

Florida's Algebra 1-A and 1-B courses address the need for an expanded, two-year treatment of traditional high school Algebra I curriculum. Algebra 1-B course topics include a review of introductory algebra; graphing data; linear equations; systems of linear equations; polynomials; factoring of polynomials; factoring of quadratic functions; rational expressions; and radical expressions.

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

Algebra 1-B meets Florida's Next Generation Sunshine State Standards and Benchmarks.

Length: Two semesters

## UNIT 1: INTRODUCTION TO PROBLEM SOLVING

### LESSON 1: BUILDING BASIC WORD PROBLEMS

#### Study: Building Basic Word Problems

Learn how to convert number sentences into addition or subtraction word problems. Practice this skill using sample problems.

Duration: 0 hrs 25 mins

#### Checkpoint: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

#### Quiz: Building Basic Word Problems

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: A FOUR-STEP APPROACH

#### Study: A Four-Step Approach

Learn the four steps for solving word problems. Apply the four steps to sample problems.

Duration: 0 hrs 25 mins

#### Checkpoint: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

#### Quiz: A Four-Step Approach

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 3: TOO MUCH OR TOO LITTLE INFORMATION

#### Study: Too Much or Too Little Information

Learn about determining if there is enough information to solve a given problem, identifying missing information, and separating relevant from irrelevant information. Practice these skills using sample problems.

Duration: 0 hrs 25 mins

#### Checkpoint: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

#### Quiz: Too Much or Too Little Information

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 12 points

#### **LESSON 4: DRAW A DIAGRAM**

##### **Study: Draw a Diagram**

Learn what information to include in a diagram of a problem. Practice this skill using sample problems.

Duration: 0 hrs 25 mins

##### **Checkpoint: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

##### **Quiz: Draw a Diagram**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 12 points

#### **LESSON 5: USE A MODEL OR ACT IT OUT**

##### **Study: Use a Model or Act it Out**

Use sample problems to learn when and how to act out a problem or make a model.

Duration: 0 hrs 25 mins

##### **Checkpoint: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

##### **Quiz: Use a Model or Act it Out**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 12 points

#### **LESSON 6: MAKE A LIST**

##### **Study: Make a List**

Learn the steps for making a list in order to solve a word problem. Explore strategies for checking your answers. Practice these skills using sample problems.

Duration: 0 hrs 25 mins

##### **Checkpoint: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

##### **Quiz: Make a List**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 12 points

#### **LESSON 7: BUILD A CHART AND FIND A PATTERN**

##### **Study: Build a Chart and Find a Pattern**

Learn about collecting data in charts, identifying patterns in order to solve word problems, and completing charts in order to answer questions. Practice these skills using sample problems.

Duration: 0 hrs 25 mins

##### **Checkpoint: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

##### **Quiz: Build a Chart and Find a Pattern**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 12 points

#### **LESSON 8: GUESS AND CHECK**

**Study: Guess and Check**

Review the four problem solving steps. Learn how to make logical guesses to solve a problem. Solve word problems using this strategy.

Duration: 0 hrs 25 mins

**Checkup: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

**Quiz: Guess and Check**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 12 points

**LESSON 9: WORK BACKWARD****Study: Work Backward**

Learn about starting with a solution and working backward to solve a word problem. Learn how to check your answers by working forward. Practice these skills using sample problems.

Duration: 0 hrs 25 mins

**Checkup: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

**Quiz: Work Backward**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 12 points

**LESSON 10: INTRODUCTION TO PROBLEM SOLVING WRAP-UP****Review: Introduction to Problem Solving**

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

**Discuss: Introduction to Problem Solving**

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

**Test (CS): Introduction to Problem Solving**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

**Test (TS): Introduction to Problem Solving**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

**UNIT 2: THE LANGUAGE OF ALGEBRA****LESSON 1: WHAT IS A VARIABLE?****Study: What is a Variable?**

Learn the definition and explore examples of variables.

Duration: 0 hrs 30 mins

**Checkup: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

**Quiz: What is a Variable?**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 16 points

## LESSON 2: FINDING AND NAMING VARIABLES

### Study: Finding and Naming Variables

Select relevant variables and name them.

