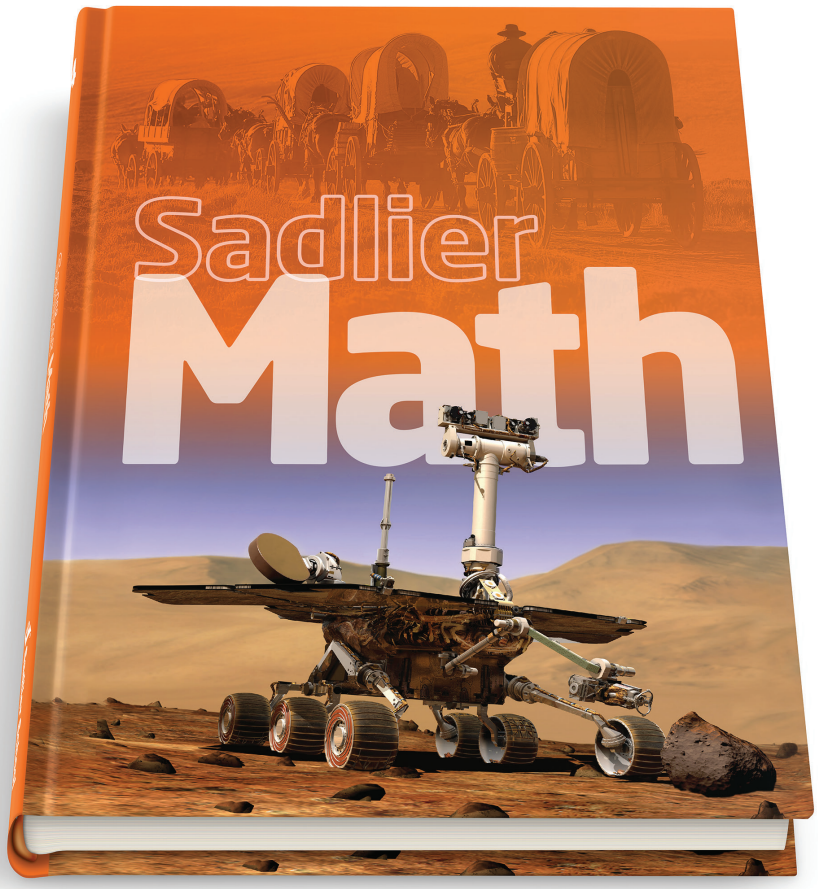
Sadlier Math™

Correlation to the Diocese of Richmond Mathematics Curriculum

Grade 4



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Problem Solving (Strategies)

4th Grade Content Standards	*Sadlier Math*, Grade 4
Problem solving is integrated throughout the content strands. The development of problem-solving skills is a major goal of the mathematics program at every grade level. Instruction in the process of problem-solving, which should include problems involving Catholic Social Teaching, not just textbook word problems, will need to be integrated early and continuously into each student's mathematics education. Students must be helped to develop a wide range of skills and strategies for solving a variety of problem types. The student will apply the following problem solving strategies to solve real life situations (use of manipulatives is imperative):	**Chapter 1: 1-7** • 1-7 Problem Solving: Make a Table—pp. 16–17 **Chapter 2: 2-7** • 2-7 Problem Solving: Make an Organized List—pp. 38–39 **Chapter 3: 3-7** • 3-7 Problem Solving: Use a Model—pp. 60–61 **Chapter 4: 4-6** • 4-6 Problem Solving: Represent the Situation—pp. 80–81 **Chapter 5: 5-6** • 5-6 Problem Solving: Guess and Test—pp. 100–101 **Chapter 6: 6-6** • 6-6 Problem Solving: Write and Solve an Equation—pp. 120–121 **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 **Chapter 9: 9-6** • 9-6 Problem Solving: Four-Step Process—pp. 184–185 **Chapter 10: 10-12** • 10-12 Problem Solving: Four-Step Process—pp. 216–217 **Chapter 11: 11-9** • 11-9 Problem Solving: Compare Strategies—pp. 242–243 **Chapter 12: 12-7** • 12-7 Problem Solving: Choose a Strategy—pp. 264–265 **Chapter 13: 13-8** • 13-8 Problem Solving: Find a Pattern—pp. 288–289 **Chapter 14: 14-10** • 14-10 Problem Solving: Make a Table—pp. 316–317 **Chapter 15: 15-9** • 15-9 Problem Solving: Use Logical Reasoning—pp. 342–343 **Chapter 16: 16-6** • 16-6 Problem Solving: Use a Diagram—pp. 362–363 **Chapter 17: 17-8** • 17-8 Problem Solving: Draw a Picture—pp. 386–387

