

**North Carolina State Standards
correlated to
Merit Software Math Programs**

The revised curriculum (2003) is based upon surveys of the effectiveness of the previous curriculum, current educational research, and input from public school teachers, administrators, college and university faculties, parents, and business and community leaders.

The *Mathematics Standard Course of Study* clearly defines a curriculum supporting the ABC's school reform effort as well as the North Carolina Testing Program. These revisions maintain a forward focus by looking at what students will need to know and to be able to do as successful and contributing citizens in our state and nation in the years ahead.

Merit's Math programs address the following North Carolina State Standards:

- Grade 3 pg. 1-5
- Grade 4 pg. 6-9
- Grade 5 pg. 9-12
- Grade 6 pg. 13-16
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- Algebra I pg. 21-23

Grade 3

Subhead	Competency Goals	Objectives	Benchmarks	Merit Software
Math	COMPETENCY GOAL 1: The learner will model, identify, and compute with whole numbers through 9,999.	1.01 Develop number sense for whole numbers through 9,999.	<ul style="list-style-type: none"> a. Connect model, number word, and number using a variety of representations. b. Build understanding of place value (ones through thousands). c. Compare and order. 	Word Problem Shape-Up Set 1, 2, 3

Math	COMPETENCY GOAL 1: The learner will model, identify, and compute with whole numbers through 9,999.	1.02 Develop fluency with multi-digit addition and subtraction through 9,999 using:	<ul style="list-style-type: none"> a. Strategies for adding and subtracting numbers. b. Estimation of sums and differences in appropriate situations. c. Relationships between operations. 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 1: The learner will model, identify, and compute with whole numbers through 9,999.	1.03 Develop fluency with multiplication from 1×1 to 12×12 and division up to two-digit by one-digit numbers using:	<ul style="list-style-type: none"> a. Strategies for multiplying and dividing numbers. b. Estimation of products and quotients in appropriate situations. c. Relationships between operations. 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 1: The learner will model, identify, and compute with whole numbers through 9,999.	1.04 Use basic properties (identity, commutative, associative, order of operations) for addition, subtraction, multiplication, and division.		Word Problem Shape-Up Set 1, 2, 3

Math	COMPETENCY GOAL 1: The learner will model, identify, and compute with whole numbers through 9,999.	1.05 Use area or region models and set models of fractions to explore part-whole relationships:	<ul style="list-style-type: none"> a. Represent fractions concretely and symbolically (halves, fourths, thirds, sixths, eighths). b. Compare and order fractions (halves, fourths, thirds, sixths, eighths) using models and benchmark numbers (zero, one-half, one); describe comparisons. c. Model and describe common equivalents, especially relationships among halves, fourths, and eighths, and thirds and sixths. d. Understand that the fractional relationships that occur between zero and one also occur between every two consecutive whole numbers. e. Understand and use mixed numbers and their equivalent fraction forms. 	Word Problem Shape-Up Set 1, 2, 3; Fraction Shape-Up
Math	COMPETENCY GOAL 1: The learner will model, identify, and compute with whole numbers through 9,999.	1.06 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 2: The learner will recognize and use standard units of metric and customary measurement.	2.01 Solve problems using measurement concepts and procedures involving:	<ul style="list-style-type: none"> a. Elapsed time. b. Equivalent measures within the same measurement system. 	Word Problem Shape-Up Set 1, 2, 3

Math	COMPETENCY GOAL 2: The learner will recognize and use standard units of metric and customary measurement.	2.02 Estimate and measure using appropriate units.	<ul style="list-style-type: none"> a. Capacity (cups, pints, quarts, gallons, liters). b. Length (miles, kilometers) c. Mass (ounces, pounds, grams, kilograms). d. Temperature (Fahrenheit, Celsius). 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 3: The learner will recognize and use basic geometric properties of two- and three-dimensional figures.	3.01 Use appropriate vocabulary to compare, describe, and classify two- and three-dimensional figures.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 3: The learner will recognize and use basic geometric properties of two- and three-dimensional figures.	3.02 Use a rectangular coordinate system to solve problems.	<ul style="list-style-type: none"> a. Graph and identify points with whole number and/or letter coordinates. b. Describe the path between given points on the plane. 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 4: The learner will understand and use data and simple probability concepts.	4.01 Collect, organize, analyze, and display data (including circle graphs and tables) to solve problems.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 4: The learner will understand and use data and simple probability concepts.	4.02 Determine the number of permutations and combinations of up to three items.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 4: The learner will understand and use data and simple probability concepts.	4.03 Solve probability problems using permutations and combinations.		Word Problem Shape-Up Set 1, 2, 3

