

APPENDIX D: THE 2009 MSA-MATH BLUEPRINTS

Table D.1 The 2008 MSA-Math Blueprint: Grade 3

Code	Standard / Objective statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
1	Knowledge of Algebra, Patterns, or Functions - Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships	12	1	12	1	12	1	12	1	12	1
		(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(1)
1.A	Patterns or Functions										
1.A.1	Identify, describe, extend, or create numeric patterns to:										
1.A.1.a	Represent or analyze numeric patterns using skip counting by 2, 5, 10, or 100 starting with any whole number (0-1,000)										
1.A.1.b	Represent or analyze numeric patterns using skip counting by 3 or 4 starting with 0, 1, 2, 3, or 4 (0-30)										
1.A.1.c	Represent or analyze numeric patterns using skip counting backward by 10 or 100 starting with any whole number (0-1,000)										
1.A.2	Identify, describe, extend or create non-numeric patterns to:										
1.A.2.a	Represent or analyze growing patterns using symbols, shapes, designs, or pictures starting at the beginning and showing at least 3 levels but no more than 5 and asking for the next level										
1.A.2.b	Represent or analyze repeating patterns using symbols, shapes, designs, or pictures with no more than 4 objects in the core of the pattern										
1.B	Expressions, Equations, or Inequalities										
1.B.1	Write or identify expressions to:										
1.B.1.a	Represent numeric quantities with one operational symbol (+, -) using whole numbers (0-50)										
1.B.2	Identify, write, or solve equations or inequalities to:										
1.B.2.a	Represent relationships by using the appropriate relational symbols (>, <, =) and operational symbols (+, -) on either side using whole numbers (0-1,000)										

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
1	Knowledge of Algebra, Patterns, or Functions - Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships	12	1	12	1	12	1	12	1	12	1
			(1)	(1)	(1)		(1)		(1)	(1)	(1)
1.A	Patterns or Functions										
1.A.1	Identify, describe, extend, or create numeric patterns to:										
1.A.1.a	Represent or analyze numeric patterns using skip counting by 2, 5, 10, or 100 starting with any whole number (0-1,000)										
1.A.1.b	Represent or analyze numeric patterns using skip counting by 3 or 4 starting with 0, 1, 2, 3, or 4 (0-30)										
1.A.1.c	Represent or analyze numeric patterns using skip counting backward by 10 or 100 starting with any whole number (0-1,000)										
1.A.2	Identify, describe, extend or create non-numeric patterns to:										
1.A.2.a	Represent or analyze growing patterns using symbols, shapes, designs, or pictures starting at the beginning and showing at least 3 levels but no more than 5 and asking for the next level										
1.A.2.b	Represent or analyze repeating patterns using symbols, shapes, designs, or pictures with no more than 4 objects in the core of the pattern										
1.B	Expressions, Equations, or Inequalities										
1.B.1	Write or identify expressions to:										
1.B.1.a	Represent numeric quantities with one operational symbol (+, -) using whole numbers (0-50)										
1.B.2	Identify, write, or solve equations or inequalities to:										
1.B.2.a	Represent relationships by using the appropriate relational symbols (>, <, =) and operational symbols (+, -) on either side using whole numbers (0-1,000)										

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
1.B.2.b	Find the missing number (unknown) in a number sentence (equation) with one operation (+, -) using whole numbers (0-100)										
1.C	Numeric or Graphic Representations of Relationships										
1.C.1	Locate points on a number line to:										
1.C.1.a	Represent whole numbers on a number line (0-500)										
1.C.1.b	Represent proper fractions with denominators of 2, 3, or 4 on a number line										
2	Knowledge of Geometry - Students will apply the properties of one, two, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	7	1	7	1	7	1	7	1	7	1
		(2)		(2)		(2)		(1)		(1)	(1)
2.A	Plane Geometric Figures										
2.A.1	Analyze the properties of plane geometric figures to:										
2.A.1.a	Identify or describe polygons including triangles, quadrilaterals, pentagons, hexagons, or octagons by the number of sides or vertices										
2.A.1.b	Identify or describe quadrilaterals (squares, rectangles, rhombi, parallelograms, trapezoids) by the length of sides										
2.A.1.c	Identify triangles, rectangles, or squares as part of a composite figure comprised of 2 of the stated polygons										
2.B	Solid Geometric Figures										
2.B.1	Analyze the properties of solid geometric figures to:										
2.B.1.a	Identify or describe a cube by the number of edges, faces, vertices, or shape of each face										
2.D	Congruence or Similarity										
2.D.1	Analyze congruent figures to:										
2.D.1.a	Identify or describe geometric figures with the same shape and same size										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
1.B.2.b	Find the missing number (unknown) in a number sentence (equation) with one operation (+, -) using whole numbers (0-100)										
1.C	Numeric or Graphic Representations of Relationships										
1.C.1	Locate points on a number line to:										
1.C.1.a	Represent whole numbers on a number line (0-500)										
1.C.1.b	Represent proper fractions with denominators of 2, 3, or 4 on a number line										
2	Knowledge of Geometry - Students will apply the properties of one, two, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	7	1	7	1	7	1	7	1	7	1
		(2)	(1)	(2)		(1)		(2)		(1)	
2.A	Plane Geometric Figures										
2.A.1	Analyze the properties of plane geometric figures to:										
2.A.1.a	Identify or describe polygons including triangles, quadrilaterals, pentagons, hexagons, or octagons by the number of sides or vertices										
2.A.1.b	Identify or describe quadrilaterals (squares, rectangles, rhombi, parallelograms, trapezoids) by the length of sides										
2.A.1.c	Identify triangles, rectangles, or squares as part of a composite figure comprised of 2 of the stated polygons										
2.B	Solid Geometric Figures										
2.B.1	Analyze the properties of solid geometric figures to:										
2.B.1.a	Identify or describe a cube by the number of edges, faces, vertices, or shape of each face										
2.D	Congruence or Similarity										
2.D.1	Analyze congruent figures to:										
2.D.1.a	Identify or describe geometric figures with the same shape and same size										

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
2.E	Transformations										
2.E.1	Analyze a transformation to:										
2.E.1.a	Identify or describe the results of a slide (horizontal), flip (over a vertical line), or turn around a given point (90o clockwise) of a geometric figure or picture										
2.E.2	Analyze geometric figures or pictures to:										
2.E.2.a	Identify or describe not more than 4 lines of symmetry										
3	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements.	6	1	6	1	6	1	6	1	6	1
		(2)		(1)		(1)		(3)		(2)	
3.A	Measurement Scales										
3.A.1	Read scales to:										
3.A.1.a	Estimate or determine length to the nearest centimeter or 1/2 inch										
3.A.1.b	Identify time to the nearest minute using an analog clock										
3.A.1.c	Estimate or determine temperature to the nearest degree (°F or °C)										
3.A.1.d	Estimate or determine weight to the nearest pound or ounce										
3.B	Measurement Tools										
3.B.1	Use standard or metric units to:										
3.B.1.a	Measure length to the nearest centimeter or ½ inch using a ruler										
3.C	Applications in Measurement										
3.C.1	Apply measurement concepts to:										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
2.E	Transformations										
2.E.1	Analyze a transformation to:										
2.E.1.a	Identify or describe the results of a slide (horizontal), flip (over a vertical line), or turn around a given point (90o clockwise) of a geometric figure or picture										
2.E.2	Analyze geometric figures or pictures to:										
2.E.2.a	Identify or describe not more than 4 lines of symmetry										
3	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements.	6	1	6	1	6	1	6	1	6	1
		(1)								(1)	
3.A	Measurement Scales										
3.A.1	Read scales to:										
3.A.1.a	Estimate or determine length to the nearest centimeter or 1/2 inch										
3.A.1.b	Identify time to the nearest minute using an analog clock										
3.A.1.c	Estimate or determine temperature to the nearest degree (°F or °C)										
3.A.1.d	Estimate or determine weight to the nearest pound or ounce										
3.B	Measurement Tools										
3.B.1	Use standard or metric units to:										
3.B.1.a	Measure length to the nearest centimeter or ½ inch using a ruler										
3.C	Applications in Measurement										
3.C.1	Apply measurement concepts to:										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
3.C.1.a	Find the perimeter of geometric figure or pictures on a grid (0-50)										
3.C.1.b	Find the area of geometric figures or pictures on a grid using whole units (0-50)										
3.C.2	Calculate to:										
3.C.2.a	Determine equivalent units of 12 inches = 1 foot or 3 feet = 1 yard (0-30)										
4	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	11	1	11	1	11	1	11	1	11	1
		(2)	(1)	(3)	(1)	(2)	(1)	(3)	(1)	(3)	
4.A	Data Displays										
4.A.1	Organize or display data to:										
4.A.1.a	Make tables with no more than 4 categories and 1 set of data using whole numbers (0-1,000)										
4.A.1.b	Make pictographs with scales of 2:1, 4:1, or 10:1 using whole numbers (0-100)										
4.A.1.c	Make single bar graphs with no more than 4 categories using intervals of 1, 2, 5, or 10 using whole numbers (0-100)										
4.B	Data Analysis										
4.B.1	Analyze data to:										
4.B.1.a	Interpret tables with no more than 4 categories and 1 set of data using whole numbers (0-1,000)										
4.B.1.b	Interpret pictographs with scales of 2:1, 4:1, or 10:1 using whole numbers (0-100)										
4.B.1.c	Interpret single bar graphs with maximum of 4 bars with intervals of 1, 2, 5, or 10 using whole numbers (0-100)										

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
3.C.1.a	Find the perimeter of geometric figure or pictures on a grid (0-50)										
3.C.1.b	Find the area of geometric figures or pictures on a grid using whole units (0-50)										
3.C.2	Calculate to:										
3.C.2.a	Determine equivalent units of 12 inches = 1 foot or 3 feet = 1 yard (0-30)										
4	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	11	1	11	1	11	1	11	1	11	1
		(2)		(1)	(1)	(2)	(1)	(1)	(1)	(1)	(1)
4.A	Data Displays										
4.A.1	Organize or display data to:										
4.A.1.a	Make tables with no more than 4 categories and 1 set of data using whole numbers (0-1,000)										
4.A.1.b	Make pictographs with scales of 2:1, 4:1, or 10:1 using whole numbers (0-100)										
4.A.1.c	Make single bar graphs with no more than 4 categories using intervals of 1, 2, 5, or 10 using whole numbers (0-100)										
4.B	Data Analysis										
4.B.1	Analyze data to:										
4.B.1.a	Interpret tables with no more than 4 categories and 1 set of data using whole numbers (0-1,000)										
4.B.1.b	Interpret pictographs with scales of 2:1, 4:1, or 10:1 using whole numbers (0-100)										
4.B.1.c	Interpret single bar graphs with maximum of 4 bars with intervals of 1, 2, 5, or 10 using whole numbers (0-100)										

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
5	Knowledge of Probability - Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	2		2		2	(1)	2	(1)	2	
5.B	Theoretical Probability										
5.B.1	Determine the relative probability of one simple event to:										
5.B.1.a	Describe the probability using the terms more (or most) likely, less (or least) likely, or equally likely										
6	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	13	3	13	3	13	3	13	3	13	3
		(6)		(7)		(6)		(5)		(5)	
6.A	Knowledge of Number or Place Value										
6.A.1.	Apply knowledge of rational numbers or place value to:										
6.A.1.a	Read, write, or represent whole numbers using symbols, words, or models (0-10,000)										
6.A.1.b	Express whole numbers in expanded form (0-10,000)										
6.A.1.c	Identify the place value of a digit in a number (0-9,999)										
6.A.1.d	Compare, order, or describe no more than 4 whole numbers with or without using the symbols (<, >, =) (0-10,000)										
6.A.2	Apply knowledge of fractions to:										
6.A.2.a	Read, write, or represent halves, thirds, or fourths of a single region using symbols, words, or models										
6.A.2.b	Read, write, or represent halves, thirds, or fourths of a set which has the same number of items as the denominator using symbols, words, or models										

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
5	Knowledge of Probability - Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	2		2		2	(1)	2	(1)	2	
5.B	Theoretical Probability										
5.B.1	Determine the relative probability of one simple event to:										
5.B.1.a	Describe the probability using the terms more (or most) likely, less (or least) likely, or equally likely										
6	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	13	3	13	3	13	3	13	3	13	3
		(8)		(8)		(9)		(9)		(9)	
6.A	Knowledge of Number or Place Value										
6.A.1.	Apply knowledge of rational numbers or place value to:										
6.A.1.a	Read, write, or represent whole numbers using symbols, words, or models (0-10,000)										
6.A.1.b	Express whole numbers in expanded form (0-10,000)										
6.A.1.c	Identify the place value of a digit in a number (0-9,999)										
6.A.1.d	Compare, order, or describe no more than 4 whole numbers with or without using the symbols (<, >, =) (0-10,000)										
6.A.2	Apply knowledge of fractions to:										
6.A.2.a	Read, write, or represent halves, thirds, or fourths of a single region using symbols, words, or models										
6.A.2.b	Read, write, or represent halves, thirds, or fourths of a set which has the same number of items as the denominator using symbols, words, or models										

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
6.A.3	Apply knowledge of money to:										
6.A.3.a	Represent money amounts (\$0-\$100)										
6.A.3.b	Determine the value of a given set of mixed currency up (\$0-\$100)										
6.B	Number Theory										
6.B.1	Apply number relationships to:										
6.B.1.a	Identify or describe whole numbers as even or odd (0-100)										
6.C	Number Computation										
6.C.1	Analyze number relationships or compute to:										
6.C.1.a	Add up to 3 addends with no more than 3 digits in each addend using whole numbers (0-1,000)										
6.C.1.b	Subtract a minuend and subtrahend with no more than 3 digits in each using whole numbers (0-999)										
6.C.1.c	Represent multiplication or division basic facts (up to $9 \times 9 = 81$) using number sentences, pictures or drawings										
6.C.1.d	Identify or use the commutative, identity or zero properties for multiplication using whole numbers (0-20)										

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
6.A.3	Apply knowledge of money to:										
6.A.3.a	Represent money amounts (\$0-\$100)										
6.A.3.b	Determine the value of a given set of mixed currency up (\$0-\$100)										
6.B	Number Theory										
6.B.1	Apply number relationships to:										
6.B.1.a	Identify or describe whole numbers as even or odd (0-100)										
6.C	Number Computation										
6.C.1	Analyze number relationships or compute to:										
6.C.1.a	Add up to 3 addends with no more than 3 digits in each addend using whole numbers (0-1,000)										
6.C.1.b	Subtract a minuend and subtrahend with no more than 3 digits in each using whole numbers (0-999)										
6.C.1.c	Represent multiplication or division basic facts (up to $9 \times 9 = 81$) using number sentences, pictures or drawings										
6.C.1.d	Identify or use the commutative, identity or zero properties for multiplication using whole numbers (0-20)										

Note. Number in parentheses indicates the total number of field test items.

