Vmath

VMath **Third Edition, Levels C–I, Grades 2–8**

Correlated to the Virginia Standards of Learning

February 2015

VOYAGER SOPRIS
LEARNING®

Virginia Standards of Learning	Vmath Matches
Grade 2	
Number and Number Sense	
Focus: Place Value, Number Patterns, and Fraction Concepts	
2.1 The student will	
a) read, write, and identify the place value of each digit in a three-digit numeral, using numeration models;	Module 1: Lesson 6: 58-61
b) round two-digit numbers to the nearest ten; and	supports: Module 2: Lesson 2: 96-99 Module 2: Lesson PL2: 88-91
c) compare two whole numbers between 0 and 999, using symbols (>, <, or =) and words (*greater than, less than,* or *equal to*).	Module 1: Lesson 10: 74-77
2.2 The student will a) identify the ordinal positions first through twentieth, using an ordered set of objects; and b) write the ordinal numbers.	
2.3 The student will	
a) identify the parts of a set and/or region that represent fractions for halves, thirds, fourths, sixths, eighths, and tenths;	Module 7: Lesson 4: 376-379 Module 7: Lesson 1: 364-367 Module 7: Lesson 2: 368-371
b) write the fractions; and	Module 7: Lesson 3: 372-375
c) compare the unit fractions for halves, thirds, fourths, sixths, eighths, and tenths.	Module 7: Lesson PL1: 356-359 Module 7: Lesson PL2: 360-363
2.4 The student will	
a) count forward by twos, fives, and tens to 100, starting at various multiples of 2, 5, or 10;	Module 1: Lesson 3: 46-49
b) count backward by tens from 100; and	Module 3: Lesson 5: 160-163
c) recognize even and odd numbers.	Module 1: Lesson 4: 50-53
Computation and Estimation	
Focus: Number Relationships and Operations	
2.5 The student will recall addition facts with sums to 20 or less and the corresponding subtraction facts.	Module 2: Lesson PL1: 84-87 Module 3: Lesson PL2: 140-143
2.6 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.	Module 2: Lesson 1: 92-95 Module 2: Lesson 2: 96-99 Module 2: Lesson 3: 100-103 Module 2: Lesson 4: 104-107
2.7 The student, given two whole numbers, each of which is 99 or less, will	

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a) estimate the difference; and	
b) find the difference, using various methods of calculation.	Module 3: Lesson PL1: 136-139 Module 3: Lesson 3: 152-155
2.8 The student will create and solve one- and two-step addition and subtraction problems, using data from simple tables, picture graphs, and bar graphs.	Module 3: Lesson 4: 156-159 Module 3: Lesson 8: 172-175 Module 4: Lesson 10: 232-235
2.9 The student will recognize and describe the related facts that represent and describe the inverse relationship between addition and subtraction.	Module 3: Lesson PL2: 140-143
Measurement	
Focus: Money, Linear Measurement, Weight/Mass, and Volume	
2.10 The student will	
a) count and compare a collection of pennies, nickels, dimes, and quarters whose total value is $2.00 or less; and	Module 5: Lesson PL1: 242-245 Module 5: Lesson PL2: 246-249 Module 5: Lesson 1: 250-253
b) correctly use the cent symbol (¢), dollar symbol ($), and decimal point (.).	Module 5: Lesson 2: 254-257
2.11 The student will estimate and measure a) length to the nearest centimeter and inch; b) weight/mass of objects in pounds/ounces and kilograms/grams, using a scale; and c) liquid volume in cups, pints, quarts, gallons, and liters.	Module 4: Lesson PL2: 192-195 Module 4: Lesson 3: 204-207
2.12 The student will tell and write time to the nearest five minutes, using analog and digital clocks.	Module 6: Lesson PL1: 300-303 Module 6: Lesson PL2: 304-307 Module 6: Lesson 1: 308-311 Module 6: Lesson 2: 312-315
2.13 The student will a) determine past and future days of the week; and b) identify specific days and dates on a given calendar.	
2.14 The student will read the temperature on a Celsius and/or Fahrenheit thermometer to the nearest 10 degrees.	
Geometry	
Focus: Symmetry and Plane and Solid Figures	
2.15 The student will a) draw a line of symmetry in a figure; and b) identify and create figures with at least one line of symmetry.	supports: Module 5: Lesson 7: 274-277

