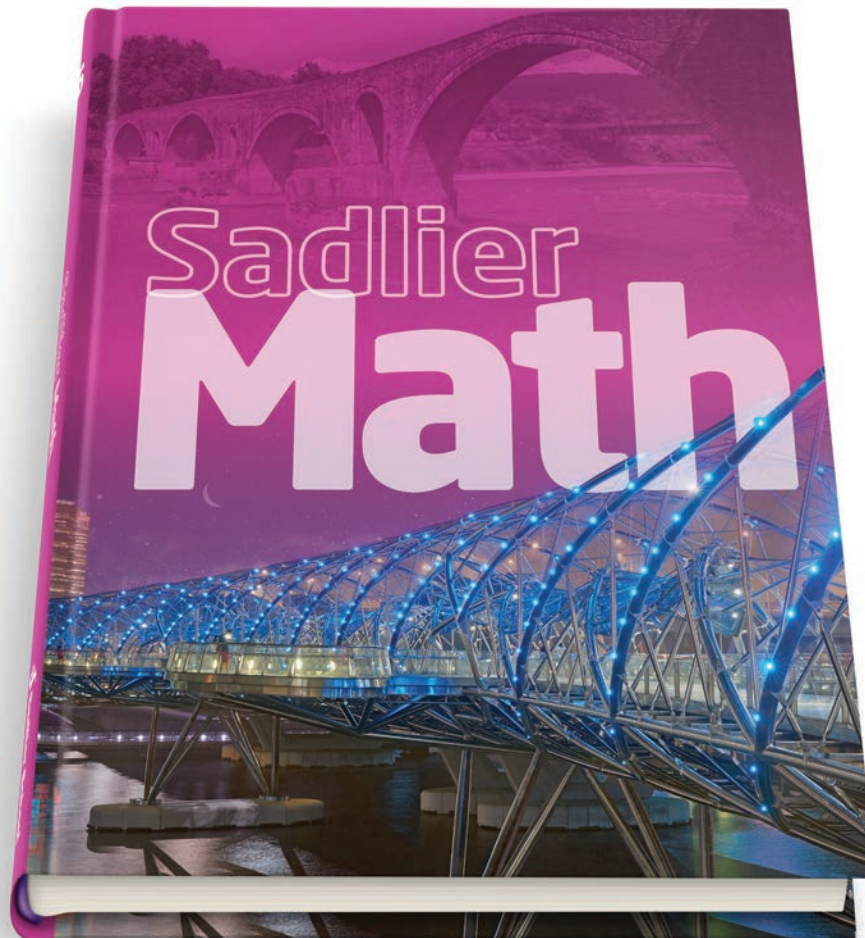# *Sadlier Math*™

Correlation to the South Carolina College- and Career-Ready Standards for Mathematics

Grade 6

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THE NUMBER SYSTEM

Grade 6 Content Standards	*Sadlier Math*, 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).	**Chapter 8 Multiply and Divide Fractions** • 8-3 Meaning of Division by a Fraction—pp. 168–169 • 8-4 Model Dividing Fractions by Fractions—pp. 170–171 • 8-5 Divide Fractions by Fractions—pp. 172–173 • 8-6 Estimate Quotients of Fractions and Mixed Numbers—pp. 174–175 • 8-7 Divide with Whole and Mixed Numbers—pp. 176–177 • 8-8 Order of Operations with Fractions—pp. 180–181 • 8-9 Fractions with Money—pp. 182–183 • 8-10 Multiplication and Division Expressions with Fractions—pp. 184–185 • 8-11 Multiplication and Division Equations with Fractions—pp. 186–187
6.NS.2 Fluently divide multi-digit whole numbers using a standard algorithmic approach.	**Chapter 3 Division Operations and Expressions** • 3-1 Divide Whole Numbers—pp. 42–43
6.NS.3 Fluently add, subtract, multiply and divide multi-digit decimal numbers using a standard algorithmic approach.	**Chapter 1 Addition and Subtraction Operations and Expressions** • 1-1 Estimate Decimal Sums and Differences—pp. 2–3 • 1-2 Add Decimals—pp. 4–5 • 1-3 Subtract Decimals—pp. 6–7 **Chapter 2 Multiplication Operations and Expressions** • 2-1 Multiply Decimals by 0.1, 0.01, and 0.001—pp. 22–23 • 2-2 Estimate Decimal Products—pp. 24–25 • 2-3 Multiply with Decimals—pp. 26–27 **Chapter 3 Division Operations and Expressions** • 3-2 Divide Decimals by 10, 100, and 1000—pp. 44–45 • 3-3 Divide Decimals by Whole Numbers—pp. 46–47 • 3-4 Divide Decimals by 0.1, 0.01, and 0.001—pp. 50–51 • 3-5 Estimate Decimal Quotients—pp. 52–53 • 3-6 Decimal Divisors—pp. 54–55 • 3-7 Zeros in Division—pp. 56–57

