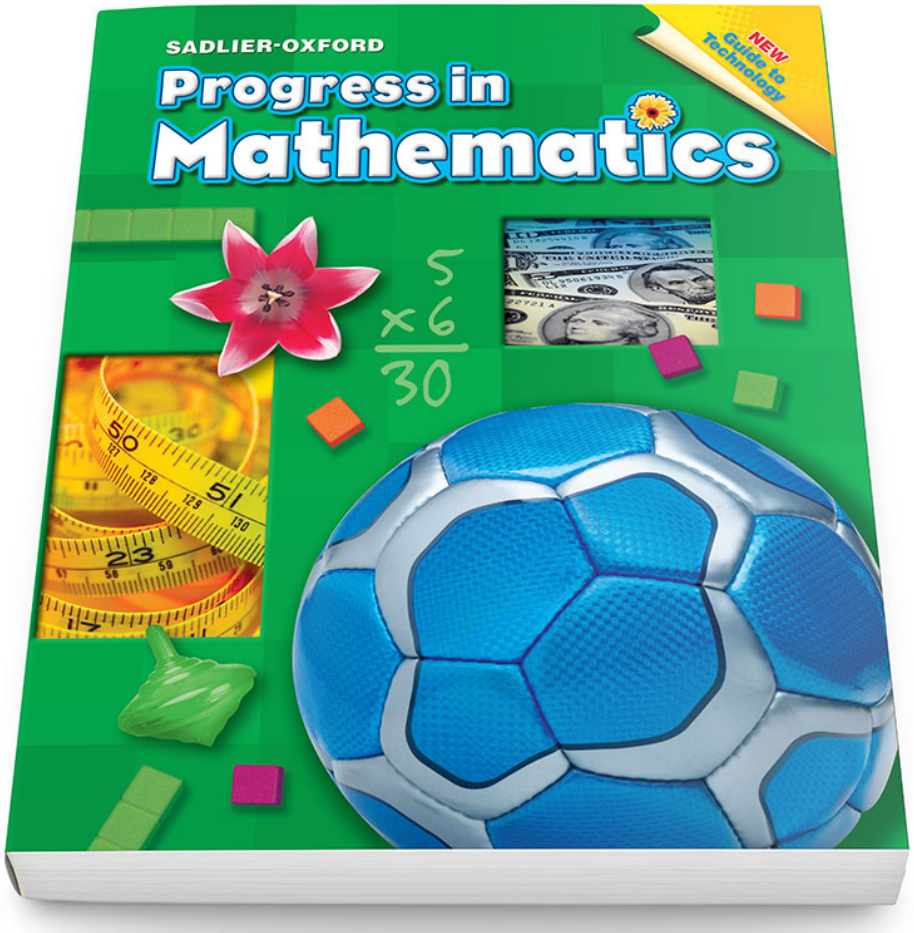
Progress in Mathematics

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

Grade 3



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STANDARD 1 – OPERATIONS AND ALGEBRAIC THINKING (OA)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.OA.3.1 Represent and solve problems involving multiplications and divisions.	
M.OA.3.1.1 Interpret products of whole numbers. For example, interpret 5 x 7 as the total number of objects in 5 groups of 7 objects each.	**Chapter 4 Multiplication Concepts and Facts** 4-1 Understand Multiplication—pp. 132–133 4-2 One and Zero as Factors—pp. 134–135 4-3 Multiply Twos—pp. 136–137 4-4 Multiply Threes—pp. 138–139 4-5 Multiply Fours—pp. 140–141 4-6 Multiply Fives—pp. 142–143 4-6A Multiplication and Arrays—Online 4-7 Multiply Cents—pp. 144–145 **Chapter 6 More Multiplication and Division Facts** 6-1 Factors and Products—p. 190 6-2 Multiply Sixes—p. 191 6-3 Multiply Sevens—pp. 192–193 6-4 Multiply Eights—pp. 194–195 6-5 Multiply Nines—pp. 196–197
M.OA.3.1.2 Interpret whole-number quotients of whole numbers. For example, interpret 56 ÷ 8 as the of objects in each share when 56 objects are portioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.	**Chapter 5 Division Concepts and Facts** 5-1 Understand Division—pp. 162–163 5-2 One and Zero in Division—pp. 164–165 5-3 Divide by 2—pp. 166–167 5-4 Divide by 3—pp. 168–169 5-5 Divide by 4—pp. 170–171 5-6 Divide by 5—pp. 172–173 5-6A Division Stories—Online 5-8 Divide Cents—pp. 176–177 **Chapter 6 More Multiplication and Division Facts** 6-7 Division Review—pp. 200–201 6-8 Divide by 6—pp. 202–203 6-9 Divide by 7—pp. 204–205 6-10 Divide by 8—pp. 206–207 6-11 Divide by 9—pp. 208–209
M.OA.3.1.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **M.OA.3.1.4** Using drawings and equations with a symbol for the unknown to represent the problems, solve word problems involving equal groups, arrays, and measurement quantities.	**Chapter 4 Multiplication Concepts and Facts** 4-3 Multiply Twos—pp. 136–137 4-4 Multiply Threes—pp. 138–139 4-5 Multiply Fours—pp. 140–141 4-6 Multiply Fives—pp. 142–143 4-6A Multiplication and Arrays—Online 4-6B Use a Bar Diagram to Multiply—Online 4-7 Multiply Cents—pp. 144–145

