Pojoaque Valley Schools

Mathematics CCSS Pacing Guide

6th Grade

**Skills adapted from*
Kentucky Department of Education
Math Deconstructed Standards
*** Evidence of attainment/assessment, Vocabulary, Knowledge, Skills and Essential Elements adapted from*
Wisconsin Department of Education and
Standards Insights Computer-Based Program

Version 3

2015-2016

Pojoaque Valley Schools
Math Common Core Pacing Guide Introduction

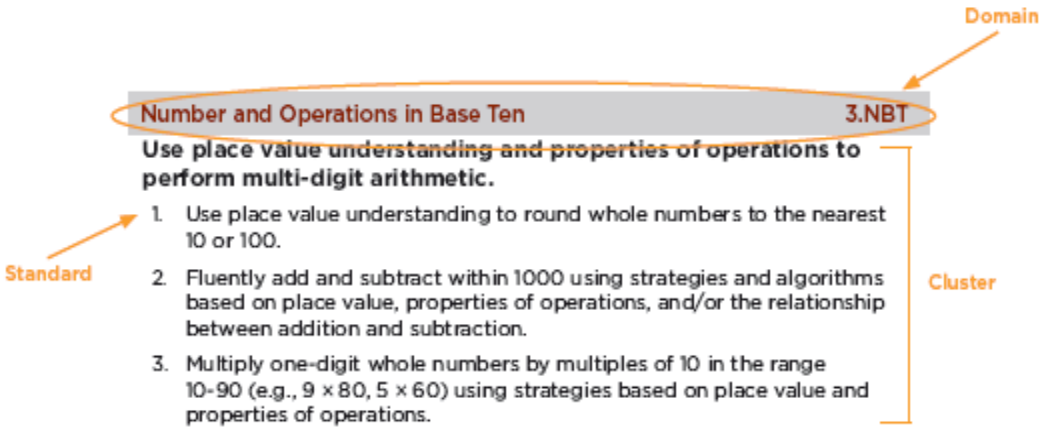
The New Mexico Public Education Department published the Assessment Blueprints for End-of-Course Exams with those standards clearly identified that are measured. While students in grades 3 through 11 who take PARCC for reading, math and science are not required to take an End-of-Course Exam (unless required for a graduation requirement), the blueprints outline those standards and provide released items for practice. In this pacing guide, standards that are identified as being measured are highlighted in bold text for easy reference.

The Pojoaque Valley Schools pacing guide documents are intended to guide teachers' use of Common Core State Standards (CCSS) over the course of an instructional school year. The guides identify the **focus standards by quarter.** Teachers should understand that the **focus standards** emphasize deep instruction for that timeframe. However, because a certain quarter does not address specific standards, it should be understood that previously taught standards should be reinforced while working on the focus standards for any designated quarter. Some standards will **recur** across all quarters due to their importance and need to be addressed on an ongoing basis.

The Math pacing guides are grounded in four key components: the key fluency expectations for each grade level, the critical areas designated in the CCSS Math Standards, the Common Core Standards for Mathematics and the integration of the Standards for Mathematical Practice. In planning instruction it is important that math teachers incorporate the 8 mathematical practices for mathematics to ensure that the Common Core standards are mastered by all students.

The Math CCSS pacing guides contain the following elements:

- **Grade Level:** Identify the grade level of the intended standard
- **Standard with code:** Defines the knowledge and skills for students. The code contains the grade level, domain and standard number.
- **Domain:** Larger groups of related standards**.** Standards from different domains may sometimes be closely related.
- **Cluster:** Summarize groups of related standards.
- **Skills and Knowledge:** Identified as subsets of the standard and appear in one or more quarters. Define the skills and knowledge embedded in the standard to meet the full intent of the standard itself.



Version 3 of the Pojoaque Valley School District Pacing guides for Reading Language Arts and Mathematics are based on the done by staff and teachers of the school district using the Kentucky model, and a synthesis of the excellent work done by Wisconsin Cooperative Educational Service Agency 7 (CESA 7) School Improvement Services, Green Bay, WI. (2010), *Standards Insight project.*

> *Standards Insight* was developed to give educators a tool for in depth investigation of the Common Core State Standards (CCSS). The CCSS are "unpacked" or dissected, identifying specific knowledge, skills, vocabulary, understandings, and evidence of student attainment for each standard. *Standards Insight* may be used by educators to gain a thorough grasp of the CCSS or as a powerful collaborative tool supporting educator teams through the essential conversations necessary for developing shared responsibility for student attainment of all CCSS. . . . serves as a high-powered vehicle to help educators examine the standards in a variety of ways.

The Version 2 Pojoaque Valley School District Pacing guides present the standard with levels of detail and then the necessary skills by quarter based on the Kentucky model. On the second page for each standard, the synthesis of the *Standards Insight* project is presented in a way that further defines and refines the standard such that teachers may use the information to refine their teaching practices.

Based on this synthesis of work and the purpose for the unpacking, the following fields were selected as most helpful to aid in understanding of the Common Core Standards that will lead to shifts in instruction:

1. Evidence of Student Attainment: "What could students do to show attainment of the standard?"

2. Vocabulary: "What are key terms in the standard that are essential for interpretation and understanding in order for students to learn the content?"

3. Knowledge: "What does the student need to know in order to aid in attainment of this standard?"

4. Skills and Understanding: "What procedural skill(s) does the student need to demonstrate for attainment of this standard?", and "What will students understand to attain the standard?"

The following fields are included in Version 2:

Evidence of Student Attainment: This field describes what the standard may look like in student work. Specific expectations are listed in performance terms showing what students will say or do to demonstrate attainment of the standard.

Standards Vocabulary: This field lists words and phrases specific to each standard. Shared interpretation and in depth understanding of standards vocabulary are essential for consistent instruction across and within grade levels and content areas.

Knowledge: The knowledge field lists what students will need to know in order to master each standard (facts, vocabulary, definitions).

Skills and Understanding: The skills field identifies the procedural knowledge students apply in order to master each standard (actions, applications, strategies), as well as the overarching understanding that connects the standard, knowledge, and skills. Understandings included in *Standards Insight* synthesize ideas and have lasting value.

Instructional Achievement Level Descriptors: This field lists, by level what a teacher can expect to see in a student who achieves at a particular level. Additionally teachers can use this filed to differentiate instruction to provide further growth for student's in moving from one level to another. This field can be used to provide specific teaching approaches to the standard in question.

A Note About High School Standards: The high school standards are listed in conceptual categories. Conceptual categories portray a coherent view of high school instruction that crosses traditional course boundaries. We have done everything possible, with teacher input, to link individual standards to the appropriate pacing guides,

References to Tables: References to tables within the standards in the *Standards Insight* tool refer to Tables 1-5 found in the glossary of the Mathematics Common Core State Standards document found at www.corestandards.org.

Quarterly View of Standards **6th Grade Mathematics Pacing Guide** **Quarter**	**1**	**2**	**3**	**4**
6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *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."*	**X**			
6.RP.2 Understand the concept of a unit rate *a/b* associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is ¾ cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."* ([1] Expectations for unit rates in this grade are limited to non-complex fractions.)	**X**			
6.RP.3a 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. 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.	**X**			
6.RP.3b 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. Solve unit rate problems including those involving unit pricing and constant speed. *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?*	**X**			
6.RP.3c 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. 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.	**X**			
6.RP.3d 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. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	**X**			
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. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (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?*	**X**			
6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.	**X**			
6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	**X**			
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. *For example, express 36 + 8 as 4 (9 + 2).*	**X**			

Quarter	1	2	3	4
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.		**X**		
6.NS.6a 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. 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.		**X**		
6.NS.6b 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. 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.		**X**		
6.NS.6c 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. 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.		**X**		
6.NS.7a Understand ordering and absolute value of rational numbers. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *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.*		**X**		
6.NS.7b Understand ordering and absolute value of rational numbers. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3 ^{o}C > –7 ^{o}C to express the fact that –3 ^{o}C is warmer than –7 ^{o}C.*		**X**		
6.NS.7c Understand ordering and absolute value of rational numbers. 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. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.*		**X**		
6.NS.7d Understand ordering and absolute value of rational numbers. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*		**X**		
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.		**X**		
6.EE.1 Write and evaluate numerical expressions involving whole-number exponents.			**X**	
6.EE.2a 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.*			**X**	

Quarter	1	2	3	4
6.EE.2b Write, read, and evaluate expressions in which letters stand 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. *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.*			**X**	
6.EE.2c: Write, read, and evaluate expressions in which letters stand for numbers. 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 = s3 and A = 6 s2 to find the volume and surface area of a cube with sides of length s = 1/2.*			**X**	
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.*			**X**	
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.*			**X**	
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.			**X**	
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.			**X**	
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.			**X**	
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.			**X**	
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. *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.*			**X**	
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.				**X**
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 $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.				**X**
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.				**X**
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.				**X**

Quarter	1	2	3	4
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. *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.*				**X**
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.				**X**
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.				**X**
6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.				**X**
6.SP.5abcd Summarize numerical data sets in relation to their context, such as by: a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. 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. d. 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.				**X**

CCSS Math Pacing Guide
Grade 6

<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. 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.”</td></tr>
<tr><td colspan="2">Domain: Ratios and Proportional Relationships</td><td colspan="6">Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</td></tr>
<tr><td colspan="2">Quarter 1:
Write ratio notation-__:__, __ to __, __/__

Know order matters when writing a ratio

Know ratios can be simplified

Know ratios compare two quantities; the quantities do not have to be the same unit of measure

Recognize that ratios appear in a variety of different contexts; part-to-whole, part-to-part, and rates

Generalize that all ratios relate two quantities or measures within a given situation in a multiplicative relationship.

Analyze your context to determine which kind of ratio is represented</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
</table>

Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical situations involving multiplicative comparisons, Communicate the relationship of two quantities using ratio language.	Ratio Ratio language	Students know: Characteristics of additive situations (Table 1), Characteristics of multiplicative situations (Table 2).	Students understand that/are able to: Compare and contrast additive vs. multiplicative contextual situations, Represent multiplicative comparisons in ratio notation and language.	**EE6.RP.1-3.** Demonstrate a simple ratio relationship.	**Level IV Students will:** **EE6.RP.1-3.** Use a ratio to describe a relationship using numbers and objects. Ex. Given an even number of red and twice as many green beads, identify the ratio of green beads compared to red beads. Ex. While preparing a recipe, fill in a ratio of flour to sugar (e.g., one cup of sugar to four cups of flour.) Ex. Compare the number of male students to female students. Ex. Given the quantity of materials available and the number of groups who will conduct a science experiment, use a ratio relationship to describe how much each group will receive. **Level III Students will:** **EE6.RP.1-3.** Demonstrate a simple ratio relationship. Ex. Give a pen and a pencil to each classmate. Ex. After the teacher explains what materials each group needs, use a C to tell another student to get two cups for one table. **Level II Students will:** **EE6.RP.1-3.** Complete a pattern given a simple ratio. Ex. Take two steps on a number line each time the teacher says “step.” Ex. Give a ratio of two-to-one, complete a BBB pattern (e.g., jump, jump, clap; jump, jump, clap). **Level I Students will:** **EE6.RP.1-3.** Identify a one-to-one relationship. Ex. Given a stack of napkins, give a napkin to each classmate. Ex. When sorting mail in the main office, place one copy of the school newsletter in each teacher’s mailbox. Ex. Touch each object as teacher counts.

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<tr><td colspan="2">Domain: Ratios and Proportional Relationships</td><td colspan="6">Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</td></tr>
<tr><td colspan="2">Quarter 1:
Identify and calculate a unit rate.

Use appropriate math terminology as related to rate.