THE NUMBER SYSTEM

Grade 6 Content Standards	*Sadlier Math*, Grade 6
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.	**Chapter 6 Factors and Multiples** • 6-1 Prime Factorization—pp. 124–125 • 6-2 Greatest Common Factor—pp. 126–127
b. Compute the least common multiple (LCM) of two numbers both less than or equal to 12.	**Chapter 6 Factors and Multiples** • 6-4 Least Common Multiple—pp. 132–133
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.	**Chapter 6 Factors and Multiples** • 6-3 The Distributive Property and Common Factors—pp. 128–129
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.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-2 Integers in the Real World—pp. 198–199
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.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-1 Integers on the Number Line—pp. 196–197
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.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-7 Plot Points in the Coordinate Plane—pp. 210–211
c. Recognize when ordered pairs are reflections of each other on the coordinate plane across one axis, both axes, or the origin.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-8 Reflections of Points—pp. 212–213

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THE NUMBER SYSTEM

Grade 6 Content Standards	*Sadlier Math*, Grade 6
d. Plot rational numbers on number lines and ordered pairs on coordinate planes.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-1 Integers on the Number Line—pp. 196–197 • 9-2 Integers in the Real World—pp. 198–199 • 9-3 Compare and Order Integers—pp. 200–201 • 9-5 Rational Numbers—pp. 204–205 • 9-6 Compare and Order Rational Numbers—pp. 206–207 • 9-7 Plot Points in the Coordinate Plane—pp. 210–211 • 9-8 Reflections of Points—pp. 212–213 • 9-9 Distance on the Coordinate Plane—pp. 214–215
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 (≠).	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-3 Compare and Order Integers—pp. 200–201 • 9-6 Compare and Order Rational Numbers—pp. 206–207
b. Interpret statements using less than (<), greater than (>), and equal to (=) as relative locations on the number line.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-3 Compare and Order Integers—pp. 200–201 • 9-6 Compare and Order Rational Numbers—pp. 206–207
c. Use concepts of equality and inequality to write and to explain real-world and mathematical situations.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-3 Compare and Order Integers—pp. 200–201 • 9-6 Compare and Order Rational Numbers—pp. 206–207
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.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-3 Compare and Order Integers—pp. 200–201 • 9-4 Absolute Value as Magnitude—pp. 202–203
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.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-4 Absolute Value as Magnitude—pp. 202–203

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THE NUMBER SYSTEM

Grade 6 Content Standards	*Sadlier Math*, Grade 6
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.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-7 Plot Points in the Coordinate Plane—pp. 210–211
b. Find the distance between two points when ordered pairs have the same x- coordinates or same y-coordinates.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-9 Distance on the Coordinate Plane—pp. 214–215
c. Relate finding the distance between two points in a coordinate plane to absolute value using a number line.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-9 Distance on the Coordinate Plane—pp. 214–215
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.	**Chapter 11 Percent** • 11-2 Relate Percents to Fractions—pp. 256–257 • 11-3 Relate Percents to Decimals—pp. 258–259 • 11-4 Relate Decimals, Fractions, and Percents—pp. 260–261

