

A Planning Guide of

**INVESTIGATIONS**   
IN NUMBER, DATA, AND SPACE®



and the

**Minnesota  
Academic Standards in Mathematics  
Grade 3**

**A Planning Guide of Investigations in Number, Data, and Space, 3<sup>rd</sup> Edition  
and the Minnesota Academic Standards in Mathematics  
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Investigations in Number, Data, and Space Grade 3	Minnesota Academic Standards in Mathematics Grade 3
<b>Unit 1 Understanding Equal Groups Multiplication and Division 1</b>	
<b>Investigation 1 Things That Come in Groups</b>	
<b>Session 1.1 - Many Things Come in Groups</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>
<b>Session 1.2 - How Many In Several Groups?</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>
<b>Session 1.3 - Solving Multiplication Problems</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p>

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<b>Session 1.4 - Solving Problems About Our Pictures</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p>
<b>Investigation 2 Skip Counting And 100 Charts</b>	
<b>Session 2.1 - Highlighting Multiples On 100 Charts</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p>
<b>Session 2.2 - More Multiples</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p>

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<p><b>Session 2.3 - Solving Related Story Problems</b></p>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p>
<p><b>Session 2.4 - Patterns and Relationships</b></p>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p>

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<b>Session 2.5 - Finding Products of Related Problems</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>
<b>Session 2.6 - Using Multiplication</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p>
<b>Investigation 3 Arrays</b>	
<b>Session 3.1 - Arranging Chairs</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>

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<p><b>Session 3.2 - Investigating Arrays</b></p>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p>
<p><b>Session 3.3 - What's The Area?</b></p>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p>
<p><b>Session 3.4 - Array Games—Part 1</b></p>	<p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p>

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<b>Session 3.5 - Using What You Know</b>	<b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.
<b>Session 3.6 - Learning Multiplication Facts</b>	<b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division. <b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.
<b>Session 3.7 - Array Games—Part 2</b>	<b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.
<b>Investigation 4 Understanding Division</b>	
<b>Session 4.1 - Solving Division Problems</b>	<b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division. <b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.

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<b>Session 4.2 - Multiply Or Divide?</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>
<b>Session 4.3 - Writing Story Problems</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>
<b>Session 4.4 - Missing Factors</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p>

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<p><b>Session 4.5 - Solving Multiplication and Division Problems</b></p>	<p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p>
<p><b>Session 4.6 - Solving Multiplication and Division Problems, Continued</b></p>	<p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>

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<b>Unit 2 Graphs and Line Plots Modeling with Data</b>	
<b>Investigation 1 Modeling with Data</b>	
<b>Session 1.1 - Places Where We Like To Eat</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>
<b>Session 1.2 - Representing the Class Data</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>
<b>Session 1.3 - What Do Our Data Show About Our Class?</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>

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<b>Session 1.4 - Solving Problems With Bar Graphs</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>
<b>Session 1.5 - Bar Graphs and Pictographs</b>	<p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p>
<b>Session 1.6 - Interpreting Bar Graphs &amp; Pictographs and Developing a Survey Question</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>
<b>Session 1.7 - Describing Data</b>	<p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>
<b>Session 1.8 - Choosing Categories</b>	<p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>

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<b>Session 1.9 - Comparing Groups</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>
<b>Investigation 2 Collecting, Representing, And Analyzing Measurement Data</b>	
<b>Session 2.1 - Using A Line Plot to Represent Data</b>	<p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>
<b>Session 2.2 - Is Your Foot A Foot Long?</b>	<p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.3.2.1:</b> Use half units when measuring distances.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>
<b>Session 2.3 - Why Are Our Measurements Different?</b>	<p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.3.2.1:</b> Use half units when measuring distances.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>

