

Content Area:	MATHEMATICS	Grade Level:	6
Domain:	Ratios and Proportional Relationships		
Cluster:	Understand ratio concepts and use ratio reasoning to solve problems.		
Common Core State Standards in Mathematics (CCSSM)			
<p>6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. <i>For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”</i></p> <p>6.RP.2 Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. <i>For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”</i>¹</p> <p>6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <ol style="list-style-type: none"> 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. Use tables to compare ratios. Solve unit rate problems including those involving unit pricing and constant speed. <i>For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</i> Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. 			
¹ Expectations for unit rates in this grade are limited to non-complex fractions.			
Understandings: Students will understand...		Essential Questions	
<ul style="list-style-type: none"> ratios compare two values. unit rates are a/b given that the ratio is $a:b$, such that $b \neq 0$. 		<ul style="list-style-type: none"> Why does one need to compare numbers? When does one need to use ratios to compare numbers? How can one compare and contrast numbers? 	
Knowledge: Students will know...		Skills: Students will be able to...	
<ul style="list-style-type: none"> ratio language (the ratio of $a:b$ means that there is a of something for every b of a corresponding item). a/b is the same as $a:b$ or a to b. how to relate a percent of a quantity to a rate per 100. 		<ul style="list-style-type: none"> use ratio language to describe a ratio relationship between two quantities. use rate language in the context of a ratio relationship. use ratio and rate reasoning to solve real-world and mathematical problems. make a table of equivalent ratios relating quantities with whole-number measurements. solve unit rate problems including those involving unit pricing and constant rate. find a percent of a quantity as a rate per 100 and solve problems involving finding the whole, given a part or the percent. use ratio reasoning to convert measurement units. manipulate and transform units appropriately when multiplying or dividing quantities. 	
RESOURCES			
<ul style="list-style-type: none"> Bits & Pieces III Investigation 4; Supplemental Lessons; CCSS Investigation 1 			

Content Area:	MATHEMATICS	Grade Level:	6
Domain:	The Number System		
Cluster:	Apply and extend previous understandings of multiplication and division to divide fractions by fractions.		
Common Core State Standards in Mathematics (CCSSM)			
<p>6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. <i>For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$-cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?</i></p>			
Understandings: Students will understand...		Essential Questions	
<ul style="list-style-type: none"> the size of a factor impacts the size of the answer with respect to the other factor. division by a rational number may result in a quotient whose value is bigger than, equal to, or smaller than the value of the dividend. 		<ul style="list-style-type: none"> What is represented by division of a fraction by a fraction? What type of visual models can be used to represent division of fractions? How are division and multiplication of a fraction by a fraction related? 	
Knowledge: Students will know...		Skills: Students will be able to...	
<ul style="list-style-type: none"> multiplication with fractions represents part of a part. division of a fraction by a <u>proper fraction</u> creates a larger answer. multiplication of a fraction by a <u>proper fraction</u> creates a smaller answer. 		<ul style="list-style-type: none"> compute quotients of fractions. interpret quotients of fractions. create a story context for division. solve word problems involving division of fractions. 	
RESOURCES			
<ul style="list-style-type: none"> Bits & Pieces II Investigation 4; Supplemental Lessons 			

Content Area:	MATHEMATICS	Grade Level:	6
Domain:	The Number System		
Cluster:	Compute fluently with multi-digit numbers and find common factors and multiples.		
Common Core State Standards in Mathematics (CCSSM)			
6.NS.2 Fluently divide multi-digit numbers using <u>the standard algorithm</u> .			
6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using <u>the standard algorithm</u> for each operation.			
6.NS.4 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 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. <i>For example, express $36 + 8$ as $4(9 + 2)$.</i>			
Understandings: Students will understand...		Essential Questions	
<ul style="list-style-type: none"> the proper operations and procedures must be determined in order to solve problems. factors of a (whole) number are always less than or equal to the number itself. multiples of a (whole) number are always greater than or equal to the number itself. 		<ul style="list-style-type: none"> Why would one need to find common factors and multiples? In what situation would one want to use the distributive property to add two whole numbers? What type(s) of problems require using multi-digit decimal operations? 	
Knowledge: Students will know...		Skills: Students will be able to...	
<ul style="list-style-type: none"> the standard algorithm for division of multi-digit numbers the standard algorithms for addition, subtraction, multiplication, and division of multi-digit decimals the definition of a factor. the process of finding a factor. the definition of a multiple. the process of finding a multiple. how to find the prime factorization of a number. how to factor out a number from the sum of two whole numbers 		<ul style="list-style-type: none"> fluently divide using the standard algorithm. fluently add multi-digit decimals using the standard algorithm. fluently subtract multi-digit decimals using the standard algorithm. fluently multiply multi-digit decimals using the standard algorithm. fluently divide multi-digit decimals using the standard algorithm. find the greatest common factor of two whole numbers less than or equal to 100 find 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 1-100 with a common factor as a multiple of the sum of two whole numbers with no common factor. <i>For example, express $36 + 8$ as $4(9 + 2)$.</i> 	
RESOURCES			
<ul style="list-style-type: none"> Bits & Pieces III; Supplemental Lessons; CCSS Investigation 2 			

