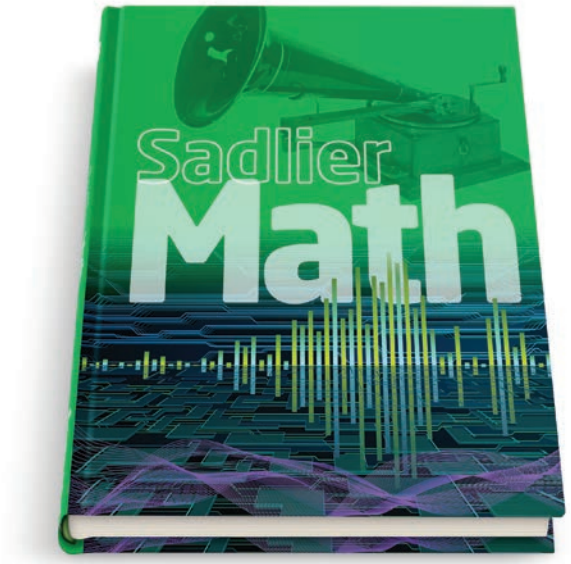
A Grade 3 Crosswalk

Progress in Mathematics

Aligned to



Sadlier Math™

And the

New York State Next Generation Mathematics Learning Standards (2017)

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Sadlier Math, Grade 3	*Progress in Mathematics,* Grade 3	Next Gen Mathematics Learning Standards
Chapter 1 **Number Sense** • 1-1 Read and Write Multi-Digit Numbers—pp. 2–3 (Write numbers to 1000 using base-ten numerals, number names, and expanded form.)	**Skills Update** • Expanded Form—p. 1 **Chapter 1** **Place Value** • 1-1 Hundreds (expanded form/stanadrd form)—pp. 30–31 • 1-5 What Is One Thousand?—pp. 38–39 • 1-6 Thousands—pp. 40–41	**NY-3.NBT.4a** Understand that the digits of a four-digit number represent amounts of thousands, hundreds, tens, and ones. **NY-3.NBT.4b** Read and write four-digit numbers using base-ten numerals, number names, and expanded form.
• 1-2 Understand the Number Line—pp. 4–5 (Understand how to use a number line.)	• 1-3 Order Numbers (number line)—pp. 34–35	Readiness **NY-3.NF.2a** Represent a fraction 11/*b* on a number line by defining the interval from 0 to 1 as the whole and partitioning 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.
• 1-3 Compare and Order Numbers—pp. 6–7 (Compare and order 3-digit numbers using a number line and place value.)	• 1-2 Compare Numbers—pp. 32–33 • 1-3 Order Numbers—pp. 34–35 • 1-8 Compare and Order Larger Numbers—pp. 44–45	Readiness for Grade 4 **NY-4.NBT.2b** Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
• 1-4 Round Numbers to the Nearest Ten—pp. 10–11 (Round numbers to the nearest ten using number lines or place-value concepts.) • 1-5 Round Numbers to the Nearest Hundred—pp. 12–13 (Round numbers to the nearest 100 using number lines or place-value concepts.)	• 1-9 Round Numbers—pp. 46–47	**NY-3.NBT.1** Use place value understanding to round whole numbers to the nearest 10 or 100.
• 1-6 Problem Solving: Use a Four-Step Process—pp. 14–15 (Solve problems by using a four-step process.)	**Introduction to Problem Solving** • Problem-Solving Model—pp. 22–23	**MP.1** Make sense of problems and persevere in solving them. **MP.2** Reason abstractly and quantitatively. **MP.3** Construct viable arguments and critique the reasoning of others. **MP.4** Model with mathematics. **MP.6** Attend to precision.

