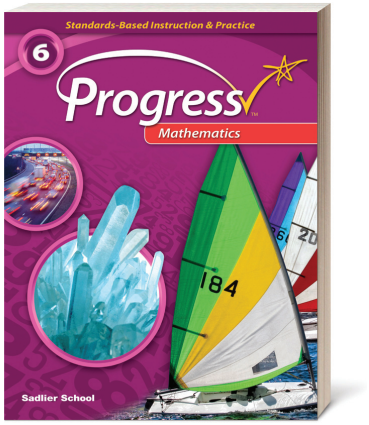
SADLIER

Progress Mathematics

Standards-Based Instruction & Practice



Aligned to the

South Carolina College- and Career-Ready Standards for Mathematics

Grade 6

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The Number System

Standards		Sadlier *Progress Mathematics*, Grade 6	
The student will:			
6.NS.1	Compute and represent quotients of positive fractions using a variety of procedures (e.g., visual models, equations, and real-world situations).	**Lesson 9**	**Divide a Fraction by a Fraction**—pp. 80–87
		Lesson 10	**Problem Solving: Fraction Division**—pp. 88–95
6.NS.2	Fluently divide multi-digit whole numbers using a standard algorithmic approach.	**Lesson 11**	**Divide Multi-digit Numbers**—pp. 96–103
6.NS.3	Fluently add, subtract, multiply and divide multi-digit decimal numbers using a standard algorithmic approach.	**Lesson 12**	**Add and Subtract Multi-digit Decimals**—pp. 104–111
		Lesson 13	**Multiply and Divide Multi-digit Decimals**—pp. 112–119
6.NS.4	Find common factors and multiples using two whole numbers.		
	a. Compute the greatest common factor (GCF) of two numbers both less than or equal to 100.	**Lesson 14**	**Find the Greatest Common Factor and Least Common Multiple**—pp. 120–127
	b. Compute the least common multiple (LCM) of two numbers both less than or equal to 12.	**Lesson 14**	**Find the Greatest Common Factor and Least Common Multiple**—pp. 120–127
	c. Express sums of two whole numbers, each less than or equal to 100, using the distributive property to factor out a common factor of the original addends.	**Lesson 14**	**Find the Greatest Common Factor and Least Common Multiple**—pp. 120–127
6.NS.5	Understand that the positive and negative representations of a number are opposites in direction and value. Use integers to represent quantities in real-world situations and explain the meaning of zero in each situation.	**Lesson 15**	**Understand Positive and Negative Numbers and Opposites**—pp. 128–135
6.NS.6	Extend the understanding of the number line to include all rational numbers and apply this concept to the coordinate plane.		
	a. Understand the concept of opposite numbers, including zero, and their relative locations on the number line.	**Lesson 15**	**Understand Positive and Negative Numbers and Opposites**—pp. 128–135
	b. Understand that the signs of the coordinates in ordered pairs indicate their location on an axis or in a quadrant on the coordinate plane.	**Lesson 16**	**Locate Points with Rational Coordinates**—pp. 136–143
	c. Recognize when ordered pairs are reflections of each other on the coordinate plane across one axis, both axes, or the origin.	**Lesson 16**	**Locate Points with Rational Coordinates**—pp. 136–143

The Number System

Standards		Sadlier *Progress Mathematics*, Grade 6	
	d. Plot rational numbers on number lines and ordered pairs on coordinate planes.	**Lesson 16**	**Locate Points with Rational Coordinates**—pp. 136–143
6.NS.7	Understand and apply the concepts of comparing, ordering, and finding absolute value to rational numbers.		
	a. Interpret statements using equal to (=) and not equal to (≠).	**Lesson 17**	**Compare and Order Rational Numbers**—pp. 144–151
	b. Interpret statements using less than (<), greater than (>), and equal to (=) as relative locations on the number line.	**Lesson 17**	**Compare and Order Rational Numbers**—pp. 144–151
	c. Use concepts of equality and inequality to write and to explain real-world and mathematical situations.	**Lesson 17**	**Compare and Order Rational Numbers**—pp. 144–151
	d. Understand that absolute value represents a number's distance from zero on the number line and use the absolute value of a rational number to represent real- world situations.	**Lesson 18**	**Understand Absolute Value**—pp. 152–159
	e. Recognize the difference between comparing absolute values and ordering rational numbers. For negative rational numbers, understand that as the absolute value increases, the value of the negative number decreases.	**Lesson 18**	**Understand Absolute Value**—pp. 152–159
6.NS.8	Extend knowledge of the coordinate plane to solve real-world and mathematical problems involving rational numbers.		
	a. Plot points in all four quadrants to represent the problem.	**Lesson 19**	**Problem Solving: The Coordinate Plane**—pp. 160–167
	b. Find the distance between two points when ordered pairs have the same *x*- coordinates or same *y*-coordinates.	**Lesson 19**	**Problem Solving: The Coordinate Plane**—pp. 160–167
	c. Relate finding the distance between two points in a coordinate plane to absolute value using a number line.	**Lesson 19**	**Problem Solving: The Coordinate Plane**—pp. 160–167
6.NS.9	Investigate and translate among multiple representations of rational numbers (fractions, decimal numbers, percentages). Fractions should be limited to those with denominators of 2, 3, 4, 5, 8, 10, and 100.	**Lesson 5**	**Calculate a Percent of a Quantity**—pp. 42–49

