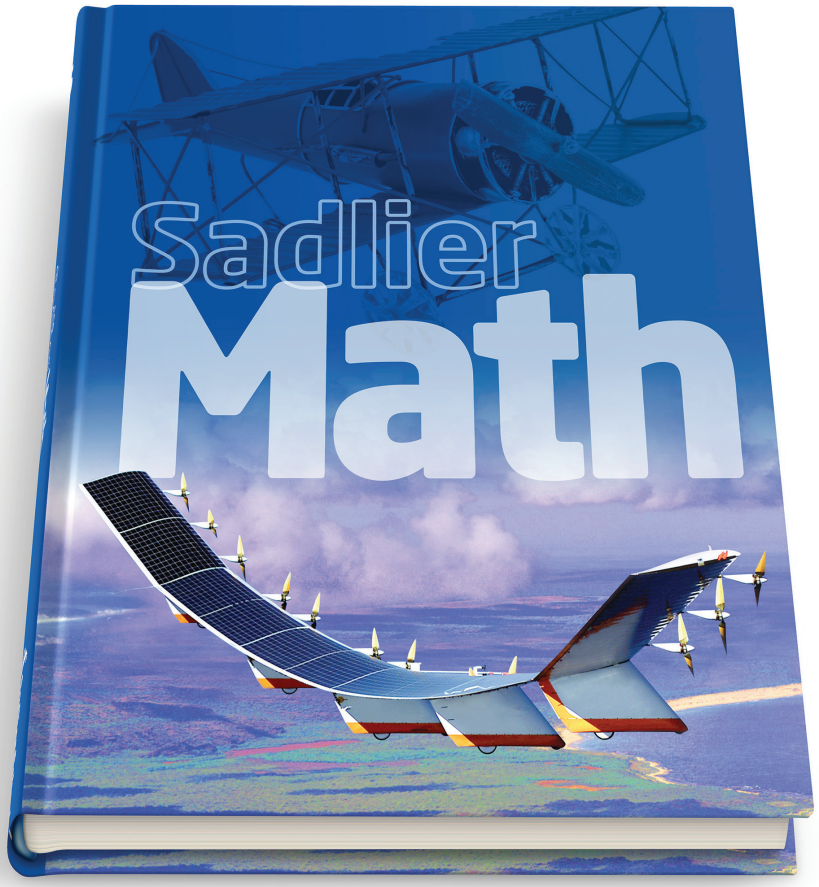
Sadlier Math™

Correlation to the ACT® Aspire® 5th Grade Mathematics Performance Level Descriptors: Ready & Exceeding

Grade 5



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OPERATIONS AND ALGEBRAIC THINKING

Focus is on numerical expressions. Students compare patterns, developing early function reasoning.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Ready *A student performing at the* Ready *level:*	
• interprets numerical expressions without evaluating them. • writes expressions involving parentheses, including from a real-world problem.	**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)
• plots ordered pairs in the first quadrant of a coordinate plane derived from the relationship between corresponding terms of two numerical patterns.	**Chapter 17: 17-3 & 17-6** • 17-3 The Coordinate Plane—pp. 386–387 (Plot and name ordered pairs on the coordinate plane; TE Develop Concepts: Two Kinds of Tables) • 17-6 Graph Number Patterns—pp. 392–393 (Graph ordered pairs from number patterns; Identify relationships between corresponding terms of two patterns; TE Develop Concepts: Use Tables to Solve Problems)
• makes sense of a real-world problem involving any of the four operations and writes an expression that reflects that given situation.	In addition to the Problem Solving resources cited below, how to solve a real-world problem is modeled in the introduction to most lessons; these lessons include practice exercises in the Problem Solving section, with additional practice in the Workbook. Students demonstrate their ability to make sense of and solve real-world problems in the two-page Performance Assessment at the end of each chapter. **Problem Solving Math Practices** • Four Steps: Read and Understand, Represent the Situation, Make and Use a Plan, Look Back—p. xxii • Make Sense of Problems/Use Reasoning—p. xxiii • Explain Your Reasoning/Model with Mathematics—p. xxiv **Problem Solving Strategies** • Write and Solve an Equation—p. xxxi **Problem Solving Lessons** • 1-7, pp. 16–17; 2-7, pp. 38–39; 3-7, pp. 60–61; 4-6, pp. 80–81; 5-6, pp. 100–101; 6-6, pp. 120–121; 7-6, pp. 140–141; 8-8, pp. 164–165; 9-6, pp. 184–185; 10-12, pp. 216–217; 12-7, pp. 264–265; 13-8, pp. 288–289; 14-10, pp. 316–317; 15-9, pp. 342–343; 16-6, pp. 362–363; 17-8, pp. 386–387 **Chapter 4: 4-11** • 4-11 Expressions—pp. 90–91 (Write, evaluate, and compare numerical expressions; TE Develop Concepts: Model Grouping Symbols)

