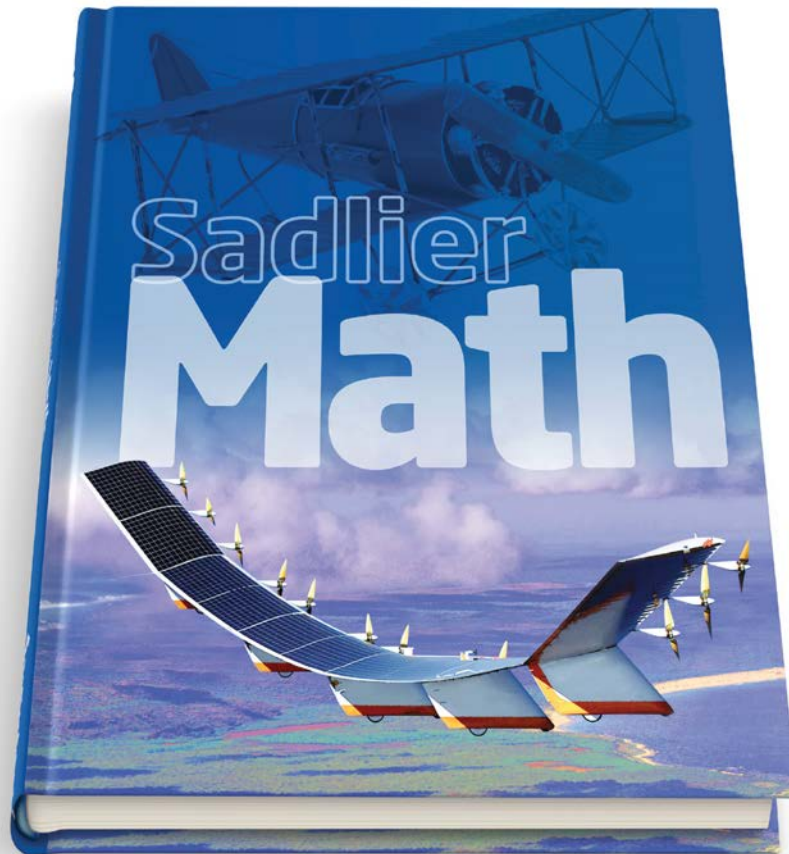


# *Sadlier Math™*

Correlation to the Archdiocese of Cincinnati  
2020 Graded Course of Study for Mathematics

Grade 5



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**STANDARD 1 – OPERATION AND ALGEBRAIC THINKING (OA)**

Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
<b>M.OA.5.1 Write and interpret numerical expression.</b>	
<p><b>M.OA.5.1.1</b> Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</p>	<p><b>Chapter 1 Place Value, Addition and Subtraction</b> 1-5 Addition Properties and Subtraction Rules—pp. 12-13</p> <p><b>Chapter 2 Place Value and Decimals</b> 2-2 Decimals and Expanded Form—pp. 26-27</p> <p><b>Chapter 3 Multiplication</b> 3-1 Multiplication Properties—pp. 44-45</p> <p><b>Chapter 4 Division</b> 4-10 Order of Operations—pp. 88-89 4-11 Expressions—pp. 90-91</p> <p><b>Chapter 7 Fractions: Subtraction</b> 7-2 Subtract Fractions: Unlike Denominators—pp. 144-145</p> <p><b>Chapter 12 Decimals: Multiplication</b> 12-7 Multiply Decimals by Decimals—pp. 276-277 12-8 Zeros in the Product—pp. 278-279</p>
<p><b>M.OA.5.1.2</b> Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as <math>2 \times (8 + 7)</math>.</p>	<p><b>Chapter 1 Place Value, Addition and Subtraction</b> 1-5 Addition Properties and Subtraction Rules—pp. 12-13 1-6 Estimate Sums and Differences—pp. 14-15 1-7 Find Sums and Differences—pp. 16-17</p> <p><b>Chapter 3 Multiplication</b> 3-2 Multiplication Patterns—pp. 46-47 3-3 Estimate Products—pp. 48-49</p> <p><b>Chapter 4 Division</b> 4-10 Order of Operations—pp. 88-89 4-11 Expressions—pp. 90-91</p>
<p><b>M.OA.5.1.3</b> Recognize that <math>3 \times (18,932 + 921)</math> is three times as large as <math>18,932 + 921</math>, without having to calculate the indicated sum or product.</p>	<p><b>Chapter 3 Multiplication</b> 3-1 Multiplication Properties—pp. 44-45</p> <p><b>Chapter 4 Division</b> 4-10 Order of Operations—pp. 88-89 4-11 Expressions—pp. 90-91</p>