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Chapter 2 **Addition Within 1000** • 2-1 Use Addition Properties—pp. 22–23 (Identify and understand the properties of addition.)	**Chapter 2** **Addition** • 2-8A Addition Properties—Online	**NY-3.NBT.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.
• 2-2 Explore Addition Patterns—pp. 24–25 (Find addition patterns in an addition table.)	**Skills Update** • Count by 2s, 5s, 10s (odd/even)—p. 2 **Chapter 1** **Place Value** • 1-4 Counting Patterns—pp. 36–37	**NY-3.OA.9** Identify and extend arithmetic patterns (including patterns in the addition table or multiplication table).
• 2-3 Estimate Sums—pp. 26–27 (Estimate sums to 1000 using rounding and front-end estimation.) • 2-4 Add with Partial Sums—pp. 30–31 (Use partial sums to add 3-digit numbers.) • 2-5 Use Place Value to Add: Regroup Once—pp. 32–33 (Add two 3-digit numbers by regrouping ones or tens.) • 2-6 Use Place Value to Add: Regroup Twice—pp. 34–35 (Add two 3-digit numbers by regrouping ones and tens.) • 2-7 Add with Three or More Addends—pp. 36–37 (Find the sum of three or more addends up to 1000.)	**Chapter 2** **Addition** • 2-1 More Than Two Addends—pp. 64–65 • 2-2 Missing Addends—pp. 66–67 • 2-3 Add No Regrouping—pp. 68–69 • 2-4 Estimate Sums—pp. 70–71 • 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 • 2-9 Three-Digit Addition—pp. 78–79 • 2-10 More Regrouping in Addition—pp. 80–81 • 2-11 Mental Math—pp. 82–83	**NY-3.NBT.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.
• 2-8 Problem Solving: Use a Model—pp. 38–39 (Solve word problems by using a model to organize the information.)	**Chapter 12** **Fractions** • 12-11 Problem Solving Strategy: Use a Drawing/ Model—pp. 406–407	**MP.1** Make sense of problems and persevere in solving them. **MP.4** Model with mathematics. **MP.6** Attend to precision.

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Chapter 3 **Subtraction Within 1000** • 3-1 Estimate Differences—pp. 46–47 (Estimate differences by rounding and using front-end estimation.) • 3-2 Relate Addition and Subtraction—pp. 48–49 (Use the relationship between addition and subtraction to help solve problems.) • 3-3 Subtract with Partial Differences—pp. 50–51 (Subtract 3-digit numbers using partial differences.) • 3-4 Subtract Three-Digit Numbers—pp. 54–55 (Subtract 3-digit numbers using regrouping.) • 3-5 Subtract Across Zeros—pp. 56–57 (Subtract 3-digit numbers when the minuend has zeros.)	**Chapter 3** **Subtraction** • 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	**NY-3.OA.8b** Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **NY-3.NBT.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.
• 3-6 Problem Solving: Write and Solve an Equation—pp. 58–59 (Solve problems by writing and solving an equation.)	**Chapter 5** **Division Concepts and Facts** • 5-10 Problem Solving Strategy: Write a Number Sentence—pp. 180–181	**MP.1** Make sense of problems and persevere in solving them. **MP.2** Reason abstractly and quantitatively. **MP.4** Model with mathematics. **MP.6** Attend to precision.

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Chapter 4 **Multiplication and Division Concepts** • 4-1 Represent Multiplication as Repeated Addition—pp. 66–67 (Understand how repeated addition is used to represent multiplication of whole numbers.) • 4-2 Represent Multiplication on a Number Line—pp. 68–69 (Represent multiplication by skip counting on a number line.) • 4-3 Represent Multiplication as Arrays—pp. 70–71 (Use multiplication to solve problems in situations involving arrays.)	**Chapter 4** **Multiplication Concepts and Facts** • 4-1 Understand Multiplication (repeated addition/number line/join equal groups)—pp. 132–133 • 4-6A Multiplication and Arrays(use arrays to find products of multiplication facts)—Online • 4-6B Use a Bar Diagram to Multiply (use a bar diagram and a table to solve a multiplication fact problem)—Online	**NY-3.OA.1** Interpret products of whole numbers. **NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.

