

Assessment Framework Information

The mathematics revision committee was given the task of identifying the indicators to be included on the Kansas Assessments. In addition to simply defining which indicators would appear on the grade level tests, it was necessary to determine the number of and kind of item to be included. The desire to have individual student indicator level feedback prompted the decision to have a minimum of eight items per tested indicator. To further clarify how items would be written cognitive level descriptions were linked to the assessed indicators. The cognitive descriptors are provided on the following page.

A summary page of information from grades 2 through high school assessment frameworks has been developed. That page presents a general comparison of the assessment from grade to grade. Included in the summary is:

- the number of multiple choice questions at each grade level,
- the percentage of questions for each benchmark and standard for each grade level,
- the percentage of knowledge and application questions which make up each grade level assessment, and
- the percentage of questions for each of the mathematics cognitive levels for each grade level.

The summary page also includes information about the optional constructed response assessments developed for local use. The general information provided for each grade level includes:

- the number of constructed response questions at each grade level,
- the percentage of questions for each standard, and
- the percentage of questions for each of the mathematics cognitive levels for each grade level.

* Optional Constructed Response Assessments will **not** be available for 2005/2006 school year.

The individual grade level assessment frameworks follow the assessment framework summary page. These frameworks contain information specific to the mathematics assessment developed for each grade. The information includes:

- the standard, benchmark and specific assessed indicator,
- the exact number of questions written (in parenthesis) and the sub-category at which each is to be written for the selected cognitive category(ies), [for example, if the category 2 column contains a designation “ b (4)”, means four questions have been written for performing procedures and specifically doing computational procedures or algorithms,
- the total number of questions to be written for each assessed indicator,
- the total number of questions and the percentage of the test for each standard,
- the percentage of the assessment devoted to knowledge level indicators,
- the percentage of the assessment devoted to application level indicators,

- the total number of multiple choice questions on the assessment
- any notes provided to the item writers to help understand the intent

The individual frameworks also includes information about the optional constructed response assessments developed for local use. The information provided for each grade level includes:

- the standard, benchmark and specific assessed indicator,
- the exact number of constructed response questions written (in parenthesis) and the sub-category at which each is written for the selected cognitive category
- the type of rubric to be used in scoring student responses.

Cognitive Categories for Mathematics - Grades 2 – High School

Category 1: Memorize Facts/Definitions/Formulas

- a. Recite or recall basic mathematics facts
- b. Recall or recognize mathematical terms, definitions, or concepts
- c. Recall formulas or computational procedures

Category 2: Perform Procedures

- a. Use numbers to count, order, or denote
- b. Do computational procedures or algorithms
- c. Follow procedures or instructions
- d. Solve equations, formulas, or routine word problems
- e. Organize or display data
- f. Read or produce graphs and tables
- g. Do geometric transformations and/or execute geometric constructions

Category 3: Demonstrate Understanding of Mathematical Ideas

- a. Communicate mathematical ideas or rules and/or explain the process
- b. Use representations to model mathematical ideas
- c. Explain findings and/or results from data analysis strategies or experiments/simulations
- d. Develop and/or explain relationships between concepts
- e. Show and/or explain relationships between models, diagrams, and/or other representations

Category 4: Conjecture/Generalize/Prove

- a. Determine the truth of a mathematical pattern, a mathematical statement, and/or proposition or make predictions
- b. Write formal or informal proofs
- c. Recognize, generate, or continue patterns
- d. Find a mathematical rule to generate a pattern or number sequence
- e. Make and investigate mathematical conjectures
- f. Identify faulty arguments or identify misrepresentations of data
- g. Reason inductively or deductively

Category 5: Solve Non-routine Problems/Make Connections

- a. Apply and adapt a variety of appropriate strategies to solve non-routine problems
- b. Apply mathematics in contexts outside of mathematics (whenever possible, include diagrams/visuals)
- c. Analyze data or recognize patterns
- d. Synthesize content and ideas from several sources

