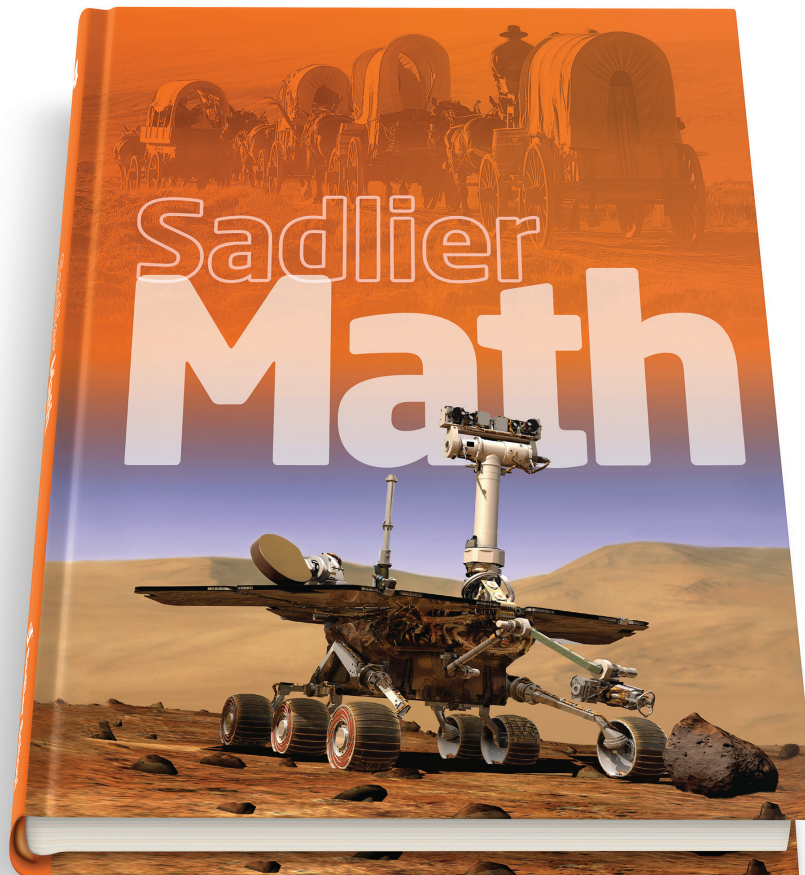


# **Sadlier Math™**

Correlation to the Minnesota Academic Standards in Mathematics

**Grade 4**



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**NUMBER & OPERATION**

**Grade 4 Content Standards**

**Sadlier Math, Grade 4**

**Demonstrate mastery of multiplication and division basic facts; multiply multi-digit numbers; solve real-world and mathematical problems using arithmetic.**

**4.1.1.1** Demonstrate fluency with multiplication and division facts.

See Grade 3

**Chapter 5: 5-1 through 5-5**

- 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

**• Chapter 6: 6-2 through 6-6, 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
- 6-11 Multiply by Multiples of 10—pp. 134-135

**Chapter 7: 7-2 through 7-5**

- 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 8-4, 8-7**

- 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
- 8-7 Fact Families—pp. 176-177

**4.1.1.2** Use an understanding of place value to multiply a number by 10, 100 and 1000.

**Chapter 4: 4-2 & 4-3**

- 4-2 Use Place-Value Models—pp. 70-71 (Use place-value models to illustrate and explain multiplication calculations; TE Develop Concepts: Understanding Multiplication Models)
- 4-3 Multiply Tens, Hundreds, and Thousands—pp. 74-75 (Understand the patterns of zeros when multiplying by tens, hundreds, and thousands; TE Develop Concepts: The Associative Property)

**4.1.1.3** Multiply multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms.

**Chapter 6: 6-1 through 6-6**

- 6-1 Use Area Models to Multiply by Two-Digit Numbers—pp. 108-109 (Use area models to multiply by two-digit numbers; TE Develop Concepts: Area Models)
- 6-2 Break Apart Numbers to Multiply—pp. 110-111 (Break apart numbers by place value to multiply; TE Develop Concepts: Partial Products)
- 6-3 Multiply by Two-Digit Numbers: No Regrouping—pp. 114-115 (Find the product of two 2-digit numbers; TE Develop Concepts: Partial Products—finding and adding partial products)
- 6-4 Multiply by Two-Digit Numbers: Regrouping—pp. 116-117 (Find the product of a two-, three-, or four-digit number and a two-digit number; TE Develop Concepts: Regrouping)

