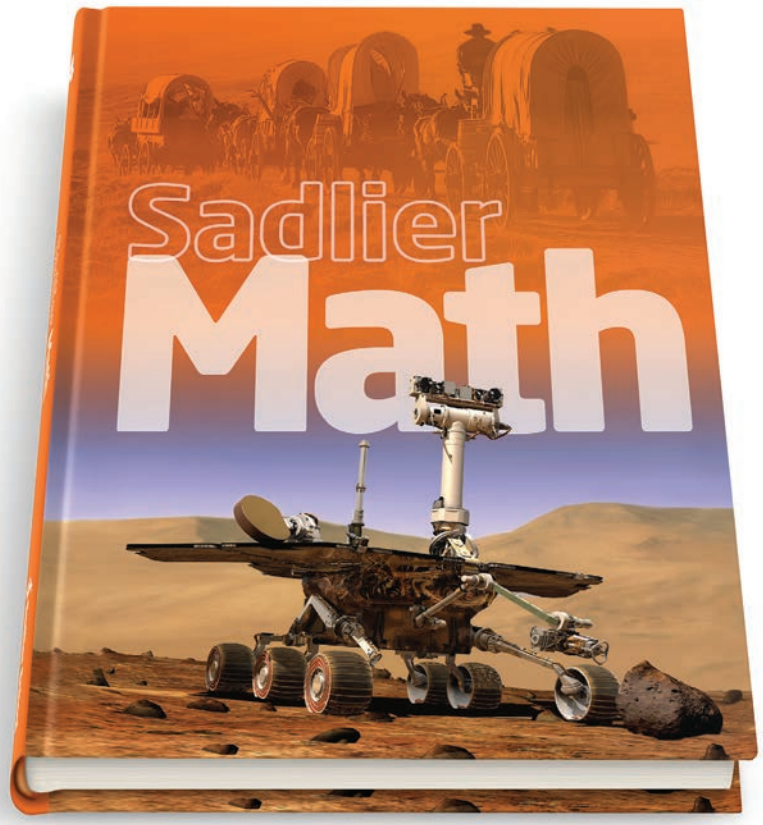
Sadlier Math™

Correlation to the New York State Next Generation Mathematics Learning Standards (2017)

Grade 4



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NY-4.OA OPERATIONS AND ALGEBRAIC THINKING

Grade 4 Content Standards	*Sadlier Math*, Grade 4
Use the four operations with whole numbers to solve problems.	
NY-4.OA.1 Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations. e.g., • Interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 or 7 times as many as 5. • Represent "Four times as many as eight is thirty-two" as an equation, 4 x 8 = 32.	**Chapter 4 Multiplication Concepts** • 4-5 Multiply to Compare Numbers—pp. 78–79 **Chapter 5 Multiply by One-Digit Numbers** • 5-5 Multiplicative and Additive Comparisons—pp. 98–99
NY-4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison. Use drawings and equations with a symbol for the unknown number to represent the problem.	**Chapter 4 Multiplication Concepts** • 4-5 Multiply to Compare Numbers—pp. 78–79 **Chapter 5 Multiply by One-Digit Numbers** • 5-5 Multiplicative and Additive Comparisons—pp. 98–99 **Chapter 7 Division Concepts** • 7-6 Problem Solving: Work Backward—pp. 140–141 **Chapter 8 Divide by One-Digit Numbers** • 8-8 Problem Solving: Use a Model—pp. 164–165
NY-4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted.	**Chapter 2 Addition** • 2-1 Mathematical Expressions—pp. 24–25 • 2-2 Addition Properties—pp. 26–27 • 2-3 Estimate Sums—pp. 28–29 **Chapter 3 Subtraction** • 3-1 Estimate Differences—pp. 46–47 • 3-6 Multistep Problems Using Addition and Subtraction—pp. 58–59 **Chapter 4 Multiplication Concepts** • 4-4 Estimate Products—pp. 76–77 **Chapter 7 Division Concepts** • 7-3 Estimate Quotients—pp. 132–133 **Chapter 8 Divide by One-Digit Numbers** • 8-1 One-Digit Quotients—pp. 148–149 • 8-3 Two-Digit Quotients—pp. 152–153