Grades 2 – 9/10 Assessment Framework Summary 3-Sessions

Standard-Benchmark	Grade Two % of Test	Grade Three % of Test	Grade Four % of Test	Grade Five % of Test	Grade Six % of Test	Grade Seven % of Test	Grade Eight % of Test	Grade 9/10 % of Test
Total Objective Questions	52	70	73	73	86	84	86	84
Number-Number Sense	9.6%	25.7%		6.8%	11.6%	7.1%	7.0%	
Number-Number Systems	21.1%		12.3%				11.6%	9.5%
Number-Estimation				11.0%	7.0%			6.0%
Number-Computation	19.2%	15.7%	20.5%	16.4%	16.3%	15.5%	14.0%	6.0%
Number Subtotal	50%	41.4%	32.9%	34.2%	34.9%	22.6%	32.6%	21.4%
Algebra-Patterns	11.5%	8.6%			4.7%	10.7%		
Algebra-Variables			6.8%	11.0%	9.3%	22.6%	14.0%	14.3%
Algebra-Functions		8.6%	12.3%	5.5%			8.1%	13.1%
Algebra-Models							4.7%	
Algebra Subtotal	11.5%	17.1%	19.2%	16.4%	14.0%	33.3%	26.7%	27.4%
Geometry-Figures	11.5%	7.1%	5.5%	11.0%	7.0%	8.3%	11.6%	4.8%
Geometry-Meas./Estim.	19.2%	15.7%	16.4%	15.1%	16.3%	16.7%		
Geometry-Transformational			5.5%	5.5%	4.7%	4.8%		7.1%
Geometry-Alg. Perspective			5.5%		7.0%		9.3%	15.5%
Geometry Subtotal	30.8%	22.9%	32.9%	31.5%	34.9%	29.8%	20.9%	27.4%
Data-Probability		7.1%			16.3%		12.8%	4.8%
Data-Statistics	7.6%	11.4%	15.1%	17.8%		14.3%	7.0%	19.0%
Data Subtotal	7.7%	18.6%	15.1%	17.8%	16.3%	14.3%	19.8%	23.8%
Percent Calculator Allowed	80.8%	78.6%	79.5%	65.7%	76.7%	90.5%	93.0%	85.7%
Knowledge Level Percent	88.5%	71.4%	64.4%	61.6%	67.4%	69.0%	51.2%	56.0%
Application Level Percent	11.5%	28.6%	35.6%	38.4%	32.6%	31.0%	48.8%	44.0%

Objective Test Cognitive Category Percentages

Category 1 Questions	26.9%	20.0%	17.8%	9.6%	20.9%	10.7%	9.3%	9.5%
Category 2 Questions	32.7%	27.1%	23.3%	47.9%	36.0%	42.8%	39.5%	23.8%
Category 3 Questions	28.8%	34.3%	42.5%	26.0%	18.6%	23.8%	29.1%	28.6%
Category 4 Questions	11.5%	14.3%	11.0%	9.6%	10.5%	13.1%	5.8%	3.6%
Category 5 Questions	0.0%	4.3%	5.5%	6.8%	14.0%	9.5%	16.3%	34.5%

Optional Grades 2 – 9/10 Constructed Response Test Question Percentages

Standard	Grade Two % of Test	Grade Three % of Test	Grade Four % of Test	Grade Five % of Test	Grade Six % of Test	Grade Seven % of Test	Grade Eight % of Test	Grade 9/10 % of Test
Total CR Questions	5	4	5	5	5	5	4	4
Number	40.0%	50.0%	20.0%	40.0%	20.0%	40.0%	25.0%	25.0%
Algebra	20.0%			20.0%	20.0%	20.0%	25.0%	25.0%
Geometry	20.0%	25.0%	60.0%	20.0%	40.0%	20.0%	25.0%	25.0%
Data	20.0%	25.0%	20.0%	20.0%	20.0%	20.0%	25.0%	25.0%

Constructed Response Test Cognitive Category Percentages

Category 1 Questions			20.0%		10.0%			
Category 2 Questions	40.0%		60.0%	50.0%	50.0%			
Category 3 Questions	40.0%	50.0%		30.0%		10.0%	25.0%	25.0%
Category 4 Questions	20.0%			20.0%		30.0%	25.0%	
Category 5 Questions		50.0%	20.0%		40.0%	60.0%	50.0%	75.0%

