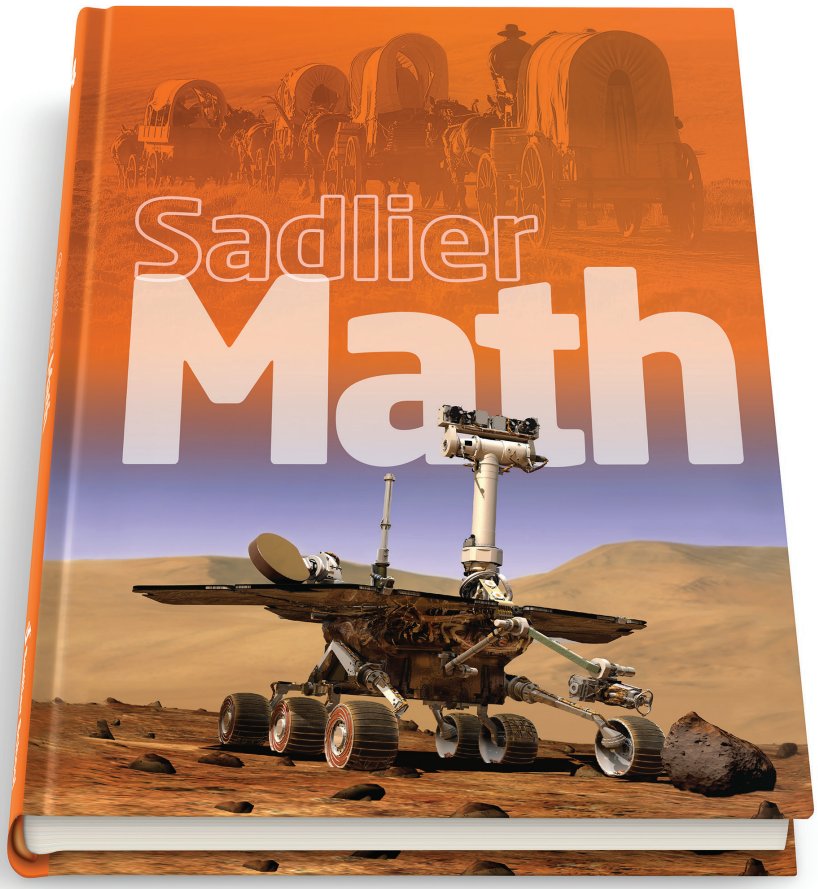
Sadlier Math™

Correlation to the Indiana Academic Standards for Mathematics

Grade 4



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THE NUMBER SYSTEM

Grade 4 Content Standards	*Sadlier Math*, Grade 4
MA.4.NS.1 Read and write whole numbers up to 1,000,000. Use words, models, standard form and expanded form to represent and show equivalent forms of whole numbers up to 1,000,000.	**Chapter 1: 1-1 through 1-4** • 1-1 Thousands—pp. 2–3 (Read and write numbers to thousands; TE Develop Concepts: Modeling Place Value) • 1-2 What Is One Million?—pp. 4–5 (Use place value to understand millions; TE Develop Concepts: Place Value of 1) • 1-3 Millions—pp. 6–7 (Read and write numbers in millions using numerals and number names; TE Develop Concepts: Number Periods and Place Value) • 1-4 Expanded Form—pp. 8–9 (Read and write numbers in expanded form; TE Develop Concepts: Values of Digits in a Number)
MA.4.NS.2 Compare two whole numbers up to 1,000,000 using >, =, and < symbols.	**Chapter 1: 1-6** • 1-6 Compare and Order Whole Numbers—pp. 14–15 (Use place value to compare numbers; TE Develop Concepts: Compare Numbers in the Hundred Thousands)
MA.4.NS.3 Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. Name and write mixed numbers using objects or pictures. Name and write mixed numbers as improper fractions using objects or pictures.	See Grade 3 **Chapter 9: 9-6** • 9-6 Use a Fraction to Find the Whole—pp. 200–201 (Given a fractional part, find the whole; TE Develop Concepts: Follow-up on Fractions) **Chapter 10: 10-1** • 10-1 Whole Numbers and Fractions—pp. 210–211 (Write whole numbers as fractions and recognize fractions that are equivalent to whole numbers; TE Develop Concepts: Dividing a Whole into Parts)
MA.4.NS.4 Explain why a fraction, a/b, is equivalent to a fraction, $(n \times a)/(n \times b)$, by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. [In grade 4, limit denominators of fractions to 2, 3, 4, 5, 6, 8, 10, 25, 100.]	**Chapter 10: 10-1 through 10-6** • 10-1 Fractions of a Set—pp. 192–193 • 10-2 Equivalent Fractions: Number Line Diagrams—pp. 194–195 • 10-3 Write Equivalent Fractions: Use Models—pp. 196–197 • 10-4 Write Equivalent Fractions: Use Multiplication and Division—pp. 198–199 • 10-5 Fractions: Lowest Terms—pp. 200–201 • 10-6 Compare Fractions: Use Benchmarks—pp. 204–205 **Chapter 13: 13-1 through 13-5** • 13-1 Equivalent Fractions: Rename Tenths as Hundredths—pp. 272–273 • 13-2 Add and Subtract Fractions with Denominators of 10 and 100—pp. 274–275 • 13-3 Tenths and Hundredths as Fractions and Decimals—pp. 276–277 • 13-4 Decimals Greater than One—pp. 278–279 • 13-5 Decimal Place Value—pp. 280–281\5-1 Multiply by 2—pp. 88–89