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## STANDARD 1 – OPERATION AND ALGEBRAIC THINKING (OA)

Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
<b>M.OA.5.2 Analyze patterns and relationships.</b>	
<b>M.OA.5.2.1</b> Generate two numerical patterns using two given rules.	<b>Chapter 17 Graphs and Data</b> 17-5 Write Number Patterns—pp. 390–391
<b>M.OA.5.2.2</b> Identify apparent relationships between corresponding terms.	<b>Chapter 17 Graphs and Data</b> 17-6 Graph Number Patterns—pp. 392–393 17-7 Problem Solving: Find and Use a Pattern—pp. 394–395
<b>M.OA.5.2.3</b> Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “ADD3” and the number 0, and given the rule “ADD6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why it is so.	<b>Chapter 17 Graphs and Data</b> 17-6 Graph Number Patterns—pp. 392–393 17-7 Problem Solving: Find and Use a Pattern—pp. 394–395

## STANDARD 2 – NUMBERS AND OPERATIONS IN BASE TEN (NBT)

Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
<b>M.NBT.5.1 Understand the Place Value System.</b>	
<b>M.NBT.5.1.1</b> Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	<b>Chapter 1 Place Value, Addition and Subtraction</b> 1-1 Place Value to Billions—pp. 2–3 1-2 Expanded Form—pp. 4–5
<b>M.NBT.5.1.2</b> Explain patterns in the number of zeros of the product when multiplying a number by powers of 10.	<b>Chapter 1 Place Value, Addition and Subtraction</b> 1-3 Powers of 10—pp. 8–9

## STANDARD 2 – NUMBERS AND OPERATIONS IN BASE TEN (NBT)

Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
<b>M.NBT.5.1 Understand the Place Value System.</b>	
<p><b>M.NBT.5.1.3</b> Explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10.</p>	<p><b>Chapter 12 Decimals: Multiplication</b> 12-1 Multiply by Powers of 10—pp. 262–263</p> <p><b>Chapter 13 Decimals: Division</b> 13-1 Divide by Powers of 10—pp. 288–289</p>
<p><b>M.NBT.5.1.4</b> Use whole-number exponents to denote powers of 10.</p>	<p><b>Chapter 12 Decimals: Multiplication</b> 12-1 Multiply by Powers of 10—pp. 262–263</p> <p><b>Chapter 13 Decimals: Division</b> 13-1 Divide by Powers of 10—pp. 288–289</p>
<p><b>M.NBT.5.1.5</b> Read, write, and compare decimals to thousandths.</p>	<p><b>Chapter 2 Place Value and Decimals</b> 2-1 Thousandths—pp. 24–25 2-3 Compare and Order Decimals—pp. 30–31</p>
<p><b>M.NBT.5.1.6</b> Read and write decimals to thousandths using base-ten numerals, number names, and expanded form. For example, <math>347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)</math>.</p>	<p><b>Chapter 2 Place Value and Decimals</b> 2-1 Thousandths—pp. 24–25 2-2 Decimals and Expanded Form—pp. 26–27</p>
<p><b>M.NBT.5.1.7</b> Compare two decimals to thousandths based on meanings of the digits in each place, using <math>\geq</math>, <math>=</math>, and <math>\leq</math> symbols to record the results of comparisons.</p>	<p><b>Chapter 2 Place Value and Decimals</b> 2-3 Compare and Order Decimals—pp. 30–31</p> <p><b>Chapter 13 Decimals: Division</b> 13-3 Estimate Decimal Quotients—pp. 292–293 13-4 Estimate with Money—pp. 294–295 13-5 Divide Decimals by Whole Numbers—pp. 296–297</p>
<p><b>M.NBT.5.1.8</b> Use place value understanding to round decimals to any place.</p>	<p><b>Chapter 2 Place Value and Decimals</b> 2-4 Round Decimals—pp. 32–33 2-6 Estimate with Decimals—pp. 36–37</p> <p><b>Chapter 10 Decimals: Addition</b> 10-3 Estimate Decimal Sums—pp. 224–225</p> <p><b>Chapter 11 Decimals: Subtraction</b> 11-2 Estimate Decimal Differences—pp. 244–245</p>

