Common Core State Standards with California Additions[1]
Standards Map for a Basic Grade-Level Program

Grade Seven – Mathematics

Standard No.	Standard Language	Publisher Citations		Meets Standard		For Reviewer Use Only
		Primary Citations	Supporting Citations	Y	N	Reviewer Notes
	RATIOS AND PROPORTIONAL RELATIONSHIPS					
	Analyze proportional relationships and use them to solve real-world and mathematical problems.					
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. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction $^{1/2}/_{1/4}$ miles per hour, equivalently 2 miles per hour.*	Unit 1: Unit Rates	Unit 1: Finding a Constant of Proportionality (Instruction, Frame 8; Assignment (#1), Frame 2; Assignment (#2), Frame 8), Applications of Unit Rates (Instruction, Frame 12; Assignment (#1), Frame 1)			
7.RP 2a.	Recognize and represent proportional	Unit 1: Unit				

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[1] These standards were originally produced by the Common Core State Standards Initiative, a state-led effort coordinated by the National Governors Association Center for Best Practices and the Council of Chief State School Officers. California additions were made by the State Board of Education when it adopted the Common Core on August 2, 2010 and modified pursuant to Senate Bill 1200 located at http://tinyurl.com/CASB1200 on January 16, 2013. Additions are marked in bold and underlined.

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	relationships between quantities. 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.	Rates, Identifying Proportional Relationships				
7.RP 2b.	Recognize and represent proportional relationships between quantities. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	Unit 1: Finding a Constant of Proportionality, Equations of Proportional Relationships	Unit 1: Graphing Proportional Relationships (Instruction, Frame 8; Assignment (#1), Frame 10), Identifying Proportional Relationships (Instruction, Frame 10; Assignment (#2), Frames 1-3)			
7.RP 2c.	Recognize and represent proportional relationships between quantities. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.*	Unit 1: Equations of Proportional Relationships				
7.RP 2d.	Recognize and represent proportional relationships between quantities. Explain what a point *(x, y)* on the graph of a	Unit 1: Graphing Proportional Relationships				

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	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.					
7.RP 3.	Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*	Unit 1: Proportions, Cross Products, Unit 2: Introduction to Percents, Finding a Percent of a Number, Estimating with Percent, Finding a Total Amount, Markups and Markdowns, Finding an Original Amount, Simple Interest, Percent Increase and Decrease, Percent Error, Applications of Percent				
	THE NUMBER SYSTEM					
	Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.					

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7.NS 1a.	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 diagram. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.*	Unit 3: Integers and the Number Line				
7.NS 1b.	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 diagram. Understand $p + q$ as the number located a distance $|q|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.	Unit 3: Adding Integers	Unit 4: Adding and Subtracting Decimals (Instruction, Frames 2-3), Adding and Subtracting Fractions (Instruction (#2); Frame 3)			
7.NS 1c.	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 diagram. 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.	Unit 3: Subtracting Integers	Unit 4: Adding and Subtracting Decimals (Instruction, Frame 6-7; Assignment, Frame 1), Adding and Subtracting Fractions (Instruction			

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			(#2), Frame 5; Assignment (#2), Frame 2)			
7.NS 1d.	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 diagram. Apply properties of operations as strategies to add and subtract rational numbers.	Unit 3: Using Properties of Operations				
7.NS 2a.	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	Unit 3: Multiplying Integers	Unit 4: Multiplying Decimals (Instruction, Frames 4-5; Assignment (#1), Frames 2, 6), Multiplying Fractions (Instruction, Frames 6-7; Assignment (#1), Frame 2)			
7.NS 2b.	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by	Unit 3: Dividing Integers				

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	describing real world contexts.					
7.NS 2c.	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. Apply properties of operations as strategies to multiply and divide rational numbers.	Unit 3: Using Properties of Operations Unit 4: Multiplying Fractions, Dividing Fractions				
7.NS 2d.	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. 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.	Unit 4: Rational Numbers				
7.NS 3.	Solve real-world and mathematical problems involving the four operations with rational numbers.[2]	Unit 1: Applications of Unit Rates Unit 2: Finding a Percent of a Number, Finding a Total Amount, Markups and Markdowns, Finding an Original Amount, Simple Interest,				

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[2] Computations with rational numbers extend the rules for manipulating fractions to complex fractions.

