

Scholastic Math Inventory



supports the

**Virginia Mathematics Standards of Learning:
Grades K - 9**

2010

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**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade K**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
Number and Number Sense	
K.1 The student, given two sets containing 10 or fewer concrete items, will identify and describe one set as having more, fewer, or the same number of members as the other set, using the concept of one - to - one correspondence.	Number & Operations: Create and identify sets with more, less or equal members by matching.
K.2 The student, given a set containing 10 or fewer concrete items, will a) tell how many are in the set by counting the number of items orally; b) select the corresponding numeral from a given set; and c) write the numeral to tell how many are in the set.	a) Number & Operations: Read, write, and count using whole numbers; rote count to 30. b) Number & Operations: Read and write numerals using one-to-one correspondence to match sets of 0 to 10. c) Number & Operations: Read and write numerals using one-to-one correspondence to match sets of 0 to 10.
K.3 The student, given an ordered set of three objects and/or pictures, will indicate the ordinal position of each item, first through third, and the ordered position of each item from left-to-right, right-to-left, top-to-bottom, and/or bottom-to-top.	The opportunity to meet this objective is available. For example, see: Number & Operations: Use ordinal numbers first through tenth to describe order. Geometry: Use directional and positional words.
K.4 The student will investigate and recognize patterns from counting by fives and tens to 30, using concrete objects and a calculator.	Algebra: Identify, copy, continue, and describe patterns. Number & Operations: Rote count by 1s, 2s, 5s and 10s to 100.
K.5 The student will count forward to 30 and backward from 10.	Number & Operations: Read, write, and count using whole numbers; rote count to 30.
Computation and Estimation	
K.6 The student will add and subtract whole numbers, using up to 10 concrete items.	Number & Operations: Model the concept of addition for sums to 10. Model the concept of subtraction using numbers less than or equal to 10.
Measurement	
K.10 The student will compare two objects or events, using direct comparisons or nonstandard units of measure, according to one or more of the following attributes: length (shorter, longer), height (taller, shorter), weight (heavier, lighter), temperature (hotter, colder). longer), height (taller, shorter), weight (heavier, lighter), temperature (hotter, colder). Examples of nonstandard units include foot length, hand span, new pencil, paper clip, block.	The opportunity to meet this objective is available. For example, see: Measurement: Measure length using nonstandard units. Measure time using nonstandard units.
Geometry	
K.11 The student will identify, describe, and draw two-dimensional (plane)	Geometry: Identify, draw, and name triangles, rectangles, squares, and circles.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
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geometric figures (circle, triangle, square, and rectangle).	
K.12 The student will describe the location of one object relative to another (above, below, next to) and identify representations of plane geometric figures (circle, triangle, square, and rectangle) regardless of their position and orientation in space.	Geometry: Use directional and positional words. Identify, draw, and name triangles, rectangles, squares, and circles.
K.13 The student will compare the size (larger, smaller) and shape of plane geometric figures (circle, triangle, square, and rectangle).	Geometry: Compare and order objects using mathematical vocabulary. Identify, draw, and name triangles, rectangles, squares, and circles. Identify equal and unequal measures and regions.
Probability and Statistics	
K.15 The student will display objects and information, using objects graphs, pictorial graphs and tables.	Data Analysis & Probability: Organize, display, and interpret information in concrete or picture graphs.
Patterns, Functions, and Algebra	
K.17 The student will sort and classify objects according to similar attributes (size, shape, and color).	Algebra: Sort a set of objects in one or more ways; explain.
K.18 The student will identify, describe, and extend a repeating relationship (pattern) found in common objects, sounds, and movements.	Algebra: Identify, copy, continue, and describe patterns.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 1**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
Number and Number Sense	
1.1 The student will count objects in a given set containing between 1 and 100 objects and write the corresponding numeral.	Number & Operations: Read and write numerals using one-to-one correspondence to match sets of 0 to 10. Read and write numerals using one-to-one correspondence to match sets of 11 to 100.
1.2 The student will group a collection of up to 100 objects into tens and ones and write the corresponding numeral to develop an understanding of place value.	Number & Operations: Represent numbers up to 100 in a variety of ways such as tallies, ten frames, and other models. Use place value with ones and tens.
1.3 The student will count forward by ones, fives, and tens to 100, by twos to 20, and backward by ones from 20.	Number & Operations: Rote count by 1s, 2s, 5s and 10s to 100. Use counting strategies for totals to 100 that include counting forward, counting backwards, grouping, ten frames, and hundred charts.
1.4 The student will recognize and write numerals 0 through 100.	Number & Operations: Read and write numerals using one-to-one correspondence to match sets of 0 to 10. Read and write numerals using one-to-one correspondence to match sets of 11 to 100.
1.5 The student will identify the ordinal positions first through tenth, using an ordered set of objects.	The opportunity to meet this objective is available. For example, see: Number & Operations: Use ordinal numbers beyond tenth to describe order.
1.6 The student will identify and represent the concepts of one-half and one-fourth, using appropriate materials or a drawing.	Number & Operations: Model the division of sets into two, three or four equal parts (fair shares).
Computation and Estimation	
1.7 The student, given a familiar problem situation involving magnitude, will a) select a reasonable magnitude from three given quantities: a one-digit numeral, a two-digit numeral, and a three-digit numeral (e.g., 5, 50, and 500); and b) explain the reasonableness of his/her choice.	(a) The opportunity to meet this objective is available. For example, see: Number & Operations: Make reasonable estimates of the number of objects.
1.8 The student will recall basic addition facts - i.e., sums to 10 or less - and the corresponding subtraction facts.	Number & Operations: Know and use addition and subtraction facts to 10.
1.9 The student will create and solve story and picture problems involving one-step solutions, using basic addition and subtraction facts.	Algebra: Write addition and subtraction sentences to represent a word problem.
Measurement	
1.10 The student will a) identify the number of pennies equivalent to a nickel, a dime, and a quarter; and b) determine the value of a collection of pennies, nickels, and dimes whose total value is 100 cents or less.	(a) Measurement: Make different sets of coins with equivalent values. (b) Measurement: Determine the value of sets of coins.

