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The Development and Technical Adequacy of Seventh-Grade Reading Comprehension Measures in a Progress Monitoring Assessment System

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Abstract

This technical report describes the process of development and piloting of reading comprehension measures that are appropriate for seventh-grade students as part of an online progress screening and monitoring assessment system, http://easycbm.com. Each measure consists of an original fictional story of approximately 1,600 to 1,900 words with 20 multiple choice questions assessing students' literal, inferential, and evaluative comprehension skills. Three answer options are provided for each question: correct, near correct, and far correct. All measures were piloted with seventh-grade students whose teachers responded to the pilot invitation on the official easyCBM website. The data were analyzed using one parameter Item Response Theory (IRT) modeling. Complete results of the pilot testing are presented and discussed.

The Development and Technical Adequacy of Seventh-Grade Reading Comprehension Measure in a Progress Monitoring Assessment System

In this technical report, we describe the process of development and piloting of reading comprehension measures as part of an online screening and progress monitoring assessment system developed in 2006 for use with students in Kindergarten through eighth grade (Alonzo, Tindal, Ulmer, & Glasgow, 2006). We begin with a brief overview of the two conceptual frameworks underlying the assessment system: progress monitoring and developmental theories of reading. We then provide context for how the comprehension measures fit into the full assessment system. Additional technical reports provide similar information about measures of early literacy (Alonzo & Tindal, 2007a) and fluency (Alonzo & Tindal, 2007b). In addition, the following reports present the results of technical adequacy studies of the measures developed for use in the primary grades (Lai et al., 2010; Jamgochian et al., 2010) and with upper elementary and secondary students (Sáez et al., 2010).

Conceptual Framework: Progress Monitoring and Literacy Assessment

Early work related to curriculum-based measurement (CBM) led by Deno and Mirkin at the University of Minnesota (1977) was instrumental in promoting the use of short, easily-administered assessments to provide educators with information about student skill development useful for instructional planning. In the three decades since, such *progress monitoring probes* as they have come to be called have increased in popularity, and they are now a regular part of many schools' educational programs (Alonzo, Tindal, & Ketterlin-Geller, 2006). However, CBMs – even those widely used across the United States – often lack the psychometric properties expected of modern technically-adequate assessments. Although the precision of instrument development has advanced tremendously in the past 30 years with the advent of more

sophisticated statistical techniques for analyzing tests on an item by item basis rather than relying exclusively on comparisons of means and standard deviations to evaluate comparability of alternate forms, the world of CBMs has not always kept pace with these statistical advances.

A key feature of assessments designed for progress monitoring is that alternate forms must be as equivalent as possible to allow meaningful interpretation of student performance data across time. Without such cross-form equivalence, changes in scores from one testing session to the next are difficult to attribute to changes in student skill or knowledge. Improvements in student scores may, in fact, be an artifact of the second form of the assessment being easier than the form that was administered first. The advent of more sophisticated data analysis techniques (such as the Rasch modeling used in this study) have made it possible to increase the precision with which we develop and evaluate the quality of assessment tools. In this technical report, we document the development of a progress monitoring assessment in reading, designed for use with students in Kindergarten through Grade 8, focusing here on the reading comprehension assessments specifically intended for use with seventh-grade students. This assessment system was developed to be used by elementary and middle school educators interested in monitoring the progress their students make in the area of reading skill acquisition.

Reading is a fluid construct, shifting over time from a focus on discrete skills necessary for working with language in both written and spoken forms, to those more complex combinations of skills associated with decoding, and finally to comprehension—a construct in which all prior literacy skills are called upon in the act of reading. Reading assessment typically follows this general progression as well (Reading First, 2006). Assessments of emerging literacy skills evaluate student mastery of the alphabetic principle. These tests measure students' ability to correctly identify and/or produce letters and the sounds associated with them. They measure

students' ability to manipulate individual phonemes (sound units) within words, when, for example, students are asked to blend a list of phonemes into a word, segment a word into its corresponding phonemes, or identify the sounds which begin or end a word (Ritchey & Speece, 2006).

As student reading skill progresses, it is necessary to use different reading measures to be able to continue to track the progress students are making as developing readers. Oral reading fluency, which measures a combination of students' sight vocabulary and their ability to decode novel words rapidly and accurately, is consistently identified in the literature as one of the best predictors of student reading comprehension in the early grades (Graves, Plasencia-Peinado, Deno, & Johnson, 2005; Hasbrouck & Tindal, 2005). Eventually, however, the information provided by measures of oral reading fluency plateaus. Readers attain a fluency threshold that enables them to attend to comprehension rather than decoding (Ehri, 1991, 2005). Once this threshold has been reached, fluency is no longer sensitive to increases in reading comprehension. At this point, one must turn to measures designed to assess comprehension more directly. Although this technical report provides information specifically related to the comprehension measures developed for use in our Progress Monitoring assessment system, we provide an overview of the complete system so readers can understand how the comprehension measures fit into the system as a whole.

The Measures that Comprise Our Complete Assessment System

Based on previous empirical studies of early literacy assessment (see, for example, the report from the National Reading Panel), we developed two measures of alphabetic principle (Letter Names and Letter Sounds), one measure of phonological awareness (Phoneme Segmenting), three measures of fluency (Word Reading Fluency, Sentence Reading Fluency, and

Passage Reading Fluency), and one measure of comprehension (Multiple Choice Reading Comprehension). Concurrent with the publication of this technical report, we are completing the development of additional measures of vocabulary and non-fiction reading. A variety of technical reports (available on the brtprojects.org website) provide detailed documentation of the development and technical adequacy of the other measures available in the system for other grades.

When one is interested in monitoring the progress students are making in attaining specific skills, it is important to have sufficient measures to sample student performance frequently. Thus, our goal is to create 20 alternate forms of each measure in our assessment system at each grade level where the measure is designed to be used, retaining three of these forms for use as benchmarking assessments while the remaining 17 are designated for progress monitoring. Because these alternate forms are designed to be used to track student progress over time, it is essential that all forms of a particular measure in a given grade level be both sensitive to showing growth in a discrete skill area over short periods of time (2-4 weeks of instruction) and comparable in difficulty. These two equally important needs inform all parts of our measurement development effort: the construction of the technical specifications for each of the measures, the design of the studies used to gather data on item and test functioning, the analytic approaches we use to interpret the results of the pilot studies, and subsequent revision of the measures. In all cases, we seek approaches that provide us with enough information to evaluate the *sensitivity of the individual measures* to detect small differences in student performance and the *comparability of the different forms* of each measure to allow for meaningful interpretation of growth over time.

In the section that follows, we describe the methods we used to construct, pilot, and analyze the performance of the reading comprehension measures in terms of reliability and validity for use in a progress monitoring assessment system.

Methods

We selected the format of the comprehension measures based on prior empirical work with local school districts (Alonzo & Tindal, 2004a, 2004b, 2004c). In this work, teachers had expressed their desire for tests that closely resembled the types of readings students regularly encountered in their classes. At the same time, concerns about increasing the reliability, ease of use, and cost-effectiveness of our measures prompted us to use multiple choice question types rather than open ended question types in our comprehension measures. Accordingly, we developed the MC Comprehension Tests in a two-step process. First, we wrote the stories that were used as the basis for each test. Then, we wrote the test items associated with each story. We embedded quality control and content review processes in both these steps throughout instrument development.

Two people, selected for their expertise in instrument development and language arts, were principally involved with overseeing the creation of the comprehension tests. The second author on this technical report, who oversaw the creation and revision of the stories and test items earned her Bachelor of Arts degree in Literature from Carleton College in 1990, worked for twelve years as an English teacher in California public schools, was awarded National Board for Professional Teaching Standards certification in Adolescent and Young Adulthood English Language Arts in 2002, and earned her Ph.D. in the area of Learning Assessments/System Performance at the University of Oregon. The man hired to write the multiple choice comprehension items earned his Ph.D. in education psychology, measurement and methodology

from the University of Arizona. He has worked in education at the elementary and middle school levels, as well as in higher education and at the state level. He held a position as associate professor in the distance learning program for Northern Arizona University and served as director of assessment for a large metropolitan school district in Phoenix, Arizona. In addition, he served as state Director of Assessment and Deputy Associate Superintendent for Standards and Assessment at the Arizona Department of Education. He was a test development manager for Harcourt Assessment and has broad experience in assessment and test development.

Creation of Original Fictitious Narratives

The lead author and the professional item writer hired for this project worked together to create documentation for story writers to use while creating their stories (see Appendix A). This written documentation was provided to increase the comparability of story structure and reduce the likelihood of construct irrelevant variance related to variation in story type affecting student performance on the different forms of the comprehension measures. Story creation specifications provided information about the length of the stories (approximately 1,500 words), characters, settings, and plots. Stories, which were composed between January 2008 and March 2010, were written by a variety of people who were either elementary and secondary school educators or graduate students and researchers in the College of Education at the University of Oregon.

Writing Multiple Choice Items to Fit Each Story

The professional item writer we hired created 20 multiple choice questions, each with three possible answer options, for each form of the seventh-grade MC Comprehension tests. All seventh-grade questions were written between January 2008 and March of 2010. For each of the seventh-grade MC Comprehension tests, we wrote seven questions targeting literal comprehension, seven questions targeting inferential comprehension, and six questions targeting

evaluative comprehension, for a total of 20 items on each form of the test. Within each type of comprehension, item-writing specifications called for a range of difficulty such that each form of each test contained easy, moderate, and difficult items in each of the types of comprehension assessed on that test. Item-writing specifications also guided the ordering of the items on each form of the MC Comprehension test. In all cases, we followed a similar pattern of item ordering, beginning with the easiest literal comprehension item and continuing with items of increasing difficulty, ending with an item designed to be one of the most challenging, pulled from the highest level of comprehension assessed in that grade level (evaluative comprehension in grade 7). Appendix B provides a more detailed description of the item ordering specifications followed in test construction.

Once the multiple choice items were written, the stories and item lists were formatted into individual tests, each composed of a story and 20 multiple choice test items. Appendix C provides tables listing each Seventh-grade multiple choice test item by its unique identifying item name, the cognitive attribute and assessment objective it was designed to sample, the degree of difficulty the item writer believed the item demonstrated, and the final ordering of the items on the test.

Pilot Testing

We used a common-person/common item piloting design to collect information on how each of the MC Comprehension measures functioned. In this design, the different forms of each grade level measure are clustered into groups, with three forms in each group. These three different forms are administered to different groups of students in a relatively short period of time. Each test grouping contains one overlapping form (resulting in 20 of 60 items in common), enabling concurrent analysis of all measures across the different student samples (see Table 1 for

an example of this design at Fifth grade). The overlapping forms serve as the ‘common items’ that allow one to analyze the comparability of test forms. Having students take three different forms of the test provides ‘common person’ information, in which each person acts as his/her own ‘control.’ This design allows test developers to increase the reliability of item difficulty estimation because all different forms of the measures can be analyzed simultaneously, and the overlap in people and test forms increases the statistical power of analyses.

Table 1.
Organization of Test Form Groupings for Piloting Different MC Comprehension Forms.

	Test Form																			
Group	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	X	X	X	X	X															
2					X	X	X	X	X											
3									X	X	X	X	X							
4													X	X	X	X	X			
5	X																X	X	X	X

Each “group” represents approximately 40 students.

A convenience sample of teachers who responded to the pilot invitation on the official easyCBM website participated in this piloting study and student demographic information was not gathered for this piloting. All piloting of the 7th-grade MC Comprehension tests took place between April and June of 2010. All items were piloted using a computer delivered online test platform. Teachers brought their classes to a computer lab to participate in the piloting. The computer captured item-level response information for analysis.

Analysis of Technical Adequacy

We evaluated the technical adequacy of the MC Reading Comprehension measures in two primary ways: (a) content review of the stories and test items and (b) statistical analysis of data obtained when the measures were piloted in the spring of 2010.

Content Review

Content and grade-level appropriateness of each of the MC Reading Comprehension measures was analyzed in four ways: grade-level appropriateness, adequate story structure for the types of items called for in the test specification documents, bias in language or story elements, and formatting.

Reviewing the content and grade-level appropriateness. First, each of the passages was reviewed by at least one educator with direct experience teaching seventh-grade students. This review focused on evaluating the degree to which the stories used in the measures were appropriate in tone, content, and language for their target grade-level audience. We used feedback from this review to revise one story prior to sending it to the item writer for question development. The remaining stories met content and grade-level appropriateness standards on first review.

Concurrent review and revision to address item-writing specifications. Second, during the item-writing phase, the professional item writer and the second author on this technical report worked in tandem to review and revise each of the stories as items were being written. This ongoing review and revision process focused on replacing vocabulary words that were deemed out of grade level (based on Taylor, Frackenpohl, & White's 1989 *A Revised Core Vocabulary*) and on re-writing sections of the stories to create more uniform story structures across different forms of the tests. In particular, revisions were made to ensure adequate opportunities for the development of higher-order inferential and evaluative questions related to the stories. Slight revisions to all of the stories were made during this process.

Attending to potential bias for students with special needs and diverse backgrounds. In the third step of the review process, all tests (stories and questions) were reviewed by a research

assistant with a Master's degree in Special Education who had successfully completed three terms a graduate seminar on assessment issues related to special-needs students. He read and provided feedback on all complete tests, including the test items on each of the alternate forms. His feedback was shared with the item writer and second author on this technical report. Because this review process did not lead to any suggested revisions, tests were sent on for reviews related to formatting without further alterations as a result of this step in the review process.

Formatting consistency and issues related to ease of access. During the final step of the content review process, a research associate with a Master's degree in Educational Methodology, Policy, and Leadership read all of the revised and formatted tests, looking for issues related to consistency and appropriateness of formatting for seventh-grade students. Specific formatting issues included inconsistency in using bold or normal typeface, spacing between the header and the first item, and font used. Issues noted in this review process were addressed prior to piloting the tests. In all cases, stories were presented on the computer in a sans serif font style to increase readability for students with visual impairments. During the piloting, students were able to look back at the story as they were answering the test questions. The format in which the test items were piloted is an exact replica of the computer delivered test format used on the end system (easycbm.com).

Statistical Analysis

We analyzed data from the pilot testing of the MC Comprehension measures with a one parameter logistic Rasch analysis using the software Winsteps3.68.2 (Linacre, 2009). Rasch analyses differ from approaches using classical statistics in that they consider patterns of responses across individuals, using this information to provide a level of specificity in results unattainable with approaches based on classical statistics used in the development of most

CBMs. In a complex iterative process, a Rasch analysis concurrently estimates the difficulty of individual test items and the ability level of each individual test taker. The results one obtains from this analysis, relevant to our discussion here, include an estimation of the difficulty (referred to as the 'measure' of each item), the standard error of measure associated with each item's estimated difficulty, and the degree to which each item 'fits' the measurement model (referred to as the 'mean square outfit' of each item). In addition, a Rasch analysis can provide information about the average estimated ability of students who selected each of the possible answer choices. All of this information must be considered when evaluating the technical adequacy of the measures, as described below.

Considering each item's estimated difficulty. Rasch analyses, which examine each item's reliability, provide a more precise treatment of reliability than classical statistics, which examine the issue only at a more global test level. The most reliable estimation of a test-taker's ability can be gained from tests comprised of items that represent the fullest range of difficulty possible for the population with which the test is intended to be used. Thus, in evaluating the technical adequacy of our MC Comprehension measures, we looked for items representing a range of difficulties. In Rasch analyses, this information is gleaned from examining each item's *measure*. Easy items will have measures represented with negative numbers; difficult items will have measures represented with positive numbers. A measure of zero indicates an item that a person of average ability would be expected to have a 50% chance of getting correct. Thus, we sought a full range of measures on every MC Comprehension test.

Examining the standard error of measure. Rasch analyses provide information about the standard error of measure associated with the estimation of each item's measure. In general, the

smaller the standard error of measure is, the more reliable the estimation is. We sought small standard errors of measure on all items on our tests.

Using the mean square outfit to evaluate goodness of fit. An additional piece of information used to evaluate technical adequacy in a Rasch model is the mean square outfit associated with each item. Values in the range of 0.50 to 1.50 are considered *acceptable fit*. Mean square outfits falling outside this acceptable range indicate the need for further evaluation of item functioning. In general, items with a mean square outfit less than 0.50 are considered less worrisome than items with mean square outfits higher than 1.50. In all cases, distractor analysis provides useful information to further evaluate the technical adequacy of each item.

Analyzing distractor selection information. A distractor analysis provides information on the average estimated ability of test takers who selected a particular distractor on a test. In evaluating the technical adequacy of an assessment instrument, one hopes to see that the correct answer is selected by test-takers with the highest average estimated ability and the remaining distractors are selected by test-takers with lower estimated abilities. In addition, every distractor in a well-constructed measure will be selected by at least some test-takers. We considered all of these features in evaluating the technical adequacy of the MC Comprehension measures.

Results

Tables 2 - 19 present the Item Measure, Standard Error of Measure, Mean Square Outfit, and complete Distractor Analyses of the nine seventh-grade MC Comprehension measures. Although we had intended to pilot 11 alternate forms, two were excluded from analysis because of the pilot sample lacked adequate sample size for those two forms.

All items on the Gr7MC10 test form passed the pre-set adequate model fit selection criteria, falling within the Mean Square Outfit range of 0.5 to 1.5, with every distractor selected

by at least one student except for item #2, where all students who took the Gr7MC10 test form selected the correct answer choice. Five items on Gr7MC1 required further analysis. Items #1 and #11 were over-fit, with a Mean Square Outfit slightly less than 0.50. Items #7 and #16 were under-fit, with a Mean Square Outfit above 1.50. Analysis of the distractors, however, indicated that all five items were functioning appropriately, so they were retained without revisions. Four items on Gr7MC3 required further analysis. Items #5, #11, and #19 were over-fit, with a Mean Square Outfit less than 0.50. Item #20 was under-fit, with a Mean Square Outfit above 1.50. Analysis of the distractors, however, indicated that all four items were functioning appropriately, so they were retained without revisions.

One item in Gr7MC5 required further analysis. Item #8 was over-fit, with a Mean Square Outfit slightly less than 0.50. Analysis of the distractors, however, indicated that it was functioning appropriately, so it was retained without revisions. Three items in Gr7MC12 required further analysis. Items #13 and #14 were over-fit, with a Mean Square Outfit below 0.50. Item #1 was under-fit, with a Mean Square Outfit above 1.50. Analysis of the distractors, however, indicated that all three items were functioning appropriately, so they were retained without revisions. Three items in Gr7MC13 required further analysis. Items #5 and #10 were over-fit, with a Mean Square Outfit less than 0.50. Item #2 was under-fit, with a Mean Square Outfit greater than 1.50. Analysis of the distractors, however, indicated that all three items were functioning appropriately, so they were retained without revisions.

Two items in Gr7MC14 required further analysis. Item #5 was over-fit, with a Mean Square Outfit slightly less than 0.50. Item #2 was under-fit, with a Mean Square Outfit greater than 1.50. Analysis of the distractors, however, indicated that it was functioning appropriately, so it was retained without revisions. Six items in Gr7MC15 required further analysis. Items #2, #3,

#6, #8, and #19 were over-fit, with a Mean Square Outfit less than 0.50. Item #4 was under-fit, with a Mean Square Outfit greater than 1.50. Four items on Gr7MC4 required further analysis. Items #11 and #18 were over-fit, with a Mean Square Outfit less than 0.50. Items #3 and #20 were under-fit, with a Mean Square Outfit above 1.50. Analysis of the distractors, however, indicated that all four items were functioning appropriately, so they were retained without revisions. Although several of the distractors on both Gr7MC4 and Gr7MC15 were not selected by any students in the pilot sample, the small number of students in the sample suggests the need for cautious interpretation of the results. Thus, the items were retained without revisions, but additional studies are recommended for these two measures.

Discussion

Based on the results of the pilot study, the following seventh-grade MC Comprehension measures were retained for use on the easyCBM assessment system: Gr7MC1, Gr7MC3, Gr7MC4, Gr7MC5, Gr7MC10, Gr7MC12, Gr7MC13, Gr7MC14, and Gr7MC15.

Table 2.
Item Statistics, Entry Order, Gr7MC1.

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	61	64	-2.55	0.60	0.32
2	42	64	0.07	0.28	1.02
3	53	64	-1.00	0.35	0.80
4	10	64	2.76	0.36	1.25
5	58	64	-1.76	0.44	0.64
6	41	64	0.15	0.28	0.91
7	16	64	2.10	0.31	1.75
8	54	64	-1.12	0.36	0.78
9	43	64	-0.02	0.29	0.72
10	30	64	0.97	0.27	1.06
11	62	64	-2.99	0.73	0.28
12	51	64	-0.76	0.33	0.96
13	33	64	0.75	0.27	1.18
14	26	64	1.27	0.28	0.88
15	33	64	0.75	0.27	1.17
16	14	64	2.30	0.32	1.66
17	38	64	0.38	0.28	1.19
18	48	64	-0.46	0.31	0.93
19	50	64	-0.66	0.32	0.83
20	45	64	-0.19	0.29	1.03

Table 3.
Distractor Analysis, Gr7MC1.

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	A	0	1	2	-1.51	0.00
	C	0	2	3	-0.55	0.00
	B	1	61	95	0.90	0.11
	Missing	**				
2	C	0	6	9	0.07	0.47
	A	0	16	25	0.45	0.22
	B	1	42	66	1.07	0.12
	Missing	**				
3	C	0	0	0	0.00	0.00
	B	0	11	17	0.08	0.23
	A	1	53	83	0.97	0.12
	Missing	**				
4	A	0	5	8	0.92	0.60
	B	1	10	16	1.19	0.30
	C	0	49	77	0.74	0.12
	Missing	**				
5	A	0	1	2	-0.55	0.00
	B	0	5	8	-0.34	0.45
	C	1	58	91	0.95	0.11
	Missing	**				
6	A	0	10	16	0.15	0.15
	C	0	13	20	0.44	0.18
	B	1	41	64	1.11	0.15
	Missing	**				
7	C	1	16	25	1.13	0.32
	A	0	17	27	0.50	0.18
	B	0	31	48	0.84	0.13
	Missing	**				
8	C	0	3	5	0.30	0.60
	B	0	7	11	-0.12	0.29
	A	1	54	84	0.97	0.12
	Missing	**				
9	C	0	4	6	-0.30	0.42
	B	0	17	27	0.15	0.16
	A	1	43	67	1.19	0.12
	Missing	**				
10	A	0	12	19	0.46	0.24
	B	0	22	34	0.59	0.20
	C	1	30	47	1.13	0.16
	Missing	**				

Table 3.
Distractor Analysis, Gr7MC1 (Continued).

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	B	0	1	2	-0.55	0.00
	C	0	1	2	-1.51	0.00
	A	1	62	97	0.88	0.11
	Missing	**				
12	A	0	4	6	0.22	0.18
	B	0	9	14	0.18	0.36
	C	1	51	80	0.98	0.12
	Missing	**				
13	B	0	14	22	0.58	0.27
	A	0	17	27	0.62	0.18
	C	1	33	52	1.03	0.16
	Missing	**				
14	B	0	15	23	0.02	0.22
	C	0	23	36	0.80	0.16
	A	1	26	41	1.31	0.15
	Missing	**				
15	B	0	3	5	0.30	0.60
	A	0	28	44	0.60	0.14
	C	1	33	52	1.06	0.17
	Missing	**				
16	C	0	4	6	0.30	0.26
	B	1	14	22	1.10	0.28
	A	0	46	72	0.78	0.13
	Missing	**				
17	C	0	7	11	-0.36	0.18
	B	0	19	30	0.78	0.23
	A	1	38	59	1.06	0.13
	Missing	**				
18	B	0	4	6	0.01	0.23
	A	0	12	19	0.31	0.24
	C	1	48	75	1.02	0.13
	Missing	**				
19	B	0	3	5	-0.78	0.44
	C	0	11	17	0.33	0.21
	A	1	50	78	1.02	0.12
	Missing	**				
20	C	0	4	6	-0.44	0.40
	A	0	15	23	0.45	0.24
	B	1	45	70	1.06	0.12
	Missing	**				

Table 4.
Item Statistics, Entry Order, Gr7MC3.

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	78	90	-0.74	0.34	0.97
2	78	90	-0.74	0.34	0.99
3	59	90	0.76	0.25	0.93
4	70	90	0.00	0.28	0.87
5	83	90	-1.43	0.42	0.29
6	63	90	0.50	0.26	0.94
7	34	90	2.20	0.24	1.49
8	82	90	-1.26	0.39	0.52
9	75	90	-0.43	0.31	1.19
10	72	90	-0.16	0.29	0.81
11	81	90	-1.12	0.37	0.49
12	67	90	0.22	0.27	1.36
13	63	90	0.50	0.26	1.14
14	72	90	-0.16	0.29	0.73
15	68	90	0.15	0.27	1.06
16	37	90	2.02	0.24	1.09
17	74	90	-0.34	0.30	0.52
18	44	89	1.63	0.24	1.02
19	78	90	-0.74	0.34	0.41
20	79	90	-0.86	0.35	1.99

Table 5.
Distractor Analysis, Gr7MC3.

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	4	4	0.91	0.63
	C	0	8	9	0.18	0.48
	A	1	78	87	1.73	0.11
	Missing	**				
2	A	0	4	4	0.92	0.39
	C	0	8	9	0.72	0.32
	B	1	78	87	1.67	0.13
	Missing	**				
3	A	0	9	10	0.69	0.28
	B	0	22	24	0.79	0.25
	C	1	59	66	1.97	0.12
	Missing	**				
4	B	0	3	3	-0.21	0.36
	C	0	17	19	0.78	0.23
	A	1	70	78	1.82	0.13
	Missing	**				
5	A	0	2	2	-0.69	0.64
	C	0	5	6	-0.39	0.20
	B	1	83	92	1.73	0.11
	Missing	**				
6	A	0	9	10	0.57	0.28
	B	0	18	20	0.97	0.21
	C	1	63	70	1.86	0.14
	Missing	**				
7	C	0	13	14	1.13	0.35
	B	1	34	38	1.92	0.20
	A	0	43	48	1.39	0.15
	Missing	**				
8	C	0	1	1	-0.78	0.00
	A	0	7	8	0.17	0.31
	B	1	82	91	1.70	0.12
	Missing	**				
9	A	0	2	2	-1.06	0.27
	B	0	13	14	0.79	0.31
	C	1	75	83	1.76	0.12
	Missing	**				
10	C	0	3	3	-0.45	0.22
	A	0	15	17	0.72	0.24
	B	1	72	80	1.81	0.12
	Missing	**				

Table 5.
Distractor Analysis, Gr7MC3 (Continued).

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	1	1	0.19	0.00
	B	0	8	9	-0.18	0.34
	A	1	81	90	1.74	0.11
	Missing	**				
12	A	0	10	11	1.20	0.28
	B	0	13	14	1.19	0.34
	C	1	67	74	1.68	0.14
	Missing	**				
13	C	0	4	4	0.45	0.48
	B	0	23	26	1.19	0.15
	A	1	63	70	1.76	0.15
	Missing	**				
14	B	0	3	3	0.03	0.68
	C	0	15	17	0.64	0.20
	A	1	72	80	1.81	0.13
	Missing	**				
15	C	0	9	10	0.95	0.41
	A	0	13	14	0.88	0.24
	B	1	68	76	1.77	0.13
	Missing	**				
16	B	0	16	18	1.10	0.25
	A	1	37	41	2.14	0.17
	C	0	37	41	1.17	0.18
	Missing	**				
17	C	0	6	7	-0.14	0.32
	A	0	10	11	0.24	0.28
	B	1	74	82	1.87	0.11
	Missing	**				
18	A	0	10	11	1.00	0.46
	B	0	35	39	1.12	0.17
	C	1	44	49	2.08	0.14
	Missing	**	1	1	-0.78	0.00
19	A	0	3	3	-0.05	0.37
	B	0	9	10	-0.15	0.25
	C	1	78	87	1.82	0.11
	Missing	**				
20	C	0	4	4	1.02	0.68
	B	0	7	8	1.13	0.55
	A	1	79	88	1.62	0.12
	Missing	**				

Table 6.
Item Statistics, Entry Order, Gr7MC4.

