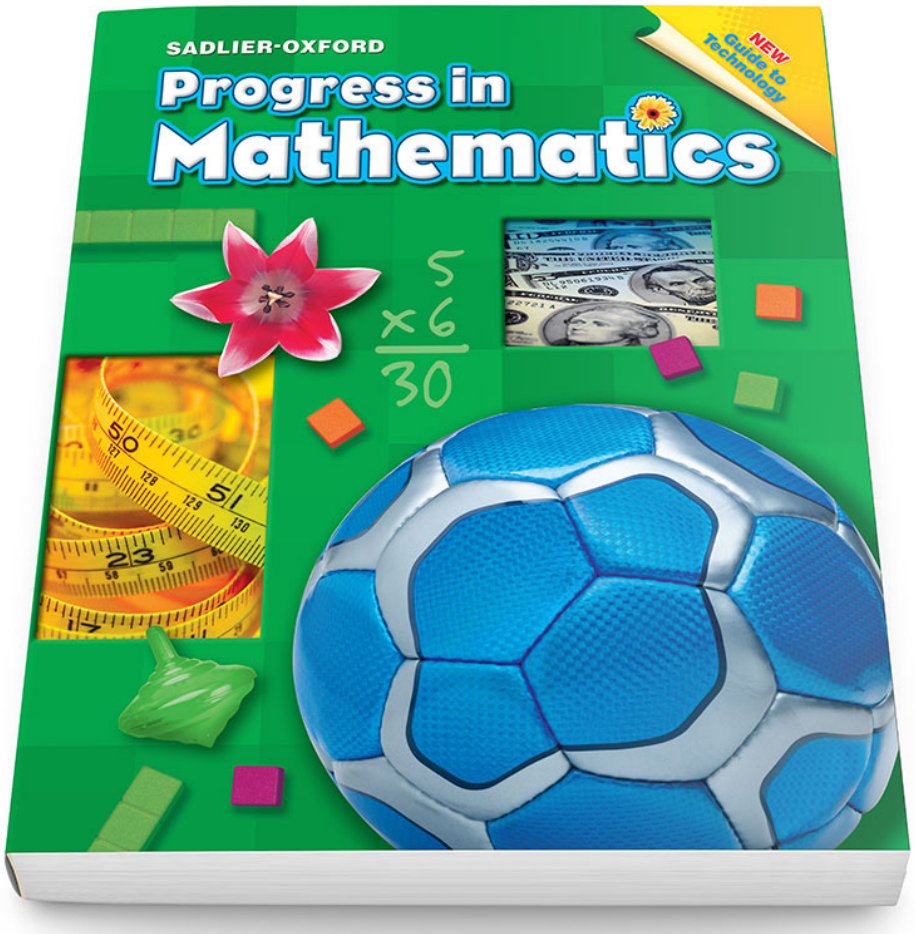
Progress in Mathematics

Correlation to the New York State
Next Generation Mathematics Learning Standards (2017)

Grade 3



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NY-3.OA OPERATIONS AND ALGEBRAIC THINKING

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
Represent and solve problems involving multiplication and division.	
NY-3.OA.1 Interpret products of whole numbers. e.g., Interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. Describe a context in which a total number of objects can be expressed as 5 × 7.	**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
NY-3.OA.2 Interpret whole-number quotients of whole numbers. e.g., Interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. Describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.	**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
NY-3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. *continued*	**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 *continued*

NY-3.OA OPERATIONS AND ALGEBRAIC THINKING

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
e.g., using drawings and equations with a symbol for the unknown number to represent the problem.	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
NY-3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. e.g., Determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = __ ÷ 3, 6 × 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
Understand properties of multiplication and the relationship between multiplication and division.	
NY-3.OA.5 Apply properties of operations as strategies to multiply and divide. e.g., • If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) • 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) • Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.) Note: Students need not use formal terms for these properties. Note: A variety of representations can be used when applying the properties of operations, which may or may not include parentheses. The area model (3.MD.7c) is a multiplication/division strategy that applies the distributive property (3.OA.5).	**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

NY-3.OA OPERATIONS AND ALGEBRAIC THINKING

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
NY-3.OA.6 Understand division as an unknown-factor problem. e.g., Find 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

Multiply and divide within 100.

