Algebra I focuses on the mastery of critical skills and the recognition and understanding of key algebraic concepts. Through a "Discovery-Confirmation-Practice"-based exploration of these concepts, students are challenged to strengthen their computational skills, to deepen their understanding of key ideas and solution strategies, and to extend their knowledge through a variety of problem-solving applications.

Course topics include solving equations and inequalities; linear, exponential, and quadratic functions; transformations of functions; systems of linear equations; sequences, polynomials and factoring; bivariate data and regression.

This course supports all students as they develop computational fluency, deepen conceptual understanding, and apply mathematical process standards. Students begin each lesson by discovering new concepts through guided instruction, and then confirm their understanding in an interactive, feedback-rich environment. Modeling activities equip students with tools for analyzing a variety of real-world scenarios and mathematical ideas. Journaling activities allow students to reason abstractly and quantitatively, construct arguments, critique reasoning, and communicate precisely.

This course is built to the TEKS Algebra I Standards.

Length: Two Semesters

UNIT 1: FOUNDATIONS OF ALGEBRA

LESSON 1: ALGEBRAIC PROPERTIES AND EXPRESSIONS

Study: Algebraic Properties and Expressions
Use the order of operations to evaluate expressions, identify and combine like terms, and simplify expressions with radicals.
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: Algebraic Properties and Expressions
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 2: WRITING EXPRESSIONS AND EQUATIONS

Study: Writing Expressions and Equations
Translate verbal descriptions to mathematical expressions, write expressions to model real-world situations, and evaluate expressions using algebraic properties.
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: Writing Expressions and Equations
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Journal: Writing Expressions and Equations
Construct arguments and critique the reasoning of others as you write about topics in algebra.
Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 3: SOLVING LINEAR EQUATIONS

Study: Solving Linear Equations
Review how to isolate the variable and solve simple equations with addition, subtraction, multiplication, and division.
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 Linear Equations
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Practice: Modeling: Solving Linear Equations
Model and solve a real-world problem.
Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 4: FOUNDATIONS OF ALGEBRA WRAP-UP

Review: Foundations of Algebra Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 40 mins Scoring: 0 points

Discuss: Using X to Mark the Spot
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 50 mins Scoring: 20 points

Test (CS): Foundations of Algebra
Take a computer-scored test to check what you have learned in this unit.
Duration: 0 hrs 50 mins Scoring: 50 points

Test (TS): Foundations of Algebra
Take a teacher-scored test to check what you have learned in this unit.
Duration: 0 hrs 50 mins Scoring: 50 points

UNIT 2: SOLVING EQUATIONS AND INEQUALITIES

LESSON 1: 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 50 mins Scoring: 20 points

LESSON 2: SOLVING LINEAR INEQUALITIES

Study: Solving Linear Inequalities
Solve multistep inequalities, including those that involve combining like terms.
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 Linear Inequalities
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Journal: Solving Linear Inequalities
Construct arguments and critique the reasoning of others as you write about topics in algebra.
Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 3: 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 4: PERFORMANCE TASK: PROBLEM SOLVING WITH INEQUALITIES

Study: Problem Solving with Inequalities
Learn strategies for solving a variety of application problems related to topics in this unit.
Duration: 0 hrs 45 mins Scoring: 0 points

Project: Performance Task: A Trade Show Booth
Use your knowledge, skills, and resources to make sense of and persevere in solving a real-world problem.
Duration: 2 hrs Scoring: 80 points

LESSON 5: SOLVING EQUATIONS AND INEQUALITIES WRAP-UP

Review: Solving Equations and Inequalities Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 40 mins Scoring: 0 points

Discuss: In Your Own Words
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 50 mins Scoring: 20 points

Test (CS): Solving Equations and Inequalities
Take a computer-scored test to check what you have learned in this unit.
Duration: 0 hrs 50 mins Scoring: 50 points

Test (TS): Solving Equations and Inequalities
Take a teacher-scored test to check what you have learned in this unit.
Duration: 0 hrs 50 mins Scoring: 50 points

UNIT 3: 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. Interpret and use mapping diagrams.
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 50 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 and a set of ordered pairs.
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: FINDING DOMAIN AND RANGE FROM A GRAPH

Study: Finding Domain and Range from a Graph
Determine the domain and range of a function from its graph. Find domains and ranges for discrete and continuous functions 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: Finding Domain and Range from a Graph
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Practice: Modeling: Finding Domain and Range from a Graph
Model and solve a real-world problem.
Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 4: FUNCTIONS WRAP-UP

Review: Functions Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 40 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 50 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 4: LINEAR FUNCTIONS

LESSON 1: SLOPE

Study: Slope

Define rise and run and learn how to find the slope of a line from a graph or the coordinates of two points on the line.

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

LESSON 2: DIRECT VARIATION AND RATE OF CHANGE

Study: Direct Variation and Rate of Change

Learn about a type of relationship in functions called direct variation. Understand that the slope of a line represents a rate of change. Find the rate of change of a linear function from its graph, a table, or an equation.

