

SIXTH GRADE CURRICULUM MAP



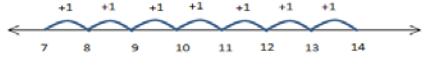
BLACKFORD COUNTY SCHOOLS

	<u>Result Unknown</u>	<u>Change Unknown</u>	<u>Start Unknown</u>
<u>Add to</u>	<p>Two bunnies sat on the grass. Three more bunnies hopped there. How many bunnies are on the grass now?</p> $2 + 3 = ?$	<p>Two bunnies were sitting on the grass. Some more bunnies hopped there. Then there were five bunnies. How many bunnies hopped over to the first two?</p> $2 + ? = 5$	<p>Some bunnies were sitting on the grass. Three more bunnies hopped there. Then there were five bunnies. How many bunnies were on the grass before?</p> $? + 3 = 5$
<u>Take from</u>	<p>Five apples were on the table. I ate two apples. How many apples are on the table now?</p> $5 - 2 = ?$	<p>Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat?</p> $5 - ? = 3$	<p>Some apples were on the table. I ate two apples. Then there were three apples. How many apples were on the table before?</p> $? - 2 = 3$
	<u>Total Unknown</u>	<u>Addend Unknown</u>	<u>Both addends Unknown</u>
<u>Put Together/ Take Apart</u>	<p>Three red apples and two green apples are on the table. How many apples are on the table?</p> $3 + 2 = ?$	<p>Five apples are on the table. Three are red and the rest are green. How many apples are green?</p> $3 + ? = 5, 5 - 3 = ?$	<p>Grandma has five flowers. How many can she put in her red vase and how many in her blue vase?</p> $5 = 0 + 5, 5 = 5 + 0$ $5 = 1 + 4, 5 = 4 + 1$ $5 = 2 + 3, 5 = 3 + 2$ <p><u>Difference Unknown</u> <u>Bigger Unknown</u> <u>Smaller Unknown</u></p>
	<u>Difference Unknown</u>	<u>Bigger Unknown</u>	<u>Smaller Unknown</u>
<u>Compare</u>	<p>("How many more?" version): Lucy has two apples. Julie has five apples. How many more apples does Julie have than Lucy? ("How many fewer?" version): Lucy has two apples. Julie has five apples. How many fewer apples does Lucy have than Julie?</p> $2 + ? = 5, 5 - 2 = ?$	<p>(Version with "more"): Julie has 3 more apples than Lucy. Lucy has two apples. How many apples does Julie have? (Version with "fewer"): Lucy has three fewer apples than Julie. Lucy has two apples. How many apples does Julie have?</p> $2 + 3 = ?, 3 + 2 = ?$	<p>Julie has three more apples than Lucy. Julie has five apples. How many apples does Lucy have? (Version with "fewer"): Lucy has three fewer apples than Julie. Julie has five apples. How many apples does Lucy have?</p> $5 - 3 = ?, ? + 3 = 5$

Addition Strategies

<u>Name</u>	<u>Clarification</u>	<u>Work Sample</u>
<u>Counting All</u>	<ul style="list-style-type: none"> Student counts every number Students are not yet able to add on from either addend, they must mentally build every number 	$8 + 9$ $1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13$
<u>Counting On</u>	<ul style="list-style-type: none"> Transitional strategy Student starts with 1 number and counts on from this point 	$8 + 9$ $8 \dots 9, 10, 11, 12, 13, 14, 15$
<u>Doubles/</u> <u>Near Doubles</u>	<ul style="list-style-type: none"> Student recalls sums for many doubles 	$8 + 9$ $8 + (8 + 1)$ $(8 + 8) + 1$ $16 + 1 = 17$
<u>Making Tens</u>	<ul style="list-style-type: none"> Student uses fluency with ten to add quickly 	$8 + 9$ $(7 + 1) + 9$ $7 + (1 + 9)$ $7 + 10 = 17$
<u>Making Friendly</u> <u>Numbers/</u> <u>Landmark</u> <u>Numbers</u>	<ul style="list-style-type: none"> Friendly number are number that are easy to use in mental computation Student adjusts one or all addends by adding or subtracting to make friendly numbers Student then adjusts the answer to compensate 	$23 + 48$ $23 + (48 + 2)$ $23 + 50 = 73$ $73 - 2 = 71$
<u>Compensation</u>	<ul style="list-style-type: none"> Student manipulates the numbers to make them easier to add Student removes a specific amount from one addend and gives that exact amount to the other addend 	$8 + 6$ $8 - 1 = 7 \quad 6 + 1 = 7$ $7 + 7 = 14$
<u>Breaking Each</u> <u>Number into its</u> <u>Place Value</u>	<ul style="list-style-type: none"> Strategy used as soon as students understand place value Student breaks each addend into its place value (expanded notations) and like place value amounts are combined Student works left to right to maintain the magnitude of the numbers 	$24 + 38$ $(30 + 4) + (30 + 8)$ $20 + 30 = 50$ $4 + 8 = 12$ $50 + 12 = 62$
<u>Adding up in</u> <u>Chunks</u>	<ul style="list-style-type: none"> Follows place value strategy Student keeps one addend whole and adds the second addend in easy to use chunks More efficient than place value strategy because student is only breaking apart one addend 	$45 + 28$ $45 + (20 + 8)$ $45 + 20 = 65$ $65 + 8 = 73$

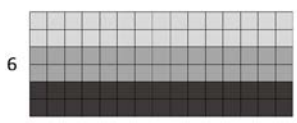
Subtraction Strategies

<u>Name</u>	<u>Clarification</u>	<u>Sample</u>
<u>Adding up</u>	<ul style="list-style-type: none"> • <u>Student adds up from the number being subtracted to the whole</u> • <u>The larger the jumps, the more efficient the strategy</u> • <u>Student uses knowledge of basic facts, doubles, making ten, and counting on</u> 	$14 - 7$ <u>7... 8,9,10,11,12,13,14 (+1 each jump)</u>  <hr/> $7 + 3 = 10$ $10 + 4 = 14$
<u>Counting Back</u>	<ul style="list-style-type: none"> • <u>Strategy used by students who primarily view subtraction as taking away</u> • <u>Student starts with the whole and removes the subtracting in parts</u> • <u>Student needs the ability to decompose numbers in east to remove parts</u> 	$65 - 32$ $65 - (10 + 10 + 10 + 2)$ $65, 55, 45, 35, 33$ $65 - (30 + 2)$ $65 - 30 = 35$ $35 - 2 = 33$
<u>Place Value</u>	<ul style="list-style-type: none"> • <u>Student breaks each number into its place value (expanded notation)</u> • <u>Student groups like place values and subtracts</u> 	$999 - 345$ $(900 + 90 + 9) - (300 + 40 + 5)$ $900 - 300 = 600$ $90 - 40 = 50$ $9 - 5 = 4$ $600 + 50 + 4 = 654$
<u>Keeping a Constant Difference</u>	<ul style="list-style-type: none"> • <u>Student understands that adding or subtracting the same amount from both numbers maintains the distance between the numbers</u> • <u>Student manipulates the numbers to create friendlier numbers</u> 	$123 - 59$ $123 + 1 = 124$ $59 + 1 = 60$ $124 - 60 = 64$
<u>Adjusting the Create and Easier Number</u>	<ul style="list-style-type: none"> • <u>Strategy requires students to adjust only one of the numbers in a subtraction problem</u> • <u>Student chooses a number to adjust, subtracts, then adjusts the final answer to compensate</u> • <u>Students must understand part/whole relationships to reason through this strategy</u> 	$123 - 59$ $59 + 1 = 60$ $123 - 60 = 63$ <u>I added 1 to make an easier number.</u> $63 + 1 = 64$ <u>I have to add 1 to my final answer because I took away 1 too many.</u>

