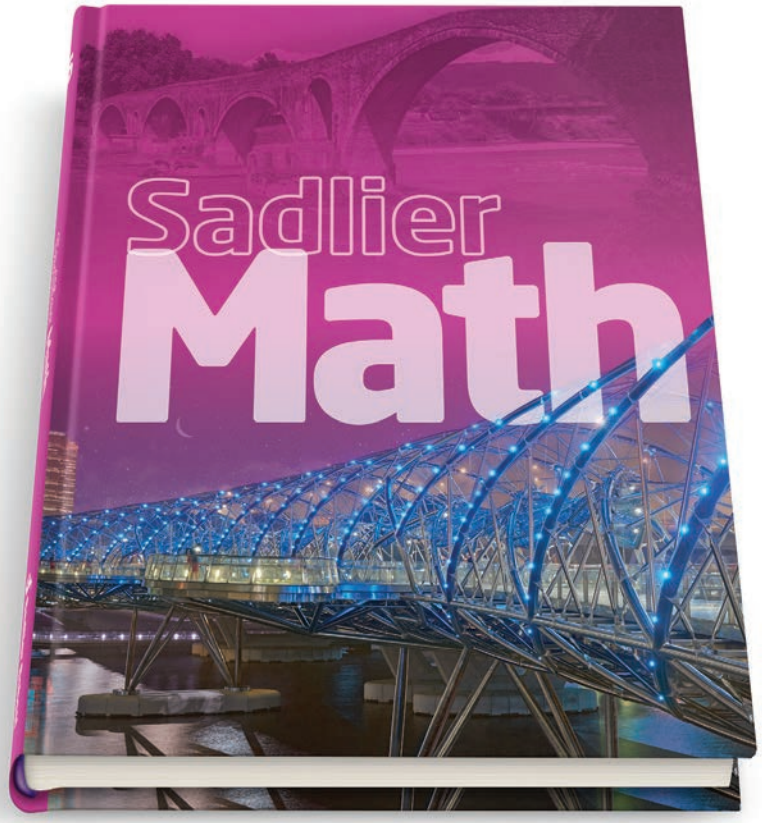
Sadlier Math™

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

Grade 6



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NY-6.RP RATIO AND PROPORTIONAL REASONING

Grade 6 Content Standards	*Sadlier Math*, Grade 6
Understand ratio concepts and use ratio reasoning to solve problems.	
NY-6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. e.g., "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received three votes."	**Chapter 10 Ratios and Proportional Relationships** • 10-1 Ratios—pp. 226–227
NY-6.RP.2 Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$ (b not equal to zero), and use rate language in the context of a ratio relationship. e.g., "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there are ¾ cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger." Note: Expectations for unit rates in this grade are limited to non-complex fractions.	**Chapter 10 Ratios and Proportional Relationships** • 10-6 Rates and Unit Rates—pp. 238–239 • 10-7 Compare Prices—pp. 240–241 • 10-8 Equations for Proportional Relationships—pp. 242–243 • 10-9 Graphs of Proportional Relationships—pp. 244–245
NY-6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems. Note: Strategies may include but are not limited to the following: tables of equivalent ratios, tape diagrams, double number lines, and equations.	**Chapter 10 Ratios and Proportional Relationships** • 10-3 Tape Diagrams—pp. 230–231 • 10-4 Double Number Lines—pp. 232–233
NY-6.RP.3a Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.	**Chapter 10 Ratios and Proportional Relationships** • 10-2 Tables of Equivalent Ratios—pp. 228–229 • 10-5 Compare Ratios—pp. 236–237 • 10-7 Compare Prices—pp. 240–241 • 10-9 Graphs of Proportional Relationships—pp. 244–245 • 10-10 Problem Solving: Make a Table—pp. 246–247

