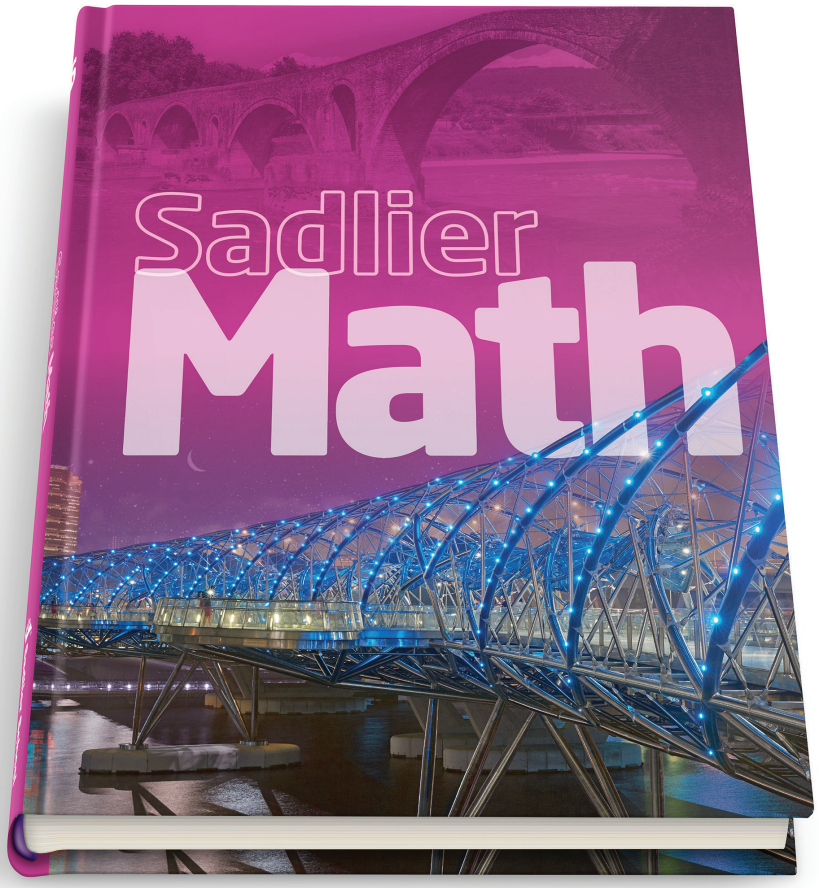
Sadlier Math™

Correlation to the ACT® Aspire® 6th Grade Mathematics Performance Level Descriptors: Ready & Exceeding

Grade 6



Learn more at www.SadlierSchool.com/SadlierMath

RATIOS AND PROPORTIONAL RELATIONSHIPS

Focus is on the concept of ratio and rate and the beginnings of developing proportional reasoning.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
Ready *A student performing at the* Ready *level:*	
• rewrites ratios representing rates in equivalent forms in order to understand a real-world problem, including converting rates to unit rates or converting the units of measure for a given rate.	**Chapter 10: 10-1 through 10-7** • 10-1 Ratios—pp. 226–227 (Use ratio concepts and language to describe relationships between quantities; TE Develop Concepts: Comparing Quantities) • 10-2 Tables of Equivalent Ratios—pp. 228–229 (Use tables of equivalent ratios to solve real-world and mathematical problems; TE Develop Concepts: Model Equivalent Ratios) • 10-3 Tape Diagrams—pp. 230–231 (Use tape diagrams and ratio reasoning to solve real-world and mathematical problems; TE Develop Concepts: Tape Diagrams) • 10-4 Double Number Lines—pp. 232–233 (Use double number line diagrams and ratio reasoning to solve real-world and mathematical problems; TE Develop Concepts: Double Number Lines) • 10-5 Compare Ratios—pp. 236–237 (Use tables to compare ratios and solve real-world and mathematical problems; TE Develop Concepts: Compare Unlike Fractions) • 10-6 Rates and Unit Rates—pp. 238–239 (Understand, describe, and calculate rates and unit rates; TE Develop Concepts: Ratio Language) • 10-7 Compare Prices—pp. 240–241 (Use rate reasoning to solve problems involving unit pricing; TE Develop Concepts: A Better Buy) **Chapter 12: 12-1 through 12-4** • 12-1 Convert Customary Units—pp. 282–283 (Use ratio reasoning to convert customary units; TE Develop Concepts: Comparing Units of Measure) • 12-2 Convert Metric Units—pp. 284–285 (Use ratio reasoning to convert between metric units; TE Develop Concepts: Comparing Metric Measures) • 12-3 Convert Between Customary and Metric Units—pp. 288–289 (Use ratio reasoning to convert between customary and metric units; TE Develop Concepts: Comparing Systems of Measure) • 12-4 Problem Solving: Choose a Strategy—pp. 290–291 (Choose a strategy to solve conversion problems; TE Develop Concepts: Different Strategies to Solve (conversions))
• makes sense of a real-world problems using ratios and unit rates.	**Chapter 10: 10-6 & 10-7** • 10-6 Rates and Unit Rates—pp. 238–239 (Understand, describe, and calculate rates and unit rates; TE Develop Concepts: Ratio Language) • 10-7 Compare Prices—pp. 240–241 (Use rate reasoning to solve problems involving unit pricing; TE Develop Concepts: A Better Buy)
Exceeding *A student performing at the* Exceeding *level:*	
• solves problems involving percentages.	**Chapter 11: 11-1 through 11-10** • 11-1 Percent—pp. 254–255 (Use models, fractions, and decimals to express percents; TE Develop Concepts: Translating Between Fractions and Decimals) *continued*