Grade 2 Assessment Framework 3-Sessions

NOTE: Number in () equals number of questions

Indicators Selected for OPTIONAL Multiple Choice Assessment Items				Mathematics Cognitive Categories					Total # of ?s
Standard	Benchmark	Knowledge Indicator	Application Indicator	Category 1 # of ?s	Category 2 # of ?s	Category 3 # of ?s	Category 4 # of ?s	Category 5 # of ?s	
1 Number	1 Number Sense	1 (CR only)							
1 Number	1 Number Sense(5)	5		b (2)	b (1)	b (2)			5
1 Number	2 Number Systems(5)	2		b (1)	a (1)	b (3)			5
1 Number	2 Number Systems(6)	4		b (3)	a (3)				6
1 Number	4 Computation(4)	7aN (&CR)			b (1)	b (1)			2
		7bN			b (1)	b (1)			2
1 Number	4 Computation(6)	8N		a (4)		b (2)			6
Number and Computation Standard Percentage of Test:				50.0%					26
2 Algebra	1 Patterns(6)	3 (& CR)					a (3)		3
							c (3)		3
Algebra Standard Percentage of Test:				11.5%					6
3 Geometry	1 Figures	2(CR only)							
3 Geometry	1 Figures(6)		2a	b (2)		b (4)			6
3 Geometry	2 Measurement(5)	2		c (1)	b (3)	b (1)			5
3 Geometry	2 Measurement(5)	4a		b (1)	c (3)	b (1)			5
Geometry and Measurement Standard Percentage of Test:				30.8%					16
4 Data	2 Statistics(4)	1a			f (1)				1
		1b			f (1)				1
		1c (& CR)			f (1)				1
		1d			f (1)				1
Data Standard Percentage of Test:				7.7%					4
Percentage of Test with Calculator Use Allowed:				80.8% (42)					
Knowledge Indicator Percentage of Test:				88.5% (46)					Total Number of Multiple Choice Questions: 52
Application Indicator Percentage of Test:				11.5% (6)					

Indicators Selected for OPTIONAL Constructed Response Assessment Items			Mathematics Cognitive Categories					Rubric
Standard	Benchmark	Indicator	Category 1	Category 2	Category 3	Category 4	Category 5	
1 Number	1 Number Sense	K1			b (1)			2 point
			uses place value models to represent a given number					
1 Number	4 Computation	K7a N			a (1)			2 point
			solves problem and explains how problem was solved (with the idea that there are multiple ways to solve the problem) – looking for mathematical understanding					
2 Algebra	1 Patterns	K3				c (1)		2 point
			continues and explains patterns					
3 Geometry	1 Figures	K2		g(1)				4 point
			draws and labels 4 out of 5 figures – circle, square, triangle, rectangle, ellipse (tools not necessary)					
4 Data	2 Statistics	K1c		e (1)				4 point
			Student is given the results of a survey and student creates a tally chart (half points are necessary)					

Notes: A letter in a cell under “Category” indicates the subcategory from the Assessment Question Categories information. In addition, the number in parentheses indicates the number of items on the assessment for that indicator in that subcategory.

CR refers to Constructed Response. The number of items to be written for Constructed Response are not included in the Multiple Choice “Total # of ?s” count.

* Optional Second Grade Assessment will **not** be available for 2005/2006 school year.

* Optional Constructed Response Assessments will **not** be available for 2005/2006 school year.

Grade 3 Assessment Framework 3-Sessions

NOTE: Number in () equals number of questions

Indicators Selected for Multiple Choice Assessment Items				Mathematics Cognitive Categories					Total # of ?s
Standard	Benchmark	Knowledge Indicator	Application Indicator	Category 1 # of ?s	Category 2 # of ?s	Category 3 # of ?s	Category 4 # of ?s	Category 5 # of ?s	
1 Number	1 Number Sense(6)	2a (& CR)			a (3)	b (3)			6
1 Number	1 Number Sense(8)	3a			b (1)	e (1)	a (1)		3
		3b			b (1)	e (2)			3
		3c			b (1)	e (1)			2
1 Number	1 Number Sense(4)	4N			b (2)	b (2)			4
1 Number	4 Computation(4)	7N (& CR)		a (1)	b (1)	b (2)			4
1 Number	4 Computation(7)		1aN		d (2)	b (1)	f (1)		4
			1bN		d (2)			b(1)	3
Number and Computation Standard Percentage of Test:				41.4%					29
2 Algebra	1 Patterns(6)		2			e (1)	c (2)	c (1)	4
							d (2)		2
2 Algebra	3 Functions(6)	3				a (3)	d (3)		6
Algebra Standard Percentage of Test:				17.1%					12
3 Geometry	1 Figures	3 (CR only)							3
3 Geometry	1 Figures(5)	4		B (3)		b (2)			5
3 Geometry	2 Measurement(4)	2		c (2)		b (2)			4
3 Geometry	2 Measurement(7)		1a		d (2)	b (2)			4
			1b		d (1)	b (1)			2
			1e					b (1)	1
Geometry and Measurement Standard Percentage of Test:				22.9%					16
4 Data	1 Probability(5)	2 (& CR)			e (3)	b (1)	f (1)		5
4 Data	2 Statistics(8)	3a		B (2)					2
		3b		C (2)					2
		3c		B (2)					2
		3d		C (2)					2
Data Standard Percentage of Test:				18.6%					13
Percentage of Test with Calculator Use Allowed:				78.6% (55)					
Knowledge Indicator Percentage of Test:				71.4% (50)					
Application Indicator Percentage of Test:				28.6% (20)					
								Total Number of Multiple Choice Questions:	70

