

Third Grade Math: I Can Statements

Processes, Content Statements & Expectations (Disciplinary Knowledge)	I Can Statement
Operations and Algebraic Thinking 3.OA	
Represent and solve problems involving multiplication and division.	
3.OA.1 Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. <i>For example, describe a context in which a total number of objects can be expressed as 5×7.</i>	I can give real world examples for multiplication problems.
3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. <i>For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.</i>	I can give real world examples for division problems.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem	I can solve real world problems using manipulative, arrays and pictures.
3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \square \div 3$, $6 \times 6 = ?$.</i>	I can find the answer to solve a missing number problem.
Understand properties of multiplication and the relationship between multiplication and division.	
3.OA.5 Apply properties of operations as strategies to multiply and divide. <i>Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)</i>	I can multiply/divide to show and apply to show different properties of operations.

<p>3.OA.6 Understand division as an unknown-factor problem. <i>For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.</i></p>	<p>I can find a missing number with division.</p>
<p>Multiply and divide within 100.</p>	
<p>3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers</p>	<p>I can fluently multiply and divide numbers up to 100. I can multiply one-digit numbers in my head.</p>
<p>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</p>	
<p>3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p>	<p>I can solve a two-step word problem using the 4 basic operations. I can find the missing number to solve an equation. I can fluently solve a problem using estimation and rounding in my head.</p>
<p>3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. <i>For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.</i></p>	<p>I can tell that a problem has a pattern using even numbers.</p>
<p>Number and Operations in Base Ten 3.NBT</p>	
<p>Use place value understanding and properties of operations to perform multi-digit arithmetic.</p>	
<p>3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.</p>	<p>I can use place value to round whole numbers to the nearest 10 or 100.</p>
<p>3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</p>	<p>I can fluently add/subtract within 1000 using place value and fact families.</p>

<p>3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations.</p>	<p>I can multiply one-digit whole numbers by 10.</p>
<p>Number and Operations—Fractions 3.NF</p>	
<p>Develop understanding of fractions as numbers.</p>	
<p>3.NF.1 Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.</p>	<p>I can tell that a fraction is the part of a whole.</p>
<p>3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram.</p> <p>a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.</p> <p>b. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.</p>	<p>I can tell that a fraction can be represented on a number line.</p> <p>I can tell that a fraction is the part of a whole.</p> <p>I can show a fraction on a number line by marking lengths with a base at 0 and endpoint up to 1.</p>

3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

- a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
- b. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$, $4/6 = 2/3$. Explain why the fractions are equivalent, e.g., by using a visual fraction model.
- c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.*
- d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

I can tell how same size fractions are equal using a number line.

I can show equal fractions using manipulatives.

I can show how fractions are equal to whole numbers.

I can show how fractions with the same numerator/denominator are compared in size.

I can show the comparisons of fractions using manipulatives.

I can show how fractions compare using $>$, $=$, or $<$.

Measurement and Data 3.MD	
Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	
3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	<p>I can tell and write time to the nearest minute.</p> <p>I can add/subtract time intervals in word problems.</p>
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). ⁶ Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. ⁷	<p>I can measure and estimate liquid volumes and masses using grams, kilograms, and liters.</p> <p>I can use the 4 basic operation to solve one-step word problems using mass and volume.</p>
Represent and interpret data.	
3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. <i>For example, draw a bar graph in which each square in the bar graph might represent 5 pets.</i>	<p>I can draw and label a picture and bar graph to show data.</p> <p>I can solve one and two step problems using less and more on a graph.</p>
3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.	<p>I can use a ruler to show a half and quarter inch.</p> <p>I can draw and label a line plot marking whole numbers, halves, and quarters.</p>
Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	
3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement. <p>a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.</p> <p>b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.</p>	<p>I can find the area of a square using 1 unit measure.</p> <p>I can find the area of a covered plane figure in unit squares without gaps or overlaps.</p>

<p>3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).</p>	<p>I can measure areas by counting unit squares.</p>
<p>3.MD.7 Relate area to the operations of multiplication and addition.</p> <p>a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.</p> <p>b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.</p> <p>c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.</p> <p>d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.</p>	<p>I can find the area of a rectangle using multiplication.</p> <p>I can solve real world problems to find the area of rectangles using multiplication.</p> <p>I can concretely show the area of a rectangle using the distributive property.</p> <p>I can find the area of non-overlapping parts of rectangles to solve real world problems.</p>

Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	
3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	I can solve real world and mathematical problems involving perimeters of polygons.
Geometry 3.G	
Reason with shapes and their attributes.	
3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as Examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	I can tell that shapes in different categories may share attributes. I can name and draw examples of different quadrilaterals.
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. <i>For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.</i>	I can divide shapes in to parts with equal areas. I can tell the area of a part as a fraction of the whole part.