RATIOS AND PROPORTIONAL RELATIONSHIPS

Focus is on the concept of ratio and rate and the beginnings of developing proportional reasoning.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
	• 11-2 Relate Percents to Fractions—pp. 256–257 (Rename percents and fractions; TE Develop Concepts: Race to Equate) • 11-3 Relate Percents to Decimals—pp. 258–259 (Rename a percent as a decimal and a decimal as a percent; TE Develop Concepts: Marking Benchmarks) • 11-4 Relate Decimals, Fractions, and Percents—pp. 260–261 (Connect decimals, fractions, and percents; TE Develop Concepts: Repeat or Terminate?) • 11-5 Percents Greater Than 100%—pp. 262–263 (Rename percents greater than 100%; TE Develop Concepts: Equivalent Numbers, Different Ways (improprer fractions)) • 11-6 Percents Less Than 1%—pp. 264–265 (Rename percents less than 1%; TE Develop Concepts: Patterns in Division) • 11-7 Find the Part—pp. 268–269 (Multiply a whole by a percent to find the part; TE Develop Concepts: What Are the Parts?) • 11-8 Find the Percent—pp. 270–271 (Divide a part by a whole to find a percent; TE Develop Concepts: Tic-Tac-Go! (equivalent decimals, percents, fractions)) • 11-9 Find the Whole—pp. 272–273 (Use a formula to find a whole given the part and percent; TE Develop Concepts: Decimal Division Challenge) • 11-10 Problem Solving: Act it Out—pp. 274–275 (Act it out to solve problems; TE Develop Concepts: Play the Part)
• determines a rate relationship in a real-world problem and uses it to compare rates and to solve rate problems.	**Chapter 10: 10-6 through 10-9** • 10-6 Rates and Unit Rates—pp. 238–239 (Understand, describe, and calculate rates and unit rates; TE Develop Concepts: Ratio Language) • 10-7 Compare Prices—pp. 240–241 (Use rate reasoning to solve problems involving unit pricing; TE Develop Concepts: A Better Buy) • 10-8 Equations for Proportional Relationships—pp. 242–243 (Use ratios and rates to write equations and solve problems; TE Develop Concepts: Proportions) • 10-9 Graphs of Proportional Relationships—pp. 244–245 (Use ratio and rate reasoning to make tables of equivalent ratios and plot pairs of values on the coordinate plane; TE Develop Concepts: Line Graphs)
• makes sense and determines a rate relationship to solve a problem.	

THE NUMBER SYSTEM

Focus is on seeing the rational numbers as a coherent number system. Students increase their fluency with calculations.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
Ready *A student performing at the* Ready *level:*	
• divides multi-digit decimals as well as non-unit fractions in order to solve problems.	**Chapter 3: 3-2 through 3-4, 3-7** • 3-2 Divide Decimals by 10, 100, and 1000—pp. 44–45 (Divide multi-digit decimals by 10, 100, and 1000; TE Develop Concepts: Understanding Place Value and Division) *continued*

THE NUMBER SYSTEM

Focus is on seeing the rational numbers as a coherent number system. Students increase their fluency with calculations.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
	• 3-3 Divide Decimals by Whole Numbers—pp. 46–47 (Divide multi-digit decimals by whole numbers; TE Develop Concepts: Understanding Division Patterns) • 3-4 Divide Decimals by 0.1, 0.01, and 0.001—pp. 50–51 (Divide multi-digit decimals by 01, 001, and 0001; TE Develop Concepts: Relating Decimal Multiplication and Division) • 3-6 Decimal Divisors—pp. 54–55 (Divide with decimal divisors; TE Develop Concepts: Comparing Equations) • 3-7 Zeros in Division—pp. 56–57 (Divide multi-digit decimals that require writing zeros; TE Develop Concepts: Find Meaning in Place Value) **Chapter 8: 8-3 through 8-5, 8-7** • 8-3 Meaning of Division by a Fraction—pp. 168–169 (Interpret the meaning of division by a fraction; TE Develop Concepts: Understand the Meaning of Division) • 8-4 Model Dividing Fractions by Fractions—pp. 170–171 (Use models to show dividing fractions; TE Develop Concepts: Division MATHO) • 8-5 Divide Fractions by Fractions—pp. 172–173 (Divide fractions and solve word problems that require division of fractions; TE Develop Concepts: Explore Division with Fraction Strips) • 8-7 Divide with Whole and Mixed Numbers—pp. 176–177 (Divide fractions, whole numbers, and mixed numbers; TE Develop Concepts: Mixed Number Circles)
• recognizes common factors of numbers and uses them to determine when expressions are equivalent.	**Chapter 4: 4-7 & 4-8** • 4-7 Apply Properties to Write Equivalent Expressions—pp. 84–85 (Apply properties of operations to write equivalent expressions; TE Develop Concepts: Use Properties to Simplify Expressions) • 4-8 Identify Equivalent Expressions—pp. 86–87 (Identify equivalent expressions; TE Develop Concepts: Explore Identity Properties)
• explains how the properties of numbers extend to negative whole numbers.	N/A (no discussion of how properties extend to negative whole numbers at this level)
• determines the absolute value of an integer.	**Chapter 9: 9-3 & 9-4** • 9-3 Compare and Order Integers—pp. 200–201 (Use a number line to compare and order integers and understand absolute value; TE Develop Concepts: Compare and Order Whole Numbers) • 9-4 Absolute Value as Magnitude—pp. 202–203 (Compare and order integers and understand absolute value as a magnitude in a real-world situation; TE Develop Concepts: Understand Absolute Value)
• graphs points in all four quadrants of the coordinate plane.	**Chapter 9: 9-7 through 9-11** • 9-7 Plot Points in the Coordinate Plane—pp. 210–211 (Use signs of coordinates to locate and plot points in the coordinate plane; TE Develop Concepts: Describing Movement in Space) • 9-8 Reflections of Points—pp. 212–213 (Use signs of coordinates to recognize when points are reflections across one or both axes; TE Develop Concepts: Symmetry) • 9-9 Distance on the Coordinate Plane—pp. 214–215 (Find the distance between two points on the coordinate plane that have the same x- or y-coordinates; TE Develop Concepts: Perimeter) *continued*