Duration: 0 hrs 30 mins

### Checkpoint: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Finding and Naming Variables

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 16 points

## LESSON 3: MEASUREMENT AND UNIT S

### Study: Measurement and Units

Explore the ideas of precision and accuracy in measurement. Solve problems involving a single unit conversion and those requiring multiple conversions.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Measurement and Units

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### Journal: Measurement and Units

Construct arguments and critique the reasoning of others as you write about topics in algebra.

Duration: 0 hrs 45 mins Scoring: 20 points

## LESSON 4: GRAPHS, TABLES, AND EQUATIONS

### Study: Graphs, Tables, and Equations

Find the value of a variable using graphs, tables, and equations. Learn to organize information and find patterns. Explore examples and advantages of each problem-solving method.

Duration: 0 hrs 30 mins

### Checkpoint: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Graphs, Tables, and Equations

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 16 points

## LESSON 5: SOLVING PROBLEMS WITH TABLES AND GRAPHS

### Study: Solving Problems with Tables and Graphs

Set up tables and graphs and use them to organize information. Determine when to use tables and graphs to solve problems.

Duration: 0 hrs 30 mins

### Checkpoint: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Solving Problems with Tables and Graphs

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 16 points

## LESSON 6: VARIABLE EXPRESSIONS

### Study: Variable Expressions

Define and form variable expressions by performing operations.

Duration: 0 hrs 30 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Variable Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 18 points

## LESSON 7: SIMPLIFYING AND EVALUATING EXPRESSIONS

### Study: Simplifying and Evaluating Expressions

Simplify variable expressions by evaluating their numerical parts. Evaluate variable expressions by substituting values for  $x$ .

Duration: 0 hrs 40 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Simplifying and Evaluating Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 15 mins Scoring: 12 points

## LESSON 8: MATHEMATICAL SENTENCES

### Study: Mathematical Sentences

Learn about the types and parts of mathematical sentences. Learn about translating word problems into mathematical sentences.

Duration: 0 hrs 30 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Mathematical Sentences

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 9: SOLVING MATHEMATICAL SENTENCES

### Study: Solving Mathematical Sentences

Solve equations using the "guess-and-check" method. Define a solution set and compare solution sets of equations and inequalities.

Duration: 0 hrs 40 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Solving Mathematical Sentences

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 15 mins Scoring: 12 points

## LESSON 10: SOME GUIDELINES FOR PROBLEM SOLVING

### Study: Some Guidelines for Problem Solving

Use problem-solving tips to solve a problem. Develop a general strategy for solving problems.

Duration: 0 hrs 40 mins

### Quiz: Some Guidelines for Problem Solving

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 15 mins Scoring: 12 points

## LESSON 11: THE LANGUAGE OF ALGEBRA WRAP-UP

### Review: The Language of Algebra

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### Discuss: Using $X$ to Mark the Spot

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

### Test (CS): The Language of Algebra

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

### Test (TS): The Language of Algebra

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## UNIT 3: SOLVING EQUATIONS WITH FOUR BASIC OPERATIONS

### LESSON 1: SOLVING EQUATIONS GRAPHICALLY

#### Study: Solving Equations Graphically

Discover problem-solving strategies including isolating a variable and using tiles to represent values in word problems.

Duration: 0 hrs 30 mins

#### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

#### Quiz: Solving Equations Graphically

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 18 points

### LESSON 2: SOLVING EQUATIONS WITH LARGER NUMBERS

#### Study: Solving Equations with Larger Numbers

Translate English into number sentences and represent equations with a balanced scale.

Duration: 0 hrs 30 mins

#### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

#### Quiz: Solving Equations with Larger Numbers

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 18 points

### LESSON 3: SOLVING $x + a = b$

#### Study: Solving $x + a = b$

Practice solving equations in the form  $x + a = b$  by isolating the variable  $x$  on one side of the equation. Learn how to solve this type of equation when the value of  $a$  is positive or negative.

Duration: 0 hrs 30 mins

#### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Solving $x + a = b$

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 4: SOLVING WITH A NUMBER LINE

### Study: Solving with a Number Line

Plot points on a number line, moving to the left or right to solve equations.

