



Participation & Supported Independence

ELA, Mathematics, and Science

Michigan's Alternate Assessment Program

**Michigan Department of Education
Office of Educational Assessment and Accountability**

Technical Report 2008-2009 Addendum

August 2009

Security label area



TABLE OF CONTENTS

LIST OF TABLES	ii
INTRODUCTION	1
SECTION 1: FORM DESIGN.....	2
SECTION 2: PARTICIPATION IN ASSESSMENTS AND SUBGROUP ANALYSIS.....	15
SECTION 3: SCORE RELIABILITY AND SUMMARY STATISTICS	30
SECTION 4: RATER CONSISTENCY	32
SECTION 5: CLASSIFICATION ACCURACY AND CONSISTENCY	36
SECTION 6: INTERRELATIONS AMONG STRANDS	38
SECTION 7: VERIFICATION OF PSYCHOMETRIC PROCEDURES	48
REFERENCES	51

LIST OF TABLES

TABLE 1.1: PARTICIPATION ENGLISH LANGUAGE ARTS BLUEPRINT: GRADES 3-8 AND 11	2
TABLE 1.2: SUPPORTED INDEPENDENCE ENGLISH LANGUAGE ARTS BLUEPRINT: GRADES 3-8 AND 11	2
TABLE 1.3: PARTICIPATION MATHEMATICS BLUEPRINT: GRADES 3-5	3
TABLE 1.4: PARTICIPATION MATHEMATICS BLUEPRINT: GRADES 6-8	4
TABLE 1.5: PARTICIPATION MATHEMATICS BLUEPRINT: GRADE 11	5
TABLE 1.6: SUPPORTED INDEPENDENCE MATHEMATICS BLUEPRINT: GRADES 3-5	6
TABLE 1.7: SUPPORTED INDEPENDENCE MATHEMATICS BLUEPRINT: GRADES 6-8	7
TABLE 1.8: SUPPORTED INDEPENDENCE MATHEMATICS BLUEPRINT: GRADE 11	8
TABLE 1.9: PARTICIPATION SCIENCE BLUEPRINT.....	9
TABLE 1.10: SUPPORTED INDEPENDENCE SCIENCE BLUEPRINT	12
TABLE 2.1: 2008-2009 N-COUNTS AND PERCENTS BY GENDER AND GRADE FOR ELA PARTICIPATION	15
TABLE 2.2: 2008-2009 N-COUNTS AND PERCENTS BY GENDER AND GRADE FOR ELA SUPPORTED INDEPENDENCE.....	15
TABLE 2.3: 2008-2009 N-COUNTS AND PERCENTS BY GENDER AND GRADE FOR MATHEMATICS PARTICIPATION.....	16
TABLE 2.4: 2008-2009 N-COUNTS AND PERCENTS BY GENDER AND GRADE FOR MATHEMATICS SUPPORTED INDEPENDENCE	16
TABLE 2.5: 2008-2009 N-COUNTS AND PERCENTS BY GENDER AND GRADE FOR SCIENCE PARTICIPATION.....	16
TABLE 2.6: 2008-2009 N-COUNTS AND PERCENTS BY GENDER AND GRADE FOR SCIENCE SUPPORTED INDEPENDENCE.....	16
TABLE 2.7: 2008-2009 N-COUNTS AND PERCENTS BY ETHNICITY AND GRADE FOR ELA PARTICIPATION.....	17
TABLE 2.8: 2008-2009 N-COUNTS AND PERCENTS BY ETHNICITY AND GRADE FOR ELA SUPPORTED INDEPENDENCE.....	17

TABLE 2.9: 2008-2009 N-COUNTS AND PERCENTS BY ETHNICITY AND GRADE FOR MATHEMATICS PARTICIPATION.....	17
TABLE 2.10: 2008-2009 N-COUNTS AND PERCENTS BY ETHNICITY AND GRADE FOR MATHEMATICS SUPPORTED INDEPENDENCE	18
TABLE 2.11: 2008-2009 N-COUNTS AND PERCENTS BY ETHNICITY AND GRADE FOR SCIENCE PARTICIPATION.....	18
TABLE 2.12: 2008-2009 N-COUNTS AND PERCENTS BY ETHNICITY AND GRADE FOR SCIENCE SUPPORTED INDEPENDENCE	18
TABLE 2.13: 2008-2009 PERCENT OF STUDENTS BY SUBGROUP AND FORM – ELA PARTICIPATION	20
TABLE 2.14: 2008-2009 PERCENT OF STUDENTS BY SUBGROUP AND FORM – MATHEMATICS PARTICIPATION.....	21
TABLE 2.15: 2008-2009 PERCENT OF STUDENTS BY SUBGROUP AND FORM – SCIENCE PARTICIPATION.....	22
TABLE 2.16: 2008-2009 PERCENT OF STUDENTS BY SUBGROUP AND FORM – ELA SUPPORTED INDEPENDENCE.....	23
TABLE 2.17: 2008-2009 PERCENT OF STUDENTS BY SUBGROUP AND FORM – MATH SUPPORTED INDEPENDENCE.....	24
TABLE 2.18: 2008-2009 PERCENT OF STUDENTS BY SUBGROUP AND FORM – SCIENCE SUPPORTED INDEPENDENCE.....	25
TABLE 2.19: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY GENDER AND GRADE – ELA PARTICIPATION.....	26
TABLE 2.20: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY GENDER AND GRADE – ELA SUPPORTED INDEPENDENCE.....	26
TABLE 2.21: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY GENDER AND GRADE – MATHEMATICS PARTICIPATION.....	26
TABLE 2.22: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY GENDER AND GRADE – MATHEMATICS SUPPORTED INDEPENDENCE	27
TABLE 2.23: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY GENDER AND GRADE – SCIENCE PARTICIPATION.....	27

TABLE 2.24: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY GENDER AND GRADE – SCIENCE SUPPORTED INDEPENDENCE.....	27
TABLE 2.25: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY ETHNICITY AND GRADE – ELA PARTICIPATION.....	27
TABLE 2.26: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY ETHNICITY AND GRADE – ELA SUPPORTED INDEPENDENCE.....	28
TABLE 2.27: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY ETHNICITY AND GRADE – MATHEMATICS PARTICIPATION.....	28
TABLE 2.28: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY ETHNICITY AND GRADE – MATHEMATICS SUPPORTED INDEPENDENCE	28
TABLE 2.29: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY ETHNICITY AND GRADE – SCIENCE PARTICIPATION.....	29
TABLE 2.30: 2008-2009 OPERATIONAL FORM SCORE SUMMARIES BY ETHNICITY AND GRADE – SCIENCE SUPPORTED INDEPENDENCE.....	29
TABLE 3.1: 2008-2009 OPERATIONAL FORM SUMMARIES, INCLUDING SAMPLE SIZE, SCORE STATISTICS, COEFFICIENT ALPHA, AND SEM BY GRADE – ELA PARTICIPATION	30
TABLE 3.2: 2008-2009 OPERATIONAL FORM SUMMARIES, INCLUDING SAMPLE SIZE, SCORE STATISTICS, COEFFICIENT ALPHA, AND SEM BY GRADE – ELA SUPPORTED INDEPENDENCE	30
TABLE 3.3: 2008-2009 OPERATIONAL FORM SUMMARIES, INCLUDING SAMPLE SIZE, SCORE STATISTICS, COEFFICIENT ALPHA, AND SEM BY GRADE – MATHEMATICS PARTICIPATION	31
TABLE 3.4: 2008-2009 OPERATIONAL FORM SUMMARIES, INCLUDING SAMPLE SIZE, SCORE STATISTICS, COEFFICIENT ALPHA, AND SEM BY GRADE – MATHEMATICS SUPPORTED INDEPENDENCE ...	31
TABLE 3.5: 2008-2009 OPERATIONAL FORM SUMMARIES, INCLUDING SAMPLE SIZE, SCORE STATISTICS, COEFFICIENT ALPHA, AND SEM BY GRADE – SCIENCE PARTICIPATION	31
TABLE 3.6: 2008-2009 OPERATIONAL FORM SUMMARIES, INCLUDING SAMPLE SIZE, SCORE STATISTICS, COEFFICIENT ALPHA, AND SEM BY GRADE – SCIENCE SUPPORTED INDEPENDENCE	31
TABLE 4.1: 2008-2009 OPERATIONAL FORM PERCENT PERFECT INTERRATER AGREEMENT RATES PARTICIPATION ELA	32
TABLE 4.2: 2008-2009 OPERATIONAL FORM PERCENT PERFECT INTERRATER AGREEMENT RATES PARTICIPATION MATHEMATICS	33

TABLE 4.3: 2008-2009 OPERATIONAL FORM PERCENT PERFECT INTERRATER AGREEMENT RATES PARTICIPATION SCIENCE.....	33
TABLE 4.4: 2008-2009 OPERATIONAL FORM PERCENT PERFECT INTERRATER AGREEMENT RATES SUPPORTED INDEPENDENCE ELA.....	34
TABLE 4.5: 2008-2009 OPERATIONAL FORM PERCENT PERFECT INTERRATER AGREEMENT RATES SUPPORTED INDEPENDENCE MATHEMATICS.....	34
TABLE 4.6: 2008-2009 OPERATIONAL FORM PERCENT PERFECT INTERRATER AGREEMENT RATES SUPPORTED INDEPENDENCE SCIENCE.....	35
TABLE 5.1: ESTIMATED CLASSIFICATION ACCURACY AND CONSISTENCY BY CONTENT AREA AND GRADE PARTICIPATION.....	36
TABLE 5.2: ESTIMATED CLASSIFICATION ACCURACY AND CONSISTENCY BY SUBJECT AND GRADE SUPPORTED INDEPENDENCE	37
TABLE 6.1: 2008-2009 OPERATIONAL FORM INTERCORRELATIONS BETWEEN SECTION SCORES BY GRADE – ELA PARTICIPATION.....	38
TABLE 6.2: 2008-2009 OPERATIONAL FORM INTERCORRELATIONS BETWEEN SECTION SCORES BY GRADE – ELA SUPPORTED INDEPENDENCE	39
TABLE 6.3: FALL 2008 OPERATIONAL FORM INTERCORRELATIONS BETWEEN SECTION SCORES BY GRADE – MATHEMATICS PARTICIPATION.....	39
TABLE 6.4: FALL 2008 OPERATIONAL FORM INTERCORRELATIONS BETWEEN SECTION SCORES BY GRADE – MATHEMATICS SUPPORTED INDEPENDENCE	40
TABLE 6.5: SPRING 2009 OPERATIONAL FORM INTERCORRELATIONS BETWEEN SECTION SCORES – MATHEMATICS PARTICIPATION	40
TABLE 6.6: SPRING 2009 OPERATIONAL FORM INTERCORRELATIONS BETWEEN SECTION SCORES – MATHEMATICS SUPPORTED INDEPENDENCE	40
TABLE 6.7: 2008-2009 OPERATIONAL FORM INTERCORRELATIONS BETWEEN SECTION SCORES BY GRADE – SCIENCE PARTICIPATION	41
TABLE 6.8: 2008-2009 OPERATIONAL FORM INTERCORRELATIONS BETWEEN SECTION SCORES BY GRADE – SCIENCE SUPPORTED INDEPENDENCE	41
TABLE 6.9: 2008-2009 OPERATIONAL FORM SUMMARY STATISTICS FOR SECTION SCORES BY GRADE – ELA PARTICIPATION	42



TABLE 6.10: 2008-2009 OPERATIONAL FORM SUMMARY STATISTICS FOR SECTION SCORES BY GRADE – ELA SUPPORTED INDEPENDENCE 43

TABLE 6.11: FALL 2008 OPERATIONAL FORM SUMMARY STATISTICS FOR SECTION SCORES BY GRADE – MATHEMATICS PARTICIPATION..... 44

TABLE 6.12: FALL 2008 OPERATIONAL FORM SUMMARY STATISTICS FOR SECTION SCORES BY GRADE – MATHEMATICS SUPPORTED INDEPENDENCE 45

TABLE 6.13: SPRING 2009 OPERATIONAL FORM SUMMARY STATISTICS FOR SECTION SCORES – MATHEMATICS PARTICIPATION..... 46

TABLE 6.14: SPRING 2009 OPERATIONAL FORM SUMMARY STATISTICS FOR SECTION SCORES – MATHEMATICS SUPPORTED INDEPENDENCE 46

TABLE 6.15: 2008-2009 OPERATIONAL FORM SUMMARY STATISTICS FOR SECTION SCORES BY GRADE – SCIENCE PARTICIPATION 46

TABLE 6.16: 2008-2009 OPERATIONAL FORM SUMMARY STATISTICS FOR SECTION SCORES BY GRADE – SCIENCE SUPPORTED INDEPENDENCE 47

TABLE 7.1: VERIFICATION OF ITEM ANALYSES BY HUMRRO FOR SUPPORTED INDEPENDENCE ASSESSMENTS 50

TABLE 7.2: VERIFICATION OF ITEM ANALYSES BY HUMRRO FOR PARTICIPATION ASSESSMENTS..... 50

INTRODUCTION

The MI-Access Technical Reports provide information about (a) the nature of the tests; (b) their intended uses; (c) the processes involved in their development; (d) technical information related to scoring, interpretation, and evidence of reliability and validity; (e) scaling and equating; and (f) guidelines for test administration and interpretation, as recommended by the Standards for Educational and Psychological Testing (1999, p. 67). Technical Reports have been developed for the Participation and Supported Independence level assessments and the Functional Independence assessments.