THE NUMBER SYSTEM

Focus is on seeing the rational numbers as a coherent number system. Students increase their fluency with calculations.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
	• 9-10 Plot Polygons—pp. 216–217 (Use vertices to draw a polygon in the coordinate plane, and find the lengths of its sides when vertices share the same x- or y-coordinate; TE Develop Concepts: Compare Coordinates) • 9-11 Problem Solving: Draw a Picture—pp. 218–219 (Use the coordinate plane to draw a picture and solve real-world problems; TE Develop Concepts: Finding Perimeters)
• uses negative numbers to describe quantities.	**Chapter 9: 9-1** • 9-1 Integers on the Number Line—pp. 196–197 (Use a number line to represent integers; TE Develop Concepts: Modeling Integers)
• recognizes integers to represent real life situations.	**Chapter 9: 9-2** • 9-2 Integers in the Real World—pp. 198–199 (Graph and use integers to represent real-world situations, and explain the meaning of 0 in context; TE Develop Concepts: Moving on the Number Line)
• uses a number line to model positive and negative numbers and absolute value.	**Chapter 9: 9-4 & 9-11** • 9-4 Absolute Value as Magnitude—pp. 202–203 (Compare and order integers and understand absolute value as a magnitude in a real-world situation; TE Develop Concepts: Understand Absolute Value) • 9-11 Problem Solving: Draw a Picture—pp. 218–219 (Use the coordinate plane to draw a picture and solve real-world problems; TE Develop Concepts: Finding Perimeters)

Exceeding

A student performing at the Exceeding *level:*

• compares absolute values of rational numbers.	**Chapter 9: 9-4** • 9-4 Absolute Value as Magnitude—pp. 202–203 (Compare and order integers and understand absolute value as a magnitude in a real-world situation; TE Develop Concepts: Understand Absolute Value)
• determines the common factors or multiples of two whole numbers.	**Chapter 6: 6-3** • 6-3 The Distributive Property and Common Factors—pp. 128–129 (Use the Distributive Property to rewrite addition expressions as multiplication expressions; TE Develop Concepts: Represent the Distributive Property)
• graphs points in all four quadrants of the coordinate plane and uses the relationship between points with the same first or second coordinate to draw conclusions.	**Chapter 9: 9-7 through 9-11** • 9-7 Plot Points in the Coordinate Plane—pp. 210–211 (Use signs of coordinates to locate and plot points in the coordinate plane; TE Develop Concepts: Describing Movement in Space) • 9-8 Reflections of Points—pp. 212–213 (Use signs of coordinates to recognize when points are reflections across one or both axes; TE Develop Concepts: Symmetry) • 9-9 Distance on the Coordinate Plane—pp. 214–215 (Find the distance between two points on the coordinate plane that have the same x- or y-coordinates; TE Develop Concepts: Perimeter) • 9-10 Plot Polygons—pp. 216–217 (Use vertices to draw a polygon in the coordinate plane, and find the lengths of its sides when vertices *continued*