**Scholastic Math Inventory Correlated to the
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Grade 1**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
1.11 The student will tell time to the half-hour, using an analog or digital clock.	Measurement: Tell time to nearest quarter-hour using digital and analog clocks.
1.12 The student will use nonstandard units to measure length and weight.	Measurement: Measure length using nonstandard units. Measure weight using nonstandard units.
1.13 The student will compare the volumes of two given containers by using concrete materials (e.g., jelly beans, sand, water, rice).	Measurement: Estimate, measure, and compare capacity using appropriate tools and units.
1.14 The student will compare the weights of two objects, using a balance scale.	Measurement: Estimate, measure, and compare weight using appropriate tools and units.
Geometry	
1.15 The student will describe the proximity of objects in space (near, far, close by, below, above, up, down, beside, and next to).	
1.16 The student will draw, describe, and sort plane geometric figures (triangle, square, rectangle, and circle) according to number of sides, corners, and square corners.	The opportunity to meet this objective is available. For example, see: Geometry: Compare and order objects using mathematical vocabulary.
1.17 The student will identify and describe objects in his/her environment that depict plane geometric figures (triangle, rectangle, square, and circle).	The opportunity to meet this objective is available. For example, see: Geometry: Identify and name basic solid figures: rectangular prism, cylinder, pyramid, and cone; identify in the environment.
Probability and Statistics	
1.18 The student will investigate, identify, and describe various forms of data collection in his/her world (e.g., recording daily temperature, lunch count, attendance, and favorite ice cream), using tables, picture graphs, and object graphs.	Data Analysis & Probability: Organize, display, and interpret information in concrete or picture graphs. Organize, display, and interpret information in picture graphs and bar graphs using grids.
1.19 The student will interpret information displayed in a picture or object graph, using the vocabulary <i>more</i> , <i>less</i> , <i>fewer</i> , <i>greater than</i> , <i>less than</i> , and <i>equal to</i> .	The opportunity to meet this objective is available. For example, see: Data Analysis & Probability: Organize, display, and interpret information in concrete or picture graphs. Organize, display, and interpret information in picture graphs and bar graphs using grids.
Patterns, Functions, and Algebra	
1.20 The student will sort and classify concrete objects according to one or more attributes, including color, size, shape, and thickness.	Algebra: Sort a set of objects in one or more ways; explain.
1.21 The student will recognize, describe, extend, and create a wide variety of patterns, including rhythmic, color, shape, and numerical. Patterns will include both growing and repeating patterns. Concrete materials and calculators will be used by students.	Algebra: Identify, continue, and describe rules for repeating patterns. Use patterns to continue numerical sequences; identify the rule.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 2**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
Number and Number Sense	
2.1 The student will a) read, write, and identify the place value of each digit in a three-digit numeral, using numeration models; and b) round two-digit numbers to the nearest ten.	(a) Number & Operations: Use place value with ones and tens. Use place value with hundreds. Indicate the value of each digit in any 2- or 3-digit number.
2.2 The student will compare two whole numbers between 0 and 999, using symbols (>, <, or =) and words (<i>greater than, less than, or equal to</i>).	Number & Operations: Compare and order sets and numerals up to 100, including using symbol notation (>, <, =). Compare and order numbers less than 10,000.
2.4 The student will identify the part of a set and/or region that represents fractions for one-half, one-third, one-fourth, one-eighth, and one-tenth and write the corresponding fraction.	Number & Operations: Represent fractions concretely and symbolically. Compare unit fractions concretely and symbolically.
2.5 The student will a) count forward by twos, fives, and tens to 100, starting at various multiples of 2, 5, or 10, using mental mathematics, paper and pencil, hundred chart, calculators, and/or concrete objects, as appropriate; b) count backward by tens from 100; c) group objects by threes and fours; and d) recognize even and odd numbers, using objects.	(a) Number & Operations: Rote count by 1s, 2s, 5s and 10s to 100. (b) Number & Operations: Use counting strategies for totals to 100 that include counting forward, counting backwards, grouping, ten frames, and hundred charts. (d) Number & Operations: Identify odd and even numbers using objects.
Computation and Estimation	
2.6 The student will recall basic addition facts - i.e., sums to 18 or less - and the corresponding subtraction facts.	Number & Operations: Use addition and subtraction facts to 18.
2.7 The student, given two whole numbers whose sum is 99 or less, will a) estimate the sum; and b) find the sum, using various methods of calculation (mental computation, concrete materials, and paper and pencil).	(a) Number & Operations: Apply appropriate type of estimation for sums and differences. (b) Number & Operations: Add 2- and 3-digit numbers without regrouping. Add 2- and 3-digit numbers with regrouping.
2.8 The student, given two whole numbers, each of which is 99 or less, will a) estimate the difference; and b) find the difference, using various methods of calculation (mental computation, concrete materials, and paper and pencil).	(a) Number & Operations: Apply appropriate type of estimation for sums and differences. (b) Number & Operations: Subtract 2- and 3-digit numbers with regrouping. Subtract 2- and 3-digit numbers without regrouping.
2.9 The student will create and solve one-step addition and subtraction problems using data from simple tables, picture graphs, bar graphs, and practical	The opportunity to meet this objective is available. For example, see: Algebra: Write addition and subtraction sentences to represent a word problem.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 2**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
situations.	
2.10 The student, given a simple addition or subtraction fact, will recognize and describe the related facts which represent and describe the inverse relationship between addition and subtraction (e.g., $3 + \underline{\quad} = 7$, $\underline{\quad} + 3 = 7$; $7 - 3 = \underline{\quad}$, and $7 - \underline{\quad} = 3$).	The opportunity to meet this objective is available. For example, see: Number & Operations: Know and use addition and subtraction facts to 10.
Measurement	
2.11 The student will a) count and compare a collection of pennies, nickels, dimes, and quarters whose total value is \$2.00 or less; and b) identify the correct usage of the cent symbol (ϕ), dollar symbol (\$), and decimal point (.).	(a) Measurement: Determine the value of sets of coins. (b) The opportunity to meet this objective is available. For example, see: Measurement: Determine the value of sets of coins.
2.12 The student will estimate and then use a ruler to make linear measurements to the nearest centimeter and inch, including measuring the distance around a polygon in order to determine perimeter.	Measurement: Estimate, measure, and compare length using appropriate tools and units. Determine costs and make change using coins up to \$1.00.
2.13 The student, given grid paper, will estimate and then count the number of square units needed to cover a given surface in order to determine area.	Measurement: Determine the area of rectangles, squares, and composite figures using nonstandard units, grids, and standard units.
2.14 The student will estimate and then count the number of cubes in a rectangular box in order to determine volume.	Measurement: Measure capacity using nonstandard units.
2.15 The student will estimate and then determine weight/mass of familiar objects in pounds and/or kilograms, using a scale.	Measurement: Estimate, measure, and compare weight using appropriate tools and units.
2.16 The student will tell and write time to the quarter hour, using analog and digital clocks.	Measurement: Tell time at the five-minute intervals.
2.17 The student will use actual measuring devices to compare metric and U.S. Customary units (cups, pints, quarts, gallons, and liters) for measuring liquid volume, using the concepts of <i>more</i> , <i>less</i> , and <i>equivalent</i> .	
2.18 The student will a) use calendar language appropriately (e.g., months, <i>today</i> , <i>yesterday</i> , <i>next week</i> , <i>last week</i>); b) determine past and future days of the week; and c) identify specific dates on a given calendar.	(a) Measurement: Use relationships between minutes, hours, days, weeks, months, and years to describe time. (b) Measurement: Use relationships between minutes, hours, days, weeks, months, and years to describe time. (c) The opportunity to meet this objective is available. For example, see: Measurement: Use relationships between minutes, hours, days, weeks, months, and years to describe time.

