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to the

2023 Arkansas Mathematics Standards

Kindergarten

| 2023 Arkansas Mathematics Standards Kindergarten | | i-Ready Classroom Mathematics ©2024 Kindergarten |
|---|--|---|
| Kindergarten | | |
| K.NPV | Number & Place Value | |
| | Counting & Number Foundations | |
| | Students know the number names and count sequence while exploring the relationships between numbers. | |
| K.NPV.1 | Count to 100 by ones and tens; count forward by ones from any given number up to 100. | <p>Lesson 17: Count Within 100</p> <p>Supporting Content: Lesson 4: Count, Show, and Write Numbers to 5; Lesson 11: Count, Show, and Write Numbers 6 to 10; Lesson 16: Count, Read, and Write Numbers 11 to 20</p> |
| K.NPV.2 | Count a set of objects up to 20 using one-to-one correspondence, demonstrating that the last number stated indicates the number of objects in the set regardless of the arrangement. | <p>Lesson 4: Count, Show, and Write Numbers to 5 Lesson 11: Count, Show, and Write Numbers 6 to 10 Lesson 16: Count, Read, and Write Numbers 11 to 20</p> <p>Supporting Content: Lesson 3: Sort and Count Objects; Lesson 5: Compare Numbers to 5; Lesson 12: Compare Numbers to 10; Lesson 17: Count Within 100 Math in Action: pp. 133–136, 423–426</p> |
| K.NPV.3 | Identify the position of objects in a set using ordinal numbers (first, second, third, etc.). | <p>Supporting Content: Lesson 1: Describe Position Lesson 12: Compare Numbers to 10</p> |
| K.NPV.4 | Identify quickly a number of items in a set from 0 to 10 without counting. | <p>Lesson 4: Count, Show, and Write Numbers to 5 Lesson 11: Count, Show, and Write Numbers 6 to 10</p> <p>Supporting Content: Lesson 7: Add Within 5; Lesson 8: Two-Dimensional Shapes</p> <p><i>Note: Quick Images in the Number Sense Activities provide repeated opportunities for students to practice subitizing skills by recognizing the number of objects in an image without counting them.</i></p> |

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| Place Value | | |
| Students understand the base ten place value system. | | |
| K.NPV.5 | Read, write, and represent whole numbers from 0 to 20. | <p>Lesson 4: Count, Show, and Write Numbers to 5 Lesson 11: Count, Show, and Write Numbers 6 to 10 Lesson 16: Count, Read, and Write Numbers 11 to 20</p> <p>Supporting Content: Lesson 5: Compare Numbers to 5; Lesson 7: Add Within 5; Lesson 9: Subtract Within 5; Lesson 10: Add and Subtract Within 5; Lesson 12: Compare Numbers to 10; Lesson 14: Compose and Decompose 10; Lesson 18: Compose and Decompose 6 and 7; Lesson 19: Compose and Decompose 8 and 9; Lesson 20: Add Within 10; Lesson 21: Subtract Within 10; Lesson 22: Add and Subtract to Solve Word Problems; Lesson 23: Compose and Decompose Teen Numbers with Tools and Drawings; Lesson 25: Compose and Decompose Teen Numbers with Symbols Math in Action: pp. 133–136, 333–336, 423–426, 563–566</p> |
| K.NPV.6 | Show equivalent forms of whole numbers up to 20 as groups of tens and ones, using manipulatives and drawings. | <p>Lesson 16: Count, Read, and Write Numbers 11 to 20</p> <p>Supporting Content: Lesson 4: Count, Show, and Write Numbers to 5; Lesson 11: Count, Show, and Write Numbers 6 to 10</p> |
| Comparison | | |
| Students use place value understanding to compare numbers. | | |
| K.NPV.7 | Use matching and counting strategies to compare the number of objects in one group to the number of objects in another group (0 to 10) using the terms greater than, less than, or equal. | <p>Lesson 3: Sort and Count Objects Lesson 5: Compare Numbers to 5 Lesson 12: Compare Numbers to 10</p> <p>Supporting Content: Math in Action: pp. 133–136</p> |

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| K.NPV.8 | Compare two whole numbers, using the terms greater than, less than, or equal. | <p>Lesson 5: Compare Numbers to 5 Lesson 12: Compare Numbers to 10</p> <p>Supporting Content: Lesson 3: Sort and Count Objects Math in Action: pp. 133–136</p> |
| K.CAR | Computation & Algebraic Reasoning | |
| | Operations & Properties | |
| | Students perform operations using place value understanding and properties of operations. | |
| K.CAR.1 | Use objects, fingers, mental images, drawings, sounds, acting out situations, or verbal explanations to represent addition and subtraction from 0 to 10. | <p>Lesson 7: Add Within 5 Lesson 9: Subtract Within 5 Lesson 10: Add and Subtract Within 5 Lesson 20: Add Within 10 Lesson 21: Subtract Within 10</p> <p>Supporting Content: Lesson 14: Compose and Decompose 10; Lesson 18: Compose and Decompose 6 and 7; Lesson 19: Compose and Decompose 8 and 9; Lesson 22: Add and Subtract to Solve Word Problems Math in Action: pp. 223–226, 493–496</p> |
| K.CAR.2 | Use objects or drawings to decompose numbers less than or equal to 10 into pairs in more than one way, recording each decomposition. | <p>Lesson 14: Compose and Decompose 10 Lesson 18: Compose and Decompose 6 and 7 Lesson 19: Compose and Decompose 8 and 9</p> <p>Supporting Content: Lesson 8: Two-Dimensional Shapes; Lesson 15: Find Number Partners for 10; Lesson 22: Add and Subtract to Solve Word Problems Math in Action: pp. 223–226, 423–426, 493–496</p> |
| K.CAR.3 | Use a drawing or equation to find the number that makes 10 when added to a given number. | <p>Lesson 15: Find Number Partners for 10</p> <p>Supporting Content: Lesson 14: Compose and Decompose 10 Math in Action: pp. 223–226</p> |

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| K.CAR.4 | Use manipulatives and various strategies to fluently add and subtract within 10. | Lesson 7: Add Within 5 Lesson 9: Subtract Within 5 Lesson 10: Add and Subtract Within 5 Lesson 20: Add Within 10 Lesson 21: Subtract Within 10 |
| Problem Solving | | |
| Students to solve real-world problems. | | |
| K.CAR.5 | Solve real-world problems involving addition and subtraction within 10, using objects, drawings, or equations to represent the problem. | Lesson 7: Add Within 5 Lesson 9: Subtract Within 5 Lesson 10: Add and Subtract Within 5 Lesson 20: Add Within 10 Lesson 21: Subtract Within 10 Lesson 22: Add and Subtract to Solve Word Problems <u>Supporting Content:</u> Lesson 14: Compose and Decompose 10; Lesson 15: Find Number Partners for 10; Lesson 18: Compose and Decompose 6 and 7; Lesson 19: Compose and Decompose 8 and 9 Math in Action: pp. 223–226, 493–496 |
| K.GM | Geometry & Measurement | |
| Shapes | | |
| Students analyze attributes of shapes to develop generalizations about their properties. | | |
| K.GM.1 | Describe the positions of objects and geometric shapes in the environment. <ul style="list-style-type: none"> • Terms include: inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of, and to the right of | Lesson 1: Describe Position Lesson 6: Three-Dimensional Shapes and Weight Lesson 8: Two-Dimensional Shapes <u>Supporting Content:</u> Lesson 13: Compose Shapes Math in Action: pp. 63–66 <i>Note: The lessons cited do not include describing position to the left of or to the right of.</i> |

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| K.GM.2 | <p>Name shapes correctly regardless of their orientation or overall size.</p> <ul style="list-style-type: none"> Shapes include: squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres | <p>Lesson 6: Three-Dimensional Shapes and Weight Lesson 8: Two-Dimensional Shapes</p> <p>Supporting Content: Lesson 13: Compose Shapes; Lesson 24: Build with Shapes Math in Action: pp. 223–226, 563–566</p> |
| K.GM.3 | Identify two-dimensional attributes of three-dimensional objects. | <p>Lesson 24: Build with Shapes</p> <p>Supporting Content: Lesson 6: Three-Dimensional Shapes and Weight; Lesson 8: Two-Dimensional Shapes</p> |
| K.GM.4 | Analyze and sort a variety of two and three-dimensional shapes using informal language to describe their similarities, differences, and other attributes. | <p>Lesson 6: Three-Dimensional Shapes and Weight Lesson 8: Two-Dimensional Shapes</p> <p>Supporting Content: Lesson 13: Compose Shapes; Lesson 24: Build with Shapes Math in Action: pp. 223–226</p> |
| K.GM.5 | Compose and draw shapes found in the world using objects (e.g., straws, toothpicks, clay balls). | <p>Lesson 13: Compose Shapes Lesson 24: Build with Shapes</p> <p>Supporting Content: Lesson 6: Three-Dimensional Shapes and Weight; Lesson 8: Two-Dimensional Shapes Math in Action: pp. 563–566</p> |
| Measurement Concepts | | |
| Students develop understanding of measurement terms and concepts. | | |
| K.GM.6 | Make direct comparisons of the length, capacity, weight, and temperature of objects, recognizing which object is shorter/longer, lighter/heavier, warmer/cooler, or holds more. | <p>Lesson 2: Describe and Compare Length and Height Lesson 6: Three-Dimensional Shapes and Weight</p> <p>Supporting Content: Lesson 3: Sort and Count Objects</p> <p><i>Note: The lessons cited do not include comparing measures of capacity or temperature.</i></p> |