The following Technical Reports have been developed:

Functional Independence English Languages Arts and Mathematics, March 2007
Participation and Supported Independence English Language Arts and Mathematics,
June 2007

Participation, Supported Independence, and Functional Independence Science, August 2008

Each year, an addendum will be produced to provide the technical quality evidence for the most recent operational administrations of the tests. This is the second annual addendum and includes the Participation and Supported Independence ELA, Mathematics, and Science assessments administered in the 2008-2009 school year.

As indicated in the full technical reports for MI-Access, the reports are designed to communicate with multiple users, including state policy makers and their staffs, school and district administrators, teachers, and parents and other advocates interested in such documentation. However, the addendums are designed to provide annual technical quality updates for a much smaller audience. The addendums will focus on reliability and validity evidence gathered at the time of test administration, scoring and scaling, and reporting.

1. Form Design

The fall 2008 grades 3 to 8 and spring 2009 grade 11 Participation and Supported Independence ELA and Mathematics, and the fall grades 5 and 8 and spring grade 11 Science assessments were developed according to the test blueprints, which were unchanged from the previous year. The test blueprints for ELA Participation and ELA Supported Independence are given in Tables 1.1 and 1.2. The test blueprints for Mathematics Participation for grades 3 to 5, grades 6 to 8, and grade 11 are given in Tables 1.3, 1.4, and 1.5, respectively. The test blueprints for Mathematics Supported Independence for grades 3 to 5, grades 6 to 8, and grade 11 are given in Tables 1.6, 1.7, and 1.8, respectively. The test blueprints for Science Participation and Supported Independence are given in Tables 1.9 and 1.10. For both Participation and Supported Independence and for all three content areas, three forms were developed for each grade group (elementary, grades 3 – 5; middle school, grades 6 – 8; and grade 11). The three forms contained the same operational, core items but differed by the field test items embedded in each form.

Table 1.1
Participation English Language Arts Blueprint: Grades 3-8 and 11

English Language Arts Assessment Components	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009		
				Grades 3 - 5	Grades 6 - 8	Grade 11
Accessing Information	6	3	2	2	3	2
Word Study	3	2	1	1	1	1
Comprehension	3	1	1	1	2	1
Expressing Ideas	4	2	1	2	1	2
Total Number of Items on Test	10	5/Form	3	4	4	4

*Five items will be embedded in each of three forms

Table 1.2
Supported Independence English Language Arts Blueprint: Grades 3-8 and 11

English Language Arts Assessment Components	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009		
				Grades 3 - 5	Grades 6 - 8	Grade 11
Accessing Information	9	3	2	3	3	3
Word Study	4	2	1	1	1	1
Comprehension	5	1	1	2	2	2
Expressing Ideas	6	2	2	2	2	2
Total Number of Items on Test	15	5/Form	4	5	5	5

*Five items will be embedded in each of three forms

Table 1.3
Participation Mathematics Blueprint: Grades 3-5

Strand	Domain	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Numbers and Operations (N)	Meaning, notation, place value, and comparisons (ME)	3	3	1	1
	Number relationships and meaning of operations (MR)		1		
	Fluency with operations and estimations (FL)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Algebra (A)	Formulas, expressions, equations, and inequalities (FO)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Measurement (M)	Units and systems of measurement (UN)	2	4	1	1
Geometry (G)	Geometric shape, properties, and mathematical arguments (GS)	2	3		
	Location and spatial relationship (LO)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Spatial Reasoning and geometric modeling (SR)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Transformation and symmetry (TR)	2	2	1	1
Data and Probability (D)	Data Representation (RE)	1	2		1
Total Number of Items on Test		10	5/Form	3	4

*Five items will be embedded in each of three forms

Table 1.4
Participation Mathematics Blueprint: Grades 6-8

Strand	Domain	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Numbers and Operations (N)	Meaning, notation, place value, and comparisons (ME)	3	3	1	1
	Number relationships and meaning of operations (MR)	1	1		
	Fluency with operations and estimations (FL)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Algebra (A)	Formulas, expressions, equations, and inequalities (FO)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Measurement (M)	Units and systems of measurement (UN)	2	4	1	1
Geometry (G)	Geometric shape, properties, and mathematical arguments (GS)	1	2		1
	Location and spatial relationship (LO)		1		
	Spatial Reasoning and geometric modeling (SR)		1		
	Transformation and symmetry (TR)	1	1	1	
Data and Probability (D)	Data Representation (RE)	2	2		1
Total Number of Items on Test		10	5/Form	3	4

*Five items will be embedded in each of three forms

Table 1.5
Participation Mathematics Blueprint: Grade 11

Strand	Domain	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Quantitative Literacy and Logic (L)	L1: Reasoning About Numbers, Systems and Quantitative Situations	6	7	1	2
	L2: Calculation, Algorithms, and Estimation	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	L3: Mathematical Reasoning, Logic, and Proof	2	4	1	1
Algebra and Functions (A)	A1: Expressions, Equations, and Inequalities	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	A2: Function	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	A3: Mathematical Modeling	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Geometry and Trigonometry (G)	G1: Figures and Their Properties	1	2		
	G2: Relationships Between Figures				
	G3: Transformations of Figures in the Plane	1	2	1	1
Statistics and Probability (S)	S1: Univariate Data-Examining Distributions	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	S2: Bivariate Data-Examining Relationships	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	S3: Samples, Surveys, and Experiments	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	S4: Probability Models and Probability Calculation	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Total Number of Items on Test		10	5/Form	3	4

*Five items will be embedded in each of three forms

Table 1.6
Supported Independence Mathematics Blueprint: Grades 3-5

Strand	Domain	Number of Core Items	Number of Embedded Field Test Items	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Number and Operations (N)	Meaning, notation, place value, and comparisons (ME)	5	5	1	1
	Number relationships and meaning of operations (MR)	1	1		
	Fluency with operations and estimations (FL)	1	1		1
Algebra (A)	Formulas, expressions, equations, and inequalities (FO)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Measurements (M)	Units and systems of measurement (UN)	2	2	1	1
Geometry (G)	Geometric shape, properties, and mathematical arguments (GS)	2	2		
	Location and spatial relationship (LO)	1	1		1
	Spatial Reasoning and geometric modeling (SR)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Transformation and symmetry (TR)	1	1	1	
Data and Probability (D)	Data Representation (RE)	2	2	1	1
Total Number of Items on Test		15	5/Form	4	5

*Five items will be embedded in each of three forms.

Table 1.7
Supported Independence Mathematics Blueprint: Grades 6-8

Strand	Domain	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Numbers and Operations (N)	Meaning, notation, place value, and comparisons (ME)	4	4	1	
	Number relationships and meaning of operations (MR)	1	1		
	Fluency with operations and estimations (FL)	1	1		1
Algebra (A)	Formulas, expressions, equations, and inequalities (FO)	1	1	1	1
Measurement (M)	Units and systems of measurement (UN)	3	3	1	1
Geometry (G)	Geometric shape, properties, and mathematical arguments (GS)	1	1		
	Location and spatial relationship (LO)	1	1		
	Spatial Reasoning and geometric modeling (SR)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Transformation and symmetry (TR)	1	1		1
Data and Probability (D)	Data Representation (RE)	2	2	1	1
Total Number of Items on Test		15	5/Form	4	5

*Five items will be embedded in each of three forms

Table 1.8
Supported Independence Mathematics Blueprint: Grade 11

Strand	Domain	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Quantitative Literacy and Logic (L)	L1: Reasoning About Numbers, Systems and Quantitative Situations	7	7	1	1
	L2: Calculation, Algorithms, and Estimation	1	1		1
	L3: Mathematical Reasoning, Logic, and Proof	3	3	1	1
Algebra and Functions (A)	A1: Expressions, Equations, and Inequalities	1	1	1	1
	A2: Function	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	A3: Mathematical Modeling	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Geometry and Trigonometry (G)	G1: Figures and Their Properties	1	1		
	G2: Relationships Between Figures				
	G3: Transformations of Figures in the Plane	2	2	1	1
Statistics and Probability (S)	S1: Univariate Data-Examining Distributions	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	S2: Bivariate Data-Examining Relationships	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	S3: Samples, Surveys, and Experiments	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	S4: Probability Models and Probability Calculation	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Total Number of Items on Test		15	5/Form	4	5

*Five items will be embedded in each of three forms

Table 1.9
Participation Science Blueprint

		Grade 5			
Strand	Domain	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Constructing & Reflecting	Constructing	1	0		1
	Reflecting	1	0		1
Life Science	Cells	1	0		
	Organization	4	7	1	1
	Heredity	0	0		
	Evolution	0	0		
	Ecosystems	0	0		
Physical Science	Matter & Energy	1	3		1
	Changes in Matter	0	0		
	Motion of Objects	2	3	1	1
	Waves	2	0		1
Earth Science	Geosphere	1	1		1
	Hydrosphere	1	0		
	Atmosphere	1	1	1	1
	Solar System	0	0		
Total Number of Items on Test		15	5/Form	3	8

*Five items will be embedded in each of three forms

Table 1.9 continued
Participation Science Blueprint

Strand	Domain	Grade 8			
		Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Constructing & Reflecting	Constructing	1	0		1
	Reflecting	1	0		1
Life Science	Cells	1	0		
	Organization	4	7	1	1
	Heredity	0	0		
	Evolution	0	0		
	Ecosystems	0	0		
Physical Science	Matter & Energy	1	3		
	Changes in Matter	0	0		
	Motion of Objects	2	3	1	1
	Waves	2	0		1
Earth Science	Geosphere	1	1		
	Hydrosphere	1	0		
	Atmosphere	1	1	1	1
	Solar System	0	0		
Total Number of Items on Test		15	5/Form	3	6

*Five items will be embedded in each of three forms

Table 1.9 continued
Participation Science Blueprint

		Grade 11			
Strand	Domain	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Constructing & Reflecting	Constructing	1	0		1
	Reflecting	1	0		1
Life Science	Cells	1	0		
	Organization	4	4	1	1
	Heredity	0	0		
	Evolution	0	0		
	Ecosystems	0	0		
Physical Science	Matter & Energy	1	5		
	Changes in Matter	0	0		
	Motion of Objects	2	1	1	
	Waves	2	0		1
Earth Science	Geosphere	1	2	1	
	Hydrosphere	1	2		1
	Atmosphere	1	1		
	Solar System	0	0		
Total Number of Items on Test		15	5/Form	3	5

