Analysis of *California Mathematics* standards to *Common Core* standards-Grade 5

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
Strand Number Sense	**CA Math Standard**				
1.0 Number Sense	1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers.	Number Operations in Base Ten	5.NBT: (Cluster Statement) Perform operations with multi-digit whole numbers and with decimals to hundredths.	Partial	CCS Cluster Statement does not mention integers and percents.
	1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.	Number Operations in Base Ten	5.NBT.1: Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. 5.NBT.3: Read, write, and compare decimals to thousandths. **5.NBT.3a: Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000).** 5.NBT.3b: Compare two decimals to thousandths based on meaning of the digits in each place, using >, =, and < symbols to record the results of comparisons. 5.NBT.4: Use place value understanding to round decimals to any place.	Partial	CCS does not reference estimation directly. In the Mathematical Practice standards, CCS implies a thorough understanding of the concepts so students could develop strong estimation skills as a by-product of the depth of understanding. 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.
	1.2 Interpret percents as a part of a hundred; find decimal and percent equivalents for common fractions and explain why they represent the same value; compute a given percent of a whole number.			No	6.RP.3a: Make table 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 table to compare

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
					ratios.

6.RP.3b: solve unit rate problems including those involving unit pricing and constant speed.

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.

6.RP.3d: Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. |
	1.3 Understand and compute positive integer powers of nonnegative integers; compute examples as repeated multiplication.			No	6.EE.1: Write and evaluate numerical expressions involving whole-number exponents.
	1.4 Determine the prime factors of all numbers through 50 and write the numbers as the product of their prime factors by using exponents to show multiples of a factor (e.g., $24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3$).			No	4.OA.4: Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range is prime or composite.
	1.5 Identify and represent on a number line decimals, fractions, mixed numbers, and positive and negative integers.			No	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

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
					the plane with negative number coordinates. 6.NS.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 then 0 is its own opposite. 6.NS.6b: Write interpret, and explain statements of order for rational number in real-world contexts. **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 the coordinate plane.**
2.0 Number Sense	2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals.	Number and Operations – Fractions Number and Operations Base Ten	5.NF: (Cluster Statement) Use equivalent fractions as a strategy to add and subtract fractions. Apply and extend previous understanding of multiplication and division to multiply and divide fractions. 5.NBT: (Cluster Statement) Perform Operations with multi-digit whole numbers and with decimals to hundredths.	Yes	
	2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.	Number and Operations in Base Ten	5.NBT.7: Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; related the strategy to a written method and explain the reasoning used.	Partial	6.NS.3: Fluently add, subtract, multiply and divide multi-digit decimals using the standard algorithm for each operation. 7.NS.1: Apply and extend previous understandings of

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
					addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
	2.2 Demonstrate proficiency with division, including division with positive decimals and long division with multidigit divisors.	Number Operations in Base Ten	5.NBT.6: Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 5.NBT.7: Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	Yes	
	2.3 Solve simple problems, including ones arising in concrete situations, involving the addition and subtraction of fractions and mixed numbers (like and unlike denominators of 20 or less), and express answers in the simplest form.	Number and Operations - Fractions	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.	Yes	
	2.4 Understand the concept of multiplication and division of fractions.	Number and Operations - Fractions	5.NF.4: Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. 5.NF.4a: Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)	Yes	*Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
			5.NF.4b: Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. 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. 5.NF.7: Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions*.		
	2.5 Compute and perform simple multiplication and division of fractions and apply these procedures to solving problems.	Number and Operations - Fractions	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. 5.NF.7: Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. 5.NF.7a: Interpret division of a unit fraction by a non-zero whole number and compute such quotients. For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$. 5.NF.7b: Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.	Yes	

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
			5.NF.7c: Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.		
Strand Algebra Functions	**CA Math Standard**				
1.0 Algebra Functions	1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results.	Operations and Algebraic Thinking	5.OA: Write and interpret numerical expressions.	Partial	6.EE: (Cluster Statement) Apply and extend previous understandings of arithmetic to algebraic expressions.
	1.1 Use information taken from a graph or equation to answer questions about a problem situation.			No	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 and table, and relate these to the equation.
	1.2 Use a letter to represent an unknown number; write and evaluate simple algebraic expressions in one variable by substitution.			No	6.EE.2: Write, read, and evaluate expressions in which letters stand for numbers.
	1.3 Know and use the distributive property in equations and expressions with variables.			No	6.EE.3: Apply the properties of operations to generate equivalent expressions.
	1.4 Identify and graph ordered pairs in the four quadrants of the coordinate plane.	Geometry	5.G.1: Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plan located by using an ordered pair of numbers, called its coordinates. Understand that the first number	Partial	6.NS.8: Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
			indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).		between points with the same first coordinate or the same second coordinate.
	1.5 Solve problems involving linear functions with integer values; write the equation; and graph the resulting ordered pairs of integers on a grid.	Geometry Grade 5	5.G.2: Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane and interpret coordinate values of points in the context of the situation.

