

Shrewsbury Borough School Mathematics Curriculum 2012
Grade 5

Marking Period 1:	Marking Period 2:	Marking Period 3:	Marking Period 4:
<p>Topic: Number and Operations in Base Ten</p>	<p>Topic: Number and Operations - Fractions</p>	<p>Topic: Geometry</p>	<p>Topic: Measurement and Data</p>
<p>Objectives and Mathematical Practices:</p>	<p>Objectives and Mathematical Practices:</p>	<p>Objectives and Mathematical Practices:</p>	<p>Objectives and Mathematical Practices:</p>
<p><i>Use basic multiplication facts and number patterns to multiply by multiples of 10 and 100. (Ex: $5 \times 7 = 35$, $50 \times 7 = 350$, $500 \times 7 = 3,500$)</i></p>	<p><i>Use models and computational procedures to add fractions with unlike denominators. (Ex: $\frac{1}{2} + \frac{2}{9} = \frac{13}{18}$)</i></p>	<p><i>Read and write integers and represent them on a number line. Recognize that there are whole numbers with their opposites and zero is its own opposite.</i></p>	<p><i>Convert customary units of measure using multiplication and division. ($2 \text{ ft} = 24 \text{ in}$)</i></p>
<p>MP2: Reason abstractly and quantitatively.</p>	<p>MP2: Reason abstractly and quantitatively.</p>	<p>MP4: Model with mathematics.</p>	<p>MP1: Make sense of problems and persevere in solving them.</p>
<p>MP6: Attend to precision.</p>	<p>MP4: Model with mathematics.</p>	<p>MP6: Attend to precision.</p>	<p>MP2: Reason abstractly and quantitatively.</p>
<p>MP7: Look for and make use of structure.</p>	<p>MP7: Look for and make use of structure.</p>	<p>MP7: Look for and make use of structure.</p>	<p>MP5: Use appropriate tools strategically.</p>
<p><i>Mentally multiply decimals by 10, 100, and 1,000. (Ex: $0.009 \times 10 = 0.09$)</i></p>	<p><i>Use models and computational procedures to subtract fractions with unlike denominators. (Ex: $\frac{5}{6} - \frac{1}{2} = \frac{1}{3}$)</i></p>	<p><i>Identify and graph points on a coordinate plane. Identify the x- and y-axis.</i></p>	<p>MP6: Attend to precision.</p> <p><i>Convert metric units of measure using multiplication and division. ($5 \text{ m} = 500 \text{ cm}$)</i></p>
<p>MP2: Reason abstractly and quantitatively.</p>	<p>MP2: Reason abstractly and quantitatively.</p>	<p>MP1: Make sense of problems and persevere in solving them.</p>	<p>MP1: Make sense of problems and persevere in solving them.</p>
<p>MP6: Attend to precision.</p>	<p>MP4: Model with mathematics.</p>	<p>MP2: Reason abstractly and quantitatively.</p>	<p>MP1: Make sense of problems and persevere in solving them.</p>
<p>MP7: Look for and make use</p>	<p>MP7: Look for and make use of</p>	<p>MP4: Model with mathematics.</p>	<p>MP2: Reason abstractly and quantitatively.</p>