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Grade 2	
2.16 The student will identify, describe, compare, and contrast plane and solid geometric figures (circle/sphere, square/cube, and rectangle/rectangular prism).	Module 5: Lesson 4: 262-265 Module 5: Lesson 8: 278-281 Module 5: Lesson 10: 286-289 Module 5: Lesson 6: 270-273
Probability and Statistics	
Focus: Applications of Data	
2.17 The student will use data from experiments to construct picture graphs, pictographs, and bar graphs.	
2.18 The student will use data from experiments to predict outcomes when the experiment is repeated.	Module 6: Lesson 7: 332-335
2.19 The student will analyze data displayed in picture graphs, pictographs, and bar graphs.	Module 6: Lesson 5: 324-327 Module 6: Lesson 6: 328-331
Patterns, Functions, and Algebra	
Focus: Patterning and Numerical Sentences	
2.20 The student will identify, create, and extend a wide variety of patterns.	Module 1: Lesson 1: 38-41 Module 2: Lesson 7: 116-119
2.21 The student will solve problems by completing numerical sentences involving the basic facts for addition and subtraction. The student will create story problems, using the numerical sentences.	Module 2: Lesson 5: 108-111 Module 3: Lesson 3: 152-155 Module 3: Lesson 6: 164-167
2.22 The student will demonstrate an understanding of equality by recognizing that the symbol = in an equation indicates equivalent quantities and the symbol ≠ indicates that quantities are not equivalent.	Module 1: Lesson 10: 74-77

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Grade 3	
Number and Number Sense	
Focus: Place Value and Fractions	
3.1 The student will	
a) read and write six-digit numerals and identify the place value and value of each digit;	Module 1: Lesson 5: 54-57 Module 1: Lesson 6: 58-61 Module 2: Lesson 4: 106-109
b) round whole numbers, 9,999 or less, to the nearest ten, hundred, and thousand; and	Module 2: Lesson 9: 124-128 Module 2: Lesson 8: 122-123
c) compare two whole numbers between 0 and 9,999, using symbols (>, <, or =) and words (*greater than, less than*, or *equal to*).	Module 2: Lesson 6: 114-117 Module 2: Lesson 7: 118-121
3.2 The student will recognize and use the inverse relationships between addition/subtraction and multiplication/division to complete basic fact sentences. The student will use these relationships to solve problems.	supports: Module 3: Lesson 15: 192-195 Module 5: Lesson 7: 292-295 Module 5: Lesson 9: 300-303
3.3 The student will	
a) name and write fractions (including mixed numbers) represented by a model;	Module 6: Lesson 3: 326-329
b) model fractions (including mixed numbers) and write the fractions' names; and	Module 6: Lesson 8: 244-247
c) compare fractions having like and unlike denominators, using words and symbols (>, <, or =).	Module 6: Lesson 7: 340-343
Computation and Estimation	
Focus: Computation and Fraction Operations	
3.4 The student will estimate solutions to and solve single-step and multistep problems involving the sum or difference of two whole numbers, each 9,999 or less, with or without regrouping.	Module 1: Lesson 1: 38-41 Module 3: Lesson 7: 164-167 Module 3: Lesson 14: 188-191
3.5 The student will recall multiplication facts through the twelves table, and the corresponding division facts.	Module 4: Lesson 5: 220-223 Module 4: Lesson 6: 224-227 Module 4: Lesson 7: 228-231 Module 4: Lesson 8: 232-235 Module 4: Lesson 9: 236-239
3.6 The student will represent multiplication and division, using area, set, and number line 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.	Module 4: Lesson 12: 247 Module 4: Lesson 10: 240-241 Module 5: Lesson PL2: 268-270
3.7 The student will add and subtract proper fractions having like denominators of 12 or less.	
Measurement	

Virginia Standards of Learning	VMath Matches
Grade 3	
Focus: U.S. Customary and Metric Units, Area and Perimeter, and Time	
3.8 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 bills and coins, and make change.	Module 6: Lesson 9: 348-351 Module 6: Lesson 10: 352-355
3.9 The student will estimate and use U.S. Customary and metric units to measure	
a) length to the nearest $\frac{1}{2}$-inch, inch, foot, yard, centimeter, and meter;	Module 7: Lesson PL2: 364-367
b) liquid volume in cups, pints, quarts, gallons, and liters;	supports: Module 7: Lesson 7: 392-395
c) weight/mass in ounces, pounds, grams, and kilograms; and	Module 7: Lesson 8: 396-399
d) area and perimeter.	Module 7: Lesson 14: 418-421 Module 7: Lesson 15: 422-425
3.10 The student will	
a) measure the distance around a polygon in order to determine perimeter; and	Module 7: Lesson 14: 418-421
b) count the number of square units needed to cover a given surface in order to determine area.	Module 7: Lesson 15: 422-425
3.11 The student will	
a) tell time to the nearest minute, using analog and digital clocks; and	Module 7: Lesson 5: 384-387
b) determine elapsed time in one-hour increments over a 12-hour period.	Module 7: Lesson 6: 388-391
3.12 The student will identify equivalent periods of time, including relationships among days, months, and years, as well as minutes and hours.	
3.13 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.	
Geometry	
Focus: Properties and Congruence Characteristics of Plane and Solid Figures	
3.14 The student will identify, describe, compare, and contrast characteristics of plane and solid geometric figures (circle, square, rectangle, triangle, cube, rectangular prism, square pyramid, sphere, cone, and cylinder) by identifying relevant characteristics, including the number of angles,	Module 7: Lesson 11: 408-409 Module 7: Lesson 12: 410-413 Module 7: Lesson 13: 414-417