Ratios and Proportional Relationships

Standards		Sadlier *Progress Mathematics*, Grade 6
The student will:		
6.RP.1	Interpret the concept of a ratio as the relationship between two quantities, including part to part and part to whole.	**Lesson 1** **Understand Ratios and Unit Rates**—pp. 10–17
6.RP.2	Investigate relationships between ratios and rates.	
	a. Translate between multiple representations of ratios (i.e., *a*/*b* , *a*: *b*, *a* to *b*, visual models).	**Lesson 1** **Understand Ratios and Unit Rates**—pp. 10–17
	b. Recognize that a rate is a type of ratio involving two different units.	**Lesson 1** **Understand Ratios and Unit Rates**—pp. 10–17
	c. Convert from rates to unit rates.	**Lesson 1** **Understand Ratios and Unit Rates**—pp. 10–17
6.RP.3	Apply the concepts of ratios and rates to solve real-world and mathematical problems.	
	a. Create a table consisting of equivalent ratios and plot the results on the coordinate plane.	**Lesson 2** **Use Ratio Tables to Find Equivalent Ratios**—pp. 18–25
	b. Use multiple representations, including tape diagrams, tables, double number lines, and equations, to find missing values of equivalent ratios.	**Lesson 2** **Use Ratio Tables to Find Equivalent Ratios**—pp. 18–25
	c. Use two tables to compare related ratios.	**Lesson 3** **Use Ratio Tables to Compare Ratios**—pp. 26–33
	d. Apply concepts of unit rate to solve problems, including unit pricing and constant speed.	**Lesson 4** **Solve Unit Rate Problems**—pp. 34–41
	e. Understand that a percentage is a rate per 100 and use this to solve problems involving wholes, parts, and percentages.	**Lesson 5** **Calculate a Percent of a Quantity**—pp. 42–49 **Lesson 6** **Find the Whole Given a Part and the Percent**—pp. 50–57
	f. Solve one-step problems involving ratios and unit rates (e.g., dimensional analysis).	**Lesson 1** **Understand Ratios and Unit Rates**—pp. 10–17

Expressions, Equations, and Inequalities

Standards		Sadlier *Progress Mathematics*, Grade 6	
The student will:			
6.EEI.1	Write and evaluate numerical expressions involving whole-number exponents and positive rational number bases using the Order of Operations.	**Lesson 20**	**Write and Evaluate Numerical Expressions with Exponents** —pp. 174–181
6.EEI.2	Extend the concepts of numerical expressions to algebraic expressions involving positive rational numbers.		
	a. Translate between algebraic expressions and verbal phrases that include variables.	**Lesson 21**	**Write Algebraic Expressions to Record Operations**—pp. 182–189
	b. Investigate and identify parts of algebraic expressions using mathematical terminology, including term, coefficient, constant, and factor.	**Lesson 22**	**Identify Parts of an Expression**—pp. 190–197
	c. Evaluate real-world and algebraic expressions for specific values using the Order of Operations. Grouping symbols should be limited to parentheses, braces, and brackets. Exponents should be limited to whole-numbers.	**Lesson 23**	**Evaluate Algebraic Expressions**—pp. 198–205
6.EEI.3	Apply mathematical properties (e.g., commutative, associative, distributive) to generate equivalent expressions.	**Lesson 24**	**Generate and Identify Equivalent Expressions**—pp. 206–213
6.EEI.4	Apply mathematical properties (e.g., commutative, associative, distributive) to justify that two expressions are equivalent.	**Lesson 24**	**Generate and Identify Equivalent Expressions**—pp. 206–213
6.EEI.5	Understand that if any solutions exist, the solution set for an equation or inequality consists of values that make the equation or inequality true.	**Lesson 25**	**Identify Solutions to Equations and Inequalities**—pp. 214–221
6.EEI.6	Write expressions using variables to represent quantities in real-world and mathematical situations. Understand the meaning of the variable in the context of the situation.	**Lesson 26**	**Write Algebraic Expressions to Represent Problems**—pp. 222–229
6.EEI.7	Write and solve one-step linear equations in one variable involving nonnegative rational numbers for real-world and mathematical situations.	**Lesson 27**	**Solve Equations of the Form x + p = q**—pp. 230–237
		Lesson 28	**Solve Equations of the Form px = q**—pp. 238–245