*continued*

NUMBER & OPERATION	
Grade 4 Content Standards	Sadlier Math, Grade 4
	<ul style="list-style-type: none"> <li>6-5 Multiplication Patterns—pp. 118-119 (Use patterns to multiply by multiples of 10, 100, or 1000; TE Develop Concepts: Break Down Factors)</li> <li>6-6 Problem Solving: Write and Solve an Equation—pp. 120-121 (Solve problems by using a variety of strategies, including writing and solving an equation; TE Develop Concepts: Translating Descriptions into Equations)</li> </ul>
<p><b>4.1.1.4</b> Estimate products and quotients of multi-digit whole numbers by using rounding, benchmarks and place value to assess the reasonableness of results.</p> <p><i>For example:</i> <math>53 \times 38</math> is between <math>50 \times 30</math> and <math>60 \times 40</math>, or between 1500 and 2400, and <math>411/73</math> is between 5 and 6.</p>	<p><b>Chapter 4: 4-4</b></p> <ul style="list-style-type: none"> <li>4-4 Estimate Products—pp. 76-77 (Use front-end estimation and rounding to estimate products; TE Develop Concepts: Estimate to Evaluate Answers)</li> </ul> <p><b>Chapter 7: 7-3</b></p> <ul style="list-style-type: none"> <li>7-3 Estimate Quotients—pp. 132-133 (Use estimation strategies to find and assess the solutions for division problems; TE Develop Concepts: Estimating Quotients)</li> </ul>
<p><b>4.1.1.5</b> Solve multi-step real-world and mathematical problems requiring the use of addition, subtraction and multiplication of multi-digit whole numbers. Use various strategies, including the relationship between operations, the use of technology, and the context of the problem to assess the reasonableness of results.</p>	<p><b>Chapter 2: 2-4 through 2-6</b></p> <ul style="list-style-type: none"> <li>2-4 Add Thousands—pp. 30-31 (Add whole numbers in the thousands; TE Develop Concepts: Adding with Base Ten Blocks)</li> <li>2-5 Add Millions—pp. 34-35 (Add whole numbers in the millions; TE Develop Concepts: Addition Properties and Numbers in the Millions)</li> <li>2-6 Three or More Addends—pp. 36-37 (Add three or more numbers; TE Develop Concepts: Adding Three Numbers with Base Ten Blocks)</li> </ul> <p><b>Chapter 3: 3-2 through 3-5</b></p> <ul style="list-style-type: none"> <li>3-2 Subtract with One Regrouping—pp. 48-49 (Subtract multi-digit whole numbers using the standard algorithm; TE Develop Concepts: Using Money to Regroup)</li> <li>3-3 Subtract with Two Regroupings—pp. 50-51 (Subtract multi-digit whole numbers with two regroupings; TE Develop Concepts: Regrouping Using Place Value)</li> <li>3-4 Subtract Greater Numbers—pp. 54-55 (Subtract multi-digit whole numbers using the standard algorithm; TE Develop Concepts: Place Value and Regrouping)</li> <li>3-5 Zeros in Subtraction—pp. 56-57 (Solve subtraction problems with multi-digit numbers that include zeros; TE Develop Concepts: Squaring Off)</li> </ul> <p><b>Chapter 4: 4-1 through 4-6</b></p> <ul style="list-style-type: none"> <li>4-1 Multiplication Properties—pp. 68-69 (Use multiplication properties to multiply accurately and efficiently; TE Develop Concepts: Examples of the Properties of Multiplication)</li> <li>4-2 Use Place-Value Models—pp. 70-71 (Use place-value models to illustrate and explain multiplication calculations; TE Develop Concepts: Understanding Multiplication Models)</li> <li>4-3 Multiply Tens, Hundreds, and Thousands—pp. 74-75 (Understand the patterns of zeros when multiplying by tens, hundreds, and thousands; TE Develop Concepts: The Associative Property)</li> <li>4-4 Estimate Products—pp. 76-77 (Use front-end estimation and rounding to estimate products; TE Develop Concepts: Estimate to Evaluate Answers)</li> <li>4-5 Multiply to Compare Numbers—pp. 78-79 (Interpret a multiplication equation as a comparison; TE Develop Concepts: Count Your Chickens Before They Hatch—egg carton models)</li> </ul> <p style="text-align: right;"><i>continued</i></p>