*Five items will be embedded in each of three forms

Table 1.10
Supported Independence Science Blueprint

		Grade 5			
Strand	Domain	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Constructing & Reflecting	Constructing	1	0		1
	Reflecting	1	0		1
Life Science	Cells	1	2		
	Organization	5	1	1	1
	Heredity	0	0		
	Evolution	0	0		
	Ecosystems	1	3		
Physical Science	Matter & Energy	1	3		
	Changes in Matter	0	0		
	Motion of Objects	1	0	1	1
	Waves	1	0		
Earth Science	Geosphere	1	3		
	Hydrosphere	2	0	1	1
	Atmosphere	1	3		
	Solar System	1	0		
Total Number of Items on Test		17	5/Form	3	5

*Five items will be embedded in each of three forms

Table 1.10 continued
Supported Independence Science Blueprint

		Grade 8			
Strand	Domain	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Constructing & Reflecting	Constructing	1	3		1
	Reflecting	1	0		1
Life Science	Cells	1	0		
	Organization	5	0	1	2
	Heredity	0	0		
	Evolution	0	0		
	Ecosystems	1	0		
Physical Science	Matter & Energy	1	3		
	Changes in Matter	0	0		
	Motion of Objects	1	0		1
	Waves	1	0	1	
Earth Science	Geosphere	1	3		
	Hydrosphere	2	3		1
	Atmosphere	1	0	1	
	Solar System	1	3		1
Total Number of Items on Test		17	5/Form	3	7

*Five items will be embedded in each of three forms

Table 1.10 continued
Supported Independence Science Blueprint

		Grade 11			
Strand	Domain	Number of Core Items	Number of Embedded Field Test Items*	Number of Released Items	Number of Repeated Items from 2007-2008 to 2008-2009
Constructing & Reflecting	Constructing	1	0		1
	Reflecting	1	0		1
Life Science	Cells	1	0		
	Organization	5	2	1	1
	Heredity	0	0		
	Evolution	0	0		
	Ecosystems	1	1		
Physical Science	Matter & Energy	1	3		
	Changes in Matter	0	0		
	Motion of Objects	1	3	1	
	Waves	1	0		1
Earth Science	Geosphere	1	2		
	Hydrosphere	2	2		1
	Atmosphere	1	2	1	
	Solar System	1	0		
Total Number of Items on Test		17	5/Form	3	5

*Five items will be embedded in each of three forms

2. Participation in Assessments and Subgroup Analysis

Participation

Participation in the assessments is monitored by gender and by racial/ethnic group. Participation counts by gender and grade are given in Tables 2.1 to 2.6, and participation counts by race/ethnicity and grade are given in Tables 2.7 to 2.12. The percent of male students across the grades and content areas for Participation ranges from 58% at grade 11 to the low 60% at grades 3 – 8. For Supported Independence, the percent of males is generally in the mid-60% except for a high of 71% for grade 3 ELA and Mathematics. Across both levels and all three content areas, the largest racial/ethnic group is White students with 55% to 69% of the students, followed by Black students with 21% to 37% of the students, Hispanic students with 2% to 7% of the students, and Asian/Pacific Islander students with a fraction of 1% to 3% of the students.

Table 2.1
2008-2009 N-Counts and Percents by Gender and Grade for ELA Participation

Grade	Gender				Total N
	Female		Male		
	N	%	N	%	
3	141	38.0%	230	62.0%	371
4	128	39.0%	200	61.0%	328
5	134	38.4%	215	61.6%	349
6	102	37.5%	170	62.5%	272
7	126	38.4%	202	61.6%	328
8	114	36.4%	199	63.6%	313
11	148	42.4%	201	57.6%	349

Table 2.2
2008-2009 N-Counts and Percents by Gender and Grade for ELA Supported Independence

Grade	Gender				Total N
	Female		Male		
	N	%	N	%	
3	140	28.8%	346	71.2%	486
4	166	32.3%	348	67.7%	514
5	177	35.3%	325	64.7%	502
6	161	33.6%	318	66.4%	479
7	148	33.1%	299	66.9%	447
8	174	33.4%	347	66.6%	521
11	216	38.0%	352	62.0%	568

Table 2.3
2008-2009 N-Counts and Percents by Gender and Grade for Mathematics Participation

Grade	Gender				Total N
	Female		Male		
	N	%	N	%	
3	141	38.1%	229	61.9%	370
4	129	39.3%	199	60.7%	328
5	131	38.0%	214	62.0%	345
6	101	37.4%	169	62.6%	270
7	126	38.4%	202	61.6%	328
8	112	35.8%	201	64.2%	313
11	147	42.5%	199	57.5%	346

Table 2.4
2008-2009 N-Counts and Percents by Gender and Grade for Mathematics Supported Independence

Grade	Gender				Total N
	Female		Male		
	N	%	N	%	
3	140	29.2%	340	70.8%	480
4	165	32.2%	347	67.8%	512
5	176	35.1%	325	64.9%	501
6	161	33.6%	318	66.4%	479
7	149	33.1%	301	66.9%	450
8	173	33.3%	347	66.7%	520
11	215	37.9%	353	62.1%	568

Table 2.5
2008-2009 N-Counts and Percents by Gender and Grade for Science Participation

Grade	Gender				Total N
	Female		Male		
	N	%	N	%	
5	128	38.0%	209	62.0%	337
8	111	36.5%	193	63.5%	304
11	147	42.2%	201	57.8%	348

Table 2.6
2008-2009 N-Counts and Percents by Gender and Grade for Science Supported Independence

Grade	Gender				Total N
	Female		Male		
	N	%	N	%	
5	163	34.2%	313	65.8%	476
8	161	34.1%	311	65.9%	472
11	215	38.1%	350	61.9%	565

Table 2.7
2008-2009 N-Counts and Percents by Ethnicity and Grade for ELA Participation

Grade	American Indian or Alaskan Native		Asian or Pacific Islander		Black, Not of Hispanic Origin		Hispanic		White, Not of Hispanic Origin		Multi-racial		Other		Unknown		Total N
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
3	3	0.8%	12	3.2%	96	25.9%	19	5.1%	235	63.3%	5	1.3%	0	0.0%	1	0.3%	371
4	1	0.3%	7	2.1%	82	25.0%	12	3.7%	222	67.7%	3	0.9%	0	0.0%	1	0.3%	328
5	0	0.0%	10	2.9%	94	26.9%	21	6.0%	219	62.8%	4	1.1%	0	0.0%	1	0.3%	349
6	2	0.7%	2	0.7%	63	23.2%	14	5.1%	189	69.5%	1	0.4%	1	0.4%	0	0.0%	272
7	1	0.3%	9	2.7%	82	25.0%	14	4.3%	220	67.1%	1	0.3%	1	0.3%	0	0.0%	328
8	1	0.3%	8	2.6%	76	24.3%	22	7.0%	203	64.9%	2	0.6%	0	0.0%	1	0.3%	313
11	4	1.1%	10	2.9%	130	37.2%	12	3.4%	191	54.7%	2	0.6%	0	0.0%	0	0.0%	349

Table 2.8
2008-2009 N-Counts and Percents by Ethnicity and Grade for ELA Supported Independence

Grade	American Indian or Alaskan Native		Asian or Pacific Islander		Black, Not of Hispanic Origin		Hispanic		White, Not of Hispanic Origin		Multi-racial		Other		Unknown		Total N
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
3	3	0.6%	12	2.5%	125	25.7%	20	4.1%	323	66.5%	3	0.6%	0	0.0%	0	0.0%	486
4	4	0.8%	14	2.7%	133	25.9%	24	4.7%	336	65.4%	3	0.6%	0	0.0%	0	0.0%	514
5	4	0.8%	14	2.8%	120	23.9%	26	5.2%	333	66.3%	5	1.0%	0	0.0%	0	0.0%	502
6	4	0.8%	12	2.5%	107	22.3%	23	4.8%	327	68.3%	6	1.3%	0	0.0%	0	0.0%	479
7	9	2.0%	7	1.6%	95	21.3%	24	5.4%	307	68.7%	3	0.7%	2	0.4%	0	0.0%	447
8	6	1.2%	10	1.9%	143	27.4%	21	4.0%	333	63.9%	8	1.5%	0	0.0%	0	0.0%	521
11	6	1.1%	13	2.3%	181	31.9%	10	1.8%	355	62.5%	2	0.4%	0	0.0%	1	0.2%	568

Table 2.9
2008-2009 N-Counts and Percents by Ethnicity and Grade for Mathematics Participation

Grade	American Indian or Alaskan Native		Asian or Pacific Islander		Black, Not of Hispanic Origin		Hispanic		White, Not of Hispanic Origin		Multi-racial		Other		Unknown		Total N
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
3	2	0.5%	12	3.2%	96	25.9%	19	5.1%	235	63.5%	5	1.4%	0	0.0%	1	0.3%	370
4	1	0.3%	7	2.1%	83	25.3%	12	3.7%	221	67.4%	3	0.9%	0	0.0%	1	0.3%	328
5	0	0.0%	10	2.9%	90	26.1%	21	6.1%	219	63.5%	4	1.2%	0	0.0%	1	0.3%	345
6	2	0.7%	2	0.7%	63	23.3%	14	5.2%	187	69.3%	1	0.4%	1	0.4%	0	0.0%	270
7	1	0.3%	9	2.7%	82	25.0%	13	4.0%	221	67.4%	1	0.3%	1	0.3%	0	0.0%	328
8	1	0.3%	7	2.2%	77	24.6%	22	7.0%	203	64.9%	2	0.6%	0	0.0%	1	0.3%	313
11	4	1.2%	10	2.9%	127	36.7%	12	3.5%	191	55.2%	2	0.6%	0	0.0%	0	0.0%	346

Table 2.10
2008-2009 N-Counts and Percents by Ethnicity and Grade for Mathematics
Supported Independence

Grade	American Indian or Alaskan Native		Asian or Pacific Islander		Black, Not of Hispanic Origin		Hispanic		White, Not of Hispanic Origin		Multi-racial		Other		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
3	3	0.6%	12	2.5%	123	25.6%	20	4.2%	319	66.5%	3	0.6%	0	0.0%	0	0.0%	480
4	4	0.8%	14	2.7%	132	25.8%	24	4.7%	335	65.4%	3	0.6%	0	0.0%	0	0.0%	512
5	4	0.8%	14	2.8%	120	24.0%	26	5.2%	332	66.3%	5	1.0%	0	0.0%	0	0.0%	501
6	4	0.8%	12	2.5%	107	22.3%	23	4.8%	327	68.3%	6	1.3%	0	0.0%	0	0.0%	479
7	9	2.0%	7	1.6%	97	21.6%	24	5.3%	308	68.4%	3	0.7%	2	0.4%	0	0.0%	450
8	6	1.2%	10	1.9%	142	27.3%	20	3.8%	334	64.2%	8	1.5%	0	0.0%	0	0.0%	520
11	6	1.1%	13	2.3%	181	31.9%	10	1.8%	355	62.5%	2	0.4%	0	0.0%	1	0.2%	568

Table 2.11
2008-2009 N-Counts and Percents by Ethnicity and Grade for Science Participation

Grade	American Indian or Alaskan Native		Asian or Pacific Islander		Black, Not of Hispanic Origin		Hispanic		White, Not of Hispanic Origin		Multi-racial		Other		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
5	0	0.0%	10	3.0%	88	26.1%	21	6.2%	214	63.5%	4	1.2%	0	0.0%	0	0.0%	337
8	2	0.7%	7	2.3%	75	24.7%	21	6.9%	196	64.5%	2	0.7%	0	0.0%	1	0.3%	304
11	4	1.1%	10	2.9%	130	37.4%	12	3.4%	190	54.6%	2	0.6%	0	0.0%	0	0.0%	348

Table 2.12
2008-2009 N-Counts and Percents by Ethnicity and Grade for Science
Supported Independence

Grade	American Indian or Alaskan Native		Asian or Pacific Islander		Black, Not of Hispanic Origin		Hispanic		White, Not of Hispanic Origin		Multi-racial		Other		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
5	4	0.8%	14	2.9%	114	23.9%	22	4.6%	318	66.8%	4	0.8%	0	0.0%	0	0.0%	476
8	4	0.8%	10	2.1%	129	27.3%	19	4.0%	302	64.0%	8	1.7%	0	0.0%	0	0.0%	472
11	6	1.1%	13	2.3%	183	32.4%	10	1.8%	350	61.9%	2	0.4%	0	0.0%	1	0.2%	565

Form Distribution

Recall from Section 1, three field test forms were developed for each level and content area. These forms were distributed to districts and schools according to the guidelines from the Michigan Department of Education, Office of Educational Assessment and Accountability. Except for the four largest districts of Detroit, Dearborn, Grand Rapids, and Utica the sampling unit was the district. For the four largest districts, the sampling unit was the school. Forms were randomly assigned using stratified random sampling where stratification was based on the enrollment counts provided to Questar. Except for the four largest districts, each district received the same form. For the four largest districts, each school received the same form.