OPERATIONS AND ALGEBRAIC THINKING

Focus is on numerical expressions. Students compare patterns, developing early function reasoning.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Exceeding *A student performing at the* Exceeding *level:*	
• writes and evaluates expressions involving multiple sets of parentheses, including from a real-world problem.	**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; multiple sets of parentheses) • 4-11 Expressions—pp. 90–91 (Write, evaluate, and compare numerical expressions; brackets and parentheses; TE Develop Concepts: Model Grouping Symbols)
• describes the relationships between ordered pairs by using coordinates from a graph.	**Chapter 17: 17-3, 17-4 & 17-6** • 17-3 The Coordinate Plane—pp. 386–387 (Plot and name ordered pairs on the coordinate plane; TE Develop Concepts: Two Kinds of Tables) • 17-4 Using Coordinate Graphs—pp. 388–389 (Interpret coordinate graphs; TE Develop Concepts: Using Tables to Graph) • 17-6 Graph Number Patterns—pp. 392–393 (Graph ordered pairs from number patterns; Identify relationships between corresponding terms of two patterns; TE Develop Concepts: Use Tables to Solve Problems)
• makes sense of a real-world problem involving any of the four operations and writes an expression that reflects that given situation and then uses the expression to solve the problem.	In addition to the Problem Solving resources cited below, how to solve a real-world problem is modeled in the introduction to most lessons; these lessons include practice exercises in the Problem Solving section, with additional practice in the Workbook. Students can demonstrate their ability to make sense of and solve real-world problems in the two-page Performance Assessment at the end of each chapter. **Problem Solving Math Practices** • Four Steps: Read and Understand, Represent the Situation, Make and Use a Plan, Look Back—p. xxii • Make Sense of Problems/Use Reasoning—p. xxiii • Explain Your Reasoning/Model with Mathematics—p. xxiv **Problem Solving Strategies** • Write and Solve an Equation—p. xxxi **Problem Solving Lessons** • 1-7, pp. 16–17; 2-7, pp. 38–39; 3-7, pp. 60–61; 4-6, pp. 80–81; 5-6, pp. 100–101; 6-6, pp. 120–121; 7-6, pp. 140–141; 8-8, pp. 164–165; 9-6, pp. 184–185; 10-12, pp. 216–217; 12-7, pp. 264–265; 13-8, pp. 288–289; 14-10, pp. 316–317; 15-9, pp. 342–343; 16-6, pp. 362–363; 17-8, pp. 386–387 **Chapter 4: 4-11** • 4-11 Expressions—pp. 90–91 (Write, evaluate, and compare numerical expressions; TE Develop Concepts: Model Grouping Symbols)

NUMBER AND OPERATIONS IN BASE TEN

Focus is on understanding the coherence of place-value for whole numbers and decimals, and how operations with whole numbers translate to decimals.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Ready *A student performing at the* Ready *level:*	
• recognizes that in a multi-digit number the place value of any digit represents 1/10 times as much as the place value of the digit to the left.	**Chapter 1: 1-1** • 1-1 Place Value to Billions—pp. 2–3 (Understand place value through billions; TE Develop Concepts: Use the Place-Value Chart to Build a Number)
• recognizes and explains patterns in placement of the decimal point when multiplying or dividing by powers of 10.	**Chapter 1: 1-3** • 1-3 Powers of 10—pp. 8–9 (Multiply and divide whole numbers by powers of 10; TE Develop Concepts: Place Value and Powers of 10)
• uses and explains a standard algorithm to multiply multi-digit whole numbers.	**Chapter 3: 3-4 & 3-5** • 3-4 Zeros in the Multiplicand—pp. 50–51 (Multiply multidigit numbers by 1-digit numbers; TE Develop Concepts: Multiply Using the Distributive Property) • 3-5 Multiply by Two-Digit Numbers—pp. 54–55 (Multiply a whole number by a 2-digit multiplier; TE Develop Concepts: Understanding Two-Digit Multiplication)
• rounds decimal numbers to the hundredths place.	**Chapter 2: 2-4** • 2-4 Round Decimals—pp. 32–33 (Use place value to round decimal numbers; TE Develop Concepts: Compare Numbers)
• uses place-value understanding to rewrite decimal numbers in expanded form.	**Chapter 2: 2-2** • 2-2 Decimals and Expanded Form—pp. 26–27 (Read and write decimals to thousandths using expanded form; TE Develop Concepts: Compare Numbers)
• calculates accurately when using the standard algorithms to multiply multi-digit whole numbers and decimals to hundredths, and rounds as appropriate.	**Chapter 3: 3-5 through 3-7** • 3-5 Multiply by Two-Digit Numbers—pp. 54–55 (Multiply a whole number by a 2-digit multiplier; TE Develop Concepts: Understanding Two-Digit Multiplication) • 3-6 Problem Solving: Guess and Test—pp. 56–57 (Use the guess and test strategy to solve problems; TE Develop Concepts: Fruit Stand—range of possible answers) • 3-7 Multiply by Three-Digit Numbers—pp. 58–59 (Multiply a whole number by a 3-digit number; TE Develop Concepts: Distributive Property)