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		Percent Increase and Decrease, Percent Error, Applications of Percent

Unit 3: Solving Problems Involving Integers

Unit 4: Solving Problems Involving Rational Numbers | | | | |
	EXPRESSIONS AND EQUATIONS					
	Use properties of operations to generate equivalent expressions.					
7.EE 1.	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	Unit 7: Adding and Subtracting Expressions, Expanding Expressions, Factoring Expressions	Unit 7: Real-World Applications of Expressions (Instruction, Frame 4)			
7.EE 2.	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%"*	Unit 7: Using Properties to Simplify Expressions	Unit 7: Adding and Subtracting Expressions (Instruction,			

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	is the same as "multiply by 1.05."		Frame 4; Assignment (#2), Frame 1), Expanding Expressions (Primary Assignment, Frame 5; Assignment, Frame 3), Factoring Expressions (Instruction, Frames 6-14; Assignment, Frame 9)			
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 between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be*	Unit 4: Adding and Subtracting Decimals, Multiplying Decimals, Dividing Decimals, Solving Problems Involving Decimals, Adding and Subtracting Fractions, Multiplying Fractions, Dividing	Unit 2: Estimating With Percents (Instruction, Frames 12-13; Assignment (#1), Frames 2, 11; Assignment (#2), Frame 6)			

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	used as a check on the exact computation.	Fractions, Solving Problems Involving Rational Numbers Unit 7: Real-World Applications of Expressions Unit 8: Solving Two-Step Equations, Solving Multi-Step Equations, Solving Multi-Step Equations, Equations in the Real World Unit 9: Inequalities in the Real World				
7.EE 4a.	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms	Unit 8: Equations in the Real World	Unit 8: Solving Multi-Step Equations (Instruction, Frames 11-12; Assignment, Frames 5, 7)			

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	fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*					
7.EE 4b.	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*	Unit 9: Graphing Inequalities, Inequalities in the Real World	Unit 9: Addition and Subtraction Inequalities (Instruction, Frames 10-12; Assignment (#1), Frames 1-10), Multiplication and Division Inequalities (Instruction, Frames 13-16; Assignment (#2), Frames 9-10), Solving Two-Step Inequalities (Instruction, Frames 7-10; Assignment, Frames 5-8)			
	GEOMETRY					
	Draw, construct, and describe geometrical figures and describe the relationships between them.					
7.G 1.	Solve problems involving scale drawings of	Unit 10: Scale				

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	geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	Factor, Determining Scale Factor, Solving Scale Problems Using Proportions, Maps, Scale Drawing and Area, Changing a Scale				
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.	Unit 11: Constructing Triangles, Constructing Geometric Figures				
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.	Unit 12: Three-Dimensional Figures, Cross Sections				
	Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.					
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.	Unit 11: Circumference, Area of a Circle				
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	Unit 11: Angle Relationships, Finding Unknown Angle				

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	angle in a figure.	Measures				
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.	Unit 11: Area of Polygons, Area of Composite Figures Unit 12: Surface Area of Prisms, Surface Area of Pyramids, Surface Area of Composite Figures, Volume of Prisms, Volume of Pyramids, Volume of Composite Figures, Applications of Volume, Applications of Volume and Surface Area				
	STATISTICS AND PROBABILITY					
	Use random sampling to draw inferences about a population.					
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.	Unit 6: Populations and Sampling, Sampling Methods, Inferences and				

