

Analysis of *California Mathematics Standards to Common Core Standards - Grade 6*

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to the CCS
Strand Number Sense	CA Math Standard				
1.0 Number Sense	1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages.	The Number System	6.RP: (Cluster statement) Understand ratio concepts and use ratio reasoning to solve problems. 6.NS: (Cluster statement) Apply and extend previous understandings of numbers to the system of rational numbers.	Yes	Problems involving fractions are also included in 5.NF 1, 2, 3, 4, 6 and 7.
	1.1 Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line.	The Number System	6.NS.5: Understand that positive and negative numbers are used together to describe quantities having opposite directions or values; use positive and negative numbers to represents quantities in real-world contexts, explaining the meaning of zero in each situation. 6.NS.6: 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. 6.NS.6a: Recognize opposite signs of numbers as indicating locations on opposite sides of 0 one a number line; recognize that the opposite of the opposite of a number is the number itself and that 0 is its own opposite.	Yes	The content in this CCS is also mapped to CA. 5 th grade AF1.4

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			<p>6.NS.6b: Understand signs of number 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 both axes.</p> <p>6.NS.6c: 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>6.NS.7: Understand ordering and absolute value of rational numbers.</p> <p>6.NS.7a: Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.</p> <p>6.NS.7b: Write, interpret, and explain statements of order for rational numbers in real-world contexts.</p> <p>6.NS.7c: 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.</p>		

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			6.NS.7d: Distinguish comparisons of absolute value from statements about order.		
	1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a:b$).	Ratio and Proportional Relationships	6.RP.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. 6.RP.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.	Yes	7.RP.1: Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
	1.3 Use proportions to solve problems (e.g., determine the value of N if $4/7 = N/21$, find the length of a side of a polygon similar to a known polygon). Use cross-multiplication as a method for solving such problems, understanding it as the multiplication of both sides of an equation by a multiplicative inverse.			No	7.RP.2: Recognize and represent proportional relationships between quantities. 7.RP.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. 7.RP.2b: Identify constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. 7.RP.2c: Represent proportional relationships by equations. 7.RP.3: Use proportional relationships to solve multi-step ratio and percent problems. 7.G.1: Solve problems involving scale drawings of geometric figures,

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					<p>including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p> <p>CCS does not reference cross-multiplication or multiplicative inverse. These are implied in the standards that require students to use operations and properties of numbers.</p>
	<p>1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.</p>	<p>Ratio and Proportional Relationships</p>	<p>6.RP.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 line diagrams, or equations.</p> <p>6.RP.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.</p> <p>6.RP.3b: Solve unit rate problems including those involving unit pricing and constant speed.</p> <p>6.RP.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.</p> <p>6.RP.3d: Use ratio reasoning of a quantity to convert measurement</p>	<p>Partial</p>	<p>7.RP-3 Use proportional relationships to solve multistep ratio and percent problems.</p>

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			units; manipulate and transform units appropriately when multiplying or dividing quantities.		
2.0 Number Sense	2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division.			No	7.NS. (Cluster statement) Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers.
	2.1 Solve problems involving addition, subtraction, multiplication, and division of positive fractions and explain why a particular operation was used for a given situation.	The Number System	6.NS.1: Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.	Partial	5.NF.1: Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. 5.NF.2: Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. 5.NF.6: Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
	2.2 Explain the meaning of multiplication and division of positive fractions and perform the calculations (e.g., $5/8 \div 15/16 = 5/8 \times 16/15 = 2/3$).	The Number System	6.NS.1: Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.	Yes	

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	2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.	Expressions and Equations	<p>6.EE.3: Apply the properties of operations to generate equivalent expressions.</p> <p>6.NS.2: Fluently divide multi-digit numbers using the standard algorithm.</p> <p>6.NS.3: Fluently add, subtract, multiply and divide multi-digit decimals using the standard algorithm for each operation.</p>	Partial	<p>7.NS.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.</p> <p>7.NS.1a: Describe situations in which opposite quantities combine to make 0.</p> <p>7.NS.1b: Understand $p + q$ as a number located q from p, is the positive or negative direction depending upon 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>7.NS.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.</p> <p>7.NS.1d: Apply properties of operations as strategies to add and subtract rational numbers.</p> <p>7.NS.2: Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>7.NS.2a: Understand that</p>