NUMBER AND OPERATIONS IN BASE TEN

Focus is on understanding the coherence of place-value for whole numbers and decimals, and how operations with whole numbers translate to decimals.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Exceeding *A student performing at the* Exceeding *level:*	
• compares numbers written in expanded or standard form.	**Chapter 2: 2-1 through 2-4** • 2-1 Thousandths—pp. 24–25 (Read and write decimals to thousandths using standard form and word form; TE Develop Concepts: Compare Numbers) • 2-2 Decimals and Expanded Form—pp. 26–27 (Read and write decimals to thousandths using expanded form; TE Develop Concepts: Compare Numbers) • 2-3 Compare and Order Decimals—pp. 30–31 (Compare and order decimals using symbols to record the comparison; TE Develop Concepts: Compare Numbers) • 2-4 Round Decimals—pp. 32–33 (TE Develop Concepts: Compare Numbers)
• solves multi-step problems involving all four operations with decimals to hundredths and division of whole numbers with up to four-digit dividends and two-digit divisors.	**Chapter 4: 4-1 through 4-9** • 4-1 Division Patterns—pp. 68–69 • 4-2 Estimation: Compatible Numbers—pp. 70–71 • 4-3 Divide by One-Digit Numbers—pp. 72–73 • 4-4 Zeros in the Quotient—pp. 74–75 • 4-5 Divisibility and Mental Math—pp. 76–77 • 4-6 Use Arrays and Area Models to Divide—pp. 80–81 • 4-7 Use Strategies to Divide—pp. 82–83 • 4-8 Divide by Two-Digit Numbers—pp. 84–85 • 4-9 Problem Solving: Work Backward—pp. 86–87 **Chapter 10: 10-4 through 10-7** • 10-4 Problem Solving: Draw a Picture—pp. 228–229 • 10-5 Add Decimals: Hundredths—pp. 230–231 • 10-6 Add Decimals: Thousandths—pp. 232–233 • 10-7 Addition with Money—pp. 234–235 **Chapter 11: 11-3 through 11-6** • 11-3 Subtract Decimals: Hundredths—pp. 248–249 • 11-4 Subtract Decimals: Thousandths—pp. 250–251 • 11-5 Subtraction with Money—pp. 252–253 • 11-6 Problem Solving: Use a Model—pp. 254–255 **Chapter 12: 12-4 through 12-8** • 12-4 Multiply Decimals by Whole Numbers—pp. 268–269 • 12-5 Multiplication with Money—pp. 270–271 • 12-6 Model Multiplying Two Decimals—pp. 274–275 • 12-7 Multiply Decimals by Decimals—pp. 276–277 • 12-8 Zeros in the Product—pp. 278–279 • 12-9 Problem Solving: Compare Strategies—pp. 280–281 **Chapter 13: 13-5 through 13-7, 13-10** • 13-5 Divide Decimals by Whole Numbers—pp. 296–297 • 13-6 Zeros in Decimal Quotients—pp. 298–299 • 13-7 Division with Money—pp. 302–303 • 13-8 Problem Solving: Work Backward—pp. 304–305 • 13-9 Model Dividing a Decimal by a Decimal—pp. 306–307 • 13-10 Divide a Decimal by a Decimal—pp. 308–309

NUMBER AND OPERATIONS IN BASE TEN

Focus is on understanding the coherence of place-value for whole numbers and decimals, and how operations with whole numbers translate to decimals.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
• Rounds decimal numbers to any place value.	**Chapter 2: 2-4** • 2-4 Round Decimals—pp. 32–33 (Use place value to round decimal numbers; TE Develop Concepts: Compare Numbers)
• solves multi-step problems involving decimals to hundredths accurately and efficiently.	**Chapter 10: 10-1 through 10-7** • 10-1 Use Models to Add Decimals—pp. 220–221 • 10-2 Use Properties to Add Decimals—pp. 222–223 • 10-3 Estimate Decimal Sums—pp. 224–225 • 10-4 Problem Solving: Draw a Picture—pp. 228–229 • 10-5 Add Decimals: Hundredths—pp. 230–231 • 10-6 Add Decimals: Thousandths—pp. 232–233 • 10-7 Addition with Money—pp. 234–235 **Chapter 11: 11-1 through 11-6** • 11-1 Use Models to Subtract Decimals—pp. 242–243 • 11-2 Estimate Decimal Differences—pp. 244–245 • 11-3 Subtract Decimals: Hundredths—pp. 248–249 • 11-4 Subtract Decimals: Thousandths—pp. 250–251 • 11-5 Subtraction with Money—pp. 252–253 • 11-6 Problem Solving: Use a Model—pp. 254–255 **Chapter 12: 12-4 through 12-9** • 12-1 Multiply by Powers of 10—pp. 262–263 • 12-2 Use Properties to Multiply a Decimal by a Whole Number—pp. 264–265 • 12-3 Estimate Decimal Products—pp. 266–267 • 12-4 Multiply Decimals by Whole Numbers—pp. 268–269 • 12-5 Multiplication with Money—pp. 270–271 • 12-6 Model Multiplying Two Decimals—pp. 274–275 • 12-7 Multiply Decimals by Decimals—pp. 276–277 • 12-8 Zeros in the Product—pp. 278–279 • 12-9 Problem Solving: Compare Strategies—pp. 280–281 **Chapter 13: 13-5 through 13-10** • 13-1 Divide by Powers of 10—pp. 288–289 • 13-2 Model Dividing a Decimal by a Whole Number—pp. 290–291 • 13-3 Estimate Decimal Quotients—pp. 292–293 • 13-4 Estimate with Money—pp. 294–295 • 13-5 Divide Decimals by Whole Numbers—pp. 296–297 • 13-6 Zeros in Decimal Quotients—pp. 298–299 • 13-7 Division with Money—pp. 302–303 • 13-8 Problem Solving: Work Backward—pp. 304–305 • 13-9 Model Dividing a Decimal by a Decimal—pp. 306–307 • 13-10 Divide a Decimal by a Decimal—pp. 308–309