THE NUMBER SYSTEM

Focus is on seeing the rational numbers as a coherent number system. Students increase their fluency with calculations.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
	share the same x- or y-coordinate; TE Develop Concepts: Compare Coordinates) • 9-11 Problem Solving: Draw a Picture—pp. 218–219 (Use the coordinate plane to draw a picture and solve real-world problems; TE Develop Concepts: Finding Perimeters)
• reasons abstractly using positive and negative numbers to solve a problem.	**Chapter 9: 9-1 through 9-6** • 9-1 Integers on the Number Line—pp. 196–197 (Use a number line to represent integers; TE Develop Concepts: Modeling Integers) • 9-2 Integers in the Real World—pp. 198–199 (Graph and use integers to represent real-world situations, and explain the meaning of 0 in context; TE Develop Concepts: Moving on the Number Line) • 9-3 Compare and Order Integers—pp. 200–201 (Use a number line to compare and order integers and understand absolute value; TE Develop Concepts: Compare and Order Whole Numbers) • 9-4 Absolute Value as Magnitude—pp. 202–203 (Compare and order integers and understand absolute value as a magnitude in a real-world situation; TE Develop Concepts: Understand Absolute Value) • 9-5 Rational Numbers—pp. 204–205 (Use a number line to represent negative and positive rational numbers; TE Develop Concepts: Numbers on a Number Line) • 9-6 Compare and Order Rational Numbers—pp. 206–207 (Use a number line to compare and order rational numbers; TE Develop Concepts: Compare and Order Integers)

EXPRESSIONS AND EQUATIONS

Focus is on understanding algebraic expressions as analogous to numeric expressions. Students continue to develop function ideas by analyzing pairs of independent and dependent variables.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
Ready *A student performing at the* Ready *level:*	
• applies the distributive property to create equivalent expressions involving whole number coefficients.	**Chapter 4: 4-6** • 4-6 Use the Distributive Property and Evaluate Algebraic Expressions—pp. 82–83 (Write and evaluate algebraic expressions; Use the Distributive Property to combine like terms; TE Develop Concepts: Model and Evaluate Expressions with the Distributive Property)
• recognizes independent and dependent variables in an equation that represents a real-life situation.	**Chapter 13: 13-3 & 13-4** • 13-3 Relationships in Equations and Graphs—pp. 302–303 (Use graphs and equations to describe relationships between dependent and independent variables; TE Develop Concepts: Concentrate on Relationships (between two variables)) • 13-4 Multiple Representations of a Relationship—pp. 306–307 (Use tables, equations, and graphs to represent the relationship between independent and dependent variables; TE Develop Concepts: Make More Equal Parts)

EXPRESSIONS AND EQUATIONS

Focus is on understanding algebraic expressions as analogous to numeric expressions. Students continue to develop function ideas by analyzing pairs of independent and dependent variables.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
• makes use of structure by using the distributive property to make equivalent expressions.	**Chapter 4: 4-6** • 4-6 Use the Distributive Property and Evaluate Algebraic Expressions—pp. 82–83 (Write and evaluate algebraic expressions; Use the Distributive Property to combine like terms; TE Develop Concepts: Model and Evaluate Expressions with the Distributive Property)

Exceeding

A student performing at the Exceeding *level:*

• represents linear relationships between two quantities with equations or inequalities, evaluates linear expressions, and solves problems involving one-variable linear equations of the form $x + p = q$.	**Chapter 5: 5-2 through 5-9** • 5-2 Addition and Subtraction Equations—pp. 100–101 (Write equations and use addition and subtraction to solve for a variable; TE Develop Concepts: Brain Teasers: discover pattern; relate addition and subtraction/inverse operations) • 5-3 Multiplication and Division Equations—pp. 102–103 (Write equations and use multiplication and division to solve for a variable; TE Develop Concepts: Estimating Products and Quotients) • 5-4 Write and Solve Equations—pp. 104–105 (Solve problems by writing and solving equations; TE Develop Concepts: Translating Words into Mathematics) • 5-5 Inequalities—pp. 108–109 (Write word sentences and math sentences that contain an inequality; TE Develop Concepts: Ordering Numbers (after simplifying expressions)) • 5-6 Solutions of Inequalities—pp. 110–111 (Use substitution to determine whether a value is a solution of an inequality; Identify solutions of an inequality on a number line; TE Develop Concepts: A Living Number Line) • 5-7 Write Inequalities—pp. 112–113 (Recognize when a real-world situation has a limit or boundary and write an inequality to model it; TE Develop Concepts: Inequality Families (write equations and inequalities)) • 5-8 Solve Inequalities—pp. 114–115 (Solve one-step inequalities; TE Develop Concepts: Equation Stations (equivalent equations)) • 5-9 Problem Solving: Write and Solve an Equation—pp. 116–117 (Use the problem-solving strategy write and solve an equation; TE Develop Concepts: Analyze Sale Prices (write equations, discounts/sales tax, best-value deal)) **Chapter 7: 7-6** • 7-6 Addition and Subtraction Equations with Fractions—pp. 154–155 (Read, write, and solve addition and subtraction equations with fractions; TE Develop Concepts: Modeling Addition) **Chapter 8: 8-11** • 8-11 Multiplication and Division Equations with Fractions—pp. 186–187 (Write and solve multiplication and division equations with fractions; TE Develop Concepts: In Search of a Solution (Multiplication Property of Equality))