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| Time & Money | | |
| Students explore time and money values and concepts. | | |
| K.GM.7 | <p>Understand concepts of time, recognizing that clocks and calendars are tools that measure time.</p> <ul style="list-style-type: none"> Concepts of time include: morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year | <p><i>For supporting content, see Grade 1:</i></p> <p>Lesson 24: Tell Time</p> <p><i>Note: The lesson cited includes concepts of time, such as morning, afternoon, evening, as well as, telling time to the nearest hour and half hour.</i></p> |
| K.GM.8 | Identify pennies and dimes by name and value. | <p>See Grade 1:</p> <p>Lesson 27: Money</p> |
| K.DA | Data Analysis | |
| | Charts, Graphs, & Tables | |
| | Students organize and analyze data. | |
| K.DA.1 | Collect, sort, and organize data into two or three categories, using real-object graphs and picture graphs. | <p>See Grade 1:</p> <p>Lesson 13: Collect and Compare Data</p> |

Note: i-Ready Classroom Mathematics addresses number sense skills every day with dedicated number sense activities and fun counting and cardinality practice. Number Sense activities provide daily opportunities for children to talk about numbers and relationships, develop understanding of numbers, and use numbers and operations flexibly. Counting Routines provide children with engaging opportunities to practice rote counting daily.



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2023 Arkansas Mathematics Standards

| 2023 Arkansas Mathematics Standards Grade 1 | | i-Ready Classroom Mathematics ©2024 Grade 1 |
|--|--|---|
| Grade 1 | | |
| 1.NPV | Number & Place Value | |
| | Counting | |
| | Students extend the counting sequence. | |
| 1.NPV.1 | Count forward and back within 120 by ones and tens from any given whole number. | <p>Lesson 16: Numbers to 120</p> <p>Supporting Content: Lesson 3: Use Counting Strategies to Add and Subtract; Lesson 6: Teen Numbers; Lesson 13: Collect and Compare Data; Lesson 27: Money</p> <p>Math in Action: pp. 441–444</p> <p><i>Note: Counting Routines provide children with engaging opportunities to practice rote counting daily, including counting backward.</i></p> |
| 1.NPV.2 | Skip count forward by multiples of fives within 120. | <p>See Grade 2:</p> <p>Lesson 10: Solve Word Problems Involving Money</p> <p>Lesson 11: Tell and Write Time</p> <p>Lesson 15: Mental Addition and Subtraction</p> <p>Lesson 31: Add Using Arrays</p> <p><i>Note: Counting Routines provide children with engaging opportunities to practice rote counting daily.</i></p> |
| | Place Value | |
| | Students understand the base ten place value system. | |
| 1.NPV.3 | Explain the place value of ones and tens in two-digit numbers, using concrete models, diagrams, numbers, or words. | <p>Lesson 6: Teen Numbers</p> <p>Lesson 15: Tens and Ones</p> <p>Supporting Content: Lesson 9: Use a Ten to Subtract; Lesson 16: Numbers to 120; Lesson 17: Compare Numbers; Lesson 18: Add and Subtract Tens; Lesson 19: Addition with Two-Digit Numbers; Lesson 20: Add Two-Digit and One-Digit Numbers; Lesson 21: Add Two-Digit Numbers</p> |

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| 1.NPV.4 | Read, write, and represent whole numbers up to 120, using concrete models or drawings, word form, base ten numerals, and expanded form. | Lesson 15: Tens and Ones Lesson 16: Numbers to 120 |
| 1.NPV.5 | Use concrete models or drawings to subtract multiples of 10 from multiples of 10 (within the range of 10-90), relate the strategy to a written expression or equation, and explain the reasoning used to solve. | Lesson 18: Add and Subtract Tens |
| 1.NPV.6 | Use mental strategies to find 10 more or 10 less than a given two-digit number. | Lesson 16: Numbers to 120 Supporting Content: Lesson 17: Compare Numbers; Lesson 18: Add and Subtract Tens; Lesson 19: Addition with Two-Digit Numbers; Lesson 27: Money |
| Comparison | | |
| Students use place value understanding to compare numbers. | | |
| 1.NPV.7 | Compare two two-digit numbers using symbols ($<$, $=$, $>$) based on the value of tens and ones in the given numbers. | Lesson 17: Compare Numbers Supporting Content: Math in Action: pp. 441–444 |
| Fraction Foundations | | |
| Students build a conceptual understanding of fractions. | | |
| 1.NPV.8 | Partition circles and rectangles into two and four equal shares, describing the shares using the words halves, fourths, and quarters; understand that decomposing into more equal pieces creates smaller pieces. | Lesson 23: Break Shapes into Equal Parts Supporting Content: Lesson 24: Tell Time Math in Action: pp. 701–704 |

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| 1.CAR | | Computation & Algebraic Reasoning |
| Operations & Properties | | Students perform operations using place value understanding and properties of operations. |
| 1.CAR.1 | Add and subtract fluently within 10 with mastery by the end of first grade. | <p>Lesson 1: Number Partners for 10 Lesson 2: Add and Subtract Within 10 Lesson 10: Doubles and Near Doubles</p> <p>Supporting Content: Lesson 3: Use Counting Strategies to Add and Subtract; Lesson 4: Use Addition to Subtract; Lesson 8: Make a Ten to Add Math in Action: pp. 123–126</p> |
| 1.CAR.2 | Use computational fluency to add and subtract within 20 using manipulatives and/or a variety of strategies. | <p>Lesson 5: Solve Word Problems to 10 Lesson 8: Make a Ten to Add Lesson 9: Use a Ten to Subtract Lesson 11: Solve Word Problems to 20</p> <p>Supporting Content: Lesson 3: Use Counting Strategies to Add and Subtract; Lesson 10: Doubles and Near Doubles; Lesson 13: Collect and Compare Data</p> |
| 1.CAR.3 | Apply properties of operations to add and subtract within 20. | <p>Lesson 1: Number Partners for 10 Lesson 7: Add Three Numbers</p> <p>Supporting Content: Lesson 8: Make a Ten to Add; Lesson 9: Use a Ten to Subtract; Lesson 10: Doubles and Near Doubles; Lesson 14: True and False Equations; Lesson 20: Add Two-Digit and One-Digit Numbers; Lesson 21: Add Two-Digit Numbers Math in Action: pp. 253–256</p> |

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| 1.CAR.4 | Use concrete models or drawings to add within 100, including a two-digit number and a one-digit number as well as a two-digit number and a multiple of ten; relate strategy used to a written expression or equation and explain reasoning. | <p>Lesson 8: Make a Ten to Add Lesson 18: Add and Subtract Tens Lesson 19: Addition with Two-Digit Numbers Lesson 20: Add Two-Digit and One-Digit Numbers Lesson 21: Add Two-Digit Numbers</p> <p><u>Supporting Content:</u> Lesson 1: Number Partners for 10; Lesson 3: Use Counting Strategies to Add and Subtract; Lesson 4: Use Addition to Subtract</p> |
| 1.CAR.5 | Demonstrate the relationship between addition and subtraction by solving problems, using an inverse operation. | <p>Lesson 4: Use Addition to Subtract Lesson 5: Solve Word Problems to 10 Lesson 9: Use a Ten to Subtract Lesson 11: Solve Word Problems to 20 Lesson 14: True and False Equations</p> <p><u>Supporting Content:</u> Lesson 10: Doubles and Near Doubles; Lesson 12: Solve Compare Problems</p> |
| Problem Solving | | |
| Students solve real-world problems. | | |
| 1.CAR.6 | <p>Solve real-world problems involving addition and subtraction within 20.</p> <ul style="list-style-type: none"> • Problem types include: adding to, taking from, putting together, taking apart, and comparing with unknowns present throughout the addition and subtraction problem. | <p>Lesson 2: Add and Subtract Within 10 Lesson 5: Solve Word Problems to 10 Lesson 9: Use a Ten to Subtract Lesson 11: Solve Word Problems to 20 Lesson 12: Solve Compare Problems</p> <p><u>Supporting Content:</u> Lesson 1: Number Partners for 10; Lesson 3: Use Counting Strategies to Add and Subtract; Lesson 4: Use Addition to Subtract; Lesson 8: Make a Ten to Add; Lesson 10: Doubles and Near Doubles; Lesson 13: Collect and Compare Data; Lesson 14: True and False Equations Math in Action: pp. 123–126, 253–256, 359–362</p> |