Table D.2 The 2008 MSA-Math Blueprint: Grade 4

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
1	Knowledge of Algebra, Patterns, or Functions - Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.	13	1	13	1	13	1	13	1	13	1
		(3)	(1)	(3)	(1)	(4)	(1)	(5)		(3)	(1)
1.A	Patterns or Functions										
1.A.1	Identify, describe, extend, or create numeric patterns or functions to:										
1.A.1.a	Represent or analyze numeric patterns using skip counting by 3, 4, 6, 7, 8, or 9 starting with any whole number (0-100)										
1.A.1.b	Complete a function table using a rule with one operation (+, -, x, ÷ with no remainders) using whole numbers (0-50)										
1.A.2	Identify, describe, extend, analyze, or create a non-numeric growing or repeating pattern to:										
1.A.2.a	Generalize a rule for the next level of a non-numeric growing pattern given at least 3 levels but no more than 5 levels										
1.A.2.b	Generalize a rule for a repeating pattern with no more than 4 objects in the core pattern										
1.B	Expressions, Equations, or Inequalities										
1.B.1	Write or identify expressions to:										
1.B.1.a	Represent numeric quantities with one operational symbol (+, -, x, ÷ with no remainders) using whole numbers (0-100)										
1.B.1.b	1.B.1.b. Determine equivalent numeric expressions using whole number (0-100)										
1.B.2	Identify, write, or solve equations or inequalities to:										
1.B.2.a	Represent relationships by using the appropriate relational symbols (>, <, =) and operational symbols (+, -, x) on either side using whole numbers (0-200)										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
1	Knowledge of Algebra, Patterns, or Functions - Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.	13	1	13	1	13	1	13	1	13	1
		(4)		(4)		(4)		(3)	(1)	(3)	(1)
1.A	Patterns or Functions										
1.A.1	Identify, describe, extend, or create numeric patterns or functions to:										
1.A.1.a	Represent or analyze numeric patterns using skip counting by 3, 4, 6, 7, 8, or 9 starting with any whole number (0-100)										
1.A.1.b	Complete a function table using a rule with one operation (+, -, x, ÷ with no remainders) using whole numbers (0-50)										
1.A.2	Identify, describe, extend, analyze, or create a non-numeric growing or repeating pattern to:										
1.A.2.a	Generalize a rule for the next level of a non-numeric growing pattern given at least 3 levels but no more than 5 levels										
1.A.2.b	Generalize a rule for a repeating pattern with no more than 4 objects in the core pattern										
1.B	Expressions, Equations, or Inequalities										
1.B.1	Write or identify expressions to:										
1.B.1.a	Represent numeric quantities with one operational symbol (+, -, x, ÷ with no remainders) using whole numbers (0-100)										
1.B.1.b	1.B.1.b. Determine equivalent numeric expressions using whole number (0-100)										
1.B.2	Identify, write, or solve equations or inequalities to:										
1.B.2.a	Represent relationships by using the appropriate relational symbols (>, <, =) and operational symbols (+, -, x) on either side using whole numbers (0-200)										

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
1.B.2.b	Find the unknown in an equation with one operation (x) using whole numbers (0-100)										
1.C	Numeric or Graphic Representations of Relationships										
1.C.1	Locate points on a number line or in a coordinate grid to:										
1.C.1.a	Represent proper fractions with denominators of 6, 8, or 10 on a number line										
1.C.1.b	Identify positions on a coordinate plane in the first quadrant using ordered pairs of whole numbers (0-20)										
2	Knowledge of Geometry - Students will apply the properties of one, two, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	6	1	6	1	6	1	6	1	6	1
		(1)		(2)		(2)		(2)		(2)	
2.A	Plane Geometric Figures										
2.A.1	Analyze the properties of plane geometric figures to:										
2.A.1.a	Identify or describe an angle as acute, right, or obtuse angle in relationship to another angle										
2.A.2	Analyze geometric relationships to:										
2.A.2.a	Compare or classify an angle as acute, right, or obtuse in relationship to another angle										
2.B	Solid Geometric Figures										
2.B.1	Analyze the properties of solid geometric figures to:										
2.B.1.a	Identify cones or cylinders										
2.B.1.b	Describe triangular pyramids, rectangular pyramids, triangular prisms, or rectangular prisms by the number of edges, faces, or vertices										
2.B.2	Analyze the relationship between plane geometric figures and faces of solid geometric figures to:										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
1.B.2.b	Find the unknown in an equation with one operation (x) using whole numbers (0-100)										
1.C	Numeric or Graphic Representations of Relationships										
1.C.1	Locate points on a number line or in a coordinate grid to:										
1.C.1.a	Represent proper fractions with denominators of 6, 8, or 10 on a number line										
1.C.1.b	Identify positions on a coordinate plane in the first quadrant using ordered pairs of whole numbers (0-20)										
2	Knowledge of Geometry - Students will apply the properties of one, two, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	6	1	6	1	6	1	6	1	6	1
		(1)		(3)		(3)		(2)		(3)	
2.A	Plane Geometric Figures										
2.A.1	Analyze the properties of plane geometric figures to:										
2.A.1.a	Identify or describe an angle as acute, right, or obtuse angle in relationship to another angle										
2.A.2	Analyze geometric relationships to:										
2.A.2.a	Compare or classify an angle as acute, right, or obtuse in relationship to another angle										
2.B	Solid Geometric Figures										
2.B.1	Analyze the properties of solid geometric figures to:										
2.B.1.a	Identify cones or cylinders										
2.B.1.b	Describe triangular pyramids, rectangular pyramids, triangular prisms, or rectangular prisms by the number of edges, faces, or vertices										
2.B.2	Analyze the relationship between plane geometric figures and faces of solid geometric figures to:										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
2.B.2.a	Analyze or identify the number or arrangement of squares needed to make a cube										
2.B.2.b	Analyze or identify the number or arrangement of triangles/rectangles needed to make a triangular pyramid or rectangular pyramid										
2.D	Congruence or Similarity										
2.D.1	Apply congruence in transformation to:										
2.D.1.a	Identify the result in a transformation as being congruent to the original figure										
2.E	Transformations										
2.E.1	Analyze a transformation to:										
2.E.1.a	Identify or describe the results of a translation (horizontal), reflection (over a vertical line), or rotation around a given point (90o clockwise) of a geometric figure or picture										
3	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements	6	1	6	1	6	1	6	1	6	1
		(4)	(1)	(3)		(3)		(3)		(6)	
3.A	Measurement Scales										
3.A.1	Read scales to:										
3.A.1.a	Estimate or determine length to the nearest millimeter or ¼ inch										
3.B	Measurement Tools										
3.B.1	Use standard or metric units to:										
3.B.1.a	Measure length to the nearest millimeter or 1/4 inch using a ruler										
3.C	Applications in Measurement										

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
2.B.2.a	Analyze or identify the number or arrangement of squares needed to make a cube										
2.B.2.b	Analyze or identify the number or arrangement of triangles/rectangles needed to make a triangular pyramid or rectangular pyramid										
2.D	Congruence or Similarity										
2.D.1	Apply congruence in transformation to:										
2.D.1.a	Identify the result in a transformation as being congruent to the original figure										
2.E	Transformations										
2.E.1	Analyze a transformation to:										
2.E.1.a	Identify or describe the results of a translation (horizontal), reflection (over a vertical line), or rotation around a given point (90o clockwise) of a geometric figure or picture										
3	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements	6 (5)	1	6 (5)	1	6 (5)	1	6 (5)	1	6 (6)	1
3.A	Measurement Scales										
3.A.1	Read scales to:										
3.A.1.a	Estimate or determine length to the nearest millimeter or ¼ inch										
3.B	Measurement Tools										
3.B.1	Use standard or metric units to:										
3.B.1.a	Measure length to the nearest millimeter or 1/4 inch using a ruler										
3.C	Applications in Measurement										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
3.C.1	Count or calculate to:										
3.C.1.a	Find the perimeter of polygons with no more than 6 sides given the length of the sides in whole numbers (0-100)										
3.C.1.b	Find the area of rectangles given the length of the sides in whole numbers (0-100)										
3.C.1.c	Find elapsed or end time using hour and half hour intervals										
3.C.2	Calculate to:										
3.C.2.a	Determine equivalent units of 36 inches = 1 yard (0-100)										
4	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	7	1	7	1	7	1	7	1	7	1
		(3)		(3)		(3)				(2)	
4.A	Data Displays										
4.A.1	Organize or display data to:										
4.A.1.a	Make line plots with no more than 20 pieces of unorganized data with a range of no more than 10 using whole numbers (0-100)										
4.B	Data Analysis										
4.B.1	Analyze data to:										
4.B.1.a	Interpret line plots with no more than 20 pieces of data with a range no more than 10 using whole numbers (0-100)										
4.B.1.b	Interpret line graphs with the x-axis representing no more than 6 time intervals, the y-axis consisting of no more than 10 intervals with scales as factors of 100 using whole numbers (0-100)										
4.B.2	Analyze a data set to:										
4.B.2.a	Find the range, median, or mode of a given data set with no more than 8 pieces of data using whole numbers (0-100)										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
3.C.1	Count or calculate to:										
3.C.1.a	Find the perimeter of polygons with no more than 6 sides given the length of the sides in whole numbers (0-100)										
3.C.1.b	Find the area of rectangles given the length of the sides in whole numbers (0-100)										
3.C.1.c	Find elapsed or end time using hour and half hour intervals										
3.C.2	Calculate to:										
3.C.2.a	Determine equivalent units of 36 inches = 1 yard (0-100)										
4	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	7	1	7	1	7	1	7	1	7	1
4.A	Data Displays										
4.A.1	Organize or display data to:										
4.A.1.a	Make line plots with no more than 20 pieces of unorganized data with a range of no more than 10 using whole numbers (0-100)										
4.B	Data Analysis										
4.B.1	Analyze data to:										
4.B.1.a	Interpret line plots with no more than 20 pieces of data with a range no more than 10 using whole numbers (0-100)										
4.B.1.b	Interpret line graphs with the x-axis representing no more than 6 time intervals, the y-axis consisting of no more than 10 intervals with scales as factors of 100 using whole numbers (0-100)										
4.B.2	Analyze a data set to:										
4.B.2.a	Find the range, median, or mode of a given data set with no more than 8 pieces of data using whole numbers (0-100)										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
5	Knowledge of Probability - Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	6	1	6	1	6	1	6	1	6	1
5.B	Theoretical Probability										
5.B.1	Determine the relative probability of one simple event comprised of equally likely outcomes to:										
5.B.1.a	Describe the probability as a fraction with a sample space of no more than 6 outcomes										
6	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	12	2	12	2	12	2	12	2	12	2
		(1)		(2)	(1)	(1)	(1)	(2)	(2)	(1)	
6.A	Knowledge of Number or Place Value										
6.A.1.	Apply knowledge of whole numbers or place value to:										
6.A.1.a	Read, write, or represent whole numbers using symbols, words, or models (0-1,000,000)										
6.A.1.b	Express whole numbers in expanded form (0-1,000,000)										
6.A.1.c	Identify the place value of a digit in a number (0-1,000,000)										
6.A.1.d	Compare or order no more than 4 whole numbers with or without using the symbols (<, >, =), (0-1,000,000)										
6.A.2	Apply knowledge of fractions or decimals to:										
6.A.2.a.	Read, write, or represent proper fractions in sixths, eighths, tenths, of a single region using symbols, words, or models										
6.A.2.b	Read, write, or represent proper fractions in sixths, eighths, tenths of a set which has the same number of items as the denominator using symbols, words, or models										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
5	Knowledge of Probability - Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	6	1	6	1	6	1	6	1	6	1
5.B	Theoretical Probability										
5.B.1	Determine the relative probability of one simple event comprised of equally likely outcomes to:										
5.B.1.a	Describe the probability as a fraction with a sample space of no more than 6 outcomes										
6	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	12	2	12	2	12	2	12	2	12	2
		(1)	(2)	(1)	(2)	(1)	(2)	(2)	(1)	(1)	
6.A	Knowledge of Number or Place Value										
6.A.1.	Apply knowledge of whole numbers or place value to:										
6.A.1.a	Read, write, or represent whole numbers using symbols, words, or models (0-1,000,000)										
6.A.1.b	Express whole numbers in expanded form (0-1,000,000)										
6.A.1.c	Identify the place value of a digit in a number (0-1,000,000)										
6.A.1.d	Compare or order no more than 4 whole numbers with or without using the symbols (<, >, =), (0-1,000,000)										
6.A.2	Apply knowledge of fractions or decimals to:										
6.A.2.a.	Read, write, or represent proper fractions in sixths, eighths, tenths, of a single region using symbols, words, or models										
6.A.2.b	Read, write, or represent proper fractions in sixths, eighths, tenths of a set which has the same number of items as the denominator using symbols, words, or models										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
6.A.2.c	Read, write, or represent decimals with no more than 2 decimal places using symbols, words, or models (0-100)										
6.A.2.d	Express decimals with no more than 2 decimal places in expanded form (0-100)										
6.A.2.e	Compare or order no more than 3 fractions or mixed numbers with like denominators with or without using the symbols (<, >, =) (0-20)										
6.A.2.f	Compare, order, or describe no more than 3 decimals with no more than 2 decimal places with or without using symbols (<, >, =) (0-100)										
6.A.3	Apply knowledge of money to:										
6.A.3.a	Compare the value of 2 sets of mixed currency (\$0-\$100)										
6.B	Number Theory										
6.B.1	Apply number relationships to:										
6.B.1.a	Identify or use divisibility rules of 2, 5, or 10 with whole numbers (0-1,000)										
6.B.1.b	Identify the factors of whole numbers (0-24)										
6.B.1.c	Identify no more than the first 5 multiples of any single digit whole number										
6.C	Number Computation										
6.C.1	Analyze number relationships or compute to:										
6.C.1.a	Add up to 3 addends with no more than 4 digits in each addend using whole numbers (0-10,000)										
6.C.1.b	Subtract a minuend and subtrahend with no more than 4 digits in each using whole numbers (0-10,000)										
6.C.1.c	Multiply a one 1-digit factor by up to a 3-digit factor using whole numbers (0-1,000)										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
6.A.2.c	Read, write, or represent decimals with no more than 2 decimal places using symbols, words, or models (0-100)										
6.A.2.d	Express decimals with no more than 2 decimal places in expanded form (0-100)										
6.A.2.e	Compare or order no more than 3 fractions or mixed numbers with like denominators with or without using the symbols (<, >, =) (0-20)										
6.A.2.f	Compare, order, or describe no more than 3 decimals with no more than 2 decimal places with or without using symbols (<, >, =) (0-100)										
6.A.3	Apply knowledge of money to:										
6.A.3.a	Compare the value of 2 sets of mixed currency (\$0-\$100)										
6.B	Number Theory										
6.B.1	Apply number relationships to:										
6.B.1.a	Identify or use divisibility rules of 2, 5, or 10 with whole numbers (0-1,000)										
6.B.1.b	Identify the factors of whole numbers (0-24)										
6.B.1.c	Identify no more than the first 5 multiples of any single digit whole number										
6.C	Number Computation										
6.C.1	Analyze number relationships or compute to:										
6.C.1.a	Add up to 3 addends with no more than 4 digits in each addend using whole numbers (0-10,000)										
6.C.1.b	Subtract a minuend and subtrahend with no more than 4 digits in each using whole numbers (0-10,000)										
6.C.1.c	Multiply a one 1-digit factor by up to a 3-digit factor using whole numbers (0-1,000)										

