8th Grade Pre-Algebra Pacing Guide
1st Nine Weeks

MS Objective	CCSS Standard	I Can Statements ✓ Included in MS Framework + Included in Phase 1 infusion ➢ Included in Phase 2 infusion
1a. Define, classify, and order rational and irrational numbers and their subsets. (DOK 1)	8.NS.1 Understand informally that every number has a decimal expansion; the rational numbers are those with decimal expansions that terminate in 0s or eventually repeat. Know that other numbers are called irrational.	I Can: ✓ 8.NS.1.1 Define and represent rational numbers ✓ 8.NS.1.2 Determine if a decimal number is rational or irrational ✓ 8.NS.1.3 Recognize that a repeating/terminating decimal is a rational number ✓ 8.NS.1.4 Determine if a number is rational or irrational ✓ 8.NS.1.5 Distinguish between rational and irrational numbers + 8.NS.1.6 Recognize that all real numbers can be written in a decimal form + 8.NS.1.7 Change rational and irrational numbers to decimals + 8.NS.1.8 Convert a decimal number (repeating/terminating) into a fraction ➢ 8.NS.1.9 Convert terminating and repeating decimals to fractions
	8.NS.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π2). For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.	I Can: ✓ 8.NS.2.1 Determine which number is bigger when given any set of numbers written in any form ✓ 8.NS.2.2 Locate rational numbers on a number line ✓ 8.NS.2.3 Locate irrational numbers on a number line ✓ 8.NS.2.4 Construct a number line that includes rational and irrational numbers ✓ 8.NS.2.5 Compare and contrast irrational numbers identifying larger vs. smaller numbers + 8.NS.2.6 Find the square roots of perfect squares + 8.NS.2.7 Estimate irrational numbers + 8.NS.2.8 Estimate the decimal for a square root ➢ 8.NS.2.9 Locate the approximate location of irrational numbers on a number line based on perfect squares ➢ 8.NS.2.10 Recognize if a number is rounded or repeats when using a calculator

1g. Explain and use the inverse relationship between square roots and squares. (DOK 2)	8.EE.2 Use square root and cube root symbols to represent solutions to equations of the form x2 = p and x3 = p, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.	I Can: ✓ 8.EE.2.1 Read perfect square numbers ✓ 8.EE.2.2 Define square and cube root ✓ 8.EE.2.3 Solve square root equations ✓ 8.EE.2.4 Recognizing the inverse operation of squared is square rooting + 8.EE.2.5 Define and recognize a rational number + 8.EE.2.6 Read perfect cube numbers + 8.EE.2.7 Solve cube roots equations + 8.EE.2.8 Understand that non-perfect squares are irrational + 8.EE.2.9 Understand that non-perfect cubes are irrational + 8.EE.2.10 Recognizing the inverse operation of cubed is cube rooting + 8.EE.2.11 Define and recognize an irrational number + 8.EE.2.12 Evaluate square and cube roots of small perfect squares and cubes up to 144 + 8.EE.2.13 Evaluate perfect squares thru 144 fluently + 8.EE.2.14 Recall the perfect squares and perfect cubes of numbers less than or equal to 100 + 8.EE.2.15 Evaluate perfect cube roots thru 125 fluently ➢ 8.EE.2.16 Use prime factorization to find the cube root of a positive number
	8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	I Can: ✓ 8.G.7.1 Solve word problems using the Pythagorean Theorem ✓ 8.G.7.2 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world problems in 2 dimension ✓ 8.G.7.3 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in mathematical problems in 2 dimension + 8.G.7.4 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world problems in 3 dimensions + 8.G.7.5 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in mathematical problems in3 dimensions
3c. Explain the Pythagorean Theorem and apply it to solve routine and non-routine problems. (DOK 3)	8.G.6 Explain a proof of the Pythagorean Theorem and its converse.	I Can: ✓ 8.G.6.1 Understand the Pythagorean Theorem ✓ 8.G.6.2 Use the Pythagorean Theorem to find the missing side of a right triangle. ✓ 8.G.6.3 Identify the parts of a right triangle (legs and hypotenuse) ✓ 8.G.6.4 Use the Pythagorean Theorem to determine if three length measurements form a right triangle ✓ 8.G.6.5 Recognize the diagonal of a parallelogram with right angles as the hypotenuse of the right triangles formed

