WELCOME TO FOURTH GRADE MATH!

By the end of the year, here is what students should be able to do:

Operations and Algebraic Thinking

- **Multiplicative Comparison:** Understand the difference between "5 more than" and "5 times as many." For example, interpreting 35 = 5 times 7 as “35 is 5 times as many as 7 and 7 times as many as 5.”
- **Multi-Step Word Problems:** Solve word problems using all four operations (addition, subtraction, multiplication, and division), including those where "remainders" must be interpreted (e.g., deciding if you need an extra bus for 3 remaining students).
- **Factors and Multiples:** Find all factor pairs for whole numbers up to 100 and determine if a number is prime or composite.
- **Patterns**: Identify and extend patterns in numbers or shapes (e.g., "Given the rule ‘Add 3’ and the starting number 7, what are the next terms?").

Fractions and Decimals

- **Equivalence:** Recognize and create equivalent fractions by using visual models.
- **Compare:** Compare two fractions using the symbols <, >, or =..
- **Adding and Subtracting Fractions:** Add and subtract fractions and mixed numbers with the same denominators.
- **Multiplying Fractions:** Multiply a fraction by a whole number (e.g., 5 x ¼ =, or 3 x ⅝ =).
- **Word Problems:** Solve word problems involving the addition and subtraction of fractions with the same denominator. Solve word problems involving the multiplication of a whole number by a fraction.
- **Decimal Notation:** Understand how fractions with denominators of 10 or 100 relate to decimals. For example, rewriting .62 as 62/100.

Base Ten System

- **Place Value:** Read, write, and compare multi-digit whole numbers up to 1,000,000. Understand that any digit represents ten times what it represents in the place to its right.
- **Round:** Round numbers through 1,000,000 to any place.
- **Fluency:** Add and subtract multi-digit whole numbers through 1,000,000..
- **Multiplication:** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers (e.g., 24 times 36).
- **Division:** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors (e.g., 4,500\6).

Measurement and Data

- **Word Problems:**Use the four operations to solve word problems involving distances, intervals of time (such as elapsed time), liquid volumes, masses of objects; money, including problems with fractions or decimals.
- **Unit Conversions:** Know the relative sizes of measurement units (in., ft, yd, mi; oz., lb; and c, pt, qt, gal), metric units (cm, m, km; g, kg; and mL, L), and time (sec, min, hr, day, wk, mo, and yr), and express larger units in terms of smaller units within a single system.
- **Area and Perimeter:** Apply the area and perimeter formulas for rectangles in real-world problems (e.g., "Find the width of a rectangular room given the area and the length").
- **Line Plots:** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8) and use the data to solve addition and subtraction problems.
- **Angle Measurement:** Use a protractor to measure or sketch angles. Solve addition and subtraction word problems to find unknown angles.

Geometry

- **Lines and Angles:** Identify and draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines.
- **Classifying Shapes:** Categorize shapes based on the presence or absence of parallel or perpendicular lines, or angles of a specified size (e.g., identifying right triangles).
- **Symmetry:** Recognize a line of symmetry and draw lines of symmetry.