THE NUMBER SYSTEM

Grade 4 Content Standards	*Sadlier Math*, Grade 4
MA.4.NS.5 Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators, or by comparing to a benchmark, such as 0, 1/2, and 1). Recognize comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions (e.g., by using a visual fraction model).	**Chapter 10: 10-6 through 10-11** • 10-6 Compare Fractions: Use Benchmarks—pp. 204–205 (Use benchmark fractions to compare fractions; TE Develop Concepts: Indirect Comparison) • 10-7 Compare Fractions with the Same Denominator—pp. 206–207 (Compare fractions with the same denominator; TE Develop Concepts: Compare Parts of a Whole) • 10-8 Compare Fractions—pp. 208–209 (Compare fractions with different denominators; TE Develop Concepts: Model Comparing Fractions) • 10-9 Mixed Numbers—pp. 210–211 (Read and write mixed numbers; TE Develop Concepts: Mixed Number Pizzas) • 10-10 Compare Mixed Numbers—pp. 212–213 (Compare mixed numbers; TE Develop Concepts: Compare Mixed Numbers on Number Lines) • 10-11 Order Fractions and Mixed Numbers—pp. 214–215 (Order fractions and mixed numbers; TE Develop Concepts: Ribbon Measurement)
MA.4.NS.6 Write tenths and hundredths in decimal and fraction notations. Use words, models, standard form and expanded form to represent decimal numbers to hundredths. Know the fraction and decimal equivalents for halves and fourths (e.g., 1/2 = 0.5 = 0.50, 7/4 = 1 3/4 = 1.75).	**Chapter 13: 13-3 through 13-5** • 13-3 Tenths and Hundredths as Fractions and Decimals—pp. 276–277 (Use decimal notation for fractions with denominators 10 and 100; TE Develop Concepts: Place Value) • 13-4 Decimals Greater than One—pp. 278–279 (Use decimal notation for fractions with denominators 10 and 100; TE Develop Concepts: Mixed Numbers and Decimal Notation) • 13-5 Decimal Place Value—pp. 280–281 (Use decimal notation for fractions with denominators 10 and 100, and identify the values of the digits; TE Develop Concepts: Expand the Place-Value Chart)
MA.4.NS.7 Compare two decimals to hundredths by reasoning about their size based on the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions (e.g., by using a visual model).	**Chapter 13: 13-6 & 13-7** • 13-6 Compare Decimals with Models and Symbols—pp. 284–285 (Compare decimals to the hundredths place; TE Develop Concepts: Model Comparing Decimals) • 13-7 Order Decimals—pp. 286–287 (Order decimals to hundredths; TE Develop Concepts: Decimals and Number Lines)
MA.4.NS.8 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number.	**Chapter 9: 9-1 through 9-5** • 9-1 Factors—pp. 172–173 • 9-2 Factor Pairs—pp. 174–175 • 9-3 Prime and Composite Numbers—pp. 176–177 • 9-4 Multiples—pp. 180–181 • 9-5 Common Multiples—pp. 182–183
MA.4.NS.9 Use place value understanding to round multi-digit whole numbers to any given place value.	**Chapter 1: 1-5** • 1-5 Round Whole Numbers—pp. 12–13 (Use place value to round numbers to any place; TE Develop Concepts: Navigating the Number Line)