Duration: 0 hrs 30 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

## LESSON 5: SOLVING INEQUALITIES

### Study: Solving Inequalities

Develop strategies to solve various forms of inequalities and display their solution set on a number line.

Duration: 0 hrs 30 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Solving Inequalities

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 16 points

## LESSON 6: SOLVING $AX = B$

### Study: Solving $ax = b$

Learn about setting up a table; writing an equation to express a pattern; isolating a variable; dividing by coefficient of a variable; and using a number line to solve equations in standard form.

Duration: 0 hrs 30 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Solving $ax = b$

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 7: SOLVING $x/a = b$

### Study: Solving $x/a = b$

Learn about solving division problems using multiplication.

Duration: 0 hrs 30 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Solving $x/a = b$

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 8: INEQUALITIES

### Study: Inequalities

Learn about solving inequalities by dividing by the coefficient of a variable. Learn about multiplying and dividing inequalities by negative numbers.

Duration: 0 hrs 30 mins

### **Checkpoint: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### **Quiz: Inequalities**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 9: VARIATIONS OF EQUATIONS AND INEQUALITIES**

### **Study: Variations of Equations and Inequalities**

Explore problems that take different forms, rearranging equations into  $x + a = b$  form (standard form) and solving inequalities in nonstandard form.

Duration: 0 hrs 30 mins

### **Checkpoint: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### **Quiz: Variations of Equations and Inequalities**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 10 points

## **LESSON 10: SOLVING MULTISTEP LINEAR EQUATIONS**

### **Study: Solving Multistep Linear Equations**

Solve multistep equations, including equations that have no solutions, one solution, or an infinite number of solutions. Write and solve equations that model real-world situations.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Solving Multistep Linear Equations**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### **Practice: Modeling: Multistep Linear Equations**

Model and solve a real-world problem.

Duration: 0 hrs 45 mins Scoring: 20 points

## **LESSON 11: LITERAL EQUATIONS**

### **Study: Literal Equations**

Learn how to solve literal equations, including formulas, for a particular variable.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Literal Equations**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 12: SOLVING EQUATIONS WITH FOUR BASIC OPERATIONS WRAP-UP**

### **Review: Solving Equations with Four Basic Operations**

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points



### **Discuss: Math — The Ultimate Balancing Act**

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

### **Test (CS): Solving Equations with Four Basic Operations**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

### **Test (TS): Solving Equations with Four Basic Operations**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## **UNIT 4: FUNCTIONS**

### **LESSON 1: DOMAIN AND RANGE**

#### **Study: Domain and Range**

Understand the meanings of the domain and range of a function. Use function notation and evaluate a function for a given value in its domain.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkup: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Domain and Range**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

#### **Journal: Domain and Range**

Construct arguments and critique the reasoning of others as you write about topics in algebra.

Duration: 0 hrs 45 mins Scoring: 20 points

### **LESSON 2: IDENTIFYING FUNCTIONS**

#### **Study: Identifying Functions**

Determine whether relations represented by graphs or tables of values are functions. Identify the domain and range of a function from an input-output table.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkup: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Identifying Functions**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### **LESSON 3: GRAPHS OF FUNCTIONS**

#### **Study: Graphs of Functions**

Determine the domain and range of a function from its graph. Identify sections where a graph is increasing, decreasing, or remaining constant.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkup: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Graphs of Functions**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### **Practice: Modeling: Graphs of Functions**

Model and solve a real-world problem.

Duration: 0 hrs 45 mins Scoring: 20 points

## **LESSON 4: ADDING AND SUBTRACTING FUNCTIONS**

### **Study: Adding and Subtracting Functions**

Learn how to add and subtract functions.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkup: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Adding and Subtracting Functions**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 5: FUNCTIONS WRAP-UP**

### **Review: Functions Practice Problems**

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Discuss: Relating to Functions**

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 40 mins Scoring: 20 points

### **Test (CS): Functions**

Take a computer-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

### **Test (TS): Functions**

Take a teacher-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

## **UNIT 5: SEMESTER 1 EXAM**

### **LESSON 1: SEMESTER 1 REVIEW AND EXAM**

#### **Review: Semester 1 Review**

Prepare for the semester exam by reviewing key concepts covered in Semester 1.

