Third Grade Mathematics Goals:

Students will understand the meaning of multiplication and division using equal-sized groups, arrays and area models. Students will be able to find an unknown product and an unknown factor. Students will be able to find an unknown number of groups as well as an unknown group size.

Students will understand fractions, beginning with unit fractions. Students will be able to model fractions as parts of a whole. Students will be able to use fractions to represent numbers equal to, less than, and greater than one. Students will be able to compare fractions with either equal numerators or denominators.

Students will recognize area as an attribute of two dimensional regions. They will understand a unit square and be able to break up rectangles to compute total area.

Students will describe, analyze, and compare two dimensional shapes. They will describe shapes using sides and angles. They will also be able to relate fractions by expressing the area of part of a shape as a unit fraction of the whole.

OPERATIONS AND ALGEBRAIC THINKING (3.OA)

3.OA.1: Students will recognize that multiplication problems mean equal groups and the number of objects in each group. For example, students will be able to describe a situation in which a total number of objects could be expressed as 5 groups with 7 in each group, or 5 x 7.

3.OA.2: Students will interpret division both **partitively** – if we know how many objects there are total and how many groups there are, how many are in each group? —and **quotatively** –if we know how many objects there are total and how many are in each group, how many groups are there?

3.OA.3: Students will solve word problems with situations involving equal groups, arrays, and measurement quantities.

3.OA.4: Students will be able to find the unknown number (product, factor, quotient, dividend, or divisor) that makes an equation true.

3.OA.5: Students will apply properties of multiplication and division to solve problems. The properties are: commutative, associative, distributive, zero property, and identity.

3.OA.6 Students will understand that division is an unknown factor problem (understanding that multiplication and division are inverse, or opposite, problems).

3.OA.7 Students will fluently multiply and divide up to 10 x 10 because they have memorized all the multiplication math facts up to 10 x 10.

3.OA.8a: Students will solve two step word problems using the four operations (add, subtract, multiply, and divide) and the Order of Operations (My Dear Aunt Sally).

3.OA8b: Students will solve problems using letters standing in for the unknown quantity.

3.OA8c: Students will be able to figure out if their answers make sense using a variety of methods.

3.OA.9 Students will be able to identify patterns and explain them using properties of operations.

NUMBER AND OPERATIONS IN BASE TEN (3.NBT)

3.NBT.1 Students will be able to round whole numbers to the nearest 10 or 100.

3.NBT.2 Students will be able to fluently add and subtract within 1,000.

3.NBT.3 Students will correctly multiply one-digit whole numbers by multiples of 10.

NUMBER AND OPERATIONS-FRACTIONS (3.NF)

3.NF.1 Students will understand that unit fractions have a numerator of 1 and a denominator that is not zero.

3.NF.1a: Students will understand a fraction 1/*b* is one part when a whole is divided into *b* parts.

3.NF1b: Students will understand a/b as a parts of 1/b size. For example, ¼ + ¼ + ¼ = ¾.

3.NF.2 Students will understand a fraction as a number on a number line.

3.NF.2a: Students will be able to show a fraction 1/b on a number line by showing the interval from 0 to 1 as the whole and breaking it into b equal parts. Students will know that one interval to the right of the 0 is 1/b big.

3.NF.2b: Students will be able to show a fraction a/b on a number line by showing the interval from 0 to 1 as the whole and breaking it into b equal parts. Students will know to go a intervals to the right of the 0 to show the fraction a/b.

3.NF.3 Students will be able to explain equivalent fractions and compare fractions by understanding their relative sizes.

3.NF.3a: Students will understand two fractions as equal if they have the same size or are at the same point on a number line.

3.NF.3b: Students will recognize and make simple equivalent fractions.

3.NF3c: Students will be able to write whole numbers as fractions and know that some fractions are equal to whole numbers.

3.NF3d: Students will be able to compare two fractions with the same numerator or same denominator by reasoning about their size.

MEASUREMENT AND DATA (3.MD)

3.MD.1 Students will be able to tell and write time to the nearest minute and measure time intervals in minutes.

3.MD.2 Students will correctly measure and estimate liquid volume and masses of objects using metric units. Students will also be able to add, subtract, multiply, or divide volume or masses to solve one-step word problems. Problems will be given in the same units.

3.MD.3 Students will be able to draw a scaled picture graph and bar graph. Students will be able to solve one- and two-step problems with “how many more” or “how many less” problems.

3.MD.4 Students will be able to measure using rulers marked with halves and fourths of a an inch. Students will also be able to make a line plot to represent data, where the line plot is marked off in the appropriate units – whole, halves, or quarters.

3.MD.5 Students will know area as an attribute of a plane figure and understand how to find area measurement.

3.MD.5a: Students will know a unit square and how to use it to measure area.

3.MD.5b: Students will know that a figure covered by n unit squares is has an area of n square units.

3.MD.6 Students will be able to measure area by counting unit squares.

3.MD.7 Students will be able to relate area to multiplication and addition.

3.MD.7a: Students will be able to find the area of a rectangle by multiplying the length and the width.

3.MD.7b: Students will be able to solve real-world mathematical area problems.

3.MD.7c: Students will be able to use the distributive property to figure out the area of a rectangle.

3.MD.7d: Students will see area as additive – that breaking a figure into rectangles, finding the area of each, and then adding the areas together will give the total area of the figure.

3.MD.8 Students will be able to solve real-world mathematical problems about perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and drawing rectangles with the same perimeter and different areas, or the same area and different perimeters.

GEOMETRY (3.G)

3.G.1 Students will understand that shapes in different categories may have the same attributes. Students will recognize examples of quadrilaterals.

3.G.2 Students will be able to break shapes into parts with equal areas and write the areas of each part as a unit fraction of the whole.