NY-4.OA OPERATIONS AND ALGEBRAIC THINKING

Grade 4 Content Standards	*Sadlier Math*, Grade 4
NY-4.OA.3a Represent these problems using equations or expressions with a letter standing for the unknown quantity.	**Chapter 2 Addition** • 2-1 Mathematical Expressions—pp. 24–25 • 2-2 Addition Properties—pp. 26–27 **Chapter 3 Subtraction** • 3-6 Multistep Problems Using Addition and Subtraction—pp. 58–59 **Chapter 8 Divide by One-Digit Numbers** • 8-3 Two-Digit Quotients—pp. 152–153
NY-4.OA.3b Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	**Chapter 2 Addition** • 2-3 Estimate Sums—pp. 28–29 **Chapter 3 Subtraction** • 3-1 Estimate Differences—pp. 46–47 **Chapter 4 Multiplication Concepts** • 4-4 Estimate Products—pp. 76–77 **Chapter 7 Division Concepts** • 7-3 Estimate Quotients—pp. 132–133
Gain familiarity with factors and multiples.	
NY-4.OA.4 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. Determine whether a given whole number in the range 1-100 is prime or composite.	**Chapter 9 Factors and Multiples** • 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
Generate and analyze patterns.	
NY-4.OA.5 Generate a number or shape pattern that follows a given rule. Identify and informally explain apparent features of the pattern that were not explicit in the rule itself. e.g., Given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.	**Chapter 7 Division Concepts** • 7-5 Number Patterns—pp. 138–139 **Chapter 17 Polygons** • 17-5 Shape Patterns —pp. 380–381

NY-4.NBT NUMBER AND OPERATIONS IN BASE TEN

Grade 4 Content Standards	*Sadlier Math*, Grade 4
Generalize place value understanding for multi-digit whole numbers.	
NY-4.NBT.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. e.g., Recognize that 70 × 10 = 700 (and, therefore, 700 ÷ 10 = 70) by applying concepts of place value, multiplication, and division. Note: Grade 4 expectations are limited to whole numbers less than or equal to 1,000,000.	**Chapter 1 Place Value** • 1-1 Thousands—pp. 2–3 • 1-2 What Is One Million?—pp. 4–5
NY-4.NBT.2	
NY-4.NBT.2a Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. e.g., 50,327 = 50,000 + 300 + 20 + 7	**Chapter 1 Place Value** • 1-1 Thousands—pp. 2–3 • 1-2 What Is One Million?—pp. 4–5 • 1-3 Millions—pp. 6–7 • 1-4 Expanded Form—pp. 8–9 • 1-5 Round Whole Numbers—pp. 12–13 • 1-6 Compare and Order Whole Numbers—pp. 14–15
NY-4.NBT.2b Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. Note: Grade 4 expectations are limited to whole numbers less than or equal to 1,000,000.	**Chapter 1 Place Value** • 1-6 Compare and Order Whole Numbers—pp. 14–15
NY-4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place. Note: Grade 4 expectations are limited to whole numbers less than or equal to 1,000,000.	**Chapter 1 Place Value** • 1-5 Round Whole Numbers—pp. 12–13