Duration: 1 hr

#### **Exam: Semester 1 Exam**

Exam covering the entire semester

Duration: 0 hrs 50 mins Scoring: 200 points

## **UNIT 6: USING LOGIC TO SOLVE PROBLEMS**

### **LESSON 1: BUILDING EQUATIONS**

#### **Study: Building Equations**

Learn about setting up an equation using information in a word problem and about choosing the correct operation(s).

Practice these skills using sample problems.

Duration: 0 hrs 25 mins

#### **Checkup: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

#### **Quiz: Building Equations**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 12 points

## LESSON 2: DEDUCTIVE REASONING

### Study: Deductive Reasoning

Learn the definition of deductive reasoning. Practice making conclusions and deducing which statements in a problem are true. Practice these skills using sample problems.

Duration: 0 hrs 25 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Deductive Reasoning

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 12 points

## LESSON 3: INDUCTIVE REASONING

### Study: Inductive Reasoning

Explore inductive reasoning and using induction to continue a pattern. Practice these skills using sample problems.

Duration: 0 hrs 25 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Inductive Reasoning

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 12 points

## LESSON 4: LOGIC PUZZLES

### Study: Logic Puzzles

Learn about organizing logic data in a grid and about direct and indirect information. Practice these skills using sample logic problems.

Duration: 0 hrs 25 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### Quiz: Logic Puzzles

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 12 points

## LESSON 5: PROBLEM SOLVING

### Study: Problem Solving

Learn strategies for solving a variety of application problems related to topics in this unit.

Duration: 0 hrs 25 mins

### Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins Scoring: 0 points

## LESSON 6: USING LOGIC TO SOLVE PROBLEMS WRAP-UP

### Review: Using Logic to Solve Problems

Review unit material in preparation for upcoming assessments.

Duration: 0 hrs 30 mins

### Test (CS): Using Logic to Solve Problems

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

### Test (TS): Using Logic to Solve Problems

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## UNIT 7: LINEAR EQUATIONS

### LESSON 1: SLOPE

#### Study: Slope

Learn how to find the slope of a line, define rise and run, and measure rates of change.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Slope

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

#### Journal: Slope

Construct arguments and critique the reasoning of others as you write about topics in algebra.

Duration: 0 hrs 45 mins Scoring: 20 points

### LESSON 2: SLOPE-INTERCEPT EQUATION OF A LINE

#### Study: Slope-Intercept Equation of a Line

Learn to use the slope and  $y$ -intercept of a line to write its slope-intercept equation. Understand the meaning of the slope and  $y$ -intercept in slope-intercept equations that model real-world situations.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Slope-Intercept Equation of a Line

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

#### Practice: Modeling: Slope-Intercept Equation of a Line

Model and solve a real-world problem.

Duration: 0 hrs 45 mins Scoring: 20 points

### LESSON 3: POINT-SLOPE EQUATION OF A LINE

#### Study: Point-Slope Equation of a Line

Write point-slope equations for lines given a point and the slope or two points. Rewrite point-slope equations in slope-intercept form.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Point-Slope Equation of a Line

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 4: PARALLEL AND PERPENDICULAR LINES

### Study: Parallel and Perpendicular Lines

Learn about parallel and perpendicular lines and the relationships between their slopes. Write equations for lines perpendicular and parallel to given lines.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Parallel and Perpendicular Lines

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 5: LINEAR INEQUALITIES

### Study: Linear Inequalities

Learn how to graph the half-planes that represent solutions for linear inequalities.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Linear Inequalities

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 6: LINEAR EQUATIONS WRAP-UP

### Review: Linear Equations Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### Discuss: A Slippery Slope

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 40 mins Scoring: 20 points

### Test (CS): Linear Equations

Take a computer-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

### Test (TS): Linear Equations

Take a teacher-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

## UNIT 8: SYSTEMS OF LINEAR EQUATIONS

### LESSON 1: TWO-VARIABLE SYSTEMS: GRAPHING

#### Study: Two-Variable Systems: Graphing

Use graphing to solve two-variable systems of linear equations. Explore what it means for a linear system to have no solution, one solution, or an infinite number of solutions.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Two-Variable Systems: Graphing