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| 1.CAR.7 | Solve real-world problems involving addition of three whole numbers whose sum is less than or equal to 20. | Lesson 7: Add Three Numbers Supporting Content: Lesson 13: Collect and Compare Data Math in Action: pp. 253–256, 359–362 |
| Algebraic Concepts | | |
| Students develop and apply understanding of foundational algebraic concepts. | | |
| 1.CAR.8 | Apply understanding of the equal sign to determine if equations involving addition and subtraction are true or false. | Lesson 14: True and False Equations Supporting Content: Lesson 8: Make a Ten to Add; Lesson 17: Compare Numbers |
| 1.CAR.9 | Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. | Lesson 14: True and False Equations Supporting Content: Lesson 1: Number Partners for 10; Lesson 4: Use Addition to Subtract; Lesson 11: Solve Word Problems to 20; Lesson 12: Solve Compare Problems |
| 1.GM | Geometry & Measurement | |
| | Shapes | |
| | Students analyze attributes of shapes to develop generalizations about their properties. | |
| 1.GM.1 | Understand the difference between defining attributes (e.g., triangles are closed and three-sided shapes) and non-defining attributes (e.g., color, orientation, overall size), using that understanding to build and draw shapes that exhibit defining attributes. | Lesson 22: Shapes Supporting Content: Math in Action: pp. 701–704 |
| 1.GM.2 | Create a composite shape using two-dimensional or three-dimensional shapes. <ul style="list-style-type: none"> Two-dimensional include: rectangle, square, trapezoid, triangle, hexagon, half circle, and quarter circle Three-dimensional include: cube, rectangular prism, cone, and cylinder | Lesson 22: Shapes Supporting Content: Math in Action: pp. 701–704 |

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| Length & Width | | |
| Students investigate measurement with non-standard units. | | |
| 1.GM.3 | Express the length of an object as a whole number of units by laying multiple copies of a shorter object end-to-end, understanding that the length of one object is equal to the number of same-size units that span the object with no gaps or overlaps. | Lesson 26: Measure Length |
| 1.GM.4 | Order three objects by their length, indirectly comparing the lengths of two objects by using a third object. | Lesson 25: Compare and Order Lengths Supporting Content: Lesson 26: Measure Length Math in Action: pp. 701–704 |
| Time & Money | | |
| Students explore time and money values and concepts. | | |
| 1.GM.5 | Tell and write time to the nearest hour and half hour using analog clocks; understand how to read hours and minutes using digital clocks. | Lesson 24: Tell Time |
| 1.GM.6 | Identify coins by name and value, including penny, nickel, dime, and quarter. | Lesson 27: Money |
| 1.GM.7 | Count collections of like coins including pennies, nickels, and dimes to determine their total value up to 100 cents. | Lesson 27: Money Supporting Content: Lesson 16: Numbers to 120 |

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| 1.DA | | Data Analysis |
| Charts, Graphs, & Tables | | |
| Students organize and analyze data. | | |
| 1.DA.1 | Organize, represent, and interpret data with up to three categories (e.g., tally tables, picture graphs, bar graphs). | <p>Lesson 13: Collect and Compare Data</p> <p>Supporting Content: Lesson 14: True and False Equations</p> <p>Math in Action: pp. 253–256, 359–362, 441–444, 547–550, 701–704</p> |
| 1.DA.2 | Ask and answer questions about the total number represented such as how many in each category and how many more or less in one category compared to another. | <p>Lesson 13: Collect and Compare Data</p> <p>Supporting Content: Lesson 17: Compare Numbers</p> |

Note: i-Ready Classroom Mathematics addresses number sense skills every day with dedicated number sense activities and fun counting and cardinality practice. Number Sense activities provide daily opportunities for children to talk about numbers and relationships, develop understanding of numbers, and use numbers and operations flexibly. Counting Routines provide children with engaging opportunities to practice rote counting daily.



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|--|---|--|
| Grade 2 | | |
| 2.NPV | Number & Place Value | |
| | Counting | |
| | Students extend the counting sequence. | |
| 2.NPV.1 | Count within 1,000 forwards and backwards by ones, tens, and hundreds from any given number. | <p>Lesson 15: Mental Addition and Subtraction</p> <p>Supporting Content: Lesson 7: Subtract Two-Digit Numbers; Lesson 8: Use Addition and Subtraction Strategies with Two-Digit Numbers; Lesson 9: Solve Word Problems with Two-Digit Numbers; Lesson 10: Solve Word Problems Involving Money; Lesson 11: Tell and Write Time; Lesson 31: Add Using Arrays</p> <p>Math in Action: pp. 124–131</p> |
| | Place Value | |
| | Students understand the base ten place value system. | |
| 2.NPV.2 | Identify the value of hundreds, tens, and ones place in a three-digit number. | <p>Lesson 12: Understand Three-Digit Numbers</p> <p>Supporting Content: Lesson 13: Read and Write Three-Digit Numbers</p> <p>Math in Action: pp. 492–499</p> |
| 2.NPV.3 | Read, write, and represent whole numbers up to 1,000 using concrete models or drawings, number names, and a variety of expanded forms. | <p>Lesson 13: Read and Write Three-Digit Numbers</p> <p>Supporting Content: Lesson 14: Compare Three-Digit Numbers; Lesson 16: Add Three-Digit Numbers; Lesson 17: Subtract Three-Digit Numbers</p> |
| 2.NPV.4 | Mentally add 10 or 100 to a given number in the range of 100-900 and mentally subtract 10 or 100 from a given number in the range of 100-900. | <p>Lesson 15: Mental Addition and Subtraction</p> <p>Supporting Content: Lesson 16: Add Three-Digit Numbers Lesson 17: Subtract Three-Digit Numbers</p> |
| | Comparison | |
| | Students use place value understanding to compare numbers. | |
| 2.NPV.5 | Compare two three-digit numbers using symbols ($<$, $=$, $>$) based on the value of hundreds, tens, and ones in the given numbers. | <p>Lesson 14: Compare Three-Digit Numbers</p> <p>Supporting Content: Math in Action: pp. 492–499</p> |

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|--|---|---|
| | Fraction Foundations | |
| | Students build a conceptual understanding of fractions. | |
| 2.NPV.6 | Partition circles and rectangles into two, three, or four equal shares, describing the shares using the words halves, thirds, and fourths (or quarters). | <p>Lesson 29: Understand Partitioning Shapes into Halves, Thirds, and Fourths</p> <p>Supporting Content: Math in Action: pp. 784–791</p> |
| 2.NPV.7 | Recognize that equal shares of identical wholes need not have the same shape. | <p>Lesson 29: Understand Partitioning Shapes into Halves, Thirds, and Fourths</p> <p>Supporting Content: Math in Action: pp. 784–791</p> |
| 2.CAR | Computation & Algebraic Reasoning | |
| | Operations & Properties | |
| | Students perform operations using place value understanding and properties of operations. | |
| 2.CAR.1 | Use mental strategies to fluently add and subtract within 20 with mastery by the end of second grade. | <p>Lesson 1: Mental Math Strategies for Addition Lesson 2: Mental Math Strategies for Subtraction</p> <p>Supporting Content: Lesson 3: Solve One-Step Word Problems Math in Action: pp. 124–131</p> |
| 2.CAR.2 | Use computational fluency to add and subtract within 100 using strategies based on place value, properties of operations, or the relationship between addition and subtraction. | <p>Lesson 6: Add Two-Digit Numbers Lesson 7: Subtract Two-Digit Numbers Lesson 8: Use Addition and Subtraction Strategies with Two-Digit Numbers</p> <p>Supporting Content: Lesson 9: Solve Word Problems with Two-Digit Numbers; Lesson 10: Solve Word Problems Involving Money; Lesson 19: Add Several Two-Digit Numbers; Lesson 25: Add and Subtract Lengths Math in Action: pp. 302–309, 492–499</p> |
| 2.CAR.3 | Add up to four two-digit numbers with sums not exceeding 100 using strategies based on place value and properties of operations. | <p>Lesson 19: Add Several Two-Digit Numbers</p> <p>Supporting Content: Math in Action: pp. 492–499</p> |

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| 2.CAR.4 | Use a number line to solve addition and subtraction problems within 100. | Lesson 26: Add and Subtract on the Number Line <u>Supporting Content:</u> Lesson 27: Read and Make Line Plots Math in Action: pp. 676–683 |
| 2.CAR.5 | Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends. | Lesson 31: Add Using Arrays <u>Supporting Content:</u> Math in Action: pp. 784–791 |
| 2.CAR.6 | Use concrete models, drawings, or equations to solve addition and subtraction problems within 1000. | Lesson 16: Add Three-Digit Numbers Lesson 17: Subtract Three-Digit Numbers Lesson 18: Use Addition and Subtraction Strategies with Three-Digit Numbers <u>Supporting Content:</u> Math in Action: pp. 492–499 |
| Problem Solving | | |
| Students solve real-world problems. | | |
| 2.CAR.7 | Solve one and two-step real-world problems involving addition and subtraction within 100 in situations of adding to, taking from, putting together, taking apart, and comparing unknowns in all positions. | Lesson 3: Solve One-Step Word Problems Lesson 5: Solve Two-Step Word Problems Lesson 9: Solve Word Problems with Two-Digit Numbers Lesson 10: Solve Word Problems Involving Money <u>Supporting Content:</u> Lesson 1: Mental Math Strategies for Addition; Lesson 2: Mental Math Strategies for Subtraction; Lesson 4: Draw and Use Bar Graphs and Picture Graphs; Lesson 25: Add and Subtract Lengths; Lesson 26: Add and Subtract on the Number Line |
| Algebraic Concepts | | |
| Students develop and apply understanding of foundational algebraic concepts. | | |
| 2.CAR.8 | Determine whether a group of objects up to 20 has an odd or even number of members; write an equation to express an even number as a sum of two equal addends. | Lesson 32: Even and Odd Numbers <u>Supporting Content:</u> Math in Action: pp. 784–791 |