NY-6.RP RATIO AND PROPORTIONAL REASONING

Grade 6 Content Standards	*Sadlier Math*, Grade 6
NY-6.RP.3b Solve unit rate problems. e.g., If it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed? What is the unit rate? Note: Problems may include unit pricing and constant speed.	**Chapter 10 Ratios and Proportional Relationships** • 10-6 Rates and Unit Rates—pp. 238–239 • 10-7 Compare Prices—pp. 240–241 • 10-8 Equations for Proportional Relationships—pp. 242–243 • 10-9 Graphs of Proportional Relationships—pp. 244–245
NY-6.RP.3c Find a percent of a quantity as a rate per 100. Solve problems that involve finding the whole given a part and the percent, and finding a part of a whole given the percent. e.g., 30% of a quantity means $\frac{30}{100}$ times the quantity.	**Chapter 11 Percent** • 11-1 Percent—pp. 254–255 • 11-2 Relate Percents to Fractions—pp. 256–257 • 11-3 Relate Percents to Decimals—pp. 258–259 • 11-4 Relate Decimals, Fractions, and Percents—pp. 260–261 • 11-5 Percents Greater Than 100%—pp. 262–263 • 11-6 Percents Less Than 1%—pp. 264–265 • 11-7 Find the Part—pp. 268–269 • 11-8 Find the Percent—pp. 270–271 • 11-9 Find the Whole—pp. 272–273 • 11-10 Problem Solving: Act it Out—pp. 274–275
NY-6.RP.3d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. Note: Conversion of units occur within a given measurement system, not across different measurement systems.	**Chapter 12 Measurement** • 12-1 Convert Customary Units—pp. 282–283 • 12-2 Convert Metric Units—pp. 284–285 • 12-3 Convert Between Customary and Metric Units—pp. 288–289 • 12-4 Problem Solving: Choose a Strategy—pp. 290–291

NY-6.NS THE NUMBER SYSTEM

Grade 6 Content Standards	*Sadlier Math*, Grade 6

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

NY-6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions. Note: Strategies may include but are not limited to the following: using visual fraction models, a standard algorithm, and equations to represent the problem. e.g., Create a story context for $(\frac{2}{3}) \div (\frac{3}{4})$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(\frac{2}{3}) \div (\frac{3}{4}) = \frac{8}{9}$ because $\frac{3}{4}$ of $\frac{8}{9}$ is $\frac{2}{3}$. In general, $(\frac{a}{b}) \div (\frac{c}{d}) = \frac{ad}{bc}$. e.g., • How much chocolate will each person get if 3 people share $\frac{1}{2}$ lb of chocolate equally? • How many $\frac{3}{4}$ cup servings are in $\frac{2}{3}$ of a cup of yogurt? • How wide is a rectangular strip of land with length $\frac{3}{4}$ mi and area $\frac{1}{2}$ square mi?	**Chapter 8 Multiply and Divide Fractions** • 8-3 Meaning of Division by a Fraction—pp. 168–169 • 8-4 Model Dividing Fractions by Fractions—pp. 170–171 • 8-5 Divide Fractions by Fractions—pp. 172–173 • 8-6 Estimate Quotients of Fractions and Mixed Numbers—pp. 174–175 • 8-7 Divide with Whole and Mixed Numbers—pp. 176–177 • 8-8 Order of Operations with Fractions—pp. 180–181 • 8-9 Fractions with Money—pp. 182–183 • 8-10 Multiplication and Division Expressions with Fractions—pp. 184–185 • 8-11 Multiplication and Division Equations with Fractions—pp. 186–187

Compute fluently with multi-digit numbers and find common factors and multiples.

NY-6.NS.2 Fluently divide multi-digit numbers using a standard algorithm.	**Chapter 3 Division Operations and Expressions** • 3-1 Divide Whole Numbers—pp. 42–43
NY-6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using a standard algorithm for each operation.	**Chapter 1 Addition and Subtraction Operations and Expressions** • 1-1 Estimate Decimal Sums and Differences—pp. 2–3 • 1-2 Add Decimals—pp. 4–5 • 1-3 Subtract Decimals—pp. 6–7 **Chapter 2 Multiplication Operations and Expressions** • 2-1 Multiply Decimals by 0.1, 0.01, and 0.001—pp. 22–23 *continued*