Common Multiplication and Division Situations

	<u>Unknown Product</u> <u>$3 \times 6 = ?$</u>	<u>Group Size Unknown</u> <u>(How many in each group)</u>	<u>Number of Groups Unknown</u> <u>(How many groups?)</u>
<u>Equal Groups</u>	<p>There are 3 bags with 6 plums in each bag. How many plums are there in all?</p> <p>Measurement example: You need 3 lengths of string, each 6 inches long. How much string will you need altogether?</p>	<p>If 18 plums are shared equally into 3 bags, then how many plums will be in each bag?</p> <p>Measurement example: You have 18 inches of string, which you will cut into 3 equal pieces. How long will each piece of string be?</p>	<p>If 18 plums are to be packed 6 to a bag, then how many bags are needed?</p> <p>Measurement example: You have 18 inches of string, which you will cut into pieces that are 6 inches long. How many pieces of string will you have?</p>
<u>Arrays, Area</u>	<p>There are 3 rows of apples with 6 apples in each row. How many apples are there?</p> <p>Area example: What is the area of a 3 cm by 6cm rectangle?</p>	<p>If 18 apples are arranged into 3 equal rows, how many apples will be in each row?</p> <p>Area example: A rectangle has area 18 square centimeters. If one side is 3 cm long, how long is a side next to it?</p>	<p>If 18 apples are arranged into equal rows of 6 apples, how many rows will there be?</p> <p>Area example: A rectangle has area 18 square centimeters. If one side is 6cm long, how long is a side next to it?</p>
<u>Compare</u>	<p>A blue hat costs \$6. A red hat cost 3 times as much as the blue hat. How much does the red hat cost?</p> <p>Measurement example: A rubber band is 6 cm long. How long will the rubber band be when it is stretched to be 3 times as long?</p>	<p>A red hat costs \$18 and that is 3 times as much as a blue hat costs. How much does the blue hat cost?</p> <p>Measurement example: A rubber band is stretched to be 18 cm long and that is 3 times as long as it was at first. How long was the rubber band at first?</p>	<p>A red hat costs \$18 and a blue hat costs \$6. How many times as much does the red hat cost as the blue hat?</p> <p>Measurement example: A rubber band was 6 cm long at first. Now it is stretched to be 18 cm long. How many times as long is the rubber band now as it was at first?</p>
<u>General</u>	<u>$a \times b = ?$</u>	<u>$a \times ? = p$ and $p \div a = ?$</u>	<u>$? \times b = p$ and $p \div b = ?$</u>

Multiplication Strategies

<u>Name</u>	<u>Clarification</u>	<u>Student Work Sample</u>
<u>Repeated Addition/Skip Counting</u>	<ul style="list-style-type: none"> Beginning strategy for students who are just learning multiplication Connection to an array model provides an essential visual model 	6×15 $15+15+15+15+15+15 = 90$ $2 \times 15 = 30$ $2 \times 15 = 30$ $2 \times 15 = 30$ $30 + 30 + 30 = 90$ <div style="text-align: center;">15</div> 
<u>Friendly Numbers/Landmark Numbers</u>	<ul style="list-style-type: none"> Students who are comfortable multiplying by multiples of 10 	9×15 Add 1 group of 15 $10 \times 15 = 150$ We must now take off 1 group of 15. $150 - 15 = 135$
<u>Partial Products</u>	<ul style="list-style-type: none"> strategy based on the distributive property and is the precursor for our standard U.S. algorithm student must understand that the factors in a multiplication problem can be broken into addends student can then use friendlier numbers to solve more difficult problems 	12×15 $12 \times (10 + 5)$ $12 \times 10 = 120$ $12 \times 5 = 60$ $120 + 60 = 180$
<u>Breaking Factors into Smaller Factors</u>	<ul style="list-style-type: none"> Strategy relies on students' understand of breaking factors into smaller factors Associate property 	12×25 $(3 \times 4) \times 25$ $3 \times (4 \times 25)$ $(4 \times 25) + (4 \times 25) + (4 \times 25) = 300$
<u>Doubling and Halving</u>	<ul style="list-style-type: none"> Used by students who have an understanding of the concept of arrays with different dimensions but the same area Student can double and halve numbers with ease Student doubles one factor and halves the other factor 	8×25 $8 \div 2 = 4$ $25 \times 2 = 50$ $4 \times 50 = 200$

Division Strategies

<u>Name</u>	<u>Clarification</u>	<u>Student Work Sample</u>
<u>Repeated Subtraction/Sharing</u>	<ul style="list-style-type: none"> • <u>Early strategy students use when they are developing multiplicative reasoning</u> • <u>Repeated subtraction is one of the least efficient division strategies</u> • <u>Presents opportunities to make connections to multiplication</u> 	$30 \div 5$ $30 - 5 = 25$ $25 - 5 = 20$ $20 - 5 = 15$ $15 - 5 = 10$ $10 - 5 = 5$ $5 - 5 = 0$ <u>I took out 6 groups of 5</u> $30 \div 5 = 6$
<u>Multiplying Up</u>	<ul style="list-style-type: none"> • <u>Strategy is a natural progression from repeated subtraction</u> • <u>Student uses strength in multiplication to multiply up to reach the dividend</u> • <u>Students relying on smaller factors and multiples will benefit from discussions related to choosing more efficient factors</u> 	$384 \div 16$ $10 \times 16 = 160$ $384 - 160 = 224$ $10 \times 16 = 160$ $224 - 160 = 64$ $2 \times 16 = 32$ $64 - 32 = 32$ $2 \times 16 = 32$ $32 - 32 = 0$ $10 + 10 + 2 + 2 = 24$
<u>Partial Quotients</u>	<ul style="list-style-type: none"> • <u>Maintains place value</u> • <u>Allows students to work their way toward the quotient by using friendly numbers such as ten, five, and two</u> • <u>As the student chooses larger numbers, the strategy becomes more efficient</u> 	$384 \div 16$ $\begin{array}{r} 16 \overline{) 384} \\ \underline{-160} \\ 224 \\ \underline{-160} \\ 64 \\ \underline{-32} \\ 32 \\ \underline{-32} \\ 0 \end{array}$
<u>Proportional Reasoning</u>	<ul style="list-style-type: none"> • <u>Students who have a strong understand of factors, multiples, and fractional reasoning</u> • <u>Students' experiences with doubling and halving to solve multiplication problems can launch an investigation leading to the idea that you can divide the dividend and the divisor by the same number to create a friendlier problem</u> 	$384 \div 16$ $384 \div 16$ $\div 2 \div 2$ $192 \div 8$ $\div 2 \div 2$ $96 \div 4$ $\div 2 \div 2$ $48 \div 2 = 24$ $384 \div 16 = 24$

Problem Solving Strategies Focus

By Grade Level

<u>Grade Level</u>	<u>Strategies</u>
<u>Kindergarten</u>	Use Objects
<u>First</u>	Review Previous Grades Draw a Picture Use a Number Sentence
<u>Second</u>	Review Previous Grades Find a Pattern Make a Table
<u>Third</u>	Review Previous Grades Work Backwards Make It Simpler
<u>Fourth</u>	Review Previous Grades Make an Organized List Guess and Check
<u>Fifth</u>	Review Previous Grades Use Logical Reasoning
<u>Sixth:</u>	Students should know all strategies that will be used all year.