NY-4.NBT NUMBER AND OPERATIONS IN BASE TEN

Grade 4 Content Standards	*Sadlier Math*, Grade 4
Use place value understanding and properties of operations to perform multi-digit arithmetic.	
NY-4.NBT.4 Fluently add and subtract multi-digit whole numbers using a standard algorithm. Note: Grade 4 expectations are limited to whole numbers less than or equal to 1,000,000.	**Chapter 2 Addition** • 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 Subtraction** • 3-2 Subtract with One Regrouping—pp. 48–49 • 3-3 Subtract with Two Regrouping—pp. 50–51 • 3-4 Subtract Greater Numbers—pp. 54–55 • 3-5 Zeros in Subtraction—pp. 56–57
NY-4.NBT.5 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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. Note on and/or: Students should be taught to use equations, rectangular arrays, and area models; however, when illustrating and explaining any calculation, students can choose any strategy. Note: Grade 4 expectations are limited to whole numbers less than or equal to 1,000,000.	**Chapter 4 Multiplication Concepts** • 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 **Chapter 5 Multiply by One-Digit Numbers** • 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 Multiply by Two-Digit Numbers** • 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 Divide by One-Digit Numbers** • 8-7 Multistep Problems Using Multiplication and Division—pp. 162–163

NY-4.NBT NUMBER AND OPERATIONS IN BASE TEN

Grade 4 Content Standards	*Sadlier Math*, Grade 4
NY-4.NBT.6 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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. Notes on and/or: Students should be taught to use strategies based on place value, the properties of operations, and the relationship between multiplication and division; however, when solving any problem, students can choose any strategy. Students should be taught to use equations, rectangular arrays, and area models; however, when illustrating and explaining any calculation, students can choose any strategy. Note: Grade 4 expectations are limited to whole numbers less than or equal to 1,000,000.	**Chapter 7 Division Concepts** • 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 Divide by One-Digit Numbers** • 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

NY-4.NF NUMBER AND OPERATION—FRACTIONS

Grade 4 Content Standards	*Sadlier Math*, Grade 4
Extend understanding of fraction equivalence and ordering.	
NY-4.NF.1 Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{a \times n}{b \times n}$ 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. Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.	**Chapter 10 Fraction Concepts** • 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

NY-4.NF NUMBER AND OPERATION—FRACTIONS

Grade 4 Content Standards	*Sadlier Math*, Grade 4
NY-4.NF.2 Compare two fractions with different numerators and different denominators. e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Note: Without specifying the whole, the shaded area could represent fraction $\frac{3}{2}$ (if one square is the whole) or $\frac{3}{4}$ (if the entire rectangle is the whole). e.g., using a visual fraction model. Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.	**Chapter 10 Fraction Concepts** • 10-7 Compare Fractions with the Same Denominator—pp. 206–207 • 10-8 Compare Fractions—pp. 208–209 • 10-9 Mixed Numbers—pp. 210–211 • 10-10 Compare Mixed Numbers—pp. 212–213 • 10-11 Order Fractions and Mixed Numbers—pp. 214–215
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	
NY-4.NF.3 Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$. Note: $\frac{1}{b}$ refers to the unit fraction for $\frac{a}{b}$.	
NY-4.NF.3a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	**Chapter 11 Fractions: Addition and Subtraction** • 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

NY-4.NF NUMBER AND OPERATION—FRACTIONS

Grade 4 Content Standards	*Sadlier Math*, Grade 4
NY-4.NF.3b Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions. e.g., Justify decompositions by using a visual fraction model such as, but not limited to: • $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$ • $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$ • $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$	**Chapter 11 Fractions: Addition and Subtraction** • 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
NY-4.NF.3c Add and subtract mixed numbers with like denominators. e.g., replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.	**Chapter 10 Fraction Concepts** • 10-9 Mixed Numbers—pp. 210–211 **Chapter 11 Fractions: Addition and Subtraction** • 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
NY-4.NF.3d Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators. e.g., using visual fraction models and equations to represent the problem. Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.	**Chapter 11 Fractions: Addition and Subtraction** • 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