NY-6.NS THE NUMBER SYSTEM

Grade 6 Content Standards	*Sadlier Math*, Grade 6
	• 2-2 Estimate Decimal Products—pp. 24–25 • 2-3 Multiply with Decimals—pp. 26–27 **Chapter 3 Division Operations and Expressions** • 3-2 Divide Decimals by 10, 100, and 1000—pp. 44–45 • 3-3 Divide Decimals by Whole Numbers—pp. 46–47 • 3-4 Divide Decimals by 0.1, 0.01, and 0.001—pp. 50–51 • 3-5 Estimate Decimal Quotients—pp. 52–53 • 3-6 Decimal Divisors—pp. 54–55 • 3-7 Zeros in Division—pp. 56–57
NY-6.NS.4 Find the greatest common factor of two whole numbers less than or equal to 100. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor other than 1. Find the least common multiple of two whole numbers less than or equal to 12. e.g., Express 36 + 8 as 4 (9 + 2).	**Chapter 6 Factors and Multiples** • 6-1 Prime Factorization—pp. 124–125 • 6-2 Greatest Common Factor—pp. 126–127 • 6-3 The Distributive Property and Common Factors—pp. 128–129 • 6-4 Least Common Multiple—pp. 132–133

Apply and extend previous understandings of numbers to the system of rational numbers.

NY-6.NS.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values. Use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. e.g., temperature above/below zero, elevation above/below sea level, debits/credits, positive/negative electric charge.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-2 Integers in the Real World—pp. 198–199

NY-6.NS THE NUMBER SYSTEM

Grade 6 Content Standards	*Sadlier Math*, Grade 6
NY-6.NS.6 Understand a rational number as a point on the number line. Use number lines and coordinate axes to represent points on a number line and in the coordinate plane with negative number coordinates.	
NY-6.NS.6a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line. Recognize that the opposite of the opposite of a number is the number itself, and that 0 is its own opposite. e.g., With the number 3, – (–3) = 3	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-1 Integers on the Number Line—pp. 196–197
NY-6.NS.6b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane. Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-7 Plot Points in the Coordinate Plane—pp. 210–211 • 9-8 Reflections of Points—pp. 212–213
NY-6.NS.6c Find and position integers and other rational numbers on a horizontal or vertical number line. Find and position pairs of integers and other rational numbers on a coordinate plane.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-1 Integers on the Number Line—pp. 196–197 • 9-2 Integers in the Real World—pp. 198–199 • 9-3 Compare and Order Integers—pp. 200–201 • 9-5 Rational Numbers—pp. 204–205 • 9-6 Compare and Order Rational Numbers—pp. 206–207 • 9-7 Plot Points in the Coordinate Plane—pp. 210–211 • 9-8 Reflections of Points—pp. 212–213 • 9-9 Distance on the Coordinate Plane—pp. 214–215 • 9-10 Plot Polygons—pp. 216–217 • 9-11 Problem Solving: Draw a Picture—pp. 218–219

NY-6.NS THE NUMBER SYSTEM

Grade 6 Content Standards	*Sadlier Math*, Grade 6
NY-6.NS.7 Understand ordering and absolute value of rational numbers.	
NY-6.NS.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line. e.g., Interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-3 Compare and Order Integers—pp. 200–201 • 9-6 Compare and Order Rational Numbers—pp. 206–207
NY-6.NS.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts. e.g., Write –3°C > –7°C to express the fact that –3°C is warmer than –7°C.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-3 Compare and Order Integers—pp. 200–201 • 9-6 Compare and Order Rational Numbers—pp. 206–207
NY-6.NS.7c Understand the absolute value of a rational number as its distance from 0 on the number line. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. e.g., For an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-3 Compare and Order Integers—pp. 200–201 • 9-4 Absolute Value as Magnitude—pp. 202–203
NY-6.NS.7d Distinguish comparisons of absolute value from statements about order. e.g., Someone with a balance of $100 in their bank account has more money than someone with a balance of –$1000, because 100 > –1000. But, the second person's debt balance is much greater than the first person's credit balance because |–1000| > |100|.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-4 Absolute Value as Magnitude—pp. 202–203

NY-6.NS THE NUMBER SYSTEM

Grade 6 Content Standards	*Sadlier Math*, Grade 6
NY-6.NS.8 Solve real-world and mathematical problems by graphing points on a coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-7 Plot Points in the Coordinate Plane—pp. 210–211 • 9-8 Reflections of Points—pp. 212–213 • 9-9 Distance on the Coordinate Plane—pp. 214–215 • 9-10 Plot Polygons—pp. 216–217 • 9-11 Problem Solving: Draw a Picture—pp. 218–219