<p>of structure.</p> <p><i>Mentally divide decimals by 10, 100, and 1,000. (Ex: $370.2 \div 10 = 37.02$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Compare and order decimals through thousandths. (Ex: $3.692 < 3.697$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Write decimals in standard form, word form, and expanded form.</i></p> <p>MP2: Reason abstractly and</p>	<p>structure.</p> <p><i>Use models and computational procedures to add mixed numbers. (Ex: $1 \frac{7}{8} + 1 \frac{1}{4} = 3 \frac{1}{8}$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP4: Model with mathematics.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Use models and computational procedures to subtract mixed numbers. (Ex: $7 \frac{2}{3} - 3 \frac{5}{6} = 3 \frac{5}{6}$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP4: Model with mathematics.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Students will explain how they estimated fractional amounts of objects.</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p>	<p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Use number lines and the coordinate plane to find distances involving positive and negative numbers.</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Make a table of x- and y-values for an equation.</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and</p>	<p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p><i>Collect data and record data in line plots. Students then interpret the results.</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Count cubic units and use formulas to find the volume of rectangular prisms.</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p>
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<p>quantitatively.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Round decimals through thousandths. (Ex: $1.\underline{3}2 = 1.3$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Use partial products or the traditional algorithm to multiply multi-digit numbers by a one-digit number. (Ex: $274 \times 3 = 822$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use</p>	<p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p>MP8: Look for and express regularity in repeated reasoning.</p> <p><i>Learn that division can be used to divide objects into equal parts that are fractions of a whole. (Ex: $1 \div 2 = \frac{1}{2}$)</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p>	<p>quantitatively.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Use the ordered pairs to graph the equation.</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Identify and classify polygons. (Ex: triangles, quadrilaterals, pentagons, hexagons, etc.)</i></p> <p>MP2: Reason abstractly and</p>	<p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Measure the volume of a solid either by counting cubic units or by using a formula.</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically. MP6: Attend to precision.</p> <p><i>Find the areas and volumes of irregular shapes and solids. Students should recognize volume as additive. Add the volumes of two non-overlapping prisms.</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p>
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<p>of structure.</p> <p>MP8: Look for and express regularity in repeated reasoning.</p> <p><i>Multiply two-digit numbers by two-digit numbers. (Ex: $72 \times 16 = 1,152$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p>MP8: Look for and express regularity in repeated reasoning.</p> <p><i>Find one-digit quotients where the divisor is a two-digit number. (Ex: $115 \div 12 = 9 R7$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p>	<p>MP7: Look for and make use of structure.</p> <p><i>Demonstrate that fractions can be represented on a number line.</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Multiply a fraction by a whole number. (Ex: $1/7 \times 14 = 2$)</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p>	<p>quantitatively.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Identify and classify triangles. (Ex: right, acute, obtuse, equilateral, isosceles, scalene)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Identify and classify quadrilaterals. (Ex: rectangle, square, rhombus, parallelogram, trapezoids)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the</p>	<p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p>MP8: Look for and express regularity in repeated reasoning.</p>
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<p>MP5: Use appropriate tools strategically.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Divide a three-digit number by a two-digit number to find a two-digit quotient. (Ex: $985 \div 47 = 20 R45$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Solve problems involving division of numbers with 4 or 5 digits by 2-digit divisors. (Ex: $1,455 \div 12 = 121.25$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable</p>	<p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p>MP8: Look for and express regularity in repeated reasoning.</p> <p><i>Give the product of two fractions. (Ex: $\frac{3}{4} \times \frac{7}{8} = \frac{21}{32}$)</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p>	<p>reasoning of others.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p>Topic: Operations and Algebraic Thinking</p> <p>Objectives and Mathematical Practices:</p> <p><i>Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions. (Ex: $2(5 + (3)(2) + 4) = 30$)</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP8: Look for and express regularity in repeated reasoning.</p> <p><i>Translate words into algebraic expressions. (Ex: a number plus 4)</i></p> <p>MP1: Make sense of problems</p>	
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<p>arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics. MP5: Use appropriate tools strategically.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Divide with zeros in the quotient. (Ex: $972 \div 9 = 108$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Compute sums of decimals involving tenths and hundredths. (Ex: $0.82 + 4.21 = 5.03$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p>	<p>MP8: Look for and express regularity in repeated reasoning.</p> <p><i>Multiply mixed numbers. (Ex: $4 \frac{1}{2} \times 1 \frac{1}{4} = 5 \frac{5}{8}$)</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p>MP8: Look for and express regularity in repeated reasoning.</p> <p><i>Use diagrams and write equations to solve problems. (Bar diagrams)</i></p> <p>MP2: Reason abstractly and quantitatively.</p>	<p>and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP7: Look for and make use of structure.</p> <p>MP8: Look for and express regularity in repeated reasoning.</p> <p><i>Use patterns to show relationships and evaluate algebraic expressions. (Ex: replace the variable(s) with given number(s) and doing the calculation that results)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Write and evaluate expressions involving multiplication, addition, and subtraction. (Ex: three times a number, plus ten)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP7: Look for and make use of structure.</p>	
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<p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Compute differences of decimals involving tenths and hundredths. (Ex: $16.82 - 5.21 = 11.61$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Use a standard algorithm to multiply a whole number and a decimal. (Ex: $9.8 \times 2 = 19.6$)</i></p>	<p>MP4: Model with mathematics.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Divide whole numbers by fractions. (Ex: $4 \div \frac{1}{2} = 8$)</i></p> <p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p>MP8: Look for and express regularity in repeated reasoning.</p> <p><i>Use reciprocals to divide fractions. (Ex: Reciprocal is $\frac{1}{2} \times \frac{2}{1} = \frac{2}{2} = 1$)</i></p>		
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<p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP7: Look for and make use of structure.</p> <p><i>Use the standard algorithm to multiply decimals by decimals. (Ex: $9.3 \times 4.1 = 38.13$)</i></p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP7: Look for and make use of structure.</p>	<p>MP1: Make sense of problems and persevere in solving them.</p> <p>MP2: Reason abstractly and quantitatively.</p> <p>MP3: Construct viable arguments and critique the reasoning of others.</p> <p>MP4: Model with mathematics.</p> <p>MP5: Use appropriate tools strategically.</p> <p>MP6: Attend to precision.</p> <p>MP7: Look for and make use of structure.</p> <p>MP8: Look for and express regularity in repeated reasoning.</p>		
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Use the standard algorithm to divide a decimal by a whole number. (Ex: $1.90 \div 19 = 0.1$)