NY-4.NF NUMBER AND OPERATION—FRACTIONS

Grade 4 Content Standards	*Sadlier Math*, Grade 4
NY-4.NF.4 Apply and extend previous understandings of multiplication to multiply a whole number by a fraction. Note: This standard refers to *n* groups of a fraction (where *n* is a whole number), e.g., 4 groups of $\frac{1}{3}$; which lends itself to being thought about as repeated addition. In grade 5 (NY-5. NF.4) students will be multiplying a fraction by a whole number, e.g., $\frac{1}{3}$ of 4.	
NY-4.NF.4a Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$. e.g., Use a visual fraction model to represent $\frac{5}{4}$ as the product $5 \times \frac{1}{4}$, recording the conclusion with the equation $\frac{5}{4} = 5 \times \frac{1}{4}$.	**Chapter 12 Fractions: Multiply by a Whole Number** • 12-1 Add Unit Fractions to Multiply—pp. 250–251 • 12-2 Model Multiplying a Unit Fraction and a Whole Number—pp. 252–253 • 12-3 Multiply a Unit Fraction and a Whole Number—pp. 254–255 • 12-4 Model Multiplying a Fraction and a Whole Number—pp. 258–259
NY-4.NF.4b Understand a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$, and use this understanding to multiply a whole number by a fraction. e.g., Use a visual fraction model to express $3 \times \frac{2}{5}$ 2/5 as $6 \times \frac{1}{5}$, recognizing this product as $\frac{6}{5}$, in general, $n \times \frac{a}{b} = \frac{(n \times a)}{b}$.	**Chapter 12 Fractions: Multiply by a Whole Number** • 12-1 Add Unit Fractions to Multiply—pp. 250–251 • 12-2 Model Multiplying a Unit Fraction and a Whole Number—pp. 252–253 • 12-3 Multiply a Unit Fraction and a Whole Number—pp. 254–255 • 12-4 Model Multiplying a Fraction and a Whole Number—pp. 258–259 • 12-5 Multiply a Fraction and a Whole Number—pp. 260–261
NY-4.NF.4c Solve word problems involving multiplication of a whole number by a fraction. e.g., using visual fraction models and equations to represent the problem. e.g., If each person at a party will eat $\frac{3}{8}$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie? Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.	**Chapter 12 Fractions: Multiply by a Whole Number** • 12-1 Add Unit Fractions to Multiply—pp. 250–251 • 12-2 Model Multiplying a Unit Fraction and a Whole Number—pp. 252–253 • 12-3 Multiply a Unit Fraction and a Whole Number—pp. 254–255 • 12-4 Model Multiplying a Fraction and a Whole Number—pp. 258–259 • 12-5 Multiply a Fraction and a Whole Number—pp. 260–261 • 12-6 Represent Situations Involving Multiplying a Fraction and a Whole Number—pp. 262–263 • 12-7 Problem Solving: Write an Equation—pp. 264–265

NY-4.NF NUMBER AND OPERATION—FRACTIONS

Grade 4 Content Standards	*Sadlier Math*, Grade 4
Understand decimal notation for fractions, and compare decimal fractions.	
NY-4.NF.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. e.g., Express $\frac{3}{10}$ as $\frac{30}{100}$, and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$. Notes: • Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade. • Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.	**Chapter 13 Fractions and Decimals** • 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
NY-4.NF.6 Use decimal notation for fractions with denominators 10 or 100. e.g., • Rewrite 0.62 as $\frac{62}{100}$ or $\frac{62}{100}$ as 0.62. • Describe a length as 0.62 meters. • Locate 0.62 on a number line. Note: Grade 4 expectations are limited	**Chapter 13 Fractions and Decimals** • 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
NY-4.NF.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions. e.g., using a visual model. Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.	**Chapter 13 Fractions and Decimals** • 13-6 Compare Decimals with Models and Symbols—pp. 284–285 • 13-7 Order Decimals—pp. 286–287

NY-4.MD MEASUREMENT AND DATA

Grade 4 Content Standards	*Sadlier Math*, Grade 4
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	
NY-4.MD.1 Know relative sizes of measurement units: ft., in.; km, m, cm e.g., • An inch is about the distance from the tip of your thumb to your first knuckle. • A foot is the length of two-dollar bills. • A meter is about the height of a kitchen counter. • A kilometer is 2½ laps around most tracks. Know the conversion factor and use it to convert measurements in a larger unit in terms of a smaller unit: ft., in.; km, m, cm; hr., min., sec. e.g., Know that 1 ft. is 12 times as long as 1 in. and express the length of a 4 ft. snake as 48 in. Given the conversion factor, convert all other measurements within a single system of measurement from a larger unit to a smaller unit. e.g., Given the conversion factors, convert kilograms to grams, pounds to ounces, or liters to milliliters. Record measurement equivalents in a two-column table. e.g., Generate a conversion table for feet and inches.	**Chapter 14 Measurement** • 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 • 14-10 Problem Solving: Make a Table—pp. 316–317