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<b>Session 2.4 - Feet and Inches</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.3.2.1:</b> Use half units when measuring distances</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>
<b>Session 2.5 - Describing the Pattern Block Data</b>	<p><b>3.3.2.1:</b> Use half units when measuring distances.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>
<b>Session 2.6 - Reading and Interpreting Data</b>	<p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p> <p><b>3.3.2.1:</b> Use half units when measuring distances.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>
<b>Unit 3 Travel Stories and Collections Addition, Subtraction, and the Number System 1</b>	
<b>Investigation 1 Working With 100</b>	
<b>Session 1.1 - Capture 5</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>

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<b>Session 1.2 - Sticker Station Problems</b>	<p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Session 1.3 - How Many More Stickers to Get 100?</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Session 1.4 - Close To 100</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>

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<b>Session 1.5 - Solving Addition and Subtraction Problems</b>	<p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Investigation 2 Building 1,000</b>	
<b>Session 2.1 - Making a 1,000 Chart</b>	<p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.1.1.3:</b> Find 10,000 more or 10,000 less than a given five-digit number. Find 1000 more or 1000 less than a given four- or five-digit. Find 100 more or 100 less than a given four- or five-digit number.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p>
<b>Session 2.2 - Collections and Quantities on the 1,000 Chart</b>	<p><b>3.1.1.5:</b> Compare and order whole numbers up to 100,000.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>

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<b>Session 2.3 - Go Collecting</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Session 2.4 - Rounding Numbers</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p>
<b>Investigation 3 Addition</b>	
<b>Session 3.1 - How Many Stickers?</b>	<p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>

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<b>Session 3.2 - Combining Collections</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Session 3.3 - Place Value Of 3-Digit Numbers</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Session 3.4 - Addition Starter Problems</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p>
<b>Session 3.5 - Addition Strategies</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p>

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<b>Investigation 4 Finding the Difference</b>	
<b>Session 4.1 - Over and Under 100</b>	<p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p>
<b>Session 4.2 - Travel Problems—Crossing Over 100</b>	<p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Session 4.3 - Finding the Difference Between Two Numbers</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Session 4.4 - How Far Did They Travel?</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>

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<b>Session 4.5 - The Trip Home</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Investigation 5 Subtraction Stories</b>	
<b>Session 5.1 - Comparing Lengths and Heights</b>	<p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Session 5.2 - Comparing Quantities</b>	<p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Session 5.3 - Related Problems</b>	<p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>

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<b>Session 5.4 - How Many Are Left?</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Session 5.5 - Solving Subtraction Problems</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Session 5.6 - Addition and Subtraction Problems</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>

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<b>Unit 4 Perimeter, Area, And Polygons 2-D Geometry and Measurement</b>	
<b>Investigation 1 Linear Measurement</b>	
<b>Session 1.1 - Using U.S. and Metric Units to Measure Length</b>	<p><b>3.3.2.1:</b> Use half units when measuring distances.</p> <p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p>
<b>Session 1.2 - Introducing Perimeter</b>	<p><b>3.3.2.2:</b> Find the perimeter of a polygon by adding the lengths of the sides.</p> <p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p>
<b>Session 1.3 - Measuring Perimeter</b>	<p><b>3.3.2.2:</b> Find the perimeter of a polygon by adding the lengths of the sides.</p> <p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p>
<b>Session 1.4 - Perimeter Problems</b>	<p><b>3.3.2.2:</b> Find the perimeter of a polygon by adding the lengths of the sides.</p> <p><b>3.3.2.3:</b> Measure distances around objects.</p> <p><b>3.3.1.2:</b> Sketch polygons with a given number of sides or vertices (corners), such as pentagons, hexagons and octagons.</p>
<b>Session 1.5 - Ordering Shapes By Perimeter</b>	<p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.3.2.2:</b> Find the perimeter of a polygon by adding the lengths of the sides.</p>