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					<p>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 rule for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.</p> <p>7.NS.2b: Understand that integers can be divided, provided the divisor is not zero, and every quotient of integers (with non-zero divisors) 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>7.NS.2c: Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p>7.NS.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> <p>7.EE.3: Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert</p>

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					between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.
	2.4 Determine the least common multiple and the greatest common divisor of whole numbers; use them to solve problems with fractions (e.g., to find a common denominator to add two fractions or to find the reduced form for a fraction).	The Number System	6.NS.4: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor.	Partial	5.NF.1: Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. CCS limits common factors to numbers less than or equal to 100. CCS limits least common multiple to numbers less than or equal to 12.
Strand Algebra and Functions	CA Math Standard				
1.0 Algebra and Functions	1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results.	Expressions and Equations	6.EE. (Cluster statement) Reason about and solve one-variable equations and inequalities.	Yes	
	1.1 Write and solve one-step linear equations in one variable.	Expressions and Equations	6.EE.7: Solve real-world and mathematical problems by writing and solving equations in the form of $x + p = q$ and $px = q$ for cases in which p , q , and x are all nonnegative rational numbers.	Yes	CCS specifically reference real-world and mathematical problems.
	1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.	Expressions and Equations	6.EE-.2: Write, read, and evaluate expressions in which letters stand for numbers. 6.EE-.2a: Write expressions that record operations with numbers and with letters standing for numbers.	Yes	

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			<p>6.EE-.2b: 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.</p> <p>6.EE.2c: 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).</p>		
	<p>1.3 Apply algebraic order of operations and the commutative, associative, and distributive properties to evaluate expressions; and justify each step in the process.</p>	<p>Expressions and Equations</p>	<p>6.EE.1: Write and evaluate numerical expressions involving whole-number exponents.</p> <p>6.EE.2: Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>6.EE.2a: Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>6.EE.2b: 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.</p>	<p>Yes</p>	<p>The use of the commutative, associative, and distributive properties is implied in 6.EE-3.</p>

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			<p>6.EE.2c: 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).</p> <p>6.EE.3: Apply properties of operations to generate equivalent expression.</p> <p>6.EE.4: Identify when two expressions are equivalent (i.e., when the two expression name the same number regardless of which value is substituted into them.)</p>		
		Mathematical Practices	6.MP: Construct valid arguments and critique the reasoning of others.		
	1.4 Solve problems manually by using the correct order of operations or by using a scientific calculator.	Expressions and Equations	<p>6.EE.2: Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>6.EE.2a: Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>6.EE.2b: 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.</p>	Yes	CCS does not reference scientific calculator.

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			<p>6.EE.2c: 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).</p> <p>6.EE.3: Apply the properties of operations to generate equivalent expressions.</p>		
2.0 Algebra and Functions	2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions.	Ratio and Proportional Relationships	<p>6.RP. (Cluster statement) Understand ratio concepts and use ration reasoning to solve problems.</p> <p>6.RP.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 line diagrams, or equations.</p> <p>6.RP.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.</p> <p>6.RP.3b: Solve unit rate problems including those involving unit pricing and constant speed.</p>	Partial	<p>7.RP.2: Recognize and represent proportional relationships between quantities.</p> <p>7.RP.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.</p> <p>7.RP.2b: Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>7.RP.2c: Represent proportional relationships by equations.</p> <p>7.RP.2d: Explain what a point (x, y) on the graph of proportional relationship means in terms of the</p>