MP2: Reason abstractly and quantitatively.

MP3: Construct viable arguments and critique the reasoning of others.

MP4: Model with mathematics.

MP5: Use appropriate tools strategically.

MP7: Look for and make use of structure.

Use the standard algorithm to divide decimals by decimals. (Ex: $4.52 \div 0.2 = 22.6$)

MP2: Reason abstractly and quantitatively.

MP3: Construct viable arguments and critique the reasoning of others.

MP4: Model with mathematics.

MP5: Use appropriate tools strategically.

<p>MP7: Look for and make use of structure.</p>			
<p>Lessons, Activities, & Student Products:</p> <p>Students will learn decimal place value through the hundredths using a place value chart.</p> <p>Students will use Interactive Learning Recording Sheet 3 for comparing and ordering decimals.</p> <p>Students will use Interactive Learning Recording Sheet 6 for rounding decimals through thousandths.</p> <p>Students will compute the sums and differences of decimals.</p> <p>Students will compute the product of whole number multiplication by 1-digit and 2-digit factors using the standard algorithm.</p>	<p>Lessons, Activities, & Student Products:</p> <p>Students will use a number line to show how objects can be divided into equal parts that are fractions of a whole.</p> <p>Students will use fraction model strips to add and subtract fractions with unlike denominators.</p> <p>Students will use fractions strips to model adding mixed numbers.</p> <p>Students will use Interactive Learning Recording Sheet 24 for multiplying mixed numbers.</p> <p>Students will use grid paper to relate division to multiplication of fractions.</p> <p>Students will use bar diagrams and write equations to solve problems.</p>	<p>Lessons, Activities, & Student Products:</p> <p>Students will use wood sticks to create polygon shapes.</p> <p>Students will create a chart of the different types of triangles.</p> <p>Students will use Interactive Learning Recording Sheet 20 to identify and classify quadrilaterals.</p> <p>Students will use numbers lines to understand integers and represent them on a number line.</p> <p>Students will use a life-size coordinate grid in the classroom to understand how to plot points.</p> <p>Students will use Interactive Learning Recording Sheet 30 to make a table of x- and y-values for an equation. The students will</p>	<p>Lessons, Activities, & Student Products:</p> <p>Students will use unit cubes to count cubic units and use formulas to find the volume of prisms.</p> <p>Students will convert customary and metric units.</p> <p>Students will use Interactive Learning Recording Sheet 27 to convert customary units of capacity.</p> <p>Students will use Interactive Learning Recording Sheet 28 to convert metric units of capacity.</p> <p>Students will distinguish between weight and mass.</p> <p>Students will use yardsticks and rulers to measure objects. From here they will convert to other</p>