NY-3.OA.7

NY-3.OA.7a Fluently solve single-digit multiplication and related divisions, using strategies such as the relationship between multiplication and division or properties of operations. e.g., Knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8.	**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
NY-3.OA.7b Know from memory all products of two one-digit numbers. Note: Fluency involves a mixture of just knowing some answers, knowing some answers from patterns, and knowing some answers from the use of strategies.	**Chapter 6 More Multiplication and Division Facts** *6-5B Multiplication Tables—Online

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

NY-3.OA.8 Solve two-step word problems posed with whole numbers and having whole-number answers using the four operations. Note: Two-step problems need not be represented by a single expression or equation.	**Introduction to Problem Solving** Problem-Solving Strategy: More Than One Step—p. 25 **Chapter 4 Multiplication Concepts and Facts** 4-11 Problem Solving Strategy: Use More Than One Step—pp. 152–153 4-12 Problem Solving Applications: Mixed Review—pp. 154–155

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NY-3.OA OPERATIONS AND ALGEBRAIC THINKING

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
	Chapter 14 Get Ready for Algebra 14-7 Problem Solving Strategy: Use More Than One Step—pp. 452–453 14-8 Problem Solving Applications: Mixed Review—pp. 454–455
NY-3.OA.8a Represent these problems using equations or expressions with a letter standing for the unknown quantity.	**Chapter 6 More Multiplication and Division Facts** *6-14B Writing Variable Expressions—Online **Chapter 14 Get Ready for Algebra** 14-2 Expressions and Variables—pp. 442–443 *14-2A Writing Variable Equations—Online
NY-3.OA.8b 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. 23 **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

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NY-3.OA OPERATIONS AND ALGEBRAIC THINKING

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
	Chapter 6 More Multiplication and Division Facts *6-14A Checking Reasonableness of Answers—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 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
NY-3.OA.9 Identify and extend arithmetic patterns (including patterns in the addition table or multiplication table).	**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 **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 **Chapter 6 More Multiplication and Division Facts** 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 *6-5B Multiplication Tables—Online 6-8 Divide by 6—pp. 202–203 6-9 Divide by 7—pp. 204–205 *continued*

NY-3.OA OPERATIONS AND ALGEBRAIC THINKING

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
	6-10 Divide by 8—pp. 206–207 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

NY-3.NBT NUMBER AND OPERATIONS IN BASE TEN

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
Use place value understanding and properties of operations to perform multi-digit arithmetic.	
NY-3.NBT.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

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NY-3.NBT NUMBER AND OPERATIONS IN BASE TEN

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
	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—pp. 338–339
NY-3.NBT.2 Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. Note on and/or: Students should be taught to use strategies and algorithms based on place value, properties of operations, and the relationship between addition and subtraction; however, when solving any problem, students can choose any strategy. Note: A range of algorithms may be used.	**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 *continued*

NY-3.NBT NUMBER AND OPERATIONS IN BASE TEN

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
	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
NY-3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations. e.g., 9 × 80, 5 × 60	**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
NY-3.NBT.4	
NY-3.NBT.4a Understand that the four digits of a four-digit number represent amounts of thousands, hundreds, tens, and ones. e.g., 3,245 equals 3 thousands, 2 hundreds, 4 tens, and 5 ones.	**Chapter 1 Place Value** 1-5 What Is One Thousand?—pp. 38–39 1-6 Thousands—pp. 40–41 1-7 Ten Thousands and Hundred Thousands—pp. 42–43
NY-3.NBT.4b Read and write four digit numbers using base-ten numerals, number names and expanded form. e.g., The number 3,245 in expanded form can be written as 3,245 = 3,000 + 200 + 40 + 5.	**Skills Update** Expanded Form—p. 1 **Chapter 1 Place Value** 1-1 Hundreds—pp. 30–31 1-5 What Is One Thousand?—pp. 38–39 1-6 Thousands—pp. 40–41 1-7 Ten Thousands and Hundred Thousands—pp. 42–43

NY-3.NF NUMBER AND OPERATIONS — FRACTIONS

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
Develop understanding of fractions as numbers.	
NY-3.NF.1 Understand a unit fraction, $\frac{1}{b}$, is the quantity formed by 1 part when a whole is partitioned into *b* equal parts. Understand a fraction $\frac{a}{b}$ as the quantity formed by *a* parts of size $\frac{1}{b}$. Note: Fractions are limited to those with denominators 2, 3, 4, 6, and 8.	**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
NY-3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line.	
NY-3.NF.2a Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line.	**Chapter 12 Fractions** *12-1C Fractions on a Number Line—Online 12-4 Compare Fractions—pp. 392–393
NY-3.NF.2b Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a lengths $\frac{1}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line.	**Chapter 12 Fractions** *12-1C Fractions on a Number Line—Online
NY-3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. Note: Fractions are limited to those with denominators 2, 3, 4, 6, and 8.	
NY-3.NF.3a 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

