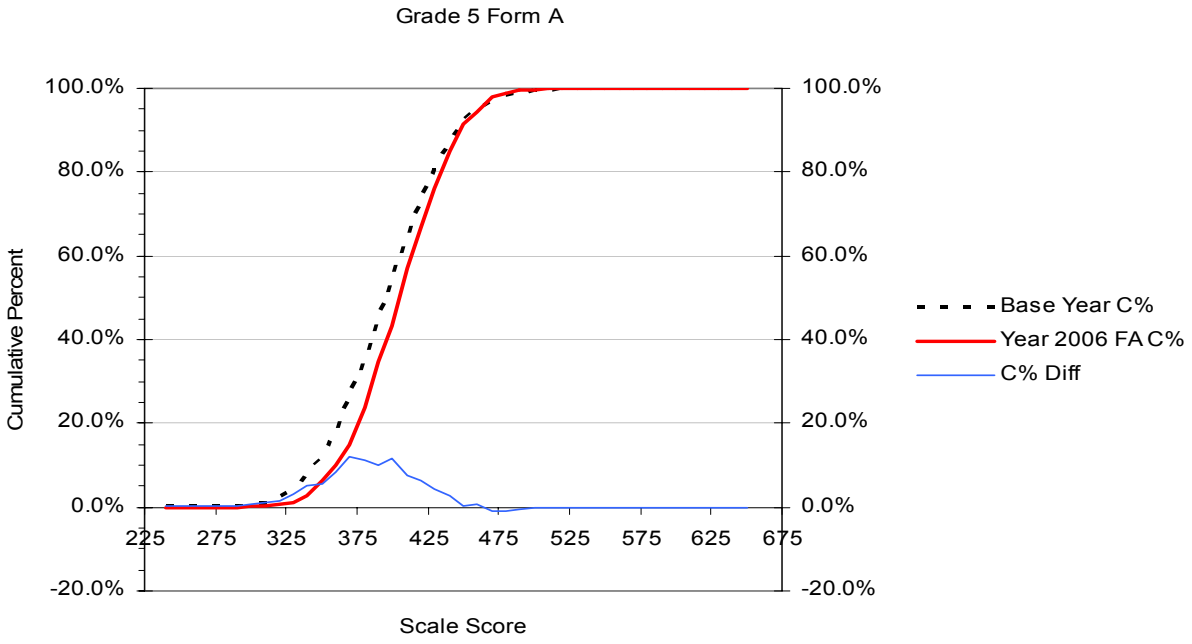


Figure B.18. Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 5 Form A

Year 2006 Grade=5 Form=B

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240		3	3	0.01	0.01
250		0	3	0.00	0.01
260		0	3	0.00	0.01
270		4	7	0.01	0.02
280		1	8	0.00	0.03
290		13	21	0.04	0.07
300		23	44	0.07	0.14
310	*	103	147	0.33	0.47
320	*	78	225	0.25	0.71
330	****	278	503	0.88	1.59
340	******	484	987	1.53	3.13
350	**********	1163	2150	3.68	6.81
360	**********	1123	3273	3.56	10.37
370	**********	2085	5358	6.61	16.98
380	**********	2883	8241	9.13	26.11
390	**********	2282	10523	7.23	33.34
400	**********	3883	14406	12.30	45.64
410	**********	3050	17456	9.66	55.31
420	**********	3226	20682	10.22	65.53
430	**********	3227	23909	10.22	75.75
440	**********	3128	27037	9.91	85.67
450	**********	1340	28377	4.25	89.91
460	**********	1143	29520	3.62	93.53
470	**********	872	30392	2.76	96.30
480	*******	558	30950	1.77	98.06
490	****	325	31275	1.03	99.09
500	***	188	31463	0.60	99.69
510		0	31463	0.00	99.69
520	*	74	31537	0.23	99.92
530		0	31537	0.00	99.92
540		0	31537	0.00	99.92
550		20	31557	0.06	99.99
560		0	31557	0.00	99.99
570		4	31561	0.01	100.00
580		0	31561	0.00	100.00
590		0	31561	0.00	100.00
600		0	31561	0.00	100.00
610		0	31561	0.00	100.00
620		0	31561	0.00	100.00
630		0	31561	0.00	100.00
640		0	31561	0.00	100.00
650		0	31561	0.00	100.00

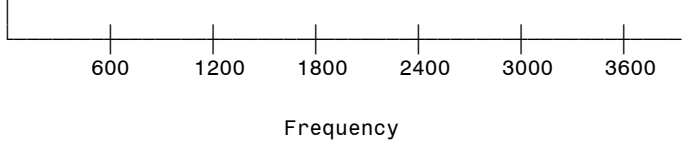


Figure B.19 Year 2006 Scale Score Distribution: Grade 5 Form B

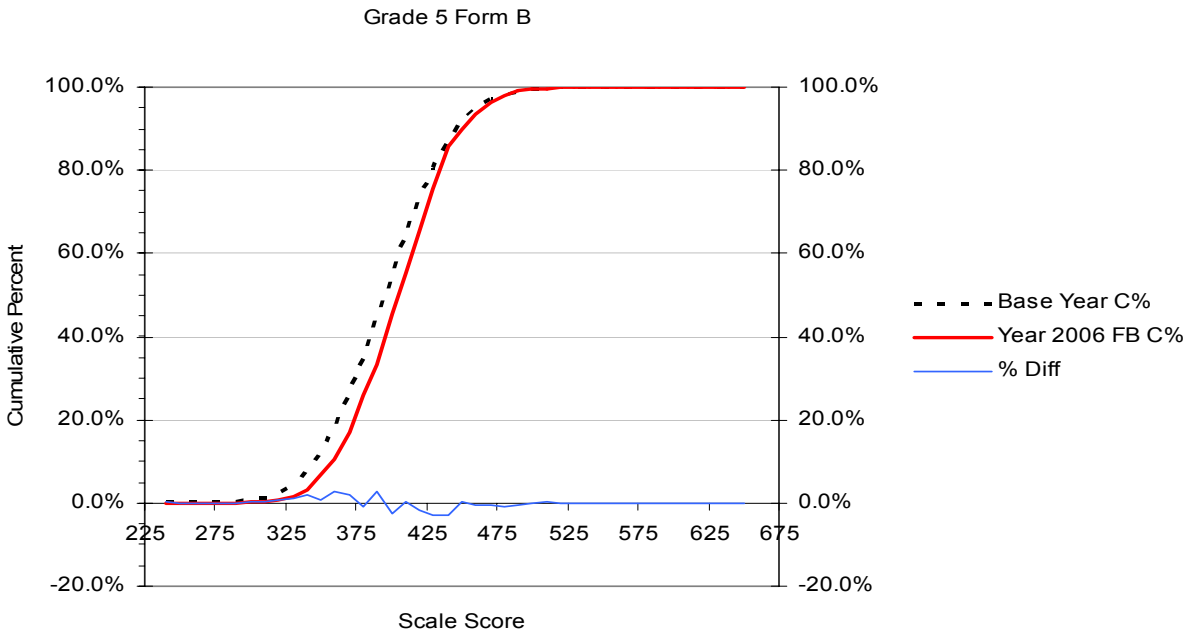


Figure B.20. Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 5 Form B

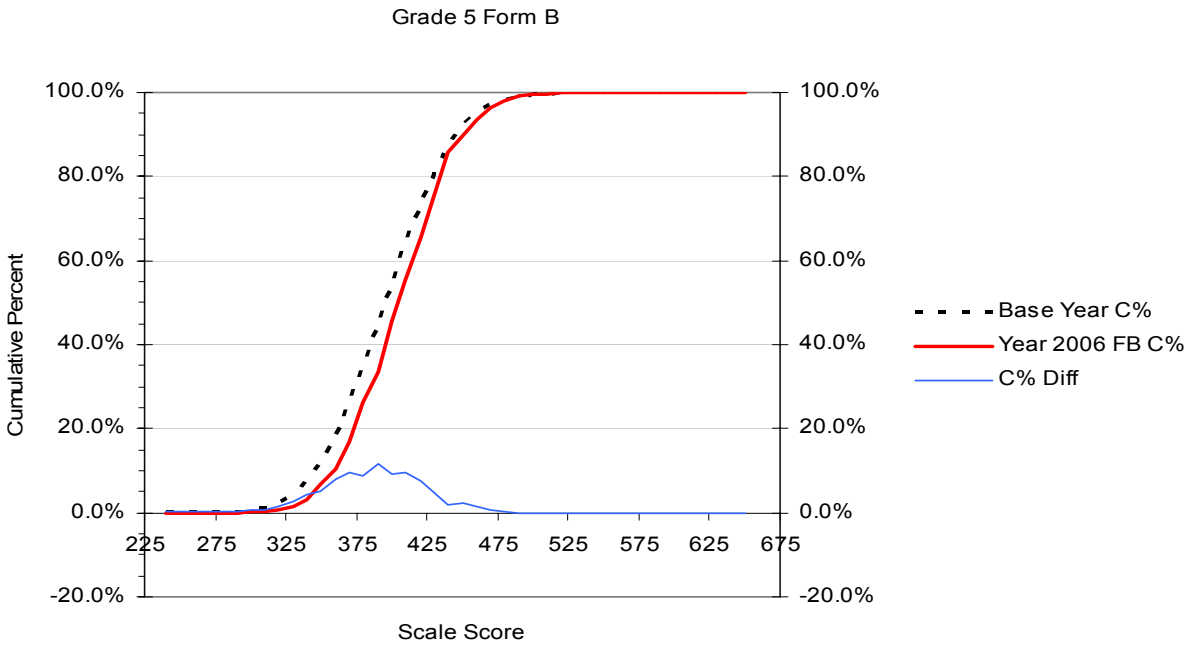


Figure B.21. Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 5 Form B

Year 2004 Grade=6

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240	*	277	277	0.41	0.41
250		12	289	0.02	0.42
260		8	297	0.01	0.44
270		14	311	0.02	0.46
280		33	344	0.05	0.51
290		61	405	0.09	0.59
300	*	108	513	0.16	0.75
310	**	317	830	0.47	1.22
320	***	624	1454	0.92	2.13
330	*******	1351	2805	1.98	4.12
340	**********	2070	4875	3.04	7.16
350	***************	3040	7915	4.46	11.62
360	*********************	4285	12200	6.29	17.91
370	**************************	5602	17802	8.23	26.14
380	**************************	5716	23518	8.39	34.53
390	**********************************	6849	30367	10.06	44.59
400	*********************************	6684	37051	9.81	54.40
410	**********************************	7001	44052	10.28	64.68
420	**************************	5803	49855	8.52	73.20
430	**************************	5801	55656	8.52	81.72
440	*******************	3799	59455	5.58	87.30
450	***************	2997	62452	4.40	91.70
460	*********	1706	64158	2.50	94.20
470	*********	1780	65938	2.61	96.82
480	*****	1001	66939	1.47	98.29
490	***	564	67503	0.83	99.11
500	*	146	67649	0.21	99.33
510	*	298	67947	0.44	99.77
520		0	67947	0.00	99.77
530		66	68013	0.10	99.86
540		51	68064	0.07	99.94
550		22	68086	0.03	99.97
560		6	68092	0.01	99.98
570		9	68101	0.01	99.99
580		4	68105	0.01	100.00
590		1	68106	0.00	100.00
600		0	68106	0.00	100.00
610		0	68106	0.00	100.00
620		0	68106	0.00	100.00
630		0	68106	0.00	100.00
640		0	68106	0.00	100.00
650		0	68106	0.00	100.00

1000 2000 3000 4000 5000 6000 7000

Frequency

Figure B.22 Year 2004 Scale Score Distribution: Grade 6

Year 2006 Grade=6 Form=A

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240		4	4	0.01	0.01
250		5	9	0.02	0.03
260		0	9	0.00	0.03
270		5	14	0.02	0.04
280		15	29	0.05	0.09
290		18	47	0.06	0.15
300		35	82	0.11	0.25
310	**	164	246	0.51	0.76
320	*****	338	584	1.05	1.82
330	*******	560	1144	1.74	3.56
340	**********	1270	2414	3.95	7.50
350	**********	1724	4138	5.36	12.86
360	**********	1985	6123	6.17	19.03
370	**********	1489	7612	4.63	23.66
380	**********	2623	10235	8.15	31.82
390	**********	3068	13303	9.54	41.35
400	**********	2302	15605	7.16	48.51
410	**********	4163	19768	12.94	61.45
420	**********	1531	21299	4.76	66.21
430	**********	3275	24574	10.18	76.39
440	**********	3064	27638	9.52	85.92
450	**********	1381	29019	4.29	90.21
460	**********	1131	30150	3.52	93.73
470	**********	814	30964	2.53	96.26
480	********	585	31549	1.82	98.08
490		0	31549	0.00	98.08
500	*****	349	31898	1.08	99.16
510		0	31898	0.00	99.16
520		0	31898	0.00	99.16
530	***	193	32091	0.60	99.76
540		0	32091	0.00	99.76
550	*	77	32168	0.24	100.00
560		0	32168	0.00	100.00
570		0	32168	0.00	100.00
580		0	32168	0.00	100.00
590		0	32168	0.00	100.00
600		0	32168	0.00	100.00
610		0	32168	0.00	100.00
620		0	32168	0.00	100.00
630		0	32168	0.00	100.00
640		0	32168	0.00	100.00
650		0	32168	0.00	100.00

600 1200 1800 2400 3000 3600 4200

Frequency

Figure B.23 Year 2006 Scale Score Distribution: Grade 6 Form A

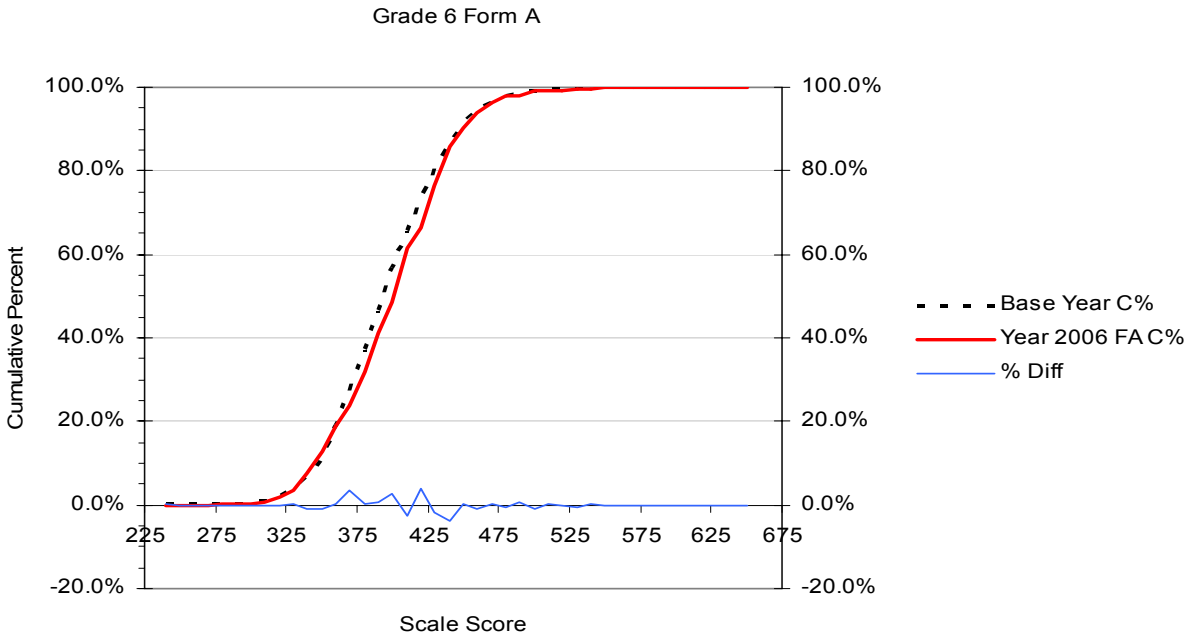


Figure B.24. Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 6 Form A

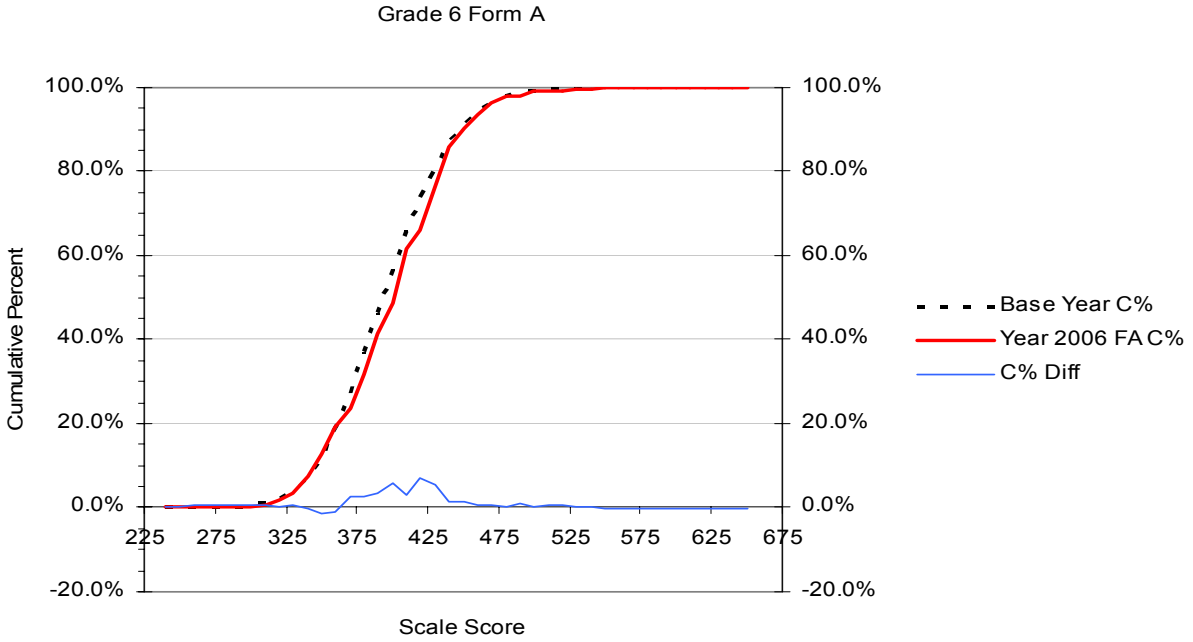


Figure B.25. Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 6 Form A

Year 2006 Grade=6 Form=B

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240		8	8	0.02	0.02
250		0	8	0.00	0.02
260		0	8	0.00	0.02
270		6	14	0.02	0.04
280		12	26	0.04	0.08
290		5	31	0.02	0.10
300		32	63	0.10	0.20
310	**	136	199	0.42	0.62
320	****	265	464	0.83	1.45
330	*******	516	980	1.61	3.06
340	**********	723	1703	2.26	5.32
350	********************	1476	3179	4.61	9.93
360	***************************	2038	5217	6.37	16.30
370	********************************	2493	7710	7.79	24.08
380	************************	1928	9638	6.02	30.10
390	**	3281	12919	10.25	40.35
400	*******************************	2398	15317	7.49	47.84
410	***	4067	19384	12.70	60.55
420	***	3069	22453	9.59	70.13
430	**********************	1748	24201	5.46	75.59
440	**	3228	27429	10.08	85.68
450	******************	1396	28825	4.36	90.04
460	**************************	2029	30854	6.34	96.37
470		0	30854	0.00	96.37
480	********	576	31430	1.80	98.17
490	*****	340	31770	1.06	99.23
500	**	160	31930	0.50	99.73
510		0	31930	0.00	99.73
520		0	31930	0.00	99.73
530	*	69	31999	0.22	99.95
540		0	31999	0.00	99.95
550		16	32015	0.05	100.00
560		0	32015	0.00	100.00
570		0	32015	0.00	100.00
580		0	32015	0.00	100.00
590		0	32015	0.00	100.00
600		0	32015	0.00	100.00
610		0	32015	0.00	100.00
620		0	32015	0.00	100.00
630		0	32015	0.00	100.00
640		0	32015	0.00	100.00
650		0	32015	0.00	100.00