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			<p>6.RP.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.</p> <p>6.RP.3d: Use ratio reasoning of a quantity to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>		<p>situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.</p>
	<p>2.1 Convert one unit of measurement to another (e.g., from feet to miles, from centimeters to inches).</p>	<p>Ratio and Proportional Relationships</p>	<p>6.RP.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 line diagrams, or equations.</p> <p>6.RP.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.</p> <p>6.RP.3b: Solve unit rate problems including those involving unit pricing and constant speed.</p> <p>6.RP.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.</p>	<p>Partial</p>	<p>5.MD.1: Convert among different-sized measurement units within a given measurement system and use these conversions in solving multi-step, real world problems.</p>

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			<p>6.RP.3d: Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>		
	<p>2.2 Demonstrate an understanding that <i>rate</i> is a measure of one quantity per unit value of another quantity.</p>	<p>Ratio and Proportional Relationships</p>	<p>6.RP.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.</p> <p>6.RP.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 line diagrams, or equations.</p> <p>6.RP.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.</p> <p>6.RP.3b: Solve unit rate problems including those involving unit pricing and constant speed.</p> <p>6.RP.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.</p>	<p>Partial</p>	<p>7.RP.2: Recognize and represent proportional relationships between quantities.</p> <p>7.RP.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.</p> <p>7.RP.2b: Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>7.RP.2c: Represent proportional relationships by equations.</p>

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			6.RP.3d: Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.		
	2.3 Solve problems involving rates, average speed, distance, and time.	Ratio and Proportional Relationships	<p>6.RP.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 line diagrams, or equations.</p> <p>6.RP.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.</p> <p>6.RP.3b: Solve unit rate problems including those involving unit pricing and constant speed.</p> <p>6.RP.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.</p> <p>6.RP.3d: Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>	Yes	

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3.0 Algebra and Functions	3.0 Students investigate geometric patterns and describe them algebraically.	Expressions and Equations	6.EE.6: Use variables to represent 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.	Yes	
	3.1 Use variables in expressions describing geometric quantities (e.g., $P = 2w + 2l$, $A = 1/2bh$, $C = \pi d$ - the formulas for the perimeter of a rectangle, the area of a triangle, and the circumference of a circle, respectively).	Expressions and Equations	<p>6.EE.2: Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>6.EE-.2a: Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>6.EE-.2b: 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.</p> <p>6.EE.2c: 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).</p>	Yes	

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	3.2 Express in symbolic form simple relationships arising from geometry.	Expressions and Equations	<p>6.EE.2: Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>6.EE.2a: Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>6.EE.2b: 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.</p> <p>6.EE.2c: 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).</p>	Yes	
Strand Measurement and Geometry	CA Math Standard				
1.0 Measurement and Geometry	1.0 Students deepen their understanding of the measurement of plane and solid shapes and use this understanding to solve problems.	Geometry	6.G. (Cluster statement) Solve real-world and mathematical problems involving area, surface area, and volume	Yes	
	1.1 Understand the concept of a constant such as π ; know the formulas for the circumference and area of a circle.	Geometry	7.G.4: Know the formulas for the area and circumference of a circle and use them to solve problems: give an informal derivation of the	Yes	

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			relationship between the circumference and area of a circle.		
	1.2 Know common estimates of π (3.14; 22/7) and use these values to estimate and calculate the circumference and the area of circles; compare with actual measurements.	Geometry	7.G.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.	Yes	
		Mathematical Practices	7.MP.5: Use appropriate tools strategically.		
	1.3 Know and use the formulas for the volume of triangular prisms and cylinders (area of base \times height); compare these formulas and explain the similarity between them and the formula for the volume of a rectangular solid.	Geometry	6.G.2: Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = bh$ to find the volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	Partial	7.G.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. 8.G.9: Know the formulas for volumes of cone, cylinders, and spheres and use them to solve real-world and mathematical problems.
2.0 Measurement and Geometry	2.0 Students identify and describe the properties of two-dimensional figures.			No	5.G.3: Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. 5.G.4: Classify two-dimensional figures in a hierarchy based on properties.
	2.1 Identify angles as vertical, adjacent, complementary, or supplementary and provide descriptions of these terms.			No	7.G.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.
	2.2 Use the properties of complementary and supplementary			No	7.G.5: Use facts about supplementary, complementary,