Analyze the relationship between a ratio a:b and a unit rate a/b where
b ≠ 0.</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical situations involving multiplicative comparisons, Use rate language to explain the relationships between ratio of two quantities and the associated unit rate of one of the quantities in terms of the other.	Unit rate Ratio Rate language	Students know: Characteristics of multiplicative comparison situations, Rate and ratio language, Techniques for determining unit rates.	Students understand that/are able to: Explain relationships between ratios and the related unit rates, Represent contextual relationships as ratios.	**EE6.RP.1-3.** Demonstrate a simple ratio relationship.	**Level IV Students will:** **EE6.RP.1-3.** Use a ratio to describe a relationship using numbers and objects. Ex. Given an even number of red and twice as many green beads, identify the ratio of green beads compared to red beads. Ex. While preparing a recipe, fill in a ratio of flour to sugar (e.g., one cup of sugar to four cups of flour.) Ex. Compare the number of male students to female students. Ex. Given the quantity of materials available and the number of groups who will conduct a science experiment, use a ratio relationship to describe how much each group will receive. **Level III Students will:** **EE6.RP.1-3.** Demonstrate a simple ratio relationship. Ex. Give a pen and a pencil to each classmate. Ex. After the teacher explains what materials each group needs, use a C to tell another student to get two cups for one table. **Level II Students will:** **EE6.RP.1-3.** Complete a pattern given a simple ratio. Ex. Take two steps on a number line each time the teacher says "step." Ex. Give a ratio of two-to-one, complete a BBB pattern (e.g., jump, jump, clap; jump, jump, clap). **Level I Students will:** **EE6.RP.1-3.** Identify a one-to-one relationship. Ex. Given a stack of napkins, give a napkin to each classmate. Ex. When sorting mail in the main office, place one copy of the school newsletter in each teacher's mailbox. Ex. Touch each object as teacher counts.

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a. 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.</td></tr>
<tr><td colspan="2">Domain: Ratios and Proportional Relationships</td><td colspan="6">Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</td></tr>
<tr><td colspan="2">Quarter 1:
Make a table of equivalent ratios using whole numbers.

Find the missing values in a table of equivalent ratios.

Plot pairs of values that represent equivalent ratios on the coordinate plane.

Use tables to compare proportional quantities.</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical situations involving ratio and rate (including those involving unit pricing, constant speed, and measurement conversions), Represent the situations using a variety of strategies (e.g., tables of equivalent ratios, changing to unit rate, tape diagrams, double number line diagrams, equations, and plots on coordinate planes) in order to solve problems, find missing values on tables and interpret relationships and results, • Change given rates to unit rates in order to find and justify solutions to problems. Given contextual or mathematical situations involving percents, Interpret the percent as	Rate Ratio Rate reasoning Ratio reasoning Transform units Quantities	Students know: Strategies for representing contexts involving rates and ratios including; tables of equivalent ratios, changing to unit rate, tape diagrams, double number lines, equations, and plots on coordinate planes, Strategies for finding equivalent ratios, Strategies for using ratio reasoning to convert measurement units.	Students understand that/are able to: Represent ratio and rate situations using a variety of strategies (e.g., tables of equivalent ratios, changing to unit rate, tape diagrams, double number line diagrams, equations, and plots on coordinate planes), Use ratio and rate reasoning to explain connections among representations and justify solutions, Solve and justify solutions for rate problems including unit pricing, constant speed, measurement conversions, and situations involving percents, Solve problems and justify solutions when finding the whole given a part	**EE6.RP.1-3.** Demonstrate a simple ratio relationship.	**Level IV Students will:** **EE6.RP.1-3.** Use a ratio to describe a relationship using numbers and objects. Ex. Given an even number of red and twice as many green beads, identify the ratio of green beads compared to red beads. Ex. While preparing a recipe, fill in a ratio of flour to sugar (e.g., one cup of sugar to four cups of flour.) Ex. Compare the number of male students to female students. Ex. Given the quantity of materials available and the number of groups who will conduct a science experiment, use a ratio relationship to describe how much each group will receive. **Level III Students will:** **EE6.RP.1-3.** Demonstrate a simple ratio relationship. Ex. Give a pen and a pencil to each classmate. Ex. After the teacher explains what materials each group needs, use a C to tell another student to get two cups for one table. **Level II Students will:** **EE6.RP.1-3.** Complete a pattern given a simple ratio. Ex. Take two steps on a number line each time the teacher says "step." Ex. Give a ratio of two-to-one, complete a BBB pattern (e.g., jump, jump, clap; jump, jump, clap). **Level I Students will:** **EE6.RP.1-3.** Identify a one-to-one relationship. Ex. Given a stack of napkins, give a napkin to each classmate. Ex. When sorting mail in the main office, place one copy of the school newsletter in each teacher's mailbox. Ex. Touch each object as teacher counts.

rate per 100, Solve problems and justify solutions when finding the whole given a part and the percent. (e.g., Brian has made 3 batches of bagels so far this morning. His boss told him that he has only completed 30% of the work she expects done during the shift. How many batches of bagels did Brian's boss expect him to make during each shift?).			and the percent, Use ratio reasoning, multiplication, and division to transform and interpret measurements.		

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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical situations involving ratio and rate (including those involving unit pricing, constant speed, and measurement conversions), Represent the situations using a variety of strategies (e.g., tables of equivalent ratios, changing to unit rate, tape diagrams, double number line diagrams, equations, and plots on coordinate planes) in order to solve problems, find missing values on tables and interpret relationships and results, Change given rates to unit rates in order to find and justify solutions to problems. Given contextual or mathematical situations involving percents, Interpret the percent as rate per 100, Solve problems and justify solutions when	Rate Ratio Rate reasoning Ratio reasoning Transform units Quantities	Students know: Strategies for representing contexts involving rates and ratios including; tables of equivalent ratios, changing to unit rate, tape diagrams, double number lines, equations, and plots on coordinate planes, Strategies for finding equivalent ratios, Strategies for using ratio reasoning to convert measurement units.	Students understand that/are able to: Represent ratio and rate situations using a variety of strategies (e.g., tables of equivalent ratios, changing to unit rate, tape diagrams, double number line diagrams, equations, and plots on coordinate planes), Use ratio and rate reasoning to explain connections among representations and justify solutions, Solve and justify solutions for rate problems including unit pricing, constant speed, measurement conversions, and situations involving percents, Solve problems and justify solutions when finding the whole given a part and the percent, Use ratio reasoning, multiplication, and division to transform	**EE6.RP.1-3.** Demonstrate a simple ratio relationship.	**Level IV Students will:** **EE6.RP.1-3.** Use a ratio to describe a relationship using numbers and objects. Ex. Given an even number of red and twice as many green beads, identify the ratio of green beads compared to red beads. Ex. While preparing a recipe, fill in a ratio of flour to sugar (e.g., one cup of sugar to four cups of flour.) Ex. Compare the number of male students to female students. Ex. Given the quantity of materials available and the number of groups who will conduct a science experiment, use a ratio relationship to describe how much each group will receive. **Level III Students will:** **EE6.RP.1-3.** Demonstrate a simple ratio relationship. Ex. Give a pen and a pencil to each classmate. Ex. After the teacher explains what materials each group needs, use a C to tell another student to get two cups for one table. **Level II Students will:** **EE6.RP.1-3.** Complete a pattern given a simple ratio. Ex. Take two steps on a number line each time the teacher says “step.” Ex. Give a ratio of two-to-one, complete a BBB pattern (e.g., jump, jump, clap; jump, jump, clap). **Level I Students will:** **EE6.RP.1-3.** Identify a one-to-one relationship. Ex. Given a stack of napkins, give a napkin to each classmate. Ex. When sorting mail in the main office, place one copy of the school newsletter in each teacher’s mailbox. Ex. Touch each object as teacher counts.

finding the whole given a part and the percent. (e.g., Brian has made 3 batches of bagels so far this morning. His boss told him that he has only completed 30% of the work she expects done during the shift. How many batches of bagels did Brian's boss expect him to make during each shift?).			and interpret measurements.		

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 6.RP.3c 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.
c. 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.</td></tr>
<tr><td colspan="2">Domain: Ratios and Proportional Relationships</td><td colspan="6">Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</td></tr>
<tr><td colspan="2">Quarter 1:
Know that a percent is a ratio of a number to 100.

Find a % of a number as a rate per 100.

Solve real-world and mathematical problems involving ratio and rate,
e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

Apply the concept of unit rate to solve real-world problems involving constant speed.

Solve real-world problems involving finding the whole, given a part and a percent.</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
</table>

Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
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justify solutions when finding the whole given a part and the percent. (e.g., Brian has made 3 batches of bagels so far this morning. His boss told him that he has only completed 30% of the work she expects done during the shift. How many batches of bagels did Brian's boss expect him to make during each shift?).			division to transform and interpret measurements.		

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 6.RP.3d 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.
d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</td></tr>
<tr><td colspan="2">Domain: Ratios and Proportional Relationships</td><td colspan="6">Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</td></tr>
<tr><td colspan="2">Quarter 1:
Apply ratio reasoning to convert measurement units in real-world and mathematical problems.

Apply ratio reasoning to convert measurement units by multiplying or dividing in real-world and mathematical problems</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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. For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (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?</td></tr>
<tr><td colspan="2">Domain: The Number System</td><td colspan="6">Cluster: Apply and extend previous understandings of multiplication and division to divide fractions by fractions.</td></tr>
<tr><td colspan="2">Quarter 1:
Compute quotients of fractions divided by fractions (including mixed numbers).

Interpret quotients of fractions

Solving word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
</table>

Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given a division problem involving a fraction divided by a fraction, Create an appropriate story context, Solve the problem using visual fraction models or an equation, Explain the relationship between the model and the problem, Interpret the solution, Use the inverse relationship between multiplication and division, or concept of division as repeated subtraction, to explain and justify the solution.	Visual fraction models	Students know: Strategies for representing fractions and operations on fractions using visual models, The inverse relationship between multiplication and division ($a \div b = c$ implies that $a = b \times c$).	Students understand that/are able to: Represent fractions and operations on fractions using visual models, Interpret quotients resulting from the division of a fraction by a fraction, Accurately determine quotients of fractions by fractions using visual models/equations, Justify solutions to division problems involving fractions using the inverse relationship between multiplication and division.	**EE6.NS.1.** Compare the relationships between two unit fractions.	**Level IV Students will:** **EE6.NS.1.** Compare the relationships between the three unit fractions (1/2, 1/4, 1/8). Ex. Given three measuring cups filled to 1/2, 1/4, and 1/8 with water, compare fractional amounts to determine which is greater. Ex. Given pictorial representations of shaded pictures and/or fraction bars, compare fractions to determine which is a smaller or lesser amount. Ex. Using circle shaped fraction puzzles, compare a 1/2, 1/4, and 1/8 to determine which is greater. **Level III Students will:** **EE6.NS.1.** Compare the relationships between two unit fractions. Ex. Given two measuring cups of 1/2 and 1/4 full of sand, compare the amounts in each of the measuring cups to a whole cup. Which is more? Ex. Given two measuring cups of 1/4 and 1/8 full of water, compare the amounts in each of the measuring cups to a whole cup. Which is more? Ex. When given a group of even-numbered objects that represents 1/2 and 1/4, determine which set is more or less. Ex. Split an even-numbered group of objects into two equal groups to show one half of the group; then split each group again to show fourths of the whole; and split each group again to show eighths of the whole. **Level II Students will:** **EE6.NS.1.** Demonstrate an amount of 1/2. Ex. Fold one piece of paper in half to show two halves in every one whole. Ex. Shade a shape to show 1/2. Ex. Given a whole and a half, identify the half (e.g., a whole or half sandwich). Ex. Shown a glass that is full and a glass that is 1/2 (half) full, select the half-full glass. **Level I Students will:** **EE6.NS.1.** Distinguish between more or less. Ex. Given two groups of objects with significantly different amounts (three vs. 10), determine which group has more or less. Ex. Given a picture of a familiar symmetrical object cut in half, combine both halves to make a whole.