2016-17 Pacing Guide
Quarter 1

Week 1	6.C.1: Divide multi-digit whole numbers fluently using a standard algorithmic approach.
Week 2	6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations. 6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations
Week 3	6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations. 6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations
Week 4	6.NS.6: Identify and explain prime and composite numbers. 6.NS.7: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.
Week 5	6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations. 6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations
Week 6	6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations. 6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations
Week 7	6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations. 6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations
Week 8	6.C.5: Evaluate positive rational numbers with whole number exponents. 6.C.6: Apply the order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents. Justify each step in the process.
Week 9	6.AF.1: Evaluate expressions for specific values of their variables, including expressions with whole-number exponents and those that arise from formulas used in real-world problems. 6.AF.2: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.

Quarter 2

Week 10	6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator.
Week 11	6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts. 6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator.
Week 12	6.NS.1: Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation. 6.NS.2: Understand the integer number system. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$), and that 0 is its own opposite. 6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts. 6.NS.4: Understand that the absolute value of a number is the distance from zero on a number line. Find the absolute value of real numbers and know that the distance between two numbers on the number line is the absolute value of their difference. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.
Week 13	6.AF.4: Understand that solving an equation or inequality is the process of answering the following question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. 6.AF.5: Solve equations of the form $x + p = q$, $x - p = q$, $px = q$, and $x/p = q$ fluently for cases in which p , q and x are all nonnegative rational numbers. Represent real world problems using equations of these forms and solve such problems.
Week 14	6.AF.6: Write an inequality of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$, where c is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Recognize inequalities have infinitely many solutions and represent solutions on a number line diagram. 6.AF.7: Understand that signs of numbers in ordered pairs indicate the quadrant containing the point; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. Graph points with rational number coordinates on a coordinate plane.
Week 15	6.AF.8: Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. 6.AF.9: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. 6.AF.10: Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.

Week 16	<p>6.NS.8: Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: a/b, a to b, $a:b$.</p> <p>6.NS.9: Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship.</p> <p>6.NS.10: Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).</p>
Week 17	<p>6.NS.8: Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: a/b, a to b, $a:b$.</p> <p>6.NS.9: Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship.</p> <p>6.NS.10: Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).</p>
Week 18	<p>6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations.</p> <p>6.AF.2: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.</p>

Quarter 3

Week 19	<p>6.AF.2: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.</p> <p>6.NS.7: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.</p>
Week 20	6.GM.2: Know that the sum of the interior angles of any triangle is 180° and that the sum of the interior angles of any quadrilateral is 360° . Use this information to solve real-world and mathematical problems.
Week 21	6.GM.4: Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems.
Week 22	6.GM.5: Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials), and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems.
Week 23	6.GM.6: Construct right rectangular prisms from nets and use the nets to compute the surface area of prisms; apply this technique to solve real-world and other mathematical problems.
Week 24	6.GM.3: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate; apply these techniques to solve real-world and other mathematical problems.
Week 25	6.GM.1: Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems.
Week 26	6.GM.1: Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems.
Week 27	<p>6.DS.2: Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots.</p> <p>6.DS.3: Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology).</p> <p>6.DS.4: Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered.</p>

Quarter 4

Week 28	<p>6.DS.2: Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots.</p> <p>6.DS.4: Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered.</p>
Week 29	6.DS.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
Week 30	6.DS.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
Week 31	6.DS.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
Week 32	6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator.
Week 33	<p>6.C.5: Evaluate positive rational numbers with whole number exponents.</p> <p>6.C.6: Apply the order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents. Justify each step in the process.</p>
Week 34	<p>6.AF.8: Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p> <p>6.AF.9: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.</p> <p>6.AF.10: Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</p>
Week 35	<p>6.NS.1: Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation.</p> <p>6.NS.2: Understand the integer number system. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$), and that 0 is its own opposite.</p> <p>6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.</p>
Week 36	Probability



Circle the
key numbers



Underline
the question



Box any math
action words



Evaluate what
steps do I take?



Solve and check
Does the answer make sense?
How can I check?

Weeks 1-3:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
Level 1: identify, list, label, illustrate, measure, state, tell, use, match	Level 2: graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	Level 3: Revise, critique, construct, investigate, cite evidence, conclusions, assess	Level 4: Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum
<p>6.C.1: Divide multi-digit whole numbers fluently using a standard algorithmic approach.</p> <p>6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.</p> <p>6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations.</p>	<p>5.C.1: Multiply multi-digit whole numbers fluently using a standard algorithmic approach.</p> <p>5.C.2: Find whole-number quotients and remainders 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. Describe the strategy and explain the reasoning used.</p> <p>5.C.3: Compare 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>5.NS.1: Use a number line to compare and order fractions, mixed numbers, and decimals to thousandths. Write the results using $>$, $=$, and $<$ symbols.</p> <p>5.C.4: Add and subtract fractions with unlike denominators, including mixed numbers.</p> <p>5.C.2: Find whole-number quotients and remainders 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. Describe the strategy and explain the reasoning used.</p> <p>5.C.8: Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning.</p> <p>5.AT.2: Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators (e.g., by using visual fraction models and equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess whether the answer is reasonable.</p>

Week 1:

Benchmarks to be taught:	Activities	Vocabulary
Standards:		
6.C.1: Divide multi-digit whole numbers fluently using a standard algorithmic approach.		
Students will: <ul style="list-style-type: none"> Divide multi-digit whole numbers Divide multi-digit whole numbers fluently Divide multi-digit whole numbers using standard algorithmic approach 	<p><u>AIMS:</u></p> <p><u>Internet Resources:</u> http://www.math-play.com/Division-Millionaire/division-millionaire.html http://www.softschools.com/math/division/long_division/</p>	<p>Algorithmic approach</p> <p>Dividend Divisibility Divisor Fluently Quotient</p>

Week 2:

[illegible]

Week 3:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations. 6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations.		
Students will: <ul style="list-style-type: none">• Compute positive fractions fluently• Compute positive decimals fluently• Use a standard algorithmic approach• Solve problems with positive fractions using one operation• Solve problems with positive fractions using two operations• Solve problems with positive decimals using one operation• Solve problems with positive decimals using two operations• Find quotients of positive fractions• Solve division of fractions by fractions• Use visual fractions models to represent calculations• Use equations to represent calculations	<u>AIMS:</u> <u>Internet Resources: (same)</u> http://www.mathplayground.com/fractions_add.html http://www.sheppardsoftware.com/mathgames/fractions/FruitShootFractionsAddition.htm http://www.mathplayground.com/ASB_Speedway.html http://www.mathplayground.com/ASB_Hungry_Puppies_Decimals.html http://www.sheppardsoftware.com/mathgames/decimals/matchingDecimalsAdd.htm http://www.math-play.com/soccer-math-adding-decimals-game/adding-decimals-game.html http://www.mathplayground.com/Fraction_bars.html http://www.abcya.com/fraction_percent_decimal_tiles.htm	Algorithmic Approach Compute Fluently Hundredth Product Quotient Standard algorithm Tenth Thousandths

Weeks 4-6:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
Level 1: identify, list, label, illustrate, measure, state, tell, use, match	Level 2: graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	Level 3: Revise, critique, construct, investigate, cite evidence, conclusions, assess	Level 4: Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum
6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations.	5.C.4: Add and subtract fractions with unlike denominators, including mixed numbers. 5.C.8: Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning. 5.AT.2: Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators (e.g., by using visual fraction models and equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess whether the answer is reasonable.