EXPRESSIONS AND EQUATIONS

Focus is on understanding algebraic expressions as analogous to numeric expressions. Students continue to develop function ideas by analyzing pairs of independent and dependent variables.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
• graphs the solution set to inequalities of the form x > c or x < c on a number line and determines if a given value is a solution of the inequality.	**Chapter 5: 5-5 through 5-8** • 5-5 Inequalities—pp. 108–109 (Write word sentences and math sentences that contain an inequality; TE Develop Concepts: Ordering Numbers (after simplifying expressions)) • 5-6 Solutions of Inequalities—pp. 110–111 (Use substitution to determine whether a value is a solution of an inequality; Identify solutions of an inequality on a number line; TE Develop Concepts: A Living Number Line) • 5-7 Write Inequalities—pp. 112–113 (Recognize when a real-world situation has a limit or boundary and write an inequality to model it; TE Develop Concepts: Inequality Families (write equations and inequalities)) • 5-8 Solve Inequalities—pp. 114–115 (Solve one-step inequalities; TE Develop Concepts: Equation Stations (equivalent equations))
• uses the language of operations to describe the structure of expressions. • describes the structure of expressions using operational language.	**Chapter 1: 1-4 & 1-5** • 1-4 Write Addition and Subtraction Expressions—pp. 10–11 (Read and write algebraic expressions; TE Develop Concepts: Write Numerical Expressions in Symbols and Words) • 1-5 Evaluate Addition and Subtraction Expressions—pp. 12–13 (Evaluate addition and subtraction expressions at specific values of the variables; TE Develop Concepts: Write and Evaluate Addition and Subtraction Expressions) **Chapter 2: 2-5** • 2-5 Evaluate Multiplication Expressions—pp. 32–33 (Evaluate multiplication expressions at specific values of the variables; TE Develop Concepts: Write and Evaluate Expressions) **Chapter 3: 3-9** • 3-9 Evaluate Division Expressions—pp. 60–61 (Write and evaluate division expressions; TE Develop Concepts: Speaking Math: Match situations to expressions) **Chapter 4: 4-1** • 4-1 Exponents—pp. 70–71 (Write and evaluate expressions with exponents; TE Develop Concepts: Powers of 10) **Chapter 7: 7-5** • 7-5 Addition and Subtraction Expressions with Fractions—pp. 152–153 (Read, write, and evaluate addition and subtraction expressions with fractions; TE Develop Concepts: Explore Adding Expressions) **Chapter 8: 8-8 & 8-10** • 8-8 Order of Operations with Fractions—pp. 180–181 (Use the order of operations to simplify and evaluate expressions with fractions; TE Develop Concepts: Finding Order) • 8-10 Multiplication and Division Expressions with Fractions—pp. 184–185 (Write and evaluate multiplication and division expressions with fractions; TE Develop Concepts: Expressions on a Roll (algebraic expressions))

GEOMETRY

Focus is on composing and decomposing shapes, and working with shapes in 3 dimensions.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
Ready *A student performing at the* Ready *level:*	
• solves real-world problems involving the area of triangles and quadrilaterals, including simple figures that are compositions of both.	**Chapter 14: 14-1 through 14-7** • 14-1 Areas of Parallelograms and Rhombuses—pp. 316–317 (Find the areas of parallelograms; TE Develop Concepts: Name Banners) • 14-2 Areas of Triangles—pp. 318–319 (Use a formula to find the area of triangles; TE Develop Concepts: Areas of Complex Figures) • 14-3 Areas of Trapezoids—pp. 320–321 (Use a formula to find the area of a trapezoid; TE Develop Concepts: Order of Operations & Formulas) • 14-5 Areas of Regular Polygons—pp. 326–327 (Find the area of a regular polygon; TE Develop Concepts: Regular Polygons) • 14-5 Areas of Regular Polygons—pp. 326–327 (Find the area of a regular polygon; TE Develop Concepts: Regular Polygons) • 14-6 Areas of Composite Figures—pp. 328–329 (Find the areas of composite figures; TE Develop Concepts: Creative Geometry (create pictures with shapes)) • 14-7 Problem Solving: Find a Pattern—pp. 330–331 (Find a pattern to solve problems; TE Develop Concepts: Identify Number Patterns; find area of composite figures)
• recognizes common factors of numbers and uses them to determine when expressions are equivalent.	**Chapter 15: 15-2 & 15-3** • 15-2 Use Nets to Find Surface Areas of Prisms—pp. 340–341 (Find the surface area of a prism; TE Develop Concepts: Relate Areas of Rectangles and Triangles to Surface Areas of Prisms) • 15-3 Use Nets to Find Surface Areas of Pyramids—pp. 342–343 (Find the surface area of a pyramid; TE Develop Concepts: Relate Areas of Squares and Triangles to Surface Areas of Pyramids)
• reasons abstractly to decompose the given figure in order to find total area.	**Chapter 14: 14-6** • 14-6 Areas of Composite Figures—pp. 328–329 (Find the areas of composite figures; TE Develop Concepts: Creative Geometry (create pictures with shapes))
Exceeding *A student performing at the* Exceeding *level:*	
• determines the area of trapezoids by composition of rectangles and triangles in order to solve problems	**Chapter 14: 14-3** • 14-3 Areas of Trapezoids—pp. 320–321 (Use a formula to find the area of a trapezoid; TE Develop Concepts: Order of Operations & Formulas)
• determines the volume of rectangular prisms in order to solve problems.	**Chapter 15: 15-2 & 15-3** • 15-2 Use Nets to Find Surface Areas of Prisms—pp. 340–341 (Find the surface area of a prism; TE Develop Concepts: Relate Areas of Rectangles and Triangles to Surface Areas of Prisms) • 15-3 Use Nets to Find Surface Areas of Pyramids—pp. 342–343 (Find the surface area of a pyramid; TE Develop Concepts: Relate Areas of Squares and Triangles to Surface Areas of Pyramids)