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<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.</td></tr>
<tr><td colspan="2">Domain: The Number System</td><td colspan="6">Cluster: Compute fluently with multi-digit numbers and find common factors and multiples.</td></tr>
<tr><td colspan="2">Quarter 1:
Fluently divide multi-digit numbers using the standard algorithm with speed and accuracy.</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given a context which calls for the division of two whole numbers, Choose the most appropriate strategy for computing the answer, Produce accurate results using the standard algorithm when appropriate.	Standard algorithm (long division)	Students know: Strategies for computing answers to division problems, including the standard division algorithm.	Students understand that/are able to: Strategically choose and apply appropriate strategies for dividing, Accurately find quotients using the standard division algorithm.	**EE6.NS.2.** Apply the concept of fair share and equal shares to divide.	**Level IV Students will:** **EE6.NS.2.** Solve a division problem using the concept of equal shares. Ex. Given a real-life division problem, solve the problem using manipulatives. Ex. Given a group of objects, determine what number to give each classmate to create equal shares. Ex. Divide students into four equal groups for a sports tournament. Ex. When planting seeds for a science experiment, divide the seeds into equal shares. **Level III Students will:** **EE6.NS.2.** Apply the concept of fair share and equal shares to divide. Ex. When planting seeds for a science experiment, divide the seeds into 10 equal shares. Ex. Divide construction paper equally among classmates. Ex. Divide students in the classroom into two equal teams. Ex. Divide 10 one dollar bills into two fair shares (e.g., "If I find 10 dollars and I divide it equally with someone, how much do we each get?"). **Level II Students will:** **EE6.NS.2.** Identify the concept of division using fair and equal shares. Ex. Given a paper folded in half, identify whether they are equal shares.* Ex. Distribute cards in a card game giving each student a fair share. Ex. Given a set of books, divide them into two buckets. Ex. Given Ziploc baggies with an equal number of pencils in them, say the number of baggies and the number of pencils in each bag. **Level I Students will:** **EE6.NS.2.** Replicate equal sets. Ex. Given a model, replicate equal sets using rings and pattern blocks. Ex. Given a model, place five different colors in equal sets. ***Refer to the Common Core Essential Elements document for diagram.**

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</td></tr>
<tr><td colspan="2">Domain: The Number System</td><td colspan="6">Cluster: Compute fluently with multi-digit numbers and find common factors and multiples.</td></tr>
<tr><td colspan="2">Quarter 1:
Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation with speed and accuracy</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:
.</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given a context which calls for complex computation involving multi-digit decimals, Choose the most appropriate strategy for computing the answer, Produce accurate results efficiently using the standard algorithm for each operation when appropriate.	Standard algorithms (addition, subtraction, multiplication, and division)	Students know: Place value conventions (i.e., a digit in one place represents 10 times as much as it would represent in the place to its right and 1/10 of what it represents in the place to its left), Strategies for computing answers to complex addition, subtraction, multiplication, and division problems involving multi-digit decimals, including the standard algorithm for each operation.	Students understand that/are able to: Strategically choose and apply appropriate computation strategies, Accurately find sums, differences, products, and quotients using the standard algorithms for each operation.	**EE6.NS.3.** Solve two factor multiplication problems with products up to 50 using concrete objects and/or calculators.	**Level IV Students will:** **EE6.NS.3.** Solve multiplication problems with whole number products to 50 using numerical representations. Ex. Given a set of multiplication problems in numerical form, find the product. Ex. Given a computer program with multiplication problems, find the product. Ex. Find the product of whole numbers to 20 via multiple algorithms (e.g., different ways to get to 20 = 10 x 2, 2 x 10, 10 + 10 or 5 + 5 + 5 + 5). Ex. Given a story problem, find the product and represent it numerically (e.g., If I have three shirts and two pair of paints how many outfits can one make? If I have five rows of desks and 10 desks in each row, how many desks will I have? If I babysat for five days and earned 10 dollars each day how much money would I make?). **Level III Students will:** **EE6.NS.3.** Solve two factor multiplication problems with products up to 50 using concrete objects and/or calculators. Ex. Given a set of manipulatives, make three groups of three and then find the product. Ex. Given a 100s board, show 3 x 10, three sets of 10, and state the product. Ex. Given numbers paired with concrete representations, select the correct answer. **Level II Students will:** **EE6.NS.3.** Solve repeated addition problems where the addends are the same (i.e., 5 + 5 + 5 = 15 is equal to three groups of five) using concrete manipulatives and/or a calculator. Ex. Given a story problem, find the sum of a repeated addition problem using objects or their representations (e.g., If I have two rows of desks and three desks in each row how many desks will I have? If I babysat for three days and earned four dollars each day how much money would I make? [Given play money as a manipulative]). Ex. Given a picture of three groups of three pencils, represent and solve the repeated addition problem. Ex. Before starting an art project, gather two pieces each of five different colored papers and describe how many total pieces of paper are required. **Level I Students will:** **EE6.NS.3.** Identify a group of a given quantity. Ex. Given a group of objects with no greater than three items, identify how many are in the group that matches the teacher's handheld numeric symbol (e.g., group of two, group of one, group of three - match to the numbers two, one, and three). Ex. Subitize sets of four (e.g., using a die). Ex. Given a set number of sounds, no greater than three, identify the quantity of sounds heard (e.g., indicating three dots or the number three). Do this twice and identify if the number of sounds are the same or different as the first round. Ex. When shown a repeating pattern of three objects, three objects, three objects, tell the teacher how many objects are in the repeated pattern.

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<tr><td colspan="8">Standard with code: 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. For example, express 36 + 8 as 4 (9 + 2).</td></tr>
<tr><td colspan="2">Domain: The Number System</td><td colspan="6">Cluster: Compute fluently with multi-digit numbers and find common factors and multiples.</td></tr>
<tr><td colspan="2">Quarter 1:
Identify the factors of two whole numbers less than or equal to 100 and determine the Greatest Common Factor.

Identify the multiples of two whole numbers less than or equal to 12 and determine the Least Common Multiple.

Apply the Distributive Property to rewrite addition problems by factoring out the Greatest Common Factor</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given any two whole numbers less than or equal to 100, Strategically select and apply strategies for finding the greatest common factor of the two numbers and justify that the strategy used does produce the correct value for the greatest common factor, Use the distributive property to write an equivalent expression for the sum of the two numbers as the product of the greatest common factor of the two numbers, and the sum of two whole numbers with no common factor. [i.e., if the two whole numbers are 36 and 8, 36+8 = 4(9+2)]. Given two whole numbers less than or equal to 12, Strategically select and apply strategies for finding the least common multiple of the two numbers and justify that the strategy used does produce the correct value for the least common multiple.	Greatest common factor Least common multiple Distributive property	Students know: Strategies for determining the greatest common factor of two numbers, Strategies for determining the least common multiple of two numbers, Distributive Property of Multiplication over addition.	Students understand that/are able to: Apply strategies for determining greatest common factors and least common multiples, Use the distributive property to express the sum of two whole numbers 1 to 100 with a common factor as a multiple of a sum of two whole numbers with no common factor.	**EE6.NS.4.** N/A	**EE6.NS.4.** N/A

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<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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.</td></tr>
<tr><td colspan="2">Domain: The Number System</td><td colspan="6">Cluster: Apply and extend previous understandings of numbers to the system of rational numbers.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:
Identify an integer and its opposite

Use integers to represent quantities in real world situations (above/below sea level, etc.)

Explain where zero fits into a situation represented by integers</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical situations containing quantities that have opposite directions or values, Use positive and negative numbers to represent quantities in the contexts and explain the meaning of 0 in each situation.	Positive and negative numbers	Students know: Notation for and meaning of positive and negative numbers and zero.	Students understand that/are able to: Use positive and negative numbers to represent quantities in real-world contexts, Explain the meaning of zero in a variety of real-world contexts.	**EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).	**Level IV Students will:** **EE6.NS.5-8.** Apply positive and negative numbers to a real-world context from greater than positive 10 and less than negative 10. Ex. Given three negative and positive temperatures on three thermometers, order the temperatures from least to greatest (e.g.,-15, 0, 15). Ex. When given a thermometer reading -5 degrees, tell how much the temperature will have to rise to get to 15 degrees? Ex. Given three bank statements, order the statement balances from least to greatest. **Level III Students will:** **EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero). Ex. Given a number line and asked to show the number that is opposite of 5, select -5. Ex. Given two temperatures on two thermometers, one positive and one negative, determine which temperature is the coldest. Ex. Look at the records (wins/losses) of three baseball teams (positive numbers to indicate number of wins and negative numbers to indicate number of losses) and then rank the teams in order from the greatest number of wins/least amount of losses. Ex. Look at a bank statement/checkbook register and tell if there is a positive or negative balance (do you have any money or do you owe the bank money?). **Level II Students will:** **EE6.NS.5-8.** Order positive numbers from least to greatest. Ex. Given three temperatures above zero, put them in order from coldest to hottest. Ex. Sequence positive numbers correctly on a number line (e.g., temperatures). Ex. Look at three checkbook registers with positive balances and order the balances from least to greatest. Ex. Given temperatures from three seasons put them in order from coldest to hottest. **Level I Students will:** **EE6.NS.5-8.** Identify which is greater than and less than using fewer than 10. Ex. Given two sets of manipulatives, identify which has the greater amount or which has the lesser amount. Ex. In a science experiment growing plants, determine how many plants have lived and how many have died to determine if more lived or died. Ex. Joe has three marbles, Frank has six. Who has more? Ex. Farmer John has five cows and nine pigs. Are there more cows or pigs? Ex. Given a representation of a thermometer, indicate which direction implies a greater temperature. Ex. On a number line, which number is closer to zero: three or five? Ex. Given two temperatures above zero, indicate which is greater.

CCSS Math Pacing Guide
Grade 6

<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 6.NS.6a 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.

a. 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.</td></tr>
<tr><td colspan="2">Domain: The Number System</td><td colspan="6">Cluster: Apply and extend previous understandings of numbers to the system of rational numbers.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:
Identify a rational number as a point on the number line.

Identify the location of zero on a number line in relation to positive and negative numbers

Recognize opposite signs of numbers as locations on opposite sides of 0 on the number line

Reason that the opposite of the opposite of a number is the number itself.</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Create and interpret number line diagrams and coordinate axes with positive and negative coordinates. Given any rational number (positive or negative), Locate the number on a number line, Identify opposite signs of numbers as indicating the same distance from zero on the opposite side of zero, the opposite of the opposite, or a representation of its opposite as the point itself [-(-3) = 3], and zero as its own opposite. Given ordered pairs made up of rational numbers, Locate and explain the placement of the ordered pair on a coordinate plane. Given two ordered pairs that differ only by signs, Locate the points on a coordinate plane and explain the relationship of the locations of the points as reflections across one or both axes.	Coordinate axes Ordered pairs Coordinate plane	Students know: Strategies for creating number line models of rational numbers (e.g., marking off equal lengths by estimation or recursive halving) and coordinate axes for plotting points with rational coordinates, Strategies for locating numbers on a number line or ordered pairs of numbers on a coordinate system.	Students understand that/are able to: Represent rational numbers and their opposites on a number line including both positive and negative quantities, Explain and justify the creation of number lines and placement of rational numbers on a number line, Explain how to identify the coordinates of a point on a coordinate system in any of the four quadrants, Graph points corresponding to ordered pairs made up of two rational numbers.	**EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).	**Level IV Students will:** **EE6.NS.5-8.** Apply positive and negative numbers to a real-world context from greater than positive 10 and less than negative 10. Ex. Given three negative and positive temperatures on three thermometers, order the temperatures from least to greatest (e.g.,-15, 0, 15). Ex. When given a thermometer reading -5 degrees, tell how much the temperature will have to rise to get to 15 degrees? Ex. Given three bank statements, order the statement balances from least to greatest. **Level III Students will:** **EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero). Ex. Given a number line and asked to show the number that is opposite of 5, select -5. Ex. Given two temperatures on two thermometers, one positive and one negative, determine which temperature is the coldest. Ex. Look at the records (wins/losses) of three baseball teams (positive numbers to indicate number of wins and negative numbers to indicate number of losses) and then rank the teams in order from the greatest number of wins/least amount of losses. Ex. Look at a bank statement/checkbook register and tell if there is a positive or negative balance (do you have any money or do you owe the bank money?). **Level II Students will:** **EE6.NS.5-8.** Order positive numbers from least to greatest. Ex. Given three temperatures above zero, put them in order from coldest to hottest. Ex. Sequence positive numbers correctly on a number line (e.g., temperatures). Ex. Look at three checkbook registers with positive balances and order the balances from least to greatest. Ex. Given temperatures from three seasons put them in order from coldest to hottest. **Level I Students will:** **EE6.NS.5-8.** Identify which is greater than and less than using fewer than 10. Ex. Given two sets of manipulatives, identify which has the greater amount or which has the lesser amount. Ex. In a science experiment growing plants, determine how many plants have lived and how many have died to determine if more lived or died. Ex. Joe has three marbles, Frank has six. Who has more? Ex. Farmer John has five cows and nine pigs. Are there more cows or pigs? Ex. Given a representation of a thermometer, indicate which direction implies a greater temperature. Ex. On a number line, which number is closer to zero: three or five? Ex. Given two temperatures above zero, indicate which is greater.

