A Planning Guide of

enVision® Mathematics

To the

Michigan Standards for Mathematics
Grade 3

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Prepared by Savvas Learning Company, formerly Pearson K12 Learning

A Planning Guide of enVision Mathematics Common Core ©2020
to the Michigan Standards for Mathematics
Grade 3

enVision Mathematics Common Core ©2020 Student Edition, Grade 3 Lesson: Pages	Michigan Standards for Mathematics
Topic 1: Understand Multiplication and Division of Whole Numbers	
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Topic Performance Task: 35-36	**3.OA.A.2:** Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. Example: For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP4:** Model with mathematics.

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Fluency Practice Review: 65	**2.NBT.B.5**: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP6:** Attend to precision.

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Lesson 3-6: The Associative Property: Multiply with 3 Factors: 97-100	**3.OA.B.5:** Apply properties of operations as strategies to multiply and divide. Students need not use formal terms for these properties. Examples: If 6 x 4 = 24 is known, then 4 x 6 = 24 is also known. (Commutative property of multiplication.) 3 x 5 x 2 can be found by 3 x 5 = 15, then 15 x 2 = 30, or by 5 x.2 = 10, then 3 x 10 = 30. (Associative property of multiplication.) Knowing that 8 x 5 = 40 and 8 x 2 = 16, one can find 8 x 7 as 8 x (5 + 2) = (8 x 5) + (8 x 2) = 40 + 16 = 56. (Distributive property.) **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP1:** Make sense of problems and persevere in solving them. **Math Practice MP2:** Reason abstractly and quantitatively.

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Fluency Practice Review: 105	**2.NBT.B.5**: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP6:** Attend to precision.
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Topic 4: Use Multiplication to Divide: Division Facts	
Lesson 4-1: Relate Multiplication and Division: 117-120	**3.OA.B.6:** Understand division as an unknown-factor problem. Example: For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP1:** Make sense of problems and persevere in solving them. **Math Practice MP2:** Reason abstractly and quantitatively.
Lesson 4-2: Use Multiplication to Divide with 2, 3, 4, and 5: 121-124	**3.OA.B.6:** Understand division as an unknown-factor problem. Example: For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Lesson 4-4: Use Multiplication to Divide with 8 and 9: 129-132	**3.OA.B.6:** Understand division as an unknown-factor problem. Example: For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP2:** Reason abstractly and quantitatively.

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Lesson 4-5: Multiplication Patterns: Even and Odd Numbers: 133-136	**3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.OA.D.9:** Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. Example: For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 4-6: Division Involving 0 and 1: 137-140	**3.OA.B.5:** Apply properties of operations as strategies to multiply and divide. Students need not use formal terms for these properties.3.OA.B.6: Understand division as an unknown-factor problem. Example: For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8. **3.OA.B.6:** Understand division as an unknown-factor problem. Example: For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP4:** Model with mathematics.

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Lesson 4-7: Practice Multiplication and Division Facts: 141-144	**3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.A.4:** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. Example: For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = n ÷ 3, 6 × 6 = ?. **Math Practice MP4:** Model with mathematics. **Math Practice MP2:** Reason abstractly and quantitatively.
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Lesson 4-9: Problem Solving: Make Sense and Persevere: 149-152	**3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Fluency Practice Review: 153	**2.NBT.B.5**: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP6:** Attend to precision.
Topic Performance Task: 163-164	**3.OA.B.6:** Understand division as an unknown-factor problem. Example: For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8. **Math Practice MP6:** Attend to precision.

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Topic 5: Fluently Multiply and Divide within 100	
Lesson 5-1: Patterns for Multiplication Facts: 169-172	**3.OA.D.9:** Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. Example: For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP6:** Attend to precision.
Lesson 5-2: Use a Table to Multiply and Divide: 173-176	**3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.

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Lesson 5-3: Use Strategies to Multiply: 177-180	**3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 5-4: Solve Word Problems: Multiplication and Division Facts: 181-184	**3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP5:** Use appropriate tolls strategically. **Math Practice MP4:** Model with mathematics.

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Lesson 5-5: Write Multiplication and Division Math Stories: 185-188	**3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.A.2:** Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. Example: For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP8:** Look for and express regularity in repeated reasoning.