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	32	33	-2.20	1.05	1.21
2	31	33	-1.43	0.76	0.68
3	24	33	0.55	0.42	1.58
4	18	33	1.50	0.38	0.99
5	33	33	0.00	0.00	1.00
6	24	33	0.55	0.42	0.96
7	22	33	0.89	0.40	1.14
8	22	33	0.89	0.40	1.04
9	13	33	2.25	0.39	0.86
10	23	33	0.72	0.41	1.05
11	32	33	-2.20	1.05	0.16
12	31	33	-1.43	0.76	0.90
13	27	33	-0.05	0.48	0.74
14	24	33	0.55	0.42	1.00
15	20	33	1.20	0.39	0.70
16	18	33	1.50	0.38	1.25
17	25	33	0.37	0.44	0.89
18	32	33	-2.20	1.05	0.16
19	27	33	-0.05	0.48	0.85
20	31	33	-1.43	0.76	3.27

Table 7.
Distractor Analysis, Gr7MC4.

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	C	0	0	0	0.00	0.00
	A	0	1	3	1.44	0.00
	B	1	32	97	1.76	0.19
	Missing	**				
2	C	0	0	0	0.00	0.00
	A	0	2	6	0.81	0.30
	B	1	31	94	1.81	0.19
	Missing	**				
3	C	0	1	3	1.44	0.00
	B	0	8	24	1.44	0.47
	A	1	24	73	1.86	0.20
	Missing	**				
4	A	0	2	6	0.67	0.45
	B	0	13	39	1.39	0.25
	C	1	18	55	2.12	0.25
	Missing	**				
5	B	0	0	0	0.00	0.00
	C	0	0	0	0.00	0.00
	A	1	33	100	1.75	0.18
	Missing	**				
6	C	0	4	12	1.21	0.27
	B	0	5	15	1.12	0.54
	A	1	24	73	1.97	0.21
	Missing	**				
7	B	0	4	12	1.47	0.26
	A	0	7	21	1.35	0.27
	C	1	22	67	1.92	0.25
	Missing	**				
8	A	0	1	3	0.22	0.00
	C	0	10	30	1.40	0.17
	B	1	22	67	1.97	0.25
	Missing	**				
9	C	0	5	15	1.03	0.33
	A	1	13	39	2.43	0.31
	B	0	15	45	1.39	0.19
	Missing	**				
10	C	0	3	9	0.92	0.27
	B	0	7	21	1.36	0.29
	A	1	23	70	1.97	0.23
	Missing	**				

Table 7.
Distractor Analysis, Gr7MC4 (Continued).

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	A	0	0	0	0.00	0.00
	B	0	1	3	-0.70	0.00
	C	1	32	97	1.82	0.17
	Missing	**				
12	A	0	0	0	0.00	0.00
	C	0	2	6	0.54	1.25
	B	1	31	94	1.82	0.18
	Missing	**				
13	C	0	1	3	0.51	0.00
	A	0	5	15	1.00	0.20
	B	1	27	82	1.93	0.21
	Missing	**				
14	B	0	0	0	0.00	0.00
	A	0	9	27	1.12	0.34
	C	1	24	73	1.98	0.20
	Missing	**				
15	C	0	2	6	0.20	0.91
	B	0	11	33	1.12	0.18
	A	1	20	61	2.25	0.21
	Missing	**				
16	B	0	4	12	1.72	0.89
	A	0	11	33	1.35	0.22
	C	1	18	55	1.99	0.24
	Missing	**				
17	A	0	3	9	0.32	0.62
	B	0	5	15	1.47	0.25
	C	1	25	76	1.97	0.20
	Missing	**				
18	C	0	0	0	0.00	0.00
	A	0	1	3	-0.70	0.00
	B	1	32	97	1.82	0.17
	Missing	**				
19	A	0	1	3	2.21	0.00
	B	0	5	15	0.63	0.37
	C	1	27	82	1.94	0.19
	Missing	**				
20	C	0	0	0	0.00	0.00
	A	0	2	6	2.48	0.27
	B	1	31	94	1.70	0.19
	Missing	**				

Table 8.
Item Statistics, Entry Order, Gr7MC5.

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	41	67	0.13	0.31	0.67
2	63	67	-0.97	0.42	0.87
3	44	67	-0.66	0.38	0.66
4	52	67	-0.17	0.33	1.19
5	62	67	-2.38	0.73	0.64
6	51	67	0.80	0.27	1.16
7	58	67	-0.52	0.36	1.06
8	58	67	-1.62	0.53	0.43
9	54	67	2.38	0.28	1.32
10	37	67	0.48	0.29	1.06
11	58	67	0.23	0.30	1.06
12	63	67	0.40	0.29	0.79
13	44	67	1.65	0.26	1.02
14	59	67	0.87	0.27	1.07
15	49	67	-0.80	0.39	1.08
16	50	67	0.87	0.27	0.85
17	57	67	-1.15	0.44	0.81
18	61	67	0.48	0.29	1.12
19	48	67	-0.17	0.33	0.85
20	54	67	0.13	0.31	0.96

Table 9.
Distractor Analysis, Gr7MC5.

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	C	0	3	4	0.00	0.44
	A	0	13	19	0.70	0.20
	B	1	51	76	1.75	0.10
	Missing	**				
2	C	0	2	3	0.79	0.54
	B	0	5	7	0.86	0.32
	A	1	60	90	1.55	0.12
	Missing	**				
3	A	0	3	4	0.60	0.31
	B	0	6	9	0.52	0.31
	C	1	58	87	1.62	0.11
	Missing	**				
4	C	0	4	6	1.72	0.45
	B	0	9	13	0.79	0.29
	A	1	54	81	1.57	0.12
	Missing	**				
5	B	0	0	0	0.00	0.00
	A	0	2	3	0.63	0.13
	C	1	65	97	1.50	0.11
	Missing	**				
6	C	0	5	7	0.19	0.47
	A	0	19	28	1.36	0.20
	B	1	43	64	1.67	0.12
	Missing	**				
7	C	0	0	0	0.00	0.00
	A	0	10	15	0.98	0.29
	B	1	57	85	1.56	0.12
	Missing	**				
8	A	0	1	1	0.76	0.00
	B	0	3	4	-0.17	0.30
	C	1	63	94	1.56	0.11
	Missing	**				
9	B	0	9	13	0.88	0.28
	A	1	21	31	1.75	0.20
	C	0	37	55	1.46	0.14
	Missing	**				
10	C	0	7	10	0.76	0.42
	A	0	13	19	1.24	0.22
	B	1	47	70	1.64	0.12
	Missing	**				

Table 9.
Distractor Analysis, Gr7MC5 (Continued).

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	A	0	7	10	1.58	0.36
	B	0	10	15	0.49	0.28
	C	1	50	75	1.65	0.11
	Missing	**				
12	C	0	4	6	0.69	0.54
	B	0	15	22	0.84	0.18
	A	1	48	72	1.74	0.12
	Missing	**				
13	B	0	17	25	1.36	0.25
	C	0	19	28	1.05	0.18
	A	1	31	46	1.79	0.14
	Missing	**				
14	A	0	6	9	1.06	0.19
	B	0	19	28	1.17	0.15
	C	1	42	63	1.67	0.15
	Missing	**				
15	C	0	2	3	0.52	0.52
	A	0	6	9	0.81	0.52
	B	1	59	88	1.57	0.11
	Missing	**				
16	C	0	5	7	0.11	0.29
	B	0	20	30	1.13	0.17
	A	1	42	63	1.80	0.12
	Missing	**				
17	A	0	2	3	0.00	0.76
	C	0	4	6	0.71	0.58
	B	1	61	91	1.57	0.11
	Missing	**				
18	B	0	5	7	0.96	0.49
	C	0	15	22	1.29	0.15
	C	0	15	22	1.29	0.15
	Missing	**				
19	A	0	6	9	0.57	0.41
	C	0	7	10	0.80	0.36
	B	1	54	81	1.66	0.11
	Missing	**				
20	A	0	1	1	1.34	0.00
	B	0	15	22	0.98	0.19
	C	1	51	76	1.62	0.13
	Missing	**				

Table 10.
Item Statistics, Entry Order, Gr7MC10.

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	49	56	-2.10	0.42	0.56
2	56	56	0.00	0.00	1.00
3	22	56	0.52	0.29	1.11
4	24	56	0.36	0.28	0.92
5	35	56	-0.53	0.29	1.06
6	20	56	0.69	0.29	1.14
7	34	56	-0.44	0.29	0.86
8	42	56	-1.18	0.32	0.98
9	3	56	3.11	0.60	0.83
10	43	56	-1.29	0.33	1.06
11	29	56	-0.04	0.28	0.99
12	22	56	0.52	0.29	1.06
13	36	56	-0.61	0.29	0.83
14	39	56	-0.88	0.31	0.93
15	15	56	1.15	0.31	1.19
16	18	56	0.87	0.30	1.04
17	45	56	-1.52	0.35	0.75
18	19	56	0.78	0.30	1.06
19	32	56	-0.28	0.29	1.13
20	18	56	0.87	0.30	1.17

Table 11.
Distractor Analysis, Gr7MC10.