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Grade 2**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
2.19 The student will read the temperature on a Celsius and/or Fahrenheit thermometer to the nearest 10 degrees.	Measurement: Read thermometers in increments of 1s, 2s, and 5s. Relate temperatures to everyday situations.
Geometry	
2.20 The student will identify, describe, and sort three-dimensional (solid) concrete figures, including a cube, rectangular solid (prism), square pyramid, sphere, cylinder, and cone, according to the number and shape of the solid's faces, edges, and corners.	Geometry: Identify and name basic solid figures: rectangular prism, cylinder, pyramid, and cone; identify in the environment.
2.21 The student will identify and create figures, symmetric along a line, using various concrete materials.	Geometry: Identify and make figures with line symmetry.
2.22 The student will compare and contrast plane and solid geometric shapes (circle/sphere, square/cube, and rectangle/rectangular solid).	Geometry: Recognize the 2-dimensional elements of 3-dimensional figures.
Probability and Statistics	
2.23 The student will read, construct, and interpret a simple picture and bar graph.	Data Analysis & Probability: Organize, display, and interpret information in picture graphs and bar graphs using grids.
Patterns, Functions, and Algebra	
2.25 The student will identify, create, and extend a wide variety of patterns, using numbers, concrete objects, and pictures.	Algebra: Organize, display, and interpret information in picture graphs and bar graphs using grids. Use patterns to continue numerical sequences; identify the rule.
2.26 The student will solve problems by completing a numerical sentence involving the basic facts for addition and subtraction. Examples include: $3 + \underline{\quad} = 7$, or $9 - \underline{\quad} = 2$. Students will create story problems, using the numerical sentences.	The opportunity to meet this objective is available. For example, see: Algebra: Write addition and subtraction sentences to represent a word problem. Number & Operations: Use addition and subtraction facts to 18. Identify missing addends for addition facts to 18.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 3**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
Number and Number Sense	
3.1 The student will read and write six-digit numerals and identify the place value for each digit.	Number & Operations: Use place value with hundreds. Read and write word names for numbers from 1,000 to 9,999. Compare and order numbers less than 10,000. Read, write, and compare whole numbers from 10,000 to less than one million using standard and expanded notation. Identify the place value of each digit in a multi-digit numeral to the thousandths place. Use place value with thousands.
3.2 The student will round a whole number, 9,999 or less, to the nearest ten, hundred, and thousand.	Number & Operations: Round whole numbers to a given place value.
3.3 The student will compare two whole numbers between 0 and 9,999, using symbols (>, <, or =) and words (<i>greater than, less than, or equal to</i>).	Number & Operations: Compare and order sets and numerals up to 100, including using symbol notation (>, <, =). Compare and order numbers less than 10,000.
3.4 The student will recognize and use the inverse relationships between addition/subtraction and multiplication/division to complete basic fact sentences. Students will use these relationships to solve problems such as $5 + 3 = 8$ and $8 - 3 = \underline{\quad}$.	Number & Operations: Identify missing or extraneous data in problem-solving situations.
3.5 The student will a) divide regions and sets to represent a fraction; and b) name and write the fractions represented by a given model (area/region, length/measurement, and set). Fractions (including mixed numbers) will include halves, thirds, fourths, eighths, and tenths.	(a) Number & Operations: Represent fractions concretely and symbolically. Find the fractional part of a whole number with and without models and pictures. (b) Number & Operations: Represent fractions concretely and symbolically. Find the fractional part of a whole number with and without models and pictures.
3.6 The student will compare the numerical value of two fractions having like and unlike denominators, using concrete or pictorial models involving areas/regions, lengths/measurements, and sets.	Number & Operations: Represent fractions concretely and symbolically. Use benchmark numbers (zero, one-half, one) and models to compare and order fractions. Model and identify mixed numbers and their equivalent improper fractions.
Computation and Estimation	
3.9 The student will recall the multiplication and division facts through the nines table.	Number & Operations: Use multiplication facts through 144. Know and use division facts related to multiplication facts through 144.
3.10 The student will represent multiplication and division, using area and set models, and create and solve problems that involve multiplication of two whole numbers, one factor 99 or less and the second factor 5 or less.	Number & Operations: Model multiplication in a variety of ways including repeated addition, rectangular arrays, and skip counting. Model division in a variety of ways including sharing equally, repeated subtraction, rectangular arrays, and the relationship with multiplication. Multiply 2- and 3-digit whole numbers by a 1-digit whole number or a 2-digit multiple of 10. Divide using single-digit divisors with and without remainders.
3.11 The student will add and subtract with proper fractions having like denominators of 10 or less, using concrete materials and	The opportunity to meet this objective is available. For example, see: Number & Operations: Add and subtract fractions with like

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 3**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
pictorial models representing areas/regions, lengths/measurements, and sets.	denominators.
3.12 The student will add and subtract with decimals expressed as tenths, using concrete materials, pictorial representations, and paper and pencil.	Number & Operations: Estimate and compute sums and differences with decimal numbers.
Measurement	
3.13 The student will determine by counting the value of a collection of bills and coins whose total value is \$5.00 or less, compare the value of the coins or bills, and make change.	Measurement: Determine the value of sets of coins and bills. Create equivalent amounts with different coins and bills. Estimate and compute the cost of items greater than \$1.00; make change.
3.14 The student will estimate and then use actual measuring devices with metric and U.S. Customary units to measure a) length—inches, feet, yards, centimeters, and meters; b) liquid volume—cups, pints, quarts, gallons, and liters; and c) weight/mass—ounces, pounds, grams, and kilograms.	(a) Measurement: Estimate, measure, and compare length using appropriate tools and units. (b) Measurement: Estimate, measure, and compare capacity using appropriate tools and units. (c) Measurement: Estimate, measure, and compare weight using appropriate tools and units.
3.15 The student will tell time to the nearest five-minute interval and to the nearest minute, using analog and digital clocks.	Measurement: Tell time at the five-minute intervals.
3.17 The student will read temperature to the nearest degree from a Celsius thermometer and a Fahrenheit thermometer. Real thermometers and physical models of thermometers will be used.	Measurement: Read thermometers in increments of 1s, 2s, and 5s. Relate temperatures to everyday situations.
Geometry	
3.18 The student will analyze two-dimensional (plane) and three-dimensional (solid) geometric figures (circle, square, rectangle, triangle, cube, rectangular solid [prism], square pyramid, sphere, cone, and cylinder) and identify relevant properties, including the number of corners, square corners, edges, and the number and shape of faces, using concrete models.	Geometry: Use manipulatives, pictorial representations, and appropriate vocabulary (e.g., polygon, side, angle, vertex, diameter) to identify and compare properties of plane figures. Use manipulatives, pictorial representations, and appropriate vocabulary (e.g., face, edge, vertex, and base) to identify and compare properties of solid figures.
3.20 The student, given appropriate drawings or models, will identify and describe congruent and symmetrical, two-dimensional (plane) figures, using tracing procedures.	Geometry: Identify and make figures with line symmetry. Identify and make congruent figures.
Probability and Statistics	
3.21 The student, given grid paper, will	(a) The opportunity to meet this objective is available. For

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Mathematics Standards of Learning for Virginia Public Schools
Grade 3**

