

## California Common Core State Standards Comparison – FOURTH GRADE Standards for Mathematical Practice

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| <ol style="list-style-type: none"> <li>1. Make sense of problems and persevere in solving them.</li> <li>2. Reason abstractly and quantitatively.</li> <li>3. Construct viable arguments and critique the reasoning of others</li> <li>4. Model with mathematics.</li> </ol> | <ol style="list-style-type: none"> <li>5. Use appropriate tools strategically</li> <li>6. Attend to precision.</li> <li>7. Look for and make use of structure.</li> <li>8. Look for and express regularity in repeated reasoning.</li> </ol> |
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Current CA Math Content Standards	# of Items	CST Released Items #	California Common Core State Standards - Mathematics	Notes
<b>NUMBER SENSE:</b>	<b>31 48%</b>	<b>46</b>		
NS 1.0 Students understand the place value of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.			4.NBT: Generalize place value understanding for multi-digit whole numbers (Cluster Statement)  4.NF Cluster Statement: Understand decimal notation for fractions, and compare decimal fractions..	
NS 1.1 Read and write whole numbers in the millions	3	#1,2,3	4.NBT.2: Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meaning of digits in each place, using $>$ , $=$ , and $<$ symbols to record the results of the comparisons.	
NS 1.2 Order and compare whole numbers and decimals to two decimal places..	2	#4,5	4.NBT.2: Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meaning of the digits in each place using $<$ , $=$ , and $>$ symbols to record the results of comparisons.  4.NF7: Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$ , $=$ , and $<$ and justify the conclusions, e.g., by using a visual model.	

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NS 1.3: Round whole numbers through the millions to the nearest ten, hundred, thousand, ten thousand, or hundred thousand.	2	#6,7,8	4.NBT.3: Use place value understanding to round multi-digit whole numbers to any place.	
N.S.1.4: Decide when a rounded solution is called for and explain why such a solution may be appropriate.	NA	0	4.OA.3: Solve multi-step problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies using rounding.	
NS 1.5: Explain different interpretations of fractions for parts of a whole, parts of a set, and division of whole numbers by whole numbers; explain equivalents of fractions (see standard 4.0)	1/2	#9,10		
NS 1.6: Write tenths and hundredths in decimal and fraction notation and know the fraction and decimal equivalents for halves and fourths (e.g. $\frac{1}{2} = 0.5$ or $0.50$ ; $\frac{7}{4} = 1 \frac{3}{4} = 1.75$ )	1/2	#11	4.NF.6: Use decimal notation for fractions with denominators of 10 or 100.	
NS1.7: Write the fraction represented by a drawing of parts of a figure; represent a given fraction by using drawings; and relate a fraction to a simple decimal on a number line.	1	#12	4.NF.5: Express a fraction with denominator 10 as an equivalent fraction with a denominator 100, and use this technique to add two fractions with respective denominators 10 or 100. Use decimal notation for fractions with denominators 10 or 100. 4.NF.7: Compare two decimals to hundredths by reasoning about their sides. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$ , $=$ , $<$ and justify the conclusions, e.g., by using a visual model.	

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NS1.8: Use concepts of negative numbers (e.g., on a number line, in counting, in temperature, in “owing”).	3	#13,14, 15,16		
NS 1.9: Identify on a number line the relative position of positive fractions, positive mixed numbers, and positive decimals to two decimal places.	3	#18,19, 20,21, 22	4.NF.7: Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$ , $=$ , $<$ and justify the conclusions, e.g., by using a visual model.	
N.S. 2.0: Students extend their use and understanding of whole numbers to the addition and subtraction of simple decimals.				
N.S. 2.1: Estimate and compute the sum or difference of whole numbers and positive decimals to two places.	1	#23,24		
N.S. 2.2: Round two-place decimals to one decimal or the nearest whole number and judge the reasonableness of the rounded answer.	1/2	#25,26		
N.S. 3.0: Students solve problems involving addition, subtraction, multiplication and division of whole numbers and understand the relationships among the operations.			4.NBT: (Cluster Statement) Use place value understanding and properties of operations to perform multi-digit arithmetic.	
N.S. 3.1: Demonstrate an understanding of and the ability to use, standard algorithms for the addition and subtraction of multi-digit numbers.	3	#27,28, 29	4.NBT.4: Fluently add and subtract multi-digit whole numbers using the standard algorithm.	