Indicators Selected for OPTIONAL Constructed Response Assessment Items			Mathematics Cognitive Categories					Rubric
Standard	Benchmark	Indicator	Category 1	Category 2	Category 3	Category 4	Category 5	
1 Number	1 Number Sense	K2a			b (1)			2 point
		uses base 10 models or drawings to compare and order						
1 Number	4 Computation	K7 N			e (1)			2 point
		Given 3 x ?, the student writes the other facts, see example in standards – using models						
3 Geometry	1 Figures	K3				b (1)		4 point
		Student is shown two examples from a classroom/home. Student identifies each solid by its geometric term.						
4 Data	1 Probability	K2				b (1)		4 point
		Student lists some of the possible outcomes, e.g., using 4 different colored chairs, how could the chairs be arranged by color [‘some’ means at least 1/3 of the outcomes of the problem, in the stem, write: “At least _____ (the number)” should be listed]						

Notes: A letter in a cell under “Category” indicates the subcategory from the Assessment Question Categories information. In addition, the number in parentheses indicates the number of items on the assessment for that indicator in that subcategory.

CR refers to Constructed Response. The number of items to be written for Constructed Response are not included in the Multiple Choice “Total # of ?s” count.

* Optional Constructed Response Assessments will **not** be available for 2005/2006 school year.

Grade 4 Assessment Framework 3-Sessions

NOTE: Number in () equals number of questions

Indicators Selected for Multiple Choice Assessment Items				Mathematics Cognitive Categories					
Standard	Benchmark	Knowledge Indicator	Application Indicator	Category 1 # of ?s	Category 2 # of ?s	Category 3 # of ?s	Category 4 # of ?s	Category 5 # of ?s	Total # of ?s
1 Number	2 Number Systems(5)	1		b (2)	a (1)	b (1)	f (1)		5
1 Number	2 Number Systems(4)	5a				b (1)			1
		5b				b (1)			1
		5c				b (1)			1
		5d				b (1)			1
1 Number	4 Computation(7)	6a N		a (1)		e (1)			2
		6b N		a (1)		e (1)			2
		6c N		a (1)		e (1)			2
		6d N		a (1)		e (0)			1
1 Number	4 Computation(8)		1a N		d (1)			b (1)	2
			1b N		d (1)			b (1)	2
			1c N		d (1)				1
			1d N		d (1)				1
			1e N (& CR)		d (1)		f (1)		2
Number and Computation Standard Percentage of Test:				32.9%					24
2 Algebra	2 Variables(5)	2a			d (2)				2
		2b			d (2)				2
		2c			d (1)				1
2 Algebra	3 Functions(4)	2				e (2)	d (2)		4
2 Algebra	3 Functions(5)		1			e (3)	f (1)	b (1)	4
Algebra Standard Percentage of Test:				19.2%					14
3 Geometry	1 Figures(4)		2 (& CR)	b (2)		b (2)			4
3 Geometry	2 Measurement(8)	2a			b (1)	b (1)			2
		2b			b (1)	b (1)			2
		2c			b (1)	b (1)			2
		2d				b (1)			1
		2e				b (1)			1
3 Geometry	2 Measurement(4)		2			a (2)	f (1)	b (1)	4
3 Geometry	3 Transformational(4)	2 (&CR)		b (1)	c (1)	a (1)			3
						b (1)			1
3 Geometry	4 Alg. Perspective(4)	3 (&CR)		b (1)	c (1)	a (1)	f (1)		4
Geometry and Measurement Standard Percentage of Test:				32.9%					24
4 Data	2 Statistics(6)	1 (&CR)			e (2)	a (1)	f (1)		4
					f (2)				2
4 Data	2 Statistics(5)		2a			c (1)			1
			2b			c (1)			1
			2c			c (1)			1
			2d			c (1)			1
			2e			c(1)			1
Data Standard Percentage of Test:				15.1%					11
Percentage of Test with Calculator Use Allowed:				79.5% (58)					
Knowledge Indicator Percentage of Test:				64.4% (47)					
Application Indicator Percentage of Test:				35.6% (26)					
				Total Number of Multiple Choice Questions: 73					

Standard	Benchmark	Indicator	Category 1	Category 2	Category 3	Category 4	Category 5	Rubric
1 Number	4 Computation	A1e					b (1)	2 point
3 Geometry	1 Figures	A2	b (1)					4 point
Student labels plane figures in a composite figure – 4 to 6 shapes.								
3 Geometry	3 Transformational	K2		c (1)				2 point
Student performs transformation and labels it.								
3 Geometry	4 Alg. Perspective	K3		c (1)				4 point
Student plots and labels 4 given points.								
4 Data	2 Statistics	K1d		e (1)				4 point
Given a list of random data, student organizes the data and makes the graph.								

