

MATH THIRD GRADE I CANS

Operations and Algebraic Thinking

Represent and solve problems involving multiplication and division

- 3.OA.1 I can interpret products of whole numbers.
- 3.OA.2 I can interpret quotients of whole numbers.
- 3.OA.3 I can use multiplication and division within 100 to solve word problems using models, arrays, equal groups, and measurement quantities.
- 3.OA.4 I can solve for the unknown within a multiplication and division equation.

Understand properties of multiplication and the relationship between multiplication and division.

- 3.OA.5a I can apply the commutative property of multiplication. ($6 \times 4 = 24$, $4 \times 6 = 24$)
- 3.OA.5b I can apply the associative property of multiplication. ($3 \times 5 \times 2$, $3 \times 5 = 15$, $15 \times 2 = 30$)
- 3.OA.5c I can apply the distributive property of multiplication. (Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$.)
- 3.OA.6 I can understand division as an unknown-factor problem. ($32 / 8 = ?$, $? \times 8 = 32$)

Multiply and divide within 100

- 3.OA.7 I can use strategies to fluently multiply and divide within 100. (Fact families, properties of operation, and memorization of all products of two one digit numbers.)

Solve problems involving the four operations, and identify and explain patterns in arithmetic.

- 3.OA.8 I can solve two-step word problems using addition, subtraction, multiplication, and division.
- 3.OA.8a I can solve two step word problems by representing unknown quantities with a letter. ($5 + n = 7$, $5 \times n = 35$, $5 - n = 1$, $35 / n = 7$)

3.OA.8b I can assess the reasonableness of answers using mental computation and estimation strategies including rounding.

3.OA.9 I can identify arithmetic patterns and explain patterns using properties of operations. (addition and multiplication tables)

Number and Operations in Base Ten

Use place value understanding and properties of operations to perform multi-digit arithmetic.

- 3.NBT.1 I can use place value understanding to round whole numbers to the nearest 10 or 100.
- 3.NBT.2 I can use strategies and algorithms to fluently add and subtract numbers within 1000.
- 3.NBT.3 I can use strategies to multiply one digit numbers by multiples of 10 in the range 10-90. (9×80)

Numbers and Operations-Fractions

Develop understanding of fractions as numbers.

- 3.NF.1 I can understand a fraction as the quantity formed by one part of a whole that is partitioned into equal parts.
- 3.NF.2 I can understand a fraction as a number on the number line.
- I can recognize the fractional interval on a number line from 0 to 1.
 - I can mark the fractional interval on a number line from 0 to 1.
- 3.NF.3a I can explain equivalence of fractions in special cases.
- 3.NF.3b I can compare fractions by reasoning about their size.
- I can understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
 - I can recognize and generate simple equivalent fractions by using a visual fraction model. ($1/2 = 2/4$)
 - I can express whole numbers as fractions.
 - I can recognize fractions that are equivalent to whole numbers. ($4/4 = 1$)

- I can compare two fractions with the same numerator by reasoning about their size.
- I can compare two fractions with the same denominators by reasoning about their size. ●
- I can recognize that comparisons are valid only when the two fractions refer to the same whole.
- I can use a visual fraction model to record the results of comparisons with $>$, $<$, $=$ and justify the conclusions.

Measurement and Data

Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

3.MD.1a I can tell and write time to nearest minute and measure time intervals in minutes.

3.MD.1b I can solve word problems involving addition and subtraction of time intervals in minutes.

3.MD.1c I can represent word problems on a number line diagram.

3.MD.2 I can measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).

- I can add, subtract, multiply, and divide to solve one-step word problems involving masses or volumes that are given in the same units by using drawings to represent the problem.

Represent and interpret data.

3.MD.3a I can draw a scaled picture graph and bar graph to represent a data set with several categories.

3.MD.3b I can solve one and two “how many more” and “how many less” problems using information presented in scaled bar graphs.

3.MD.4 I can generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.

I can show the data by making a line plot where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

3.MD.5 I can recognize area as an attribute of plane figures and understand concepts of area measurement.

3.MD.5a I can show that I understand that a square with side lengths one unit, called “a unit squared” is said to have “one square unit” of area, and can be used to measure area.

3.MD.5b I can show that I understand that 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.

3.MD.6 I can measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units.)

3.MD.7 I can relate area to the operations of multiplication and addition.

3.MD.7a I can 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.

3.MD.7b I can multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems.

3.MD.7c I can represent whole number products as rectangular areas in mathematical reasoning.

3.MD.7d I can use tiling to show in a concrete case that the area of a rectangle with whole numbers side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$.

3.MD.7e I can use area models to represent the distributive properties in mathematical reasoning.

3.MD.7f I can recognize area as additive.

3.MD.7g I can decompose an area of a rectangular figure into non-overlapping rectangles.

3.MD.7h I can then add the areas of the non-overlapping parts to the decomposed rectangular figure.

3.MD.7i I can apply these techniques to solve real world problems.

Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

3.MD.8a I can solve real world and mathematical problems involving perimeters of polygons, including the perimeter given the side lengths.

3.MD.8b I can find an unknown side length.

3.MD.8c I can solve real world and mathematical problems exhibiting rectangles with the same perimeter and different areas or vice versa.

Geometry

Reason with shapes and their attributes.

3.G.1a I can understand that shapes in different categories may share attributes.

3.G.1b I can understand that shared attributes can define a larger category. (e.g. quadrilaterals)

3.G.1c I can recognize and draw examples of quadrilaterals. (rhombuses, rectangles, and squares)

3.G.1d I can recognize and draw examples of quadrilaterals that do not belong to any of these subcategories.

3.G.2a I can partition shapes into parts with equal areas.

3.G.2b I can express the area of each part as a unit fraction of the whole.