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• 4-4 Multiply with the Commutative Property—pp. 74–75 (Build an understanding of the Commutative Property of Multiplication.)	• 4-9 Order in Multiplication—pp. 148–149 **Chapter 6** **More Multiplication and Division Facts** • 6-5B Multiplication Tables (apply properties of multiplication to explain multiplication patterns)—Online	**NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **NY-3.OA.5** Apply properties of operations as strategies to multiply and divide.
• 4-5 Represent Division by Sharing—pp. 76–77 (Explore the concept of division as sharing.) • 4-6 Represent Division by Repeated Subtraction—pp. 78–79 (Use repeated subtraction to show the relationship between division and subtraction.)	**Chapter 5** **Division Concepts and Facts** • 5-1 Understand Division (repeated subtraction/ separate into equal groups)—pp. 162–163	**NY-3.OA.2** Interpret whole-number quotients of whole numbers. **NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.
• 4-7 Problem Solving: Write an Equation—pp. 80–81 (Write equations to solve problems involving multiplication and division.)	**Chapter 5** **Division Concepts and Facts** • 5-10 Problem Solving Strategy: Write a Number Sentence—pp. 180–181	**MP.1** Make sense of problems and persevere in solving them. **MP.4** Model with mathematics. **MP.6** Attend to precision.

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Chapter 5 **Multiplication Facts** • 5-1 Multiply by 2—pp. 88–89 (Fluently multiply whole numbers by 2.) • 5-2 Multiply by 5—pp. 90–91 (Fluently multiply whole numbers by 5.) • 5-3 Multiply by 9—pp. 92–93 (Fluently multiply whole numbers by 9.)	**Chapter 4** **Multiplication Concepts and Facts** • 4-3 Multiply Twos—pp. 136–137 • 4-6 Multiply Fives—pp. 142–143 **Chapter 6** **More Multiplication and Division Facts** • 6-5 Multiply Nines—pp. 196–197	**NY-3.OA.1** Interpret products of whole numbers. **NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.

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• 5-4 Multiply by 1 and 0—pp. 96–97 (Fluently multiply whole numbers by 1 and 0.)	**Chapter 4** **Multiplication Concepts and Facts** • 4-2 One and Zero as Factors—pp. 134–135	**NY-3.OA.1** Interpret products of whole numbers. **NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **NY-3.OA.5** Apply properties of operations as strategies to multiply and divide. **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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.
• 5-5 Multiply by 10—pp. 98–99 (Fluently multiply whole numbers by 10.)	**Chapter 6** **More Multiplication and Division Facts** • 6-5B Multiplication Tables (products of 10)—Online **Chapter 10** **Multiply by One Digit** • 10-1 Multiplication Patterns—pp. 336–337 • 10-1A Multiply with Multiples (multiply one-digit numbers by multiples of 10)—Online	**NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers. **NY-3.OA.9** Identify and extend arithmetic patterns (including patterns in the addition table or multiplication table).
• 5-6 Find Patterns in the Multiplication Table—pp. 100–101 (Find and use patterns in the multiplication table.)	**Chapter 6** **More Multiplication and Division Facts** • 6-5B Multiplication Tables—Online	**NY-3.OA.7** Fluently solve single-digit multiplication and related divisions, using strategies such as the relationship between multiplication and division or properties of operations. **NY-3.OA.9** Identify and extend arithmetic patterns (including patterns in the addition table or multiplication table).

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• 5-7 Solve for Unknowns—pp. 102–103 (Find the unknown in a multiplication equation.)	**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 (find missing factors, dividends, or divisors in number sentences)—Online	**NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **NY-3.OA.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.
• 5-8 Problem Solving: Use a Model—pp. 104–105 (Use and compare models to help fluently multiply within 100.)	**Chapter 12** **Fractions** • 12-11 Problem Solving Strategy: Use a Drawing/ Model—pp. 406–407	**MP.1** Make sense of problems and persevere in solving them. **MP.4** Model with mathematics. **MP.6** Attend to precision.