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: Direct Variation and Rate of Change

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

Duration: 0 hrs 25 mins Scoring: 20 points

Journal: Direct Variation and Rate of Change

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

Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 3: REPRESENTING LINEAR FUNCTIONS: SLOPE-INTERCEPT FORM

Study: Representing Linear Functions: Slope-Intercept Form

Understand the definitions of *x*- and *y*-intercepts. Learn to use the slope and *y*-intercept of a line to write its slope-intercept equation. Learn the connection between the zeros of a function and its *x*-intercept(s). 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: Representing Linear Functions: Slope-Intercept Form

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

Duration: 0 hrs 25 mins Scoring: 20 points

Practice: Modeling: Slope-Intercept Form

Model and solve a real-world problem.

Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 4: REPRESENTING LINEAR FUNCTIONS: POINT-SLOPE AND STANDARD FORMS

Study: Representing Linear Functions: Point-Slope and Standard Forms

Write point-slope equations for lines, given a point and the slope or two points. Rewrite point-slope equations in slope-intercept form and standard form. Learn how to determine whether a point is on a line.

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: Representing Linear Functions: Point-Slope and Standard Forms
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 5: PARALLEL AND PERPENDICULAR LINES

Study: Parallel and Perpendicular Lines
Learn about parallel and perpendicular lines and the relationship between their slopes. Write equations for lines perpendicular and parallel to given lines. Find equations of lines parallel to the *x*- and *y*-axes.
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 6: LINEAR INEQUALITIES

Study: Linear Inequalities
Learn how to graph the half planes that represent solutions to linear inequalities. Understand when the boundary line should be dashed and when it should be solid.
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 7: LINEAR FUNCTIONS WRAP-UP

Review: Linear Functions Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 40 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 50 mins Scoring: 20 points

Test (CS): Linear 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): Linear 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: SYSTEMS OF LINEAR EQUATIONS

LESSON 1: SOLVING TWO-VARIABLE SYSTEMS: GRAPHING

Study: Solving 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: Solving 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: SOLVING TWO-VARIABLE SYSTEMS: SUBSTITUTION

Study: Solving 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: Solving 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: SOLVING TWO-VARIABLE SYSTEMS: ELIMINATION

Study: Solving 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: Solving 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: Solving Two-Variable Systems: Elimination
Construct arguments and critique the reasoning of others as you write about topics in algebra.
Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 4: SOLVING TWO-VARIABLE SYSTEMS OF INEQUALITIES

Study: Solving 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 50 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 40 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 50 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 6: EXPONENTIAL FUNCTIONS

LESSON 1: EXPONENTS

Study: Exponents
Evaluate exponential expressions. Use laws of exponents to rewrite exponential expressions, including those with rational exponents, and to rewrite radicals using fractional exponents. Understand negative exponents and exponents of zero.
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: Exponents
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 2: REPRESENTING EXPONENTIAL FUNCTIONS

Study: Representing Exponential Functions
Define an exponential function and explore applications of exponential functions, such as exponential growth and decay. Use exponential expressions to model real-world contexts.
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: Representing 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 50 mins Scoring: 20 points

LESSON 3: GRAPHING EXPONENTIAL FUNCTIONS

Study: Graphing Exponential Functions
Learn about graphs of exponential functions with different bases. Identify the domain, range, asymptote, 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: Graphing Exponential Functions
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Journal: Graphing Exponential Functions
Construct arguments and critique the reasoning of others as you write about topics in algebra.
Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 4: EXPONENTIAL FUNCTIONS WRAP-UP

Review: Exponential Functions Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 40 mins Scoring: 0 points

Discuss: Exponential Potential
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 50 mins Scoring: 20 points

Test (CS): 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): 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 7: SEMESTER 1 EXAM

LESSON 1: SEMESTER 1 EXAM

Review: Semester 1 Exam
Prepare for the final exam by reviewing key concepts and skills.
Duration: 0 hrs 40 mins Scoring: 0 points

Exam: Semester 1 Exam
Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in Semester 1.
Duration: 1 hr Scoring: 200 points

UNIT 8: 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 50 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 50 mins Scoring: 20 points

LESSON 3: APPLICATION OF NUMBER SEQUENCES

Study: Application of 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: Application of Number Sequences

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

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 4: SEQUENCES AND FUNCTIONS WRAP-UP

Review: Sequences and Functions Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 40 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 50 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 9: POLYNOMIALS

LESSON 1: ADDING AND SUBTRACTING POLYNOMIALS

Study: Adding and Subtracting Polynomials

Learn how to add and subtract polynomials by collecting like terms. Practice adding and subtracting polynomials both vertically and horizontally.