**STANDARD 2 – NUMBERS AND OPERATIONS IN BASE TEN (NBT)**

Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
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**M.NBT.5.2 Perform operations with multi-digit whole numbers and with decimals to hundredths.**

<p><b>M.NBT.5.2.1</b> Fluently multiply multi-digit whole numbers using the standard algorithm.</p>	<p><b>Chapter 3 Multiplication</b>                      3-4 Zeros in the Multiplicand—pp. 50-51                      3-5 Multiply by Two-Digit Numbers—pp. 54-55                      3-6 Problem Solving: Guess and Test—pp. 56-57                      3-7 Multiply by Three-Digit Numbers—pp. 58-59                      3-8 Zeros in the Multiplier—pp. 60-61</p>
<p><b>M.NBT.5.2.2</b> Find whole-numbers quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations rectangular arrays, and/or area models.</p>	<p><b>Chapter 4 Division</b>                      4-1 Division Patterns—pp. 68-69                      4-2 Estimation: Compatible Numbers—pp. 70-71                      4-3 Divide by One-Digit Numbers—pp. 72-73                      4-4 Zeros in the Quotient—pp. 74-75                      4-5 Divisibility and Mental Math—pp. 76-77                      4-6 Use Arrays and Area Models to Divide—pp. 80-81                      4-7 Use Strategies to Divide—pp. 82-83                      4-8 Divide by Two-Digit Numbers—pp. 84-85</p>
<p><b>M.NBT.5.2.3</b> Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction, relate the strategy to a written method and explain the reasoning used.</p>	<p><b>Chapter 10 Decimals: Addition</b>                      10-1 Use Models to Add Decimals—pp. 220-221                      10-2 Use Properties to Add Decimals—pp. 222-223                      10-3 Estimate Decimal Sums—pp. 224-225                      10-4 Problem Solving: Draw a Picture—pp. 228-229                      10-5 Add Decimals: Hundredths—pp. 230-231                      10-6 Add Decimals: Thousandths—pp. 232-233                      10-7 Addition with Money—pp. 234-235</p> <p><b>Chapter 11 Decimals: Subtraction</b>                      11-1 Use Models to Subtract Decimals—pp. 242-243                      11-2 Estimate Decimal Differences—pp. 244-245                      11-3 Subtract Decimals: Hundredths—pp. 248-249                      11-4 Subtract Decimals: Thousandths—pp. 250-251                      11-5 Subtraction with Money—pp. 252-253                      11-6 Problem Solving: Use a Model—pp. 254-255</p> <p><b>Chapter 12 Decimals: Multiplication</b>                      12-2 Use Properties to Multiply a Decimal by a Whole Number—pp. 264-265                      12-3 Estimate Decimal Products—pp. 266-267                      12-4 Multiply Decimals by Whole Numbers—pp. 268-269                      12-5 Multiplication with Money—pp. 270-271                      12-6 Model Multiplying Two Decimals—pp. 274-275                      12-7 Multiply Decimals by Decimals—pp. 276-277</p> <p style="text-align: right;"><i>continued</i></p>

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## STANDARD 2 – NUMBERS AND OPERATIONS IN BASE TEN (NBT)

Grade 5 Standard & Benchmark Description

Sadlier Math, Grade 5

### M.NBT.5.2 Perform operations with multi-digit whole numbers and with decimals to hundredths.

12-8 Zeros in the Product—pp. 278-279  
 12-9 Problem Solving: More Than One Way—pp. 280-281

**Chapter 13 Decimals: Division**  
 13-1 Divide by Powers of 10—pp. 288-289  
 13-2 Model Dividing a Decimal by a Whole Number—pp. 290-291  
 13-5 Divide Decimals by Whole Numbers—pp. 296-297  
 13-6 Zeros in Decimal Quotients—pp. 298-299  
 13-7 Division with Money—pp. 302-303  
 13-8 Problem Solving: Work Backward—pp. 304-305  
 13-9 Model Dividing a Decimal by a Decimal—pp. 306-307  
 13-10 Divide a Decimal by a Decimal—pp. 308-309

## STANDARD 3 – NUMBER AND OPERATIONS — FRACTIONS (NF)

Grade 5 Standard & Benchmark Description

Sadlier Math, Grade 5

### M.NF.5.1 Use equivalent fractions as a strategy to add and subtract fractions.

**M.NF.5.1.1** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example,  $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$ . In general,  $\frac{a}{b} + \frac{c}{d} = \frac{(ad + bc)}{bd}$ .

**Chapter 6 Fractions: Addition**  
 6-1 Model Addition with Unlike Denominators—pp. 122-123  
 6-2 Add Fractions: Unlike Denominators—pp. 124-125  
 6-3 Fraction Addition: Estimation and Reasonableness—pp. 126-127  
 6-4 Add Mixed Numbers—pp. 130-131  
 6-6 Rename Mixed Number Sums—pp. 134-135

**Chapter 7 Fractions: Subtraction**  
 7-1 Model Subtraction of Fractions with Unlike Denominators—pp. 142-143  
 7-2 Subtract Fractions: Unlike Denominators—pp. 144-145  
 7-4 Model Subtraction with Mixed Numbers—pp. 150-151  
 7-6 Subtract Fractions and Whole Numbers from Mixed Numbers—pp. 154-155

*continued*

**STANDARD 3 – NUMBER AND OPERATIONS — FRACTIONS (NF)**

Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
<p><b>M.NF.5.1 Use equivalent fractions as a strategy to add and subtract fractions.</b></p>	
	<p>7-7 Subtract Mixed Numbers: Rename Fractions—pp. 156-157 7-8 Subtract Mixed Numbers: Rename Whole Numbers and Fractions—pp. 158-159</p>
<p><b>M.NF.5.1.2</b> Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators. For example, by using visual fraction models or equations to represent the problem.</p>	<p><b>Chapter 6 Fractions: Addition</b> 6-1 Model Addition with Unlike Denominators—pp. 122-123 6-2 Add Fractions: Unlike Denominators—pp. 124-125 6-3 Fraction Addition: Estimation and Reasonableness—pp. 126-127 6-4 Add Mixed Numbers—pp. 130-131 6-6 Rename Mixed Number Sums—pp. 134-135</p> <p><b>Chapter 7 Fractions: Subtraction</b> 7-1 Model Subtraction of Fractions with Unlike Denominators—pp. 142-143 7-2 Subtract Fractions: Unlike Denominators—pp. 144-145 7-3 Subtract Fractions: Estimation and Reasonableness—pp. 146-147 7-5 Estimate Sums and Differences of Mixed Numbers—pp. 152-153 7-7 Subtract Mixed Numbers: Rename Fractions—pp. 156-157 7-8 Subtract Mixed Numbers: Rename Whole Numbers and Fractions—pp. 158-159</p> <p><b>Chapter 9 Fractions: Division</b> 9-6 Word Problems Involving Fraction Division—pp. 210-211</p>
<p><b>M.NF.5.1.3</b> Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result <math>2/5 + 1/2 = 3/7</math>, by observing that <math>3/7 \leq 1/2</math>.</p>	<p><b>Chapter 6 Fractions: Addition</b> 6-3 Fraction Addition: Estimation and Reasonableness—pp. 126-127</p> <p><b>Chapter 7 Fractions: Subtraction</b> 7-3 Subtract Fractions: Estimation and Reasonableness—pp. 146-147 7-5 Estimate Sums and Differences of Mixed Numbers—pp. 152-153</p>

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STANDARD 3 – NUMBER AND OPERATIONS – FRACTIONS (NF)	
Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
M.NF.5.2 Apply and extend previous understands of multiplication and division to multiply and divide fractions.	
<b>M.NF.5.2.1</b> Interpret a fraction as division of the numerator by the denominator ( $a/b = a \div b$ ).	<b>Chapter 5 Number Theory and Fractions</b> 5-8 Interpret a Remainder—pp. 114-115
<b>M.NF.5.2.2</b> Solve word problems involving divisions of whole numbers leading to answers in the form of fractions a mixed number.	<b>Chapter 5 Number Theory and Fractions</b> 5-8 Interpret a Remainder—pp. 114-115
<b>M.NF.5.2.3</b> By using visual fraction models or equations to represent the problem. For example, interpret $\frac{3}{4}$ as the result of dividing 3 by 4, noting that $\frac{3}{4}$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $\frac{3}{4}$ . If 9 people want to share a 50-pound sack of rice equally by weight how many pounds of rice should each person get? Between what two whole numbers where does your answer lie?	<b>Chapter 5 Number Theory and Fractions</b> 5-8 Interpret a Remainder—pp. 114-115 <b>Chapter 8 Fractions: Multiplication</b> 8-6 Rename Mixed Numbers as Fractions—pp. 180-181 8-7 Estimate Products with Mixed Numbers—pp. 182-183
<b>M.NF.5.2.4</b> Apply and extend previous understandings of multiplications to multiply a fraction or whole number by a fraction.	<b>Chapter 8 Fractions: Multiplication</b> 8-1 Model Multiplying Fractions—pp. 168-169 8-2 Multiply Fractions by Fractions—pp. 170-171 8-3 Multiply Fractions and Whole Numbers—pp. 172-173 8-5 Common Factors in Products—pp. 176-177 8-8 Multiply Fractions and Mixed Numbers—pp. 184-185 8-9 Multiply Mixed Numbers—pp. 186-187
<b>M.NF.5.2.5</b> Interpret the product $(a/b) \times q$ into $b$ equal parts, equivalently, as the result of a sequence of operations $a \times q \div b$ . For example, using a visual fraction model to show $(\frac{2}{3}) \times 4 = \frac{8}{3}$ , and create a story context for this equation. Do the same with $(\frac{2}{3}) \times (\frac{4}{5}) = \frac{8}{15}$ .	<b>Chapter 8 Fractions: Multiplication</b> 8-1 Model Multiplying Fractions—pp. 168-169 8-2 Multiply Fractions by Fractions—pp. 170-171 8-3 Multiply Fractions and Whole Numbers—pp. 172-173 8-5 Common Factors in Products—pp. 176-177 8-8 Multiply Fractions and Mixed Numbers—pp. 184-185 8-9 Multiply Mixed Numbers—pp. 186-187

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## STANDARD 3 – NUMBER AND OPERATIONS — FRACTIONS (NF)

Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
<p><b>M.NF.5.2 Apply and extend previous understands of multiplication and division to multiply and divide fractions.</b></p>	
<p><b>M.NF.5.2.6</b> Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths to find areas of rectangles, and represent fraction products as rectangular areas.</p>	<p><b>Chapter 8 Fractions: Multiplication</b> 8-10 Find the Area of a Rectangle—pp. 188-189</p>
<p><b>M.NF.5.2.7</b> Interpret multiplication as scaling (resizing)</p>	<p><b>Chapter 8 Fractions: Multiplication</b> 8-4 Scaling Fractions—pp. 174-175</p>
<p><b>M.NF.5.2.8</b> Compare the size of a product to the size of the other factor, without performing the indicated multiplication.</p>	<p><b>Chapter 8 Fractions: Multiplication</b> 8-4 Scaling Fractions—pp. 174-175</p>
<p><b>M.NF.5.2.9</b> Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case).</p>	<p><b>Chapter 8 Fractions: Multiplication</b> 8-4 Scaling Fractions—pp. 174-175</p>
<p><b>M.NF.5.2.10</b> Explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence <math>a/b = (n \times a) / (n \times b)</math> to the effect of multiplying <math>a/b</math> by 1.</p>	<p><b>Chapter 8 Fractions: Multiplication</b> 8-4 Scaling Fractions—pp. 174-175</p>
<p><b>M.NF.5.2.11</b> Solve real world problems involving multiplication of fractions and mixed numbers. For example, by using visual fractions models or equations to represent the problem.</p>	<p><b>Chapter 8 Fractions: Multiplication</b> 8-2 Multiply Fractions by Fractions—pp. 170-171 8-3 Multiply Fractions and Whole Numbers—pp. 172-173</p> <p><b>Chapter 9 Fractions: Division</b> 9-6 Word Problems Involving Fraction Division—pp. 210-211</p>