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Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.OA.3.1 Represent and solve problems involving multiplications and divisions.	
	Chapter 5 Division Concepts and Facts 5-1 Understand Division—pp. 162–163 5-3 Divide by 2—pp. 166–167 5-4 Divide by 3—pp. 168–169 5-5 Divide by 4—pp. 170–171 5-6 Divide by 5—pp. 172–173 5-6A Division Stories—Online 5-8 Divide Cents—pp. 176–177 5-10 Problem Solving Strategy: Write a Number Sentence—pp. 180–181 5-11 Problem Solving Applications: Mixed Review—pp. 182–183 **Chapter 6 More Multiplication and Division Facts** 6-4 Multiply Eights—pp. 194–195 6-12A Missing Operands Multiplication & Division—Online 6-14 Apply Facts—pp. 214–215 6-15 Problem Solving Strategy: Guess and Test—pp. 216–217 **Chapter 8 Measurement and Time** 8-11 Rename Units of Measure—pp. 280–281 **Chapter 9 Geometry** 9-12B Measurement Problems—Online
M.OA.3.1.5 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true. 8 x ☐ = 48, 5 = ☐ + 3, 6 x 6 = ☐.	**Chapter 4 Multiplication Concepts and Facts** 4-10 Missing Factors—pp. 150–151 **Chapter 6 More Multiplication and Division Facts** 6-12A Missing Operands: Multiplication & Division—Online 6-13 Fact Families—pp. 212–213 **Chapter 10 Multiply by One Digit** 10-4 Multiply with Models—pp. 342–343

STANDARD 1 – OPERATIONS AND ALGEBRAIC THINKING (OA)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.OA.3.2 Understand properties of multiplication and the relationship between multiplication and division.	
M.OA.3.2.1 Apply properties of operations as strategies to multiply and divide. For example, if 6 x 4 = 24 is the known, then 4 x 6 = 24 is also known (Commutative Property of Multiplication). For example, 3 x 5 x 2 can be found by 3 x 5 = 15, then 15 x 2 = 30, or by 5 x 2 = 10, then 3 x 10 = 30 (Associative Property of Multiplication); for example, knowing that 8 x 5 = 40 and 8 x 2 = 16, one can find 8 x 7 as 8 x (5 + 2) = (8 x 5) + (8 x 2) = 40 + 16 = 56 (Distributive Property).	**Chapter 4 Multiplication Concepts and Facts** 4-2 One and Zero as Factors (Identity Property of Multiplication, Zero Property of Multiplication)—pp. 134–135 4-9 Order in Multiplication (Commutative Property of Multiplication)—pp. 148–149 **Chapter 6 More Multiplication and Division Facts** 6-5A Break Apart Numbers to Multiply (Distributive Property)—Online 6-6 Multiply Three Numbers (Associative Property of Multiplication)—pp. 198–199 6-12A Missing Operands: Multiplication & Division—Online 6-13 Fact Families—pp. 212–213 **Chapter 9 Geometry** 9-11B Area of Composite Shapes (Distributive Property)—Online
M.OA.3.2.2 Understand division as an unknown-factor problem. For example, 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.	**Chapter 5 Division Concepts and Facts** 5-7 Relate Multiplication and Division—pp. 174–175 **Chapter 6 More Multiplication and Division Facts** 6-12A Missing Operands: Multiplication & Division—Online 6-13 Fact Families—pp. 212–213
M.OA.3.3 Multiply and Divide within 100.	
M.OA.3.3.1 Fluently multiple and divide within 100, using strategies such as the relationship between multiplication and division. For example, knowing that 8 x 5 = 40, one knows 40 ÷ 5 = 8 or properties of operations.	**Chapter 5 Division Concepts and Facts** 5-7 Relate Multiplication and Division—pp. 174–175 **Chapter 6 More Multiplication and Division Facts** 6-5B Multiplication Tables—Online 6-7 Division Review—pp. 200–201 6-13 Fact Families—pp. 212–213

