Objectives Taught in *Essentials for Algebra*

	Mastered by:
Short Division	Lesson 16 (T1)
Decimal Rounding	
• Round a decimal value to the nearest whole number, tenth, hundredth, or thousandth.	Lesson 16 (T1)
Decimal Operations	
• Add or subtract decimal values.	Lesson 16 (T1)
• Multiply decimal values.	Lesson 16 (T1)
• Divide decimal values.	Lesson 46 (T4)
Fraction Operations	
• Add or subtract fractions with like denominators.	Lesson 16 (T1)
• Multiply fractions.	Lesson 16 (T1)
Fraction, Decimal, Percent Equivalences	
• Equivalent Fractions	Lesson 16 (T1)
• Fraction/Whole Number/Mixed Number	Lesson 16 (T1)
• Fraction/Decimal/Percent	Lesson 16 (T1)
Abbreviations	
• Write abbreviations for common standard/metric units.	Lesson 16 (T1)
Fraction Simplification	
• Apply divisibility rules for 2, 3, 5 and 10.	Lesson 26 (T2)
• Simplify a fraction.	Lesson 26 (T2)
• Simplify fractions that are added or multiplied.	Lesson 36 (T3)
• Simplify a fraction with decimal values.	Lesson 56 (T5)
Problem Solving: Add/Subtract	
• Find the total cost of a purchase, or the change received.	Lesson 16 (T1)
• Find the difference between two values.	Lesson 76 (T1)
Problem Solving: Rate Equations	
• Write a letter equation from a question.	Lesson 26 (T2)
• Solve a complete problem.	Lesson 36 (T3)
• Solve a ratio problem.	Lesson 46 (T4)
• Solve a mixed set of Rate Equation/Classification problems.	Lesson 46 (T4)
• Solve a mixed set of Rate Equation/Classification/Comparison problems.	Lesson 56 (T5)
• Solve a problem that asks about the rate unit.	Lesson 66 (T6)

• Work a mixed set of problems, some of which ask about the rate unit.	Lesson 76 (T7)
• Use survey/sample data to estimate expected outcomes.	Lesson 106 (T10)
• Convert related units.	Lesson 116 (T10)
• Solve a rate-equation problem that involves unit conversion.	Lesson 117

Algebra

- Solve a missing-factor problem. Lesson 26 (T2)
- Solve a one-step add/subtract problem. Lesson 26 (T2)
- Solve a problem that involves multiplication by a reciprocal. Lesson 36 (T3)
- Solve a two-step problem. Lesson 36 (T3)
- Solve a problem that involves substitution. Lesson 46 (T4)
- Solve a problem that adds or subtracts a whole number and a fraction. Lesson 56 (T5)
- Solve a problem that involves like terms. Lesson 56 (T5)
- Simplify an expression that involves the distribution of a number. Lesson 66 (T6)
- Solve a problem that involves a negative letter term (multiply by –1). Lesson 76 (T7)
- Solve a problem that involves two substitutions. Lesson 76 (T7)
- Solve a problem that involves the distribution of a number. Lesson 76 (T7)
- Solve a problem that involves the distribution of a letter. Lesson 76 (T7)
- Solve a problem with letter terms on both sides of the equation. Lesson 76 (T7)
- Solve a one- or two-step inequality (>, <). Lesson 86 (T8)
- Solve a mixed set of equations and inequalities that involve substitution. Lesson 86 (T8)
- Solve an equation with the unknown in the denominator of a fraction. Lesson 86 (T8)
- Solve a pair of simultaneous equations by multiplying and combining equations. Lesson 86 (T8)
- Solve a pair of simultaneous equations by substitution. Lesson 96 (T9)
- Solve a pair of simultaneous equations for *x* and *y.* Plot the lines and show the intercept. Lesson 116 (T11)

Problem Solving: Algebra Translation

- Solve a classification problem (+ or –). Lesson 36 (T3)
- Translate a comparison sentence into a letter equation (+, –, x). Lesson 36 (T3)
- Solve a comparison problem (+, –, x). Lesson 46 (T4)
- Solve a multiplication comparison problem involving a percent value. Lesson 66 (T6)
- Solve a problem that asks about a fraction or percent of a group. Lesson 76 (T7)
- Solve a classification problem that involves two multiplication equations. Lesson 76 (T7)
- Translate a sentence into a letter or equation that involves two operations. Lesson 76 (T7)
- Solve a problem that yields an equation involving two or more operations. Lesson 86 (T8)
- Solve a problem that yields an inequality statement involving two or more operations. Lesson 96 (T9)
- Translate a sentence that yields a combination sign ($\geq, \leq$). Lesson 96 (T9)
- Solve a problem that yields a combination sign. Lesson 96 (T9)
- Solve a mixed set of problems (>, <, =, $\leq$, $\geq$). Lesson 106 (T10)
- Solve a two-step problem that asks about a fraction or percent of a group. Lesson 106 (T10)

• Solve a problem that involves a percent increase or decrease. Lesson 116 (T11)
• Solve a problem that generates a pair of simultaneous equations. Lesson 116 (T11)