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

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
6.C.1.d	Divide up to a 3-digit dividend by a 1-digit divisor using whole numbers and no remainders (0-1,000)										
6.C.1.e	Add or subtract 2 proper fractions with single digit like denominators, 2 mixed numbers with single digit like denominators or a whole number and a proper fraction with a single digit denominator (0-20)										
6.C.1.f	Add 2 decimals with the same number of decimal places but no more than 2 decimal places and no more than 4 digits including monetary notation (0-100)										
6.C.1.g	Subtract 2 decimals with the same number of decimal places but no more than 2 decimal places and no more than 4 digits including monetary notation (0-100)										
6.C.2	Estimate to:										
6.C.2.a	Determine the sum or difference of 2 numbers with no more than 2 decimal places in each (0-100)										
6.C.2.b	Determine the product of one 1-digit factor with the other factor having no more than 2 digits or the quotient of a 1-digit divisor with the dividend having no more than 2 digits using whole numbers (0-1,000)										

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)	
		SR	BCR	SR	BCR	SR	BCR	SR	BCR	SR	BCR
6.C.1.d	Divide up to a 3-digit dividend by a 1-digit divisor using whole numbers and no remainders (0-1,000)										
6.C.1.e	Add or subtract 2 proper fractions with single digit like denominators, 2 mixed numbers with single digit like denominators or a whole number and a proper fraction with a single digit denominator (0-20)										
6.C.1.f	Add 2 decimals with the same number of decimal places but no more than 2 decimal places and no more than 4 digits including monetary notation (0-100)										
6.C.1.g	Subtract 2 decimals with the same number of decimal places but no more than 2 decimal places and no more than 4 digits including monetary notation (0-100)										
6.C.2	Estimate to:										
6.C.2.a	Determine the sum or difference of 2 numbers with no more than 2 decimal places in each (0-100)										
6.C.2.b	Determine the product of one 1-digit factor with the other factor having no more than 2 digits or the quotient of a 1-digit divisor with the dividend having no more than 2 digits using whole numbers (0-1,000)										

Note. Number in parentheses indicates the total number of field test items.

Table D.3 The 2008 MSA-Math Blueprint: Grade 5

Code	Standard / Objective Statement	No. of Augmented Items (Form A)			No. of Augmented Items (Form B)			No. of Augmented Items (Form C)			No. of Augmented Items (Form D)			No. of Augmented Items (Form E)		
		SR	BCR	ECR	SR	BCR	ECR	SR	BCR	ECR	SR	BCR	ECR	SR	BCR	ECR
1	Knowledge of Algebra, Patterns, or Functions - Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.	13	1	1	13	1	1	13	1	1	13	1	1	13	1	1
		(4)	(1)	(1)	(3)	(1)	(1)	(1)	(1)	(1)	(2)	(1)	(1)	(1)	(1)	(1)
1.A	Patterns or Functions															
1.A.1	Identify, describe, extend, or create numeric patterns or functions to:															
1.A.1.a	Interpret or write the rule for a one operation (+, -, x, ÷ with no remainders) function table using whole numbers or decimals with no more than 2 decimal places (0-1,000)															
1.A.1.b	Complete a function table with a one operation (+, -, x, ÷ with no remainders) rule using whole numbers or decimals with no more than 2 decimal places (0-200)															
1.A.1.c	Apply a given two-operation rule (+, -, x) for a pattern using whole numbers (0-100)															
1.B	Expressions, Equations, or Inequalities															
1.B.1	Write or evaluate expressions to:															
1.B.1.a	Represent unknown quantities with one unknown and one operation (+, -, x, ÷ with no remainders) using whole numbers (0-100) or money (\$0-\$100)															
1.B.1.b	Determine the value of algebraic expressions with one unknown and one operation (+, -) using whole numbers (0-1,000)															
1.B.1.c	Determine the value of algebraic expressions with one unknown and one operation (x, ÷ with no remainders) that uses whole numbers and the number for the unknown is no more than 9 (0-100)															

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)			No. of Augmented Items (Form G)			No. of Augmented Items (Form H)			No. of Augmented Items (Form J)			No. of Augmented Items (Form K)		
		SR	BC	RECR	SR	BC	RECR	SR	BC	ECR	SR	BC	ECR	SR	BC	RECR
1	Knowledge of Algebra, Patterns, or Functions - Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.	13	1	1	13	1	1	13	1	1	13	1	1	13	1	1
		(1)	(1)		(1)		(1)	(1)		(1)	(1)	(1)	(1)	(1)	(1)	(1)
1.A	Patterns or Functions															
1.A.1	Identify, describe, extend, or create numeric patterns or functions to:															
1.A.1.a	Interpret or write the rule for a one operation (+, -, x, ÷ with no remainders) function table using whole numbers or decimals with no more than 2 decimal places (0-1,000)															
1.A.1.b	Complete a function table with a one operation (+, -, x, ÷ with no remainders) rule using whole numbers or decimals with no more than 2 decimal places (0-200)															
1.A.1.c	Apply a given two-operation rule (+, -, x) for a pattern using whole numbers (0-100)															
1.B	Expressions, Equations, or Inequalities															
1.B.1	Write or evaluate expressions to:															
1.B.1.a	Represent unknown quantities with one unknown and one operation (+, -, x, ÷ with no remainders) using whole numbers (0-100) or money (\$0-\$100)															
1.B.1.b	Determine the value of algebraic expressions with one unknown and one operation (+, -) using whole numbers (0-1,000)															
1.B.1.c	Determine the value of algebraic expressions with one unknown and one operation (x, ÷ with no remainders) that uses whole numbers and the number for the unknown is no more than 9 (0-100)															

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		SR BCRECR	SR BCR ECR	SR BCR ECR	SR BCRECR	SR BCRECR
1.B.2	Identify, write, or solve equations or inequalities to:					
1.B.2.a	Represent relationships by using the appropriate relational symbols (>, <, =) and one operational symbol (+, -, x, ÷ with no remainders) on either side using whole numbers (0-400)					
1.B.2.b	Find the unknown in an equation with one operation (+, -, x, ÷ with no remainders) using whole numbers (0-2,000)					
1.C	Numeric or Graphic Representations of Relationships					
1.C.1	Locate points on a number line or in a coordinate grid to:					
1.C.1.a	Represent decimals with no more than two decimal places (0-100) or mixed numbers (0-10) with denominators of 2, 3, 4, 5, 6, 8, or 10 on a number line					
1.C.1.b	Create a graph in the first quadrant of a coordinate plane using ordered pairs of whole numbers (0-50)					
2.0	Knowledge of Geometry - Students will apply the properties of one, two, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	5 1 (4)	5 1 (2)	5 1 (2) (1)	5 1	5 1 (2)
2.A	Plane Geometric Figures					
2.A.1	Analyze the properties of plane geometric figures to:					
2.A.1.a	Identify or describe parallel or perpendicular lines or line segments in geometric figures or pictures					
2.A.1.b	Identify a polygon with no more than 8 sides as part of composite figure comprised of triangles or quadrilaterals					
2.A.2	Analyze geometric relationships to:					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)
		SR BCRECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCRECR
1.B.2	Identify, write, or solve equations or inequalities to:					
1.B.2.a	Represent relationships by using the appropriate relational symbols (>, <, =) and one operational symbol (+, -, x, ÷ with no remainders) on either side using whole numbers (0-400)					
1.B.2.b	Find the unknown in an equation with one operation (+, -, x, ÷ with no remainders) using whole numbers (0-2,000)					
1.C	Numeric or Graphic Representations of Relationships					
1.C.1	Locate points on a number line or in a coordinate grid to:					
1.C.1.a	Represent decimals with no more than two decimal places (0-100) or mixed numbers (0-10) with denominators of 2, 3, 4, 5, 6, 8, or 10 on a number line					
1.C.1.b	Create a graph in the first quadrant of a coordinate plane using ordered pairs of whole numbers (0-50)					
2.0	Knowledge of Geometry - Students will apply the properties of one, two, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	5 1	5 1 (1)	5 1 (1)	5 1 (1)	5 1
2.A	Plane Geometric Figures					
2.A.1	Analyze the properties of plane geometric figures to:					
2.A.1.a	Identify or describe parallel or perpendicular lines or line segments in geometric figures or pictures					
2.A.1.b	Identify a polygon with no more than 8 sides as part of composite figure comprised of triangles or quadrilaterals					
2.A.2	Analyze geometric relationships to:					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		SR BCRECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCRECR
2.A.2.a	Compare or classify quadrilaterals including squares, rectangles, rhombi, parallelograms, or trapezoids by length of the sides or the types of the angles (Use the angle symbol \angle ABC)					
2.B	Solid Geometric Figures					
2.B.1	Analyze the properties of solid geometric figures to:					
2.B.1.a	Identify or classify pyramids or prisms as triangular pyramids, rectangular pyramids, triangular prisms or rectangular prisms by the number of edges, faces, or vertices					
2.B.1.b	Classify prisms or pyramids as triangular or rectangular by the base					
2.B.2	Analyze the relationship between plane geometric figures and surfaces of solid geometric figures to:					
2.B.2.a	Analyze or identify the number or arrangement of rectangles needed to make a rectangle prism					
2.B.2.b	Analyze or identify the number or arrangement of triangles/rectangles needed to make a triangular prism					
2.B.2.c	Analyze or identify the number or arrangement of circles/rectangles needed to make a cylinder					
2.C	Representation of Geometric Figures					
2.C.1	Represent plane geometric figures to:					
2.C.1.a	Identify, describe or draw angles, parallel line segments or perpendicular line segments given their dimensions using whole numbers (0-20) or angle measurements (0° - 179°)					
2.D	Congruence of Similarity					
2.D.1	Analyze similar figures to:					
2.D.1.a	Identify or describe geometric figures with the same shape and different size					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)
		SR BCRECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCRECR
2.A.2.a	Compare or classify quadrilaterals including squares, rectangles, rhombi, parallelograms, or trapezoids by length of the sides or the types of the angles (Use the angle symbol \angle ABC)					
2.B	Solid Geometric Figures					
2.B.1	Analyze the properties of solid geometric figures to:					
2.B.1.a	Identify or classify pyramids or prisms as triangular pyramids, rectangular pyramids, triangular prisms or rectangular prisms by the number of edges, faces, or vertices					
2.B.1.b	Classify prisms or pyramids as triangular or rectangular by the base					
2.B.2	Analyze the relationship between plane geometric figures and surfaces of solid geometric figures to:					
2.B.2.a	Analyze or identify the number or arrangement of rectangles needed to make a rectangle prism					
2.B.2.b	Analyze or identify the number or arrangement of triangles/rectangles needed to make a triangular prism					
2.B.2.c	Analyze or identify the number or arrangement of circles/rectangles needed to make a cylinder					
2.C	Representation of Geometric Figures					
2.C.1	Represent plane geometric figures to:					
2.C.1.a	Identify, describe or draw angles, parallel line segments or perpendicular line segments given their dimensions using whole numbers (0-20) or angle measurements (0° - 179°)					
2.D	Congruence of Similarity					
2.D.1	Analyze similar figures to:					
2.D.1.a	Identify or describe geometric figures with the same shape and different size					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
2.E	Transformations					
2.E.1	Analyze a transformation to:					
2.E.1.a	Identify or describe the given result of a translation (vertical), a reflection (over a horizontal line), or a rotation around a given point (90° or 180° around a given point) of a geometric figure or picture					
3.0	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements.	7 1 (1)	7 1 (1)	7 1 (2)	7 1 (1) (1)	7 1
3.A	Measurement Scales					
3.A.1	Read scales to:					
3.A.1.a	Estimate or determine weight to the nearest ounce or gram					
3.A.1.b	Estimate or determine capacity to the nearest ounce					
3.B	Measurement Tools					
3.B.1	Use standard units to:					
3.B.1.a	Measure length to the nearest 1/8 inch using a ruler					
3.B.2	Use standard units to:					
3.B.2.a	Measure angles (acute, right, obtuse) to the nearest degree using protractors					
3.C	Applications in Measurement					
3.C.1	Estimate or apply formulas to:					
3.C.1.a	Determine the perimeter of polygons with no more than 8 sides using whole numbers (0-500)					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)
		SR BC RE CR	SR BC RE CR	SR BC RE CR	SR BC RE CR	SR BC RE CR
2.E	Transformations					
2.E.1	Analyze a transformation to:					
2.E.1.a	Identify or describe the given result of a translation (vertical), a reflection (over a horizontal line), or a rotation around a given point (90° or 180° around a given point) of a geometric figure or picture					
3.0	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements.	7 1	7 1	7 1 (1)	7 1	7 1 (1)
3.A	Measurement Scales					
3.A.1	Read scales to:					
3.A.1.a	Estimate or determine weight to the nearest ounce or gram					
3.A.1.b	Estimate or determine capacity to the nearest ounce					
3.B	Measurement Tools					
3.B.1	Use standard units to:					
3.B.1.a	Measure length to the nearest 1/8 inch using a ruler					
3.B.2	Use standard units to:					
3.B.2.a	Measure angles (acute, right, obtuse) to the nearest degree using protractors					
3.C	Applications in Measurement					
3.C.1	Estimate or apply formulas to:					
3.C.1.a	Determine the perimeter of polygons with no more than 8 sides using whole numbers (0-500)					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
3.C.1.b	Determine the area of rectangles with whole numbers (0-200)					
3.C.1.c	Find the area or perimeter of any closed figure drawn on a grid using partial units (0-50)					
3.C.2	Calculate to:					
3.C.2.a	Find start, elapsed or end time to the nearest minute					
3.C.2.b	Determine equivalent units of seconds, minutes, or hours					
3.C.2.c	Determine equivalent units of pints, quarts, or gallons					
4.0	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	8 1 (3)	8 1 (3) (1)	8 1 (2) (1)	8 1 (2)	8 1 (1)
4.A	Data Displays					
4.A.1	Organize or display data to:					
4.A.1.a	Make stem & leaf plots with no more than 20 data points using whole numbers (0-100)					
4.A.1.b	Make line plots with no more than 20 pieces of data with a range of no more than 20 using whole numbers (0-200)					
4.A.1.c	Make double bar graphs with no more than 4 categories and intervals of 1, 2, 5, or 10 using whole numbers (0-100)					
4.A.1.d	Make line graphs with y-axis having intervals of 1, 2, 4, 5, or 10 and x-axis with no more than 10 time intervals using whole numbers (0-100)					
4.B	Data Analysis					
4.B.1	Analyze data to:					
4.B.1.a	Interpret stem & leaf plots with no more than 20 pieces of data points using whole numbers (0-100)					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
3.C.1.b	Determine the area of rectangles with whole numbers (0-200)					
3.C.1.c	Find the area or perimeter of any closed figure drawn on a grid using partial units (0-50)					
3.C.2	Calculate to:					
3.C.2.a	Find start, elapsed or end time to the nearest minute					
3.C.2.b	Determine equivalent units of seconds, minutes, or hours					
3.C.2.c	Determine equivalent units of pints, quarts, or gallons					
4.0	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	8 1 (5) (1)	8 1 (5)	8 1 (1)	8 1 (2)	8 1 (6)
4.A	Data Displays					
4.A.1	Organize or display data to:					
4.A.1.a	Make stem & leaf plots with no more than 20 data points using whole numbers (0-100)					
4.A.1.b	Make line plots with no more than 20 pieces of data with a range of no more than 20 using whole numbers (0-200)					
4.A.1.c	Make double bar graphs with no more than 4 categories and intervals of 1, 2, 5, or 10 using whole numbers (0-100)					
4.A.1.d	Make line graphs with y-axis having intervals of 1, 2, 4, 5, or 10 and x-axis with no more than 10 time intervals using whole numbers (0-100)					
4.B	Data Analysis					
4.B.1	Analyze data to:					
4.B.1.a	Interpret stem & leaf plots with no more than 20 pieces of data points using whole numbers (0-100)					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)			
		SR	BCRECR	SR	BCRECR	SR	BCR	ECR	SR	BCR	ECR	SR	BCRECR
4.B.1.b	Interpret line plots with no more than 20 pieces of data with a range of no more than 20 using whole numbers (0-100)												
4.B.1.c	Interpret double bar graphs with no more than 4 categories and intervals of 1, 2, 5, or 10 using whole numbers (0-1,000)												
4.B.1.d	Interpret double line graphs with y-axis having intervals of 1, 2, 5, or 10 and x-axis having no more than 10 time intervals using whole numbers (0-100)												
4.B.1.e	Read circle graphs with no more than 4 categories and data in whole numbers or percents which are multiples of 5 (0-100)												
4.B.2	Determine measures of central tendency of a data set to:												
4.B.2.a	Find the mean (no remainders) of a given data set with no more than 8 pieces of data using whole numbers (0-1,000)												
5.0	Knowledge of Probability - Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	3	1	3	1	3	1	3	1	3	1	3	1
5.A	Sample Space												
5.A.1	Identify members of a sample space to:												
5.A.1.a	Determine all possible outcomes of two independent events with no more than 4 outcomes each, using an organized list or tree diagram												
5.B	Theoretical Probability												
5.B.1	Determine the probability of one simple event comprised of equally likely outcomes to:												
5.B.1.a	Express the probability as a fraction with a sample space of no more than 20 outcomes												
6.0	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	13	2	13	2	13	2	13	2	13	2	13	2
		(3)		(3)		(5)		(7)	(1)	(8)	(1)		

