

**Course Name:** Algebra 1

**Duration:**  1 Semester  Full Year

**Grade Level:**  9th  10th  11th  12th (check all that apply)

**Are there any prerequisites for the course?**

Completed Mathematics 2 in Middle School

**WHAT this course is about:**

This course is designed to build on pre-algebra concepts. It develops algebra skills such as graphing and solving equations, systems of equations, polynomials, quadratics, and includes the study of statistics. The content of this course is important for students' success on the ACT/SAT, SBAC, and college mathematics entrance exams. Students who complete Algebra 1 should take Geometry next.

Uses Carnegie Learning curriculum.

**WHY take this course:**

Take this course because you are starting your high school mathematics journey. It will build off the mathematics you learned in Middle School and further prepare you for more advanced mathematics.

**WHAT you'll learn:**

Linear Functions – graphing, solving, and writing equations  
Linear Systems – solving graphically and with substitution and elimination methods  
Exponential Functions – graphing, solving, and writing equations  
Quadratic Functions – graphing, solving by factoring, and using polynomial arithmetic  
Statistics (if time)

**WHAT you'll do:**

Click or tap here to enter text.

**WHERE this could take you:**

This will prepare you for future courses in mathematics you are required to take for graduation: Geometry and Algebra 2.

**OPTIONAL Course Outline (“scope and sequence”, sequence chart, etc.)**

Quarter 1 (Module 1)

- Functions & Function Notation
- Domain & Range
- Identify Linear Functions
- Review finding slope from graphs, equations, and points
- Review graphing linear equations from slope-intercept form
- Review writing linear equations in slope-intercept and point-slope forms from graphs and points.

#### Quarter 2 (Module 2)

- Solving Linear Equations – Algebraically and Graphically
- Solving Linear Inequalities – Algebraically and Graphically
- Solving Systems of Linear Equations – Algebraically (Elimination and Substitution Methods) and Graphically
- Solving Systems of Linear Inequalities – Graphically

#### Quarter 3 (Module 3)

- Review Exponent Properties
- Graph Exponential functions
- Identify growth and decay
- Write equations of Exponential functions
- Solve real world problems using Exponential growth
- Solve Exponential equations using common bases

#### Quarter 4 (Module 5)

- Polynomial Arithmetic – Adding, subtracting, multiplying binomials
- Factoring Quadratic equations
- Solving Quadratic equations – Zero Product Property, Quadratic Formula, Square roots
- Graph Quadratic equations
- Statistics if time allows (Module 4).