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Grade 3	
vertices, and edges, and the number and shape of faces, using concrete models.	
3.15 The student will identify and draw representations of points, line segments, rays, angles, and lines.	supports: Module 6: Lesson PL1: 312-315
3.16 The student will identify and describe congruent and noncongruent plane figures.	
Probability and Statistics	
Focus: Applications of Data and Chance	
3.17 The student will	
a) collect and organize data, using observations, measurements, surveys, or experiments;	
b) construct a line plot, a picture graph, or a bar graph to represent the data; and	Module 7: Lesson 2: 372-375 Module 7: Lesson 3: 376-379 Module 7: Lesson 4: 380-383
c) read and interpret the data represented in line plots, bar graphs, and picture graphs and write a sentence analyzing the data.	Module 7: Lesson 2: 372-375 Module 7: Lesson 3: 376-379 Module 7: Lesson 4: 380-383 Module 7: Lesson PL1: 360-363
3.18 The student will investigate and describe the concept of probability as chance and list possible results of a given situation.	
Patterns, Functions, and Algebra	
Focus: Patterns and Property Concepts	
3.19 The student will recognize and describe a variety of patterns formed using numbers, tables, and pictures, and extend the patterns, using the same or different forms.	Module 1: Lesson 1: 38-41 Module 7: Lesson 1: 368-371
3.20 The student will	
a) investigate the identity and the commutative properties for addition and multiplication; and	Module 3: Lesson 1: 142-145 Module 4: Lesson 11: 242-246
b) identify examples of the identity and commutative properties for addition and multiplication.	Module 3: Lesson 1: 142-145 Module 4: Lesson 11: 242-246

Virginia Standards of Learning	VMath Matches
Grade 4	
Number and Number Sense	
Focus: Place Value, Fractions, and Decimals	
4.1 The student will	
a) identify orally and in writing the place value for each digit in a whole number expressed through millions;	Module 1: Lesson 1: 38-41 Module 1: Lesson 2: 42-45
b) compare two whole numbers expressed through millions, using symbols (>, <, or =); and	Module 1: Lesson 5: 54-55
c) round whole numbers expressed through millions to the nearest thousand, ten thousand, and hundred thousand.	Module 1: Lesson 10: 68-71
4.2 The student will	
a) compare and order fractions and mixed numbers;	Module 4: Lesson 9: 222-223 Module 4: Lesson 10: 224-227
b) represent equivalent fractions; and	Module 4: Lesson 6: 214-215 Module 4: Lesson 7: 216-219 Module 5: Lesson PL2: 231
c) identify the division statement that represents a fraction.	Module 4: Lesson 3: 202-205 Module 4: Lesson 4: 206-209
4.3 The student will	
a) read, write, represent, and identify decimals expressed through thousandths;	Module 5: Lesson 1: 232-235 Module 5: Lesson 2: 236-239
b) round decimals to the nearest whole number, tenth, and hundredth;	
c) compare and order decimals; and	Module 5: Lesson 3: 240-243
d) given a model, write the decimal and fraction equivalents.	Module 5: Lesson 13: 276-279
Computation and Estimation	
Focus: Factors and Multiples, and Fraction and Decimal Operations	
4.4 The student will	
a) estimate sums, differences, products, and quotients of whole numbers;	Module 1: Lesson 6: 56-57 Module 2: Lesson 9: 108-111
b) add, subtract, and multiply whole numbers;	Module 2: Lesson 2: 84-87 Module 2: Lesson 3: 88-91 Module 2: Lesson 4: 92-93 Module 2: Lesson 5: 94-95 Module 2: Lesson 6: 96-99 Module 2: Lesson 7: 100-103 Module 2: Lesson 8: 104-107 Module 3: Lesson 1: 128-131 Module 3: Lesson 2: 132-135 Module 3: Lesson 4: 140-143

