

Florida 6th Grade Assessment Item Specification Report

Benchmark number	Benchmark	Content Limits
MA.6.A.1.1#:	Explain and justify procedures for multiplying and dividing fractions and decimals.	Items may include mixed numbers, fractions, and/or decimals. ----- Items may include decimals through the hundredths place. ----- Denominators of fractions used must be less than or equal to 16. ----- Items will not require the student to simplify fractions. ----- Items may not include a combination of fractions and decimals.
MA.6.A.1.2#:	Multiply and divide fractions and decimals efficiently.	Assessed with MA.6.A.1.1
MA.6.A.1.3#:	Solve real-world problems involving multiplication and division of fractions and decimals.	Items may include fractions and mixed numbers. ----- Items may include decimals through the hundredths place. ----- Fractions and decimals may not be used in the same item. ----- In fractions that must be simplified, the numerator and denominator must be simplified to lowest terms with no more than two common prime factors, e.g., 2, 3, 5, or 7. ----- Items may include up to three procedural steps. ----- Items may involve checking for reasonableness of answers, especially when dealing with remainders.
MA.6.A.2.1#:	Use reasoning about multiplication and division to solve ratio and rate problems.	Rates involving money should be limited to the nearest cent. ----- Ratios may be presented in words or symbols (e.g., 2 to 3, 2:3, 2 out of 3, or 2/3).
MA.6.A.2.2#:	Interpret and compare ratios and rates.	Items will not include defining rate and ratio. ----- Items will not include inequality symbols. ----- Ratios may be presented in words or symbols (e.g., 2 to 3, 2:3, 2 out of 3, or 2/3).
MA.6.A.3.1#:	Write and evaluate mathematical expressions that correspond to given situations.	Expressions may have up to two variables and up to two different operations, with no more than three procedural steps need to evaluate the expression (e.g., $2x + 3y$ requires two multiplication steps and one addition step). ----- Items will not require students to evaluate expressions having both decimals and fractions. ----- Items will not include identifying equivalent expressions using the associative, commutative, or distributive properties.

MA.6.A.3.2#:	<p>Write, solve, and graph one- and two-step linear equations and inequalities.</p>	<p>Items may include patterns, graphic models, situations, number lines, graphs, and relationships. ----- Items may include up to three variables, if the third variable is isolated on one side, as when using a formula (e.g., $d=rt$). ----- Items may have up to two operations, with no more than three procedural steps needed to evaluate the expression, and/or inequality. ----- Items involving the graphing of inequalities will be limited to one procedural step. ----- Graphs must be limited to the first quadrant. ----- In items involving inequalities, the inequality must include only one variable and may be on a number line. ----- Items that involve solving inequalities may only use positive coefficients.</p>
MA.6.A.3.3#:	<p>Work backward with two-step function rules to undo expressions.</p>	<p>Assessed with MA.6.A.3.1</p>
MA.6.A.3.4#:	<p>Solve problems given a formula.</p>	<p>Assessed with MA.6.A.3.2, MA.6.G.4.1, MA.6.G.4.2, and MA.6.G.4.3</p>
MA.6.A.3.5#:	<p>Apply the Commutative, Associative, and Distributive Properties to show that two expressions are equivalent.</p>	<p>Items may include expressions or real-world situations. ----- No more than two properties should be needed to convert from one expression to an equivalent expression in an item. ----- Items may include a maximum of two variables.</p>
MA.6.A.3.6#:	<p>Construct and analyze tables, graphs, and equations to describe linear functions and other simple relations using both common language and algebraic notation.</p>	<p>Items may include tables, graphs, equations, or real-world situations. ----- Simple relationships may include discrete data that lends itself to a linear relationship. ----- Graphs should be limited to the first quadrant, and indicated points on the graphs must have whole-number coordinates. ----- Items will not include the use of the slope formula.</p>
MA.6.A.5.1#:	<p>Use equivalent forms of fractions, decimals, and percents to solve problems.</p>	<p>Items may include different forms of numbers within the same problem (fractions, decimals, and/or percents). ----- Percents used in items must be whole numbers less than or equal to 100. ----- Items will not include decimals beyond the thousandths place. ----- Items will not include solving percent problems involving multiplying by a percent (e.g., finding discounts, simple interest, taxes, tips, and percents of increase or decrease). ----- Items involving finding percents of numbers must use percents that are easily converted to fractions, such as fourths, fifths, tenths, or fractions that can be easily simplified (e.g., $9/12$).</p>