COMPUTATION

Grade 4 Content Standards	*Sadlier Math*, Grade 4
MA.4.C.1 Add and subtract multi-digit whole numbers fluently using a standard algorithmic approach.	**Chapter 2: 2-2, 2-4 through 2-6** • 2-2 Addition Properties—pp. 26–27 • 2-4 Add Thousands—pp. 30–31 • 2-5 Add Millions—pp. 34–35 • 2-6 Three or More Addends—pp. 36–37 **Chapter 3: 3-2 through 3-5** • 3-2 Subtract with One Regrouping—pp. 48–49 • 3-3 Subtract with Two Regroupings—pp. 50–51 • 3-4 Subtract Greater Numbers—pp. 54–55 • 3-5 Zeros in Subtraction—pp. 56–57
MA.4.C.2 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Describe the strategy and explain the reasoning.	**Chapter 4: 4-1 through 4-3** • 4-1 Multiplication Properties—pp. 68–69 • 4-2 Use Place-Value Models—pp. 70–71 • 4-3 Multiply Tens, Hundreds, and Thousands—pp. 74–75 • 5-1 Multiply with Regrouping—pp. 88–89 • 5-2 Use Properties to Multiply by One-Digit Numbers—pp. 90–91 • 5-3 Use Area Models to Multiply by One-Digit Numbers—pp. 92–93 • 5-4 Multiply Three- and Four-Digit Numbers—pp. 96–97 • 5-5 Multiplicative and Additive Comparisons—pp. 98–99 **Chapter 5: 5-1 through 5-5** • 5-1 Multiply with Regrouping—pp. 88–89 • 5-2 Use Properties to Multiply by One-Digit Numbers—pp. 90–91 • 5-3 Use Area Models to Multiply by One-Digit Numbers—pp. 92–93 • 5-4 Multiply Three- and Four-Digit Numbers—pp. 96–97 • 5-5 Multiplicative and Additive Comparisons—pp. 98–99 **Chapter 6: 6-1 through 6-5** • 6-1 Use Area Models to Multiply by Two-Digit Numbers—pp. 108–109 • 6-2 Break Apart Numbers to Multiply—pp. 110–111 • 6-3 Multiply by Two-Digit Numbers: No Regrouping—pp. 114–115 • 6-4 Multiply by Two-Digit Numbers: Regrouping—pp. 116–117 • 6-5 Multiplication Patterns—pp. 118–119 **Chapter 8: 8-7** • 8-7 Multistep Problems Using Multiplication and Division—pp. 162–163
MA.4.C.3 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Describe the strategy and explain the reasoning.	**Chapter 7: 7-1, 7-2 & 7-4** • 7-1 Division Rules—pp. 128–129 • 7-2 Relate Multiplication and Division—pp. 130–131 • 7-4 Use Models to Divide—pp. 136–137 **Chapter 8: 8-1 through 8-7** • 8-1 One-Digit Quotients—pp. 148–149 • 8-2 Divisibility—pp. 150–151 • 8-3 Two-Digit Quotients—pp. 152–153 • 8-4 Zeros in Quotients—pp. 154–155 • 8-5 More Quotients—pp. 158–159 • 8-6 Order of Operations—pp. 160–161 • 8-7 Multistep Problems Using Multiplication and Division—pp. 162–163

