

PLC Question #1: What do we want all students to know and be able to do?

Unit 1: Proportional Relationships & Solve Percent Problems	Unit 2: Operations with Integers and Rational Numbers	Unit 3: Exponents and Scientific Notation
Priority Standard(s) <ul style="list-style-type: none">M.7.RP.A.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.	Priority Standard(s) <ul style="list-style-type: none">M.7.NS.A.1 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.M.7.NS.A.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	Priority Standard(s) <ul style="list-style-type: none">M.8.EE.A.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions.
Supporting Standard(s) <ul style="list-style-type: none">M.7.RP.A.2 Recognize and represent proportional relationships between quantities.M.7.RP.A.2a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.M.7.RP.A.2b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.M.7.RP.A.2c. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.M.7.RP.A.2d. Explain what a point (x, y) on the graph of a proportional relationship means in termsM.7.RP.A.3 Use proportional relationships to solve multi-step ratio and percent problems.M.7.EE.A.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.	Supporting Standard(s) <ul style="list-style-type: none">M.7.NS.A.1a. Describe situations in which opposite quantities combine to make 0. For example, if you earn \$10 and then spend \$10, you are left with \$0.M.7.NS.A.1b. 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.M.7.NS.A.1c. 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.M.7.NS.A.1d. Apply properties of operations as strategies to add and subtract rational numbers.M.7.NS.A.2a. 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.M.7.NS.A.2b. 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.M.7.NS.A.2c. Apply properties of operations as strategies to multiply and divide rational numbers.M.7.NS.A.2d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number	Supporting Standard(s) <ul style="list-style-type: none">M.8.EE.A.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 3×10^8 and the population of the world as 7×10^9 and determine that the world population is more than 20 times larger.M.8.EE.A.4 Use technology to interpret and perform operations with numbers expressed in scientific notation. Choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading).

		terminates in 0s or eventually repeats. <ul style="list-style-type: none">			
Learning Outcomes		Learning Outcomes		Learning Outcomes	
Students need to know (concrete knowledge) <ul style="list-style-type: none">Ex. vocabulary, facts, concepts, etc.	DOK Level	Students need to know (concrete knowledge) <ul style="list-style-type: none">Ex. vocabulary, facts, concepts, etc.	DOK Level	Students need to know (concrete knowledge) <ul style="list-style-type: none">Ex. vocabulary, facts, concepts, etc.	DOK Level
<ul style="list-style-type: none">M.6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.M.6.RP.A.2 Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship.		<ul style="list-style-type: none">M.6.NS.C.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.M.6.NS.C.6 Understand a rational number as a point on the number line. Extend number lines and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.M.6.NS.C.6a. 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.M.6.NS.C.6b. 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.M.6.NS.C.6c. Find and position integers and other rational numbers on a horizontal or vertical number line; find and position pairs of integers and other rational numbers on a coordinate plane.		<ul style="list-style-type: none">M.7.NS.A.1 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.M.7.NS.A.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	
Students will understand (abstract ideas) <ul style="list-style-type: none">Ex. connections, relationships, frameworks, etc.	DOK Level	Students will understand (abstract ideas) <ul style="list-style-type: none">Ex. connections, relationships, frameworks, etc.	DOK Level	Students will understand (abstract ideas) <ul style="list-style-type: none">Ex. connections, relationships, frameworks, etc.	DOK Level
<ul style="list-style-type: none">Students will analyze multiple representations of proportional relationships (tables, graphs, and equations).		<ul style="list-style-type: none">Students will add, subtract, multiply, and divide integers and rational numbers.		<ul style="list-style-type: none">Students will develop and use the Laws of Exponents to evaluate, simplify, and perform computations with expressions with powers.	
Students will do (active application)	DOK Level	Students will do (active application)	DOK Level	Students will do (active application)	DOK Level