Week 4:

Benchmarks to be taught:	Activities	Vocabulary
<p>Standards:</p> <p>6.NS.6: Identify and explain prime and composite numbers.</p> <p>6.NS.7: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.</p>		
<p>Students will:</p> <ul style="list-style-type: none">• Identify prime numbers• Identify composite numbers• Explain prime numbers• Explain composite numbers• Find the greatest common factor of two whole numbers• Find least common multiple of two whole numbers• Use the distributive property to express sum	<p><u>AIMS:</u> <i>Essential Math: Writing and Simplifying Expressions book</i></p> <p><u>Internet Resources:</u> http://www.sheppardsoftware.com/mathgames/monkeydrive/numbers/MDPrimeNumbers.htm http://www.sheppardsoftware.com/mathgames/numbers/fruit_shoot_prime.htm http://www.sheppardsoftware.com/mathgames/fractions/GreatestCommonFactor.htm http://www.abcya.com/number_ninja_factors.htm http://www.fun4thebrain.com/beyondfacts/lcmsnowball.html http://www.sheppardsoftware.com/mathgames/fractions/LeastCommonMultiple.htm http://www.oswego.org/ocsd-web/match/dragflip.asp?filename=slanegcf http://www.mathplayground.com/factortrees.html</p>	<p>Composite numbers</p> <p>Factor</p> <p>Greatest common factor</p> <p>Least common multiple</p> <p>Prime factorization</p> <p>Prime numbers</p>

Week 5:

Benchmarks to be taught:	Activities	Vocabulary
<p>Standards:</p> <p>6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.</p> <p>6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations.</p> <p>6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations.</p>		
<p>Students will:</p> <ul style="list-style-type: none">• Compute positive fractions fluently• Compute positive decimals fluently• Use a standard algorithmic approach• Solve problems with positive fractions using one operation• Solve problems with positive fractions using two operations• Solve problems with positive decimals using one operation• Solve problems with positive decimals using two operations• Find quotients of positive fractions• Solve division of fractions by fractions• Use visual fractions models	<p><u>AIMS:</u></p> <p><u>Internet Resources: (same)</u></p> <p>http://www.mathplayground.com/fractions_add.html</p> <p>http://www.sheppardsoftware.com/mathgames/fractions/FruitShootFractionsAddition.htm</p> <p>http://www.mathplayground.com/ASB_Speedway.html</p> <p>http://www.mathplayground.com/ASB_Hungry_Puppies_Decimals.html</p> <p>http://www.sheppardsoftware.com/mathgames/decimals/matchingDecimalsAdd.htm</p> <p>http://www.math-play.com/soccer-math-adding-decimals-game/adding-decimals-game.html</p> <p>http://www.mathplayground.com/Fraction_bars.html</p> <p>http://www.abcya.com/fraction_percent_decimal_tiles.htm</p>	<p>Algorithmic Approach</p> <p>Common denominator</p> <p>Denominator</p> <p>Equivalent fractions</p> <p>Fluently</p> <p>Fractions</p> <p>Least common denominator</p> <p>Numerator</p> <p>Simplest form</p> <p>Simplify</p>

Week 6:

[illegible]

Weeks 7-9:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
Level 1: identify, list, label, illustrate, measure, state, tell, use, match	Level 2: graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	Level 3: Revise, critique, construct, investigate, cite evidence, conclusions, assess	Level 4: Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum
<p>6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.</p> <p>6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations.</p> <p>6.C.6: Apply the order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents. Justify each step in the process.</p> <p>6.AF.1: Evaluate expressions for specific values of their variables, including expressions with whole-number exponents and those that arise from formulas used in real-world problems.</p>	<p>5.C.4: Add and subtract fractions with unlike denominators, including mixed numbers.</p> <p>5.C.9: Evaluate expressions with parentheses or brackets involving whole numbers using the commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property.</p> <p>5.AT.2: Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators (e.g., by using visual fraction models and equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess whether the answer is reasonable.</p> <p>5.AT.7: Represent real-world problems and equations by graphing ordered pairs in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p> <p>5.C.8: Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning.</p>

Week 7:

Benchmarks to be taught:	Activities	Vocabulary
<p>Standards:</p> <p>6.C.2: Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.</p> <p>6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations.</p> <p>6.C.4: Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations.</p>		
<p>Students will:</p> <ul style="list-style-type: none">• Compute positive fractions fluently• Compute positive decimals fluently• Use a standard algorithmic approach• Solve problems with positive fractions using one operation• Solve problems with positive fractions using two operations• Solve problems with positive decimals using one operation• Solve problems with positive decimals using two operations• Find quotients of positive fractions• Solve division of fractions by fractions• Use visual fractions models	<p><u>AIMS:</u></p> <p><u>Internet Resources:</u></p> <p>http://www.mathplayground.com/fractions_add.html</p> <p>http://www.sheppardsoftware.com/mathgames/fractions/FruitShootFractionsAddition.htm</p> <p>http://www.mathplayground.com/ASB_Speedway.html</p> <p>http://www.mathplayground.com/ASB_Hungry_Puppies_Decimals.html</p> <p>http://www.sheppardsoftware.com/mathgames/decimals/matchingDecimalsAdd.htm</p> <p>http://www.math-play.com/soccer-math-adding-decimals-game/adding-decimals-game.html</p> <p>http://www.mathplayground.com/Fraction_bars.html</p> <p>http://www.abcya.com/fraction_percent_decimal_tiles.htm</p> <p>https://www.khanacademy.org/math/arithmetic/fractions/multiplying-fractions-word-problem/e/multiplying-fractions-by-fractions-word-problems</p>	<p>Algorithmic Approach</p> <p>Denominator</p> <p>Equivalent fractions</p> <p>Fluently</p> <p>Fractions</p> <p>Improper fraction</p> <p>Mixed number</p> <p>Numerator</p> <p>Reciprocal</p> <p>Simplest form</p> <p>Simplify</p>

Week 8:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.C.5: Evaluate positive rational numbers with whole number exponents. 6.C.6: Apply the order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents. Justify each step in the process.		
Students will: <ul style="list-style-type: none">• Evaluate positive rational numbers with exponents• Apply order of operations• Apply properties of operations• Evaluate numerical expression with non-negative rational numbers• Use grouping symbols that involve whole number exponents• Use parentheses correctly• Justify each step when solving	<u>AIMS:</u> <i>Essential Math: Writing and Simplifying Expressions book</i> <u>Internet Resources:</u> http://mrnussbaum.com/orderops/ http://www.math-play.com/Order-of-Operations-Millionaire/division-millionaire.html http://www.mathplayground.com/order_of_operations.html http://www.mathplayground.com/mathman.html http://www.learnalberta.ca/content/mesg/html/math6web/index.html?page=lessons&lesson=m6lessonsshell14.swf http://www.math4children.com/Grade4/games/Geometry/geometry/	Cubed Evaluate Exponent Expression Numerical expression Order of operations Squared

Week 9:

[illegible]

Weeks 10-12:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
Level 1: identify, list, label, illustrate, measure, state, tell, use, match	Level 2: graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	Level 3: Revise, critique, construct, investigate, cite evidence, conclusions, assess	Level 4: Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum
6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. 6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.	5.NS.1: Use a number line to compare and order fractions, mixed numbers, and decimals to thousandths. Write the results using $>$, $=$, and $<$ symbols.