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

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)			
		SR	BCRECR	SR	BCRECR	SR	BCR	ECR	SR	BCR	ECR	SR	BCRECR
4.B.1.b	Interpret line plots with no more than 20 pieces of data with a range of no more than 20 using whole numbers (0-100)												
4.B.1.c	Interpret double bar graphs with no more than 4 categories and intervals of 1, 2, 5, or 10 using whole numbers (0-1,000)												
4.B.1.d	Interpret double line graphs with y-axis having intervals of 1, 2, 5, or 10 and x-axis having no more than 10 time intervals using whole numbers (0-100)												
4.B.1.e	Read circle graphs with no more than 4 categories and data in whole numbers or percents which are multiples of 5 (0-100)												
4.B.2	Determine measures of central tendency of a data set to:												
4.B.2.a	Find the mean (no remainders) of a given data set with no more than 8 pieces of data using whole numbers (0-1,000)												
5.0	Knowledge of Probability - Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	3	1	3	1	3	1	3	1	3	1	3	1
5.A	Sample Space												
5.A.1	Identify members of a sample space to:												
5.A.1.a	Determine all possible outcomes of two independent events with no more than 4 outcomes each, using an organized list or tree diagram												
5.B	Theoretical Probability												
5.B.1	Determine the probability of one simple event comprised of equally likely outcomes to:												
5.B.1.a	Express the probability as a fraction with a sample space of no more than 20 outcomes												
6.0	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	13	2	13	2	13	2	13	2	13	2	13	2
		(6)		(7)		(10)		(9)	(1)	(5)			

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		SR BCRECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCRECR
6.A	Knowledge of Number or Place Value					
6.A.1	Apply Knowledge of fractions, decimals, or place value to:					
6.A.1.a	Read, write, or represent fractions or mixed numbers with denominators as factors of 24 using symbols, words, or models (0-200)					
6.A.1.b	Read, write, or represent decimals with no more than 3 decimal places or percents using symbols, words, or models (0-100)					
6.A.1.c	Identify or determine equivalent forms of proper fractions with denominators that are factors of 100, decimals, or percents (0-200)					
6.A.1.d	Compare or order no more than 4 fractions or mixed numbers with denominators that are factors of 100 with or without using the symbols (>, <, =) (0-100)					
6.A.1.e	Compare, order, or describe no more than 4 decimals with no more than 3 decimal places with or without using the symbols (>, <, =) (0-100)					
6.B	Number Theory					
6.B.1	Apply number relationships to:					
6.B.1.a	Identify or describe whole numbers as prime or composite (0-100)					
6.B.1.b	Identify or use rules of divisibility for 2, 3, 5, 9, or 10 with whole numbers (0-10,000)					
6.B.1.c	Identify the greatest common factor which is no more than 10 of two whole numbers (0-100)					
6.B.1.d	Identify a common multiple or the least common multiple of no more than 4 single digit whole numbers					
6.C	Number Computation					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
6.A	Knowledge of Number or Place Value					
6.A.1	Apply Knowledge of fractions, decimals, or place value to:					
6.A.1.a	Read, write, or represent fractions or mixed numbers with denominators as factors of 24 using symbols, words, or models (0-200)					
6.A.1.b	Read, write, or represent decimals with no more than 3 decimal places or percents using symbols, words, or models (0-100)					
6.A.1.c	Identify or determine equivalent forms of proper fractions with denominators that are factors of 100, decimals, or percents (0-200)					
6.A.1.d	Compare or order no more than 4 fractions or mixed numbers with denominators that are factors of 100 with or without using the symbols (>, <, =) (0-100)					
6.A.1.e	Compare, order, or describe no more than 4 decimals with no more than 3 decimal places with or without using the symbols (>, <, =) (0-100)					
6.B	Number Theory					
6.B.1	Apply number relationships to:					
6.B.1.a	Identify or describe whole numbers as prime or composite (0-100)					
6.B.1.b	Identify or use rules of divisibility for 2, 3, 5, 9, or 10 with whole numbers (0-10,000)					
6.B.1.c	Identify the greatest common factor which is no more than 10 of two whole numbers (0-100)					
6.B.1.d	Identify a common multiple or the least common multiple of no more than 4 single digit whole numbers					
6.C	Number Computation					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
6.C.1	Analyze number relationships or compute to:					
6.C.1.a	Multiply a 3-digit factor by another factor with no more than 2-digits using whole numbers (0-10,000)					
6.C.1.b	Divide a dividend with no more than a 4-digit dividend by a 2-digit divisor using whole numbers (0-10,000)					
6.C.1.c	Interpret quotients (including remainders) with no more than a 3-digit dividend by a 1- or 2-digit divisor using whole numbers (0-1,000)					
6.C.1.d	Add or subtract proper fractions or mixed numbers with denominators as factors of 24 and answers in simplest form (0-20)					
6.C.1.e	Add decimals, including monetary notation, with no more than 4 addends and no more than 3 decimal places in each addend (0-1,000)					
6.C.1.f	Subtract decimals including monetary notation with a minuend and subtrahend with no more than 3 decimal places (0-1,000)					
6.C.1.g	Multiply a decimal in monetary notation by a single digit whole number (0-100)					
6.C.2	Estimate to:					
6.C.2.a	Determine sum of no more than 3 addends with no more than 3 decimal places in each addend or the difference of a minuend and subtrahend with no more than 3 decimal places (0-1,000)					
6.C.2.b	Determine the product of one 1-digit factor with the other factor having no more than 3 digits or the quotient of a dividend having no more than 3 digits and a 1-digit divisor using whole numbers (0-5,000)					
6.C.2.c	Determine the product of a decimal in monetary notation by a single digit whole number (0-100)					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
6.C.1	Analyze number relationships or compute to:					
6.C.1.a	Multiply a 3-digit factor by another factor with no more than 2-digits using whole numbers (0-10,000)					
6.C.1.b	Divide a dividend with no more than a 4-digit dividend by a 2-digit divisor using whole numbers (0-10,000)					
6.C.1.c	Interpret quotients (including remainders) with no more than a 3-digit dividend by a 1- or 2-digit divisor using whole numbers (0-1,000)					
6.C.1.d	Add or subtract proper fractions or mixed numbers with denominators as factors of 24 and answers in simplest form (0-20)					
6.C.1.e	Add decimals, including monetary notation, with no more than 4 addends and no more than 3 decimal places in each addend (0-1,000)					
6.C.1.f	Subtract decimals including monetary notation with a minuend and subtrahend with no more than 3 decimal places (0-1,000)					
6.C.1.g	Multiply a decimal in monetary notation by a single digit whole number (0-100)					
6.C.2	Estimate to:					
6.C.2.a	Determine sum of no more than 3 addends with no more than 3 decimal places in each addend or the difference of a minuend and subtrahend with no more than 3 decimal places (0-1,000)					
6.C.2.b	Determine the product of one 1-digit factor with the other factor having no more than 3 digits or the quotient of a dividend having no more than 3 digits and a 1-digit divisor using whole numbers (0-5,000)					
6.C.2.c	Determine the product of a decimal in monetary notation by a single digit whole number (0-100)					

Note. Number in parentheses indicates the total number of field test items.

Table D.4 The 2008 MSA-Math Blueprint: Grade 6

Code	Standard / Objective Statement	No. of Augmented Items (Form A)			No. of Augmented Items (Form B)			No. of Augmented Items (Form C)			No. of Augmented Items (Form D)			No. of Augmented Items (Form E)		
		SR	BC	RECR	SR	BC	RECR	SR	BC	RECR	SR	BC	RECR	SR	BC	RECR
1	Knowledge of Algebra, Patterns, or Functions- Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.	12	1	1	12	1	1	12	1	1	12	1	1	12	1	1
		(5)		(1)	(4)	(1)	(1)	(3)	(1)	(1)	(6)		(1)	(6)		(1)
1.A	Patterns or Functions															
1.A.1	Identify, describe, extend, or create numeric patterns or functions to:															
1.A.1.a	Interpret or write the rule for a one operation (+, -, x, ÷) function table using whole numbers or decimals with no more than two decimal places (0-10,000)															
1.A.1.b	Complete a function table using a given two-operations (+, -, x) rule using whole numbers no more than 10 in the rule (0-50)															
1.B	Expressions, Equations, or Inequalities															
1.B.1	Write or evaluate expressions to:															
1.B.1.a	Represent unknown quantities with one unknown and one operation (+, -) using whole numbers (0-200), fractions with denominators as factors of 24 (0-50), or decimals with no more than two decimal places (0-50)															
1.B.1.b	Determine the value of algebraic expressions with one unknown and one operation (+, -) using whole numbers (0-200), fractions with denominators as factors of 24 (0-50), or decimals with no more than two decimal places (0-50)															
1.B.1.c	Determine the value of numeric expressions using order of operations (+, -, x, ÷, with no remainders) with no more than 4 operations and 1 set of grouping symbols using parentheses or a division bar with whole numbers (0-100)															

