

Florida 4th Grade Assessment Item Specification Report

Benchmark number	Benchmark	Content Limits
<a href="#">MA.4.A.1.1#:</a>	Use and describe various models for multiplication in problem-solving situations, and demonstrate recall of basic multiplication and related division facts with ease.	Assessed with MA.4.A.1.2
<a href="#">MA.4.A.1.2#:</a>	Multiply multi-digit whole numbers through four digits fluently, demonstrating understanding of the standard algorithm, and checking for reasonableness of results, including solving real-world problems.	<p>Items may include whole-number multiplication facts from <math>0 \times 0</math> through <math>12 \times 12</math> and the related division facts.</p> <p>For items that require solving multidigit multiplication problems, the two factors may not exceed three digits by three digits or four digits by two digits.</p> <p>When both factors have three digits, at least one digit must be a zero.</p> <p>Items may include finding partial products of a multidigit multiplication problem or finding errors in multiplication problems.</p> <p>Items may include checking for reasonableness of products.</p> <p>Items may use properties (e.g., commutative, associative, inverse, identity, distributive, zero) to solve problems but will not include asking students to name the specific properties.</p>
<a href="#">MA.4.A.2.1#:</a>	Use decimals through the thousandths place to name numbers between whole numbers.	Assessed with MA.4.A.2.3 and MA.4.A.2.4
<a href="#">MA.4.A.2.2#:</a>	Describe decimals as an extension of the base-ten number system.	Assessed with MA.4.A.2.3 and MA.4.A.2.4

<p><a href="#">MA.4.A.2.3#:</a></p>	<p>Relate equivalent fractions and decimals with and without models, including locations on a number line.</p>	<p>Items may include mixed numbers and/or fractions.</p> <p>Items may assess translating the following commonly used fractions or mixed numbers to decimals (or their decimal equivalents): <math>\frac{1}{10}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math>, all fifths, tenths, hundredths, and thousandths. For example, 0.2, 0.20, 0.200, and <math>\frac{2}{10}</math> are all equivalent. Also, <math>0.5 = \frac{1}{2}</math>, <math>\frac{3}{5} = 0.6</math>, <math>\frac{3}{2} = 1.5</math>, or <math>7\frac{1}{2} = 7.5</math>.</p> <p>Items will not require the use of division or dividing a denominator into a numerator to translate a fraction to an equivalent decimal.</p> <p>Items will not assess simplifying fractions, except for converting commonly used fractions or mixed numbers to decimals.</p> <p>When naming or identifying fractions or decimals between two consecutive whole numbers, the whole numbers may not exceed 99.</p>
<p><a href="#">MA.4.A.2.4#:</a></p>	<p>Compare and order decimals, and estimate fraction and decimal amounts in real-world problems.</p>	<p>Items may include fractions and mixed numbers.</p> <p>Items may include fractions with denominators of 1 through 20, 25, 50, 100, and 1,000.</p> <p>The number of fractions being ordered or compared should not exceed five.</p> <p>The number of decimals being ordered or compared should not exceed six.</p> <p>Numbers being compared may be in the same form or in two different forms.</p> <p>Numbers being compared and ordered in two different forms should not exceed five.</p> <p>Items may include the inequality symbols (&lt;, ≤, &gt;, ≥, =, or ≠).</p>

<p><a href="#">MA.4.A.4.1#:</a></p>	<p>Generate algebraic rules and use all four operations to describe patterns, including nonnumeric growing or repeating patterns.</p>	<p>Items may include any of the four operations but will use only one operation in each numeric pattern.</p> <p>Patterns involving multiplication or division are limited to the multiplication facts of <math>0 \times 0</math> through <math>12 \times 12</math> and the related division facts.</p> <p>A repeating pattern should be shown with at least three examples of the repeated pattern unless it is clearly explained in the stem of the item.</p>
<p><a href="#">MA.4.A.4.2#:</a></p>	<p>Describe mathematics relationships using expressions, equations, and visual representations.</p>	<p>Items must use rules or relationships that involve only one operation or a one-step function.</p> <p>A relationship must be defined in words, or at least three examples of the relationship must be provided.</p> <p>Relationships involving multiplication or division are limited to the multiplication facts of <math>0 \times 0</math> through <math>12 \times 12</math> and the related division facts.</p> <p>Items may include only one variable.</p>
<p><a href="#">MA.4.A.4.3#:</a></p>	<p>Recognize and write algebraic expressions for functions with two operations.</p>	<p>Items will use only one variable.</p> <p>A relationship must be defined in words, or at least three examples of the relationship must be provided.</p>
<p><a href="#">MA.4.A.6.1#:</a></p>	<p>Use and represent numbers through millions in various contexts, including estimation of relative sizes of amounts or distances.</p>	<p>Items may include the inequality symbols (<math>&gt;</math>, <math>&lt;</math>, <math>\leq</math>, <math>\geq</math>, <math>\neq</math>).</p> <p>Items will not include decimals or fractions.</p> <p>Items involving units of measure may not involve converting from one unit to another.</p> <p>Front-end estimation will not be an acceptable estimation strategy.</p>