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Chapter 6 **More Multiplication Facts** • 6-1 Break Apart to Multiply—pp. 112–113 (Apply the Distributive Property as a strategy to multiply.)	**Chapter 6** **More Multiplication and Division Facts** • 6-5A Break Apart Numbers to Multiply (break apart arrays and use the Distributive Property to find products)—Online	**NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **NY-3.OA.5** Apply properties of operations as strategies to multiply and divide. **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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.

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• 6-2 Multiply by 3—pp. 114–115 (Fluently multiply whole numbers by 3.)	**Chapter 4** **Multiplication Concepts and Facts** • 4-4 Multiply Threes—pp. 138–139	**NY-3.OA.1** Interpret products of whole numbers. **NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **NY-3.OA.5** Apply properties of operations as strategies to multiply and divide. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.
• 6-3 Multiply by 4—pp. 116–117 (Use doubles of known facts for 2 to multiply by 4.) • 6-4 Multiply by 6—pp. 118–119 (Fluently multiply whole numbers by 6.) • 6-5 Multiply by 7—pp. 120–121 (Fluently multiply whole numbers by 7.) • 6-6 Multiply by 8—pp. 122–123 (Fluently multiply whole numbers by 8.)	• 4-5 Multiply Fours—pp. 140–141 **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	**NY-3.OA.1** Interpret products of whole numbers. **NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **NY-3.OA.5** Apply properties of operations as strategies to multiply and divide. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.
• 6-7 Use a Bar Model to Multiply—pp. 126–127 (Use bar models to solve multiplication word problems within 100.)	**Chapter 4** **Multiplication Concepts and Facts** • 4-6B Use a Bar Diagram to Multiply—Online	**NY-3.OA.5** Apply properties of operations as strategies to multiply and divide. **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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.

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• 6-8 Problem Solving: Make a Table—pp. 128–129 (Solve two-step word problems by making a table to organize the information.)	**Chapter 8** **Measurement and Time** • 8-18 Problem Solving Strategy: Make a Table—pp. 294–295	**MP.1** Make sense of problems and persevere in solving them. **MP.4** Model with mathematics. **MP.6** Attend to precision.
• 6-9 Use the Associative Property to Multiply—pp. 130–131 (Use the Associative Property of Multiplication to multiply.)	**Chapter 6** **More Multiplication and Division Facts** • 6-6 Multiply Three Numbers (Associative Property of Multiplication)—pp. 198–199	**NY-3.OA.5** Apply properties of operations as strategies to multiply and divide. **NY-3.OA.7a** Fluently solve single-digit multiplication and related divisions, using strategies such as the relationship between **NY-3.OA.7b** Know from memory all products of two one-digit numbers.
• 6-10 Find More Multiplication Patterns—pp. 132–133 (Find and use patterns in the multiplication table.)	**Chapter 10** **Multiply by One Digit** • 10-1 Multiplication Patterns—pp. 336–337	**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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers. **NY-3.OA.9** Fluently solve single-digit multiplication and related divisions, using strategies such as the relationship between multiplication and division or properties of operations.
• 6-11 Multiply by Multiples of 10—pp. 134–135 (Multiply one-digit numbers by multiples of 10.)	• 10-1A Multiply with Multiples (multiply one-digit numbers by multiples of 10)—Online	**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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers. **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.

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Chapter 7 **Division Facts** • 7-1 Relate Multiplication and Division—pp. 142–143 (Use related multiplication and division facts to solve problems.)	**Chapter 5** **Division Concepts and Facts** • 5-7 Relate Multiplication and Division—pp. 174–175	**NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **NY-3.OA.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. **NY-3.OA.6** Understand division as an unknown-factor problem. **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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.
• 7-2 Divide by 2—pp. 144–145 (Divide whole numbers by 2.) • 7-3 Divide by 3—pp. 146–147 (Divide whole numbers by 3.) • 7-4 Divide by 4—pp. 150–151 (Divide whole numbers by 4.) • 7-5 Divide by 5—pp. 152–153 (Divide whole numbers by 5.)	• 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	**NY-3.OA.2** Interpret whole-number quotients of whole numbers. **NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **NY-3.OA.6** Understand division as an unknown-factor problem. **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.
• 7-6 Problem Solving: Use Drawings to Solve Problems—pp. 154–155 (Solve division word problems by using a drawing.)	**Chapter 12** **Fractions** • 12-11 Problem Solving Strategy: Use a Drawing/ Model—pp. 406–407	**MP.1** Make sense of problems and persevere in solving them. **MP.4** Model with mathematics. **MP.6** Attend to precision.