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Lesson 5-6: Problem Solving: Look For and Use Structure: 189-192	**3.OA.D.9:** Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. Example: For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP1:** Make sense of problems and persevere in solving them.
Fluency Practice Activity: 193	**3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP6:** Attend to precision.

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Topic Performance Task: 203-204	**3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.OA.D.9:** Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. Example: For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP7:** Look for and make use of structure.
Topic 6: Connect Area to Multiplication and Addition	
Lesson 6-1: Cover Regions: 209-212	**3.MD.C.5a:** A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. **3.MD.C.5b:** A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units. **Math Practice MP5:** Use appropriate tolls strategically. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 6-2: Area: Nonstandard Units: 213-216	**3.MD.C.5b:** A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units. **3.MD.C.6:** Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.

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Lesson 6-3: Area: Standard Units: 217-220	**3.MD.C.6:** Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). **3.MD.C.5a:** A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. **Math Practice MP6:** Attend to precision. **Math Practice MP2:** Reason abstractly and quantitatively.
Lesson 6-4: Area of Squares and Rectangles: 221-224	**3.MD.C.7a:** Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. **3.OA.A.4:** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. Example: For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = n \div 3$, $6 \times 6 = ?$. **3.MD.C.7b:** Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. **Math Practice MP8:** Look for and express regularity in repeated reasoning. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Lesson 6-5: Apply Properties: Area and the Distributive Property: 225-228	**3.MD.C.7c:** Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths *a* and *b* + *c* is the sum of *a* × *b* and *a* × *c*. Use area models to represent the distributive property in mathematical reasoning. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP4:** Model with mathematics. **Math Practice MP7:** Look for and make use of structure.
Lesson 6-6: Apply Properties: Area of Irregular Shapes: 229-232	**3.MD.C.7d:** Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP2:** Reason abstractly and quantitatively.

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Lesson 6-7: Problem Solving: Look For and Use Structure: 233-236	**3.MD.C.7b:** Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **3.MD.C.7a:** Find the area of a rectangle with whole-number side lengths by tiling it and show that the area is the same as would be found by multiplying the side lengths. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP2:** Reason abstractly and quantitatively.
Fluency Practice Activity: 237	**3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP6:** Attend to precision.

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Topic Performance Task: 247-248	**3.MD.C.7b:** Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. **3.MD.C.7c:** Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning. **3.MD.C.7d:** Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP4:** Model with mathematics.
Topic 7: Represent and Interpret Data	
Lesson 7-1: Read Picture Graphs and Bar Graphs: 253-256	**3.MD.B.3:** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. Example: For example, draw a bar graph in which each square in the bar graph might represent 5 pets. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP2:** Reason abstractly and quantitatively.

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Lesson 7-2: Make Picture Graphs: 257-260	**3.MD.B.3:** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. Example: For example, draw a bar graph in which each square in the bar graph might represent 5 pets. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **Math Practice MP1:** Make sense of problems and persevere in solving them. **Math Practice MP4:** Model with mathematics.
Lesson 7-3: Make Bar Graphs: 261-264	**3.MD.B.3:** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. Example: For example, draw a bar graph in which each square in the bar graph might represent 5 pets. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP6:** Attend to precision.

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Lesson 7-4: Solve Word Problems Using Information in Graphs: 265-268	**3.MD.B.3:** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. Example: For example, draw a bar graph in which each square in the bar graph might represent 5 pets. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **Math Practice MP1:** Make sense of problems and persevere in solving them. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 7-5: Problem Solving: Precision: 269-272	**3.MD.B.3:** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. Example: For example, draw a bar graph in which each square in the bar graph might represent 5 pets. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **Math Practice MP6:** Attend to precision. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Fluency Practice Activity: 273	**3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP6:** Attend to precision.
Topic Performance Task: 283-284	**3.MD.B.3:** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. Example: For example, draw a bar graph in which each square in the bar graph might represent 5 pets. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP4:** Model with mathematics.
Topic 8: Use Strategies and Properties to Add and Subtract	
Lesson 8-1: Addition Properties: 289-292	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Lesson 8-2: Algebra: Addition Patterns: 293-296	**3.OA.D.9:** Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. Example: For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP8:** Look for and express regularity in repeated reasoning.
Lesson 8-3: Mental Math: Addition: 297-300	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 8-4: Mental Math: Subtraction: 301-304	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP4:** Model with mathematics.