STANDARD 1 – OPERATIONS AND ALGEBRAIC THINKING (OA)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.OA.3.4 Solve problems involving the four operations and identify and explain patterns in arithmetic.	
M.OA.3.4.1 Solve two-steps word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity.	**Introduction to Problem Solving** Check: Test that the solution is reasonable—p. 2 Problem-Solving Strategy: More Than One Step—p. 25 **Chapter 2 Addition** 2-2 Missing Addends—pp. 66–67 2-15 Problem Solving Strategy: Use Simpler Numbers—pp. 90–91 **Chapter 3 Subtraction** 3-2 Subtract: No Regrouping—pp. 102–103 3-7 Regroup Twice in Subtraction—pp. 112–113 3-12 Problem Solving Strategy: Choose the Operation—pp. 122–123 **Chapter 4 Multiplication Concepts and Facts** 4-8 Sums, Differences, and Products—pp. 146–147 4-11 Problem Solving Strategy: Use More Than One Step—pp. 152–153 4-12 Problem Solving Applications: Mixed Review—pp. 154–155 **Chapter 6 More Multiplication and Division Facts** 6-4 Multiply Eights—pp. 194–195 6-14A Checking Reasonableness of Answers—Online 6-14B Writing Variable Expressions—Online 6-15 Problem Solving Strategy: Guess and Test—pp. 216–217 **Chapter 8 Measurement and Time** 8-11 Rename Units of Measure—pp. 280–281 **Chapter 14 Get Ready for Algebra** 14-7 Problem Solving Strategy: Use More Than One Step—pp. 452–453 14-7 Problem Solving Strategy: Use More Than One Step—pp. 452–453 14-8 Problem Solving Applications: Mixed Review—pp. 454–455

STANDARD 1 – OPERATIONS AND ALGEBRAIC THINKING (OA)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3

M.OA.3.4 Solve problems involving the four operations and identify and explain patterns in arithmetic.

M.OA.3.4.2 Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	**Introduction to Problem Solving** Check: Test that the solution is reasonable—p. 2 Problem-Solving Strategy: More Than One Step—p. 25 **Chapter 2 Addition** 2-6 Regroup Tens (answer is reasonable)—p. 74 2-4 Estimate Sums—pp. 70–71 2-8 Add Regroup Twice: Add: Use Paper and Pencil (answer is reasonable)—pp. 76–77 2-9 Three-Digit Addition (answer is reasonable)—pp. 78–79 2-11 Mental Math—pp. 82–83 2-13 Three or More Addends (answer is reasonable)—pp. 86–87 2-14 Add Larger Numbers (answer is reasonable)—pp. 88–89 **Chapter 3 Subtraction** 3-3 Estimate Differences—pp. 104–105 3-4 Subtract with Regrouping (estimating to determine if an exact answer is reasonable)—pp. 106–107 3-5 Regroup Hundreds and Dollars—pp. 108–109 3-8 Regroup with Zeros (answer is reasonable)—pp. 114–115 3-11 Choose a Computation Method (answer is reasonable)—pp. 120–121 3-12 Problem Solving Strategy: Choose the Operation (answer is reasonable)—pp. 122–123 **Chapter 6 More Multiplication and Division Facts** 6-14A Checking Reasonableness of Answers—Online 6-14B Writing Variable Expressions—Online **Chapter 10 Multiply by One Digit** 10-3 Multiply Two Digits (answer is reasonable)—pp. 340–341 10-4 Multiply with Models (answer is reasonable)—pp. 342–343 10-5 Multiply with Regrouping (answer is reasonable)—pp. 344–345 10-7 Multiply Three Digits (answer is reasonable)—pp. 348–349 *continued*

