Objectives Taught in
Essentials for Algebra

	Assessed in	Mastered by
Short Division		
• Divide a 3-digit or 4-digit value by a single-digit value.	Test 1A	Lesson 7
Decimal Rounding		
• Round a decimal value to the nearest whole number, tenth, hundredth, or thousandth.	Test 1B	Lesson 16
Decimal Operations		
• Add or subtract decimal values	Test 1A	Lesson 7
• Multiply decimal values.	Test 1B	Lesson 16
• Divide decimal values.	Test 4	Lesson 46
Fraction Operations		
• Add or subtract fractions with like denominators.	Test 1A	Lesson 7
• Multiply fractions.	Test 1A	Lesson 7
Fraction, Decimal, Percent Equivalences		
• Complete an equation to show equivalent fractions.	Test 1B	Lesson 16
• Complete an equation to show a fraction and the equivalent mixed number.	Test 1A	Lesson 7
• Complete a table to show a hundredths fraction and the equivalent decimal and percent values.	Test 1B	Lesson 16
Abbreviations		
• Write abbreviations for common standard and metric units.	Test 1A	Lesson 7
Problem Solving: Add/Subtract		
• Find the total cost of a purchase or the change received.	Test 1B	Lesson 16
• Find the difference between two values.	Test 7	Lesson 76
Fraction Simplification		
• Apply divisibility rules for 2, 3, 5, and 10.	Test 2	Lesson 26
• Simplify a fraction.	Test 2	Lesson 26
• Simplify fractions that are added or multiplied.	Test 3	Lesson 36
• Simplify a fraction with decimal values.	Test 5	Lesson 56

Problem Solving: Rate Equations

	Assessed in	Mastered by
• Write a letter equation from a question.	Test 2	Lesson 26
• Solve a complete problem.	Test 3	Lesson 36
• Solve a ratio problem.	Test 4	Lesson 46
• Solve a mixed set of rate-equation and classification problems.	Test 4	Lesson 46
• Solve a mixed set of rate-equation, classification, and comparison problems.	Test 5	Lesson 56
• Solve a problem that asks about the rate unit.	Test 6	Lesson 66
• Work a mixed set of problems, some of which ask about the rate unit.	Test 7	Lesson 76
• Use survey and sample data to estimate expected outcomes.	Test 10	Lesson 106
• Convert related units.	Test 11	Lesson 116
• Solve a rate-equation problem that involves unit conversion.	——	Lesson 117

Algebra

	Assessed in	Mastered by
• Solve a missing-factor problem.	Test 2	Lesson 26
• Solve a one-step add/subtract problem.	Test 2	Lesson 26
• Solve a problem that involves multiplication by a reciprocal.	Test 3	Lesson 36
• Solve a two-step problem.	Test 3	Lesson 36
• Solve a problem that involves substitution.	Test 4	Lesson 46
• Solve a problem that adds or subtracts a whole number and a fraction.	Test 5	Lesson 56
• Solve a problem that involves like terms.	Test 5	Lesson 56
• Simplify an expression that involves the distribution of a number.	Test 6	Lesson 66
• Solve a problem that involves a negative letter term (multiply by -1).	Test 7	Lesson 76
• Solve a problem that involves two substitutions.	Test 7	Lesson 76
• Solve a problem that involves the distribution of a number.	Test 7	Lesson 76
• Solve a problem that involves the distribution of a letter.	Test 7	Lesson 76
• Solve a problem with letter terms on both sides of the equation.	Test 7	Lesson 76
• Solve a one- or two-step inequality $(>, <)$.	Test 8	Lesson 86
• Solve a mixed set of equations and inequalities that involve substitution.	Test 8	Lesson 86
• Solve an equation with the unknown in the denominator of a fraction.	Test 8	Lesson 86
• Solve a pair of simultaneous equations by multiplying and combining equations.	Test 8	Lesson 86
• Solve a pair of simultaneous equations by substitution.	Test 9	Lesson 96
• Solve a pair of simultaneous equations for x and y. Plot the lines and show the intercept.	Test 11	Lesson 116