COMPUTATION

Grade 4 Content Standards	*Sadlier Math*, Grade 4
MA.4.C.4 Multiply fluently within 100.	See Grade 3 **Chapter 5: 5-1 through 5-7** • 5-2 Multiply by 5—pp. 90–91 • 5-3 Multiply by 9—pp. 92–93 • 5-4 Multiply by 1 and 0—pp. 96–97 • 5-5 Multiply by 10—pp. 98–99 • 5-6 Find Patterns in the Multiplication Table—pp. 100–101 • 5-7 Solve for Unknowns—pp. 102–103 **Chapter 6: 6-1 through 6-11** • 6-1 Break Apart to Multiply—pp. 112–113 • 6-2 Multiply by 3—pp. 114–115 • 6-3 Multiply by 4—pp. 116–117 • 6-4 Multiply by 6—pp. 118–119 • 6-5 Multiply by 7—pp. 120–121 • 6-6 Multiply by 8—pp. 122–123 • 6-7 Use a Bar Model to Multiply—pp. 126–127 • 6-8 Problem Solving: Make a Table—pp. 128–129 • 6-9 Use the Associative Property to Multiply—pp. 130–131 • 6-10 Find More Multiplication Patterns—pp. 132–133 • 6-11 Multiply by Multiples of 10—pp. 134–135 **Chapter 7: 7-1 through 7-5** • 7-1 Relate Multiplication and Division—pp. 142–143 • 7-2 Divide by 2—pp. 144–145 • 7-3 Divide by 3—pp. 146–147 • 7-4 Divide by 4—pp. 150–151 • 7-5 Divide by 5—pp. 152–153 **Chapter 8: 8-1 through 8-9** • 8-1 Divide by 6—pp. 162–163 • 8-2 Divide by 7—pp. 164–165 • 8-3 Divide by 8—pp. 166–167 • 8-4 Divide by 9—pp. 168–169 • 8-5 One and Zero in Division—pp. 172–173 • 8-6 Problem Solving: Work Backward—pp. 174–175 • 8-7 Fact Families—pp. 176–177 • 8-8 Use Facts to Solve Problems—pp. 178–179 • 8-9 Use Order of Operations—pp. 180–181
MA.4.C.5 Add and subtract fractions with common denominators. Decompose a fraction into a sum of fractions with common denominators. Understand addition and subtraction of fractions as combining and separating parts referring to the same whole.	**Chapter 11: 11-1 through 11-5** • 11-1 Use Models to Add Fractions—pp. 224–225 • 11-2 Add Fractions: Like Denominators—pp. 226–227 • 11-3 Decompose Fractions as Sums of Unit Fractions—pp. 228–229 • 11-4 Use Models to Subtract Fractions—pp. 230–231 • 11-5 Subtract Fractions: Like Denominators—pp. 232–233

COMPUTATION

Grade 4 Content Standards	*Sadlier Math*, Grade 4
MA.4.C.6 Add and subtract mixed numbers with common denominators (e.g. by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction).	**Chapter 10: 10-9** • 10-9 Mixed Numbers—pp. 210–211 **Chapter 11: 11-6 through 11-8** • 11-6 Write Mixed Numbers as Equivalent Fractions—pp. 236–237 • 11-7 Add Mixed Numbers: Like Denominators—pp. 238–239 • 11-8 Subtract Mixed Numbers: Like Denominators—pp. 240–241
MA.4.C.7 Show how the order in which two numbers are multiplied (commutative property) and how numbers are grouped in multiplication (associative property) will not change the product. Use these properties to show that numbers can by multiplied in any order. Understand and use the distributive property.	**Chapter 4: 4-1, 4-3 & 4-5** • 4-1 Multiplication Properties—pp. 68–69 (Use multiplication properties to multiply accurately and efficiently; TE Develop Concepts: Examples of the Properties of Multiplication) • 4-3 Multiply Tens, Hundreds, and Thousands—pp. 74–75 (TE Develop Concepts: The Associative Property; TE Early Finishers: use the Distributive Property to rewrite each expression) • 4-5 Multiply to Compare Numbers—pp. 78–79 (TE Use the Student Pages: use the Commutative Property) **Chapter 5: 5-2, 5-3 through 5-5** • 5-2 Use Properties to Multiply by One-Digit Numbers—pp. 90–91 (Use properties to multiply efficiently; TE Develop Concepts: Using Properties to Make Multiplication Simpler) • 5-3 Use Area Models to Multiply by One-Digit Numbers—pp. 92–93 (TE Use the Student Pages: use the Distributive Property) • 5-4 Multiply Three- and Four-Digit Numbers—pp. 96–97 (TE Develop Concepts: Multiply Using Expanded Form, Commutative Property) • 5-5 Multiplicative and Additive Comparisons—pp. 98–99 (Problem Solving: Commutative Property) **Chapter 6: 6-1, 6-2 & 6-5** • 6-1 Use Area Models to Multiply by Two-Digit Numbers—pp. 108–109 (TE Use the Student Pages: use the Distributive Property) • 6-2 Break Apart Numbers to Multiply—pp. 110–111 (TE Develop Concepts: Partial Products, use the Distributive Property) • 6-5 Multiplication Patterns—pp. 118–119 (TE Develop Concepts: Break Down Factors, Commutative Property, Associative Property) **Chapter 7: 7-4** • 7-4 Use Models to Divide—pp. 136–137 (TE Develop Concepts: Arrays as Multiplication and Division, use the Distributive Property) **Chapter 8: 8-6** • 8-6 Order of Operations—pp. 160–161 (TE Use the Student Pages: use the Distributive Property)

