Southmoreland School District
Algebra 1 Curriculum Overview

Algebra 1 Overview:

Algebra I course that teaches the Common Core standards that are needed to be successful in higher mathematics. Topics to be taught in this course include: Exploring variables and open sentences, equations, linear functions, proportions, probability and rational numbers; solving and graphing linear equations using slope and intercepts, solving and graphing linear inequalities, solving systems of equations and equations involving absolute value, polynomials, and exploring rational expressions.

Module Titles:

Module 1:   Operations with Rational Numbers
Module 2:   Expressions and Equations
Module 3:   Linear Functions and Linear Inequalities
Module 4:   Systems of Linear Functions and Inequalities
Module 5:   Operations with Polynomials
Module 6:   Statistics

Module Overviews:

Module 1: Operations with Rational Numbers
Students will be able to perform addition, subtraction, multiplication, and division with rational numbers. Students will also be able to calculate percent proportion and represent data using various graphs.

Module 2: Expressions and Equations
In this module the students represent relationships among quantities using tables, graphs, verbal descriptions and inequalities. They also use symbols to represent unknowns and variables to then interpret and make critical predictions from functional relationships. They identify domains and ranges, independent and dependent variables, and discrete and continuous functions.

Module 3: Linear Functions and Linear Inequalities
Students will be able to solve one-step and multi-step equations with variables on one or both sides of the equation. Then the students will solve equations using absolute value. Then students will be able to graph linear equations, solve linear equations by graphing and calculate the rate of change. They will relate direct variation to the rate of change and use arithmetic sequences with linear functions. The students also will be

able to graph equations in slope intercept form, as well as, write equations in slope intercept form and point-slope form, identify and graph parallel and perpendicular lines, and analyze and write a line of best fit with scatter plots.The students then will be able to work with inequalities using addition, subtraction, multiplication, and division. The inequalities will be multi-step and compound, as well as, absolute value.

Module 4: Systems of Linear Functions and Inequalities
The students will be able to graph systems of equations and inequalities. They will also use substitution and elimination to find solutions.

Module 5: Operations with Polynomials
The students will be able to add, subtract, multiply and divide polynomials. The students will also be able to factor polynomials when a is equal to 1.

Module 6: Statistics
The students will calculate measures of central tendency and represent data using various graphs, such as, box and whisker, stem and leaf, and line graphs.