



Brookhaven School District
Pacing Guide 2017-2018
Sixth Grade Math

1st NINE WEEKS			
Timeline	Concepts and Skills for the Time Period	Standards	Resources (textbooks, links, etc.)
August 6-8	- <u>Fluently</u> divide multi-digit numbers using the standard algorithm.	6.NS.2	Corecommonstandards.com binder Go Mathbook www.khanacademy.org www.illustrativemathematics.com www.tenmarks.com (on website) MAP to Khan Academy Classworks / Kahoot
August 9-15	- Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. <i>For example, express $36 + 8$ as $4(9 + 2)$.</i>	6.NS.4	
August 16-24	- <u>Fluently</u> add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	6.NS.3	
August 27- August 31	- Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane. - Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. <i>For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.</i>	6.NS.6c 6.NS.7a	
September 4-20	- Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. <i>For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$-cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?</i>	6.NS.1	
September 6 4.5 Week Test			
September 21-28	- Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. <i>For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."</i> Nine Weeks Test - Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. <i>For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."¹</i>	6.RP.1 6.RP.2	Corecommonstandards.com binder Go Mathbook MAP to Khan Academy Classworks/ Kahoot
October 1-5	Nine Weeks Test		
2nd NINE WEEKS			
Timeline	Concepts and Skills for the Time Period	Standards	Resources (textbooks, links, etc.)
October 8-19 October 9 Report Card Pick-Up	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. a. Make tables of equivalent ratios relating quantities with whole-number measurements, find	6.RP.3 6. RP.3a	Corecommonstandards.com binder Go Mathbook www.engageny.org (on website)

<p>October 22- November 8</p>	<p>missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p> <p>b. Solve unit rate problems including those involving unit pricing and constant speed. <i>For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</i></p> <p>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.</p> <p>d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>	<p>6. RP.3b</p> <p>6. RP.3c</p> <p>6.RP.3d</p>	<p>MAP to Khan Academy Classworks/ Kahoot</p>
<p>November 9; 12</p> <p><u>November 12 4.5 Week Test</u></p> <p>November 13-14</p> <p>November 15-16</p> <p>November 26-29</p> <p>November 30-December 4</p> <p>December 5-14</p>	<p>- Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.</p> <p>-Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.</p> <p>-Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. <i>For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.</i></p> <p>-Write, interpret, and explain statements of order for rational numbers in real-world contexts. <i>For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C.</i></p> <p>- Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. <i>For example, for an account balance of -30 dollars, write $-30 = 30$ to describe the size of the debt in dollars.</i></p> <p>- Distinguish comparisons of absolute value from statements about order. <i>For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.</i></p> <p>Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.</p> <p>-Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.</p> <p>- 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.</p> <p>-- Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.</p> <p>- Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p> <p>- Apply and extend previous understandings of addition and subtraction to add and subtract integers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <p>a. Describe situations in which opposite quantities combine to make 0. <i>For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</i></p> <p>b. Understand $p + q$ as the number located a distance q from p, in the positive or negative</p>	<p>6. NS.5</p> <p>6.NS.6a</p> <p>6. NS.7a</p> <p>6.NS.7b</p> <p>6. NS.7c</p> <p>6.NS.7d</p> <p>6.NS.6</p> <p>6.NS.6a</p> <p>6.NS.6b</p> <p>6.NS.6c</p> <p>6. NS.8</p> <p>6.NS.9a</p> <p>6.NS.9b</p>	<p>Corecommonstandards.com binder Go Mathbook MAP to Khan Academy Classworks/ Kahoot</p>

December 12-20	<p>direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of integers by describing real-world contexts.</p> <p>c. Understand subtraction of integers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two integers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</p> <p>d. Apply properties of operations as strategies to add and subtract integers.</p>	6.NS.9c 6.NS.9d	
----------------	--	------------------------	--

Nine Weeks Test

3rd NINE WEEKS

Timeline	Concepts and Skills for the Time Period	Standards	Resources (textbooks, links, etc.)
January 5-8	-Write and evaluate numerical expressions involving whole-number exponents.	6.EE.1	Corecommonstandards.com binder
January 9-11	<p>Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>a. Write expressions that record operations with numbers and with letters standing for numbers. <i>For example, express the calculation "Subtract y from 5" as $5 - y$.</i></p> <p>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. <i>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.</i></p> <p>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). <i>For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = 1/2$.</i></p>	6.EE.2a 6.EE.2b 6.EE.2c	Go Mathbook Grab n Go kit MAP to Khan Academy Classworks/Kahoot
January 12	- Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	6.EE.6	
January 16-18	<p>-Apply the properties of operations to generate equivalent expressions. <i>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 $3y$.</i></p> <p>- Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). <i>For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.</i></p>	6.EE.3 6.EE.4	
January 19-25	<p>- 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.</p> <p>-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.</p>	6.EE.5 6.EE.7	
January 26-31	-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;	6.EE.8	

February 1-9	<p>represent solutions of such inequalities on number line diagrams.</p> <p>-Use variables to represent two quantities in a real-world problem that change in relationship to one another.</p> <ul style="list-style-type: none"> • 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. <p><i>For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.</i></p>	6.EE.9	
February 12-13	<p>- Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. <i>For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.</i></p> <p>Summarize numerical data sets in relation to their context, such as by:</p> <ol style="list-style-type: none"> Reporting the number of observations. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. Giving quantitative measures of center (median and/or mean) and variability (interquartile range), 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. <p>-Display numerical data in plots on a number line, including dot plots, histograms, and box plots.</p> <p>- Giving quantitative measures of center (median and/or mean) and variability (interquartile range), 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.</p> <p>- 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.</p> <p>- Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.</p> <p>- Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.</p>	6.SP.1	<p>Go Mathbook MAP to Khan Academy Classworks / Kahoot Corecommonstandards.com binder</p>
February 14-16		6.SP.5a 6.SP.5b	
February 20-26		6.SP.5c	
February 27- March 2		6.SP.4 6.SP.5c	
March 5-9		6.SP.5d 6.SP.3 6.SP.2	
4th NINE WEEKS			
Timeline	Concepts and Skills for the Time Period	Standards	Resources (textbooks, links, etc.)
March 19-29	<p>- Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.</p> <p>-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.</p> <p>-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</p>	6.G.1 6.EE.7 6.EE.2c	<p>Corecommonstandards.com binder Go mathbook Manipulatives Classworks/ Kahoot MAP to Khan Academy</p>