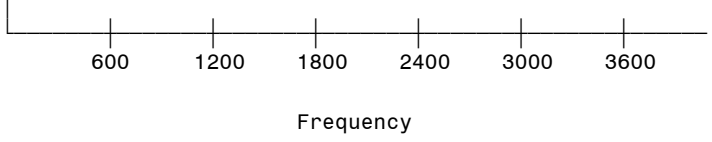


Figure B.26 Year 2006 Scale Score Distribution: Grade 6 Form B

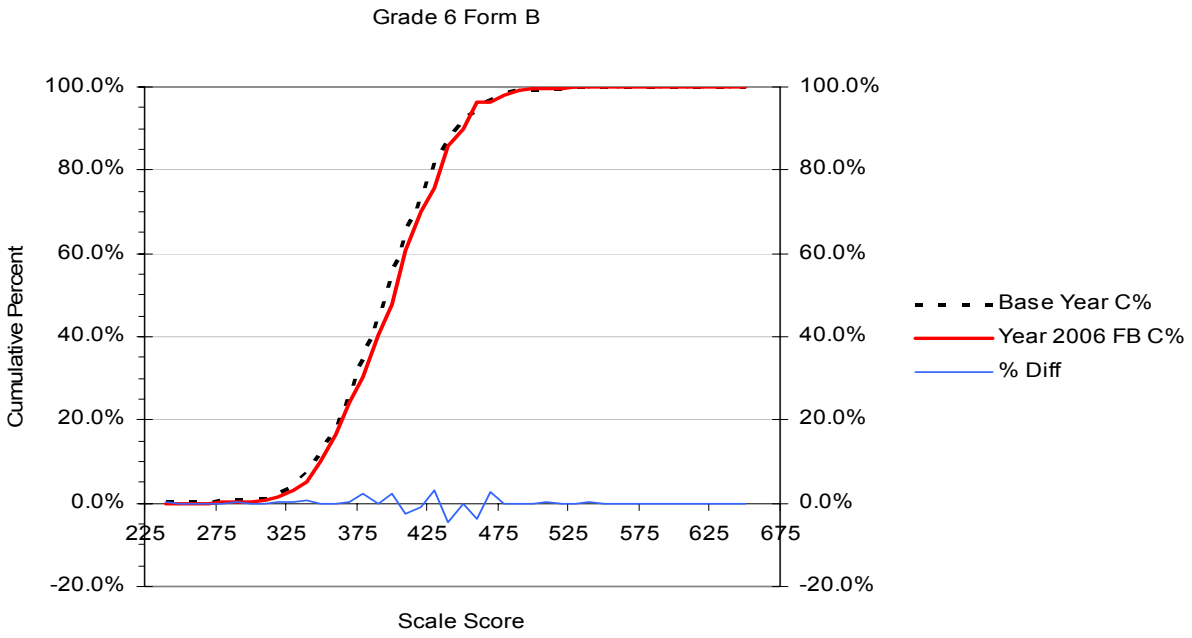


Figure B.27 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 6 Form B

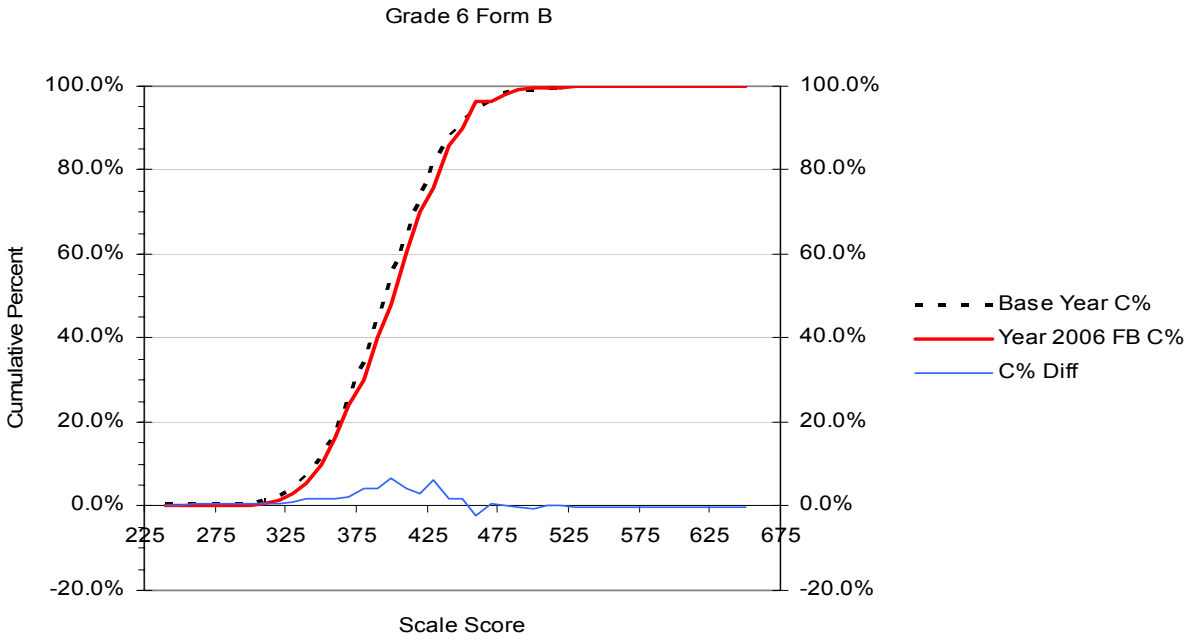


Figure B.28 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 6 Form B

Year 2004 Grade=7

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240	**	436	436	0.63	0.63
250		0	436	0.00	0.63
260		31	467	0.04	0.68
270		12	479	0.02	0.69
280		32	511	0.05	0.74
290		62	573	0.09	0.83
300	*	134	707	0.19	1.02
310	**	410	1117	0.59	1.62
320	****	776	1893	1.12	2.74
330	******	1288	3181	1.86	4.60
340	*********	1778	4959	2.57	7.17
350	**********	2797	7756	4.04	11.21
360	**********	3648	11404	5.27	16.49
370	**********	5034	16438	7.28	23.77
380	**********	5865	22303	8.48	32.25
390	**********	7817	30120	11.30	43.55
400	**********	6965	37085	10.07	53.62
410	**********	7175	44260	10.37	63.99
420	**********	6773	51033	9.79	73.79
430	**********	5910	56943	8.55	82.33
440	**********	4679	61622	6.77	89.10
450	**********	2633	64255	3.81	92.90
460	*********	1782	66037	2.58	95.48
470	********	1546	67583	2.24	97.72
480	**	414	67997	0.60	98.31
490	***	563	68560	0.81	99.13
500	*	257	68817	0.37	99.50
510		94	68911	0.14	99.64
520	*	128	69039	0.19	99.82
530		54	69093	0.08	99.90
540		32	69125	0.05	99.95
550		11	69136	0.02	99.96
560		14	69150	0.02	99.98
570		5	69155	0.01	99.99
580		5	69160	0.01	100.00
590		1	69161	0.00	100.00
600		0	69161	0.00	100.00
610		2	69163	0.00	100.00
620		0	69163	0.00	100.00
630		0	69163	0.00	100.00
640		0	69163	0.00	100.00
650		0	69163	0.00	100.00

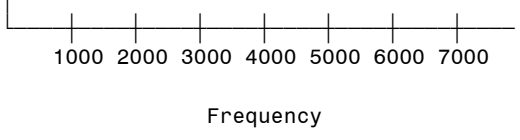


Figure B.29 Year 2004 Scale Score Distribution: Grade 7

Year 2006 Grade=7 Form=A

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240		20	20	0.06	0.06
250		0	20	0.00	0.06
260		0	20	0.00	0.06
270		7	27	0.02	0.08
280		13	40	0.04	0.12
290		19	59	0.06	0.18
300		42	101	0.13	0.31
310	**	153	254	0.47	0.78
320	***	316	570	0.97	1.74
330	*****	477	1047	1.46	3.20
340	*******	714	1761	2.18	5.39
350	***************	1532	3293	4.68	10.07
360	************	1348	4641	4.12	14.19
370	************************	2564	7205	7.84	22.03
380	********************	2145	9350	6.56	28.59
390	************************************	3782	13132	11.57	40.16
400	*****************************	3024	16156	9.25	49.41
410	**	4847	21003	14.82	64.23
420	********************************	3336	24339	10.20	74.43
430	******************************	3100	27439	9.48	83.91
440	************	1346	28785	4.12	88.02
450	**********	1143	29928	3.50	91.52
460	*****************	1684	31612	5.15	96.67
470		0	31612	0.00	96.67
480	*****	479	32091	1.46	98.13
490	***	284	32375	0.87	99.00
500	**	183	32558	0.56	99.56
510		0	32558	0.00	99.56
520	*	81	32639	0.25	99.81
530		0	32639	0.00	99.81
540		0	32639	0.00	99.81
550		48	32687	0.15	99.96
560		0	32687	0.00	99.96
570		0	32687	0.00	99.96
580		14	32701	0.04	100.00
590		0	32701	0.00	100.00
600		0	32701	0.00	100.00
610		0	32701	0.00	100.00
620		0	32701	0.00	100.00
630		0	32701	0.00	100.00
640		0	32701	0.00	100.00
650		0	32701	0.00	100.00

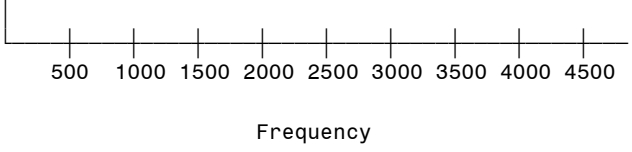


Figure B.30 Year 2006 Scale Score Distribution: Grade 7 Form A

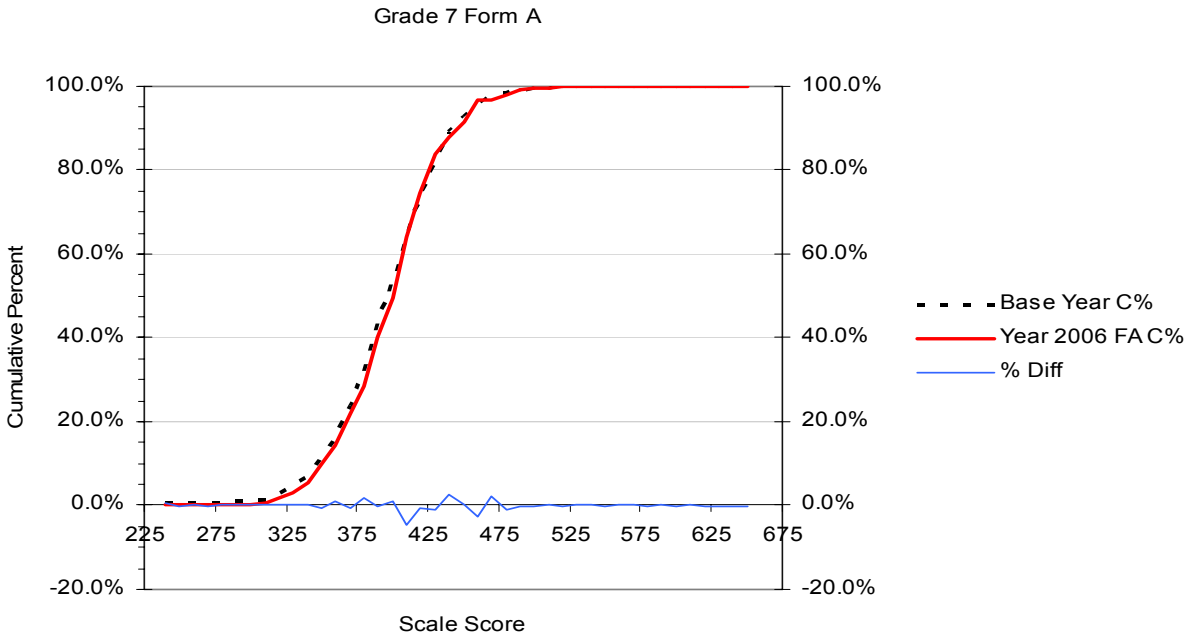


Figure B.31 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 7 Form A

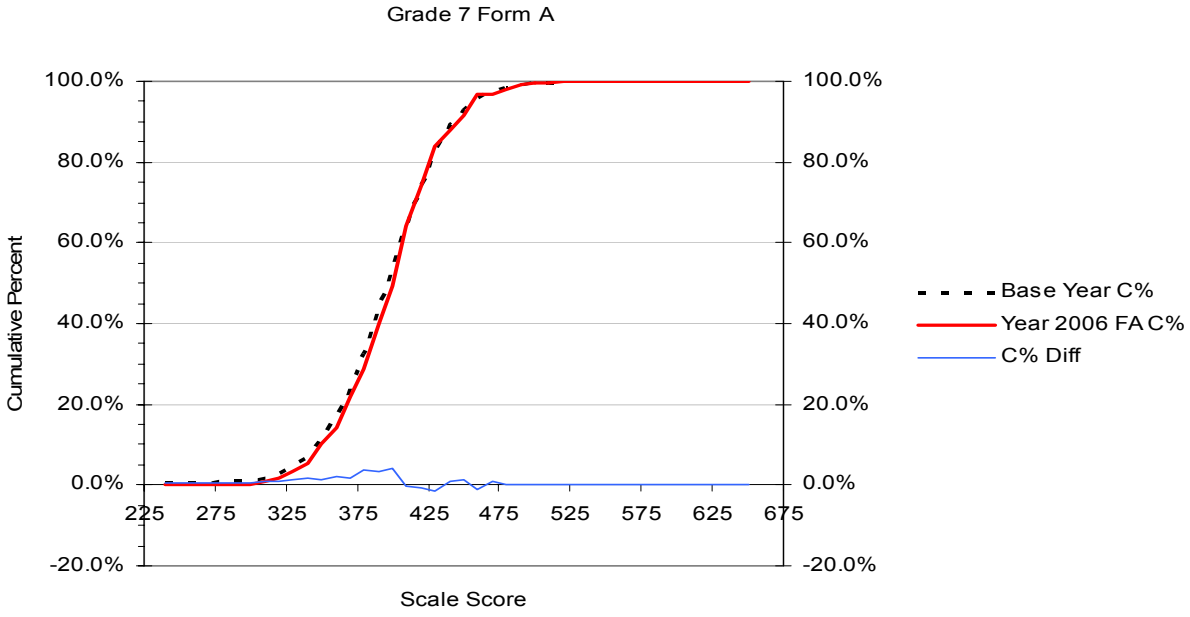


Figure B.32 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 7 Form A

Year 2006 Grade=7 Form=B

Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240		3	3	0.01	0.01
250		11	14	0.03	0.04
260		0	14	0.00	0.04
270		16	30	0.05	0.09
280		17	47	0.05	0.14
290		35	82	0.11	0.25
300		47	129	0.14	0.40
310	*	72	201	0.22	0.62
320	***	265	466	0.82	1.43
330	*****	479	945	1.47	2.91
340	********	801	1746	2.47	5.37
350	**********	1621	3367	4.99	10.36
360	**********	1283	4650	3.95	14.31
370	**********	2575	7225	7.92	22.24
380	**********	2070	9295	6.37	28.61
390	**********	3606	12901	11.10	39.70
400	**********	2704	15605	8.32	48.03
410	**********	4842	20447	14.90	62.93
420	**********	3342	23789	10.29	73.21
430	**********	1602	25391	4.93	78.14
440	**********	2944	28335	9.06	87.20
450	**********	1178	29513	3.63	90.83
460	**********	1736	31249	5.34	96.17
470	*****	498	31747	1.53	97.70
480	***	322	32069	0.99	98.70
490	**	203	32272	0.62	99.32
500		0	32272	0.00	99.32
510	*	130	32402	0.40	99.72
520		0	32402	0.00	99.72
530	*	60	32462	0.18	99.90
540		0	32462	0.00	99.90
550		26	32488	0.08	99.98
560		0	32488	0.00	99.98
570		0	32488	0.00	99.98
580		5	32493	0.02	100.00
590		0	32493	0.00	100.00
600		0	32493	0.00	100.00
610		0	32493	0.00	100.00
620		0	32493	0.00	100.00
630		0	32493	0.00	100.00
640		0	32493	0.00	100.00
650		0	32493	0.00	100.00