5.OA.3: Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. | Partial | 6.EE.9: Use variable 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 variable using graphs and table and relate these to the equation. |
Strand Measurement and Geometry	**CA Math Standard**				
1.0 Measurement and Geometry	1.0 Students understand and compute the volumes and areas of simple objects.	Measurement and Data	5.MD: (Cluster Statement) Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	Yes	
	1.1 Derive and use the formula for the area of a triangle and of a parallelogram by comparing it with the formula for the area of a rectangle (i.e., two of the same triangles make a parallelogram with twice the area; a parallelogram is compared with a rectangle of the same area by cutting and pasting a right triangle on the parallelogram).			No	6.G.1: Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangle or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
	1.2 Construct a cube and rectangular box from two-dimensional patterns and use these patterns to compute the surface area for these objects.			No	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.
	1.3 Understand the concept of volume and use the appropriate units in common measuring systems (i.e., cubic centimeter [cm^3], cubic meter [m^3], cubic inch [in^3], cubic yard [yd^3]) to compute the volume of rectangular solids.	Measurement and Data	5.MD.3: Recognize volume as an attribute of solid figures and understand concepts of volume measurement. 5.MD.3a: A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. 5.MD.3b: A solid figure which can be packed without gaps or overlaps using *n* unit cubes is said to have a volume of *n* cubic units. 5.MD.4: Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. 5.MD.5: Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. **5.MD.5a: Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edges lengths, equivalently by multiplying the heights by the area of the base. Represent threefold whole-number products as volumes e.g., to represent the associative property of multiplication.** **5.MD.5b: Apply the formulas V = l x w x h and V = b x h for rectangular prisms to find volumes of right rectangular with whole number edge lengths in the**	Yes	

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
			context of solving real world and mathematical problems. 5.MD.5c: Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.		
	1.4 Differentiate between, and use appropriate units of measures for, two-and three-dimensional objects (i.e., find the perimeter, area, volume).	Measurement and Data	5.MD.4: Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	Partial	4.MD.2: Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. 4.MD.3: Apply the area and perimeter formulas for rectangles in real world and mathematical problems. CCS does not mention differentiate between appropriate units of measure.
2.0 Measurement and Geometry	2.0 Students identify, describe, and classify the properties of, and the relationships between, plane and solid geometric figures.	Geometry	5.G: (Cluster Statement) Classify two-dimensional figures into categories based on their properties. 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.	Yes	

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
	2.1 Measure, identify, and draw angles, perpendicular and parallel lines, rectangles, and triangles by using appropriate tools (e.g., straightedge, ruler, compass, protractor, drawing software).	Measurement and Data	4.MD.5: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: **4.MD.5a: An angle is measure with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle" and can be used to measure angles.** 4.MD.5b: An angle that turns through n one-degree angles is said to have an angle measure of n degrees. 4.MD.6: Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure. 4.MD.1: Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	Partial	7.G: (Cluster Statement) Draw, construct and describe geometrical figures and describe the relationships between them.
	2.2 Know that the sum of the angles of any triangle is 180° and the sum of the angles of any quadrilateral is 360° and use this information to solve problems.			No	8.G.5: Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.
	2.3 Visualize and draw two-dimensional views of three-dimensional objects made from rectangular solids.			No	7.G.3: Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. CCS does not specify drawing two-dimensional views of three-

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
					dimensional objects.
Strand Statistics, Data Analysis, and Probability	**CA Math Standard**				
1.0 Statistics, Data Analysis, and Probability	1.0 Students display, analyze, compare, and interpret different data sets, including data sets of different sizes.	Measurement and Data	5.MD: (Cluster Statement) Represent and interpret data.	Yes	
	1.1 Know the concepts of mean, median, and mode; compute and compare simple examples to show that they may differ.			No	6.SP.5: Summarize numerical data sets in relation to their context, such as by: 6.SP.5a: Reporting the number of observations. 6.SP.5b: Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. **6.SP.5c: 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 and any striking deviations from the overall pattern with reference to the context in which the data were gathered.** 6.SP.5d: 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.

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
	1.2 Organize and display single-variable data in appropriate graphs and representations (e.g., histogram, circle graphs) and explain which types of graphs are appropriate for various data sets.			No	6.SP.4: Display numerical data in plots on a number line, including dot plots, histograms, and box plots. CCS does not mention circle graph.
	1.3 Use fractions and percentages to compare data sets of different sizes.	Measurement and Data	5.MD.2: Make a line plot to display a data set of measurements in fractions of a unit (1/2, ¼, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.	Partial	CCS does not specify using percentages to compare data.
	1.4 Identify ordered pairs of data from a graph and interpret the meaning of the data in terms of the situation depicted by the graph.			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 the 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.2d: Explain that 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.**

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
	1.5 Know how to write ordered pairs correctly; for example, (*x, y*).	Geometry	5.G.1: Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plan located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	Yes	
Strand Mathematical Reasoning	**CA Math Standard**				
1.0 Mathematical Reasoning	1.0 Students make decisions about how to approach problems:	Mathematical Practice Standards	5.MP1: Make sense of problems and persevere in solving them.	Yes	
	1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.	Mathematical Practice Standards	5.MP1: Make sense of problems and persevere in solving them.	Yes	
	1.2 Determine when and how to break a problem into simpler parts.	Mathematical Practice Standards	5.MP1: Make sense of problems and persevere in solving them.	Yes	
2.0 Mathematical Reasoning	2.0 Students use strategies, skills, and concepts in finding solutions.	Mathematical Practice Standards	5.MP3: Construct viable arguments and critique the reasoning of others.	Yes	
	2.1 Use estimation to verify the reasonableness of calculated results.	Mathematical Practice Standards	5.MP1: Make sense of problems and persevere in solving them.	Yes	CCS does not reference estimation directly. In the Mathematical Practice standards, CCS implies a thorough understanding of the concepts so

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
					students could develop strong estimation skills as a byproduct of the depth of understanding.
	2.2 Apply strategies and results from simpler problems to more complex problems.	Mathematical Practice Standards	5.MP1: Make sense of problems and persevere in solving them.	Yes	
	2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	Mathematical Practice Standards	5.MP1: Make sense of problems and persevere in solving them.	Yes	
	2.4 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 Practice Standards	5.MP1: Make sense of problems and persevere in solving them.		
	2.5 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.	Mathematical Practice Standards	5.MP6: Attend to precision.		
	2.6 Make precise calculations and check the validity of the results from the context of the problem.	Mathematical Practice Standards	5.MP1: Make sense of problems and persevere in solving them.		
3.0 Mathematical Reasoning	3.0 Students move beyond a particular problem by generalizing to other situations.	Mathematical Practice Standards	5.MP7: Look for and make use of structure.		
	3.1 Evaluate the reasonableness of the solution in the context of the original situation.	Mathematical Practice Standards	5.MP8: Look for and express regularity in repeated reasoning.		
	3.2 Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.	Mathematical Practice Standards	5.MP7: Look for and make use of structure.		

Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in Reference to CCS
	3.3 Develop generalizations of the results obtained and apply them in other circumstances.	Mathematical Practice Standards	5.MP7: Look for and make use of structure.		

Grade 5 Common Core Standards not found in Grade 5 CA Mathematics Standards

Domain	Common Core Standard	Found in CA Math Standards
Operations and Algebraic Thinking	5.OA.1: Use parentheses brackets, or braces in numerical expressions, and evaluate these expressions with these symbols.	Yes Grade 4 AF1.2
Operations and Algebraic Thinking	5.OA.2: Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	Yes Grade 7 AF1.1
Number and Operations in Base Ten	5.NBT.2: Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	Partial Grade 7 NS1.1
Number and Operations in Base Ten	5.NBT.5: Fluently multiply multi-digit whole numbers using the standard algorithm.	Partial Grade 4 NS3.2
Number and Operations - Fractions	5.NF.2: Solve word problems involving addition and subtraction of fractions referring to the same who, including cases of 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.	No
Number and Operations – Fractions	5.NF.3: Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	Yes Grade 4 NS1.5
Number and Operations – Fractions	5.NF.4a: Interpret the product (*a/b*) *x q* as a parts of a partition of *q* into *b* equal parts; equivalently, as the result of a sequence of operations *a x q ÷b*.	Yes Grade 6 NS2.2
Number and Operations – Fractions	5.NF.4b: Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriated unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	Partial Grade 4 MG1.1
Number and Operations – Fractions	5.NF.5: Interpret multiplications as scaling (resizing) by: a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater that the given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence *a/b = (n x a)/ (n x b)* to the effect multiplying *a/b* by 1.	Partial Grade 6 NS1.3 Partial Grade 7 MG1.2
Number and Operations – Fractions	5.NF.7a: Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.	Yes Grade 6 NS2.2
Number and Operations -	5.NF.7b: Interpret division of a whole number by a unit fraction, and compute such quotients.	Yes Grade 6 NS2.2

