RIO VALLEY CHARTER SCHOOL

A PACIFIC CHARTER INSTITUTE SCHOOL

Mathematics Arts State Standards Grade 3

Third grade students develop understanding of multiplication, division, and fractions. They learn to calculate a shape's area and perimeter, and they compare the properties of two- dimensional shapes. Third graders explain the relationship between multiplication and division, use tools to solve math problems, and relate area to multiplication and addition.

Standards for Mathematical Practice – "HOW" My student can:

- ☐ explain a math problem, create & use a plan to solve it, and check if the answer makes sense.
- ☐ make sense of and flexibly use math symbols, numbers, and operations. use objects, drawings, diagrams, actions and words to explain his/her approach to a math problem and decide if others' strategies make sense. recognize math in everyday life and use math to solve real problems.
- ☐ use tools (e.g., ruler, concrete models, paper/pencil) to solve problems and deepen understanding.
- ☐ calculate accurately, use precise math vocabulary, and explain problems/solutions clearly.
- ☐ describe how numbers and shapes are organized as parts and wholes. notice when calculations are repeated and look for general "rules" and shortcuts.

Math Content Standards – "WHAT" Multiplication and Division (Operations and Algebraic Thinking) My student can:

- ☐ understand multiplication by thinking about groups of objects (e.g., 5 x 7 is the total number of objects in 5 groups of 7 objects each). 3.OA.1
- ☐ understand division by thinking about how one group can be divided into equal smaller groups (e.g., 56 ÷ 8 is the number of objects in each group when 56 is separated in to 8 equal groups). 3.OA.2
- ☐ use multiplication and division within 100 to solve word problems. 3.OA.3
- ☐ use strategies (e.g., drawings, equations with a symbol for the unknown number) to solve word problems involving equal groups, arrays, and measurement quantities. 3.OA.3

- ☐ find the missing number in a multiplication or division equation (e.g., 8 x __ = 48; 5 = __ ÷ 3). 3.OA.4
- ☐ use the commutative property of multiplication (If 6 x 4 = 24, then 4 x 6 = 24). 3.OA.5 use the associative property of multiplication (To figure out 3 x 5 x 2, multiply 3 x 5 = 15, then 15 x 2 = 30 OR multiply 5 x 2 = 10, then 3 x 10 = 30). 3.OA.5
- ☐ use the distributive property of multiplication [To figure out 8 x 7, think of 8 x (5 + 2) which means (8 x 5) + (8 x 2) = 40 + 16 = 56]. 3.OA.5
- ☐ find the answer to a division problem by thinking of the missing factor in a multiplication problem (e.g., Find 32 ÷ 8 by figuring out the number that multiples with 8 to make 32). 3.OA.6
- ☐ easily multiply and divide within 100 using a variety of strategies. 3.OA.7
- ☐ memorize all multiplication facts of two one-digit numbers (e.g., 3 x 5 = 15, 4 x 6 = 24). 3.OA.7
- ☐ use addition, subtraction, multiplication and division to solve two-step word problems; use mental math or estimation to decide if the answer is reasonable. 3.OA.8
- ☐ use a letter to represent an unknown number in +, -, x, and ÷ word problems (e.g., 42 ÷ n = 7). 3.OA.8
- ☐ find patterns in addition (including patterns in the addition and multiplication tables) and explain them using properties of operations (e.g., observe that 4 times a number is always even). 3.OA.9

Number Sense and Place Value (Number and Operations in Base Ten) My student can:

- ☐ round numbers to the nearest 10 or 100. 3.NBT.1
- ☐ easily add and subtract numbers within 1000 using a variety of strategies.
- ☐ NBT.2
- ☐ quickly and easily multiply any one-digit whole number by 10. 3.NBT.3

Fractions (Number and Operations

My student can:

- ☐ understand the meaning of the numerator and denominator in a fraction
- ☐ using terms like equal parts and whole. 3.NF.1
- ☐ understand fractions as numbers on the number line; label fractions on a number line. 3.NF.2 explain in words or pictures how two fractions can be equal (e.g., 1/2 = 2/4; 4/6 = 2/3). 3.NF.3
- ☐ compare fractions by reasoning about their size or place on a number line. 3.NF.3
- ☐ compare fractions using <, =, and >, and justify the conclusion with a visual model. 3.NF.3
- ☐ recognize whole numbers that are equal to fractions (e.g., 3 = 3/1). NF.3

☐ recognize fractions that are equal to whole numbers (e.g., 4/4 = 1). NF.3

Measurement and Data My student can:

☐ tell and write time to the nearest minute; measure time in minutes.

☐ MD.1

☐ solve time word problems by adding and subtracting minutes. 3.MD.1

☐ measure and estimate volume & mass of liquids and solids using liters, grams and kilograms. 3.MD.2

☐ add, subtract, multiply and divide to solve word problems involving mass and volume. 3.MD.2

☐ create a scaled picture graph or bar graph to show data with several categories. 3.MD.3

☐ solve word problems (how many more, how many less) using data from scaled bar graphs. 3.MD.3

☐ use rulers to measure lengths of objects to the nearest whole, half or fourth of an inch. 3.MD.4

☐ create a line plot from measurement data, where the objects have been measured to the nearest whole number, half or quarter unit. 3.MD.4

☐ understand that the area of plane shapes can be measured in square units. 3.MD.5

☐ measure areas by counting unit squares (e.g., square cm, square inches, square feet). 3.MD.6

☐ measure area by using multiplication and addition. 3.MD.7 find the perimeter of plane figures; solve real world problems involving perimeter. 3.MD.8

Geometry
My student can:

☐ place shapes into categories depending upon their attributes (e.g., quadrilaterals, rhombuses). 3.G.1

☐ recognize and draw quadrilaterals such as rhombuses, rectangles and squares, as well as quadrilaterals that do not belong to any of these subcategories. 3.G.1

☐ divide shapes into parts with equal areas; show the area of each part as a fraction of the whole. G.2