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A Planning Guide of

INVESTIGATIONS 3
IN NUMBER, DATA, AND SPACE®

INVESTIGATIONS 3
IN NUMBER, DATA, AND SPACE®

STUDENT ACTIVITY BOOK

and the

Minnesota
Academic Standards in Mathematics
Grade 5

**A Planning Guide of Investigations in Number, Data, and Space, 3rd Edition
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Session 2.7: Examining Division Strategies	**5.1.1.1:** Divide multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms. Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal. **5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.

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Investigation 3 Using The Operations	
Session 3.1: Field Day Refreshments	**5.1.1.1:** Divide multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms. Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal. **5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.
Session 3.2: Field Day Activities	**5.1.1.1:** Divide multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms. Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal. **5.1.3.3:** Estimate sums and differences of decimals and fractions to assess the reasonableness of results. **5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.

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Session 3.3: Field Day Problems	**5.1.1.1:** Divide multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms. Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal. **5.1.3.3:** Estimate sums and differences of decimals and fractions to assess the reasonableness of results. **5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.
Session 3.4: Field Day Problems, Continued	**5.1.1.1:** Divide multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms. Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal. **5.1.3.3:** Estimate sums and differences of decimals and fractions to assess the reasonableness of results. **5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.

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Session 3.5: Multiplication and Division with Larger Numbers	**5.1.1.1:** Divide multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms. Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal. **5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.
Unit 5 Temperature, Height, and Growth Analyzing Patterns and Rules	
Investigation 1 Graphing Temperature And Height	
Session 1.1: Temperature Graphs	**5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results. **5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system.
Session 1.2: Temperature: Stories, Tables, and Graphs	**5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system.
Session 1.3: Growth Stories	**5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms. **5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system.

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Session 1.4: More Stories of Children's Growth	**5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms. **5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system.
Session 1.5: A Growth Pattern That Follows a Rule	**5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system. **5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers.
Session 1.6: Comparing Animals' Growth	**5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system. **5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers.
Session 1.7: Another Kind of Animal	**5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system. **5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers.

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Investigation 2 Analyzing Geometric Patterns	
Session 2.1: 3 Squares Across	**5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results. **5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.3.2:** Represent real-world situations using equations and inequalities involving variables. Create real-world situations corresponding to equations and inequalities.
Session 2.2: Double Or Not?	**5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system. **5.2.3.2:** Represent real-world situations using equations and inequalities involving variables. Create real-world situations corresponding to equations and inequalities.
Session 2.3: Comparing Arrays with 4, 5, And 6 Squares Across	**5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results. **5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system.

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Session 2.4: 10 Squares Across	**5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system. **5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers.
Session 2.5: Growing Squares	**5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system. **5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers.
Session 2.6: Staircase Towers	**5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system. **5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers.
Session 2.7: Graphing and Analyzing Patterns	**5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.1.2:** Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system. **5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers.

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Unit 6 Between 0 and 1 Rational Numbers 2: Addition and Subtraction	
Investigation 1 Representing and Comparing Decimals	
Session 1.1: Decimals on Grids	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.4:** Recognize and generate equivalent decimals, fractions, mixed numbers and improper fractions in various contexts. **5.1.3.3:** Estimate sums and differences of decimals and fractions to assess the reasonableness of results.
Session 1.2: Introducing Thousandths	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.3:** Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line. **5.1.2.4:** Recognize and generate equivalent decimals, fractions, mixed numbers and improper fractions in various contexts.
Session 1.3: Comparing Decimals	**5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results. **5.1.2.3:** Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line.
Session 1.4: Decimals on the Number Line	**5.1.2.3:** Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line. **5.1.2.4:** Recognize and generate equivalent decimals, fractions, mixed numbers and improper fractions in various contexts. **5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.

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Session 1.5: Decimals in Between	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.3:** Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line.
Session 1.6: Rounding Decimals	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.3:** Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001.
Session 1.7: Decimal Problems	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.3:** Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001.
Session 1.8: Ordering And Comparing Decimals	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.3:** Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001.

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Investigation 2 Adding And Subtracting Decimals	
Session 2.1: Fill Two	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.2:** Model addition and subtraction of fractions and decimals using a variety of representations.
Session 2.2: The Jeweler's Gold	**5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms. **5.1.3.2:** Model addition and subtraction of fractions and decimals using a variety of representations.
Session 2.3: Strategies For Adding Decimals	**5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms. **5.1.3.2:** Model addition and subtraction of fractions and decimals using a variety of representations.
Session 2.4: Subtracting Decimals	**5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms. **5.1.3.2:** Model addition and subtraction of fractions and decimals using a variety of representations.
Session 2.5: Decimal Problems	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms. **5.1.3.4:** Solve real-world and mathematical problems requiring addition and subtraction of decimals, fractions and mixed numbers, including those involving measurement, geometry and data.