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	2	4	-1.00	0.30
	C	0	5	9	-0.98	0.34
	A	1	49	88	0.18	0.09
	Missing	**				
2	A	0	0	0	0.00	0.00
	C	0	0	0	0.00	0.00
	B	1	56	100	0.03	0.10
	Missing	**				
3	B	0	5	9	0.35	0.39
	A	1	22	39	0.23	0.14
	C	0	29	52	-0.17	0.13
	Missing	**				
4	C	0	2	4	-0.16	0.00
	A	1	24	43	0.37	0.14
	B	0	30	54	-0.23	0.12
	Missing	**				
5	A	0	8	14	-0.14	0.25
	B	0	13	23	-0.22	0.21
	C	1	35	63	0.16	0.12
	Missing	**				
6	C	0	17	30	-0.10	0.17
	A	0	19	34	0.05	0.20
	B	1	20	36	0.13	0.13
	Missing	**				
7	B	0	5	9	-0.74	0.33
	A	0	17	30	-0.27	0.16
	C	1	34	61	0.30	0.10
	Missing	**				
8	B	0	1	2	-0.16	0.00
	C	0	13	23	-0.39	0.22
	A	1	42	75	0.17	0.10
	Missing	**				
9	C	1	3	5	0.46	0.18
	A	0	6	11	-0.73	0.29
	B	0	47	84	0.10	0.10
	Missing	**				
10	A	0	2	4	-0.60	0.70
	C	0	11	20	-0.19	0.20
	B	1	43	77	0.12	0.11
	Missing	**				

Table 11.
Distractor Analysis, Gr7MC10 (Continued).

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	13	23	0.09	0.16
	A	0	14	25	-0.48	0.20
	B	1	29	52	0.25	0.12
	Missing	**				
12	B	0	6	11	-0.31	0.27
	C	1	22	39	0.25	0.15
	A	0	28	50	-0.07	0.14
	Missing	**				
13	A	0	5	9	-0.53	0.45
	B	0	15	27	-0.43	0.17
	C	1	36	64	0.30	0.09
	Missing	**				
14	B	0	6	11	-0.59	0.24
	C	0	11	20	-0.22	0.19
	A	1	39	70	0.20	0.11
	Missing	**				
15	B	0	9	16	-0.08	0.23
	A	1	15	27	0.24	0.19
	C	0	32	57	-0.03	0.13
	Missing	**				
16	C	0	15	27	0.05	0.16
	B	1	18	32	0.31	0.17
	A	0	23	41	-0.20	0.15
	Missing	**				
17	B	0	3	5	-1.02	0.32
	C	0	8	14	-0.56	0.26
	A	1	45	80	0.21	0.09
	Missing	**				
18	A	0	3	5	-0.27	0.56
	C	1	19	34	0.26	0.13
	B	0	34	61	-0.07	0.13
	Missing	**				
19	A	0	9	16	-0.02	0.21
	C	0	15	27	-0.17	0.24
	B	1	32	57	0.14	0.11
	Missing	**				
20	A	0	5	9	0.13	0.45
	C	1	18	32	0.22	0.18
	B	0	33	59	-0.09	0.11
	Missing	**				

Table 12.
Item Statistics, Entry Order, Gr7MC12.

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	9	75	2.83	0.37	3.48
2	62	75	-1.38	0.33	0.70
3	32	75	0.88	0.26	1.19
4	50	75	-0.33	0.27	0.76
5	53	75	-0.56	0.28	0.67
6	52	75	-0.48	0.28	0.61
7	45	75	0.02	0.26	1.30
8	55	75	-0.72	0.29	0.86
9	44	75	0.09	0.26	1.01
10	56	75	-0.80	0.29	0.66
11	43	75	0.16	0.26	1.05
12	57	75	-0.89	0.30	0.77
13	42	74	0.22	0.26	1.67
14	63	73	-1.49	0.34	0.42
15	51	73	-0.41	0.27	0.79
16	35	73	0.68	0.26	1.22
17	53	73	-0.56	0.28	0.88
18	47	73	-0.12	0.26	0.78
19	36	73	0.62	0.26	1.08
20	14	73	2.26	0.31	1.31

Table 13.
Distractor Analysis, Gr7MC12.

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	C	0	4	5	-0.49	0.49
	B	1	9	12	-0.30	0.24
	A	0	62	83	0.67	0.13
	Missing	**				
2	C	0	4	5	-0.74	0.19
	B	0	9	12	-0.59	0.42
	A	1	62	83	0.73	0.11
	Missing	**				
3	A	0	19	25	0.38	0.23
	B	0	24	32	0.15	0.23
	C	1	32	43	0.81	0.17
	Missing	**				
4	B	0	12	16	-0.24	0.22
	C	0	13	17	-0.41	0.29
	A	1	50	67	0.90	0.12
	Missing	**				
5	A	0	6	8	-0.35	0.16
	B	0	16	21	-0.51	0.24
	C	1	53	71	0.89	0.12
	Missing	**				
6	C	0	7	9	-0.28	0.24
	A	0	16	21	-0.64	0.23
	B	1	52	69	0.94	0.11
	Missing	**				
7	B	0	11	15	0.11	0.27
	C	0	19	25	0.18	0.32
	A	1	45	60	0.71	0.13
	Missing	**				
8	A	0	8	11	-0.13	0.34
	C	0	12	16	-0.45	0.33
	B	1	55	73	0.79	0.12
	Missing	**				
9	A	0	11	15	0.40	0.32
	B	0	20	27	-0.23	0.25
	C	1	44	59	0.84	0.13
	Missing	**				
10	A	0	8	11	-0.32	0.33
	B	0	11	15	-0.78	0.27
	C	1	56	75	0.85	0.11
	Missing	**				

Table 13.
Distractor Analysis, Gr7MC12 (Continued).

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	13	17	0.31	0.23
	A	0	19	25	-0.09	0.27
	B	1	43	57	0.80	0.15
	Missing	**				
12	B	0	8	11	-0.59	0.43
	C	0	10	13	-0.32	0.27
	A	1	57	76	0.78	0.12
	Missing	**				
13	C	0	5	7	-0.32	0.19
	A	0	27	36	0.45	0.16
	B	1	42	56	0.65	0.18
	Missing	**	1	1	-1.05	0.00
14	C	0	4	5	-1.55	0.59
	B	0	6	8	-0.81	0.13
	A	1	63	84	0.78	0.10
	Missing	**	2	3	-0.68	0.37
15	A	0	5	7	-1.06	0.61
	B	0	17	23	-0.09	0.19
	C	1	51	68	0.88	0.12
	Missing	**	2	3	-0.68	0.37
16	C	0	7	9	-0.72	0.53
	B	0	31	41	0.49	0.15
	A	1	35	47	0.80	0.16
	Missing	**	2	3	-0.68	0.37
17	A	0	8	11	-0.14	0.52
	C	0	12	16	-0.33	0.24
	B	1	53	71	0.81	0.12
	Missing	**	2	3	-0.68	0.37
18	A	0	5	7	-0.40	0.36
	C	0	21	28	-0.21	0.22
	B	1	47	63	0.95	0.12
	Missing	**	2	3	-0.68	0.37
19	B	0	15	20	0.02	0.34
	C	0	22	29	0.31	0.19
	A	1	36	48	0.86	0.15
	Missing	**	2	3	-0.68	0.37
20	B	0	13	17	-0.09	0.22
	C	1	14	19	0.80	0.23
	A	0	46	61	0.61	0.16
	Missing	**	2	3	-0.68	0.37

Table 14.
Item Statistics, Entry Order, Gr7MC13.

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	76	82	-1.65	0.45	1.06
2	46	82	1.05	0.25	1.56
3	72	82	-1.02	0.36	0.89
4	68	82	-0.56	0.32	0.85
5	75	82	-1.47	0.42	0.44
6	69	82	-0.66	0.33	0.72
7	70	82	-0.77	0.34	0.59
8	63	82	-0.11	0.29	1.16
9	48	82	0.93	0.25	0.84
10	74	82	-1.30	0.40	0.38
11	56	82	0.41	0.26	0.86
12	22	82	2.53	0.27	1.38
13	49	82	0.86	0.25	1.05
14	63	81	-0.11	0.29	1.01
15	57	81	0.34	0.26	0.78
16	48	81	0.93	0.25	1.22
17	52	81	0.68	0.25	0.76
18	63	81	-0.11	0.29	0.97
19	52	81	0.68	0.25	1.13
20	69	81	-0.66	0.33	0.88

Table 15.
Distractor Analysis, Gr7MC13.

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	A	0	2	2	0.12	0.89
	C	0	4	5	0.76	0.52
	B	1	76	93	1.38	0.12
	Missing	**				
2	A	0	2	2	0.27	1.04
	C	0	34	41	1.26	0.14
	B	1	46	56	1.41	0.17
	Missing	**				
3	B	0	4	5	0.42	0.64
	C	0	6	7	0.33	0.47
	A	1	72	88	1.45	0.11
	Missing	**				
4	C	0	6	7	-0.16	0.47
	B	0	8	10	0.72	0.32
	A	1	68	83	1.52	0.11
	Missing	**				
5	C	0	3	4	0.16	0.42
	A	0	4	5	-0.61	0.39
	B	1	75	91	1.47	0.11
	Missing	**				
6	B	0	2	2	-0.27	0.50
	A	0	11	13	0.18	0.33
	C	1	69	84	1.55	0.10
	Missing	**				
7	C	0	2	2	0.77	0.54
	A	0	10	12	-0.14	0.30
	B	1	70	85	1.54	0.10
	Missing	**				
8	C	0	4	5	0.13	0.83
	B	0	15	18	0.86	0.23
	A	1	63	77	1.51	0.12
	Missing	**				
9	A	0	7	9	0.22	0.32
	B	0	27	33	0.83	0.19
	C	1	48	59	1.76	0.12
	Missing	**				
10	C	0	2	2	-0.65	0.39
	B	0	6	7	-0.33	0.34
	A	1	74	90	1.51	0.10
	Missing	**				

Table 15.
Distractor Analysis, Gr7MC13 (Continued).