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)			No. of Augmented Items (Form G)			No. of Augmented Items (Form H)			No. of Augmented Items (Form J)			No. of Augmented Items (Form K)		
		SR	BC	RECR	SR	BC	RECR	SR	BC	ECR	SR	BC	ECR	SR	BC	RECR
1	Knowledge of Algebra, Patterns, or Functions- Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.	12	1	1	12	1	1	12	1	1	12	1	1	12	1	1
		(5)		(1)	(2)	(1)	(1)	(4)		(1)	(3)	(1)	(1)	(2)		(1)
1.A	Patterns or Functions															
1.A.1	Identify, describe, extend, or create numeric patterns or functions to:															
1.A.1.a	Interpret or write the rule for a one operation (+, -, x, ÷) function table using whole numbers or decimals with no more than two decimal places (0-10,000)															
1.A.1.b	Complete a function table using a given two-operations (+, -, x) rule using whole numbers no more than 10 in the rule (0-50)															
1.B	Expressions, Equations, or Inequalities															
1.B.1	Write or evaluate expressions to:															
1.B.1.a	Represent unknown quantities with one unknown and one operation (+, -) using whole numbers (0-200), fractions with denominators as factors of 24 (0-50), or decimals with no more than two decimal places (0-50)															
1.B.1.b	Determine the value of algebraic expressions with one unknown and one operation (+, -) using whole numbers (0-200), fractions with denominators as factors of 24 (0-50), or decimals with no more than two decimal places (0-50)															
1.B.1.c	Determine the value of numeric expressions using order of operations (+, -, x, ÷, with no remainders) with no more than 4 operations and 1 set of grouping symbols using parentheses or a division bar with whole numbers (0-100)															

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
1.B.2	Identify, write, or solve equations or inequalities to:					
1.B.2.a	Represent relationships using a variable with the appropriate relational symbols ($>$, $<$, $=$) and one operational symbol ($+$, $-$, \times , \div) on either side using fractions with denominators as factors of 24 (0-50), or decimals with no more than two decimal places (0-50)					
1.B.2.b	Find the unknown in an equation with one operation ($+$, $-$, \times , \div , with no remainder) and positive coefficients using decimals with no more than two decimal places (0-100)					
1.C	Numeric or Graphic Representations of Relationships					
1.C.1	Locate points on a number line or in a coordinate plane to:					
1.C.1.a	Represent integers (-20 to 20) on a number line					
1.C.1.b	Create a graph in the coordinate plane using no more than 3 ordered pairs of integers (-20 to 20) or no more than 3 ordered pairs with fractions/mixed numbers with denominators of 2 (-10 to 10)					
1.C.2	Analyze linear relationships to:					
1.C.2.a	Identify given graph of a line that shows increase, decrease, or no change					
2.0	Knowledge of Geometry - Students will apply the properties of one, two, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	7 1 (1) (1)	7 1 (4)	7 1 (1)	7 1 (1)	7 1 (1) (1)
2.A	Plane Geometric Figures					
2.A.1	Analyze the properties of plane geometric figures to:					
2.A.1.a	Identify or describe diagonal line segments					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
1.B.2	Identify, write, or solve equations or inequalities to:					
1.B.2.a	Represent relationships using a variable with the appropriate relational symbols (>, <, =) and one operational symbol (+, -, x, ÷) on either side using fractions with denominators as factors of 24 (0-50), or decimals with no more than two decimal places (0-50)					
1.B.2.b	Find the unknown in an equation with one operation (+, -, x, ÷, with no remainder) and positive coefficients using decimals with no more than two decimal places (0-100)					
1.C	Numeric or Graphic Representations of Relationships					
1.C.1	Locate points on a number line or in a coordinate plane to:					
1.C.1.a	Represent integers (-20 to 20) on a number line					
1.C.1.b	Create a graph in the coordinate plane using no more than 3 ordered pairs of integers (-20 to 20) or no more than 3 ordered pairs with fractions/mixed numbers with denominators of 2 (-10 to 10)					
1.C.2	Analyze linear relationships to:					
1.C.2.a	Identify given graph of a line that shows increase, decrease, or no change					
2.0	Knowledge of Geometry - Students will apply the properties of one, two, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	7 1 (1) (1)	7 1	7 1 (1) (1)	7 1 (1)	7 1 (2) (1)
2.A	Plane Geometric Figures					
2.A.1	Analyze the properties of plane geometric figures to:					
2.A.1.a	Identify or describe diagonal line segments					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
2.A.1.b	Identify or describe the radius, diameter, or circumference of a circle					
2.A.2	Analyze geometric relationships to:					
2.A.2.a	Compare or classify triangles as scalene, equilateral, or isosceles					
2.A.2.b	Compare or classify triangles as equiangular, obtuse, acute, or right					
2.A.2.c	Apply the concept of the sum of angles in any triangle is 180° without using a diagram					
2.A.2.d	Identify or compare circumference, radii, or diameter of a circle (pi = 3.14)					
2.C	Representation of Geometric Figures					
2.C.1	Represent plane geometric figures to:					
2.C.1.a	Draw triangles given the measure of 2 sides and one angle or 2 angles and 1 side using whole numbers (0-20) and angle measures (0° - 179°)					
2.C.1.b	Identify, describe or draw a polygon in the first quadrant given no more than six coordinates					
2.C.1.c	Identify or describe perpendicular bisectors or angle bisectors					
3.0	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements.	5 1 (2)	5 1 (1)	5 1	5 1 (1)	5 1 (1)
3.B	Measurement Tools					
3.B.1	Use standard units to:					
3.B.1.a	Measure length to the nearest 1/16 inch using a ruler					
3.C	Applications in Measurement					
3.C.1	Estimate or apply formulas to:					
3.C.1.a	Determine the area of a triangle with whole number dimensions (0-200)					
3.C.1.b	Determine the volume of rectangular prisms with whole number dimensions (0-1,000)					

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

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
2.A.1.b	Identify or describe the radius, diameter, or circumference of a circle					
2.A.2	Analyze geometric relationships to:					
2.A.2.a	Compare or classify triangles as scalene, equilateral, or isosceles					
2.A.2.b	Compare or classify triangles as equiangular, obtuse, acute, or right					
2.A.2.c	Apply the concept of the sum of angles in any triangle is 180° without using a diagram					
2.A.2.d	Identify or compare circumference, radii, or diameter of a circle (pi = 3.14)					
2.C	Representation of Geometric Figures					
2.C.1	Represent plane geometric figures to:					
2.C.1.a	Draw triangles given the measure of 2 sides and one angle or 2 angles and 1 side using whole numbers (0-20) and angle measures (0° - 179°)					
2.C.1.b	Identify, describe or draw a polygon in the first quadrant given no more than six coordinates					
2.C.1.c	Identify or describe perpendicular bisectors or angle bisectors					
3.0	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements.	5 1 (1)	5 1 (2) (1)	5 1	5 1 (2)	5 1
3.B	Measurement Tools					
3.B.1	Use standard units to:					
3.B.1.a	Measure length to the nearest 1/16 inch using a ruler					
3.C	Applications in Measurement					
3.C.1	Estimate or apply formulas to:					
3.C.1.a	Determine the area of a triangle with whole number dimensions (0-200)					
3.C.1.b	Determine the volume of rectangular prisms with whole number dimensions (0-1,000)					

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

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
3.C.1.c	Determine the area of composite figures using no more than 4 polygons (triangles or rectangles) with whole number dimensions (0-200)					
3.C.1.d	Determine the missing dimension of a quadrilateral given the perimeter using whole number dimensions (0-200)					
3.C.1.e	Determine the missing dimension of a square or rectangle given the area using whole number dimensions (0-200)					
4.0	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	8 1	8 1	8 1	8 1	8 1
4.A	Data Displays					
4.A.1	Organize or display data to:					
4.A.1.a	Make frequency tables with no more than 5 categories or ranges of numbers and frequencies of no more than 25					
4.A.1.b	Make stem-and-leaf plots with no more than 20 data points using whole numbers (0-1,000)					
4.B	Data Analysis					
4.B.1	Analyze data to:					
4.B.1.a	Interpret frequency tables with no more than 5 categories or ranges of numbers and frequencies of no more than 25					
4.B.1.b	Read or analyze circle graphs with no more than 5 categories using data in whole numbers or percents (0-1,000)					
5.0	Knowledge of Probability – Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	4	4	4	4	4
		(2)	(2)	(2)		
5.B	Theoretical Probability					
5.B.1	Determine the probability of one simple event comprised of equality likely outcomes to:					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
3.C.1.c	Determine the area of composite figures using no more than 4 polygons (triangles or rectangles) with whole number dimensions (0-200)					
3.C.1.d	Determine the missing dimension of a quadrilateral given the perimeter using whole number dimensions (0-200)					
3.C.1.e	Determine the missing dimension of a square or rectangle given the area using whole number dimensions (0-200)					
4.0	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	8 1 (1) (1)	8 1 (4)	8 1 (1) (1)	8 1 (1)	8 1 (1) 91)
4.A	Data Displays					
4.A.1	Organize or display data to:					
4.A.1.a	Make frequency tables with no more than 5 categories or ranges of numbers and frequencies of no more than 25					
4.A.1.b	Make stem-and-leaf plots with no more than 20 data points using whole numbers (0-1,000)					
4.B	Data Analysis					
4.B.1	Analyze data to:					
4.B.1.a	Interpret frequency tables with no more than 5 categories or ranges of numbers and frequencies of no more than 25					
4.B.1.b	Read or analyze circle graphs with no more than 5 categories using data in whole numbers or percents (0-1,000)					
5.0	Knowledge of Probability – Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	4 (1)	4	4 (1)	4	4 (2)
5.B	Theoretical Probability					
5.B.1	Determine the probability of one simple event comprised of equality likely outcomes to:					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)		No. of Augmented Items (Form B)		No. of Augmented Items (Form C)		No. of Augmented Items (Form D)		No. of Augmented Items (Form E)			
		SR	BCRECR	SR	BCRECR	SR	BCR	ECR	SR	BCR	ECR	SR	BCRECR
5.B.1.a	Express the probability as a decimal with a sample space of 10, 20, 25, or 50 outcomes												
5.C	Experimental Probability												
5.C.1	Analyze the results of a probability experiment to:												
5.C.1.a	Make predictions and express the experimental probability as a fraction, decimal or percent with no more than 30 results												
6.0	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	12	2	12	2	12	2	12	2	12	2	12	2
		(2)		(1)		(5)		(4)	(1)	(4)	(1)		
6.A	Knowledge of Number or Place Value												
6.A.1.	Apply Knowledge of rational numbers or place value to:												
6.A.1.a	Read, write, or represent whole numbers using exponential form using powers of 10 (0-10,000)												
6.A.1.b	Read, write, or represent integers (-100 to 100)												
6.A.1.c	Identify or determine equivalent forms of proper fractions with denominators as factors of 100, decimals, percents, or ratios (0-1,000)												
6.A.1.d	Compare or order no more than 4 fractions with denominators as factors of 100 to decimals with up to 2 decimal places with or without using the symbols (<, >, =) (0-100)												
6.C	Number Computation												
6.C.1	Analyze number relationships or compute to:												
6.C.1.a	Add or subtract proper fractions or mixed numbers with denominator as factors of 60 and answers in simplest form (0-20)												

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)		No. of Augmented Items (Form G)		No. of Augmented Items (Form H)		No. of Augmented Items (Form J)		No. of Augmented Items (Form K)			
		SR	BCRECR	SR	BCRECR	SR	BCR	ECR	SR	BCR	ECR	SR	BCRECR
5.B.1.a	Express the probability as a decimal with a sample space of 10, 20, 25, or 50 outcomes												
5.C	Experimental Probability												
5.C.1	Analyze the results of a probability experiment to:												
5.C.1.a	Make predictions and express the experimental probability as a fraction, decimal, or percent with no more than 30 results												
6.0	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	12	2	12	2	12	2	12	2	12	2	12	2
		(3)		(4)		(4)		(5)	(1)	(5)		(5)	
6.A	Knowledge of Number or Place Value												
6.A.1	Apply Knowledge of rational numbers or place value to:												
6.A.1.a	Read, write, or represent whole numbers using exponential form using powers of 10 (0-10,000)												
6.A.1.b	Read, write, or represent integers (-100 to 100)												
6.A.1.c	Identify or determine equivalent forms of proper fractions with denominators as factors of 100, decimals, percents, or ratios (0-1,000)												
6.A.1.d	Compare or order no more than 4 fractions with denominators as factors of 100 to decimals with up to 2 decimal places with or without using the symbols (<, >, =) (0-100)												
6.C	Number Computation												
6.C.1	Analyze number relationships or compute to:												
6.C.1.a	Add or subtract proper fractions or mixed numbers with denominator as factors of 60 and answers in simplest form (0-20)												

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
6.C.1.b	Multiply proper fractions or mixed numbers with denominators as factors of 24 not including 24 and express answers in simplest form (0-20)					
6.C.1.c	Multiply a decimal with no more than 3-digits by a 2 digit decimal (0-1,000)					
6.C.1.d	Divide a decimal with no more than a 5-digits by whole number with no more than 2 digits without annexing zeros (0-1,000)					
6.C.1.e	Determine 10%, 20%, 25%, or 50% of a whole number (0-1,000)					
6.C.1.f	Use the distributive property to simplify numeric expressions using whole numbers (0-1,000)					
6.C.2	Estimate to:					
6.C.2.a	Determine the product of a decimal with no more than 3-digits by a 2-digit whole number or the quotient of a decimal with no more than 5-digits in the dividend by a 2-digit whole number (0-1,000)					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)
		SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR	SR BCR ECR
6.C.1.b	Multiply proper fractions or mixed numbers with denominators as factors of 24 not including 24 and express answers in simplest form (0-20)					
6.C.1.c	Multiply a decimal with no more than 3-digits by a 2 digit decimal (0-1,000)					
6.C.1.d	Divide a decimal with no more than a 5-digits by whole number with no more than 2 digits without annexing zeros (0-1,000)					
6.C.1.e	Determine 10%, 20%, 25%, or 50% of a whole number (0-1,000)					
6.C.1.f	Use the distributive property to simplify numeric expressions using whole numbers (0-1,000)					
6.C.2	Estimate to:					
6.C.2.a	Determine the product of a decimal with no more than 3-digits by a 2-digit whole number or the quotient of a decimal with no more than 5-digits in the dividend by a 2-digit whole number (0-1,000)					

Note. Number in parentheses indicates the total number of field test items.