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Chapter 8 **More Division Facts** • 8-1 Divide by 6—pp. 162–163 (Divide whole numbers by 6.) • 8-2 Divide by 7—pp. 164–165 (Divide whole numbers by 7.) • 8-3 Divide by 8—pp. 166–167 (Divide whole numbers by 8.) • 8-4 Divide by 9—pp. 168–169 (Divide whole numbers by 9.)	**Chapter 6** **More Multiplication and Division Facts** • 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.2** Interpret whole-number quotients of whole numbers. **NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **NY-3.OA.6** Understand division as an unknown-factor problem. **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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.
• 8-5 One and Zero in Division—pp. 172–173 (Use 1 and 0 in division.)	**Chapter 5** **Division Concepts and Facts** • 5-2 One and Zero in Division—pp. 164–165	
• 8-6 Problem Solving: Work Backward—pp. 174–175 (Solve multistep word problems by working backward.)	**Chapter 10** **Multiply by One Digit** • 10-10 Problem Solving Strategy: Work Backward—pp. 354–355	**MP.1** Make sense of problems and persevere in solving them. **MP.2** Reason abstractly and quantitatively. **MP.3** Construct viable arguments and critique the reasoning of others. **MP.6** Attend to precision.
• 8-7 Fact Families—pp. 176–177 (Identify multiplication and division fact families.)	**Chapter 6** **More Multiplication and Division Facts** • 6-13 Fact Families—pp. 212–213	**NY-3.OA.1** Interpret products of whole numbers. **NY-3.OA.2** Interpret whole-number quotients of whole numbers. **NY-3.OA.6** Understand division as an unknown-factor problem. **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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.

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• 8-8 Use Facts to Solve Problems—pp. 178–179 (Fluently multiply and divide within 100 to solve word problems.)	**Chapter 4** **Multiplication Concepts and Facts** • 4-6C Multiplication Stories (solve fact stories that emphasize the different representations of multiplication)—Online • 4-7 Multiply Cents—pp. 144–145 **Chapter 5** **Division Concepts and Facts** • 5-6A Division Stories (read and write division stories that emphasize different representations of division)—Online • 5-8 Divide Cents—pp. 176–177	**NY-3.OA.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. **NY-3.OA.6** Understand division as an unknown-factor problem. **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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.
• 8-9 Use Order of Operations—pp. 180–181 (Use the order of operations to solve problems with multiple operations.)	**Chapter 14** **Get Ready for Algebra** • 14-3 Order of Operations—pp. 444–445	**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. **NY-3.OA.7b** Know from memory all products of two one-digit numbers.

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Chapter 9 **Fraction Concepts** • 9-1 Understand Equal Parts—pp. 188–189 (Determine if a shape is divided into equal parts and name the number of equal parts.)	**Skills Update** • Fractions: Part of a Whole—p. 8 **Chapter 12** **Fractions** • 12-1 Fractions—pp. 386–387	**NY-3.NF.1** Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by a parts of size 1/*b*. **NY-3.G.2** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.
• 9-2 Name Unit Fractions of a Whole—pp. 190–191 (Understand a unit fraction as the quantity formed by 1 part when a whole is partitioned into equal parts.)	• 12-1A Use Fractions (partition plane shapes into equal parts and express the area of each part as a unit fraction)—Online	**NY-3.NF.1** Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by a parts of size 1/*b*.