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|--|---|---|
| 2.GM | Geometry & Measurement | |
| | Shapes | |
| | Students analyze attributes of shapes to develop generalizations about their properties. | |
| 2.GM.1 | Identify, describe, and draw two-dimensional shapes. <ul style="list-style-type: none"> Shapes include: triangles, regular pentagons, regular hexagons, and quadrilaterals (square, rectangle, trapezoid, parallelogram, rhombus) | Lesson 28: Recognize and Draw Shapes <u>Supporting Content:</u> Math in Action: pp. 784–791 |
| 2.GM.2 | Identify and describe three-dimensional shapes based on the shape, number of faces, number of edges, and number of vertices. <ul style="list-style-type: none"> Shapes include: rectangular prisms, cubes, and square-based pyramids | Lesson 28: Recognize and Draw Shapes <u>Supporting Content:</u> Math in Action: pp. 784–791 <i>Note: In the lesson cited, students sort three-dimensional shapes based on whether they are cubes or not cubes.</i> |
| | Length & Width | |
| | Students investigate measurement using rulers. | |
| 2.GM.3 | Select appropriate measurement tools to estimate and measure the length of an object to the nearest whole inch or whole centimeters. | Lesson 20: Measure in Inches and Centimeters Lesson 23: Estimate and Measure Length <u>Supporting Content:</u> Lesson 21: Measure in Feet and Meters; Lesson 24: Compare Lengths Math in Action: pp. 676–683 |
| 2.GM.4 | Demonstrate how the length of an object does not change, regardless of the units used to measure it, by measuring the length of an object twice; use two different length units, describing how the two measurements relate to the size of the chosen unit. | Lesson 22: Understand Measurement with Different Units <u>Supporting Content:</u> Math in Action: pp. 676–683 |
| 2.GM.5 | Measure to determine how much longer or shorter one object is than another, expressing the length difference in terms of a standard length whole unit. | Lesson 24: Compare Lengths <u>Supporting Content:</u> Math in Action: pp. 676–683 |

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| 2.GM.6 | Solve real-world problems involving lengths of the same units, using addition and subtraction within 100. | Lesson 25: Add and Subtract Lengths Supporting Content: Math in Action: pp. 676–683 |
| Perimeter, Area, & Volume | | |
| Students explore the perimeter and area of shapes. | | |
| 2.GM.7 | Solve real-world and mathematical problems to find the perimeter of polygons. | See Grade 3: Lesson 32: Area and Perimeter of Shapes |
| 2.GM.8 | Partition a rectangle into rows and columns of same-size squares, counting the total number of squares to find the area. | See Grade 2: Lesson 30: Partition Rectangles Supporting Content: Math in Action: pp. 784–791 See Grade 3: Lesson 14: Understand Area |
| Time & Money | | |
| Students explore time and money values and concepts. | | |
| 2.GM.9 | Using an analog clock, tell and write time to the nearest five minutes using colon notation and indicate a.m. or p.m. | Lesson 11: Tell and Write Time Supporting Content: Math in Action: pp. 302–309 |
| 2.GM.10 | Describe relationships of time. • Times include: seconds in a minute; minutes in an hour; hours in a day; days in a week; and days, weeks, and months in a year | Lesson 11: Tell and Write Time Supporting Content: Math in Action: pp. 302–309 <i>Note: The lesson cited is limited to minutes in an hour and hours in a day.</i> |
| 2.GM.11 | Solve real-world problems involving addition and subtraction of time intervals in half hours or hours. | See Grade 3: Lesson 27: Time <i>Note: The lesson cited includes addition and subtraction of time intervals to the nearest minute.</i> |

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| 2.GM.12 | Count collections of mixed coins and solve real-world problems involving quarters, dimes, nickels, and pennies within 99¢ and whole dollar amounts. | <p>Lesson 10: Solve Word Problems Involving Money</p> <p>Supporting Content: Lesson 1: Mental Math Strategies for Addition; Lesson 2: Mental Math Strategies for Subtraction; Lesson 8: Use Addition and Subtraction Strategies with Two-Digit Numbers; Lesson 9: Solve Word Problems with Two-Digit Numbers; Lesson 19: Add Several Two-Digit Numbers</p> <p>Math in Action: pp. 302–309</p> |
| 2.DA | Data Analysis | |
| | Charts, Graphs, & Tables | |
| | Students organize and analyze data. | |
| 2.DA.1 | Use bar graphs, picture graphs, and line plots to organize and represent data, interpreting data with up to four categories. | <p>Lesson 4: Draw and Use Bar Graphs and Picture Graphs</p> <p>Lesson 27: Read and Make Line Plots</p> <p>Supporting Content: Math in Action: pp. 124–131, 676–683</p> |
| 2.DA.2 | Ask and answer simple put together, take apart, and compare problems, using information presented in the bar graphs, picture graphs, and line plots. | <p>Lesson 4: Draw and Use Bar Graphs and Picture Graphs</p> <p>Lesson 27: Read and Make Line Plots</p> <p>Supporting Content: Math in Action: pp. 124–131, 676–683</p> |



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| Grade 3 | | |
| 3.NPV | Number & Place Value | |
| | Place Value | |
| | Students understand the base ten place value system. | |
| 3.NPV.1 | Round four-digit whole numbers to the nearest 10 or 100, using place value understanding. | <p>See Grade 3: Lesson 1: Use Place Value to Round Numbers</p> <p>Supporting Content: Lesson 2: Add Three-Digit Numbers; Lesson 3: Subtract Three-Digit Numbers; Lesson 18: Solve Two-Step Word Problems Using the Four Operations Math in Action: pp. 76–83</p> <p><i>Note: The lesson cited is limited to three-digit whole numbers. For instruction rounding four-, five-, and six-digit whole numbers, see Grade 4, Lesson 3: Round Whole Numbers</i></p> |
| 3.NPV.2 | Identify the value of thousands, hundreds, tens, and ones place in a four-digit number. | <p>See Grade 4: Lesson 1: Understand Place Value</p> <p>Supporting Content: Lesson 2: Compare Whole Numbers <i>Note: The lesson cited includes four-, five-, and six-digit numbers.</i></p> |
| 3.NPV.3 | Read and write whole numbers up to 10,000, using base ten numerals, word form, and a variety of expanded forms. | <p>See Grade 4: Lesson 1: Understand Place Value</p> <p>Supporting Content: Lesson 2: Compare Whole Numbers <i>Note: The lesson cited includes four-, five-, and six-digit numbers.</i></p> |

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| | Comparison | |
| Students use place value understanding to compare numbers. | | |
| 3.NPV.4 | Compare two four-digit numbers using symbols ($<$, $=$, $>$) based on the value of thousands, hundreds, tens, and ones in the given numbers. | <p>See Grade 4: Lesson 2: Compare Whole Numbers</p> <p><i>Note: The lesson cited includes four-, five-, and six-digit numbers.</i></p> |
| 3.NPV.5 | Compare two fractions with the same numerator or denominator by reasoning about their size based on the same whole; use symbols ($<$, $=$, $>$) and justify the conclusion using visual fraction models, concrete objects, or words. | <p>Lesson 24: Understand Comparing Fractions Lesson 25: Use Symbols to Compare Fractions</p> <p>Supporting Content: Lesson 33: Partition Shapes into Parts with Equal Areas Math in Action: pp. 572–579</p> |
| Fraction Foundations | | |
| Students build a conceptual understanding of fractions. | | |
| 3.NPV.6 | Identify fractions as parts of a whole and parts of a collection or set. <ul style="list-style-type: none"> Fractions include: denominators 2, 3, 4, 6, and 8 | <p>Lesson 20: Understand What a Fraction Is</p> <p>Supporting Content: Lesson 21: Understand Fractions on a Number Line; Lesson 22: Understand Equivalent Fractions; Lesson 24: Understand Comparing Fractions; Lesson 33: Partition Shapes into Parts with Equal Areas Math in Action: pp. 572–579</p> |
| 3.NPV.7 | Partition squares, regular hexagons, and equilateral triangles into parts with equal shares, explaining the shares of each part as a unit fraction of the whole. <ul style="list-style-type: none"> Fractions include: denominators 2, 3, 4, 6, and 8 | <p>Lesson 33: Partition Shapes into Parts with Equal Areas</p> <p>Supporting Content: Lesson 20: Understand What a Fraction Is Math in Action: pp. 754–761</p> |