ALGEBRAIC THINKING

Grade 4 Content Standards	*Sadlier Math*, Grade 4
MA.4.AT.1 Solve real-world problems involving addition and subtraction of multi-digit whole numbers (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).	**Chapter 2: 2-1 through 2-7** • 2-1 Mathematical Expressions—pp. 24–25 (Represent problems using mathematical expressions; TE Develop Concepts: Representing an Unknown with a Letter) • 2-2 Addition Properties—pp. 26–27 (Use addition properties to add numbers; TE Develop Concepts: Introducing Properties of Addition) • 2-3 Estimate Sums—pp. 28–29 (Use estimation to add numbers; TE Develop Concepts: Find Sums Using Rounded Numbers) • 2-4 Add Thousands—pp. 30–31 (Add whole numbers in the thousands; TE Develop Concepts: Adding with Base Ten Blocks) • 2-5 Add Millions—pp. 34–35 (Add whole numbers in the millions; TE Develop Concepts: Addition Properties and Numbers in the Millions) • 2-6 Three or More Addends—pp. 36–37 (Add three or more numbers; TE Develop Concepts: Adding Three Numbers with Base Ten Blocks) • 2-7 Problem Solving: Make an Organized List—pp. 38–39 (Solve problems by using a variety of strategies, including making an organized list; TE Develop Concepts: Making an Organized List) **Chapter 3: 3-1 through 3-7** • 3-1 Estimate Differences—pp. 46–47 (Use estimation strategies to solve subtraction problems; TE Develop Concepts: Which Difference is Closest?) • 3-2 Subtract with One Regrouping—pp. 48–49 (Subtract multi-digit whole numbers using the standard algorithm; TE Develop Concepts: Using Money to Regroup) • 3-3 Subtract with Two Regroupings—pp. 50–51 (Subtract multi-digit whole numbers with two regroupings; TE Develop Concepts: Regrouping Using Place Value) • 3-4 Subtract Greater Numbers—pp. 54–55 (Subtract multi-digit whole numbers using the standard algorithm; TE Develop Concepts: Place Value and Regrouping) • 3-5 Zeros in Subtraction—pp. 56–57 (Solve subtraction problems with multi-digit numbers that include zeros; TE Develop Concepts: Squaring Off) • 3-6 Multistep Problems Using Addition and Subtraction—pp. 58–59 (Solve multistep addition and subtraction problems using equations; TE Develop Concepts: Representing Equations) • 3-7 Problem Solving: Use a Model—pp. 60–61 (Solve problems by using a variety of strategies, including using a model; TE Develop Concepts: Make a Bar Graph)
MA.4.AT.2 Recognize and apply the relationships between addition and multiplication, between subtraction and division, and the inverse relationship between multiplication and division to solve real-world and other mathematical problems.	**Chapter 5: 5-1** • 5-1 Multiply with Regrouping—pp. 88–89 (TE Develop Concepts: Multiplication with Money, multiplication as repeated addition) **Chapter 6: 6-6** • 6-6 Problem Solving: Write and Solve an Equation—pp. 120–121 (TE Develop Concepts: Translating Descriptions into Equations, multiplication as repeated addition) **Chapter 7: 7-1, 7-2, 7-5 & 7-6** • 7-1 Division Rules—pp. 128–129 (Find whole-number quotients using strategies and properties of operations; TE Use the Student Pages: multiplication and division as inverse operations) • 7-2 Relate Multiplication and Division—pp. 130–131 • 7-5 Number Patterns—pp. 138–139 (TE Develop Concepts: Patterns and Relationships, multiplication and division as inverse operations) *continued*