Expressions, Equations, and Inequalities

Standards		Sadlier *Progress Mathematics*, Grade 6	
6.EEI.8	Extend knowledge of inequalities used to compare numerical expressions to include algebraic expressions in real-world and mathematical situations.		
	a. Write an inequality of the form $x > c$ or $x < c$ and graph the solution set on a number line.	**Lesson 29**	**Graph Solutions to Inequalities**—pp. 246–253
	b. Recognize that inequalities have infinitely many solutions.	**Lesson 29**	**Graph Solutions to Inequalities**—pp. 246–253
6.EEI.9	Investigate multiple representations of relationships in real-world and mathematical situations.		
	a. Write an equation that models a relationship between independent and dependent variables.	**Lesson 30**	**Represent Relationships Between Variables**—pp. 254–261
	b. Analyze the relationship between independent and dependent variables using graphs and tables.	**Lesson 30**	**Represent Relationships Between Variables**—pp. 254–261
	c. Translate among graphs, tables, and equations.	**Lesson 30**	**Represent Relationships Between Variables**—pp. 254–261

Geometry and Measurement

Standards		Sadlier *Progress Mathematics*, Grade 6	
The student will:			
6.GM.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	**Lesson 31**	**Find Areas of Parallelograms and Triangles**—pp. 268–275
		Lesson 32	**Find Areas of Polygons**—pp. 276–283
6.GM.2	Use visual models (e.g., model by packing) to discover that the formulas for the volume of a right rectangular prism ($V = lwh, = Bh$) are the same for whole or fractional edge lengths. Apply these formulas to solve real-world and mathematical problems.	**Lesson 33**	**Find Volumes of Rectangular Prisms**—pp. 284–291
6.GM.3	Apply the concepts of polygons and the coordinate plane to real-world and mathematical situations.		
	a. Given coordinates of the vertices, draw a polygon in the coordinate plane.	**Lesson 34**	**Plot and Analyze Polygons in the Coordinate Plane**—pp. 292–299

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	b. Find the length of an edge if the vertices have the same *x*-coordinates or same *y*-coordinates.	**Lesson 34**	**Plot and Analyze Polygons in the Coordinate Plane**—pp. 292–299
6.GM.4	Unfold three-dimensional figures into two-dimensional rectangles and triangles (nets) to find the surface area and to solve real-world and mathematical problems.	**Lesson 35**	**Use Nets to Find Surface Area**—pp. 300–307

Data Analysis and Statistics

Standards		Sadlier *Progress Mathematics*, Grade 6	
The student will:			
6.DS.1	Differentiate between statistical and non-statistical questions.	**Lesson 36**	**Understand Statistical Questions and Describe Data**—pp. 314–321
6.DS.2	Use center (mean, median, mode), spread (range, interquartile range, mean absolute value), and shape (symmetrical, skewed left, skewed right) to describe the distribution of a set of data collected to answer a statistical question.	**Lesson 36**	**Understand Statistical Questions and Describe Data**—pp. 314–321
		Lesson 37	**Find the Median and Interquartile Range**—pp. 322–329
6.DS.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	**Lesson 37**	**Find the Median and Interquartile Range**—pp. 322–329
		Lesson 38	**Find the Mean and Mean Absolute Deviation**—pp. 330–337
6.DS.4	Select and create an appropriate display for numerical data, including dot plots, histograms, and box plots.	**Lesson 39**	**Display Numerical Data**—pp. 338–345
6.DS.5	Describe numerical data sets in relation to their real-world context.		
	a. State the sample size.	**Lesson 40**	**Summarize Numerical Data**—pp. 346–353
	b. Describe the qualitative aspects of the data (e.g., how it was measured, units of measurement).	**Lesson 40**	**Summarize Numerical Data**—pp. 346–353
	c. Give measures of center (median, mean).	**Lesson 40**	**Summarize Numerical Data**—pp. 346–353
	d. Find measures of variability (interquartile range, mean absolute deviation) using a number line.	**Lesson 40**	**Summarize Numerical Data**—pp. 346–353

Data Analysis and Statistics

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e.	Describe the overall pattern (shape) of the distribution.	**Lesson 40**	**Summarize Numerical Data**—pp. 346–353
f.	Justify the choices for measure of center and measure of variability based on the shape of the distribution.	**Lesson 40**	**Summarize Numerical Data**—pp. 346–353
g.	Describe the impact that inserting or deleting a data point has on the measures of center (median, mean) for a data set.	**Lesson 40**	**Summarize Numerical Data**—pp. 346–353