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Session 2.6: Addition And Subtraction Of Decimals	**5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms. **5.1.3.2:** Model addition and subtraction of fractions and decimals using a variety of representations.
Session 2.7: Decimal Games	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms. **5.1.3.3:** Estimate sums and differences of decimals and fractions to assess the reasonableness of results.
Session 2.8: Adding And Subtracting Decimals	**5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms. **5.1.3.2:** Model addition and subtraction of fractions and decimals using a variety of representations. **5.1.3.3:** Estimate sums and differences of decimals and fractions to assess the reasonableness of results.
Session 2.9: Working With Decimals	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.

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Unit 7 Races, Arrays, and Grids Rational Numbers 3: Multiplication and Division	
Investigation 1 Multiplying And Dividing Fractions	
Session 1.1: Multiplying a Fraction by a Whole Number	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.
Session 1.2: Multiplying a Whole Number by a Fraction	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.
Session 1.3: Multiplying Whole Numbers By Fractions and Mixed Numbers	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.
Session 1.4: Multiplying Fractions Or Mixed Numbers	**5.1.2.3:** Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.
Session 1.5: Multiplying Fractions By Fractions	**55.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.
Session 1.6: Rules For Multiplying Fractions	**55.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.

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Session 1.7: Using Arrays For Multiplying Fractions	**55.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.
Session 1.8: Multiplying Fractions And Multiplying Mixed Numbers	**55.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.
Session 1.9: Dividing a Whole Number By a Fraction	**55.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.
Session 1.10: Dividing a Fraction By a Whole Number	**55.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.
Session 1.11: Dividing With Fractions	**55.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.
Investigation 2 Fraction As Division	
Session 2.1: Brownie Problems	**5.1.2.2:** Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.
Session 2.2: Fractions As Division	**5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results. **5.1.2.2:** Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001.

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Session 2.3: Decimal Equivalents	**5.1.2.2:** Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems.
Session 2.4: Fraction-Decimal Equivalents	**5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.2:** Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number. **5.1.2.4:** Recognize and generate equivalent decimals, fractions, mixed numbers and improper fractions in various contexts.
Investigation 3 Multiplying And Dividing Decimals	
Session 3.1: Multiplying Powers of 10	These MN standards support this lesson content. **5.1.2.2:** Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.
Session 3.2: Multiplying By "Small" Numbers	These MN standards support this lesson content. **5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.

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Session 3.3: Strategies for Multiplying Decimals	These MN standards support this lesson content. **5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.
Session 3.4: Multiplying Decimals	These MN standards support this lesson content. **5.1.2.1:** Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. **5.1.2.5:** Round numbers to the nearest 0.1, 0.01 and 0.001. **5.1.3.1:** Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.
Session 3.5: Multiplying Decimals, Continued	These MN standards support this lesson content. **5.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.
Session 3.6: Dividing Powers Of 10	These MN standards support this lesson content. **5.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.
Session 3.7: Dividing Decimals	These MN standards support this lesson content. **5.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.
Session 3.8: Converting Metric Measurements	These MN standards support this lesson content. **5.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.
Session 3.9: Converting U.S. Measurements of Length and Weight	These MN standards support this lesson content. **5.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.

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Session 3.10: Converting Measurements and Dividing Decimals	These MN standards support this lesson content. **5.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results. **5.1.1.4:** Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.
Session 3.11: Converting Measurements and Dividing Decimals, Continued	These MN standards support this lesson content. **5.1.1.3:** Estimate solutions to arithmetic problems in order to assess the reasonableness of results.

Unit 8 Properties of Polygons 2-D Geometry and Measurement

Investigation 1 Categories and Properties of Polygons

Session 1.1: Triangles	This Investigations in Number, Date, and Space ® Grade 5 lesson addresses the MN Grade 4 standard below. **4.3.1.1:** Describe, classify and sketch triangles, including equilateral, right, obtuse and acute triangles. Recognize triangles in various contexts.
Session 1.2: Quadrilaterals	This Investigations in Number, Date, and Space ® Grade 5 lesson addresses the MN Grade 4 standard below. **4.3.1.2:** Describe, classify and draw quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms and kites. Recognize quadrilaterals in various contexts.
Session 1.3: Properties of Quadrilaterals	This Investigations in Number, Date and Space ® grade 5 lesson exceeds the Minnesota Academic Standards requirements.
Session 1.4: Relationships Among Polygons	This Investigations in Number, Date and Space ® grade 5 lesson exceeds the Minnesota Academic Standards requirements.
Session 1.5: Categories of Polygons	This Investigations in Number, Date and Space ® grade 5 lesson exceeds the Minnesota Academic Standards requirements.

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Investigation 2 Finding Perimeter and Area of Related Rectangles	
Session 2.1: A Sequence of Squares	**5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers. **5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems.
Session 2.2: Doubling Dimensions of Squares	**5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers. **5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems.
Session 2.3: Building a Sequence of Rectangles	**5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers. **5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems.
Session 2.4: Rearranging Rectangles	**5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers.
Session 2.5: Perimeter and Area of Rectangles	**5.2.1.1:** Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. **5.2.2.1:** Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers.