Northern York County School District

Curriculum Overview

Course: Algebra 1 - 1.03	
Grade Level: 9th Grade	
Development/Revision Date: May 2022	**Length of Time:** 180 Days

Course Description:
Algebra I is designed to provide students with foundational skills necessary for success in all future math courses within the college preparatory pathway and to prepare students with the necessary vocational math skills needed post-graduation. This course will prepare students to take the Algebra I Keystone Exam. All students are required to take this exam by the Pennsylvania State Department of Education. In addition, this course is designed to address the needs of college bound students who plan to pursue a non-mathematics related degree.

Course Objectives:

- Understanding the structure of linear, quadratic, and exponential expressions
- Performing operations with linear, quadratic, and exponential equations
- Solve linear and absolute value equations and inequalities
- Solve basic quadratic and exponential equations
- Build linear models
- Use properties of rational exponents, rational numbers, and irrational numbers
- Summarize, represent, and interpret data using measures of center and spread

Related Standards:

- CC.2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.
- CC.2.2.8.B.3 Represent and analyze quantitative relationships between dependent and independent variables.
- CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers of relationships.
- CC.2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable.
- CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.
- CC.2.2.HS.D.10 Represent, solve and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.
- CC.2.2.7.B.3 Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.
- CC.2.2.8.B.2 Understand the connections between proportional relationships, lines, and linear equations.
- CC.2.4.HS.B.2 Summarize, represent, and interpret data on two categorical and quantitative variables.
- CC.2.2.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations.
- CC.2.2.8.C.1 Define, evaluate, and compare functions.
- CC.2.4.HS.B.3 Analyze linear models to make interpretations based on the data.
- CC.2.4.HS.B.5 Make inferences and justify conclusions based on sample surveys, experiments, and observational studies.

Concepts: • Solving and Graphing Linear Equations Inequalities • Writing Linear Functions • Solving Systems of Linear Equations • Exponential Functions and Sequences • Polynomial Equations and Factoring • Solving Quadratic Equations • Data Analysis and Displays	**Competencies:** • Solving linear equations and the connected skills of solving absolute value equations and rewriting equations and formulas • Solving, writing, graphing, and interpreting linear inequalities • Understanding characteristics of functions • Creating two variable equations to represent relationships • Writing and solving systems of equations • Make connections between exponential functions and geometric sequences • Performing operations with polynomials and factoring polynomials to solve equations • Summarizing, representing, interpreting, and analyzing data
Learning Activities: • Guided Notes and Exploration Discoveries • Warm-ups • Written Responses • Collaborative Practice (Jig-saws, Class Discussion, I have- who has) • Guided Practice • Independent Practice	**Performance Tasks:** • Quizzes (Online and In-Person) • Unit Tests • Unit Projects
Other Assessment Measures: Classwork, Homework, Online assessment tools, and Tickets out the door	
Textbook/Primary Resource: Ron Larson & Laurie Boswell, Algebra 1	
Supplemental Resource Materials: Online Resource and Collaboratively created resources	