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Grade 4	
	Module 3: Lesson 5: 144-147
	Module 3: Lesson 6: 148-151
	Module 3: Lesson 10: 164-165
	Module 3: Lesson 13: 170-173
	Module 3: Lesson 14: 174-177
c) divide whole numbers, finding quotients with and without remainders; and	Module 3: Lesson 10: 164-165
	Module 3: Lesson 11: 166-167
	Module 3: Lesson 12: 168-169
	Module 3: Lesson 13: 170-173
	Module 3: Lesson 14: 174-177
d) solve single-step and multistep addition, subtraction, and multiplication problems with whole numbers.	Module 2: Lesson 2: 84-87
	Module 2: Lesson 3: 88-91
	Module 2: Lesson 4: 92-93
	Module 2: Lesson 5: 94-95
	Module 2: Lesson 6: 96-99
	Module 2: Lesson 7: 100-103
	Module 2: Lesson 8: 104-107
	Module 3: Lesson 1: 128-131
	Module 3: Lesson 2: 132-135
	Module 3: Lesson 4: 140-143
	Module 3: Lesson 5: 144-147
	Module 3: Lesson 6: 148-151
	Module 3: Lesson 10: 164-165
	Module 3: Lesson 13: 170-173
	Module 3: Lesson 14: 174-177
4.5 The student will	
a) determine common multiples and factors, including least common multiple and greatest common factor;	Module 4: Lesson PL2: 190-193
	Module 4: Lesson 1: 194-197
b) add and subtract fractions having like and unlike denominators that are limited to 2, 3, 4, 5, 6, 8, 10, and 12, and simplify the resulting fractions, using common multiples and factors;	Module 5: Lesson 9: 264-265
	Module 5: Lesson 10: 266-269
	Module 5: Lesson 11: 270-271
c) add and subtract with decimals; and	Module 5: Lesson 4: 244-247
	Module 5: Lesson 5: 248-251
	Module 5: Lesson 6: 252-255
	Module 5: Lesson 7: 256-259
d) solve single-step and multistep practical problems involving addition and subtraction with fractions and with decimals.	Module 5: Lesson 4: 244-247
	Module 5: Lesson 5: 248-251
	Module 5: Lesson 6: 252-255
	Module 5: Lesson 7: 256-259
	Module 5: Lesson 8: 260-263
	Module 5: Lesson 9: 264-265

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Grade 4	
	Module 5: Lesson 10: 266-269
	Module 5: Lesson 11: 270-271
Measurement	
Focus: Equivalence within U.S. Customary and Metric Systems	
4.6 The student will	
a) estimate and measure weight/mass and describe the results in U.S. Customary and metric units as appropriate; and	Module 7: Lesson 4: 362-365 Module 7: Lesson 5: 366-369
b) identify equivalent measurements between units within the U.S. Customary system (ounces, pounds, and tons) and between units within the metric system (grams and kilograms).	Module 7: Lesson 6: 370-373
4.7 The student will	
a) estimate and measure length, and describe the result in both metric and U.S. Customary units; and	Module 7: Lesson 1: 350-353 Module 7: Lesson 2: 354-357 Module 7: Lesson 3: 358-361
b) identify equivalent measurements between units within the U.S. Customary system (inches and feet; feet and yards; inches and yards; yards and miles) and between units within the metric system (millimeters and centimeters; centimeters and meters; and millimeters and meters).	supports: Module 7: Lesson 6: 370-373
4.8 The student will a) estimate and measure liquid volume and describe the results in U.S. Customary units; and b) identify equivalent measurements between units within the U.S. Customary system (cups, pints, quarts, and gallons).	supports: Module 7: Lesson 5: 366-369
4.9 The student will determine elapsed time in hours and minutes within a 12-hour period.	Module 7: Lesson 7: 374-377
Geometry	
Focus: Representations and Polygons	
4.10 The student will	
a) identify and describe representations of points, lines, line segments, rays, and angles, including endpoints and vertices; and	Module 6: Lesson PL1: 292-295 Module 6: Lesson PL2: 296-300 Module 6: Lesson 1: 301 Module 6: Lesson 7: 322-325
b) identify representations of lines that illustrate intersection, parallelism, and perpendicularity.	supports: Module 6: Lesson 8: 326-329

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Grade 4	
4.11 The student will a) investigate congruence of plane figures after geometric transformations, such as reflection, translation, and rotation, using mirrors, paper folding, and tracing; and b) recognize the images of figures resulting from geometric transformations, such as translation, reflection, and rotation.	
4.12 The student will	
a) define *polygon*; and	Module 6: Lesson 2: 302-305
b) identify polygons with 10 or fewer sides.	Module 6: Lesson 2: 302-305 Module 6: Lesson 3: 306-309 Module 6: Lesson 4: 310-313
Probability and Statistics	
Focus: Outcomes and Data	
4.13 The student will a) predict the likelihood of an outcome of a simple event; and b) represent probability as a number between 0 and 1, inclusive.	
4.14 The student will collect, organize, display, and interpret data from a variety of graphs.	
Patterns, Functions, and Algebra	
Focus: Geometric Patterns, Equality, and Properties	
4.15 The student will recognize, create, and extend numerical and geometric patterns.	supports: Module 7: Lesson 11: 388-391
4.16 The student will	
a) recognize and demonstrate the meaning of equality in an equation; and	supports: Module 7: Lesson 10: 384-387
b) investigate and describe the associative property for addition and multiplication.	Module 2: Lesson LP2: 78-81 Module 3: Lesson PL2: 124-127