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**NUMBER & OPERATION**

**Grade 4 Content Standards**

**Sadlier Math, Grade 4**

	<ul style="list-style-type: none"> <li>4-6 Problem Solving: Represent the Situation—pp. 80-81 (Solve problems using a variety of strategies, including representing the situation; TE Develop Concepts: Use a Diagram to Organize Information)</li> </ul> <p><b>Chapter 5: 5-1 through 5-6</b></p> <ul style="list-style-type: none"> <li>5-1 Multiply with Regrouping—pp. 88-89 (Use regrouping to multiply two numbers; TE Develop Concepts: Multiplication with Money)</li> <li>5-2 Use Properties to Multiply by One-Digit Numbers—pp. 90-91 (Use properties to multiply efficiently; TE Develop Concepts: Using Properties to Make Multiplication Simpler)</li> <li>5-3 Use Area Models to Multiply by One-Digit Numbers—pp. 92-93 (Multiply by one-digit numbers using area models; TE Develop Concepts: Arrays)</li> <li>5-4 Multiply Three- and Four-Digit Numbers—pp. 96-97 (Multiply three- and four-digit numbers by one-digit numbers; TE Develop Concepts: Multiply Using Expanded Form)</li> <li>5-5 Multiplicative and Additive Comparisons—pp. 98-99 (Solve problems that involve multiplicative and additive comparisons; TE Develop Concepts: Illustrate Comparisons)</li> <li>5-6 Problem Solving: Guess and Test—pp. 100-101 (Solve problems by using a variety of strategies, including guess and test; TE Develop Concepts: Guess the Factor)</li> </ul> <p><b>Chapter 6: 6-1 through 6-6</b></p> <ul style="list-style-type: none"> <li>6-1 Use Area Models to Multiply by Two-Digit Numbers—pp. 108-109 (Use area models to multiply by two-digit numbers; TE Develop Concepts: Area Models)</li> <li>6-2 Break Apart Numbers to Multiply—pp. 110-111 (Break apart numbers by place value to multiply; TE Develop Concepts: Partial Products)</li> <li>6-3 Multiply by Two-Digit Numbers: No Regrouping—pp. 114-115 (Find the product of two 2-digit numbers; TE Develop Concepts: Partial Products—finding and adding partial products)</li> <li>6-4 Multiply by Two-Digit Numbers: Regrouping—pp. 116-117 (Find the product of a two-, three-, or four-digit number and a two-digit number; TE Develop Concepts: Regrouping)</li> <li>6-5 Multiplication Patterns—pp. 118-119 (Use patterns to multiply by multiples of 10, 100, or 1000; TE Develop Concepts: Break Down Factors)</li> <li>6-6 Problem Solving: Write and Solve an Equation—pp. 120-121 (Solve problems by using a variety of strategies, including writing and solving an equation; TE Develop Concepts: Translating Descriptions into Equations)</li> </ul>
<p><b>4.1.1.6</b> Use strategies and algorithms based on knowledge of place value, equality and properties of operations to divide multi-digit whole numbers by one- or two-digit numbers. Strategies may include mental strategies, partial quotients, the commutative, associative, and distributive properties and repeated subtraction.</p> <p style="text-align: right;"><i>continued</i></p>	<p><b>Chapter 7: 7-1 through 7-6</b></p> <ul style="list-style-type: none"> <li>7-1 Division Rules—pp. 128-129 (Find whole-number quotients using strategies and properties of operations; TE Develop Concepts: Division as Separating)</li> <li>7-2 Relate Multiplication and Division—pp. 130-131 (Understand the relationship between multiplication and division; TE Develop Concepts: Connecting Models for Multiplication and Division)</li> <li>7-3 Estimate Quotients—pp. 132-133 (Use estimation strategies to find and assess the solutions for division problems; TE Develop Concepts: Estimating Quotients)</li> <li>7-4 Use Models to Divide—pp. 136-137 (Find whole-number quotients using models such as arrays and area models; TE Develop Concepts: Arrays as Multiplication and Division)</li> </ul>

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## NUMBER & OPERATION

### Grade 4 Content Standards

### Sadlier Math, Grade 4

*For example:* A group of 324 students is going to a museum in 6 buses. If each bus has the same number of students, how many students will be on each bus?