NUMBER AND OPERATIONS—FRACTIONS

Focus is on deepening understanding of fraction multiplication and division, and on developing fluency with fraction addition and subtraction through equivalent fractions.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Ready *A student performing at the* Ready *level:*	
• multiplies a fraction between zero and one by a whole number and explains why the result is smaller than the original whole number.	**Chapter 8: 8-3** • 8-3 Multiply Fractions and Whole Numbers—pp. 172–173 (Multiply fractions and whole numbers; TE Develop Concepts: Repeated Addition)
• solves mathematical or real-word problems involving addition and subtraction of fractions and mixed numbers with unlike denominators. • makes sense of a real-world problem using addition and subtraction of fractions and mixed numbers with unlike denominators to find a solution.	**Chapter 6: 6-1 through 6-6** • 6-1 Model Addition with Unlike Denominators—pp. 122–123 • 6-2 Add Fractions: Unlike Denominators—pp. 124–125 • 6-3 Fraction Addition: Estimation and Reasonableness—pp. 126–127 • 6-4 Add Mixed Numbers—pp. 130–131 • 6-5 Problem Solving: Use a Model—pp. 132–133 • 6-6 Rename Mixed Number Sums—pp. 134–135 **Chapter 7: 7-1 through 7-3, 7-5 through 7-9** • 7-1 Model Subtraction of Fractions with Unlike Denominators—pp. 142–143 • 7-2 Subtract Fractions: Unlike Denominators—pp. 144–145 • 7-3 Subtract Fractions: Estimation and Reasonableness—pp. 146–147 • 7-5 Estimate Sums and Differences of Mixed Numbers—pp. 152–153 • 7-6 Subtract Fractions and Whole Numbers from Mixed Numbers—pp. 154–155 • 7-7 Subtract Mixed Numbers: Rename Fractions—pp. 156–157 • 7-8 Subtract Mixed Numbers: Rename Whole Numbers and Fractions—pp. 158–159 • 7-9 Problem Solving: Write and Solve an Equation—pp. 160–161 **Chapter 8: 8-11** • 8-11 Problem Solving: Use Logical Reasoning—pp. 190–191 **Chapter 9: 9-6** • 9-6 Word Problems Involving Fraction Division—pp. 210–211 (Solve problems that involve dividing with fractions; TE Develop Concepts: Interpreting Word Phrases)
Exceeding *A student performing at the* Exceeding *level:*	
• solves real-world problems involving multiplication of fractions and mixed numbers.	**Chapter 8: 8-1 through 8-4, 8-8 & 8-9** • 8-1 Model Multiplying Fractions—pp. 168–169 (Use models to multiply a whole number or fraction by a fraction; TE Develop Concepts: Compare Half of a Whole and Half of a Half) • 8-2 Multiply Fractions by Fractions—pp. 170–171 (Multiply fractions by fractions; TE Develop Concepts: Measure a Fraction of a Fraction) • 8-3 Multiply Fractions and Whole Numbers—pp. 172–173 (Multiply fractions and whole numbers; TE Develop Concepts: Repeated Addition) *continued*

NUMBER AND OPERATIONS—FRACTIONS

Focus is on deepening understanding of fraction multiplication and division, and on developing fluency with fraction addition and subtraction through equivalent fractions.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
	• 8-4 Scaling Fractions—pp. 174–175 (Understand how the value of one factor affects the size of the product; TE Develop Concepts: Rewrite a Fraction to Use the Distributive Property) • 8-8 Multiply Fractions and Mixed Numbers—pp. 184–185 (Multiply fractions and mixed numbers; TE Develop Concepts: Half of a Mixed Number) • 8-9 Multiply Mixed Numbers—pp. 186–187 (Multiply mixed numbers by mixed numbers and whole numbers; TE Develop Concepts: One and a Half of a Whole and a Part)
• solves multi-step mathematical and real-world problems involving addition and subtraction of fractions with unlike denominators.	**Chapter 6: 6-1 through 6-4** • 6-1 Model Addition with Unlike Denominators—pp. 122–123 • 6-2 Add Fractions: Unlike Denominators—pp. 124–125 • 6-3 Fraction Addition: Estimation and Reasonableness—pp. 126–127 • 6-4 Add Mixed Numbers—pp. 130–131 **Chapter 7: 7-1 through 7-9** • 7-1 Model Subtraction of Fractions with Unlike Denominators—pp. 142–143 • 7-2 Subtract Fractions: Unlike Denominators—pp. 144–145 • 7-3 Subtract Fractions: Estimation and Reasonableness—pp. 146–147 • 7-4 Model Subtraction with Mixed Numbers—pp. 150–151 • 7-5 Estimate Sums and Differences of Mixed Numbers—pp. 152–153 • 7-6 Subtract Fractions and Whole Numbers from Mixed Numbers—pp. 154–155 • 7-7 Subtract Mixed Numbers: Rename Fractions—pp. 156–157 • 7-8 Subtract Mixed Numbers: Rename Whole Numbers and Fractions—pp. 158–159 • 7-9 Problem Solving: Write and Solve an Equation—pp. 160–161
• makes sense of multi-step problems involving several related parts of a whole.	**Chapter 6: 6-1 through 6-6** • 6-1 Model Addition with Unlike Denominators—pp. 122–123 • 6-2 Add Fractions: Unlike Denominators—pp. 124–125 • 6-3 Fraction Addition: Estimation and Reasonableness—pp. 126–127 • 6-4 Add Mixed Numbers—pp. 130–131 • 6-5 Problem Solving: Use a Model—pp. 132–133 • 6-6 Rename Mixed Number Sums—pp. 134–135 **Chapter 7: 7-1 through 7-9** • 7-1 Model Subtraction of Fractions with Unlike Denominators—pp. 142–143 • 7-2 Subtract Fractions: Unlike Denominators—pp. 144–145 • 7-3 Subtract Fractions: Estimation and Reasonableness—pp. 146–147 • 7-4 Model Subtraction with Mixed Numbers—pp. 150–151 • 7-5 Estimate Sums and Differences of Mixed Numbers—pp. 152–153 • 7-6 Subtract Fractions and Whole Numbers from Mixed Numbers—pp. 154–155 • 7-7 Subtract Mixed Numbers: Rename Fractions—pp. 156–157 • 7-8 Subtract Mixed Numbers: Rename Whole Numbers and Fractions—pp. 158–159 • 7-9 Problem Solving: Write and Solve an Equation—pp. 160–161 **Chapter 8: 8-1 through 8-11** • 8-1 Model Multiplying Fractions—pp. 168–169