Virginia Standards of Learning	VMath Matches
Grade 5	
Number and Number Sense	
Focus: Prime and Composite Numbers and Rounding Decimals	
5.1 The student, given a decimal through thousandths, will round to the nearest whole number, tenth, or hundredth.	Module 2: Lesson 9: 112-116 Module 2: Lesson 10: 117-120 Module 3: Lesson 13: 170-174
5.2 The student will	
a) recognize and name fractions in their equivalent decimal form and vice versa; and	Module 4: Lesson PL1: 186-189 Module 1: Lesson 10: 75-78
b) compare and order fractions and decimals in a given set from least to greatest and greatest to least.	Module 2: Lesson 8: 108-111
5.3 The student will a) identify and describe the characteristics of prime and composite numbers; and b) identify and describe the characteristics of even and odd numbers.	Module 5: Lesson 1: 258-261
Computation and Estimation	
Focus: Multistep Applications and Order of Operations	
5.4 The student will create and solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division with and without remainders of whole numbers.	Module 1: Lesson 3: 46-49 Module 1: Lesson 4: 50-53 Module 1: Lesson 5: 54-57 Module 1: Lesson 6: 58-61 Module 5: Lesson 2: 262-265 Module 5: Lesson 7: 276-279 Module 5: Lesson 8: 280-283
5.5 The student will a) find the sum, difference, product, and quotient of two numbers expressed as decimals through thousandths (divisors with only one nonzero digit); and b) create and solve single-step and multistep practical problems involving decimals.	Module 3: Lesson 1: 128-131 Module 3: Lesson 2: 132-135 Module 3: Lesson 4: 138-141 Module 3: Lesson 5: 142-145 Module 3: Lesson 8: 154-155 Module 3: Lesson 9: 156-159 Module 3: Lesson 11: 164-165 Module 3: Lesson 12: 166-169
5.6 The student will solve single-step and multistep practical problems involving addition and subtraction with fractions and mixed numbers and express answers in simplest form.	Module 4: Lesson 3: 202-205 Module 4: Lesson 4: 206-209 Module 4: Lesson 5: 210-211 Module 4: Lesson 6: 212-215 Module 4: Lesson 7: 216-219 Module 4: Lesson 8: 220-223 Module 4: Lesson 9: 224-228

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Grade 5	
5.7 The student will evaluate whole number numerical expressions, using the order of operations limited to parentheses, addition, subtraction, multiplication, and division.	Module 5: Lesson 2: 262-265 Module 5: Lesson 3: 266-268
Measurement	
Focus: Perimeter, Area, Volume, and Equivalent Measures	
5.8 The student will	
a) find perimeter, area, and volume in standard units of measure;	Module 7: Lesson 6: 366-370 Module 7: Lesson 8: 372-375
b) differentiate among perimeter, area, and volume and identify whether the application of the concept of perimeter, area, or volume is appropriate for a given situation;	Module 7: Lesson 6: 366-370 Module 7: Lesson 8: 372-375
c) identify equivalent measurements within the metric system;	Module 7: Lesson 4: 360-363
d) estimate and then measure to solve problems, using U.S. Customary and metric units; and	Module 7: Lesson 3: 356-359 Module 7: Lesson 4: 360-363
e) choose an appropriate unit of measure for a given situation involving measurement using U.S. Customary and metric units.	Module 7: Lesson 5: 364-365 Module 7: Lesson 7: 371 Module 7: Lesson 8: 372-375
5.9 The student will identify and describe the diameter, radius, chord, and circumference of a circle.	
5.10 The student will determine an amount of elapsed time in hours and minutes within a 24-hour period.	
5.11 The student will measure right, acute, obtuse, and straight angles.	
Geometry	
Focus: Classification and Subdividing	
5.12 The student will classify a) angles as right, acute, obtuse, or straight; and b) triangles as right, acute, obtuse, equilateral, scalene, or isosceles.	
5.13 The student, using plane figures (square, rectangle, triangle, parallelogram, rhombus, and trapezoid), will a) develop definitions of these plane figures; and b) investigate and describe the results of combining and subdividing plane figures.	Module 7: Lesson PL1: 342-343 Module 7: Lesson 1: 348-351 Module 7: Lesson 2: 352-355
Probability and Statistics	
Focus: Outcomes and Measures of Center	