NY-4.MD MEASUREMENT AND DATA

Grade 4 Content Standards	*Sadlier Math*, Grade 4
NY-4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money.	
NY-4.MD.2a Solve problems involving fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. **NY-4.MD.2b** Represent measurement quantities using diagrams that feature a measurement scale, such as number lines. Note: Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.	**Chapter 14 Measurement** • 14-1 Measure with Inches—pp. 296–29 • 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 • 14-10 Problem Solving: Make a Table—pp. 316–317 **Chapter 15 Measurement and Data** • 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
NY-4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. e.g., Find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.	**Chapter 17 Polygons** • 17-6 Use Perimeter Formulas—pp. 382–383 • 17-7 Use Area Formulas—pp. 384–385
Represent and interpret data.	
NY-4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. e.g., Given measurement data on a line plot, find and interpret the difference in length between the longest and shortest specimens in an insect collection.	**Chapter 15 Measurement and Data** • 15-6 Line Plots—pp. 336–337 • 15-7 Surveys and Line Plots—pp. 338–339 • 15-8 Choose an Appropriate Display—pp. 340–341

NY-4.MD MEASUREMENT AND DATA

Grade 4 Content Standards	*Sadlier Math*, Grade 4
Geometric measurement: understand concepts of angle and measure angles.	
NY-4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.	
NY-4.MD.5a Recognize 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. An angle that turns through $\frac{1}{360}$ of a circle is called a "one-degree angle," and can be used to measure angles.	**Chapter 16 Lines and Angles** • 16-2 Angle Measure—pp. 352–353
NY-4.MD.5b Recognize an angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.	**Chapter 16 Lines and Angles** • 16-1 Points, Lines, Line Segments, Rays and Angles—pp. 350–351 • 16-2 Angle Measure—pp. 352–353
NY-4.MD.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	**Chapter 16 Lines and Angles** • 16-1 Points, Lines, Line Segments, Rays and Angles—pp. 350–351 • 16-2 Angle Measure—pp. 352–353 • 16-3 Measure Angles—pp. 356–357
NY-4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems. e.g., using an equation with a symbol for the unknown angle measure.	**Chapter 16 Lines and Angles** • 16-4 Unknown Angle Measures—pp. 358–359

NY-4.G GEOMETRY

Grade 4 Content Standards	*Sadlier Math*, Grade 4
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	
NY-4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	**Chapter 16 Lines and Angles** • 16-1 Points, Lines, Line Segments, Rays and Angles—pp. 350–351 • 16-2 Angle Measure—pp. 352–353 • 16-3 Measure Angles—pp. 356–357 • 16-4 Unknown Angle Measures—pp. 358–359 • 16-5 Parallel and Perpendicular Lines—pp. 360–361 • 16-6 Problem Solving: Use a Diagram—pp. 362–363
NY-4.G.2	
NY-4.G.2a Identify and name triangles based on angle size (right, obtuse, acute).	**Chapter 17 Polygons** • 17-3 Triangles—pp. 374–375
NY-4.G.2b Identify and name all quadrilaterals with 2 pairs of parallel sides as parallelograms.	**Chapter 17 Polygons** • 17-2 Quadrilaterals—pp. 372–373
NY-4.G.2c Identify and name all quadrilaterals with four right angles as rectangles.	**Chapter 17 Polygons** • 17-2 Quadrilaterals—pp. 372–373
NY-4.G.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	**Chapter 17 Polygons** • 17-4 Symmetry—pp. 376–377