ALGEBRAIC THINKING

Grade 4 Content Standards	*Sadlier Math*, Grade 4
	• 7-6 Problem Solving: Work Backward—pp. 140–141 (TE Develop Concepts: Inverse Operations) **Chapter 8: 8-7** • 8-7 Multistep Problems Using Multiplication and Division—pp. 162–163 (Solve multistep problems that involve multiplication and division; translate word problems involving multiplication and/or division) **Chapter 12: 12-4 & 12-5** • 12-4 Model Multiplying a Fraction and a Whole Number—pp. 258–259 (TE Develop Concepts: Modeling Addition with Fractions, multiplication as repeated addition) • 12-5 Multiply a Fraction and a Whole Number—pp. 260–261 (TE Use the Student Pages: multiplication as repeated addition)
MA.4.AT.3 Interpret a multiplication equation as a comparison (e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7, and 7 times as many as 5). Represent verbal statements of multiplicative comparisons as multiplication equations.	**Chapter 4: 4-5** • 4-5 Multiply to Compare Numbers—pp. 78–79 **Chapter 5: 5-5** • 5-5 Multiplicative and Additive Comparisons—pp. 98–99
MA.4.AT.4 Solve real-world problems with whole numbers involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem), distinguishing multiplicative comparison from additive comparison. [In grade 4, division problems should not include a remainder.]	**Chapter 4: 4-5** • 4-5 Multiply to Compare Numbers—pp. 78–79 **Chapter 5: 5-5** • 5-5 Multiplicative and Additive Comparisons—pp. 98–99 **Chapter 7: 7-6** • 7-6 Problem Solving: Work Backward—pp. 140–141 **Chapter 8: 8-8** • 8-8 Problem Solving: Use a Model—pp. 164–165
MA.4.AT.5 Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having common denominators (e.g., by using visual fraction models and equations to represent the problem).	**Chapter 11: 11-1 through 11-5** • 11-1 Use Models to Add Fractions—pp. 224–225 • 11-2 Add Fractions: Like Denominators—pp. 226–227 • 11-3 Decompose Fractions as Sums of Unit Fractions—pp. 228–229 • 11-4 Use Models to Subtract Fractions—pp. 230–231 • 11-5 Subtract Fractions: Like Denominators—pp. 232–233
MA.4.AT.6 Understand that an equation, such as $y = 3x + 5$, is a rule to describe a relationship between two variables and can be used to find a second number when a first number is given. Generate a number pattern that follows a given rule.	**Chapter 7: 7-5** • 7-5 Number Patterns—pp. 138–139 (Make a number pattern, and find features of patterns; TE Develop Concepts: Patterns and Relationships) **Chapter 17: 17-5** • 17-5 Shape Patterns—pp. 380–381 (Identify and generate shape patterns that follow a given rule; TE Develop Concepts: Properties of Patterns)