Problem Solving: Algebra Translation

	Assessed in	Mastered by
• Solve a classification problem (+ or −).	Test 3	Lesson 36
• Translate a comparison sentence into a letter equation (+, −, ×).	Test 3	Lesson 36
• Solve a comparison problem (+, −, ×).	Test 4	Lesson 46
• Solve a multiplication comparison problem involving a percent value.	Test 6	Lesson 66
• Solve a problem that asks about a fraction or percent of a group.	Test 7	Lesson 76
• Solve a classification problem that involves two multiplication equations.	Test 7	Lesson 76
• Translate a sentence into a letter or equation that involves two operations.	Test 7	Lesson 76
• Solve a problem that yields an equation involving two or more operations.	Test 8	Lesson 86
• Solve a problem that yields an inequality statement involving two or more operations.	Test 9	Lesson 96
• Translate a sentence that yields a combination sign ($\geq$, $\leq$).	Test 9	Lesson 96
• Solve a problem that yields a combination sign.	Test 9	Lesson 96
• Solve a mixed set of problems ($>$, $<$, $=$, $\leq$, $\geq$)	Test 10	Lesson 106
• Solve a two-step problem that asks about a fraction or percent of a group.	Test 10	Lesson 106
• Solve a problem that involves a percent increase or decrease.	Test 11	Lesson 116
• Solve a problem that generates a pair of simultaneous equations.	Test 11	Lesson 116

Coordinate System

	Assessed in	Mastered by
• Plot a point from a description ($x =$ ▇, $y =$ ▇)	Test 3	Lesson 36
• Write an x and y equation for a point.	Test 3	Lesson 36
• Plot a point from coordinates (▇, ▇).	Test 4	Lesson 46
• Write coordinates for a point (4 quadrants).	Test 4	Lesson 46
• Answer questions based on rates shown as lines on the coordinate system.	Test 11	Lesson 116

Signed-Number Operations

	Assessed in	Mastered by
• Combine 2 values.	Test 3	Lesson 36
• Combine more than 2 values.	Test 4	Lesson 46
• Multiply 2 values.	Test 5	Lesson 56
• Divide 2 values.	Test 6	Lesson 66
• Multiply and combine a string of values.	Test 6	Lesson 66
• Multiply more than 2 values.	Test 7	Lesson 76

Straight-Line Equations

	Assessed in	Mastered by
• Complete an add/subtract function table and draw the line.	Test 4	Lesson 46
• Figure out the correct function for a table $(+, -, \times)$.	Test 4	Lesson 46
• Figure out the correct function for a table based on $x\left(\frac{y}{x}\right) = y$.	Test 5	Lesson 56
• Complete a multiplication function table with missing x or y values and draw the line.	Test 6	Lesson 66
• Solve a linear equation for y, and write an equation for the slope $(m = \blacksquare)$.	Test 6	Lesson 66
• Write the slope-intercept equation for a line shown on the coordinate system (+ slope, through zero).	Test 6	Lesson 66
• Write the slope-intercept equation for a line (+ slope, $+/-$ intercept).	Test 7	Lesson 76
• Write the slope-intercept equation for a line ($+/-$ slope, $+/-$ intercept).	Test 8	Lesson 86
• Plot a line on the coordinate system for a given equation ($+/-$ slope, $+/-$ intercept).	Test 8	Lesson 86
• Plot a line on the coordinate system that involves a whole-number slope.	Test 9	Lesson 96
• Substitute a given x or y value in a slope-intercept equation to figure out the corresponding y or x coordinate and plot the line.	Test 11	Lesson 116
• Identify the y intercept for a line on the coordinate system.	Test 11	Lesson 116