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<p>a) collect and organize data on a given topic of his/her choice, using observations, measurements, surveys, or experiments; and</p> <p>b) construct a line plot, a picture graph, or a bar graph to represent the results. Each graph will include an appropriate title and key.</p>	<p>example, see:</p> <p>Data Analysis & Probability: Organize, display, and interpret information in line plots and tally charts. Organize, display, and interpret information in bar graphs. Organize, display, and interpret information in tables and graphs (frequency tables, pictographs, and line plots).</p> <p>(b) Data Analysis & Probability: Organize, display, and interpret information in line plots and tally charts. Organize, display, and interpret information in bar graphs. Organize, display, and interpret information in tables and graphs (frequency tables, pictographs, and line plots).</p>
3.22 The student will read and interpret data represented in line plots, bar graphs, and picture graphs and write a sentence analyzing the data.	Data Analysis & Probability: Organize, display, and interpret information in line plots and tally charts. Organize, display, and interpret information in bar graphs. Organize, display, and interpret information in tables and graphs (frequency tables, pictographs, and line plots).
3.23 The student will investigate and describe the concept of probability as chance and list possible results of a given situation.	Data Analysis & Probability: Describe the probability of chance events as certain, impossible, more likely, less likely, or equally likely to occur.
Patterns, Functions, and Algebra	
3.24 The student will recognize and describe a variety of patterns formed using concrete objects, numbers, tables, and pictures, and extend the pattern, using the same or different forms (concrete objects, numbers, tables, and pictures).	Algebra: Identify, continue, and describe rules for repeating patterns. Use patterns to continue numerical sequences; identify the rule. Describe and demonstrate patterns in skip counting and multiplication; continue sequences beyond memorized or modeled numbers. Extend patterns that are generated from multiple rules. Solve problems using patterns.
3.25 The student will	(a) Algebra: Identify, continue, and describe rules for repeating patterns. Use patterns to continue numerical sequences; identify the rule. Describe and demonstrate patterns in skip counting and multiplication; continue sequences beyond memorized or modeled numbers. Extend patterns that are generated from multiple rules. Solve problems using patterns.
a) investigate and create patterns involving numbers, operations (addition and multiplication), and relations that model the identity and commutative properties for addition and multiplication; and	Number & Operations: Use the commutative and associative properties to simplify numerical expressions.
b) demonstrate an understanding of equality by recognizing that the equal sign (=) links equivalent quantities, such as $4 \cdot 3 = 2 \cdot 6$.	(b) The opportunity to meet this objective is available. For example, see: Algebra: Write addition and subtraction sentences to represent a word problem. Write multiplications and division sentences to represent a problem.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 4**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
Number and Number Sense	
<p>4.1 The student will</p> <p>a) identify (orally and in writing) the place value for each digit in a whole number expressed through millions;</p> <p>b) compare two whole numbers expressed through millions, using symbols ($>$, $<$, or $=$); and</p> <p>c) round whole numbers expressed through millions to the nearest thousand, ten thousand, and hundred thousand.</p>	<p>(a) Number & Operations: Identify the place value of each digit in a multi-digit numeral to the thousandths place. Use place value with thousands.</p> <p>(b) Number & Operations: Read, write, and compare whole numbers from 10,000 to less than one million using standard and expanded notation.</p> <p>(c) Number & Operations: Round rational numbers to a whole number or a given fractional place value.</p>
<p>4.2 The student will</p> <p>a) identify, model, and compare rational numbers (fractions and mixed numbers), using concrete objects and pictures;</p> <p>b) represent equivalent fractions; and</p> <p>c) relate fractions to decimals, using concrete objects.</p>	<p>(a) Number & Operations: Represent fractions concretely and symbolically. Model and identify mixed numbers and their equivalent improper fractions.</p> <p>(b) Number & Operations: Represent fractions concretely and symbolically. Use models to write equivalent fractions, especially relationships among halves, fourths, and eighths, and thirds and sixths. Model and identify mixed numbers and their equivalent improper fractions. Write and simplify equivalent fractions.</p> <p>(c) Number & Operations: Compare decimals to fractions (tenths and hundredths) with and without models and pictures.</p>
<p>4.3 The student will compare the numerical value of fractions (with like and unlike denominators) having denominators of 12 or less, using concrete materials.</p>	<p>Number & Operations: Compare decimals to fractions (tenths and hundredths) with and without models and pictures.</p>
<p>4.4 The student will</p> <p>a) read, write, represent, and identify decimals expressed through thousandths;</p> <p>b) round to the nearest whole number, tenth, and hundredth; and</p> <p>c) compare the value of two decimals, using symbols ($<$, $>$, or $=$), concrete materials, drawings, and calculators.</p>	<p>(a) Number & Operations: Read and write word names for rational numbers in decimal form to the hundredths place.</p> <p>(b) Number & Operations: Round rational numbers to a whole number or a given fractional place value.</p> <p>(c) Number & Operations: Read, write, and compare numbers with decimal place values to the thousandths place or numbers greater than one million. Compare rational numbers in decimal form (tenths and hundredths) with and without models.</p>
Computation and Estimation	
<p>4.5 The student will estimate whole-number sums and differences and describe the method of estimation. Students will refine estimates, using terms such as <i>closer to</i>, <i>between</i>, and <i>a little more than</i>.</p>	<p>Number & Operations: Apply appropriate type of estimation for sums and differences.</p>
<p>4.7 The student will find the product of two whole numbers when one factor has two digits or fewer and the other factor has three digits or fewer, using estimation and paper and pencil. For larger products (a two-digit numeral times a three-digit numeral), estimation and calculators will be</p>	<p>Number & Operations: Multiply 2- and 3-digit whole numbers by a 1-digit whole number or a 2-digit multiple of 10. Estimate and compute products of whole numbers with 2- or 3-digit factors.</p>

**Scholastic Math Inventory Correlated to the
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Grade 4**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
used.	
4.8 The student will estimate and find the quotient of two whole numbers, given a one-digit divisor.	Number & Operations: Estimate and solve division problems with 2- and 3-digit divisors; explain solution.
4.9 The student will a) add and subtract with fractions having like and unlike denominators of 12 or less, using concrete materials, pictorial representations, and paper and pencil; b) add and subtract with decimals through thousandths, using concrete materials, pictorial representations, and paper and pencil; and c) solve problems involving addition and subtraction with fractions having like and unlike denominators of 12 or less and with decimals expressed through thousandths, using various computational methods, including calculators, paper and pencil, mental computation, and estimation.	(a) The opportunity to meet this objective is available. For example, see: Number & Operations: Add and subtract fractions with like denominators. (b) The opportunity to meet this objective is available. For example, see: Number & Operations: Estimate and compute sums and differences with decimal numbers. (c) The opportunity to meet this objective is available. For example, see: Number & Operations: Add and subtract fractions with like denominators. Estimate and compute sums and differences with decimal numbers.
Measurement	
4.10 The student will a) estimate and measure weight/mass, using actual measuring devices, and describe the results in U.S. Customary/metric units as appropriate, including ounces, pounds, grams, and kilograms; b) identify equivalent measurements between units within the U.S. Customary system (ounces and pounds) and between units within the metric system (grams and kilograms); and c) estimate the conversion of ounces and grams and pounds and kilograms, using approximate comparisons (1 ounce is about 28 grams, or 1 gram is about the weight of a paper clip; 1 kilogram is a little more than 2 pounds). * <i>* The intent of this standard is for students to make ballpark comparisons and not to memorize conversion factors between U.S. Customary and metric units.</i>	(a) Measurement: Estimate, measure, and compare weight using appropriate tools and units.
4.11 The student will a) estimate and measure length, using actual measuring devices, and describe the results in both metric and U.S. Customary units, including part of an inch (1/2, 1/4, and 1/8), inches, feet, yards,	(a) Measurement: Estimate, measure, and compare length using appropriate tools and units. (b) Measurement: Convert measures of length, area, capacity, weight, and time expressed in a given unit to other units in the same measurement system.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 4**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
<p>millimeters, centimeters, and meters; b) identify equivalent measurements between units within the U.S. Customary system (inches and feet; feet and yards; inches and yards) and between units within the metric system (millimeters and centimeters; centimeters and meters; and millimeters and meters); and c) estimate the conversion of inches and centimeters, yards and meters, and miles and kilometers, using approximate comparisons (1 inch is about 2.5 centimeters, 1 meter is a little longer than 1 yard, 1 mile is slightly farther than 1.5 kilometers, or 1 kilometer is slightly farther than half a mile). *</p> <p><i>* The intent of this standard is for students to make ballpark comparisons and not to memorize conversion factors between U.S. Customary and metric units.</i></p>	
<p>4.12 The student will a) estimate and measure liquid volume, using actual measuring devices and using metric and U.S. Customary units, including cups, pints, quarts, gallons, milliliters, and liters; b) identify equivalent measurements between units within the U.S. Customary system (cups, pints, quarts, and gallons) and between units within the metric system (milliliters and liters); and c) estimate the conversion of quarts and liters, using approximate comparisons (1 quart is a little less than 1 liter, 1 liter is a little more than 1 quart).*</p> <p><i>* The intent of this standard is for students to make ballpark comparisons and not to memorize conversion factors between U. S. Customary and metric unit</i></p>	<p>(a) Measurement: Estimate, measure, and compare weight using appropriate tools and units.</p> <p>(b) Measurement: Convert measures of length, area, capacity, weight, and time expressed in a given unit to other units in the same measurement system.</p>
<p>4.13 The student will a) identify and describe situations representing the use of perimeter and area; and b) use measuring devices to find perimeter in both standard and nonstandard units of measure.</p>	<p>(b) Measurement: Determine perimeter using concrete models, nonstandard units, and standard units.</p>
Geometry	
<p>4.14 The student will investigate and describe the relationships between and among points, lines, line segments, and rays.</p>	<p>Geometry: Identify and name: points, rays, line segments, lines, and planes.</p>