Math	COMPETENCY GOAL 5: The learner will recognize, determine, and represent patterns and simple mathematical relationships.	5.01 Describe and extend numeric and geometric patterns.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 5: The learner will recognize, determine, and represent patterns and simple mathematical relationships.	5.02 Extend and find missing terms of repeating and growing patterns.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 5: The learner will recognize, determine, and represent patterns and simple mathematical relationships.	5.03 Use symbols to represent unknown quantities in number sentences.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 5: The learner will recognize, determine, and represent patterns and simple mathematical relationships.	5.04 Find the value of the unknown in a number sentence.		Word Problem Shape-Up Set 1, 2, 3

Grade 4

Subhead	Competency Goals	Objectives	Benchmarks	Merit Software
Math	COMPETENCY GOAL 1: The learner will model, identify, and compute with whole numbers through 9,999.	1.01 Develop number sense for whole numbers through 9,999.	<ul style="list-style-type: none"> a. Connect model, number word, and number using a variety of representations. b. Build understanding of place value (hundredths through ten thousands). c. Compare and order rational numbers. d. Make estimates of rational numbers in appropriate situations. 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 1: The learner will model, identify, and compute with whole numbers through 9,999.	1.02 Develop fluency with multi-digit addition and subtraction through 9,999 using:	<ul style="list-style-type: none"> a. Two-digit by two-digit multiplication (larger numbers with calculator). b. Up to three-digit by two-digit division (larger numbers with calculator). c. Strategies for multiplying and dividing numbers. d. Estimation of products and quotients in appropriate situations. e. Relationships between operations. 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 1: The learner will model, identify, and compute with whole numbers through 9,999.	1.03 Solve problems using models, diagrams, and reasoning about fractions and relationships among fractions involving halves, fourths, eighths, thirds, sixths, twelfths, fifths, tenths, hundredths, and mixed numbers.		Word Problem Shape-Up Set 1, 2, 3

Math	COMPETENCY GOAL 1: The learner will model, identify, and compute with whole numbers through 9,999.	1.04 Develop fluency with addition and subtraction of non-negative rational numbers with like denominators, including decimal fractions through hundredths.	<ul style="list-style-type: none"> a. Develop and analyze strategies for adding and subtracting numbers. b. Estimate sums and differences. c. Judge the reasonableness of solutions. 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 1: The learner will model, identify, and compute with whole numbers through 9,999.	1.05 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.		Word Problem Shape-Up Set 1, 2, 3; Fraction Shape-Up
Math	COMPETENCY GOAL 2: The learner will recognize and use standard units of metric and customary measurement.	22.01 Solve problems using measurement concepts and procedures involving:	<ul style="list-style-type: none"> a. Elapsed time. b. Equivalent measures within the same measurement system. 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 2: The learner will recognize and use standard units of metric and customary measurement.	2.02 Estimate and measure using appropriate units.	<ul style="list-style-type: none"> a. Capacity (cups, pints, quarts, gallons, liters). b. Length (miles, kilometers) c. Mass (ounces, pounds, grams, kilograms). e. Temperature (Fahrenheit, Celsius). 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 3: The learner will recognize and use basic geometric properties of two- and three-dimensional figures.	3.01 Use appropriate vocabulary to compare, describe, and classify two- and three-dimensional figures.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 3: The learner will recognize and use basic geometric properties of two- and three-dimensional figures.	3.02 Use a rectangular coordinate system to solve problems.	<ul style="list-style-type: none"> a. Graph and identify points with whole number and/or letter coordinates. b. Describe the path between given points on the plane. 	Word Problem Shape-Up Set 1, 2, 3

Math	COMPETENCY GOAL 4: The learner will understand and use data and simple probability concepts.	4.01 Collect, organize, analyze, and display data (including circle graphs and tables) to solve problems.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 4: The learner will understand and use data and simple probability concepts.	4.02 Determine the number of permutations and combinations of up to three items.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 4: The learner will understand and use data and simple probability concepts.	4.03 Solve probability problems using permutations and combinations.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 5: The learner will recognize, determine, and represent patterns and simple mathematical relationships.	5.01 Describe and extend numeric and geometric patterns.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 5: The learner will recognize, determine, and represent patterns and simple mathematical relationships.	5.02 Extend and find missing terms of repeating and growing patterns.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 5: The learner will recognize, determine, and represent patterns and simple mathematical relationships.	5.03 Use symbols to represent unknown quantities in number sentences.		Word Problem Shape-Up Set 1, 2, 3