Notes: A letter in a cell under “Category” indicates the subcategory from the Assessment Question Categories information. In addition, the number in parentheses indicates the number of items on the assessment for that indicator in that subcategory.

CR refers to Constructed Response. The number of items to be written for Constructed Response are not included in the Multiple Choice “Total # of ?s” count.

* Optional Constructed Response Assessments will **not** be available for 2005/2006 school year.

Grade 5 Assessment Framework 3-Sessions

NOTE: Number in () equals number of questions

Indicators Selected for Multiple Choice Assessment Items				Mathematics Cognitive Categories					
Standard	Benchmark	Knowledge Indicator	Application Indicator	Category 1 # of ?s	Category 2 # of ?s	Category 3 # of ?s	Category 4 # of ?s	Category 5 # of ?s	Total # of ?s
1 Number	1 Number Sense(5)	1 N			a (1)	b (1)	a (1)		3
					b (1)	e (1)			2
1 Number	3 Estimation(4)	2N			c (1)	a (1)	f (1)		3
						d (1)			1
1 Number	3 Estimation(4)		4 (& CR)		c (1)	a (1)	f (1)	a (1)	4
1 Number	4 Computation(5)	4 N		b (2)	c (2)				4
1 Number	4 Computation(8)		1a N		d (1)				1
			1b N		d (1)				1
			1c N		d (1)			b (1)	2
			1d N		d (1)				1
			1e N		d (1)		f (1)		2
			1f N (& CR)		d (1)				1
Number and Computation Standard Percentage of Test:				34.2%					25
2 Algebra	2 Variables(4)	1				b (2)			2
						e (2)			2
2 Algebra	2 Variables(4)	2 N			d (4)				4
2 Algebra	3 Functions(4)	4 (& CR)		b (2)	c (2)				4
Algebra Standard Percentage of Test:				16.4%					12
3 Geometry	1 Figures(4)	3		b (2)		b (2)			4
3 Geometry	1 Figures(4)		1a		d (2)		f (1)	b (1)	4
3 Geometry	2 Measurement(4)	4a (& CR)			b (4)				4
3 Geometry	2 Measurement(7)		1a		d (1)	a (1)		b (1)	3
			1c		d (1)				1
			1f		d (1)				1
			1g		d (1)				1
			1h		d (1)				1
3 Geometry	3 Transformational(4)	3				b (4)			4
Geometry and Measurement Standard Percentage of Test:				31.5%					23
4 Data	1 Probability		1 (CR only)						
4 Data	2 Statistics(8)	3a			c (1)				1
		3b			c (1)				1
		3c		b (1)	c (1)				2
		3d			c (1)	a (1)			2
		3e			c (1)	a (1)			2
4 Data	2 Statistics(5)		1		f (1)	c (1)	a (1)	c (1)	4
							f (1)		1
Data Standard Percentage of Test:				17.8%					13
Percentage of Test with Calculator Use Allowed:				65.7% (48)					
Knowledge Indicator Percentage of Test:				61.6% (45)	Total Number of Multiple Choice Questions:				73
Application Indicator Percentage of Test:				38.4% (28)					

Indicators Selected for OPTIONAL Constructed Response Assessment Items			Mathematics Cognitive Categories					
Standard	Benchmark	Indicator	Category 1	Category 2	Category 3	Category 4	Category 5	Rubric
1 Number	3 Estimation	A4			a (1)			4 point
Student includes an explanation of the process.								
1 Number	4 Computation	A1f N		d (1)				2 point
Answer must be ≤ 1,000,000.								
2 Algebra	3 Functions	K4		c (1)				2 point
Student plots and labels 4 different ordered pairs (1/2 point for each ordered pair identified correctly).								
3 Geometry	2 Measurement	K4a				f (1)		2 point
Faulty argument – conversions								
4 Data	1 Probability	A1		e (1 part)	c (1 part)			4 point
Student conducts experiment, records results, draws conclusions, and makes predictions (2 points for each part.)								

Notes: A letter in a cell under “Category” indicates the subcategory from the Assessment Question Categories information. In addition, the number in parentheses indicates the number of items on the assessment for that indicator in that subcategory.

CR refers to Constructed Response. The number of items to be written for Constructed Response are not included in the Multiple Choice “Total # of ?s” count.

* Optional Constructed Response Assessments will **not** be available for 2005/2006 school year.