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| 3.NPV.8 | <p>Identify and represent a unit fraction as a number on the number line.</p> <ul style="list-style-type: none"> • Fractions include: denominators 2, 3, 4, 6, and 8 | <p>Lesson 21: <i>Understand Fractions on a Number Line</i></p> <p>Supporting Content: Lesson 22: <i>Understand Equivalent Fractions</i>; Lesson 23: <i>Find Equivalent Fractions</i>; Lesson 24: <i>Understand Comparing Fractions</i>; Lesson 25: <i>Use Symbols to Compare Fractions</i>; Lesson 26: <i>Measure Length and Plot Data on Line Plots</i></p> <p>Math in Action: pp. 572–579</p> |
| 3.NPV.9 | <p>Identify and represent a non-unit fraction as a number on the number line, including fractions greater than one.</p> <ul style="list-style-type: none"> • Fractions include: denominators 2, 3, 4, 6, and 8 | <p>Lesson 21: <i>Understand Fractions on a Number Line</i></p> <p>Supporting Content: Lesson 22: <i>Understand Equivalent Fractions</i>; Lesson 23: <i>Find Equivalent Fractions</i>; Lesson 24: <i>Understand Comparing Fractions</i>; Lesson 25: <i>Use Symbols to Compare Fractions</i>; Lesson 26: <i>Measure Length and Plot Data on Line Plots</i></p> <p>Math in Action: pp. 572–579</p> |
| 3.NPV.10 | <p>Decompose and compose a non-unit fraction a/b as the quantity formed by the sum of unit fractions.</p> <ul style="list-style-type: none"> • Fractions include: denominators 2, 3, 4, 6, and 8 | <p>Lesson 21: <i>Understand Fractions on a Number Line</i></p> <p>Supporting Content: Lesson 22: <i>Understand Equivalent Fractions</i>; Lesson 23: <i>Find Equivalent Fractions</i>; Lesson 24: <i>Understand Comparing Fractions</i>; Lesson 25: <i>Use Symbols to Compare Fractions</i>; Lesson 26: <i>Measure Length and Plot Data on Line Plots</i></p> |

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| Equivalent Fractions | | |
| Students develop and apply equivalent fraction understanding. | | |
| 3.NPV.11 | <p>Use number lines and visual models to recognize and generate equivalent fractions, explaining how they are equivalent in real-world and mathematical situations.</p> <ul style="list-style-type: none"> • Fractions include: denominators 2, 3, 4, 6, and 8 | <p>Lesson 22: Understand Equivalent Fractions Lesson 23: Find Equivalent Fractions</p> <p>Supporting Content: Lesson 25: Use Symbols to Compare Fractions; Lesson 33: Partition Shapes into Parts with Equal Areas Math in Action: pp. 572–579</p> |
| 3.CAR | Computation & Algebraic Reasoning | |
| | Operations & Properties | |
| | Students perform operations using place value understanding and properties of operations. | |
| 3.CAR.1 | <p>Use computational fluency to add and subtract three-digit whole numbers, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</p> | <p>Lesson 2: Add Three-Digit Numbers Lesson 3: Subtract Three-Digit Numbers</p> <p>Supporting Content: Lesson 18: Solve Two-Step Word Problems Using the Four Operations; Lesson 28: Liquid Volume; Lesson 29: Mass Math in Action: pp.442–449, 660–667, 754–761</p> |
| 3.CAR.2 | <p>Use basic fact fluency to multiply and divide whole numbers with mastery by the end of third grade.</p> <ul style="list-style-type: none"> • Knowing all products with factors up to and including 12 and the corresponding division facts from the products with factors up to and including 12. • Using strategies such as the relationship between multiplication and division (e.g., Knowing that $8 \cdot 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. | <p>Lesson 4: Understand the Meaning of Multiplication Lesson 10: Understand the Meaning of Division Lesson 12: Multiplication and Division Facts</p> <p>Supporting Content: Lesson 17: Solve One-Step Word Problems Using Multiplication and Division; Lesson 18: Solve Two-Step Word Problems Using the Four Operations</p> |

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| 3.CAR.3 | <p>Apply properties of operations as strategies to multiply and divide.</p> <ul style="list-style-type: none"> Properties include: Distributive, Commutative, and Associative Properties of Multiplication | <p>Lesson 5: Multiply with 0, 1, 2, 5, and 10 Lesson 6: Multiply with 3, 4, and 6 Lesson 7: Multiply with 7, 8, and 9 Lesson 8: Use Order and Grouping to Multiply</p> <p>Supporting Content: Lesson 9: Use Place Value to Multiply; Lesson 10: <i>Understand</i> the Meaning of Division; Lesson 12: Multiplication and Division Facts; Lesson 16: Add Areas Math in Action: pp. 284–291</p> |
| 3.CAR.4 | <p>Use strategies to multiply one-digit numbers by multiples of 10 ranging from 10–90; strategies are based on place value and properties of operations (e.g., $9 \cdot 80$, $5 \cdot 60$).</p> | <p>Lesson 9: Use Place Value to Multiply</p> <p>Supporting Content: Math in Action: pp. 284–291</p> |
| 3.CAR.5 | <p>Identify arithmetic patterns including, but not limited to, patterns in an addition or multiplication table, explaining use of properties of operations appropriate to the pattern.</p> | <p>Lesson 13: <i>Understand</i> Patterns</p> |
| <p>Problem Solving</p> <p>Students solve real-world problems.</p> | | |
| 3.CAR.6 | <p>Solve real-world problems using multiplication and division within 100 involving equal groups, arrays, partitive and measurement division.</p> | <p>Lesson 5: Multiply with 0, 1, 2, 5, and 10 Lesson 6: Multiply with 3, 4, and 6 Lesson 7: Multiply with 7, 8, and 9 Lesson 17: Solve One-Step Word Problems Using Multiplication and Division</p> <p>Supporting Content: Lesson 4: <i>Understand</i> the Meaning of Multiplication; Lesson 8: Use Order and Grouping to Multiply; Lesson 12: Multiplication and Division Facts; Lesson 15: Multiply to Find Area; Lesson 16: Add Areas; Lesson 18: Solve Two-Step Word Problems Using the Four Operations; Lesson 19: Scaled Graphs; Lesson 28: Liquid Volume; Lesson 29: Mass; Lesson 32: Area and Perimeter of Shapes Math in Action: pp. 284–291, pp. 442–449</p> |

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| 3.CAR.7 | Solve two-step real-world situations using addition, subtraction, multiplication, and division, representing these problems using equations with a symbol standing for an unknown quantity. | <p>Lesson 18: Solve Two-Step Word Problems Using the Four Operations</p> <p>Supporting Content: Math in Action: pp. 442–449</p> | | |
| Algebraic Concepts | | Students develop and apply an understanding of foundational algebraic concepts. | | |
| 3.CAR.8 | Determine the unknown whole number in a multiplication or division equation relating three whole numbers. | <p>Lesson 12: Multiplication and Division Facts</p> <p>Supporting Content: Lesson 17: Solve One-Step Word Problems Using Multiplication and Division; Lesson 18: Solve Two-Step Word Problems Using the Four Operations</p> <p>Math in Action: pp. 442–449</p> | | |
| 3.CAR.9 | Understand division as an unknown-factor problem. | <p>Lesson 11: Understand How Multiplication and Division Are Connected</p> <p>Supporting Content: Lesson 12: Multiplication and Division Facts; Lesson 17: Solve One-Step Word Problems Using Multiplication and Division</p> <p>Math in Action: pp. 284–291</p> | | |
| 3.GM | Geometry & Measurement | | | |
| Shapes | | | | |
| Students analyze attributes of shapes to develop generalizations about their properties. | | | | |
| 3.GM.1 | Understand that quadrilaterals in different categories may share attributes; those attributes (e.g., four equivalent sides) can define a larger category (e.g., quadrilaterals) or subcategory (e.g., rhombus and square). | <p>Lesson 30: Understand Categories of Shapes</p> <p>Supporting Content: Lesson 31: Classify Quadrilaterals; Lesson 32: Area and Perimeter of Shapes</p> <p>Math in Action: pp. 754–761</p> | | |
| 3.GM.2 | Identify perpendicular and parallel lines, as well as right angles in two-dimensional shapes and real-world surroundings or objects. | <p>Lesson 31: Classify Quadrilaterals</p> <p>Supporting Content: Lesson 30: Understand Categories of Shapes; Lesson 32: Area and Perimeter of Shapes</p> <p>Math in Action: pp. 754–761</p> | | |

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| 3.GM.3 | Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, identifying and/or drawing examples of quadrilaterals that do not belong to any of these subcategories. | Lesson 30: Understand Categories of Shapes Lesson 31: Classify Quadrilaterals <u>Supporting Content:</u> Lesson 32: Area and Perimeter of Shapes Math in Action: pp. 754–761 |
| Length & Width | | |
| Students investigate measurement using rulers. | | |
| 3.GM.4 | Measure lengths of objects to the nearest half and quarter inch, using a ruler. | Lesson 26: Measure Length and Plot Data on Line Plots |
| Area & Volume | | |
| Students calculate the area of rectangles and liquid volume. | | |
| 3.GM.5 | Describe area as the number of unit squares that cover a plane figure without gaps and overlaps. | Lesson 14: Understand Area |
| 3.GM.6 | Find the area of a rectangle with whole number side lengths by modeling with unit squares and multiplying the side lengths to show the results are the same. | Lesson 15: Multiply to Find Area <u>Supporting Content:</u> Lesson 16: Add Areas; Lesson 17: Solve One-Step Word Problems Using Multiplication and Division; Lesson 32: Area and Perimeter of Shapes |
| 3.GM.7 | Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real-world and mathematical problems. | Lesson 15: Multiply to Find Area <u>Supporting Content:</u> Lesson 16: Add Areas; Lesson 17: Solve One-Step Word Problems Using Multiplication and Division; Lesson 32: Area and Perimeter of Shapes |
| 3.GM.8 | Measure and estimate liquid volumes and masses of objects using standard units. | Lesson 28: Liquid Volume Lesson 29: Mass <u>Supporting Content:</u> Math in Action: pp. 660–667 |