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Grade 6

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<tr><td colspan="8">Standard with code: 6.NS.6b 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.

b. 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.</td></tr>
<tr><td colspan="2">Domain: The Number System</td><td colspan="6">Cluster: Apply and extend previous understandings of numbers to the system of rational numbers.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:
Recognize the signs of both numbers in an ordered pair indicate which quadrant of the coordinate plane the ordered pair will be located

Reason that when only the x value in a set of ordered pairs are opposites, it creates a reflection over the y axis, e.g., (x,y) and (-x,y)

Recognize that when only the y value in a set of ordered pairs are opposites, it creates a reflection over the x axis, e.g., (x,y) and (x,-y)</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Create and interpret number line diagrams and coordinate axes with positive and negative coordinates. Given any rational number (positive or negative), Locate the number on a number line, Identify opposite signs of numbers as indicating the same distance from zero on the opposite side of zero, the opposite of the opposite, or a representation of its opposite as the point itself [-(-3) = 3], and zero as its own opposite. Given ordered pairs made up of rational numbers, Locate and explain the placement of the ordered pair on a coordinate plane. Given two ordered pairs that differ only by signs, Locate the points on a coordinate plane and explain the relationship of the locations of the points as reflections across one or both axes.	Coordinate axes Ordered pairs Coordinate plane	Students know: Strategies for creating number line models of rational numbers (e.g., marking off equal lengths by estimation or recursive halving) and coordinate axes for plotting points with rational coordinates, Strategies for locating numbers on a number line or ordered pairs of numbers on a coordinate system.	Students understand that/are able to: Represent rational numbers and their opposites on a number line including both positive and negative quantities, Explain and justify the creation of number lines and placement of rational numbers on a number line, Explain how to identify the coordinates of a point on a coordinate system in any of the four quadrants, Graph points corresponding to ordered pairs made up of two rational numbers.	**EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).	**Level IV Students will:** **EE6.NS.5-8.** Apply positive and negative numbers to a real-world context from greater than positive 10 and less than negative 10. Ex. Given three negative and positive temperatures on three thermometers, order the temperatures from least to greatest (e.g.,-15, 0, 15). Ex. When given a thermometer reading -5 degrees, tell how much the temperature will have to rise to get to 15 degrees? Ex. Given three bank statements, order the statement balances from least to greatest. **Level III Students will:** **EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero). Ex. Given a number line and asked to show the number that is opposite of 5, select -5. Ex. Given two temperatures on two thermometers, one positive and one negative, determine which temperature is the coldest. Ex. Look at the records (wins/losses) of three baseball teams (positive numbers to indicate number of wins and negative numbers to indicate number of losses) and then rank the teams in order from the greatest number of wins/least amount of losses. Ex. Look at a bank statement/checkbook register and tell if there is a positive or negative balance (do you have any money or do you owe the bank money?). **Level II Students will:** **EE6.NS.5-8.** Order positive numbers from least to greatest. Ex. Given three temperatures above zero, put them in order from coldest to hottest. Ex. Sequence positive numbers correctly on a number line (e.g., temperatures). Ex. Look at three checkbook registers with positive balances and order the balances from least to greatest. Ex. Given temperatures from three seasons put them in order from coldest to hottest. **Level I Students will:** **EE6.NS.5-8.** Identify which is greater than and less than using fewer than 10. Ex. Given two sets of manipulatives, identify which has the greater amount or which has the lesser amount. Ex. In a science experiment growing plants, determine how many plants have lived and how many have died to determine if more lived or died. Ex. Joe has three marbles, Frank has six. Who has more? Ex. Farmer John has five cows and nine pigs. Are there more cows or pigs? Ex. Given a representation of a thermometer, indicate which direction implies a greater temperature. Ex. On a number line, which number is closer to zero: three or five? Ex. Given two temperatures above zero, indicate which is greater.

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<tr><td colspan="8">Standard with code: 6.NS.6c 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.

c. 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.</td></tr>
<tr><td colspan="2">Domain: The Number System</td><td colspan="6">Cluster: Apply and extend previous understandings of numbers to the system of rational numbers.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:
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

Reason that when two ordered pairs differ only by signs, the locations of the points are related by reflections across both axes, e.g., (-x, -y) and (x,y)</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Create and interpret number line diagrams and coordinate axes with positive and negative coordinates. Given any rational number (positive or negative), Locate the number on a number line, Identify opposite signs of numbers as indicating the same distance from zero on the opposite side of zero, the opposite of the opposite, or a representation of its opposite as the point itself [-(-3) = 3], and zero as its own opposite. Given ordered pairs made up of rational numbers, Locate and explain the placement of the ordered pair on a coordinate plane. Given two ordered pairs that differ only by signs, Locate the points on a coordinate plane and explain the relationship of the locations of the points as reflections across one or both axes.	Coordinate axes Ordered pairs Coordinate plane	Students know: Strategies for creating number line models of rational numbers (e.g., marking off equal lengths by estimation or recursive halving) and coordinate axes for plotting points with rational coordinates, Strategies for locating numbers on a number line or ordered pairs of numbers on a coordinate system.	Students understand that/are able to: Represent rational numbers and their opposites on a number line including both positive and negative quantities, Explain and justify the creation of number lines and placement of rational numbers on a number line, Explain how to identify the coordinates of a point on a coordinate system in any of the four quadrants, Graph points corresponding to ordered pairs made up of two rational numbers.	**EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).	**Level IV Students will:** **EE6.NS.5-8.** Apply positive and negative numbers to a real-world context from greater than positive 10 and less than negative 10. Ex. Given three negative and positive temperatures on three thermometers, order the temperatures from least to greatest (e.g.,-15, 0, 15). Ex. When given a thermometer reading -5 degrees, tell how much the temperature will have to rise to get to 15 degrees? Ex. Given three bank statements, order the statement balances from least to greatest. **Level III Students will:** **EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero). Ex. Given a number line and asked to show the number that is opposite of 5, select -5. Ex. Given two temperatures on two thermometers, one positive and one negative, determine which temperature is the coldest. Ex. Look at the records (wins/losses) of three baseball teams (positive numbers to indicate number of wins and negative numbers to indicate number of losses) and then rank the teams in order from the greatest number of wins/least amount of losses. Ex. Look at a bank statement/checkbook register and tell if there is a positive or negative balance (do you have any money or do you owe the bank money?). **Level II Students will:** **EE6.NS.5-8.** Order positive numbers from least to greatest. Ex. Given three temperatures above zero, put them in order from coldest to hottest. Ex. Sequence positive numbers correctly on a number line (e.g., temperatures). Ex. Look at three checkbook registers with positive balances and order the balances from least to greatest. Ex. Given temperatures from three seasons put them in order from coldest to hottest. **Level I Students will:** **EE6.NS.5-8.** Identify which is greater than and less than using fewer than 10. Ex. Given two sets of manipulatives, identify which has the greater amount or which has the lesser amount. Ex. In a science experiment growing plants, determine how many plants have lived and how many have died to determine if more lived or died. Ex. Joe has three marbles, Frank has six. Who has more? Ex. Farmer John has five cows and nine pigs. Are there more cows or pigs? Ex. Given a representation of a thermometer, indicate which direction implies a greater temperature. Ex. On a number line, which number is closer to zero: three or five? Ex. Given two temperatures above zero, indicate which is greater.

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<tr><td colspan="8">Standard with code: 6.NS.7a Understand ordering and absolute value of rational numbers.

a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. 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.</td></tr>
<tr><td colspan="2">Domain: The Number System</td><td colspan="6">Cluster: Apply and extend previous understandings of numbers to the system of rational numbers.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:
Order rational numbers on a number line

Interpret statements of inequality as statements about relative position of two numbers on a number line diagram.</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical situations involving quantities that can be represented as positive or negative rational numbers, Write, interpret, and explain inequalities that show order of the given numbers, Write, interpret, and explain the absolute values of the quantities, Distinguish comparisons of absolute value from statements about order, (i.e., students will use logical reasoning to explain how an account balance less than -30 dollars represents a debt greater than 30 dollars).	Absolute value Inequality	Students know: Use and interpretation of absolute value and inequality notation.	Students understand that/are able to: Use mathematical language to communicate the relationship between verbal representations of inequalities and the related number line and algebraic models, Distinguish comparisons of absolute value of positive and negative rational numbers from statements about order, Use number line models to explain absolute value concepts.	**EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).	**Level IV Students will:** **EE6.NS.5-8.** Apply positive and negative numbers to a real-world context from greater than positive 10 and less than negative 10. Ex. Given three negative and positive temperatures on three thermometers, order the temperatures from least to greatest (e.g.,-15, 0, 15). Ex. When given a thermometer reading -5 degrees, tell how much the temperature will have to rise to get to 15 degrees? Ex. Given three bank statements, order the statement balances from least to greatest. **Level III Students will:** **EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero). Ex. Given a number line and asked to show the number that is opposite of 5, select -5. Ex. Given two temperatures on two thermometers, one positive and one negative, determine which temperature is the coldest. Ex. Look at the records (wins/losses) of three baseball teams (positive numbers to indicate number of wins and negative numbers to indicate number of losses) and then rank the teams in order from the greatest number of wins/least amount of losses. Ex. Look at a bank statement/checkbook register and tell if there is a positive or negative balance (do you have any money or do you owe the bank money?). **Level II Students will:** **EE6.NS.5-8.** Order positive numbers from least to greatest. Ex. Given three temperatures above zero, put them in order from coldest to hottest. Ex. Sequence positive numbers correctly on a number line (e.g., temperatures). Ex. Look at three checkbook registers with positive balances and order the balances from least to greatest. Ex. Given temperatures from three seasons put them in order from coldest to hottest. **Level I Students will:** **EE6.NS.5-8.** Identify which is greater than and less than using fewer than 10. Ex. Given two sets of manipulatives, identify which has the greater amount or which has the lesser amount. Ex. In a science experiment growing plants, determine how many plants have lived and how many have died to determine if more lived or died. Ex. Joe has three marbles, Frank has six. Who has more? Ex. Farmer John has five cows and nine pigs. Are there more cows or pigs? Ex. Given a representation of a thermometer, indicate which direction implies a greater temperature. Ex. On a number line, which number is closer to zero: three or five? Ex. Given two temperatures above zero, indicate which is greater.

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b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write –3 ^{oC} > –7 ^{oC} to express the fact that –3 ^{oC} is warmer than –7 ^{oC}.</td></tr>
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c. 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. For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.</td></tr>
<tr><td colspan="2">Domain: The Number System</td><td colspan="6">Cluster: Apply and extend previous understandings of numbers to the system of rational numbers.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:
Identify absolute value of rational numbers

Interpret absolute value as magnitude for a positive or
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<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical situations involving quantities that can be represented as positive or negative rational numbers, Write, interpret, and explain inequalities that show order of the given numbers, Write, interpret, and explain the absolute values of the quantities, Distinguish comparisons of absolute value from statements about order, (i.e., students will use logical reasoning to explain how an account balance less than -30 dollars represents a debt greater than 30 dollars).	Absolute value Inequality	Students know: Use and interpretation of absolute value and inequality notation.	Students understand that/are able to: Use mathematical language to communicate the relationship between verbal representations of inequalities and the related number line and algebraic models, Distinguish comparisons of absolute value of positive and negative rational numbers from statements about order, Use number line models to explain absolute value concepts.	**EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).	**Level IV Students will:** **EE6.NS.5-8.** Apply positive and negative numbers to a real-world context from greater than positive 10 and less than negative 10. Ex. Given three negative and positive temperatures on three thermometers, order the temperatures from least to greatest (e.g.,-15, 0, 15). Ex. When given a thermometer reading -5 degrees, tell how much the temperature will have to rise to get to 15 degrees? Ex. Given three bank statements, order the statement balances from least to greatest. **Level III Students will:** **EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero). Ex. Given a number line and asked to show the number that is opposite of 5, select -5. Ex. Given two temperatures on two thermometers, one positive and one negative, determine which temperature is the coldest. Ex. Look at the records (wins/losses) of three baseball teams (positive numbers to indicate number of wins and negative numbers to indicate number of losses) and then rank the teams in order from the greatest number of wins/least amount of losses. Ex. Look at a bank statement/checkbook register and tell if there is a positive or negative balance (do you have any money or do you owe the bank money?). **Level II Students will:** **EE6.NS.5-8.** Order positive numbers from least to greatest. Ex. Given three temperatures above zero, put them in order from coldest to hottest. Ex. Sequence positive numbers correctly on a number line (e.g., temperatures). Ex. Look at three checkbook registers with positive balances and order the balances from least to greatest. Ex. Given temperatures from three seasons put them in order from coldest to hottest. **Level I Students will:** **EE6.NS.5-8.** Identify which is greater than and less than using fewer than 10. Ex. Given two sets of manipulatives, identify which has the greater amount or which has the lesser amount. Ex. In a science experiment growing plants, determine how many plants have lived and how many have died to determine if more lived or died. Ex. Joe has three marbles, Frank has six. Who has more? Ex. Farmer John has five cows and nine pigs. Are there more cows or pigs? Ex. Given a representation of a thermometer, indicate which direction implies a greater temperature. Ex. On a number line, which number is closer to zero: three or five? Ex. Given two temperatures above zero, indicate which is greater.