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	B	0	2	2	0.52	0.79
	A	0	24	29	0.64	0.20
	C	1	56	68	1.64	0.12
	Missing	**				
12	A	0	1	1	1.01	0.00
	C	1	22	27	1.49	0.17
	B	0	59	72	1.26	0.14
	Missing	**				
13	C	0	4	5	0.59	0.57
	A	0	29	35	0.90	0.18
	B	1	49	60	1.63	0.13
	Missing	**				
14	B	0	3	4	0.77	0.82
	A	0	15	18	0.74	0.26
	C	1	63	77	1.50	0.12
	Missing	**	1	1	0.23	0.00
15	C	0	7	9	-0.30	0.41
	A	0	17	21	0.83	0.19
	B	1	57	70	1.68	0.11
	Missing	**	1	1	0.23	0.00
16	B	0	9	11	0.20	0.36
	C	0	24	29	1.36	0.15
	A	1	48	59	1.53	0.15
	Missing	**	1	1	0.23	0.00
17	B	0	13	16	0.66	0.33
	A	0	16	20	0.52	0.19
	C	1	52	63	1.75	0.11
	Missing	**	1	1	0.23	0.00
18	B	0	8	10	0.87	0.42
	C	0	10	12	0.49	0.33
	A	1	63	77	1.53	0.12
	Missing	**	1	1	0.23	0.00
19	A	0	4	5	0.49	0.27
	B	0	25	30	0.96	0.16
	C	1	52	63	1.58	0.15
	Missing	**	1	1	0.23	0.00
20	A	0	5	6	0.32	0.62
	C	0	7	9	0.46	0.41
	B	1	69	84	1.50	0.11
	Missing	**	1	1	0.23	0.00

Table 16.
Item Statistics, Entry Order, Gr7MC14.

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	36	36	0.00	0.00	1.00
2	31	36	-1.31	0.50	1.88
3	12	36	1.45	0.37	0.95
4	14	36	1.19	0.36	1.12
5	33	36	-1.91	0.62	0.48
6	11	36	1.59	0.38	1.10
7	23	35	0.06	0.37	0.89
8	35	36	-3.11	1.02	1.06
9	24	36	-0.07	0.37	1.09
10	18	36	0.69	0.35	0.97
11	22	36	0.19	0.36	0.83
12	23	36	0.06	0.37	1.05
13	12	36	1.45	0.37	1.23
14	23	36	0.06	0.37	1.11
15	22	36	0.19	0.36	0.74
16	15	36	1.06	0.35	1.00
17	33	36	-1.91	0.62	0.81
18	33	36	-1.91	0.62	0.62
19	25	36	-0.21	0.38	0.67
20	6	36	2.42	0.46	1.41

Table 17.
Distractor Analysis, Gr7MC14.

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	A	0	0	0	0.00	0.00
	B	0	0	0	0.00	0.00
	C	1	36	100	0.68	0.11
	Missing	**				
2	B	0	1	3	1.44	0.00
	C	0	4	11	1.12	0.13
	A	1	31	86	0.60	0.12
	Missing	**				
3	B	0	11	31	0.71	0.21
	A	1	12	33	0.94	0.13
	C	0	13	36	0.40	0.21
	Missing	**				
4	A	0	0	0	0.00	0.00
	C	1	14	39	0.77	0.14
	B	0	22	61	0.61	0.16
	Missing	**				
5	C	0	1	3	-0.37	0.00
	A	0	2	6	-0.38	0.31
	B	1	33	92	0.77	0.11
	Missing	**				
6	C	0	11	31	0.54	0.22
	A	1	11	31	0.82	0.17
	B	0	14	39	0.67	0.20
	Missing	**				
7	A	0	1	3	1.44	0.00
	C	0	11	31	0.21	0.23
	B	1	23	64	0.91	0.10
	Missing	**	1	3	-0.37	0.00
8	C	0	0	0	0.00	0.00
	B	0	1	3	0.51	0.00
	A	1	35	97	0.68	0.12
	Missing	**				
9	C	0	4	11	0.28	0.47
	A	0	8	22	0.63	0.18
	B	1	24	67	0.76	0.14
	Missing	**				
10	B	0	6	17	0.36	0.24
	C	0	12	33	0.51	0.24
	A	1	18	50	0.89	0.13
	Missing	**				

Table 17.
Distractor Analysis, Gr7MC14 (Continued).

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	A	0	3	8	0.52	0.34
	B	0	11	31	0.18	0.19
	C	1	22	61	0.94	0.12
	Missing	**				
12	C	0	2	6	0.66	0.15
	A	0	11	31	0.43	0.24
	B	1	23	64	0.79	0.13
	Missing	**				
13	A	0	1	3	0.51	0.00
	C	1	12	33	0.84	0.23
	B	0	23	64	0.60	0.13
	Missing	**				
14	B	0	0	0	0.00	0.00
	A	0	13	36	0.52	0.23
	C	1	23	64	0.77	0.12
	Missing	**				
15	C	0	0	0	0.00	0.00
	A	0	14	39	0.15	0.17
	B	1	22	61	1.01	0.10
	Missing	**				
16	C	0	1	3	0.80	0.00
	B	1	15	42	0.90	0.15
	A	0	20	56	0.50	0.16
	Missing	**				
17	B	0	0	0	0.00	0.00
	A	0	3	8	0.12	0.35
	C	1	33	92	0.73	0.12
	Missing	**				
18	A	0	1	3	-0.37	0.00
	C	0	2	6	0.07	0.15
	B	1	33	92	0.75	0.12
	Missing	**				
19	C	0	3	8	0.22	0.17
	B	0	8	22	-0.09	0.22
	A	1	25	69	0.98	0.10
	Missing	**				
20	C	1	6	17	0.68	0.32
	A	0	8	22	0.70	0.22
	B	0	22	61	0.67	0.15
	Missing	**				

Table 18.
Item Statistics, Entry Order, Gr7MC15.

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	35	37	-1.51	0.74	0.84
2	36	37	-2.26	1.03	0.24
3	35	37	-1.51	0.74	0.34
4	11	37	2.59	0.38	1.59
5	37	37	0.00	0.00	1.00
6	35	37	-1.51	0.74	0.34
7	33	37	-0.72	0.55	1.09
8	33	37	-0.72	0.55	0.41
9	27	37	0.51	0.39	0.99
10	24	37	0.93	0.37	1.10
11	36	37	-2.26	1.03	0.61
12	28	37	0.35	0.40	0.66
13	23	37	1.06	0.36	1.07
14	32	37	-0.44	0.50	0.71
15	14	37	2.19	0.36	0.94
16	10	37	2.74	0.39	1.40
17	32	37	-0.44	0.50	0.68
18	17	37	1.81	0.35	1.30
19	36	37	-2.26	1.03	0.24
20	20	37	1.44	0.35	1.07

Table 19.
Distractor Analysis, Gr7MC15.

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	C	0	1	3	0.47	0.00
	B	0	1	3	1.57	0.00
	A	1	35	95	1.65	0.13
	Missing	**				
2	A	0	1	3	-0.20	0.00
	A	0	1	3	-0.20	0.00
	C	1	36	97	1.67	0.12
	Missing	**				
3	B	0	0	0	0.00	0.00
	C	0	2	5	0.13	0.34
	A	1	35	95	1.71	0.12
	Missing	**				
4	A	0	4	11	1.01	0.31
	B	1	11	30	1.68	0.33
	C	0	22	59	1.70	0.13
	Missing	**				
5	A	0	0	0	0.00	0.00
	C	0	0	0	0.00	0.00
	B	1	37	100	1.62	0.13
	Missing	**				
6	A	0	1	3	0.47	0.00
	B	0	1	3	-0.20	0.00
	C	1	35	95	1.71	0.12
	Missing	**				
7	B	0	0	0	0.00	0.00
	C	0	4	11	1.39	0.25
	A	1	33	89	1.65	0.14
	Missing	**				
8	B	0	1	3	0.47	0.00
	A	0	3	8	0.25	0.30
	C	1	33	89	1.78	0.12
	Missing	**				
9	A	0	3	8	1.07	0.32
	B	0	7	19	1.42	0.19
	C	1	27	73	1.73	0.16
	Missing	**				
10	A	0	5	14	0.77	0.35
	C	0	8	22	1.68	0.28
	B	1	24	65	1.78	0.14
	Missing	**				

Table 19.
Distractor Analysis, Gr7MC15 (Continued).

