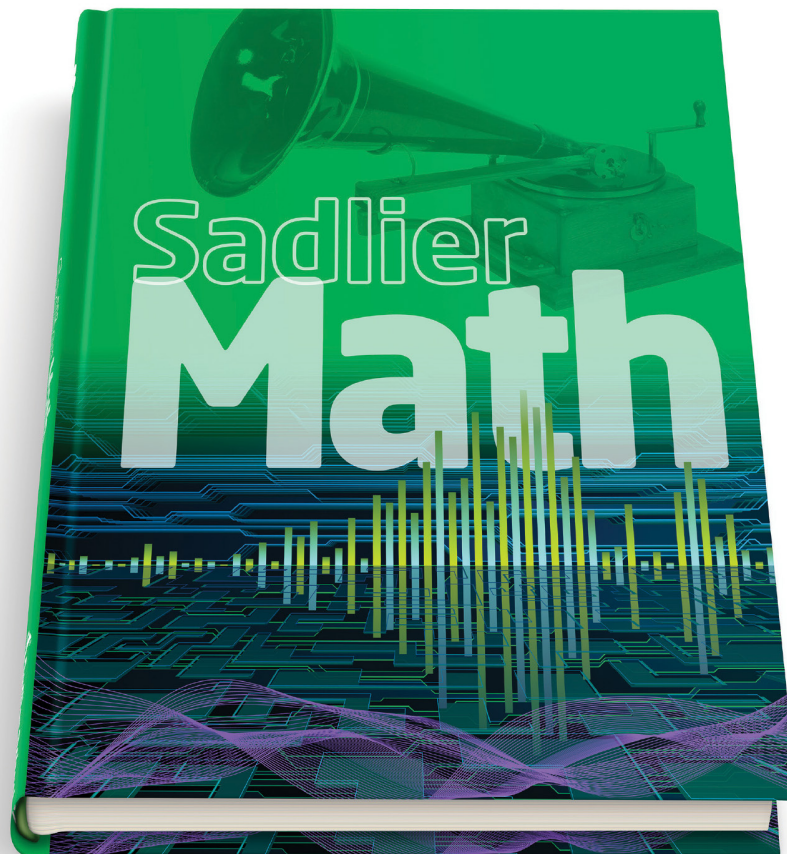# *Sadlier Math*™

Correlation to the South Dakota State Standards for Mathematics

Grade 3

Learn more at www.SadlierSchool.com/SadlierMath

OPERATIONS AND ALGEBRAIC THINKING   3.OA

Grade 3 Content Standards	*Sadlier Math*, Grade 3

A. Represent and solve problems involving multiplication and division.

3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 x 7.	**Chapter 4 Multiplication and Division Concepts** • 4-1 Represent Multiplication as Repeated Addition—pp. 66–67 • 4-2 Represent Multiplication on a Number Line—pp. 68–69 • 4-3 Represent Multiplication as Arrays—pp. 70–71 • 4-7 Problem Solving: Write an Equation—pp. 80–81 **Chapter 5 Multiplication Facts** • 5-1 Multiply by 2—pp. 88–89 • 5-2 Multiply by 5—pp. 90–91 • 5-3 Multiply by 9—pp. 92–93 • 5-4 Multiply by 1 and 10—pp. 96–97 **Chapter 6 More Multiplication Facts** • 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 **Chapter 8 More Division Facts** • 8-7 Fact Families—pp. 176–177 • 8-8 Use Facts to Solve Problems—pp. 178–179
3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.	**Chapter 4 Multiplication and Division Concepts** • 4-5 Represent Division by Sharing—pp. 76–77 • 4-6 Represent Division by Repeated Subtraction—pp. 78–79 **Chapter 7 Division Facts** • 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 More Division Facts** • 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 • 8-7 Fact Families—pp. 176–177 • 8-8 Use Facts to Solve Problems—pp. 178–179