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 6.NS.7d Understand ordering and absolute value of rational numbers.

d. Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.</td></tr>
<tr><td colspan="2">Domain: The Number System</td><td colspan="6">Cluster: Apply and extend previous understandings of numbers to the system of rational numbers.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:
Distinguish comparisons of absolute value from statements
about order and apply to real world contexts</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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.</td></tr>
<tr><td colspan="2">Domain: Expressions and Equations</td><td colspan="6">Cluster: Apply and extend previous understandings of arithmetic to algebraic expressions.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:
Calculate absolute value.

Graph points in all four quadrants of the coordinate plane.

Solve real-world problems by graphing points in all four quadrants of a coordinate plane.

Given only coordinates, calculate the distances between two points with the same first coordinate or the same second coordinate using absolute value</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given real world and mathematical problems where a coordinate graph will aid in the solution, Create the corresponding graph on a coordinate plane and explain its relationship to the context of the problem, (e.g., Tickets cost $0.75 each. If 20 tickets are sold, the cost is $15, if 21 tickets are sold the cost is $15.75. Create a graph that shows the cost of any number of tickets). Given a graph of a real world or mathematical situation, Interpret the coordinate values of the points in the context of the situation including finding vertical and horizontal distances.	Coordinate plane Quadrants Coordinate values	Students know: Strategies for creating coordinate graphs, Strategies for finding vertical and horizontal distance on coordinate graphs including using absolute value.	Students understand that/are able to: Graph points corresponding to ordered pairs, Represent real world and mathematical problems on a coordinate plane, Interpret coordinate values of points in the context of real world/mathematical situations, Determine lengths of line segments on a coordinate plane when the line segment joins points with the same first coordinate (vertical distance)or the same second coordinate (horizontal distance).	**EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).	**Level IV Students will:** **EE6.NS.5-8.** Apply positive and negative numbers to a real-world context from greater than positive 10 and less than negative 10. Ex. Given three negative and positive temperatures on three thermometers, order the temperatures from least to greatest (e.g.,-15, 0, 15). Ex. When given a thermometer reading -5 degrees, tell how much the temperature will have to rise to get to 15 degrees? Ex. Given three bank statements, order the statement balances from least to greatest. **Level III Students will:** **EE6.NS.5-8.** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero). Ex. Given a number line and asked to show the number that is opposite of 5, select -5. Ex. Given two temperatures on two thermometers, one positive and one negative, determine which temperature is the coldest. Ex. Look at the records (wins/losses) of three baseball teams (positive numbers to indicate number of wins and negative numbers to indicate number of losses) and then rank the teams in order from the greatest number of wins/least amount of losses. Ex. Look at a bank statement/checkbook register and tell if there is a positive or negative balance (do you have any money or do you owe the bank money?). **Level II Students will:** **EE6.NS.5-8.** Order positive numbers from least to greatest. Ex. Given three temperatures above zero, put them in order from coldest to hottest. Ex. Sequence positive numbers correctly on a number line (e.g., temperatures). Ex. Look at three checkbook registers with positive balances and order the balances from least to greatest. Ex. Given temperatures from three seasons put them in order from coldest to hottest. **Level I Students will:** **EE6.NS.5-8.** Identify which is greater than and less than using fewer than 10. Ex. Given two sets of manipulatives, identify which has the greater amount or which has the lesser amount. Ex. In a science experiment growing plants, determine how many plants have lived and how many have died to determine if more lived or died. Ex. Joe has three marbles, Frank has six. Who has more? Ex. Farmer John has five cows and nine pigs. Are there more cows or pigs? Ex. Given a representation of a thermometer, indicate which direction implies a greater temperature. Ex. On a number line, which number is closer to zero: three or five? Ex. Given two temperatures above zero, indicate which is greater.

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<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 6.EE.1 Write and evaluate numerical expressions involving whole-number exponents.</td></tr>
<tr><td colspan="2">Domain: Expressions and Equations</td><td colspan="6">Cluster: Apply and extend previous understandings of arithmetic to algebraic expressions.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:
Write numerical expressions involving whole number exponents
Ex. 3^4= 3x3x3x3

Evaluate numerical expressions involving whole number exponents
Ex. 3^4= 3x3x3x3 = 81

Solve order of operation problems that contain exponents
Ex. $3+2^2-(2+3) = 2$</td><td colspan="2"></td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: - Write whole numbers with indicated exponents and their equivalent form without exponents, (e.g., given 108 the student will write 2^2 x 3^3 or given 2^2 x 3^3 will write 108) and justify the equivalence.	Numerical expression Exponent	Students know: Conventions of exponential notation, Factorization strategies for whole numbers.	Students understand that/are able to: Use factorization strategies to write equivalent expressions involving exponents, Accurately find products for repeated multiplication of the same factor in evaluating exponential expressions.	**EE6.EE.1-2.** Identify equivalent number sentences.	**Level IV Students will:** **EE6.EE.1.** Generate a two-step math sentence using appropriate numbers and symbols. Ex. Given a two-step word problem, identify the numerical equivalent (e.g., "John has two apples, Mary has three. John ate one apple. How many apples are left?" Student produces the math sentence (2 + 3 – 1 =) or (2 – 1 + 3 =). Ex. Given a two-step word problem, identify the numerical equivalent (e.g. "Trudy has three cakes. She was given one more. Frank has two cakes. Show who has the greater number of cakes." (3 + 1 > 2), (3 + 1 = 4, 4 > 2). **Level III Students will:** **EE6.EE.1.** Identify equivalent number sentences. Ex. Given a word problem, identify the numerical equivalent (e.g. "John has one pencil. He is given five more. How many pencils does he have?" Student identifies 1 + 5 = as an equivalent to the statement.). Ex. Given a word problem, identify the numerical equivalent (e.g. "Teacher places group of three pencils and a group of four pencils to the left of student. Teacher then places a second group of five pencils and two pencils to the right of the student and asks, "does this group of pencils have the same amount as the other group of pencils?" (3 + 4 = 5 + 2). Ex. Given a number problem, select from choices an equivalent problem (e.g., 1 + 3 has the same result as 2 + 2). **Level II Students will:** **EE6.EE.1.** Match number sentence with the correct picture representation. Ex. Given a picture showing single addition, identify correct number sentence. Ex. Given a picture and a correct and incorrect number sentence, choose one that is correct. **Level I Students will:** **EE6.EE.1.** Identify math symbol "=" as meaning equal to. Ex. Indicate the symbol in a math sentence. Ex. Given picture representations of two equal groups of objects with an equal sign between, responds that they are the same.

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<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 6.EE.2a Write, read, and evaluate expressions in which letters stand for numbers.

a. 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.</td></tr>
<tr><td colspan="2">Domain: Expressions and Equations</td><td colspan="6">Cluster: Apply and extend previous understandings of arithmetic to algebraic expressions.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:
Use numbers and variables to represent desired operations

Translating written phrases into algebraic expressions.

Translating algebraic expressions into written phrases.</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical problems both when known models exist (for example formulas) or algebraic models are unknown Interpret the parts of the model in the original context, Create the algebraic model of the situation when appropriate, Use appropriate mathematical terminology to communicate the meaning of the expression, Evaluate the expressions for values of the variable including finding values following conventions of parentheses and order of operations.	Expressions Term Coefficient	Students know: Correct usage of mathematical symbolism to model the terms sum, term, product, factor, quotient, and coefficient when they appear in verbally stated contexts, Conventions for order of operations, Convention of using juxtaposition (e.g., 5A or xy) to indicate multiplication.	Students understand that/are able to: Translate fluently between verbally stated situations and algebraic models of the situation, Use operations (addition, subtraction, multiplication, division, and exponentiation) fluently with the conventions of parentheses and order of operations to evaluate expressions for specific values of variables in expressions, Use terminology related to algebraic expressions (sum, term, product, factor, quotient, or coefficient) to communicate the meanings of the expression and the parts of the expression.	**EE6.EE.1-2.** Identify equivalent number sentences.	**Level IV Students will:** **EE6.EE.1.** Generate a two-step math sentence using appropriate numbers and symbols. Ex. Given a two-step word problem, identify the numerical equivalent (e.g., "John has two apples, Mary has three. John ate one apple. How many apples are left?" Student produces the math sentence (2 + 3 – 1 =) or (2 – 1 + 3 =). Ex. Given a two-step word problem, identify the numerical equivalent (e.g. "Trudy has three cakes. She was given one more. Frank has two cakes. Show who has the greater number of cakes." (3 + 1 > 2), (3 + 1 = 4, 4 > 2). **Level III Students will:** **EE6.EE.1.** Identify equivalent number sentences. Ex. Given a word problem, identify the numerical equivalent (e.g. "John has one pencil. He is given five more. How many pencils does he have?" Student identifies 1 + 5 = as an equivalent to the statement.). Ex. Given a word problem, identify the numerical equivalent (e.g. "Teacher places group of three pencils and a group of four pencils to the left of student. Teacher then places a second group of five pencils and two pencils to the right of the student and asks, "does this group of pencils have the same amount as the other group of pencils?" (3 + 4 = 5 + 2). Ex. Given a number problem, select from choices an equivalent problem (e.g., 1 + 3 has the same result as 2 + 2). **Level II Students will:** **EE6.EE.1.** Match number sentence with the correct picture representation. Ex. Given a picture showing single addition, identify correct number sentence. Ex. Given a picture and a correct and incorrect number sentence, choose one that is correct. **Level I Students will:** **EE6.EE.1.** Identify math symbol "=" as meaning equal to. Ex. Indicate the symbol in a math sentence. Ex. Given picture representations of two equal groups of objects with an equal sign between, responds that they are the same.

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<tr><td colspan="8">Standard with code: 6.EE.2b Write, read, and evaluate expressions in which letters stand for numbers.

b. 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.</td></tr>
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<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:
Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient)

Identify parts of an expression as a single entity, even if not a monomial.</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical problems both when known models exist (for example formulas) or algebraic models are unknown Interpret the parts of the model in the original context, Create the algebraic model of the situation when appropriate, Use appropriate mathematical terminology to communicate the meaning of the expression, Evaluate the expressions for values of the variable including finding values following conventions of parentheses and order of operations.	Expressions Term Coefficient	Students know: Correct usage of mathematical symbolism to model the terms sum, term, product, factor, quotient, and coefficient when they appear in verbally stated contexts, Conventions for order of operations, Convention of using juxtaposition (e.g., 5A or xy) to indicate multiplication.	Students understand that/are able to: Translate fluently between verbally stated situations and algebraic models of the situation, Use operations (addition, subtraction, multiplication, division, and exponentiation) fluently with the conventions of parentheses and order of operations to evaluate expressions for specific values of variables in expressions, Use terminology related to algebraic expressions (sum, term, product, factor, quotient, or coefficient) to communicate the meanings of the expression and the parts of the expression.	**EE6.EE.1-2.** Identify equivalent number sentences.	**Level IV Students will:** **EE6.EE.1.** Generate a two-step math sentence using appropriate numbers and symbols. Ex. Given a two-step word problem, identify the numerical equivalent (e.g., "John has two apples, Mary has three. John ate one apple. How many apples are left?" Student produces the math sentence (2 + 3 – 1 =) or (2 – 1 + 3 =). Ex. Given a two-step word problem, identify the numerical equivalent (e.g. "Trudy has three cakes. She was given one more. Frank has two cakes. Show who has the greater number of cakes." (3 + 1 > 2), (3 + 1 = 4, 4 > 2). **Level III Students will:** **EE6.EE.1.** Identify equivalent number sentences. Ex. Given a word problem, identify the numerical equivalent (e.g. "John has one pencil. He is given five more. How many pencils does he have?" Student identifies 1 + 5 = as an equivalent to the statement.). Ex. Given a word problem, identify the numerical equivalent (e.g. "Teacher places group of three pencils and a group of four pencils to the left of student. Teacher then places a second group of five pencils and two pencils to the right of the student and asks, "does this group of pencils have the same amount as the other group of pencils?" (3 + 4 = 5 + 2). Ex. Given a number problem, select from choices an equivalent problem (e.g., 1 + 3 has the same result as 2 + 2). **Level II Students will:** **EE6.EE.1.** Match number sentence with the correct picture representation. Ex. Given a picture showing single addition, identify correct number sentence. Ex. Given a picture and a correct and incorrect number sentence, choose one that is correct. **Level I Students will:** **EE6.EE.1.** Identify math symbol "=" as meaning equal to. Ex. Indicate the symbol in a math sentence. Ex. Given picture representations of two equal groups of objects with an equal sign between, responds that they are the same.