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 4**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
4.15 The student will a) identify and draw representations of points, lines, line segments, rays, and angles, using a straightedge or ruler; and b) describe the path of shortest distance between two points on a flat surface.	(a) The opportunity to meet this objective is available. For example, see: Geometry: Identify and name: points, rays, line segments, lines, and planes. Identify angles (acute, right, obtuse, and straight).
4.16 The student will identify and draw representations of lines that illustrate intersection, parallelism, and perpendicularity.	Geometry: Identify intersecting, parallel, skew, and perpendicular lines and line segments. Identify midpoints of line segments.
4.17 The student will a) analyze and compare the properties of two-dimensional (plane) geometric figures (circle, square, rectangle, triangle, parallelogram, and rhombus) and three-dimensional (solid) geometric figures (sphere, cube, and rectangular solid [prism]); b) identify congruent and noncongruent shapes; and c) investigate congruence of plane figures after geometric transformations such as reflection (flip), translation (slide) and rotation (turn), using mirrors, paper folding, and tracing.	(a) Geometry: Use manipulatives, pictorial representations, and appropriate vocabulary (e.g., polygon, side, angle, vertex, diameter) to identify and compare properties of plane figures. Use manipulatives, pictorial representations, and appropriate vocabulary (e.g., face, edge, vertex, and base) to identify and compare properties of solid figures.
4.18 The student will identify the ordered pair for a point and locate the point for an ordered pair in the first quadrant of a coordinate plane.	Data Analysis & Probability: Locate a point in Quadrant I of a coordinate grid given an ordered pair; name the ordered pair for a point in Quadrant I of a coordinate grid.
Probability and Statistics	
4.19 The student will a) predict the likelihood of outcomes of a simple event, using the terms <i>certain</i> , <i>likely</i> , <i>unlikely</i> , <i>impossible</i> ; and b) determine the probability of a given simple event, using concrete materials.	(b) The opportunity to meet this objective is available. For example, see: Data Analysis & Probability: Describe the probability of an event using a fraction or ratio. Determine the number of possible outcomes of a given situation and list the possibilities.
4.20 The student will collect, organize, and display data in line and bar graphs with scale increments of one or greater than one and use the display to interpret the results, draw conclusions, and make predictions.	Data Analysis & Probability: Organize, display, and interpret information in graphs containing scales that represent multiple units. Organize, display, and interpret information in tables and graphs (frequency tables, pictographs, and line plots).
Patterns, Functions, and Algebra	
4.21 The student will recognize, create, and extend numerical and geometric patterns, using concrete materials, number lines, symbols, tables, and words.	The opportunity to meet this objective is available. For example, see: Algebra: Describe and demonstrate patterns in skip counting and multiplication; continue sequences beyond memorized or modeled numbers.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 5**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
Number and Number Sense	
5.1 The student will a) read, write, and identify the place values of decimals through thousandths; b) round decimal numbers to the nearest tenth or hundredth; and c) compare the values of two decimals through thousandths, using the symbols $>$, $<$, or $=$.	(a) Number & Operations: Identify the place value of each digit in a multi-digit numeral to the thousandths place. (c) Number & Operations: Read, write, and compare numbers with decimal place values to the thousandths place or numbers greater than one million.
5.2 The student will a) recognize and name commonly used fractions (halves, fourths, fifths, eighths, and tenths) in their equivalent decimal form and vice versa; and b) order a given set of fractions and decimals from least to greatest. Fractions will include like and unlike denominators limited to 12 or less, and mixed numbers.	(a) Number & Operations: Identify equivalent decimals and fractions at the symbolic level, including simplifying fractions. Explain the equivalence.
Computation and Estimation	
5.4 The student will find the sum, difference, and product of two numbers expressed as decimals through thousandths, using an appropriate method of calculation, including paper and pencil, estimation, mental computation, and calculators.	Number & Operations: Estimate and compute sums and differences with decimal numbers. Multiply or divide two decimals or a decimal and a whole number.
5.6 The student, given a dividend expressed as a decimal through thousandths and a single-digit divisor, will find the quotient.	Number & Operations: Multiply or divide two decimals or a decimal and a whole number.
5.7 The student will add and subtract with fractions and mixed numbers, with and without regrouping, and express answers in simplest form. Problems will include like and unlike denominators limited to 12 or less.	Number & Operations: Add and subtract fractions with like denominators. Add and subtract fractions and mixed numbers with unlike denominators.
Measurement	
5.8 The student will describe and determine the perimeter of a polygon and the area of a square, rectangle, and right triangle, given the appropriate measures.	Measurement: Determine perimeter using concrete models, nonstandard units, and standard units. Use grids to develop the relationship between the total numbers of square units in a rectangle and the length and width of the rectangle ($l \times w$). Determine the area of rectangles, squares, and composite figures using nonstandard units, grids, and standard units.
5.11 The student will choose an appropriate measuring device and unit of measure to solve problems involving measurement of a) length—part of an inch ($1/2$, $1/4$, and $1/8$), inches, feet, yards, miles, millimeters,	(a) Measurement: Estimate, measure, and compare length using appropriate tools and units. (b) Measurement: Estimate, measure, and compare weight using appropriate tools and units.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 5**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
centimeters, meters, and kilometers; b) weight/mass—ounces, pounds, tons, grams, and kilograms; c) liquid volume—cups, pints, quarts, gallons, milliliters, and liters; d) area—square units; and e) temperature—Celsius and Fahrenheit units. Problems also will include estimating the conversion of Celsius and Fahrenheit units relative to familiar situations (water freezes at 0°C and 32°F, water boils at 100°C and 212°F, normal body temperature is about 37°C and 98.6°F).	(c) Measurement: Estimate, measure, and compare capacity using appropriate tools and units. (d) Measurement: Estimate, measure, and compare capacity using appropriate tools and units.
5.12 The student will determine an amount of elapsed time in hours and minutes within a 24-hour period.	Measurement: Solve problems involving elapsed time.
5.13 The student will measure and draw right, acute, and obtuse angles and triangles, using appropriate tools.	Measurement: Draw and measure angles using a protractor. Understand that a circle measures 360 degrees.
Geometry	
5.14 The student will classify angles and triangles as right, acute, or obtuse.	Geometry: Identify angles (acute, right, obtuse, and straight).
5.15 The student, using two-dimensional (plane) figures (square, rectangle, triangle, parallelogram, rhombus, kite, and trapezoid) will a) recognize, identify, describe, and analyze their properties in order to develop definitions of these figures; b) identify and explore congruent, noncongruent, and similar figures; c) investigate and describe the results of combining and subdividing shapes; d) identify and describe a line of symmetry; and e) recognize the images of figures resulting from geometric transformations such as translation (slide), reflection (flip), or rotation (turn).	(a) Geometry: Use manipulatives, pictorial representations, and appropriate vocabulary (e.g., polygon, side, angle, vertex, diameter) to identify and compare properties of plane figures. (d) Geometry: Classify plane figures according to type of symmetry (line, rotational) (e) Geometry: Use models to illustrate or recognize reflections, rotations, and translations of plane figures.
5.16 The student will identify, compare, and analyze properties of three-dimensional (solid) geometric shapes (cylinder, cone, cube, square pyramid, and rectangular prism).	Geometry: Use manipulatives, pictorial representations, and appropriate vocabulary (e.g., face, edge, vertex, and base) to identify and compare properties of solid figures.
Probability and Statistics	
5.17 The student will a) solve problems involving the probability of a single event by using tree diagrams or by constructing a sample space	(a) Data & Analysis: Determine the sample space for an event using counting strategies (include tree diagrams, permutations, combinations, and the Fundamental Counting Principle).

