

Algebra I Course Syllabus

Description:

Algebra I emphasizes the importance of algebra in everyday life through hundreds of real-world examples. Assessments are designed to ensure that your understanding goes beyond rote memorization of steps and procedures. Upon successful course completion, you will have a strong foundation in Algebra I and will be prepared for other higher level math courses.

Estimated Completion Time: 2 segments / 32-36 weeks

Major Topics and Concepts:

Segment I:

Module 01: Algebra Foundations

- 01.00 Introduction and Module Pretest
- 01.01 Numerical Operations
- 01.02 Algebraic Expressions
- 01.03 Units and Graphs
- 01.04 Module Quiz
- 01.05 Descriptive Modeling and Accuracy
- 01.06 Translations
- 01.07 Algebraic Properties and Equations
- 01.08 Module Review and Practice Test
- 01.09 Discussion-Based Assessment
- 01.10 Collaboration Component
- 01.11 Module Test

Module 02: Equations and Inequalities

- 02.00 Module Pretest
- 02.01 One-Variable Equations
- 02.02 Two-Variable Equations
- 02.03 Absolute Value Equations
- 02.04 Module Quiz
- 02.05 Inequalities
- 02.06 Compound Inequalities
- 02.07 Literal Equations
- 02.08 Module Review and Practice Test
- 02.09 Discussion-Based Assessment
- 02.10 Module Test

Module 03: Linear Functions

- 03.00 Module Pretest
- 03.01 Relations and Functions
- 03.02 Function Notation and Graphs
- 03.03 Linear Functions
- 03.04 Module Quiz
- 03.05 Linear Models
- 03.06 Writing Linear Functions
- 03.07 Horizontal and Vertical Lines
- 03.08 Reflection
- 03.09 Module Review and Practice Test
- 03.10 Discussion-Based Assessment
- 03.11 Module Test

Module 04: Exponential Functions

- 04.00 Module Pretest
- 04.01 Properties of Exponents
- 04.02 Operations with Radicals
- 04.03 Exponential Functions and Models
- 04.04 Module Quiz
- 04.05 Graphing Exponential Functions
- 04.06 Sequences
- 04.07 Exploring Linear and Exponential Growth
- 04.08 Module Review and Practice Test
- 04.09 Discussion-Based Assessment
- 04.10 Module Test

Module 05: Systems of Equations

- 05.00 Module 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 Quiz
- 05.05 Two-Variable Linear Inequalities
- 05.06 Systems of Linear Inequalities
- 05.07 Reflection
- 05.08 Segment One Honors Project
- 05.09 Module Review and Practice Test
- 05.10 Discussion-Based Assessment
- 05.11 Module Test
- 05.12 Segment One Review and Practice Test
- 05.13 Segment One Exam

Segment II:

Module 06: Statistics

- 06.00 Introduction and Module Pretest
- 06.01 Representing Data
- 06.02 Comparing Data Sets
- 06.03 Data Sets and Outliers
- 06.04 Module Quiz
- 06.05 Two-Way Frequency Tables
- 06.06 Scatter Plots and Line of Best Fit
- 06.07 Correlation and Causation
- 06.08 Reflection
- 06.09 Module Review and Practice Test
- 06.10 Collaboration Component
- 06.11 Discussion-Based Assessment
- 06.12 Module Test

Module 07: Polynomials

- 07.00 Module 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 Quiz
- 07.06 Multiplication of Polynomials
- 07.07 Special Products
- 07.08 Division of Polynomials
- 07.09 Function Operations
- 07.10 Module Review and Practice Test
- 07.11 Discussion-Based Assessment
- 07.12 Module Test

Module 08: Factoring

- 08.00 Module Pretest
- 08.01 Greatest Common Factor
- 08.02 Factoring by Grouping
- 08.03 Factoring Trinomials
- 08.04 Module Quiz
- 08.05 Perfect Square Trinomials
- 08.06 Difference of Perfect Squares
- 08.07 Polynomial Functions
- 08.08 Reflection
- 08.09 Module Review and Practice Test
- 08.10 Discussion-Based Assessment
- 08.11 Module Test

Module 09: Quadratic Functions

- 09.00 Module Pretest
- 09.01 Quadratic Models
- 09.02 Quadratics and Completing the Square
- 09.03 Module 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 Review and Practice Test
- 09.09 Discussion-Based Assessment
- 09.10 Module Test
- 09.11 Segment Two Review and Practice Test
- 09.12 Exam Preparation
- 09.13 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. 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.