Mathematics Rubric

Grade Level: 3

Scoring Guide		
B	**Beginning to develop the standard**	The student shows **basic** understanding of concepts/skills and applies them **with guidance and support from adults.**
P	**Progressing toward the standard**	The student shows **increased** understanding of concepts/skills and applies them **with guidance and support from adults.**
A	**Approaching the standard**	The student shows **near-complete** understanding of concepts/skills and applies them **with increased accuracy and independence.**
M	**Meeting the standard**	The student shows **thorough** understanding of concepts/skills and **consistently applies them with accuracy and independence.**
E	**Exceeding the standard**	The student **independently extends** concepts/skills and **consistently works beyond grade-level standards.**

Operations & Algebraic Thinking	
Solves problems involving multiplication or division within 100 **3.OA.7**	Fluently multiplies and divides within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations.
Knows from memory multiplication facts through 9x9 **3.OA.7**	Knows from memory all products of two one-digit numbers.
Solves 2 step word problems involving addition, subtraction, multiplication and division **3.OA.8**	Represents these problems using equations with a letter standing for the unknown quantity. Assesses the reasonableness of answers using mental computation and estimation strategies including rounding.
Number & Operations in Base Ten	
Rounds whole numbers through 100	Uses place value understanding to round whole numbers to the nearest 100.

3.NBT.1.	
Fluently adds and subtracts three-digit numbers **3.NBT.2.**	Fluently adds and subtracts within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
Multiplies one-digit numbers by multiples of 10 **3.NBT.3.**	Multiplies 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.
Number & Operations- Fractions	
Demonstrates an understanding of fractions as parts of a whole **3.NF.1**	Understands a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understands a fraction a/b as the quantity formed by a parts of size 1/b. **Expectations are limited to fractions with denominators 2, 3, 4, 6, 8.**
Represents fractions on a number line **3.NF.2**	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. 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. **Expectations are limited to fractions with denominators 2, 3, 4, 6, 8.**
Demonstrates an understanding of equivalent fractions **3.NF.3**	Understands two fractions as equivalent (equal) if they are the same size, or the same point on a number line. Recognizes and generates simple equivalent fractions, e.g., 1/2 = 2/4 , 4/6 = 3/3 . Explains why the fractions are equivalent, e.g., by using a visual fraction model. Expresses whole numbers as fractions, and recognizes 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. **Expectations are limited to fractions with denominators 2, 3, 4, 6, 8.**
Compares fractions with like numerators or like denominators **3.NF.3**	Compares two fractions with the same numerator or the same denominator by reasoning about their size. Recognizes that comparisons are valid only when the two fractions refer to the same whole. Records the results of comparisons with the symbols >, =, or <, and justifies the conclusions, e.g., by using a visual fraction model. **Expectations are limited to fractions with denominators 2, 3, 4, 6, 8.**
Measurement & Data	
Tells time to the nearest minute	Tells and writes time to the nearest minute and measures time intervals in minutes.

3.MD.1.	
Calculates elapsed time 3.MD.1.	Solves word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
Measures Metric mass & volume 3.MD.2.	Measures and estimates liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Adds, subtracts, multiplies, or divides 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.
Represents and interprets data 3.MD.3. 3.MD.4.	Draws a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solves one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets. Generates measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Shows the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.
Demonstrates an understanding of area 3.MD.5 3.MD.6 3.MD.7	Recognizes area as an attribute of plane figures and understands concepts of area measurement. (i.e. 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. 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). Measures areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). Finds the area of a rectangle with whole-number side lengths by tiling it, and shows that the area is the same as would be found by multiplying the side lengths. Multiplies side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represents whole-number products as rectangular areas in mathematical reasoning. Uses 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 × b and a × c. Use area models to represent the distributive property in mathematical reasoning. 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.
Demonstrates an understanding of perimeter 3.MD.8	Solves 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.
Geometry	
Identifies, forms and classifies two-dimensional	Understands that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared

shapes **3.G.1.**	attributes can define a larger category (e.g., quadrilaterals). Recognizes rhombuses, rectangles, and squares as examples of quadrilaterals, and draws examples of quadrilaterals that do not belong to any of these subcategories.
Applies to All Standards	
Makes sense of problems & perseveres in solving them	Identifies a problem, analyzes givens, tries to solve the problem independently, monitors progress and changes course if necessary.
Reasons & explains using words, illustrations, tools & models	Communicates mathematics precisely using clear language. Calculates efficiently and provides carefully formulated explanations using words, illustrations, tools and models.
Attends to precision	Uses symbols and units accurately and consistently.