Content Area:	MATHEMATICS	Grade Level:	6
Domain:	The Number System		
Cluster:	Apply and extend previous understandings of numbers to the system of rational numbers.		
Common Core State Standards in Mathematics (CCSSM)			
<p>6.NS.5 Understand that positive and negative numbers are used together 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 quantities in real-world contexts, explaining the meaning of 0 in each situation.</p> <p>6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.</p> <ol style="list-style-type: none"> 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. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane. <p>6.NS.7 Understand ordering and absolute value of rational numbers.</p> <ol style="list-style-type: none"> Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. <i>For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.</i> Write, interpret, and explain statements of order for rational numbers in real-world contexts. <i>For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C.</i> Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. <i>For example, for an account balance of -30 dollars, write $-30 = 30$ to describe the size of the debt in dollars.</i> Distinguish comparisons of absolute value from statements about order. <i>For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.</i> <p>6.NS.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p>			
Understandings: Students will understand...		Essential Questions	
<ul style="list-style-type: none"> positive and negative numbers are used together 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). a rational number is a point on the number line. rational numbers on the number line are oriented from left to right rational numbers have an order that exists related to their location on a number line. the absolute value of a rational number is its distance from 0 on the number line. the distance from a point on the coordinate system to the origin (0,0) is related to the absolute value of its x- and y- coordinates . 		<ul style="list-style-type: none"> What are some rational numbers around us? What are some non-rational numbers around us? How can ordering of rational numbers help to make sense of the world around us? When is the absolute value of a rational number used in real life? 	

Knowledge: Students will know...	Skills: Students will be able to...
<ul style="list-style-type: none"> • opposite signs of numbers indicate locations on opposite sides of 0 on the number line. • the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite. • signs of numbers in ordered pairs indicate locations in quadrants of the coordinate plane. • that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. • how to find the absolute value of a rational number. 	<ul style="list-style-type: none"> • use positive and negative numbers to represent quantities in real-world contexts. • explain the meaning of 0 in situations using positive and negative numbers. • extend number-line diagrams and coordinate axes to represent points on the line and in the plane with negative number coordinates. • find and position integers and other rational numbers on a horizontal or vertical number line diagram. • find and position pairs of integers and other rational numbers on a coordinate plane. • interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. <i>For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.</i> • write, interpret, and explain statements of order for rational numbers in real-world contexts. <i>For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C.</i> • interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. <i>For example, for an account balance of -30 dollars, write $-30 = 30$ to describe the size of the debt in dollars.</i> • distinguish comparisons of absolute value from statements about order. <i>For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.</i> • solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. • find distances between points with the same first coordinate or the same second coordinate, using coordinates and absolute value.
RESOURCES	
<ul style="list-style-type: none"> • Bits & Pieces III Investigations 1, 2, 4; Covering & Surrounding Investigation 2; Data About Us Investigation 2; Supplemental Lessons; CCSS Investigation 2 	

Content Area:	MATHEMATICS	Grade Level:	6
Domain:	Expressions and Equations		
Cluster:	Apply and extend previous understandings of arithmetic to algebraic expressions.		

**Common Core State Standards in Mathematics
(CCSSM)**

6.EE.1 Write and evaluate numerical expressions involving whole-number exponents.

6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers.

- Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as $5 - y$.*
- Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.*
- Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = 1/2$.*

6.EE.3 Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.*

6.EE.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.*

Understandings: Students will understand...	Essential Questions
<ul style="list-style-type: none"> algebraic expressions have letters that stand for numbers and arithmetic expressions have only numbers and no letters. numbers can be substituted in place of letters in algebraic expressions algebraic expressions can be equivalent to each other area, perimeter, or volume formulas are algebraic expressions that verbal sentences or expressions can be written as algebraic expressions 	<ul style="list-style-type: none"> How are mathematical expressions in which letters stand for numbers useful in real life? What is the purpose of identifying equivalent expressions? What is the difference between an algebraic expression and an arithmetic expression?