Math	COMPETENCY GOAL 5: The learner will recognize, determine, and represent patterns and simple mathematical relationships.	5.04 Find the value of the unknown in a number sentence.		Word Problem Shape-Up Set 1, 2, 3
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Grade 5

Subhead	Competency Goals	Objectives	Benchmarks	Merit Software
Math	COMPETENCY GOAL 1: The learner will understand and compute with non-negative rational numbers.	1.01 Develop number sense for whole numbers through 9,999.	<ul style="list-style-type: none"> a. Connect model, number word, and number using a variety of representations. b. Build understanding of place value (thousandths through hundred thousands). c. Compare and order rational numbers. d. Make estimates of rational numbers in appropriate situations. 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 1: The learner will understand and compute with non-negative rational numbers.	1.02 Develop fluency in adding and subtracting non-negative rational numbers (halves, fourths, eighths; thirds, sixths, twelfths; fifths, tenths, hundredths, thousandths; mixed numbers).	<ul style="list-style-type: none"> a. Develop and analyze strategies for adding and subtracting numbers. b. Estimate sums and differences. c. Judge the reasonableness of solutions. 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 1: The learner will understand and compute with non-negative rational numbers.	1.03 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.		Word Problem Shape-Up Set 1, 2, 3

Math	COMPETENCY GOAL 1: The learner will understand and compute with non-negative rational numbers.	1.04 Develop fluency with addition and subtraction of non-negative rational numbers with like denominators, including decimal fractions through hundredths.	<ul style="list-style-type: none"> a. Develop and analyze strategies for adding and subtracting numbers. b. Estimate sums and differences. c. Judge the reasonableness of solutions. 	Word Problem Shape-Up Set 1, 2, 3; Fraction Shape-Up
Math	COMPETENCY GOAL 1: The learner will understand and compute with non-negative rational numbers.	1.05 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.		Word Problem Shape-Up Set 1, 2, 3; Fraction Shape-Up
Math	COMPETENCY GOAL 2: The learner will recognize and use standard units of metric and customary measurement.	2.01 Estimate the measure of an object in one system given the measure of that object in another system.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 2: The learner will recognize and use standard units of metric and customary measurement.	2.02 Identify, estimate, and measure the angles of plane figures using appropriate tools.		Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of plane figures.	3.01 Identify, define, describe, and accurately represent triangles, quadrilaterals, and other polygons.		Word Problem Shape-Up Set 1, 2, 3

Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of plane figures.	3.02 Make and test conjectures about polygons involving:	<ul style="list-style-type: none"> a. Sum of the measures of interior angles. b. Lengths of sides and diagonals. c. Parallelism and perpendicularity of sides and diagonals. 	Word Problem Shape-Up Set 1, 2, 3
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of plane figures.	3.03 Classify plane figures according to types of symmetry (line, rotational).		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of plane figures.	3.04 Solve problems involving the properties of triangles, quadrilaterals, and other polygons.	<ul style="list-style-type: none"> a. Sum of the measures of interior angles. b. Lengths of sides and diagonals. c. Parallelism and perpendicularity of sides and diagonals. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up
Math	COMPETENCY GOAL 4: The learner will understand and use graphs and data analysis.	4.01 Collect, organize, analyze, and display data (including stem-and-leaf plots) to solve problems.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up
Math	COMPETENCY GOAL 4: The learner will understand and use graphs and data analysis.	4.02 Compare and contrast different representations of the same data; discuss the effectiveness of each representation.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up

Math	COMPETENCY GOAL 4: The learner will understand and use graphs and data analysis.	4.03 Solve problems with data from a single set or multiple sets of data using median, range, and mode.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of patterns, relationships, and elementary algebraic representation.	5.01 Describe, extend, and generalize numeric and geometric patterns using tables, graphs, words, and symbols.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of patterns, relationships, and elementary algebraic representation.	5.02 Use algebraic expressions, patterns, and one-step equations and inequalities to solve problems.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of patterns, relationships, and elementary algebraic representation.	5.03 Identify, describe, and analyze situations with constant or varying rates of change.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up