Week 10:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator.		
Students will: <ul style="list-style-type: none"> Know commonly used fractions Know fraction and decimal equivalents Know fraction and percent equivalents Convert between any two representations of positive rational numbers 	<p><u>AIMS:</u></p> <p><u>Internet Resources:</u> http://www.sheppardsoftware.com/mathgames/fractions/FractionsToDecimals.htm http://mrnussbaum.com/deathdecimals/ http://www.mathplayground.com/ASB_Puppy_Chase_Decimals.html http://www.math-play.com/Fractions-Decimals-Percents-Jeopardy/fractions-decimals-percents-jeopardy.html</p>	Convert Decimal Equivalents Percent Rational number Representations

Week 11:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts. 6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator.		
Students will: <ul style="list-style-type: none">• Compare rational numbers• Order rational numbers• Plot rational numbers on a number line• Write statements of order for rational numbers• Interpret statements of order for rational numbers• Explain statements of order for rational numbers• Know commonly used fractions and decimal equivalents• Know commonly used fractions and percent equivalents• Know commonly used percent and decimal equivalents• Convert between any two representations of positive rational numbers	<u>AIMS:</u> <i>Line Dance</i> <i>Integer Avenue</i> <i>Who Has More Money?</i> <i>Finding Net Worth</i> <i>Integer Patterns</i> <i>Problem Pairing</i> <u>Internet Resources:</u> http://www.math-play.com/Comparing-Rational-Numbers/comparing-rational-numbers.html http://www.mathgames.com/skill/6.61-compare-rational-numbers	Common denominator Number line Rational number

Week 12:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.NS.1: Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation. 6.NS.2: Understand the integer number system. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$), and that 0 is its own opposite. 6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts. 6.NS.4: Understand that the absolute value of a number is the distance from zero on a number line. Find the absolute value of real numbers and know that the distance between two numbers on the number line is the absolute value of their difference. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.		
Students will: <ul style="list-style-type: none"> • Understand positive numbers to describe quantities with opposite value • Understand negative numbers to describe quantities with opposite value • Use positive numbers to represent quantities in real-world contexts • Use negative numbers to represent quantities in real-world contexts • Compare quantities in real-world contexts • Explain meaning of 0 in each situation • Understand integer number system • Recognize opposite signs of numbers on number line • Recognize opposite of the opposite of a number is the number itself • Compare rational numbers • Order rational numbers • Plot rational numbers on a number line • Write statements of order of rational numbers • Interpret order for rational numbers • Explain statements of order for rational numbers • Understand absolute value • Find the absolute value of real numbers • Know distance between two numbers on a number line is absolute value of their difference • Interpret absolute value as magnitude for positive quantity • Interpret absolute value as magnitude for negative quantity 	AIMS: <i>Line Dance</i> <i>Integer Avenue</i> <i>Who Has More Money?</i> <i>Finding Net Worth</i> <i>Integer Patterns</i> <i>Problem Pairing</i> Internet Resources: http://www.mathgames.com/skill/6.58-absolute-value-and-opposite-integers http://www.sheppardsoftware.com/mathgames/Numberballs_absolute_value/numberballsAS2_abs.htm http://www.math-play.com/absolutevalue-millionaire.html http://www.math-play.com/Absolute-Value-Equations/Absolute-Value-Millionaire.html https://www.mangahigh.com/en-us/games/pinatafever http://primarygamesarena.com/Topics/Negative-Numbers	Absolute value Integer Integer Number System Magnitude Negative number Number line Opposite Positive number Rational number

Weeks 13-15:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
Level 1: identify, list, label, illustrate, measure, state, tell, use, match	Level 2: graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	Level 3: Revise, critique, construct, investigate, cite evidence, conclusions, assess	Level 4: Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum
<p>6.AF.5: Solve equations of the form $x + p = q$, $x - p = q$, $px = q$, and $x/p = q$ fluently for cases in which p, q and x are all non-negative rational numbers. Represent real world problems using equations of these forms and solve such problems.</p> <p>6.AF.10: Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</p>	<p>5.AT.8: Define and use up to two variables to write linear expressions that arise from real-world problems, and evaluate them for given values.</p> <p>5.AT.3: Solve real-world problems involving multiplication of fractions, including mixed numbers (e.g., by using visual fraction models and equations to represent the problem).</p>

Week 13:

[illegible]

Week 14:

Benchmarks to be taught:	Activities	Vocabulary
<p>Standards:</p> <p>6.AF.6: Write an inequality of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$, where c is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Recognize inequalities have infinitely many solutions and represent solutions on a number line diagram.</p> <p>6.AF.7: Understand that signs of numbers in ordered pairs indicate the quadrant containing the point; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. Graph points with rational number coordinates on a coordinate plane.</p>		
<p>Students will:</p> <ul style="list-style-type: none">• Write an inequality to represent a constraint in real-world problem• Recognize inequalities have infinitely many solutions• Represent solutions on a number line diagram• Understand signs of numbers in ordered pair indicate quadrant• Recognize two ordered pairs differ only in signs, the locations of points are related by reflections across one or both axes• Graph points with rational number coordinates	<p><u>AIMS:</u></p> <p><i>Line Dance</i> <i>Integer Avenue</i> <i>Who Has More Money?</i> <i>Finding Net Worth</i> <i>Integer Patterns</i> <i>Problem Pairing</i></p> <p><u>Internet Resources:</u></p> <p>http://www.algebralab.org/lessons/lesson.aspx?file=Algebra_OneVariableWritingEquations.xml http://mrnussbaum.com/stockshelves/ http://www.xpmath.com/forums/archive.php?do=play&gameid=90 http://www.oswego.org/ocsd-web/games/BillyBug2/bug2.html http://hotmath.com/hotmath_help/games/ctf/ctf_hotmath.swf</p>	<p>Axis</p> <p>Constraint</p> <p>Coordinate plane</p> <p>Greater than</p> <p>Greater than or equal to</p> <p>Inequality</p> <p>Less than</p> <p>Less than or equal to</p> <p>Ordered pair</p> <p>Plot</p> <p>Quadrant</p> <p>x-axis</p> <p>x-coordinate</p> <p>y-axis</p> <p>y-coordinate</p>

Week 15:

Benchmarks to be taught:	Activities	Vocabulary
<p>Standards:</p> <p>6.AF.8: Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p> <p>6.AF.9: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.</p> <p>6.AF.10: Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</p>		
<p>Students will:</p> <ul style="list-style-type: none">• Solve real-world problems by graphing points with rational number coordinates• Find distances of coordinates between coordinates• Find distances of absolute value between coordinates• Make tables of equivalent ratios relating quantities with whole-number measurements• Find missing values in tables• Plot the pairs of values on the coordinate plane• Use variables to represent two quantities in a proportional relationship• Write an equation to express one quantity (dependent variable) in terms of the other quantity (independent variable)• Analyze relationship between dependent variables and independent variables• Relate tables to an equation• Relate graphs to an equation	<p><u>AIMS:</u></p> <p><i>Paper Clip Rulers</i> <i>Pattern Block Functions</i> <i>Expressions for Patterns</i> <i>Bars and Bolts</i> <i>Pulse Rates</i> <i>A Pace Race</i></p> <p><u>Internet Resources:</u></p>	<p>Dependent variable</p> <p>Function rule Function tables Functions</p> <p>Independent variable</p> <p>Proportional relationship</p>

Weeks 16-18:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
Level 1: identify, list, label, illustrate, measure, state, tell, use, match	Level 2: graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	Level 3: Revise, critique, construct, investigate, cite evidence, conclusions, assess	Level 4: Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum
<p>6.AF.10: Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</p> <p>6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations</p>	<p>5.AT.8: Define and use up to two variables to write linear expressions that arise from real-world problems, and evaluate them for given values.</p> <p>5.C.4: Add and subtract fractions with unlike denominators, including mixed numbers.</p> <p>5.C.8: Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning.</p> <p>5.AT.2: Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators (e.g., by using visual fraction models and equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess whether the answer is reasonable.</p> <p>5.AT.5: Solve real-world problems involving addition, subtraction, multiplication, and division with decimals to hundredths, including problems that involve money in decimal notation (e.g. by using equations to represent the problem).</p>

Week 16:

Benchmarks to be taught:	Activities	Vocabulary
<p>Standards:</p> <p>6.NS.8: Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: a/b, a to b, $a:b$.</p> <p>6.NS.9: Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship.</p> <p>6.NS.10: Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).</p>		
<p>Students will:</p> <ul style="list-style-type: none">• Interpret ratios to show relative sizes of two quantities• Model ratios to show relative sizes of two quantities• Use ratios to show the relative sizes of two quantities• Describe how a ratio shows relationship between two quantities• Understand concept of unit rate• Use terms related to rate in the context of ratio relationship• Use reasoning involving rates to mode real-world problems• Use reasoning involving ratios to model real-world problems• Reason about tables of equivalent ratios• Reason about tape diagrams• Reason about double number line diagrams• Reason about equations	<p><u>AIMS:</u></p> <p><i>Fraction Equivalence With Pattern Blocks</i> <i>Part 8: Fraction Action 92-93</i> <i>Percent Measures</i> <i>Percent Pictures</i> <i>Proportional Practice</i> <i>Shrink to Fit</i></p> <p><u>Internet Resources:</u></p> <p>http://www.mathplayground.com/ASB_RatioBlaster.html http://www.mathplayground.com/ASB_RatioStadium.html http://mathsnacks.com/ratiorumble_game_en.html</p>	<p>Cross product</p> <p>Dependent variable</p> <p>Double line diagram</p> <p>Equivalent ratios</p> <p>Independent variable</p> <p>Proportion</p> <p>Proportional relationship</p> <p>Rate</p> <p>Ratio</p> <p>Tape diagram</p> <p>Unit rate</p>

Week 17:

Benchmarks to be taught:	Activities	Vocabulary
<p>Standards:</p> <p>6.NS.8: Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: a/b, a to b, $a:b$.</p> <p>6.NS.9: Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship.</p> <p>6.NS.10: Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).</p>		
<p>Students will:</p> <ul style="list-style-type: none">• Interpret ratios to show relative sizes of two quantities• Model ratios to show the relative sizes of two quantities• Use ratios to show the relative sizes of two quantities• Describe how a ratio shows the relationship between two quantities• Use a/b, a to b, $a:b$• Understand the concept of a unit rate• Use terms related to rate in the context of a ratio relationship• Use reasoning involving rates to model real-world problems• Use reasoning involving ratios to model real-world problems• Reason using table of equivalent ratios• Reason using tape diagrams• Reason using double number line diagrams• Reason using equations	<p><u>AIMS:</u></p> <p><i>Fraction Equivalence With Pattern Blocks</i> <i>Part 8: Fraction Action 92-93</i> <i>Percent Measures</i> <i>Percent Pictures</i> <i>Proportional Practice</i> <i>Shrink to Fit</i></p> <p><u>Internet Resources:</u></p> <p>http://www.mathplayground.com/tb_ratios/thinking_blocks_ratios.html http://www.mathplayground.com/NewThinkingBlocks/thinking_blocks_ratios.html</p>	<p>Cross product</p> <p>Double number line diagram</p> <p>Equivalent ratios</p> <p>Proportion</p> <p>Proportional relationship</p> <p>Rate</p> <p>Ratio</p> <p>Tables of equivalent ratios</p> <p>Tape diagram</p> <p>Unit rate</p>

Week 18:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.C.3: Solve real-world problems with positive fractions and decimals by using one or two operations. 6.AF.2: Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.		
Students will: <ul style="list-style-type: none">• Solve real-world problems with positive fractions by one or two operations• Solve real-world problems using decimals by one or two operations• Apply the properties of operations• Create equivalent linear expressions• Justify whether two linear expressions are equivalent when two expressions name the same number regardless of substitution	<u>AIMS:</u> <i>Essential Math: Writing and Simplifying Expressions book</i> <u>Internet Resources:</u> http://www.mathplayground.com/wp/database/Fractions1_1.htm https://www.khanacademy.org/math/arithmetic/fractions/multiplying-fractions-word-probl/e/multiplying-fractions-by-fractions-word-problems	Associative property Commutative property Discount Distributive property Identify property Inverse property Percent Tax Tip

Weeks 19-21:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
<u>Level 1:</u> identify, list, label, illustrate, measure, state, tell, use, match	<u>Level 2:</u> graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	<u>Level 3:</u> Revise, critique, construct, investigate, cite evidence, conclusions, assess	<u>Level 4:</u> Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum

Week 19:

[illegible]

Week 20:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.GM.2: Know that the sum of the interior angles of any triangle is 180° and that the sum of the interior angles of any quadrilateral is 360° . Use this information to solve real-world and mathematical problems.		
Students will: <ul style="list-style-type: none"> • Know sum of interior angles of a triangle is 180 degrees • Know sum of inter angles of any quadrilateral is 360 degrees • Solve real-world problems regarding sums of triangles • Solve real-world problems regarding sums of quadrilaterals 	<p><u>AIMS:</u></p> <p><u>Internet Resources:</u> http://www.mathgames.com/skill/8.62-find-missing-angles-in-triangles-and-quadrilaterals http://www.aartpack.com/sales/october_trial/grade_5/links/Mathematics/MA014/index.swf</p>	Adjacent Complementary Quadrilateral Supplementary Triangle Vertical