<ul style="list-style-type: none"> I can find unit rates when one or both quantities are fractions. I can use models and ratio reasoning to understand how a proportional relationship can exist between quantities. I can determine whether two quantities shown in a table are in a proportional relationship by testing for equivalent ratios. I can determine if a relationship is proportional by analyzing its graph and explain what the points (0,0) and (1,r) mean on the graph of a proportional relationship. I can write equations to represent proportional relationships and identify the constant of proportionality in the equation representing the proportional relationship. I can solve problems involving proportional relationships by making a table, using a graph, or writing an equation. I can use proportional relationships to solve percent of change, tax, tip, discount, or markup problems. I can use the simple interest formula to find the amount of interest earned for a given principal, at a given interest rate, for a given time period. 		<ul style="list-style-type: none"> I can use different methods including number lines and absolute values to add integers. I can use different methods including number lines and additive inverses to subtract integers. I can use number lines and mathematical properties to multiply integers. I can use related multiplication sentences to divide integers. I can use order of operations to evaluate expressions. I can divide rational numbers and convert fractions to decimal equivalents using division. I can find the additive inverse of a rational number and add and subtract rational numbers. I can find rules for multiplying and dividing integers to multiply and divide rational numbers. I can add, subtract, multiply, and divide rational numbers, including using those four operations to solve real-world problems. 		<ul style="list-style-type: none"> I can use integer exponents to show repeated multiplication of rational numbers. I can use the Laws of Exponents to multiply and divide monomials with common bases. I can use the Power of a Power Property and the Power of a Product Property to simplify expressions with integer exponents. I can use the Zero Exponent Rule and the Quotient of Powers Property to simplify expressions with zero and negative integer exponents. I can write very large and very small numbers using scientific notation. I can perform computations with numbers written in scientific notation. 	
Domain-specific Vocabulary		Domain-specific Vocabulary		Domain-specific Vocabulary	
<ul style="list-style-type: none"> Unit rate Proportional Relationship Proportional Nonproportional Constant of Proportionality Percent of Change Percent of Increase Percent of Decrease Sales tax Gratuity Tip Markup Selling Price Wholesale Cost Discount Markdown Interest Principal Simple Interest 		<ul style="list-style-type: none"> Additive inverse property Additive Inverse Opposites Absolute Value Distributive Property Multiplicative Property of Zero Multiplicative Identity Property Dividend Divisor Quotient Order of Operations Bar Notation Rational Number Repeating Decimal Terminating Decimal Multiplicative Inverses 		<ul style="list-style-type: none"> Base Evaluate Exponent Order of Operations Power Monomial Product of Powers Property Quotient of Powers Property Term Power of a Power Property Power of a Product Property Negative Exponents Zero Exponent rule Scientific Notation Standard form 	

PLC Question #1: What do we want all students to know and be able to do?

Unit 4: Real Numbers		Unit 5: Algebraic Expressions and Solving Equations		Unit 6: Linear Relationships and Slope	
Priority Standard(s) <ul style="list-style-type: none">M.8.EE.A.2 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.		Priority Standard(s) <ul style="list-style-type: none">M.7.EE.A.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.		Priority Standard(s) <ul style="list-style-type: none">M.8.EE.B.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	
Supporting Standard(s) <ul style="list-style-type: none">M.8.NS.A.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually and use patterns to rewrite a decimal expansion that repeats into a rational number.M.8.NS.A.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line, and estimate the value of expressions (e.g., $\sqrt{2}$). For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5 and explain how to continue on to get better approximations.		Supporting Standard(s) <ul style="list-style-type: none">M.7.EE.A.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.M.7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.M.8.EE.C.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 equivalent forms.M.8.EE.C.7b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.		Supporting Standard(s) <ul style="list-style-type: none">M.8.EE.B.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.	
Learning Outcomes		Learning Outcomes		Learning Outcomes	
Students need to know (concrete knowledge)	DOK Level	Students need to know (concrete knowledge)	DOK Level	Students need to know (concrete knowledge)	DOK Level
<ul style="list-style-type: none">Ex. vocabulary, facts, concepts, etc.		<ul style="list-style-type: none">Ex. vocabulary, facts, concepts, etc.		<ul style="list-style-type: none">Ex. vocabulary, facts, concepts, etc.	
<ul style="list-style-type: none">M.6.NS.C.6 Understand a rational number as a point on the number line. Extend number lines and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.M.6.NS.C.6a. 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.M.6.NS.C.6b. Understand signs of numbers in ordered pairs as indicating locations in quadrants		<ul style="list-style-type: none">M.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.		<ul style="list-style-type: none">M.7.RP.A.2 Recognize and represent proportional relationships between quantities.M.7.RP.A.2 a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.M.7.RP.A.2b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.M.7.RP.A.2c. Represent proportional relationships by equations. For example, if total	