STATISTICS AND PROBABILITY

Focus is on the concept of statistical variability and the notion that there is some order in the apparent chaos, seen through distributions. Students develop more ways of representing data.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
Ready *A student performing at the* Ready *level:*	
• determines the mean, median, and mode of a set of data.	**Chapter 16: 16-2** • 16-2 Measures of Center—pp. 360–361 (Determine measures of center and use them to summarize data sets; TE Develop Concepts: Review Decimal Division)
• constructs histograms to represent distributions.	**Chapter 17: 17-3** • 17-3 Histograms—pp. 382–383 (Make and read frequency tables and histograms; TE Develop Concepts: Frequency Tables)
• creates a model of a histogram using a set of data.	**Chapter 17: 17-3** • 17-3 Histograms—pp. 382–383 (Make and read frequency tables and histograms; TE Develop Concepts: Frequency Tables)
Exceeding *A student performing at the* Exceeding *level:*	
• interprets and compares the mean and media of a univariate distribution.	**Chapter 16: 16-2** • 16-2 Measures of Center—pp. 360–361 (Determine measures of center and use them to summarize data sets; TE Develop Concepts: Review Decimal Division)
• explains how additional data points would affect the center and spread of a distribution.	**Chapter 16: 16-5** • 16-5 Analyze Data—pp. 368–369 (Identify clusters, gaps, and outliers and use them to analyze data; TE Develop Concepts: Analyze Statistical Pictures)
• analyzes and creates box plots to represent a univariate data set.	**Chapter 17: 17-2** • 17-2 Box Plots—pp. 380–381 (Make and read box plots; TE Develop Concepts: Visualizing Data)
• represents and analyzes sets of data using various model representations.	**Chapter 17: 17-1 through 17-6** • 17-1 Dot Plots—pp. 378–379 (Organize data in dot plots and use dot plots to describe the data; TE Develop Concepts: Data Display Review) • 17-2 Box Plots—pp. 380–381 (Make and read box plots; TE Develop Concepts: Visualizing Data) • 17-3 Histograms—pp. 382–383 (Make and read frequency tables and histograms; TE Develop Concepts: Frequency Tables) • 17-4 Data Distributions—pp. 386–387 (Use data displays to describe data; TE Develop Concepts: Describe Data) • 17-5 Interpret Circle Graphs—pp. 388–389 (Interpret circle graphs; TE Develop Concepts: Fraction Circles) • 17-6 Problem Solving: Compare Models—pp. 390–391 (Compare models to solve problems; dot plot, box plot, histogram; TE Develop Concepts: Different Displays for Data)

MODELING

Producing, interpreting, understanding, evaluating, and improving mathematical models.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
Ready *A student performing at the* Ready *level:*	
• evaluates a manipulative model to solve a problem or concept.	**Problem Solving Strategies** • Use a Model (colored counters)—p. xxvii In addition to the above citation, learning activities with manipulative models are featured in several teacher-directed activities throughout the program. Consider the following representative lessons: **Chapter 1: 1-1 & 1-2** • 1-1 Estimate Decimal Sums and Differences—pp. 2–3 (TE Struggling Learners; using base ten blocks) • 1-2 Add Decimals—pp. 4–5 (TE Struggling Learners; using base ten blocks) **Chapter 8: 8-6 & 8-7** • 8-3 Meaning of Division by a Fraction—pp. 168–169 (TE Struggling Learners: Using connecting cubes to model expressions) • 8-6 Estimate Quotients of Fractions and Mixed Numbers—pp. 174–175 (TE: Early Finishers; using number cubes) • 8-7 Divide with Whole and Mixed Numbers—pp. 176–177 (TE Develop Concepts; using cardstock circles)
Exceeding *A student performing at the* Exceeding *level:*	
• uses a manipulative to improve a model of a problem or concept.	**Problem Solving Strategies** • Use a Model (colored counters)—p. xxvii In addition to the above citation, learning activities with manipulative models are featured throughout the program. Consider the following representative lessons: **Chapter 3: 3-1** • 3-1 Divide Whole Numbers—pp. 42–43 (TE Develop Concepts: Modeling Multidigit Division; using base-ten blocks) **Chapter 9: 9-1** • 9-1 Integers on the Number Line—pp. 196–197 (TE Develop Concepts: Modeling Integers; using different-colored counting/multi-link cubes) **Chapter 15: 15-4** • 15-4 Use Cubes to Find Volumes—pp. 346–347 (TE Develop Concepts: Model Fractional Edge Lengths; using base-ten blocks)

JUSTIFICATION AND EXPLANATION

Giving reasons, explaining "Why?".

