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correlated to

Virginia Mathematics Standards of Learning Grades 6-7



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Every Day Counts Algebra Readiness © 2006

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Virginia Mathematics Standards of Learning

Grade 6

Number and Number Sense

Standards of Learning, Grade 6	Every Day Counts Algebra Readiness
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.	Teacher's Guide: 28-30, 35-37, 42-43, 47, 55-57, 65, 72-73, 80, 91-92, 99, 100, 109, 145, 166-169, 194, 198, 199, 209
6.2 The student will describe and compare two sets of data, using ratios, and will use the appropriate notations, such as a/b , a to b , and $a:b$.	Teacher's Guide: 110-114, 145, 161, 176-180, 186-189
6.3 The student will:	Teacher's Guide: 26, 27, 41, 192, 197, 207
a) find common multiples and factors, including least common multiple and greatest common factor;	
b) identify and describe prime and composite numbers; and	Teacher's Guide: 24-28, 40-42, 52-54, 71-72, 89
c) identify and describe the characteristics of even and odd integers.	Teacher's Guide: 27, 40, 41, 90, 95, 96
6.4 The student will compare and order whole numbers, fractions, and decimals, using concrete materials, drawings, or pictures, and mathematical symbols.	Teacher's Guide: 28-30, 42-43, 91-92, 109, 198
6.5 The student will identify, represent, order and compare integers.	Teacher's Guide: 131-135, 154-158

Computation and Estimation

Standards of Learning, Grade 6	Every Day Counts Algebra Readiness
<p>6.6 The student will:</p> <p>a) 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</p>	<p>Teacher's Guide: 28-30, 55-57, 72-73, 91-92, 93-94, 109, 125, 166-169, 198</p>
<p>b) 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.</p>	<p>Teacher's Guide: 73, 91, 92</p>
<p>6.7 The student will use estimation strategies to solve multistep practical problems involving whole numbers, decimals, and fractions (rational numbers).</p>	<p>Teacher's Guide: 36, 94, 100-101, 113, 121, 167, 177-180, 192</p>
<p>6.8 The student will solve multistep consumer-application problems involving fractions and decimals and present data and conclusions in paragraphs, tables, or graphs. Planning a budget will be included.</p>	<p>Teacher's Guide: 35-37, 47, 64-65, 80-81, 98-101, 120-122</p>

Measurement

Standards of Learning, Grade 6	Every Day Counts Algebra Readiness
<p>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:</p> <p>a) length—part of an inch ($\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$), inches, feet, yards, miles, millimeters, centimeters, meters, kilometers;</p>	<p>Teacher's Guide: 112, 125, 146-147, 194, 202, 209</p>
<p>c) liquid volume—cups, pints, quarts, gallons, milliliters, and liters; and</p>	<p>Teacher's Guide: 166-169, 202, 207</p>
<p>d) area—square units.</p>	<p>Teacher's Guide: 30-33, 43-44, 60-62, 95, 114-116, 136, 137-139, 188, 202</p>

Standards of Learning, Grade 6	Every Day Counts Algebra Readiness
6.10 The student will estimate and then determine length, weight/mass, area, and liquid volume/capacity, using standard and nonstandard units of measure.	Teacher's Guide: 30-33, 43-44, 60-62, 95, 110-116, 136, 137-139, 146-147, 166-169, 188, 202, 209
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.	Teacher's Guide: 30-33, 43-44, 60-62, 95, 114-116
6.12 The student will: a) solve problems involving the circumference and/or area of a circle when given the diameter or radius; and	Teacher's Guide: 110-114, 135-136, 194, 203, 207
b) derive approximations for pi (π) from measurements for circumference and diameter, using concrete materials or computer models.	Teacher's Guide: 110-114
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	Teacher's Guide: 57-59, 130
b) measure and draw right, acute, and obtuse angles and triangles.	Teacher's Guide: 51, 57-59, 69, 129, 130

