



## Algebra 1 Syllabus - Teacher: Isaac Taylor

An introduction to mathematically abstract thinking involving simple algebraic expressions, equations, functions, and the Cartesian coordinate plane.

### CLASS OBJECTIVES

1. To further hone and exercise skills in basic algebraic concepts and skills.
2. To interpret, write, and evaluate algebraic expressions.
3. To model mathematical problems through writing, solving, and graphing equations and functions.
4. To understand functions in various forms and presentations.
5. To prepare each student for upper level math courses.
5. Understand how numbers are conceptual tools for the mind to know/understand the world.

### GENERAL CLASS CONTENT

1. Real Number Operations
  - a. Sets
  - b. Absolute Value/Number Lines
  - c. Mathematical Properties
  - d. Operations on Rational Numbers
  - e. Order of Operations
2. Introduction to Equations
  - a. Variables
  - b. Expression Evaluation
  - c. Solving Equations
3. Equations in Life
  - a. Ratios/Proportions
  - b. Converting Percentages and Decimals
4. Inequalities
  - a. Inequality Properties
  - b. Conjunctions and Disjunctions
  - c. Absolute Values with Equations and Inequalities



5. Graphing Functions
  - a. Points on Cartesian Plane
  - b. Graphs of Relations and Functions
  - c. Direct and Indirect Variation
  - d. Graphing Absolute Value Functions
6. Linear Functions
  - a. Graphing Lines
  - b. Slope-Intercept Form
  - c. Parallel and Perpendicular Lines
  - d. Graphing linear Inequalities
7. Systems of Equations
  - a. Solving by Substitution
  - b. Solving by Elimination
  - c. Solving Inequality Systems
8. Exponents
  - a. Relationship of Multiplication and Powers
  - b. Quotients of Exponents
  - c. Scientific Notation
  - d. Exponential Functions
9. Polynomials
  - a. Classifying Polynomials
  - b. Operations on Polynomials
  - c. FOIL
10. Factoring
  - a. Factoring Monomials
  - b. Factoring Trinomials of a Quadratic Form
  - c. Factoring Patterns
11. Radicals
  - a. Simplifying Radicals
  - b. Operations with Radicals
  - c. Radical Equations/Functions
12. Quadratic Functions
  - a. Factoring Quadratics
  - b. Completing the Square
  - c. The Quadratic Formula
13. Rational Expressions
  - a. Operations with Rational Expressions
  - b. Finding Common Denominators for Rational Expressions
  - c. Solving Rational Equations