- 7-5 Number Patterns—pp. 138–139 (Make a number pattern, and find features of patterns; TE Develop Concepts: Patterns and Relationships)
- 7-6 Problem Solving: Work Backward—pp. 140–141 (Solve problems by working backward; TE Develop Concepts: Inverse Operations)

#### Chapter 8: 8-1 through 8-8

- 8-1 One-Digit Quotients—pp. 148–149 (Solve division problems involving one-digit quotients; TE Develop Concepts: Modeling Division with Remainders)
- 8-2 Divisibility—pp. 150–151 (Use divisibility rules to tell whether one number is divisible by another; TE Develop Concepts: Divisibility by 3)
- 8-3 Two-Digit Quotients—pp. 152–153 (Divide to find two-digit quotients; TE Develop Concepts: Model Two-Digit Quotients)
- 8-4 Zeros in Quotients—pp. 154–155 (Find quotients that include zeros; TE Develop Concepts: Divide Using Area Models)
- 8-5 More Quotients—pp. 158–159 (Find whole number quotients and remainders; TE Develop Concepts: Analyze Division Expressions)
- 8-6 Order of Operations—pp. 160–161 (Solve problems using the order of operations; TE Develop Concepts: Analyze Division Expressions)
- 8-7 Multistep Problems Using Multiplication and Division—pp. 162–163 (Solve multistep problems that involve multiplication and division; TE Develop Concepts: Model a Multistep Problem)
- 8-8 Problem Solving: Use a Model—pp. 164–165 (Solve problems by using various strategies, including using a model; TE Develop Concepts: Understand Bar Models)

### Represent and compare fractions and decimals in real-world and mathematical situations; use place value to understand how decimals represent quantities.

**4.1.2.1** Represent equivalent fractions using fraction models such as parts of a set, fraction circles, fraction strips, number lines and other manipulatives. Use the models to determine equivalent fractions.

#### Chapter 10: 10-2 through 10-4

- 10-2 Equivalent Fractions: Number Line Diagrams—pp. 194–195 (Use a number line to find equivalent fractions; TE Develop Concepts: Fractions and Number Lines)
- 10-3 Write Equivalent Fractions: Use Models—pp. 196–197 (Use models to find equivalent fractions; TE Develop Concepts: Modeling Fractions)
- 10-4 Write Equivalent Fractions: Use Multiplication and Division—pp. 198–199 (Use multiplication and division to find equivalent fractions; TE Develop Concepts: Make More Equal Parts)

#### Chapter 11: 11-6

- 11-6 Write Mixed Numbers as Equivalent Fractions—pp. 236–237 (Write mixed numbers as improper fractions and improper fractions as mixed numbers; TE Develop Concepts: Improper Fractions and Mixed Numbers)