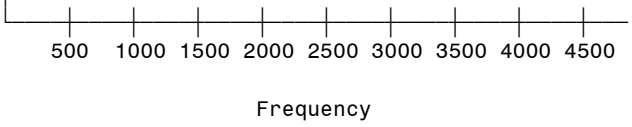


Figure B.33 Year 2006 Scale Score Distribution: Grade 7 Form A

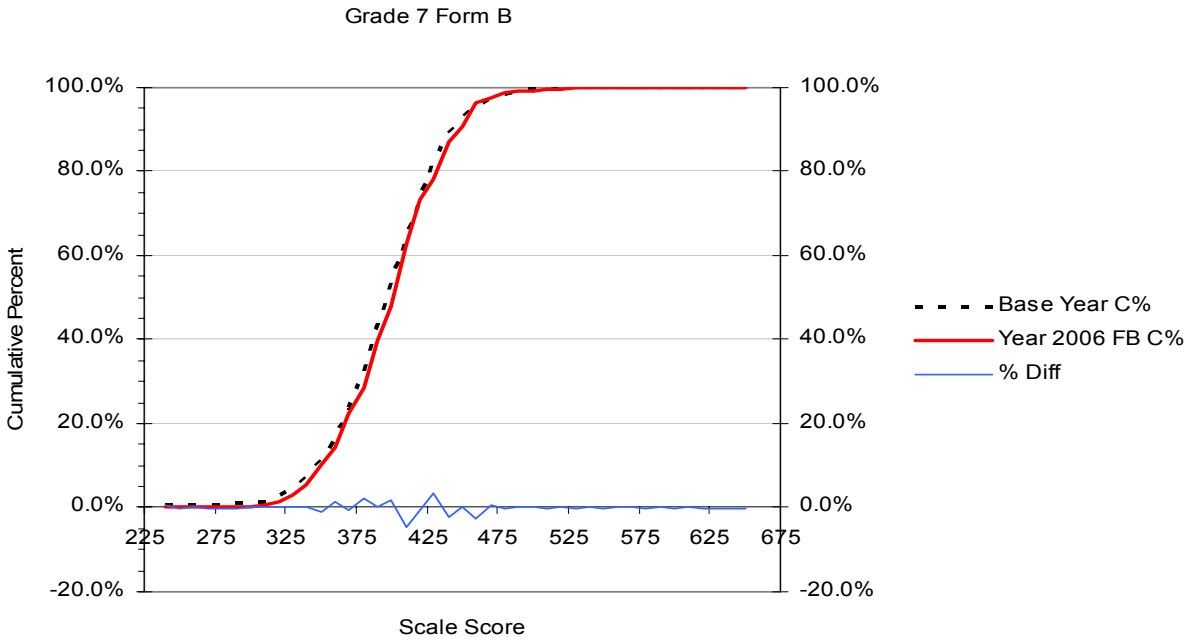


Figure B.34 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 7 Form B

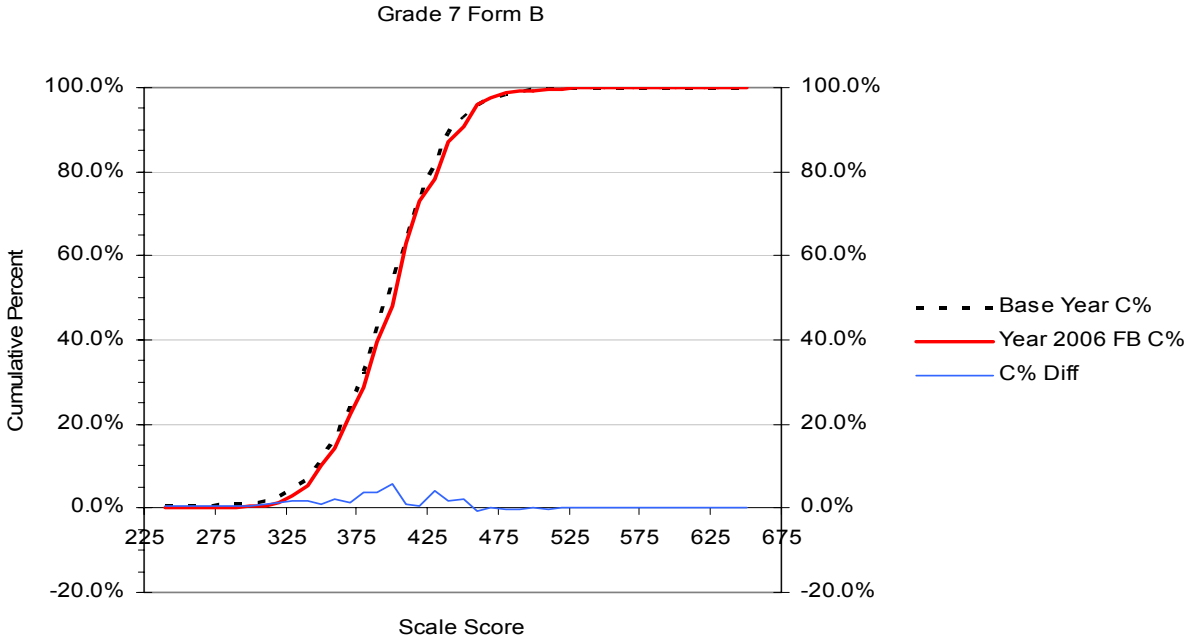


Figure B.35 Cumulative Distribution Functions (CDFs) for the Year 2004 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 7 Form B

Year 2003 Grade=8

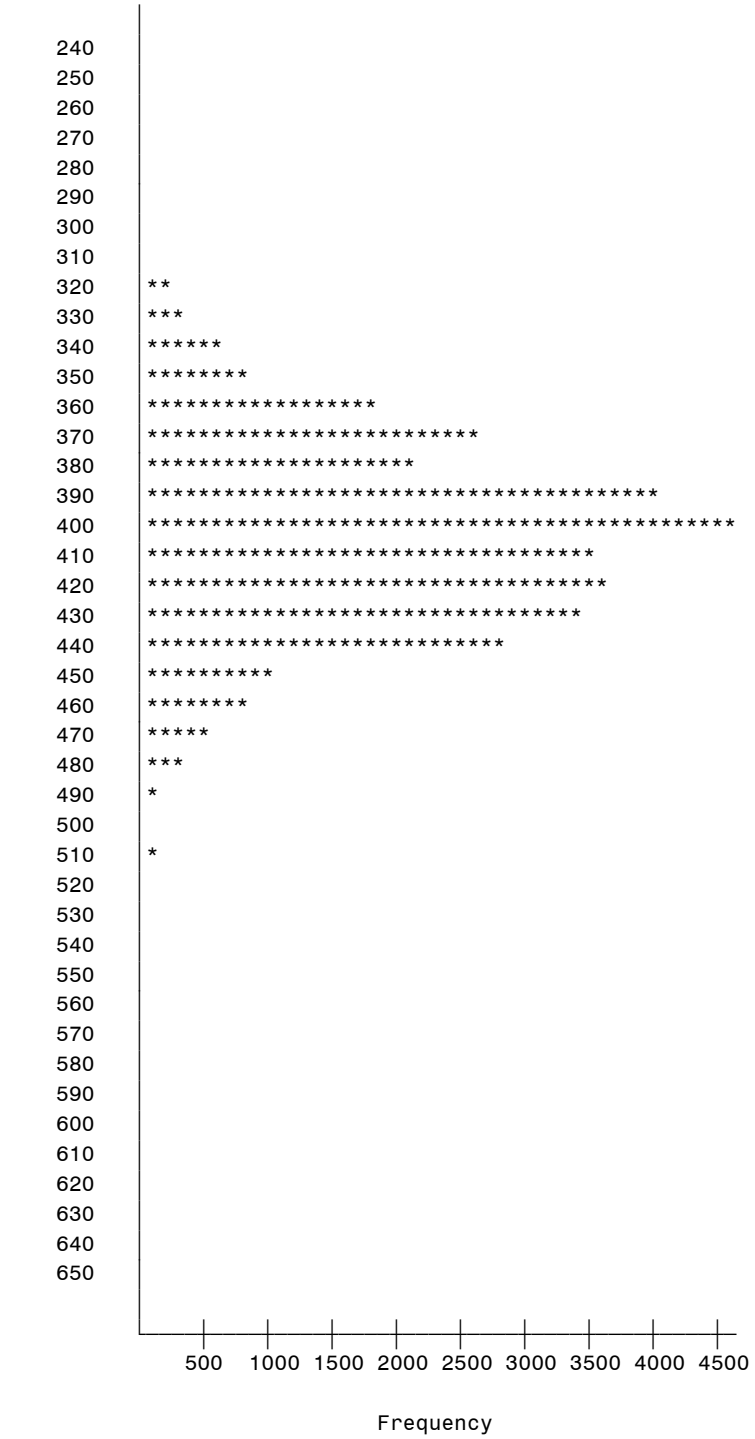
Scale Score Midpoint		Freq	Cum. Freq	Percent	Cum. Percent
240	***	552	552	0.82	0.82
250		0	552	0.00	0.82
260		10	562	0.01	0.83
270		12	574	0.02	0.85
280		34	608	0.05	0.90
290		76	684	0.11	1.01
300	*	136	820	0.20	1.21
310	*	214	1034	0.32	1.53
320	***	566	1600	0.84	2.36
330	****	864	2464	1.28	3.64
340	**********	1923	4387	2.84	6.48
350	************	2609	6996	3.85	10.33
360	********************	3998	10994	5.90	16.24
370	**************************	5525	16519	8.16	24.40
380	*************************	5473	21992	8.08	32.48
390	**********************************	7195	29187	10.63	43.11
400	***	7935	37122	11.72	54.83
410	*******************************	6409	43531	9.47	64.29
420	********************************	6584	50115	9.72	74.02
430	**************************	5539	55654	8.18	82.20
440	********************	3943	59597	5.82	88.02
450	*****************	3316	62913	4.90	92.92
460	**********	1998	64911	2.95	95.87
470	******	1276	66187	1.88	97.76
480	***	699	66886	1.03	98.79
490	*	166	67052	0.25	99.03
500	**	403	67455	0.60	99.63
510		19	67474	0.03	99.66
520	*	140	67614	0.21	99.86
530		27	67641	0.04	99.90
540		33	67674	0.05	99.95
550		28	67702	0.04	99.99
560		0	67702	0.00	99.99
570		3	67705	0.00	100.00
580		1	67706	0.00	100.00
590		0	67706	0.00	100.00
600		0	67706	0.00	100.00
610		0	67706	0.00	100.00
620		0	67706	0.00	100.00
630		0	67706	0.00	100.00
640		0	67706	0.00	100.00
650		0	67706	0.00	100.00

1000 2000 3000 4000 5000 6000 7000 8000

Frequency

Figure B.36 Year 2003 Scale Score Distribution: Grade 8

Year 2006 Grade=8 Form=A



Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	10	10	0.03	0.03
250	6	16	0.02	0.05
260	0	16	0.00	0.05
270	8	24	0.02	0.07
280	0	24	0.00	0.07
290	21	45	0.06	0.13
300	32	77	0.10	0.23
310	39	116	0.12	0.35
320	171	287	0.51	0.85
330	334	621	0.99	1.85
340	586	1207	1.74	3.59
350	846	2053	2.52	6.11
360	1817	3870	5.41	11.52
370	2634	6504	7.84	19.35
380	2119	8623	6.31	25.66
390	4049	12672	12.05	37.71
400	4617	17289	13.74	51.44
410	3540	20829	10.53	61.98
420	3633	24462	10.81	72.79
430	3398	27860	10.11	82.90
440	2842	30702	8.46	91.35
450	1024	31726	3.05	94.40
460	808	32534	2.40	96.80
470	534	33068	1.59	98.39
480	289	33357	0.86	99.25
490	146	33503	0.43	99.69
500	0	33503	0.00	99.69
510	73	33576	0.22	99.90
520	0	33576	0.00	99.90
530	14	33590	0.04	99.95
540	0	33590	0.00	99.95
550	17	33607	0.05	100.00
560	0	33607	0.00	100.00
570	0	33607	0.00	100.00
580	0	33607	0.00	100.00
590	1	33608	0.00	100.00
600	0	33608	0.00	100.00
610	0	33608	0.00	100.00
620	0	33608	0.00	100.00
630	0	33608	0.00	100.00
640	0	33608	0.00	100.00
650	0	33608	0.00	100.00