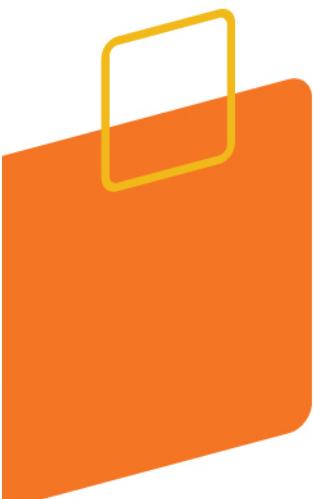
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| 3.GM.9 | Solve one-step real-world problems involving liquid volumes and masses of objects in the same units, using all four operations. | Lesson 28: Liquid Volume Lesson 29: Mass <u>Supporting Content:</u> Math in Action: pp. 660–667 |
| Time | | |
| Students tell time and solve problems about elapsed time. | | |
| 3.GM.10 | Tell and write time to the nearest minute, using analog clocks. | Lesson 27: Time <u>Supporting Content:</u> Math in Action: pp. 660–667 |
| 3.GM.11 | Solve word problems involving addition and subtraction of time intervals in minutes. | Lesson 27: Time <u>Supporting Content:</u> Math in Action: pp. 660–667 |
| 3.DA | Data Analysis | |
| | Charts, Graphs, & Tables | |
| | Students organize and analyze data. | |
| 3.DA.1 | Represent a data set with multiple categories, using a scaled picture graph, scaled bar graph, and a line plot. | Lesson 19: Scaled Graphs Lesson 26: Measure Length and Plot Data on Line Plots |
| 3.DA.2 | Solve one and two-step problems, using categorical data represented with a scaled picture graph, scaled bar graph, and a line plot. | Lesson 19: Scaled Graphs Lesson 26: Measure Length and Plot Data on Line Plots |



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| Grade 4 | | |
| 4.NPV | Number & Place Value | |
| | Place Value | |
| | Students understand the base ten place value system. | |
| 4.NPV.1 | Recognize that a digit in a given place represents ten times what it represents in the place to its right. | <p>Lesson 1: Understand Place Value</p> <p>Supporting Content: Lesson 2: Compare Whole Numbers; Lesson 11: Multiply by One-Digit Numbers</p> |
| 4.NPV.2 | Read and write whole numbers up to 1,000,000 using base ten numerals, word form, and a variety of expanded forms. | <p>Lesson 1: Understand Place Value</p> <p>Lesson 2: Compare Whole Numbers</p> <p>Supporting Content: Math in Action: pp. 92–99</p> |
| 4.NPV.3 | Use place value understanding to round five-digit and six-digit whole numbers to any place. | <p>Lesson 3: Round Whole Numbers</p> <p>Supporting Content: Lesson 4: Add Whole Numbers; Lesson 5: Subtract Whole Numbers; Lesson 11: Multiply by One-Digit Numbers</p> <p>Math in Action: pp. 92–99</p> |
| | Comparison | |
| | Students use place value understanding to compare numbers. | |
| 4.NPV.4 | Compare two five-digit whole numbers and six-digit whole numbers, using symbols ($<$, $=$, $>$) to record the results of comparisons. | <p>Lesson 2: Compare Whole Numbers</p> <p>Supporting Content: Math in Action: pp. 92–99</p> |
| 4.NPV.5 | Compare two fractions with different numerators and different denominators using symbols ($<$, $=$, $>$) to record the results of comparisons (e.g., by creating common denominators or numerators or by comparing to a benchmark of 0, $\frac{1}{2}$, 1). | <p>Lesson 18: Compare Fractions</p> <p>Supporting Content: Math in Action: pp. 628–635</p> |
| 4.NPV.6 | Compare two decimals to the hundredths place, using symbols ($<$, $=$, $>$) to record the results of comparisons. | <p>Lesson 27: Compare Decimals</p> <p>Supporting Content: Math in Action: pp. 628–635</p> |

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| | Fraction Foundations | |
| | Students develop a conceptual understanding of fractions. | |
| 4.NPV.7 | <p>Decompose fractions, including fractions greater than one and mixed numbers, into unit fractions, using concrete models, drawings, and/or the number line.</p> <ul style="list-style-type: none"> • Fractions include denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100. | <p>Lesson 20: Add and Subtract Fractions Lesson 21: Add and Subtract Mixed Numbers</p> <p>Supporting Content: Math in Action: pp. 628–635</p> <p><i>Note: The lessons cited do not include denominators of 100.</i></p> |
| | Equivalent Fractions | |
| | Students develop and apply equivalent fraction understanding. | |
| 4.NPV.8 | <p>Explain why a fraction a/b is equivalent to a fraction $(n \cdot a)/(n \cdot b)$, using visual fraction models, generating equivalent fractions using the principle $a/b = (n \cdot a)/(n \cdot b)$.</p> <ul style="list-style-type: none"> • Fractions include denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100. | <p>Lesson 17: Understand Equivalent Fractions</p> <p>Supporting Content: Lesson 18: Compare Fractions; Lesson 25: Fractions as Tenths and Hundredths Math in Action: pp. 628–635</p> |
| 4.NPV.9 | Add two fractions with denominators of 10 and 100 by expressing the denominator of 10 as an equivalent fraction with a denominator of 100. | <p>Lesson 25: Fractions as Tenths and Hundredths</p> <p>Supporting Content: Math in Action: pp. 628–635</p> |
| 4.NPV.10 | Apply decimal notation for fractions with denominators 10 or 100. | <p>Lesson 26: Relate Decimals and Fractions</p> <p>Supporting Content: Math in Action: pp. 628–635</p> |
| 4.CAR | Computation & Algebraic Reasoning | |
| | Operations & Properties | |
| | Students perform operations, using place value understanding and properties of operations. | |
| 4.CAR.1 | Find the factor pairs for a given number in the range of 1-100, identifying whether a number is prime or composite; determine whether a given whole number in the range of 1-100 is a multiple of a given one-digit number. | <p>Lesson 8: Multiples and Factors</p> <p>Supporting Content: Lesson 9: Number and Shape Patterns Math in Action: pp. 214–221, 350–357</p> |

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| 4.CAR.2 | Use computational fluency to add and subtract whole numbers up to 1,000,000 by using strategies and algorithms, including the standard algorithm, with mastery by the end of fourth grade. | <p>Lesson 4: Add Whole Numbers Lesson 5: Subtract Whole Numbers</p> <p><u>Supporting Content:</u> Lesson 28: Problems About Time and Money; Lesson 29: Problems About Length, Liquid Volume, Mass, and Weight Math in Action: pp. 92–99, 214–221</p> |
| 4.CAR.3 | Use strategies based on place value and the properties of operations to multiply four-digit by one-digit whole numbers and two two-digit whole numbers. | <p>Lesson 11: Multiply by One-Digit Numbers Lesson 12: Multiply by Two-Digit Numbers</p> <p><u>Supporting Content:</u> Lesson 13: Use Multiplication to Convert Measurements; Lesson 14: Divide Three-Digit Numbers; Lesson 15: Divide Four-Digit Numbers; Lesson 16: Find Perimeter and Area; Lesson 28: Problems About Time and Money; Lesson 29: Problems About Length, Liquid Volume, Mass, and Weight Math in Action: pp. 350–357</p> |
| 4.CAR.4 | Use strategies based on place value, the properties of operations, and the relationship between multiplication and division to divide whole numbers with four-digits by one-digit divisors; quotients should be with and without whole number remainders. | <p>Lesson 14: Divide Three-Digit Numbers Lesson 15: Divide Four-Digit Numbers</p> <p><u>Supporting Content:</u> Lesson 10: Model and Solve Multi-Step Problems; Lesson 16: Find Perimeter and Area; Lesson 28: Problems About Time and Money; Lesson 29: Problems About Length, Liquid, Liquid Volume, Mass, and Weight Math in Action: pp. 350–357</p> |