MA.6.A.5.2#:	<p>Compare and order fractions, decimals, and percents, including finding their approximate location on a number line.</p>	<p>Items may include multiple forms of numbers expressed as fractions, mixed numbers, decimals, or percents. ----- Items may include inequality symbols and graphs of inequalities on a number line. ----- Items may include mixed numbers or fractions following the general content limits. ----- Percents used in items must be whole numbers less than or equal to 100. ----- Items will not include decimals beyond the thousandths place. ----- No more than five numbers may be compared or ordered in each item.</p>
MA.6.A.5.3#:	<p>Estimate the results of computations with fractions, decimals, and percents, and judge the reasonableness of the results.</p>	<p>Fractions must not exceed those indicated in the general content limits. ----- Percents used in items must be whole numbers less than or equal to 100. ----- Items will not involve multiplying a number by a percent. ----- Items will not include decimals beyond the thousandths place. ----- Computations may have up to two different operations, with no more than three procedural steps (e.g., $2(4) + 3(9)$ requires two multiplication steps and one addition step).</p>
MA.6.G.4.1#:	<p>Understand the concept of Pi, know common estimates of Pi (3.14; $22/7$) and use these values to estimate and calculate the circumference and the area of circles.</p>	<p>Items may include using vocabulary such as <i>radius</i>, <i>diameter</i>, and <i>center</i>. ----- Item graphics or options may include the use of visual representations or vocabulary associated with a circle, such as <i>chord</i>, <i>arc</i>, <i>sector</i>, and <i>central angle</i>. These terms will not be directly assessed.</p>

<p>MA.6.G.4.2#:</p>	<p>Find the perimeters and areas of composite two-dimensional figures, including non-rectangular figures (such as semicircles) using various strategies.</p>	<p>Students may find missing dimensions in order to find the perimeter or area of composite or decomposed two-dimensional figures, given some of the dimensions of a figure. ----- Students will work with composite two-dimensional figures, which may be composed of shapes within other shapes. ----- Polygons used in composite two-dimensional figures may be convex or concave. ----- The figures used within another figure are limited to triangles, quadrilaterals, circles, and semicircles. ----- Composite two-dimensional figures may be created from up to three different simple polygons. ----- Dimensions of polygons may be whole numbers; fractions with denominators of 2, 4, or 10; or decimal values, which may include 0.25, 0.75, or tenths. ----- Composite shapes should not be represented on grids. ----- Items will not include the vocabulary of <i>inscribed</i> or <i>circumscribed</i>, but these concepts may be represented graphically.</p>
<p>MA.6.G.4.3#:</p>	<p>Determine a missing dimension of a plane figure or prism given its area or volume and some of the dimensions, or determine the area or volume given the dimensions.</p>	<p>Items may include three-dimensional figures, which are limited to cubes and rectangular prisms. ----- Items may include two-dimensional figures, which are limited to triangles, parallelograms, trapezoids, rectangles, squares, rhombi, and circles. ----- Dimensions of figures may be whole numbers; fractions with denominators of 2, 4, or 10; or decimal values, which may include 0.25, 0.75, or tenths. ----- Items will not include composite two-dimensional or composite three-dimensional figures. ----- Items will not include two-dimensional figures represented on grids.</p>
<p>MA.6.S.6.1#:</p>	<p>Determine the measures of central tendency (mean, median, mode) and variability (range) for a given set of data.</p>	<p>Items may include data presented in a table, line plot, bar graph, double bar graph, or line graph. ----- The number of data points may not exceed ten when the median or mode is being determined. ----- The number of data points may not exceed six when the mean is being calculated. ----- Items may include the use of frequency tables for numerical or categorical data. ----- Items may include the use of whole numbers; fractions with denominators of 2, 4, or 10; or decimal values, which may include 0.25, 0.75, or tenths.</p>

<p>MA.6.S.6.2#:</p>	<p>Select and analyze the measures of central tendency or variability to represent, describe, analyze, and/or summarize a data set for the purposes of answering questions appropriately.</p>	<p>Items may include data sets that are presented as lists, frequency tables, and charts. ----- The number of data points may not exceed six when the mean is being calculated. ----- The number of data points may not exceed ten when the median or mode is being determined. ----- Graphical displays are limited to line graphs, double bar graphs, bar graphs, pictographs, and line plots. ----- Items will not assess the vocabulary <i>measures of central tendency</i> or <i>variability</i>. ----- Items may include, in both stem or answer options, the vocabulary word <i>outlier</i>.</p>
-------------------------------------	---	---