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Grade 5	
5.14 The student will make predictions and determine the probability of an outcome by constructing a sample space.	
5.15 The student, given a problem situation, will collect, organize, and interpret data in a variety of forms, using stem-and-leaf plots and line graphs.	Module 6: Lesson 4: 312-315 Module 6: Lesson 5: 316-319 Module 6: Lesson 6: 320-323 Module 6: Lesson 7: 324-327
5.16 The student will a) describe mean, median, and mode as measures of center; b) describe mean as fair share; c) find the mean, median, mode, and range of a set of data; and d) describe the range of a set of data as a measure of variation.	Module 6: Lesson 1: 300-303
Patterns, Functions, and Algebra	
Focus: Equations and Properties	
5.17 The student will describe the relationship found in a number pattern and express the relationship.	Module 5: Lesson 10: 288-291
5.18 The student will	
a) investigate and describe the concept of variable;	Module 5: Lesson 3: 266-268 Module 5: Lesson 4: 269
b) write an open sentence to represent a given mathematical relationship, using a variable;	Module 5: Lesson 9: 284-287
c) model one-step linear equations in one variable, using addition and subtraction; and	Module 5: Lesson 7: 276-279 Module 5: Lesson 8: 280-283
d) create a problem situation based on a given open sentence, using a single variable.	
5.19 The student will investigate and recognize the distributive property of multiplication over addition.	Module 1: Lesson 6: 58-61

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Grade 6	
Number and Number Sense	
Focus: Relationships among Fractions, Decimals, and Percents	
6.1 The student will describe and compare data, using ratios, and will use appropriate notations, such as $\frac{a}{b}$, a to b, and $a{:}b$.	Module 5: Lesson 2: 252-255
6.2 The student will	
a) investigate and describe fractions, decimals, and percents as ratios;	Module 5: Lesson 2: 252-255
b) identify a given fraction, decimal, or percent from a representation;	Module 5: Lesson 6: 268-271
c) demonstrate equivalent relationships among fractions, decimals, and percents; and	Module 5: Lesson 7: 272-275 Module 5: Lesson 8: 276-279 Module 5: Lesson 9: 280-284
d) compare and order fractions, decimals, and percents.	
6.3 The student will	
a) identify and represent integers;	Module 2: Lesson 7: 112-115
b) order and compare integers; and	Module 3: Lesson 1: 140-143
c) identify and describe absolute value of integers.	Module 2: Lesson 8: 116-119 Module 2: Lesson 9: 120-123
6.4 The student will demonstrate multiple representations of multiplication and division of fractions.	Module 3: Lesson 6: 160-163 Module 3: Lesson 7: 164-167 Module 3: Lesson 9: 172-175 Module 3: Lesson 10: 176-179
6.5 The student will investigate and describe concepts of positive exponents and perfect squares.	
Computation and Estimation	
Focus: Applications of Operations with Rational Numbers	
6.6 The student will a) multiply and divide fractions and mixed numbers; and b) estimate solutions and then solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions.	Module 3: Lesson 6: 160-163 Module 3: Lesson 7: 164-167 Module 3: Lesson 9: 172-175 Module 3: Lesson 10: 176-179
6.7 The student will solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of decimals.	Module 3: Lesson 6: 160-163 Module 3: Lesson 7: 164-167 Module 3: Lesson 9: 172-175 Module 3: Lesson 10: 176-179

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Grade 6	
6.8 The student will evaluate whole number numerical expressions, using the order of operations.	Module 4: Lesson PL1: 182-186 Module 4: Lesson PL2: 187 Module 4: Lesson 1: 188-189
Measurement	
Focus: Problem Solving with Area, Perimeter, Volume, and Surface Area	
6.9 The student will make ballpark comparisons between measurements in the U.S. Customary System of measurement and measurements in the metric system.	supports: Module 5: Lesson 10: 285-288
6.10 The student will a) define π (pi) as the ratio of the circumference of a circle to its diameter; b) solve practical problems involving circumference and area of a circle, given the diameter or radius; c) solve practical problems involving area and perimeter; and d) describe and determine the volume and surface area of a rectangular prism.	Module 6: Lesson PL1: 290-291 Module 6: Lesson PL2: 292-295 Module 6: Lesson 1: 296-299 Module 6: Lesson 2: 300-303 Module 6: Lesson 3: 304-307 Module 6: Lesson 4: 308-311 Module 6: Lesson 5: 312-315 Module 6: Lesson 9: 324-327 Module 6: Lesson 10: 328-331
Geometry	
Focus: Properties and Relationships	
6.11 The student will a) identify the coordinates of a point in a coordinate plane; and b) graph ordered pairs in a coordinate plane.	Module 7: Lesson 10: 328-331
6.12 The student will determine congruence of segments, angles, and polygons.	supports: Module 6: Lesson 6: 316-317
6.13 The student will describe and identify properties of quadrilaterals.	supports: Module 6: Lesson 4: 308-311 Module 6: Lesson 5: 312-315
Probability and Statistics	
Focus: Practical Applications of Statistics	
6.14 The student, given a problem situation, will a) construct circle graphs; b) draw conclusions and make predictions, using circle graphs; and c) compare and contrast graphs that present information from the same data set.	
6.15 The student will a) describe mean as balance point; and	Module 7: Lesson 1: 296-299 Module 7: Lesson 1: 296-299 Module 7: Lesson 3: 3-4-307