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	angles and the sum of the angles of a triangle to solve problems involving an unknown angle.				vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
	2.3 Draw quadrilaterals and triangles from given information about them (e.g., a quadrilateral having equal sides but no right angles, a right isosceles triangle).			No	7.G.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. 7.G.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.
Strand Statistics, Data Analysis, and Probability	CA Math Standard				
1.0 Statistics, Data Analysis, and Probability	1.0 Students compute and analyze statistical measurements for data sets.	Statistics and Probability	6.SP: (Cluster statement) Develop understanding of statistical variability.	Yes	
	1.1 Compute the range, mean, median, and mode of data sets.	Statistics and Probability	6.SP.2: Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. 6.SP.3: Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its value vary with a single number.	Yes	

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	1.2 Understand how additional data added to data sets may affect these computations of measures of central tendency.	Statistics and Probability	6.SP.3: Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	Partial	8.SP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe such patterns as clustering, outliers, positive or negative association, linear association and nonlinear association. CCS does not specifically state knowing the effect of additional data. CCS includes describing patterns as clustering, outliers, positive or negative association, linear association and nonlinear association.
	1.3 Understand how the inclusion or exclusion of outliers affects measures of central tendency.			No	8.SP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe such patterns as clustering, outliers, positive or negative association, linear association and nonlinear association.
	1.4 Know why a specific measure of central tendency (mean, median, mode) provides the most useful information in a given context.	Statistics and Probability	6.SP.5d: Summarize numerical data set in relation to their context, such as by 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.	Yes	
2.0 Statistics, Data Analysis, and Probability	2.0 Students use data samples of a population and describe the characteristics and limitations of the samples.	Statistics and Probability Statistics and Probability	6.SP.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. 7.SP: (Cluster statement) Use random sampling to draw inferences about a population.	Yes	

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	2.1 Compare different samples of a population with the data from the entire population and identify a situation in which it makes sense to use a sample.			No	7.SP.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.
	2.2 Identify different ways of selecting a sample (e.g., convenience sampling, responses to a survey, random sampling) and which method makes a sample more representative for a population.			No	7.SP.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.
	2.3 Analyze data displays and explain why the way in which the question was asked might have influenced the results obtained and why the way in which the results were displayed might have influenced the conclusions reached.	Statistics and Probability	6.SP.5a: Summarize numerical data sets in relation to their context by reporting the number of observations 6.SP.5b: Summarize numerical data sets in relation to their context by describing the nature of the attribute under investigation, including how it was measured and its units of measurement. 6.SP.5c: Summarize numerical data sets in relation to their context by giving quantitative measures of center (median and/or mean) and variability) interquartile range and/or mean	Yes	

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to the CCS
			<p>absolute deviation) as well as describing any overall pattern with reference to the context in which the data were given.</p> <p>6.SP.5d: Summarize numerical data sets in relation to 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>2.4 Identify data that represent sampling errors and explain why the sample (and the display) might be biased.</p>	<p>Statistics and Probability</p>	<p>6.SP.5a: Summarize numerical data sets in relation to their context by reporting the number of observations</p> <p>6.SP.5b: Summarize numerical data sets in relation to their context by describing the nature of the attribute under investigation, including how it was measured and its units of measurement.</p> <p>6.SP.5c: Summarize numerical data sets in relation to their context by giving quantitative measures of center (median and/or mean) and variability) interquartile range and/or mean absolute deviation) as well as describing any overall pattern with reference to the context in which the data were given.</p> <p>6.SP.5d: Summarize numerical data sets in relation to Relating the choice of measures of center and variability to the shape of the data distribution and the context in</p>	<p>Yes</p>	

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to the CCS
			which the data were gathered.		
	2.5 Identify claims based on statistical data and, in simple cases, evaluate the validity of the claims.	Mathematical Practices	6.MP.2: Reason abstractly and quantitatively. MP-3 Construct viable arguments and critiques the reasoning of others.	Yes	
3.0 Statistics, Data Analysis, and Probability	3.0 Students determine theoretical and experimental probabilities and use these to make predications about events.			No	<p>7.SP.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.</p> <p>7.SP.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.</p> <p>7SP.7a: Develop uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.</p> <p>7SP.7b: Develop a probability model (which may not be uniform) by observing frequencies in data generated form a chance process.</p> <p>7.SP.8: Find probabilities of compound events using organized list, tables, tree diagrams, and simulation.</p>

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to the CCS
					<p>7.SP.8a: 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>7.SP.8b: 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>7.SP.8c: Design and use a simulation to generate frequencies for compound events.</p>
	<p>3.1 Represent all possible outcomes for compound events in an organized way (e.g., tables, grids, tree diagrams) and express the theoretical probability of each outcome.</p>			No	<p>7.SP.8: Find probabilities of compound events using organized list, tables, tree diagrams, and simulation.</p> <p>7.SP.8a: 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>7.SP.8b: 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>7.SP-8c Design and use a simulation to generate frequencies for</p>

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to the CCS
					compound events.
	3.2 Use data to estimate the probability of future events (e.g., batting averages or number of accidents per mile driven).			No	7.SP.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.
	3.3 Represent probabilities as ratios, proportions, decimals between 0 and 1, and percentages between 0 and 100 and verify that the probabilities computed are reasonable; know that if P is the probability of an event, $1 - P$ is the probability of an event not occurring.			No	7.SP.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 $\frac{1}{2}$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
	3.4 Understand that the probability of either of two disjoint events occurring is the sum of the two individual probabilities and that the probability of one event following another, in independent trials, is the product of the two probabilities.			No	<p>7.SP.8: Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</p> <p>7.SP.8a: 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>7.SP.8b: 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>

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to the CCS
					7.SP.8c: Design and use a simulation to generate frequencies for compound events.
	3.5 Understand the difference between independent and dependent events.			No	7.SP.8: Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. 7.SP.8a: 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. 7.SP.8b: 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. 7.SP.8c: Design and use a simulation to generate frequencies for compound events.
Strand Mathematical Reasoning	CA Math Standard				
1.0 Mathematical Reasoning	1.0 Students make decisions about how to approach problems.	Mathematical Practices	6.MP.1: Make sense of problems and persevere in solving them	Yes	
	1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.	Mathematical Practices	6.MP.7: Look for and make use of structure. 6.MP.8: Look for and express regularity in repeated reasoning.	Yes	
	1.2 Formulate and justify	Mathematical	6.MP.2: Reason abstractly and	Yes	

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to the CCS
	mathematical conjectures based on a general description of the mathematical question or problem posed.	Practices	quantitatively. 6.MP.3: Construct viable arguments and critique the reasoning of others.		
	1.3 Determine when and how to break a problem into simpler parts.	Mathematical Practices	6.MP.1: Make sense of problems and persevere in solving them. 6.MP.7: Look for and make use of structure.	Yes	
2.0 Mathematical Reasoning	2.0 Students use strategies, skills, and concepts in finding solutions.	Mathematical Practices	6.MP.1: Make sense of problems and persevere in solving them. 6.MP.5: Use appropriate tools strategically. 6.MP.7: Look for and make use of structure. 6.MP.8: Look for and express regularity in repeated reasoning	Yes	
	2.1 Use estimation to verify the reasonableness of calculated results.	Mathematical Practices	6.MP.1: Make sense of problems and persevere in solving them.	Yes	
	2.2 Apply strategies and results from simpler problems to more complex problems.	Mathematical Practices	6.MP.7: Look for and make use of structure. 6.MP.8: Look for and express regularity in repeated reasoning.	Yes	
	2.3 Estimate unknown quantities graphically and solve for them by using logical reasoning and arithmetic and algebraic techniques.	Mathematical Practices	6.MP.2: Reason abstractly and quantitatively. 6.MP.5: Use appropriate tools strategically. 6.MP.7: Look for and make use of structure. 6.MP.8: Look for and express regularity in repeated reasoning.	Yes	