NUMBER & OPERATION	
Grade 4 Content Standards	Sadlier Math, Grade 4
<p><b>4.1.2.2</b> Locate fractions on a number line. Use models to order and compare whole numbers and fractions, including mixed numbers and improper fractions.</p> <p><i>For example:</i> Locate <math>\frac{5}{3}</math> and <math>1\frac{3}{4}</math> on a number line and give a comparison statement about these two fractions, such as “<math>\frac{5}{3}</math> is less than <math>1\frac{3}{4}</math>.”</p>	<p><b>Chapter 10: 10-2, 10-6 through 10-9</b></p> <ul style="list-style-type: none"> <li>10-2 Equivalent Fractions: Number Line Diagrams—pp. 194-195 (Use a number line to find equivalent fractions; TE Develop Concepts: Fractions and Number Lines)</li> <li>10-6 Compare Fractions: Use Benchmarks—pp. 204-205 (Use benchmark fractions to compare fractions; TE Develop Concepts: Indirect Comparison)</li> <li>10-7 Compare Fractions with the Same Denominator—pp. 206-207 (Compare fractions with the same denominator; TE Develop Concepts: Compare Parts of a Whole)</li> <li>10-8 Compare Fractions—pp. 208-209 (Compare fractions with different denominators; TE Develop Concepts: Model Comparing Fractions)</li> <li>10-9 Mixed Numbers—pp. 210-211 (Read and write mixed numbers; TE Develop Concepts: Mixed Number Pizzas)</li> </ul>
<p><b>4.1.2.3</b> Use fraction models to add and subtract fractions with like denominators in real-world and mathematical situations. Develop a rule for addition and subtraction of fractions with like denominators.</p>	<p><b>Chapter 11: 11-1 through 11-4</b></p> <ul style="list-style-type: none"> <li>11-1 Use Models to Add Fractions—pp. 224-225 (Add fractions using models; TE Develop Concepts: The Meaning of Sums)</li> <li>11-2 Add Fractions: Like Denominators—pp. 226-227 (Add fractions with the same denominators; TE Develop Concepts: Modeling Addition with Fractions)</li> <li>11-3 Decompose Fractions as Sums of Unit Fractions—pp. 228-229 (Decompose fractions into other fractions, including unit fractions; TE Develop Concepts: Model Decomposing Fractions)</li> <li>11-4 Use Models to Subtract Fractions—pp. 230-231 (Subtract fractions using fraction strips and number lines; TE Develop Concepts: Difference of Fractions)</li> </ul>
<p><b>4.1.2.4</b> Read and write decimals with words and symbols; use place value to describe decimals in terms of thousands, hundreds, tens, ones, tenths, hundredths and thousandths.</p> <p><i>For example:</i> Writing 362.45 is a shorter way of writing the sum:</p> <p>3 hundreds + 6 tens + 2 ones + 4 tenths + 5 hundredths,</p> <p>which can also be written as:</p> <p>three hundred sixty-two and forty-five hundredths.</p>	<p>See Grade 5</p> <p><b>Chapter 2: 2-1 &amp; 2-2</b></p> <ul style="list-style-type: none"> <li>2-1 Thousandths—pp. 24-25 (Read and write decimals to thousandths using standard form and word form; TE Develop Concepts: Compare Numbers)</li> <li>2-2 Decimals and Expanded Form—pp. 26-27 (Read and write decimals to thousandths using expanded form; TE Develop Concepts: Compare Numbers)</li> </ul>
<p><b>4.1.2.5</b> Compare and order decimals and whole numbers using place value, a number line and models such as grids and base 10 blocks.</p>	<p><b>Chapter 1: 1-6</b></p> <ul style="list-style-type: none"> <li>1-6 Compare and Order Whole Numbers—pp. 14-15 (Use place value to compare numbers; TE Develop Concepts: Compare Numbers in the Hundred Thousands)</li> </ul> <p>See Grade 5 (compare decimals)</p> <p><b>Chapter 2: 2-3</b></p> <ul style="list-style-type: none"> <li>2-3 Compare and Order Decimals—pp. 30-31 (Compare and order decimals using symbols to record the comparison; TE Develop Concepts: Compare Numbers)</li> </ul>


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## NUMBER & OPERATION

Grade 4 Content Standards	Sadlier Math, Grade 4
<p><b>4.1.2.6</b> Read and write tenths and hundredths in decimal and fraction notations using words and symbols; know the fraction and decimal equivalents for halves and fourths.</p> <p><i>For example:</i> <math>\frac{1}{2} = 0.5 = 0.50</math> and <math>\frac{7}{4} = 1\frac{3}{4} = 1.75</math>, which can also be written as one and three-fourths or one and seventy-five hundredths.</p>	<p>See Grade 5</p> <p><b>Chapter 2: 2-1 &amp; 2-2</b></p> <ul style="list-style-type: none"> <li>2-1 Thousandths—pp. 24–25 (Read and write decimals to thousandths using standard form and word form; TE Develop Concepts: Compare Numbers)</li> <li>2-2 Decimals and Expanded Form—pp. 26–27 (Read and write decimals to thousandths using expanded form; TE Develop Concepts: Compare Numbers)</li> </ul>
<p><b>4.1.2.7</b> Round decimals to the nearest tenth.</p> <p><i>For example:</i> The number 0.36 rounded to the nearest tenth is 0.4.</p>	<p>See Grade 5</p> <p><b>Chapter 2: 2-4</b></p> <ul style="list-style-type: none"> <li>2-4 Round Decimals—pp. 32–33 (Use place value to round decimal numbers; TE Develop Concepts: Compare Numbers)</li> </ul>