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	0	0	0.00	0.00
	B	0	1	3	0.82	0.00
	A	1	36	97	1.64	0.13
	Missing	**				
12	C	0	4	11	0.77	0.47
	B	0	5	14	0.83	0.20
	A	1	28	76	1.88	0.12
	Missing	**				
13	A	0	7	19	1.09	0.15
	C	0	7	19	1.63	0.30
	B	1	23	62	1.78	0.17
	Missing	**				
14	C	0	0	0	0.00	0.00
	A	0	5	14	0.71	0.39
	B	1	32	86	1.76	0.12
	Missing	**				
15	A	0	7	19	1.3	0.37
	C	1	14	38	2.00	0.21
	B	0	16	43	1.43	0.15
	Missing	**				
16	B	0	2	5	1.02	0.55
	C	1	10	27	1.57	0.21
	A	0	25	68	1.69	0.17
	Missing	**				
17	B	0	2	5	0.47	0.34
	C	0	3	8	1.07	0.32
	A	1	32	86	1.74	0.13
	Missing	**				
18	A	0	2	5	1.19	0.37
	B	1	17	46	1.68	0.20
	C	0	18	49	1.61	0.19
	Missing	**				
19	A	0	0	0	0.00	0.00
	B	0	1	3	-0.20	0.00
	C	1	36	97	1.67	0.12
	Missing	**				
20	B	0	8	22	1.65	0.20
	C	0	9	24	1.17	0.21
	A	1	20	54	1.81	0.19
	Missing	**				

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Appendix A

Item Specifications for MC Comprehension
PASSAGE CRITERIA

1. Passage type criteria
   Fiction – Text that is read for enjoyment (Realistic fiction; folktales; fables; tall tales; animal stories).
2. Content criteria
   Reflect a range of multi-cultural content.
   Avoid stereotyping and be free from bias.
   Avoid controversial, confusing, or emotionally-charged topics.
   Represent various family structures.
3. Passage source criteria
   Original work – do not use previously published stories.
4. Passage quality criteria
   Passages reflect good writing.
   Fictional passages contain elements of good fiction and have a beginning, middle, and end.
   Passages are intact, stand-alone pieces.
   Passages are interesting and appropriate for the grade level.
   Topics of passages are timely and not something that would quickly become dated.
   Writing must show sensitivity to level of complexity needed in terms of grade level.
5. Criteria related to possible passage modification
   Commissioned passages will have changes made to allow for specific item requirements.
   Explanations, definitions for words, or other clarification will be footnoted, boxed, or otherwise provided for student as needed.
6. Reading level criteria
   Reading level must be appropriate for the grade level in terms of difficulty and the beginning and end of the grade level expectations.
   Readability formulas should be used as guides only.
7. Diversity criteria
   Reading passages must reflect the diversity of the world's peoples.
   Some passages may be specific to the diversity of the state.
   Passages must be written so that no group of students is advantaged or disadvantaged.
8. Passage length criteria
   Average length of 2nd-grade passages will range from 500 – 700 words.
   Average length of 3rd-5th-grade passages will range 1,300 – 1,500.
   Longer passages typically should be lower in readability level and concept load than shorter passages.
9. Passage suitability for Items
   Passage content should allow a sufficient number of items.
   Passage content should allow a sufficient range of item difficulty.
   Passage content should accommodate measurement of factual/literal, interpretative/inferential, and critical/evaluative comprehension.
   Passage content should accommodate assessment objectives (cognitive tasks).

Appendix B

Suggested Guidelines for ordering items for test pull and test form development.

Treat all items with the following understanding:
1) Although the cognitive categories dictate the degree of difficulty, there is a range of objectives within each category which will likely produce total-scale-score difficulty values that overlap among categories.
2) The assessment-objective difficulty designations assigned to the items by the professional item writer are estimates (based on the design of each item in terms of expected student responses).

The following diagram shows the difficulty relationship among assessment-objective designations. Ll would be the least difficult item(s) on a test form, and Hh would be the most difficult item(s) on the test. Lh, Mm, and Hl would be items of similar difficulty based on an overall "reading comprehension scale."

Ll	Lm	Lh		
	Ml	Mm	Mh	
		Hl	Hm	Hh

Below is a table for recommended item ordering based on objective by category difficulties. Where the specific difficulty is not available, a second (or third) choice can be made using the above diagram. For example, if there are not enough Mh items for a particular form, then Hm would be a good substitute. When a second (or third) choice is not available, then whatever items are left over can be inserted using what seems to be the closest match. It would probably be best to fill out as many matches to the table as possible and then start making second choices; however, there may be times when you will want to manipulate as you go.

Item number	Difficulty
1	Ll
2	Ll
3	Ml
4	Mm
5	Lm
6	Mm
7	Hl
8	Lm
9	Mm
10	Hm
11	Lh
12	Mh
13	Hm
14	L1
15	Mm
16	Hm
17	Lh
18	Hh
19	Ml
20	Hm

Appendix C

Item Ordering Tables for Seventh Grade, Story 1 and 3.

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR7MC1–L1	Factual/Literal	Detail (discriminate)	Ll	1
GR7MC1–L2	Factual/Literal	Detail (discriminate)	Lm	5
GR7MC1–L3	Factual/Literal	Detail	Lh	11
GR7MC1–L4	Factual/Literal	Detail (discriminate)	Lh	17
GR7MC1–L5	Factual/Literal	Detail (causal)	Lm	8
GR7MC1–L6	Factual/Literal	Detail (discriminate)	Ll	2
GR7MC1–L7	Factual/Literal	Detail (discriminate)	Lh	14
GR7MC1–M1	Interpretive/Inferential	Inference (causal)	Mm	6
GR7MC1–M2	Interpretive/Inferential	Character (detail)	Mh	12
GR7MC1–M3	Interpretive/Inferential	Causal (inference)	Mm	9
GR7MC1–M4	Interpretive/Inferential	Inference (causal)	Ml	3
GR7MC1–M5	Interpretive/Inferential	Sequence	Mm	4
GR7MC1–M6	Interpretive/Inferential	Causal (interpretive)	Mh	19
GR7MC1–M7	Interpretive/Inferential	Inference (character)	Mm	15
GR7MC1–H1	Critical/Evaluative	Prediction (inference)	Hl	16
GR7MC1–H2	Critical/Evaluative	Prediction (evaluate)	Hh	18
GR7MC1–H3	Critical/Evaluative	Problem (inference)	Hh	20
GR7MC1–H4	Critical/Evaluative	Main idea (theme)	Hm	10
GR7MC1–H5	Critical/Evaluative	Character (inference)	Hl	7
GR7MC1–H6	Critical/Evaluative	Character (attitude/eval)	Hm	13
GR7MC3–L1	Factual/Literal	Detail	Ll	1
GR7MC3–L2	Factual/Literal	Detail (attitude)	Lh	11
GR7MC3–L3	Factual/Literal	Detail (discriminate)	Lh	17
GR7MC3–L4	Factual/Literal	Detail	Lm	5
GR7MC3–L5	Factual/Literal	Detail (discriminate)	Lm	8
GR7MC3–L6	Factual/Literal	Detail	Lm	14
GR7MC3–L7	Factual/Literal	Detail	Ll	2
GR7MC3–M1	Interpretive/Inferential	Problem	Mm	4
GR7MC3–M2	Interpretive/Inferential	Causal (detail)	Mh	12
GR7MC3–M3	Interpretive/Inferential	Sequence	Ml	3
GR7MC3–M4	Interpretive/Inferential	Causal (inference)	Mm	6
GR7MC3–M5	Interpretive/Inferential	Causal (inference)	Ml	19
GR7MC3–M6	Interpretive/Inferential	Sequence	Mm	9
GR7MC3–M7	Interpretive/Inferential	Inference (causal)	Mh	15
GR7MC3–H1	Critical/Evaluative	Character (attitude)	Hm	10
GR7MC3–H2	Critical/Evaluative	Causal (inference)	Hm	13
GR7MC3–H3	Critical/Evaluative	Main Idea	Hm	16
GR7MC3–H4	Critical/Evaluative	Character (attitude)	Hm	20
GR7MC3–H5	Critical/Evaluative	Character (trait)	Hl	7
GR7MC3–H6	Critical/Evaluative	Prediction (inference)	Hh	18

Item Ordering Tables for Seventh Grade, Story 4 and 5.

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR7MC4–L1	Factual/Literal	Detail (discriminate)	Lh	17
GR7MC4–L2	Factual/Literal	Detail	Ll	1
GR7MC4–L3	Factual/Literal	Detail (discriminate)	Lm	5
GR7MC4–L4	Factual/Literal	Detail	Lm	8
GR7MC4–L5	Factual/Literal	Detail (causal)	Lh	11
GR7MC4–L6	Factual/Literal	Detail	Ll	2
GR7MC4–L7	Factual/Literal	Detail	Ll	14
GR7MC4–M1	Interpretive/Inferential	Inference (causal)	Mm	4
GR7MC4–M2	Interpretive/Inferential	Sequence	Mm	6
GR7MC4–M3	Interpretive/Inferential	Causal	Ml	19
GR7MC4–M4	Interpretive/Inferential	Inference	Mm	9
GR7MC4–M5	Interpretive/Inferential	Causal (attitude)	Mh	15
GR7MC4–M6	Interpretive/Inferential	Causal (interpretive)	Ml	3
GR7MC4–M7	Interpretive/Inferential	Sequence	Mh	12
GR7MC4–H1	Critical/Evaluative	Inference (causal)	Hh	18
GR7MC4–H2	Critical/Evaluative	Main Idea	Hl	7
GR7MC4–H3	Critical/Evaluative	Character (attitude)	Hm	10
GR7MC4–H4	Critical/Evaluative	Character Trait (evaluate)	Hh	20
GR7MC4–H5	Critical/Evaluative	Main Problem	Hm	13
GR7MC4–H6	Critical/Evaluative	Prediction (inference)	Hm	16
GR7MC5–L1	Factual/Literal	Detail	Ll	1
GR7MC5–L2	Factual/Literal	Detail (discriminate)	Lm	8
GR7MC5–L3	Factual/Literal	Detail (discriminate)	Lm	2
GR7MC5–L4	Factual/Literal	Detail(discriminate)	Lh	11
GR7MC5–L5	Factual/Literal	Detail (discriminate)	Lm	5
GR7MC5–L6	Factual/Literal	Detail (discriminate)	Lh	14
GR7MC5–L7	Factual/Literal	Detail (causal)	Lh	17
GR7MC5–M1	Interpretive/Inferential	Causal (detail)	Ml	19
GR7MC5–M2	Interpretive/Inferential	Inference (character traits)	Mh	15
GR7MC5–M3	Interpretive/Inferential	Character trait (inference)	Ml	3
GR7MC5–M4	Interpretive/Inferential	Sequence	Mm	6
GR7MC5–M5	Interpretive/Inferential	Sequence (inference)	Mh	12
GR7MC5–M6	Interpretive/Inferential	Causal (inference)	Mm	9
GR7MC5–M7	Interpretive/Inferential	Causal (inference)	Mm	4
GR7MC5–H1	Critical/Evaluative	Causal (evaluation)	Hl	7
GR7MC5–H2	Critical/Evaluative	Character (evaluation)	Hm	13
GR7MC5–H3	Critical/Evaluative	Main idea (critical)	Hh	20
GR7MC5–H4	Critical/Evaluative	Character Trait (evaluate)	Hm	16
GR7MC5–H5	Critical/Evaluative	Character Trait (infer)	Hm	10
GR7MC5–H6	Critical/Evaluative	Character attitude (eval)	Hh	18

Item Ordering Tables for Seventh Grade, Story 10 and 12.