Virginia Standards of Learning	VMath Matches
Grade 6	
b) decide which measure of center is appropriate for a given purpose.	Module 7: Lesson 6: 316-317 Module 7: Lesson 7: 318-321
6.16 The student will a) compare and contrast dependent and independent events; and b) determine probabilities for dependent and independent events.	
Patterns, Functions, and Algebra	
Focus: Variable Equations and Properties	
6.17 The student will identify and extend geometric and arithmetic sequences.	
6.18 The student will solve one-step linear equations in one variable involving whole number coefficients and positive rational solutions.	Module 4: Lesson 6: 200-201 Module 4: Lesson 7: 202-205 Module 4: Lesson 8: 206-209
6.19 The student will investigate and recognize	
a) the identity properties for addition and multiplication;	Module 1: Lesson 1: 38-41
b) the multiplicative property of zero; and	
c) the inverse property for multiplication.	Module 1: Lesson 1: 38-41
6.20 The student will graph inequalities on a number line.	Module 4: Lesson 11: 218-221 Module 4: Lesson 12: 222-225

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Grade 7	
Number and Number Sense	
Focus: Proportional Reasoning	
7.1 The student will a) investigate and describe the concept of negative exponents for powers of ten; b) determine scientific notation for numbers greater than zero; c) compare and order fractions, decimals, percents, and numbers written in scientific notation; d) determine square roots; and e) identify and describe absolute value for rational numbers.	Module 3: Lesson PL1: 122-126 Module 3: Lesson PL2: 127 Module 2: Lesson 1: 84-87 Module 2: Lesson 2: 88-91
7.2 The student will describe and represent arithmetic and geometric sequences, using variable expressions.	
Computation and Estimation	
Focus: Integer Operations and Proportional Reasoning	
7.3 The student will a) model addition, subtraction, multiplication, and division of integers; and b) add, subtract, multiply, and divide integers.	Module 2: Lesson 3: 92-95 Module 2: Lesson 8: 106-109 Module 3: Lesson 1: 128-131 Module 3: Lesson 4: 140-143
7.4 The student will solve single-step and multistep practical problems, using proportional reasoning.	Module 5: Lesson3: 228 Module 5: Lesson 6: 231
Measurement	
Focus: Proportional Reasoning	
7.5 The student will a) describe volume and surface area of cylinders; b) solve practical problems involving the volume and surface area of rectangular prisms and cylinders; and c) describe how changing one measured attribute of a rectangular prism affects its volume and surface area.	Module 6: Lesson 7: 282-285 Module 6: Lesson 8: 286-289 Module 6: Lesson 10: 294-297 Module 6: Lesson 12: 302-326
7.6 The student will determine whether plane figures—quadrilaterals and triangles—are similar and write proportions to express the relationships between corresponding sides of similar figures.	Module 5: Lesson 4: 229
Geometry	
Focus: Relationships between Figures	
7.7 The student will compare and contrast the following quadrilaterals based on properties:	

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Grade 7	
parallelogram, rectangle, square, rhombus, and trapezoid.	
7.8 The student, given a polygon in the coordinate plane, will represent transformations (reflections, dilations, rotations, and translations) by graphing in the coordinate plane.	
Probability and Statistics	
Focus: Applications of Statistics and Probability	
7.9 The student will investigate and describe the difference between the experimental probability and theoretical probability of an event.	Module 7: Lesson 7: 344-347
7.10 The student will determine the probability of compound events, using the Fundamental (Basic) Counting Principle.	Module 7: Lesson 8: 348-351 Module 7: Lesson 5: 338-341
7.11 The student, given data for a practical situation, will	
a) construct and analyze histograms; and	
b) compare and contrast histograms with other types of graphs presenting information from the same data set.	Module 7: Lesson 1: 322-325
Patterns, Functions, and Algebra	
Focus: Linear Equations	
7.12 The student will represent relationships with tables, graphs, rules, and words.	Module 4: Lesson 8: 198-201
7.13 The student will	
a) write verbal expressions as algebraic expressions and sentences as equations and vice versa; and	Module 4: Lesson 6: 192-193 Module 4: Lesson 7: 194-197
b) evaluate algebraic expressions for given replacement values of the variables.	Module 4: Lesson PL1: 166-169 Module 4: Lesson PL2: 170-173 Module 4: Lesson 1: 174-177 Module 4: Lesson 2: 178-181
7.14 The student will a) solve one- and two-step linear equations in one variable; and b) solve practical problems requiring the solution of one- and two-step linear equations.	Module 4: Lesson 4: 184-187 Module 4: Lesson 6: 192-193
7.15 The student will a) solve one-step inequalities in one variable; and b) graph solutions to inequalities on the number line.	Module 4: Lesson 9: 202-206 Module 4: Lesson 10: 207-210
7.16 The student will apply the following properties of operations with real numbers:	

Virginia Standards of Learning	VMath Matches
Grade 7	
a) the commutative and associative properties for addition and multiplication;	
b) the distributive property;	Module 4: Lesson PL2: 170-173
c) the additive and multiplicative identity properties;	
d) the additive and multiplicative inverse properties; and	
e) the multiplicative property of zero.	

