

Mathematics Formative Assessments

Several formative assessment tools will be available this year. These tools target the concepts and skills in the Common Core State Standards (CCSS) for Mathematics and English Language Arts. Although these tools provide examples of test items that target the CCSS, they should not be used to make assumptions about any items that may appear on future summative assessments since little information exists describing the summative assessments currently being developed by the SMARTER Balanced Assessment Consortium.

The small formative assessment tools for mathematics target closely-related concepts or skills at the grade level where these concepts and skills are found in the Common Core State Standards for Mathematics (CCSSM). In some cases, the grade placement of concepts and skills in the CCSSM varies from that of the Kansas 2003 standards. Therefore, it may be appropriate to administer these assessments to students at other grade levels than those indicated for each assessment.

Target Grade	Assessment Name	Applicable Grades Based on 2003 KS Standards						
		3rd	4th	5th	6th	7th	8th	HS
3	Fact Families	X	X					
3	Multiplication and Division	X	X					
4	Number Patterns	X	X	X	X			
4	Calculations with Money	X	X	X	X			
5	Plotting Points		X	X				
6	Rate and Ration Reasoning			X	X	X		
6	Area				X	X	X	X
6	Mean and Median			X	X	X	X	
7	Probability				X	X	X	X
7	Equations and Inequalities					X	X	X
8	Application of Hypotenuse						X	X
8	Graphs and Equations						X	X

The descriptions of the formative assessment tools are listed below by grade. These descriptions are intended to provide teachers with some information they can use to decide whether the assessments are appropriate for their students. If you have comments or concerns about these assessments, please contact Angela Broaddus at broaddus@ku.edu.

Grade 3

Fact Families

This test contains six items concerning multiplication and division facts with products less than 100. Students are asked to identify which number sentence belongs to a particular given fact family. The fact families in these items are represented in arrays or number sentences. It is recommended that students complete this assessment without the use of a calculator.

Multiplication and Division

This test contains six items concerning applications of math facts and number properties. Students are asked to identify different representations of the same number property and to solve word problems using multiplication and division. A calculator may be useful for some of the items on this assessment.

Grade 4

Number Patterns

This test contains eight items including patterns of numbers and shapes. Students will be asked to identify number patterns that match patterns given in rules or symbols. The rules for the patterns in these items are based on shape, addition, multiplication, and division.

Calculations with Money

This test contains eight word problems involving operations with money in dollars and cents. Students will apply their knowledge of the values of different coins and bills to solve problems. They will also calculate total costs and amounts of change given real-world problems. A calculator may be useful for some of the items on this assessment.

Grade 5

Plotting Points

This test contains seven items pertaining to plotting and reading points graphed in the first quadrant of the coordinate plane. Students are asked to identify a point on a coordinate grid, identify multiple points on a coordinate grid, or identify a point on a line.

Grade 6

Rate and Ratio Reasoning

This test contains eight items pertaining to ratios, rates, and percents. Students are asked to use ratio reasoning, and computations of rates and percents to solve application problems. The items contain whole numbers, percents, and monetary amounts in dollars and cents. A calculator may be useful for some of the items on this assessment.

Area

This test contains eight items concerning areas of geometric figures. Students are asked to calculate the areas of various shapes comprised of rectangles and triangles and apply the concept of area to solve application problems. A calculator may be useful for some of the items on this assessment.

Mean and Median

This test contains eight items concerning statistics. Students are asked to calculate the mean and the median of a data set, and apply their understanding to determine how values in the data set affect the mean and median. The numerical values in these items are whole numbers and rational numbers. A calculator may be useful for some of the items on this assessment.

Grade 7

Probability

This test contains eight items concerning simple and joint probabilities. Students are asked to find the probability for an event described in an application problem. Probabilities in these items are expressed as fractions. A calculator may be useful for some of the items on this assessment.

Equations and Inequalities

This test contains seven questions concerning symbolic representations of word problems. Students are asked to identify an equation or inequality that should be used to solve a given application problem. The equations and inequalities in these items contain rational number coefficients and constants. A calculator may be useful for some of the items on this assessment.

Grade 8

Application of Hypotenuse

This test contains seven questions. Students will be asked to use Pythagorean theorem to solve application questions involving whole numbers, decimals, and money. A calculator may be useful for some of the items on this assessment.

Graphs and Equations

This test contains six questions pertaining to linear equations and graphs of lines. Students are asked to identify the correct graph given an equation, obtain information from a graph to solve an application problem, or solve algebraic equations in one variable. Although calculator may be useful for some of the items on this assessment, a graphing calculator may not be appropriate.