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
Ready *A student performing at the* Ready *level:*	
• uses and cites conditional statements, specific aspects of created visual representations, and/or computations or procedures to clarify an argument or draw a conclusion.	Students clarify an argument or draw a conclusion based on visual representations, computations, or procedures in many **Problem Solving** and **Write About It** exercises (located at the end of each Student Edition lesson and each corresponding Workbook lesson). For example: **Chapter 1: 1-6** • 1-6 Problem Solving: The Four-Step Process—pp. 14–15 (Write About It: Describe how you used variables in this chapter. When are they useful? How do you evaluate an expression that contains a variable? It may help to use an exercise from this chapter as an example to explain your reasoning.) **Chapter 9: 9-7** • 9-7 Plot Points in the Coordinate Plane—pp. 210–211 (Write About It: Where are points that have one coordinate equal to zero located? Use an example to explain your reasoning.) **Chapter 17: 17-6** • 17-6 Problem Solving: Compare Models—pp. 390–391 (Write About It: Explain which type of data display—dot plot, box plot, or histogram—is the easiest to use to find the lower quartile, median, upper quartile, and interquartile range of a set of data.) Students become familiar with conditional statements in many lessons and assessment activities. For example: **Chapter 2: 2-2 & Performance Assessment** • 2-2 Estimate Decimal Products—pp. 24–25 (A dragonfly can fly 9.9 miles in one hour. About how far can the dragonfly fly in 4.5 hours, if you suppose it can fly without resting?) • Chapter 2 Performance Assessment—p. 38 (#3 Evaluate your expression if the community harvests 200 trees. Explain what your answer means in the context of the problem. Answer: 300; If the community harvests 200 trees for wood, it will plant 300 trees.) **Chapter 3: 3-5** • 3-5 Estimate Decimal Quotients—pp. 52–53 (Problem Solving: Jonathan has $122.90 to spend on food while on a business trip. If each meal in the hotel costs $10.25, about how many meals can Jonathan buy?)

JUSTIFICATION AND EXPLANATION

Giving reasons, explaining "Why?".

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
• justifies and defends conclusions by explaining errors in reasoning or calculations, providing counterexamples, applying relevant classification schemes, and/or verifying statements or claims used to draw a conclusion.	Students justify and defend conclusions in many **Problem Solving** and **Write About It** exercises (located at the end of each Student Edition lesson and each corresponding Workbook lesson). For example: **Chapter 4: 4-8** (counterexample) • 4-8 Identify Equivalent Expressions—pp. 86–87 (Problem Solving: Offer counterexample) **Chapter 6: 6-5** (reasoning) • 6-5 Problem Solving: Make a List—pp. 134–135 (Write About It: Explain your reasoning) **Chapter 11: 11-2** (error analysis) • 11-2 Relate Percents to Fractions—pp. 256–257 (Cassidy sells apples at the farmer's market. She sells 14/20 of the apples she brings. She tells her friend she sold 56% of the apples. Is she correct? Explain; No, she is not correct. Sample explanation: Cassidy multiplied the numerator and denominator by 4 instead of by 5. She actually sold 70%.)

Exceeding

A student performing at the Exceeding *level:*

• provides a coherent, logical argument or solution pathway by providing evidence to support claims.	Students exercise logical reasoning and providing evidence to support claims in many lessons. They cite evidence to support claims in several **Problem Solving** and **Write About It** exercises (located at the end of each Student Edition lesson and each corresponding Workbook lesson). For example: **Problem Solving Math Practices** • Use Reasoning/Explain Reasoning—pp. xxiii–xxiv **Problem Solving Strategies** • Use Logical Reasoning—p. xxix **Chapter 3: 3-10** • 3-10 Problem Solving: Use Logical Reasoning—pp. 62–63

JUSTIFICATION AND EXPLANATION

Giving reasons, explaining "Why?".

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
• provides thorough justification and defends conclusions by using multiple, connected statements and incorporating justification techniques such as explaining errors in reasoning or calculations, providing counterexamples, applying relevant classification schemes, and/or verifying statements or claims used to draw a conclusion.	Students justify and defend conclusions in many **Problem Solving** and **Write About It** exercises (located at the end of each Student Edition lesson and each corresponding Workbook lesson). For example: **Chapter 2: 2-3** (error analysis) • 2-3 Multiply with Decimals—pp. 26–27 (Practice: Identify incorrect, unreasonable answers.) **Chapter 3: 3-10** (reasoning) • 3-10 Problem Solving: Use Logical Reasoning—pp. 62–63 **Chapter 4: 4-8** (counterexample) • 4-8 Identify Equivalent Expressions—pp. 86–87 (Problem Solving: Offer counterexample) **Chapter 6: 6-5** (reasoning) • 6-5 Problem Solving: Make a List—pp. 134–135 (Write About It: Explain your reasoning) **Chapter 13: 13-5** (error analysis) • 13-5 Problem Solving: Guess and Test—pp. 308–309 (Estimate to identify obvious errors)

INTEGRATING ESSENTIAL SKILLS

Integrate and continue to grow with topics from prior grades.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
Ready *A student performing at the* Ready *level:*	
• multiplies fractions and/or mixed numbers with unlike denominators.	**Chapter 8: 8-1** • 8-1 Multiply Fractions—pp. 164–165 (Multiply fractions; TE Develop Concepts: Model Fraction Multiplication)
• classifies geometric figures by their properties.	Related content **Chapter 14: 14-1 through 14-5** • 14-1 Areas of Parallelograms and Rhombuses—pp. 316–317 (Find the areas of parallelograms; TE Develop Concepts: Name Banners) • 14-2 Areas of Triangles—pp. 318–319 (Use a formula to find the area of triangles; TE Develop Concepts: Areas of Complex Figures) • 14-3 Areas of Trapezoids—pp. 320–321 (Use a formula to find the area of a trapezoid; TE Develop Concepts: Order of Operations & Formulas) • 14-5 Areas of Regular Polygons—pp. 326–327 (Find the area of a regular polygon; TE Develop Concepts: Regular Polygons) *continued*