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| 4.CAR.5 | <p>Add and subtract fractions, including mixed numbers, with like denominators, using visual fraction models and equations.</p> <ul style="list-style-type: none"> • Fractions include: denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 | <p>Lesson 19: Understand Fraction Addition and Subtraction</p> <p>Lesson 20: Add and Subtract Fractions</p> <p>Lesson 21: Add and Subtract Mixed Numbers</p> <p>Supporting Content: Lesson 22: Add and Subtract Fractions in Line Plots; Lesson 29: Problems About Length, Liquid Volume, Mass, and Weight</p> <p><i>Note: The lessons cited do not include denominators of 100.</i></p> |
| 4.CAR.6 | <p>Multiply a fraction by a whole number using visual fraction models and equations.</p> <ul style="list-style-type: none"> • Fractions include: denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 | <p>Lesson 23: Understand Fraction Multiplication</p> <p>Lesson 24: Multiply Fractions by Whole Numbers</p> |
| Problem Solving | | |
| Students solve real-world problems. | | |
| 4.CAR.7 | <p>Solve real-world problems involving multiplicative comparison, using drawings and/or equations with a symbol for the unknown number, and distinguish between multiplicative comparison and additive comparison.</p> | <p>Lesson 6: Understand Multiplication as a Comparison</p> <p>Lesson 7: Multiplication and Division in Word Problems</p> <p>Supporting Content: Lesson 10: Model and Solve Multi-Step Problems; Lesson 28: Problems About Time and Money; Lesson 29: Problems About Length, Liquid Volume, Mass, and Weight</p> <p>Math in Action: pp. 214–221</p> |
| 4.CAR.8 | <p>Solve multi-step, real-world problems posed with whole numbers and having whole-number answers, using addition, subtraction, multiplication, and division; include problems in which remainders must be interpreted and represent these problems using equations with symbols standing for the unknown quantity.</p> | <p>Lesson 10: Model and Solve Multi-Step Problems</p> <p>Supporting Content: Lesson 28: Problems About Time and Money; Lesson 29: Problems About length, Liquid Volume, Mass, and Weight</p> <p>Math in Action: pp. 214–221</p> |

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| 4.CAR.9 | <p>Solve real-world problems involving the addition and subtraction of fractions; include mixed numbers with like denominators, using visual fraction models or equations.</p> <ul style="list-style-type: none"> • Fractions include: denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 | <p>Lesson 20: Add and Subtract Fractions</p> <p>Supporting Content: Lesson 21: Add and Subtract Mixed Numbers; Lesson 22: Add and Subtract Fractions in Line Plots; Lesson 29: Problems About Length, Liquid Volume, Mass, and Weight</p> <p>Math in Action: pp. 628–635</p> <p><i>Note: The lesson cited does not include denominators of 100.</i></p> |
| 4.CAR.10 | <p>Solve real-word problems involving the multiplication of a fraction by a whole number using visual fraction models or equations.</p> <ul style="list-style-type: none"> • Fractions include: denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 | <p>Lesson 24: Multiply Fractions by Whole Numbers</p> <p>Supporting Content: Math in Action: pp. 628–635</p> <p><i>Note: The lesson cited does not include denominators of 100.</i></p> |
| Algebraic Concepts | | Students develop and apply an understanding of foundational algebraic concepts. |
| 4.CAR.11 | Generate a number or shape pattern that follows a given rule, identifying apparent features of the pattern that are not explicit in the rule itself. | Lesson 9: Number and Shape Patterns |
| 4.GM Geometry & Measurement | | |
| Shapes | | |
| Students expand knowledge of shapes by analyzing sides and angles. | | |
| 4.GM.1 | <p>Identify angles as geometric shapes that are formed where two rays share a common endpoint, understanding that angles are measured with reference to a circle so that an angle that turns through $1/360$ of a circle is called a “one-degree angle” and an angle that turns through n one-degree angles is said to have an angle measure of n degree.</p> | <p>Lesson 30: Points, Lines, Rays, and Angles Lesson 31: Angles</p> <p>Supporting Content: Lesson 32: Add and Subtract with Angles; Lesson 33: Classify Two-Dimensional Figures</p> <p>Math in Action: pp. 760–767</p> |

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| 4.GM.2 | Measure angles in whole-number degrees, using a protractor, drawing angles of specified measure. | Lesson 31: Angles Supporting Content: Math in Action: pp. 760–767 |
| 4.GM.3 | Solve real-word problems finding unknown angle measures, using addition and subtraction when an angle is decomposed into non-overlapping parts. | Lesson 32: Add and Subtract with Angles Supporting Content: Math in Action: pp. 760–767 |
| 4.GM.4 | Identify and draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines, identifying these in quadrilaterals and triangles. | Lesson 30: Points, Lines, Rays, and Angles Supporting Content: Lesson 33: Classify Two-Dimensional Figures Math in Action: pp. 760–767 |
| 4.GM.5 | Classify two-dimensional figures based on the presence or absence of parallel lines, perpendicular lines, or angles of a specified size, involving quadrilaterals and triangles. • Shapes include: quadrilaterals (trapezoid, parallelogram, rectangle, square, rhombus) and triangles (right, acute, obtuse) | Lesson 33: Classify Two-Dimensional Figures Supporting Content: Math in Action: pp. 760–767 |
| 4.GM.6 | Identify and/or draw lines of symmetry for a two-dimensional figure. | Lesson 34: Symmetry Supporting Content: Math in Action: pp. 760–767 |
| Perimeter, Area, & Volume | | |
| Students calculate the perimeter of polygons, area of rectangles, and liquid volume. | | |
| 4.GM.7 | Apply the area and perimeter formulas for rectangles and figures composed of two or more rectangles in real-world situations. | Lesson 16: Find Perimeter and Area Supporting Content: Math in Action: pp. 350–357 |

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| | Time, Money, & Conversions | |
| | Students apply measurement knowledge to solve real-world problems. | |
| 4.GM.8 | Convert measurements of length, weight/mass, and liquid volume within the same system of measurement, metric and customary, expressing measurements from a larger unit in terms of a smaller unit. | <p>Lesson 13: Use Multiplication to Convert Measurements</p> <p>Supporting Content: Lesson 28: Problems About Time and Money; Lesson 29: Problems About Length, Liquid Volume, Mass, and Weight</p> |
| 4.GM.9 | Solve real-world problems involving time intervals that may cross the hour. | Lesson 28: Problems About Time and Money |
| 4.GM.10 | Solve real-world problems involving addition and subtraction of money, including the ability to make change. | Lesson 28: Problems About Time and Money |
| 4.GM.11 | Solve real-world problems involving distances, liquid volume, and masses of objects, including problems that require expressing measurements given in a larger unit in terms of a smaller unit. | Lesson 29: Problems About Length, Liquid Volume, Mass, and Weight |
| 4.DA | Data Analysis | |
| | Charts, Graphs, & Tables | |
| | Students organize and analyze data. | |
| 4.DA.1 | Collect and interpret data from observations, surveys, and experiments; represent data using frequency tables and scaled bar graphs. | <p>See Grade 3: Lesson 19: Scaled Graphs</p> <p>See Grade 4: Lesson 22: Add and Subtract Fractions in Line Plots</p> |
| 4.DA.2 | Use a line plot to display a data set of measurements in fractions of a unit, solving problems involving addition and subtraction of fractions with like denominators using data presented in line plots. | <p>Lesson 22: Add and Subtract Fractions in Line Plots</p> <p>Supporting Content: Math in Action: pp. 628–635</p> |



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to the

2023 Arkansas Mathematics Standards

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| Grade 5 | | |
| 5.NPV | Number & Place Value | |
| | Place Value | |
| | Students understand the base ten place value system. | |
| 5.NPV.1 | Recognize that, in a multi-digit number, a digit in a given place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left. | <p>Lesson 6: Understand Decimal Place Value</p> <p>Supporting Content: Lesson 7: Understand Powers of 10; Lesson 15: Multiply a Decimal by a Whole Number; Lesson 16: Multiply Decimals; Lesson 17: Divide Decimals</p> <p>Math in Action: pp. 292–299</p> |
| 5.NPV.2 | Explain patterns in the number of zeros and/or the decimal point when multiplying or dividing a number by a power of 10, using whole-number exponents to denote powers of 10. | <p>Lesson 7: Understand Powers of 10</p> <p>Supporting Content: Lesson 25: Convert Measurement Units; Lesson 26: Solve Word Problems Involving Conversions</p> <p>Math in Action: pp. 292–299</p> |
| 5.NPV.3 | Read and write decimals to thousandths, using base-ten numerals, word form, and a variety of expanded forms. | <p>Lesson 6: Understand Decimal Place Value</p> <p>Lesson 8: Read and Write Decimals</p> <p>Supporting Content:</p> <p>Math in Action: pp. 292–299</p> |
| 5.NPV.4 | Apply place value understanding to round decimals to any place up to the thousandths. | <p>Lesson 9: Compare and Round Decimals</p> <p>Supporting Content: Lesson 14: Add and Subtract in Word Problems</p> <p>Math in Action: pp. 292–299</p> |
| | Comparison | |
| | Students use place value understanding to compare numbers. | |
| 5.NPV.5 | Compare two decimals to thousandths based on the value of the digits in each place, using symbols ($<$, $=$, $>$) to record the results of comparisons. | <p>Lesson 9: Compare and Round Decimals</p> <p>Supporting Content: Lesson 8: Read and Write Decimals</p> <p>Math in Action: pp. 292–299</p> |