RATIOS AND PROPORTIONAL RELATIONSHIPS

Grade 6 Content Standards	*Sadlier Math*, 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.	**Chapter 10 Ratios and Proportional Relationships** • 10-1 Ratios—pp. 226–227
6.RP.2 Investigate relationships between ratios and rates.	
a. Translate between multiple representations of ratios (i.e., $\frac{a}{b}$, $a{:}b$, a to b, visual models).	**Chapter 10 Ratios and Proportional Relationships** • 10-1 Ratios—pp. 226–227

RATIOS AND PROPORTIONAL RELATIONSHIPS

Grade 6 Content Standards	*Sadlier Math*, Grade 6
b. Recognize that a rate is a type of ratio involving two different units.	**Chapter 10 Ratios and Proportional Relationships** • 10-6 Rates and Unit Rates—pp. 238–239
c. Convert from rates to unit rates.	**Chapter 10 Ratios and Proportional Relationships** • 10-6 Rates and Unit Rates—pp. 238–239
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.	**Chapter 10 Ratios and Proportional Relationships** • 10-2 Tables of Equivalent Ratios—pp. 228–229
b. Use multiple representations, including tape diagrams, tables, double number lines, and equations, to find missing values of equivalent ratios.	**Chapter 10 Ratios and Proportional Relationships** • 10-3 Tape Diagrams—pp. 230–231 • 10-4 Double Number Lines—pp. 232–233
c. Use two tables to compare related ratios.	**Chapter 10 Ratios and Proportional Relationships** • 10-5 Compare Ratios—pp. 236–237
d. Apply concepts of unit rate to solve problems, including unit pricing and constant speed. .	**Chapter 10 Ratios and Proportional Relationships** • 10-4 Double Number Lines (constant speed)—pp. 232–233 • 10-6 Rates and Unit Rates—pp. 238–239 • 10-7 Compare Prices—pp. 240–241 • 10-8 Equations for Proportional Relationships—pp. 242–243 • 10-9 Graphs of Proportional Relationships—pp. 244–245
e. Understand that a percentage is a rate per 100 and use this to solve problems involving wholes, parts, and percentages.	**Chapter 11 Percent** • 11-1 Percent—pp. 254–255 • 11-2 Relate Percents to Fractions—pp. 256–257 • 11-3 Relate Percents to Decimals—pp. 258–259 • 11-4 Relate Decimals, Fractions, and Percents—pp. 260–261 • 11-5 Percents Greater Than 100%—pp. 262–263 *continued*

RATIOS AND PROPORTIONAL RELATIONSHIPS

Grade 6 Content Standards	*Sadlier Math*, Grade 6
	• 11-6 Percents Less Than 1%—pp. 264–265 • 11-7 Find the Part—pp. 268–269 • 11-8 Find the Percent—pp. 270–271 • 11-9 Find the Whole—pp. 272–273 • 11-10 Problem Solving: Act it Out—pp. 274–275
f. Solve one-step problems involving ratios and unit rates (e.g., dimensional analysis).	**Chapter 12 Measurement** • 12-1 Convert Customary Units—pp. 282–283 • 12-2 Convert Metric Units—pp. 284–285 • 12-3 Convert Between Customary and Metric Units—pp. 288–289

EXPRESSIONS, EQUATIONS, AND INEQUALITIES

Grade 6 Content Standards	*Sadlier Math*, 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.	**Chapter 4 Numerical and Algebraic Expressions** • 4-1 Exponents—pp. 70–71 • 4-2 Order of Operations—pp. 72–73
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.	**Chapter 1 Addition and Subtraction Operations and Expressions** • 1-4 Write Addition and Subtraction Expressions—pp. 10–11 **Chapter 2 Multiplication Operations and Expressions** • 2-4 Write Multiplication Expressions—pp. 30–31 **Chapter 3 Division Operations and Expressions** • 3-8 Write Division Expressions—pp. 58–59
b. Investigate and identify parts of algebraic expressions using mathematical terminology, including term, coefficient, constant, and factor.	**Chapter 4 Numerical and Algebraic Expressions** • 4-3 Parts of Expressions—pp. 74–75

