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: Solve a Simpler Problem
- Lesson 11: Building Equations
- Lesson 12: Deductive Reasoning
- Lesson 13: Inductive Reasoning
- Lesson 14: Logic Puzzles
- Lesson 15: Reasonable Answers
- Lesson 16: Introduction to Problem Solving Wrap-Up
- Lesson 17: Diagnostic

UNIT 2: INTEGERS

- Lesson 1: Whole Numbers
- Lesson 2: Number Lines and Inequalities
- Lesson 3: Rounding Whole Numbers
- Lesson 4: Operations and Numerical Expressions
- Lesson 5: Properties of Operations
- Lesson 6: The Operations on a Number Line
- Lesson 7: Reverse Operations
- Lesson 8: Negative Numbers
- Lesson 9: Absolute Value
- Lesson 10: Adding Integers
- Lesson 11: Subtracting Integers
- Lesson 12: Multiplying Integers
- Lesson 13: Dividing Integers
- Lesson 14: Wrap-Up
- Lesson 15: Diagnostic
UNIT 3: THE LANGUAGE OF ALGEBRA
- Lesson 1: What is a Variable?
- Lesson 2: Finding and Naming Variables
- Lesson 3: Units and Reasonable Values
- 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: Wrap-Up
- Lesson 12: Diagnostic

UNIT 4: FRACTIONS AND DECIMALS
- Lesson 1: Fraction Fundamentals
- Lesson 2: Introduction to Fraction Arithmetic
- Lesson 3: Equivalent Fractions
- Lesson 4: Simplifying Fractions
- Lesson 5: Mixed Numbers
- Lesson 6: Dividing Fractions
- Lesson 7: Adding and Subtracting Fractions
- Lesson 8: Decimals and Percents
- Lesson 9: The Set of Rational Numbers
- Lesson 10: Applications of Percentages
- Lesson 11: Converting Units
- Lesson 12: Wrap-Up
- Lesson 13: Diagnostic

UNIT 5: EXPONENTS
- Lesson 1: Definitions and Examples of Exponents
- Lesson 2: Exponents and the Order of Operations
- Lesson 3: Laws of Exponents
- Lesson 4: Scientific Notation
- Lesson 5: Exponents in Geometry
- Lesson 6: Square Roots
- Lesson 7: Radical Notation
- Lesson 8: Wrap-Up
- Lesson 9: Diagnostic

UNIT 6: ALGEBRA I-A SEMESTER 1 WRAP-UP
- Lesson 1: Algebra I-A Semester 1

UNIT 7: 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: Variations of Equations and Inequalities
- Lesson 7: Solving $ax = b$
- Lesson 8: The Lightning Problem
UNIT 8: SOLVING EQUATIONS WITH ROOTS, POWERS, OR MULTIPLE STEPS

Lesson 1: Solving \( ax + b = c \)
Lesson 2: Collecting Like Terms
Lesson 3: Using the Distributive Property
Lesson 4: Variables on Both Sides of the Equation
Lesson 5: The Profit Problem
Lesson 6: Solving \( |x| = b \)
Lesson 7: Solving \( x^2 = b \)
Lesson 8: Solving \( \sqrt{x} = b \)
Lesson 9: Inequalities and Absolute Value
Lesson 10: Inequalities and \( x^2 \)
Lesson 11: Inequalities and \( \sqrt{x} \)
Lesson 12: Multistep and Compound Inequalities
Lesson 13: Solving Equations with Roots, Powers, or Multiple Steps Wrap-Up
Lesson 14: Diagnostic

UNIT 9: FUNCTIONS

Lesson 1: When One Thing Depends on Another
Lesson 2: Function Notation
Lesson 3: Input–Output Machines
Lesson 4: Functions and Tables
Lesson 5: Functions and Graphs
Lesson 6: Functions and Formulas
Lesson 7: How Many Outputs?
Lesson 8: Functions and Relations
Lesson 9: Domain and Range
Lesson 10: Functions Wrap-Up
Lesson 11: Diagnostic

UNIT 10: INTRODUCTION TO SET THEORY

Lesson 1: What Is a Set?
Lesson 2: Set Notation
Lesson 3: Set Operations
Lesson 4: Set Relationships
Lesson 5: Introduction to Set Theory Wrap-Up
Lesson 6: Diagnostic

UNIT 11: LINEAR EQUATIONS

Lesson 1: Cartesian Coordinate Systems
Lesson 2: Lines in the \( xy \)-plane
Lesson 3: Slope
Lesson 4: Parallel and Perpendicular Lines
Lesson 5: Slope and Equations
Lesson 6: Slope–Intercept Form
Lesson 7: Point–Slope Form
Lesson 8: Linear Inequalities
Lesson 9: Properties of Lines
Lesson 10: Linear Equations Wrap-Up
Lesson 11: Diagnostic

UNIT 12: ALGEBRA I-A SEMESTER 2 WRAP-UP

- Lesson 1: Algebra I-A Semester 2