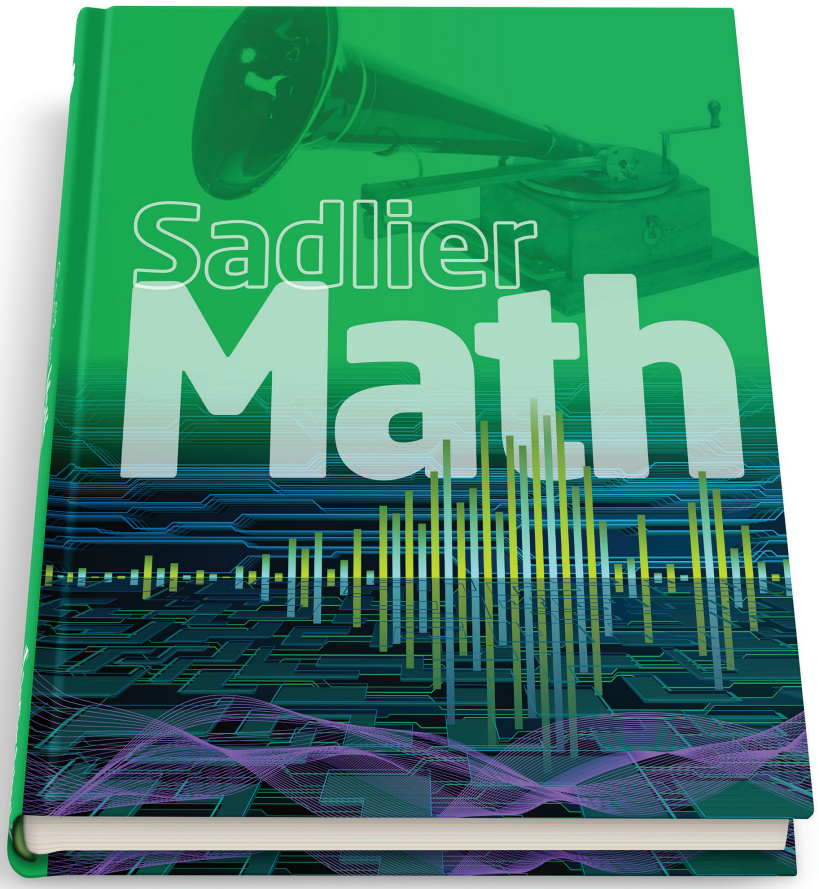
# *Sadlier Math*™

## Correlation to the Archdiocese of Hartford Mathematics Standards-based Curriculum

**Grade 3**

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# NUMBER THEORY, OPERATIONS, ALGEBRAIC THINKING (NOA)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| NOA 3.1 Use place value understanding and properties of operations to perform multi-digit arithmetic.<br>• To represent and order number concepts in verbal and written form (NOA 3.1)<br>○ Read and write number words to one thousand<br>○ Identify and name place values to the thousands place<br>○ Expand numerals by identifying the value of each digit in its place<br>○ Write expanded numerals in standard form<br>○ Read and write numerals to 9999<br>○ Count, order, compare, and expand numerals to 9999<br>○ Identify and name place values to the hundred thousands place<br>○ Read and write numerals to 999,999<br>○ Count, order, compare, and expand numerals to 999,999<br>• To represent four digit numbers as groups of thousands, hundreds, tens, and ones in the base ten number system (NOA 3.1)<br>• To represent the result of counting, combining and separating sets of objects using number sentences (NOA 3.1, 3.3)<br>• To analyze change in quantity and quality using patterns (NOA 3.1) | **Chapter 1: 1-1 through 1-5**<br>• 1-1 Read and Write Multi-Digit Numbers—pp. 2–3<br>• 1-2 Understand the Number Line—pp. 4–5<br>• 1-3 Compare and Order Numbers—pp. 6–7<br>• 1-4 Round Numbers to the Nearest Ten—pp. 10–11<br>• 1-5 Round Numbers to the Nearest Hundred—pp. 12–13<br>**Chapter 4: 4-7**<br>• 4-7 Problem Solving: Write an Equation—pp. 80–81<br>**Chapter 5: 5-6**<br>• 5-6 Find Patterns in the Multiplication Table—pp. 100–101<br>**Chapter 6: 6-10 & 6-11**<br>• 6-10 Find More Multiplication Patterns—pp. 132–133<br>• 6-11 Multiply by Multiples of 10—pp. 134–135 |
| NOA 3.2 Understand properties of multiplication and the relationship between multiplication and division.<br>• To use concepts based on patterns and place value to multiply and divide (NOA 3.2)<br>○ Relate skip counting and repeated addition to multiplication<br>○ Draw arrays to model multiplication<br>○ Skip count by 3, 4, and 100<br>○ Explore and describe multiplication fact patterns<br>○ Identify, express and apply the zero properties of multiplication<br>*continued* | **Chapter 4: 4-1 through 4-6**<br>• 4-1 Represent Multiplication as Repeated Addition—pp. 66–67<br>• 4-2 Represent Multiplication on a Number Line—pp. 68–69<br>• 4-3 Represent Multiplication as Arrays—pp. 70–71<br>• 4-4 Multiply with the Commutative Property—pp. 74–75<br>• 4-5 Represent Division by Sharing—pp. 76–77<br>• 4-6 Represent Division by Repeated Subtraction—pp. 78–79<br>**Chapter 5: 5-5 & 5-6**<br>• 5-5 Multiply by 10—pp. 98–99<br>• 5-6 Find Patterns in the Multiplication Table—pp. 100–101<br>**Chapter 6: 6-7 through 6-11**<br>• 6-7 Use a Bar Model to Multiply—pp. 126–127<br>• 6-8 Problem Solving: Make a Table—pp. 128–129<br>• 6-9 Use the Associative Property to Multiply—pp. 130–131<br>• 6-10 Find More Multiplication Patterns—pp. 132–133<br>*continued* |

