**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. (6X4=24, 4X6=24)

3.OA.5b I can apply the associative property of multiplication. (3X5X2, 3X5=15, 15X2=30)

3.OA.5c I can apply the distributive property of multiplication. (Knowing that 8X5=40 and 8X2=16, one can find 8X7 as 8X(5+2)=(8X5)+(8X2)=40+16=56.

3.OA.6 I can understand division as an unknown-factor problem. (32/8=?, ?X8=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, 5Xn=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. (9X80)

**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 canshow 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 side 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 X b and a X 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)

3G.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.