



Southmoreland School District

Fourth Grade Mathematics Curriculum Overview

Fourth Grade Math Overview:

The fourth grade mathematics curriculum is divided into five modules: (1) Numbers and Operations including Fractions, (2) Algebraic Concepts, (3) Measurement, Data, and Probability, (4) Geometry, and (5) Problem Solving. Fourth grade students use place value to show an understanding of multi-digit whole numbers and to solve multi-digit arithmetic. They demonstrate an understanding of using fractions to show equivalence. Students build fractions by using units or fractions and applying the four basic mathematical operations. In addition, students connect the concept of decimals to fractions. The students solve problems using the four basic mathematical operations to generate and analyze patterns using one rule. They classify two dimensional figures by their lines and angles. Students recognize symmetric shapes and draw lines of symmetry. The students solve problems using measurement and convert a larger unit to a smaller unit. Finally, students interpret data involving fractions using a line plot.

Module Titles:

Module 1: Numbers and Operations including Fractions

Module 2: Algebraic Concepts

Module 3: Measurement, Data, and Probability

Module 4: Geometry

Module 5: Problem Solving

Module Overviews:

Module 1: Numbers and Operations including Fractions

The goal of this module is for students to develop an understanding of fractions as numbers. Fourth grade students generalize place value understanding and use the properties of operations to perform multi digit arithmetic. They use concepts of the base 10 system for place value for multi digit whole numbers. Students read and write whole numbers in expanded, standard, and word form. In addition, students compare two multi digit numbers and identify the missing symbol (+, −, ×, ÷, <, >, and =) that makes a number sentence true. In addition, students round multi digit whole numbers to any place. The students add and subtract multi-digit whole numbers. They multiply a whole number of up to four digits by one digit and multiply two digit numbers by each other. Students divide a whole number of up to four digit dividends by one digit divisors with answers as a whole digit quotient and remainders. Finally, students estimate answers to addition, subtraction, and multiplication problems using whole numbers through six digits



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Module 2: Algebraic Concepts

The goal of this module is for students to generalize and analyze patterns using the four basic mathematical operations to solve problems with whole numbers. Fourth grade students use the concepts of multiplication and division to interpret a multiplication equation as a comparison. They solve multi-step word problems with whole numbers using the four basic mathematical operations, representing these problems using equations with a symbol or letter for the unknown quantity. Students factor pairs for a whole number and recognize that a whole number is a multiple of each of its factors. In addition, students generate and analyze patterns that follow a given rule. Finally, students determine the missing elements in a function table and identify the missing symbol (+, −, or ×) that makes a number sentence true.

Module 3: Measurement, Data, and Probability

The goal of this module is for students to solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit and to represent and interpret the data. Fourth grade students solve measurement problems in terms of relative sizes of measurement units. They use the four basic mathematical operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects; money, including problems involving simple fractions or decimals. Students apply the area and perimeter formulas for rectangles in whole numbers only. In addition, students identify time as the amount of minutes before or after the hour. The students translate information from one type of display to another and solve problems involving addition and subtraction of fractions by using information presented in line plots. Finally, students use a protractor to measure angles in whole-number degrees and solve addition and subtraction problems to find unknown angles on a diagram.

Module 4: Geometry

The goal of this module is for students to draw, identify, and measure lines and angles and to classify shapes by properties. Fourth grade students identify points, lines, line segments, rays, angles (right, acute, and obtuse), and perpendicular and parallel lines in two-dimensional figures. They classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size. Finally, students recognize and draw lines of symmetry for a two dimensional figure.

Module 5: Problem Solving

The goal of this module that is integrated throughout the year is for students to use strategies that enable us to solve problems. Fourth grade students develop problem



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solving and reasoning strategies that are essential in developing conceptual understanding of problem solving. Finally, students explore the following strategies and key concepts: looking for a pattern, drawing a picture and writing an equation, acting it out and using reasoning, making an organized list, using logical reasoning, identifying missing or extra information, identifying two question problems, writing to explain, working backwards, solving a simpler problem and making a table, and making and testing generalizations.