Southmoreland School District
Fifth Grade Mathematics Curriculum Overview

Fifth Grade Mathematics Overview:

The fifth 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. Fifth grade students extend their understanding of place value and the use of the operations to whole numbers and decimals. They use the four basic mathematical operations to solve problems with decimals. Students use equivalence to add and subtract fractions and learn to multiply and divide fractions. In addition, students analyze patterns and relationships using two rules. The students graph points in the first quadrant of the coordinate plane and interpret these points when solving problems. Students solve problems using conversion within a measurement system. The students interpret data using an appropriate scale. They solve problems involving the computation of fractions using information from a line plot. Finally, students solve problems within the concept of volume and relate volume to multiplication and addition.

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 Operation including Fractions
The goal of this module is for students to use equivalent fractions as a strategy to add and subtract fractions to develop an understanding of fractions as numbers. Fifth grade students understand the place value system and perform operations with multi digit whole numbers and decimals to thousandths. They understand concepts of fractions with unlike denominators and mixed numbers as they apply the four basic mathematical operations. Students demonstrate an understanding of multiplication and division as scaling or resizing as they compare the size of a product or quotient without performing the indicated operation. Finally, students divide unit fractions by whole numbers and whole numbers by unit fractions.

Module 2: Algebraic Concepts The goal of this module is for students to write and interpret numerical expressions, as they analyze patterns and relationships. Fifth grade

students interpret and evaluate numerical expressions using order of operations, using multiple grouping symbols (parentheses, brackets, or braces). Finally, students analyze patterns and identify relationships using two rules.

Module 3: Measurement, Data, and Probability
The goal of this module is for students to determine how volume relates to multiplication and division by converting measurement units within a given measurement system. Fifth grade students represent and interpret data using appropriate scales. They solve problems involving computation of fractions by using information presented in line plots. Students display and interpret data shown in tallies, tables, charts, pictographs, bar graphs, and line graphs, and use a title, appropriate scale, and labels. In addition, students find volumes of right rectangular prisms with whole-number edge lengths and of solid figures composed of two non overlapping right rectangular prisms.

Module 4: Geometry
The goal of this module is for students to graph points on the coordinate plane to solve mathematical problems and to classify two dimensional figures into categories based on their properties. Fifth grade students graph points in the first quadrant on the coordinate plane and interpret these points. They identify parts of the coordinate plane (x-axis, y-axis, and the origin) and the ordered pair (x-coordinate and y-coordinate). Finally, students classify two dimensional figures in a hierarchy based on properties.

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. Fifth grade students develop problem solving and reasoning strategies that are essential in developing conceptual understanding of problem solving. Finally, students explore the following strategies and key concepts: making sense of problems and persevere in solving them, using appropriate tools strategically, reasoning abstractly and quantitatively, attending to precision, constructing viable arguments and critiquing the reasoning of others, looking for and making use of structure, modeling with mathematics, and looking for and expressing regularity in repeated reasoning