<p>Students will model how to complete a division problem with a zero in the quotient.</p> <p>Students will model how to divide by multiples of 10, 1-digit quotients, and greater numbers.</p> <p>Students will use Interactive Learning Recording Sheet 13 for multiplying decimals by powers of 10.</p> <p>Students will use Interactive Learning Recording Sheet 14 for multiplying a decimal by a whole number.</p> <p>Students will use Interactive Learning Recording Sheet 16 for multiplying two decimals.</p> <p>Students will use play money to model dividing with decimals.</p> <p>Activities:</p> <p>Students will use Venn Diagrams to display decimals.</p> <p>Students will use dice to roll and record a number for an indicated place value.</p> <p>Students will use dice to create decimal numbers to the</p>	<p>Activities:</p> <p>Students will use center activities of: Toss and Talk and Clip and Cover for adding and subtracting fractions with unlike denominators.</p> <p>Students will use center activity: Teamwork for subtracting with mixed numbers.</p> <p>Students will use center activities of: Toss and Talk and Clip and Cover for multiplying fractions and whole numbers and multiplying two fractions.</p> <p>Student Products:</p> <p>Students will write a Convince Me paper to explain how and why they estimated the fractional amounts of objects.</p> <p>Students will create Fraction Quilt Squares.</p> <p>Students will create Fraction Flags.</p>	<p>then use the ordered pairs to graph the equation.</p> <p>Students will translate words into algebraic expressions.</p> <p>Students will use Interactive Learning Recording Sheet 10 to use patterns to show relationships and solve algebraic expressions.</p> <p>Students will use Interactive Learning Recording Sheet 11 to write and evaluate expressions involving multiplication, addition, and subtraction.</p> <p>Activities:</p> <p>Students will use center activity: Teamwork to decide if a figure is a regular polygon.</p> <p>Students will use center activity: Toss and Talk to classify triangles by angles.</p> <p>Students will use the center activity: Toss and Talk to identify integers from word phrases.</p> <p>Students will plot points on a coordinate graph that is on the floor.</p>	<p>customary units.</p> <p>Students will use meter and centimeter rulers to find measurements of objects and convert to other metric units.</p> <p>Students will collect data and graph the results in a line plot.</p> <p>Activities:</p> <p>Students will use center activity: Toss and Talk to explain how to find volume of a rectangular prism and inform the other player which information is given, volume, height, length, width, or base.</p> <p>Students will work with liquid containers to determine proper units.</p> <p>Students will work with rulers to determine proper measurement and units.</p> <p>Students will use center activity: Toss and Talk to explain how to convert a given customary unit.</p> <p>Students will use center activity: Teamwork to determine whether a given metric measurement is less than, equal to, or greater than a</p>
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<p>thousandths and compare the two numbers.</p> <p>Students will use center activities: Clip and Cover for adding decimals and Teamwork for subtracting decimals.</p> <p>Students will use center activities of: Display the Digits and Teamwork for multiplying whole numbers.</p> <p>Students will use center activities of: Display the Digits and Teamwork for dividing with whole numbers.</p> <p>Students will use center activity: Clip and Cover for dividing decimals by powers of 10.</p> <p>Students will use center activity: Toss and Talk for dividing a decimal by a whole number.</p> <p>Students will use center activity: Toss and Talk for dividing a decimal by a decimal.</p> <p>Students Products:</p> <p>Students will write a paper on how to properly multiply and divide decimals.</p>		<p>Students will use the center activity: Tic-Tac-Toe to find the distance between two integers on a number line.</p> <p>Students will graph equations.</p> <p>Students will create pictures on a coordinate grid using math skills (ex: mean, median, mode, and range; adding/subtracting with variables, etc.)</p> <p>Students will use the center activity: Teamwork to read the word phrases and create algebraic expressions from them.</p> <p>Students will use the center activity: Think Together to evaluate algebraic expressions.</p> <p>Student Products:</p> <p>Students will write a Convince Me paper on why certain quadrilaterals can be called parallelograms and others are not considered this shape, but are still a quadrilateral.</p> <p>Students will create pictures from their coordinate grid activities.</p>	<p>second metric measurement.</p> <p>Students will use the center activity: Teamwork to interpret a line plot. They will also need to make an observation about data and state a question that may have been asked for the results.</p> <p>Student Products:</p> <p>Students will create line plot based upon collected data.</p>
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<p>Students will create Venn Diagrams.</p>			
<p><u>21st Century Skills:</u></p> <ul style="list-style-type: none"> ✓ Creativity & Innovation ✓ Critical Thinking & Problem Solving ✓ Communication ✓ Collaboration 	<p><u>21st Century Skills:</u></p> <ul style="list-style-type: none"> ✓ Creativity & Innovation ✓ Critical Thinking & Problem Solving ✓ Communication ✓ Collaboration 	<p><u>21st Century Skills:</u></p> <ul style="list-style-type: none"> ✓ Creativity & Innovation ✓ Critical Thinking & Problem Solving ✓ Communication ✓ Collaboration 	<p><u>21st Century Skills:</u></p> <ul style="list-style-type: none"> ✓ Creativity & Innovation ✓ Critical Thinking & Problem Solving ✓ Communication ✓ Collaboration
<p>Essential Questions:</p> <p>What place value patterns can be seen when you multiply 1-digit numbers by multiples of 10 and 100?</p> <p>What is the rule for multiplying decimals by 10, 100, or 1,000?</p> <p>How can you divide decimals by 10, 100, and 1,000?</p>	<p>Essential Questions:</p> <p>How can you add fractions with unlike denominators?</p> <p>How can you subtract fractions with unlike denominators?</p> <p>How can you add mixed numbers?</p> <p>How can you subtract mixed numbers?</p>	<p>Essential Questions:</p> <p>What operation do we use when we see parentheses?</p> <p>What do brackets represent?</p> <p>What are integers and what situations can integers represent?</p> <p>How can you describe the location of a point on a coordinate plane?</p>	<p>Essential Questions:</p> <p>How do you convert from one unit of customary length to another?</p> <p>How do you convert from one unit of metric length to another?</p> <p>How can you display the data collected in a survey?</p> <p>How do you create a line plot?</p>