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Lesson 8-5: Round Whole Numbers: 305-308	**3.NBT.A.1:** Use place value understanding to round whole numbers to the nearest 10 or 100. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP1:** Make sense of problems and persevere in solving them. **Math Practice MP6:** Attend to precision.
Lesson 8-6: Estimate Sums: 309-312	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.NBT.A.1:** Use place value understanding to round whole numbers to the nearest 10 or 100. **Math Practice MP6:** Attend to precision. **Math Practice MP2:** Reason abstractly and quantitatively.
Lesson 8-7: Estimate Differences: 313-316	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP1:** Make sense of problems and persevere in solving them. **Math Practice MP4:** Model with mathematics.

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Lesson 8-8: Problem Solving: Model with Math: 317-320	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP4:** Model with mathematics. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Fluency Practice Activity: 321	**3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP6:** Attend to precision.

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Topic Performance Task: 331-332	**3.NBT.A.1:** Use place value understanding to round whole numbers to the nearest 10 or 100. **3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.D.9:** Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. Example: For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. **Math Practice MP1:** Make sense of problems and persevere in solving them. **Math Practice MP2:** Reason abstractly and quantitatively.
Topic 9: Fluently Add and Subtract within 1,000	
Lesson 9-1: Use Partial Sums to Add: 337-340	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.

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Lesson 9-2: Use Regrouping to Add: 341-344	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP5:** Use appropriate tolls strategically. **Math Practice MP1:** Make sense of problems and persevere in solving them.
Lesson 9-3: Add 3 or More Numbers: 345-348	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP8:** Look for and express regularity in repeated reasoning. **Math Practice MP2:** Reason abstractly and quantitatively.

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Lesson 9-4: Use Partial Differences to Subtract: 349-352	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP6:** Attend to precision.
Lesson 9-5: Use Regrouping to Subtract: 353-356	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP5:** Use appropriate tolls strategically. **Math Practice MP4:** Model with mathematics.

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Lesson 9-6: Use Strategies to Add and Subtract: 357-360	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 9-7: Problem Solving: Construct Arguments: 361-364	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP1:** Make sense of problems and persevere in solving them.
Fluency Practice Activity: 365	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP6:** Attend to precision.

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Topic Performance Task: 375-376	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP4:** Model with mathematics.
Topic 10: Multiply by Multiples of 10	
Lesson 10-1: Use Patterns to Multiply: 381-384	**3.NBT.A.3:** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP2:** Reason abstractly and quantitatively.
Lesson 10-2: Use Mental Math to Multiply: 385-388	**3.NBT.A.3:** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Lesson 10-3: Use Properties to Multiply: 389-392	**3.NBT.A.3:** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. **3.OA.B.5:** Apply properties of operations as strategies to multiply and divide. Students need not use formal terms for these properties.**3.OA.B.6:** Understand division as an unknown-factor problem. Example: For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP6:** Attend to precision.
Lesson 10-4: Problem Solving: Look For and Use Structure: 393-396	**3.NBT.A.3:** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. **3.OA.D.9:** Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. Example: For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP1:** Make sense of problems and persevere in solving them.
Fluency Practice Activity: 397	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP6:** Attend to precision.

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Topic Performance Task: 403-404	**3.NBT.A.3:** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP4:** Model with mathematics.
Topic 11: Use Operations with Whole Numbers to Solve Problems	
Lesson 11-1: Solve 2-Step Word Problems: Addition and Subtraction: 409-412	**3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 11-2: Solve 2-Step Word Problems: Multiplication and Division: 413-416	**3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Lesson 11-3: Solve 2-Step Word Problems: All Operations: 417-420	**3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP1:** Make sense of problems and persevere in solving them. **Math Practice MP7:** Look for and make use of structure.
Lesson 11-4: Problem Solving: Critique Reasoning: 421-424	**3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Fluency Practice Activity: 425	**3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP6:** Attend to precision.
Topic Performance Task: 431-432	**3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Topic 12: Understand Fractions as Numbers	
Lesson 12-1: Partition Regions into Equal Parts: 437-440	**3.G.A.2:** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. Example: For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape. **3.NF.A.1:** Understand a fraction *1/b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a/b* as the quantity formed by *a* parts of size *1/b*. **Math Practice MP6:** Attend to precision. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Lesson 12-2: Fractions and Regions: 441-444	**3.NF.A.1:** Understand a fraction *1/b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a/b* as the quantity formed by *a* parts of size *1/b.* **3.G.A.2:** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. Example: For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape. **Math Practice MP4:** Model with mathematics. **Math Practice MP6:** Attend to precision.
Lesson 12-3: Understand the Whole: 445-448	**3.NF.A.3c:** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Example: Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram. **3.NF.A.1:** Understand a fraction *1/b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a/b* as the quantity formed by *a* parts of size *1/b.* **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 12-4: Number Line: Fractions Less Than 1: 449-452	**3.NF.A.2a:** 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. **3.NF.A.2b:** 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. **Math Practice MP4:** Model with mathematics. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.