<p><a href="#">MA.4.A.6.2#:</a></p>	<p>Use models to represent division as: (a) the inverse of multiplication, (b) as partitioning, and (c) as successive subtraction</p>	<p>Items will include only whole numbers and whole-number remainders.</p> <p>Items will not require students to interpret a remainder.</p> <p>Items may assess how to translate a word problem to a multiplication or division expression or equation.</p> <p>Items will not include computing solutions to long-division problems.</p> <p>Items may be a translation from arrays, equal-sized groups, area, or visual representations.</p>
<p><a href="#">MA.4.A.6.3#:</a></p>	<p>Generate equivalent fractions and simplify fractions.</p>	<p>All common factors of the numerator and denominator must be less than or equal to 10.</p> <p>Items will not include graphical representations of fractions.</p>
<p><a href="#">MA.4.A.6.4#:</a></p>	<p>Determine factors and multiples for specified whole numbers.</p>	<p>Items may use the vocabulary terms <i>factors</i> and <i>multiples</i>.</p> <p>The number being factored must be less than or equal to 100.</p> <p>When multiples are assessed, the multiple number must be 1–12, 20, 25, 50, or 100.</p> <p>Items will not include the use of factor trees or prime factorization.</p>
<p><a href="#">MA.4.A.6.5#:</a></p>	<p>Relate halves, fourths, tenths, and hundredths to decimals and percents.</p>	<p>The following fractions: <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math>, all tenths, and all hundredths may be converted to percents (e.g., <math>\frac{1}{4} = 25\%</math>, or <math>\frac{3}{4} = 75\%</math>) or vice versa.</p> <p>Items will not assess converting between fractions and decimals.</p> <p>Items will not require a student to solve a problem using decimals, fractions, or percents.</p> <p>Items may include graphic models of fractions, decimals, or percents.</p>

<p><a href="#">MA.4.A.6.6#:</a></p>	<p>Estimate and describe reasonableness of estimates; determine the appropriateness of an estimate versus an exact answer.</p>	<p>Items may include finding numbers or ranges of numbers that are most appropriate or reasonable.</p> <p>Items will not include measurement estimates.</p> <p>Items may include visual estimates.</p> <p>Items may include numbers up to and including the hundred millions place.</p> <p>Items may include fractions or decimals that estimate to a whole number.</p> <p>Items should not require exact calculations.</p> <p>Items will not require the estimation strategy to be named.</p> <p>Front-end estimation will not be an acceptable estimation strategy.</p> <p>Items will not assess rounding of numbers without estimating.</p>
<p><a href="#">MA.4.G.3.1#:</a></p>	<p>Describe and determine area as the number of same-sized units that cover a region in the plane, recognizing that a unit square is the standard unit for measuring area.</p>	<p>Items may include estimating areas of irregular geometric shapes, such as a figure in the shape of a pond, a mitten, a foot, the sole of a shoe, or a solid letter D.</p> <p>Items should include countable units that estimate to a whole unit or half unit.</p> <p>Items may use only a one-to-one scale.</p>
<p><a href="#">MA.4.G.3.2#:</a></p>	<p>Justify the formula for the area of the rectangle "area = base x height".</p>	<p>Items may include deriving or explaining the area of a rectangle in order to solve real-world problems.</p> <p>Items will not include the formula for the area of a rectangle.</p>
<p><a href="#">MA.4.G.3.3#:</a></p>	<p>Select and use appropriate units, both customary and metric, strategies, and measuring tools to estimate and solve real-world area problems.</p>	<p>Items may include figures with whole-number dimensions less than or equal to 100 units.</p> <p>Items will not include the formula for area of a rectangle.</p>

<p><a href="#">MA.4.G.5.1#:</a></p>	<p>Classify angles of two-dimensional shapes using benchmark angles (45°, 90°, 180°, and 360°)</p>	<p>Items may include the following vocabulary terms: <i>ray, angle (acute, obtuse, right, straight), and perpendicular lines.</i></p> <p>Items will not include the vocabulary terms: <i>complementary, supplementary, or vertical.</i></p> <p>Items will not require the use of a protractor or measuring an angle to the nearest degree.</p> <p>Items may include the geometric notation for angle (<math>\angle</math>) and degrees (<math>^\circ</math>).</p>
<p><a href="#">MA.4.G.5.2#:</a></p>	<p>Identify and describe the results of translations, reflections, and rotations of 45, 90, 180, 270, and 360 degrees, including figures with line and rotational symmetry.</p>	<p>For rotations, the center of rotation may be shown on the object being rotated.</p> <p>The following vocabulary terms may be used: <i>transformation, translation, reflection, rotation, clockwise, counterclockwise, line symmetry, rotational symmetry, and center.</i></p> <p>Items should include no more than two transformations.</p>
<p><a href="#">MA.4.G.5.3#:</a></p>	<p>Identify and build a three-dimensional object from a two-dimensional representation of that object and vice versa.</p>	<p>Items may include drawings of views from the top, sides, front, or base of an object.</p> <p>Three-dimensional objects represented in items must be made from cubes.</p> <p>Items will not include or assess two-dimensional nets of three-dimensional objects.</p>