		✓ 8.G.6.6 Determine if a triangle is a right triangle by using the Pythagorean Theorem ➢ 8.G.6.7 Verify the Pythagorean Theorem by examining the area of squares coming off of each side of the right triangle ➢ 8.G.6.8 Identify Pythagorean triples ➢ 8.G.6.9 Explain a proof of the Pythagorean Theorem
	8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	I Can: ➢ 8.G.8.1 Use the Pythagorean Theorem (instead of the distance formula) to find the distance between two points in a coordinate plane ➢ 8.G.8.2 Construct a right triangle on a coordinate plane to determine the distance between two points ➢ 8.G.8.3 Determine the length of the diagonal or hypotenuse of a right triangle on a coordinate plane ➢ 8.G.8.4 Use the coordinate plane to create a right triangle relationship whereby the distance between two points can be determined by solving for the hypotenuse of the Pythagorean Theorem.
2c. Solve and check equations and inequalities using one variable. (DOK 2)	8.EE.7 Solve linear equations in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	I Can: a. ✓ 8.EE.7a.1 Solve one-variable equations with a single solution and check the answer. ✓ 8.EE.7a.3 Solve multi-step equations in one variable and justify the solution ✓ 8.EE.7a.4 Solve one-variable equations with no solution and check the answer. ✓ 8.EE.7a.5 Solve one-variable equations with infinitely many solutions and check the answers. ✓ 8.EE.7a.6 Recognize one solution, infinitely many solution, and no solution when solving multi-step equations + 8.EE.7a.2 Create an ordered pair to support my solution and justification ** b. + 8.EE.7b.1 Solve multi-step one-variable equations, involving parentheses. + 8.EE.7b.2 Solve multi-step one-variable equations, by combining like terms. + 8.EE.7b.3 Solve multi-step one-variable equations, with variables on both sides of the equation.

2nd Nine Weeks

MS Objective	CCSS Standard	I Can Statements ✓ Included in MS Framework + Included in Phase 1 infusion ➢ Included in Phase 2 infusion
	8.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	I Can: + 8.F.5.1 Identify equations as linear or nonlinear. + 8.F.5.2 Explain how slope changes when given a graph. + 8.F.5.3 Sketch a graph when given the description of the slope + 8.F.5.4 Evaluate and describe properties based on a given graph + 8.F.5.5 Analyze the graph for a functional relationships + 8.F.5.6 Create a graph for a functional relationships + 8.F.5.7 Sketch a graph by analyzing a situation that has been described verbally
2i. Predict characteristics of a graph given an equation or t-table. (DOK 2)	8.F.1 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.1	I Can: ✓ 8.F.1.1 Define function ✓ 8.F.1.2 Identify the domain and range of a relation ✓ 8.F.1 Graph a set of points ✓ 8.F.1.3 Determine if a graph is a function ✓ 8.F.1.4 Determine if a set of points is a function ✓ 8.F.1.5 Identify functions from an equation ✓ 8.F.1.6 Calculate the y-value for an equation when given the x-value ✓ 8.F.1.7 Calculate the x-value for an equation when given the y-value ✓ 8.F.1.8 Create a table for an equation ✓ 8.F.1.9 Determine if a table is a function ✓ 8.F.1.10 Determine if an equation is a function by looking at it + 8.F.1.11 Represent a function in the form of ordered pairs, mapping, graph, or listing
2e. Graph linear equations and non-linear equations ($y = x^2$) using multiple methods including t-tables and slope-intercept. (DOK 2)	8.EE.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.	I Can: ✓ 8.EE.5.1 Determine the slope of an equation ✓ 8.EE.5.2 Determine the slope of a graph ✓ 8.EE.5.3 Compare the slopes of 2 graphs ✓ 8.EE.5.4 Determine which slope is the steepest ✓ 8.EE.5.5 Determine which slope is closest to being horizontal ✓ 8.EE.5.6 Compare the slopes of 2 equations ✓ 8.EE.5.7 Compare the slope of an equation to the slope of a graph + 8.EE.5.8 Identify slope is unit rate + 8.EE.5.9 Interpret the unit rate of a graph as the slope of a line + 8.EE.5.10 Compare the unit rate of a line and of an