The percent of students by various subgroups and form for the 2008-2009 school year are given in the tables on the following pages. Each table contains the number of students tested by form at each grade as well as the grade total. At each grade, the percent of students for the various subgroups is given by form as well as for the grade total. For Participation, the percents for the three content areas are given in Tables 2.13 – 2.15. For Supported Independence, the percents for the three content areas are given in Tables 2.16 – 2.18. The subgroups consist of gender, three racial/ethnic groups (Black, Hispanic, and White), and Economically Disadvantaged. As seen from the tables for both levels and all three content areas, each form is well represented by the various subgroups. Moreover, for each form at a grade, the percent of students across the subgroups is generally consistent with the percents for the grade population.

Table 2.13
2008-2009 Percent of Students by Subgroup and Form
ELA Participation

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 3							
All Forms	371	38.0%	62.0%	25.9%	5.1%	63.3%	45.3%
Form 1	110	35.5%	64.5%	26.4%	3.6%	65.5%	42.7%
Form 2	126	38.9%	61.1%	22.2%	4.0%	68.3%	37.3%
Form 3	135	39.3%	60.7%	28.9%	7.4%	57.0%	54.8%
Grade 4							
All Forms	328	39.0%	61.0%	25.0%	3.7%	67.7%	41.5%
Form 1	90	37.8%	62.2%	24.4%	1.1%	71.1%	42.2%
Form 2	116	44.0%	56.0%	25.0%	6.0%	65.5%	38.8%
Form 3	122	35.2%	64.8%	25.4%	3.3%	67.2%	43.4%
Grade 5							
All Forms	349	38.4%	61.6%	26.9%	6.0%	62.8%	37.8%
Form 1	107	34.6%	65.4%	27.1%	6.5%	60.7%	30.8%
Form 2	123	38.2%	61.8%	30.9%	6.5%	58.5%	43.1%
Form 3	119	42.0%	58.0%	22.7%	5.0%	68.9%	38.7%
Grade 6							
All Forms	272	37.5%	62.5%	23.2%	5.1%	69.5%	38.2%
Form 1	103	36.9%	63.1%	31.1%	1.9%	64.1%	47.6%
Form 2	71	31.0%	69.0%	26.8%	11.3%	60.6%	39.4%
Form 3	98	42.9%	57.1%	12.2%	4.1%	81.6%	27.6%
Grade 7							
All Forms	328	38.4%	61.6%	25.0%	4.3%	67.1%	39.0%
Form 1	121	38.8%	61.2%	31.4%	6.6%	60.3%	47.1%
Form 2	113	36.3%	63.7%	28.3%	2.7%	64.6%	38.1%
Form 3	94	40.4%	59.6%	12.8%	3.2%	78.7%	29.8%
Grade 8							
All Forms	313	36.4%	63.6%	24.3%	7.0%	64.9%	38.0%
Form 1	101	37.6%	62.4%	22.8%	8.9%	65.3%	44.6%
Form 2	129	32.6%	67.4%	29.5%	7.0%	58.1%	34.1%
Form 3	83	41.0%	59.0%	18.1%	4.8%	74.7%	36.1%
Grade 11							
All Forms	349	42.4%	57.6%	37.2%	3.4%	54.7%	53.0%
Form 1	152	44.7%	55.3%	40.1%	3.3%	53.3%	54.6%
Form 2	94	41.5%	58.5%	38.3%	2.1%	50.0%	53.2%
Form 3	103	39.8%	60.2%	32.0%	4.9%	61.2%	50.5%

Table 2.14
2008-2009 Percent of Students by Subgroup and Form
Mathematics Participation

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 3							
All Forms	370	38.1%	61.9%	25.9%	5.1%	63.5%	45.4%
Form 1	110	35.5%	64.5%	26.4%	3.6%	65.5%	42.7%
Form 2	126	38.9%	61.1%	22.2%	4.0%	68.3%	37.3%
Form 3	134	39.6%	60.4%	29.1%	7.5%	57.5%	55.2%
Grade 4							
All Forms	328	39.3%	60.7%	25.3%	3.7%	67.4%	41.5%
Form 1	91	38.5%	61.5%	25.3%	1.1%	70.3%	41.8%
Form 2	115	44.3%	55.7%	25.2%	6.1%	65.2%	39.1%
Form 3	122	35.2%	64.8%	25.4%	3.3%	67.2%	43.4%
Grade 5							
All Forms	345	38.0%	62.0%	26.1%	6.1%	63.5%	38.0%
Form 1	107	34.6%	65.4%	26.2%	6.5%	61.7%	30.8%
Form 2	121	38.0%	62.0%	30.6%	6.6%	58.7%	43.8%
Form 3	117	41.0%	59.0%	21.4%	5.1%	70.1%	38.5%
Grade 6							
All Forms	270	37.4%	62.6%	23.3%	5.2%	69.3%	38.1%
Form 1	102	37.3%	62.7%	31.4%	2.0%	63.7%	48.0%
Form 2	71	31.0%	69.0%	26.8%	11.3%	60.6%	39.4%
Form 3	97	42.3%	57.7%	12.4%	4.1%	81.4%	26.8%
Grade 7							
All Forms	328	38.4%	61.6%	25.0%	4.0%	67.4%	38.7%
Form 1	120	39.2%	60.8%	31.7%	5.8%	60.8%	46.7%
Form 2	114	36.0%	64.0%	28.1%	2.6%	64.9%	37.7%
Form 3	94	40.4%	59.6%	12.8%	3.2%	78.7%	29.8%
Grade 8							
All Forms	313	35.8%	64.2%	24.6%	7.0%	64.9%	38.0%
Form 1	103	36.9%	63.1%	24.3%	8.7%	64.1%	45.6%
Form 2	127	31.5%	68.5%	29.1%	7.1%	59.1%	33.1%
Form 3	83	41.0%	59.0%	18.1%	4.8%	74.7%	36.1%
Grade 11							
All Forms	346	42.5%	57.5%	36.7%	3.5%	55.2%	52.6%
Form 1	151	44.4%	55.6%	39.7%	3.3%	53.6%	54.3%
Form 2	94	41.5%	58.5%	38.3%	2.1%	50.0%	53.2%
Form 3	101	40.6%	59.4%	30.7%	5.0%	62.4%	49.5%

Table 2.15
2008-2009 Percent of Students by Subgroup and Form
Science Participation

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 5							
All Forms	337	38.0%	62.0%	26.1%	6.2%	63.5%	36.5%
Form 1	120	37.5%	62.5%	30.8%	8.3%	58.3%	35.8%
Form 2	120	40.8%	59.2%	30.8%	5.0%	57.5%	35.0%
Form 3	97	35.1%	64.9%	14.4%	5.2%	77.3%	39.2%
Grade 8							
All Forms	304	36.5%	63.5%	24.7%	6.9%	64.5%	38.2%
Form 1	97	37.1%	62.9%	28.9%	6.2%	58.8%	41.2%
Form 2	94	35.1%	64.9%	25.5%	6.4%	67.0%	43.6%
Form 3	113	37.2%	62.8%	20.4%	8.0%	67.3%	31.0%
Grade 11							
All Forms	348	42.2%	57.8%	37.4%	3.4%	54.6%	52.6%
Form 1	147	37.4%	62.6%	36.1%	2.0%	57.1%	46.9%
Form 2	103	40.8%	59.2%	35.9%	2.9%	57.3%	52.4%
Form 3	98	51.0%	49.0%	40.8%	6.1%	48.0%	61.2%

Table 2.16
2008-2009 Percent of Students by Subgroup and Form
ELA Supported Independence

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 3							
All Forms	486	28.8%	71.2%	25.7%	4.1%	66.5%	49.6%
Form 1	200	29.5%	70.5%	24.0%	3.5%	70.5%	48.5%
Form 2	168	29.2%	70.8%	25.0%	4.8%	64.9%	47.0%
Form 3	118	27.1%	72.9%	29.7%	4.2%	61.9%	55.1%
Grade 4							
All Forms	514	32.3%	67.7%	25.9%	4.7%	65.4%	50.4%
Form 1	200	37.0%	63.0%	28.0%	5.0%	62.5%	49.0%
Form 2	155	30.3%	69.7%	27.1%	3.9%	65.2%	51.0%
Form 3	159	28.3%	71.7%	22.0%	5.0%	69.2%	51.6%
Grade 5							
All Forms	502	35.3%	64.7%	23.9%	5.2%	66.3%	51.0%
Form 1	196	36.7%	63.3%	24.5%	5.6%	67.3%	48.5%
Form 2	162	36.4%	63.6%	22.8%	3.7%	68.5%	46.3%
Form 3	144	31.9%	68.1%	24.3%	6.3%	62.5%	59.7%
Grade 6							
All Forms	479	33.6%	66.4%	22.3%	4.8%	68.3%	46.3%
Form 1	172	31.4%	68.6%	22.7%	6.4%	66.9%	46.5%
Form 2	157	36.3%	63.7%	22.9%	4.5%	68.2%	50.3%
Form 3	150	33.3%	66.7%	21.3%	3.3%	70.0%	42.0%
Grade 7							
All Forms	447	33.1%	66.9%	21.3%	5.4%	68.7%	47.7%
Form 1	158	31.0%	69.0%	20.9%	3.8%	70.9%	50.0%
Form 2	151	27.2%	72.8%	20.5%	6.6%	68.2%	42.4%
Form 3	138	42.0%	58.0%	22.5%	5.8%	66.7%	50.7%
Grade 8							
All Forms	521	33.4%	66.6%	27.4%	4.0%	63.9%	45.9%
Form 1	187	33.2%	66.8%	24.6%	3.2%	67.9%	44.9%
Form 2	154	29.2%	70.8%	27.9%	3.9%	64.3%	33.8%
Form 3	180	37.2%	62.8%	30.0%	5.0%	59.4%	57.2%
Grade 11							
All Forms	568	38.0%	62.0%	31.9%	1.8%	62.5%	50.5%
Form 1	158	34.2%	65.8%	34.8%	1.9%	60.1%	58.2%
Form 2	213	37.6%	62.4%	33.8%	1.9%	58.7%	51.2%
Form 3	197	41.6%	58.4%	27.4%	1.5%	68.5%	43.7%

Table 2.17
2008-2009 Percent of Students by Subgroup and Form
Math Supported Independence