GEOMETRY

Grade 4 Content Standards	*Sadlier Math*, Grade 4
MA.4.G.1 Identify, describe, and draw parallelograms, rhombuses, and trapezoids using appropriate tools (e.g., ruler, straightedge and technology).	**Chapter 17: 17-1 through 17-3** • 17-1 Polygons—pp. 370–371 (Identify and name polygons: triangle, quadrilateral, pentagon, hexagon, and octagon; TE Develop Concepts: Building Polygons) • 17-2 Quadrilaterals—pp. 372–373 (Identify and classify quadrilaterals; TE Develop Concepts: Constructing Quadrilaterals) • 17-3 Triangles—pp. 374–375 (Identify and classify triangles; TE Develop Concepts: Drawing Triangles)
MA.4.G.2 Recognize and draw lines of symmetry in two-dimensional figures. Identify figures that have lines of symmetry.	**Chapter 17: 17-4** • 17-4 Symmetry—pp. 376–377 (Identify line symmetry in figures and draw lines of symmetry; TE Develop Concepts: Symmetry as Reflections)
MA.4.G.3 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint.	**Chapter 16: 16-1 & 16-2** • 16-1 Points, Lines, Line Segments, Rays, and Angles—pp. 350–351 (Identify and draw points, lines, line segments, rays, and angles; TE Develop Concepts: Basic Geometric Figures) • 16-2 Angle Measure—pp. 352–353 (Recognize that an angle turns through a fraction of a circle with the vertex of the angle at the center of the circle; degrees; TE Develop Concepts: Angles and Circles) • 16-3 Measure Angles—pp. 356–357 (Measure and sketch angles using a protractor; Workbook: draw an angle; TE Develop Concepts: Measuring Angles) • 16-4 Unknown Angle Measures—pp. 358–359 (Find unknown angle measures; TE Develop Concepts: Additive Property) • 16-5 Parallel and Perpendicular Lines—pp. 360–361 (Identify and draw parallel and perpendicular lines; TE Develop Concepts: Map Lines) • 16-6 Problem Solving: Use a Diagram—pp. 362–363 (Identify and draw parallel and perpendicular lines; TE Develop Concepts: Making Diagrams)
MA.4.G.4 Identify, describe, and draw rays, angles (right, acute, obtuse), and perpendicular and parallel lines using appropriate tools (e.g., ruler, straightedge and technology). Identify these in two-dimensional figures.	
MA.4.G.5 Classify triangles and quadrilaterals based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles (right, acute, obtuse).	**Chapter 17: 17-1 through 17-3** • 17-1 Polygons—pp. 370–371 (Identify and name polygons: triangle, quadrilateral, pentagon, hexagon, and octagon; TE Develop Concepts: Building Polygons) • 17-2 Quadrilaterals—pp. 372–373 (Identify and classify quadrilaterals; TE Develop Concepts: Constructing Quadrilaterals) • 17-3 Triangles—pp. 374–375 (Identify and classify triangles; TE Develop Concepts: Drawing Triangles)

MEASUREMENT

Grade 4 Content Standards	*Sadlier Math*, Grade 4
MA.4.M.1 Measure length to the nearest quarter-inch, eighth-inch, and millimeter.	**Chapter 14: 14-1 & 14-6** • 14-1 Measure with Inches—pp. 296–297 (Measure length to nearest inch, half-inch, quarter-inch, eighth-inch; TE Develop Concepts: Units of Measure) • 14-6 Metric Units of Length—pp. 308–311 (Measure to nearest millimeter)