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 2: TWO-VARIABLE SYSTEMS: SUBSTITUTION

### Study: Two-Variable Systems: Substitution

Use substitution to solve two-variable systems of linear equations.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Two-Variable Systems: Substitution

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 3: TWO-VARIABLE SYSTEMS: ELIMINATION

### Study: Two-Variable Systems: Elimination

Use elimination to solve two-variable systems of linear equations.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Two-Variable Systems: Elimination

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### Journal: Two-Variable Systems: Elimination

Construct arguments and critique the reasoning of others as you write about topics in algebra.

Duration: 0 hrs 45 mins Scoring: 20 points

## LESSON 4: TWO-VARIABLE SYSTEMS OF INEQUALITIES

### Study: Two-Variable Systems of Inequalities

Use graphing to solve two-variable systems of linear inequalities. Use what you know about solving systems of inequalities to solve a real-world problem where there are constraints (limitations) that restrict your options.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Two-Variable Systems of Inequalities

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### Practice: Modeling: Two-Variable Systems of Inequalities

Model and solve a real-world problem.

Duration: 0 hrs 45 mins Scoring: 20 points

## LESSON 5: SYSTEMS OF LINEAR EQUATIONS WRAP-UP

### Review: Systems of Linear Equations Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### Discuss: What's the Solution?

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 40 mins Scoring: 20 points

### Test (CS): Systems of Linear Equations

Take a computer-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

### **Test (TS): Systems of Linear Equations**

Take a teacher-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

## **UNIT 9: EXPONENTS AND EXPONENTIAL FUNCTIONS**

### **LESSON 1: DEFINITIONS AND EXAMPLES OF EXPONENTS**

#### **Study: Definitions and Examples of Exponents**

Learn the definitions of base exponent power and exponential expression. Learn to use a table to illustrate real-world applications of exponents.

Duration: 0 hrs 40 mins

#### **Checkpoint: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

#### **Quiz: Definitions and Examples of Exponents**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 2: EXPONENTS AND THE ORDER OF OPERATIONS**

#### **Study: Exponents and the Order of Operations**

Learn about evaluating expressions with exponents using the order of operations.

Duration: 0 hrs 40 mins

#### **Checkpoint: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

#### **Quiz: Exponents and the Order of Operations**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 3: LAWS OF EXPONENTS**

#### **Study: Laws of Exponents**

Learn about the multiplication law of exponents with positive and negative exponents; the rule for negative exponents; the division law of exponents; raising products and fractions to a power; and the power rule of exponents.

Duration: 0 hrs 40 mins

#### **Checkpoint: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

#### **Quiz: The Multiplication Law of Exponents**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 4: SQUARE ROOTS**

#### **Study: Square Roots**

Learn about fractional exponents; principal square roots; square roots of positive numbers; perfect squares; and negative square roots vs. square roots of negative numbers.

Duration: 0 hrs 40 mins

#### **Checkpoint: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### **Quiz: Square Roots**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 5: RADICAL NOTATION**

### **Study: Radical Notation**

Learn about radical signs and radicands. Explore laws of exponents that apply to radicals.

Duration: 0 hrs 40 mins

### **Checkpoint: Practice Problems**

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

### **Quiz: Radical Notation**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 6: EXPONENTIAL FUNCTIONS**

### **Study: Exponential Functions**

Define an exponential function and explore applications of exponential functions, such as exponential growth and decay. Interpret the parts of an exponential expression that represents a real-world context.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Exponential Functions**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### **Practice: Modeling: Exponential Functions**

Model and solve a real-world problem.

Duration: 0 hrs 45 mins Scoring: 20 points

## **LESSON 7: GRAPHS OF EXPONENTIAL FUNCTIONS**

### **Study: Graphs of Exponential Functions**

Learn about graphs of exponential functions with different bases. Identify the domain, range and  $y$ -intercept of an exponential function from its equation and from its graph. Use graphs to evaluate exponential functions for given  $x$ -values.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Graphs of Exponential Functions**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### **Journal: Graphs of Exponential Functions**

Construct arguments and critique the reasoning of others as you write about topics in algebra.