## ALGEBRA

Grade 4 Content Standards	Sadlier Math, Grade 4
<p><b>Use input-output rules, tables and charts to represent patterns and relationships and to solve real-world and mathematical problems.</b></p>	
<p><b>4.2.1.1</b> Create and use input-output rules involving addition, subtraction, multiplication and division to solve problems in various contexts. Record the inputs and outputs in a chart or table.</p> <p><i>For example:</i> If the rule is “multiply by 3 and add 4,” record the outputs for given inputs in a table.</p> <p><i>Another example:</i> A student is given these three arrangements of dots:</p> <div style="text-align: center;">  </div> <p>Identify a pattern that is consistent with these figures, create an input-output rule that describes the pattern, and use the rule to find the number of dots in the 10<sup>th</sup> figure.</p>	<p><b>Chapter 7: 7-5</b></p> <ul style="list-style-type: none"> <li>7-5 Number Patterns—pp. 138–139 (Make a number pattern, and find features of patterns; TE Develop Concepts: Patterns and Relationships)</li> </ul>

**ALGEBRA**

**Grade 4 Content Standards**

**Sadlier Math, Grade 4**

**Use number sentences involving multiplication, division and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.**

**4.2.2.1** Understand how to interpret number sentences involving multiplication, division and unknowns. Use real-world situations involving multiplication or division to represent number sentences.

*For example:* The number sentence  $a \times b = 60$  can be represented by the situation in which chairs are being arranged in equal rows and the total number of chairs is 60.

**Chapter 4: 4-1 & 4-5**

- 4-1 Multiplication Properties—pp. 68–69 (Use multiplication properties to multiply accurately and efficiently; TE Develop Concepts: Examples of the Properties of Multiplication)

**Chapter 6: 6-6**

- 6-6 Problem Solving: Write and Solve an Equation—pp. 120–121 (Solve problems by using a variety of strategies, including writing and solving an equation; TE Develop Concepts: Translating Descriptions into Equations)

**4.2.2.2** Use multiplication, division and unknowns to represent a given problem situation using a number sentence. Use number sense, properties of multiplication, and the relationship between multiplication and division to find values for the unknowns that make the number sentences true.

*For example:* If \$84 is to be shared equally among a group of children, the amount of money each child receives can be determined using the number sentence  $84 \div n = d$ .

*Another example:* Find values of the unknowns that make each number sentence true:

$$12 \times m = 36$$

$$s = 256 \div t.$$

**Chapter 4: 4-1 & 4-5**

- 4-1 Multiplication Properties—pp. 68–69 (Use multiplication properties to multiply accurately and efficiently; TE Develop Concepts: Examples of the Properties of Multiplication)
- 4-5 Multiply to Compare Numbers—pp. 78–79 (Interpret a multiplication equation as a comparison; TE Develop Concepts: Count Your Chickens Before They Hatch—egg carton models)

**Chapter 5: 5-2**

- 5-2 Use Properties to Multiply by One-Digit Numbers—pp. 90–91 (Use properties to multiply efficiently; TE Develop Concepts: Using Properties to Make Multiplication Simpler)

**Chapter 6: 6-6**

- 6-6 Problem Solving: Write and Solve an Equation—pp. 120–121 (Solve problems by using a variety of strategies, including writing and solving an equation; TE Develop Concepts: Translating Descriptions into Equations)

**Chapter 7: 7-1**

- 7-1 Division Rules—pp. 128–129 (Find whole-number quotients using strategies and properties of operations; TE Develop Concepts: Division as Separating)



## GEOMETRY & MEASUREMENT

### Grade 4 Content Standards

### Sadlier Math, Grade 4

#### Name, describe, classify and sketch polygons.

**4.3.1.1** Describe, classify and sketch triangles, including equilateral, right, obtuse and acute triangles. Recognize triangles in various contexts.

#### Chapter 17: 17-1 & 17-3

- 17-1 Polygons—pp. 370–371 (Identify and name polygons: triangle, quadrilateral, pentagon, hexagon, and octagon; TE Develop Concepts: Building Polygons)
- 17-3 Triangles—pp. 374–375 (Identify and classify triangles; TE Develop Concepts: Drawing Triangles)

**4.3.1.2** Describe, classify and draw quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms and kites. Recognize quadrilaterals in various contexts.