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• 9-3 Find Unit Fractions on a Number Line—pp. 192–193 (Find unit fractions on a number line.)	• 12-1B Unit Fractions on a Number Line—Online	**NY-3.NF.2a** Represent a fraction 11/*b* on a number line by defining the interval from 0 to 1 as the whole and partitioning 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.
• 9-4 Name Fractions of a Whole—pp. 196–197 (Name fractions of a whole.)	• 12-2A Model Equivalent Fractions (write an equivalent fraction for a whole number)—Online	**NY-3.NF.1** Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by a parts of size 1/*b*.
• 9-5 Find Fractions on a Number Line—pp. 198–199 (Name and plot fractions using a number line.)	• 12-1C Fractions on a Number Line (identify non-unit fractions on a number line)—Online	**NY-3.NF.2b** Represent a fraction a/b on a number line 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.
• 9-6 Use a Fraction to Find the Whole—pp. 200–201 (Given a fractional part, find the whole.)	• 12-1 Fractions—pp. 386–387	**NY-3.NF.3c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
• 9-7 Problem Solving: Use a Model—pp. 202–203 (Identify fractions by using models.)	**Chapter 12** **Fractions** • 12-11 Problem Solving Strategy: Use a Drawing/Model—pp. 406–407	**MP.1** Make sense of problems and persevere in solving them. **MP.4** Model with mathematics. **MP.6** Attend to precision.

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Chapter 10 **Fractions: Comparison and Equivalence** • 10-1 Whole Numbers and Fractions—pp. 210–211 (Write whole numbers as fractions and recognize fractions that are equivalent to whole numbers.)	**Chapter 12** **Fractions** • 12-2A Model Equivalent Fractions (write an equivalent fraction for a whole number)—Online	**NY-3.NF.3c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.

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• 10-2 Find Equivalent Fractions—pp. 212–213 (Identify equivalent fractions.) • 10-3 Find Equivalent Fractions on a Number Line—pp. 214–215 (Find equivalent fractions on a number line.)	• 12-2 Equivalent Fractions—pp. 388–389 • 12-2A Model Equivalent Fractions (identify and generate equivalent fractions/number line)—Online	**NY-3.NF.3a** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **NY-3.NF.3b** Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent.

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• 10-4 Compare Fractions with the Same Denominator—pp. 218–219 (Compare fractions with the same denominator.) • 10-5 Compare Fractions with the Same Numerator—pp. 220–221 (Compare fractions with the same numerator.)	• 12-3A Compare Like Fractions Using Models (compare fractions with like denominators using number lines and fraction strips)—Online • 12-4A Compare Unlike Fractions Using Fraction Strips (compare fractions with the same numerator but unlike denominators using models)—Online	**NY-3.NF.3d** Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions.
• 10-6 Order Fractions—pp. 222–223 (Compare and order fractions with same/different numerators and denominators.)	• 12-4 Compare Fractions (compare fractions with different numerators and different denominators)—pp. 392–393 • 12-4B Fraction Sense (compare fractions to 0, 1/2, and 1 using number lines and reasoning/ compare fractions with different numerators and different denominators)—Online • 12-5 Order Fractions (compare and order fractions with different numerators and denominators)—pp. 394–395	Readiness for Grade 4 **NY-4.NF.2** Compare two fractions with different numerators and different denominators. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions.
• 10-7 Problem Solving: Act It Out—pp. 224–225 (Solve problems by acting it out.)	**Introduction to Problem Solving** • Problem-Solving Applications: Mixed Review: Act It Out—p. 28	**MP.1** Make sense of problems and persevere in solving them. **MP.4** Model with mathematics. **MP.6** Attend to precision.