		equation ** + 8.EE.5.11 Analyze graphs, tables, and equations and explain what is being represented + 8.EE.5.12 Graph by hand and by calculator data illustrating slope as the unit rate ➢ 8.EE.5.13 Compare and contrast proportional relationships from a graph, table, or description
	8.EE.6. Use similar triangles to explain why the slope *m* is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation *y* = *mx* for a line through the origin and the equation *y* = *mx* + *b* for a line intercepting the vertical axis at *b*.	I Can: ➢ 8.EE.6.1 Explain why triangles are similar ➢ 8.EE.6.2 Determine the slope between two points ➢ 8.EE.6.3 Determine the slope between two points on a coordinate plane ➢ 8.EE.6.4 Determine the slope, looking at a graph ➢ 8.EE.6.5 Determine the y-intercept, looking at a graph ➢ 8.EE.6.6 Write the slope-intercept form of an equation of a line, looking at a graph ➢ 8.EE.6.7 Construct a right triangle using two points on a non-vertical line ** ➢ 8.EE.6.8 Compare the sides by counting units to understand the slope of a non-vertical line is rise to run ➢ 8.EE.6.9 Identify *m* as the slope of a line and *b* as the point where the line intercepts the vertical axis (y-intercept) ➢ 8.EE.6.10 Construct an equation using the slope *m* and the y-intercept *b* in the form of y=mx + b ➢ 8.EE.6.11 Justify why the slope is the same between any two points on a non-vertical line ➢ 8.EE.6.12 Identify that the slope is the same between any two points on a line based on the proportional relationship of m=y/x
2f. Given a linear graph, identify its slope as positive, negative, undefined, or zero, and interpret slope as rate of change. (DOK 2)	8.F.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	I Can: ✓ 8.F.4.1 Identify the slope and y-intercept from a graph ✓ 8.F.4.2 Identify the slope and y-intercept from a table ✓ 8.F.4.3 Identify the slope and y-intercept given an equation + 8.F.4.4 Understand that the y-intercept is the initial value of a function + 8.F.4.5 Construct an equation from a verbal expression + 8.F.4.6 Write an equation given the slope of a line and a point on the line ➢ 8.F.4.7 Write an equation given two points on a line ➢ 8.F.4.8 Interpret the rate of change (slope) and the y-intercept given real-world situations ➢ 8.F.4.9 Model the rate of change and the y-intercept given real-world situations
2i. Predict characteristics of a graph given an equation or t-table. (DOK 2)	8.F.1 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.1	I Can: ✓ 8.F.1.1 Define function ✓ 8.F.1.2 Identify the domain and range of a relation ✓ 8.F.1 Graph a set of points ✓ 8.F.1.3 Determine if a graph is a function ✓ 8.F.1.4 Determine if a set of points is a function ✓ 8.F.1.5 Identify functions from an equation ✓ 8.F.1.6 Calculate the y-value for an equation when given the x-value ✓ 8.F.1.7 Calculate the x-value for an equation when given