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N.S. 3.2: Demonstrate an understanding of, and the ability to use, standard algorithms for multiplying a multi-digit number by a two-digit number and for dividing a multi-digit number by a one-digit number; use relationships between them to simplify computation and to check results.	3	#30,31, 32	4.NBT.6: Find whole number quotients and remainders with up to four-digit dividends and one-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.	
N.S. 3.3: Solve problems involving multiplication of multi-digit numbers by two-digit numbers.	3	#33,34, 35,36, 37	4.NBT.5: Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	
N.S. 3.4: Solve problems involving division of multi-digit numbers by one-digit numbers.	3	#38,39, 40,41, 42,43	4.NBT.6: Find whole number quotients and remainders with up to four-digit dividends and one-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.	
N.S. 4.0: Students know how to factor small whole numbers.			4.OA: (Cluster Statement) Gain familiarity with factors and multiples.	
N.S. 4.1: Understand that many whole numbers break down in different ways (e.g. $12 = 4 \times 3 = 2 \times 6 = 2 \times 2 \times 3$ )	1/2	#44	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 1-100 is prime or composite.	

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N.S. 4.2: Know that numbers such as 2, 3, 5, 7 and 11 do not have any factors except 1 and themselves and that such numbers are called prime factors.	2	#45,46	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 1-100 is prime or composite.	
<b>Algebra and Functions</b>	<b>18 28%</b>			
A.F. 1.0: Students use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences.			4OA.2: Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	
A.F.1.1: Use letters, boxes, or other symbols to stand for any number in simple expressions or equations (e.g. demonstrate an understanding and the use of the concept of a variable)	1/2	<b>#47,48</b>	4.OA.3: Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	
A.F. 1.2: Interpret and evaluate mathematical expressions that now use parentheses.	5	<b>#49,50, 51,52, 53,54</b>		
A.F.1.3: Use parentheses to indicate which operation to perform first when writing expressions containing more than two terms and different operations.	3	<b>#55,56, 57</b>		

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A.F. 1.4: Use and interpret formulas (e.g. area=length x width or $A = lw$ ) to answer questions about quantities and their relationships.	1	#58	4.MD.3: Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	
A.F. 1.5: Understand that an equation such as $y=3x+5$ is a prescription for determining a second number when a first number is given.	2	#59,60, 61,62		
A.F. 2.0: Students know how to manipulate equations.				
A.F. 2.1: Know and understand that equals added to equals are equal.	3	#63,64, 65,66		
A.F. 2.2: Know and understand that equals multiplied by equals are equal.	3	#67,68, 69,70		
<b>Measurement and Geometry</b>	12 18%			
M.G. 1.0: Students understand perimeter and area.			4.MD: (Cluster Statement) Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	
M.G. 1.1 Measure the area of rectangular shapes by using the appropriate units, such as square centimeter ( $cm^2$ )	1/2	#71	4.MD.3: Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	

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M.G. 1.2: Recognize that rectangles that have the same area can have different perimeters.	1/2	#72,73	4.MD.3: Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	
M.G. 1.3: Understand that rectangles that have the same perimeter, can have different areas.	1/2	#74	4.MD.3: Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	
M.G. 1.4: Understand and use formulas to solve problems involving perimeters and areas of rectangles and squares. Use those formulas to find the areas of more complex figures by dividing the figures into basic shapes.	1/2	#75,76	4.MD.3: Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	
M.G. 2.0: Students use two-dimensional coordinate grids to represent points and graph lines and simple figures.				
M.G. 2.1: Draw the points corresponding to linear relationships on graph paper (e.g., draw 10 points on the graph of the equation $y=3x$ and connect them by using a straight line).	2	#77		
M.G. 2.2: Understand that the length of a horizontal line segment equals the difference of the x-coordinates.	2	#78		
M.G. 2.3: Understand the length of a vertical line segment equals the difference of the y-coordinates.	2	#79,80, 81		

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M.G. 3.0: Students demonstrate an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems.			4.G: (Cluster Statement) Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	
M.G. 3.1: Identify lines that are parallel and perpendicular.	1	#82	4.G.1: Draw points, lines, line segments, rays, angle (right, acute, obtuse) and perpendicular and parallel lines. Identify these in two-dimensional figures.  4.G.2: Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	
M.G. 3.2: Identify the radius and diameter of a circle	1	#83		
M.G. 3.3: Identify congruent figures	1/3	#84		
M.G. 3.4: Identify figures that have bilateral and rotational symmetry.	1/3	#85	4.G.3: Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	