NY-6.EE EXPRESSIONS, EQUATIONS AND INEQUALITIES

Grade 6 Content Standards	*Sadlier Math*, Grade 6
Apply and extend previous understandings of arithmetic to algebraic expressions.	
NY-6.EE.1 Write and evaluate numerical expressions involving whole-number exponents.	**Chapter 4 Numerical and Algebraic Expressions** • 4-1 Exponents—pp. 70–71 • 4-2 Order of Operations—pp. 72–73
NY-6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers.	
NY-6.EE.2a Write expressions that record operations with numbers and with letters standing for numbers. e.g., Express the calculation "Subtract *y* from 5" as 5 – *y*.	**Chapter 1 Addition and Subtraction Operations and Expressions** • 1-4 Write Addition and Subtraction Expressions—pp. 10–11 **Chapter 2 Multiplication Operations and Expressions** • 2-4 Write Multiplication Expressions—pp. 30–31 **Chapter 3 Division Operations and Expressions** • 3-8 Write Division Expressions—pp. 58–59 **Chapter 4 Numerical and Algebraic Expressions** • 4-2 Order of Operations—pp. 72–73 • 4-3 Parts of Expressions—pp. 74–75 • 4-4 Translate Expressions—pp. 76–77 • 4-5 Translate Expressions Involving Exponents—pp. 78–79 • 4-6 Use the Distributive Property and Evaluate Algebraic Expressions—pp. 82–83

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NY-6.EE EXPRESSIONS, EQUATIONS AND INEQUALITIES

Grade 6 Content Standards	*Sadlier Math*, Grade 6
	• 4-7 Apply Properties to Write Equivalent Expressions—pp. 84–85 • 4-8 Identify Equivalent Expressions—pp. 86–87 • 4-9 Use Formulas—pp. 88–89 **Chapter 7 Fractions and Decimals** • 7-5 Addition and Subtraction Expressions with Fractions—pp. 152–153 **Chapter 8 Multiply and Divide Fractions** • 8-10 Multiplication and Division Expressions with Fractions—pp. 184–185
NY-6.EE.2b Identify parts of an expression using mathematical terms (term, coefficient, sum, difference, product, factor, and quotient); view one or more parts of an expression as a single entity. e.g., Describe the expression 2(8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.	**Chapter 1 Addition and Subtraction Operations and Expressions** • 1-4 Write Addition and Subtraction Expressions—pp. 10–11 **Chapter 2 Multiplication Operations and Expressions** • 2-1 Multiply Decimals by 0.1, 0.01, and 0.001—pp. 22–23 • 2-4 Write Multiplication Expressions—pp. 30–31 **Chapter 3 Division Operations and Expressions** • 3-8 Write Division Expressions—pp. 58–59 **Chapter 4 Numerical and Algebraic Expressions** • 4-3 Parts of Expressions—pp. 74–75
NY-6.EE.2c Evaluate expressions given specific values for their variables. Include expressions that arise from formulas in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order (Order of Operations). e.g., Use the formulas $V = s^3$ and $SA = 6s^2$ to find the volume and surface area of a cube with sides of length $s = ½$. Note: Expressions may or may not include parentheses. Nested grouping symbols are not included.	**Chapter 1 Addition and Subtraction Operations and Expressions** • 1-5 Evaluate Addition and Subtraction Expressions—pp. 12–13 **Chapter 2 Multiplication Operations and Expressions** • 2-5 Evaluate Multiplication Expressions—pp. 32–33 **Chapter 3 Division Operations and Expressions** • 3-9 Evaluate Division Expressions—pp. 60–61 **Chapter 4 Numerical and Algebraic Expressions** • 4-1 Exponents—pp. 70–71 • 4-2 Order of Operations—pp. 72–73 • 4-6 Use the Distributive Property and Evaluate Algebraic Expressions—pp. 82–83 *continued*