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<tr><td colspan="8">Standard with code 6.EE.2c: Write, read, and evaluate expressions in which letters stand for numbers.

c. 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 = s3 and A = 6 s2 to find the volume and surface area of a cube with sides of length s = 1/2.</td></tr>
<tr><td colspan="2">Domain: Expressions and Equations</td><td colspan="6">Cluster: Apply and extend previous understandings of arithmetic to algebraic expressions.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:
Substitute specific values for variables.

Evaluate algebraic expressions including those that arise from real-world problems.

Apply order of operations when there are no parentheses for expressions that include whole number exponents</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning</td></tr>
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<tr><td colspan="8">Standard with code: 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.</td></tr>
<tr><td colspan="2">Domain: Expressions and Equations</td><td colspan="6">Cluster: Apply and extend previous understandings of arithmetic to algebraic expressions.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:
Generate equivalent expressions using the properties of operations. (e.g. distributive property, associative property, adding like terms with the addition property of equality, etc.)

Apply the properties of operations to generate equivalent expressions.</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical problems which may be modeled by algebraic expressions, Use properties of the operations to produce combined and re-written forms of the expressions that are useful in resolving the problem.	Properties of operations Distributive property	Students know: The properties of operations listed in Table 3 and their appropriate application.	Students understand that/are able to: Accurately use the properties of operations on algebraic expressions to produce equivalent expressions useful in a problem solving context.	**EE6.EE.3-4.** Demonstrate understanding of equivalent expressions.	**Level IV Students will:** **EE6.EE.3-4.** Solve equivalent expressions to illustrate that they are equivalent. Ex. Fill in the blank to make a true statement: 2 + 6 = 6 + ___. Ex. Fill in the blank to make a true statement: 3 + 5 = ___ + 3. Ex. Fill in the blank to make a true statement: 4 + ___ = 3 + 4. **Level III Students will:** **EE6.EE.3-4.** Demonstrate understanding of equivalent expressions. Ex. Indicate that 2 + 3 is the same as 3 + 2. Ex. Answer yes or no when asked, "Is 2 + 3 equal to 3 + 2?" Ex. Answer yes or no when asked, "Is 2 + 3 equal to 4 + 2?" **Level II Students will:** **EE6.EE.3-4.** Recognize different displays of the equal quantities. Ex. Given a model, create an expression using manipulatives (e.g., three blocks plus two blocks equals five blocks). Ex. Given a group of three objects, a group of four objects, and a group of seven objects, match to 3 + 4 = 7. **Level I Students will:** **EE6.EE.3-4.** Match different displays of the same quantity. Ex. Match pictures of quantities of objects to their numerical equivalent (e.g., four balls matches to the number 4).

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Grade Level: 6th							
Standard with code: 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.***							
Domain: Expressions and Equations		**Cluster: Apply and extend previous understandings of arithmetic to algebraic expressions.**					
Quarter 1:		**Quarter 2:**		**Quarter 3:** Recognize when two expressions are equivalent Prove (using various strategies) that two equations are equivalent no matter what number is substituted		**Quarter 4:**	
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 use of structure.**	**Look for and express regularity in repeated reasoning.**

Evidence of Student Attainment/Assessment	**Vocabulary**	**Knowledge**	**Skills**	**Common Core Essential Elements**	**Instructional Achievement Level Descriptors**
Students: Given a contextual or mathematical situation that could be represented algebraically, Explain by reasoning from the context why two expressions must be equivalent, (e.g., the	Equivalent Expressions	Students know: The properties of operations listed in Table 3 and their appropriate application, Conventions of order of operations.	Students understand that/are able to: Accurately use the properties of operations to produce equivalent forms of an algebraic expression when interpreting	**EE6.EE.3-4.** Demonstrate understanding of equivalent expressions.	**Level IV Students will:** **EE6.EE.3-4.** Solve equivalent expressions to illustrate that they are equivalent. Ex. Fill in the blank to make a true statement: 2 + 6 = 6 + ___. Ex. Fill in the blank to make a true statement: 3 + 5 = ___ + 3. Ex. Fill in the blank to make a true statement: 4 + ___ = 3 + 4. **Level III Students will:** **EE6.EE.3-4.** Demonstrate understanding of equivalent expressions. Ex. Indicate that 2 + 3 is the same as 3 + 2. Ex. Answer yes or no when asked, "Is 2 + 3 equal to 3 + 2?"

student will demonstrate that each of these three ways of thinking about the following problem will always result in the same answer when n is known. When determining the number of tiles needed for a border around a square pool of side n, the expression 4n+4 shows counting 4 sides and then 4 corners. The expression 4(n+1) shows counting four sides which each include one corner. The expression 4(n+2) - 4 shows counting the outer border then subtracting the corners as they have been counted twice). • Use properties of operations and equality to verify if two algebraic expressions are equivalent or not.			mathematical and contextual situations, Use mathematical reasoning to communicate the relationships between equivalent algebraic expressions.		Ex. Answer yes or no when asked, "Is 2 + 3 equal to 4 + 2?" **Level II Students will:** **EE6.EE.3-4.** Recognize different displays of the equal quantities. Ex. Given a model, create an expression using manipulatives (e.g., three blocks plus two blocks equals five blocks). Ex. Given a group of three objects, a group of four objects, and a group of seven objects, match to 3 + 4 = 7. **Level I Students will:** **EE6.EE.3-4.** Match different displays of the same quantity. Ex. Match pictures of quantities of objects to their numerical equivalent (e.g., four balls matches to the number 4).

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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.</td></tr>
<tr><td colspan="2">Domain: Expressions and Equations</td><td colspan="6">Cluster: Reason about and solve one-variable equations and inequalities.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:
Recognize solving an equation or inequality as a process of answering “which values from a specified set, if any, make the equation or inequality true?”

Know that the solutions of an equation or inequality are the values that make the equation or inequality true.

Use substitution to determine whether a given number in a specified set makes an equation or inequality true.</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning</td></tr>
</table>

Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given situations that have been modeled with equations or inequalities, Substitute given specified values for the variables and the evaluate expressions, Determine if the resulting numerical sentence is true when the specified values are substituted for the variables, Explain with mathematical reasoning why a specified value is or is not a solution to a given equation or inequality.	Substitution Equation Inequality	Students know: Conventions of order of operations.	Students understand that/are able to: Substitute specific values into algebraic expressions and accurately perform operations of addition, subtraction, multiplication, division and exponentiation on numerical expressions, Use conventions of order of operations to evaluate expressions.	**EE6.EE.5-7.** Match an equation to a real-world problem in which variables are used to represent numbers.	**Level IV Students will:** **EE6.EE.2.** Using a variable, generate an equivalent equation that represents a real-world problem. Ex. Arrange symbols and numbers to show this equation: Joe has three cups and Sue has some more cups. If they have eight cups together, how would we write this? Answer: 3 + X = 8. Ex. Show how to write this equation: two students have apples, one student has five apples, the other student has more apples, and there are 12 apples altogether. How would you write this? Answer 5 + X = 12. Ex. Together Pete and Joe have five candies. Pete has two. How many does Joe have? Show the problem with manipulatives using X to represent the unknown, how would you write the equation using X. Answer: 2 + X = 7. **Level III Students will:** **EE6.EE.2.** Match an equation to a real-world problem in which variables are used to represent numbers. Ex. Match an equation using X to represent how many Fred has: Fred and June have five apples. June has two. Show me this problem. Answer: 2 + X = 5. Ex. Tell that X means "how many" in 2 + □ =5 and insert X in the box.* Ex. Match an equation to this word problem: I know Tommy has three tickets. How many more tickets will he need if he wants to take five friends to a movie? Answer: 3 + X = 5. **Level II Students will:** **EE6.EE.2.** Determine what is unknown in an equation. Ex. After hearing a story problem, indicate what is unknown (the teacher labels that as X). Ex. Tell that X means "how many" in 2 + □ =5 and insert X in the box.* Ex. Indicate the X when asked, "What number do I not know in this equation? **Level I Students will:** **EE6.EE.2.** Identify the letter in a mathematical sentence. Ex. Point to or indicate the letter/fixed/variable. Ex. Indicate "X" in the equation when asked. ***Refer to the Common Core Essential Elements document for diagram.**

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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.</td></tr>
<tr><td colspan="2">Domain: Expressions and Equations</td><td colspan="6">Cluster: Reason about and solve one-variable equations and inequalities.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:
Recognize that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

Relate variables to a context.

Write expressions when solving a real-world or mathematical problem</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
</table>

Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given a contextual problem, Model the problem with mathematical symbols, variables, and expressions that aid in solving the problem, Explain the role of the variable as a place holder where the variable stands for a particular number (y + 7 = 12) or a value in a formula (A = L x W) whereas values are substituted for one or more variables another variable assumes different values.	Variable Expression	Students know: Correct translation between verbally stated situations and mathematical symbols and notation.	Students understand that/are able to: Translate fluently between verbally stated situations and algebraic models of the situation.	**EE6.EE.5-7.** Match an equation to a real-world problem in which variables are used to represent numbers.	**Level IV Students will:** **EE6.EE.2.** Using a variable, generate an equivalent equation that represents a real-world problem. Ex. Arrange symbols and numbers to show this equation: Joe has three cups and Sue has some more cups. If they have eight cups together, how would we write this? Answer: 3 + X = 8. Ex. Show how to write this equation: two students have apples, one student has five apples, the other student has more apples, and there are 12 apples altogether. How would you write this? Answer 5 + X = 12. Ex. Together Pete and Joe have five candies. Pete has two. How many does Joe have? Show the problem with manipulatives using X to represent the unknown, how would you write the equation using X. Answer: 2 + X = 7. **Level III Students will:** **EE6.EE.2.** Match an equation to a real-world problem in which variables are used to represent numbers. Ex. Match an equation using X to represent how many Fred has: Fred and June have five apples. June has two. Show me this problem. Answer: 2 + X = 5. Ex. Tell that X means "how many" in 2 + □ =5 and insert X in the box.* Ex. Match an equation to this word problem: I know Tommy has three tickets. How many more tickets will he need if he wants to take five friends to a movie? Answer: 3 + X = 5. **Level II Students will:** **EE6.EE.2.** Determine what is unknown in an equation. Ex. After hearing a story problem, indicate what is unknown (the teacher labels that as X). Ex. Tell that X means "how many" in 2 + □ =5 and insert X in the box.* Ex. Indicate the X when asked, "What number do I not know in this equation? **Level I Students will:** **EE6.EE.2.** Identify the letter in a mathematical sentence. Ex. Point to or indicate the letter/fixed/variable. Ex. Indicate "X" in the equation when asked. ***Refer to the Common Core Essential Elements document for diagram.**

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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.</td></tr>
<tr><td colspan="2">Domain: Expressions and Equations</td><td colspan="6">Cluster: Reason about and solve one-variable equations and inequalities.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:*</td><td colspan="2">Quarter 3:
Define inverse operation.

Know how inverse operations can be used in solving one-variable equations.

Apply rules of the form x + p = q and px = for cases in which p, q and x are all nonnegative rational numbers, to solve real world and mathematical problems.(There is only one unknown quantity.)

Develop a rule for solving one-step equations using inverse operations with nonnegative rational coefficients.