Virginia Standards of Learning	VMath Matches
Grade 8	
Number and Number Sense	
Focus: Relationships within the Real Number System	
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; and	Module 2: Lesson 1: 98-101 Module 2: Lesson 2: 102-105 Module 3: Lesson PL1: 136-139 Module 3: Lesson PL2: 140-143 Module 2: Lesson 4: 110-113
b) compare and order decimals, fractions, percents, and numbers written in scientific notation.	Module 2: Lesson PL1: 90-93 Module 2: Lesson 5: 114-118 Module 2: Lesson 6: 119
8.2 The student will describe orally and in writing the relationships between the subsets of the real number system.	Module 2: Lesson 6: 119
Computation and Estimation	
Focus: Practical Applications of Operations with Real Numbers	
8.3 The student will a) solve practical problems involving rational numbers, percents, ratios, and proportions; and b) determine the percent increase or decrease for a given situation.	Module 1: Lesson 12: 82 Module 5: Lesson PL2: 244-247
8.4 The student will apply the order of operations to evaluate algebraic expressions for given replacement values of the variables.	Module 2: Lesson 2: 102-105
8.5 The student will a) determine whether a given number is a perfect square; and b) find the two consecutive whole numbers between which a square root lies.	Module 2: Lesson 7: 120-123 Module 2: Lesson 8: 124-127 Module 2: Lesson 9: 128-130 Module 2: Lesson 10: 131-134 Module 7: Lesson PL2: 338-341
Measurement	
Focus: Problem Solving	
8.6 The student will	
a) verify by measuring and describe the relationships among vertical angles, adjacent angles, supplementary angles, and complementary angles; and	Module 6: Lesson 3: 296-299
b) measure angles of less than 360°.	Module 6: Lesson PL2: 284-28
8.7 The student will	
a) investigate and solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids; and	Module 7: Lesson 4: 354-357 Module 7: Lesson 5: 358-362 Module 7: Lesson 6: 362-365

Virginia Standards of Learning	VMath Matches
Grade 8	
b) describe how changing one measured attribute of a figure affects the volume and surface area.	Module 7: Lesson 3: 350-353 Module 7: Lesson 7: 366-369
Geometry	
Focus: Problem Solving with 2- and 3-Dimensional Figures	
8.8 The student will a) apply transformations to plane figures; and b) identify applications of transformations.	Module 6: Lesson 7: 312-315 Module 6: Lesson 8: 316-319 Module 6: Lesson 9: 320-323 Module 6: Lesson 10: 324-327
8.9 The student will construct a three-dimensional model, given the top or bottom, side, and front views.	Module 7: Lesson 4: 354-357
8.10 The student will a) verify the Pythagorean Theorem; and b) apply the Pythagorean Theorem.	Module 7: Lesson 8: 370-372 Module 7: Lesson 9: 372-375
8.11 The student will solve practical area and perimeter problems involving composite plane figures.	Module 7: Lesson 1: 342-345 Module 7: Lesson 2: 346-349 Module 7: Lesson 3: 350-353
Probability and Statistics	
Focus: Statistical Analysis of Graphs and Problem Situations	
8.12 The student will determine the probability of independent and dependent events with and without replacement.	
8.13 The student will a) make comparisons, predictions, and inferences, using information displayed in graphs; and b) construct and analyze scatterplots.	
Patterns, Functions, and Algebra	
Focus: Linear Relationships	
8.14 The student will make connections between any two representations (tables, graphs, words, and rules) of a given relationship.	Module 3: Lesson 7: 166-169 Module 3: Lesson 8: 170-171 Module 4: Lesson 8: 206-209
8.15 The student will a) solve multistep linear equations in one variable with the variable on one and two sides of the equation; b) solve two-step linear inequalities and graph the results on a number line; and c) identify properties of operations used to solve an equation.	Module 5: Lesson 7: 268 Module 5: Lesson 8: 269 Module 5: Lesson 10: 275-278
8.16 The student will graph a linear equation in two variables.	Module 4: Lesson 10: 214-217 Module 4: Lesson 11: 218-221

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Grade 8	
	Module 5: Lesson 9: 270-274
8.17 The student will identify the domain, range, independent variable, or dependent variable in a given situation.	Module 3: Lesson 3: 152-155
	Module 3: Lesson 4: 156-159
	Module 3: Lesson 10: 174-177