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to the CCS
	2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	Mathematical Practices	6.MP.4: Model with mathematics.	Yes	
	2.5 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.	Mathematical Practices	6.MP.6: Attend to precision.	Yes	
	2.6 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.			No	
	2.7 Make precise calculations and check the validity of the results from the context of the problem.	Mathematical Practices	6.MP.6: Attend to precision.	Yes	
3.0 Mathematical Reasoning	3.0 Students move beyond a particular problem by generalizing to other situations.	Mathematical Practices	6.MP.8: Look for and express regularity in repeated reasoning.	Yes	
	3.1 Evaluate the reasonableness of the solution in the context of the original situation.	Mathematical Practices	6.MP.2: Reason abstractly and quantitatively. 6.MP.3: Construct viable arguments and critique the reasoning of others.	Yes	
	3.2 Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.	Mathematical Practices	6.MP.7: Look for and make use of structure. 6.MP.8: Look for and express regularity in repeated reasoning	Yes	
	3.3 Develop generalizations of the results obtained and the strategies used and apply them in new problem situations.	Mathematical Practices	6.MP.5: Use appropriate tools strategically. 6.MP.7: Look for and make use of structure. 6.MP.8: Look for and express regularity in repeated reasoning.	Yes	

Grade 6 Common Core Standards not found in 6th Grade CA Mathematics Standards

Domain	Common Core standard	Found in CA Math standards
The Number System	6.NS.5b: 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.	Yes
The Number System	6.NS.7c: Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real world situation. For example, for an account balance of -30 dollars, write $ -30 = 30$ to describe the size of the debt in dollars.	Yes Grade 7- NS 2.5
The Number System	7.NS.7d: Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance of less than -30 dollars represents a debt greater than 30 dollars.	Yes Grade 7- NS 2.5
The Number System	6.NS.8: Solve real-world and mathematical problems by graphing points in all four quadrants. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	Yes Grade 7- NS 2.5
Expressions and Equations	6.EE.8: Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	Yes Grade 7- AF 1.1
Expressions and Equations	6.EE.9: Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs, tables, and relate these to an equation.	Yes Grade 7- AF 1.1 and A.F. 1.5
Geometry	6.G.1: Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes: apply these techniques in the context of solving real-world and mathematical problems.	Yes Grade 7- MG 2.2
Geometry	6.G.3: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.	Yes Grade 7- MG 3.2
Geometry	6.G.4: Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	Yes Grade 7- MG 3.5

Grade 6 CA Mathematics Standards not found in the Grade 6 Common Core Standards

Strand	CA Math Standard	Found in CCS
1.0 Number Sense	1.3 Use proportions to solve problems (e.g., determine the value of N if $4/7 = N/21$, find the length of a side of a polygon similar to a known polygon). Use cross-multiplication as a method for solving such problems, understanding it as the multiplication of both sides of an equation by a multiplicative inverse.	<p>Yes</p> <p>7.RP.2: Recognize and represent proportional relationships between quantities.</p> <p>7.RP.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.</p> <p>7.RP.2b: Identify constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>7.RP.2c: Represent proportional relationships by equations.</p> <p>7.RP.3: Use proportional relationships to solve multi-step ratio and percent problems.</p> <p>7.G.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.</p> <p>CCS does not reference cross-multiplication or multiplicative inverse. These are implied in the standards that require students to use operations and properties of numbers.</p>
2.0 Number Sense	2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division.	<p>Yes</p> <p>7.NS. (Cluster statement) Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers.</p>
2.0 Measurement and Geometry	2.0 Students identify and describe the properties of two-dimensional figures.	<p>Yes</p> <p>5.G.3: Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.</p> <p>5.G.4: Classify two-dimensional figures in a hierarchy based on properties.</p>
	2.1 Identify angles as vertical, adjacent, complementary, or supplementary and provide descriptions of these terms.	<p>Yes</p> <p>7.G.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.</p>
	2.2 Use the properties of complementary and supplementary angles and the sum of the angles of a triangle to solve problems involving an unknown angle.	<p>Yes</p> <p>7.G.5: Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an</p>