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<b>Investigation 2 Understanding and Finding Area</b>	
<b>Session 2.1 - Tetrominoes</b>	<p>This Minnesota standard supports the session content.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p>Please see Grade 4 standard: <b>4.3.2.3:</b> Understand that the area of a two-dimensional figure can be found by counting the total number of same size square units that cover a shape without gaps or overlaps. Justify why length and width are multiplied to find the area of a rectangle by breaking the rectangle into one unit by one unit squares and viewing these as grouped into rows and columns.</p>
<b>Session 2.2 - Which Tetrominoes Fit?</b>	<p>This Minnesota standard supports the session content.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.2.2:</b> Find the perimeter of a polygon by adding the lengths of the sides.</p> <p>Please see Grade 4 standard: <b>4.3.2.3:</b> Understand that the area of a two-dimensional figure can be found by counting the total number of same size square units that cover a shape without gaps or overlaps. Justify why length and width are multiplied to find the area of a rectangle by breaking the rectangle into one unit by one unit squares and viewing these as grouped into rows and columns.</p>

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<p style="text-align: center;"><b>Investigations in Number, Data, and Space Grade 3</b></p>	<p style="text-align: center;"><b>Minnesota Academic Standards in Mathematics Grade 3</b></p>
<p><b>Session 2.3 - Using Square Inches to Measure</b></p>	<p>This MN standard supports the session content.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p>Please see Grade 4 standards:</p> <p><b>4.3.2.3:</b> Understand that the area of a two-dimensional figure can be found by counting the total number of same size square units that cover a shape without gaps or overlaps. Justify why length and width are multiplied to find the area of a rectangle by breaking the rectangle into one unit by one unit squares and viewing these as grouped into rows and columns.</p> <p><b>4.3.2.4:</b> Find the areas of geometric figures and real-world objects that can be divided into rectangular shapes. Use square units to label area measurements.</p>
<p><b>Session 2.4 - Same Area, Different Perimeter; Same Perimeter, Different Area</b></p>	<p><b>3.3.2.2:</b> Find the perimeter of a polygon by adding the lengths of the sides.</p> <p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p>

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<b>Session 2.5 - Area Activities</b>	<p>These Minnesota standards support the session content.</p> <p><b>3.1.1.1:</b> Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.</p> <p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p>Please see Grade 4 standard: <b>4.3.2.4:</b> Find the areas of geometric figures and real-world objects that can be divided into rectangular shapes. Use square units to label area measurements.</p>
<b>Session 2.6 - Area Activities</b>	<b>3.3.2.3:</b> Measure distances around objects.
<b>Session 2.7 - Finding Area</b>	<p>Please see Grade 4 standard: <b>4.3.2.4:</b> Find the areas of geometric figures and real-world objects that can be divided into rectangular shapes. Use square units to label area measurements.</p>
<b>Investigation 3 Triangles and Quadrilaterals</b>	
<b>Session 3.1 - Triangles</b>	<p><b>3.3.1.1:</b> Identify parallel and perpendicular lines in various contexts, and use them to describe and create geometric shapes, such as right triangles, rectangles, parallelograms and trapezoids.</p> <p><b>3.3.1.2:</b> Sketch polygons with a given number of sides or vertices (corners), such as pentagons, hexagons and octagons.</p>

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<b>Session 3.2 - Is It a Triangle?</b>	<p>These Minnesota standards support the session content.</p> <p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p>Please see Grade 4 standard: <b>4.3.1.1:</b> Describe, classify and sketch triangles, including equilateral, right, obtuse and acute triangles. Recognize triangles in various contexts.</p>
<b>Session 3.3 - Squares, Rectangles, and Other Quadrilaterals</b>	<p><b>3.3.1.2:</b> Sketch polygons with a given number of sides or vertices (corners), such as pentagons, hexagons and octagons.</p>
<b>Session 3.4 - Rectangles and Rhombuses</b>	<p>These Minnesota standards support the session content.</p> <p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p>Please see Grade 4 standard: <b>4.3.1.2:</b> Describe, classify and draw quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms and kites. Recognize quadrilaterals in various contexts.</p>