STANDARD 1 – OPERATIONS AND ALGEBRAIC THINKING (OA)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.OA.3.4 Solve problems involving the four operations and identify and explain patterns in arithmetic.	
	10-9 Regroup Twice in Multiplication (answer is reasonable)—pp. 352–353 **Chapter 11 Divide by One Digit** 11-6 Estimate Quotients—pp. 374–375
M.OA.3.4.3 Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. For example, identify that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.	**Skills Update** Patterns—p. 7 **Chapter 1 Place Value** 1-4 Counting Patterns—pp. 36–37 **Chapter 4 Multiplication Concepts and Facts** 4-3 Multiply Twos—pp. 136–137 4-4 Multiply Threes—pp. 138–139 4-5 Multiply Fours—pp. 140–141 4-6 Multiply Fives—pp. 142–143 Enrichment: Predict Patterns of Sums—p. 157 **Chapter 5 Division Concepts and Facts** 5-3 Divide by 2—pp. 166–167 5-4 Divide by 3—pp. 168–169 5-5 Divide by 4—pp. 170–171 5-6 Divide by 5—pp. 172–173 6-11 Divide by 9—pp. 208–209 6-12 Operation Patterns—pp. 210–211 **Chapter 10 Multiply by One Digit** 10-1 Multiplication Patterns—pp. 336–337 10-1A Multiply with Multiples—Online 10-2 Estimate Products—p. 338 **Chapter 13 Decimals** 13-8 Problem Solving Strategy: Find a Pattern—pp. 430–431 **Chapter 14 Get Ready for Algebra** 14-1 Divisibility—pp. 440–441

STANDARD 2 – NUMBERS AND OPERATION IN BASE TEN (NBT)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.NBT.3.1 Use place value understanding and properties of operations to perform multi-digit arithmetic.	
M.NBT.3.1.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	**Chapter 1 Place Value** 1-9 Round Numbers—pp. 46–47 1-12 Compare and Round Money—pp. 52–53 **Chapter 2 Addition** 2-4 Estimate Sums—pp. 70–71 2-5 Add with Regrouping (estimate by rounding)—pp. 72–73 2-8 Add Regroup Twice (estimate by rounding)—p. 76 2-9 Three-Digit Addition (estimate by rounding)—pp. 78–79 2-10 More Regrouping in Addition (estimate by rounding)—p. 80 2-12 Regroup Hundreds as Thousands—p. 85 2-13 Three or More Addends (estimate by rounding)—pp. 86–87 2-14 Add Larger Numbers (estimate by rounding)—p. 88 2-15 Problem Solving Strategy: Use Simpler Numbers—pp. 90–91 **Chapter 3 Subtraction** 3-3 Estimate Differences—pp. 104–105 3-4 Subtract with Regrouping (estimate by rounding)—pp. 106–107 3-6 Regroup Once in Subtraction (estimate by rounding)—pp. 110–111 3-7 Regroup Twice in Subtraction (estimate by rounding)—pp. 112–113 3-8 Regroup with Zeros (estimate by rounding)—pp. 114–115 3-10 Subtract Larger Numbers (estimate by rounding)—pp. 118–119 3-11 Choose a Computation Method (estimate by rounding)—pp. 120–121 3-12 Problem Solving Strategy: Choose the Operation (estimate by rounding)—p. 122 **Chapter 10 Multiply by One Digit** 10-2 Estimate Products (rounding)—pp. 338–339

