

Algebra 1 – Part A. – Course Details Semester Long Course

Course Objectives:

- structure and properties of the real number system, including rational and irrational numbers
- exponents, square roots, radicals, rational expression, absolute value, and scientific notation
- varied means for analyzing and expressing patterns, relations, and functions, including words, tables, sequences, graphs, and algebraic equations
- variables, algebraic expressions, polynomials, and operations with polynomials
- coordinate geometry and graphing of equations and inequalities
- data analysis concepts and techniques including introductory statistics and probability
- varied solution strategies, algebraic and graphic, for inequalities, linear and quadratic equations, and for systems of equations

No textbook is required for this course.

Scope & Sequence

Module 1 - A Healthy Attitude

A review of how to complete assignments and navigate through the course.

An outline covering student responsibilities and expectations.

An outline covering instructor responsibilities and expectations.

Algebra diagnostic test.

Module 2 - The Journey Begins

Exploring different types of graphs through the Let's Do Math graphing tool

Creating a data chart to be used in central tendencies lab.

Reading data from a tree diagram and stem and leaf plot.

Interpreting data through graphs.

Central tendencies, (mean, median, mode), lab.

A look at standardized tests.

Web Search

Final Assessment

Module 3 - I've got your number

History of number origins explored through the Let's Do Math resource

Identifying types of numbers and vocabulary through the Let's Do Math dictionary

Order of operations using integers
Translating English to algebraic equations.
Gain an understanding of absolute value.
Complete the Pendulum lab to connect order of operations and evaluating expressions.
Create a line graph using the Let's Do Math graphing tool
field trip - Algebra at work
Final Assessments and two quizzes throughout module.
Honors declaration

Module 4 - Time to Line Up

Name the rules using algebraic properties
Combining like terms
Honors assignment - extension on identifying properties in solving equations.
Solving equations: One step and multi-step linear equations.
Solving absolute value equations.
Solving literal equations with variables only.
Relations and functions covered
Mixture problems - Honors assignment
Racing Lab - students compute $d = r \cdot t$ in hands on lab
Web Search - Sports and Leisure
Final Assessment and three quizzes throughout module.
Honors Assessment

Module 5 - Down the Line

Understanding slope intercept form and graphing components
Finding slope, using standard form and the point slope formula
Linear graphing applications and writing equations
Learning to graph using three different methods
Battleship Lab - student make life-size grid to plot battleship paths
Systems of equations - Solving simultaneous equations through addition or substitution method.
Finding parallel and perpendicular equations to a given line.
Word problems - Honors assignment
field trip - Real Algebra
Final Assessment and two quizzes throughout module
Honors Assessment.

SEMESTER EXAM