

QUEST Grade 6 Math Post Test Blueprint

STANDARD	Ratios and Proportional Relationships (RP)	ITEM TYPE	DOK	BLOOM'S	ITEMS	Percentage
Understand ratio concepts and use ratio reasoning to solve problems.						12%
6.RP.A.1	Understand the concept of a ratio as comparing two quantities multiplicatively or joining/composing the two quantities in a way that preserves a multiplicative relationship. Use ratio language to describe a ratio relationship between two quantities. <i>For example, "There were 2/3 as many men as women at the concert."</i>	MC	Skill/Concept	Comprehension	1	2%
6.RP.A.2	Understand the concept of a unit rate a/b associated with a ratio $a : b$ with $b \neq 0$, and use rate language (e.g., for every, for each, for each 1, per) in the context of a ratio relationship. (Complex fraction notation is not an expectation for unit rates in this grade level.)	MC	Skill/Concept	Analysis	1	2%
6.RP.A.3	Use ratio and rate reasoning to solve mathematical problems and problems in real-world context (e.g., by reasoning about data collected from measurements, tables of equivalent ratios, tape diagrams, double number line diagrams, or equations). a. Make tables 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 tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity). Solve percent problems with the unknown in all positions of the equation. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	MC MS	Skill/Concept	Application Comprehension	3	7%
STANDARD	The Number System (NS)	ITEM TYPE	DOK	BLOOM'S	ITEMS	Percentage
Apply and extend previous understanding of multiplication and division to divide fractions by fractions.						14%
6.NS.A.1	Interpret and compute quotients of fractions to solve mathematical problems and problems in real-world context involving division of fractions by fractions using visual fraction models and equations to represent the problem. For example, create a story context for $2/3 \div 3/4$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $2/3 \div 3/4 = 8/9$ because $3/4$ of $8/9$ is $2/3$. In general, $a/b \div c/d = ad/bc$.	MC	Recall	Application	1	0%
Compute fluently with multi-digit numbers and find common factors and multiples.						
6.NS.B.2	Fluently divide multi-digit numbers using a standard algorithm.	MC	Recall	Comprehension	1	2%
6.NS.B.3	Fluently add, subtract, multiply, and divide multi-digit decimals using a standard algorithm for each operation.		Skill/Concept	Comprehension	1	2%
Apply and extend previous understanding of numbers to the system of rational numbers.						
6.NS.C.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values. Use positive and negative numbers to represent quantities in real-world context, explaining the meaning of 0 in each situation.	MC	Skill/Concept	Comprehension	1	2%

6.NS.C.6	Understand a rational number can be represented 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. a. 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 and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. 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 a coordinate plane.	MC	Skill/Concept	Comprehension	1	2%
5.NS.C.7	Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line. b. Write, interpret, and explain statements of order for rational numbers in real-world context. c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in real-world context. d. Distinguish comparisons of absolute value from statements about order in mathematical problems and problems in real-world context.	MC	Skill/Concept	Comprehension	1	2%
5.NS.C.8	Solve mathematical problems and problems in real-world context by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	MC	Skill/Concept	Comprehension	1	2%
STANDARD	Expressions and Equations (EE)	ITEM TYPE	DOK	BLOOM'S	ITEMS	Percentage
	Apply and extend previous understanding of arithmetic to algebraic expressions.					19%
6.EE.A.1	Write and evaluate numerical expressions involving whole-number exponents.	MC	Recall	Comprehension	1	2%
6.EE.A.2	Write, read, and evaluate algebraic expressions. a. Write expressions that record operations with numbers and variables. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, and coefficient); view one or more parts of an expression as a single entity. c. Evaluate expressions given specific values of their variables. Include expressions that arise from formulas used to solve mathematical problems and problems in real-world context. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).	MC	Skill/Concept	Comprehension	1	2%
6.EE.A.3	Apply the properties of operations to generate equivalent expressions. <i>For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$.</i>	MC	Skill/Concept	Application	1	2%
6.EE.A.4	Identify when two expressions are equivalent. For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.	MS	Skill/Concept	Comprehension	1	2%
	Reason about and solve one-variable equations and inequalities.					
6.EE.B.5	Understand solving an equation or inequality as a process of reasoning to find the value(s) of the variables that make that equation or inequality true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	MC	Recall	Application	1	2%

6.EE.B.6	Use variables to represent numbers and write expressions when solving mathematical problems and problems in real-world context; understand that a variable can represent an unknown number or any number in a specified set.	MC	Recall	Comprehension	1	2%
6.EE.B.7	Solve mathematical problems and problems in real-world context by writing and solving equations of the form $x + p = q$, $x - p = q$, $px = q$, and $x/p = q$ for cases in which p , q and x are all non-negative rational numbers.	MC	Recall	Application	1	2%
6.EE.B.8	Write an inequality of the form $x > c$, $x < c$, $x \geq c$, or $x \leq c$ to represent a constraint or condition to solve mathematical problems and problems in real-world context. Recognize that inequalities have infinitely many solutions; represent solutions of such inequalities on number lines.	MC	Recall	Comprehension	1	2%
STANDARD	Geometry (G)	ITEM TYPE	DOK	BLOOM'S	ITEMS	Percentage
	Solve mathematical problems and problems in real-world context involving area, surface area, and volume.					7%
6.G.A.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques to solve mathematical problems and problems in real-world context.	MC	Recall	Application	1	2%
6.G.A.2	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Understand and use the formula $V = B \cdot h$, where in this case, B is the area of the base ($B = l \times w$) to find volumes of right rectangular prisms with fractional edge lengths in mathematical problems and problems in real-world context.	MC	Skill/Concept	Analysis	1	2%
6.G.A.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 to solve mathematical problems and problems in real-world context.	MC	Recall	Application	1	2%
STANDARD	Statistics and Probability (SP)	ITEM TYPE	DOK	BLOOM'S	ITEMS	Percentage
	Develop understanding of statistical variability.					5%
6.SP.A.2	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for variability in the answers. <i>For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.</i>	MC	Skill/Concept	Comprehension	1	2%
6.SP.A.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation uses a single number to describe the spread of the data set.	MC	Skill/Concept	Application	1	2%
		Multiple Choice 92.00% Multiple Select 8.00%	Recall 36.00% Skill/Concept 64.00%	Analysis 8.00% Application 32.00% Comprehension 60.00%	25	