

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.

Focusing on review of pre-algebra skills and introductory algebra content, Algebra I-A allows students to deepen their understanding of real numbers in their various forms and then extend their knowledge to linear equations in one and two variables.

Algebra I-A 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.

Length: Two semesters

## UNIT 1: INTRODUCTION TO PROBLEM SOLVING

- Lesson 1: Building Basic Word Problems
- Lesson 2: A Four-Step Approach
- Lesson 3: Too Much or Too Little Information
- Lesson 4: Draw a Diagram
- Lesson 5: Use a Model or Act it Out
- Lesson 6: Make a List
- Lesson 7: Build a Chart and Find a Pattern
- Lesson 8: Guess and Check
- Lesson 9: Work Backward
- Lesson 10: Introduction to Problem Solving Wrap-Up

## UNIT 2: THE LANGUAGE OF ALGEBRA

- Lesson 1: What is a Variable?
- Lesson 2: Finding and Naming Variables
- Lesson 3: Measurement and Units
- Lesson 4: Graphs, Tables, and Equations
- Lesson 5: Solving Problems with Tables and Graphs
- Lesson 6: Variable Expressions
- Lesson 7: Simplifying and Evaluating Expressions
- Lesson 8: Mathematical Sentences
- Lesson 9: Solving Mathematical Sentences
- Lesson 10: Some Guidelines for Problem Solving
- Lesson 11: The Language of Algebra Wrap-Up

## UNIT 3: SOLVING EQUATIONS WITH FOUR BASIC OPERATIONS

- Lesson 1: Solving Equations Graphically
- Lesson 2: Solving Equations with Larger Numbers
- Lesson 3: Solving  $x + a = b$
- Lesson 4: Solving with a Number Line
- Lesson 5: Solving Inequalities
- Lesson 6: Solving  $ax = b$
- Lesson 7: Solving  $\cancel{x}a = b$
- Lesson 8: Inequalities

- Lesson 9: Variations of Equations and Inequalities
- Lesson 10: Solving Multistep Linear Equations
- Lesson 11: Literal Equations
- Lesson 12: Solving Equations with Four Basic Operations Wrap-Up

## UNIT 4: FUNCTIONS

- Lesson 1: Domain and Range
- Lesson 2: Identifying Functions
- Lesson 3: Graphs of Functions
- Lesson 4: Adding and Subtracting Functions
- Lesson 5: Functions Wrap-Up

## UNIT 5: SEMESTER 1 EXAM

- Lesson 1: Semester 1 Review and Exam

## UNIT 6: USING LOGIC TO SOLVE PROBLEMS

- Lesson 1: Building Equations
- Lesson 2: Deductive Reasoning
- Lesson 3: Inductive Reasoning
- Lesson 4: Logic Puzzles
- Lesson 5: Problem Solving
- Lesson 6: Using Logic to Solve Problems Wrap-Up

## UNIT 7: LINEAR EQUATIONS

- Lesson 1: Slope
- Lesson 2: Slope-Intercept Equation of a Line
- Lesson 3: Point-Slope Equation of a Line
- Lesson 4: Parallel and Perpendicular Lines
- Lesson 5: Linear Inequalities
- Lesson 6: Linear Equations Wrap-Up

## UNIT 8: SYSTEMS OF LINEAR EQUATIONS

- Lesson 1: Two-Variable Systems: Graphing
- Lesson 2: Two-Variable Systems: Substitution
- Lesson 3: Two-Variable Systems: Elimination
- Lesson 4: Two-Variable Systems of Inequalities
- Lesson 5: Systems of Linear Equations Wrap-Up

## UNIT 9: EXPONENTS AND EXPONENTIAL FUNCTIONS

- Lesson 1: Definitions and Examples of Exponents
- Lesson 2: Exponents and the Order of Operations
- Lesson 3: Laws of Exponents
- Lesson 4: Square Roots
- Lesson 5: Radical Notation
- Lesson 6: Exponential Functions
- Lesson 7: Graphs of Exponential Functions
- Lesson 8: Exponents and Exponential Functions Wrap-Up

## UNIT 10: SEQUENCES AND FUNCTIONS

- Lesson 1: Arithmetic Sequences
- Lesson 2: Geometric Sequences
- Lesson 3: Understanding Number Sequences
- Lesson 4: Exponential and Linear Growth

- Lesson 5: Sequences and Functions Wrap-Up

## **UNIT 11: SEMESTER 2 EXAM**

- Lesson 1: Semester 2 Review and Exam