<p>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> <ul style="list-style-type: none">M.6.NS.C.6c. Find and position integers and other rational numbers on a horizontal or vertical number line; find and position pairs of integers and other rational numbers on a coordinate plane.M.7.NS.A.2d. 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>cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.</p> <ul style="list-style-type: none">M.7.RP.A.2 d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.	
Students will understand (abstract ideas) <ul style="list-style-type: none">Ex. connections, relationships, frameworks, etc.	DOK Level	Students will understand (abstract ideas) <ul style="list-style-type: none">Ex. connections, relationships, frameworks, etc.	DOK Level	Students will understand (abstract ideas) <ul style="list-style-type: none">Ex. connections, relationships, frameworks, etc.	DOK Level
<ul style="list-style-type: none">Students will learn about the real number system by identifying, calculating, and estimating irrational numbers and comparing them to rational numbers.		<ul style="list-style-type: none">Students will use properties of operations to simplify algebraic expressions.Students will write and solve equations and inequalities.		<ul style="list-style-type: none">Students will graph and write equations to represent linear relationships.	
Students will do (active application)	DOK Level	Students will do (active application)	DOK Level	Students will do (active application)	DOK Level
<ul style="list-style-type: none">I can find square and cube roots, and use square and cube roots to solve equations involving perfect squares and cubes.I can identify irrational numbers and name the set(s) of real numbers to which a given real number belongs.I can estimate irrational numbers by approximating their locations on a number line or by truncating their decimal expansions.I can use rational approximations to compare and order real numbers, including irrational numbers.		<ul style="list-style-type: none">I can simplify algebraic expressions by identifying and combining like terms.I can use different methods to add linear expressions.I can use different methods to subtract linear expressions.I can use GCF to factor linear expressions.I can combine operations to simplify linear expressions.I can write two step equations of the form $px+q=r$ and use inverse operations to solve the equations.I can write two step equations of the form $p(x+q)=r$ and use inverse operations to solve the equationI can use the properties of equality to write and solve equations with variables on each side that have rational coefficients.I can write and solve multistep linear equations with rational coefficients by using the Distributive Property and combining like terms.I can write and solve one and two step inequalities using inverse operations.		<ul style="list-style-type: none">I can graph and compare proportional relationships using words, equations, and tables and interpret the unit rate as the slope of the line.I can identify the slope of a line and interpret it as the rate of change within the context of the problem.I can derive the equation $y=mx$ from the slope formula and use direct variation equations to represent and solve real-world and mathematical problems.I can write equations of the form $y=mx+b$ when given a table, graph, or verbal description.I can interpret the slope and y intercept of a line from an equation of the form $y=mx+b$ in order to graph the line on the coordinate plane.	
Domain-specific Vocabulary		Domain-specific Vocabulary		Domain-specific Vocabulary	