Figure B.37 Year 2006 Scale Score Distribution: Grade 8 Form A

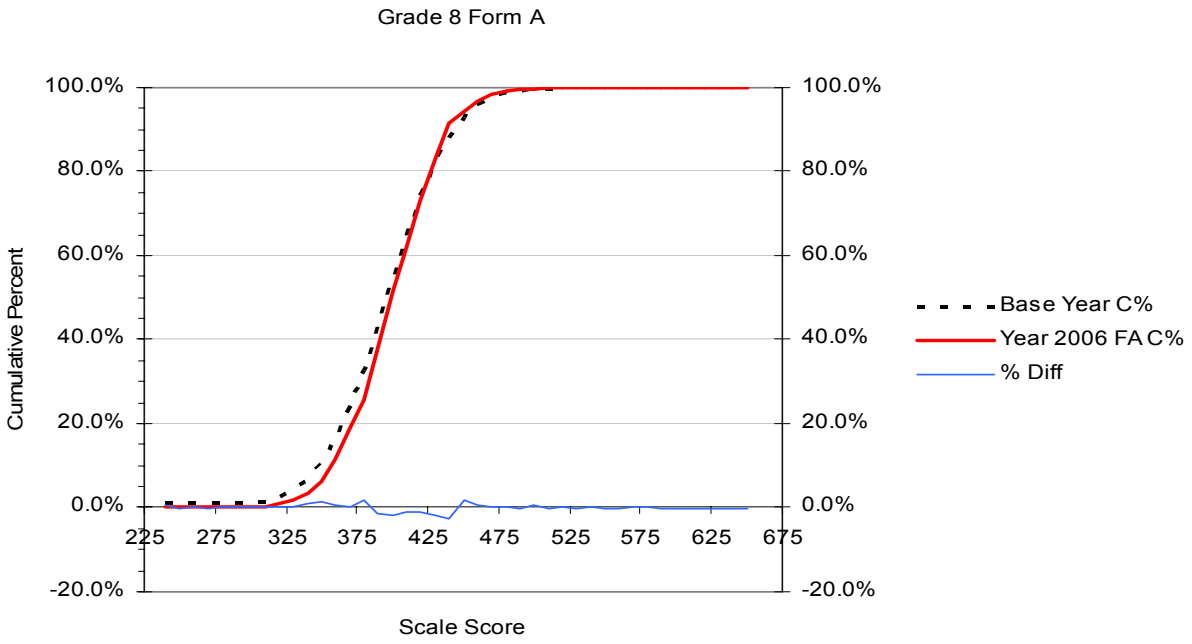


Figure B.38 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 8 Form A

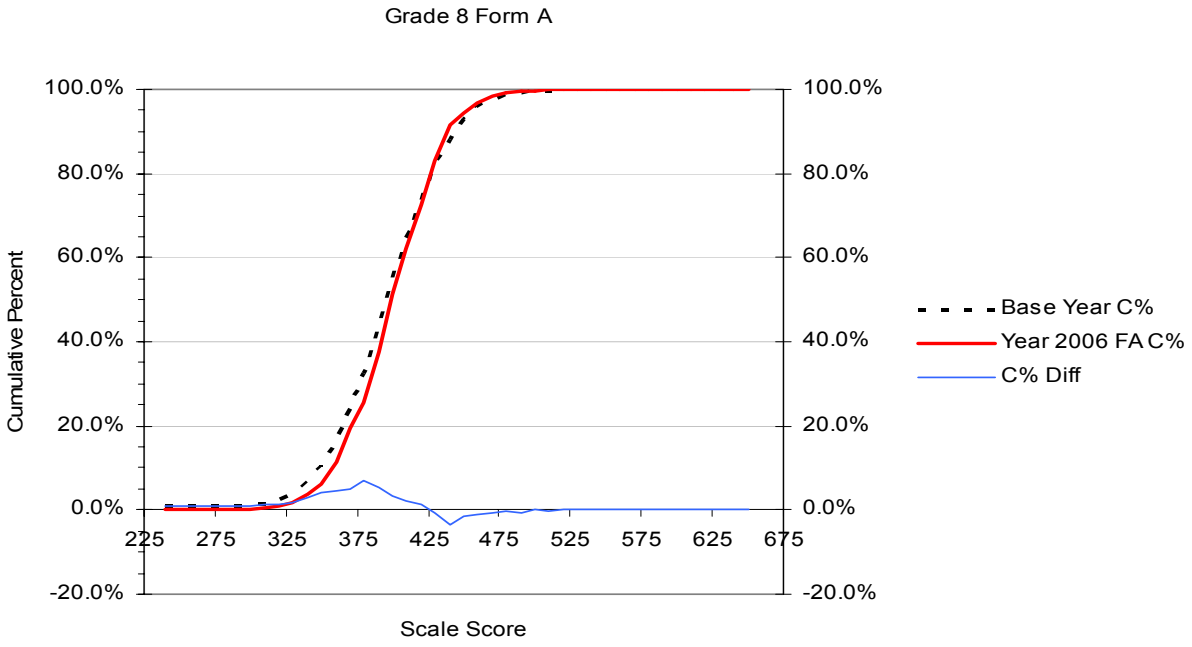
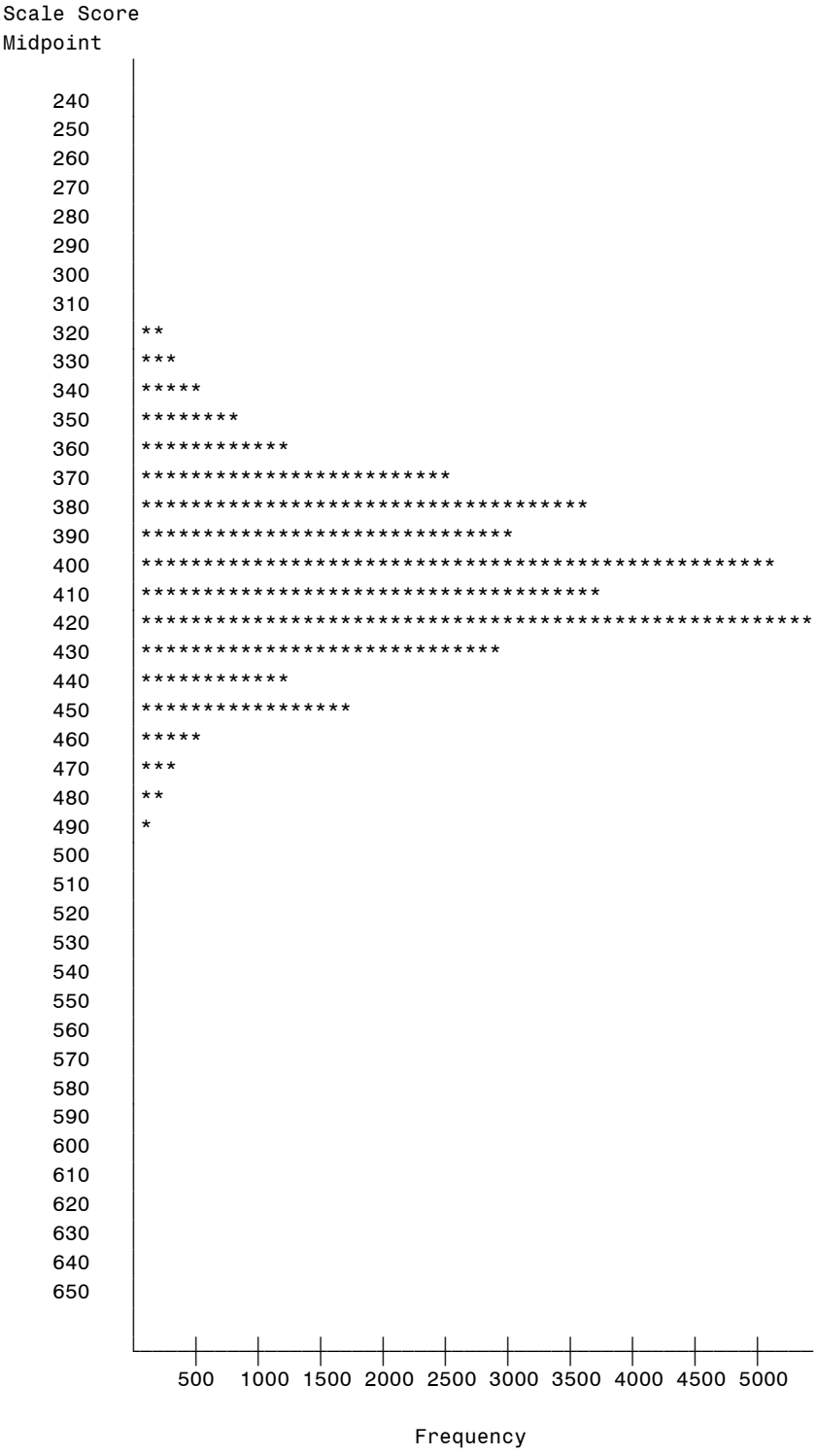


Figure B.39 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 8 Form A

Year 2006 Grade=8 Form=B



Scale Score Midpoint	Freq	Cum. Freq	Percent	Cum. Percent
240	15	15	0.04	0.04
250	0	15	0.00	0.04
260	4	19	0.01	0.06
270	0	19	0.00	0.06
280	8	27	0.02	0.08
290	16	43	0.05	0.13
300	29	72	0.09	0.22
310	40	112	0.12	0.34
320	150	262	0.45	0.78
330	307	569	0.92	1.70
340	465	1034	1.39	3.09
350	808	1842	2.42	5.51
360	1193	3035	3.57	9.08
370	2514	5549	7.52	16.60
380	3644	9193	10.90	27.51
390	3031	12224	9.07	36.58
400	5130	17354	15.35	51.93
410	3655	21009	10.94	62.87
420	5397	26406	16.15	79.01
430	2924	29330	8.75	87.76
440	1169	30499	3.50	91.26
450	1681	32180	5.03	96.29
460	501	32681	1.50	97.79
470	347	33028	1.04	98.83
480	205	33233	0.61	99.44
490	105	33338	0.31	99.76
500	48	33386	0.14	99.90
510	0	33386	0.00	99.90
520	25	33411	0.07	99.98
530	0	33411	0.00	99.98
540	0	33411	0.00	99.98
550	8	33419	0.02	100.00
560	0	33419	0.00	100.00
570	0	33419	0.00	100.00
580	0	33419	0.00	100.00
590	0	33419	0.00	100.00
600	0	33419	0.00	100.00
610	0	33419	0.00	100.00
620	0	33419	0.00	100.00
630	0	33419	0.00	100.00
640	0	33419	0.00	100.00
650	0	33419	0.00	100.00

Figure B.40 Year 2006 Scale Score Distribution: Grade 8 Form B

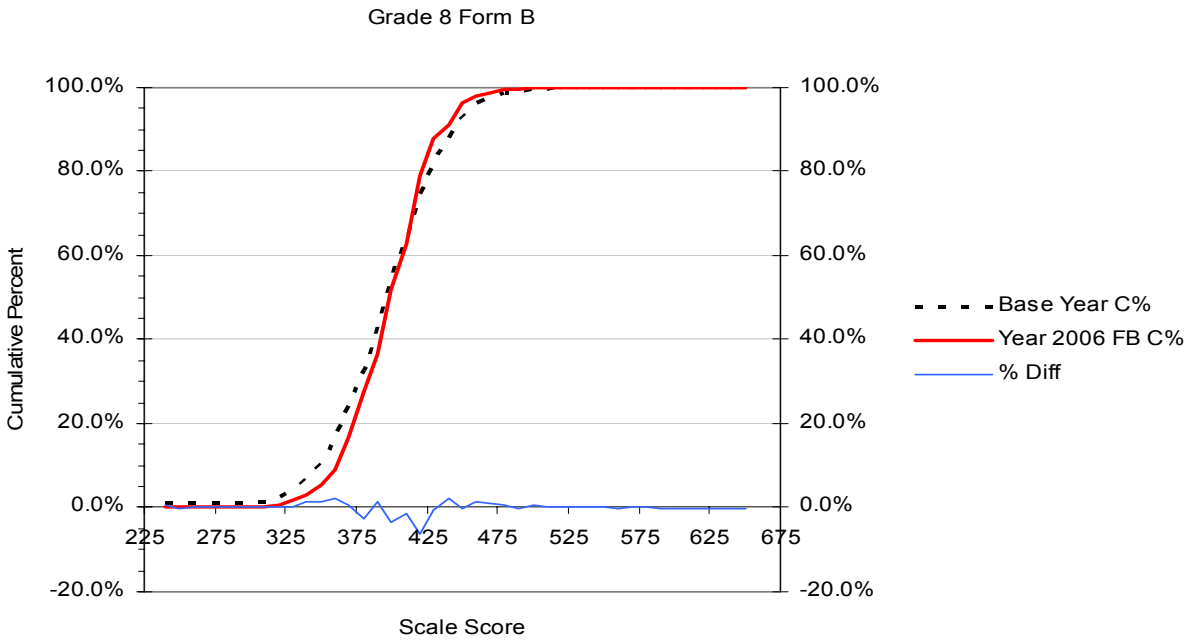


Figure B.41 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Percent Differences between CDFs: Grade 8 Form B

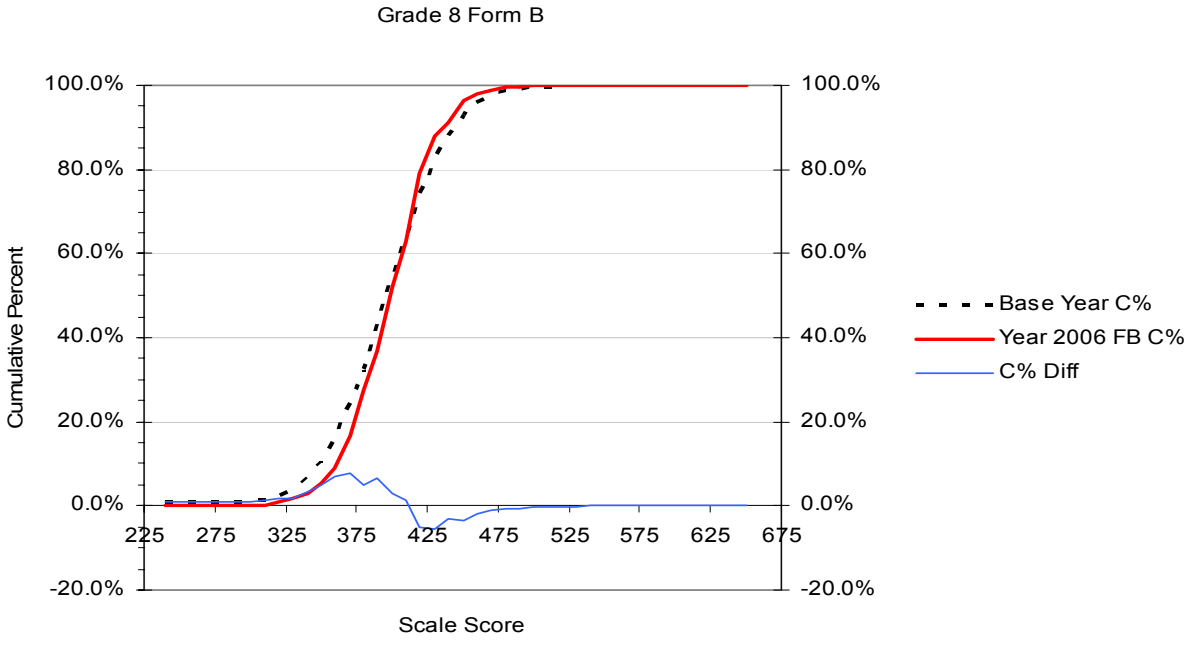


Figure B.42 Cumulative Distribution Functions (CDFs) for the Year 2003 vs. Year 2006 Scale Scores with the Cumulative Percent Differences between CDFs: Grade 8 Form B

APPENDIX C: THE 2006 MSA-READING CLASSICAL AND *IRT* ITEM PARAMETERS

Table C.1 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 3 Form A

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
2	SR	0.94	0.14	-2.3300	0.09	1.35	1.92			
6	SR	0.90	0.38	-1.1000	0.06	0.70	0.52			
7	SR	0.69	0.46	0.1500	0.05	0.96	0.89			
11	SR	0.87	0.35	-0.9300	0.06	0.88	0.79			
13	SR	0.70	0.44	0.0971	0.05	0.95	0.95			
17	SR	0.85	0.25	-1.0800	0.06	1.06	1.51			
20	SR	0.74	0.40	-0.2065	0.05	0.99	0.98			
22	SR	0.43	0.42	1.4523	0.04	1.01	1.02			
25	SR	0.68	0.42	-0.0800	0.05	1.10	1.09			
32	SR	0.50	0.46	1.0000	0.04	0.96	0.95			
34	SR	0.74	0.35	-0.1100	0.05	1.03	1.11			
35	SR	0.72	0.48	0.2400	0.05	0.86	0.77			
37	SR	0.79	0.49	-0.1500	0.05	0.81	0.69			
45	SR	0.78	0.52	-0.0300	0.05	0.75	0.64			
48	SR	0.92	0.38	-1.8000	0.08	0.82	0.49			
53	SR	0.67	0.36	0.0000	0.05	1.14	1.19			
59	SR	0.68	0.51	0.0300	0.05	0.92	0.82			
60	SR	0.48	0.33	0.9300	0.04	1.11	1.15			
61	SR	0.83	0.32	-1.0600	0.06	1.20	1.41			
62	SR	0.91	0.45	-1.4300	0.07	0.74	0.43			
63	SR	0.85	0.50	-0.9100	0.06	0.78	0.58			
65	SR	0.56	0.43	0.6500	0.04	1.01	1.01			
72	SR	0.78	0.50	-0.4733	0.05	0.88	0.73			
73	SR	0.81	0.43	-0.4000	0.05	0.83	0.77			
74	SR	0.65	0.47	0.5900	0.04	0.92	0.92			
75	SR	0.36	0.44	1.8752	0.05	0.93	1.01			
76	BCR	0.47	0.54	1.3750	0.03	1.14	1.14	-1.4285	-0.4967	1.9252
77	SR	0.40	0.30	1.6577	0.04	1.10	1.19			
78	SR	0.47	0.27	1.2642	0.04	1.15	1.24			
79	BCR	0.36	0.46	2.2940	0.04	1.05	1.05	-2.9788	0.255	2.7238
80	SR	0.85	0.37	-1.1624	0.06	0.94	0.84			
81	SR	0.52	0.27	1.0970	0.04	1.16	1.25			
82	BCR	0.46	0.52	1.3417	0.04	0.95	0.95	-2.4862	0.0275	2.4587
83	SR	0.52	0.33	0.9931	0.04	1.12	1.15			
84	SR	0.61	0.45	0.5344	0.04	0.97	0.94			
85	BCR	0.38	0.52	2.1956	0.04	1.06	1.08	-1.4753	-0.7929	2.2682
86	SR	0.61	0.30	0.5404	0.04	1.11	1.18			

Table C.2 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 3 Form B

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
2	SR	0.94	0.14	-2.3300	0.09	1.20	1.81			
6	SR	0.91	0.38	-1.1000	0.06	0.71	0.55			
7	SR	0.70	0.46	0.1500	0.05	0.97	0.90			
11	SR	0.87	0.36	-0.9300	0.06	0.86	0.75			
13	SR	0.70	0.44	0.0647	0.05	1.02	1.01			
17	SR	0.85	0.26	-1.0800	0.06	1.20	1.58			
20	SR	0.73	0.42	-0.1596	0.05	1.02	0.97			
22	SR	0.43	0.41	1.4902	0.04	1.05	1.05			
25	SR	0.68	0.42	-0.0800	0.05	1.12	1.26			
32	SR	0.51	0.46	1.0000	0.04	0.99	1.00			
34	SR	0.74	0.36	-0.1100	0.05	1.04	1.05			
35	SR	0.71	0.48	0.2400	0.05	0.91	0.82			
37	SR	0.78	0.51	-0.1500	0.05	0.76	0.64			
45	SR	0.78	0.53	-0.0300	0.05	0.80	0.70			
48	SR	0.92	0.40	-1.8000	0.07	0.92	0.71			
53	SR	0.66	0.37	0.0000	0.05	1.19	1.30			
59	SR	0.68	0.52	0.0300	0.05	0.97	0.90			
60	SR	0.48	0.32	0.9300	0.04	1.13	1.18			
61	SR	0.82	0.33	-1.0600	0.06	1.19	1.40			
62	SR	0.91	0.46	-1.4300	0.07	0.68	0.42			
63	SR	0.85	0.51	-0.9100	0.06	0.83	0.68			
65	SR	0.56	0.45	0.6500	0.04	1.04	1.06			
72	SR	0.78	0.52	-0.3708	0.05	0.88	0.78			
73	SR	0.81	0.44	-0.4000	0.05	0.83	0.76			
74	SR	0.65	0.48	0.5900	0.04	0.96	0.94			
75	SR	0.79	0.41	-0.4802	0.05	1.00	1.04			
76	BCR	0.57	0.50	0.6842	0.03	1.17	1.17	-2.3942	-0.305	2.6991
77	SR	0.54	0.38	0.9423	0.04	1.08	1.13			
78	SR	0.46	0.44	1.3945	0.04	0.99	1.03			
79	BCR	0.58	0.56	0.6398	0.03	1.05	1.05	-2.4476	-0.3177	2.7653
80	SR	0.68	0.50	0.2226	0.05	0.94	0.91			
81	SR	0.64	0.49	0.3851	0.05	0.96	0.90			
82	BCR	0.36	0.63	2.3762	0.03	0.96	0.95	-2.0143	-0.6846	2.6989
83	SR	0.76	0.49	-0.1964	0.05	0.93	0.81			
84	SR	0.78	0.42	-0.458	0.05	0.95	0.97			
85	BCR	0.28	0.42	2.9716	0.05	1.21	1.23	-2.5427	-0.023	2.5657
86	SR	0.87	0.29	-1.2787	0.06	1.02	1.09			