Grade 6 Assessment Framework 3-Sessions

NOTE: Number in () equals number of questions

Indicators Selected for Multiple Choice Assessment Items				Mathematics Cognitive Categories						
Standard	Benchmark	Knowledge Indicator	Application Indicator	Category 1 # of ?s	Category 2 # of ?s	Category 3 # of ?s	Category 4 # of ?s	Category 5 # of ?s	Total # Of ?s	
1 Number	1 Number Sense(4)	2			a (4)				4	
1 Number	1 Number Sense(6)	4 N		b (3)		a (3)			6	
1 Number	3 Estimation(6)		2 N				a (3)	b (3)	6	
1 Number	4 Computation(8)	2a N			b (1)	a (1)			2	
		2f N			b (3)	a (3)			6	
1 Number	4 Computation(6)		1b (& CR)		d (3)			b (3)	6	
Number and Computation Standard Percentage of Test:				34.9%						30
2 Algebra	1 Patterns(4)	4					d (4)		4	
2 Algebra	2 Variables(8)		1b (& CR)		d (3)	d (3)		b (2)	8	
Algebra Standard Percentage of Test:				14.0%						12
3 Geometry	1 Figures(6)	7a			b (2)				2	
		7b			b (4)				4	
3 Geometry	2 Measurement(6)	3b		c (2)	c (4)				6	
3 Geometry	2 Measurement(8)		1a		d (2)			b (2)	4	
			1b (& CR)		d (2)			b (2)	4	
3 Geometry	3 Transformational(4)	1 (& CR)		b (1)	c (2)	a (1)			4	
3 Geometry	4 Alg. Perspective(6)	3a		b (3)					3	
		3b				b (3)			3	
Geometry and Measurement Standard Percentage of Test:				34.9%						30
4 Data	1 Probability(6)	2 (& CR)			e (4)	b (2)			6	
4 Data	1 Probability(8)	4		b (3)	b (3)		f (2)		8	
Data Standard Percentage of Test:				16.3%						14
Percentage of Test with Calculator Use Allowed:				76.7% (66)						
Knowledge Indicator Percentage of Test:				67.4% (58)						
Application Indicator Percentage of Test:				32.6% (28)						
Total Number of Multiple Choice Questions:								86		

Indicators Selected for OPTIONAL Constructed Response Assessment Items			Mathematics Cognitive Categories					
Standard	Benchmark	Indicator	Category 1	Category 2	Category 3	Category 4	Category 5	Rubric
1 Number	4 Computation	A1b		d (1)				2 point
2 Algebra	2 Variables	A1b					b (1)	4 point
3 Geometry	2 Measurement	A1b					b(1)	4 point
3 Geometry	3 Transformational	K1	b (1 part)	g (1 part)				4 point
			Student must include both parts – identifying the transformation and then “doing” the transformation (2 points for each part).					
4 Data	1 Probability	K2		e (1)				2 point

Notes: A letter in a cell under “Category” indicates the subcategory from the Assessment Question Categories information. In addition, the number in parentheses indicates the number of items on the assessment for that indicator in that subcategory.

CR refers to Constructed Response. The number of items to be written for Constructed Response are not included in the Multiple Choice “Total # of ?s” count.

* Optional Constructed Response Assessments will **not** be available for 2005/2006 school year.