<p>What are the different ways to write numbers?</p> <p>How can you represent a decimal in a place-value chart?</p> <p>How can you compare and order decimals?</p> <p>How can you round whole numbers and decimals?</p> <p>How do you multiply by 1-digit numbers?</p> <p>How do you multiply by 2-digit numbers?</p> <p>How do you divide by a multiple of ten?</p> <p>What are the steps for dividing by 2-digit numbers?</p> <p>How can you solve problems involving division of larger numbers?</p> <p>When do you write a zero in the quotient?</p> <p>How can you add decimals?</p> <p>How can you subtract decimals?</p> <p>How do you multiply a decimal</p>	<p>How do you write a math explanation?</p> <p>How are fractions and division related?</p> <p>How can you multiply fractions and whole numbers?</p> <p>How can you multiply fractions?</p> <p>How can you multiply mixed numbers?</p> <p>How can drawing a picture and writing an equation help you solve a problem?</p> <p>How do you divide a whole number by a fraction?</p> <p>How do you use reciprocals to divide fractions by whole numbers?</p>	<p>How is it useful to use number lines and the coordinate plane to find distances involving positive and negative numbers?</p> <p>How can you graph an equation on a coordinate grid?</p> <p>How do you classify polygons?</p> <p>How do classify triangles?</p> <p>How do you classify quadrilaterals?</p> <p>How can you translate words into expressions?</p> <p>How can you use algebraic expressions to describe relationships?</p> <p>How can you write and evaluate expressions with variables?</p>	<p>How can we relate fractions on our line plot?</p> <p>How do you find the volume of a rectangular prism?</p> <p>How do you find the volume of a rectangular prism?</p> <p>How do you find the volume of an irregular solid?</p>
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<p>by a whole number?</p> <p>How can you multiply two decimals?</p> <p>How do you divide a decimal by a whole number?</p> <p>How can you divide a decimal by a decimal?</p>			
<p>Materials:</p> <p>Websites: www.pearsonsuccessnet.com http://nlvm.usu.edu/en/nav/vlibrary.html http://illustrativemathematics.org http://guidedmath.wordpress.com/ http://www.sheppardsoftware.com/math.htm</p> <p>enVision Math: Topic 1 – Numeration Topic 2 – Adding and Subtracting Whole Numbers and Decimals Topic 3 – Multiplying Whole Numbers</p>	<p>Materials:</p> <p>Websites: www.pearsonsuccessnet.com http://nlvm.usu.edu/en/nav/vlibrary.html http://illustrativemathematics.org http://guidedmath.wordpress.com/ http://www.sheppardsoftware.com/math.htm</p> <p>enVision Math: Topic 9 – Fractions and Decimals Topic 10 – Adding and Subtracting Fractions and Mixed Numbers Topic 11 – Multiplying Fractions and Mixed Numbers</p>	<p>Materials:</p> <p>Websites: www.pearsonsuccessnet.com http://nlvm.usu.edu/en/nav/vlibrary.html http://illustrativemathematics.org http://guidedmath.wordpress.com/ http://www.sheppardsoftware.com/math.htm</p> <p>enVision Math: Topic 6 – Variables and Expressions Topic 8 – Shapes Topic 17 – Equations and Graphs</p>	<p>Materials:</p> <p>Websites: www.pearsonsuccessnet.com http://nlvm.usu.edu/en/nav/vlibrary.html http://illustrativemathematics.org http://guidedmath.wordpress.com/ http://www.sheppardsoftware.com/math.htm</p> <p>enVision Math: Topic 13 – Solids Topic 14 – Measurement Units, Time, and Temperature Topic 18 – Graphs and Data</p>