STANDARD 2 – NUMBERS AND OPERATION IN BASE TEN (NBT)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.NBT.3.1 Use place value understanding and properties of operations to perform multi-digit arithmetic.	
M.NBT.3.1.2 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.	**Skills Update** Addition Facts Through 18—p. 4 Subtraction Facts Through 18—p. 5 **Chapter 2 Addition** 2-3 Add No Regrouping—pp. 68–69 2-5 Add with Regrouping—pp. 72–73 2-6 Regroup Tens—p. 74 2-7 Add Regroup Tens—p. 75 2-8 Add Regroup Twice—pp. 76–77 2-8A Addition Properties—Online 2-9 Three-Digit Addition—pp. 78–79 2-10 More Regrouping in Addition—pp. 80–81 2-11 Mental Math—pp. 82–83 **Chapter 3 Subtraction** 3-2 Subtract No Regrouping—pp. 102–103 3-3 Estimate Differences—pp. 104–105 3-4 Subtract with Regrouping—pp. 106–107 3-5 Regroup Hundreds and Dollars—pp. 108–109 3-6 Regroup Once in Subtraction—pp. 110–111 3-7 Regroup Twice in Subtraction—pp. 112–113 3-8 Regroup with Zeros—pp. 114–115 3-12A Missing Operands—Online
M.NBT.3.1.3 Multiply one-digit whole numbers by multiples of 10 in the range 10 – 90. For example, 9 x 80, 5 x 60 using strategies based on place value and properties of operations.	**Skills Update** Count by 2s, 5s, 10s—p. 2 **Chapter 1 Place Value** 1-4 Counting Patterns—pp. 36–37 **Chapter 6 More Multiplication and Division Facts** 6-5B Multiplication Tables—Online

STANDARD 3 – NUMBERS AND OPERATIONS – FRACTIONS (NF)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.NF.3.1 Develop understanding of fractions as numbers.	
M.NF.3.1.1 Grade 3 expectations for fractions are limited to denominators of 2, 3, 4, 6, and 8. **M.NF.3.1.2** Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into b equal parts.	**Skills Update** Fractions: Part of a Whole—p. 8 **Chapter 12 Fractions** 12-1 Fractions—pp. 386–387 12-1C Fractions on a Number Line—Online 12-4 Compare Fractions—pp. 392–393 12-5 Order Fractions—pp. 394–395
M.NF.3.1.3 Understand a fraction *a*/*b* as the quantity formed by a parts of size 1/*b*.	**Chapter 12 Fractions** 12-1 Fractions—pp. 386–387
M.NF.3.1.4 Understand a fraction as a number on the number line; represent fractions on a number line diagram.	**Chapter 12 Fractions** 12-1C Fractions on a Number Line—Online 12-4 Compare Fractions—pp. 392–393 12-5 Order Fractions—pp. 394–395
M.NF.3.1.5 Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and portioning 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 12 Fractions** 12-1C Fractions on a Number Line—Online 12-4 Compare Fractions—pp. 392–393 12-11 Problem Solving Strategy: Use a Drawing/ Model—pp. 406–407
M.NF.3.1.6 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 12 Fractions** 12-1C Fractions on a Number Line—Online 12-4 Compare Fractions—pp. 392–393
M.NF.3.1.7 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.	**Chapter 12 Fractions** 12-2 Equivalent Fractions—pp. 388–389 12-2A Model Equivalent Fractions—Online
M.NF.3.1.8 Understand two fractions as equivalent (equal) if they are the same size or the same point on a number line.	**Chapter 12 Fractions** 12-2 Equivalent Fractions—pp. 388–389 12-2A Model Equivalent Fractions—Online

