

# Algebra 1

## Course Description:

StudyForge Algebra 1 introduces students to the foundations of High School Algebra in an understandable, relatable, and enjoyable way, with proven success.

Algebra 1 establishes students' algebraic foundations by delving deeply into two primary topics: equations and functions. After easing into the course with a review of preliminary concepts, students will journey into the world of linear equations, where they will graph, interpret, solve, and apply to investigate and solve a myriad of interesting, real-life problems. Equipped with these analytical skills, students will then venture into the world of polynomials and functions, and eventually tackle quadratic and exponential relations and equations. Throughout this accessible and rewarding journey, students will strengthen their understanding of the many kinds of relationships that exist in our fascinating world and will be set up with the skills, competencies, and confidence they need for success in their future math courses.

With auditory, visual, and hands-on components throughout, this is truly a course that suits all learning styles. The lessons are engaging, interactive, and student-friendly, with interactive videos that allow students to go at their own speed, pausing and rewinding at any point. Many lessons also include fun, interactive applets and dynamic graphs that enhance student understanding.

Each instructional video is accompanied by a student-friendly note package that allows students to take notes to whatever level of detail they like. There are also an abundance of practice questions for students to internalize the material they have learned in the lessons, with full, detailed solutions for each. Additionally, there is a comprehensive review assignment and practice test for each unit. Furthermore, with randomized question banks, students can redo every quiz and test in the course to help them master the material and perform their very best.

This course is strongly recommended for students who might take Algebra 2 and eventually Pre-Calculus or even Calculus in either high school or college/university.

## Units:

- Pre-Algebra Review
- Solving Equations and Inequalities
- Linear Equations and Graphs
- Systems of Linear Equations and Inequalities
- Polynomials and Factoring
- Functions and Quadratic
- Quadratic Equations
- Exponents and Exponential Functions
- Analyzing Data

**By the end of the course, students will be able to:**

- Manipulate algebraic expressions to solve problems
- Formulate, interpret and solve equations and inequalities in context
- Numerically and graphically represent, interpret and analyze relations
- Identify, analyze and apply patterns to make predictions and solve problems
- Model and solve real-life phenomena using functions
- Apply algebraic reasoning to analyze and solve real-world problems
- Analyze and interpret data represented in tables, graphs and equations

**Assessments:**

- Unit Note Packages
- Lesson Practice Questions
- Quizzes
- Unit Review Assignment
- Unit Practice Test
- Unit Test
- Projects
- Semester Exams

**Requirements:**

- Scientific Calculator for assessments (handheld or online)
  - Note: Every practice question has a built-in Desmos graphing calculator