Solve and write equations for real-world mathematical problems containing one unknown.</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
</table>

Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical situations which may be modeled by x + p = q or px = q (p,q, and x are rational and non-negative), Write equations modeling the situation, solve the resulting equations, and justify the solutions.	Equations Nonnegative rational numbers	Students know: Correct translation between verbally stated situations and mathematical symbols and notation.	Students understand that/are able to: Translate fluently between verbally stated equality situations to algebraic models of the situation, Use inverse operations and properties of equality to produce solutions to equations of the forms x + p = q or px = q, Use logical reasoning and properties of equality to justify solutions, reasonableness of solutions, and solution paths.	**EE6.EE.5-7.** Match an equation to a real-world problem in which variables are used to represent numbers.	**Level IV Students will:** **EE6.EE.2.** Using a variable, generate an equivalent equation that represents a real-world problem. Ex. Arrange symbols and numbers to show this equation: Joe has three cups and Sue has some more cups. If they have eight cups together, how would we write this? Answer: 3 + X = 8. Ex. Show how to write this equation: two students have apples, one student has five apples, the other student has more apples, and there are 12 apples altogether. How would you write this? Answer 5 + X = 12. Ex. Together Pete and Joe have five candies. Pete has two. How many does Joe have? Show the problem with manipulatives using X to represent the unknown, how would you write the equation using X. Answer: 2 + X = 7. **Level III Students will:** **EE6.EE.2.** Match an equation to a real-world problem in which variables are used to represent numbers. Ex. Match an equation using X to represent how many Fred has: Fred and June have five apples. June has two. Show me this problem. Answer: 2 + X = 5. Ex. Tell that X means "how many" in 2 + □ =5 and insert X in the box.* Ex. Match an equation to this word problem: I know Tommy has three tickets. How many more tickets will he need if he wants to take five friends to a movie? Answer: 3 + X = 5. **Level II Students will:** **EE6.EE.2.** Determine what is unknown in an equation. Ex. After hearing a story problem, indicate what is unknown (the teacher labels that as X). Ex. Tell that X means "how many" in 2 + □ =5 and insert X in the box.* Ex. Indicate the X when asked, "What number do I not know in this equation? **Level I Students will:** **EE6.EE.2.** Identify the letter in a mathematical sentence. Ex. Point to or indicate the letter/fixed/variable. Ex. Indicate "X" in the equation when asked. ***Refer to the Common Core Essential Elements document for diagram.**

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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.</td></tr>
<tr><td colspan="2">Domain: Expressions and Equations</td><td colspan="6">Cluster: Reason about and solve one-variable equations and inequalities.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:
Identify the constraint or condition in a real-world or mathematical problem in order to set up an inequality.

Recognize that inequalities of the form x > c or x < c have infinitely many solutions

Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem.

Represent solutions to inequalities or the form x > c or x < c, with infinitely many solutions, on number line diagrams</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning</td></tr>
</table>

Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given contextual or mathematical situations which may be modeled by x > c or x < c, Write inequalities modeling the situation, Identify the set of values making the resulting inequalities true. (e.g., the temperature of the meat must stay below 28 degrees F; the store owner must make at least $1000 in order to pay all his employees), Represent the solutions on a number line.	Inequalities Constraint	Students know: Correct translation between verbally stated situations and mathematical symbols and notation.	Students understand that/are able to: Translate fluently among verbally stated inequality situations, algebraic models of the situation (x > c or x < c), and visual models on a number line.	**EE6.EE.5-7.** Match an equation to a real-world problem in which variables are used to represent numbers.	**Level IV Students will:** **EE6.EE.2.** Using a variable, generate an equivalent equation that represents a real-world problem. Ex. Arrange symbols and numbers to show this equation: Joe has three cups and Sue has some more cups. If they have eight cups together, how would we write this? Answer: 3 + X = 8. Ex. Show how to write this equation: two students have apples, one student has five apples, the other student has more apples, and there are 12 apples altogether. How would you write this? Answer 5 + X = 12. Ex. Together Pete and Joe have five candies. Pete has two. How many does Joe have? Show the problem with manipulatives using X to represent the unknown, how would you write the equation using X. Answer: 2 + X = 7. **Level III Students will:** **EE6.EE.2.** Match an equation to a real-world problem in which variables are used to represent numbers. Ex. Match an equation using X to represent how many Fred has: Fred and June have five apples. June has two. Show me this problem. Answer: 2 + X = 5. Ex. Tell that X means "how many" in 2 + □ =5 and insert X in the box.* Ex. Match an equation to this word problem: I know Tommy has three tickets. How many more tickets will he need if he wants to take five friends to a movie? Answer: 3 + X = 5. **Level II Students will:** **EE6.EE.2.** Determine what is unknown in an equation. Ex. After hearing a story problem, indicate what is unknown (the teacher labels that as X). Ex. Tell that X means "how many" in 2 + □ =5 and insert X in the box.* Ex. Indicate the X when asked, "What number do I not know in this equation? **Level I Students will:** **EE6.EE.2.** Identify the letter in a mathematical sentence. Ex. Point to or indicate the letter/fixed/variable. Ex. Indicate "X" in the equation when asked. ***Refer to the Common Core Essential Elements document for diagram.**

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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. 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.</td></tr>
<tr><td colspan="2">Domain: Expressions and Equations</td><td colspan="6">Cluster: Represent and analyze quantitative relationships between dependent and independent variables.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:
Define independent and dependent variables.

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 (dependent) in terms of the other quantity (independent).

Analyze the relationship between the dependent variable and independent variable using tables and graphs

Relate the data in a graph and table to the corresponding equation.</td><td colspan="2">Quarter 4:</td></tr>
<tr><td>Make sense of problems and persevere in solving them.</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given a real world problem involving two quantities that change in relationship to one another, Represent the context using graphs, tables, and equations, Explain the connections among the representations using mathematical vocabulary including dependent and independent variables.	Dependent variables Independent variables	Students know: Roles of dependent and independent variables, Correct translation between verbally stated situations and mathematical symbols and notation.	Students understand that/are able to: Represent real world problems involving two quantities that change in relationship to one another using equations, graphs, and tables, Use mathematical vocabulary to explain connections among representations of function contexts, Analyze and interpret the relationship between the independent and the dependent variable in a given situation.	**EE6.EE.9.** N/A	**EE6.EE.9.** N/A

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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.</td></tr>
<tr><td colspan="2">Domain: Geometry</td><td colspan="6">Cluster: Solve real-world and mathematical problems involving area, surface area, and volume.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="3">Quarter 2:</td><td colspan="2">Quarter 3:</td><td>Quarter 4:
Recognize and know how to compose and decompose polygons into triangles and rectangles.

Compare the area of a triangle to the area of the composted rectangle.(Decomposition addressed in previous grade.)

Apply the techniques of composing and/or decomposing to find the area of triangles, special quadrilaterals and polygons to solve mathematical and real world problems.

Discuss, develop and justify formulas for triangles and parallelograms (6th grade introduction)</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given a variety of triangles and quadrilaterals, Find their area, Justify their solutions and solution paths by composing shapes into rectangles and decomposing into triangles or other shapes, (e.g., combining two congruent right triangles into a rectangle to show that the area of one triangle is half of the area of the corresponding rectangle or decomposing a non-rectangular parallelogram into two right triangles and a rectangle to show that the area is the same as sum of the areas of the two right triangles and the rectangle). Given real world and mathematical problems involving area of triangles and other polygons, Compose and decompose shapes to find solutions, Interpret solutions.	Right triangles Special quadrilaterals Polygons	Students know: Appropriate units for measuring area: square inches, square units, square feet, etc., Strategies for composing and decomposing shapes to find area.	Students understand that/are able to: Communicate the relationship between models of area and the associated real world mathematical problems, Use logical reasoning to choose and apply strategies for finding area by composing and decomposing shapes, Accurately compute area of rectangles using multiplication and the formula A = l x w.	**EE6.G.1-2.** Demonstrate area.	**Level IV Students will:** **EE6.G.1-2.** Find area. Ex. Determine how many tiles in a single layer are required to cover a rectangle.* Ex. Determine how many cubes in a single layer are required to cover the bottom of a box and state the number required. **Level III Students will:** **EE6.G.1-2.** Demonstrate area. Ex. Given two representations, identify which has area (e.g. line segment, angle, square). Ex. Use squares of colored paper to cover their desk or tray on a wheelchair. Ex. Tell which figure is larger inside. **Level II Students will:** **EE6.G.1-2.** Determine what is the larger area. **Level I Students will:** **EE6.G.1-2.** Indicate the inside of a space. Ex. Fill in the inside of a figure when the difference between the inside and outside is clear. Ex. Answer yes or no when asked, “Here is a basket. Here is a ball. Put the ball inside the basket. Is the ball inside or outside the basket?” Ex. Point around the room or spread arms when asked “Are we inside or outside our classroom?” Ex. Point to the inside of a box or frame when asked, “Where is the inside?” ***Refer to the Common Core Essential Elements document for diagram.**

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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 = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</td></tr>
<tr><td colspan="2">Domain: Geometry</td><td colspan="6">Cluster: Solve real-world and mathematical problems involving area, surface area, and volume.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:
Know how to calculate the volume of a right rectangular prism.

Apply volume formulas for right rectangular prisms to solve real-world and mathematical problems involving rectangular prisms with fractional edge lengths.

Model the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given a right rectangular prism with fractional edge lengths within a real world or mathematical problem context, Find and justify the volume of the prism as part or all of the problem's solution by relating a cube filled model to the corresponding multiplication problem(s). Given cubes with appropriate unit fraction edge lengths, Create and explain rectangular prism models to show that the volume of a right rectangular prism with fractional edge lengths l, w, and h is represented by the formulas V = l w h and V = b h.	Right rectangular prism V = b h (Volume of a right rectangular prism = the area of the base x the height)	Students know: Measurable attributes of objects, specifically volume, Units of measurement, specifically unit cubes, Relationships between unit cubes and corresponding cubes with unit fraction edge lengths, Strategies for determining volume, Strategies for finding products of fractions.	Students understand that/are able to: Communicate the relationships between rectangular models of volume and multiplication problems, Model the volume of rectangles using manipulatives, Accurately measure volume using cubes with unit fraction edge lengths, Strategically and fluently choose and apply strategies for finding products of fractions, Accurately compute products of fractions.	**EE6.G.1-2.** Demonstrate area.	**Level IV Students will:** **EE6.G.1-2.** Find area. Ex. Determine how many tiles in a single layer are required to cover a rectangle.* Ex. Determine how many cubes in a single layer are required to cover the bottom of a box and state the number required. **Level III Students will:** **EE6.G.1-2.** Demonstrate area. Ex. Given two representations, identify which has area (e.g. line segment, angle, square). Ex. Use squares of colored paper to cover their desk or tray on a wheelchair. Ex. Tell which figure is larger inside. **Level II Students will:** **EE6.G.1-2.** Determine what is the larger area. **Level I Students will:** **EE6.G.1-2.** Indicate the inside of a space. Ex. Fill in the inside of a figure when the difference between the inside and outside is clear. Ex. Answer yes or no when asked, "Here is a basket. Here is a ball. Put the ball inside the basket. Is the ball inside or outside the basket?" Ex. Point around the room or spread arms when asked "Are we inside or outside our classroom?" Ex. Point to the inside of a box or frame when asked, "Where is the inside?" ***Refer to the Common Core Essential Elements document for diagram.**

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<tr><td colspan="8">Standard with code: 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.</td></tr>
<tr><td colspan="2">Domain: Geometry</td><td colspan="6">Cluster: Solve real-world and mathematical problems involving area, surface area, and volume.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:
Draw polygons in the coordinate plane.

Use coordinates (with the same x- coordinate or the same y-coordinate) to find the length of a side of a polygon.

Apply the technique of using coordinates to find the length of a side of a polygon drawn in the coordinate plane to solve real-world and mathematical problems.</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
</table>

Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given real world and mathematical problems involving the mapping of polygons onto a coordinate system, Determine the length of a side joining points with the same first coordinate or the same second coordinate.	Polygon Coordinate plane	Students know: Terminology associated with coordinate systems, Correct construction of coordinate systems.	Students understand that/are able to: Graph points corresponding to ordered pairs, Represent real world and mathematical problems on a coordinate plane, Interpret coordinate values of points in the context of real world and mathematical situations, Determine lengths of line segments on a coordinate plane when the line segment joins points with the same first coordinate or the same second coordinate.	**EE6.G.3.** N/A	**EE6.G.3.** N/A

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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.</td></tr>
<tr><td colspan="2">Domain: Geometry</td><td colspan="6">Cluster: Solve real-world and mathematical problems involving area, surface area, and volume.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:
Know that 3-D figures can be represented by nets.

Represent three-dimensional figures using nets made up of rectangles and triangles.

Apply knowledge of calculating the area of rectangles and triangles to a net, and combine the areas for each shape into one answer representing the surface area of a 3-dimensional figure.