STANDARD 3 – NUMBERS AND OPERATIONS – FRACTIONS (NF)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.NF.3.1 Develop understanding of fractions as numbers.	
M.NF.3.1.9 Recognize and generate as equivalent fractions, for example, 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, for example, by using a visual fraction model.	**Chapter 12 Fractions** 12-2 Equivalent Fractions—pp. 388–389 12-2A Model Equivalent Fractions—Online
M.NF.3.1.10 Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. Example: Express 3 in the form 3 = 3/1, recognize that 6/1 = 6; locate 4/4 and 1 at the same point on a number line.	**Chapter 12 Fractions** 12-2 Equivalent Fractions—pp. 388–389 12-2A Model Equivalent Fractions—Online 12-7 Mixed Numbers—pp. 398–399
M.NF.3.1.11 Compare two fractions with the same numerator or the same denominator by reasoning about their size.	**Chapter 12 Fractions** 12-3A Compare Like Fractions Using Models—Online 12-4 Compare Fractions—pp. 392–393 12-4A Compare Unlike Fractions Using Fraction Strips—Online 12-4B Fraction Sense—Online
M.NF.3.1.12 Recognize that comparisons of fractions are valid only when two fractions, refer to the same whole.	**Chapter 12 Fractions** 12-3A Compare Like Fractions Using Models—Online 12-4 Compare Fractions—pp. 392–393 12-4A Compare Unlike Fractions Using Fraction Strips—Online 12-4B Fraction Sense—Online
M.NF.3.1.13 Record the results of comparisons with the symbols ≥, =, or ≤, and justify the conclusion, for example by using a visual fraction model.	**Chapter 12 Fractions** 12-3A Compare Like Fractions Using Models—Online 12-4 Compare Fractions—pp. 392–393 12-4A Compare Unlike Fractions Using Fraction Strips—Online 12-4B Fraction Sense—Online

STANDARD 3 – NUMBERS AND OPERATIONS – FRACTIONS (NF)

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M.NF.3.1.9 Recognize and generate as equivalent fractions, for example, 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, for example, by using a visual fraction model.	**Chapter 12 Fractions** 12-2 Equivalent Fractions—pp. 388–389 12-2A Model Equivalent Fractions—Online
M.NF.3.1.10 Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. Example: Express 3 in the form 3 = 3/1, recognize that 6/1 = 6; locate 4/4 and 1 at the same point on a number line.	**Chapter 12 Fractions** 12-2 Equivalent Fractions—pp. 388–389 12-2A Model Equivalent Fractions—Online 12-7 Mixed Numbers—pp. 398–399
M.NF.3.1.11 Compare two fractions with the same numerator or the same denominator by reasoning about their size.	**Chapter 12 Fractions** 12-3A Compare Like Fractions Using Models—Online 12-4 Compare Fractions—pp. 392–393 12-4A Compare Unlike Fractions Using Fraction Strips—Online 12-4B Fraction Sense—Online
M.NF.3.1.12 Recognize that comparisons of fractions are valid only when two fractions, refer to the same whole.	**Chapter 12 Fractions** 12-3A Compare Like Fractions Using Models—Online 12-4 Compare Fractions—pp. 392–393 12-4A Compare Unlike Fractions Using Fraction Strips—Online 12-4B Fraction Sense—Online
M.NF.3.1.13 Record the results of comparisons with the symbols ≥, =, or ≤, and justify the conclusion, for example by using a visual fraction model.	**Chapter 12 Fractions** 12-3A Compare Like Fractions Using Models—Online 12-4 Compare Fractions—pp. 392–393 12-4A Compare Unlike Fractions Using Fraction Strips—Online 12-4B Fraction Sense—Online

STANDARD 4 – MEASUREMENT AND DATA (MD)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.MD.3.1 Solve problems involving money, measurement, and estimation of intervals of time, liquid volumes, and masses of objects.	
M.MD.3.1.1 Work with time and money. Tell and write time to the nearest minute.	**Skills Update** Money Less Than $1.00—p. 3 Hour, Half Hour—p. 14 A.M., P.M.—p. 15 **Chapter 1 Place Value** 1-10 Coins and Bills—pp. 48–49 1-11 Make and Count Change—pp. 50–51 1-12 Compare and Round Money—pp. 52–53 **Chapter 8 Measurement and Time** 8-15 Minutes—pp. 288–289 8-16 Elapsed Time—pp. 290–291 8-16A Time on a Number Line—Online
M.MD.3.1.2 Measure time intervals in minutes (within 90 minutes).	**Chapter 8 Measurement and Time** 8-15 Minutes—pp. 288–289 8-16 Elapsed Time—pp. 290–291 8-16A Time on a Number Line—Online
M.MD.3.1.3 Solve problems involving addition and subtraction of time intervals in minutes, for example, by representing the problem on a number line diagram or clock.	**Chapter 8 Measurement and Time** 8-15 Minutes—pp. 288–289 8-16 Elapsed Time—pp. 290–291 8-16A Time on a Number Line—Online
M.MD.3.1.4 Solve word problems by adding and subtracting within 1,000 dollars with dollars, and cents with cents (not using dollars and cents simultaneously).	**Chapter 1 Place Value** 1-10 Coins and Bills—pp. 48–49 1-11 Make and Count Change—pp. 50–51 1-12 Compare and Round Money—pp. 52–53 **Chapter 2 Addition** 2-1 More Than Two Addends—pp. 64–65 2-3 Add No Regrouping—pp. 68–69 2-4 Estimate Sums—pp. 70–71 2-5 Add with Regrouping—pp. 72–73 2-7 Add Regroup Tens—p. 75 2-9 Three-Digit Addition—pp. 78–79 2-10 More Regrouping in Addition—pp. 80–81 2-13 Three or More Addends—pp. 86–87 2-14 Add Larger Numbers—pp. 88–89 *continued*

