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Colorado Mathematics Academic Standards, Grade 7 Alignments to SuccessMaker

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Colorado Mathematics Standards Code	Colorado Mathematics Academic Standards, Grade 7	SuccessMaker Item Description	Item ID
1	Number and Quantity		
7.RP.A	Ratios & Proportional Relationships: Analyze proportional relationships and use them to solve real-world and mathematical problems.		
7.RP.A.2	Identify and represent proportional relationships between quantities.	Determine the fraction needed to complete the proportion.	SMMA_LO_01827
7.RP.A.2.a	Determine 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.	Determine the fraction needed to complete the proportion.	SMMA_LO_01827
7.RP.A.2.d	Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.	Interpret the meaning of a point on the graph of a proportional relationship in terms of the situation; use this information to answer questions about the situation.	SMMA_LO_02089
7.RP.A.3	Use proportional relationships to solve multistep ratio and percent problems.	Identify the correct proportion for the context, and then solve.	SMMA_LO_01826
	Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.		
	Academic Context and Connections		
	Entrepreneurial Skills: Inquiry/Analysis		
MP1	Make sense of problems and persevere in solving them.		
2	Recognize, identify, and solve problems that involve proportional relationships to make predictions and describe associations among variables.	Identify the correct proportion for the context, and then solve.	SMMA_LO_01826
7.NS.A	The Number System: Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.		
7.NS.A.1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.		
7.NS.A.1.a	Describe situations in which opposite quantities combine to make 0.	Find the sum of four integers when two are additive inverses (a, b, c, and d have absolute values 1 to 20).	SMMA_LO_00119
	For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.		
7.NS.A.1.b	Demonstrate $p + q$ 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.	Find the sum of four integers when two are additive inverses (a, b, c, and d have absolute values 1 to 20).	SMMA_LO_00119
7.NS.A.1.c	Demonstrate 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	Evaluate the expression -(-a), were a has values 1 to 99.	SMMA_LO_01518

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	contexts.		
		Identify a - b as equivalent to a + (-b), where a and b are 1 to 20.	SMMA_LO_01514
		Identify a - (-b) as equivalent to a + b (minuends 1 to 10).	SMMA_LO_01517
		Identify -a - (-b) as equivalent to -a + b (minuends and subtrahends -9 to 9).	SMMA_LO_01521
		Identify -a - b as equivalent to -a + (-b) (minuends -20 to -1).	SMMA_LO_01515
7.NS.A.1.d	Apply properties of operations as strategies to add and subtract rational numbers.	Apply properties of operations to add two linear expressions.	SMMA_LO_02149
7.NS.A.2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.		
7.NS.A.2.c	Apply properties of operations as strategies to multiply and divide rational numbers.	Apply properties of operations to add two linear expressions.	SMMA_LO_02149
7.NS.A.2.d	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.		
	Academic Context and Connections		
	Entrepreneurial Skills: Critical Thinking/Problem Solving		
MP2	Reason abstractly and quantitatively.		
2	Compute with rational numbers abstractly and interpret quantities in context.	Interpret quotients of rational numbers by describing real-world contexts.	SMMA_LO_02088
2	Algebra and Functions		
7.EE.B	Expressions & Equations: Solve real-life and mathematical problems using numerical and algebraic expressions and equations.		
7.EE.B.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.		
7.EE.B.4.a	Solve word problems leading to equations of the form $px \pm q = r$ and $p(x \pm q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.	Solve a one-step equation (fractions, addition and subtraction).	SMMA_LO_01868
		Solve for a in ba/c = d by multiplying by the reciprocal.	SMMA_LO_01795
		Complete the steps to solve for x in ax - b = c (x is from -9 to 2).	SMMA_LO_00393
		Complete the steps to solve for x in ax + b = c.	SMMA_LO_00383
		Solve a one-step equation (integers, multiplication and division).	SMMA_LO_01845
		Complete the steps to solve for x in a - x = b.	SMMA_LO_00396
		Solve for a in a - b = c (differences from -19 to 11).	SMMA_LO_00389
		Solve a one-step equation (multiplication, decimals).	SMMA_LO_01797
		Solve for x in ax + b = c.	SMMA_LO_00384