continued

NUMBER AND OPERATIONS—FRACTIONS

Focus is on deepening understanding of fraction multiplication and division, and on developing fluency with fraction addition and subtraction through equivalent fractions.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
	• 8-2 Multiply Fractions by Fractions—pp. 170–171 • 8-3 Multiply Fractions and Whole Numbers—pp. 172–173 • 8-4 Scaling Fractions—pp. 174–175 • 8-5 Common Factors in Products—pp. 176–177 • 8-6 Rename Mixed Numbers as Fractions—pp. 180–181 • 8-7 Estimate Products with Mixed Numbers—pp. 182–183 • 8-8 Multiply Fractions and Mixed Numbers—pp. 184–185 • 8-9 Multiply Mixed Numbers—pp. 186–187 • 8-10 Find the Area of a Rectangle—pp. 188–189 • 8-11 Problem Solving: Use Logical Reasoning—pp. 190–191 **Chapter 9: 9-1 through 9-7** • 9-1 Divide Whole Numbers by Unit Fractions—pp. 198–199 • 9-2 Reciprocals—pp. 200–201 • 9-3 Divide Whole Numbers by Fractions—pp. 202–203 • 9-4 Divide Unit Fractions by Whole Numbers—pp. 206–207 • 9-5 Divide Fractions by Whole Numbers—pp. 208–209 • 9-6 Word Problems Involving Fraction Division—pp. 210–211 • 9-7 Problem Solving: Choose a Strategy—pp. 212–213

MEASUREMENT AND DATA

Focus is on the concept of volume and relations to multiplication and addition. Students convert measurements to different units and continue to represent and interpret data.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Ready *A student performing at the* Ready *level:*	
• converts among the units within a non-metric measurement system in order to solve single-step real-world or mathematical problems.	**Chapter 14: 14-1 through 14-4, 14-9** • 14-1 Relate Customary Units of Length—pp. 316–317 (Convert customary units of length; TE Develop Concepts: Measurement Scavenger Hunt) • 14-2 Relate Customary Units of Capacity—pp. 318–319 (Convert customary units of capacity; TE Develop Concepts: Visual Relationships) • 14-3 Relate Customary Units of Weight—pp. 320–321 (Convert customary units of weight; TE Develop Concepts: Compare Weights) • 14-4 Compute with Customary Units—pp. 322–323 (Use computation skills to solve problems involving customary units; TE Develop Concepts: Equivalent Units) • 14-9 Problem Solving: Use the Four-Step Process—pp. 334–335 (Apply the four-step problem-solving process; TE Develop Concepts: Bar Diagrams)

MEASUREMENT AND DATA

Focus is on the concept of volume and relations to multiplication and addition. Students convert measurements to different units and continue to represent and interpret data.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
• determines and uses an appropriate system of units for a given measurement.	**Chapter 14: 14-1 through 14-3, 14-5 through 14-7** • 14-1 Relate Customary Units of Length—pp. 316–317 (Convert customary units of length; TE Develop Concepts: Measurement Scavenger Hunt) • 14-2 Relate Customary Units of Capacity—pp. 318–319 (Convert customary units of capacity; TE Develop Concepts: Visual Relationships) • 14-3 Relate Customary Units of Weight—pp. 320–321 (Convert customary units of weight; TE Develop Concepts: Compare Weights) • 14-5 Relate Metric Units of Length—pp. 326–327 (Convert metric units of length; TE Develop Concepts: One-Meter Challenge) • 14-6 Relate Metric Units of Capacity—pp. 328–329 (Convert metric units of capacity; TE Develop Concepts: 15,000 Milliliter Challenge) • 14-7 Relate Metric Units of Mass—pp. 330–331 (Convert metric units of mass; TE Develop Concepts: 100,000 Gram Challenge)
• solves multi-step mathematical and real-world problems involving volume of right rectangular prisms.	**Chapter 16: 16-3 through 16-6** • 16-3 Volume of Rectangular Prisms—pp. 364–365 (Find volume by packing with unit cubes; TE Develop Concepts: Using Water to Measure Volumes of Solids) • 16-4 Volume Formulas—pp. 368–369 (Use formulas to find the volumes of rectangular prisms; TE Develop Concepts: Arrays and Equations) • 16-5 Volume of Composite Figures—pp. 370–371 (Find the volume of a solid figure composed of rectangular prisms; TE Develop Concepts: How can you use a model to find missing lengths?) • 16-6 Problem Solving: Act it Out—pp. 372–373 (Use the Act It Out strategy to solve problems; TE Develop Concepts: Handshake Problem)
• uses all four operations on fractions with unlike denominators of 2, 4, and 8 referring to the same whole to solve problems involving information presented in line plots.	**Chapter 17: 17-1 & 17-2** • 17-1 Line Plots with Whole Numbers and Decimals—pp. 380–381 (Make and use line plots with whole numbers and decimals; TE Develop Concepts: Organizing Data) • 17-2 Line Plots with Fractions and Mixed Numbers—pp. 382–383 (Make and use line plots with fractions and mixed numbers; TE Develop Concepts: Desk Shuffleboard—collect data using fractions and mixed numbers)
• makes sense of an irregular rectangular prism to find the sides lengths and then uses a volume formula to find the volume of the shape.	**Chapter 16: 16-5** • 16-5 Volume of Composite Figures—pp. 370–371 (Find the volume of a solid figure composed of rectangular prisms; TE Develop Concepts: How can you use a model to find missing lengths?)