INTEGRATING ESSENTIAL SKILLS

Integrate and continue to grow with topics from prior grades.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
	See Grade 5 **Chapter 15: 15-1 through 15-4** • 15-1 Polygons—pp. 342–343 • 15-2 Triangles—pp. 344–345 • 15-3 Quadrilaterals—pp. 348–349 • 15-4 Classify Quadrilaterals—pp. 350–351 **Chapter 16: 16-1** • 16-1 Solid Figures—pp. 360–361
• writes and evaluates simple expressions without variables.	**Chapter 1: 1-2 through 1-5** • 1-2 Add Decimals—pp. 4–5 (Add multi-digit decimals; TE Develop Concepts: Estimate, Model, and Compare) • 1-3 Subtract Decimals—pp. 6–7 (Subtract multi-digit decimals; TE Develop Concepts: Estimate, Model, Compare) • 1-4 Write Addition and Subtraction Expressions—pp. 10–11 (TE Develop Concepts: Write Numerical Expressions in Symbols and Words) • 1-5 Evaluate Addition and Subtraction Expressions—pp. 12–13 (TE Develop Concepts: Write and Evaluate Addition and Subtraction Expressions)

Exceeding

A student performing at the Exceeding *level:*

• adds, subtracts, and multiplies fractions and/or mixed numbers with unlike denominators in multi-step problems.	**Chapter 7: 7-5 & 7-6** • 7-5 Addition and Subtraction Expressions with Fractions—pp. 152–153 (Read, write, and evaluate addition and subtraction expressions with fractions; TE Develop Concepts: Explore Adding Expressions) • 7-6 Addition and Subtraction Equations with Fractions—pp. 154–155 (Read, write, and solve addition and subtraction equations with fractions; TE Develop Concepts: Modeling Addition) **Chapter 8: 8-1** • 8-1 Multiply Fractions—pp. 164–165 (Multiply fractions; TE Develop Concepts: Model Fraction Multiplication)
• explains classifications of geometric figures by using sides and angles.	See Grade 5 **Chapter 15: 15-1 through 15-3** • 15-1 Polygons—pp. 342–343 (Understand and use attributes of polygons; classify by number of sides; TE Develop Concepts: Geometric Definitions) • 15-2 Triangles—pp. 344–345 (Understand and use attributes of triangles; classify by angles; TE Develop Concepts: Classifying Angles) • 15-3 Quadrilaterals—pp. 348–349 (Understand and use attributes of quadrilaterals: trapezoid, parallelogram, rhombus, rectangle, square; classify by right angles; TE Develop Concepts: Draw Four-Sided Polygons)

INTEGRATING ESSENTIAL SKILLS

Integrate and continue to grow with topics from prior grades.

6th Grade Performance Level Descriptors	*Sadlier Math*, Grade 6
• writes and evaluates complex expressions without variables.	**Chapter 1: 1-2 through 1-5** • 1-2 Add Decimals—pp. 4–5 (Add multi-digit decimals; TE Develop Concepts: Estimate, Model, and Compare) • 1-3 Subtract Decimals—pp. 6–7 (Subtract multi-digit decimals; TE Develop Concepts: Estimate, Model, Compare) • 1-4 Write Addition and Subtraction Expressions—pp. 10–11 (TE Develop Concepts: Write Numerical Expressions in Symbols and Words) • 1-5 Evaluate Addition and Subtraction Expressions—pp. 12–13 (TE Develop Concepts: Write and Evaluate Addition and Subtraction Expressions) **Chapter 4: 4-4 & 4-5** • 4-4 Translate Expressions—pp. 76–77 (Use numbers and variables to translate word phrases to expressions; TE Develop Concepts: Analyze and Compare Numerical Expressions) • 4-5 Translate Expressions Involving Exponents—pp. 78–79 (Use numbers and variables to translate word phrases to expressions involving exponents; write and evaluate numerical expressions) See also Grade 5 (numerical expressions) **Chapter 3: 3-1 & 3-2** • 3-1 Multiplication Properties—pp. 44–45 (Use multiplication properties to compare and evaluate expressions; TE Develop Concepts: Use Properties to Verify Whole Number Products) • 3-2 Multiplication Patterns—pp. 46–47 (Use patterns to multiply whole numbers by multiples of 10, 100, and 1000; write a numerical expression; TE Develop Concepts: Think About Multiplying by Multiples of 10) **Chapter 4: 4-10 & 4-11** • 4-10 Order of Operations—pp. 88–89 (Use parentheses and brackets in numerical expressions and evaluate expressions using the order of operations; TE Develop Concepts: The Need for Order) • 4-11 Expressions—pp. 90–91 (Write, evaluate, and compare numerical expressions; TE Develop Concepts: Model Grouping Symbols)