## NUMBER THEORY, OPERATIONS, ALGEBRAIC THINKING (NOA)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| ○ Illustrate repeated addition and subtraction on a number line | • 6-11 Multiply by Multiples of 10—pp. 134–135<br>**Chapter 7: 7-1**<br>• 7-1 Relate Multiplication and Division—pp. 142–143 |
| NOA 3.3 Solve problems involving all four operations, and identify and explain patterns in arithmetic.<br>• To represent the result of counting, combining and separating sets of objects using number sentences (NOA 3.1, 3.3)<br>○ Multiply two and three digit numbers by a one digit number<br>○ Recognize and apply the distributive property of multiplication<br>○ Model and interpret division with remainders<br>○ Multiply and divide money using single digit multipliers/divisors.<br>○ Divide with 2-digit dividends and 2-digit quotients<br>○ Record division using an algorithm (long division)<br>• To identify functional number relationships in real world situations (NOA 3.3) | **Chapter 2: 2-1 through 2-8**<br>• 2-1 Use Addition Properties—pp. 22–23<br>• 2-2 Explore Addition Patterns—pp. 24–25<br>• 2-3 Estimate Sums—pp. 26–27<br>• 2-4 Add with Partial Sums—pp. 30–31<br>• 2-5 Use Place Value to Add: Regroup Once—pp. 32–33<br>• 2-6 Use Place Value to Add: Regroup Twice—pp. 34–35<br>• 2-7 Add with Three or More Addends—pp. 36–37<br>• 2-8 Problem Solving: Use a Model—pp. 38–39<br>**Chapter 3: 3-1 through 3-6**<br>• 3-1 Estimate Differences—pp. 46–47<br>• 3-2 Relate Addition and Subtraction—pp. 48–49<br>• 3-3 Subtract with Partial Differences—pp. 50–51<br>• 3-4 Subtract Three-Digit Numbers—pp. 54–55<br>• 3-5 Subtract Across Zeros—pp. 56–57<br>• 3-6 Problem Solving: Read and Understand—pp. 58–59<br>**Chapter 4: 4-1 through 4-7**<br>• 4-1 Represent Multiplication as Repeated Addition—pp. 66–67<br>• 4-2 Represent Multiplication on a Number Line—pp. 68–69<br>• 4-3 Represent Multiplication as Arrays—pp. 70–71<br>• 4-4 Multiply with the Commutative Property—pp. 74–75<br>• 4-5 Represent Division by Sharing—pp. 76–77<br>• 4-6 Represent Division by Repeated Subtraction—pp. 78–79<br>• 4-7 Problem Solving: Write an Equation—pp. 80–81<br>**Chapter 5: 5-1 through 5-8**<br>• 5-1 Multiply by 2—pp. 88–89<br>• 5-2 Multiply by 5—pp. 90–91<br>• 5-3 Multiply by 9—pp. 92–93<br>• 5-4 Multiply by 1 and 0—pp. 96–97<br>• 5-5 Multiply by 10—pp. 98–99<br>• 5-6 Find Patterns in the Multiplication Table—pp. 100–101<br>• 5-7 Solve for Unknowns—pp. 102–103<br>• 5-8 Problem Solving: Compare Models—pp. 104–105<br>**Chapter 6: 6-1 through 6-11**<br>• 6-1 Break Apart to Multiply—pp. 112–113<br>• 6-2 Multiply by 3—pp. 114–115<br>• 6-3 Multiply by 4—pp. 116–117<br>• 6-4 Multiply by 6—pp. 118–119<br>• 6-5 Multiply by 7—pp. 120–121<br>• 6-6 Multiply by 8—pp. 122–123<br>• 6-7 Use a Bar Model to Multiply—pp. 126–127<br>• 6-8 Problem Solving: Make a Table—pp. 128–129<br>• 6-9 Use the Associative Property to Multiply—pp. 130–131<br>• 6-10 Find More Multiplication Patterns—pp. 132–133<br>• 6-11 Multiply by Multiples of 10—pp. 134–135<br>**Chapter 7: 7-1 through 7-8**<br>• 7-1 Relate Multiplication and Division—pp. 142–143<br>*continued* |

