**Algebra I Course Syllabus**

Description:

Algebra I is the foundation—the skills acquired in this course contain the basic knowledge needed for all future high school math courses. The material covered in this course is important, but everyone can do it. Anyone can have a good time solving the hundreds of real-world problems algebra can help answer.

Each module in this course is presented in a step-by-step way right on the computer screen. Hands-on labs make the numbers, graphs, and equations more real. The content in this course is tied to real-world applications like sports, travel, business, and health.

This course is designed to give students the skills and strategies to solve all kinds of mathematical problems. Students will also acquire the confidence needed to handle everything high school math has in store for them.

Estimated Completion Time: 1 school year

Major Topics and Concepts:
Segment I:

Module 01: Algebra Foundations

01.00 Introduction and Pretest

01.01 Numerical Operations

01.02 Algebraic Expressions

01.03 Units and Graphs

01.04 Module One Quiz

01.05 Descriptive Modeling and Accuracy

01.06 Translations

01.07 Algebraic Properties and Equations

01.08 Module One Review and Practice Test

01.09 Discussion-Based Assessment

01.10 Collaboration Component

01.11 Module One Test

Module 02: Equations and Inequalities

02.00 Module Two Pretest

02.01 One-Variable Equations

02.02 Two-Variable Equations

02.03 Absolute Value Equations

02.04 Module Two Quiz

02.05 Inequalities

02.06 Compound Inequalities

02.07 Literal Equations

02.08 Module Two Review and Practice Test

02.09 Discussion-Based Assessment

02.10 Module Two Test

Module 03: Linear Functions

03.00 Module Three Pretest

03.01 Relations and Functions

03.02 Function Notation and Graphs

03.03 Linear Functions

03.04 Module Three Quiz

03.05 Linear Models

03.06 Writing Linear Functions

03.07 Parallel and Perpendicular Lines

03.08 Exploring Linear Models

03.09 Module Three Review and Practice Test

03.10 Discussion-Based Assessment

03.11 Module Three Test

Module 04: Exponential Functions

04.00 Module Four Pretest

04.01 Properties of Exponents

04.02 Operations with Radicals

04.03 Exponential Functions and Models

04.04 Module Four Quiz

04.05 Graphing Exponential Functions

04.06 Sequences

04.07 Exploring Linear and Exponential Growth

04.08 Module Four Review and Practice Test

04.09 Discussion-Based Assessment

04.10 Module Four Test

Module 05: Systems of Equations

05.00 Module Five Pretest

05.01 Solving Systems of Equations Graphically

05.02 Solving Systems of Equations Algebraically

05.03 Solving Systems of Equations Approximately

05.04 Module Five Quiz

05.05 Two-Variable Linear Inequalities

05.06 Systems of Linear Inequalities

05.07 Exploring Linear Inequalities

05.08 Segment One Honors Project

05.09 Module Five Review and Practice Test

05.10 Discussion-Based Assessment

05.11 Module Five Test

05.12 Segment One Review and Practice Test

05.13 Segment One Exam

Segment II
Module 06: Statistics

06.00 Introduction and Pretest

06.01 Representing Data

06.02 Comparing Data Sets

06.03 Data Sets and Outliers

06.04 Module Six Quiz

06.05 Two-Way Frequency Tables

06.06 Scatter Plots and Line of Best Fit

06.07 Correlation and Causation

06.08 Exploring Linear Fits

06.09 Module Six Review and Practice Test

06.10 Collaboration Component

06.11 Discussion-Based Assessment

06.12 Module Six Test

Module 07: Polynomials

07.00 Module Seven Pretest

07.01 Introduction to Polynomials

07.02 Addition and Subtraction of Polynomials

07.03 Multiplication of Monomials

07.04 Division of Monomials

07.05 Module Seven Quiz

07.06 Multiplication of Polynomials

07.07 Special Products

07.08 Division of Polynomials

07.09 Exploring Polynomial Expressions

07.10 Module Seven Review and Practice Test

07.11 Discussion-Based Assessment

07.12 Module Seven Test

Module 08: Factoring

08.00 Module Eight Pretest

08.01 Greatest Common Factor

08.02 Factoring By Grouping

08.03 Factoring Trinomials

08.04 Module Eight Quiz

08.05 Perfect Square Trinomials

08.06 Difference of Perfect Squares

08.07 Polynomial Functions

08.08 Exploring Graphs of Polynomials

08.09 Module Eight Review and Practice Test

08.10 Discussion-Based Assessment

08.11 Module Eight Test

Module 09: Quadratic Functions

09.00 Module Nine Pretest

09.01 Quadratic Models

09.02 Quadratics and Completing the Square

09.03 Module Nine Quiz

09.04 Quadratics and the Quadratic Formula

09.05 Applications of Quadratic Functions

09.06 Exploring Non-Linear Systems and Growth

09.07 Segment Two Honors Project

09.08 Module Nine Review and Practice Test

09.09 Discussion-Based Assessment

09.10 Module Nine Test

09.11 Segment Two Review and Practice Test

09.12 Segment Two Exam

Course Assessment and Participation Requirements:

To achieve success, students are expected to submit work in each course weekly. Students can learn at their own pace; however, “any pace” still means that students must make progress in the course every week and complete the course by the end of the school year. To measure learning, students complete self-checks, practice lessons, multiple choice questions, projects, discussion-based assessments, and discussions. Students are expected to maintain regular contact with teachers; the minimum requirement is monthly. When teachers, students, and parents work together, students are successful.