MEASUREMENT

Grade 4 Content Standards	*Sadlier Math*, Grade 4
MA.4.M.2 Know relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec. Express measurements in a larger unit in terms of a smaller unit within a single system of measurement. Record measurement equivalents in a two-column table.	**Chapter 14: 14-1 through 14-9** • 14-1 Measure with Inches—pp. 296–297 • 14-2 Customary Units of Length—pp. 298–299 • 14-3 Customary Units of Capacity—pp. 300–301 • 14-4 Customary Units of Weight—pp. 302–303 • 14-5 Operations with Customary Units—pp. 304–305 • 14-6 Metric Units of Length—pp. 308–311 • 14-7 Metric Units of Capacity—pp. 310–313 • 14-8 Metric Units of Mass—pp. 312–313 • 14-9 Operations with Metric Units—pp. 314–315 **Chapter 15: 15-1 through 15-3** • 15-1 Represent Measures on a Number Line—pp. 324–325 • 15-2 Use Multiplication to Rename Measures—pp. 326–327 • 15-3 Elapsed Time—pp. 328–329 (Hour, minutes, seconds)
MA.4.M.3 Use the four operations (addition, subtraction, multiplication and division) to solve real-world problems involving distances, intervals of time, volumes, masses of objects, and money. Include addition and subtraction problems involving simple fractions and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	
MA.4.M.4 Apply the area and perimeter formulas for rectangles to solve real-world problems and other mathematical problems. Recognize area as additive and find the area of complex shapes composed of rectangles by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts; apply this technique to solve real-world problems and other mathematical problems.	**Chapter 17: 17-6 & 17-7** • 17-6 Use Perimeter Formulas—pp. 382–383 (Use formulas to find the perimeters of polygons; TE Develop Concepts: What Is Perimeter?) • 17-7 Use Area Formulas—pp. 384–385 (Use formulas to find the areas of rectangles and squares; TE Develop Concepts: Derive Area Formulas) See also Grade 3 **Chapter 15: 15-5** • 15-5 Find Area of Composite Shapes—pp. 322–323 (Find the area of a composite shape by decomposition into nonoverlapping rectangles; TE Develop Concepts: Decompose Shapes into Rectangles and Squares)
MA.4.M.5 Understand that an angle is measured with reference to a circle, with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. Understand an angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure other angles. Understand an angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.	**Chapter 16: 16-1 & 16-2** • 16-1 Points, Lines, Line Segments, Rays, and Angles—pp. 350–351 (Identify and draw points, lines, line segments, rays, and angles; TE Develop Concepts: Basic Geometric Figures) • 16-2 Angle Measure—pp. 352–353 (Recognize that an angle turns through a fraction of a circle with the vertex of the angle at the center of the circle; degrees; TE Develop Concepts: Angles and Circles)

MEASUREMENT

Grade 4 Content Standards	*Sadlier Math*, Grade 4
MA.4.M.6 Measure angles in whole-number degrees using appropriate tools. Sketch angles of specified measure.	**Chapter 16: 16-1 through 16-3** • 16-1 Points, Lines, Line Segments, Rays, and Angles—pp. 350–351 (Identify and draw points, lines, line segments, rays, and angles; TE Develop Concepts: Basic Geometric Figures) • 16-2 Angle Measure—pp. 352–353 (Recognize that an angle turns through a fraction of a circle with the vertex of the angle at the center of the circle; degrees; TE Develop Concepts: Angles and Circles) • 16-3 Measure Angles—pp. 356–357 (Measure and sketch angles using a protractor; Workbook: draw an angle; TE Develop Concepts: Measuring Angles)

DATA ANALYSIS

Grade 4 Content Standards	*Sadlier Math*, Grade 4
MA.4.DA.1 Formulate questions that can be addressed with data. Use observations, surveys, and experiments to collect, represent, and interpret the data using tables (including frequency tables), line plots, and bar graphs.	**Chapter 15: 15-5 through 15-8** • 15-5 Line Graphs—pp. 334–335 (Solve problems using customary units of measure; TE Develop Concepts: Graphing Data) • 15-6 Line Plots—pp. 336–337 (Solve length problems with metric units of measure; TE Develop Concepts: Making and Using Tally Charts) • 15-7 Surveys and Line Plots—pp. 338–339 (Solve capacity problems using metric units of measure; TE Develop Concepts: Analyzing Surveys) • 15-8 Choose an Appropriate Display—pp. 340–341 (Solve mass problems using metric units of measure; TE Develop Concepts: Comparing Graphical Displays: table, bar graph, picture graph, line plot, line graph) See also Grade 3 (bar graphs) **Chapter 12: 12-3 & 12-4** • 12-3 Read Bar Graphs—pp. 256–257 (Read a scaled bar graph; TE Develop Concepts: Use a Number Line to Understand Scale) • 12-4 Make Bar Graphs—pp. 258–259 (Create a scaled bar graph from data; TE Develop Concepts: Determining Scale)
MA.4.DA.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using data displayed in line plots.	See Grade 5 **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)
MA.4.DA.3 Interpret data displayed in a circle graph.	See Grade 6 **Chapter 17: 17-5** • 17-5 Interpret Circle Graphs—pp. 388–389 (Interpret circle graphs; TE Develop Concepts: Fraction Circles)