Algebra II provides a curriculum that builds on the concepts covered in Algebra I. Through a "Discovery-Confirmation-Practice"-based exploration of intermediate algebra, students are challenged to work toward a mastery of computational skills, to deepen their understanding of key ideas and solution strategies, and to extend their knowledge in a variety of problem-solving applications.

Course topics include conic sections; functions, relations, and their graphs; quadratic functions; inverse functions; and advanced polynomial functions. Students also cover topics relating to rational, radical, exponential, and logarithmic functions; sequences and series; and data analysis and probability.

Within each Algebra II lesson, students are supplied with a scaffolded note-taking guide, called a Study Sheet, as well as a post-study Checkup activity that provides them the opportunity to hone their computational skills by working through a low-stakes, 10-question problem set before moving on to a formal assessment. Unit-level Algebra II assessments include a computer-scored test and a scaffolded, teacher-scored test.

The content is based on the National Council of Teachers of Mathematics (NCTM) standards and is aligned with state standards.

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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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 UNITS

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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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

Checkup: 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