#### Chapter 17: 17-1 & 17-2

- 17-1 Polygons—pp. 370–371 (Identify and name polygons: triangle, quadrilateral, pentagon, hexagon, and octagon; TE Develop Concepts: Building Polygons)
- 17-2 Quadrilaterals—pp. 372–373 (Identify and classify quadrilaterals; TE Develop Concepts: Constructing Quadrilaterals)

#### Understand angle and area as measurable attributes of real-world and mathematical objects. Use various tools to measure angles and areas.

**4.3.2.1** Measure angles in geometric figures and real-world objects with a protractor or angle ruler.

#### Chapter 16: 16-3

- 16-3 Measure Angles—pp. 356–357 (Measure and sketch angles using a protractor; Workbook: draw an angle; TE Develop Concepts: Measuring Angles)

**4.3.2.2** Compare angles according to size. Classify angles as acute, right and obtuse.  
*For example:* Compare different hockey sticks according to the angle between the blade and the shaft.

#### Chapter 16: 16-2

- 16-2 Angle Measure—pp. 352–353 (Recognize that an angle turns through a fraction of a circle with the vertex of the angle at the center of the circle; right, acute, obtuse, straight angles; TE Develop Concepts: Angles and Circles)

**4.3.2.3** Understand that the area of a two-dimensional figure can be found by counting the total number of same size square units that cover a shape without gaps or overlaps. Justify why length and width are multiplied to find the area of a rectangle by breaking the rectangle into one unit by one unit squares and viewing these as grouped into rows and columns.

#### Chapter 5: 5-3

- 5-3 Use Area Models to Multiply by One-Digit Numbers—pp. 92–93 (Multiply by one-digit numbers using area models; TE Develop Concepts: Arrays)

#### Chapter 6: 6-1

- 6-1 Use Area Models to Multiply by Two-Digit Numbers—pp. 108–109 (Use area models to multiply by two-digit numbers; TE Develop Concepts: Area Models)

#### Chapter 17: 17-7

- 17-7 Use Area Formulas—pp. 384–385 (Use formulas to find the areas of rectangles and squares; TE Develop Concepts: Derive Area Formulas)

## GEOMETRY & MEASUREMENT

Grade 4 Content Standards	Sadlier Math, Grade 4
<p><b>4.3.2.4</b> Find the areas of geometric figures and real-world objects that can be divided into rectangular shapes. Use square units to label area measurements.</p>	<p>See Grade 6  <b>Chapter 14: 14-6</b>  <ul style="list-style-type: none"> <li>14-6 Areas of Composite Figures—pp. 328–329 (Find the areas of composite figures; TE Develop Concepts: Creative Geometry (create pictures with shapes))</li> </ul> </p>

### Use translations, reflections and rotations to establish congruency and understand symmetries.

<p><b>4.3.3.1</b> Apply translations (slides) to figures.</p>	<p>N/A</p>
<p><b>4.3.3.2</b> Apply reflections (flips) to figures by reflecting over vertical or horizontal lines and relate reflections to lines of symmetry.</p>	<p>N/A</p>
<p><b>4.3.3.3</b> Apply rotations (turns) of 90° clockwise or counterclockwise.</p>	<p>N/A</p>
<p><b>4.3.3.4</b> Recognize that translations, reflections and rotations preserve congruency and use them to show that two figures are congruent.</p>	<p>N/A</p>

## DATA ANALYSIS

Grade 4 Content Standards	Sadlier Math, Grade 4
<p><b>Collect, organize, display and interpret data, including data collected over a period of time and data represented by fractions and decimals.</b></p>	
<p><b>4.4.1.1</b> Use tables, bar graphs, timelines and Venn diagrams to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data.</p>	<p><b>Chapter 3: 3-7</b>  <ul style="list-style-type: none"> <li>3-7 Problem Solving: Use a Model—pp. 60–61 (Solve problems by using a variety of strategies, including using a model; TE Develop Concepts: Make a Bar Graph)</li> </ul> <b>Chapter 15: 15-5, 15-6 &amp; 15-8</b>  <ul style="list-style-type: none"> <li>15-5 Line Graphs—pp. 334–335 (Solve problems using customary units of measure; TE Develop Concepts: Graphing Data)</li> <li>15-6 Line Plots—pp. 336–337 (Solve length problems with metric units of measure; TE Develop Concepts: Making and Using Tally Charts)</li> <li>15-8 Choose an Appropriate Display—pp. 340–341 (Solve mass problems using metric units of measure; TE Develop Concepts: Comparing Graphical Displays)</li> </ul> </p>