Knowledge: Students will know...	Skills: Students will be able to...
<ul style="list-style-type: none"> • the definition of sum, term, product, factor, quotient, coefficient. • how to identify two algebraic expressions that are equivalent . • to apply the conventional order of operations when no parentheses are given. • how to apply the distributive property. 	<ul style="list-style-type: none"> • write numerical expressions involving whole-number exponents. • evaluate numerical expressions involving whole-number exponents. • write expressions in which letters stand for numbers. • read expressions in which letters stand for numbers. • evaluate expressions in which letters stand for numbers. • write expressions that record operations with numbers and with letters standing for numbers. • identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. • evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). • apply the properties of operations to generate equivalent expressions. identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).
RESOURCES	
<ul style="list-style-type: none"> • Covering & Surrounding; Bits & Pieces III Investigations 1, 2, 3; Bits & Pieces II review; Prime Time review; Supplemental Lessons; CCSS Investigation 2 	

Content Area:	MATHEMATICS	Grade Level:	6
Domain:	Expressions and Equations		
Cluster:	Reason about and solve one-variable equations and inequalities.		

**Common Core State Standards in Mathematics
(CCSSM)**

6.EE.5 Understand solving an equation or inequality as a process of answering a 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.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.

6.EE.8 Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Understandings: Students will understand that...	Essential Questions
<ul style="list-style-type: none"> • solving an equation or inequality will find the value(s) that will make the statement true. • a variable can represent an unknown number. • a variable can represent any number in a specified set. 	<ul style="list-style-type: none"> • What is the difference between an equation and an inequality? • What does it mean when a number does not satisfy an equation or inequality?

Knowledge: Students will know...	Skills: Students will be able to . . .
<ul style="list-style-type: none"> • that a random number may not make an equation or inequality true. • that a variable in an equation or inequality represents an unknown number. • inequalities of the form $x > c$ or $x < c$ have infinitely many solutions. • that solutions of inequalities of form $x > c$ or $x < c$ can be represented as intervals on the number line. • that while inequalities may have infinitely many solutions, equations have a finite number of solutions. 	<ul style="list-style-type: none"> • use substitution to determine whether a given number in a specified set will make an equation or inequality true. • use variables to represent numbers • solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ for cases in which p, q and x are all nonnegative rational numbers. • solve real-world and mathematical problems by writing and solving equations of the form $px = q$ for cases in which p, q and x are all nonnegative rational numbers. • write inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. • recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions • represent solutions of inequalities on number line diagrams

RESOURCES

- Bits & Pieces III Investigations 1, 2, 3; Bits & Pieces II review; Supplemental Lessons; CCSS Investigations 2, 3

Content Area:	MATHEMATICS	Grade Level:	6
Domain:	Expressions and Equations		
Cluster:	Represent and analyze quantitative relationships between dependent and independent variables.		
Common Core State Standards in Mathematics (CCSSM)			
<p>6.EE.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. <i>For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.</i></p>			
Understandings: Students will understand that...		Essential Questions	
<ul style="list-style-type: none"> quantities can change in relation to one another and the relationship can be expressed as an equation relating the two. the value of one quantity determines the value of the second quantity. two quantities may or may not be related. 		<ul style="list-style-type: none"> How is a relationship represented in tables? How is a relationship represented in graphs? How is a relationship represented in an equation? How can one tell that there is a relationship between two quantities? Why is it useful to write an equation to express one quantity in terms of another quantity? 	
Knowledge: Students will know...		Skills: Students will be able to . . .	
<ul style="list-style-type: none"> the meaning of a dependent variable. the meaning of an independent variable. when two quantities are related to each other. 		<ul style="list-style-type: none"> use variables to represent two quantities in a real-world problem that change in relationship to one another. write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. use the equation of a relationship between two dependent and independent variables to predict ordered pairs that are not displaced in a given graph or table 	
RESOURCES			
<ul style="list-style-type: none"> Supplemental Lessons; CCSS Investigation 2 			