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR7MC10-L1	Factual/Literal	Detail	Ll	1
GR7MC10-L2	Factual/Literal	Detail	Ll	2
GR7MC10-L3	Literal/Factual	Detail (discriminate)	Lh	11
GR7MC10-L4	Factual/Literal	Detail (discriminate)	Lh	17
GR7MC10-L5	Factual/Literal	Detail (discriminate)	Lm	5
GR7MC10-L6	Factual/Literal	Detail (discriminate)	Lm	8
GR7MC10-L7	Literal/Factual	Detail	Ll	14
GR7MC10-M1	Interpretive/Inferential	Causal (inference)	Ml	3
GR7MC10-M2	Interpretive/Inferential	Causal (inference)	Mm	4
GR7MC10-M3	Interpretive/Inferential	Character attitude (inference)	Mm	6
GR7MC10-M4	Interpretive/Inferential	Sequence	Mm	9
GR7MC10-M5	Interpretive/Inferential	Sequence (inference)	Mh	12
GR7MC10-M6	Interpretive/Inferential	Inference (causal)	Mh	7
GR7MC10-M7	Interpretive/Inferential	Causal (inference)	Mm	19
GR7MC10-H1	Critical/Evaluative	Character Attitude (inference)	Hm	13
GR7MC10-H2	Critical/Evaluative	Character Trait	Hh	18
GR7MC10-H3	Critical/Evaluative	Character Trait	Hm	10
GR7MC10-H4	Critical/Evaluative	Character Trait	Hm	16
GR7MC10-H5	Critical/Evaluative	Main Idea	Hh	20
GR7MC10-H6	Critical/Evaluative	Problem	Hm	15
GR7MC12-L1	Factual/Literal	Detail	Lh	11
GR7MC12-L2	Factual/Literal	Detail	Ll	1
GR7MC12-L3	Factual/Literal	Detail (discriminate)	Lm	8
GR7MC12-L4	Factual/Literal	Detail	Ll	2
GR7MC12-L5	Factual/Literal	Detail (discriminate)	Lh	17
GR7MC12-L6	Factual/Literal	Detail (discriminate)	Lm	5
GR7MC12-L7	Factual/Literal	Detail	Ll	14
GR7MC12-M1	Interpretive/Inferential	Causal (inference)	Mh	12
GR7MC12-M2	Interpretive/Inferential	Main problem (character)	Mh	15
GR7MC12-M3	Interpretive/Inferential	Causal (inference)	Mm	4
GR7MC12-M4	Interpretive/Inferential	Sequence (causal)	Mm	6
GR7MC12-M5	Interpretive/Inferential	Character (attitude)	Ml	3
GR7MC12-M6	Interpretive/Inferential	Causal (inference)	Ml	19
GR7MC12-M7	Interpretive/Inferential	Causal (inference)	Mm	9
GR7MC12-H1	Critical/Evaluative	Main Idea	Hh	18
GR7MC12-H2	Critical/Evaluative	Character (inference/attitude)	Hm	10
GR7MC12-H3	Critical/Evaluative	Prediction	Hm	13
GR7MC12-H4	Critical/Evaluative	Character (trait/causal)	Hh	20
GR7MC12-H5	Critical/Evaluative	Prediction	Hm	16
GR7MC12-H6	Critical/Evaluative	Causal (character/attitude)	Hl	7

Item Ordering Tables for Seventh Grade, Story 13 and 14.

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR7MC13-L1	Factual/Literal	Detail (discriminate)	Lm	8
GR7MC13-L2	Factual/Literal	Detail	Lm	2
GR7MC13-L3	Factual/Literal	Detail	Ll	1
GR7MC13-L4	Factual/Literal	Detail (discriminate)	Lh	11
GR7MC13-L5	Factual/Literal	Detail (discriminate)	Lh	15
GR7MC13-L6	Factual/Literal	Detail (discriminate)	Lh	17
GR7MC13-L7	Factual/Literal	Detail	Lm	5
GR7MC13-M1	Interpretive/Inferential	Sequence	Mm	4
GR7MC13-M2	Interpretive/Inferential	Causal (inference)	Ml	3
GR7MC13-M3	Interpretive/Inferential	Problem (inference)	Mm	6
GR7MC13-M4	Interpretive/Inferential	Causal (inference)	Ml	14
GR7MC13-M5	Interpretive/Inferential	Sequence	Mm	9
GR7MC13-M6	Interpretive/Inferential	Inference	Mh	19
GR7MC13-M7	Interpretive/Inferential	Problem resolution (causal)	Mh	12
GR7MC13-H1	Critical/Evaluative	Main idea	Hh	16
GR7MC13-H2	Critical/Evaluative	Main problem (character)	Hl	7
GR7MC13-H3	Critical/Evaluative	Prediction	Hm	10
GR7MC13-H4	Critical/Evaluative	Character (trait)	Hm	13
GR7MC13-H5	Critical/Evaluative	Character (trait)	Hh	18
GR7MC13-H6	Critical/Evaluative	Character (trait)	Hh	20
GR7MC14-L1	Factual/Literal	Detail	Lm	8
GR7MC14-L2	Factual/Literal	Detail	Ll	1
GR7MC14-L3	Factual/Literal	Detail	Ll	2
GR7MC14-L4	Factual/Literal	Detail	Lm	5
GR7MC14-L5	Factual/Literal	Detail	Lh	11
GR7MC14-L6	Factual/Literal	Detail (discriminate)	Lh	15
GR7MC14-L7	Factual/Literal	Detail	Lh	17
GR7MC14-M1	Interpretive/Inferential	Causal (inference)	Mm	4
GR7MC14-M2	Interpretive/Inferential	Causal	Mh	16
GR7MC14-M3	Interpretive/Inferential	Sequence	Mm	6
GR7MC14-M4	Interpretive/Inferential	Causal (interpretive)	Ml	3
GR7MC14-M5	Interpretive/Inferential	Causal (interpretive)	Ml	14
GR7MC14-M6	Interpretive/Inferential	Character (attitude)	Mh	12
GR7MC14-M7	Interpretive/Inferential	Causal (interpretive)	Mm	9
GR7MC14-H1	Critical/Evaluative	Main idea	Hm	10
GR7MC14-H2	Critical/Evaluative	Main problem	Hh	13
GR7MC14-H3	Critical/Evaluative	Character (trait)	Hl	7
GR7MC14-H4	Critical/Evaluative	Character (trait)	Hh	18
GR7MC14-H5	Critical/Evaluative	Causal	Hl	19
GR7MC14-H6	Critical/Evaluative	Prediction	Hh	20

Item Ordering Tables for Seventh Grade, Story 15.

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR7MC15-L1	Factual/Literal	Detail	Ll	1
GR7MC15-L2	Factual/Literal	Detail (discriminate)	Lh	4
GR7MC15-L3	Factual/Literal	Detail (discriminate)	Ll	2
GR7MC15-L4	Factual/Literal	Detail	Lm	5
GR7MC15-L5	Factual/Literal	Detail	Lm	8
GR7MC15-L6	Factual/Literal	Detail (discriminate)	Ll	14
GR7MC15-L7	Factual/Literal	Detail (discriminate)	Lh	11
GR7MC15-M1	Interpretive/Inferential	Causal (inference)	Ml	3
GR7MC15-M2	Interpretive/Inferential	Causal (Inference)	Mh	9
GR7MC15-M3	Interpretive/Inferential	Causal (character/inference)	Mh	12
GR7MC15-M4	Interpretive/Inferential	Causal (inference)	Mh	15
GR7MC15-M5	Interpretive/Inferential	Sequence	Ml	6
GR7MC15-M6	Interpretive/Inferential	Story ending	Ml	19
GR7MC15-M7	Interpretive/Inferential	Causal (character/attitude)	Mh	16
GR7MC15-H1	Critical/Evaluative	Main idea	Hm	13
GR7MC15-H2	Critical/Evaluative	Main problem	Hh	18
GR7MC15-H3	Critical/Evaluative	Character (trait)	Hl	7
GR7MC15-H4	Critical/Evaluative	Character (evaluate)	Hh	20
GR7MC15-H5	Critical/Evaluative	Character (trait)	Hm	10
GR7MC15-H6	Critical/Evaluative	Prediction	Hl	17