		the y-value ✓ 8.F.1.8 Create a table for an equation ✓ 8.F.1.9 Determine if a table is a function ✓ 8.F.1.10 Determine if an equation is a function by looking at it + 8.F.1.11 Represent a function in the form of ordered pairs, mapping, graph, or listing
	8.F.3 Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function A = s2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.	I Can: ✓ 8.F.3.1 Explain the slope-intercept form of an equation ✓ 8.F.3.2 Identify that non-linear is not straight ✓ 8.F.3.3 Use graphs to categorize functions as linear or non-linear ✓ 8.F.3.4 Use tables to categorize functions as linear or non-linear ✓ 8.F.3.5 Use equations to categorize functions as linear or non-linear
2f. Given a linear graph, identify its slope as positive, negative, undefined, or zero, and interpret slope as rate of change. (DOK 2)	8.F.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	I Can: ✓ 8.F.4.1 Identify the slope and y-intercept from a graph ✓ 8.F.4.2 Identify the slope and y-intercept from a table ✓ 8.F.4.3 Identify the slope and y-intercept given an equation + 8.F.4.4 Understand that the y-intercept is the initial value of a function + 8.F.4.5 Construct an equation from a verbal expression + 8.F.4.6 Write an equation given the slope of a line and a point on the line ➢ 8.F.4.7 Write an equation given two points on a line ➢ 8.F.4.8 Interpret the rate of change (slope) and the y-intercept given real-world situations ➢ 8.F.4.9 Model the rate of change and the y-intercept given real-world situation
2g. Determine slope, x-intercept, and y-intercept from a graph and/or equation in slope-intercept or standard form. (DOK 1)	8.F.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*	I Can: ✓ 8.F.2.1 Find the slope of a graph ✓ 8.F.2.2 Find the slope of an equation + 8.F.2.3 Find the slope of a table ➢ 8.F.2.4 Compare and explain slopes [unit rate] ➢ 8.F.2.5 Identify properties of a function ➢ 8.F.2.6 Compare/contrast two functions with the same representation (graphically, numerically, verbally) ➢ 8.F.2.7 Compare/contrast two functions with different representations ➢ 8.F.2.8 Compare functions represented in different forms to determine which has the greater rate of change (slope) **

	8.EE.8. Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, 3x + 2y = 5 and 3x +2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.* c. Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*	I Can: a. + 8.EE.8a.1 Graph a linear equation written in slope-intercept form + 8.EE.8a.2 Find the slope and y-intercept of a linear equation written in slope-intercept form + 8.EE.8a.3 Graph a linear equation written in standard form + 8.EE.8a.4 Find the slope of a linear equation written in standard form + 8.EE.8a.5 Find the y-intercept of a linear equation written in standard form + 8.EE.8a.6 Find the x-intercept of a linear equation written in standard form + 8.EE.8a.7 Graph 2 linear equations on the same graph and find the point of intersection. + 8.EE.8a.8 Discover the solution of a system of equations by graphing the linear equations and showing the point of intersection + 8.EE.8a.9 Understand if there is no point of intersection, then the lines are parallel. + 8.EE.8a.10 Understand if the graph is the same for the 2 equations, then the solution is infinitely many solutions. b. + 8.EE.8b.1 Solve a system of equations by substitution, involving 1 solution. + 8.EE.8b.2 Solve a system of equations by substitution, involving no solution [parallel lines] + 8.EE.8b.3 Solve a system of equations by substitution, involving infinitely many solutions [same line] + 8.EE.8b.4 Solve a system of equations by elimination, involving 1 solution. + 8.EE.8b.5 Solve a system of equations by elimination, involving no solution [parallel lines] + 8.EE.8b.6 Solve a system of equations by elimination, involving infinitely many solutions [same line] + 8.EE.8b.7 Estimate solutions through simple inspection + 8.EE.8b.8 Distinguish between one solution, no solution, and infinitely many solution by graphing a system of equations + 8.EE.8b.9 Rearrange linear equations from slope-intercept form to standard form and vice versa c. + 8.EE.8c.1 Solve word problems by writing 2 linear equations and solving the system. + 8.EE.8c.2 Explain how the point of intersection represents 2 linear equations + 8.EE.8c.3 Examine real-world problems and extract linear systems of equations + 8.EE.8c.4 Decide which method to use when solving systems of linear equations in real-world situations.