OPERATIONS AND ALGEBRAIC THINKING 3.OA

Grade 3 Content Standards	*Sadlier Math*, Grade 3
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	**Chapter 4 Multiplication and Division Concepts** • 4-1 Represent Multiplication as Repeated Addition—pp. 66–67 • 4-2 Represent Multiplication on a Number Line—pp. 68–69 • 4-3 Represent Multiplication as Arrays—pp. 70–71 • 4-4 Multiply with the Commutative Property—pp. 74–75 • 4-5 Represent Division by Sharing—pp. 76–77 • 4-6 Represent Division by Repeated Subtraction—pp. 78–79 • 4-7 Problem Solving: Write an Equation—pp. 80–81 **Chapter 5 Multiplication Facts** • 5-1 Multiply by 2—pp. 88–89 • 5-2 Multiply by 5—pp. 90–91 • 5-3 Multiply by 9—pp. 92–93 • 5-4 Multiply by 1 and 10—pp. 96–97 • 5-5 Multiply by 10—pp. 98–99 • 5-7 Solve for Unknowns—pp. 102–103 • 5-8 Problem Solving: Use a Model—pp. 104–105 **Chapter 6 More Multiplication Facts** • 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 • 6-9 Use the Associative Property to Multiply—pp. 130–131 **Chapter 7 Division Facts** • 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 • 7-6 Problem Solving: Use Drawings to Solve Problems—pp. 154–155 **Chapter 8 More Division Facts** • 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 • 8-8 Use Facts to Solve Problems—pp. 178–179

OPERATIONS AND ALGEBRAIC THINKING   3.OA

Grade 3 Content Standards	*Sadlier Math*, Grade 3
3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers.	**Chapter 5 Multiplication Facts** • 5-7 Solve for Unknowns—pp. 102–103 **Chapter 6 More Multiplication Facts** • 6-7 Use a Bar Model to Multiply—pp. 126–127 • 6-9 Use the Associative Property to Multiply—pp. 130–131 **Chapter 7 Division Facts** • 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

B. Understand properties of multiplication and the relationship between multiplication and division.

3.OA.5 Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.)	**Chapter 4 Multiplication and Division Concepts** • 4-4 Multiply with the Commutative Property—pp. 74-75 **Chapter 5 Multiplication Facts** • 5-4 Multiply by 1 and 10—pp. 96–97 **Chapter 6 More Multiplication Facts** • 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 • 6-9 Use the Associative Property to Multiply—pp. 130–131
3.OA.6 Understand division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.	**Chapter 7 Division Facts** • 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 • 7-6 Problem Solving: Use Drawings to Solve Problems—pp. 154–155 **Chapter 8 More Division Facts** • 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 • 8-7 Fact Families—pp. 176–177 • 8-8 Use Facts to Solve Problems—pp. 178–179

OPERATIONS AND ALGEBRAIC THINKING — 3.OA

Grade 3 Content Standards	*Sadlier Math*, Grade 3

C. Multiply and divide within 100.

3.OA.7 Multiply and divide within 100.

a. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations.

b. Demonstrate fluency (skill in carrying out procedures flexibly, appropriately, efficiently, and accurately) for all products of two one-digit numbers.

Chapter 5 Multiplication Facts
- 5-1 Multiply by 2—pp. 88–89
- 5-2 Multiply by 5—pp. 90–91
- 5-3 Multiply by 9—pp. 92–93
- 5-4 Multiply by 1 and 10—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 More Multiplication Facts
- 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 Division Facts
- 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 More Division Facts
- 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
- 8-7 Fact Families—pp. 176–177
- 8-8 Use Facts to Solve Problems—pp. 178–179

OPERATIONS AND ALGEBRAIC THINKING   3.OA

Grade 3 Content Standards	*Sadlier Math*, Grade 3

D. Solve problems involving the four operations, and identify and explain patterns in arithmetic.

3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (This standard is limited to problems posed with whole numbers and having whole number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order [Order of Operations]).	**Chapter 2 Addition Within 1000** • 2-8 Problem Solving: Use a Model—pp. 38–39 **Chapter 6 More Multiplication Facts** • 6-8 Problem Solving: Make a Table—pp. 128–129 **Chapter 8 More Division Facts** • 8-6 Problem Solving: Work Backward—pp. 174–175 **Chapter 11 Measurement** • 11-6 Problem Solving: Write an Equation—pp. 244–245 **Chapter 12 Data** • 12-5 Data and Two-Step Problems—pp. 260–261
3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.	**Chapter 2 Addition Within 1000** • 2-2 Explore Addition Patterns—pp. 24–25 **Chapter 5 Multiplication Facts** • 5-5 Multiply by 10—pp. 98–99 • 5-6 Find Patterns in the Multiplication Table—pp. 100–101 **Chapter 6 More Multiplication Facts** • 6-10 Find More Multiplication Patterns—pp. 132–133

NUMBER AND OPERATION IN BASE TEN   3.NBT

Grade 3 Content Standards	*Sadlier Math*, Grade 3

A. Use place value understanding and properties of operation to perform multi-digit arithmetic (A range of algorithms may be used).