NY-6.EE EXPRESSIONS, EQUATIONS AND INEQUALITIES

Grade 6 Content Standards	*Sadlier Math*, Grade 6
	• 4-8 Identify Equivalent Expressions—pp. 86–87 • 4-9 Use Formulas—pp. 88–89 **Chapter 7 Fractions and Decimals** • 7-5 Addition and Subtraction Expressions with Fractions—pp. 152–153 **Chapter 8 Multiply and Divide Fractions** • 8-10 Multiplication and Division Expressions with Fractions—pp. 184–185
NY-6.EE.3 Apply the properties of operations to generate equivalent expressions. e.g., Apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.	**Chapter 4 Numerical and Algebraic Expressions** • 4-7 Apply Properties to Write Equivalent Expressions—pp. 84–85
NY-6.EE.4 Identify when two expressions are equivalent. e.g., The expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y represents.	**Chapter 4 Numerical and Algebraic Expressions** • 4-8 Identify Equivalent Expressions—pp. 86–87
Reason about and solve one-variable equations and inequalities.	
NY-6.EE.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	**Chapter 5 One-Variable Equations and Inequalities** • 5-1 Solutions of Equations—pp. 98–99 • 5-6 Solutions of Inequalities—pp. 110–111
NY-6.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem. Understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	**Chapter 4 Numerical and Algebraic Expressions** • 4-4 Translate Expressions—pp. 76–77 **Chapter 5 One-Variable Equations and Inequalities** • 5-2 Addition and Subtraction Equations—pp. 100–101

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NY-6.EE EXPRESSIONS, EQUATIONS AND INEQUALITIES

Grade 6 Content Standards	*Sadlier Math*, Grade 6
	• 5-3 Multiplication and Division Equations—pp. 102–103 • 5-4 Write and Solve Equations—pp. 104–105 • 5-7 Write Inequalities—pp. 112–113 • 5-8 Solve Inequalities—pp. 114–115 • 5-9 Problem Solving: Write and Solve an Equation—pp. 116–117
NY-6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$; $x - p = q$; $px = q$; and $x/p = q$ for cases in which p, q and x are all nonnegative rational. Note: For the $\frac{x}{p} = q$ case, $p \neq 0$.	**Chapter 5 One-Variable Equations and Inequalities** • 5-2 Addition and Subtraction Equations—pp. 100–101 • 5-3 Multiplication and Division Equations—pp. 102–103 **Chapter 7 Fractions and Decimals** • 7-6 Addition and Subtraction Equations with Fractions—pp. 154–155 **Chapter 8 Multiply and Divide Fractions** • 8-11 Multiplication and Division Equations with Fractions—pp. 186–187
NY-6.EE.8 Write an inequality of the form $x > c$, $x \geq c$, $x \leq c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of these forms have infinitely many solutions; represent solutions of such inequalities on a number line.	**Chapter 5 One-Variable Equations and Inequalities** • 5-5 Inequalities—pp. 108–109 • 5-6 Solutions of Inequalities—pp. 110–111 • 5-7 Write Inequalities—pp. 112–113 • 5-8 Solve Inequalities—pp. 114–115
Represent and analyze quantitative relationships between dependent and independent variables.	
NY-6.EE.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another. Given a verbal context and an equation, identify the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *continued*	**Chapter 13 Two-Variable Relationships** • 13-1 Related Quantities—pp. 298–299 • 13-2 Relationships in Words and Tables—pp. 300–301 • 13-3 Relationships in Equations and Graphs—pp. 302–303 • 13-4 Multiple Representations of a Relationship—pp. 306–307

NY-6.EE EXPRESSIONS, EQUATIONS AND INEQUALITIES

Grade 6 Content Standards	*Sadlier Math*, Grade 6
e.g., In a problem involving motion at constant speed, list and graph ordered pairs of distances and times. e.g., Given the equation $d = 65t$ to represent the relationship between distance and time, identify t as the independent variable and d as the dependent variable.	