1f. Recognize and appropriately use exponential and scientific notation. (DOK 1)	8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 × 108 and the population of the world as 7 × 109, and determine that the world population is more than 20 times larger.	I Can: ✓ 8.EE.3.1 Write numbers in scientific notation ✓ 8.EE.3.2 Multiply numbers written in scientific notation ✓ 8.EE.3.3 Divide numbers written in scientific notation ✓ 8.EE.3.4 Estimate values written in scientific notation ✓ 8.EE.3.5 Distinguish between small and large values of numbers in scientific notation by looking at exponents ✓ 8.EE.3.6 Compare/Contrast numbers written in scientific notation + 8.EE.3.7 Convert numbers from scientific notation to standard form + 8.EE.3.8 Expand a single digit number as a power of ten using positive/negative exponents + 8.EE.3.9 Use base 10 multiplication to compare the values of numbers in scientific notation ➢ 8.EE.3.10 Analyze values written in scientific notation
1e. Explain the rules of exponents related to multiplication and division of terms with exponents. (DOK 2)	8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, 32 × 3–5 = 3–3 = 1/33 = 1/27.	I Can: ✓ 8.EE.1.1 Recognize integers ✓ 8.EE.1.2 Add and subtract integers ✓ 8.EE.1.3 Multiply and divide integers ✓ 8.EE.1.4 Recognize exponents ✓ 8.EE.1.5 Identify the laws of exponents including multiplication, division, power of a power, and zero exponents ✓ 8.EE.1.6 Apply the laws of exponents when multiplying and dividing like and unlike bases ✓ 8.EE.1.7 Fluently read exponents ✓ 8.EE.1.8 Simplify algebraic expressions, by applying the multiplication properties of exponents [exponents are added] ✓ 8.EE.1.9 Simplify algebraic expressions, by applying the power properties of exponents [exponents are multiplied] ✓ 8.EE.1.10 Simplify algebraic expressions, by applying the division properties of exponents [exponents are subtracted] ✓ 8.EE.1.11 Simplify algebraic expressions, using several properties + 8.EE.1.12 Read equivalent expressions with exponents + 8.EE.1.13 Generate equivalent expressions with exponents + 8.EE.1.14 Convert bases with negative exponents to fractions + 8.EE.1.15 Simplify algebraic expressions, involving zero exponents ➢ 8.EE.1.16 Simplify algebraic expressions, involving negative exponents

	8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	I Can: + 8.EE.4.1 Multiply numbers written in scientific notation using the laws of exponents + 8.EE.4.2 Divide numbers written in scientific notation using the laws of exponents ➢ 8.EE.4.3 Interpret real-life situations using scientific notations ➢ 8.EE.4.4 Demonstrate knowledge of scientific notation by using a calculator or other form of technology to solve problems