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Lesson 12-5: Number Line: Fractions Greater Than 1: 453-456	**3.NF.A.2b:** 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. **3.NF.A.2a:** 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. **Math Practice MP5:** Use appropriate tolls strategically. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 12-6: Line Plots and Length: 457-460	**3.MD.B.4:** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters. **3.NF.A.2b:** 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. **Math Practice MP6:** Attend to precision. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Lesson 12-7: More Line Plots and Length: 461-465	**3.MD.B.4:** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters. **3.NF.A.2a:** 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. **Math Practice MP1:** Make sense of problems and persevere in solving them. **Math Practice MP7:** Look for and make use of structure.
Lesson 12-8: Problem Solving: Make Sense and Persevere: 465-468	**3.NF.A.1:** Understand a fraction *1/b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a/b* as the quantity formed by *a* parts of size *1/b.* **Math Practice MP1:** Make sense of problems and persevere in solving them. **Math Practice MP2:** Reason abstractly and quantitatively.
Fluency Practice Activity: 469	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP6:** Attend to precision.

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Topic Performance Task: 479-480	**3.NF.A.1:** Understand a fraction *1/b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a/b* as the quantity formed by *a* parts of size *1/b.* **3.G.A.2:** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. Example: For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape. **3.G.A.2:** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. Example: For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape. **Math Practice MP1:** Make sense of problems and persevere in solving them. **Math Practice MP4:** Model with mathematics.
Topic 13: Fraction Equivalence and Comparison	
Lesson 13-1: Equivalent Fractions: Use Models: 485-488	**3.NF.A.3b:** Recognize and generate simple equivalent fractions, (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. **3.NF.A.3a:** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **Math Practice MP5:** Use appropriate tolls strategically. **Math Practice MP2:** Reason abstractly and quantitatively.
Lesson 13-2: Equivalent Fractions: Use the Number Line: 489-492	**3.NF.A.3a:** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **3.NF.A.3b:** Recognize and generate simple equivalent fractions, (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP4:** Model with mathematics.

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Lesson 13-3: Use Models to Compare Fractions: Same Denominator: 493-496	**3.NF.A.3d:** Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. **Math Practice MP5:** Use appropriate tolls strategically. **Math Practice MP2:** Reason abstractly and quantitatively.
Lesson 13-4: Use Models to Compare Fractions: Same Numerator: 497-500	**3.NF.A.3d:** Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. **Math Practice MP6:** Attend to precision. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 13-5: Compare Fractions: Use Benchmarks: 501-504	**3.NF.A.3d:** Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. **Math Practice MP1:** Make sense of problems and persevere in solving them.
Lesson 13-6: Compare Fractions: Use the Number Line: 505-508	**3.NF.A.3a:** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP6:** Attend to precision.

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Lesson 13-7: Whole Numbers and Fractions: 509-512	**3.NF.A.3c:** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Example: Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram. **3.NF.A.3a:** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP7:** Look for and make use of structure.
Lesson 13-8: Problem Solving: Construct Arguments: 513-516	**3.NF.A.3d:** Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. **3.NF.A.3b:** Recognize and generate simple equivalent fractions, (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP1:** Make sense of problems and persevere in solving them.
Fluency Practice Activity: 517	**3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP6:** Attend to precision.