MEASUREMENT AND DATA

Focus is on the concept of volume and relations to multiplication and addition. Students convert measurements to different units and continue to represent and interpret data.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Exceeding *A student performing at the* Exceeding *level:*	
• converts among the units within a non-metric measurement system in order to solve multi-step real-world or mathematical problems.	**Chapter 14: 14-1 through 14-4, 14-9** • 14-1 Relate Customary Units of Length—pp. 316–317 (Convert customary units of length; TE Develop Concepts: Measurement Scavenger Hunt) • 14-2 Relate Customary Units of Capacity—pp. 318–319 (Convert customary units of capacity; TE Develop Concepts: Visual Relationships) • 14-3 Relate Customary Units of Weight—pp. 320–321 (Convert customary units of weight; TE Develop Concepts: Compare Weights) • 14-4 Compute with Customary Units—pp. 322–323 (Use computation skills to solve problems involving customary units; TE Develop Concepts: Equivalent Units) • 14-9 Problem Solving: Use the Four-Step Process—pp. 334–335 (Apply the four-step problem-solving process; TE Develop Concepts: Bar Diagrams)
• solves multi-step mathematical and real-world problems involving the volume of a composite figure composed of two or more non-overlapping right rectangular prisms.	**Chapter 16: 16-5** • 16-5 Volume of Composite Figures—pp. 370–371 (Find the volume of a solid figure composed of rectangular prisms; TE Develop Concepts: How can you use a model to find missing lengths?)
• constructs line plots to display a data set of measurements in fractions with denominators of 2, 4, and 8.	**Chapter 17: 17-1 & 17-2** • 17-1 Line Plots with Whole Numbers and Decimals—pp. 380–381 (Make and use line plots with whole numbers and decimals; TE Develop Concepts: Organizing Data) • 17-2 Line Plots with Fractions and Mixed Numbers—pp. 382–383 (Make and use line plots with fractions and mixed numbers; TE Develop Concepts: Desk Shuffleboard—collect data using fractions and mixed numbers)
• makes sense of quantities and units, using the units as a way to attend to the meaning of the quantities.	**Chapter 14: 14-1 through 14-4, 14-8** • 14-1 Relate Customary Units of Length—pp. 316–317 • 14-2 Relate Customary Units of Capacity—pp. 318–319 • 14-3 Relate Customary Units of Weight—pp. 320–321 • 14-4 Compute with Customary Units—pp. 322–323 • 14-5 Relate Metric Units of Length—pp. 326–327 • 14-6 Relate Metric Units of Capacity—pp. 328–329 • 14-7 Relate Metric Units of Mass—pp. 330–331 • 14-8 Compute with Metric Units—pp. 332–333

GEOMETRY

Focus is on categories of 2-dimensional figures based on properties. The coordinate plane is introduced.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Ready *A student performing at the* Ready *level:*	
• identifies the coordinates of the ordered pair for a given point in the first quadrant of the coordinate plane.	**Chapter 17: 17-3 & 17-6** • 17-3 The Coordinate Plane—pp. 386–387 (Plot and name ordered pairs on the coordinate plane; TE Develop Concepts: Two Kinds of Tables) • 17-6 Graph Number Patterns—pp. 392–393 (Graph ordered pairs from number patterns; Identify relationships between corresponding terms of two patterns; TE Develop Concepts: Use Tables to Solve Problems)
• classifies and compares triangles, squares, rectangles, rhombuses, parallelograms, kites, and trapezoids based on their properties	**Chapter 15: 15-1 through 15-4** • 15-1 Polygons—pp. 342–343 (Understand and use attributes of polygons; TE Develop Concepts: Geometric Definitions) • 15-2 Triangles—pp. 344–345 (Understand and use attributes of triangles; TE Develop Concepts: Classifying Angles) • 15-3 Quadrilaterals—pp. 348–349 (Understand and use attributes of quadrilaterals: trapezoid, parallelogram, rhombus, rectangle, square; TE Develop Concepts: Draw Four-Sided Polygons) • 15-4 Classify Quadrilaterals—pp. 350–351 (Classify quadrilaterals in a hierarchy based on their properties; Venn diagram, trapezoid, parallelogram, rhombus, rectangle, square; TE Develop Concepts: Using a Tangram)
• interprets a graph model by identifying coordinate pairs in the first quadrant of a coordinate plane.	**Chapter 17: 17-4** • 17-4 Using Coordinate Graphs—pp. 388–389 (Interpret coordinate graphs; TE Develop Concepts: Using Tables to Graph)
• constructs a viable argument to classify and compare triangles and quadrilaterals based on their properties.	**Chapter 15: 15-1 through 15-4** • 15-1 Polygons—pp. 342–343 (Understand and use attributes of polygons; TE Develop Concepts: Geometric Definitions) • 15-2 Triangles—pp. 344–345 (Understand and use attributes of triangles; TE Develop Concepts: Classifying Angles) • 15-3 Quadrilaterals—pp. 348–349 (Understand and use attributes of quadrilaterals: trapezoid, parallelogram, rhombus, rectangle, square; TE Develop Concepts: Draw Four-Sided Polygons) • 15-4 Classify Quadrilaterals—pp. 350–351 (Classify quadrilaterals in a hierarchy based on their properties; Venn diagram, trapezoid, parallelogram, rhombus, rectangle, square; TE Develop Concepts: Using a Tangram)