3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	**Chapter 1 Number Sense** • 1-4 Round Numbers to the Nearest Ten—pp. 10–11 • 1-5 Round Numbers to the Nearest Hundred—pp. 12–13
3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	**Chapter 2 Addition Within 1000** • 2-1 Use Addition Properties—pp. 22–23 • 2-3 Estimate Sums—pp. 26–27 • 2-4 Add with Partial Sums—pp. 30–31 • 2-5 Use Place Value to Add: Regroup Once (whole dollar amounts)—pp. 32–33 • 2-6 Use Place Value to Add: Regroup Twice—pp. 34–35 *continued*

NUMBER AND OPERATION IN BASE TEN — 3.NBT

Grade 3 Content Standards	*Sadlier Math*, Grade 3
	• 2-7 Add with Three or More Addends—pp. 36–37 • 2-8 Problem Solving: Use a Model (whole dollar amounts)—pp. 38–39 **Chapter 3 Subtraction Within 1000** • 3-1 Estimate Differences—pp. 46–47 • 3-2 Relate Addition and Subtraction—pp. 48–49 • 3-3 Subtract with Partial Differences—pp. 50–51 • 3-4 Subtract Three-Digit Numbers—pp. 54–55 • 3-5 Subtract Across Zeros—pp. 56–57 • 3-6 Problem Solving: Write and Solve an Equation—pp. 58–59
3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.	**Chapter 5 Multiplication Facts** • 5-5 Multiply by 10—pp. 98–99 **Chapter 6 More Multiplication Facts** • 6-11 Multiply by Multiples of 10—pp. 134–135

NUMBER AND OPERATIONS—FRACTIONS — 3.NF

Grade 3 Content Standards	*Sadlier Math*, Grade 3
A. Develop understanding of fractions as numbers.	
3.NF.1 Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts (example: 1 part out of 4 equal parts is the same as 1/4); understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*. (example: 3/4 is the same as 3 one-fourths (1/4, 1/4, 1/4)	**Chapter 9 Fraction Concepts** • 9-1 Understand Equal Parts—pp. 188–189 • 9-2 Name Unit Fractions of a Whole—pp. 190–191 • 9-4 Name Fractions of a Whole—pp. 196–197
3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram.	
a. Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/*b* and that the endpoint of the part based at 0 locates the number 1/*b* on the number line.	**Chapter 9 Fraction Concepts** • 9-3 Find Unit Fractions on a Number Line—pp. 192–193

NUMBER AND OPERATIONS—FRACTIONS   3.NF

Grade 3 Content Standards	*Sadlier Math*, Grade 3
b. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.	**Chapter 9 Fraction Concepts** • 9-5 Find Fractions on a Number Line—pp. 198–199
3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. *Note - Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.*	
a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.	**Chapter 10 Fractions: Comparison and Equivalence** • 10-2 Find Equivalent Fractions—pp. 212–213 • 10-3 Find Equivalent Fractions on a Number Line—pp. 214–215
b. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.	**Chapter 10 Fractions: Comparison and Equivalence** • 10-2 Find Equivalent Fractions—pp. 212–213 • 10-3 Find Equivalent Fractions on a Number Line—pp. 214–215
c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.	**Chapter 9 Fraction Concepts** • 9-6 Use a Fraction to Find the Whole—pp. 200–201 **Chapter 10 Fractions: Comparison and Equivalence** • 10-1 Whole Numbers and Fractions—pp. 210–211
d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols < , =, or >.	**Chapter 10 Fractions: Comparison and Equivalence** • 10-4 Compare Fractions with the Same Denominator—pp. 218–219 • 10-5 Compare Fractions with the Same Numerator—pp. 220–221 • 10-6 Order Fractions—pp. 222–223