Exponents

	Assessed in	Mastered by
• Write the base and exponent for repeated multiplication.	Test 5	Lesson 56
• Write repeated multiplication for a base and exponent.	Test 5	Lesson 56
• Figure out the value for a base and exponent.	Test 5	Lesson 56
• Write the base and exponent for groups of repeated multiplication.	Test 5	Lesson 56
• Write the base and exponent for fractions showing repeated multiplication.	Test 5	Lesson 56
• Express a fraction involving repeated multiplication as a base with a positive or with a negative exponent.	Test 6	Lesson 66
• Rewrite a fraction with multiplied bases and exponents to show an equivalent fraction with all positive exponents.	Test 6	Lesson 66
• Simplify an expression by combining exponents.	Test 7	Lesson 76
• Rewrite an expression to show the value of a numerical base and exponent.	Test 7	Lesson 76
• Simplify a fraction that has a positive and negative exponent in both the numerator and denominator.	Test 8	Lesson 86
• Combine like terms that have exponents.	Test 10	Lesson 106
• Simplify an expression by multiplying and combining terms with exponents.	Test 11	Lesson 116
• Combine exponents and figure out the value of an expression involving a negative base.	Test 11	Lesson 116

	Assessed in	Mastered by

Geometry
	Assessed in	Mastered by
• Find the perimeter of a polygon.	Test 1A	Lesson 7
• Find the area of a rectangle or triangle.	Test 1B	Lesson 16
• Find the circumference or diameter of a circle.	Test 5	Lesson 56
• Find the radius of a circle, given the diameter.	Test 5	Lesson 56
• Find the area of a circle.	Test 6	Lesson 66
• Know the degrees in a circle, a right angle, and a straight line.	Test 7	Lesson 76
• Find the surface area of a box.	Test 11	Lesson 116
• Find the area of a trapezoid.	——	Lesson 117
• Find the area of complex shapes.	——	Lesson 118
• Find the volume of a rectangular prism.	——	Lesson 118
• Find the volume of complex figures.	——	Lesson 119

Pythagorean Theorem
	Assessed in	Mastered by
• Identify the square root of a number or the whole numbers a square root lies between.	Test 8	Lesson 86
• Complete an equation to show the square root or square of a number.	Test 8	Lesson 86
• Find the missing side in a right triangle.	Test 9	Lesson 96
• Solve word problems that involve distance and direction, some of which generate a right-triangle diagram.	Test 10	Lesson 106

Similar Triangles
	Assessed in	Mastered by
• Figure out a missing angle to determine whether or not two triangles are similar.	Test 9	Lesson 96
• Figure out a corresponding side in a pair of similar triangles.	Test 9	Lesson 96
• Figure out a corresponding side for right triangles shown on parallel lines.	Test 10	Lesson 106
• Figure out a corresponding side in a pair of nested similar triangles.	Test 10	Lesson 106
• Solve a word problem that generates a similar-triangle diagram.	Test 10	Lesson 106

Probability
	Assessed in	Mastered by
• Write a probability fraction for an event involving a spinner.	Test 9	Lesson 96
• Solve a probability problem that asks about trials.	Test 9	Lesson 96
• Solve a probability problem that asks about the object.	Test 9	Lesson 96
• Compute the probability of independent events.	Test 11	Lesson 116
• Compute the probability of dependent events.	Test 11	Lesson 116

Scientific Notation
	Assessed in	Mastered by
• Write the scientific notation for a number (+ exponent).	Test 9	Lesson 96
• Write a number from scientific notation (+ exponent).	Test 10	Lesson 106
• Write a number from scientific notation (+/− exponent).	Test 11	Lesson 116
• Write the scientific notation for a number (+/− exponent).	Test 11	Lesson 116

Proportion
	Assessed in	Mastered by
• Use a scale diagram to figure out the actual dimension of an object.	Test 10	Lesson 106

Box and Whiskers
	Assessed in	Mastered by
• Find the mean and median score for a population of scores.	Test 11	Lesson 116
• Construct a box-and-whiskers plot for a population of scores.	——	Lesson 119