Week 21:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.GM.4: Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems.		
Students will: <ul style="list-style-type: none"> • Find area of complex shapes composed of polygons by composing into simple shapes • Find area of complex shapes composed of polygons by decomposing into simple shapes • Solve real-world problems about area of complex shapes 	<p><u>AIMS:</u></p> <p><u>Internet Resources:</u> http://www.mathplayground.com/PartyDesigner/PartyDesigner.html http://mathszone.co.uk/measuring/area-and-perimeter/ http://www.sheppardsoftware.com/mathgames/geometry/shapeshoot/AreaShapesShoot.htm https://www.studyladder.com/games/activity/area-of-irregular-shapes-13136</p>	Area Base Center Circle Complex shapes Circumference Compose Decompose Diameter Formulas Height Parallelogram Pi Quadrilateral Radius Rectangle Trapezoid Triangle

Weeks 22-24:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
<u>Level 1:</u> identify, list, label, illustrate, measure, state, tell, use, match	<u>Level 2:</u> graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	<u>Level 3:</u> Revise, critique, construct, investigate, cite evidence, conclusions, assess	<u>Level 4:</u> Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum

Week 22:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.GM.5: Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials), and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems.		
Students will: <ul style="list-style-type: none">• Find the volume of a right rectangular prism with fractional lengths• Show volume is the same by multiplying edge lengths of the prism• Apply the formulas to find volume of right rectangular prisms with fractional sides	<u>AIMS:</u> <i>Essential Math: Area Formulas for Parallelograms, Triangles, and Trapezoids book</i> <i>Essential Math: Measurement of Prisms, Pyramids, Cylinders, and Cones book</i> <i>What's a Liter Look Like?</i> <u>Internet Resources:</u> http://www.xpmath.com/forums/arcade.php?do=play&gameid=118 http://www.mathplayground.com/cube_perspective.html http://www.mathgames.com/skill/5.120-volume-of-cubes-and-rectangular-prisms http://www.sheppardsoftware.com/mathgames/geometry/shapeshoot/VolumeShapesShoot.htm	Prism Pyramid Right rectangular prism Volume

Week 23:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.GM.6: Construct right rectangular prisms from nets and use the nets to compute the surface area of prisms; apply this technique to solve real-world and other mathematical problems.		
Students will: <ul style="list-style-type: none">• Construct right rectangular prism from nets• Use nets to compute surface area• Solve real-world problems for surface area	<u>AIMS:</u> <i>Essential Math: Area Formulas for Parallelograms, Triangles, and Trapezoids book</i> <i>Essential Math: Measurement of Prisms, Pyramids, Cylinders, and Cones book</i> <i>What's a Liter Look Like?</i> <u>Internet Resources:</u> https://www.brainingcamp.com/legacy/content/concepts/surface-area/ http://www.onlinemathlearning.com/volume-games.html	Edge Face Net Prism Pyramid Right rectangular prism Solid Surface area Vertex

Week 24:

Benchmarks to be taught:	Activities	Vocabulary
Standards:		
6.GM.3: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate; apply these techniques to solve real-world and other mathematical problems.		
Students will: <ul style="list-style-type: none"> Draw polygons in the coordinate plane given coordinates for the vertices Use coordinates to find the length of a side Solve real-world problems regarding coordinate planes 	<p><u>AIMS:</u></p> <p><u>Internet Resources:</u> https://www.khanacademy.org/math/cc-fifth-grade-math/cc-5th-geometry-topic/cc-5th-coordinate-plane-word-problems https://www.khanacademy.org/math/basic-geo/basic-geo-coordinate-plane/copy-of-cc-6th-coordinate-plane/e/coordinate-plane-word-problems</p>	Coordinate plane Decagon Heptagon Hexagon Nonagon Octagon Pentagon Polygons Quadrilateral Triangle

Weeks 25-27:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
<u>Level 1:</u> identify, list, label, illustrate, measure, state, tell, use, match	<u>Level 2:</u> graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	<u>Level 3:</u> Revise, critique, construct, investigate, cite evidence, conclusions, assess	<u>Level 4:</u> Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum
6.DS.3: Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology).	5.DS.1: Formulate questions that can be addressed with data and make predictions about the data. Use observations, surveys, and experiments to collect, represent, and interpret the data using tables (including frequency tables), line plots, bar graphs, and line graphs. Recognize the differences in representing categorical and numerical data. 5.DS.2: Understand and use measures of center (mean and median) and frequency (mode) to describe a data set.

Week 25:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.GM.1: Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems.		
Students will: <ul style="list-style-type: none"> • Convert between measurement systems • Use conversions to solve real-world problems 	<p><u>AIMS:</u></p> <p><u>Internet Resources:</u> http://mrnussbaum.com/soup/ https://www.sheppardsoftware.com/mathgames/menus/measurement.htm http://www.bbc.co.uk/skillswise/game/ma22leng-game-build-a-shed http://www.sheppardsoftware.com/mathgames/measurement/MeasurementMeasures.htm</p>	Capacity Conversion Convert Cup Customary units Fahrenheit Feet Fluid ounce Gallon Inches Length Metric Miles Ounce Pint Pound Quart Weight Yards

Week 26:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.GM.1: Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems.		
Students will: <ul style="list-style-type: none"> • Convert between measurement systems • Use conversions to solve real-world problems 	<p><u>AIMS:</u></p> <p><u>Internet Resources:</u> https://learnzillion.com/resources/72211-solve-word-problems-involving-the-conversion-of-measurement-data http://www.studyzone.org/mtestprep/math8/g/convertmetricprac.cfm</p>	Base unit Capacity Celsius Centi- Conversions Convert Kilo- Length Mass Metric unit Milli-

Week 27:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.DS.2: Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots. 6.DS.3: Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology). 6.DS.4: Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered.		
Students will: <ul style="list-style-type: none"> • Select graphical representations of numerical data • Create graphical representations of numerical data • Interpret graphical representations of numerical data • Understand line plots • Understand histograms • Understand box plots • Develop statistical questions • Collect data • Organize data • Display data with graphical representations • Interpret data with graphical representations • Summarize numerical data sets • Report number of observations • Describe nature of attribute under investigation • Describe how data was measured and its units of measurement • Determine quantitative measures of center (mean and/or median) • Determine quantitative measures of spread (range and interquartile range) • Describe overall pattern with reference to context of data collections • Describe overall pattern of deviations with reference to context of data collections • Relate choice of measures of center to shape of data distribution • Relate choice of measures of spread to shape of data distribution 	AIMS: <i>What's Normal?</i> <i>Bag o' Stats</i> <i>Sorts of Pennies</i> <i>Drops on a Penny, Revisited</i> Internet Resources: http://www.bbc.co.uk/skillswise/topic/collecting-data http://www.kidsmathgamesonline.com/numbers/mathdata.html http://www.topmarks.co.uk/maths-games/5-7-years/data-handling http://interactivesites.weebly.com/mean-median-and-mode.html http://www.pbslearningmedia.org/resource/ea4d290e-7d88-43b6-b50f-5f3355df5e49/ea4d290e-7d88-43b6-b50f-5f3355df5e49/ http://www.topmarks.co.uk/Flash.aspx?a=activity22	Absolute deviation Box Plot Box-and-whisker plot Center Distribution Distribution deviation Histograms Interquartile range Line plots Mean Median Mode Outlier Pattern Range Shape variability Spread Statistic

Weeks 28-30:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
<u>Level 1:</u> identify, list, label, illustrate, measure, state, tell, use, match	<u>Level 2:</u> graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	<u>Level 3:</u> Revise, critique, construct, investigate, cite evidence, conclusions, assess	<u>Level 4:</u> Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum

Week 28:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.DS.2: Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots. 6.DS.4: Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; and relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered.		
Students will: <ul style="list-style-type: none">• Select graphical representations of numerical data• Create graphical representations of numerical data• Interpret graphical representations of numerical data• Understand line plots• Understand histograms• Understand box plots• Summarize numerical data sets in relations to their context by reporting number of observations• Describe the nature of the attribute under investigation• Describe how it was measured• Describe the units of measurement• Determine quantitative measures of center (mean and/or median)• Determine quantitative measures of spread (range and interquartile range)• Describe any overall patterns of the data• Describe any deviations of overall patterns of data• Describe overall pattern with reference to context of data collections• Describe overall pattern of deviations with reference to context of data collections• Relate choice of measures of center to shape of data distribution• Relate choice of measures of spread to shape of data distribution	AIMS: <i>What's Normal?</i> <i>Bag o' Stats</i> <i>Sorts of Pennies</i> <i>Drops on a Penny, Revisited</i> Internet Resources: http://www2.learningtoday.com/player/swf/Data_Analysis_LinePlots_L3_V1_T1a.swf https://www.mathsisfun.com/data/histograms.html https://www.brainiaccamp.com/content/box-and-whisker-plots/ http://www.mathgames.com/skill/6.126-interpret-box-and-whisker-plots	Absolute deviation Box Plots Box-and-whisker plot Center Distribution Deviation Histogram Interquartile range Line Plots Mean Median Mode Outlier Pattern Range Shape variability Spread Statistic

Week 29:

Benchmarks to be taught:	Activities	Vocabulary
Standards: 6.DS.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.		
Students will: <ul style="list-style-type: none"> • Recognize statistical question as one that anticipates variability in data related to questions • Recognize accounts for the variability in the answers • Understand a set of data collected to answer a statistical question has a distribution that can be described by its center • Understand a set of data collected to answer a statistical question has a distribution that can be described by its spread • Understand a set of data collected to answer a statistical questions has a distribution that can be described by its overall shape 	AIMS: <i>Getting to Know You</i> <i>The Marbleous Rolls</i> Internet Resources: http://www.mathsisfun.com/data/ http://www.onlinemathlearning.com/data-distribution-6sp2.html	Bar graph Center Circle (pie) graph Distribution Dot plot (line plot) Frequency table Histogram Line graph Spread Stem-and-leaf plots Variability

Week 30:

[illegible]

Weeks 31-33:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
Level 1: identify, list, label, illustrate, measure, state, tell, use, match	Level 2: graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	Level 3: Revise, critique, construct, investigate, cite evidence, conclusions, assess	Level 4: Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum
<p>6.NS.5: Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator.</p> <p>6.C.6: Apply the order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents. Justify each step in the process.</p>	<p>5.AT.5: Solve real-world problems involving addition, subtraction, multiplication, and division with decimals to hundredths, including problems that involve money in decimal notation (e.g. by using equations to represent the problem).</p> <p>5.AT.4: 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).</p> <p>5.C.9: Evaluate expressions with parentheses or brackets involving whole numbers using the commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property.</p> <p>5.C.8: Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning.</p>

Week 31:

[illegible]

Week 32:

[illegible]

Week 33:

[illegible]

Weeks 34-36:

Problem Solving: Should be embedded within daily instruction:							
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively	Construct viable arguments and critique the reasoning of others	Model with Mathematics	Use appropriate tools strategically	Attend to precision	Look for and make sure of structure	Look for and express regularity in repeated reasoning.
PS.1	PS.2	PS.3	PS.4	PS.5	PS.6	PS. 7	PS.8

DOK (Depth of Knowledge)			
Level 1: identify, list, label, illustrate, measure, state, tell, use, match	Level 2: graph, classify, cause/effect, estimate, compare, infer, construct, summarize, interpret, estimate	Level 3: Revise, critique, construct, investigate, cite evidence, conclusions, assess	Level 4: Design, connect, synthesize, critique, analyze, create, prove, apply concepts

Critical Standards (check plus) for 3 weeks:	Spiral Review of Current Curriculum
6.AF.10: Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. 6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.	5.AT.8: Define and use up to two variables to write linear expressions that arise from real-world problems, and evaluate them for given values.

Week 34:

Benchmarks to be taught:	Activities	Vocabulary
<p>Standards:</p> <p>6.AF.8: Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p> <p>6.AF.9: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.</p> <p>6.AF.10: Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</p>		
<p>Students will:</p> <ul style="list-style-type: none">• Solve real-world problems by graphing points with rational number coordinates• Find distances between points of coordinates• Use absolute value to find distances between points on coordinate graph• Make tables of equivalent ratios relating quantities with whole-number measurements• Find missing values in the tables• Plot pairs of values on the coordinate plane• Use variables to represent two quantities in a proportional relationship• Write an equations to express one quantity (dependent variable)• Analyze the relationship between the dependent and independent variable using graphs• Analyze the relationship between the dependent and independent variable using tables• Relate the relationship to the equation	<p><u>AIMS:</u></p> <p><i>Paper Clip Rulers</i> <i>Pattern Block Functions</i> <i>Expressions for Patterns</i> <i>Bars and Bolts</i> <i>Pulse Rates</i> <i>A Pace Race</i></p> <p><u>Internet Resources:</u></p> <p>http://www.mathgames.com/skill/8.106-graph-a-proportional-relationship</p>	<p>Dependent variable</p> <p>Function rule Function tables Functions</p> <p>Independent variable</p> <p>Proportional relationship</p>

Week 35:

Benchmarks to be taught:	Activities	Vocabulary
<p>Standards:</p> <p>6.NS.1: Understand that positive and negative numbers are used to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). Use positive and negative numbers to represent and compare quantities in real-world contexts, explaining the meaning of 0 in each situation.</p> <p>6.NS.2: Understand the integer number system. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$), and that 0 is its own opposite.</p> <p>6.NS.3: Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.</p>		
<p>Students will:</p> <ul style="list-style-type: none">• Understand positive numbers are used to describe quantities having opposite directions or values• Understand negative numbers are used to describe quantities having opposite directions or values• Use positive numbers to represent quantities in real-world problems• Use negative numbers to represent quantities in real-world problems• Compare quantities in real-world problems• Explain the meaning of 0 in different situations• Understand the integer number system• Recognize opposite signs of numbers on a number line• Recognize the opposite of the opposite of a number is the number itself• Understand that 0 is its own opposite• Compare rational numbers• Order rational numbers• Plot rational numbers on a number line• Write statements of order for rational numbers• Interpret statements of order for rational numbers• Explain statements of order for rational numbers	<p><u>AIMS:</u></p> <p><i>Line Dance</i> <i>Integer Avenue</i> <i>Who Has More Money?</i> <i>Finding Net Worth</i> <i>Integer Patterns</i> <i>Problem Pairing</i></p> <p><u>Internet Resources:</u></p>	<p>Absolute value Integer Number System Opposite Rational Numbers</p>

Week 36:

[illegible]

Benchmarks to be taught:	Activities	Vocabulary
Standards:		
Students will:	<p><u>AIMS:</u></p> <p><u>Internet Resources:</u></p>	