Table D.5 The 2008 MSA- Mathematics Blueprint: Grade 7

Code	Standard / Objective Statement	No. of Augmented Items (Form A)				No. of Augmented Items (Form B)				No. of Augmented Items (Form C)				No. of Augmented Items (Form D)				No. of Augmented Items (Form E)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
1.0	Knowledge of Algebra, Patterns, or Functions - Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.	9	3	1	1	9	3	1	1	9	3	1	1	9	3	1	1	9	3	1	1
		(6)	(2)	(1)		(5)	(3)	(1)	(1)	(1)		(1)						(2)		(1)	(1)
1.A	Patterns or Functions																				
1.A.1	Identify, describe, extend, or create linear patterns or functions to:																				
1.A.1.a	Complete a function table using a given two-operations (+, -, x) rule whose numbers are whole numbers no more than 20 in the rule and whole numbers (0-500)																				
1.B	Expressions, Equations, or Inequalities																				
1.B.1	Write or evaluate expressions to:																				
1.B.1.a	Represent unknown quantities with one unknown and one or two operations (+, -, x, ÷ with no remainders) using whole numbers (0-20), fractions with denominators as factors of 100 (0-20), or decimals with no more than three decimal places (0-20)																				
1.B.1.b	Determine the value of algebraic expressions with one unknown and no more than two operations (+, -, x, ÷ with no remainders) using whole numbers (0-200), fractions with denominators as factors of 100 (0-100), or decimals with no more than three decimal places (0-100)																				
1.B.1.c	Determine the value of numeric expressions using order of operations with no more than 4 operation (+, -, x, ÷ with no remainders) and 1 set of grouping symbols using parentheses, brackets, or a division bar using whole numbers (0-200), fractions with denominators as factors of 100 (0-100) or decimals with no more than three decimal places (0-100)																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)				No. of Augmented Items (Form G)				No. of Augmented Items (Form H)				No. of Augmented Items (Form J)				No. of Augmented Items (Form K)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	R	R	P	C	R	R	P	C	R	R	P	C	R	R	P	C	R
1.0	Knowledge of Algebra, Patterns, or Functions - Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.	9	3	1	1	9	3	1	1	9	3	1	1	9	3	1	1	9	3	1	1
		(2)	(2)	(1)		(3)		(1)													
1.A	Patterns or Functions																				
1.A.1	Identify, describe, extend, or create linear patterns or functions to:																				
1.A.1.a	Complete a function table using a given two-operations (+, -, x) rule whose numbers are whole numbers no more than 20 in the rule and whole numbers (0-500)																				
1.B	Expressions, Equations, or Inequalities																				
1.B.1	Write or evaluate expressions to:																				
1.B.1.a	Represent unknown quantities with one unknown and one or two operations (+, -, x, ÷ with no remainders) using whole numbers (0-20), fractions with denominators as factors of 100 (0-20), or decimals with no more than three decimal places (0-20)																				
1.B.1.b	Determine the value of algebraic expressions with one unknown and no more than two operations (+, -, x, ÷ with no remainders) using whole numbers (0-200), fractions with denominators as factors of 100 (0-100), or decimals with no more than three decimal places (0-100)																				
1.B.1.c	Determine the value of numeric expressions using order of operations with no more than 4 operation (+, -, x, ÷ with no remainders) and 1 set of grouping symbols using parentheses, brackets, or a division bar using whole numbers (0-200), fractions with denominators as factors of 100 (0-100) or decimals with no more than three decimal places (0-100)																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)				No. of Augmented Items (Form B)				No. of Augmented Items (Form C)				No. of Augmented Items (Form D)				No. of Augmented Items (Form E)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
1.B.2	Identify, write, or solve equations or inequalities to:																				
1.B.2.a	Represent relationships using a variable with the appropriate relational symbols ($>$, \geq , $<$, \leq , $=$) and one or two operational symbols ($+$, $-$, \times , \div) on either side using whole numbers (0-20), fractions with denominators as factors of 100 (0-20) or decimals with no more than three decimal places (0-20)																				
1.B.2.b	Find the unknown (used only once) in an equation with one or two operations ($+$, $-$, \times) using whole numbers (0-500), fractions with denominators as factors of 100 (0-50), or decimals with no more than three decimal places (0-100)																				
1.B.2.c	Find the unknown in an inequality with one variable with a positive whole number whole coefficient with one operation ($+$, $-$, \times , \div with no remainders) using whole numbers or decimals with no more than 2 decimal places (0-100)																				
1.B.2.d	Identify or graph solutions or inequalities on a number line using whole numbers (0-50)																				
1.B.2.e	Apply given formulas having no more than three variables and up to two operations using whole numbers (0-100), fractions with denominators as factors of 100 (0-100), or decimals with no more than three decimal places (0-100)																				
1.C	Numeric or Graphic Representations of Relationships																				
1.C.1	Locate points on a number line or in a coordinate plane to:																				
1.C.1.a	Represent rational numbers on a number line (-100 to 100)																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)				No. of Augmented Items (Form G)				No. of Augmented Items (Form H)				No. of Augmented Items (Form J)				No. of Augmented Items (Form K)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
1.B.2	Identify, write, or solve equations or inequalities to:																				
1.B.2.a	Represent relationships using a variable with the appropriate relational symbols ($>$, \geq , $<$, \leq , $=$) and one or two operational symbols ($+$, $-$, \times , \div) on either side using whole numbers (0-20), fractions with denominators as factors of 100 (0-20) or decimals with no more than three decimal places (0-20)																				
1.B.2.b	Find the unknown (used only once) in an equation with one or two operations ($+$, $-$, \times) using whole numbers (0-500), fractions with denominators as factors of 100 (0-50), or decimals with no more than three decimal places (0-100)																				
1.B.2.c	Find the unknown in an inequality with one variable with a positive whole number whole coefficient with one operation ($+$, $-$, \times , \div with no remainders) using whole numbers or decimals with no more than 2 decimal places (0-100)																				
1.B.2.d	Identify or graph solutions or inequalities on a number line using whole numbers (0-50)																				
1.B.2.e	Apply given formulas having no more than three variables and up to two operations using whole numbers (0-100), fractions with denominators as factors of 100 (0-100), or decimals with no more than three decimal places (0-100)																				
1.C	Numeric or Graphic Representations of Relationships																				
1.C.1	Locate points on a number line or in a coordinate plane to:																				
1.C.1.a	Represent rational numbers on a number line (-100 to 100)																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items				No. of Augmented Items							
		(Form A)	(Form B)	(Form C)	(Form D)	(Form E)	(Form A)	(Form B)	(Form C)	(Form D)	(Form E)		
		S P R	B C R	E C R	S P R	B C R	E C R	S P R	B C R	E C R	S P R	B C R	E C R
1.C.1.b	Create a graph in the coordinate plane using no more than 4 ordered pairs of rational numbers (-20 to 20)												
1.C.2	Analyze linear relationships to:												
1.C.2.a	Identify a table of values that shows increase, decrease, or no change												
2.0	Knowledge of Geometry - Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	4	2	1	4	2	1	4	2	1	4	2	1
		(1)	(1)		(1)	(1)		(3)	(1)	(1)	(1)	(1)	(1)
2.A	Plane Geometric Figures												
2.A.1	Analyze the properties of plane geometric figures to:												
2.A.1.a	Identify or describe vertical, adjacent, complementary, or supplementary angles (Use the angle notation m)												
2.A.2	Analyze geometric relationships to:												
2.A.2.a	Determine missing measurements of an angle in a quadrilateral												
2.A.2.b	Determine missing measurements of vertical, adjacent, complementary, or supplementary angles.												
2.C	Representation of Geometric Figures												
2.C.1	Represent plane geometric figures to:												
2.C.1.a	Construct a circle using a given line segment for the radius in whole number inches or centimeters												
2.C.1.b	Construct a line segment congruent to a given line segment												
2.C.1.c	Construct a perpendicular bisector to given line segment or a bisector to a given angle												

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items				No. of Augmented Items															
		(Form F)				(Form G)				(Form H)				(Form J)				(Form K)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
1.C.1.b	Create a graph in the coordinate plane using no more than 4 ordered pairs of rational numbers (-20 to 20)																				
1.C.2	Analyze linear relationships to:																				
1.C.2.a	Identify a table of values that shows increase, decrease, or no change																				
2.0	Knowledge of Geometry - Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	4	2	1		4	2	1		4	2	1		4	2	1		4	2	1	
									(1)				(1)								(1)
2.A	Plane Geometric Figures																				
2.A.1	Analyze the properties of plane geometric figures to:																				
2.A.1.a	Identify or describe vertical, adjacent, complementary, or supplementary angles (Use the angle notation m)																				
2.A.2	Analyze geometric relationships to:																				
2.A.2.a	Determine missing measurements of an angle in a quadrilateral																				
2.A.2.b	Determine missing measurements of vertical, adjacent, complementary, or supplementary angles.																				
2.C	Representation of Geometric Figures																				
2.C.1	Represent plane geometric figures to:																				
2.C.1.a	Construct a circle using a given line segment for the radius in whole number inches or centimeters																				
2.C.1.b	Construct a line segment congruent to a given line segment																				
2.C.1.c	Construct a perpendicular bisector to given line segment or a bisector to a given angle																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)				No. of Augmented Items (Form B)				No. of Augmented Items (Form C)				No. of Augmented Items (Form D)				No. of Augmented Items (Form E)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
2.D	Congruence or Similarity																				
2.D.1	Apply the properties of congruent polygons to:																				
2.D.1.a	Find the length of corresponding sides or the measure of corresponding angles using whole numbers (0-1,000)																				
2.E	Transformations																				
2.E.1	Analyze a transformation on a coordinate plane to:																				
2.E.1.a	Identify or plot the result of one translation (horizontal or vertical), reflection (horizontal or vertical), or rotation around a given point (90° or 180°)																				
3.0	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements.	4	1	1		4	1	1		4	1	1		4	1	1		4	1	1	
					(1)												(1) (1)				(1) (1) (1)
3.C	Applications in Measurement																				
3.C.1	Estimate or apply formulas to:																				
3.C.1.a	Determine area of parallelograms or trapezoids using whole number dimensions (0-1,000)																				
3.C.1.b	Determine surface area of rectangular prisms using whole number dimensions (0-1,000)																				
3.C.2	Analyze scale drawings to:																				
3.C.2.a	Determine a missing length for a polygon with no more than 8 sides using whole numbers (0-1000)																				
3.C.2.b	Determine the distance between 2 points using a drawing and a scale of 1 cm = ?, ¼ inch = ?, or ½ inch = ? (0-1,000)																				

Note. Number in parentheses indicates the total number of field test items.

Cod	Standard / Objective Statement	No. of Augmented Items (Form F)				No. of Augmented Items (Form G)				No. of Augmented Items (Form H)				No. of Augmented Items (Form J)				No. of Augmented Items (Form K)				
		S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	
2.D	Congruence or Similarity																					
2.D.1	Apply the properties of congruent polygons to:																					
2.D.1.a	Find the length of corresponding sides or the measure of corresponding angles using whole numbers (0-1,000)																					
2.E	Transformations																					
2.E.1	Analyze a transformation on a coordinate plane to:																					
2.E.1.a	Identify or plot the result of one translation (horizontal or vertical), reflection (horizontal or vertical), or rotation around a given point (90° or 180°)																					
3.0	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements.	4	1	1	4	1	1	4	1	1	4	1	1	4	1	1	4	1	1	4	1	1
				(1)		(2)				(1)			(1)	(1)					(1)			
3.C	Applications in Measurement																					
3.C.1	Estimate or apply formulas to:																					
3.C.1.a	Determine area of parallelograms or trapezoids using whole number dimensions (0-1,000)																					
3.C.1.b	Determine surface area of rectangular prisms using whole number dimensions (0-1,000)																					
3.C.2	Analyze scale drawings to:																					
3.C.2.a	Determine a missing length for a polygon with no more than 8 sides using whole numbers (0-1000)																					
3.C.2.b	Determine the distance between 2 points using a drawing and a scale of 1 cm = ?, ¼ inch = ?, or ½ inch = ? (0-1,000)																					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)				No. of Augmented Items (Form B)				No. of Augmented Items (Form C)				No. of Augmented Items (Form D)				No. of Augmented Items (Form E)			
		S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R
4.0	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	5	2	1	1	5	2	1	1	5	2	1	1	5	2	1	1	5	2	1	1
				(1)	(2)			(1)	(1)	(1)			(1)			(1)	(1)			(1)	(1)
4.A	Data Displays																				
4.A.1	Organize or display data to:																				
4.A.1.a	Make back-to-back stem-and-leaf plots with no more than 20 data points using whole numbers (0-99)																				
4.B	Data Analysis																				
4.B.1	Analyze data to:																				
4.B.1.a	Recognize or analyze faulty interpretation or representation of data caused by an inappropriate scale or choice of display for a given data set.																				
4.B.1.b	Determine the best choice of a data display for a given data set																				
4.B.2	Analyze measures of central tendency to:																				
4.B.2.a	Determine or apply the mean or median of a given data set with no more than 15 pieces of data or the mode of a given data set with 15-30 pieces of data, using whole numbers or decimals with no more than 2 decimal places (0-100)																				
5.0	Knowledge of Probability - Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	3	1	1		3	1	1		3	1	1		3	1	1		3	1	1	
		(1)								(1)	(2)							(1)	(1)		
5.A	Sample Space																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)				No. of Augmented Items (Form G)				No. of Augmented Items (Form H)				No. of Augmented Items (Form J)				No. of Augmented Items (Form K)			
		S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R
4.0	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	5	2	1	1	5	2	1	1	5	2	1	1	5	2	1	1	5	2	1	1
		(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
4.A	Data Displays																				
4.A.1	Organize or display data to:																				
4.A.1.a	Make back-to-back stem-and-leaf plots with no more than 20 data points using whole numbers (0-99)																				
4.B	Data Analysis																				
4.B.1	Analyze data to:																				
4.B.1.a	Recognize or analyze faulty interpretation or representation of data caused by an inappropriate scale or choice of display for a given data set.																				
4.B.1.b	Determine the best choice of a data display for a given data set																				
4.B.2	Analyze measures of central tendency to:																				
4.B.2.a	Determine or apply the mean or median of a given data set with no more than 15 pieces of data or the mode of a given data set with 15-30 pieces of data, using whole numbers or decimals with no more than 2 decimal places (0-100)																				
5.0	Knowledge of Probability - Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	3	1	1		3	1	1		3	1	1		3	1	1		3	1	1	
		(1)				(1)	(1)	(1)		(3)				(1)	(1)			(1)			
5.A	Sample Space																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items				No. of Augmented Items															
		(Form A)				(Form B)				(Form C)				(Form D)				(Form E)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
5.A.1	Identify numbers of members of a sample space to:																				
5.A.1.a	Determine the number of outcomes for no more than 3 independent events with a sample space of no more than 6 outcomes in each event																				
5.B	Theoretical Probability																				
5.B.1	Determine the probability of an event comprised of no more than 2 independent events to:																				
5.B.1.a	Express the probability as a fraction, decimal with no more than 2 decimal places, or percent with a sample space of no more than 35 outcomes.																				
5.C	Experimental Probability																				
5.C.1	Analyze the results of a survey or simulation to:																				
5.C.1.a	Make predictions and express the probability as a fraction, decimal with no more than 2 decimal places, or percent with 25 or 50 results																				
6.0	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	11	3			11	3			11	3			11	3			11	3		
		(1)								(1)				(5)	(3)			(2)	(1)		
6.A	Knowledge of Number or Place Value																				
6.A.1.	Apply knowledge of rational numbers or place value to:																				
6.A.1.a	Read, write, or represent whole numbers in exponential notation with bases no more than 12 and exponents no more than 3 in standard form (0-1,000)																				
6.A.1.b	Express decimals with no more than 4 decimal places using expanded form (0-100)																				
6.A.1.c	Determine equivalent forms of fraction, decimals, percents, or ratios using positive rational numbers (0-100)																				