Geometry

Standards of Learning, Grade 6	Every Day Counts Algebra Readiness
6.14 The student will identify, classify, and describe the characteristics of plane figures, describing their similarities, differences, and defining properties.	Teacher's Guide: 50-52, 68-70, 86-88, 106-108, 128-131, 192, 193, 194, 202, 203
6.15 The student will determine the congruence of segments, angles, and polygons by direct comparison, given their attributes. Examples of noncongruent and congruent figures will be included.	Teacher's Guide: 27, 68-70, 106, 107, 129, 152, 173
6.17 The student will sketch, construct models of, and classify solid figures (rectangular prism, cone, cylinder, and pyramid).	Teacher's Guide: 119, 150-154, 172-174, 186-189, 194, 209

Probability and Statistics

Standards of Learning, Grade 6	Every Day Counts Algebra Readiness
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;	Teacher's Guide: 122-124, 142-145, 164-166, 195, 205, 210
b) stem-and-leaf plots; and	Teacher's Guide: 101-103, 204
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.	Teacher's Guide: 82-83, 101-103, 123, 124, 144, 185, 195, 205, 210
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	Teacher's Guide: 159, 175-177
b) determine and interpret the probability of an event occurring from a given sample space and represent probability as a ratio, decimal, or percent, as appropriate for the given situation.	Teacher's Guide: 159-161, 175-177, 192, 207

Patterns, Functions, and Algebra

Standards of Learning, Grade 6	Every Day Counts Algebra Readiness
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.	Teacher's Guide: 24-26, 30-34, 40-41, 43-44, 50-52, 60-62, 68-70, 75-78, 86-88, 94-96, 106-108, 114-116, 128-131, 134, 137-139, 153, 158, 162-163, 177-180, 192, 193, 199, 200, 207, 208
6.22 The student will investigate and describe concepts of positive exponents, perfect squares, square roots, and, for numbers greater than 10, scientific notation. Calculators will be used to develop exponential patterns.	Teacher's Guide: 24-28, 40-42, 54, 71-72, 94-97, 117-120, 137-139, 140-141
6.23 The student will: a) model and solve algebraic equations, using concrete materials;	Teacher's Guide: 33-35, 45-46, 79, 96, 164-166
b) solve one-step linear equations in one variable, involving whole number coefficients and positive rational solutions; and	Teacher's Guide: 33, 164
c) use the following algebraic terms appropriately: <i>variable</i> , <i>coefficient</i> , <i>term</i> , and <i>equation</i> .	Teacher's Guide: 33-35, 45-46, 63-64, 78-80, 96-98, 108, 137-139, 140-141, 181-182

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Grade 7

Number and Number Sense

Standards of Learning, Grade 7	Every Day Counts Algebra Readiness
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.	Teacher's Guide: 28-30, 42-43, 55-57, 72-73, 91-92, 109, 145, 166-169, 194, 198, 199, 209
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.	Teacher's Guide: 32-35, 41-42, 43-46, 54, 62, 63-64, 71-72, 76-80, 94-97, 116, 117-120, 131, 137-139, 140-141, 163, 164, 165, 181-182, 189, 208
7.3 The student will identify and apply the following properties of operations with real numbers:	Teacher's Guide: 27, 33, 37, 53, 81, 120
a) the commutative and associative properties for addition and multiplication;	
b) the distributive property;	Teacher's Guide: 43-44, 181
c) the additive and multiplicative identity properties;	Teacher's Guide: 26, 27, 41
d) the additive and multiplicative inverse properties; and	Teacher's Guide: 33, 164