NY-3.NF NUMBER AND OPERATIONS — FRACTIONS

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
NY-3.NF.3b Recognize and generate simple equivalent fractions. e.g., $\frac{1}{2} = \frac{2}{4}$, $\frac{4}{6} = \frac{2}{3}$ Explain why the fractions are equivalent. e.g., using a visual fraction model	**Chapter 12 Fractions** 12-2 Equivalent Fractions—pp. 388–389 *12-2A Model Equivalent Fractions—Online
NY-3.NF.3c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. e.g., Express 3 in the form $3 = \frac{3}{1}$, recognize that $\frac{6}{3} = 2$, and locate $\frac{4}{4}$ and 1 at the same point of a number line diagram.	**Chapter 12 Fractions** 12-2 Equivalent Fractions—pp. 388–389 *12-2A Model Equivalent Fractions—Online
NY-3.NF.3d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions. e.g., 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

NY-3.MD MEASUREMENT AND DATA

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	
NY-3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve one-step word problems involving addition and subtraction of time intervals in minutes. e.g., representing the problem on a number line or other visual model. Note: This includes one-step problems that cross into a new hour.	**Skills Update** Hour, Half Hour—p. 14 A.M., P.M.—p. 15 **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
NY-3.MD.2	
NY-3.MD.2a Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (l). Note: Does not include compound units such as cm^3 and finding the geometric volume of a container.	**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
NY-3.MD.2b Add, subtract, multiply, or divide to solve one-step word problems involving masses or liquid volumes that are given in the same units. e.g., using drawings (such as a beaker with a measurement scale) to represent the problem. Note: Does not include multiplicative comparison problems involving notions of "times as much."	**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
Represent and interpret data.	
NY-3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in a scaled picture graph or a scaled bar graph. *continued*	**Skills Update** Read a Pictograph—p. 19 Read a Bar Graph—p. 20 **Chapter 7 Statistics and Probability** 7-1 Pictographs—pp. 226–227 7-2 Bar Graphs—pp. 228–229 *continued*

NY-3.MD MEASUREMENT AND DATA

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
e.g., Draw a bar graph in which each square in the bar graph might represent 5 pets.	*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
NY-3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	**Chapter 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
Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	
NY-3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.	
NY-3.MD.5a Recognize 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 *9-11A Area of a Rectangle—Online
NY-3.MD.5b Recognize 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
NY-3.MD.6 Measure areas by counting unit squares. Note: Unit squares include 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
NY-3.MD.7 Relate area to the operations of multiplication and addition.	
NY-3.MD.7a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.	**Chapter 9 Geometry** 9-11 Area—pp. 322–323 *9-11A Area of a Rectangle—Online

NY-3.MD MEASUREMENT AND DATA

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
NY-3.MD.7b 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
NY-3.MD.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.	**Chapter 9 Geometry** *9-11B Area of Composite Shapes—Online
NY-3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems. Note: Problems include no more than one unknown side length.	**Chapter 9 Geometry** *9-11B Area of Composite Shapes—Online 9-13 Problem Solving Strategy: Solve a Simpler Problem—pp. 326–327

Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

NY-3.MD.8	
NY-3.MD.8a Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths or finding one unknown side length given the perimeter and other side length.	**Chapter 9 Geometry** 9-10 Perimeter—pp. 320–321 *9-11D Missing Dimensions—Online
NY-3.MD.8b Identify rectangles with the same perimeter and different areas or with the same area and different perimeters.	**Chapter 9 Geometry** *9-11C Perimeter and Area—Online

NY-3.G GEOMETRY

Grade 3 Content Standards	*Progress in Mathematics*, Grade 3
Reason with shapes and their attributes.	
NY-3.G.1 Recognize and classify polygons based on the number of sides and vertices (triangles, quadrilaterals, pentagons, and hexagons). Identify shapes that do not belong to one of the given subcategories. Note: Include both regular and irregular polygons, however, students need not use formal terms "regular" and "irregular," e.g., students should be able to classify an irregular pentagon as "a pentagon," but do not need to classify it as an "irregular pentagon."	**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
NY-3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. e.g., Partition a shape into 4 parts with equal area, and describe the area of each part as $\frac{1}{4}$ of the area of the shape.	**Chapter 9 Geometry** Fractions: Part of a Whole—p. 8 **Chapter 12 Fractions** *12-1A Use Fractions—Online