Solve real-world and mathematical problems involving surface area using nets</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given real world and mathematical problems involving surface area, Use models of the relating net of the 3-D figure to explain and justify solutions and solution paths.	Nets Surface area	Students know: Measureable attributes of objects, specifically area and surface area, Strategies for representing the surface area of a 3-D shape as a 2-D net.	Students understand that/are able to: Communicate the relationships between rectangular models of area and multiplication problems, Model the surface area of 3-D shapes using 2-D nets, Accurately measure and compute area of triangles and rectangles, Strategically and fluently choose and apply strategies for finding surface areas of 3-D figures.	**EE6.G.4.** Identify common three-dimensional shapes.	**Level IV Students will:** **EE6.G.4.** Relate real-world items as three-dimensional shapes to their two-dimensional representations. Ex. Match the picture of the soda can to the picture of the cylinder, etc. Ex. Identify in the environment items that are three-dimensional when presented with in the two-dimensional format. **Level III Students will:** **EE6.G.4.** Identify common three-dimensional shapes. Ex. When presented with a sphere and a cube, name the three-dimensional shape. Ex. Identify spheres and cubes in the classroom. **Level II Students will:** **EE6.G.4.** Sort three-dimensional shapes and two-dimensional shapes. Ex. When given a bag of three-dimensional shapes and their two-dimensional pictures, sort into the appropriate three-dimensional or two-dimensional shape. Ex. Label objects as three-dimensional and two-dimensional shapes in the classroom. **Level I Students will:** **EE6.G.4.** Match shapes. Ex. When given a picture of a shape, find like shapes in the classroom. Ex. Shape BINGO.

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<tr><td colspan="8">Standard with code: 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. 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.</td></tr>
<tr><td colspan="2">Domain: Statistics and Probability</td><td colspan="6">Cluster: Develop understanding of statistical variability.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:

Recognize that data can have variability.

Recognize a statistical question (examples versus nonexamples)</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given a variety of mathematical questions, Justify the classification of questions as either statistical or non-statistical	Statistical questions Variability	Students know: Characteristics of statistical and non-statistical questions.	Students understand that/are able to: Justify the classification of mathematical questions as statistical or non-statistical questions.	**EE6.SP.1-2.** Display data on a graph or table that shows variability in the data.	**Level IV Students will:** **EE6.SP.1-2.** Collect, display, and describe data on a graph or table. Ex. Collect data for a classroom experiment and chart height of plants, temperature of soil, etc. Ex. Collect data from a class survey of height and create a table showing the variance in height (e.g., shortest person is 4'6", the tallest person is 5'4"). Ex. Collect weather data and graph to show variance (e.g., five sunny days, three cloudy, two rainy). Ex. Describe data laid out on a graph showing a distribution of responses. For example, students have different heights, but there are many with similar heights, while some are much taller or shorter. **Level III Students will:** **EE6.SP.1-2.** Display data on a graph or table that shows variability of data. Ex. Given weather data for the week, display it on a graph to show variance (e.g., five sunny days, three cloudy, two rainy). Ex. Given data about the ages of students in the class (e.g., 12, 13, and 14), display data in a table showing the variance in age (e.g., fewest are 12 years old, most are 13 years old). **Level II Students will:** **EE6.SP.1-2.** Organize data. Ex. Survey students in the classroom concerning favorites among three choices and represent responses (e.g., how many pick each of three stories or each of three subjects). Ex. Given data, sort to determine how many (e.g., how many students have certain number of siblings). **Level I Students will:** **EE6.SP.1-2.** Sort information into categories of same and different. Ex. After charting the weather for a week, identify if today's weather was the same or different than yesterday. Ex. Given a graphic organizer with three categories of colors identified, sort seven discs of three different colors into the categories and place them in the appropriate place on the graphic organizer.

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<table>
<tr><td colspan="8">Grade Level: 6th</td></tr>
<tr><td colspan="8">Standard with code: 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.</td></tr>
<tr><td colspan="2">Domain: Statistics and Probability</td><td colspan="6">Cluster: Develop understanding of statistical variability.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:
Know that a set of data has a distribution.

Describe a set of data by its center, e.g., mean and median.

Describe a set of data by its spread and overall shape, e.g. by identifying data clusters, peaks,
gaps and symmetry</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Generate statistical questions, Collect and organize the data to address the questions, Describe the distributions of the data using measures of center (e.g., mean and median), spread, and overall shape including outliers.	Statistical question Distribution Measure of center Spread Shape	Students Know: How to identify the significant features of a data set, [e.g., measures of center (mean and median), spread, and overall shape].	Students understand that/are able to: Calculate the mean, median, and range, Organize data in ways that aid in identifying significant features of the data (e.g. putting data in order to find median, displaying data in a graph to see overall shape), Describe the distribution of a set of data by referring to measures of center, spread, and shape.	**EE6.SP.1-2.** Display data on a graph or table that shows variability in the data.	**Level IV Students will:** **EE6.SP.1-2.** Collect, display, and describe data on a graph or table. Ex. Collect data for a classroom experiment and chart height of plants, temperature of soil, etc. Ex. Collect data from a class survey of height and create a table showing the variance in height (e.g., shortest person is 4'6", the tallest person is 5'4"). Ex. Collect weather data and graph to show variance (e.g., five sunny days, three cloudy, two rainy). Ex. Describe data laid out on a graph showing a distribution of responses. For example, students have different heights, but there are many with similar heights, while some are much taller or shorter. **Level III Students will:** **EE6.SP.1-2.** Display data on a graph or table that shows variability of data. Ex. Given weather data for the week, display it on a graph to show variance (e.g., five sunny days, three cloudy, two rainy). Ex. Given data about the ages of students in the class (e.g., 12, 13, and 14), display data in a table showing the variance in age (e.g., fewest are 12 years old, most are 13 years old). **Level II Students will:** **EE6.SP.1-2.** Organize data. Ex. Survey students in the classroom concerning favorites among three choices and represent responses (e.g., how many pick each of three stories or each of three subjects). Ex. Given data, sort to determine how many (e.g., how many students have certain number of siblings). **Level I Students will:** **EE6.SP.1-2.** Sort information into categories of same and different. Ex. After charting the weather for a week, identify if today's weather was the same or different than yesterday. Ex. Given a graphic organizer with three categories of colors identified, sort seven discs of three different colors into the categories and place them in the appropriate place on the graphic organizer.

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<tr><td colspan="2">Domain: Statistics and Probability</td><td colspan="6">Cluster: Develop understanding of statistical variability.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:
Recognize there are measures of central tendency for a data set, e.g., mean, median, mode
.
Recognize there are measures of variances for a data set, e.g., range, interquartile range, mean absolute deviation.

Recognize measures of central tendency for a data set summarizes the data with a single number.

Recognize measures of variation for a data set describes how its values vary with a single number.</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given a set of numerical data, Determine and interpret measures of center (mean and median) and variability (interquartile range and mean absolute deviation).	Measures of center Measures of variation	Students know: Measures of center (mean and median) and how they are affected by the data distribution, Measures of variability (interquartile range and mean absolute deviation) and how they are affected by data distribution.	Students understand that/are able to: Determine measures of center and variability for a set of numerical data, Interpret measures of center and variability for a set of numerical data.	**EE6.SP.3.** N/A	**EE6.SP.3.** N/A

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<table>
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<tr><td colspan="8">Standard with code: 6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.</td></tr>
<tr><td colspan="2">Domain: Statistics and Probability</td><td colspan="6">Cluster: Summarize and describe distributions.</td></tr>
<tr><td colspan="2">Quarter 1:</td><td colspan="2">Quarter 2:</td><td colspan="2">Quarter 3:</td><td colspan="2">Quarter 4:
Identify the components of dot plots, histograms, and box plots.

Find the median, quartile and interquartile range of a set of data

Analyze a set of data to determine its variance.

Create a dot plot to display a set of numerical data.

Create a histogram to display a set of numerical data.

Create a box plot to display a set of numerical data.</td></tr>
<tr><td>Make sense of problems and persevere in solving them</td><td>Reason abstractly and quantitatively.</td><td>Construct viable arguments and critique the reasoning of others.</td><td>Model with mathematics.</td><td>Use appropriate tools strategically.</td><td>Attend to precision.</td><td>Look for and make use of structure.</td><td>Look for and express regularity in repeated reasoning.</td></tr>
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Evidence of Student Attainment/Assessment	Vocabulary	Knowledge	Skills	Common Core Essential Elements	Instructional Achievement Level Descriptors
Students: Given a set of numerical data, Organize and display the data using plots on a number line, including dot plots, histograms, and box plots.	Dot plot Histograms Box plots	Students know: Techniques for constructing dot plots, histograms, and box plots.	Students understand that/are able to: Organize and display data using dot plots, histograms, and box plots.	**EE6.SP.4.** N/A (See EE6.SP.1-2)	**EE6.SP.4.** N/A (See EE6.SP.1-2)

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Grade Level: 6th			
Standard with code: 6.SP.5abcd Summarize numerical data sets in relation to their context, such as by: e. Reporting the number of observations. f. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. g. 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. h. 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.			
Domain: Statistics and Probability	**Cluster: Summarize and describe distributions**		
Quarter 1:	**Quarter 2:**	**Quarter 3:**	**Quarter 4:** Organize and display data in tables and graphs. Report the number of observations in a data set or display. Describe the data being collected, including how it was measured and its units of measurement. Calculate quantitative measures of center, e.g., mean, median, mode. Calculate quantitative measures of variance, e.g., range, interquartile range, mean absolute deviation. Identify outliers Determine the effect of outliers on quantitative measures of a set of data, e.g., mean, median, mode, range, interquartile range, mean absolute deviation. Choose the appropriate measure of central tendency to represent the data.

						Analyze the shape of the data distribution and the context in which the data were gathered to choose the appropriate measures of central tendency and variability and justify why this measure is appropriate in terms of the context	
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 use of structure.**	**Look for and express regularity in repeated reasoning.**

Evidence of Student Attainment/Assessment	**Vocabulary**	**Knowledge**	**Skills**	**Common Core Essential Elements**	**Instructional Achievement Level Descriptors**
Students: Given a set of numerical data, summarize the data by, Reporting the number of observations (n), Describing the nature of the attribute under investigation (how it was measured and its units of measure), Determining the measures of center (median/mean), Determining the measures of variability (interquartile range and mean absolute	Data distribution Measures of center Measures of variability Mean Median Interquartile range Mean absolute deviations Striking deviations	Students know: Measures of center and how they are affected by the data distribution and context, Measures of variability and how they are affected by the data distribution and context, Methods of determining mean, median, interquartile range, and mean absolute deviation.	Students understand that/ are able to: Describe the nature of the attribute under investigation including how it was measured and its unit of measure using the context in which the data were collected, Describe the shape of numerical data distribution including patterns and outliers, Determine measures of center and variability for a set of numerical data, Use characteristics of	**EE6.SP.5.** Summarize data distributions on a graph or table.	**Level IV Students will:** **EE6.SP.5.** Summarize the data on a graph or table. Ex. When looking at a table of what students like to eat for lunch, summarize the data in multiple ways (i.e., chicken nuggets has the most, pizza has the least). Ex. When looking at a graph of temperatures from the week, summarize the data in multiple ways (i.e., three days were above 70 degrees, six days were between 60-70 degrees, and two days were 50-60 degrees). **Level III Students will:** **EE6.SP.5.** Summarize data distributions on a graph or table. Ex. When looking at a graph of temperatures from the week, summarize the data in one way (i.e., three days were above 70 degrees). Ex. When looking at a table of what students like to eat for lunch, summarize the data in one way (e.g., chicken nuggets has the most; pizza has the least). **Level II Students will:** **EE6.SP.5.** Use a graph to determine which category has the most. Ex. Looking at a bar graph on the students' favorite subject in school, identify which is the most preferred subject. Ex. Looking at a pictograph of the students' favorite sports teams, identify which is the most preferred team. **Level I Students will:**

deviation), Reporting significant features in the shape of data including striking deviations, (e.g., outliers, gaps, and clusters). Given a set of numerical data, Justify their choice of measures of center and variability to describe the data based on the data distribution and the context in which the data were gathered.			measures of center and variability to justify choices for summarizing and describing data. Measures of center for a set of data summarize the values in the set in a single number and are affected by the distribution of the data, Measures of variability for a set of data describe how the values vary in a single number and are affected by the distribution of the data, The overall shape and other significant features of a set of data, (e.g., outliers, gaps, and clusters) are important in summarizing numerical data sets		**EE6.SP.5.** Identify which has more or less. Ex. Given two items on a bar graph, identify which has more or less. Ex. Given two towers of interlocking cubes, identify which has more or less.