

## QUEST Grade 4 Math Post Test Blueprint

STANDARD	Operations and Algebraic Thinking (OA)	ITEM TYPE	DOK	BLOOM'S	ITEMS	Percentage
	<b>Use the four operations with the whole numbers to solve problems.</b>					<b>22%</b>
4.OA.A.1	Represent verbal statements of multiplicative comparisons as multiplication equations. Interpret a multiplication equation as a comparison (e.g., 35 is the number of objects in 5 groups, each containing 7 objects, and is also the number of objects in 7 groups, each containing 5 objects).	MC	Recall	Comprehension	1	3%
4.OA.A.2	Multiply or divide within 1000 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).	MC	Recall Skill/Concept	Comprehension Application	5	16%
4.OA.A.3	Solve multistep word problems using the four operations, including problems in which remainders must be interpreted. Understand how the remainder is a fraction of the divisor. Represent these problems using equations with a letter standing for the unknown quantity.	MC	Skill/Concept	Application	1	3%
STANDARD	Number and Operations in Base Ten (NBT)	ITEM TYPE	DOK	BLOOM'S	ITEMS	Percentage
	<b>Generalize place value understanding for multi-digit whole numbers.</b>					<b>19%</b>
4.NBT.A.3	Apply concepts of place value, multiplication, and division to understand that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.	MC	Recall	Application	2	6%
	<b>Use place value understanding and properties of operations to perform multi-digit arithmetic.</b>					
4.NBT.B.4	Fluently add and subtract multi-digit whole numbers using a standard algorithm.	MC	Recall	Comprehension Application	2	6%
4.NBT.B.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.	MC	Recall	Application	1	3%
4.NBT.B.6	Demonstrate understanding of division by finding whole-number quotients and remainders with up to four-digit dividends and one-digit divisors.	MC	Skill/Concept	Comprehension	1	3%
STANDARD	Number and Operations-Fractions (NF)	ITEM TYPE	DOK	BLOOM'S	ITEMS	Percentage
	<b>Build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers.</b>					<b>28%</b>
4.NF.B.3	Understand a fraction $a/b$ with $a > 1$ as a sum of unit fractions ( $1/b$ ). a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. b. Decompose a fraction into a sum of fractions with the same denominator in more than one way (e.g., $3/8 = 1/8 + 1/8 + 1/8$ ; $3/8 = 2/8 + 1/8$ ; $2 \frac{1}{8} = 1 + 1 + 1/8$ or $2 \frac{1}{8} = 8/8 + 8/8 + 1/8$ ). c. Add and subtract mixed numbers with like denominators (e.g., by using properties of operations and the relationship between addition and subtraction and/or by replacing each mixed number with an equivalent fraction).	MC	Skill/Concept	Application	1	3%

4.NF.B.4	Build fractions from unit fractions. a. Understand a fraction $a/b$ as a multiple of a unit fraction $1/b$ . In general, $a/b = a \times 1/b$ b. Understand a multiple of $a/b$ as a multiple of a unit fraction $1/b$ , and use this understanding to multiply a whole number by a fraction. In general, $n \times a/b = n \times a/b$ . c. Solve word problems involving multiplication of a whole number by a fraction. <i>For example, if each person at a party will eat <math>3/8</math> of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?</i>	MC Multi-part	Skill/Concept	Application	2	6%
<b>Understand decimal notation for fractions, and compare decimal fractions.</b>						
4.NF.C.5	Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 (tenths) and 100 (hundredths). For example, express $3/10$ as $30/100$ , and $3/10 + 4/100 = 34/100$ . (Note: Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators, in general, is not a requirement at this grade.)	MC	Recall	Application	2	6%
4.NF.C.6	Use decimal notation for fractions with denominators 10 (tenths) or 100 (hundredths), and locate these decimals on a number line.	MC	Recall	Comprehension	2	6%
4.NF.C.7	Compare two decimals to hundredths by reasoning about their size. Understand that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$ , $=$ , or $<$ .	MC	Recall Skill/Concept	Comprehension	2	6%
<b>STANDARD</b>	<b>Measure and Data (MD)</b>	<b>ITEM TYPE</b>	<b>DOK</b>	<b>BLOOM'S</b>	<b>ITEMS</b>	<b>Percentage</b>
<b>Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.</b>						<b>16%</b>
4.MD.A.2	Use the four operations to solve word problems and problems in real-world context involving distances, intervals of time (hr, min, sec), liquid volumes, masses of objects, and money, including decimals and problems involving fractions with like denominators, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using a variety of representations, including number lines that feature a measurement scale.	MC	Recall Skill/Concept	Knowledge Application	3	9%
4.MD.A.3	Apply the area and perimeter formulas for rectangles in mathematical problems and problems in real-world contexts including problems with unknown side lengths.	MC	Recall	Comprehension	1	3%
<b>Represent and interpret data.</b>						
4.MD.B.4	Make a line plot to display a data set of measurements in fractions of a unit ( $1/2, 1/4, 1/8$ ). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	MC	Recall	Comprehension	1	3%
		Multiple Choice 7.41% Multi-Part 3.70% Multiple Choice 88.89%	Recall 17% Strat. Thinking 35% Skill/Concept 47%	Analysis 22% Application 20% Comprehension 55% Knowledge 2.5%	27	