I. NUMBERS AND OPERATIONS

4th Grade Content Standards	*Sadlier Math*, Grade 4
GOAL: For students to develop fluency in multiplication and division. The students will extend their understanding of fractions and fractional parts. "Students will develop an understanding of decimals including the connections between fractions and decimals" Focal Points. Teachers should reinforce the process of estimation at each grade level. Students should continue to determine the reasonableness of answers.	
A. Number Sense	
The student will:	
1. Count, read, write, order, compare, estimate and round numbers to 1 million (<,>,+)	**Chapter 1: 1-1 through 1-6** • 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
2. Identify, place value and read and write numbers in word form from millionths to millions (i.e., Four thousand six hundred thirty-four and seven hundredths – 4,634.07)	**Chapter 1: 1-1 through 1-6** • 1-1 Thousands—pp. 2–3 • 1-2 What Is One Million?—pp. 4–5 • 1-3 Millions—pp. 6–7 **Chapter 13: 13-5** • 13-5 Decimal Place Value—pp. 280–281
3. Define prime and composite numbers	See Grade 5 **Chapter 5: 5-1** • 5-1 Factors, Primes and Composite Numbers—pp. 98–99
4. Identify prime numbers to 20	See Grade 5 **Chapter 5: 5-1** • 5-1 Factors, Primes and Composite Numbers—pp. 98–99
5. Use factorization to express whole numbers as products of prime factors	See Grade 5 **Chapter 5: 5-1** • 5-1 Factors, Primes and Composite Numbers—pp. 98–99

I. NUMBERS AND OPERATIONS

4th Grade Content Standards	*Sadlier Math*, Grade 4
B. Addition and Subtraction	
No objectives.	
Students should continue to practice skills.	
C. Multiplication and Division	
The student will:	
1. Multiply by two digit numbers and three digit numbers	**Chapter 6: 6-3 & 6-4** • 6-3 Multiply by Two-Digit Numbers: No Regrouping—pp. 114–115 • 6-4 Multiply by Two-Digit Numbers: Regrouping—pp. 116–117 See also Grade 5 **Chapter 3: 3-5 & 3-7** • 3-5 Multiply by Two-Digit Numbers—pp. 54–55 • 3-7 Multiply by Three-Digit Numbers—pp. 58–59
2. Demonstrate automaticity and fluency with multiplication and division facts (0-12)	See Grade 3 **Chapter 5: 5-1 through 5-7** • 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 0—pp. 96–97 • 5-5 Multiply by 10—pp. 98–99 • 5-6 Find Patterns in the Multiplication Table—pp. 100–101 **Chapter 6: 6-2 through 6-7, 6-9 through 6-11** • 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 • 6-10 Find More Multiplication Patterns—pp. 132–133 • 6-11 Multiply by Multiples of 10—pp. 134–135 **Chapter 7: 7-2 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 8-5, 8-7 & 8-8** • 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 *continued*

I. NUMBERS AND OPERATIONS

4th Grade Content Standards	*Sadlier Math*, Grade 4
	• 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 **Chapter 16: 16-6** • 16-6 Same Area, Different Perimeters—pp. 344–345 (multiplication facts for 12)
3. Divide two- and three-digit dividends by one digit	**Chapter 8: 8-1 through 8-5** • 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
4. Show a remainder when dividing by one digit	**Chapter 8: 8-5** • 8-5 More Quotients—pp. 158–159
D. Properties	
No objectives.	
Students should continue to use and explore the property of zero, the property of one and the associative and commutative properties and use the correct vocabulary associated with them.	
E. Fractions/Decimals/Percents	
The student will:	
1. Change improper fractions to mixed numbers	**Chapter 11: 11-6** • 11-6 Write Mixed Numbers as Equivalent Fractions—pp. 236–237
2. Change mixed numbers to improper fractions	**Chapter 11: 11-6** • 11-6 Write Mixed Numbers as Equivalent Fractions—pp. 236–237
3. Simplify fractions to lowest terms	**Chapter 10: 10-5** • 10-5 Fractions: Lowest Terms—pp. 200–201