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 3							
All Forms	480	29.2%	70.8%	25.6%	4.2%	66.5%	49.4%
Form 1	197	29.9%	70.1%	23.9%	3.6%	70.6%	48.2%
Form 2	167	29.3%	70.7%	25.1%	4.8%	64.7%	46.7%
Form 3	116	27.6%	72.4%	29.3%	4.3%	62.1%	55.2%
Grade 4							
All Forms	512	32.2%	67.8%	25.8%	4.7%	65.4%	50.4%
Form 1	199	37.2%	62.8%	27.6%	5.0%	62.8%	48.7%
Form 2	154	29.9%	70.1%	27.3%	3.9%	64.9%	51.3%
Form 3	159	28.3%	71.7%	22.0%	5.0%	69.2%	51.6%
Grade 5							
All Forms	501	35.1%	64.9%	24.0%	5.2%	66.3%	51.1%
Form 1	195	36.4%	63.6%	24.6%	5.6%	67.2%	48.7%
Form 2	162	36.4%	63.6%	22.8%	3.7%	68.5%	46.3%
Form 3	144	31.9%	68.1%	24.3%	6.3%	62.5%	59.7%
Grade 6							
All Forms	479	33.6%	66.4%	22.3%	4.8%	68.3%	46.3%
Form 1	172	31.4%	68.6%	22.7%	6.4%	66.9%	46.5%
Form 2	157	36.3%	63.7%	22.9%	4.5%	68.2%	50.3%
Form 3	150	33.3%	66.7%	21.3%	3.3%	70.0%	42.0%
Grade 7							
All Forms	450	33.1%	66.9%	21.6%	5.3%	68.4%	47.3%
Form 1	159	30.8%	69.2%	21.4%	3.8%	70.4%	49.7%
Form 2	153	27.5%	72.5%	20.9%	6.5%	68.0%	41.8%
Form 3	138	42.0%	58.0%	22.5%	5.8%	66.7%	50.7%
Grade 8							
All Forms	520	33.3%	66.7%	27.3%	3.8%	64.2%	46.2%
Form 1	188	33.0%	67.0%	24.5%	3.2%	68.1%	45.2%
Form 2	154	29.2%	70.8%	27.9%	3.9%	64.3%	33.8%
Form 3	178	37.1%	62.9%	29.8%	4.5%	60.1%	57.9%
Grade 11							
All Forms	568	37.9%	62.1%	31.9%	1.8%	62.5%	50.7%
Form 1	159	34.0%	66.0%	34.6%	1.9%	60.4%	57.9%
Form 2	213	37.6%	62.4%	33.8%	1.9%	58.7%	51.6%
Form 3	196	41.3%	58.7%	27.6%	1.5%	68.4%	43.9%

Table 2.18
2008-2009 Percent of Students by Subgroup and Form
Science Supported Independence

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 5							
All Forms	476	34.2%	65.8%	23.9%	4.6%	66.8%	50.8%
Form 1	173	31.8%	68.2%	22.0%	6.9%	68.8%	45.7%
Form 2	168	36.9%	63.1%	27.4%	3.6%	63.1%	53.0%
Form 3	135	34.1%	65.9%	22.2%	3.0%	68.9%	54.8%
Grade 8							
All Forms	472	34.1%	65.9%	27.3%	4.0%	64.0%	45.3%
Form 1	188	37.2%	62.8%	26.6%	4.3%	64.4%	47.9%
Form 2	151	35.1%	64.9%	30.5%	4.0%	60.9%	45.0%
Form 3	133	28.6%	71.4%	24.8%	3.8%	66.9%	42.1%
Grade 11							
All Forms	565	38.1%	61.9%	32.4%	1.8%	61.9%	51.0%
Form 1	193	35.2%	64.8%	30.6%	1.0%	64.2%	53.9%
Form 2	208	39.4%	60.6%	34.6%	1.9%	59.6%	49.0%
Form 3	164	39.6%	60.4%	31.7%	2.4%	62.2%	50.0%

Subgroup Analysis

Summary statistics by gender and grade for all three content areas for Participation and Supported Independence are given in Tables 2.19 to 2.24, and the summary statistics by ethnicity and grade for the three content areas for Participation and Supported Independence are given in Tables 2.25 to 2.30. Summary statistics by ethnicity are given for White students, Black students, and Other students. Excluding white and black students, Other students combine all other ethnic subgroups but consists primarily of Hispanic students.

For ELA Participation males scored higher than females at grades 4 – 7, and 11, males and females scored about the same at grade 3, and females scored higher than males at grade 8. For ELA Supported Independence females scored higher than males at all grades except grade 4. For Mathematics Participation males scored higher than females at all grades. For Mathematics Supported Independence, the males scored higher than females at grades 3 – 7, but lower at grades 8 and 11. For Science Participation, males scored higher than females at grades 5 and 11, but lower at grade 8. For Science Supported Independence, females scored higher than males at grades 5 and 8, but lower at grade 11.

At the elementary grade group (grades 3 – 5) for all three content areas and for both Participation and Supported Independence, the white students scored higher than the black students except at grade 4 ELA Supported Independence, grade 5 Mathematics Participation, and grades 3 and 4 Mathematics Supported Independence. At the middle school grade group (grades 6 – 8), the white students scored higher than the black students across all three grades for Mathematics Supported Independence. However, the results are completely mixed at the middle school grade group for Mathematics Participation and for ELA and Science Participation and Supported Independence. At grade 11, the black students scored higher than the white students except for Science Supported Independence.

Table 2.19
2008-2009 Operational Form Score Summaries by Gender and Grade -
ELA Participation

Grade	Female			Male		
	Mean	SD	N	Mean	SD	N
3	27.57	19.02	141	27.62	18.57	230
4	25.21	20.09	128	27.22	17.80	200
5	25.61	17.99	134	28.70	17.85	215
6	23.26	17.97	102	26.44	16.53	170
7	27.65	18.37	126	28.72	17.16	202
8	26.81	19.13	114	25.74	17.95	199
11	26.67	20.21	148	29.15	18.66	201

Table 2.20
2008-2009 Operational Form Score Summaries by Gender and Grade -
ELA Supported Independence

Grade	Female			Male		
	Mean	SD	N	Mean	SD	N
3	37.59	14.67	140	37.50	14.11	346
4	39.78	13.32	166	40.05	13.09	348
5	39.53	14.84	177	38.56	14.31	325
6	39.54	14.22	161	38.66	15.06	318
7	41.47	13.54	148	39.81	14.43	299
8	42.38	13.47	174	40.75	14.30	347
11	42.33	12.53	216	41.20	13.94	352

Table 2.21
2008-2009 Operational Form Score Summaries by Gender and Grade -
Mathematics Participation

Grade	Female			Male		
	Mean	SD	N	Mean	SD	N
3	27.97	19.24	141	28.25	18.73	229
4	25.09	21.54	129	28.01	18.36	199
5	25.92	19.51	131	30.13	18.19	214
6	21.21	19.60	101	24.12	18.32	169
7	23.98	19.54	126	27.42	18.29	202
8	21.49	19.95	112	23.57	18.85	201
11	24.97	22.19	147	28.86	20.18	199

Table 2.22
2008-2009 Operational Form Score Summaries by Gender and Grade -
Mathematics Supported Independence

Grade	Female			Male		
	Mean	SD	N	Mean	SD	N
3	33.31	14.56	140	35.17	14.76	340
4	37.98	13.33	165	39.08	13.61	347
5	37.27	14.09	176	37.63	14.00	325
6	35.22	13.85	161	35.88	15.90	318
7	36.24	14.22	149	37.58	14.72	301
8	39.21	13.69	173	38.59	14.64	347
11	39.41	14.60	215	38.86	15.82	353

Table 2.23
2008-2009 Operational Form Score Summaries by Gender and Grade -
Science Participation

Grade	Female			Male		
	Mean	SD	N	Mean	SD	N
5	36.17	30.25	128	38.57	28.66	209
8	35.86	30.57	111	35.44	29.39	193
11	39.88	31.51	147	43.43	29.24	201

Table 2.24
2008-2009 Operational Form Score Summaries by Gender and Grade -
Science Supported Independence

Grade	Female			Male		
	Mean	SD	N	Mean	SD	N
5	47.17	16.38	163	46.49	15.59	313
8	47.65	15.95	161	46.50	15.65	311
11	43.63	14.08	215	43.77	16.24	350

Table 2.25
2008-2009 Operational Form Score Summaries by Ethnicity and Grade -
ELA Participation

Grade	White			Black			Other		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
3	29.23	18.85	235	25.64	18.64	96	22.73	17.15	40
4	26.66	19.00	222	24.77	17.89	82	30.00	19.05	24
5	28.21	18.01	219	26.33	18.21	94	26.36	17.04	36
6	25.37	16.61	189	25.06	18.30	63	24.65	18.89	20
7	28.06	17.29	220	30.33	18.01	82	24.04	18.89	26
8	24.83	17.73	203	29.70	19.41	76	25.91	19.20	34
11	28.17	18.67	191	28.78	20.21	130	24.46	20.06	28

Table 2.26
2008-2009 Operational Form Score Summaries by Ethnicity and Grade -
ELA Supported Independence

Grade	White			Black			Other		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
3	37.63	13.98	323	37.44	14.45	125	36.95	16.24	38
4	39.30	13.02	336	40.43	13.54	133	43.53	12.56	45
5	39.16	14.34	333	39.01	15.24	120	36.90	13.78	49
6	39.14	14.00	327	39.69	16.24	107	35.89	16.50	45
7	40.50	14.10	307	40.46	14.24	95	39.22	14.49	45
8	41.45	14.08	333	41.22	14.29	143	40.36	13.13	45
11	40.74	13.95	355	43.22	12.71	181	42.50	10.44	32

Table 2.27
2008-2009 Operational Form Score Summaries by Ethnicity and Grade -
Mathematics Participation

Grade	White			Black			Other		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
3	28.60	18.96	235	27.88	18.94	96	26.05	18.82	39
4	27.12	19.11	221	25.01	20.61	83	30.83	21.83	24
5	28.79	18.62	219	29.19	19.36	90	25.31	18.54	36
6	24.18	18.81	187	21.13	18.49	63	18.25	19.70	20
7	25.52	18.65	221	28.85	18.88	82	22.16	19.78	25
8	22.32	18.75	203	24.42	20.21	77	22.21	20.37	33
11	26.49	20.80	191	28.95	21.72	127	24.14	20.55	28

Table 2.28
2008-2009 Operational Form Score Summaries by Ethnicity and Grade -
Mathematics Supported Independence

Grade	White			Black			Other		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
3	34.24	14.26	319	35.51	15.43	123	35.00	16.25	38
4	38.19	13.36	335	39.39	14.20	132	40.71	12.55	45
5	37.73	13.46	332	37.09	15.41	120	36.98	14.35	49
6	36.54	14.68	327	34.87	16.06	107	31.11	16.56	45
7	38.31	13.72	308	35.51	15.66	97	32.62	16.63	45
8	39.40	14.33	334	37.72	14.71	142	37.70	12.90	44
11	39.01	15.16	355	39.61	15.75	181	36.66	15.62	32

Table 2.29
2008-2009 Operational Form Score Summaries by Ethnicity and Grade -
Science Participation

Grade	White			Black			Other		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
5	38.83	28.73	214	36.89	30.07	88	32.49	30.56	35
8	36.20	29.02	196	36.72	31.77	75	29.39	29.75	33
11	41.89	30.39	190	42.65	30.37	130	38.86	29.34	28

Table 2.30
2008-2009 Operational Form Score Summaries by Ethnicity and Grade -
Science Supported Independence

Grade	White			Black			Other		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
5	47.52	15.28	318	45.39	17.72	114	44.34	14.59	44
8	47.84	15.51	302	44.48	16.45	129	47.46	14.74	41
11	44.27	15.76	350	42.77	15.27	183	43.13	12.75	32

3. Score Reliability and Summary Statistics

Internal consistency reliability estimates were computed as Cronbach's Coefficient Alpha for the operational forms in ELA, Mathematics, and Science. These reliability estimates are reported in Tables 3.1 to 3.6. Across all grades for all three content areas of Participation, the reliabilities range from the high .80s to the mid .90s. Across all grades for all three content areas of Supported Independence, the reliabilities range from the mid .80s to the low .90s. These reliabilities indicate a high degree of internal consistency across all 34 assessments.