Domain	Common Core Standard	Found in CA Math Standards
Fractions	For example, created a story context for 4 divided by (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain than 4 divided by (1/5) = 20 because 20 x (1/5) = 4.	
Measurement and Data	5.MD.1: Convert among different-sized standard measurement units with a given measurement system (e.g., convert 5 cm to 0.05 m) and use conversions in solving multi-step, real world problems.	Yes Grade 7 MG1.1

Grade 5 CA Mathematics Standards not found in the Grade 5 Common Core Standards

Strand	CA Math Standard	Found in Common Core Standards
1.0 Number Sense	1.2 Interpret percents as a part of a hundred; find decimal and percent equivalents for common fractions and explain why they represent the same value; compute a given percent of a whole number.	Yes 6.RP.3a: Make table 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 table to compare ratios. 6.RP.3b: solve unit rate problems including those involving unit pricing and constant speed. **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.** 6.RP.3d: Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
1.0 Number Sense	1.3 Understand and compute positive integer powers of nonnegative integers; compute examples as repeated multiplication.	Yes 6.EE.1: Write and evaluate numerical expressions involving whole-number exponents.
1.0 Number Sense	1.4 Determine the prime factors of all numbers through 50 and write the numbers as the product of their prime factors by using exponents to show multiples of a factor (e.g., $24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3$).	Yes 4.OA.4: Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range is prime or composite.
1.0 Number Sense	1.5 Identify and represent on a number line decimals, fractions, mixed numbers, and positive and negative integers.	Yes 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 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., -(-3) = 3 and then 0 is its own opposite. 6.NS.6b: Write interpret, and explain statements of order for rational number in real-world contexts. **6.NS.6c: Find and position integers and other rational numbers on a**

Strand	CA Math Standard	Found in Common Core Standards
		horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on the coordinate plane.
1.0 Algebra	1.1 Use information taken from a graph or equation to answer questions about a problem situation.	Yes 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 and table, and relate these to the equation.
1.0 Algebra	1.2 Use a letter to represent an unknown number; write and evaluate simple algebraic expressions in one variable by substitution.	Yes 6.EE.2: Write, read, and evaluate expressions in which letters stand for numbers.
1.0 Algebra	1.3 Know and use the distributive property in equations and expressions with variables.	Yes 6.EE.3: Apply the properties of operations to generate equivalent expressions.
1.0 Measurement and Geometry	1.1 Derive and use the formula for the area of a triangle and of a parallelogram by comparing it with the formula for the area of a rectangle (i.e., two of the same triangles make a parallelogram with twice the area; a parallelogram is compared with a rectangle of the same area by cutting and pasting a right triangle on the parallelogram).	Yes 6.G.1: Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangle or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
	1.2 Construct a cube and rectangular box from two-dimensional patterns and use these patterns to compute the surface area for these objects.	Yes 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.
2.0 Measurement and Geometry	2.2 Know that the sum of the angles of any triangle is 180° and the sum of the angles of any quadrilateral is 360° and use this information to solve problems.	Yes 8.G.5: Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.
2.0 Measurement and Geometry	2.3 Visualize and draw two-dimensional views of three-dimensional objects made from rectangular solids.	Yes CCS does not specify drawing two-dimensional views of three-dimensional objects. 7.G.3: Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

Strand	CA Math Standard	Found in Common Core Standards
1.2 Statistics, Data Analysis, and Probability	1.1 Know the concepts of mean, median, and mode; compute and compare simple examples to show that they may differ.	Yes 6.SP.5: Summarize numerical data sets in relation to their context, such as by: 6.SP.5a: Reporting the number of observations. 6.SP.5b: Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. **6.SP.5c: 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 and any striking deviations from the overall pattern with reference to the context in which the data were gathered.** 6.SP.5d: 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.
1.2 Statistics, Data Analysis, and Probability	1.2 Organize and display single-variable data in appropriate graphs and representations (e.g., histogram, circle graphs) and explain which types of graphs are appropriate for various data sets.	Yes 6.SP.4: Display numerical data in plots on a number line, including dot plots, histograms, and box plots. CCS does not mention circle graph.
1.2 Statistics, Data Analysis, and Probability	1.4 Identify ordered pairs of data from a graph and interpret the meaning of the data in terms of the situation depicted by the graph.	Yes 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 the 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.2d: Explain that 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.**