GEOMETRY

Focus is on categories of 2-dimensional figures based on properties. The coordinate plane is introduced.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Exceeding *A student performing at the* Exceeding *level:*	
• represents real-world problems by graphing points in the first quadrant of the coordinate plane and interprets the coordinate values in the context of the situation.	**Chapter 17: 17-3 & 17-6** • 17-3 The Coordinate Plane—pp. 386–387 (Plot and name ordered pairs on the coordinate plane; TE Develop Concepts: Two Kinds of Tables) • 17-6 Graph Number Patterns—pp. 392–393 (Graph ordered pairs from number patterns; Identify relationships between corresponding terms of two patterns; TE Develop Concepts: Use Tables to Solve Problems)
• uses properties to explain and justify the classifications of polygons.	**Chapter 15: 15-1 through 15-4** • 15-1 Polygons—pp. 342–343 (Understand and use attributes of polygons; TE Develop Concepts: Geometric Definitions) • 15-2 Triangles—pp. 344–345 (Understand and use attributes of triangles; TE Develop Concepts: Classifying Angles) • 15-3 Quadrilaterals—pp. 348–349 (Understand and use attributes of quadrilaterals: trapezoid, parallelogram, rhombus, rectangle, square; TE Develop Concepts: Draw Four-Sided Polygons) • 15-4 Classify Quadrilaterals—pp. 350–351 (Classify quadrilaterals in a hierarchy based on their properties; Venn diagram, trapezoid, parallelogram, rhombus, rectangle, square; TE Develop Concepts: Using a Tangram)
• creates a graph to model a real-world problem on a coordinate plane and then interprets a value.	**Chapter 17: 17-6** • 17-6 Graph Number Patterns—pp. 392–393 (Graph ordered pairs from number patterns; Identify relationships between corresponding terms of two patterns; TE Develop Concepts: Use Tables to Solve Problems)
• constructs a viable argument to justify the classification of polygons by using clear definitions and examples.	**Chapter 15: 15-1 through 15-4** • 15-1 Polygons—pp. 342–343 (Understand and use attributes of polygons; TE Develop Concepts: Geometric Definitions) • 15-2 Triangles—pp. 344–345 (Understand and use attributes of triangles; TE Develop Concepts: Classifying Angles) • 15-3 Quadrilaterals—pp. 348–349 (Understand and use attributes of quadrilaterals: trapezoid, parallelogram, rhombus, rectangle, square; TE Develop Concepts: Draw Four-Sided Polygons) • 15-4 Classify Quadrilaterals—pp. 350–351 (Classify quadrilaterals in a hierarchy based on their properties; Venn diagram, trapezoid, parallelogram, rhombus, rectangle, square; TE Develop Concepts: Using a Tangram)

MODELING

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

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Ready *A student performing at the* Ready *level:*	
• evaluates a manipulative model to solve a problem or explain a concept.	In addition to the citations below, learning activities with manipulative models are featured in several teacher-directed activities throughout the program. See the following representative lessons: **Problem Solving Math Practices** • Model with Mathematics (blocks)—p. xxiv **Problem Solving Strategies** • Use a Model (base-ten blocks)—p. xxvii **Chapter 1: 1-5** • 1-5 Addition Properties and Subtraction Rules—pp. 12–13 (TE Develop Concepts: Use Place-Value Workmats to Model Addition Properties) **Chapter 2: 2-3** • 2-3 Compare and Order Decimals—pp. 30–31 (TE Develop Concepts: Compare Numbers with virtual base-ten blocks) **Chapter 5: 5-1** • 5-1 Factors, Primes and Composite Numbers—pp. 98–99 (TE Develop Concepts: Use Counters to Explore Prime and Composite Numbers) **Chapter 6: 6-1** • 6-1 Model Addition with Unlike Denominators—pp. 122–123 (Use fraction strips to add fractions with unlike denominators; TE Develop Concepts: Model Fractions) **Chapter 10: 10-5** • 10-1 Use Models to Add Decimals—pp. 220–221 (Use base-ten models to add decimals; TE Develop Concepts: Solve Decimal Riddles)
Exceeding *A student performing at the* Exceeding *level:*	
• uses manipulatives to improve a model of a problem or concept.	In addition to the citations below, manipulative models are featured in several teacher-directed activities throughout the program. See the following representative lessons: **Problem Solving Math Practices** • Model with Mathematics (blocks)—p. xxiv **Problem Solving Strategies** • Use a Model (base-ten blocks)—p. xxvii **Chapter 1: 1-5** • 1-5 Addition Properties and Subtraction Rules—pp. 12–13 (TE *continued*

MODELING

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

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
	Develop Concepts: Use Place-Value Workmats to Model Addition Properties) **Chapter 2: 2-3** • 2-3 Compare and Order Decimals—pp. 30–31 (TE Develop Concepts: Compare Numbers with virtual base-ten blocks) **Chapter 5: 5-1** • 5-1 Factors, Primes and Composite Numbers—pp. 98–99 (TE Develop Concepts: Use Counters to Explore Prime and Composite Numbers) **Chapter 6: 6-1** • 6-1 Model Addition with Unlike Denominators—pp. 122–123 (Use fraction strips to add fractions with unlike denominators; TE Develop Concepts: Model Fractions) **Chapter 10: 10-5** • 10-1 Use Models to Add Decimals—pp. 220–221 (Use base-ten models to add decimals; TE Develop Concepts: Solve Decimal Riddles)

JUSTIFICATION AND EXPLANATION

Giving reasons, explaining "Why?".

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Ready *A student performing at the* Ready *level:*	
• draws conclusions using both a specific and general evidentiary statement.	Students explain evidence behind conclusions in response to the **Write About It** prompt at the end of each Student Edition lesson (and each corresponding Workbook lesson). For example: **Chapter 4: 4-3** • 4-3 Divide by One-Digit Numbers—pp. 72–73 (Write About It: Jalyn's brother says that when you divide a 4-digit number by a 1-digit number, the quotient will always be a 3-digit number. Do you agree? Give evidence to support your answer.)
• provides general support for a claim in order to reach a conclusion.	For many lessons, students provide general support for a claim in order to reach a response to **Write About It** prompts (at the end of each Student Edition lesson and each corresponding Workbook lesson). **Chapter 7: 7-5** • 7-5 Estimate Sums and Differences of Mixed Numbers—pp. 152–153 (Write About It: Give an argument as to whether rounding or front-end estimation gives a better estimate. Do you think this is always true? Include examples to support your answer..)

JUSTIFICATION AND EXPLANATION

Giving reasons, explaining "Why?".