The standard error of measurement (SEM) for each assessment is also reported in these tables as well as the N, mean, and standard deviation. The standard deviations for all the assessments are larger than one might expect, especially for the Participation assessments. This is because a few to several percent of the students obtained a valid, earned zero score, and likewise, a few to several percent of the students received a perfect score. Due to the large standard deviations, the corresponding SEMs are also quite large despite the high reliabilities.

Table 3.1
2008-2009 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade - ELA Participation

Grade	N	Mean	SD	Cronbach's Alpha	SEM
3	371	27.60	18.71	0.89	6.1
4	328	26.43	18.72	0.89	6.2
5	349	27.51	17.94	0.88	6.3
6	272	25.25	17.12	0.87	6.2
7	328	28.31	17.62	0.87	6.3
8	313	26.13	18.37	0.89	6.1
11	349	28.10	19.34	0.91	5.7

Table 3.2
2008-2009 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade - ELA Supported Independence

Grade	N	Mean	SD	Cronbach's Alpha	SEM
3	486	37.52	14.26	0.87	5.2
4	514	39.96	13.15	0.85	5.1
5	502	38.90	14.49	0.88	5.0
6	479	38.96	14.77	0.88	5.0
7	447	40.36	14.15	0.87	5.0
8	521	41.29	14.04	0.87	5.0
11	568	41.63	13.42	0.87	4.8

Table 3.3
2008-2009 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade - Mathematics Participation

Grade	N	Mean	SD	Cronbach's Alpha	SEM
3	370	28.14	18.90	0.89	6.1
4	328	26.86	19.69	0.91	5.9
5	345	28.53	18.78	0.89	6.1
6	270	23.03	18.82	0.90	5.9
7	328	26.10	18.83	0.89	6.2
8	313	22.82	19.25	0.90	5.9
11	346	27.21	21.12	0.93	5.5

Table 3.4
2008-2009 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade - Mathematics Supported Independence

Grade	N	Mean	SD	Cronbach's Alpha	SEM
3	480	34.63	14.71	0.86	5.4
4	512	38.72	13.51	0.84	5.4
5	501	37.50	14.02	0.85	5.4
6	479	35.66	15.23	0.88	5.2
7	450	37.14	14.55	0.87	5.3
8	520	38.80	14.32	0.87	5.2
11	568	39.07	15.36	0.89	5.1

Table 3.5
2008-2009 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade - Science Participation

Grade	N	Mean	SD	Cronbach's Alpha	SEM
5	337	37.66	29.25	0.93	7.5
8	304	35.59	29.78	0.94	7.4
11	348	41.93	30.23	0.94	7.2

Table 3.6
2008-2009 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade - Science Supported Independence

Grade	N	Mean	SD	Cronbach's Alpha	SEM
5	476	46.72	15.85	0.87	5.8
8	472	46.89	15.75	0.87	5.7
11	565	43.72	15.44	0.85	6.1

4. Rater Consistency

Each item of the ELA Mathematics, and Science assessments is scored based on a rubric. There is a 3 point rubric with 3 condition codes at the Participation level and a 2 point rubric with the same 3 condition codes at the Supported Independence level. Each activity has two raters— the Primary Assessment Administrator (PAA) and the Shadow Assessment Administrator (SAA). Items with a missing score for a rater are coded using a special code in the student data file, but for the purposes of scoring a missing score for a rater is treated as a 0. There are very few item scores that are missing scores for a rater. A student’s score is the sum of the item scores across both raters.

The consistency of each double-scored item is summarized in Tables 4.1 to 4.6. Across the 70 ELA Participation items, the percent perfect agreement rates ranged from 91% to 98% with a median of 95%. Across the 70 Mathematics Participation items, the percent perfect agreement rates ranged from 91% to 98% with a median of 96%. Across the 45 Science Participation items, the percent perfect agreement rates ranged from 93% to 98% with a median of 96%. Across the 105 ELA Supported Independence items, the percent perfect agreement rates ranged from 92% to 99% with a median of 96%. Across the 105 Mathematics Supported Independence items, the percent perfect agreement rates ranged from 94% to 99% with a median of 96%. Across the 51 Science Supported Independence items, the percent perfect agreement rates ranged from 95% to 99% with a median of 97%.

Table 4.1
2008-2009 Operational Form Percent Perfect Interrater Agreement Rates Participation ELA

Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 11	
Item #	N = 371	Item #	N = 328	Item #	N = 349	Item #	N = 272	Item #	N = 328	Item #	N = 313	Item #	N = 349
1	96	1	94	1	96	1	96	1	95	1	97	1	93
3	96	3	95	3	94	2	96	2	94	2	96	2	93
4	95	4	95	4	97	4	95	4	95	4	97	3	95
7	92	7	96	7	97	7	95	7	93	7	95	6	94
8	95	8	96	8	98	8	97	8	95	8	96	8	95
9	95	9	97	9	96	9	94	9	94	9	96	9	97
11	94	11	95	11	96	11	95	11	94	11	96	10	95
12	95	12	95	12	97	12	91	12	96	12	95	13	94
14	94	14	96	14	95	14	96	14	96	14	95	14	94
15	94	15	98	15	94	15	95	15	95	15	97	15	95

Table 4.2
2008-2009 Operational Form Percent Perfect Interrater Agreement Rates Participation
Mathematics

Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 11	
Item #	N = 370	Item #	N = 328	Item #	N = 345	Item #	N = 270	Item #	N = 328	Item #	N = 313	Item #	N = 346
1	96	1	97	1	96	1	97	1	95	1	97	1	94
2	95	2	97	2	96	2	93	2	96	2	96	2	95
3	96	3	95	3	95	3	97	3	95	3	96	3	93
6	95	6	95	6	96	4	92	4	94	4	96	6	94
7	95	7	97	7	95	7	94	7	98	7	97	7	94
9	96	9	97	9	97	8	93	8	93	8	96	9	92
10	95	10	95	10	95	10	95	10	95	10	96	10	94
11	96	11	98	11	97	11	95	11	94	11	96	11	93
13	96	13	95	13	97	14	96	14	96	14	96	14	91
14	95	14	96	14	97	15	96	15	96	15	97	15	95

Table 4.3
2008-2009 Operational Form Percent Perfect Interrater Agreement Rates Participation
Science

Grade 5		Grade 8		Grade 11	
Item #	N = 337	Item #	N = 304	Item #	N = 348
1	97	1	97	1	98
2	97	2	96	2	95
3	96	3	96	3	95
4	94	4	96	4	95
5	96	5	98	5	95
6	97	6	96	6	95
7	96	7	96	8	95
9	97	9	98	9	93
10	97	10	97	10	95
13	96	11	95	11	95
14	96	14	96	14	93
15	93	15	96	15	95
16	95	16	97	16	93
17	95	19	96	19	96
20	95	20	96	20	95

Table 4.4
2008-2009 Operational Form Percent Perfect Interrater Agreement Rates Supported
Independence ELA

Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 11	
Item #	N = 486	Item #	N = 515	Item #	N = 503	Item #	N = 479	Item #	N = 447	Item #	N = 521	Item #	N = 568
1	95	1	98	1	98	1	98	1	98	1	98	1	97
2	95	2	96	2	96	2	95	2	95	2	97	2	97
4	95	4	98	4	98	4	97	4	95	4	94	3	95
5	97	5	97	5	99	5	97	5	96	5	98	4	97
8	94	8	95	8	97	8	97	8	96	8	96	7	94
9	95	9	96	9	97	9	98	9	97	9	96	8	95
10	95	10	98	10	97	10	96	10	97	10	95	9	95
12	93	12	96	12	97	12	97	12	97	12	96	10	96
13	96	13	96	13	96	13	97	13	96	13	97	11	95
14	95	14	96	14	95	14	95	14	96	14	97	13	96
15	95	15	95	15	95	15	97	15	98	15	97	14	92
16	95	16	96	16	96	16	96	16	96	16	96	17	94
18	95	18	96	18	95	18	95	18	93	18	97	18	97
19	95	19	95	19	97	19	97	19	96	19	95	19	97
20	94	20	96	20	96	20	96	20	96	20	95	20	95

Table 4.5
2008-2009 Operational Form Percent Perfect Interrater Agreement Rates Supported
Independence Mathematics

Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 11	
Item #	N = 480	Item #	N = 513	Item #	N = 502	Item #	N = 479	Item #	N = 450	Item #	N = 520	Item #	N = 568
1	94	1	96	1	96	1	97	1	96	1	96	1	97
2	94	2	95	2	96	2	95	2	97	2	97	2	96
3	95	3	96	3	96	3	96	3	97	3	96	3	98
6	96	6	97	6	97	6	96	6	94	6	96	4	97
7	94	7	96	7	95	7	95	7	97	7	96	6	96
8	95	8	97	8	97	8	97	8	96	8	96	7	95
9	94	9	95	9	95	9	98	9	97	9	96	8	97
11	95	11	95	11	96	11	98	11	98	11	98	10	98
12	97	12	97	12	98	12	97	12	96	12	97	13	96
13	94	13	97	13	98	13	97	13	96	13	96	14	98
14	97	14	98	14	99	14	97	14	97	14	97	15	96
15	97	15	98	15	97	15	98	15	98	15	99	16	95
16	96	16	97	16	96	17	95	17	96	17	95	17	95
19	94	19	97	19	95	19	99	19	98	19	96	19	95
20	95	20	96	20	97	20	97	20	98	20	96	20	95

Table 4.6
2008-2009 Operational Form Percent Perfect Interrater Agreement Rates Supported
Independence Science

Grade 5		Grade 8		Grade 11	
Item #	N = 477	Item #	N = 472	Item #	N = 565
1	97	1	97	1	98
2	97	2	97	2	96
3	99	3	97	3	98
4	98	4	97	4	97
5	98	5	98	5	96
6	97	6	98	6	96
7	98	7	97	7	96
8	96	8	96	8	95
10	98	10	96	10	96
12	98	12	97	12	96
14	98	14	97	14	96
15	99	15	98	15	97
17	96	17	96	17	96
18	98	18	97	18	97
19	97	19	97	19	96
21	97	21	96	21	97
22	97	22	95	22	95

5. Classification Accuracy and Consistency

Classification accuracy and consistency are indices of agreement for performance-level classification as a score. Classification accuracy is a way to estimate the difference between true classification and observed classification due to measurement error. Classification consistency is a way to estimate the difference between the observed classification and the classification on a parallel form. The MI-Access Participation and Supported Independence classification accuracy and consistency indices were calculated by applying procedures given in Livingston and Lewis (1995) via the BB-CLASS computer program (Brennan, 2004). These indices are presented in Tables 5.1 and 5.2. The accuracy indices can be interpreted as the proportion of examinees that would be classified accurately into the performance-level score categories given infinite replications of identical conditions. The consistency indices can be interpreted as the proportion of examinees that would be classified into the same performance-level score categories on the assessment and a parallel form of the assessment.