Table C.3 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 4 Form A

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
1	SR	0.99	0.16	-3.9886	0.22	1.04	0.46			
5	SR	0.94	0.27	-1.7739	0.08	1.00	1.09			
11	SR	0.84	0.36	-0.5918	0.06	1.01	1.02			
12	SR	0.89	0.27	-1.2892	0.07	1.19	1.28			
20	SR	0.79	0.36	0.0403	0.05	1.00	1.00			
25	SR	0.86	0.49	-0.6252	0.06	0.84	0.63			
26	SR	0.81	0.49	-0.2092	0.05	0.88	0.76			
32	SR	0.91	0.32	-1.4440	0.07	1.10	1.31			
39	SR	0.83	0.38	-0.4661	0.06	1.04	1.05			
42	SR	0.71	0.47	0.2123	0.05	0.98	0.94			
45	SR	0.83	0.40	-0.3429	0.05	0.93	1.02			
46	SR	0.76	0.35	-0.0374	0.05	1.09	1.11			
47	SR	0.86	0.48	-0.7393	0.06	0.87	0.67			
48	SR	0.82	0.50	-0.3247	0.05	0.83	0.77			
49	SR	0.45	0.28	1.8175	0.04	1.15	1.26			
50	SR	0.95	0.35	-1.9501	0.09	0.86	0.55			
51	SR	0.82	0.39	-0.4109	0.05	1.03	0.99			
54	SR	0.84	0.52	-0.5286	0.06	0.83	0.72			
55	SR	0.94	0.31	-1.8443	0.09	0.85	0.68			
56	SR	0.62	0.37	0.8212	0.05	1.04	1.04			
57	SR	0.51	0.34	1.3188	0.04	1.13	1.22			
58	SR	0.38	0.31	2.0024	0.04	1.04	1.16			
59	SR	0.92	0.41	-1.4991	0.08	0.94	0.78			
66	SR	0.79	0.46	-0.1689	0.05	0.88	0.78			
68	SR	0.66	0.47	0.7087	0.05	0.92	0.89			
75	SR	0.64	0.35	0.7360	0.05	1.12	1.16			
76	BCR	0.58	0.50	0.9784	0.05	1.05	1.05	-2.3393	-0.7611	3.1004
77	SR	0.64	0.41	0.6290	0.05	1.03	1.02			
78	SR	0.89	0.42	-1.1070	0.07	0.95	0.74			
79	BCR	0.44	0.46	1.6854	0.04	0.99	1.00	-3.9815	0.5619	3.4196
80	SR	0.77	0.40	-0.0328	0.05	1.00	1.08			
81	SR	0.85	0.38	-0.6355	0.06	0.99	0.94			
82	BCR	0.48	0.47	1.2777	0.04	0.95	0.97	-4.0371	1.1534	2.8837
83	SR	0.69	0.48	0.5619	0.05	0.92	0.93			
84	SR	0.52	0.24	1.3741	0.04	1.23	1.32			
85	BCR	0.38	0.56	2.3791	0.03	0.97	0.97	-2.6197	0.0462	2.5735
86	SR	0.65	0.48	0.6148	0.05	0.95	0.90			

Table C.4 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 4 Form B

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
1	SR	0.99	0.15	-3.9886	0.22	0.99	1.72			
5	SR	0.94	0.27	-1.7739	0.08	1.04	1.22			
11	SR	0.83	0.37	-0.4710	0.06	1.07	1.19			
12	SR	0.89	0.26	-1.2892	0.07	1.20	1.24			
20	SR	0.80	0.34	0.0403	0.05	1.00	1.02			
25	SR	0.86	0.50	-0.6252	0.06	0.81	0.63			
26	SR	0.81	0.49	-0.2092	0.05	0.89	0.75			
32	SR	0.92	0.31	-1.4440	0.07	1.04	1.20			
39	SR	0.83	0.37	-0.6157	0.06	1.02	1.02			
42	SR	0.72	0.48	0.2123	0.05	0.98	0.98			
45	SR	0.83	0.40	-0.3429	0.05	0.92	1.00			
46	SR	0.76	0.36	-0.0598	0.05	1.07	1.13			
47	SR	0.86	0.48	-0.7393	0.06	0.90	0.77			
48	SR	0.82	0.49	-0.3247	0.05	0.87	0.74			
49	SR	0.45	0.29	1.7252	0.04	1.19	1.36			
50	SR	0.95	0.35	-1.9501	0.09	0.81	0.63			
51	SR	0.82	0.39	-0.4109	0.06	1.04	0.99			
54	SR	0.83	0.52	-0.5286	0.06	0.89	0.73			
55	SR	0.94	0.31	-1.8443	0.09	0.89	0.97			
56	SR	0.62	0.38	0.8212	0.05	1.06	1.11			
57	SR	0.51	0.34	1.3188	0.04	1.12	1.19			
58	SR	0.38	0.33	2.0024	0.04	1.11	1.25			
59	SR	0.92	0.41	-1.4991	0.08	0.89	0.66			
66	SR	0.78	0.46	-0.1689	0.05	0.97	0.94			
68	SR	0.66	0.47	0.7087	0.05	0.96	0.92			
75	SR	0.80	0.35	-0.1933	0.05	1.07	1.14			
76	BCR	0.42	0.55	2.3102	0.04	0.96	0.96	-3.2953	0.0094	3.286
77	SR	0.68	0.39	0.4553	0.05	1.08	1.12			
78	SR	0.85	0.50	-0.6226	0.06	0.89	0.77			
79	BCR	0.42	0.52	2.2776	0.04	1.00	1.00	-3.4091	-0.0394	3.4485
80	SR	0.69	0.47	0.4683	0.05	0.96	0.91			
81	SR	0.73	0.47	0.2553	0.05	0.98	0.95			
82	BCR	0.42	0.63	2.1761	0.04	0.92	0.91	-2.1192	-0.5935	2.7127
83	SR	0.54	0.44	1.2656	0.04	1.02	1.06			
84	SR	0.72	0.55	0.2504	0.05	0.88	0.75			
85	BCR	0.44	0.54	1.7439	0.04	0.99	0.99	-3.0317	0.1072	2.9245
86	SR	0.85	0.46	-0.7797	0.06	0.92	0.78			

Table C.5 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 5 Form A

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
4	SR	0.61	0.41	0.5100	0.04	1.00	0.96			
5	SR	0.57	0.41	0.5600	0.04	1.00	0.99			
6	SR	0.64	0.52	0.3700	0.04	0.85	0.78			
10	SR	0.91	0.27	-1.5200	0.07	0.93	0.94			
11	SR	0.91	0.38	-1.6968	0.07	0.89	0.61			
12	SR	0.84	0.25	-1.1100	0.06	1.17	1.57			
14	SR	0.85	0.22	-1.1400	0.06	1.16	1.68			
18	SR	0.83	0.37	-0.7100	0.05	0.91	0.84			
19	SR	0.80	0.44	-0.4700	0.05	0.89	0.77			
21	SR	0.75	0.30	-0.3700	0.05	1.05	1.06			
24	SR	0.82	0.41	-0.7762	0.05	0.96	0.91			
26	SR	0.59	0.39	0.4900	0.04	1.04	1.03			
28	SR	0.73	0.47	-0.1900	0.05	0.94	0.84			
29	SR	0.70	0.28	-0.0561	0.05	1.10	1.27			
31	SR	0.54	0.28	0.7147	0.04	1.13	1.17			
34	SR	0.60	0.48	0.4500	0.04	0.93	0.92			
35	SR	0.70	0.35	0.0071	0.05	1.06	1.11			
36	SR	0.81	0.46	-0.6500	0.05	0.85	0.73			
37	SR	0.44	0.42	1.4400	0.04	1.00	1.04			
38	SR	0.67	0.50	0.1195	0.05	0.89	0.80			
40	SR	0.68	0.36	-0.0200	0.05	1.10	1.20			
44	SR	0.77	0.43	-0.3800	0.05	0.89	0.81			
47	SR	0.66	0.52	0.1230	0.05	0.89	0.82			
48	SR	0.57	0.41	0.6900	0.04	1.00	1.03			
52	SR	0.85	0.46	-1.2702	0.06	0.89	0.73			
64	SR	0.85	0.42	-1.0182	0.06	0.94	0.79			
65	BCR	0.26	0.54	2.3136	0.04	0.97	1.02	-1.2533	-0.0171	1.2703
66	SR	0.51	0.23	0.9470	0.04	1.21	1.31			
67	SR	0.78	0.38	-0.4540	0.05	0.99	0.95			
68	BCR	0.29	0.56	2.5966	0.03	0.99	0.99	-2.1019	-0.0754	2.1773
69	SR	0.71	0.33	-0.1528	0.05	1.05	1.08			
70	SR	0.81	0.44	-0.6995	0.05	0.94	0.92			
71	BCR	0.30	0.50	1.9336	0.03	1.09	1.17	-0.8400	-0.1247	0.9647
72	SR	0.82	0.35	-0.7553	0.05	1.01	1.02			
73	SR	0.71	0.39	-0.2062	0.05	1.00	0.97			
74	BCR	0.33	0.51	1.9017	0.03	1.16	1.17	-0.7689	-0.7023	1.4712
75	SR	0.60	0.38	0.5646	0.04	1.02	1.03			

Table C.6 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 5 Form B

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
4	SR	0.62	0.41	0.5100	0.04	1.00	0.99			
5	SR	0.57	0.38	0.5600	0.04	1.08	1.07			
6	SR	0.63	0.51	0.3700	0.04	0.88	0.83			
10	SR	0.91	0.25	-1.5200	0.07	0.85	0.85			
11	SR	0.91	0.39	-1.8950	0.07	0.90	0.61			
12	SR	0.85	0.24	-1.1100	0.06	1.14	1.47			
14	SR	0.84	0.20	-1.1400	0.06	1.18	1.69			
18	SR	0.83	0.36	-0.7100	0.05	0.88	0.83			
19	SR	0.80	0.43	-0.4700	0.05	0.81	0.72			
21	SR	0.75	0.31	-0.3700	0.05	1.13	1.22			
24	SR	0.82	0.42	-0.8321	0.05	0.95	0.89			
26	SR	0.59	0.38	0.4900	0.04	1.05	1.06			
28	SR	0.73	0.46	-0.1900	0.05	0.94	0.84			
29	SR	0.70	0.28	-0.0725	0.05	1.09	1.22			
31	SR	0.55	0.27	0.7117	0.04	1.17	1.22			
34	SR	0.59	0.47	0.4500	0.04	0.95	0.93			
35	SR	0.70	0.36	0.0017	0.05	1.00	0.99			
36	SR	0.81	0.46	-0.6500	0.05	0.90	0.81			
37	SR	0.43	0.40	1.4400	0.04	1.01	1.06			
38	SR	0.68	0.49	0.1206	0.05	0.92	0.84			
40	SR	0.68	0.37	-0.0200	0.05	1.07	1.11			
44	SR	0.77	0.43	-0.3800	0.05	0.88	0.79			
47	SR	0.66	0.52	0.2228	0.04	0.87	0.80			
48	SR	0.57	0.42	0.6900	0.04	1.00	1.02			
52	SR	0.85	0.47	-1.2185	0.06	0.88	0.71			
64	SR	0.75	0.42	-0.3068	0.05	0.98	0.96			
65	BCR	0.48	0.53	1.0519	0.03	1.01	1.01	-2.6658	0.1169	2.5489
66	SR	0.61	0.56	0.4808	0.04	0.85	0.78			
67	SR	0.66	0.12	0.1529	0.05	1.31	1.57			
68	BCR	0.51	0.60	0.8502	0.03	0.94	0.93	-2.326	0.1756	2.1504
69	SR	0.65	0.29	0.1262	0.05	1.11	1.20			
70	SR	0.71	0.25	-0.1249	0.05	1.15	1.29			
71	BCR	0.48	0.49	1.1994	0.04	1.06	1.06	-2.6475	-0.0668	2.7143
72	SR	0.93	0.39	-2.0815	0.08	0.87	0.56			
73	SR	0.65	0.45	0.2654	0.04	0.95	0.92			
74	BCR	0.45	0.46	1.3410	0.04	1.21	1.21	-1.8955	-0.3138	2.2094
75	SR	0.70	0.58	-0.0650	0.05	0.83	0.74			

Table C.7 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 6 Form A

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
1	SR	0.79	0.40	-0.6467	0.06	1.09	1.00			
5	SR	0.54	0.39	0.9241	0.05	1.11	1.19			
8	SR	0.63	0.43	0.7190	0.05	1.04	1.10			
10	SR	0.92	0.33	-1.8289	0.08	0.88	0.76			
11	SR	0.75	0.25	-0.2987	0.05	1.29	1.70			
15	SR	0.76	0.36	-0.2270	0.05	1.03	1.10			
18	SR	0.81	0.54	-0.5273	0.05	0.81	0.63			
20	SR	0.84	0.43	-0.9466	0.06	0.92	0.82			
24	SR	0.89	0.44	-1.4970	0.07	0.91	0.68			
25	SR	0.78	0.45	-0.4965	0.05	1.03	1.02			
26	SR	0.70	0.46	-0.0437	0.05	1.06	1.08			
27	SR	0.71	0.51	0.0022	0.05	0.92	0.95			
28	SR	0.68	0.35	0.2939	0.05	1.12	1.38			
31	SR	0.80	0.53	-0.6443	0.06	0.89	0.73			
32	SR	0.66	0.52	0.2820	0.05	0.92	0.86			
33	SR	0.69	0.43	0.1072	0.05	1.04	1.03			
35	SR	0.86	0.46	-1.2626	0.06	0.98	0.94			
36	SR	0.34	0.28	1.8873	0.05	1.12	1.41			
37	SR	0.83	0.34	-1.0083	0.06	1.18	1.43			
38	SR	0.64	0.42	0.5459	0.05	1.05	1.03			
39	SR	0.79	0.39	-0.4554	0.05	1.01	1.14			
40	SR	0.82	0.52	-0.8703	0.06	0.90	0.79			
41	SR	0.61	0.54	0.6399	0.05	0.90	0.84			
42	SR	0.87	0.50	-1.4312	0.07	0.93	0.69			
43	SR	0.77	0.49	-0.4922	0.05	1.00	0.89			
64	SR	0.81	0.52	-0.7845	0.06	0.89	0.73			
65	BCR	0.58	0.70	0.7544	0.03	0.86	0.84	-1.6612	-0.7996	2.4609
66	SR	0.80	0.50	-0.6621	0.06	0.92	0.83			
67	SR	0.78	0.57	-0.5052	0.05	0.84	0.65			
68	BCR	0.54	0.60	0.9164	0.03	1.04	1.03	-2.1024	-0.2168	2.3192
69	SR	0.86	0.47	-1.1569	0.06	0.91	0.70			
70	SR	0.56	0.50	0.8595	0.05	0.96	0.96			
71	BCR	0.45	0.62	1.5965	0.04	1.00	1.00	-2.0626	-0.1137	2.1763
72	SR	0.63	0.30	0.5291	0.05	1.24	1.39			
73	SR	0.54	0.35	0.9710	0.05	1.15	1.29			
74	BCR	0.46	0.62	1.4307	0.03	0.97	0.98	-2.5648	0.3469	2.2179
75	SR	0.75	0.51	-0.3015	0.05	0.90	0.78			

Table C.8 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 6 Form B

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
1	SR	0.79	0.40	-0.6467	0.05	1.11	1.07			
5	SR	0.54	0.40	0.9241	0.04	1.06	1.07			
8	SR	0.63	0.43	0.7190	0.04	0.99	1.00			
10	SR	0.92	0.33	-1.8289	0.08	0.93	0.75			
11	SR	0.75	0.27	-0.2987	0.05	1.13	1.31			
15	SR	0.76	0.35	-0.2270	0.05	1.04	1.06			
18	SR	0.81	0.53	-0.5273	0.05	0.79	0.62			
20	SR	0.84	0.43	-0.9466	0.06	0.93	0.80			
24	SR	0.88	0.45	-1.3720	0.07	0.90	0.69			
25	SR	0.78	0.45	-0.4965	0.05	0.94	0.85			
26	SR	0.71	0.45	-0.0437	0.05	1.01	1.04			
27	SR	0.71	0.50	0.0022	0.05	0.92	0.86			
28	SR	0.68	0.36	0.2939	0.05	1.09	1.14			
31	SR	0.80	0.52	-0.5970	0.05	0.90	0.78			
32	SR	0.66	0.51	0.2820	0.05	0.95	0.89			
33	SR	0.69	0.42	0.0674	0.05	1.05	1.07			
35	SR	0.86	0.46	-1.2626	0.06	1.00	0.75			
36	SR	0.33	0.29	1.8873	0.05	1.10	1.32			
37	SR	0.83	0.35	-1.0083	0.06	1.12	1.41			
38	SR	0.63	0.43	0.5459	0.05	1.01	0.98			
39	SR	0.79	0.39	-0.4554	0.05	0.95	0.88			
40	SR	0.82	0.53	-0.8703	0.06	0.92	0.73			
41	SR	0.61	0.55	0.6399	0.04	0.88	0.83			
42	SR	0.87	0.49	-1.4312	0.07	0.97	0.67			
43	SR	0.76	0.49	-0.4922	0.05	0.98	0.89			
64	SR	0.65	0.42	0.3986	0.05	1.01	0.97			
65	BCR	0.49	0.61	1.1549	0.04	0.92	0.91	-2.7461	0.2196	2.5265
66	SR	0.40	0.27	1.6809	0.04	1.20	1.40			
67	SR	0.76	0.54	-0.3898	0.05	0.87	0.72			
68	BCR	0.50	0.68	1.1549	0.04	0.81	0.81	-2.3228	0.1131	2.2097
69	SR	0.66	0.45	0.3131	0.05	1.04	1.03			
70	SR	0.79	0.41	-0.5405	0.05	1.05	1.04			
71	BCR	0.49	0.52	0.8605	0.03	1.08	1.10	-3.1284	0.634	2.4944
72	SR	0.73	0.38	-0.0986	0.05	1.07	1.26			
73	SR	0.75	0.43	-0.2304	0.05	1.00	0.96			
74	BCR	0.44	0.55	1.5776	0.03	1.09	1.10	-2.2744	0.1386	2.1358
75	SR	0.59	0.36	0.6061	0.05	1.13	1.17			