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

Code	Standard / Objective Statement	No. of Augmented Items				No. of Augmented Items															
		(Form F)				(Form G)				(Form H)				(Form J)				(Form K)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
5.A.1	Identify numbers of members of a sample space to:																				
5.A.1.a	Determine the number of outcomes for no more than 3 independent events with a sample space of no more than 6 outcomes in each event																				
5.B	Theoretical Probability																				
5.B.1	Determine the probability of an event comprised of no more than 2 independent events to:																				
5.B.1.a	Express the probability as a fraction, decimal with no more than 2 decimal places, or percent with a sample space of no more than 35 outcomes.																				
5.C	Experimental Probability																				
5.C.1	Analyze the results of a survey or simulation to:																				
5.C.1.a	Make predictions and express the probability as a fraction, decimal with no more than 2 decimal places, or percent with 25 or 50 results																				
6.0	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	11	3			11	3			11	3			11	3			11	3		
		(3)	(2)			(2)	(1)			(2)	(3)			(4)	(3)			(4)	(1)		
6.A	Knowledge of Number or Place Value																				
6.A.1.	Apply knowledge of rational numbers or place value to:																				
6.A.1.a	Read, write, or represent whole numbers in exponential notation with bases no more than 12 and exponents no more than 3 in standard form (0-1,000)																				
6.A.1.b	Express decimals with no more than 4 decimal places using expanded form (0-100)																				
6.A.1.c	Determine equivalent forms of fraction, decimals, percents, or ratios using positive rational numbers (0-100)																				

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

Code	Standard / Objective Statement	No. of Augmented Items (Form A)				No. of Augmented Items (Form B)				No. of Augmented Items (Form C)				No. of Augmented Items (Form D)				No. of Augmented Items (Form E)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
6.A.1.d	Compare, order, or describe no more than 4 fractions with denominators as factors of 300 that are less than 101 (1-100), decimals with no more than 4 decimal places (0-100), percents (0-100), or integers (-100 to 100) with or without using the symbols (<, >, =)																				
6.C	Number Computation																				
6.C.1	Analyze number relationships or compute to:																				
6.C.1.a	Add, subtract, multiply, or divide integers (Use one operation and -100 to 100)																				
6.C.1.b	Add, subtract, or multiply positive fractions or mixed numbers with denominators as factors of 300 less than 101 (use no more than 2 operation and 0-2,000)																				
6.C.1.c	Calculate powers using exponents of no more than 3 and bases of whole numbers (0-20) or integers (-10 to 20); square roots of perfect square whole numbers (0-100)																				
6.C.1.d	Simplify using the rules of exponents (power x power or power divided by power) with the same whole numbers base (0-100) and exponents (0-10)																				
6.C.1.e	Identify or use the commutative property of addition and multiplication, associative property of addition or multiplication, additive inverse property, the distinctive property, or the identity property for one or zero with whole numbers (0-100)																				
6.C.2	Estimate to:																				
6.C.2.a	Determine the sum, difference, product or quotient of no more than 3 positive rational numbers (0-1,000)																				
6.C.3	Analyze ratios or percents to:																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)				No. of Augmented Items (Form G)				No. of Augmented Items (Form H)				No. of Augmented Items (Form J)				No. of Augmented Items (Form K)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
6.A.1.d	Compare, order, or describe no more than 4 fractions with denominators as factors of 300 that are less than 101 (1-100), decimals with no more than 4 decimal places (0-100), percents (0-100), or integers (-100 to 100) with or without using the symbols (<, >, =)																				
6.C	Number Computation																				
6.C.1	Analyze number relationships or compute to:																				
6.C.1.a	Add, subtract, multiply, or divide integers (Use one operation and -100 to 100)																				
6.C.1.b	Add, subtract, or multiply positive fractions or mixed numbers with denominators as factors of 300 less than 101 (use no more than 2 operation and 0-2,000)																				
6.C.1.c	Calculate powers using exponents of no more than 3 and bases of whole numbers (0-20) or integers (-10 to 20); square roots of perfect square whole numbers (0-100)																				
6.C.1.d	Simplify using the rules of exponents (power x power or power divided by power) with the same whole numbers base (0-100) and exponents (0-10)																				
6.C.1.e	Identify or use the commutative property of addition and multiplication, associative property of addition or multiplication, additive inverse property, the distinctive property, or the identity property for one or zero with whole numbers (0-100)																				
6.C.2	Estimate to:																				
6.C.2.a	Determine the sum, difference, product or quotient of no more than 3 positive rational numbers (0-1,000)																				
6.C.3	Analyze ratios or percents to:																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items				No. of Augmented Items				
		(Form A)	(Form B)	(Form C)	(Form D)	(Form E)				
		S P R	S B R	E C R	S P R	S B R	E C R	S P R	S B R	E C R
6.C.3.a	Determine equivalent ratios with denominators as factors of 300 less than 101 using whole numbers (0-100)									
6.C.3.b	Determine or use rates, unit rates, or percents as ratios in the context of a problem using whole numbers (0-1,000)									

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items				No. of Augmented Items			
		(Form F)	(Form G)	(Form H)	(Form J)	(Form K)			
		S P R	S B C C R	S S B E R	S P C C R	S S B E R	S P C C R	S S B E R	S P C C R
6.C.3.a	Determine equivalent ratios with denominators as factors of 300 less than 101 using whole numbers (0-100)								
6.C.3.b	Determine or use rates, unit rates, or percents as ratios in the context of a problem using whole numbers (0-1,000)								

Note. Number in parentheses indicates the total number of field test items.

Table D.6 The 2008 MSA-Math Blueprint: Grade 8

Code	Standard / Objective Statement	No. of Augmented Items (Form A)				No. of Augmented Items (Form B)				No. of Augmented Items (Form C)				No. of Augmented Items (Form D)				No. of Augmented Items (Form E)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	R	R	P	C	R	R	P	C	R	R	P	C	R	R	P	C	R
1.0	Knowledge of Algebra, Patterns, or Functions - Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1
		(3)	(1)	(2)	(1)	(2)	(2)	(1)	(1)	(2)	(1)	(1)		(2)	(1)	(1)		(2)	(2)	(1)	
1.A	Patterns or Functions																				
1.A.1	Identify, describe, extend, or create patterns, functions, or sequences to:																				
1.A.1.a	Determine the nth term no more than 10 terms beyond the last given term using the recursive relationship of arithmetic sequences with common differences no more than 10 (-100 to 5,000)																				
1.A.1.b	Determine the nth term no more than 5 terms beyond the last given term using the recursive relationship of geometric sequences with a common whole number ratio of no more than 5:1 (0-10,000)																				
1.A.1.c	Determine whether a relationship is linear or non-linear given the graph of the function																				
1.B	Expressions, Equations, or Inequalities																				
1.B.1	Write, simplify or evaluate expressions to:																				
1.B.1.a	Represent unknown quantities with one unknown and no more than three operations using rational numbers (-1,000 to 1,000)																				
1.B.1.b	Determine the value of algebraic expressions with one or two unknowns and up to three operations using rational numbers (-100 to 100)																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)				No. of Augmented Items (Form G)				No. of Augmented Items (Form H)				No. of Augmented Items (Form J)				No. of Augmented Items (Form K)			
		S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R	B C R	E C R
1.0	Knowledge of Algebra, Patterns, or Functions - Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1
		(2) (1) (2)				(1) (1)				(1) (3) (1)				(3) (1) (1)				(1)			
1.A	Patterns or Functions																				
1.A.1	Identify, describe, extend, or create patterns, functions, or sequences to:																				
1.A.1.a	Determine the nth term no more than 10 terms beyond the last given term using the recursive relationship of arithmetic sequences with common differences no more than 10 (-100 to 5,000)																				
1.A.1.b	Determine the nth term no more than 5 terms beyond the last given term using the recursive relationship of geometric sequences with a common whole number ratio of no more than 5:1 (0-10,000)																				
1.A.1.c	Determine whether a relationship is linear or non-linear given the graph of the function																				
1.B	Expressions, Equations, or Inequalities																				
1.B.1	Write, simplify or evaluate expressions to:																				
1.B.1.a	Represent unknown quantities with one unknown and no more than three operations using rational numbers (-1,000 to 1,000)																				
1.B.1.b	Determine the value of algebraic expressions with one or two unknowns and up to three operations using rational numbers (-100 to 100)																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		S P R	S P R	S P R	S P R	S P R
1.B.1.c	Determine the value of numeric expressions using order of operations with no more than 5 operations including exponents of no more than 3 and 2 sets of grouping symbols using parentheses, brackets, a division bar, or absolute value with rational numbers (-100 to 100)					
1.B.1.d	Represent equivalent algebraic expressions by combining like terms with no more than 3 variables using whole numbers (-50 to 50) or proper fractions with denominators as factors of 20 (-20 to 20)					
1.B.2	Identify, write, or solve equations or inequalities to:					
1.B.2.a	Represent relationships using a variable by using the appropriate relational symbols ($>$, \geq , $<$, \leq , $=$) and no more than three operational symbols (+, -, \times , \div) on either side using rational numbers (-1,000 to 1,000)					
1.B.2.b	Find the unknown in an equation with one unknown on one side used no more than 3 times and up to three operations (same or different but only one division) using rational numbers (-2,000 to 2,000)					
1.B.2.c	Find the unknown in an inequality with one variable on one side used no more than 3 times whose result after combining coefficients is a positive whole number coefficient and one or two operations (-100 to 100)					
1.B.2.d	Identify or graph solutions of inequalities with one variable used once and a positive whole number coefficient on a number line using integers (-100 to 100)					
1.B.2.e	Identify equivalent equations using one unknown no more than 3 times on one side and up to three operations (same or different but only one division) and integers (-2,000 to 2,000)					
1.B.2.f	Apply given formulas having no more than four variables and up to three operations using rational numbers (-500 to 500)					

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

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)					
		S P R	B C R	E C R	S P R	B C R	E C R	S P R	B C R	E C R	S P R
1.B.1.c	Determine the value of numeric expressions using order of operations with no more than 5 operations including exponents of no more than 3 and 2 sets of grouping symbols using parentheses, brackets, a division bar, or absolute value with rational numbers (-100 to 100)										
1.B.1.d	Represent equivalent algebraic expressions by combining like terms with no more than 3 variables using whole numbers (-50 to 50) or proper fractions with denominators as factors of 20 (-20 to 20)										
1.B.2	Identify, write, or solve equations or inequalities to:										
1.B.2.a	Represent relationships using a variable by using the appropriate relational symbols ($>$, \geq , $<$, \leq , $=$) and no more than three operational symbols (+, -, \times , \div) on either side using rational numbers (-1,000 to 1,000)										
1.B.2.b	Find the unknown in an equation with one unknown on one side used no more than 3 times and up to three operations (same or different but only one division) using rational numbers (-2,000 to 2,000)										
1.B.2.c	Find the unknown in an inequality with one variable on one side used no more than 3 times whose result after combining coefficients is a positive whole number coefficient and one or two operations (-100 to 100)										
1.B.2.d	Identify or graph solutions of inequalities with one variable used once and a positive whole number coefficient on a number line using integers (-100 to 100)										
1.B.2.e	Identify equivalent equations using one unknown no more than 3 times on one side and up to three operations (same or different but only one division) and integers (-2,000 to 2,000)										
1.B.2.f	Apply given formulas having no more than four variables and up to three operations using rational numbers (-500 to 500)										

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

Code	Standard / Objective Statement	No. of Augmented Items				No. of Augmented Items															
		(Form A)				(Form B)				(Form C)				(Form D)				(Form E)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
1.C	Numeric or Graphic Representations of Relationships																				
1.C.1	Locate points on a coordinate plane to:																				
1.C.1.a	Create a graph in the coordinate plane of a linear equation with two unknowns having integers coefficients (-9 to 9) and integer constants (-20 to 20)																				
1.C.2	Analyze linear relationships to:																				
1.C.2.a.	Determine the slope of a linear relationship having integer coefficients (-9 to 9) and integer constants (-20 to 20), given the graph of the relationship																				
2.0	Knowledge of Geometry - Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	5	2			5	2			5	2			5	2			5	2		
		(1)	(2)			(1)	(1)			(1)	(1)	(1)		(1)	(1)	(1)		(1)	(1)		(1)
2.A	Plane Geometric Figures																				
2.A.1	Analyze the properties of plane geometric figures to:																				
2.A.1.a	Identify or describe the geometric relationships of alternate interior, alternate exterior, or corresponding angles formed by parallel lines cut by a transversal																				
2.A.1.b	Identify or describe the hypotenuse or legs of right triangles																				
2.A.2	Analyze geometric relationships to:																				
2.A.2.a	Determine the missing measurements of alternate interior, alternate exterior or corresponding angles formed by parallel lines but by a transversal																				
2.A.2.b	Apply the Pythagorean Theorem																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items				No. of Augmented Items							
		(Form F)	(Form G)	(Form H)	(Form J)	(Form K)	(Form L)	(Form M)	(Form N)				
		S P R	B C R	E C R	S P R	B C R	E C R	S P R	B C R	E C R	S P R	B C R	E C R
1.C	Numeric or Graphic Representations of Relationships												
1.C.1	Locate points on a coordinate plane to:												
1.C.1.a	Create a graph in the coordinate plane of a linear equation with two unknowns having integers coefficients (-9 to 9) and integer constants (-20 to 20)												
1.C.2	Analyze linear relationships to:												
1.C.2.a	Determine the slope of a linear relationship having integer coefficients (-9 to 9) and integer constants (-20 to 20), given the graph of the relationship												
2.0	Knowledge of Geometry - Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects	5 2			5 2			5 2			5 2		1
		(1) (1)			(1) (1) (1)			(1) (1)			(1) (1)		(1)
2.A	Plane Geometric Figures												
2.A.1	Analyze the properties of plane geometric figures to:												
2.A.1.a	Identify or describe the geometric relationships of alternate interior, alternate exterior, or corresponding angles formed by parallel lines cut by a transversal												
2.A.1.b	Identify or describe the hypotenuse or legs of right triangles												
2.A.2	Analyze geometric relationships to:												
2.A.2.a	Determine the missing measurements of alternate interior, alternate exterior or corresponding angles formed by parallel lines but by a transversal												
2.A.2.b	Apply the Pythagorean Theorem												