<ul style="list-style-type: none">• Cube Root• Inverse Operations• Perfect Cube• Perfect Square• Principal Square Root• Counterexample\• Irrational Number• Real Number• Truncating• Real Number	<ul style="list-style-type: none">• Coefficient• Constant• Factor• Factored Form• Greatest Common Factor• Like Terms• Linear Expression• Simplest form• Addition Property of Inequality• Division Property of Inequality• Inequality• Multiplication Property of Inequality• Order of Operations• Subtraction Property of Inequality• Two step equation• Two step inequality	<ul style="list-style-type: none">• Constant Rate of Change• Linear Equation• Linear Relationships• Rate of Change• Slope• Rise• Run• Corresponding Parts• Similar Figures• Slope Triangles• Constant of Proportionality• Constant of Variation• Direct Variation• Initial Value• Slope-Intercept Form• Y-intercept
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PLC Question #1: What do we want all students to know and be able to do?

Unit 7: Probability and Sampling & Statistics	Unit 8: Geometric Figures, Area and Volume	Unit 9: Transformations
<p>Priority Standard(s)</p> <ul style="list-style-type: none">M.7.SP.C.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	<p>Priority Standard(s)</p> <ul style="list-style-type: none">M.7.G.B.5 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.M.7.G.B.4 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.	<p>Priority Standard(s)</p> <ul style="list-style-type: none">M.8.G.A.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.
<p>Supporting Standard(s)</p> <ul style="list-style-type: none">M.7.SP.C.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.M.7.SP.C.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.M.7.SP.C.7a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.M.7.SP.C.7b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequenciesM.7.SP.C.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.M.7.SP.A.1 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.M.7.SP.A.2 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.	<p>Supporting Standard(s)</p> <ul style="list-style-type: none">M.7.G.A.2 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.M.8.G.A.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.M.7.G.A.1 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.M.7.G.A.3 Describe the two-dimensional figures that result from slicing three dimensional figures parallel to the base, as in plane sections of right rectangular prisms and right rectangular pyramids.M.7.G.B.6 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.M.8.G.C.9 Know the relationship among the formulas for the volumes of cones, cylinders, and spheres (given the same height and diameter) and use them to solve real-world and mathematical problems.	<p>Supporting Standard(s)</p> <ul style="list-style-type: none">M.8.G.A.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.M.8.G.A.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.M.8.G.A.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.M.8.G.A.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.

Learning Outcomes		Learning Outcomes		Learning Outcomes	
Students need to know (concrete knowledge)	DOK Level	Students need to know (concrete knowledge)	DOK Level	Students need to know (concrete knowledge)	DOK Level
<ul style="list-style-type: none">Ex. vocabulary, facts, concepts, etc. <ul style="list-style-type: none">M.6.RP.A.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."M.6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number lines, or equations.M.6.RP.A.3a. 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.M.6.RP.A.3b. 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?M.6.RP.A.3c. 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.M.6.RP.A.3d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.		<ul style="list-style-type: none">Ex. vocabulary, facts, concepts, etc. <ul style="list-style-type: none">M.6.G.A.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.M.6.G.A.2 Find volumes of right rectangular prisms with fractional edge lengths by using physical or virtual unit cubes. Develop (construct) and apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms in the context of solving real-world and mathematical problems.M.6.G.A.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.M.6.G.A.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.		<ul style="list-style-type: none">Ex. vocabulary, facts, concepts, etc. <ul style="list-style-type: none">M.7.G.B.4 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.M.7.G.B.6 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.M.8.G.C.9 Know the relationship among the formulas for the volumes of cones, cylinders, and spheres (given the same height and diameter) and use them to solve real-world and mathematical problems.	
Students will understand (abstract ideas)	DOK Level	Students will understand (abstract ideas)	DOK Level	Students will understand (abstract ideas)	DOK Level
<ul style="list-style-type: none">Ex. connections, relationships, frameworks, etc. <ul style="list-style-type: none">Students will understand probability, find the probability of simple and compound events, and design simulations.		<ul style="list-style-type: none">Ex. connections, relationships, frameworks, etc. <ul style="list-style-type: none">Students will draw, describe, and solve problems involving geometric figures.		<ul style="list-style-type: none">Ex. connections, relationships, frameworks, etc. <ul style="list-style-type: none">Students will analyze translations, rotations, reflections, and dilations. Analyze and use similar and congruent figures using transformations.	
Students will do (active application)	DOK Level	Students will do (active application)	DOK Level	Students will do (active application)	DOK Level
<ul style="list-style-type: none">I can describe the likelihood of an event as		<ul style="list-style-type: none">I can identify vertical and adjacent angles, and		<ul style="list-style-type: none">I can translate figures on the coordinate plane	

