Colorado Extended Evidence Outcomes: Mathematics

Grade 7

Ratios & Proportional Relationships: Analyze proportional relationships and use them to solve real-world and mathematical problems. 7.RP.A

1 **Compute unit rates associated with ratios of whole numbers, including ratios of lengths, areas, and other quantities measured in like or different units.** 7.RP.A.1

- a For example, if a person walks 6 miles in 2 hours, compute the unit rate as the fraction 6 , equivalently 3 miles per hour. 7.RP.A.1.A

2 **Represent proportional relationships between quantities using a table.** 7.RP.A.2

3 **Use proportional relationships to solve simple ratio and percent problems.** 7.RP.A.3

- a Examples: simple interest, tax, markups and markdowns, and gratuities. 7.RP.A.3.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 with single-digit numerators and denominators up to at least 12.** 7.NS.A.1

- a Represent addition and subtraction on a horizontal or vertical number line diagram. For example, add - 1 + 3 to get 1 . 7.NS.A.1.A

2 **Apply and extend previous understandings of multiplication and division and or fractions to multiply and divide rational numbers with single-digit numerators and denominators up to at least 12, e.g., by using visual fraction models or equations to represent the problem.** 7.NS.A.2

- a For example, dividing 3 of a pizza into pieces the size of 1 of the whole 4 4 pizza can be written as 3 divided by 1 , and it yields 3 pieces. 7.NS.A.2.A

3 **Solve real-world and mathematical problems involving the four operations.** 7.NS.A.3

Expressions & Equations: Use properties of operations to generate equivalent expressions. 7.EE.A

1 **Apply properties of operations as strategies to add and subtract linear expressions with whole number coefficients. For example, 2x + 3x is 5x.** 7.EE.A.1

2 **Demonstrate that rewriting an expression in different forms can shed light on the problem and how the quantities in it are related.** 7.EE.A.2

- a For example, if 3 people at lunch spend $21 for sandwiches, the expression $7 x 3 tells us that it was 7 dollars for each of the 3 sandwiches. 7.EE.A.2.A

Ex| Equations: Solve real-

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olve multi-step real-life and mathematical problems posed with whole numbers, benchmark fractions, and/or decimals to two decimal places. Numbers should

life and mathematical problems using numerical and algebraic expressions and equations. 7.EE.B	**combine cleanly for simpler calculations.** 7.EE.B.3 a For example, if a sandwich costs $6.50 and a drink costs $1.50, but you have a coupon to save 1 off the total, how much will you spend for the 4 sandwich and the drink? 7.EE.B.3.A
	4 Solve real-world or mathematical problems using simple equations containing variables. 7.EE.B.4 b For example, if x number of glasses of water plus 2 glasses of water makes 8 glasses of water total, then x must be 6 glasses of water. 7.EE.B.4.B c Represent the problems using objects or drawings and match the situations to equations (in this case, x + 2 = 8). 7.EE.B.4.C
Statistics & Probability: Use random sampling to draw inferences about a population. 7.SP.A	**1 Understand that statistics usually involves measuring something about a sample to learn something about a problem.** 7.SP.A.1
	2 Use data from a sample to answer a statistical question. 7.SP.A.2 a For example, conclude from a sample of the class that most students like chocolate ice cream. 7.SP.A.2.A
Statistics & Probability: Draw informal comparative inferences about two populations. 7.SP.B	**3 Informally compare two sets of data within a single data display, such as a picture graph, line plot, or bar graph.** 7.SP.B.3
	4 Use given measures of center and given measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. 7.SP.B.4 a For example, if the average height of a class of 8th graders is 5 feet 5 inches, and the average height of a class of 7th graders is 5 feet 2 inches, which population is more likely taller on average, 8th graders of 7th graders? 7.SP.B.4.A
Statistics & Probability: Investigate chance processes and develop, use, and evaluate probability models. 7.SP.C	**5 Indicate an understanding that the probability of a chance event can be 0, for things that never happen, between 0 and 1, for things that sometimes happen, or 1, for things that always happen.** 7.SP.C.5
	6 Collect data on a chance process (e.g., flipping a coin, rolling a die) and observe its long-run relative frequency. 7.SP.C.6
	7 Compare probabilities from a model to observed frequencies and identify when agreement is not good. 7.SP.C.7 a For example, given that the probability of flipping heads is 0.5, getting 8 heads out of 10 flips is not good agreement with the model. 7.SP.C.7.A
	8 Find probabilities of compound events using organized lists and tree diagrams. 7.SP.C.8

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Geometry: Draw, construct, and describe geometrical figures and describe the relationships between them. 7.G.A	**1** Match corresponding parts of scale drawings of geometric figures and compare given lengths and areas. 7.G.A.1
	2 Create triangles with given conditions and recognize that some combinations of side lengths and/or angles cannot be made into a triangle. 7.G.A.2
	3 Describe rectangular cross-sections from right rectangular prisms. 7.G.A.3
Geometry: Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. 7.G.B	**4** Use the formula for the area and circumference of a circle to solve problems. 7.G.B.4
	5 Recognize angles that are acute, obtuse, and right (EE.7.G.B.5). 7.G.B.5
	6 Solve real-world and mathematical problems involving the area of triangles, rectangles, and circles, and the volume and surface area of right rectangular prisms. 7.G.B.6