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<b>Session 3.5 - Area and Quadrilaterals</b>	<p>These Minnesota standards support the session content.</p> <p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p> <p>Please see Grade 4 standard: <b>3.3.2.4:</b> Find the areas of geometric figures and real-world objects that can be divided into rectangular shapes. Use square units to label area measurements.</p>
<b>Unit 5 Cube Patterns, Arrays, and Multiples of 10 Multiplication and Division 2</b>	
<b>Investigation 1 Relationship Between Multiplication and Division</b>	
<b>Session 1.1 - Groups of 3</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p>

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<b>Session 1.2 - Groups of 3, 4, and 6</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>
<b>Session 1.3 - Equations for Multiples and Non-Multiples Of 3, 4, And 6</b>	<p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>
<b>Session 1.4 - Multiplication and Division Equations</b>	<p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>

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<b>Session 1.5 - Relating Multiplication and Division</b>	<p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>
<b>Investigation 2 Solving Multiplication and Division Problems</b>	
<b>Session 2.1 - Arrays And Multiplication Facts</b>	<p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p>
<b>Session 2.2 - Array Cover-Up</b>	<p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p>

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<b>Session 2.3 - Related Story Problems</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>
<b>Session 2.4 - Missing Factors</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p>
<b>Session 2.5 - Division Strategies</b>	<p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>

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<p><b>Session 2.6 - Multiplication and Division Problems</b></p>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.2.2.1:</b> Understand how to interpret number sentences involving multiplication and division basic facts and unknowns. Create real-world situations to represent number sentences.</p>
<p><b>Investigation 3 Multiplying By Multiples Of 10</b></p>	
<p><b>Session 3.1 - The Toy Factory: Multiples Of Ten</b></p>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p>

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<p><b>Session 3.2 - Multiplying By Tens</b></p>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p>
<p><b>Session 3.3 - Solving Multi-Step Problems</b></p>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p> <p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p>

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<p><b>Session 3.4 - Solving Division Problems</b></p>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p>
<p><b>Session 3.5 - Problems With Multiple Solutions</b></p>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p>

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<b>Investigations in Number, Data, and Space Grade 3</b>	<b>Minnesota Academic Standards in Mathematics Grade 3</b>
<b>Session 3.6 - Solving Word Problems</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p>
<b>Unit 6 Fair Shares And Fractions On Number Lines Fractions</b>	
<b>Investigation 1 Sharing Brownies</b>	
<b>Session 1.1 - Making Fair Shares</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p>
<b>Session 1.2 - Making Fraction Sets</b>	<p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p> <p><b>3.1.3.3:</b> Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.</p>
<b>Session 1.3 - More Than One Piece</b>	<p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p>

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<b>Session 1.4 - Cutting Up Cookies In Equal Parts</b>	<p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p> <p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p>
<b>Session 1.5 - Fractions On a Number Line</b>	<p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p>
<b>Session 1.6 - Measuring to the Nearest Fourth Inch</b>	<p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p> <p><b>3.3.2.1:</b> Use half units when measuring distances.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Session 1.7 - Sharing Brownies</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>

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<b>Session 1.8 - Naming Fractional Parts</b>	<p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p> <p><b>3.3.2.1:</b> Use half units when measuring distances.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Investigation 2 Many Ways To Make A Share</b>	
<b>Session 2.1 - The Fraction Cookie Game</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p> <p><b>3.1.3.3:</b> Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.</p>
<b>Session 2.2 - Locating And Comparing Fractions On Number Lines</b>	<p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p> <p><b>3.1.3.3:</b> Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.</p>
<b>Session 2.3 - Making Half-Yellow Designs</b>	<p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p> <p><b>3.1.3.2:</b> Understand that the size of a fractional part is relative to the size of the whole.</p> <p><b>3.1.3.3:</b> Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.</p>

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<b>Session 2.4 - Which Fraction Is Greater?</b>	<p><b>3.1.3.3:</b> Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Session 2.5 - Representing And Comparing Fractions</b>	<p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p> <p><b>3.1.3.3:</b> Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Unit 7 How Many Miles? Addition, Subtraction, and the Number System 2</b>	
<b>Investigation 1 Numbers in the Hundreds</b>	
<b>Session 1.1 - Measuring Liquid Volume</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p>
<b>Session 1.2 - Measuring Mass</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>