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**STANDARD 3 – NUMBER AND OPERATIONS — FRACTIONS (NF)**

Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
<p><b>M.NF.5.2 Apply and extend previous understands of multiplication and division to multiply and divide fractions.</b></p>	
<p><b>M.NF.5.2.12</b> Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.</p>	<p><b>Chapter 9 Fractions: Division</b>                      9-1 Divide Whole Numbers by Unit Fractions—pp. 198-199                      9-2 Reciprocals—pp. 200-201                      9-3 Divide Whole Numbers by Fractions—pp. 202-203                      9-5 Divide Fractions by Whole Numbers—pp. 208-209</p>
<p><b>M.NF.5.2.13</b> Interpret division of a unit fraction by a non-zero whole number and compute such quotients. For example, create a story context for <math>(1/3) \div 4 = 1/12</math> because <math>(1/12) \times 4 = 1/3</math>.</p>	<p><b>Chapter 9 Fractions: Division</b>                      9-5 Divide Fractions by Whole Numbers—pp. 208-209</p>
<p><b>M.NF.5.2.14</b> Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story content for <math>4 \div (1/5) = 20</math> because <math>20 \times (1/5) = 4</math>.</p>	<p><b>Chapter 9 Fractions: Division</b>                      9-1 Divide Whole Numbers by Unit Fractions—pp. 198-199                      9-2 Reciprocals—pp. 200-201                      9-3 Divide Whole Numbers by Fractions—pp. 202-203</p>
<p><b>M.NF.5.2.15</b> Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions. For example, by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share <math>1/2</math> lb. of chocolate equally? How many <math>1/3</math> cup servings are in 2 cups of raisins?</p>	<p><b>Chapter 9 Fractions: Division</b>                      9-5 Divide Fractions by Whole Numbers—pp. 208-209                      9-6 Word Problems Involving Fraction Division—pp. 210-211</p>

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STANDARD 4 – MEASUREMENT AND DATA (MD)	
Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
<b>M.MD.5.2 Represent and interpret data.</b>	
<b>M.MD.5.2.1</b> Make a line plot to display a data set of measurements in fractions of a unit, ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ).	<b>Chapter 17 Graphs and Data</b> 17-1 Line Plots with Whole Numbers and Decimals— pp. 380–381
<b>M.MD.5.2.2</b> Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, give different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.	<b>Chapter 17 Graphs and Data</b> 17-2 Line Plots with Fractions and Mixed Numbers— pp. 382–383
<b>M.MD.5.3 Geometric measurement: understand concepts of volume and relate volume to multiplications and to addition.</b>	
<b>M.MD.5.3.1</b> Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	<b>Chapter 16 Volume</b> 16-1 Solid Figures—pp. 360–361 16-2 Cubic Measure—pp. 362–363 16-3 Volumes of Rectangular Prisms—pp. 364–365
<b>M.MD.5.3.2</b> A cube with side length 1 unit, called a “unit cube” is said to have “one cubic unit” of volume, and can be used to measure volume.	<b>Chapter 16 Volume</b> 16-1 Solid Figures—pp. 360–361 16-2 Cubic Measure—pp. 362–363 16-3 Volumes of Rectangular Prisms—pp. 364–365
<b>M.MD.5.3.3</b> A solid figure which can be packed without gaps or overlaps using $n$ cubic units.	<b>Chapter 16 Volume</b> 16-2 Cubic Measure—pp. 362–363 16-3 Volumes of Rectangular Prisms—pp. 364–365
<b>M.MD.5.3.4</b> Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft. and improvised units.	<b>Chapter 16 Volume</b> 16-2 Cubic Measure—pp. 362–363 16-3 Volumes of Rectangular Prisms—pp. 364–365
<b>M.MD.5.3.5</b> Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	<b>Chapter 16 Volume</b> 16-3 Volumes of Rectangular Prisms—pp. 364–365 16-6 Problem Solving: Act It Out—pp. 372–373