Coordinate System

• Plot a point from a description ($x =$ ■ , $y =$ ■). Lesson 36 (T3)
• Write an x and y equation for a point. Lesson 36 (T3)
• Plot a point from coordinates (■ , ■). Lesson 46 (T4)
• Write coordinates for a point (4 quadrants). Lesson 46 (T4)
• Answer questions based on rates shown as lines on the coordinate system. Lesson 116 (T11)

Signed-Number Operations

- Combine 2 values. Lesson 36 (T3)
- Combine more than 2 values. Lesson 46 (T4)
- Multiply 2 values. Lesson 56 (T5)
- Multiply and combine a string of values. Lesson 66 (T6)
- Multiply more than 2 values. Lesson 76 (T7)

Straight-Line Equations

- Complete an add/subtract function table and draw the line. Lesson 46 (T4)
- Figure out the correct function for a table (+, –, x). Lesson 46 (T4)
- Figure out the correct function for a table, based on $x\left(\frac{y}{x}\right) = y$. Lesson 56 (T5)
- Complete a multiplication function table with missing *x* or *y* values and draw the line. Lesson 66 (T6)
- Solve a linear equation for *y,* and write an equation for the slope ($m =$ ■.) Lesson 66 (T6)
- Write the slope-intercept equation for a line shown on the coordinate system (+ slope, through zero). Lesson 66 (T6)
- Write the slope-intercept equation for a line (+ slope, +/– intercept). Lesson 76 (T7)
- Write the slope-intercept equation for a line (+/– slope, +/– intercept). Lesson 86 (T8)
- Plot a line on the coordinate system for a given equation (+/– slope, +/– intercept). Lesson 86 (T8)
- Plot a line on the coordinate system that involves a whole-number slope. Lesson 96 (T9)
- 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. Lesson 116 (T11)
- Identify the *y* intercept for a line on the coordinate system. Lesson 116 (T11)

Exponents

- Write the base and exponent for repeated multiplication. Lesson 56 (T5)
- Write repeated multiplication for a base and exponent. Lesson 56 (T5)
- Figure out the value for a base and exponent. Lesson 56 (T5)
- Write the base and exponent for groups of repeated multiplication. Lesson 56 (T5)
- Write the base and exponent for fractions showing repeated multiplication. Lesson 56 (T5)
- Express a fraction involving repeated multiplication as a base with a positive or with a negative exponent. Lesson 66 (T6)
- Rewrite fraction with multiplied bases and exponents to show an equivalent fraction with all positive exponents. Lesson 66 (T6)
- Simplify an expression by combining exponents. Lesson 76 (T7)
- Rewrite an expression to show the value of a numerical base and

exponent.	Lesson 76 (T7)
• Simplify a fraction that has a positive and negative exponent in both the numerator and denominator.	Lesson 86 (T8)
• Combine like terms that have exponents.	Lesson 106 (T10)
• Simplify an expression by multiplying and combining terms with exponents.	Lesson 116 (T11)
• Combine exponents and figure out the value of an expression involving a negative base.	Lesson 116 (T11)

Geometry

- Find the perimeter of a polygon. Lesson 16 (T1)
- Find the area of a rectangle or triangle. Lesson 16 (T1)
- Find the circumference or diameter of a circle. Lesson 56 (T5)
- Find the radius of a circle, given the diameter. Lesson 56 (T5)
- Find the area of a circle. Lesson 66 (T6)
- Know the degrees in a circle, right angle, and straight line. Lesson 76 (T7)
- Find the surface area of a box. Lesson 116 (T5)
- 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

- Identify the square root of a number, or the whole numbers a square root lies between. Lesson 86 (T8)
- Complete an equation to show the square root, or square of a number. Lesson 86 (T8)
- Find the missing side in a right triangle. Lesson 96 (T9)
- Solve word problems that involve distance and direction, some of which generate a right-triangle diagram. Lesson 106 (T10)

Similar Triangles

- Figure out a missing angle to determine whether or not two triangles are similar. Lesson 96 (T9)
- Figure out a corresponding side in a pair of similar triangles. Lesson 96 (T9)
- Figure out a corresponding side for right triangles shown on parallel lines. Lesson 106 (T10)
- Figure out a corresponding side in a pair of nested similar triangles. Lesson 106 (T10)
- Solve a word problem that generates a similar-triangle diagram. Lesson 106 (T10)

Probability

- Write a probability fraction for an event involving a spinner. Lesson 96 (T9)
- Solve a probability problem that asks about trials. Lesson 96 (T9)
- Solve a probability problem that asks about the object. Lesson 96 (T9)
- Compute the probability of independent events. Lesson 116 (T11)
- Compute the probability of dependent events. Lesson 116 (T11)

Scientific Notation

- Write the scientific notation for a number (+ exponent). Lesson 96 (T9)

• Write a number from scientific notation (+ exponent). Lesson 106 (T10)
• Write a number from scientific notation (+/– exponent). Lesson 116 (T11)
• Write the scientific notation for a number (+/– exponent). Lesson 116 (T11)

Proportion

• Use a scale diagram to figure out an actual dimension of an object. Lesson 106 (T10)

Box and Whisker

• Find the mean and median score for a population of scores. Lesson 116 (T11)
• Construct a box-and-whisker plot for a population of scores. Lesson 119