Content Area:	MATHEMATICS	Grade Level:	6
Domain:	Geometry		
Cluster:	Solve real-world and mathematical problems involving area, surface area, and volume.		
Common Core State Standards in Mathematics (CCSSM)			
<p>6.G.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.</p> <p>6.G.2. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, 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 in the context of solving real-world and mathematical problems.</p> <p>6.G.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 in the context of solving real-world and mathematical problems.</p> <p>6.G.4. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.</p>			
Understandings: Students will understand that...		Essential Questions	
<ul style="list-style-type: none"> triangles and rectangles can be used to find areas of other polygons a 2-D net of a 3-D figure can be used to find the surface area of the figure surface area is related to “wrapping” or “covering” of a surface with square units, i.e. squares with side length of one unit volume is related to “filling” of space with cubic units, i.e. cubes with edges of one-unit length 		<ul style="list-style-type: none"> Why would one want to calculate areas of polygons? How are areas of polygons found? How are volume and surface area of a right rectangular prism found? Why are volumes represented in cubic units? What is the connection between the net and surface area of 3-D figures? 	
Knowledge: Students will know...		Skills: Students will be able to ...	
<ul style="list-style-type: none"> that areas of triangles, including right triangles, and rectangles can be used to find areas of other polygons, when the other polygons are decomposed into triangles or composed into rectangles that the volume of a right rectangular prism is the number of unit cubes it contains (of the appropriate unit fraction edge length) the total area of a net of a 3-D figure is the surface area of the figure 		<ul style="list-style-type: none"> find the area of right triangles. find the area of other triangles. find the area of special quadrilaterals. find the areas of polygons by composing them into rectangles or decomposing them into triangles represent three-dimensional figures using nets to find the surface area of a 3-D figure by finding the total area of its 2-D net 	
RESOURCES			
<ul style="list-style-type: none"> Covering & Surrounding; Supplemental Lessons; CCSS Investigations 3, 4 			

Content Area:	MATHEMATICS	Grade Level:	6
Domain:	Statistics and Probability		
Cluster:	Develop understanding of statistical variability.		
Common Core State Standards in Mathematics (CCSSM)			
<p>6.SP.1. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. <i>For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages.</i></p> <p>6.SP.2. 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.</p> <p>6.SP.3. Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.</p>			
Understandings: Students will understand that...		Essential Questions	
<ul style="list-style-type: none"> • statistical questions anticipate variability • a set of data has a distribution • center and spread are two related but different ways of describing a set of data 		<ul style="list-style-type: none"> • What is a statistical question? • What is a distribution? • What is the difference between the center and the spread of a numerical set? • How are data sets described? 	
Knowledge: Students will know...		Skills: Students will be able to ...	
<ul style="list-style-type: none"> • that a set of data can be described by its center, spread, and overall shape • how to find the center of a numerical data set • the center summarizes a data set with a single number • the spread is a measure of variation of all values in a data set about the center 		<ul style="list-style-type: none"> • recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. <i>For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages.</i> • 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. • recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number. 	
RESOURCES			
<ul style="list-style-type: none"> • Data About Us; Supplemental Lessons; CCSS Investigation 4 			

Content Area:	MATHEMATICS	Grade Level:	6
Domain:	Statistics and Probability		
Cluster:	Summarize and describe distributions.		
Common Core State Standards in Mathematics (CCSSM)			
<p>6.SP.4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.</p> <p>6.SP.5. Summarize numerical data sets in relation to their context, such as by:</p> <ol style="list-style-type: none"> Reporting the number of observations. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. 			
Understandings: Students will understand that...		Essential Questions	
<ul style="list-style-type: none"> numerical data can be displayed in multiple ways. summaries of numerical data vary based on their contexts. overall patterns of numerical data can vary. some patterns in numerical data can have striking deviations. 		<ul style="list-style-type: none"> How do measures of center and variability help us make sense of the world around us? In what contexts are the measures of center and variability preferred descriptions of the data? Why do we need multiple ways of describing numerical data? 	
Knowledge: Students will know...		Skills: Students will be able to . . .	
<ul style="list-style-type: none"> how to display numerical data using dot plots, histograms, and box plots. how to summarize numerical data in multiple ways. that the choice of measures of center and variability depends on the context. how to identify a striking deviation from the overall pattern. real life examples of patterns with, and without, striking deviations. 		<ul style="list-style-type: none"> construct dot plots, histograms, and box plots. summarize numerical data by: <ul style="list-style-type: none"> reporting the number of observations; describing the nature of the attribute under investigation, including how it was measured and its units of measurement; giving quantitative measures of center (median and/or mean) giving quantitative measures of variability (interquartile range and/or mean absolute deviation); describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. 	
RESOURCES			
<ul style="list-style-type: none"> Data About Us 			