Grade 7 Assessment Framework 3-Sessions

NOTE: Number in () equals number of questions

Indicators Selected for Multiple Choice Assessment Items				Mathematics Cognitive Categories						
Standard	Benchmark	Knowledge Indicator	Application Indicator	Category 1 # of ?s	Category 2 # of ?s	Category 3 # of ?s	Category 4 # of ?s	Category 5 # of ?s	Total # of ?s	
1 Number	1 Number Sense(6)		1a			b (3)		b (3)	6	
1 Number	4 Computation(8)	2a N			b (1)	a (1)			2	
		2b N			b (1)	a (1)			2	
		2c N			b (1)	a (1)			2	
		2d N			b (1)	a (1)			2	
1 Number	4 Computation(5)	5			b (5)				5	
1 Number	4 Computation		1a (CR only)						0	
Number and Computation Standard Percentage of Test:				22.6%					19	
2 Algebra	1 Patterns(4)	1a					c (2)		2	
		1b					c (2)		2	
2 Algebra	1 Patterns(5)	4 (& CR)					d (5)		5	
2 Algebra	2 Variables(8)	7			d (5)	a (3)*			8	
2 Algebra	2 Variables(5)	8			b (5)				5	
2 Algebra	2 Variables(6)		1			b (5)		b (1)	6	
Algebra Standard Percentage of Test:				33.3%					28	
3 Geometry	1 Figures(7)	3a		b (1)					1	
		3b		b (1)					1	
		3c		b (1)					1	
		3d		b (1)					1	
		3e		b (1)					1	
		3f		b (1)					1	
		3g		b (1)					1	
3 Geometry	2 Measurement(5)		1c (& CR)		d (3)			b (2)	5	
3 Geometry	2 Measurement(5)	4		c (2)	d (3)				5	
3 Geometry	2 Measurement(4)	6a			d (2)				2	
		6b			d (2)				2	
3 Geometry	3 Transformational(4)		3 (& CR)			b (2)		b (2)	4	
Geometry and Measurement Standard Percentage of Test:				29.8%					25	
4 Data	2 Statistics(7)	1a			e (1)				1	
		1b			e (1)				1	
		1c			e (1)				1	
		1d			e (1)				1	
		1e			e (1)				1	
		1f			e (1)				1	
		1g			e (1)				1	
4 Data	2 Statistics(5)		3a (& CR)				f (2)		2	
			3b			a (3)			3	
Data Standard Percentage of Test:				14.3%					12	
Percentage of Test with Calculator Use Allowed:				90.5% (76)						
Knowledge Indicator Percentage of Test:				69.0% (58)					Total Number of Multiple Choice Questions:	84
Application Indicator Percentage of Test:				31.0% (26)						

** Focus on the mathematical relationships, NOT solving for a missing part.

Indicators Selected for OPTIONAL Constructed Response Assessment Items			Mathematics Cognitive Categories					
Standard	Benchmark	Indicator	Category 1	Category 2	Category 3	Category 4	Category 5	Rubric
1 Number	4 Computation	A1a					b (1)	2 point
2 Algebra	1 Patterns	K4				d (1)		2 point
3 Geometry	2 Measurement	A1c					b (1)	4 point
3 Geometry	3 Transformational	A3					b (1)	2 point
Provide the scale and scaled dimensions.								
4 Data	2 Statistics	A3a			c (1 part)	f (1 part)		4 point
(2 points for each part)								

Notes: A letter in a cell under "Category" indicates the subcategory from the Assessment Question Categories information. In addition, the number in parentheses indicates the number of items on the assessment for that indicator in that subcategory.

CR refers to Constructed Response. The number of items to be written for Constructed Response are not included in the Multiple Choice "Total # of ?s" count.

* Optional Constructed Response Assessments will **not** be available for 2005/2006 school year.

Grade 8 Assessment Framework3-Sessions

NOTE: Number in () equals number of questions

Indicators Selected for Multiple Choice Assessment Items				Mathematics Cognitive Categories					
Standard	Benchmark	Knowledge Indicator	Application Indicator	Category 1 # of ?s	Category 2 # of ?s	Category 3 # of ?s	Category 4 # of ?s	Category 5 # of ?s	Total # of ?s
1 Number	1 Number Sense(6)	5a			b (1)*	a (1)			2
		5b				a (2)			2
		5c				a (2)			2
1 Number	2 Number Systems(4)	2		b (4)					4
1 Number	2 Number Systems(6)		1a			a (2)		b (1)	3
			1b			a (2)		b (1)	3
1 Number	4 Computation(6)	2a N			b (2)	a (1)			3
		2b N			b (2)	a (1)			3
1 Number	4 Computation(6)		1a (& CR)					b (2)	2
			1b					b (2)	2
			1c		d (2)				2
Number and Computation Standard Percentage of Test:				32.6%					28
2 Algebra	2 Variables(5)	3a			d (5)				5
2 Algebra	2 Variables(7)		1a (& CR)			b (5)		b (2)	7
2 Algebra	3 Functions(7)		3		f (3)	e (2)		b (2)	7
2 Algebra	4 Models(4)		2			e (1)	f (2)	b (1)	4
Algebra Standard Percentage of Test:				26.7%					23
3 Geometry	1 Figures(5)		1a (& CR)		d (3)			b (2)	5
3 Geometry	1 Figures(5)	6a			d (2)				2
		6b			d (3)				3
3 Geometry	4 Alg. Perspective(8)	1a			b (2)				2
		1b		b (2)				2	
		1c		b (2)				2	
		1d			b (2)			2	
Geometry and Measurement Standard Percentage of Test:				20.9%					18
4 Data	1 Probability(4)	3			b (4)				4
4 Data	1 Probability(7)		4a (& CR)			c (3)	a (3)	b (1)	7
4 Data	2 Statistics(6)	3			b (3)	c (3)			6
Data Standard Percentage of Test:				19.8%					17
Percentage of Test with Calculator Use Allowed:				93.0% (80)					
Knowledge Indicator Percentage of Test:				51.2% (44)					
Application Indicator Percentage of Test:				48.8% (42)					
								Total Number of Multiple Choice Questions:	86

* When writing questions for this indicator, EXAMPLES SHOULD BE OF A NUMBER BETWEEN ZERO AND ONE!