NY-6.G GEOMETRY

Grade 6 Content Standards	*Sadlier Math*, Grade 6
Solve real-world and mathematical problems involving area, surface area, and volume.	
NY-6.G.1 Find area of triangles, trapezoids, and other polygons by composing into rectangles or decomposing into triangles and quadrilaterals. Apply these techniques in the context of solving real-world and mathematical problems. Note: The inclusive definition of a trapezoid will be utilized, which defines a trapezoid as "A quadrilateral with at least one pair of parallel sides." (This definition includes parallelograms.)	**Chapter 14 Geometry: Area** • 14-1 Areas of Parallelograms and Rhombuses—pp. 316–317 • 14-2 Areas of Triangles—pp. 318–319 • 14-3 Areas of Trapezoids—pp. 320–321 • 14-5 Areas of Regular Polygons—pp. 326–327 • 14-6 Areas of Composite Figures—pp. 328–329
NY-6.G.2 Find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	**Chapter 15 Geometry: Surface Area and Volume** • 15-4 Use Cubes to Find Volumes—pp. 346–347 • 15-5 Volumes of Right Rectangular Prisms—pp. 348–349 • 15-6 Problem Solving: More Than One Way—pp. 350–351
NY-6.G.3 Draw polygons in the coordinate plane given coordinates for the vertices. Use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.	**Chapter 9 Rational Numbers and the Coordinate Plane** • 9-10 Plot Polygons—pp. 216–217 • 9-11 Problem Solving: Draw a Picture—pp. 218–219

NY-6.G GEOMETRY

Grade 6 Content Standards	*Sadlier Math*, Grade 6
NY-6.G.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. Note: Three-dimensional figures include only right rectangular prisms, right rectangular pyramids, and right triangular prisms. When finding surface areas, all necessary measurements will be given.	**Chapter 15 Geometry: Surface Area and Volume** • 15-1 Nets of Three-Dimensional Figures—pp. 338–339 • 15-2 Use Nets to Find Surface Areas of Prisms—pp. 340–341 • 15-3 Use Nets to Find Surface Areas of Pyramids—pp. 342–343

NY-6.SP STATISTICS AND PROBABILITY

Grade 6 Content Standards	*Sadlier Math*, Grade 6
Develop an understanding of statistical variability.	
NY-6.SP.1	
NY-6.SP.1a Recognize that a statistical question is one that anticipates variability in the data related to the question and accounts for it in the answers. e.g., "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.	**Chapter 16 Measures of Center and Variation** • 16-1 Statistical Questions—pp. 358–359
NY-6.SP.1b Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Note: Students need to understand that data are generated with respect to particular contexts or situations and can be used to answer questions about those contexts or situations.	**Chapter 18 Probability** • 18-1 Populations and Samples—Online

NY-6.SP STATISTICS AND PROBABILITY

Grade 6 Content Standards	*Sadlier Math*, Grade 6
NY-6.SP.1c Understand that the method and sample size used to collect data for a particular question is intended to reduce the difference between a population and a sample taken from the population so valid inferences can be drawn about the population. Generate multiple samples (or simulated samples) of the same size to recognize the variation in estimates or predictions. Note: Examples of acceptable methods to obtain a representative sample from a population include, but are not limited to, a simple random sample for a given population or a systematic random sample for an unknown population. Examples of unacceptable methods of sampling include, but are not limited to, online polls and convenience	**Chapter 18 Probability** • 18-2 Drawing Conclusions from Samples—Online
NY-6.SP.2 Understand that a set of quantitative data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. Notes: • Students need to determine and justify the most appropriate graph to display a given set of data (histogram, dot plot). • Students extend their knowledge of symmetric shapes, to describe data displayed in dot plots and histograms in terms of symmetry. They identify clusters, peaks and gaps, recognizing common shapes and patterns in these displays of data distributions, and ask why a distribution takes on	**Chapter 16 Measures of Center and Variation** • 16-2 Measures of Center—pp. 360–361 • 16-3 Measures of Variation: Range and Interquartile Range—pp. 362–363 • 16-4 Measure of Variation: Mean Absolute Deviation—pp. 366–367 • 16-5 Analyze Data—pp. 368–369 **Chapter 17 Data Displays** • 17-2 Box Plots—pp. 380–381 • 17-4 Data Distributions—pp. 386–387
NY-6.SP.3 Recognize that a measure of center for a quantitative data set summarizes all of its values with a single number while a measure of variation describes how its values vary with a single number. Note: Measures of center are mean, median, and mode. The measure of variation is the range.	**Chapter 16 Measures of Center and Variation** • 16-2 Measures of Center—pp. 360–361 • 16-3 Measures of Variation: Range and Interquartile Range—pp. 362–363 • 16-4 Measure of Variation: Mean Absolute Deviation—pp. 366–367