I. NUMBERS AND OPERATIONS

4th Grade Content Standards	*Sadlier Math*, Grade 4
4. Read, write and order fractions	**Chapter 10: 10-1 through 10-8** • 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 • 10-6 Compare Fractions: Use Benchmarks—pp. 204–205 • 10-7 Compare Fractions with the Same Denominator—pp. 206–207 • 10-8 Compare Fractions—pp. 208–209
5. Read, write and order mixed numbers	**Chapter 10: 10-9 through 10-11** • 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
6. Generate many fractions for the same value	**Chapter 10: 10-2 through 10-4** • 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
7. Read, write and compare decimals as an extension of the base-ten system	**Chapter 13: 13-5 & 13-6** • 13-5 Decimal Place Value—pp. 280–281 • 13-6 Compare Decimals with Models and Symbols—pp. 284–285
8. Understand decimals as a part of the whole	**Chapter 13: 13-3** • 13-3 Tenths and Hundredths as Fractions and Decimals—pp. 276–27
9. Locate decimals on a number line	**Chapter 13: 13-1 & 13-7** • 13-1 Equivalent Fractions: Rename Tenths as Hundredths—pp. 272–273 • 13-7 Order Decimals—pp. 286–287
10. Compare and order whole numbers, fractions, decimals and percents	**Chapter 1: 1-6** • 1-6 Compare and Order Whole Numbers—pp. 14–15 **Chapter 10: 10-6 through 10-6, 10-10 & 10-11** • 10-6 Compare Fractions: Use Benchmarks—pp. 204–205 • 10-7 Compare Fractions with the Same Denominator—pp. 206–207 • 10-8 Compare Fractions—pp. 208–209 • 10-10 Compare Mixed Numbers—pp. 212–213 • 10-11 Order Fractions and Mixed Numbers—pp. 214–215 **Chapter 13: 13-6 & 13-7** • 13-6 Compare Decimals with Models and Symbols—pp. 284–285 • 13-7 Order Decimals—pp. 286–287 See also Grade 6 **Chapter 11: 11-2 through 11-4** • 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

I. NUMBERS AND OPERATIONS

4th Grade Content Standards	*Sadlier Math*, Grade 4
11. Write decimals as equivalent fractions to the thousandths place	**Chapter 13: 13-1** • 13-1 Equivalent Fractions: Rename Tenths as Hundredths—pp. 272–273
12. Add and subtract fractions with common denominators	**Chapter 11: 11-1 through 11-8** • 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 • 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
13. Add and subtract decimals	**Chapter 13: 13-2** • 13-2 Add and Subtract Fractions with Denominators of 10 and 100—pp. 274–275 See Grade 5 **Chapter 10: 10-1, 10-2, 10-5 through 10-7** • 10-1 Use Models to Add Decimals—pp. 220–221 • 10-2 Use Properties to Add Decimals—pp. 222–223 • 10-5 Add Decimals: Hundredths—pp. 230–231 • 10-6 Add Decimals: Thousandths—pp. 232–233 • 10-7 Addition with Money—pp. 234–235 **Chapter 11: 11-1, 11-3 through 11-5** • 11-1 Use Models to Subtract Decimals—pp. 242–243 • 11-3 Subtract Decimals: Hundredths—pp. 248–249 • 11-4 Subtract Decimals: Thousandths—pp. 250–251 • 11-5 Subtraction with Money—pp. 252–253