Indicators Selected for OPTIONAL Constructed Response Assessment Items			Mathematics Cognitive Categories					Rubric
Standard	Benchmark	Indicator	Category 1	Category 2	Category 3	Category 4	Category 5	
1 Number	4 Computation	A1a					b (1)	4 point
2 Algebra	2 Variables	A1a			b (1)			2 point
3 Geometry	1 Figures	A1a					b (1)	4 point
4 Data	1 Probability	A4a				e (1)		2 point

Notes: A letter in a cell under "Category" indicates the subcategory from the Assessment Question Categories information. In addition, the number in parentheses indicates the number of items on the assessment for that indicator in that subcategory.

CR refers to Constructed Response. The number of items to be written for Constructed Response are not included in the Multiple Choice "Total # of ?s" count.

* Optional Constructed Response Assessments will **not** be available for 2005/2006 school year.

High School Assessment Framework 3-Sessions

NOTE: Number in () equals number of questions

Indicators Selected for Multiple Choice Assessment Items				Mathematics Cognitive Categories						
Standard	Benchmark	Knowledge Indicator	Application Indicator	Category 1 # of ?s	Category 2 # of ?s	Category 3 # of ?s	Category 4 # of ?s	Category 5 # of ?s	Total # of ?s	
1 Number	2 Number Systems(8)	3a		b (1)	b (2)	a (1)			4	
		3b			b (1)				1	
		3c		b (1)					1	
		3d			b (1)				1	
		3e			b (1)				1	
1 Number	3 Estimation(5)		1			c (1)	f (1)	b (3)	5	
1 Number	4 Computation(5)		1a					b (2)	2	
			1b					b (2)	2	
			1d (& CR)					b (1)	1	
Number and Computation Standard Percentage of Test:				21.4%					18	
2 Algebra	2 Variables(6)	3c N		b (2)*	d (4)				6	
2 Algebra	2 Variables(6)		2a N		d (2)	b (2)		b (2)	6	
2 Algebra	3 Functions(6)		2 (& CR)			e (2)		b (4)	6	
2 Algebra	3 Functions(5)	6				e (5)			5	
Algebra Standard Percentage of Test:				27.4%					23	
3 Geometry	1 Figures(4)		1b (& CR)					b (4)**	4	
3 Geometry	3 Transformational(6)		1			a (2)	a (2)	b (2)	6	
3 Geometry	4 Alg. Perspective(6)	4			b (3)	d (3)			6	
3 Geometry	4 Alg. Perspective(7)	6		b (2)	b (3)	a (2)			7	
Geometry and Measurement Standard Percentage of Test:				27.4%					23	
4 Data	1 Probability(4)	3		b (1)	b (3)				4	
4 Data	2 Statistics(4)	4				c (4)			4	
4 Data	2 Statistics(5)		1a or 1h (& CR)					c (1)	1	
			1d					c (1)	1	
			1e					c (1)	1	
			1f					c (1)	1	
			1g					c (1)	1	
4 Data	2 Statistics(7)	5		b (1)		e (2)		c (4)	7	
Data Standard Percentage of Test:				23.8%					20	
Percentage of Test with Calculator Use Allowed:				85.7% (72)						
Knowledge Indicator Percentage of Test:				56.0% (47)					Total Number of Multiple Choice Questions:	84
Application Indicator Percentage of Test:				44.0% (37)						

* For example, the questions could be: What does the point of intersection mean? The answer: The point of intersection is the solution to the system of equations.

** Be sure to use VISUALS!

Indicators Selected for OPTIONAL Constructed Response Assessment Items			Mathematics Cognitive Categories					Rubric
Standard	Benchmark	Indicator	Category 1	Category 2	Category 3	Category 4	Category 5	
Number	Computation	A1d					b (1)	4 point
Algebra	Functions	A2			e (1)			2 point
Geometry	Figures (use visuals)	A1b					b (1)	2 point
Data	Statistics	A1					c (1)	4 point

Notes: A letter in a cell under "Category" indicates the subcategory from the Assessment Question Categories information. In addition, the number in parentheses indicates the number of items on the assessment for that indicator in that subcategory.

CR refers to Constructed Response. The number of items to be written for Constructed Response are not included in the Multiple Choice "Total # of ?s" count.

* Optional Constructed Response Assessments will **not** be available for 2005/2006 school year.