Grade 6

Subhead	Competency Goals	Objectives	Benchmarks	Merit Software
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.01 Develop number sense for negative rational numbers.	<ul style="list-style-type: none"> a. Connect the model, number word, and number using a variety of representations, including the number line. b. Compare and order. c. Make estimates in appropriate situations. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.02 Develop meaning for percents.	<ul style="list-style-type: none"> a. Connect the model, number word, and number using a variety of representations. b. Make estimates in appropriate situations. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.03 Compare and order rational numbers.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.04 Develop fluency in addition, subtraction, multiplication, and division of non-negative rational numbers.	<ul style="list-style-type: none"> a. Analyze computational strategies. b. Describe the effect of operations on size. c. Estimate the results of computations. d. Judge the reasonableness of solutions. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.05 Develop fluency in the use of factors, multiples, exponential notation, and prime factorization.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.06 Use exponential, scientific, and calculator notation to write very large and very small numbers.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2

Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.07 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 2: The learner will select and use appropriate tools to measure two- and three-dimensional figures.	2.01 Estimate and measure length, perimeter, area, angles, weight, and mass of two- and three-dimensional figures, using appropriate tools.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 2: The learner will select and use appropriate tools to measure two- and three-dimensional figures.	2.02 Solve problems involving perimeter/circumference and area of plane figures.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.01 Identify and describe the intersection of figures in a plane.		Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.02 Identify the radius, diameter, chord, center, and circumference of a circle; determine the relationships among them.		Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.03 Transform figures in the coordinate plane and describe the transformation.		Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2

Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.04 Solve problems involving geometric figures in the coordinate plane.		Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.01 Develop fluency with counting strategies to determine the sample space for an event. Include lists, tree diagrams, frequency distribution tables, permutations, combinations, and the Fundamental Counting Principle.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.02 Use a sample space to determine the probability of an event.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.03 Conduct experiments involving simple and compound events.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.04 Determine and compare experimental and theoretical probabilities for simple and compound events.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.05 Determine and compare experimental and theoretical probabilities for independent and dependent events.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.06 Design and conduct experiments or surveys to solve problems; report and analyze results.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.01 Simplify algebraic expressions and verify the results using the basic properties of rational numbers.	<ul style="list-style-type: none"> a. Identity. b. Commutative. c. Associative. d. Distributive. e. Order of operations. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2

Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.02 Use and evaluate algebraic expressions.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.03 Solve simple (one- and two-step) equations or inequalities.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.04 Use graphs, tables, and symbols to model and solve problems involving rates of change and ratios.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2

Grade 7

Subhead	Competency Goals	Objectives	Benchmarks	Merit Software
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.01 Develop and use ratios, proportions, and percents to solve problems.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.02 Develop fluency in addition, subtraction, multiplication, and division of rational numbers.	<ul style="list-style-type: none"> a. Analyze computational strategies. b. Describe the effect of operations on size. c. Estimate the results of computations. c. Judge the reasonableness of solutions. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.03 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2

Math	COMPETENCY GOAL 2: The learner will select and use appropriate tools to measure two- and three-dimensional figures.	2.01 Draw objects to scale and use scale drawings to solve problems.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 2: The learner will select and use appropriate tools to measure two- and three-dimensional figures.	2.02 Solve problems involving volume and surface area of cylinders, prisms, and composite shapes.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.01 Using three-dimensional figures:	<ul style="list-style-type: none"> a. Identify, describe, and draw from various views (top, side, front, corner). b. Build from various views. c. Describe cross-sectional views. 	Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.02 Identify, define, and describe similar and congruent polygons with respect to angle measures, length of sides, and proportionality of sides.		Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.03 Use scaling and proportional reasoning to solve problems related to similar and congruent polygons.		Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.01 Collect, organize, analyze, and display data (including box plots and histograms) to solve problems.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.02 Calculate, use, and interpret the mean, median, mode, range, frequency distribution, and inter-quartile range for a set of data.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2

Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.03 Describe how the mean, median, mode, range, frequency distribution, and inter-quartile range of a set of data affect its graph.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.04 Identify outliers and determine their effect on the mean, median, mode, and range of a set of data.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.05 Solve problems involving two or more sets of data using appropriate statistical measures.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.01 Identify, analyze, and create linear relations, sequences, and functions using symbols, graphs, tables, diagrams, and written descriptions.	<ul style="list-style-type: none"> a. Identity. b. Commutative. c. Associative. d. Distributive. e. Order of operations. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.02 Translate among different representations of algebraic expressions, equations and inequalities.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.03 Use and evaluate algebraic expressions, linear equations or inequalities to solve problems.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.04 Develop fluency in the use of formulas to solve problems.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2