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 5**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
<p>representing all possible results; b) predict the probability of outcomes of simple experiments, representing it with fractions or decimals from 0 to 1, and test the prediction; and c) create a problem statement involving probability and based on information from a given problem situation. Students will not be required to solve the created problem statement.</p>	<p>(b) Data & Analysis: Describe the probability of an event using a fraction or ratio.</p>
<p>5.18 The student will, given a problem situation, collect, organize, and display a set of numerical data in a variety of forms, using bar graphs, stem-and-leaf plots, and line graphs, to draw conclusions and make predictions.</p>	<p>Data & Analysis: Organize, display, and interpret information in bar graphs. Organize, display, and interpret information in tables and graphs (frequency tables, pictographs, and line plots). Organize, display, and interpret information in line graphs. Organize, display, and interpret information in stem-and-leaf plots.</p>
<p>5.19 The student will find the mean, median, mode, and range of a set of data.</p>	<p>Data & Analysis: Describe data using the mode. Describe data using the median. Describe data using the range.</p>
<p>Patterns, Functions, and Algebra</p>	
<p>5.21 The student will a) investigate and describe the concept of variable; b) use a variable expression to represent a given verbal quantitative expression involving one operation ; and c) write an open sentence to represent a given mathematical relationship, using a variable.</p>	<p>(a) The opportunity to meet this objective is available. For example, see: Algebra: Translate between models or verbal phrases and algebraic expressions.</p> <p>(b) The opportunity to meet this objective is available. For example, see: Algebra: Translate between models or verbal phrases and algebraic expressions.</p> <p>(c) The opportunity to meet this objective is available. For example, see: Algebra: Translate between models or verbal phrases and algebraic expressions.</p>