Table 5.1
Estimated Classification Accuracy and Consistency by Content Area and Grade Participation

Grade	2 Categories Emerging vs Attained plus Surpassed		3 Categories Emerging vs Attained vs Surpassed	
	Accuracy	Consistency	Accuracy	Consistency
ELA				
3	0.91	0.88	0.83	0.76
4	0.91	0.87	0.83	0.76
5	0.91	0.87	0.82	0.75
6	0.90	0.86	0.81	0.74
7	0.92	0.88	0.80	0.72
8	0.92	0.88	0.82	0.74
11	0.92	0.89	0.85	0.78
Mathematics				
3	0.92	0.89	0.82	0.75
4	0.93	0.90	0.84	0.77
5	0.92	0.88	0.81	0.74
6	0.93	0.90	0.82	0.75
7	0.92	0.89	0.79	0.72
8	0.92	0.89	0.83	0.77
11	0.93	0.91	0.85	0.79
Science				
5	0.94	0.92	0.84	0.78
8	0.94	0.92	0.86	0.81
11	0.94	0.91	0.87	0.82

Table 5.2
Estimated Classification Accuracy and Consistency by Subject and Grade Supported Independence

Grade	2 Categories Emerging vs Attained plus Surpassed		3 Categories Emerging vs Attained vs Surpassed	
	Accuracy	Consistency	Accuracy	Consistency
ELA				
3	0.93	0.90	0.81	0.74
4	0.91	0.88	0.79	0.71
5	0.91	0.87	0.81	0.73
6	0.94	0.92	0.84	0.77
7	0.92	0.89	0.81	0.74
8	0.93	0.90	0.81	0.73
11	0.93	0.90	0.82	0.74
Mathematics				
3	0.93	0.90	0.82	0.74
4	0.93	0.90	0.81	0.73
5	0.92	0.88	0.81	0.73
6	0.95	0.93	0.85	0.78
7	0.95	0.92	0.83	0.76
8	0.95	0.93	0.84	0.78
11	0.94	0.92	0.84	0.78
Science				
5	0.92	0.89	0.77	0.70
8	0.93	0.90	0.75	0.66
11	0.91	0.87	0.82	0.74

Across all grades for all three content areas of Participation, when categorizing students into the NCLB categories of proficient (attained + surpassed) and not proficient (emerging), classification accuracy ranges from 90% to 94% while classification consistency ranges from 86% to 92%. When categorizing students into three categories (emerging, attained, and surpassed) the classification accuracy ranges from 79% to 87% and the classification consistency ranges from 72% to 82%. Across all grades for all three content areas of Supported Independence, the two-category classification accuracy ranges from 91% to 95% and the two-category classification consistency ranges from 87% to 93%. The three-category classification accuracy ranges from 75% to 85% and the three-category classification consistency ranges 66% to 78%. Across all 34 assessments, there is at least 90% classification accuracy and at least 86% classification consistency when students are classified as proficient or not proficient. The accuracy indices will be higher than the consistency indices because the former estimates accuracy between observed scores containing measurement error and true scores with no error, whereas the later estimates accuracy between observed scores on parallel forms of the assessment where both scores contain measurement error.

These estimates represent strong proportions of students classified accurately for an assessment appropriate for students with disabilities such as those that take the MI-Access Participation and Supported Independence assessments.

6. Interrelations Among Strands

One important source of validity evidence is the consistency of the relations of test subcomponents – interrelations among strands within the test. These interrelations provide a picture of the internal structure of a test, indicating the extent to which item types and items within subsections of the content area “hang together.” The intercorrelations between section scores for ELA Participation and Supported Independence are reported in Tables 6.1 and 6.2. The Pearson product-moment intercorrelations between section scores for Mathematics Participation and Supported Independence at grades 3 to 8 are reported in Tables 6.3 and 6.4, and for grade 11 the intercorrelations are reported in Tables 6.5 and 6.6. The intercorrelations between section scores for Science Participation and Supported Independence are reported in Tables 6.7 and 6.8. With one exception, for all three content areas for both Participation and Supported Independence, the intercorrelations between section scores are uniformly high indicating a high degree of association between the subcontent areas. For each content area within each level, the correlational structure is generally consistent across the grades. The one exception is for grade 11 Mathematics Supported Independence where the one-item Algebra score has a -.01 correlation with both geometry and logic.

The N, mean, standard deviation, and Cronbach’s Coefficient Alpha along with the minimum and maximum score of the section scores are also provided. These summary statistics are given in Tables 6.9 and 6.10 for ELA Participation and Supported Independence, in Tables 6.11 and 6.12 for Mathematics Participation and Supported Independence at grades 3 to 8, in Tables 6.13 and 6.14 for grade 11 Mathematics, and in Tables 6.15 and 6.16 for Science Participation and Supported Independence.

Table 6.1
2008-2009 Operational Form Intercorrelations Between Section Scores by Grade - ELA Participation

Grade		Expressing Ideas	Text Comprehension
3	Text Comprehension	0.75	
	Word Recognition	0.69	0.76
4	Text Comprehension	0.70	
	Word Recognition	0.64	0.68
5	Text Comprehension	0.68	
	Word Recognition	0.60	0.76
6	Text Comprehension	0.72	
	Word Recognition	0.58	0.61
7	Text Comprehension	0.72	
	Word Recognition	0.62	0.67
8	Text Comprehension	0.76	
	Word Recognition	0.71	0.69
11	Text Comprehension	0.73	
	Word Recognition	0.69	0.76

Table 6.2
**2008-2009 Operational Form Intercorrelations Between Section Scores by Grade-
 ELA Supported Independence**

Grade		Expressing Ideas	Text Comprehension
3	Text Comprehension	0.70	
	Word Recognition	0.48	0.50
4	Text Comprehension	0.70	
	Word Recognition	0.40	0.45
5	Text Comprehension	0.71	
	Word Recognition	0.50	0.50
6	Text Comprehension	0.74	
	Word Recognition	0.58	0.64
7	Text Comprehension	0.76	
	Word Recognition	0.58	0.57
8	Text Comprehension	0.73	
	Word Recognition	0.56	0.65
11	Text Comprehension	0.70	
	Word Recognition	0.50	0.54

Table 6.3
**Fall 2008 Operational Form Intercorrelations Between Section Scores by Grade-
 Mathematics Participation**

Grade		Data Probability	Geometry	Measurement
3	Geometry	0.73		
	Measurement	0.66	0.64	
	Numbers and Operations	0.64	0.61	0.72
4	Geometry	0.77		
	Measurement	0.74	0.72	
	Numbers and Operations	0.69	0.67	0.70
5	Geometry	0.71		
	Measurement	0.67	0.67	
	Numbers and Operations	0.66	0.61	0.72
6	Geometry	0.63		
	Measurement	0.63	0.68	
	Numbers and Operations	0.68	0.70	0.70
7	Geometry	0.65		
	Measurement	0.63	0.60	
	Numbers and Operations	0.67	0.64	0.64
8	Geometry	0.66		
	Measurement	0.67	0.65	
	Numbers and Operations	0.66	0.69	0.71

Table 6.4
**Fall 2008 Operational Form Intercorrelations Between Section Scores by Grade-
Mathematics Supported Independence**

Grade		Data Probability	Geometry	Measurement	Algebra
3	Geometry	0.56			
	Measurement	0.50	0.56		
	Numbers and Operations	0.57	0.59	0.58	
4	Geometry	0.47			
	Measurement	0.38	0.50		
	Numbers and Operations	0.52	0.60	0.53	
5	Geometry	0.43			
	Measurement	0.44	0.53		
	Numbers and Operations	0.54	0.57	0.58	
6	Geometry	0.54			
	Measurement	0.61	0.59		
	Numbers and Operations	0.57	0.53	0.68	
	Algebra	0.49	0.43	0.47	0.48
7	Geometry	0.53			
	Measurement	0.51	0.54		
	Numbers and Operations	0.55	0.49	0.65	
	Algebra	0.47	0.41	0.42	0.56
8	Geometry	0.49			
	Measurement	0.52	0.50		
	Numbers and Operations	0.56	0.51	0.65	
	Algebra	0.47	0.35	0.48	0.53

Table 6.5
**Spring 2009 Operational Form Intercorrelations Between Section Scores
Mathematics Participation**

Grade		Geometry	Logic
11	Logic	0.80	

Table 6.6
**Spring 2009 Operational Form Intercorrelations Between Section Scores
Mathematics Supported Independence**

Grade		Geometry	Logic
11	Logic	0.67	
	Algebra	-0.01	-0.01

Table 6.7
**2008-2009 Operational Form Intercorrelations Between Section Scores by Grade-
 Science Participation**

Grade		Constructing & Reflecting	Life Science	Physical Science
5	Life Science	0.79		
	Physical Science	0.70	0.77	
	Earth Science	0.72	0.78	0.74
8	Life Science	0.80		
	Physical Science	0.77	0.77	
	Earth Science	0.71	0.77	0.75
11	Life Science	0.81		
	Physical Science	0.78	0.84	
	Earth Science	0.70	0.78	0.79

Table 6.8
**2008-2009 Operational Form Intercorrelations Between Section Scores by Grade-
 Science Supported Independence**

Grade		Constructing & Reflecting	Life Science	Physical Science
5	Life Science	0.56		
	Physical Science	0.47	0.65	
	Earth Science	0.50	0.68	0.60
8	Life Science	0.49		
	Physical Science	0.42	0.69	
	Earth Science	0.40	0.62	0.64
11	Life Science	0.57		
	Physical Science	0.40	0.58	
	Earth Science	0.50	0.58	0.55

Table 6.9
2008-2009 Operational Form Summary Statistics for Section Scores by Grade -
ELA Participation

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
3	Expressing Ideas	371	0	24	12.41	7.83	0.76
	Text Comprehension	371	0	18	7.85	6.25	0.69
	Word Recognition	371	0	18	7.34	6.57	0.78
4	Expressing Ideas	328	0	24	11.93	8.26	0.80
	Text Comprehension	328	0	18	7.29	6.45	0.74
	Word Recognition	328	0	18	7.22	6.44	0.74
5	Expressing Ideas	349	0	24	12.72	7.55	0.74
	Text Comprehension	349	0	18	7.82	6.22	0.68
	Word Recognition	349	0	18	6.97	6.50	0.76
6	Expressing Ideas	272	0	24	11.98	7.75	0.76
	Text Comprehension	272	0	18	5.98	5.51	0.63
	Word Recognition	272	0	18	7.29	6.42	0.75
7	Expressing Ideas	328	0	24	13.00	7.64	0.74
	Text Comprehension	328	0	18	7.32	5.92	0.66
	Word Recognition	328	0	18	7.99	6.40	0.74
8	Expressing Ideas	313	0	24	12.27	7.87	0.76
	Text Comprehension	313	0	18	6.24	5.78	0.64
	Word Recognition	313	0	18	7.63	6.69	0.78
11	Expressing Ideas	349	0	24	13.72	8.19	0.82
	Text Comprehension	349	0	18	6.72	6.35	0.79
	Word Recognition	349	0	18	7.66	6.84	0.81

Table 6.10
2008-2009 Operational Form Summary Statistics for Section Scores by Grade -
ELA Supported Independence

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
3	Expressing Ideas	486	0	24	12.98	7.23	0.81
	Text Comprehension	486	0	20	12.07	5.22	0.65
	Word Recognition	486	0	16	12.48	4.33	0.71
4	Expressing Ideas	514	0	24	13.60	6.70	0.78
	Text Comprehension	514	0	20	13.28	4.89	0.61
	Word Recognition	514	0	16	13.08	4.19	0.74
5	Expressing Ideas	502	0	24	13.32	7.21	0.82
	Text Comprehension	502	0	20	12.74	5.60	0.72
	Word Recognition	502	0	16	12.83	4.11	0.69
6	Expressing Ideas	479	0	20	12.76	5.58	0.77
	Text Comprehension	479	0	24	16.14	6.38	0.76
	Word Recognition	479	0	16	10.05	4.81	0.67
7	Expressing Ideas	447	0	20	13.18	5.47	0.77
	Text Comprehension	447	0	24	16.68	6.00	0.72
	Word Recognition	447	0	16	10.50	4.70	0.66
8	Expressing Ideas	521	0	20	13.57	5.41	0.77
	Text Comprehension	521	0	24	16.84	5.99	0.73
	Word Recognition	521	0	16	10.88	4.60	0.65
11	Expressing Ideas	568	0	24	16.86	6.03	0.79
	Text Comprehension	568	0	20	13.01	5.28	0.72
	Word Recognition	568	0	16	11.76	4.42	0.67

Table 6.11
Fall 2008 Operational Form Summary Statistics for Section Scores by Grade -
Mathematics Participation