Table C.9 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 7 Form A

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
1	SR	0.90	0.37	-1.6474	0.07	1.02	0.79			
3	SR	0.85	0.28	-1.1065	0.06	0.96	0.95			
6	SR	0.49	0.49	0.9977	0.04	0.90	0.88			
8	SR	0.41	0.38	1.4056	0.04	0.99	1.09			
11	SR	0.61	0.29	0.3792	0.04	1.13	1.16			
15	SR	0.70	0.41	0.0457	0.05	0.95	0.93			
18	SR	0.66	0.38	0.1649	0.05	1.04	1.02			
22	SR	0.84	0.46	-1.1073	0.06	0.88	0.71			
25	SR	0.88	0.38	-1.5119	0.07	0.96	0.90			
26	SR	0.53	0.46	0.7546	0.04	0.95	0.95			
29	SR	0.77	0.26	-0.4347	0.05	1.06	1.21			
30	SR	0.53	0.31	0.8787	0.04	1.12	1.17			
31	SR	0.65	0.45	0.2107	0.05	0.99	0.99			
34	SR	0.57	0.39	0.5308	0.04	1.04	1.06			
35	SR	0.87	0.41	-1.3415	0.06	0.91	0.95			
36	SR	0.63	0.33	0.5246	0.04	1.08	1.13			
39	SR	0.90	0.34	-1.5988	0.07	0.97	0.84			
40	SR	0.73	0.51	-0.2783	0.05	0.96	0.89			
41	SR	0.76	0.41	-0.5500	0.05	1.03	1.01			
42	SR	0.65	0.36	0.2337	0.05	1.05	1.06			
43	SR	0.88	0.38	-1.3703	0.06	0.93	0.88			
44	SR	0.78	0.47	-0.5760	0.05	0.93	0.88			
45	SR	0.73	0.54	-0.3503	0.05	0.91	0.79			
46	SR	0.74	0.46	-0.3690	0.05	0.98	0.96			
47	SR	0.69	0.49	-0.0528	0.05	0.89	0.81			
64	SR	0.91	0.37	-1.7846	0.07	0.94	0.74			
65	BCR	0.49	0.61	1.1441	0.03	0.89	0.89	-2.8844	-0.0732	2.9576
66	SR	0.70	0.33	-0.0952	0.05	1.07	1.17			
67	SR	0.85	0.45	-1.2273	0.06	0.89	0.68			
68	BCR	0.47	0.57	1.1302	0.03	0.95	0.95	-2.4373	-0.0697	2.5069
69	SR	0.67	0.26	0.0612	0.05	1.19	1.41			
70	SR	0.75	0.46	-0.4330	0.05	0.94	0.85			
71	BCR	0.35	0.60	1.9406	0.03	0.99	1.00	-1.3567	-0.6052	1.9619
72	SR	0.58	0.26	0.5856	0.04	1.19	1.30			
73	SR	0.55	0.24	0.6895	0.04	1.19	1.27			
74	BCR	0.38	0.51	1.7263	0.05	0.98	0.98	-2.8109	-0.0529	2.8638
75	SR	0.77	0.43	-0.4891	0.05	0.96	0.89			

Table C.10 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 7 Form B

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
1	SR	0.90	0.37	-1.6474	0.07	0.91	0.68			
3	SR	0.85	0.26	-1.1065	0.06	1.11	1.39			
6	SR	0.49	0.50	1.0330	0.04	0.90	0.88			
8	SR	0.41	0.38	1.3777	0.04	1.02	1.10			
11	SR	0.62	0.28	0.3792	0.04	1.13	1.19			
15	SR	0.70	0.42	0.0457	0.05	0.94	0.92			
18	SR	0.65	0.40	0.1649	0.05	1.05	1.10			
22	SR	0.84	0.46	-1.1073	0.06	0.91	0.75			
25	SR	0.88	0.40	-1.5119	0.07	1.00	0.91			
26	SR	0.54	0.46	0.8305	0.04	0.94	0.92			
29	SR	0.77	0.25	-0.4347	0.05	1.04	1.16			
30	SR	0.53	0.30	0.8787	0.04	1.16	1.23			
31	SR	0.65	0.44	0.2107	0.05	0.99	0.99			
34	SR	0.57	0.39	0.5308	0.04	1.05	1.04			
35	SR	0.87	0.39	-1.3415	0.06	0.96	0.81			
36	SR	0.62	0.33	0.5246	0.04	1.11	1.20			
39	SR	0.90	0.33	-1.5698	0.07	0.99	0.94			
40	SR	0.73	0.51	-0.2783	0.05	0.88	0.77			
41	SR	0.76	0.41	-0.5500	0.05	1.05	1.09			
42	SR	0.65	0.37	0.2337	0.05	1.05	1.10			
43	SR	0.88	0.38	-1.3703	0.06	0.91	0.82			
44	SR	0.77	0.47	-0.5760	0.05	0.93	0.87			
45	SR	0.73	0.55	-0.3503	0.05	0.87	0.76			
46	SR	0.74	0.45	-0.3690	0.05	0.94	0.91			
47	SR	0.69	0.49	-0.0528	0.05	0.94	0.89			
64	SR	0.78	0.35	-0.5582	0.05	1.04	1.02			
65	BCR	0.36	0.57	1.8451	0.03	0.92	0.93	-2.795	0.7037	2.0913
66	SR	0.52	0.35	0.9180	0.04	1.09	1.19			
67	SR	0.71	0.41	-0.1129	0.05	0.99	1.01			
68	BCR	0.38	0.60	1.7181	0.03	0.91	0.91	-2.0719	0.2852	1.7867
69	SR	0.83	0.46	-0.9443	0.06	0.92	0.82			
70	SR	0.67	0.26	0.0137	0.05	1.15	1.37			
71	BCR	0.40	0.51	1.7183	0.05	0.99	0.99	-3.1613	0.4508	2.7104
72	SR	0.71	0.47	-0.1371	0.05	0.97	0.98			
73	SR	0.59	0.54	0.5586	0.04	0.86	0.83			
74	BCR	0.35	0.51	1.9503	0.05	1.10	1.10	-2.5459	0.3053	2.2406
75	SR	0.67	0.31	0.0481	0.05	1.10	1.20			

Table C.11 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 8 Form A

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
3	SR	0.66	0.43	0.0700	0.05	0.97	0.92			
6	SR	0.54	0.31	0.9600	0.04	1.09	1.12			
8	SR	0.56	0.42	0.7729	0.04	0.95	0.93			
10	SR	0.93	0.31	-2.1746	0.09	0.95	0.67			
25	SR	0.97	0.21	-3.1958	0.13	0.98	1.15			
26	SR	0.56	0.23	0.6400	0.04	1.17	1.22			
27	SR	0.59	0.30	0.5742	0.04	1.08	1.12			
28	SR	0.82	0.26	-0.8000	0.05	1.08	1.22			
29	SR	0.63	0.35	0.3900	0.04	1.04	1.05			
32	SR	0.74	0.43	-0.1900	0.05	0.92	0.90			
33	SR	0.62	0.35	0.4417	0.04	1.03	1.03			
34	SR	0.65	0.43	0.2000	0.04	0.99	0.97			
35	SR	0.49	0.24	0.9800	0.04	1.16	1.23			
36	SR	0.65	0.42	0.2900	0.04	0.98	0.95			
38	SR	0.78	0.33	-0.4600	0.05	0.94	0.99			
39	SR	0.53	0.27	0.9468	0.04	1.11	1.15			
40	SR	0.73	0.42	-0.2400	0.05	0.96	0.94			
41	SR	0.75	0.44	-0.4900	0.05	1.01	1.02			
42	SR	0.53	0.37	0.8505	0.04	1.03	1.05			
44	SR	0.84	0.30	-1.0200	0.06	1.03	1.14			
47	SR	0.74	0.51	-0.1600	0.05	0.81	0.71			
49	SR	0.79	0.50	-0.6554	0.05	0.88	0.73			
51	SR	0.73	0.54	-0.0500	0.05	0.81	0.71			
52	SR	0.74	0.40	-0.1600	0.05	0.95	0.89			
53	SR	0.74	0.44	-0.1800	0.05	0.90	0.87			
64	SR	0.90	0.36	-1.6346	0.07	0.95	1.00			
65	BCR	0.44	0.53	1.5784	0.04	0.94	0.94	-3.4976	-0.0444	3.542
66	SR	0.66	0.60	0.2805	0.04	0.82	0.75			
67	SR	0.61	0.23	0.4273	0.04	1.18	1.25			
68	BCR	0.46	0.63	1.9023	0.03	0.87	0.85	-2.3884	-1.218	3.6064
69	SR	0.68	0.32	0.1416	0.05	1.04	1.03			
70	SR	0.72	0.34	-0.0685	0.05	1.06	1.08			
71	BCR	0.34	0.59	2.4814	0.05	0.87	0.87	-2.9633	-0.2938	3.257
72	SR	0.51	0.34	0.8998	0.04	1.06	1.13			
73	SR	0.74	0.42	-0.3210	0.05	0.93	0.89			
74	BCR	0.29	0.53	3.0578	0.05	0.89	0.89	-3.1564	0.0909	3.0655
75	SR	0.37	0.16	1.6341	0.04	1.22	1.36			

Table C.12 The 2006 MSA-Reading Classical and *IRT* Item Parameters: Grade 8 Form B

Item Number	Item Type	P-Value	Point-Biserial	Rasch Difficulty	*SE*	Ms. Infit	Ms. Outfit	Step 0-1	Step 1-2	Step 2-3
3	SR	0.66	0.42	0.0700	0.04	1.01	0.98			
6	SR	0.54	0.31	0.9600	0.04	1.07	1.11			
8	SR	0.57	0.41	0.6102	0.04	0.95	0.94			
10	SR	0.94	0.31	-2.3917	0.09	0.94	0.71			
25	SR	0.97	0.22	-3.1953	0.13	0.97	0.99			
26	SR	0.56	0.22	0.6400	0.04	1.18	1.25			
27	SR	0.59	0.30	0.5384	0.04	1.08	1.09			
28	SR	0.82	0.26	-0.8000	0.05	1.03	1.15			
29	SR	0.63	0.33	0.3900	0.04	1.05	1.07			
32	SR	0.74	0.43	-0.1900	0.05	0.92	0.89			
33	SR	0.61	0.34	0.4091	0.04	1.02	1.01			
34	SR	0.64	0.42	0.2000	0.04	0.99	0.98			
35	SR	0.50	0.24	0.9800	0.04	1.16	1.22			
36	SR	0.64	0.41	0.2900	0.04	0.98	0.97			
38	SR	0.79	0.32	-0.4600	0.05	1.01	1.07			
39	SR	0.53	0.27	0.7856	0.04	1.12	1.16			
40	SR	0.73	0.41	-0.2400	0.05	0.96	0.94			
41	SR	0.75	0.44	-0.4900	0.05	1.01	0.94			
42	SR	0.53	0.37	0.8103	0.04	1.01	1.02			
44	SR	0.84	0.29	-1.0200	0.06	1.06	1.12			
47	SR	0.75	0.49	-0.1600	0.05	0.80	0.74			
49	SR	0.80	0.49	-0.6549	0.05	0.87	0.74			
51	SR	0.73	0.53	-0.0500	0.05	0.79	0.69			
52	SR	0.74	0.40	-0.1600	0.05	0.92	0.93			
53	SR	0.75	0.44	-0.1800	0.05	0.88	0.82			
64	SR	0.29	0.17	1.9752	0.05	1.16	1.29			
65	BCR	0.42	0.59	1.4114	0.03	0.86	0.86	-2.8752	0.2244	2.6508
66	SR	0.68	0.39	0.1651	0.04	0.98	0.97			
67	SR	0.34	0.36	1.7412	0.04	0.99	1.06			
68	BCR	0.45	0.55	0.9791	0.04	0.90	0.90	-3.6999	0.5978	3.1022
69	SR	0.74	0.39	-0.3197	0.05	0.98	0.98			
70	SR	0.73	0.42	-0.2048	0.05	0.93	0.86			
71	BCR	0.51	0.51	0.3490	0.04	0.94	0.95	-4.1063	0.7652	3.3411
72	SR	0.61	0.09	0.4009	0.04	1.26	1.44			
73	SR	0.60	0.26	0.4872	0.04	1.10	1.16			
74	BCR	0.37	0.50	1.9880	0.04	0.93	0.93	-3.3590	0.5613	2.7977
75	SR	0.68	0.41	0.0525	0.04	0.96	0.95			

APPENDIX D: THE 2006 MSA-READING BLUEPRINTS

Table D.1 The 2006 MSA-Reading Blueprint: Grade 3

Code	Standard / Objective statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
1	**General Reading Process**	16	(4)		(4)		(4)		(4)	
1.B	**General Reading Process: Vocabulary: Students will apply their knowledge of letter/sound relationships and word structure to decode unfamiliar words**									
1.B.1	**Use a variety of phonetic skills to read unfamiliar words**									
1.B.1.a	Apply phonics skills									
1.B.2	**Decode words in grade-level texts**									
1.B.2.a	Sound out common word parts									
1.B.2.b	Break words into familiar parts									
1.D	**General Reading Process: Vocabulary: Students will use a variety of strategies and opportunities to understand word meanings and to increase vocabulary**									
1.D.2	**Develop a conceptual understanding of new words**									
1.D.2.b	Identify and explain word relationships to determine the meanings of words									
1.D.3	**Understand, acquire, and use new vocabulary**									
1.D.3.a	Use context to determine the meanings of words									
1.D.3.b	Use word structure to determine the meanings of words									
1.D.3.c	Use resources to determine the meanings of words									
1.E	**General Reading Processes: Comprehension: Students will use a variety of strategies to understand what they read (construct meaning)**									
1.E.4	**Use strategies to demonstrate understanding of the text (after reading)**									
1.E.4.a	Identify and explain the main idea									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
1.E.4.b	Identify and explain what is directly stated in the text									
1.E.4.c	Identify and explain what is not directly stated in the text by drawing inferences									
1.E.4.d	Draw conclusions based on the text and prior knowledge									
1.E.4.e	Confirm, refute, or make predictions and form new ideas									
1.E.4.f	Paraphrase the main idea of the text									
1.E.4.g	Summarize the text									
1.E.4.h	Connect the text to prior knowledge or personal experience									
2	**Comprehension of Informational Text**	5	4	2	4	2	4	2	4	2
							(7)	(3)	(7)	(3)
2.A	**Comprehension of Informational Text: Students will read, comprehend, interpret, analyze, and evaluate informational texts**									
2.A.1	**Develop comprehension skills by reading a variety of self-selected and assigned informational texts**									
2.A.1.a	Read, use, and identify the characteristics of nonfiction materials to gain information and content knowledge									
2.A.1.b	Read, use, and identify the characteristics of functional documents									
2.A.2	**Identify and use text features to facilitate understanding of informational texts**									
2.A.2.a	Use print features									
2.A.2.b	Use graphic aids									
2.A.2.c	Use informational aids									
2.A.2.d	Use organizational aids									
2.A.2.e	Use online features									
2.A.2.f	Identify and explain the contributions of text features to meaning									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.3	**Develop knowledge of organizational structure of informational text to understand what is read**									
2.A.3.a	Identify and analyze the organization of texts									
2.A.3.b	Identify and use words and phrases associated with common organizational patterns									
2.A.4	**Determine important ideas and messages in informational text**									
2.A.4.a	Identify and explain the author's/text's purpose and intended audience									
2.A.4.b	Identify and explain the author's opinion									
2.A.4.c	State and support main ideas or messages									
2.A.4.d	Summarize the text or a portion of text									
2.A.4.e	Identify and explain information not related to the main idea									
2.A.4.f	Identify and explain relationships between and among ideas									
2.A.4.g	Draw conclusions and make generalizations from text to form new understanding									
2.A.4.h	Distinguish between a fact and an opinion									
2.A.4.i	Identify and explain how someone might use the text									
2.A.4.j	Connect the text to prior knowledge or experience									
2.A.5	**Identify and explain the author's use of language**									
2.A.5.a	Identify and explain specific words or phrases that contribute to the meaning of a text									
2.A.5.b	Identify and explain specific words and punctuation that create tone									
2.A.5.c	Identify and explain the effect of repetition of words or phrases									
2.A.6	**Read critically to evaluate informational text**									
2.A.6.a	Explain whether the text fulfills the reading purpose									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.6.b	Identify and explain additions or changes that would make the text easier to understand									
2.A.6.c	Identify and explain what makes the text a reliable source of information									
2.A.6.d	Explain whether or not the author's opinion is presented fairly									
2.A.6.e	Identify and explain information not included in the text that would have made it easier to understand the author's point									
2.A.6.f	Identify and explain words that affect the reader's feelings									
3	**Comprehension of Literary Text**	4	4 (7)	2 (3)	4 (7)	2 (3)	4	2	4	2
3.A.	**Comprehension of Literary Text: Students will read, comprehend, interpret, analyze, and evaluate literary texts**									
3.A.2	**Use text features to facilitate understanding of literary texts**									
3.A.2.a	Identify and explain how organizational aids contribute to meaning									
3.A.2.b	Identify and explain how graphic aids contribute to meaning									
3.A.2.c	Identify and explain how informational aids contribute to meaning									
3.A.3	**Use elements of narrative texts to facilitate understanding**									
3.A.3.a	Identify and use structural features to distinguish among types of narrative text									
3.A.3.b	Identify and explain the elements of a story									
3.A.3.c	Identify and describe the setting									
3.A.3.d	Identify and analyze the characters									
3.A.3.e	Identify and explain the relationships between and among characters and events									
3.A.3.f	Identify and describe the narrator of the story									
3.A.4	**Use elements of poetry to facilitate understanding**									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.4.a	Use structural features to identify poetry as a literary form									
3.A.4.b	Identify and explain the meaning of words, lines, and stanzas									
3.A.4.c	Identify and explain sound elements of poetry									
3.A.5	**Use elements of drama to facilitate understanding**									
3.A.5.a	Use structural features to identify a play as a literary form									
3.A.5.b	Identify and explain the action of a scene									
3.A.5.c	Identify and explain stage directions that help to create character and movement									
3.A.5.d	Identify and explain stage directions and dialogue that help to create character									
3.A.6	**Determine important ideas and messages in literary texts**									
3.A.6.a	Identify and explain main ideas and universal themes									
3.A.6.b	Identify and explain a similar theme in more than one text									
3.A.6.c	Retell the text									
3.A.6.d	Summarize the text									
3.A.6.e	Identify and explain personal connections to the text									
3.A.7	**Identify and describe the author's use of language**									
3.A.7.a	Identify and explain how the author's use of dialogue contributes to a story									
3.A.7.b	Identify and explain specific words and phrases that contribute to the meaning of a text									
3.A.7.c	Identify and explain words and punctuation that create tone									
3.A.7.d	Identify and explain figurative language									
3.A.7.e	Identify and explain language that appeals to the senses and feelings									
3.A.7.f	Identify and explain repetition and exaggeration									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.8	**Read critically to evaluate literary texts**									
3.A.8.a	Identify and explain the believability of the characters' actions and the story's events									
3.A.8.b	Identify and explain questions left unanswered by the text									

Note. The number in the parenthesis indicates the total number of field test items.