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Chapter 11 **Measurement** • 11-1 Measure Length—pp. 232–233 (Measure lengths to the nearest quarter and half inch.)	**UChapter 8** **Measurement and Time** • 8-1 Quarter Inch, Half Inch, Inch—pp. 260–261	**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.
• 11-2 Estimate and Measure Liquid Volume—pp. 234–235 (Estimate liquid volumes in the metric system.) • 11-3 Operations with Liquid Volume—pp. 236–237 (Solve one-step problems involving liquid volumes that are given in the same units.) • 11-4 Estimate and Measure Mass—pp. 240–241 (Estimate and measure masses using the metric system.) • 11-5 Operations with Mass—pp. 242–243 (Solve one-step problems involving masses that are given in the same units.)	• 8-9 Milliliter, Liter—pp. 276–277 • 8-10 Gram, Kilogram—pp. 278–279 • 8-10A Estimate and Measure Masses—Online	**NY-3.MD.2a** Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (l). **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.
• 11-6 Problem Solving: Write an Equation—pp. 244–245 (Write one-step equations to solve problems.)	**Chapter 5** **Division Concepts and Facts** • 5-10 Problem Solving Strategy: Write a Number Sentence—pp. 180–181	**MP.1** Make sense of problems and persevere in solving them. **MP.2** Reason abstractly and quantitatively. **MP.4** Model with mathematics. **MP.6** Attend to precision.

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Chapter 12 **Data** • 12-1 Read Picture Graphs—pp. 252–253 (Read and interpret scaled picture graphs.) • 12-2 Make Picture Graphs—pp. 254–255 (Make a scaled picture graph using data.) • 12-3 Read Bar Graphs—pp. 256–257 (Read a scaled bar graph.) • 12-4 Make Bar Graphs—pp. 258–259 (Create a scaled bar graph from data.)	**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	**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.

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• 12-5 Data and Two-Step Problems—pp. 260–261 (Solve two-step problems using a scaled bar graph.)	• 7-2A Data and Two-Step Problems—Online	**NY-3.OA.8** Solve two-step word problems posed with whole numbers and having whole-number answers using the four operations. **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.
• 12-6 Problem Solving: Use a Model—pp. 264–265 (Use and compare different models for representing data.)	**Chapter 12** **Fractions** • 12-11 Problem Solving Strategy: Use a Drawing/ Model—pp. 406–407	**MP.1** Make sense of problems and persevere in solving them. **MP.4** Model with mathematics. **MP.6** Attend to precision.
• 12-7 Read Line Plots—pp. 266–267 (Read and interpret a line plot.) • 12-8 Make Line Plots—pp. 268–269 (Make a line plot.)	**Chapter 7** **Statistics and Probability** • 7-5 Line Plots—pp. 234–235	**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.

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Chapter 13 **Time** • 13-1 Tell Time to the Minute—pp. 276–277 (Read and write time to the minute.) • 13-2 Measure Elapsed Time—pp. 278–279 (Measure time intervals in hours and minutes.) • 13-3 Find Start and End Times—pp. 282–283 (Find the start or end time of an event given one time and the elapsed time.) • 13-4 Operations with Time—pp. 284–285 (Solve word problems involving addition and subtraction of time intervals in minutes.)	**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.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.

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• 13-5 Problem Solving: Use Logical Reasoning—pp. 286–287 (Solve problems, including those involving time, using logical reasoning.)	**Introduction to Problem Solving** • Problem-Solving Strategy: Logical Reasoning—p. 27	**MP.1** Make sense of problems and persevere in solving them. **MP.2** Reason abstractly and quantitatively. **MP.3** Construct viable arguments and critique the reasoning of others. **MP.6** Attend to precision.

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Chapter 14 **Two-Dimensional Shapes** • 14-1 Classify Polygons—pp. 294–295 (Classify polygons by their attributes.) • 14-2 Classify Quadrilaterals—pp. 296–297 (Classify quadrilaterals by their attributes.) • 14-3 Draw Quadrilaterals—pp. 298–299 (Draw quadrilaterals that are not rectangles, rhombuses, or squares.)	**Skills Update** • Sides and Vertices—p. 16 **Chapter 9** **Geometry** • 9-3 Polygons and Circles—pp. 308–309 • 9-4 Triangles—pp. 310–311 • 9-4A Quadrilaterals—Online	**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.
• 14-4 Compose and Decompose Shapes—pp. 302–303 (Compose and decompose shapes.)	Related • Chapter 9 Enrichment: Complex Solid Figures (combine solid figures to make new figures)—p. 331 • 9-11B Area of Composite Shapes (break apart the figure into two rectangles)—Online	Readiness **NY-3.MD.7d** Recognize area as additive. Find areas of figures composed of non-overlapping rectangles, and apply this technique to solve real world problems Readiness for Grade 6 **NY-6.G.1** Find area of triangles, trapezoids, and other polygons by composing into rectangles or decomposing into triangles and quadrilaterals. Apply these techniques in the context of solving real-world and mathematical problems.
• 14-5 Problem Solving: Make a Table—pp. 304–305 (Make a table to solve a problem.)	**Chapter 8** **Measurement and Time** • 8-18 Problem Solving Strategy: Make a Table—pp. 294–295	**MP.1** Make sense of problems and persevere in solving them. **MP.4** Model with mathematics. **MP.6** Attend to precision.