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| | Fraction Foundations | |
| | Students build a conceptual understanding of fractions. | |
| 5.NPV.6 | Use visual models to explain the product of multiplying a whole number by a fraction greater than and less than one. | Lesson 21: Understand Multiplication as Scaling |
| 5.CAR | Computation & Algebraic Reasoning | |
| | Operations & Properties | |
| | Students perform operations using place value understanding and properties of operations. | |
| 5.CAR.1 | Use computational fluency to multiply multi-digit whole numbers by using strategies and algorithms, including the standard algorithm, with mastery by the end of fifth grade. | Lesson 4: Multiply Multi-Digit Numbers Supporting Content: Lesson 3: Find Volume Using Formulas; Lesson 26: Solve Word Problems Involving Conversions Math in Action: pp. 104–111 |
| 5.CAR.2 | Calculate whole number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value, properties of operations, divisibility rules, and the relationship between multiplication and division. | Lesson 5: Divide Multi-Digit Numbers Supporting Content: Math in Action: pp. 104–111 |
| 5.CAR.3 | Add and subtract decimals to the hundredths using concrete models or drawings and strategies based on place value, properties of operations, or the relationship between addition and subtraction. | Lesson 10: Add Decimals Lesson 11: Subtract Decimals Lesson 14: Add and Subtract in Word Problems Supporting Content: Math in Action: pp. 292–299 |
| 5.CAR.4 | Multiply and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, or the relationship between multiplication and division. | Lesson 15: Multiply a Decimal by a Whole Number Lesson 16: Multiply Decimals Lesson 17: Divide Decimals Supporting Content: Math in Action: pp. 492–499 |

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| 5.CAR.5 | <p>Add and subtract fractions with like and unlike denominators by using equivalent fractions $\{a/b = (n \cdot a)/(n \cdot b)\}$ to create common denominators; include real-world problems.</p> <ul style="list-style-type: none"> • Fractions include: mixed numbers | <p>Lesson 12: Add Fractions Lesson 13: Subtract Fractions</p> <p>Supporting Content: Lesson 14: Add and Subtract in Word Problems; Lesson 27: Make Line Plots and Interpret Data Math in Action: pp. 292–299</p> |
| 5.CAR.6 | Interpret and solve fractions as division problems, $(a/b = a \div b)$, where a and b are natural numbers. | <p>Lesson 18: Fractions as Division</p> <p>Supporting Content: Lesson 25: Convert Measurement Units; Lesson 26: Solve Word Problems Involving Conversions Math in Action: pp. 492–499</p> |
| 5.CAR.7 | Use visual models and equations to multiply whole numbers by fractions and fractions by fractions, including mixed numbers and fractions greater than one. | <p>Lesson 19: Understand Multiplication by a Fraction</p> <p>Supporting Content: Lesson 20: Multiply Fractions to Find Area; Lesson 22: Multiply Fractions in Word Problems Math in Action: pp. 492–499</p> |
| 5.CAR.8 | Apply previous understanding of division to divide unit fractions by whole numbers and whole numbers by unit fractions. | <p>Lesson 23: Understand Division with Unit Fractions</p> <p>Supporting Content: Lesson 24: Divide Unit Fractions in Word Problems Math in Action: pp. 492–499</p> |
| Problem Solving | | |
| Students solve real-world problems. | | |
| 5.CAR.9 | Solve and create real-world problems involving multiplication of fractions and mixed numbers. | <p>Lesson 22: Multiply Fractions in Word Problems</p> <p>Supporting Content: Lesson 20: Multiply Fractions to Find Area; Lesson 26: Solve Word Problems Involving Conversions; Lesson 27: Make Line Plots and Interpret Data Math in Action: pp. 492–499</p> |

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| 5.CAR.10 | Solve real-world problems involving the division of natural numbers leading to answers in the form of fractions or mixed numbers using visual models and equations. | <p>Lesson 18: Fractions as Division</p> <p>Supporting Content: Lesson 25: Convert Measurement Units; Lesson 26: Solve Word Problems Involving Conversions</p> <p>Math in Action: pp. 492–499</p> |
| 5.CAR.11 | Solve real-world problems involving the division of unit fractions by whole numbers and whole numbers by unit fractions, using visual fraction models and equations. | <p>Lesson 24: Divide Unit Fractions in Word Problems</p> <p>Supporting Content: Math in Action: pp. 492–499</p> |
| Algebraic Concepts | | |
| Students develop and apply an understanding of foundational algebraic concepts. | | |
| 5.CAR.12 | Evaluate numerical expressions with parentheses or brackets and exponents with the base of ten, using the Order of Operations. | <p>Lesson 30: Evaluate, Write, and Interpret Expressions</p> <p>Supporting Content: Lesson 3: Find Volume Using Formulas; Lesson 8: Read and Write Decimals</p> <p>Math in Action: pp. 702–709</p> |
| 5.CAR.13 | Write simple expressions that record calculations with numbers, interpreting numerical expressions without evaluating them. | <p>Lesson 30: Evaluate, Write, and Interpret Expressions</p> <p>Supporting Content: Math in Action: pp. 702–709</p> |
| 5.CAR.14 | Generate two numerical patterns given two rules, identifying the relationship between the corresponding terms by graphing the terms in the first quadrant of the coordinate grid. | <p>Lesson 33: Analyze Patterns and Relationships</p> <p>Supporting Content: Math in Action: pp. 702–709</p> |

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| 5.GM Geometry & Measurement | | |
| Shapes | | Students expand knowledge of shapes by analyzing sides and angles. |
| 5.GM.1 | Classify two-dimensional figures in a hierarchy based on properties with the focus on quadrilaterals and triangles when teaching hierarchies. <ul style="list-style-type: none"> Shapes to include: quadrilaterals (trapezoid, parallelogram, rectangle, square, rhombus, kite) and triangles (right, acute, obtuse, scalene, isosceles, equilateral) | Lesson 29: Classify Two-Dimensional Figures Supporting Content: Lesson 28: <i>Understand</i> Categories of Two-Dimensional Figures Math in Action: pp. 608–615 <i>Note: The lesson cited does not include kites.</i> |
| Area & Volume | | Students solve the area of rectangles and volume of rectangular prisms. |
| 5.GM.2 | Find the area of a rectangle with fractional and/or mixed number side lengths by using models and multiplying the fractional side lengths showing that both strategies produce the same area. | Lesson 20: Multiply Fractions to Find Area Supporting Content: Lesson 19: Understand Multiplication by a Fraction; Lesson 22: Multiply Fractions in Word Problems Math in Action: pp. 492–499 |
| 5.GM.3 | Measure volumes by counting unit cubes using cubic cm (cm^3), cubic in (in^3), cubic ft (ft^3), and improvised units (u^3). | Lesson 2: Find Volume Using Unit Cubes Supporting Content: Lesson 1: <i>Understand</i> Volume Math in Action: pp. 104–111 |
| 5.GM.4 | Solve real-world and mathematical problems involving the volume of rectangular prisms with whole number side lengths by applying the formulas ($V = l \cdot w \cdot h$ or $V = B \cdot h$) and the properties of operations. | Lesson 3: Find Volume Using Formulas Supporting Content: Lesson 4: Multiply Multi-Digit Numbers Math in Action: pp. 104–111 |
| 5.GM.5 | Solve real-world problems by calculating volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts. | Lesson 2: Find Volume Using Unit Cubes Supporting Content: Lesson 3: Find Volume Using Formulas; Lesson 4: Multiply Multi-Digit Numbers; Lesson 5: Divide Multi-Digit Numbers Math in Action: pp. 104–111 |

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| Conversions | | |
| Students apply measurement knowledge to solve real-world problems. | | |
| 5.GM.6 | Convert among different-sized standard measurement units within the same system, including both the metric and customary systems, and solve multi-step, real-world problems using conversions. | Lesson 25: Convert Measurement Units Lesson 26: Solve Word Problems Involving Conversions <u>Supporting Content:</u> Math in Action: pp. 608–615 |
| Coordinate Plane System | | |
| Students develop an understanding of the coordinate system. | | |
| 5.GM.7 | Graph points with whole number coordinates on a coordinate plane in the first quadrant, explaining how the coordinates relate to the horizontal and vertical axes to describe the location of points in the plane. | Lesson 31: <i>Understand</i> the Coordinate Plane <u>Supporting Content:</u> Lesson 32: Represent Problems in the Coordinate Plane Math in Action: pp. 702–709 |
| 5.GM.8 | Represent real-world and mathematical problems by graphing points in the first quadrant on a coordinate plane, interpreting coordinate values of points in the context of the situation. | Lesson 32: Represent Problems in the Coordinate Plane <u>Supporting Content:</u> Lesson 31: <i>Understand</i> the Coordinate Plane; Lesson 33: Analyze Patterns and Relationships Math in Action: pp. 702–709 |

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| 5.DA | Data Analysis | |
| | Charts, Graphs, & Tables | |
| | Students organize and analyze data. | |
| 5.DA.1 | Collect and interpret data from observations, surveys, and experiments; represent data using frequency tables, scaled bar graphs, and scaled line graphs. | <p>Supporting Content: Lesson 27: Make Line Plots and Interpret Data Math in Action: pp. 608–615</p> |
| 5.DA.2 | Use a line plot to display a data set of measurements in fractions of a unit solving problems involving all four operations with fractions (excluding division of a fraction by fraction) using data presented in line plots. | <p>Lesson 27: Make Line Plots and Interpret Data</p> <p>Supporting Content: Math in Action: pp. 608–615</p> |