NY-6.SP STATISTICS AND PROBABILITY

Grade 6 Content Standards	*Sadlier Math*, Grade 6
Summarize and describe distributions.	
NY-6.SP.4 Display quantitative data in plots on a number line, including dot plots and histograms.	**Chapter 17 Data Displays** • 17-1 Dot Plots—pp. 378–379 • 17-2 Box Plots—pp. 380–381 • 17-3 Histograms—pp. 382–383
NY-6.SP.5 Summarize quantitative data sets in relation to their context.	
NY-6.SP.5a Report the number of observations.	**Chapter 16 Measures of Center and Variation** • 16-2 Measures of Center—pp. 360–361 • 16-3 Measures of Variation: Range and Interquartile Range—pp. 362–363 • 16-4 Measure of Variation: Mean Absolute Deviation—pp. 366–367 • 16-5 Analyze Data—pp. 368–369 **Chapter 17 Data Displays** • 17-1 Dot Plots—pp. 378–379 • 17-2 Box Plots—pp. 380–381 • 17-3 Histograms—pp. 382–383 • 17-4 Data Distributions—pp. 386–387
NY-6.SP.5b Describe the nature of the attribute under investigation, including how it was measured and its units of measurement.	**Chapter 16 Measures of Center and Variation** • 16-2 Measures of Center—pp. 360–361 • 16-3 Measures of Variation: Range and Interquartile Range—pp. 362–363 • 16-4 Measure of Variation: Mean Absolute Deviation—pp. 366–367 • 16-5 Analyze Data—pp. 368–369 **Chapter 17 Data Displays** • 17-1 Dot Plots—pp. 378–379 • 17-2 Box Plots—pp. 380–381 • 17-3 Histograms—pp. 382–383 • 17-4 Data Distributions—pp. 386–387

NY-6.SP STATISTICS AND PROBABILITY

Grade 6 Content Standards	*Sadlier Math*, Grade 6
NY-6.SP.5c Calculate range and measures of center, as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. Note: Measures of center are mean, median, and mode. The measure of variation is the range. Role of outliers should be discussed, but no formula required.	**Chapter 16 Measures of Center and Variation** • 16-2 Measures of Center—pp. 360–361 • 16-3 Measures of Variation: Range and Interquartile Range—pp. 362–363 • 16-5 Analyze Data—pp. 368–369 **Chapter 17 Data Displays** • 17-1 Dot Plots—pp. 378–379 • 17-2 Box Plots—pp. 380–381 • 17-3 Histograms—pp. 382–383 • 17-4 Data Distributions—pp. 386–387
NY-6.SP.5d Relate the range and the choice of measures of center to the shape of the data distribution and the context in which the data were gathered. Note: Measures of center are mean, median, and mode. The measure of variation is the range.	**Chapter 16 Measures of Center and Variation** • 16-2 Measures of Center—pp. 360–361 • 16-3 Measures of Variation: Range and Interquartile Range—pp. 362–363 • 16-5 Analyze Data—pp. 368–369 **Chapter 17 Data Displays** • 17-1 Dot Plots—pp. 378–379 • 17-2 Box Plots—pp. 380–381 • 17-3 Histograms—pp. 382–383 • 17-4 Data Distributions—pp. 386–387
Investigate chance processes and develop, use and evaluate probability models.	
NY-6.SP.6 Understand that the probability of a chance event is a number between 0 and 1 inclusive, that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	**Chapter 18 Probability** • 18-3 Probability and Likelihood—Online

NY-6.SP STATISTICS AND PROBABILITY

Grade 6 Content Standards	*Sadlier Math*, Grade 6
NY-6.SP.7 Approximate the probability of a simple event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. e.g., When rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times. Note: Compound events are introduced in grade 7.	**Chapter 18 Probability** • 18-4 Theoretical Probability—Online • 18-5 Relative Frequency and Experimental Probability—Online
NY-6.SP.8 Develop a probability model and use it to find probabilities of simple events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.	
NY-6.SP.8a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of simple events. e.g., The probability of rolling a six-sided fair number cube and landing on a 2 is $\frac{1}{6}$. The probability of landing on an even number is $\frac{3}{6}$.	**Chapter 18 Probability** • 18-4 Theoretical Probability—Online • 18-6 Uniform Probability Models—Online
NY-6.SP.8b Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. e.g., Find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?	**Chapter 18 Probability** • 18-5 Relative Frequency and Experimental Probability—Online • 18-7 Non-Uniform Probability Models—Online