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 6**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
Number and Number Sense	
6.1 The student will identify representations of a given percent and describe orally and in writing the equivalence relationships among fractions, decimals, and percents.	Number & Operations: Relate a percent to its equivalent fraction or decimal.
6.2 The student will describe and compare two sets of data, using ratios, and will use appropriate notations, such as a/b , a to b , and $a:b$.	Number & Operations: Write a ratio to compare two quantities.
6.3 The student will a) find common multiples and factors, including least common multiple and greatest common factor; b) identify and describe prime and composite numbers; and c) identify and describe the characteristics of even and odd integers.	(a) Number & Operations: Find multiples, common multiples, and the least common multiple of numbers; explain. Find factors, common factors, and the greatest common factor of numbers; explain. (b) Number & Operations: Identify prime and composite numbers less than 100. (c) Number & Operations:
6.5 The student will identify, represent, order, and compare integers.	Number & Operations: Compare and order integers.
Computation and Estimation	
6.6 The student will solve problems that involve addition, subtraction, multiplication, and/or division with fractions and mixed numbers, with and without regrouping, that include like and unlike denominators of 12 or less, and express their answers in simplest form; and find the quotient, given a dividend expressed as a decimal through thousandths and a divisor expressed as a decimal to thousandths with exactly one non-zero digit.	Number & Operations: Add and subtract fractions with like denominators. Multiply two fractions or a fraction and a whole number. Divide two fractions or a fraction and a whole number. Add and subtract fractions and mixed numbers with unlike denominators. Multiply or divide two decimals or a decimal and a whole number. Multiply or divide with mixed numbers.
Measurement	
6.9 The student will compare and convert units of measure for length, area, weight/mass, and volume within the U.S. Customary system and the metric system and estimate conversions between units in each system: a) length—part of an inch ($1/2$, $1/4$, and $1/8$), inches, feet, yards, miles, millimeters, centimeters, meters, and kilometers; b) weight/mass—ounces, pounds, tons, grams, and kilograms; c) liquid volume—cups, pints, quarts, gallons, milliliters, and liters; and d) area—square units. * * <i>The intent of this standard is for students to make ballpark comparisons and not to</i>	(a) Measurement: Estimate, measure, and compare length using appropriate tools and units. Estimate the measure of an object in one system given the measure of that object in another system. (b) Measurement: Estimate, measure, and compare weight using appropriate tools and units. Estimate the measure of an object in one system given the measure of that object in another system. (c) Measurement: Estimate, measure, and compare capacity using appropriate tools and units. Estimate the measure of an object in one system given the measure of that object in another system.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 6**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
<i>memorize conversion factors between U.S. Customary and metric units.</i>	
6.10 The student will estimate and then determine length, weight/mass, area, and liquid volume/capacity, using standard and nonstandard units of measure.	Measurement: Estimate, measure, and compare length using appropriate tools and units. Estimate, measure, and compare weight using appropriate tools and units. Estimate, measure, and compare capacity using appropriate tools and units.
6.11 The student will determine if a problem situation involving polygons of four or fewer sides represents the application of perimeter or area and apply the appropriate formula.	Measurement: Calculate the areas of triangles, parallelograms, trapezoids, circles and composite figures. Use models to find volume for prisms and cylinders as the product of the area of the base (B) and the height. Calculate the volume of prisms.
6.12 The student will a) solve problems involving the circumference and/or area of a circle when given the diameter or radius; and b) derive approximations for pi (π) from measurements for circumference and diameter, using concrete materials or computer models.	(a) The opportunity to meet this objective is available. For example, see: Measurement: Investigate and determine the relationship between the diameter and the circumference of a circle and the value of pi; calculate the circumference of a circle. (b) Measurement: Investigate and determine the relationship between the diameter and the circumference of a circle and the value of pi; calculate the circumference of a circle.
6.13 The student will a) estimate angle measures, using 45° , 90° , and 180° as referents, and use the appropriate tools to measure the given angles; and b) measure and draw right, acute, and obtuse angles and triangles.	(a) The opportunity to meet this objective is available. For example, see: Measurement: Draw and measure angles using a protractor. Understand that a circle measures 360 degrees. (b) Measurement: Draw and measure angles using a protractor. Understand that a circle measures 360 degrees.
Geometry	
6.14 The student will identify, classify, and describe the characteristics of plane figures, describing their similarities, differences, and defining properties.	Geometry: Use manipulatives, pictorial representations, and appropriate vocabulary (e.g., polygon, side, angle, vertex, diameter) to identify and compare properties of plane figures,
6.15 The student will determine congruence of segments, angles, and polygons by direct comparison, given their attributes. Examples of noncongruent and congruent figures will be included.	Geometry: Identify corresponding parts of similar and congruent figures.
6.17 The student will sketch, construct models of, and classify solid figures (rectangular prism, cone, cylinder, and pyramid).	Geometry: Use manipulatives, pictorial representations, and appropriate vocabulary (e.g., face, edge, vertex, and base) to identify and compare properties of solid figures.
Probability and Statistics	
6.18 The student, given a problem situation, will collect, analyze, display, and interpret data in a variety of graphical methods, including a) line, bar, and circle graphs; b) stem-and-leaf plots; and c) box-and-whisker plots. Circle graphs will be limited to halves,	(a) Data Analysis & Probability: Organize, display, and interpret information in bar graphs. Organize, display, and interpret information in line graphs. Organize, display, and interpret information in circle graphs using ratios and percents. (b) Data Analysis & Probability: Organize, display, and interpret information in stem-and-leaf plots.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 6**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
fourths, and eighths.	
6.19 The student will describe the mean, median, and mode as measures of central tendency, describe the range, and determine their meaning for a set of data.	Data Analysis & Probability: Describe data using the mode. Describe data using the median. Describe data using the mean. Describe data using the range.
6.20 The student will a) make a sample space for selected experiments and represent it in the form of a list, chart, picture, or tree diagram; and b) determine and interpret the probability of an event occurring from a given sample space and represent the probability as a ratio, decimal or percent, as appropriate for the given situation.	(a) Data Analysis & Probability: Determine the sample space for an event using counting strategies (include tree diagrams, permutations, combinations, and the Fundamental Counting Principle). (b) Data Analysis & Probability: Determine odds given an event or a probability.
Patterns, Functions, and Algebra	
6.21 The student will investigate, describe, and extend numerical and geometric patterns, including triangular numbers, patterns formed by powers of 10, and arithmetic sequences.	Algebra: Describe, extend, and analyze a wide variety of geometric and numerical patterns, such as Pascal's triangle or the Fibonacci sequence.
6.23 The student will a) model and solve algebraic equations, using concrete materials; b) solve one-step linear equations in one variable, involving whole number coefficients and positive rational solutions; and c) use the following algebraic terms appropriately: <i>variable, coefficient, term, and equation</i> .	(a) Algebra: Translate between models or verbal phrases and algebraic expressions. (b) Algebra: Solve one-step linear equations and inequalities and graph solutions of the inequalities on a number line.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 7**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
Number and Number Sense	
7.1 The student will compare, order, and determine equivalent relationships between fractions, decimals, and percents, including use of scientific notation for numbers greater than 10.	Number & Operations: Compare and order fractions using renaming strategies. Relate a percent to its equivalent fraction or decimal. Compare and order integers. Write whole numbers in scientific notation; convert scientific notation to standard form; investigate the uses of scientific notation. Compare and order rational numbers.
7.2 The student will simplify expressions that contain rational numbers (whole numbers, fractions, and decimals) and positive exponents, using order of operations, mental mathematics, and appropriate tools.	Number & Operations: Use exponential notation and repeated multiplication to describe and simplify exponential expressions. Simplify numerical expressions that may contain exponents.
7.3 The student will identify and apply the following properties of operations with real numbers: a) the commutative and associative properties for addition and multiplication; b) the distributive property; c) the additive and multiplicative identity properties; d) the additive and multiplicative inverse properties; and e) the multiplicative property of zero.	(a) Number & Operations: Use the commutative and associative properties to simplify numerical expressions. (b) Number & Operations: Use the distributive property to simplify numerical expressions. (c) Number & Operations: Use the identity properties for addition and multiplication. (d) Number & Operations: Identify additive inverses (opposites) and multiplicative inverses (reciprocals, including zero).
Computation and Estimation	
7.4 The student will a) solve practical problems using rational numbers (whole numbers, fractions, decimals) and percents; and b) solve consumer–application problems involving tips, discounts, sales tax, and simple interest.	(a) The opportunity to meet this objective is available. For example, see: Number & Operations: Divide two fractions or a fraction and a whole number. Add and subtract fractions and mixed numbers with unlike denominators. Model or compute with integers using addition or subtraction. Model or compute with integers using multiplication or division. Solve problems involving percent increase and percent decrease. Multiply or divide two decimals or a decimal and a whole number. Compute with rational numbers (positive and negative). (b) Number & Operations: Calculate or estimate the percent of a number including discounts, taxes, commissions, and simple interest.
7.5 The student will formulate rules for and solve practical problems involving basic operations (addition, subtraction, multiplication, and division) with integers.	The opportunity to meet this objective is available. For example, see: Number & Operations: Model or compute with integers using addition or subtraction. Model or compute with integers using multiplication or division.
7.6 The student will use proportions to solve practical problems, which may include scale drawings, that contain rational numbers (whole numbers, fractions, and decimals), and percents.	Number & Operations: Write a proportion to model a word problem; solve proportions. Use proportional reasoning to solve problems.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 7**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
Measurement	
7.7 The student, given appropriate dimensions, will a) estimate and find the area of polygons by subdividing them into rectangles and right triangles; and b) apply perimeter and area formulas in practical situations.	(a) The opportunity to meet this objective is available. For example, see: Measurement: Determine the area of rectangles, squares, and composite figures using nonstandard units, grids, and standard units. (b) Measurement: Calculate the areas of triangles, parallelograms, trapezoids, circles and composite figures.
7.8 The student will investigate and solve problems involving the volume and surface area of rectangular prisms and cylinders, using concrete materials and practical situations to develop formulas.	Measurement: Use models to find volume for prisms and cylinders as the product of the area of the base (B) and the height. Calculate the volume of prisms. Use nets or formulas to find the surface area of prisms and cylinders. Calculate the volume of cylinders, pyramids, and cones.
Geometry	
7.9 The student will compare and contrast the following quadrilaterals: parallelogram, rectangle, square, rhombus, and trapezoid. Deductive reasoning and inference will be used to classify quadrilaterals.	Geometry: Use manipulatives, pictorial representations, and appropriate vocabulary (e.g., face, edge, vertex, and base) to identify and compare properties of solid figures. Use a variety of triangles, quadrilaterals, and other polygons to draw conclusions about the sum of the measures of the interior angles.
7.10 The student will identify and draw the following polygons: pentagon, hexagon, heptagon, octagon, nonagon, and decagon.	Geometry: Name polygons by the number of sides. Distinguish quadrilaterals based on properties of their sides or angles.
7.11 The student will determine if geometric figures – quadrilaterals or triangles – are similar and write proportions to express the relationships between corresponding parts of similar figures.	Geometry: Identify corresponding parts of similar and congruent figures. Use proportional reasoning to solve problems related to similar and congruent polygons.
7.12 The student will identify and graph ordered pairs in the four quadrants of a coordinate plane.	Data Analysis & Probability: Locate points in all quadrants of the coordinate plane using ordered pairs.
7.13 The student, given a polygon in the coordinate plane, will represent transformations – rotation and translation – by graphing the coordinates of the vertices of the transformed polygon and sketching the resulting figure.	Geometry: Locate, given the coordinates of, and graph plane figures which are the results of translations or reflections in all quadrants of the coordinate plane.
Probability and Statistics	
7.14 The student will investigate and describe the difference between the probability of an event found through simulation versus the theoretical probability of that same event.	The opportunity to meet this objective is available. For example, see: Data Analysis & Probability: Determine the probability from experimental results or compare theoretical probabilities and experimental results.
7.15 The student will identify and describe the number of possible arrangements of several objects, using a tree diagram or the Fundamental (Basic) Counting Principle.	Data Analysis & Probability: Determine the sample space for an event using counting strategies (include tree diagrams, permutations, combinations, and the Fundamental Counting Principle).
7.16 The student will create and solve	The opportunity to meet this objective is available. For example,

