PETERS TOWNSHIP HIGH SCHOOL
COURSE SYLLABUS: KEYSTONE MATH ONLINE

Course Overview and Essential Skills

This course is a study of the language, concepts, and techniques of Algebra that will prepare students to approach and solve problems following a logical succession of steps. This course is the foundation for high school mathematics courses and Keystone Algebra 1 assessment. Topics include simplifying expressions, evaluating and solving equations and inequalities, and graphing linear and quadratic functions and relations. For each of the sections that follow, students may be required to analyze, recall, explain, interpret, apply, or evaluate the particular concepts being taught. Concepts will be presented, applied, and assessed analytically, numerically, and graphically. Real-world applications are presented within the course content and Keystone Math standards are emphasized.

Course Textbook and Required Materials

- A classroom computer
- Study Island
- Blended Schools
- Khan Academy
- Access assignments
- Access the schedule
- Binders, notebooks, writing utensils, graphing calculator (TI-84 Plus)

Course Outline of Material Covered:

Unit or Topic	Concepts/Skills/Resources	Timeframe
Operations with Real Numbers and Expressions	- Compare and Order Numbers - Simplify Square Roots - Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials - Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute values to solve problems - Use estimation to solve problems - Add, subtract, and/or multiply polynomial expressions (express answers in simplest form) - Factor algebraic expressions, including difference of squares and trinomials - Simplify/reduce a rational algebraic expression	3 Weeks
Linear Equations	- Write real world linear equations - Solve linear equations - Solve three steps linear equations - Recognize situations in which one quantity changes at a constant rate per unit	2.5 Weeks
Linear Inequalities	- Solve compound inequalities - Use a number line to graph an inequality in	3 Weeks

	one variable • Solve absolute value inequalities • Graph absolute value inequalities on a number line • Solve multi step inequalities • Create and solve inequalities	
Functions	• Solve compound inequalities • Use a number line to graph an inequality in one variable • Solve absolute value inequalities • Graph absolute value inequalities on a number line • Solve multi step inequalities • Create and solve inequalities	3 Weeks
Coordinate Geometry	• Find the rate of change • Write or identify a linear equation • Find the slope of a linear equation • Find the equation of a line • Find the equation of a line on a graph • Factor trinomials	3 Weeks
Data Analysis	• Find the equation of the line of best fit for a graph • Determine the function that best models a scatter plot • Calculate mean, median, mode, and range using central tendency • Separate data into quartiles and interquartile range • Compare central tendency • Interpret scatter plots • Interpret data on graphs - bar, line, circle, box plot, stem & leaf • Make predictions • Determine probability of events • Determine probability of compound events • Utilize probability addition rule	3 Weeks

Depending on the needs of the class or changes in the school year, the course outline is subject to change.