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	Understand that random sampling tends to produce representative samples and support valid inferences.	Predictions				
7.SP 2.	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.*	Unit 6: Multiple Samples, Variation in Predictions and Estimates				
	Draw informal comparative inferences about two populations.					
7.SP 3.	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*	Unit 6: Analyzing Dot Plots, Comparing Box Plots, Comparing Populations				
7.SP 4.	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For*	Unit 6: Analyzing Dot Plots, Comparing				

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	example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.	Measures of Center and Variability, Comparing Box Plots, Comparing Populations				
	Investigate chance processes and develop, use, and evaluate probability models.					
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 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	Unit 5: Understanding Probability, Geometric Probability, Theoretical Probability				
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. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*	Unit 5: Experimental Probability	Unit 5: Experimental vs. Theoretical Probability (Instruction (#1), Frame 11; Instruction (#2), Frame 2; Assignment (#2), Frames 2-4)			
7.SP 7a.	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed	Unit 5: Simulations to Estimate				

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	frequencies; if the agreement is not good, explain possible sources of the discrepancy. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.*	Probabilities				
7. SP 7b.	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. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*	Unit 5: Simulations to Estimate Probabilities				
7.SP 8a.	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. 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.	Unit 5: Probability of Compound Events				
7.SP 8b.	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. Represent sample spaces for	Unit 5: Compound Events and				

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	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.	Sample Space, Probability of Compound Events				
7.SP 8c.	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*	Unit 5: Simulations to Estimate Probabilities				
	MATHEMATICAL PRACTICES					
MP 1.	Make sense of problems and persevere in solving them.	Unit 1: Cross Products Unit 8: Equations in the Real World Unit 11: Area of Composite Figures	Unit 9: Inequalities in the Real World (Instruction, Frame 7; Assignment (#1), Frame 9)			
MP 2.	Reason abstractly and quantitatively.	Unit 3: Using Properties of Operations Unit 5:	Unit 6: Inferences and Predictions (Instruction, Frame 10)			

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		Experimental vs. Theoretical Probability Unit 12; Volume of Composite Figures				
MP 3.	Construct viable arguments and critique the reasoning of others.	Unit 1: Identifying Proportional Relationships Unit 6: Inferences and Predictions Unit 10: Changing a Scale	Unit 2: Markups and Markdowns (Primary Assignment (#1), Frame 8; Assignment (#2), Frame 9)			
MP 4.	Model with mathematics.	Unit 2: Finding a Percent of a Number Unit 3: Solving Problems Involving Integers Unit 7: Real-World Applications of Expressions	Unit 1: Equations of Proportional Relationships (Assignment (#1), Frames 2-6)			

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		Unit 8: Addition and Subtraction Equations				
MP 5.	Use appropriate tools strategically.	Unit 2: Finding a Percent of a Number

Unit 5: Experimental vs. Theoretical Probability

Unit 10: Determining a Scale Factor

Unit 11: Constructing Triangles | Unit 5: Compound Events and Sample Space (Instruction, Frames 1, 5-6, 8; Assignment (#1), Frame 3; Assignment (#2), Frames 2-3) | | | |
| MP 6. | Attend to precision. | Unit 3: Operations with Integers

Unit 5: Probability of Compound Events

Unit 8: Equations in the Real World | Unit 9: Graphing Inequalities (Instruction, Frame 6; Assignment (#1), Frames 9-11) | | | |

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MP 7.	Look for and make use of structure.	Unit 3: Using Properties of Operations Unit 7: Writing Expressions Unit 12: Applications of Volume and Surface Area	Unit 7: Factoring Expressions (Instruction, Frames 9, 11-12; Assignment, Frame 11)			
MP 8.	Look for and express regularity in repeated reasoning.	Unit 2: Estimating with Percents Unit 4: Rational Numbers, Adding and Subtracting Fractions, Solving Problems Involving Rational Numbers	Unit 4: Dividing Fractions (Instruction, Frames 7, 12; Assignment, Frame 12)			
Appendix						