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
3	Data Probability	370	0	12	5.86	4.75	0.74
	Geometry	370	0	18	10.01	6.52	0.76
	Measurement	370	0	12	5.18	4.38	0.54
	Numbers and Recognition	370	0	18	7.09	6.18	0.70
4	Data Probability	328	0	12	5.70	4.75	0.77
	Geometry	328	0	18	9.84	6.65	0.77
	Measurement	328	0	12	5.03	4.61	0.65
	Numbers and Recognition	328	0	18	6.29	6.20	0.70
5	Data Probability	345	0	12	6.21	4.77	0.77
	Geometry	345	0	18	10.31	6.20	0.68
	Measurement	345	0	12	5.41	4.48	0.59
	Numbers and Recognition	345	0	18	6.59	6.18	0.71
6	Data Probability	270	0	12	3.91	4.37	0.73
	Geometry	270	0	12	4.64	4.28	0.54
	Measurement	270	0	12	4.54	4.39	0.59
	Numbers and Recognition	270	0	24	9.94	8.45	0.82
7	Data Probability	328	0	12	4.84	4.43	0.61
	Geometry	328	0	12	5.11	4.42	0.60
	Measurement	328	0	12	5.31	4.45	0.59
	Numbers and Recognition	328	0	24	10.84	8.57	0.81
8	Data Probability	313	0	12	4.15	4.47	0.70
	Geometry	313	0	12	4.52	4.41	0.58
	Measurement	313	0	12	4.87	4.40	0.56
	Numbers and Recognition	313	0	24	9.29	8.71	0.84

Table 6.12
Fall 2008 Operational Form Summary Statistics for Section Scores by Grade -
Mathematics Supported Independence

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
3	Data Probability	480	0	8	5.04	2.80	0.65
	Geometry	480	0	16	11.12	4.05	0.55
	Measurement	480	0	8	4.74	2.65	0.41
	Numbers and Recognition	480	0	28	13.73	8.04	0.78
4	Data Probability	512	0	8	5.61	2.46	0.56
	Geometry	512	0	16	12.18	3.66	0.52
	Measurement	512	0	8	5.26	2.59	0.34
	Numbers and Recognition	512	0	28	15.69	7.71	0.76
5	Data Probability	501	0	8	5.64	2.52	0.59
	Geometry	501	0	16	11.85	3.99	0.59
	Measurement	501	0	8	5.13	2.63	0.45
	Numbers and Recognition	501	0	28	14.88	7.81	0.75
6	Data Probability	479	0	8	5.82	2.63	0.69
	Geometry	479	0	8	6.19	2.33	0.46
	Measurement	479	0	16	10.13	4.74	0.64
	Numbers and Recognition	479	0	24	11.47	7.05	0.77
	Algebra	479	0	4	2.05	1.66	
7	Data Probability	450	0	8	5.90	2.67	0.73
	Geometry	450	0	8	6.41	2.15	0.41
	Measurement	450	0	16	10.56	4.41	0.56
	Numbers and Recognition	450	0	24	12.14	6.94	0.75
	Algebra	450	0	4	2.13	1.70	
8	Data Probability	520	0	8	6.02	2.57	0.67
	Geometry	520	0	8	6.62	1.97	0.33
	Measurement	520	0	16	11.11	4.47	0.62
	Numbers and Recognition	520	0	24	12.79	6.86	0.74
	Algebra	520	0	4	2.27	1.67	

Table 6.13
Spring 2009 Operational Form Summary Statistics for Section Scores
Mathematics Participation

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
11	Geometry	346	0	12	5.30	4.73	0.70
	Logic	346	0	48	21.91	17.13	0.92

Table 6.14
Spring 2009 Operational Form Summary Statistics for Section Scores
Mathematics Supported Independence

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
11	Algebra	568	0	4	2.37	1.63	N/A
	Geometry	568	0	12	6.57	3.69	0.52
	Logic	568	0	44	30.14	11.62	0.87

Table 6.15
2008-2009 Operational Form Summary Statistics for Section Scores by Grade-
Science Participation

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
5	Constructing & Reflecting	337	0	12	5.03	4.80	0.69
	Life Science	337	0	30	12.75	10.46	0.83
	Physical Science	337	0	30	13.47	10.82	0.85
	Earth Science	337	0	18	6.41	6.15	0.69
8	Constructing & Reflecting	304	0	12	4.66	4.76	0.69
	Life Science	304	0	30	12.88	11.03	0.86
	Physical Science	304	0	30	11.04	10.50	0.84
	Earth Science	304	0	18	7.01	6.38	0.74
11	Constructing & Reflecting	348	0	12	5.51	4.89	0.72
	Life Science	348	0	30	13.84	10.65	0.84
	Physical Science	348	0	30	14.24	10.85	0.86
	Earth Science	348	0	18	8.34	6.33	0.72

Table 6.16
2008-2009 Operational Form Summary Statistics for Section Scores by Grade-
Science Supported Independence

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
5	Constructing & Reflecting	476	0	8	5.32	2.87	0.51
	Life Science	476	0	28	19.55	7.19	0.75
	Physical Science	476	0	12	9.01	3.58	0.59
	Earth Science	476	0	20	12.84	5.09	0.59
8	Constructing & Reflecting	472	0	8	4.07	2.67	0.21
	Life Science	472	0	28	21.21	7.03	0.77
	Physical Science	472	0	12	8.79	3.63	0.63
	Earth Science	472	0	20	12.82	5.55	0.66
11	Constructing & Reflecting	565	0	8	4.65	2.95	0.43
	Life Science	565	0	28	21.03	6.59	0.74
	Physical Science	565	0	12	7.33	3.79	0.51
	Earth Science	565	0	20	10.70	5.53	0.58

7. Verification of Psychometric Procedures

As the independent psychometric quality assurance provider for the MI-Access Supported Independence and Participation programs, HumRRO was responsible for reviewing and assuring that all psychometric procedures were carried out accurately by Questar Assessment, Inc. For these assessments, classical statistics were checked for ELA (grades 3 – 8 and 11), Mathematics (grades 3 – 8 and 11), and Science (grades 5, 8, and 11). Classical statistics were checked for the core items and for final item analyses with core and field-test (FT) items.

Classical Statistics.

The first step in the process was to check Questar's classical statistics results for the core items. A second check was done with core and FT items. HumRRO staff wrote custom SAS® programs to calculate a predetermined set of statistics variables. HumRRO then compared their results to Questar's. The variables checked were:

- Number of Students
- P-value or item mean divided by maximum score
- Item Score Mean
- Item Standard Deviation
- Corrected/Adjusted Item-Total Correlation- For core items the total score excludes the item. For field-test items, correlation is between the item and the total raw score for core items.
- Number of students with a score of 0
- Number of students with a score of 1
- Number of students with a score of 2
- Number of students with a score of 3
- Number of students with a score of 4
- Number of students with a score of 5 (Participation only)
- Number of students with a score of 6 (Participation only)
- Percent of students with a score of 0
- Percent of students with a score of 1
- Percent of students with a score of 2
- Percent of students with a score of 3
- Percent of students with a score of 4
- Percent of students with a score of 5 (Participation only)
- Percent of students with a score of 6 (Participation only)
- Corrected point biserial correlation for those scoring 0
- Corrected point biserial correlation for those scoring 1 point
- Corrected point biserial correlation for those scoring 2 points
- Corrected point biserial correlation for those scoring 3 points
- Corrected point biserial correlation for those scoring 4 points
- Corrected point biserial correlation for those scoring 5 points (Participation only)
- Corrected point biserial correlation for those scoring 6 points (Participation only)
- Number of omits by Primary Scorer
- Number with multi-marks by Primary Scorer
- Number with condition code A by Primary Scorer
- Number with condition code B by Primary Scorer
- Number with condition code C by Primary Scorer

- Number of scores of 1 by Primary Scorer
- Number of scores of 2 by Primary Scorer
- Number of scores of 3 by Primary Scorer (Participation only)
- Percent of omits by Primary Scorer
- Percent with multi-marks by Primary Scorer
- Percent with condition code A by Primary Scorer
- Percent with condition code B by Primary Scorer
- Percent with condition code C by Primary Scorer
- Percent of scores of 1 by Primary Scorer
- Percent of scores of 2 by Primary Scorer
- Percent of scores of 3 by Primary Scorer (Participation only)
- Number of omits by Shadow Scorer
- Number with multi-marks by Shadow Scorer
- Number with condition code A by Shadow Scorer
- Number with condition code B by Shadow Scorer
- Number with condition code C by Shadow Scorer
- Number of scores of 1 by Shadow Scorer
- Number of scores of 2 by Shadow Scorer
- Number of scores of 3 by Shadow Scorer (Participation only)
- Percent of omits by Shadow Scorer
- Percent with multi-marks by Shadow Scorer
- Percent with condition code A by Shadow Scorer
- Percent with condition code B by Shadow Scorer
- Percent with condition code C by Shadow Scorer
- Percent of scores of 1 by Shadow Scorer
- Percent of scores of 2 by Shadow Scorer
- Percent of scores of 3 by Shadow Scorer (Participation only)
- P-Value Flag: if the Item Score Mean was less than 1.0 or greater than 5.5 (Participation)
- P-Value Flag: if the Item Score Mean was less than 1.0 or greater than 3.5 (Supported Independence)
- Item-Total Correlation Flag: if the point biserial was less than 0.20.

HumRRO matched all the variables (which were rounded to the second decimal place) at all grade/subject levels. Table 7.1 shows the matches that were verified for Supported Independence subject/grades and Table 7.2 shows the verification of the Participation subject/grades.

The following emails were sent by HumRRO to the Michigan Department of Education, Office of Educational Assessment and Accountability to announce when verification of a particular assessment had been made:

- February 12, 2009 "Verification of Questar's Results for MI-Access (Participation – Science, Mathematics, and ELA)" [Final Item Analyses]
- February 12, 2009 "Verification of Questar's Results for MI Access (Supported Independence - Science, Mathematics, and ELA)" [Final Item Analyses]
- June 11, 2009 "Verification of Questar's MI-Access Results for Grade 11 – FI, SI, and PA" [Final Item Analyses]

Table 7.1
Verification of Item Analyses by HumRRO for Supported Independence Assessments

Subject/Grade	Match Results? (HumRRO vs Questar)	Number of Items (Core/FT)
SC05	Yes	17/15
SC08	Yes	17/15
SC11	Yes	17/15
MA03	Yes	15/15
MA04	Yes	15/15
MA05	Yes	15/15
MA06	Yes	15/15
MA07	Yes	15/15
MA08	Yes	15/15
MA11	Yes	15/15
RD03	Yes	15/15
RD04	Yes	15/15
RD05	Yes	15/15
RD06	Yes	15/15
RD07	Yes	15/15
RD08	Yes	15/15
RD11	Yes	15/15

Table 7.2
Verification of Item Analyses by HumRRO for Participation Assessments

Subject/Grade	Match Results? (HumRRO vs Questar)	Number of Items (Core/FT)
SC05	Yes	15/14
SC08	Yes	15/11
SC11	Yes	15/15
MA03	Yes	10/15
MA04	Yes	10/15
MA05	Yes	10/15
MA06	Yes	10/15
MA07	Yes	10/15
MA08	Yes	10/15
MA11	Yes	10/15
RD03	Yes	10/15
RD04	Yes	10/15
RD05	Yes	10/15
RD06	Yes	10/15
RD07	Yes	10/15
RD08	Yes	10/15
RD11	Yes	10/15

REFERENCES

Brennan, R. L. (2004). BB-CLASS: Beta-Binomial Classification Consistency and Accuracy, version 1.1. CASMA, University of Iowa, Iowa City, IA: Author.

Livingston, S. A. & Lewis, C. (1995). Estimating the consistency and accuracy of classifications based on test scores. *Journal of Educational Measurement*, 32, 179-197



Michigan Department of Education
Office of Educational Assessment and Accountability
608 West Allegan Street
P.O. Box 30008
Lansing, MI 48909
(877) 560-8378
www.mi.gov/mi-access