## NUMBER THEORY, OPERATIONS, ALGEBRAIC THINKING (NOA)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| | • 7-2 Divide by 2—pp. 144–145<br>• 7-3 Divide by 3—pp. 146–147<br>• 7-4 Divide by 4—pp. 150–151<br>• 7-5 Divide by 5—pp. 152–153<br>• 7-6 Problem Solving: Use Drawings to Solve Problems—pp. 154–155<br>**Chapter 8: 8-1 through 8-8**<br>• 8-1 Divide by 6—pp. 162–163<br>• 8-2 Divide by 7—pp. 164–165<br>• 8-3 Divide by 8—pp. 166–167<br>• 8-4 Divide by 9—pp. 168–169<br>• 8-5 One and Zero in Division—pp. 172–173<br>• 8-6 Problem Solving: Work Backward—pp. 174–175<br>• 8-7 Fact Families—pp. 176–177<br>• 8-8 Use Facts to Solve Problems—pp. 178–179<br>• 8-9 Use Order of Operations—pp. 180–181 |
| NOA 3.4 Compute fluently through 12s tables and apply to real world situations | **Chapter 5: 5-1 through 5-6**<br>• 5-1 Multiply by 2—pp. 88–89<br>• 5-2 Multiply by 5—pp. 90–91<br>• 5-3 Multiply by 9—pp. 92–93<br>• 5-4 Multiply by 1 and 0—pp. 96–97<br>• 5-5 Multiply by 10—pp. 98–99<br>• 5-6 Find Patterns in the Multiplication Table—pp. 100–101<br>**Chapter 6: 6-1 through 6-11**<br>• 6-1 Break Apart to Multiply—pp. 112–113<br>• 6-2 Multiply by 3—pp. 114–115<br>• 6-3 Multiply by 4—pp. 116–117<br>• 6-4 Multiply by 6—pp. 118–119<br>• 6-5 Multiply by 7—pp. 120–121<br>• 6-6 Multiply by 8—pp. 122–123<br>• 6-7 Use a Bar Model to Multiply—pp. 126–127<br>• 6-8 Problem Solving: Make a Table—pp. 128–129<br>• 6-9 Use the Associative Property to Multiply—pp. 130–131<br>• 6-10 Find More Multiplication Patterns—pp. 132–133<br>• 6-11 Multiply by Multiples of 10—pp. 134–135<br>**Chapter 7: 7-1 through 7-8**<br>• 7-1 Relate Multiplication and Division—pp. 142–143<br>• 7-2 Divide by 2—pp. 144–145<br>• 7-3 Divide by 3—pp. 146–147<br>• 7-4 Divide by 4—pp. 150–151<br>• 7-5 Divide by 5—pp. 152–153<br>• 7-6 Problem Solving: Use Drawings to Solve Problems—pp. 154–155<br>**Chapter 8: 8-1 through 8-8**<br>• 8-1 Divide by 6—pp. 162–163<br>• 8-2 Divide by 7—pp. 164–165<br>• 8-3 Divide by 8—pp. 166–167<br>• 8-4 Divide by 9—pp. 168–169<br>• 8-5 One and Zero in Division—pp. 172–173<br>• 8-6 Problem Solving: Work Backward—pp. 174–175<br>• 8-7 Fact Families—pp. 176–177<br>• 8-8 Use Facts to Solve Problems—pp. 178–179<br>*continued* |

## NUMBER THEORY, OPERATIONS, ALGEBRAIC THINKING (NOA)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| | See also Grade 2<br>**Chapter 1: 1-1 through 1-7, 1-9 & 1-10**<br>• 1-1 Addition Concepts—pp. 3–6<br>• 1-2 Put Together—pp. 7–10<br>• 1-3 Related Addition Facts—pp. 11–14<br>• 1-4 Count On to Add—pp. 15–18<br>• 1-5 Doubles and Near Doubles—pp. 19–22<br>• 1-6 Make 10 to Add—pp. 23–26<br>• 1-7 Three Addends—pp. 29–32<br>• 1-9 Solve for Unknown Addends—pp. 39–42<br>• 1-10 Patterns in Addition—pp. 43–46<br>**Chapter 2: 2-1 through 2-11**<br>• 2-1 Subtraction Concepts—pp. 53–56<br>• 2-2 Take Apart—pp. 57–60<br>• 2-3 Subtract to Compare—pp. 61–64<br>• 2-4 Count On to Subtract—pp. 65–68<br>• 2-5 Related Subtraction Facts—pp. 69–72<br>• 2-6 Relate Addition and Subtraction—pp. 73–76<br>• 2-7 Fact Families—pp. 77–80<br>• 2-8 Think Addition to Subtract—pp. 83–86<br>• 2-9 Use Addition to Check—pp. 87–90<br>• 2-10 Solve for Unknowns—pp. 91–94<br>• 2-11 Make 10 to Subtract—pp. 95–98 |
| NOA 3.5 Develop an understanding of fractions as numbers<br>• To represent fractions by sharing portions of equal size (NOA 3.5)<br>• To explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. (NOA 3.5)<br>○ Model equivalent fractions (using manipulatives, pictures, graphics, etc.)<br>○ Read, write and identify all fractions<br>○ Identify and model fractional parts of a set<br>○ Find fractional parts of numbered groups<br>• To use models and number lines to compare fractions (NOA 3.5)<br>○ Use visual models to identify and compare fractions<br>○ Compare fractions with like denominators<br>○ Compare unit fractions<br>○ Compare proper fractions with unlike denominators<br>○ Compare two fractions with the same numerator or the same denominator by reasoning about their size.<br>*continued* | **Chapter 9: 9-1 through 9-7**<br>• 9 Fraction Concepts—pp. Concepts–186<br>• 9-1 Understand Equal Parts—pp. 188–189<br>• 9-2 Name Unit Fractions of a Whole—pp. 190–191<br>• 9-3 Find Unit Fractions on a Number Line—pp. 192–193<br>• 9-4 Name Fractions of a Whole—pp. 196–197<br>• 9-5 Find Fractions on a Number Line—pp. 198–199<br>• 9-6 Use a Fraction to Find the Whole—pp. 200–201<br>• 9-7 Problem Solving: Use a Model—pp. 202–203<br>**Chapter 10: 10-1 through 10-7**<br>• 10-1 Whole Numbers and Fractions—pp. 210–211<br>• 10-2 Find Equivalent Fractions—pp. 212–213<br>• 10-3 Find Equivalent Fractions on a Number Line—pp. 214–215<br>• 10-4 Compare Fractions with the Same Denominator—pp. 218–219<br>• 10-5 Compare Fractions with the Same Numerator—pp. 220–221<br>• 10-6 Order Fractions—pp. 222–223<br>• 10-7 Problem Solving: Act It Out—pp. 224–225 |