EXPRESSIONS, EQUATIONS, AND INEQUALITIES

Grade 6 Content Standards	*Sadlier Math*, Grade 6
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.	**Chapter 4 Numerical and Algebraic Expressions** • 4-1 Exponents—pp. 70–71 • 4-2 Order of Operations—pp. 72–73
6.EEI.3 Apply mathematical properties (e.g., commutative, associative, distributive) to generate equivalent expressions.	**Chapter 4 Numerical and Algebraic Expressions** • 4-7 Apply Properties to Write Equivalent Expressions—pp. 84–85
6.EEI.4 Apply mathematical properties (e.g., commutative, associative, distributive) to justify that two expressions are equivalent.	**Chapter 8 Fractions: Multiplication** • 8-2 Properties of Multiplication—pp. 166–167
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.	**Chapter 5 One-Variable Equations and Inequalities** • 5-5 Inequalities—pp. 108–109
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.	**Chapter 4 Numerical and Algebraic Expressions** • 4-4 Translate Expressions—pp. 76–77
6.EEI.7 Write and solve one-step linear equations in one variable involving nonnegative rational numbers for real-world and mathematical situations.	**Chapter 5 One-Variable Equations and Inequalities** • 5-2 Addition and Subtraction Equations—pp. 100–101 • 5-3 Multiplication and Division Equations—pp. 102–103 • 5-4 Write and Solve Equations—pp. 104–105
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.	**Chapter 5 One-Variable Equations and Inequalities** • 5-7 Write Inequalities—pp. 112–113

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EXPRESSIONS, EQUATIONS, AND INEQUALITIES

Grade 6 Content Standards	*Sadlier Math*, Grade 6
b. Recognize that inequalities have infinitely many solutions.	**Chapter 5 One-Variable Equations and Inequalities** • 5-8 Solve Inequalities—pp. 114–115
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.	**Chapter 13 Two-Variable Relationships** • 13-1 Related Quantities—pp. 298–299
b. Analyze the relationship between independent and dependent variables using graphs and tables.	**Chapter 13 Two-Variable Relationships** • 13-2 Relationships in Words and Tables—pp. 300–301 • 13-3 Relationships in Equations and Graphs—pp. 302–303
c. Translate among graphs, tables, and equations.	**Chapter 13 Two-Variable Relationships** • 13-4 Multiple Representations of a Relationship—pp. 306–307

GEOMETRY AND MEASUREMENT

Grade 6 Content Standards	*Sadlier Math*, 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.	**Chapter 14 Geometry: Area** • 14-1 Areas of Parallelograms and Rhombuses—pp. 316–317 • 14-2 Areas of Triangles—pp. 318–319 • 14-3 Areas of Trapezoids—pp. 320–321 • 14-5 Areas of Regular Polygons—pp. 326–327 • 14-6 Areas of Composite Figures—pp. 328–329
6.GM.2 Use visual models (e.g., model by packing) to discover that the formulas for the volume of a right rectangular prism ($V = lwh$, $V = Bh$) are the same for whole or fractional edge lengths. Apply these formulas to solve real-world and mathematical problems.	**Chapter 15 Geometry: Surface Area and Volume** • 15-4 Use Cubes to Find Volumes—pp. 346–347 • 15-5 Volumes of Right Rectangular Prisms—pp. 348–349

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GEOMETRY AND MEASUREMENT

Grade 6 Content Standards	*Sadlier Math*, Grade 6
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.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-10 Plot Polygons—pp. 216–217
b. Find the length of an edge if the vertices have the same *x*-coordinates or same *y*-coordinates.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-10 Plot Polygons—pp. 216–217 • 9-11 Problem Solving: Draw a Picture—pp. 218–219
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.	**Chapter 15 Geometry: Surface Area and Volume** • 15-1 Nets of Three-Dimensional Figures—pp. 338–339 • 15-2 Use Nets to Find Surface Areas of Prisms—pp. 340–341 • 15-3 Use Nets to Find Surface Areas of Pyramids—pp. 342–343