Grade 8

Subhead	Competency Goals	Objectives	Benchmarks	Merit Software
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.01 Develop number sense for the real numbers.	<ul style="list-style-type: none"> a. Define and use irrational numbers. b. Compare and order. c. Use estimates of irrational numbers in appropriate situations. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.02 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.	<ul style="list-style-type: none"> a. Analyze computational strategies. b. Describe the effect of operations on size. c. Estimate the results of computations. d. Judge the reasonableness of solutions. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 2: The learner will select and use appropriate tools to measure two- and three-dimensional figures.	2.01 Determine the effect on perimeter, area or volume when one or more dimensions of two- and three-dimensional figures are changed.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 2: The learner will select and use appropriate tools to measure two- and three-dimensional figures.	2.02 Apply and use concepts of indirect measurement.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.01 Represent problem situations with geometric models.		Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.02 Apply geometric properties and relationships, including the Pythagorean theorem, to solve problems.		Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2

Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.03 Identify, predict, and describe dilations in the coordinate plane.		Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.01 Collect, organize, analyze, and display data (including scatterplots) to solve problems.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.02 Approximate a line of best fit for a given scatterplot; explain the meaning of the line as it relates to the problem and make predictions.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.03 Identify misuses of statistical and numerical data.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.01 Develop an understanding of function.	<ul style="list-style-type: none"> a. Translate among verbal, tabular, graphic, and algebraic representations of functions. b. Identify relations and functions as linear or nonlinear. c. Find, identify, and interpret the slope (rate of change) and intercepts of a linear relation. d. Interpret and compare properties of linear functions from tables, graphs, or equations. 	Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.02 Write an equation of a linear relationship given: two points, the slope and one point on the line, or the slope and y-intercept.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2

Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.03 Solve problems using linear equations and inequalities; justify symbolically and graphically.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 5: The learner will demonstrate an understanding of simple algebraic expressions.	5.04 Solve equations using the inverse relationships of addition and subtraction, multiplication and division, squares and square roots, and cubes and cube roots.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2

Algebra I

Subhead	Competency Goals	Objectives	Benchmarks	Merit Software
Math	COMPETENCY GOAL 1: The learner will perform operations with numbers and expressions to solve problems.	1.01 Write equivalent forms of algebraic expressions to solve problems.	<ul style="list-style-type: none"> a. Apply the laws of exponents. b. Operate with polynomials. c. Factor polynomials. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.02 Use formulas and algebraic expressions, including iterative and recursive forms, to model and solve problems.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 1: The learner will understand and compute with rational numbers.	1.03 Model and solve problems using direct variation.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 2: The learner will describe geometric figures in the coordinate plane algebraically.	2.01 Find the lengths and midpoints of segments to solve problems.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2

Math	COMPETENCY GOAL 2: The learner will describe geometric figures in the coordinate plane algebraically.	2.02 Use the parallelism or perpendicularity of lines and segments to solve problems.		Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 3: The learner will collect, organize, and interpret data with matrices and linear models to solve problems.	3.01 Use matrices to display and interpret data.		Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.02 Operate (addition, subtraction, scalar multiplication) with matrices to solve problems.		Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 3: The learner will understand and use properties and relationships of geometric figures in the coordinate plane.	3.03 Create linear models for sets of data to solve problems.	<ul style="list-style-type: none"> a. Interpret constants and coefficients in the context of the data. b. Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions. 	Word Problem Shape-Up Set 1, 2, 3; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will use relations and functions to solve problems.	4.01 Use linear functions or inequalities to model and solve problems; justify results. 4.04 Graph and evaluate exponential functions to solve problems.	<ul style="list-style-type: none"> a. Solve using tables, graphs, and algebraic properties. b. Interpret constants and coefficients in the context of the problem. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.02 Graph, factor, and evaluate quadratic functions to solve problems.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2

Math	COMPETENCY GOAL 4: The learner will understand and determine probabilities.	4.03 Use systems of linear equations or inequalities in two variables to model and solve problems. Solve using tables, graphs, and algebraic properties; justify results.		Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2
Math	COMPETENCY GOAL 4: The learner will use relations and functions to solve problems.	4.04 Graph and evaluate exponential functions to solve problems.	<ul style="list-style-type: none"> a. Solve using tables, graphs, and algebraic properties. b. Interpret constants and coefficients in the context of the problem. 	Word Problem Shape-Up Set 1, 2, 3; Pre-Algebra Shape-Up; Basic Algebra Shape-Up Set 1 & 2