Frankfort School District 157C
Math Curricular Expectations
Grade: 4

- **Skills students should know and be able to do by the end of 4th grade**

Operations & Algebraic Thinking	Measurement & Data	Numbers & Operations Base 10	Geometry	Numbers & Operations/ Fractions
- Use the four operations with whole numbers to solve problems. - Interpret a multiplication equation as a comparison. - Represent verbal statements of multiplicative - Use algebra to represent equations. - Use mental math and rounding to assess the reasonableness of answers. - Multiply or divide to solve word problems. comparisons as multiplication equations. - Gain familiarity with factors and multiples. - Find all factor pairs for a whole number from 1-100. - Recognize that whole numbers are multiples of its factors. - Determine prime and composite numbers from 1 - 100. - Determine and interpret patterns. - Generate a number or shape pattern that follows a given rule and analyze patterns. - Use the correct vocabulary to understand and interpret patterns. - Explain in words why the pattern alternates - Solve multi-step word problems that require interpreting remainders.	- Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, money, simple fractions or decimals, and those that require measurements. - Use diagrams such as number lines that feature a measurement scale. - Apply the area and perimeter formulas for rectangles in real world and mathematical problems. - Represent and interpret data. - Solve problems involving measurement and conversion of measurements from a large unit to a smaller unit. - Know relative sizes of measurement units in one system (km, m, cm: kg, g: lb, oz; l,ml; hr, min, sec.) - Record measurement equivalents in a two-column table. - Understand concepts of angles, recognize and measure angles. - Measure and sketch angles in whole-number degrees using a protractor. - Recognize angle measure as additive. - Solve addition and subtraction problems to find unknown angles.	- Generalize place value understanding for multi-digit whole numbers - Recognize and explain a multi-digit while number, a digit in the ones place represents ten times what it represents in the place to its right - Read and write multi-digit whole numbers using base ten numbers, number names and expanded form. - Compare two multi-digit numbers bases on meaning of the digits in each place, using >, <, =, and symbols to record the results of comparisons (4th grade expectations are numbers less than or equal to 1 million). - Use place value to round multi-digit numbers to any place. - Use place value to add and subtract fluently. - Use place value understanding and properties of operations to multiply four digits by one digit and two two-digit numbers, illustrate and explain calculations by using equations, arrays, and models - Use place value and operations to find whole number quotients and remainders up to four digit dividends and one digit divisors. - Illustrate and explain calculations by using equations, arrays, and models.	- Draw and identify lines and angles. - Draw and identify lines and angles, and classify shapes by the properties of their lines and angles. - Recognize the line of symmetry for a 2-dimensional figure. - Identify line symmetric figures. Draw lines of symmetry. - Classify 2-dimesnsional figures. Recognize and identify right triangles. - Classify shapes by properties of their lines and angles. - Draw points, lines, line segments, rays, angles, and perpendicular and parallel lines.	- Use decimal notation for fractions with denominators 10 or 100 (0.62=62/100) - Compare 2 decimals to 100ths by reasoning about their size. - Extend understanding of fraction equivalents and ordering. - Build fractions from benchmark fractions by whole and mixed numbers - Explain why a fraction a/b is equivalent to a fraction (n x a)/ (n x b) by using visual fraction models. - Recognize and generate equivalent fractions. - Extend understanding of fraction equivalence and ordering. - Understand subtraction and addition of fractions. - Decompose fractions into a sum using the same denominator multiple ways. - Add and subtract mixed numbers with like denominators. - Solve word problems involving addition and subtraction of fractions with like denominators. - Build fractions from benchmark fractions by applying understanding of operations of whole numbers. - Apply the understanding of multiplication to multiply a fraction by a whole number. - Understand a fraction a/b as a multiple of 1 /b (5 /4 = 5 x 1/4) . - Understand a multiple of a/b as a multiple of 1/b (3x 2/5 = 6x 1/5). - Solve word problems involving multiplication of a fraction by a whole number. - Understand decimal notation for fractions and compare decimal fractions. - Express a fraction with a denominator of 10 as an equivalent fraction with the denominator of 100.