<p>Topic 4 – Dividing by 1-Digit Divisors Topic 5 – Dividing by 2-Digit Divisors Topic 7 – Multiplying and Dividing Decimals</p> <p>Interactive Learning Recording Sheets</p> <p>Manipulatives: dice, place value charts, play money.</p>	<p>Interactive Learning Recording Sheets</p> <p>Manipulatives: fraction strips, grid paper</p>	<p>Interactive Learning Recording Sheets</p> <p>Manipulatives: Number lines, masking/painter’s tape</p>	<p>Interactive Learning Recording Sheets</p> <p>Manipulatives: unit cubes, yardstick, ruler, making tapes, meter stick, measuring cups, containers, water, rice, sand, or other filler, liter container</p>
<p>Assessment:</p> <p>Topic Assessments Benchmark Tests “100 Problem” Time Tests Teacher Observation Student Input Projects</p>	<p>Assessment:</p> <p>Topic Assessments Benchmark Tests “100 Problem” Time Tests Teacher Observation Student Input Projects</p>	<p>Assessment:</p> <p>Topic Assessments Benchmark Tests “100 Problem” Time Tests Teacher Observation Student Input Projects</p>	<p>Assessment:</p> <p>Topic Assessments Benchmark Tests “100 Problem” Time Tests Teacher Observation Student Input Projects</p>

<p>CCSS: 5.NBT Number and Operations in Base Ten</p> <p>Understand the place value system.</p> <p>5.NBT.1 Recognize that in a multi-digit number, a digit in the one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.</p> <p>5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</p> <p>5.NBT.3 Read, write, and compare decimals to thousandths.</p> <p>A. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.</p>	<p>CCSS: 5.NF Number and Operations – Fractions</p> <p>Use equivalent fractions as a strategy to add and subtract fractions.</p> <p>5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. <i>For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)</i></p> <p>5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. <i>For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.</i></p>	<p>CCSS: 5.G Geometry</p> <p>Graph points on the coordinate plane to solve real-world and mathematical problems.</p> <p>5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).</p> <p>5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p>	<p>CCSS: 5.MD Measurement and Data</p> <p>Convert like measurement units within a given measurement system.</p> <p>5.MD.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.</p> <p>Represent and interpret data.</p> <p>5.MD.2. Make a line plot to display a data set of measurements in fractions of a unit ($1/2, 1/4, 1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots. <i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i></p>
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<p>B. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p> <p>5.NBT.4 Use place value understanding to round decimals to any place.</p> <p>Perform operations with multi-digit whole numbers and with decimals to hundredths.</p> <p>5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.</p> <p>5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value,</p>	<p>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p> <p>5.NF.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. <i>For example, interpret $\frac{3}{4}$ as the result of dividing 3 and 4, noting that $\frac{3}{4}$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $\frac{3}{4}$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?</i></p> <p>5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p> <p>A. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations</p>	<p>Classify two-dimensional figures into categories based on their properties.</p> <p>5.G.3 Understand that attributes belonging to a category of two dimensional figures also belong to all subcategories of that category. <i>For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</i></p> <p>5.G.4 Classify two-dimensional figures in a hierarchy based on properties.</p> <p>5.OA Operations and Algebraic Thinking</p> <p>Write and interpret numerical expressions.</p> <p>5.OA.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</p> <p>5.OA.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. <i>For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 +$</i></p>	<p>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p> <p>5.MD.3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.</p> <p>A. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.</p> <p>B. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.</p> <p>5.MD.4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.</p> <p>5.MD.5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.</p> <p>A. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the</p>
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<p>properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning method.</p>	<p>$a \times q \div b$. For example, use a visual fraction model to show $(\frac{2}{3}) \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $(\frac{2}{3}) \times (\frac{4}{5}) = \frac{8}{15}$. (In general, $(\frac{a}{b}) \times (\frac{c}{d}) = \frac{ac}{bd}$.)</p> <p>B. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.</p> <p>5.NF.5 Interpret multiplication as scaling (resizing), by:</p> <p>A. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.</p> <p>B. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number a</p>	<p>921, without having to calculate the indicated sum or product.</p> <p>Analyze patterns and relationships.</p> <p>5.OA.3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</p>	<p>volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.</p> <p>B. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.</p> <p>C. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.</p>
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fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

A. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.*

B. Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for $4 \div (1/5)$, and use a visual*

fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.

C. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share $\frac{1}{2}$ lb of chocolate equally? How many $\frac{1}{3}$ -cup servings are in 2 cups of raisins?*