## NUMBER THEORY, OPERATIONS, ALGEBRAIC THINKING (NOA)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| ○ Recognize that comparisons are valid only when the two fractions refer to the same whole.<br>○ Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.<br>• To model and identify mixed numbers (NOA 3.5)<br>○ Identify mixed numbers | |
| • To construct and use models to add and subtract like fractions (NOA 3.5)<br>○ Add and subtract like fractions using models<br>○ Apply fractions to draw conclusions about fairness and equity of resources | See Grade 4<br>**Chapter 11: 11-1 through 11-8**<br>• 11-1 Use Models to Add Fractions—pp. 224–225<br>• 11-2 Add Fractions: Like Denominators—pp. 226–227<br>• 11-3 Decompose Fractions as Sums of Unit Fractions—pp. 228–229<br>• 11-4 Use Models to Subtract Fractions—pp. 230–231<br>• 11-5 Subtract Fractions: Like Denominators—pp. 232–233<br>• 11-6 Write Mixed Numbers as Equivalent Fractions—pp. 236–237<br>• 11-7 Add Mixed Numbers: Like Denominators—pp. 238–239<br>• 11-8 Subtract Mixed Numbers: Like Denominators—pp. 240–241 |
| NOA 3.6 Extend whole numbers, place value, patterns, and notations to include decimals; relate money to decimals<br>• To identify and use equivalent representations of numbers based on place value patterns to estimate and compute (NOA 3.6)<br>○ fluently divide within 100<br>○ use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities | **Chapter 1: 1-1 through 1-6**<br>• 1-1 Read and Write Multi-Digit Numbers—pp. 2–3<br>• 1-2 Understand the Number Line—pp. 4–5<br>• 1-3 Compare and Order Numbers—pp. 6–7<br>• 1-4 Round Numbers to the Nearest Ten—pp. 10–11<br>• 1-5 Round Numbers to the Nearest Hundred—pp. 12–13<br>• 1-6 Problem Solving: Use a Four-Step Process—pp. 14–15<br>**Chapter 2: 2-3**<br>• 2-3 Estimate Sums—pp. 26–27<br>**Chapter 3: 3-1**<br>• 3-1 Estimate Differences—pp. 46–47 |
| • To extend whole number place value patterns, models, and notations to include decimals (NOA 3.6)<br>○ Model and write decimals in tenths and hundredths<br>○ Relate money (pennies and dimes) to decimals<br>○ Compare and order decimals of tenths and hundredths<br>○ Locate decimals on a number line<br>○ Count by tenths and hundredths<br>○ Write fractions with denominators of 10 or 100 as decimals<br>• To express equivalent relationships between decimals and fractions whose denominator is a multiple of ten (NOA 3.6, 3.7) | See Grade 4<br>**Chapter 13: 13-1 through 13-7**<br>• 13-1 Equivalent Fractions: Rename Tenths as Hundredths—pp. 272–273<br>• 13-2 Add and Subtract Fractions with Denominators of 10 and 100—pp. 274–275<br>• 13-3 Tenths and Hundredths as Fractions and Decimals—pp. 276–277<br>• 13-4 Decimals Greater than One—pp. 278–279<br>• 13-5 Decimal Place Value—pp. 280–281<br>• 13-6 Compare Decimals with Models and Symbols—pp. 284–285<br>• 13-7 Order Decimals—pp. 286–287 |

## NUMBER THEORY, OPERATIONS, ALGEBRAIC THINKING (NOA)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| NOA 3.7 Represent and analyze mathematical situations and structures using algebraic symbols<br>• To demonstrate equivalence using properties of whole numbers (NOA 3.7)<br>• To use estimation strategies that result in reasonable answers to a problem (NOA 3.7)<br>○ Recognize when estimation is an appropriate problem- solving strategy<br>○ Estimate products and quotients and the method of estimation<br>○ Use compatible numbers to make reasonable estimates<br>○ Use clustering to estimate sums<br>○ Divide with 2-digit dividends and 2-digit quotients<br>○ Record division using an algorithm (long division)<br>○ Use benchmarks to understand the relative magnitude of numbers<br>○ Determine and discuss the reasonableness of an answer and explain why a particular estimation strategy will result in an over or underestimate<br>• To express equivalent relationships between decimals and fractions whose denominator is a multiple of ten (NOA 3.6, 3.7) | **Chapter 1: 1-3 through 1-5**<br>• 1-3 Compare and Order Numbers—pp. 6–7<br>• 1-4 Round Numbers to the Nearest Ten—pp. 10–11<br>• 1-5 Round Numbers to the Nearest Hundred—pp. 12–13<br>**Chapter 2: 2-1 & 2-3**<br>• 2-1 Use Addition Properties—pp. 22–23<br>• 2-3 Estimate Sums—pp. 26–27<br>**Chapter 3: 3-1**<br>• 3-1 Estimate Differences—pp. 46–47<br>**Chapter 4: 4-4 & 4-7**<br>• 4-4 Multiply with the Commutative Property—pp. 74–75<br>• 4-7 Problem Solving: Write an Equation—pp. 80–81<br>**Chapter 6: 6-9**<br>• 6-9 Use the Associative Property to Multiply—pp. 130–131<br>**Chapter 15: 15-4**<br>• 15-4 Find Area Using the Distributive Property—pp. 320–321<br>See Grade 4<br>**Chapter 2: 2-1**<br>• 2-3 Estimate Sums—pp. 28–29<br>**Chapter 3: 3-1**<br>• 3-1 Estimate Differences—pp. 46–47<br>**Chapter 4: 4-1**<br>• 4-4 Estimate Products—pp. 76–77<br>**Chapter 7: 7-3**<br>• 7-3 Estimate Quotients—pp. 132–133<br>**Chapter 13: 13-1 & 13-3**<br>• 13-1 Equivalent Fractions: Rename Tenths as Hundredths—pp. 272–273<br>• 13-3 Tenths and Hundredths as Fractions and Decimals—pp. 276–277 |
| • To identify characteristics of a situation or problem influence the choice of numbers, operations, strategies, and tools. (NOA 3.7)<br>○ synthesize number and operation concepts to solve complex, multi-step word problems using all four operations<br>○ assess the reasonableness of answers using mental computation and estimation strategies including rounding | **Chapter 1: 1-6**<br>• 1-6 Problem Solving: Use a Four-Step Process—pp. 14–15<br>**Chapter 2: 2-8**<br>• 2-8 Problem Solving: Use a Model—pp. 38–39<br>**Chapter 3: 3-6**<br>• 3-6 Problem Solving: Read and Understand—pp. 58–59<br>**Chapter 4: 4-8**<br>• 4-7 Problem Solving: Write an Equation—pp. 80–81<br>**Chapter 5: 5-8**<br>• 5-8 Problem Solving: Compare Models—pp. 104–105<br>**Chapter 6: 6-8**<br>• 6-8 Problem Solving: Make a Table—pp. 128–129<br>**Chapter 7: 7-6**<br>• 7-6 Problem Solving: Use Drawings to Solve Problems—pp. 154–155<br>**Chapter 8: 8-6**<br>• 8-6 Problem Solving: Work Backward—pp. 174–175<br>*continued* |

## NUMBER THEORY, OPERATIONS, ALGEBRAIC THINKING (NOA)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| | **Chapter 9: 9-7**<br>• 9-7 Problem Solving: Use a Model—pp. 202–203<br>**Chapter 10: 10-7**<br>• 10-7 Problem Solving: Act It Out—pp. 224–225<br>**Chapter 11: 11-6**<br>• 11-6 Problem Solving: Write an Equation—pp. 244–245<br>**Chapter 12: 12-6**<br>• 12-6 Problem Solving: Compare Models—pp. 264–265<br>**Chapter 13: 13-5**<br>• 13-5 Problem Solving: Use Logical Reasoning—pp. 286–287<br>**Chapter 14: 14-5**<br>• 14-5 Problem Solving: Choose a Strategy—pp. 304–305<br>**Chapter 15: 15-6**<br>• 15-6 Problem Solving: Guess and Test—pp. 324–325<br>**Chapter 16: 16-4**<br>• 16-4 Problem Solving: Compare Strategies—pp. 340–341 |
| NOA 3.8 Use mathematical models to represent and understand quantitative relationships<br>• To identify and represent quantities that are equivalent or non-equivalent (NOA 3.8)<br>• To use properties of whole numbers to maintain equivalence (NOA 3.8)<br>○ Memorize multiplication facts and related division facts through 12 times table<br>○ Apply multiplication facts to solve real world problems<br>○ Apply properties of operations as strategies to multiply and divide including commutative, associative, and distributive properties<br>○ Identify and justify missing numbers in multiplication and division facts<br>○ Use mental math to multiply by 10, 100, and 1000<br>• To identify functional number relationships in real-world situations (NOA 3.8) | **Chapter 4: 4-4**<br>• 4-4 Multiply with the Commutative Property—pp. 74–75<br>**Chapter 5: 5-1 through 5-7**<br>• 5-1 Multiply by 2—pp. 88–89<br>• 5-2 Multiply by 5—pp. 90–91<br>• 5-3 Multiply by 9—pp. 92–93<br>• 5-4 Multiply by 1 and 0—pp. 96–97<br>• 5-5 Multiply by 10—pp. 98–99<br>• 5-6 Find Patterns in the Multiplication Table—pp. 100–101<br>• 5-7 Solve for Unknowns—pp. 102–103<br>**Chapter 6: 6-1 through 6-11**<br>• 6-1 Break Apart to Multiply—pp. 112–113<br>• 6-2 Multiply by 3—pp. 114–115<br>• 6-3 Multiply by 4—pp. 116–117<br>• 6-4 Multiply by 6—pp. 118–119<br>• 6-5 Multiply by 7—pp. 120–121<br>• 6-6 Multiply by 8—pp. 122–123<br>• 6-7 Use a Bar Model to Multiply—pp. 126–127<br>• 6-8 Problem Solving: Make a Table—pp. 128–129<br>• 6-9 Use the Associative Property to Multiply—pp. 130–131<br>• 6-10 Find More Multiplication Patterns—pp. 132–133<br>• 6-11 Multiply by Multiples of 10—pp. 134–135<br>**Chapter 7: 7-1 through 7-8**<br>• 7-1 Relate Multiplication and Division—pp. 142–143<br>• 7-2 Divide by 2—pp. 144–145<br>• 7-3 Divide by 3—pp. 146–147<br>• 7-4 Divide by 4—pp. 150–151<br>• 7-5 Divide by 5—pp. 152–153<br>• 7-6 Problem Solving: Use Drawings to Solve Problems—pp. 154–155<br>**Chapter 8: 8-1 through 8-8**<br>• 8-1 Divide by 6—pp. 162–163<br>• 8-2 Divide by 7—pp. 164–165 |

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## NUMBER THEORY, OPERATIONS, ALGEBRAIC THINKING (NOA)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| | • 8-3 Divide by 8—pp. 166–167<br>• 8-4 Divide by 9—pp. 168–169<br>• 8-5 One and Zero in Division—pp. 172–173<br>• 8-6 Problem Solving: Work Backward—pp. 174–175<br>• 8-7 Fact Families—pp. 176–177<br>• 8-8 Use Facts to Solve Problems—pp. 178–179<br>• 8-9 Use Order of Operations—pp. 180–181 |
| NOA 3.9 Use fractions to draw conclusions about fairness and equity of resources<br>• To develop understanding of fractions as numbers (NOA 3.9)<br>○ 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.<br>○ Understand a fraction as a number on the number line; represent fractions on a number line diagram<br>○ Represent a fraction 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 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.<br>○ 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 9: 9-1, 9-2 & 9-6**<br>• 9 Fraction Concepts—pp. Concepts–186<br>• 9-1 Understand Equal Parts—pp. 188–189<br>• 9-2 Name Unit Fractions of a Whole—pp. 190–191<br>• 9-3 Find Unit Fractions on a Number Line—pp. 192–193<br>• 9-4 Name Fractions of a Whole—pp. 196–197<br>• 9-5 Find Fractions on a Number Line—pp. 198–199<br>• 9-6 Use a Fraction to Find the Whole—pp. 200–201<br>• 9-7 Problem Solving: Use a Model—pp. 202–203<br>**Chapter 10: 10-1 through 10-5**<br>• 10-1 Whole Numbers and Fractions—pp. 210–211<br>• 10-2 Find Equivalent Fractions—pp. 212–213<br>• 10-3 Find Equivalent Fractions on a Number Line—pp. 214–215<br>• 10-4 Compare Fractions with the Same Denominator—pp. 218–219<br>• 10-5 Compare Fractions with the Same Numerator—pp. 220–221<br>• 10-6 Order Fractions—pp. 222–223<br>• 10-7 Problem Solving: Act It Out—pp. 224–225 |