<p>impossible, unlikely, equally likely to happen as not to happen, likely, or certain.</p> <ul style="list-style-type: none">• I can find the relative frequency of an event and use it to predict the chance of that event occurring in the future.• I can find the theoretical probability of a simple event and its complement, and understand the relationship between them.• I can understand what happens to the long-run relative frequency as the number of trials increases, adn compare relative frequencies to theoretical probabilities.• I can use organized lists, tables, or tree diagrams to find the sample space and probability of a compound event.• I can design a simulation to represent a simple or compound event and use the results of a simulation to find the experimental probability.• I can identify biased and unbiased sampling methods and understand that inferences made are only valid if the sampling method is unbiased.• I can make predictions about a population based on data from a random sample.• I can understand how collecting multiple samples of data can help me determine how my predictions about a population might vary.• I can use the measures of center and measures of variation to compare two samples and make comparative inferences about two populations.		<p>use them to write and solve equations to find unknown angle measures.</p> <ul style="list-style-type: none">• I can identify complementary and supplementary angles, and use them to write and solve equations to find unknown angles.• I can use the relationships between angles to find the measures of missing angles.• I can find the measures of interior and exterior angles in a triangle by using relationships between these angles.• I can use ratio reasoning to find actual lengths and areas from a scale drawing and reproduce a scale drawing at a different scale.• I can describe three-dimensional figures and determine the shapes resulting from horizontal, vertical, and angled cross sections.• I can find the circumference and area of circles given the radius or diameter using the formulas for the circumference or area of a circle and find the radius or diameter given its circumference or area.• I can find areas of composite figures by decomposing the figures into known shapes, and then adding the areas of those shapes.• I can find the volumes of prisms, pyramids, cones, spheres, and cylinders.• I can find the surface area of solids by relating the nets of those solids to the formulas for area.		<p>and use coordinate notation to describe translations.</p> <ul style="list-style-type: none">• I can describe reflections of figures on the coordinate plane using coordinates and coordinate notation.• I can use coordinate notation to find the coordinates of a figure that has been rotated about the origin, as well as describe the angle of rotation using the given graph and coordinates of figures.• I can describe dilations using coordinate notations as well as graph dilations on the coordinate plane using coordinate notation.• I can use a composition of transformations, as well as the orientations of figures, to determine if two figures are congruent.• I can determine if two figures are similar by determining a sequence of rotations, reflections, translations, and dilations that maps one similar figure onto another.• I can use properties of similar triangles to solve indirect measurement problems.	
Domain-specific Vocabulary	Domain-specific Vocabulary	Domain-specific Vocabulary			
<ul style="list-style-type: none">• Complementary events• Compound events• Event• Experimental Probability• Likelihood• Outcome• Probability• Probability Experiment• Relative frequency• Sample space• Simple event• Theoretical Probability• Tree Diagram• Biased Sample• Distribution• Population	<ul style="list-style-type: none">• Adjacent Angles• Alternate interior/exterior angles• Bases• Complementary Angles• Cone• Congruent• Corresponding Angles• Cross Section• Cylinder• Edge• Face• Line Segment• Parallel• Perpendicular• Plane• Polyhedron	<ul style="list-style-type: none">• Center of Dilation• Center of Rotation• Composition of transformations• Dilation• Image• Line of Reflection• Preimage• Reflection• Rotation• Scale Factor• Similar• Transformation• Translation			