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items				No. of Augmented Items															
		(Form A)				(Form B)				(Form C)				(Form D)				(Form E)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
2.C	Representation of Geometric Figures																				
2.C.1	Represent plane geometric figures to:																				
2.C.1.a	Draw quadrilaterals given their whole number dimensions in inches or centimeters or angle measurements																				
2.C.1.b	Construct a perpendicular through a given point on a given line segment																				
2.C.1.c	Construct a triangle congruent to a given triangle																				
2.D	Congruence or Similarity																				
2.D.1	Analyze the properties of congruent polygons to:																				
2.D.1.a	Find the length of corresponding sides or the measure of corresponding angles using rational numbers with no more than 2 decimal places (0-1,000)																				
2.E	Transformations																				
2.E.1	Analyze a transformation on a coordinate plane to:																				
2.E.1.a	Identify or plot the result of two transformation on one figure using translations (horizontal or vertical), reflections (horizontal or vertical), or rotations around a given point (90° or 180°)																				
3.0	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements.	3	1	1		3	1	1		3	1	1		3	1	1		3	1	1	
		(1)	(1)			(1)				(3)	(1)	(1)									
3.C	Applications in Measurement																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)			
		S R	S P R	B C R	E C R	S P R	S B C R	E C R	S P R
2.C	Representation of Geometric Figures								
2.C.1	Represent plane geometric figures to:								
2.C.1.a	Draw quadrilaterals given their whole number dimensions in inches or centimeters or angle measurements								
2.C.1.b	Construct a perpendicular through a given point on a given line segment								
2.C.1.c	Construct a triangle congruent to a given triangle								
2.D	Congruence or Similarity								
2.D.1	Analyze the properties of congruent polygons to:								
2.D.1.a	Find the length of corresponding sides or the measure of corresponding angles using rational numbers with no more than 2 decimal places (0-1,000)								
2.E	Transformations								
2.E.1	Analyze a transformation on a coordinate plane to:								
2.E.1.a	Identify or plot the result of two transformation on one figure using translations (horizontal or vertical), reflections (horizontal or vertical), or rotations around a given point (90° or 180°)								
3.0	Knowledge of Measurement - Students will identify attributes, units, or systems of measurement or apply a variety of techniques, formulas, tools or technology for determining measurements.	3 1 (1) (1)	3 1 (1) (1) (1)	3 1 (1) (1)	3 1	3 1			
3.C	Applications in Measurement								

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)				No. of Augmented Items (Form B)				No. of Augmented Items (Form C)				No. of Augmented Items (Form D)				No. of Augmented Items (Form E)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
3.C.1	Estimate or apply formulas to:																				
3.C.1.a	Find the circumference or area of a circle using rational numbers with no more than 2 decimal places (0-10,000)																				
3.C.1.b	Find the area of a composite figure with no more than six polygons (triangles, rectangles, or circles) by measuring, partitioning, or using formulas with whole number dimensions (0-10,000)																				
3.C.1.c	Find the volume of a cylinder with whole number dimensions, given the formula (0-10,000)																				
3.C.2	Analyze measurement relationships to:																				
3.C.2.a	Solve problems using proportions, scale drawings with scales as whole numbers, or rates using whole numbers or decimals (0-1,000)																				
4.0	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	6	1	1	1	6	1	1	1	6	1	1	1	6	1	1	1	6	1	1	1
		(1)					(1)				(1)			(1)	(1)	(1)	(1)				(1)
4.A	Data Displays																				
4.A.1	Organize and display data to:																				
4.A.1.a	Make circle graphs with no more than 5 categories using data in whole number percents																				
4.A.1.b	Make box-and-whisker plots with no more than 12 pieces of data using whole numbers (0-1,000)																				
4.A.1.c	Make scatter plots with no more than 10 points using whole numbers (0-1,000)																				
4.B	Data Analysis																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)				No. of Augmented Items (Form G)				No. of Augmented Items (Form H)				No. of Augmented Items (Form J)				No. of Augmented Items (Form K)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
3.C.1	Estimate or apply formulas to:																				
3.C.1.a	Find the circumference or area of a circle using rational numbers with no more than 2 decimal places (0-10,000)																				
3.C.1.b	Find the area of a composite figure with no more than six polygons (triangles, rectangles, or circles) by measuring, partitioning, or using formulas with whole number dimensions (0-10,000)																				
3.C.1.c	Find the volume of a cylinder with whole number dimensions, given the formula (0-10,000)																				
3.C.2	Analyze measurement relationships to:																				
3.C.2.a	Solve problems using proportions, scale drawings with scales as whole numbers, or rates using whole numbers or decimals (0-1,000)																				
4.0	Knowledge of Statistics - Students will collect, organize, display, analyze, or interpret data to make decisions or predictions	6	1	1	1	6	1	1	1	6	1	1	1	6	1	1	1	6	1	1	1
					(1)	(3)			(1)	(2)			(1)	(1)			(1)	(1)			(1)
4.A	Data Displays																				
4.A.1	Organize and display data to:																				
4.A.1.a	Make circle graphs with no more than 5 categories using data in whole number percents																				
4.A.1.b	Make box-and-whisker plots with no more than 12 pieces of data using whole numbers (0-1,000)																				
4.A.1.c	Make scatter plots with no more than 10 points using whole numbers (0-1,000)																				
4.B	Data Analysis																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)				No. of Augmented Items (Form B)				No. of Augmented Items (Form C)				No. of Augmented Items (Form D)				No. of Augmented Items (Form E)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
4.B.1	Analyze data to:																				
4.B.1.a	Interpret tables with no more than 5 categories having no more than 2 quantities per category using whole numbers or decimals with no more than 2 decimal places (0-100)																				
4.B.1.b	Interpret box-and-whisker plots using minimum, first (lower) quartile, median (middle) quartile, third (upper) quartile, or maximum using whole numbers (0-100)																				
4.B.1.c	Interpret scatter plots with no more than 10 points using whole numbers or decimals with no more than 2 decimal places (0-100)																				
4.B.1.d	Interpret circle graph with no more than 8 categories (0-1,000)																				
5.0	Knowledge of Probability - Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	2	2	1		2	2	1		2	2	1		2	2	1		2	2	1	
		(1)				(1)				(1)				(1)				(1)			
5.A	Sample Space																				
5.A.1	Identify number of members of a sample space to:																				
5.A.1.a	Determine the number of outcomes for no more than 5 dependent events with no more than 10 outcomes in the first event.																				
5.B	Theoretical Probability																				
5.B.1	Determine the probability of an event comprised of no more than 2 independent events to:																				
5.B.1.a	Express the probability as a fraction, decimal or percent with a sample space of no more than 36-60 outcomes																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)				No. of Augmented Items (Form G)				No. of Augmented Items (Form H)				No. of Augmented Items (Form J)				No. of Augmented Items (Form K)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
4.B.1	Analyze data to:																				
4.B.1.a	Interpret tables with no more than 5 categories having no more than 2 quantities per category using whole numbers or decimals with no more than 2 decimal places (0-100)																				
4.B.1.b	Interpret box-and-whisker plots using minimum, first (lower) quartile, median (middle) quartile, third (upper) quartile, or maximum using whole numbers (0-100)																				
4.B.1.c	Interpret scatter plots with no more than 10 points using whole numbers or decimals with no more than 2 decimal places (0-100)																				
4.B.1.d	Interpret circle graph with no more than 8 categories (0-1,000)																				
5.0	Knowledge of Probability - Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	2	2	1		2	2	1		2	2	1		2	2	1		2	2	1	
										(1)				(1)	(1)			(1)			
5.A	Sample Space																				
5.A.1	Identify number of members of a sample space to:																				
5.A.1.a	Determine the number of outcomes for no more than 5 dependent events with no more than 10 outcomes in the first event.																				
5.B	Theoretical Probability																				
5.B.1	Determine the probability of an event comprised of no more than 2 independent events to:																				
5.B.1.a	Express the probability as a fraction, decimal or percent with a sample space of no more than 36-60 outcomes																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items				No. of Augmented Items															
		(Form A)				(Form B)				(Form C)				(Form D)				(Form E)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
5.B.2	Determine the probability of second event that is dependent on a first event of equally likely outcomes to:																				
5.B.2.a	Express the probability as a fraction, decimal, or percent with a sample space of no more than 60 outcomes																				
5.C	Experimental Probability																				
5.C.1	Analyze the results of a survey or simulation to:																				
5.C.1.a	Make predictions and express the probability as a fraction, decimal with no more than 2 decimal places, or percent with 20-500 results																				
6.0	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	10	2			10	2			10	2			10	2			10	2		
						(1)	(2)			(1)				(1)	(2)			(3)	(2)		
6.A	Knowledge of Number or Place Value																				
6.A.1.	Apply knowledge of rational numbers or place value to:																				
6.A.1.a	Read, write, or represent rational numbers in exponential notation or scientific notation (-10,000 to 1,000,000,000)																				
6.A.1.b	Compare, order, or describe no more than 4 integers (-100 to 100) or positive rational numbers (0-100) using equivalent forms or absolute value with or without using the symbols (<, >, =)																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)				No. of Augmented Items (Form G)				No. of Augmented Items (Form H)				No. of Augmented Items (Form J)				No. of Augmented Items (Form K)			
		S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E	S	S	B	E
		R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C	R	P	C	C
5.B.2	Determine the probability of second event that is dependent on a first event of equally likely outcomes to:																				
5.B.2.a	Express the probability as a fraction, decimal, or percent with a sample space of no more than 60 outcomes																				
5.C	Experimental Probability																				
5.C.1	Analyze the results of a survey or simulation to:																				
5.C.1.a	Make predictions and express the probability as a fraction, decimal with no more than 2 decimal places, or percent with 20-500 results																				
6.0	Knowledge of Number Relationships or Computation - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	10	2			10	2			10	2			10	2			10	2		
		(2)	(1)			(1)	(2)							(1)	(2)			(5)	(3)		
6.A	Knowledge of Number or Place Value																				
6.A.1.	Apply knowledge of rational numbers or place value to:																				
6.A.1.a	Read, write, or represent rational numbers in exponential notation or scientific notation (-10,000 to 1,000,000,000)																				
6.A.1.b	Compare, order, or describe no more than 4 integers (-100 to 100) or positive rational numbers (0-100) using equivalent forms or absolute value with or without using the symbols (<, >, =)																				

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form A)	No. of Augmented Items (Form B)	No. of Augmented Items (Form C)	No. of Augmented Items (Form D)	No. of Augmented Items (Form E)
		S P R	S P R	S P R	S P R	S P R
6.C	Number Computation					
6.C.1	Analyze number relationships or compute to:					
6.C.1.a	Add, subtract, multiply, or divide integers using one operation (-1,000 to 1,000)					
6.C.1.b	Calculate powers using bases no more than 12 and exponents no more than 3 or square roots of perfect squares no more than 144					
6.C.1.c	Simplify using the rules of exponents (power x power or power divided by power) with the same integer as a base (-20 to 20) and exponents (0-10)					
6.C.1.d	6.C.1.d Identify or use the commutative property of addition and multiplication, associative property of addition or multiplication, additive inverse property, the distributive property, or the identity property for one or zero with integers (-100 to 100)					
6.C.2	Estimate to:					
6.C.2.a	Determine square roots of whole numbers (0-100)					
6.C.3	Analyze ratios, proportions, or percents to:					
6.C.3.a	Determine unit rates using positive rational numbers (0-100)					
6.C.3.b	Determine or use percents, rate of increase/decrease, discount, commission, sales tax, or simple interest in the context of a problem using positive rational numbers (0-10,000)					
6.C.3.c	Use proportional reasoning to solve problems using positive rational numbers (0-1,000)					

Note. Number in parentheses indicates the total number of field test items.

Code	Standard / Objective Statement	No. of Augmented Items (Form F)	No. of Augmented Items (Form G)	No. of Augmented Items (Form H)	No. of Augmented Items (Form J)	No. of Augmented Items (Form K)					
		S R	S P R	B C R	E C R	S R	S P R	B C R	E C R	S R	S P R
6.C	Number Computation										
6.C.1	Analyze number relationships or compute to:										
6.C.1.a	Add, subtract, multiply, or divide integers using one operation (-1,000 to 1,000)										
6.C.1.b	Calculate powers using bases no more than 12 and exponents no more than 3 or square roots of perfect squares no more than 144										
6.C.1.c	Simplify using the rules of exponents (power x power or power divided by power) with the same integer as a base (-20 to 20) and exponents (0-10)										
6.C.1.d	6.C.1.d Identify or use the commutative property of addition and multiplication, associative property of addition or multiplication, additive inverse property, the distributive property, or the identity property for one or zero with integers (-100 to 100)										
6.C.2	Estimate to:										
6.C.2.a	Determine square roots of whole numbers (0-100)										
6.C.3	Analyze ratios, proportions, or percents to:										
6.C.3.a	Determine unit rates using positive rational numbers (0-100)										
6.C.3.b	Determine or use percents, rate of increase/decrease, discount, commission, sales tax, or simple interest in the context of a problem using positive rational numbers (0-10,000)										
6.C.3.c	Use proportional reasoning to solve problems using positive rational numbers (0-1,000)										

Note. Number in parentheses indicates the total number of field test items.