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 7**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
problems involving the measures of central tendency (mean, median, mode) and the range of a set of data.	see: Data Analysis & Probability: Describe data using the mode. Describe data using the median. Describe data using the mean. Describe data using the range. Describe data using or selecting the appropriate measure of central tendency.
7.17 The student, given a problem situation, will collect, analyze, display, and interpret data, using a variety of graphical methods, including a) frequency distributions; b) line plots; c) histograms; d) stem-and-leaf plots; e) box-and-whisker plots; and f) scattergrams.	(a) Data Analysis & Probability: Organize, display, and interpret information in tables and graphs (frequency tables, pictographs, and line plots). (b) Data Analysis & Probability: Organize, display, and interpret information in tables and graphs (frequency tables, pictographs, and line plots). (c) Data Analysis & Probability: Organize, display, and interpret information in histograms. (d) Data Analysis & Probability: Organize, display, and interpret information in stem-and-leaf plots.
7.18 The student will make inferences, conjectures, and predictions based on analysis of a set of data.	The opportunity to meet this objective is available. For example, see: Data Analysis & Probability: Organize, display, and interpret information in bar graphs. Organize, display, and interpret information in tables and graphs (frequency tables, pictographs, and line plots). Organize, display, and interpret information in line graphs. Organize, display, and interpret information in stem-and-leaf plots. Organize, display, and interpret multiple sets of information in the same graph including multiple bar, multiple stem-and-leaf, and multiple line graphs.
Patterns, Functions, and Algebra	
7.19 The student will represent, analyze, and generalize a variety of patterns, including arithmetic sequences and geometric sequences, with tables, graphs, rules, and words in order to investigate and describe functional relationships	Algebra: Describe, extend, and analyze a wide variety of geometric and numerical patterns, such as Pascal's triangle or the Fibonacci sequence.
7.20 The student will write verbal expressions as algebraic expressions and sentences as equations.	Algebra: Translate between models or verbal phrases and algebraic expressions. Describe the algebraic relationship between two defined variables in a verbal expression. Write or model a linear equation or inequality to solve a given problem.
7.21 The student will use the following algebraic terms appropriately: <i>equation</i> , <i>inequality</i> , and <i>expression</i> .	
7.22 The student will a) solve one-step linear equations and inequalities in one variable with strategies involving inverse operations and integers, using concrete materials, pictorial representations, and paper and pencil; and b) solve practical problems requiring the solution of a one-step linear equation.	(a) Algebra: Solve one-step linear equations and inequalities and graph solutions of the inequalities on a number line. (b) Algebra: Solve one-step linear equations and inequalities and graph solutions of the inequalities on a number line.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 8**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
Number and Number Sense	
8.1 The student will a) simplify numerical expressions involving positive exponents, using rational numbers, order of operations, and properties of operations with real numbers; b) recognize, represent, compare, and order numbers expressed in scientific notation; and c) compare and order decimals, fractions, percents, and numbers written in scientific notation.	(a) Number & Operations: Use the commutative and associative properties to simplify numerical expressions. Use exponential notation and repeated multiplication to describe and simplify exponential expressions. Simplify numerical expressions that may contain exponents. Use the distributive property to simplify numerical expressions. (b) Number & Operations: Write whole numbers in scientific notation; convert scientific notation to standard form; investigate the uses of scientific notation.
8.2 The student will describe orally and in writing the relationship between the subsets of the real number system.	Number & Operations: Describe, use, and compare real numbers. Use the definition of rational numbers to derive and distinguish irrational numbers.
Computation and Estimation	
8.4 The student will apply the order of operations to evaluate algebraic expressions for given replacement values of the variables. Problems will be limited to positive exponents.	Algebra: Evaluate algebraic expressions.
8.5 The student, given a whole number from 0 to 100, will identify it as a perfect square or find the two consecutive whole numbers between which the square root lies.	Number & Operations: Use geometric models to investigate the meaning of the square of a number and its positive square root. Know perfect squares to 625. Estimate the square root of a number between two consecutive integers. Use a calculator to estimate the square root of a number.
Measurement	
8.7 The student will investigate and solve practical problems involving volume and surface area of rectangular solids (prisms), cylinders, cones, and pyramids.	The opportunity to meet this objective is available. For example, see: Measurement: Use models to find volume for prisms and cylinders as the product of the area of the base (B) and the height. Calculate the volume of prisms. Use nets or formulas to find the surface area of prisms and cylinders. Find the lateral area and surface area of a right prism, pyramid, right circular cylinder, and cone using formulas. Find the surface area and volume of a sphere using formulas.
Geometry	
8.9 The student will construct a three-dimensional model, given the top, side, and/or bottom views.	Geometry: Identify or draw the association between 3-D figures and their front, side, and top views.
8.10 The student will a) verify the Pythagorean Theorem, using diagrams, concrete materials, and measurement; and b) apply the Pythagorean Theorem to find the missing length of a side of a right triangle when given the lengths of the other two sides.	The opportunity to meet this objective is available. For example, see: (a) Geometry: Use the Pythagorean Theorem and its converse to solve problems. (b) Geometry: Use the Pythagorean Theorem and its converse to solve problems.

**Scholastic Math Inventory Correlated to the
Mathematics Standards of Learning for Virginia Public Schools
Grade 8**

Mathematics Standards of Learning for Virginia Public Schools	Scholastic Math Inventory
Probability and Statistics	
8.11 The student will analyze problem situations, including games of chance, board games, or grading scales, and make predictions, using knowledge of probability.	The opportunity to meet this objective is available. For example, see: Data Analysis & Probability: Determine the probability from experimental results or compare theoretical probabilities and experimental results.
8.12 The student will make comparisons, predictions, and inferences, using information displayed in frequency distributions; box-and-whisker plots; scattergrams; line, bar, circle, and picture graphs; and histograms.	The opportunity to meet this objective is available. For example, see: Data Analysis & Probability: Organize, display, and interpret information in tables and graphs (frequency tables, pictographs, and line plots). Organize, display, and interpret information in stem-and-leaf plots. Organize, display, and interpret multiple sets of information in the same graph including multiple bar, multiple stem-and-leaf, and multiple line graphs. Organize, display, and interpret information in histograms. Organize, display, and interpret information in box-and-whisker plots.
Patterns, Functions, and Algebra	
8.14 The student will a) describe and represent relations and functions, using tables, graphs, and rules; and b) relate and compare tables, graphs, and rules as different forms of representation for relationships.	(a) Algebra: Define and distinguish between relations and functions, dependent and independent variables, and domain and range. (b) Algebra: Convert between different representations of relations and functions using tables, the coordinate plane, and algebraic or verbal statements.
8.15 The student will solve two-step equations and inequalities in one variable, using concrete materials, pictorial representations, and paper and pencil.	Algebra: Solve two-step linear equations and inequalities and graph solutions of the inequalities on a number line.
8.16 The student will graph a linear equation in two variables, in the coordinate plane, using a table of ordered pairs.	Algebra: Use ordered pairs derived from tables, algebraic rules, or verbal descriptions to graph linear functions.
8.17 The student will create and solve problems, using proportions, formulas, and functions.	Algebra: Solve one-step linear equations and inequalities and graph solutions of the inequalities on a number line. Identify situations or solve problems with varying rates of change. Solve two-step linear equations and inequalities and graph solutions of the inequalities on a number line. Write or model a linear equation or inequality to solve a given problem. Determine algebraically or graphically the solutions of a linear inequality. Solve linear equations using the associative, commutative, distributive, and equality properties and justify the steps used. Use direct variation to solve problems.
8.18 The student will use the following algebraic terms appropriately: <i>domain</i> , <i>range</i> , <i>independent variable</i> , and <i>dependent variable</i> .	Algebra: Define and distinguish between relations and functions, dependent and independent variables, and domain and range.