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<b>Session 1.3 - Paper Clip Problems</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.1.3.1:</b> Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p>
<b>Session 1.4 - Capture From 300 To 600</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.1.3.3:</b> Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.</p>
<b>Session 1.5 - Related Subtraction Problems</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p>

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<b>Session 1.6 - Solving Subtraction Problems</b>	<p><b>3.1.1.4:</b> Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Session 1.7 - Practicing Subtraction and Addition</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Investigation 2 Addition Strategies</b>	
<b>Session 2.1 - Making an Easier Problem</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>

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<b>Session 2.2 - Addition Starter Problems</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Session 2.3 - Categorizing Addition Strategies</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Session 2.4 - Adding More Than Two Numbers</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.1.3.3:</b> Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.</p>

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<b>Session 2.5 - Addition Problems</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Investigation 3 Subtraction</b>	
<b>Session 3.1 - Travel Problems</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Session 3.2 - Subtraction Strategies</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>

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<b>Session 3.3 - Subtracting Whole Dollars</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.3.3:</b> Make change up to one dollar in several different ways, including with as few coins as possible.</p>
<b>Session 3.4 - Strategies for Subtraction</b>	<p><b>3.1.1.2:</b> Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.</p> <p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p>
<b>Session 3.5 - What Combinations Can I Make?</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.3.3:</b> Make change up to one dollar in several different ways, including with as few coins as possible.</p>

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<b>Session 3.6 - Solving Addition And Subtraction Problems</b>	<p><b>3.1.2.1:</b> Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.</p> <p><b>3.1.2.2:</b> Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.</p> <p><b>3.3.3.3:</b> Make change up to one dollar in several different ways, including with as few coins as possible.</p>
<b>Unit 8 Larger Numbers and Multi-Step Problems Multiplication and Division 3</b>	
<b>Investigation 1 Solving Division Problems</b>	
<b>Session 1.1 - Solving Division Problems</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Session 1.2 - Learning Division Facts</b>	<p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Session 1.3 - Related Division Problems</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>

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<b>Session 1.4 - Division With Remainders</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Session 1.5 - Division Facts and Multiplication And Division Practice, Part 1</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>
<b>Session 1.6 - Division Facts and Multiplication And Division Practice, Part 2</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>

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Investigations in Number, Data, and Space Grade 3	Minnesota Academic Standards in Mathematics Grade 3
<b>Investigation 2 Solving Multiplication and Division Problems</b>	
<b>Session 2.1 - Multiplying a 2-Digit Number</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p>
<b>Session 2.2 - Using Arrays for Multiplication</b>	<p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p>
<b>Session 2.3 - Divide 2-Digit Numbers By 1-Digit Numbers</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>
<b>Session 2.4 - Solving Multiplication and Division Problems, Part 1</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p>

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<b>Session 2.5 - Solving Multiplication and Division Problems, Part 2</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p>
<b>Investigation 3 Solving Multi-Step Problems</b>	
<b>Session 3.1 - Representing Multi-Step Problems: The Marbles of Rhomaar</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p>
<b>Session 3.2 - Identifying and Explaining Arithmetic Patterns</b>	<p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p> <p><b>3.4.1.1:</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.</p>

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<b>Investigations in Number, Data, and Space Grade 3</b>	<b>Minnesota Academic Standards in Mathematics Grade 3</b>
<b>Session 3.3 - Applying a General Rule</b>	<p><b>3.1.2.3:</b> Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p>
<b>Session 3.4 - Using Equations to Model Multi-Step Problems</b>	<p><b>3.1.2.4:</b> Solve real-world and mathematical problems involving multiplication and division, including both 'how many in each group' and 'how many groups' division problems.</p> <p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p> <p><b>3.2.2.2:</b> Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p>
<b>Session 3.5 - Solving Multi-Step Problems</b>	<p><b>3.1.2.5:</b> Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p> <p><b>3.3.3.1:</b> Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p>

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