



Southmoreland School District

8th Grade Mathematics Curriculum Overview

Math 8 Overview:

Mathematics in Pennsylvania stresses both procedural skills and conceptual understanding to ensure students are learning and applying the critical information they need to succeed at higher levels. Students will learn and apply concepts of the Number System, Expressions and Equations, Functions, Geometry, and Statistics and Probability. This course will prepare learners for success in Algebra 1.

Module Titles:

Module 1: The Number System

Module 2: Expressions and Equations

Module 3: Functions

Module 4: Geometry

Module 5: Statistics and Probability

Module Overviews:

Module 1: The Number System

Students will demonstrate an understanding of rational and irrational numbers then apply concepts of rational and irrational numbers.

Module 2: Expressions and Equations

Students will demonstrate an understanding of expressions and equations with radicals and integer exponents and represent and use expressions and equations to solve problems involving radicals and integer exponents. Students will develop an understanding of the connections between proportional relationships, lines, and linear equations. Students will analyze and describe linear relationships between two variables, using slope. As well as analyze and solve linear equations and pairs of simultaneous linear equations. Finally, in this module students will write, solve, graph, and interpret linear equations in one or two variables, using various methods.

Module 3: Functions

In this module, students will analyze and interpret functions, define, evaluate, and compare functions displayed algebraically, graphically, or numerically in tables or by verbal descriptions. Students will use functions to model relationships between



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quantities and represent or interpret functional relationships between quantities using tables, graphs, and descriptions.

Module 4: Geometry

In this module, students will demonstrate an understanding of geometric transformations and apply properties of geometric transformations to verify congruence or similarity. They will understand and apply the Pythagorean theorem. Then they will solve real-world and mathematical problems involving volume of cones, cylinders, and spheres.

Module 5: Statistics and Probability

This module investigates patterns of association in bivariate data in multiple representations. Students will understand that patterns of association can be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table.