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Chapter 15 **Area** • 15-1 Understand Area—pp. 312–313 (Understand concepts of area measurement.)	**Chapter 9** **Geometry** • 9-11 Area—pp. 322–323 • 9-11A Area of a Rectangle—Online	**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. **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. **NY-3.MD.6** Measure areas by counting unit squares.
• 15-2 Find Area Using Standard Units—pp. 314–315 (Measure area by counting unit squares.)	• 9-11 Area—pp. 322–323 • 9-11A Area of a Rectangle—Online	**NY-3.MD.6** Measure areas by counting unit squares. **NY-3.G.2** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.
• 15-3 Find the Area of a Rectangle and a Square—pp. 316–317 (Find the area of a rectangle and a square.)	• 9-11A Area of a Rectangle—Online	**NY-3.MD.6** Measure areas by counting unit squares. **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. **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.
• 15-4 Find Area Using the Distributive Property—pp. 320–321 (Find the area of a rectangle by using the Distributive Property.)	• 9-11B Area of Composite Shapes (use the Distributive Property)—Online	**NY-3.MD.7c** Use tiling to show in a concrete case that the area of a rectangle with whole-number side length a and side length b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning.
• 15-5 Find Area of Composite Shapes—pp. 322–323 (Find the area of a composite shape by decomposition into non-overlapping rectangles.)	• 9-11 Area—pp. 322–323 • 9-11B Area of Composite Shapes—Online	**NY-3.MD.7d** Recognize area as additive. Find areas of figures composed of non-overlapping rectangles, and apply this technique to solve real world problems.

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• 15-6 Problem Solving: Guess and Test—pp. 324–325 (Solve problems by using guess and test.)	**Introduction to Problem Solving** • Problem-Solving Strategy: Guess and Test—p. 24	**MP.1** Make sense of problems and persevere in solving them. **MP.3** Construct viable arguments and critique the reasoning of others. **MP.6** Attend to precision.

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Chapter 16 **Perimeter** • 16-1 Understand Perimeter—pp. 332–333 (Find the perimeter of polygons that are shown on grids.) • 16-2 Find Perimeter—pp. 334–335 (Find the perimeter of polygons.) • 16-3 Find Unknown Side Lengths—pp. 336–337 (Find the unknown side lengths of a polygon when given the perimeter.)	**Chapter 9** **Geometry** • 9-10 Perimeter—pp. 320–321 • 9-11D Missing Dimensions (solve real-world problems involving perimeter and area, with missing lengths)—Online	**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 lengths.
• 16-4 Problem Solving: More Than One Way—pp. 340–341 (Solve problems in more than one way using two different strategies and comparing the strategies.)	**Introduction to Problem Solving** • Problem-Solving Applications: Mixed Review: Use These Strategies—p. 28	**MP.1** Make sense of problems and persevere in solving them. **MP.3** Construct viable arguments and critique the reasoning of others. **MP.6** Attend to precision.
• 16-5 Same Perimeter, Different Areas—pp. 342–343 (Find rectangles that have the same perimeter and different areas.) • 16-6 Same Area, Different Perimeters—pp. 344–345 (Find rectangles that have the same area and different perimeters.)	• 9-11C Perimeter and Area (explore the connection between perimeter and area)—Online	**NY-3.MD.8b** Identify rectangles with the same perimeter and different areas or with the same area and different perimeters.