Strand	CA Math Standard	Found in CCS
		unknown angle in a figure.
	2.3 Draw quadrilaterals and triangles from given information about them (e.g., a quadrilateral having equal sides but no right angles, a right isosceles triangle).	<p>7.G.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.</p> <p>7.G.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.</p>
1.0 Statistics, Data Analysis, and Probability	1.3 Understand how the inclusion or exclusion of outliers affects measures of central tendency.	<p>Yes</p> <p>8.SP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe such patterns as clustering, outliers, positive or negative association, linear association and nonlinear association.</p>
2.0 Statistics, Data Analysis, and Probability	2.1 Compare different samples of a population with the data from the entire population and identify a situation in which it makes sense to use a sample.	<p>Yes</p> <p>7.SP.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.</p>
	2.2 Identify different ways of selecting a sample (e.g., convenience sampling, responses to a survey, random sampling) and which method makes a sample more representative for a population.	<p>Yes</p> <p>7.SP.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.</p>
3.0 Statistics, Data Analysis, and Probability	3.0 Students determine theoretical and experimental probabilities and use these to make predications about events.	<p>Yes</p> <p>7.SP.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.</p> <p>7.SP.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.</p> <p>7SP.7a: Develop uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.</p>

Strand	CA Math Standard	Found in CCS
		<p>7.SP.7b: Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.</p> <p>7.SP.8: Find probabilities of compound events using organized list, tables, tree diagrams, and simulation.</p> <p>7.SP.8a: 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>7.SP.8b: 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>7.SP.8c: Design and use a simulation to generate frequencies for compound events.</p>
3.0 Statistics, Data Analysis, and Probability	3.1 Represent all possible outcomes for compound events in an organized way (e.g., tables, grids, tree diagrams) and express the theoretical probability of each outcome.	<p>Yes</p> <p>7.SP.8: Find probabilities of compound events using organized list, tables, tree diagrams, and simulation.</p> <p>7.SP.8a: 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>7.SP.8b: 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>7.SP.8c Design and use a simulation to generate frequencies for compound events.</p>
3.0 Statistics, Data Analysis, and Probability	3.2 Use data to estimate the probability of future events (e.g., batting averages or number of accidents per mile driven).	<p>Yes</p> <p>7.SP.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.</p>
3.0 Statistics, Data Analysis, and	3.3 Represent probabilities as ratios, proportions, decimals between 0 and 1, and percentages between 0 and 100 and verify that the	<p>Yes</p> <p>7.SP.5: Understand that the probability of a chance event is a number</p>

Strand	CA Math Standard	Found in CCS
Probability	probabilities computed are reasonable; know that if P is the probability of an event, $1 - P$ is the probability of an event not occurring.	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 $\frac{1}{2}$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
3.0 Statistics, Data Analysis, and Probability	3.4 Understand that the probability of either of two disjoint events occurring is the sum of the two individual probabilities and that the probability of one event following another, in independent trials, is the product of the two probabilities.	<p>Yes</p> <p>7.SP.8: Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</p> <p>7.SP.8a: 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>7.SP.8b: 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>7.SP.8c: Design and use a simulation to generate frequencies for compound events.</p>
3.0 Statistics, Data Analysis, and Probability	3.5 Understand the difference between independent and dependent events.	<p>7.SP.8: Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</p> <p>7.SP.8a: 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>7.SP.8b: 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>7.SP.8c: Design and use a simulation to generate frequencies for compound events.</p>