STANDARD 4 – MEASUREMENT AND DATA (MD)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.MD.3.1 Solve problems involving money, measurement, and estimation of intervals of time, liquid volumes, and masses of objects.	
	Chapter 3 Subtraction 3-1 Subtraction Concepts—pp. 100–101 3-2 Subtract: No Regrouping—pp. 102–103 3-3 Estimate Differences—pp. 104–105 3-4 Subtract with Regrouping—pp. 106–107 3-5 Regroup Hundreds and Dollars—pp. 108–109 3-6 Regroup Once in Subtraction—pp. 110–111 3-7 Regroup Twice in Subtraction—pp. 112–113 3-8 Regroup with Zeros—pp. 114–115 3-9 Regroup Thousands as Hundreds—pp. 116–117 3-10 Subtract Larger Numbers—pp. 118–119 3-11 Choose a Computation Method—pp. 120–121 3-12 Problem Solving Strategy: Choose the Operation—pp. 122–123
M.MD.3.1.5 Use the $ and ¢ symbol appropriately (not including decimal notation).	**Skills Update** Money Less Than $1.00—p. 3 **Chapter 1 Place Value** 1-10 Coins and Bills—pp. 48–49 1-11 Make and Count Change—pp. 50–51 1-12 Compare and Round Money—pp. 52–53
M.MD.3.1.6 Measure and estimate liquid volumes and masses of objects using standard units of grams, kilograms, and liters.	**Skills Update** Skills Update: Liter—p. 13 **Chapter 8 Measurement and Time** 8-9 Milliliter, Liter—pp. 276–277 8-10 Gram, Kilogram—pp. 278–279 8-10A Estimate and Measure Masses—Online
M.MD.3.1.7 Add, subtract, multiply or divide whole numbers to solve one-step word problems involving masses or volumes that are given in the same units, for example, by using drawing (such as a beaker with a measurement scale) to represent a problem.	**Chapter 8 Measurement and Time** 8-9 Milliliter, Liter—pp. 276–277 8-10 Gram, Kilogram—pp. 278–279 8-10A Estimate and Measure Masses—Online 8-11 Rename Units of Measure—pp. 280–281 8-19 Problem Solving Applications: Mixed Review—pp. 296–297 **Chapter 9 Geometry** 9-12 Volume—pp. 324–325 9-12A Estimate and Measure Volume—Online 9-12B Measurement Problems—Online