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		Solve a one-step equation (decimal integers, multiplication and division).	SMMA_LO_01849
		Solve a one-step equation with decimals in context (addition and subtraction).	SMMA_LO_01799
		Solve a one-step equation (addition and subtraction, one-digit integers).	SMMA_LO_01801
		Solve a two-step equation (decimals).	SMMA_LO_01851
		Complete the steps to solve for x in ax + b = c (x is from -9 to -1).	SMMA_LO_00392
		Complete the steps to solve for x in ax - b = c (x is from -9 to 9).	SMMA_LO_00394
		Solve for a or b in a + b = c (decimals to hundredths).	SMMA_LO_00373
		Solve for x in ax = b (products from -(4 x 4) to -(9 x 9)).	SMMA_LO_00390
		Solve for a or b in a - b = c (decimals to hundredths, regrouping).	SMMA_LO_00374
		Solve a one-step equation (fractions, addition and subtraction).	SMMA_LO_01848
		Solve a one-step equation (multiplication and division, integers).	SMMA_LO_01800
		Solve for x in -x = a (numbers from -99 to 99).	SMMA_LO_00395
		Solve for a in ba/c = d by multiplying by the reciprocal.	SMMA_LO_00382
		Solve a one-step equation (two-digit integers, addition and subtraction).	SMMA_LO_01844
		Solve for a in a + b = c (a is from -20 to -1).	SMMA_LO_00388
		Solve for a in a/b = c (products from -(4 x 4) to -(9 x 9)).	SMMA_LO_00391
	For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?		
7.EE.B.4.b	Solve word problems leading to inequalities of the form $px \pm q > r$, $px \pm q \geq r$, $px \pm q <$ □, or $px \pm q \leq r$, 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.	Write an inequality of the form px + q > r or px + q < r to represent a constraint in a real-world problem.	SMMA_LO_02083
		Solve an inequality of the form px + q > r or px + q < r; then graph the solution on a number line.	SMMA_LO_02084
	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.		
3	Data, Statistics, and Probability		
7.SP.C	Statistics & Probability: Investigate chance processes and develop, use, and evaluate probability models.		
7.SP.C.5	Explain 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.	Given a sentence describing an observed event, label a future occurrence as certain, possible, or impossible.	SMMA_LO_01143

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		Given information about a current situation, classify a future event as being certain, possible, or impossible.	SMMA_LO_01139
		Within the context of selecting without replacement from a cup containing three balls, each of a different color, label a given event prior to each selection as certain, possible, or impossible.	SMMA_LO_01147
		Create a set of colored balls whose contents are specified by whether it is certain, possible, or impossible to select a particular color.	SMMA_LO_01153
		Given a graphical representation of a spinner partitioned into sectors of different sizes, each containing one of several possible pictures, label events as certain or impossible or pairs of events as more, less, or equally likely.	SMMA_LO_01212
4	Geometry		
7.G.B	Geometry: Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.		
7.G.B.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure.	Find the measure of the missing angle in a diagram.	SMMA_LO_00674
	Academic Context and Connections		
	Entrepreneurial Skills: Inquiry/Analysis		
1	Solve problems involving angle measure, area, surface area, and volume.	Find the measure of the missing angle in a diagram.	SMMA_LO_00674
MP4	Model with mathematics.		
3	Model real-world situations involving area, surface area, and volume.	Determine whether a chronological event is certain or impossible.	SMMA_LO_01137
		Write an inequality of the form px + q > r or px + q < r to represent a constraint in a real-world problem.	SMMA_LO_02083
		Identify the correct proportion for the context, and then solve.	SMMA_LO_01826
		In the context of randomly selecting a card that has one of two pictures on it, compute the probability of each picture being selected from a set of cards (total of 4 to 7 cards).	SMMA_LO_01211
		Determine the average (mean) of a data set of three to five customary weights or metric masses.	SMMA_LO_00836
		Within the context of selecting without replacement from a cup containing three balls, each of a different color, label a given event prior to each selection as certain, possible, or impossible.	SMMA_LO_01147
		Match equations and inequalities with real-world situations.	SMMA_LO_02140
		Determine the event that is most or least likely; then conduct a simulation in which the results are recorded so that theoretical and experimental probability can be compared.	SMMA_LO_01738
		Within the context of selecting without replacement from a bowl containing marbles of two colors, indicate the	SMMA_LO_01200

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		effect of changes on the probability of the event in both the number of possible outcomes favorable to an event and the total number of possible	
		Within the context of selecting without replacement from a bowl containing marbles of two colors, indicate the effect of changes on the probability of the event in both the number of possible outcomes favorable to an event and the total number of possible	SMMA_LO_01203
		Create a set of colored balls whose contents are specified by whether it is certain, possible, or impossible to select a particular color.	SMMA_LO_01153
		Determine distances from scale drawings (inches to miles, cm to km).	SMMA_LO_00815
		Compare the absolute values of positive and negative quantities in a real-world situation.	SMMA_LO_02111
MP6	Attend to precision.		
4	Reason accurately with measurement units when calculating angles, circumference, area, surface area, and volume.	Find the measure of the missing angle in a diagram.	SMMA_LO_00674