

Algebra 1A and 1B address the need for an expanded, two-year treatment of traditional high school Algebra I curriculum. Focusing on review of pre-algebra skills and introductory algebra content, Algebra 1A 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. Course topics include integers; the language of algebra; fractions and decimals; exponents; solving equations with four basic operations; solving equations with roots, powers, or multiple steps; functions; and linear equations.

Algebra 1A features ample opportunity for students to hone their computational skills by working through practice problem sets before moving on to formal assessment.

When used together, Algebra 1A and Algebra 1B meet California's Algebra I Mathematics Content 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: UNDOING FUNCTIONS AND MOVING THEM AROUND

- Lesson 1: Parent Functions
- Lesson 2: Shifting Functions
- Lesson 3: Stretching and Compressing Functions
- Lesson 4: Transformations of Parent Functions

- Lesson 5: Undoing Functions and Moving Them Around Wrap-Up

UNIT 11: 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 12: SEMESTER 2 EXAM

- Lesson 1: Semester 2 Review and Exam