II. MEASUREMENT

4th Grade Content Standards	*Sadlier Math*, Grade 4
Students should be able to estimate and measure in both customary and metric measurements of length, weight, capacity, temperature and time and money. As their ability to measure increases, they should be able to determine the reasonableness of their answers. Students should use appropriate labels for answers.	
A. Linear Measurement	
The student will:	
1. Measure length to the nearest 1/4 and 1/8 of an inch or to the nearest millimeter	**Chapter 14: 14-1 & 14-6** • 14-1 Measure with Inches—pp. 296–297 • 14-6 Metric Units of Length—pp. 308–311
B. Weight	
No objectives.	
C. Temperature	
No objectives.	
D. Time/Money	
The student will:	
1. Count to one hundred dollars	See Grade 2 related content **Chapter 12: 12-8** • 12-8 Paper Money—pp. 525–528
2. Make change to ten dollars	See Grade 2 related content **Chapter 12: 12-5** • 12-5 Make Change—pp. 513–516
3. Add and subtract elapsed time with regrouping (minutes greater than one hour becomes converted to an hour; days more than seven become a week)	See related content **Chapter 15: 15-3** • 15-3 Elapsed Time—pp. 328–329
4. Use time applications to solve problems (elapsed time)	**Chapter 15: 15-3** • 15-3 Elapsed Time—pp. 328–329

II. MEASUREMENT

4th Grade Content Standards	*Sadlier Math*, Grade 4
E. Capacity	
The student will:	
1. Measure capacity using fluid ounces, cups, pints, quarts, gallons and liters	**Chapter 14: 14-3 & 14-7** • 14-3 Customary Units of Capacity—pp. 300–301 • 14-7 Metric Units of Capacity—pp. 310–313

III. GEOMETRY

4th Grade Content Standards	*Sadlier Math*, Grade 4
The student will:	
1. Compare and contrast the characteristics and properties of two-dimensional shapes (regular hexagon, pentagon, etc) and their corresponding three-dimensional solids	See Grade 1 **Chapter 13: 13-7** • 13-7 Compare Two-Dimensional and Three-Dimensional Shapes—pp. 509–512 See Grade 2 **Chapter 13: 13-1 & 13-3** • 13-1 Identify Two-Dimensional Shapes—pp. 555–558 • 13-3 Identify Three-Dimensional Shapes—pp. 565–568 See also Grade 5 **Chapter 16: 16-1** • 16-1 Solid Figures—pp. 360–361
2. Classify two-dimensional figures - i.e., squares – as subsets of rectangles, and rectangles as subsets of parallelograms	**Chapter 17: 17-1 through 17-3** • 17-1 Polygons—pp. 370–371 • 17-2 Quadrilaterals—pp. 372–373 • 17-3 Triangles—pp. 374–375
3. Predict and describe the result of the geometric transformations, such as reflection, translation and rotation using concrete objects (i.e., mirrors, paper folding, tracing)	N/A
4. Identify equilateral, isosceles, scalene and right triangles	**Chapter 17: 17-3** • 17-3 Triangles—pp. 374–375
5. Measure volume of rectangular prisms using cubes	See Grade 5 **Chapter 16: 16-3** • 16-3 Volume of Rectangular Prisms—pp. 364–365

III. GEOMETRY

4th Grade Content Standards	*Sadlier Math*, Grade 4
6. Measure surface area with tiles	See Grade 6 **Chapter 15: 15-2 & 15-3** • 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
7. Derive the formula for perimeter and area of polygons	**Chapter 17: 17-6 & 17-7** • 17-6 Use Perimeter Formulas—pp. 382–383 • 17-7 Use Area Formulas—pp. 384–385

IV. STATISTICS, PROBABILITY AND DATA ANALYSIS

4th Grade Content Standards	*Sadlier Math*, Grade 4
Students continue to use skills and tools from Grade 3. The student will:	
1. Apply place value to use stem/leaf plots	N/A
2. Model situations using experiments to determine probability and predict results	See Grade 6 **Chapter 18: 18-5 & 18-7** • 18-5 Relative Frequency and Experimental Probability—online • 18-7 Non-Uniform Probability Models—online
3. Represent probability as a fraction	See Grade 6 **Chapter 18: 18-3** • 18-3 Probability and Likelihood—online

V. ALGEBRA

4th Grade Content Standards	*Sadlier Math*, Grade 4
The student will:	
1. Find the missing number in a pattern	**Chapter 7: 7-5** • 7-5 Number Patterns—pp. 138–139
2. Identify missing operational signs in equations	**Chapter 8: 8-6** • 8-6 Order of Operations—pp. 160–161 (missing operations)
3. Recognize and use a variable in a number sentence	**Chapter 2: 2-1** • 2-1 Mathematical Expressions—pp. 24–25