STANDARD 4 – MEASUREMENT AND DATA (MD)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.MD.3.2 Represent and interpret data.	
M.MD.3.2.1 Create scaled picture graphs to represent a data set with several categories.	**Skills Update** Read a Pictograph—p. 19 **Chapter 7 Statistics and Probability** 7-1 Pictographs—pp. 226–227
M.MD.3.2.2 Create scaled bar graphs to represent a data set with several categories.	**Skills Update** Read a Bar Graph—p. 20 **Chapter 7 Statistics and Probability** 7-2 Bar Graphs—pp. 228–229
M.MD.3.2.3 Solve one – and two steps "how many more" and "how many less" problems using information presented in the scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets, then determine how many more/less in two given categories.	**Skills Update** Read a Bar Graph—p. 20 **Chapter 7 Statistics and Probability** 7-2 Bar Graphs—pp. 228–229 7-2A Data and Two-Step Problems—Online 7-3 Surveys—pp. 230–231 7-8 Compare Data—pp. 240–241 7-13 Problem Solving Strategy: Use a Graph—pp. 250–251 7-14 Problem Solving Applications: Mixed Review—pp. 252–253
M.MD.3.2.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths on an inch. Show this data by creating a line plot, where the horizontal scale is marked off in appropriate units, whole numbers, halves, or quarters.	**Chapter 7 Statistics and Probability** 7-5 Line Plots—pp. 234–235 **Chapter 8 Measurement and Time** 8-1 Quarter Inch, Half Inch, Inch—pp. 260–261 8-12A Collect and Represent Data—Online
M.MD.3.3 Geometric measurement: Understand concepts of area and relate area to multiplication and to addition.	
M.MD.3.3.1 Recognize area as an attribute of plane figures and understand concepts of area measurement.	**Chapter 9 Geometry** 9-11 Area—pp. 322–323
M.MD.3.3.2 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 9 Geometry** 9-11 Area—pp. 322–323

STANDARD 4 – MEASUREMENT AND DATA (MD)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.MD.3.3 Geometric measurement: Understand concepts of area and relate area to multiplication and to addition.	
M.MD.3.3.3 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 9 Geometry** 9-11 Area—pp. 322–323 9-11A Area of a Rectangle—Online
M.MD.3.3.4 Measure areas by counting unit squares (square cm, square m, square in, square ft., and improvised units).	**Chapter 9 Geometry** 9-11 Area—pp. 322–323 9-11A Area of a Rectangle—Online
M.MD.3.3.5 Relate area to the operation of multiplication and addition.	**Chapter 9 Geometry** 9-11 Area—pp. 322–323 9-11A Area of a Rectangle—Online
M.MD.3.3.6 Find the area of a rectangle with whole-numbers side lengths by tiling it, and show that the area is the same as would be found by multiplying the side length.	**Chapter 9 Geometry** 9-11 Area—pp. 322–323 9-11A Area of a Rectangle—Online
M.MD.3.3.7 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 9 Geometry** 9-11 Area—pp. 322–323 9-11A Area of a Rectangle—Online
M.MD.3.3.8 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* x *b* and *a* x *c*.	**Chapter 9 Geometry** 9-11B Area of Composite Shapes—Online
M.MD.3.3.9 Recognize area as additive. Find the area of figures composed of rectangles by decomposing into non-overlapping rectangles and adding the area of the non-overlapping parts, applying this technique to solve real world problems.	**Chapter 9 Geometry** 9-11 Area—pp. 322–323 9-11A Area of a Rectangle—Online

STANDARD 4 – MEASUREMENT AND DATA (MD)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.MD.3.4 Geometric measure: Recognize perimeter as an attribute of plane figure and distinguish between linear and area measure.	
M.MD.3.4.1 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 9 Geometry** 9-10 Perimeter—pp. 320–321 9-11C Perimeter and Area—Online 9-11D Missing Dimensions—Online

STANDARD 4 – GEOMETRY (G)

Grade 3 Standard & Benchmark Description	*Progress in Mathematics*, Grade 3
M.G.3.1 Reason with shapes and their attributes.	
M.G.3.1.1 Draw and understand that shapes in different categories, for example, rhombuses, rectangles and squares may share attributes, i.e. (having four sides); and shared attributes can define a larger category (e.g. quadrilaterals).	**Chapter 9 Geometry** 9-3 Polygons and Circles—pp. 308–309 9-4 Triangles—pp. 310–311 9-4A Quadrilaterals—Online 9-14 Problem Solving Applications: Mixed Review—pp. 328–329
M.G.3.1.2 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 ¼ of the area of the shape.	**Skills Update** Fractions: Part of a Whole—p. 8 **Chapter 9 Geometry** 9-7 Symmetry—p. 316 **Chapter 12 Fractions** 12-1 Fractions—pp. 386–387 12-1A Use Fractions—Online 12-2 Equivalent Fractions—pp. 388–389