Duration: 0 hrs 45 mins Scoring: 20 points

## **LESSON 8: EXPONENTS AND EXPONENTIAL FUNCTIONS WRAP-UP**

### **Review: Exponents and Exponential Functions Practice Problems**

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points



**Discuss: Exponential Potential**

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 40 mins Scoring: 20 points

**Test (CS): Exponents and Exponential Functions**

Take a computer-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

**Test (TS): Exponents and Exponential Functions**

Take a teacher-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

**UNIT 10: UNDOING FUNCTIONS AND MOVING THEM AROUND****LESSON 1: PARENT FUNCTIONS****Study: Parent Functions**

Learn about the properties and graphs of linear parent functions, quadratic parent functions, absolute value parent functions, and step functions.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Parent Functions**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

**LESSON 2: SHIFTING FUNCTIONS****Study: Shifting Functions**

Learn about shifting graphs of functions up/down and left/right by changing the coordinates of each ordered pair. Learn about changing the equation of a function to shift its graph vertically or horizontally and about combining vertical and horizontal shifts.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Shifting Functions**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

**LESSON 3: STRETCHING AND COMPRESSING FUNCTIONS****Study: Stretching and Compressing Functions**

Learn about stretching or compressing a function's graph by multiplying by a constant, flipping the graph by multiplying by a negative constant, and combining stretches with shifts.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Stretching and Compressing Functions**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

**LESSON 4: T TRANSFORMATIONS OF PARENT FUNCTIONS****Study: Transformations of Parent Functions**

Learn how to perform vertical and horizontal shifts, stretches, and compressions, and any combination of these transformations, on parent functions.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Transformations of Parent Functions**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 5: UNDOING FUNCTIONS AND MOVING THEM AROUND WRAP-UP**

### **Review: Undoing Functions and Moving Them Around Practice Problems**

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Discuss: Transformation Station**

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 40 mins Scoring: 20 points

### **Test (CS): Undoing Functions and Moving Them Around**

Take a computer-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

### **Test (TS): Undoing Functions and Moving Them Around**

Take a teacher-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

## **UNIT 11: SEQUENCES AND FUNCTIONS**

### **LESSON 1: ARITHMETIC SEQUENCES**

#### **Study: Arithmetic Sequences**

Learn about arithmetic sequences, explicit and recursive formulas, and finding the next term in a sequence.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Arithmetic Sequences**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

#### **Journal: Arithmetic Sequences**

Construct arguments and critique the reasoning of others as you write about topics in algebra.

Duration: 0 hrs 45 mins Scoring: 20 points

### **LESSON 2: GEOMETRIC SEQUENCES**

#### **Study: Geometric Sequences**

Explore geometric sequences as sets of numbers in which the ratio between any two consecutive numbers is a constant. Compare how the recursive formula and the explicit formula allow you to find the value of any term in a geometric sequence.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Geometric Sequences

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### Practice: Modeling: Geometric Sequences

Model and solve a real-world problem.

Duration: 0 hrs 45 mins Scoring: 20 points

## LESSON 3: UNDERSTANDING NUMBER SEQUENCES

### Study: Understanding Number Sequences

Learn about applications and models of arithmetic, geometric, and special sequences.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Understanding Number Sequences

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 4: EXPONENTIAL AND LINEAR GROWTH

### Study: Exponential and Linear Growth

Learn about the connections between linear and exponential functions and arithmetic and geometric sequences.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Exponential and Linear Growth

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 5: SEQUENCES AND FUNCTIONS WRAP-UP

### Review: Sequences and Functions Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### Discuss: What's the Difference?

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 40 mins Scoring: 20 points

### Test (CS): Sequences and Functions

Take a computer-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

### Test (TS): Sequences and Functions

Take a teacher-scored test to check what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

## UNIT 12: SEMESTER 2 EXAM

### LESSON 1: SEMESTER 2 REVIEW AND EXAM

#### Review: Semester 2 Review

Prepare for the semester exam by reviewing key concepts covered in Semester 2.

Duration: 1 hr

#### Exam: Semester 2 Exam

Exam covering the entire semester

Duration: 0 hrs 50 mins Scoring: 200 points