3rd Nine Weeks

MS Objective	CCSS Standard	I Can Statements ✓ Included in MS Framework + Included in Phase 1 infusion ➢ Included in Phase 2 infusion
3a. Locate and identify angles formed by parallel lines cut by a transversal(s) (e.g., adjacent, vertical, complementary, supplementary, corresponding, alternate interior, and alternate exterior). (DOK 1)	8.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.	I Can: ✓ 8.G.5.1 Find the measures of missing angles ✓ 8.G.5.2 Make conjectures about relationships between angles ✓ 8.G.5.3 Determine the relationship between two angles when given parallel lines and a transversal. ✓ 8.G.5.4 Construct parallel lines and transversal to examine the relationships between created angles ✓ 8.G.5.5 Explore and justify relationships that exist between angles created when parallel lines are cut by a transversal ✓ 8.G.5.6 Apply my knowledge of vertical, adjacent, and supplementary angles to identify other pairs of congruent angles + 8.G.5.7 Find the missing angle of a triangle. + 8.G.5.8 Find the exterior angle of a triangle + 8.G.5.9 Find the missing angle measure when given two similar triangles. + 8.G.5.10 Construct various triangles and find the measures of interior and exterior angles + 8.G.5.11 Explore and justify relationships that exist between angle sums and exterior angle sums of triangles + 8.G.5.12 Explore and justify relationships that exist between the angle – angle criterion for similarity of triangles ➢ 8.G.5.13 Construct various triangles and find measures of the interior and exterior angles ➢ 8.G.5.14 Form a hypothesis about the relationship between the measure of an exterior angle and the other two angles of a triangle ➢ 8.G.5.15 Construct triangles having line segments of different lengths but with two corresponding congruent angles ➢ 8.G.5.16 Compare ratios of sides to find a constant scale factor of similar triangles

	8.G.2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	I Can: + 8.G.2.4 Determine if two figures are congruent by identifying the transformation used to produce the figures + 8.G.2.3 Write congruent statements. + 8.G.2.2 Recognize the congruent symbol + 8.G.2.1 Define congruent + 8.G.2.5 Write statements that justify the process of transformation as well as the conclusion + 8.G.2.6 Describe the sequence of transformations from one figure to another
	8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	I Can: + 8.G.4.1 Create similar figures using dilations and transform them + 8.G.4.2 Comprehend that the angles of similar figures are congruent and the sides of similar figures are proportional + 8.G.4.3 Produce similar figures from dilations using scale factors + 8.G.4.4 Describe that transformed images have congruent angles and proportionate sides + 8.G.4.5 Interpret the meaning of similar figures and describe their similarities ➢ 8.G.4.6 Describe the list of steps that would produce similar figures when given the scale factors (dilation) ➢ 8.G.4.7 Differentiate between scale factor that would enlarge a figure's size and one that would reduce it
	8.G.1. Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines.	I Can: a. + 8.G.1a.1 Construct an image from pre-image, using geometric tools. + 8.G.1a.2 Construct a rotation + 8.G.1a.3 Construction a reflection + 8.G.1a.4 Construction a translation + 8.G.1a.5 Understand image and pre-image are congruent in translations + 8.G.1a.6 Understand image and pre-image are congruent in reflections + 8.G.1a.7 Understand image and pre-image are congruent in rotations + 8.G.1a.8 Explore and justify figures created from transformations using compasses, protractors, and rulers or technology b. + 8.G.1b.1 Defend whether or not two figures are congruent given the graph of a figure and its transformation using translation + 8.G.1b.2 Defend whether or not two figures are congruent given the graph of a figure and its transformation using reflection + 8.G.1b.3 Defend whether or not two figures are congruent

		given the graph of a figure and its transformation using rotation c. + 8.G.1c.1 Recognize the angles formed by two parallel lines and a transversal + 8.G.1c.2 Justify why angles(formed by parallel lines and a transversal) are congruent using angle relationships
	8.G.3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	I Can: ➢ 8.G.3.1 Identify the new coordinates of a translation. ➢ 8.G.3.2 Identify the new coordinates of a reflection ➢ 8.G.3.3 Identify the new coordinates of a rotation ➢ 8.G.3.4 Identify the new coordinates of a dilation ➢ 8.G.3.5 Understand image and pre-image are similar in dilations ➢ 8.G.3.6 Given two similar figures describe the sequence of rotations, reflections, translations, and dilations ➢ 8.G.3.7 Create a figure congruent to a given figure by applying knowledge of translation ➢ 8.G.3.8 Create a figure congruent to a given figure by applying knowledge of reflection ➢ 8.G.3.9 Create a figure congruent to a given figure by applying my knowledge of rotation(90, 180, 270 degrees) both clockwise and counterclockwise
	8.G.2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	I Can: + 8.G.2.4 Determine if two figures are congruent by identifying the transformation used to produce the figures + 8.G.2.3 Write congruent statements. + 8.G.2.2 Recognize the congruent symbol + 8.G.2.1 Define congruent + 8.G.2.5 Write statements that justify the process of transformation as well as the conclusion + 8.G.2.6 Describe the sequence of transformations from one figure to another
	8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	I Can: + 8.G.4.1 Create similar figures using dilations and transform them + 8.G.4.2 Comprehend that the angles of similar figures are congruent and the sides of similar figures are proportional + 8.G.4.3 Produce similar figures from dilations using scale factors + 8.G.4.4 Describe that transformed images have congruent angles and proportionate sides + 8.G.4.5 Interpret the meaning of similar figures and describe their similarities ➢ 8.G.4.6 Describe the list of steps that would produce similar figures when given the scale factors (dilation) ➢ 8.G.4.7 Differentiate between scale factor that would enlarge a figure's size and one that would reduce it