Table D.2 The 2006 MSA-Reading Blueprint: Grade 4

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
1	**General Reading Process**	15	(4)		(4)		(4)		(4)	
1.B	**General Reading Process: Phonics: Students will apply knowledge of letter/sound relationships and word structure to decode words**									
1.B.1	**Use a variety of phonetic skills to read unfamiliar words**									
1.B.1.a	Apply phonics skills									
1.B.2	**Decode words in grade-level texts**									
1.B.2.a	Sound out common word parts									
1.B.2.b	Break words into familiar parts									
1.D	**General Reading Process: Vocabulary: Students will use a variety of strategies and opportunities to understand word meanings and to increase vocabulary**									
1.D.2	**Develop a conceptual understanding of new words**									
1.D.2.b	Identify and explain word relationships to determine the meanings of words									
1.D.3	**Understand, acquire, and use new vocabulary**									
1.D.3.a	Use context to determine the meanings of words									
1.D.3.b	Use word structure to determine the meanings of words									
1.D.3.c	Use resources to determine the meanings of words									
1.E	**General Reading Processes: Comprehension: Students will use a variety of strategies to understand what they read (construct meaning)**									
1.E.4	**Use strategies to demonstrate understanding of the text (after reading)**									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
1.E.4.a	Identify and explain the main idea									
1.E.4.b	Identify and explain what is directly stated in the text									
1.E.4.c	Identify and explain what is not directly stated in the text by drawing inferences									
1.E.4.d	Draw conclusions or make generalizations about the text									
1.E.4.e	Confirm, refute, or make predictions and form new ideas									
1.E.4.f	Paraphrase the main idea of the text									
1.E.4.g	Summarize the text									
1.E.4.h	Connect the text to prior knowledge or personal experience									
2	**Comprehension of Informational Text**	5	4 (7)	2 (3)	4	2	4 (7)	2 (3)	4	2
2.A	**Comprehension of Informational Text: Students will read, comprehend, interpret, analyze, and evaluate informational texts**									
2.A.1	**Develop comprehension skills by reading a variety of self-selected and assigned informational texts**									
2.A.1.a	Read, use, and identify the characteristics of nonfiction materials to gain information and content knowledge									
2.A.1.b	Read, use, and identify the characteristics of functional documents									
2.A.2	**Identify and use text features to facilitate understanding of informational texts**									
2.A.2.a	Use print features									
2.A.2.b	Use graphic aids									
2.A.2.c	Use informational aids									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.2.d	Use organizational aids									
2.A.2.e	Use online features									
2.A.2.f	Identify and explain the contributions of text features to meaning									
2.A.3	**Develop knowledge of organizational structure of informational text to understand what is read**									
2.A.3.a	Identify and analyze the organization of texts									
2.A.3.b	Identify and use words and phrases associated with common organizational patterns									
2.A.4	**Determine important ideas and messages in informational text**									
2.A.4.a	Identify and explain the author's/text's purpose and intended audience									
2.A.4.b	Identify and explain the author's opinion									
2.A.4.c	State and support main ideas or messages									
2.A.4.d	Summarize the text or a portion of text									
2.A.4.e	Identify and explain information not related to the main idea									
2.A.4.f	Identify and explain relationships between and among ideas									
2.A.4.g	Draw conclusions and make generalizations from text to form new understanding									
2.A.4.h	Distinguish between a fact and an opinion									
2.A.4.i	Identify and explain how someone might use the text									
2.A.4.j	Connect the text to prior knowledge or experience									
2.A.5	**Identify and explain the author's use of language**									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.5.a	Identify and explain specific words or phrases that contribute to the meaning of a text									
2.A.5.b	Identify and explain specific words and punctuation that create tone									
2.A.5.c	Identify and explain the effect of repetition of words or phrases									
2.A.6	**Read critically to evaluate informational text**									
2.A.6.a	Explain whether the text fulfills the reading purpose									
2.A.6.b	Identify and explain additions or changes that would make the text easier to understand									
2.A.6.c	Identify and explain what makes the text a reliable source of information									
2.A.6.d	Explain whether or not the author's opinion is presented fairly									
2.A.6.e	Identify and explain information not included in the text that would have made it easier to understand the author's point									
2.A.6.f	Identify and explain words that affect the reader's feelings									
3	**Comprehension of Literary Text**	5	4	2	4 (7)	2 (3)	4	2	4 (7)	2 (3)
3.A.	**Comprehension of Literary Text: Students will read, comprehend, interpret, analyze, and evaluate literary texts**									
3.A.2	**Use text features to facilitate understanding of literary texts**									
3.A.2.a	Identify and explain how organizational aids contribute to meaning									
3.A.2.b	Identify and explain how print features contribute to meaning									
3.A.2.c	Identify and explain how informational aids contribute to meaning									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.3	**Use elements of narrative texts to facilitate understanding**									
3.A.3.a	Identify and use structural features to distinguish among types of narrative text									
3.A.3.b	Identify and explain the elements of a story									
3.A.3.c	Identify and describe the setting									
3.A.3.d	Identify and analyze the characters									
3.A.3.e	Identify and explain the relationships between and among characters and events									
3.A.3.f	Identify and explain how the actions of the character(s) affect the plot									
3.A.3.g	Identify and describe the narrator of the story									
3.A.4	**Use elements of poetry to facilitate understanding**									
3.A.4.a	Use structural features to identify poetry as a literary form and distinguish among types of poems									
3.A.4.b	Identify and explain the meaning of words, lines, and stanzas									
3.A.4.c	Identify and explain sound elements of poetry									
3.A.5	**Use elements of drama to facilitate understanding**									
3.A.5.a	Use structural features to identify a play as a literary form									
3.A.5.b	Identify and explain the action of a scene									
3.A.5.c	Identify and explain stage directions that help to create character and movement									
3.A.5.d	Identify and explain stage directions and dialogue that help to create character									
3.A.6	**Determine important ideas and messages in literary texts**									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.6.a	Identify and explain main ideas and universal themes									
3.A.6.b	Identify and explain a similar theme in more than one text									
3.A.6.c	Paraphrase the text									
3.A.6.d	Summarize the text									
3.A.6.e	Identify and explain personal connections to the text									
3.A.7	**Identify and describe the author's use of language**									
3.A.7.a	Identify and explain how the author's use of dialogue contributes to a story									
3.A.7.b	Identify and explain specific words and phrases that contribute to the meaning of a text									
3.A.7.c	Identify and explain words and punctuation that create tone									
3.A.7.d	Identify and explain figurative language									
3.A.7.e	Identify and explain language that appeals to the senses and feelings									
3.A.7.f	Identify and explain repetition and exaggeration									
3.A.8	**Read critically to evaluate literary texts**									
3.A.8.a	Identify and explain the believability of the characters' actions and the story's events									
3.A.8.b	Identify and explain questions left unanswered by the text									
3.A.8.c	Identify and explain the relationship between a literary text and its historical context									

Note. The number in the parenthesis indicates the total number of field test items.

Table D.3 The 2006 MSA-Reading Blueprint: Grade 5

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
1	**General Reading Process**	15	(3)		(3)		(3)		(3)	
1.D	**General Reading Process: Vocabulary: Students will use a variety of strategies and opportunities to understand word meanings and to increase vocabulary**									
1.D.2	**Develop and apply a conceptual understanding of new words**									
1.D.2.b	Identify and explain relationships between and among words									
1.D.3	**Understand, acquire, and use new vocabulary**									
1.D.3.a	Use context to determine the meanings of words									
1.D.3.b	Use word structure to determine the meanings of words									
1.D.3.c	Use resources to confirm definitions and gather further information about words									
1.E	**General Reading Processes: Comprehension: Students will use a variety of strategies to understand what they read (construct meaning)**									
1.E.4	**Use strategies to demonstrate understanding of the text (after reading)**									
1.E.4.a	Identify and explain the main idea									
1.E.4.b	Identify and explain what is directly stated in the text									
1.E.4.c	Identify and explain what is not directly stated in the text by drawing inferences									
1.E.4.d	Draw conclusions or make generalizations about the text									
1.E.4.e	Confirm, refute, or make predictions and form new ideas									
1.E.4.f	Paraphrase the main idea of the text									
1.E.4.g	Summarize the text									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
1.E.4.h	Connect the text to prior knowledge or personal experience									
2	**Comprehension of Informational Text**	5	4 (7)	2 (3)	4	2	4 (7)	2 (3)	4	2
2.A	**Comprehension of Informational Text: Students will read, comprehend, interpret, analyze, and evaluate informational texts**									
2.A.1	**Develop and apply comprehension skills by reading a variety of self-selected and assigned print and electronic informational texts**									
2.A.1.a	Read, use, and identify the characteristics of nonfiction materials to gain information and content knowledge									
2.A.1.b	Read, use, and identify the characteristics of functional documents									
2.A.2	**Identify and use text features to facilitate understanding of informational texts**									
2.A.2.a	Use print features									
2.A.2.b	Use graphic aids									
2.A.2.c	Use informational aids									
2.A.2.d	Use organizational aids									
2.A.2.e	Use online features									
2.A.2.f	Identify and explain the contributions of text features to meaning									
2.A.3	**Develop and apply knowledge of organizational structure of informational text to understand what is read**									
2.A.3.a	Identify and analyze the organizational patterns of texts									
2.A.3.b	Identify and use words and phrases associated with common organizational patterns									
2.A.4	**Determine and analyze important ideas and messages in informational text**									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.4.a	Identify and explain the author's/text's purpose and intended audience									
2.A.4.b	Identify and explain the author's opinion									
2.A.4.c	State and support main ideas or messages									
2.A.4.d	Summarize the text or a portion of text									
2.A.4.e	Identify and explain information not related to the main idea									
2.A.4.f	Identify and explain relationships between and among ideas									
2.A.4.g	Draw conclusions and make generalizations from text to form new understanding									
2.A.4.h	Distinguish between a fact and an opinion									
2.A.4.i	Identify and explain how someone might use the text									
2.A.4.j	Connect the text to prior knowledge or experience									
2.A.5	**Identify and explain the author's use of language**									
2.A.5.a	Identify and explain specific words or phrases that contribute to the meaning of a text									
2.A.5.b	Identify and explain specific words and punctuation that create tone									
2.A.5.c	Identify and explain the effect of repetition of words and phrases									
2.A.6	**Read critically to evaluate informational text**									
2.A.6.a	Explain whether the text fulfills the reading purpose									
2.A.6.b	Identify and explain additions and changes that would make the text easier to understand									
2.A.6.c	Identify and explain what makes the text a reliable source of information									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.6.d	Determine and explain whether or not the author's opinion is presented fairly									
2.A.6.e	Identify and explain information not included in the text that would have clarified the author's point									
2.A.6.f	Identify and explain words the author uses to appeal to emotion									
3	**Comprehension of Literary Text**	5	4	2	4	2	4	2	4	2
					(7)	(3)			(7)	(3)
3.A.	**Comprehension of Literary Text: Students will read, comprehend, interpret, analyze, and evaluate literary texts**									
3.A.2	**Analyze text features to facilitate understanding of literary texts**									
3.A.2.a	Identify and explain how organizational aids contribute to meaning									
3.A.2.b	Identify and explain how print features contribute to meaning									
3.A.2.c	Identify and explain how informational aids contribute to meaning									
3.A.3	**Analyze elements of narrative texts to facilitate understanding and interpretation**									
3.A.3.a	Identify and use structural features to distinguish among types of narrative text									
3.A.3.b	Identify and explain the conflict and the events of the plot									
3.A.3.c	Identify and describe the setting and explain how the setting affects the characters and the mood									
3.A.3.d	Analyze the characterization									
3.A.3.e	Identify and explain relationships between and among characters and events									
3.A.3.f	Identify and explain how the actions of the character(s) affect the plot									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.3.g	Identify and describe the narrator									
3.A.4	**Analyze elements of poetry to facilitate understanding and interpretation**									
3.A.4.a	Use structural features to identify poetry as a literary form and distinguish among types of poems									
3.A.4.b	Identify and explain the meaning of words, lines, and stanzas									
3.A.4.c	Identify and explain sound elements of poetry									
3.A.5	**Analyze elements of drama to facilitate understanding**									
3.A.5.a	Use structural features to identify a play as a literary form and distinguish among types of plays									
3.A.5.b	Identify and explain the action of a scene									
3.A.5.c	Identify and explain how stage directions create character and movement									
3.A.6	**Determine important ideas and messages in literary texts**									
3.A.6.a	Identify and explain main ideas and universal themes									
3.A.6.b	Identify and explain similar themes across multiple texts									
3.A.6.c	Paraphrase the text									
3.A.6.d	Summarize the text									
3.A.6.e	Identify and explain personal connections to the text									
3.A.6.f	Explain the implications for the reader and/or society									
3.A.7	**Identify and describe the author's use of language**									
3.A.7.a	Identify and explain how the author's use of dialogue contributes to a story									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.7.b	Identify and explain specific words and phrases that contribute to the meaning of a text									
3.A.7.c	Identify and explain words and phrases that create tone									
3.A.7.d	Identify and explain figurative language that contributes to meaning									
3.A.7.e	Identify and explain language that appeals to the senses and feelings									
3.A.7.f	Identify and explain repetition and exaggeration contribute to meaning									
3.A.8	**Read critically to evaluate literary texts**									
3.A.8.a	Determine and explain the plausibility of the characters' actions and the plot									
3.A.8.b	Identify and explain questions left unanswered by the text									
3.A.8.c	Identify and explain the relationship between a literary text and its historical context									

Note. The number in the parenthesis indicates the total number of field test items.