## MEASUREMENT (M)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| M 3.1 Apply appropriate techniques, tools and formulas to determine measurements, including time and money<br>• To express monetary values in oral and written forms (M 3.1)<br>• To recognize, identify and trade sets of equivalent coins (M 3.1)<br>○ Subtract amounts of money less than a dollar from amounts greater than a dollar<br>○ Use decimal point in writing money amounts<br>○ Find equivalent sets of coins<br>○ Identify half dollars<br>○ Make change to a dollar<br>○ Add and subtract sums of money less than a dollar in columns aligning decimal points | See Grade 2<br>**Chapter 12: 12-1 & 12-4**<br>• 12-1 Pennies, Nickels, and Dimes—pp. 497–500<br>• 12-2 Quarters—pp. 501–504<br>• 12-3 Equal Amounts—pp. 505–508<br>• 12-4 Compare Money—pp. 509–512<br>• 12-5 Make Change—pp. 513–516<br>• 12-6 Add and Subtract Money—pp. 517–520<br>• 12-7 One Dollar—pp. 521–524<br>See also Grade 5<br>**Chapter 10: 10-7**<br>• 10-7 Addition with Money—pp. 234–235<br>**Chapter 11: 11-5**<br>• 11-5 Subtraction with Money—pp. 252–253<br>**Chapter 12: 12-5**<br>• 12-5 Multiplication with Money—pp. 270–271<br>**Chapter 13: 13-7**<br>• 13-7 Division with Money—pp. 302–303 |
| • To determine and use various tools and units to estimate and measure (M 3.1)<br>○ Identify cup, pint, quart, gallon and apply to real life<br>○ Identify pound and ounce as units of measure and relate use in real life<br>○ Identify a liter as 1000 milliliters<br>○ Identify liter and apply to real life<br>○ Compare and order objects according to capacity & weight<br>○ Identify conversion factors in the metric system<br>○ Read Fahrenheit and Celsius thermometers and describe<br>○ temperatures as hot, warm, or cold | **Chapter 11: 11-1 through 11-5**<br>• 11-1 Measure Length—pp. 232–233<br>• 11-2 Estimate and Measure Liquid Volume—pp. 234–235<br>• 11-3 Operations with Liquid Volume—pp. 236–237<br>• 11-4 Estimate and Measure Mass—pp. 240–241<br>• 11-5 Operations with Mass—pp. 242–243<br>See also Grade 4<br>**Chapter 14: 14-2 through 14-9**<br>• 14-2 Customary Units of Length—pp. 298–299<br>• 14-3 Customary Units of Capacity—pp. 300–301<br>• 14-4 Customary Units of Weight—pp. 302–303<br>• 14-5 Operations with Customary Units—pp. 304–305<br>• 14-6 Metric Units of Length—pp. 308–311<br>• 14-7 Metric Units of Capacity—pp. 310–313<br>• 14-8 Metric Units of Mass—pp. 312–313<br>• 14-9 Operations with Metric Units—pp. 314–315<br>**Chapter 15: 15-4**<br>• 15-4 Temperature—pp. 330–331 (Fahrenheit and Celsius) |
| • To represent and order time concepts in verbal and written form (M 3.1)<br>○ Identify ordinal words to thirty-first (calendar-related) | **Chapter 13: 13-1 through 13-4**<br>• 13-1 Tell Time to the Minute—pp. 276–277<br>• 13-2 Measure Elapsed Time—pp. 278–279<br>• 13-3 Find Start and End Times—pp. 282–283<br>• 13-4 Operations with Time—pp. 284–285<br>See also Grade 2<br>**Chapter 12: 12-9 through 12-11**<br>• 12-9 Hour and Half Hour—pp. 531–534<br>• 12-10 Five Minutes—pp. 535–538<br>• 12-11 a.m. and p.m.—pp. 539–542<br>*continued* |

