



Brookhaven School District
Pacing Guide 2017-18
Seventh Grade Math

1 st NINE WEEKS			
Timeline	Concepts and Skills for the Time Period	Standards	Resources (textbooks, links, etc.)
Integers			Classworks https://www.engageny.org/mathbits.com/ https://www.bigideasmath.com/teachers www.commoncoresheets.com www.helpingwithmath.com http://www.insidemathematics.org https://www.illustrativemathematics.org/ Sharemylesson.com watchknowlearn.org https://www.kutasoftware.com https://www.mathplanet.com http://mathshell.org/ https://www.desmos.com/ https://www.mathworksheets4kids.com
2 days Aug 6-7	<p>Integers and Absolute Value Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <ol style="list-style-type: none"> 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> Understand $p + q$ as the number located a distance q from p, in the positive or negative 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 rational numbers by describing real-world contexts. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. Apply properties of operations as strategies to add and subtract rational numbers. <p>Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <ol style="list-style-type: none"> Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts. Apply properties of operations as strategies to multiply and divide rational numbers. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. <p>Solve real-world and mathematical problems involving the four operations with rational numbers.¹</p>	7.NS.1 7.NS.1a 7.NS.1b 7.NS.1c 7.NS.1d 7.NS.2 7.NS.2a 7.NS.2b 7.NS.2c 7.NS.2d 7.NS.3	
3 days Aug. 8-10	<p>Adding Integers Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <ol style="list-style-type: none"> 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> Understand $p + q$ as the number located a distance q from p, in the positive or negative 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 rational numbers by describing real-world contexts. Apply properties of operations as strategies to add and subtract rational numbers. <p>Solve real-world and mathematical problems involving the four operations with rational numbers.¹</p>	7.NS.1 7.NS.1a 7.NS.1b 7.NS.1d 7.NS.3	

3 days Aug. 13-15	<p>Subtracting Integers</p> <p>d. Apply properties of operations as strategies to add and subtract rational numbers.</p> <p>Solve real-world and mathematical problems involving the four operations with rational numbers.¹</p>	7.NS.1d 7.NS.3
2 days Aug. 16-17	<p>Multiplying Integers</p> <p>Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the</p> <p>c. Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p>Solve real-world and mathematical problems involving the four operations with rational numbers.¹</p>	7.NS.2 7.NS.2a 7.NS.2c 7.NS.3
2 days Aug. 20-21	<p>Dividing Integers</p> <p>b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.</p> <p>Solve real-world and mathematical problems involving the four operations with rational numbers.¹</p>	7.NS.2 b 7.NS.3
1 day Aug. 22	Assessment	
Rational Numbers		
2 days Aug. 23-24	<p>Rational Numbers Conversions</p> <p>Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.</p>	7.NS.2d
2 days Aug. 27-28	<p>Adding Rational Numbers</p> <p>Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; 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 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 rational numbers by describing real-world contexts.</p> <p>d. Apply properties of operations as strategies to add and subtract rational numbers.</p> <p>Solve real-world and mathematical problems involving the four operations with rational numbers.¹</p>	7.NS.1 7.NS.1a 7.NS.1b 7.NS.1d 7.NS.3
1 day Aug. 29	Quiz	
2 days Aug. 30-31	<p>Subtraction Rational Numbers</p> <p>Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <p>c. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers 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 rational numbers.</p> <p>Solve real-world and mathematical problems involving the four operations with rational numbers.¹</p>	7.NS.1 7.NS.1c 7.NS.1d 7.NS.3
2 days Sept. 4-5	<p>Multiplication /Division Rational numbers</p> <p>Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p>	7.NS.2

2 days Jan. 17-18	<p>Independent and Dependent Events Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</p> <p>a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.</p> <p>b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.</p> <p>c. Design and use a simulation to generate frequencies for compound events. <i>For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?</i></p>	7.SP.8 7.SP.8a 7.SP.8b 7.SP.8c
3 days Jan. 22-24	<p>Samples and Populations collect and use data about populations, validity and size Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.</p> <p>Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. <i>For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.</i></p>	7.SP.1 7.SP.2
2days Jan. 25; 28	<p>Comparing Populations. Look at data sets (i.e, mean, median, mean absolute deviation, interquartile range etc.) and compare data. Use tables, charts, graphs Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability on either team; on a dot plot, the separation between the two distributions of heights is noticeable.</p> <p>Use measures of center and measures of variability (i.e. inter-quartile range) for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.</p>	7.SP.3 7.SP.4
1 day Jan. 29	Assessment	
Geometry-angles, triangles, scale		
2 days Jan. 30-31	<p>Adjacent and Vertical Angles Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</p>	7.G.5
2 days Feb. 1: 4	<p>Complementary/Supplementary Angles Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</p>	7.G.5
4 days Feb. 5-6; 8 11	<p>Triangles (triangle inequality theorem) Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</p>	7.G.5
1 day Feb. 7	<p>Assessment (4.5 week test)</p> <p>Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p>	7.G.2
3 days Feb. 12-14	<p>Quadrilaterals Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p>	7.G.2

2 days Feb. 15;19	Scale Drawings Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	7.G.1	
9 days Feb. 20-22; 25-28 Mar. 1; 4 5 Days Mar. 4-8	Additional needed review/reinforcement Assessment (9 weeks test)		
4th Nine Weeks			
Timeline	Concepts and Skills for the Time Period	Standards	Resources (textbooks, links, etc.)
8 days Mar. 18-20; 22; 25-28	Circles circumference and area. Reverses formula and solve for d or r Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	7.G.4	Big Ideas Math https://www.engageny.org/mathbits.com/ https://www.bigideasmath.com/teachers www.commoncoresheets.com https://www.illustrativemathematics.org/ www.helpingwithmath.com http://www.insidemathematics.org ELS Teacher Made Resources Classworks
4 days Mar. 29; Apr. 1-3	Composite Figures Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	7.G.6	
10 days Apr.4-5; 8-12; 15-17	Perimeter, Area, Surface Area and Volume 2-D shapes, Irregular shapes and 3-D shapes Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	7.G.6 7.G.3	
24 Days Apr. 18; Apr.23-May 23	Additional needed review/reinforcement <ul style="list-style-type: none"> • Spring NWEA MAP • State testing begins • Nine weeks Tests 5-17 to 5-23 		
WRITING-Math Vocabulary, Students are required to write; justifying their reasoning using math vocabulary and strategies explaining how they arrived at their answers or outcomes.			