Table D.4 The 2006 MSA-Reading Blueprint: Grade 6

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
1	**General Reading Process**	15	(3)		(3)		(3)		(3)	
1.D	**General Reading Process: Vocabulary: Students will use a variety of strategies and opportunities to understand word meanings and to increase vocabulary**									
1.D.2	**Apply a conceptual understanding of new words**									
1.D.2.b	Explain relationships between and among words									
1.D.3	**Understand, acquire, and use new vocabulary**									
1.D.3.a	Use context to determine the meanings of words									
1.D.3.b	Use word structure to determine the meanings of words									
1.D.3.c	Use resources to confirm definitions and gather further information about words									
1.E	**General Reading Processes: Comprehension: Students will use a variety of strategies to understand what they read (construct meaning)**									
1.E.4	**Use strategies to demonstrate understanding of the text (after reading)**									
1.E.4.a	Identify and explain the main idea									
1.E.4.b	Identify and explain what is directly stated in the text									
1.E.4.c	Identify and explain what is not directly stated in the text by drawing inferences									
1.E.4.d	Draw conclusions or make generalizations about the text									
1.E.4.e	Confirm, refute, or make predictions and form new ideas									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
1.E.4.f	Paraphrase the main idea of the text									
1.E.4.g	Summarize the text									
1.E.4.h	Connect the text to prior knowledge or personal experience									
2	**Comprehension of Informational Text**	5	4 (7)	2 (3)	4	2	4 (7)	2 (3)	4	2
2.A	**Comprehension of Informational Text: Students will read, comprehend, interpret, analyze, and evaluate informational texts**									
2.A.1	**Develop and apply comprehension skills by reading a variety of self-selected and assigned print and electronic informational texts**									
2.A.1.a	Read, use, and identify the characteristics of nonfiction materials to gain information and content knowledge									
2.A.1.b	Read, use, and identify the characteristics of functional documents									
2.A.2	**Identify and use text features to facilitate understanding of informational texts**									
2.A.2.a	Use print features									
2.A.2.b	Use graphic aids									
2.A.2.c	Use informational aids									
2.A.2.d	Use organizational aids									
2.A.2.e	Use online features									
2.A.2.f	Identify and explain the contributions of text features to supporting the main idea of the text									
2.A.3	**Develop and apply knowledge of organizational structure of informational text to facilitate understanding**									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.3.a	Identify and analyze the organizational patterns of texts									
2.A.3.b	Explain how the organizational pattern clarifies and reinforces meaning and supports the author's/text's purpose									
2.A.4	**Determine and analyze important ideas and messages in informational text**									
2.A.4.a	Identify and explain the author's/text's purpose and intended audience									
2.A.4.b	Identify and explain the author's opinion									
2.A.4.c	State and support main ideas or messages.									
2.A.4.d	Summarize the text or a portion of text									
2.A.4.e	Identify and explain information not related to the main idea									
2.A.4.f	Explain relationships between and among ideas									
2.A.4.g	Synthesize ideas from text to form new understanding									
2.A.4.h	Distinguish between a fact and an opinion									
2.A.4.i	Explain how someone might use the text									
2.A.4.j	Connect the text to prior knowledge or experience									
2.A.5	**Analyze purposeful use of language**									
2.A.5.a	Analyze specific words or phrases that contribute to the meaning of a text									
2.A.5.b	Analyze specific language choices that create tone									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.5.c	Analyze the effect of repetition of words or phrases on meaning									
2.A.6	**Read critically to evaluate informational text**									
2.A.6.a	Explain whether the text fulfills the reading purpose									
2.A.6.b	Analyze changes or additions to the structures and features of the text that would make the text easier to understand									
2.A.6.c	Analyze the text and its information for reliability									
2.A.6.d	Determine and explain whether or not the author's argument or position is presented fairly									
2.A.6.e	Identify and explain information not included in the text that would have clarified the author's point.									
2.A.6.f	Identify and explain language intended to persuade the reader									
3	**Comprehension of Literary Text**	5	4	2	4 (7)	2 (3)	4	2	4 (7)	2 (3)
3.A.	**Comprehension of Literary Text: Students will read, comprehend, interpret, analyze, and evaluate literary texts**									
3.A.2	**Analyze text features to facilitate understanding of literary texts**									
3.A.2.a	Identify and explain how organizational aids contribute to meaning									
3.A.2.b	Identify and explain how print features contribute to meaning									
3.A.2.c	Identify and explain how informational aids contribute to meaning									
3.A.3	**Analyze elements of narrative texts to facilitate understanding and interpretation**									
3.A.3.a	Identify and use structural features to distinguish among types of narrative text									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.3.b	Analyze the conflict and the events of the plot									
3.A.3.c	Analyze details that provide information about the setting, the mood created by the setting, and ways in which the setting affects the characters									
3.A.3.d	Analyze the characterization									
3.A.3.e	Analyze relationships between and among characters and events									
3.A.3.f	Identify and explain how the actions of the character(s) affect the plot									
3.A.3.g	Analyze conflicts that motivate characters and those that advance the plot									
3.A.3.h	Identify and explain the author's approach to issues of time in a narrative									
3.A.3.i	Identify and explain the point of view									
3.A.4	**Analyze elements of poetry to facilitate understanding and interpretation**									
3.A.4.a	Use structural features to distinguish among types of poems									
3.A.4.b	Identify and explain the meaning of words, lines, and stanzas									
3.A.4.c	Identify and explain how sound elements of poetry contribute to meaning									
3.A.5	**Analyze elements of drama to facilitate understanding**									
3.A.5.a	Use structural features to distinguish among types of plays									
3.A.5.b	Identify and explain the action of scenes and acts									
3.A.5.c	Identify and explain how stage directions create character and movement									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.5.d	Identify and explain stage directions and dialogue that help to create character									
3.A.6	**Determine important ideas and messages in literary texts**									
3.A.6.a	Analyze main ideas and universal themes									
3.A.6.b	Analyze similar themes across multiple texts									
3.A.6.c	Paraphrase the text									
3.A.6.d	Summarize the text									
3.A.6.e	Identify and explain personal connections to the text									
3.A.6.f	Explain the implications for the reader and/or society									
3.A.7	**Analyze the author's purposeful use of language**									
3.A.7.a	Analyze specific words and phrases that contribute to the meaning of a text									
3.A.7.b	Analyze words and phrases that create tone									
3.A.7.c	Identify and explain figurative language that contributes to meaning									
3.A.7.d	Analyze how sensory language contributes to meaning									
3.A.7.e	Analyze how repetition and exaggeration contribute to meaning									
3.A.8	**Read critically to evaluate literary texts**									
3.A.8.a	Determine and explain the plausibility of the characters' actions and the plot									
3.A.8.b	Identify and explain questions left unanswered by the text									
3.A.8.c	Identify and explain the relationship between a literary text and its historical and social context									

Note. The number in the parenthesis indicates the total number of field test items.

Table D.5 The 2006 MSA-Reading Blueprint: Grade 7

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
1	**General Reading Process**	15	(3)		(3)		(3)		(3)	
1.D	**General Reading Process: Vocabulary: Students will use a variety of strategies and opportunities to understand word meanings and to increase vocabulary**									
1.D.2	**Apply a conceptual understanding of new words**									
1.D.2.b	Explain relationships between and among words									
1.D.3	**Understand, acquire, and use new vocabulary**									
1.D.3.a	Use context to determine the meanings of words									
1.D.3.b	Use word structure to determine the meanings of words									
1.D.3.c	Use resources to confirm definitions and gather further information about words									
1.E	**General Reading Processes: Comprehension: Students will use a variety of strategies to understand what they read (construct meaning)**									
1.E.4	**Use strategies to demonstrate understanding of the text (after reading)**									
1.E.4.a	Identify and explain the main idea									
1.E.4.b	Identify and explain information directly stated in the text									
1.E.4.c	Draw inferences and/or conclusions or make generalizations									
1.E.4.d	Confirm, refute, or make predictions and form new ideas									
1.E.4.e	Summarize or paraphrase the text									
1.E.4.f	Connect the text to prior knowledge or personal experience									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2	**Comprehension of Informational Text**	5	4 (7)	2 (3)	4	2	4 (7)	2 (3)	4	2
2.A	**Comprehension of Informational Text: Students will read, comprehend, interpret, analyze, and evaluate informational texts**									
2.A.1	**Apply comprehension skills by selecting, reading, and interpreting a variety of print and electronic informational texts**									
2.A.1.a	Read, use, and identify the characteristics of primary and secondary sources of academic information									
2.A.1.b	Read, use, and identify the characteristics of workplace and other real-world documents									
2.A.2	**Analyze text features to facilitate understanding of informational texts**									
2.A.2.a	Analyze print features that contribute to meaning									
2.A.2.b	Analyze graphic aids that contribute to meaning									
2.A.2.c	Analyze informational aids that contribute to meaning									
2.A.2.d	Analyze organizational aids that contribute to meaning									
2.A.2.e	Analyze online features that contribute to meaning									
2.A.2.f	Analyze the relationship between the text features and the content of the text as a whole									
2.A.3	**Apply knowledge of organizational patterns of informational text to facilitate understanding**									
2.A.3.a	Analyze the organizational patterns of texts									
2.A.3.b	Analyze the contribution of the organizational pattern to clarifying or reinforcing meaning and supporting the author's purpose and/or argument									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.3.c	Use organizational structure to locate specific information									
2.A.4	**Analyze important ideas and messages in informational text**									
2.A.4.a	Identify and explain the author's/text's purpose and intended audience									
2.A.4.b	Identify and explain the author's argument, viewpoint, or perspective									
2.A.4.c	State and support main ideas and messages									
2.A.4.d	Summarize the text or a portion of text									
2.A.4.e	Identify and explain information or ideas peripheral to the main idea or message									
2.A.4.f	Explain relationships between and among ideas									
2.A.4.g	Synthesize ideas from text to form new understanding									
2.A.4.h	Distinguish between a fact and an opinion									
2.A.4.i	Explain how someone might use the text									
2.A.4.j	Connect the text to prior knowledge or experience									
2.A.5	**Analyze purposeful use of language**									
2.A.5.a	Analyze specific word choice that contributes to meaning and/or creates style									
2.A.5.b	Analyze specific language choices to determine tone									
2.A.5.c	Analyze repetition and variation of specific words and phrases that contribute to meaning									
2.A.6	**Read critically to evaluate informational text**									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.6.a	Analyze the extent to which the text fulfills the reading purpose									
2.A.6.b	Analyze the extent to which the structure and features of the text clarify the purpose and the information									
2.A.6.c	Analyze the text and its information for reliability									
2.A.6.d	Analyze the author's argument or position for clarity and/or bias									
2.A.6.e	Analyze additional information that would clarify or strengthen the author's argument or viewpoint									
2.A.6.f	Analyze language intended to persuade the reader									
3	**Comprehension of Literary Text**	5	4	2	4 (7)	2 (3)	4	2	4 (7)	2 (3)
3.A.	**Comprehension of Literary Text: Students will read, comprehend, interpret, analyze, and evaluate literary texts**									
3.A.2	**Analyze text features to facilitate understanding of literary texts**									
3.A.2.a	Analyze text features that contribute to meaning									
3.A.3	**Analyze elements of narrative texts to facilitate understanding and interpretation**									
3.A.3.a	Use structural features to distinguish among types of narrative text									
3.A.3.b	Analyze the conflict and the events of the plot									
3.A.3.c	Analyze details that provide information about the setting, the mood created by the setting, and ways in which the setting affects the characters									
3.A.3.d	Analyze the characterization									
3.A.3.e	Analyze relationships between and among characters and events									
3.A.3.f	Analyze the actions of characters that serve to advance the plot									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.3.g	Analyze conflicts that motivate characters and those that advance the plot									
3.A.3.h	Analyze the author's approach to issues of time in a narrative									
3.A.3.i	Analyze the point of view									
3.A.3.j	Analyze the interactions among narrative elements and their contribution to meaning									
3.A.4	**Analyze elements of poetry to facilitate understanding and interpretation**									
3.A.4.a	Use structural features to distinguish among types of poems									
3.A.4.b	Analyze language and structural features to determine meaning									
3.A.4.c	Analyze sound elements of poetry that contribute to meaning									
3.A.4.d	Analyze other poetic elements, such as setting, mood, tone, etc. that contribute to meaning									
3.A.5	**Analyze elements of drama to facilitate understanding**									
3.A.5.a	Use structural features to distinguish among types of plays									
3.A.5.b	Analyze the action of individual scenes and acts and its relationship to the plot									
3.A.5.c	Analyze how stage directions affect dialogue, characters, and plot									
3.A.6	**Analyze important ideas and messages in literary texts**									
3.A.6.a	Analyze main ideas and universal themes									
3.A.6.b	Analyze similar themes across multiple texts									
3.A.6.c	Summarize or paraphrase the text									
3.A.6.d	Reflect on and explain personal connections to the text									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.6.e	Explain the implications for the reader and/or society									
3.A.7	**Analyze the author's purposeful use of language**									
3.A.7.a	Analyze how specific language choices contribute to meaning and create style									
3.A.7.b	Analyze language choices that create tone									
3.A.7.c	Analyze figurative language that contributes to meaning and/or creates style									
3.A.7.d	Analyze imagery that contributes to meaning and/or creates style									
3.A.7.e	Analyze elements of style and their contribution to meaning									
3.A.8	**Read critically to evaluate literary texts**									
3.A.8.a	Analyze the plausibility of the plot and the credibility of the characters									
3.A.8.b	Analyze the extent to which the text contains ambiguities, subtleties, or contradictions									
3.A.8.c	Analyze and evaluate the relationship between a literary text and its historical, social, and political contexts									

Note. The number in the parenthesis indicates the total number of field test items.

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Table D.6 The 2006 MSA-Reading Blueprint: Grade 8

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
1	**General Reading Process**	16	(3)		(3)		(3)		(3)	
1.D	**General Reading Process: Vocabulary: Students will use a variety of strategies and opportunities to understand word meanings and to increase vocabulary**									
1.D.2	**Apply a conceptual understanding of new words**									
1.D.2.b	Explain relationships between and among words									
1.D.3	**Understand, acquire, and use new vocabulary**									
1.D.3.a	Use context to determine the meanings of words									
1.D.3.b	Use word structure to determine the meanings of words									
1.D.3.c	Select and use resources to confirm definitions and gather further information about words									
1.E	**General Reading Processes: Comprehension: Students will use a variety of strategies to understand what they read (construct meaning)**									
1.E.4	Use strategies to demonstrate understanding of the text (after reading)									
1.E.4.a	Identify and explain the main idea or argument									
1.E.4.b	Identify and explain information directly stated in the text									
1.E.4.c	Draw inferences and/or conclusions or make generalizations									
1.E.4.d	Confirm, refute, or make predictions and form new ideas									
1.E.4.e	Summarize or paraphrase the text									
1.E.4.f	Connect the text to prior knowledge or personal experience									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2	**Comprehension of Informational Text**	5	4 (7)	2 (3)	4	2	4 (7)	2 (3)	4	2
2.A	**Comprehension of Informational Text: Students will read, comprehend, interpret, analyze, and evaluate informational texts**									
2.A.1	**Apply comprehension skills by selecting, reading, and interpreting a variety of print and electronic informational texts**									
2.A.1.a	Read, use, and identify the characteristics of primary and secondary sources of academic information									
2.A.1.b	Read, use, and identify the characteristics of workplace and other real-world documents									
2.A.2	**Analyze text features to facilitate and extend understanding of informational texts**									
2.A.2.a	Analyze print features that contribute to meaning									
2.A.2.b	Analyze graphic aids that contribute to meaning									
2.A.2.c	Analyze informational aids that contribute to meaning									
2.A.2.d	Analyze organizational aids that contribute to meaning									
2.A.2.e	Analyze online features that contribute to meaning									
2.A.2.f	Analyze the relationship between the text features and the content of the text as a whole									
2.A.3	**Apply knowledge of organizational patterns of informational text to facilitate understanding**									
2.A.3.a	Analyze the organizational patterns of texts									
2.A.3.b	Analyze the contribution of the organizational pattern to clarifying or reinforcing meaning and supporting the author's purpose and/or argument									
2.A.3.c	Analyze shifts in organizational patterns									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.3.d	Use organizational structure to locate specific information									
2.A.4	**Analyze important ideas and messages in informational text**									
2.A.4.a	Analyze the author's/text's purpose and intended audience									
2.A.4.b	Analyze the author's argument, viewpoint, or perspective									
2.A.4.c	State and support main ideas and messages									
2.A.4.d	Summarize the text or a portion of text									
2.A.4.e	Analyze information or ideas peripheral to the main idea or message									
2.A.4.f	Analyze relationships between and among ideas									
2.A.4.g	Synthesize ideas from text to form new understanding									
2.A.4.h	Explain the implications of the text or now someone might use the text									
2.A.4.i	Connect the text to prior knowledge or experience									
2.A.5	**Analyze purposeful use of language**									
2.A.5.a	Analyze specific word choice that contributes to meaning and/or creates style									
2.A.5.b	Analyze specific language choices to determine tone									
2.A.5.c	Analyze the appropriateness of tone									
2.A.5.d	Analyze repetition and variation of specific words and phrases that contribute to meaning									
2.A.6	**Read critically to evaluate informational text**									
2.A.6.a	Analyze the extent to which the text fulfills the reading purpose									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
2.A.6.b	Analyze the extent to which the structure and features of the text clarify the purpose and the information									
2.A.6.c	Analyze the text and its information for reliability									
2.A.6.d	Analyze the author's argument or position for clarity and/or bias									
2.A.6.e	Analyze additional information that would clarify or strengthen the author's argument or viewpoint									
2.A.6.f	Analyze the effectiveness of persuasive techniques to sway the reader to a particular point of view									
2.A.6.g	Analyze the effect of elements of style on meaning									
3	**Comprehension of Literary Text**	4	4	2	4 (7)	2 (3)	4	2	4 (7)	2 (3)
3.A.	**Comprehension of Literary Text: Students will read, comprehend, interpret, analyze, and evaluate literary texts**									
3.A.2	**Analyze and evaluate text features to facilitate and extend understanding of literary texts**									
3.A.2.a	Analyze text features that contribute to meaning									
3.A.3	**Analyze elements of narrative texts to facilitate understanding and interpretation**									
3.A.3.a	Use structural features to distinguish among types of narrative text									
3.A.3.b	Analyze the conflict and its role in advancing the plot									
3.A.3.c	Analyze details that provide information about the setting, the mood created by the setting, and the role the setting plays in the text									
3.A.3.d	Analyze the characterization									
3.A.3.e	Analyze relationships between and among characters and events									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.3.f	Analyze the actions of characters that serve to advance the plot									
3.A.3.g	Analyze conflicts that motivate characters and those that advance the plot									
3.A.3.h	Analyze the author's approach to issues of time in a narrative									
3.A.3.i	Analyze the point of view and its effect on meaning									
3.A.3.j	Analyze the interactions among narrative elements and their contribution to meaning									
3.A.4	**Analyze and evaluate elements of poetry to facilitate understanding and interpretation**									
3.A.4.a	Use structural features to distinguish among types of poems									
3.A.4.b	Analyze language and structural features to determine meaning									
3.A.4.c	Analyze sound elements of poetry that contribute to meaning									
3.A.5	**Analyze and evaluate elements of drama to facilitate understanding**									
3.A.5.a	Use structural features to distinguish among types of dramas									
3.A.5.b	Analyze structural features of drama that contribute to meaning									
3.A.5.c	Analyze how dialogue and stage directions work together to create characters and plot									
3.A.6	**Analyze important ideas and messages in literary texts**									
3.A.6.a	Analyze main ideas and universal themes									
3.A.6.b	Analyze similar themes across multiple texts									
3.A.6.c	Summarize or paraphrase the text									

Note. The number in the parenthesis indicates the total number of field test items.

Code	Standard / Objective Statement	No. of *SAT10* Items	No. of Augmented Items (Form 1)		No. of Augmented Items (Form 2)		No. of Augmented Items (Form 3)		No. of Augmented Items (Form 4)	
		SR	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*	*SR*	*BCR*
3.A.6.d	Reflect on and explain personal connections to the text									
3.A.6.e	Explain the implications for the reader and/or society									
3.A.7	**Analyze and evaluate the author's purposeful use of language**									
3.A.7.a	Analyze and evaluate how specific language choices contribute to meaning and create style									
3.A.7.b	Analyze and evaluate language choices that create tone									
3.A.7.c	Analyze the appropriateness of a particular tone									
3.A.7.d	Analyze and evaluate figurative language that contributes to meaning and/or creates style									
3.A.7.e	Analyze imagery that contributes to meaning and/or creates style									
3.A.7.f	Analyze elements of style and their contribution to meaning									
3.A.8	**Read critically to evaluate literary texts**									
3.A.8.a	Analyze and evaluate the plausibility of the plot and the credibility of the characters									
3.A.8.b	Analyze and evaluate the extent to which the text contains ambiguities, subtleties, or contradictions									
3.A.8.c	Analyze and evaluate the relationship between a literary text and its historical, social, and political contexts									

Note. The number in the parenthesis indicates the total number of field test items.