DATA ANALYSIS AND STATISTICS

Grade 6 Content Standards	*Sadlier Math*, Grade 6
The student will:	
6.DS.1 Differentiate between statistical and non-statistical questions.	**Chapter 16 Measures of Center and Variation** • 16-1 Statistical Questions—pp. 358–359
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.	**Chapter 16 Measures of Center and Variation** • 16-2 Measures of Center—pp. 360–361 • 16-3 Measures of Variation: Range and Interquartile Range—pp. 362–363 • 16-4 Measure of Variation: Mean Absolute Deviation—pp. 366–367 • 16-5 Analyze Data—pp. 368–369
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.	**Chapter 16 Measures of Center and Variation** • 16-2 Measures of Center—pp. 360–361 • 16-3 Measures of Variation: Range and Interquartile Range—pp. 362–363

DATA ANALYSIS AND STATISTICS

Grade 6 Content Standards	*Sadlier Math*, Grade 6
6.DS.4 Select and create an appropriate display for numerical data, including dot plots, histograms, and box plots.	**Chapter 17 Data Displays** • 17-1 Dot Plots—pp. 378–379 • 17-2 Box Plots—pp. 380–381 • 17-3 Histograms—pp. 382–383 • 17-4 Data Distributions—pp. 386–387 • 17-5 Interpret Circle Graphs—pp. 388–389 • 17-6 Problem Solving: Use a Model—pp. 390–391
6.DS.5 Describe numerical data sets in relation to their real-world context.	
a. State the sample size.	**Chapter 18 Probability** • 18-1 Populations and Samples—Online • 18-2 Drawing Conclusions from Samples—Online
b. Describe the qualitative aspects of the data (e.g., how it was measured, units of measurement).	**Chapter 18 Probability** • 18-1 Populations and Samples—Online • 18-2 Drawing Conclusions from Samples—Online
c. Give measures of center (median, mean).	**Chapter 16 Measures of Center and Variation** • 16-2 Measures of Center—pp. 360–361
d. Find measures of variability (interquartile range, mean absolute deviation) using a number line.	**Chapter 16 Measures of Center and Variation** • 16-3 Measures of Variation: Range and Interquartile Range—pp. 362–363 • 16-5 Analyze Data—pp. 368–369
e. Describe the overall pattern (shape) of the distribution.	**Chapter 16 Measures of Center and Variation** • 16-3 Measures of Variation: Range and Interquartile Range—pp. 362–363 • 16-5 Analyze Data—pp. 368–369 **Chapter 17 Data Displays** • 17-1 Dot Plots—pp. 378–379 • 17-2 Box Plots—pp. 380–381 • 17-3 Histograms—pp. 382–383 • 17-4 Data Distributions—pp. 386–387 • 17-5 Interpret Circle Graphs—pp. 388–389 • 17-6 Problem Solving: Use a Model—pp. 390–391
f. Justify the choices for measure of center and measure of variability based on the shape of the distribution.	**Chapter 16 Measures of Center and Variation** • 16-2 Measures of Center—pp. 360–361 • 16-3 Measures of Variation: Range and Interquartile Range—pp. 362–363 *continued*

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DATA ANALYSIS AND STATISTICS

Grade 6 Content Standards	*Sadlier Math*, Grade 6
	• 16-4 Measure of Variation: Mean Absolute Deviation—pp. 366–367 • 16-5 Analyze Data—pp. 368–369 **Chapter 17 Data Displays** • 17-1 Dot Plots—pp. 378–379 • 17-2 Box Plots—pp. 380–381 • 17-3 Histograms—pp. 382–383 • 17-4 Data Distributions—pp. 386–387 • 17-5 Interpret Circle Graphs—pp. 388–389 • 17-6 Problem Solving: Use a Model—pp. 390–391
g. Describe the impact that inserting or deleting a data point has on the measures of center (median, mean) for a data set.	**Chapter 16 Measures of Center and Variation** • 16-5 Analyze Data—pp. 368–369 **Chapter 17 Data Displays** • 17-6 Problem Solving: Compare Models—pp. 390–391