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
• 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 use visual representations/models and computation to clarify an argument or draw a conclusion in several TE **Develop Concept** and **Write About It** exercises. See the following examples. **Chapter 2: 2-1** (conditional statements) • 2-1 Mathematical Expressions—pp. 24–25 (What if Alex had been given 3 more baseball cards? How would that change the value of the expression?) **Chapter 4: 4-1** (computations) • 4-1 Division Patterns—pp. 68–69 (Write About It: Describe Hector's mistake.) **Chapter 6: 6-5** (procedures) • 6-5 Problem Solving: Use a Model—pp. 132–133 (Write About It: aligning markers when using a number line.) **Chapter 10: 10-1** (visual representations) • 10-1 Use Models to Add Decimals—pp. 220–221 (TE Develop Concepts: Solve Decimal Riddles; using visual representations.)
• 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.	In addition to opportunities for error analysis in group work suggested for several TE **Develop Concept** and **Write About It** activities, the following representative lessons provide exercises in examining reasoning or calculations: **Chapter 3: 3-5** • 3-5 Multiply by Two-Digit Numbers—pp. 54–55 (Write About It: Omar multiplies 316 x 81 and gets a product of 2528. Describe and correct his error.) **Chapter 8: 8-10** • 8-10 Find the Area of a Rectangle—pp. 188–189 (Workbook: Problem Solving: Whose reasoning is correct? Why?) **Chapter 12: 12-7** • 12-7 Multiply Decimals by Decimals—pp. 276–277 (Workbook: Write About It: Who is correct? Explain.)

Exceeding

A student performing at the Exceeding *level:*

• provides a coherent, logical argument or solution pathway by providing evidence to support claims.	In addition to the resources cited below, teachers guide discussion of logical arguments in two TE activities: **Develop Concepts** and **Summarize**. Students analyze then explain, justify, support, or refute a conclusion or answer proposed in Write About It prompts (at the end of each Student Edition lesson and each corresponding Workbook lesson).

continued

JUSTIFICATION AND EXPLANATION

Giving reasons, explaining "Why?".

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
	Problem Solving Strategies • Use Logical Reasoning—p. xxix **Chapter 8: 8-11** • 8-11 Problem Solving: Use Logical Reasoning—pp. 190–191 (Use logical reasoning to solve problems; TE Develop Concepts: Logic—following the clues)
• 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.	Teachers explain justification strategies in **Develop Concepts.** Students practice these strategies in group work then explain, justify, support, or refute a conclusion or answer proposed in **Write About It** prompts at the end of each Student Edition lesson (and each corresponding Workbook lesson). See the following examples: **Chapter 3: 3-7** • 3-7 Multiply by Three-Digit Numbers—pp. 58–59 (Write About It: How will the product 345 x 569 compare to the product 3450 x 569? Use a property to justify your answer.) **Chapter 4: 4-10** • 4-10 Order of Operations—pp. 88–89 (Workbook Write About It: Who is correct? Justify your answer.) **Chapter 7: 7-4** • 7-4 Model Subtraction with Mixed Numbers—pp. 150–151 (Write About It: Identify any errors and find the correct difference.) **Chapter 12: 12-1 & 12-6** • 12-1 Multiply by Powers of 10—pp. 262–263 (Write About It: Do 1.05×10^7 and 10,000,000 x 1.05 have the same value? Justify your reasoning..) • 12-6 Model Multiplying Two Decimals—pp. 274–275 (Write About It: Choose any two decimal factors that are tenths. Use a grid to find the product. How does the product compare to the two factors? Do you think this will always be true for any two tenths? Why?)

INTEGRATING ESSENTIAL SKILLS

Integrate and continue to grow with topics from prior grades.

5th Grade Performance Level Descriptors	*Sadlier Math*, Grade 5
Ready *A student performing at the* Ready *level:*	
• fluently divides single-digit whole numbers.	See Grade 3 **Chapter 7: 7-1 through 7-5** • 7-1 Relate Multiplication and Division—pp. 142–143 (Use related multiplication and division facts to solve problems; TE Develop Concepts: Grouping in Division) • 7-2 Divide by 2—pp. 144–145 (Divide whole numbers by 2; TE Develop Concepts: Modeling Division by Sharing) • 7-3 Divide by 3—pp. 146–147 (Divide whole numbers by 3; TE Develop Concepts: Equal Groups of 2 or 3) • 7-4 Divide by 4—pp. 150–151 (Divide whole numbers by 4; TE Develop Concepts: Equal Groups of 2, 3, or 4) • 7-5 Divide by 5—pp. 152–153 (Divide whole numbers by 5; TE Develop Concepts: Equal Groups of 5) • Chapter 7 Fluency Practice—p. 160 **Chapter 8: 8-1 through 8-5** • 8-1 Divide by 6—pp. 162–163 (Divide whole numbers by 6; TE Develop Concepts: Equal Groups of 6—connecting cubes) • 8-2 Divide by 7—pp. 164–165 (Divide whole numbers by 7; TE Develop Concepts: Equal Groups of 7—connecting cubes) • 8-3 Divide by 8—pp. 166–167 (Divide whole numbers by 8; TE Develop Concepts: Equal Groups of 8—connecting cubes) • 8-4 Divide by 9—pp. 168–169 (Divide whole numbers by 9; TE Develop Concepts: Equal Groups of 9—connecting cubes) • 8-5 One and Zero in Division—pp. 172–173 (Use 1 and 0 in division; TE Develop Concepts: One and Zero Properties of Division) • Chapter 8 Fluency Practice—p. 186
Exceeding *A student performing at the* Exceeding *level:*	
• checks when comparing fractional parts that they are fractions of the same whole.	**Chapter 5: 5-7** • 5-7 Compare and Order Fractions and Mixed Numbers—pp. 112–113 (Compare and order fractions and mixed numbers; TE Develop Concepts: Compare Fractions Models)