Computation and Estimation

Standards of Learning, Grade 7	Every Day Counts Algebra Readiness
<p>7.4 The student will</p> <p>a) solve practical problems using rational numbers (whole numbers, fractions, decimals) and percents; and</p>	<p>Teacher's Guide: 28-30, 35-37, 42-43, 47, 55-57, 72-73, 80-81, 91-92, 98-101, 109, 120-122, 125, 166-169, 198</p>
<p>b) solve consumer-application problems involving tips, discounts, sales tax, and simple interest.</p>	<p>Teacher's Guide: 35-37, 98-101, 120-122, 207, 208</p>
<p>7.5 The student will formulate rules for and solve practical problems involving basic operations (addition, subtraction, multiplication, and division) with integers.</p>	<p>Teacher's Guide: 131-135, 154-158, 164-166</p>
<p>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.</p>	<p>Teacher's Guide: 177-180</p>

Measurement

Standards of Learning, Grade 7	Every Day Counts Algebra Readiness
<p>7.7 The student, given appropriate dimensions, will</p> <p>a) estimate and find the area of polygons by subdividing them into rectangles and right triangles; and</p>	<p>Teacher's Guide: 32, 44, 61-62, 95, 116, 137-139</p>
<p>b) apply perimeter and area formulas in practical situations.</p>	<p>Teacher's Guide: 30-33, 43-44, 60-62, 94-96, 114-116, 135-136, 137-139, 202, 203</p>
<p>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.</p>	<p>Teacher's Guide: 117-120, 172-174, 186-189, 204, 208</p>

Geometry

Standards of Learning, Grade 7	Every Day Counts Algebra Readiness
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.	Teacher's Guide: 50-52, 68-70, 86-88, 93, 194, 203, 204
7.10 The student will identify and draw the following polygons: pentagon, hexagon, heptagon, octagon, nonagon, and decagon.	Teacher's Guide: 106-108
7.12 The student will identify and graph ordered pairs in the four quadrants of a coordinate plane.	Teacher's Guide: 35, 46, 64, 79, 96-98, 117-118, 164-166
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.	Teacher's Guide: 106-108, 203, 204

Probability and Statistics

Standards of Learning, Grade 7	Every Day Counts Algebra Readiness
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.	Teacher's Guide: 159-161, 175-177, 192, 207
7.16 The student will create and solve problems involving the measures of central tendency (mean, median, mode) and the range of a set of data.	Teacher's Guide: 82-83, 101-103, 123, 124, 144, 185, 195, 205, 210
7.17 The student, given a problem situation, will collect, analyze, display, and interpret data, using a variety of graphical methods, including	Teacher's Guide: 142
a) frequency distributions;	
b) line plots;	Teacher's Guide: 81-83
c) histograms;	Teacher's Guide: 142-145

Standards of Learning, Grade 7	Every Day Counts Algebra Readiness
d) stem-and-leaf plots;	Teacher's Guide: 101-103, 204
f) scattergrams.	Teacher's Guide: 182-185
7.18 The student will make inferences, conjectures, and predictions based on analysis of a set of data.	Teacher's Guide: 81-83, 101-103, 142-145, 161, 182-185

Patterns, Functions, and Algebra

Standards of Learning, Grade 7	Every Day Counts Algebra Readiness
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.	Teacher's Guide: 24-26, 30-34, 40-41, 43-44, 50-52, 60-62, 68-70, 75-78, 86-88, 94-96, 106-108, 114-116, 128-131, 134, 137-139, 153, 158, 162-163, 177-180, 192, 193, 199, 200, 207, 208
7.20 The student will write verbal expressions as algebraic expressions and sentences as equations.	Teacher's Guide: 33-35, 44, 45-46, 62-64, 76-78, 79-80, 96-97, 108, 117-119, 139, 181-182, 208
7.21 The student will use the following algebraic terms appropriately: <i>equation</i> , <i>inequality</i> , and <i>expression</i> .	Teacher's Guide: 33-35, 44, 45-46, 62-64, 97, 108, 138-139, 181-182
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	Teacher's Guide: 33, 164
b) solve practical problems requiring the solution of a one-step linear equation.	Teacher's Guide: 33, 164



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