## MEASUREMENT (M)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| | See also Kindergarten<br>**Chapter 3: 3-7**<br>• 3-7 Ordinals: First to Fifth—pp. 101–104<br>**Chapter 5: 5-7**<br>• 5-7 Ordinals: First to Tenth—pp. 173–176<br>**Chapter 17: 17-1 through 17-4**<br>• 17-1 Time Sequence: First, Next, Last—pp. 619–622<br>• 17-2 Calendar—pp. 623–626<br>• 17-3 More Time, Less Time—pp. 629–632<br>• 17-4 Time on the Hour—pp. 633–636 |
| • To use measurement to determine and explain relative size of a given objects and measures (M 3.1) | **Chapter 11: 11-1 through 11-5**<br>• 11-1 Measure Length—pp. 232–233<br>• 11-2 Estimate and Measure Liquid Volume—pp. 234–235<br>• 11-3 Operations with Liquid Volume—pp. 236–237<br>• 11-4 Estimate and Measure Mass—pp. 240–241<br>• 11-5 Operations with Mass—pp. 242–243<br>See also Grade 1<br>**Chapter 5: 5-1**<br>• 5-1 Order by Length—pp. 163–166<br>See also Grade 2<br>**Chapter 6: 6-2**<br>• 6-8 Compare Lengths—pp. 271–274<br>See also Grade 4<br>**Chapter 14: 14-2 through 14-9**<br>• 14-2 Customary Units of Length—pp. 298–299<br>• 14-3 Customary Units of Capacity—pp. 300–301<br>• 14-4 Customary Units of Weight—pp. 302–303<br>• 14-5 Operations with Customary Units—pp. 304–305<br>• 14-6 Metric Units of Length—pp. 308–311<br>• 14-7 Metric Units of Capacity—pp. 310–313<br>• 14-8 Metric Units of Mass—pp. 312–313<br>• 14-9 Operations with Metric Units—pp. 314–315<br>**Chapter 15: 15-4**<br>• 15-4 Temperature—pp. 330–331 (Fahrenheit and Celsius) |

## MEASUREMENT (M)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| M 3.2 Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects<br>• To solve problems involving money (M 3.2)<br>• To use standard units and identify and express examples of measurement in daily life (M 3.2)<br>○ Estimate and/or compute elapsed or projected time in terms of an hour or a minute using a clock<br>○ Use A.M. and P.M. appropriately<br>○ Tell, write, and show time to the quarter hour, to five and one minute intervals<br>○ Use a schedule, calendar, and/or a timeline to measure elapsed time<br>○ Tell time in two ways (minutes before the hour and minutes after the hour)<br>○ Identify conversion factors for seconds, minutes, hours, and days<br>• To determine and use various tools and units to estimate and measure (M 3.2)<br>• To use measurement to determine and explain relative size of a given objects and measures (M 3.2)<br>• To use standard units and identify and express examples of measurement in daily life (M 3.2)<br>○ Estimate and measure length and height in inches, feet, and yards<br>○ Estimate and measure length and height in centimeters and meters<br>○ Choose an appropriate unit to estimate length or distance (foot, yard, mile)<br>○ Measure to the nearest half and quarter inch<br>○ Estimate and measure length and height in millimeters, decimeters, kilometers<br>○ Memorize conversions for inches, feet, yards<br>○ Identify the conversions for feet, yards and miles | **Chapter 11: 11-1 through 11-5**<br>• 11-1 Measure Length—pp. 232–233<br>• 11-2 Estimate and Measure Liquid Volume—pp. 234–235<br>• 11-3 Operations with Liquid Volume—pp. 236–237<br>• 11-4 Estimate and Measure Mass—pp. 240–241<br>• 11-5 Operations with Mass—pp. 242–243<br>**Chapter 13: 13-1 through 13-5**<br>• 13-1 Tell Time to the Minute—pp. 276–277<br>• 13-2 Measure Elapsed Time—pp. 278–279<br>• 13-3 Find Start and End Times—pp. 282–283<br>• 13-4 Operations with Time—pp. 284–285<br>• 13-5 Problem Solving: Use Logical Reasoning—pp. 286–287<br>See Grade 2<br>**Chapter 12: 12-1 through 12-8**<br>• 12-1 Pennies, Nickels, and Dimes—pp. 497–500<br>• 12-2 Quarters—pp. 501–504<br>• 12-3 Equal Amounts—pp. 505–508<br>• 12-4 Compare Money—pp. 509–512<br>• 12-5 Make Change—pp. 513–516<br>• 12-6 Add and Subtract Money—pp. 517–520<br>• 12-7 One Dollar—pp. 521–524<br>• 12-8 Paper Money—pp. 525–528<br>• 12-9 Hour and Half Hour—pp. 531–534<br>• 12-10 Five Minutes—pp. 535–538<br>• 12-11 a.m. and p.m.—pp. 539–542<br>See also Grade 4<br>**Chapter 14: 14-2 through 14-9**<br>• 14-2 Customary Units of Length—pp. 298–299<br>• 14-3 Customary Units of Capacity—pp. 300–301<br>• 14-4 Customary Units of Weight—pp. 302–303<br>• 14-5 Operations with Customary Units—pp. 304–305<br>• 14-6 Metric Units of Length—pp. 308–311<br>• 14-7 Metric Units of Capacity—pp. 310–313<br>• 14-8 Metric Units of Mass—pp. 312–313<br>• 14-9 Operations with Metric Units—pp. 314–315<br>**Chapter 15: 15-4**<br>• 15-4 Temperature—pp. 330–331 (Fahrenheit and Celsius)<br>See also Grade 5<br>**Chapter 10: 10-7**<br>• 10-7 Addition with Money—pp. 234–235<br>**Chapter 11: 11-5**<br>• 11-5 Subtraction with Money—pp. 252–253<br>**Chapter 12: 12-5**<br>• 12-5 Multiplication with Money—pp. 270–271<br>**Chapter 13: 13-7**<br>• 13-7 Division with Money—pp. 302–303 |