4th Nine Weeks

MS Objective	CCSS Standard	I Can Statements ✓ Included in MS Framework + Included in Phase 1 infusion ➢ Included in Phase 2 infusion
4c. Use formulas and/or appropriate measuring tools to find length and angle measures (to appropriate levels of precision), perimeter, area, volume, and surface area of polygons, circles, spheres, cones, pyramids, and composite or irregular figures. (DOK 1)	8.G.9 Know the formulas for the volumes of cones, cylinders, and spheres, and use them to solve real-world and mathematical problems.	I can: ✓ 8.G.9.1 Identify the shapes of cones, cylinders, and spheres ✓ 8.G.9.2 Use appropriate formulas for volume of cones, cylinders, and spheres in mathematical and real-world situations
	8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	I Can: ✓ 8.G.7.1 Solve word problems using the Pythagorean Theorem ✓ 8.G.7.2 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world problems in 2 dimension ✓ 8.G.7.3 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in mathematical problems in 2 dimension + 8.G.7.4 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world problems in 3 dimensions + 8.G.7.5 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in mathematical problems in3 dimensions
5d. Construct and interpret scatter plots to generalize trends from given data sets. (DOK 3)	8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	I Can: ✓ 8.SP.1.1 Graph a set of points ✓ 8.SP.1.2 Interpret scatter plot as linear or nonlinear ✓ 8.SP.1.3 Interpret the graph as strong correlation (clustering) or weak (outliers) ✓ 8.SP.1.4 Construct a scatter plot on a plane using two variables ✓ 8.SP.1.5 Investigate the relationship between two quantities on a scatter plot ✓ 8.SP.1.6 Analyze the trend of a scatter plot and determine whether there is a positive, negative(linear), or no relationship(non-linear) + 8.SP.1.7 Predict future outcomes using a scatter plot
	8.SP.2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	8.SP.2. ➢ 8.SP.2.1 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.

	8.SP.3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.	I Can: + 8.SP.3.1 Graph the equation to demonstrate how the data is related + 8.SP.3.2 Use the line of best fit to determine an equation in two variables for the data (y=mx + b) + 8.SP.3.3 Use slope intercept form (y= mx + b) to determine the slope and y-intercept of the line of best fit ➢ 8.SP.3.4 Interpret the meaning of the slope and y-intercept in the context of the data given ➢ 8.SP.3.5 Determine relevant information from graph
	8.SP.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?	I Can: + 8.SP.4.1 Create a frequency table with collected data + 8.SP.4.2 Interpret a frequency table + 8.SP.4.3 Determine if there is a correlation between the information + 8.SP.4.4 Read a graph to determine a correlation + 8.SP.4.5 Construct a graph based on information given ➢ 8.SP.4.6 Make predictions and analyze the data between the variables in the frequency table ➢ 8.SP.4.7 Justify and defend the accuracy of my predictions