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Topic Performance Task: 527-528	**3.NF.A.3d:** Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. **3.NF.A.3a:** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **3.NF.A.3b:** Recognize and generate simple equivalent fractions, (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. **Math Practice MP4:** Model with mathematics. **Math Practice MP2:** Reason abstractly and quantitatively.
Topic 14: Solve Time, Capacity, and Mass Problems	
Lesson 14-1: Time to the Minute: 533-536	**3.MD.A.1:** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP4:** Model with mathematics.
Lesson 14-2: Units of Time: Measure Elapsed Time: 537-540	**3.MD.A.1:** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Lesson 14-3: Units of Time: Solve Word Problems: 541-544	**3.MD.A.1:** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. **3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Math Practice MP4:** Model with mathematics. **Math Practice MP2:** Reason abstractly and quantitatively.
Lesson 14-4: Estimate Liquid Volume: 545-548	**3.MD.A.2:** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. **Math Practice MP6:** Attend to precision. **Math Practice MP8:** Look for and express regularity in repeated reasoning.
Lesson 14-5: Measure Liquid Volume: 549-552	**3.MD.A.2:** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. **Math Practice MP6:** Attend to precision. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.

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Lesson 14-6: Estimate Mass: 553-556	**3.MD.A.2:** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 14-7: Measure Mass: 557-560	**3.MD.A.2:** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP2:** Reason abstractly and quantitatively.
Lesson 14-8: Solve Word Problems Involving Mass and Liquid Volume: 561-564	**3.MD.A.2:** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **Math Practice MP4:** Model with mathematics. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Lesson 14-9: Problem Solving: Reasoning: 565-568	**3.MD.A.1:** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Fluency Practice Activity: 569	**3.MD.A.2:** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. **3.MD.A.1:** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP6:** Attend to precision.

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Topic Performance Task: 579-580	**3.MD.A.2:** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. **3.MD.A.1:** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP4:** Model with mathematics.
Topic 15: Attributes of Two-Dimensional Shapes	
Lesson 15-1: Describe Quadrilaterals: 585-588	**3.G.A.1:** Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. **3.NF.A.1:** Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Lesson 15-2: Classify Shapes: 589-592	**3.G.A.1:** Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. **3.NF.A.1:** Understand a fraction *1/b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a/b* as the quantity formed by *a* parts of size *1/b.* **Math Practice MP8:** Look for and express regularity in repeated reasoning. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Lesson 15-3: Analyze and Compare Quadrilaterals: 593-596	**3.G.A.1:** Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP2:** Reason abstractly and quantitatively.
Lesson 15-4: Problem Solving: Precision: 597-600	**3.G.A.1:** Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. **Math Practice MP6:** Attend to precision. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Fluency Practice Activity: 601	**3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP6:** Attend to precision.
Topic Performance Task: 607-608	**3.G.A.1:** Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others.
Topic 16: Solve Perimeter Problems	
Lesson 16-1: Understand Perimeter: 613-616	**3.MD.D.8:** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. **Math Practice MP6:** Attend to precision. **Math Practice MP2:** Reason abstractly and quantitatively.

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Lesson 16-2: Perimeter of Common Shapes: 617-620	**3.MD.D.8:** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. **3.OA.A.3:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **Math Practice MP7:** Look for and make use of structure. **Math Practice MP1:** Make sense of problems and persevere in solving them.
Lesson 16-3: Perimeter and Unknown Side Lengths: 621-624	**3.MD.D.8:** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. **3.OA.D.8:** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP1:** Make sense of problems and persevere in solving them.

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Lesson 16-4: Same Perimeter, Different Area: 625-628	**3.MD.D.8:** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP6:** Attend to precision. **Math Practice MP8:** Look for and express regularity in repeated reasoning.
Lesson 16-5: Same Area, Different Perimeter: 629-632	**3.MD.D.8:** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. **3.OA.C.7:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. **Math Practice MP5:** Use appropriate tolls strategically. **Math Practice MP2:** Reason abstractly and quantitatively.

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Lesson 16-6: Problem Solving: Reasoning: 633-636	**3.MD.D.8:** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP1:** Make sense of problems and persevere in solving them.
Fluency Practice Activity: 637	**3.NBT.A.2:** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Math Practice MP3:** Construct viable arguments and critique the reasoning of others. **Math Practice MP6:** Attend to precision.
Topic Performance Task: 643-644	**3.MD.D.8:** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. **Math Practice MP2:** Reason abstractly and quantitatively. **Math Practice MP7:** Look for and make use of structure.