## GEOMETRY (G)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| G 3.1 Analyze characteristics and properties of two and three dimensional geometric shapes and develop mathematical arguments about relationships<br>• To identify shapes as the same where there are changes in position (G 3.1, 3.2, 3.3)<br>• To recognize and use geometric relationships to solve problems (G 3.1, 3.2, 3.3)<br>○ Identify ways to tile or tessellate a region or shape using various polygons | **Chapter 14: 14-1 through 14-5**<br>• 14-1 Classify Polygons—pp. 294–295<br>• 14-2 Classify Quadrilaterals—pp. 296–297<br>• 14-3 Draw Quadrilaterals—pp. 298–299<br>• 14-4 Compose and Decompose Shapes—pp. 302–303<br>• 14-5 Problem Solving: Choose a Strategy—pp. 304–305 |
| G 3.2 Understand concepts of area and perimeter and relate to multiplication and addition<br>• To identify shapes as the same where there are changes in position (G 3.1, 3.2, 3.3)<br>• To recognize and use geometric relationships to solve problems (G 3.1, 3.2, 3.3)<br>○ Identify congruent figures<br>○ Compute the perimeter of a polygon<br>○ Find the area of squares and rectangles by modeling and<br>○ counting square units | **Chapter 15: 15-1 through 15-6**<br>• 15-1 Understand Area—pp. 312–313<br>• 15-2 Find Area Using Standard Units—pp. 314–315<br>• 15-3 Find the Area of a Rectangle and a Square—pp. 316–317<br>• 15-4 Find Area Using the Distributive Property—pp. 320–321<br>• 15-5 Find Area of Composite Shapes—pp. 322–323<br>• 15-6 Problem Solving: Guess and Test—pp. 324–325<br>**Chapter 16: 16-1 through 16-6**<br>• 16-1 Understand Perimeter—pp. 332–333<br>• 16-2 Find Perimeter—pp. 334–335<br>• 16-3 Find Unknown Side Lengths—pp. 336–337<br>• 16-4 Problem Solving: Compare Strategies—pp. 340–341<br>• 16-5 Same Perimeter, Different Areas—pp. 342–343<br>• 16-6 Same Area, Different Perimeters—pp. 344–345 |
| G 3.3 Apply transformations and use symmetry to analyze mathematical situations and solve problems<br>• To classify or identify plane figures and solids by common characteristics (G 3.3)<br>• To identify shapes as the same where there are changes in position (G 3.1, 3.2, 3.3)<br>• To recognize and use geometric relationships to solve problems (G 3.1, 3.2, 3.3)<br>○ Recognize, name, compare, and sort: cube, cylinder, cone sphere, rectangular prism, and pyramid<br>○ Describe plane and solid figures by number of edges and/or faces<br>○ Describe the relationship between plane and solid figures<br>○ Identify and draw points, lines, line segments, and rays<br>*continued* | **Chapter 14: 14-1 through 14-5**<br>• 14-1 Classify Polygons—pp. 294–295<br>• 14-2 Classify Quadrilaterals—pp. 296–297<br>• 14-3 Draw Quadrilaterals—pp. 298–299<br>• 14-4 Compose and Decompose Shapes—pp. 302–303<br>• 14-5 Problem Solving: Choose a Strategy—pp. 304–305<br>See also Grade 4<br>**Chapter 17: 17-1 through 17-4**<br>• 17-1 Polygons—pp. 370–371<br>• 17-2 Quadrilaterals—pp. 372–373<br>• 17-3 Triangles—pp. 374–375<br>• 17-4 Symmetry—pp. 376–377<br>See also Grade 5<br>**Chapter 16: 16-1**<br>• 16-1 Solid Figures—pp. 360–361 |

## GEOMETRY (G)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| ○ Classify angles as right, acute or obtuse<br>○ Identify, compare and contrast intersecting, perpendicular and parallel lines<br>○ Identify, describe, classify and draw polygons: quadrilaterals, pentagons, hexagons, octagons and classify triangles according to sides and angles | |

## DATA ANALYSIS, STATISTICS, & PROBABILITY (DSP)

| Grade 3 Standards | *Sadlier Math*, Grade 3 |
|---|---|
| DP 3.1 Collect, organize, and display data; select and use appropriate statistical methods to analyze data<br>• To collect, organize and describe data (DSP 3.1)<br>○ Create simple (picture, bar) graphs from given data<br>○ Create a tally chart using given data<br>○ Read and interpret tally charts, frequency tables, bar graphs, and pictographs<br>○ Use a variety of graphic organizers to sort items<br>• To describe features of a data set (DSP 3.1)<br>○ Create diagrams and charts to solve problems<br>○ Draw Venn diagrams to illustrate given data<br>○ Read and interpret line graphs<br>○ Conduct surveys to gather data<br>○ Demonstrate and explain survey findings<br>○ Use range and mode to explain data<br>○ Calculate mean and use to explain data<br>○ Identify and use median to explain data<br>DP 3.2 Develop and evaluate inferences and predictions that are based on data | **Chapter 12: 12-1 through 12-8**<br>• 12-1 Read Picture Graphs—pp. 252–253<br>• 12-2 Make Picture Graphs—pp. 254–255<br>• 12-3 Read Bar Graphs—pp. 256–257<br>• 12-4 Make Bar Graphs—pp. 258–259<br>• 12-5 Data and Two-Step Problems—pp. 260–261<br>• 12-6 Problem Solving: Compare Models—pp. 264–265<br>• 12-7 Read Line Plots—pp. 266–267<br>• 12-8 Make Line Plots—pp. 268–269<br>**Chapter 13: 13-5**<br>• 13-5 Problem Solving: Use Logical Reasoning—pp. 286–287 (Venn diagram) |
| DP 3.3 Understand and apply basic concepts of probability<br>• To pose questions to be answered through collection and analysis of a data set (DSP 3.3)<br>○ Identify events as more likely, equally likely, less likely<br>○ Express probability in verbal and numerical terms<br>○ Use results of experiments to predict future events<br>○ Calculate probability of an event | See Grade 6<br>**Chapter 18: 18-1 through 18-7**<br>• 18-1 Populations and Samples—online<br>• 18-2 Drawing Conclusions from Samples—online<br>• 18-3 Probability and Likelihood—online<br>• 18-4 Theoretical Probability—online<br>• 18-5 Relative Frequency and Experimental Probability—online<br>• 18-6 Uniform Probability Models—online<br>• 18-7 Non-Uniform Probability Models—online |