## STANDARD 4 – MEASUREMENT AND DATA (MD)

Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
<p><b>M.MD.5.3 Geometric measurement: understand concepts of volume and relate volume to multiplications and to addition.</b></p>	
<p><b>M.MD.5.3.6</b> Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes.</p>	<p><b>Chapter 16 Volume</b> 16-3 Volumes of Rectangular Prisms—pp. 364-365 16-6 Problem Solving: Act It Out—pp. 372-373</p>
<p><b>M.MD.5.3.7</b> Show that the volume is the same as would be found by multiplying the height by the area of the base.</p>	<p><b>Chapter 16 Volume</b> 16-3 Volumes of Rectangular Prisms—pp. 364-365 16-6 Problem Solving: Act It Out—pp. 372-373</p>
<p><b>M.MD.5.3.8</b> Represent three whole - number products as volume. For example, to represent the associative property of multiplication.</p>	<p><b>Chapter 16 Volume</b> 16-3 Volumes of Rectangular Prisms—pp. 364-365 16-6 Problem Solving: Act It Out—pp. 372-373</p>
<p><b>M.MD.5.3.9</b> Apply the formulas <math>V = l \times W \times b</math> and <math>V = b \times b</math> for rectangular prisms with whole - number edge lengths in the context of solving real world and mathematical problems.</p>	<p><b>Chapter 16 Volume</b> 16-4 Volume Formulas—pp. 368-369</p>
<p><b>M.MD.5.3.10</b> Recognize volume as additive.</p>	<p><b>Chapter 16 Volume</b> 16-5 Volume of Composite Figures—pp. 370-371</p>
<p><b>M.MD.5.3.11</b> Find volumes of solid figures composed of two - non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.</p>	<p><b>Chapter 16 Volume</b> 16-5 Volume of Composite Figures—pp. 370-371</p>

**STANDARD 5 – GEOMETRY (G)**

Grade 5 Standard & Benchmark Description	Sadlier Math, Grade 5
<b>M.G.5.1 Graph points on the coordinate plane to solve real-world and mathematical problems.</b>	
<p><b>M.G.5.1.1</b> Use a pair of perpendicular number lines, called axes, to define a coordinate system with the intersection of the line (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates.</p>	<p><b>Chapter 17 Graphs and Data</b> 17-3 The Coordinate Plane—pp. 386–387</p>
<p><b>M.G.5.1.2</b> Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond. For example, <math>x</math> - axis and <math>x</math> - coordinate, <math>y</math> - axis and <math>y</math> - coordinate.</p>	<p><b>Chapter 17 Graphs and Data</b> 17-3 The Coordinate Plane—pp. 386–387</p>
<p><b>M.G.5.1.3</b> Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p>	<p><b>Chapter 17 Graphs and Data</b> 17-4 Using Coordinate Graphs—pp. 388–389</p>
<b>M.G.5.2 Classify two-dimensional figures into categories based on their properties.</b>	
<p><b>M.G.5.2.1</b> Classify two-dimensional figures in a hierarchy based on properties.</p>	<p><b>Chapter 15 Geometry</b> 15-1 Polygons—pp. 342–343 15-2 Triangles—pp. 344–345 15-3 Quadrilaterals—pp. 348–349 15-4 Classify Quadrilaterals—pp. 350–351 15-5 Problem Solving: Use a Model—pp. 352–353</p>