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M.G. 3.5: Know the definitions of a right angle, an acute angle and an obtuse angle. Understand that $90^\circ$ , $180^\circ$ , $270^\circ$ and $360^\circ$ are associated, respectively, with $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , and full turns.	1/3	#86	<p>4.G.2: Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.</p> <p>4.MD.5: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.</p> <p><b>4.MD.5a: An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular area between the points where the two rays intersect the circle. An angle that turns through <math>\frac{1}{360}</math> of a circle is called a “one-degree angle”, and can be used to measure angles.</b></p> <p>4.MD.5b: An angle that turns through <math>n</math> one-degree angles is said to have an angle measure of <math>n</math> degrees.</p>	
M.G. 3.6: Visualize, describe, and make models of geometric solids (e.g., prisms, pyramids) in terms of the number and shape of faces, edges, and vertices; interpret two-dimensional representations of three-dimensional objects; and draw patterns (of faces) for a solid that, when cut and folded, will make a model of the solid.	1/3	#87,88		
M.G. 3.7: Know the definitions of different triangles (e.g. equilateral, isosceles, scalene) and identify their attributes.	1/3	#89	<p>4.G.2: Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.</p>	

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M.G. 3.8: Know the definition of different quadrilaterals (e.g., rhombus, square, rectangle, parallelogram, trapezoid)	1/3	#90	4.G.2: Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles	
<b>Statistics, Data Analysis and Probability</b>	4 6%			
S.D.A.P.1.0: Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings.			4.MD: (Cluster Statement) Represent and interpret data.	
S.D.A.P.1.1: Formulate survey questions; systematically collect and represent data on a number line; and coordinate graphs, tables and charts.	1	#91,92		
S.D.A.P.1.2: Identify the mode(s) for sets of categorical data and the mode(s), median and any apparent outliers for numerical data sets.	2/3	#93		
S.D.A.P.1.3: Interpret one-and two-variable data graphs to answer questions about a situation	1	#94	4.MD.4: Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	
S.D.A.P.2.0: Students make predictions for simple probability situations.				
S.D.A.P.2.1: Represent all possible outcomes for a simple probability situation in an organized way (e.g. tables, grids, tree diagrams).	2/3	0		

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S.D.A.P.2.2: Express outcomes of experimental probability situations verbally and numerically (e.g., 3 out of 4; $\frac{3}{4}$ )	2/3	#95, 96		
<b>Mathematical Reasoning</b>	<b>Embedded</b>			
M.R. 1.0: Students make decisions about how to approach problems.	Emb.		MP1: Make sense of problems and persevere in solving them.	
M.R.1.1: Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information and observing patterns.	Emb		MP1: Make sense of problems and persevere in solving them	
M.R. 1.2: Determine when and how to break a problem into simpler parts.	Emb		MP1: Make sense of problems and persevere in solving them	
M.R. 2.0: Students use strategies, skills, and concepts in finding solutions.	Emb		M.P.3:Construct viable arguments and critique the reasoning of others.	
M.R.2.1: Use estimation to verify the reasonableness of calculated results.	Emb		MP1: Make sense of problems and persevere in solving them	
M.R. 2.2: Apply strategies and results from simpler problems to more complex problems.	Emb		MP1: Make sense of problems and persevere in solving them	
M.R.2.3: Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	Emb		MP1: Make sense of problems and persevere in solving them	

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M.R. 2.4: Express the situation clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.	Emb		M.P.6: Attend to precision.	
M.R. 2.5: Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.	Emb		MP1: Make sense of problems and persevere in solving them	
M.R.2.6: Make precise calculations and check the validity of the results from the context of the problem.	Emb		M.P.7: Look for and make use of structure.	
M.R.3.0: Students move beyond a particular problem by generalizing to other situations.	Emb		M.P.8: Look for and express regularity in repeated reasoning.	
M.R.3.1: Evaluate the reasonableness of the solution in the context of the original situation.	Emb		M.P.7: Look for and make use of structure.	
M.R.3.2: Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.	Emb		M.P.7: Look for and make use of structure.	
M.R.3.3: Develop generalizations of the results obtained and apply them in order circumstances.	Emb		M.P.7: Look for and make use of structure.	