MEASUREMENT AND DATA   3.MD

Grade 3 Content Standards	*Sadlier Math*, Grade 3

A. Solving problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes, using an analog and digital clock. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	**Chapter 13 Time** • 13-1 Tell Time to the Minute—pp. 276–277 • 13-2 Measure Elapsed Time—pp. 278–279 • 13-3 Find Start and End Times—pp. 282–283 • 13-4 Operations with Time—pp. 284–285
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). (Excludes compound units such as cm3 and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (Excludes multiplicative comparison problems [problems involving notions of "times as much"; see Table, page 34])	**Chapter 11 Measurement** • 11-2 Estimate and Measure Liquid Volume—pp. 234–235 • 11-3 Operations with Liquid Volume—pp. 236–237 • 11-4 Estimate and Measure Mass—pp. 240–241 • 11-5 Operations with Mass—pp. 242–243

B. Represent and interpret data.

3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.	**Chapter 12 Data** • 12-1 Read Picture Graphs—pp. 252–253 • 12-2 Make Picture Graphs—pp. 254–255 • 12-3 Read Bar Graphs—pp. 256–257 • 12-4 Make Bar Graphs—pp. 258–259 • 12-5 Data and Two-Step Problems—pp. 260–261
3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	**Chapter 11 Measurement** • 11-1 Measure Length—pp. 232–233 **Chapter 12 Data** • 12-7 Read Line Plots—pp. 266–267 • 12-8 Make Line Plots—pp. 268–269

MEASUREMENT AND DATA   3.MD

Grade 3 Content Standards	*Sadlier Math*, Grade 3
C. Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	
3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.	
a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.	**Chapter 15 Area** • 15-1 Understand Area—pp. 312–313
b. A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.	**Chapter 15 Area** • 15-1 Understand Area—pp. 312–313
3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).	**Chapter 15 Area** • 15-1 Understand Area—pp. 312–313 • 15-2 Find Area Using Standard Units—pp. 314–315 • 15-3 Find the Area of a Rectangle and a Square—pp. 316–317
3.MD.7 Relate area to the operations of multiplication and addition.	
a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.	**Chapter 15 Area** • 15-3 Find the Area of a Rectangle and a Square—pp. 316–317
b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	**Chapter 15 Area** • 15-3 Find the Area of a Rectangle and a Square—pp. 316–317

MEASUREMENT AND DATA   3.MD

Grade 3 Content Standards	*Sadlier Math*, Grade 3
c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.	**Chapter 15 Area** • 15-4 Find Area Using the Distributive Property—pp. 320–321
d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.	**Chapter 15 Area** • 15-5 Find Area of Composite Shapes—pp. 322–323
3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	**Chapter 16 Perimeter** • 16-1 Understand Perimeter—pp. 332–333 • 16-2 Find Perimeter—pp. 334–335 • 16-3 Find Unknown Side Lengths—pp. 336–337 • 16-5 Same Perimeter, Different Areas—pp. 342–343 • 16-6 Same Area, Different Perimeter—pp. 344–345
3.MD.9 Determine the value of a collection of money using dollar sign and decimal point appropriately. Understand that the digits to the right of the decimal represent parts of a whole dollar.	*See Grade 2* **Chapter 12 Money and Time** • 12-1 Pennies, Nickels, and Dimes—pp. 497–500 • 12-2 Quarters—pp. 501–504 • 12-3 Equal Amounts—pp. 505–508 • 12-4 Compare Money—pp. 509–512 • 12-5 Make Change—pp. 513–516 • 12-6 Add and Subtract Money—pp. 517–520 • 12-7 One Dollar—pp. 521–524 • 12-8 Paper Money—pp. 525–528 *See also Grade 5 (introduce decimal point with dollar sign)* **Chapter 2 Place Value and Decimals** • 2-4 Round Decimals—pp. 32–33 • 2-5 Problem Solving: Read and Understand—pp. 34–35 • 2-6 Estimate with Decimals—pp. 36–37

GEOMETRY	3.G

Grade 3 Content Standards	*Sadlier Math*, Grade 3

A. Reason with shapes and their attributes.

3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	**Chapter 14 Two-Dimensional Shapes** • 14-1 Classify Polygons—pp. 294–295 • 14-2 Classify Quadrilaterals—pp. 296–297 • 14-3 Draw Quadrilaterals—pp. 298–299
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of a shape.	**Chapter 9 Fraction Concepts** • 9-1 Understand Equal Parts—pp. 188–189 **Chapter 15 Area** • 15-2 Find Area Using Standard Units—pp. 314–315