Algebra I-A and I-B provide an expanded, two-year course sequence designed for students who are not prepared for the academic challenges of the traditional one-year Algebra I curriculum.

Algebra I-B course topics include a review of introductory algebra; measurement; graphing data; linear equations; systems of linear equations; polynomials; factoring of polynomials; factoring of quadratic functions; rational expressions; and radical expressions.

Algebra I-B features ample opportunity for students to hone their computational skills by working through practice problem sets before moving on to formal assessment.

This course is built to state standards.

No required or optional materials.

Length: Two Semesters

Unit 1: Using Logic to Solve Problems

- Building Equations
- Deductive Reasoning
- Inductive Reasoning
- Logic Puzzles
- Problem Solving
- Using Logic to Solve Problems Wrap-Up

Unit 2: Review of Algebra I-A

- Integers and Operations
- Fractions and Decimals
- Exponents
- Variables and Problem Solving
- Solving with Addition and Subtraction
- Solving with Multiplication and Division
- Solving Multistep Linear Equations
- Review of Algebra I-A Wrap-Up

Unit 3: Solving Equations and Inequalities

- Rational and Irrational Numbers
- Solving Linear Inequalities
- Literal Equations
- Measurement and Units
- Performance Task: Problem Solving with Inequalities
- Solving Equations and Inequalities Wrap-Up

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Unit 4: Linear Equations

- Slope
- Slope-Intercept Equation of a Line
- Point-Slope Equation of a Line
- Parallel and Perpendicular Lines
- Linear Inequalities
- Linear Equations Wrap-Up

Unit 5: Exponents and Exponential Functions

- Exponential Functions
- Graphs of Exponential Functions
- Arithmetic Sequences
- Geometric Sequences
- Understanding Number Sequences
- Exponential and Linear Growth
- Exponents and Exponential Functions Wrap-Up

Unit 6: Semester 1 Exam

- Semester 1 Review and Exam

Unit 7: Polynomials

- What Is a Polynomial?
- Adding and Subtracting Polynomials
- Adding and Subtracting Functions
- Multiplying Binomials
- Multiplying Polynomials
- Polynomials Wrap-Up

Unit 8: Factoring Polynomials

- GCF and Factoring by Grouping
- Factoring x2 + bx + c
- Factoring ax2 + bx + c
- Special Cases
- Factoring and Graphing
- Factoring Polynomials Wrap-Up

Unit 9: Quadratic Equations and Functions

- Solving Quadratic Equations
- Completing the Square
- The Quadratic Formula
- Graphs of Quadratic Functions
- Linear, Quadratic, and Exponential Functions
- Performance Task: Pricing for Profit
- Quadratic Equations and Functions Wrap-Up

Unit 10: Undoing Functions and Moving Them Around

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- Parent Functions
- Shifting Functions
- Stretching and Compressing Functions
- Transformations of Parent Functions
- Undoing Functions and Moving Them Around Wrap-Up

Unit 11: Descriptive Statistics

- Measures of Center and Spread
- Dot Plots, Box Plots, and Histograms
- Describing Distributions
- Two-Way Frequency Tables
- Descriptive Statistics Wrap-Up

Unit 12: Data and Mathematical Modeling

- Two-Variable Data and Scatterplots
- Fitting Linear Models to Data
- Nonlinear Models
- Data and Mathematical Modeling Wrap-Up

Unit 13: Semester 2 Exam

- Semester 2 Review and Exam

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