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 Polynomials
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 2: MULTIPLYING BINOMIALS

Study: Multiplying Binomials
Learn how to multiply binomials and how to simplify the result by combining like terms.
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: Multiplying Binomials
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Practice: Modeling: Multiplying Binomials
Model and solve a real-world problem.
Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 3: MULTIPLYING POLYNOMIALS

Study: Multiplying Polynomials
Extend the use of the distributive property to multiply polynomials with more than two terms. Use a table to organize the multiplication of polynomials. Practice multiplying polynomials horizontally and vertically.
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: Multiplying Polynomials
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Journal: Multiplying Polynomials
Construct arguments and critique the reasoning of others as you write about topics in algebra.
Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 4: DIVIDING POLYNOMIALS

Study: Dividing Polynomials
Learn how to do long division with polynomials. Find out how to divide polynomials with missing terms and divide polynomials with remainders.
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: Dividing Polynomials
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 5: POLYNOMIALS WRAP-UP

Review: Polynomials Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 40 mins Scoring: 0 points

Discuss: FOILed Again

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

Duration: 0 hrs 50 mins Scoring: 20 points

Test (CS): Polynomials

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

Duration: 0 hrs 50 mins Scoring: 50 points

Test (TS): Polynomials

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

Duration: 0 hrs 50 mins Scoring: 50 points

UNIT 10: FACTORING POLYNOMIALS

LESSON 1: GCF AND FACTORING BY GROUPING

Study: GCF and Factoring by Grouping

Explore the similarities between factoring numbers and polynomials. Learn how to identify the greatest common factor (GCF) of the terms of a polynomial, and how to use grouping to factor polynomials.

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: GCF and Factoring by Grouping

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

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 2: FACTORING $x^2 + bx + c$

Study: Factoring $x^2 + bx + c$

Learn the definition of a quadratic trinomial. Learn how to factor quadratic trinomials when the coefficient of the *x*-squared term is 1.

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: Factoring $x^2 + bx + c$

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

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 3: FACTORING $ax^2 + bx + c$

Study: Factoring $ax^2 + bx + c$

Learn how to factor quadratic trinomials with leading coefficients other than 1.

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: Factoring $ax^2 + bx + c$

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

Duration: 0 hrs 25 mins Scoring: 20 points

Practice: Modeling: Factoring $ax^2 + bx + c$

Model and solve a real-world problem.

Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 4: SPECIAL CASES

Study: Special Cases

Learn how to work with special cases of factoring. Learn definitions for a perfect square trinomial and a difference of two squares. Practice using strategies that will help you factor each of these special cases.

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: Special Cases

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

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 5: FACTORING AND GRAPHING

Study: Factoring and Graphing

Compare *x*-intercepts, zeros, roots, and linear factors. Identify the roots of a polynomial. Use the intercepts of the graph of a function to identify the roots and factors of a related equation and vice versa. Understand that a quadratic function may have 0, 1, or 2 real zeros.

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: Factoring and Graphing

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

Duration: 0 hrs 25 mins Scoring: 20 points

Journal: Factoring and Graphing

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

Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 6: FACTORING POLYNOMIALS WRAP-UP

Review: Factoring Polynomials Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 40 mins Scoring: 0 points

Discuss: Just the Factors

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

Duration: 0 hrs 50 mins Scoring: 20 points

Test (CS): Factoring Polynomials

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

Duration: 0 hrs 50 mins Scoring: 50 points

Test (TS): Factoring Polynomials

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

Duration: 0 hrs 50 mins Scoring: 50 points

UNIT 11: QUADRATIC EQUATIONS AND FUNCTIONS

LESSON 1: RADICAL EXPRESSIONS

Study: Radical Expressions

Learn the definition of *radical expression*. Explore simplifying the products and quotients of radicals and simplifying individual radicals.

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: Radical Expressions
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 2: SOLVING QUADRATIC EQUATIONS: FACTORING AND SQUARE ROOTS

Study: Solving Quadratic Equations: Factoring and Square Roots
Learn to solve quadratics in the form $x^2 = b$ by taking square roots. Use the zero product property to solve quadratic equations by factoring. Learn about standard form and rewrite quadratic equations in that 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: Solving Quadratic Equations: Factoring and Square Roots
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Practice: Modeling: Factoring and Square Roots
Model and solve a real-world problem.
Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 3: SOLVING QUADRATIC EQUATIONS: COMPLETING THE SQUARE

Study: Solving Quadratic Equations: Completing the Square
Learn the definition for a special case of factoring called completing the square. Explore the steps to complete a square and practice solving quadratic equations by using this way of factoring. Learn about vertex form and ways to identify a quadratic function given specific features of the function.
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 Quadratic Equations: Completing the Square
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Journal: Solving Quadratic Equations: Completing the Square
Construct arguments and critique the reasoning of others as you write about topics in algebra.
Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 4: SOLVING QUADRATIC EQUATIONS: QUADRATIC FORMULA

Study: Solving Quadratic Equations: Quadratic Formula
Learn the quadratic formula and see how it can be used to solve quadratic equations. Understand that the discriminant can be used to determine whether a quadratic equation has 0, 1, or 2 real 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: Solving Quadratic Equations: Quadratic Formula
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 5: GRAPHING QUADRATIC FUNCTIONS

Study: Graphing Quadratic Functions

Graph quadratic functions. Relate factors of a quadratic function to its graph and its corresponding *x*-intercepts. Locate the vertex of a quadratic function graphically and algebraically. Use the graph of a quadratic function to write its equation. Understand vertex form and use it to identify the vertex of a quadratic function.

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: Graphing Quadratic Functions

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

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 6: PERFORMANCE TASK: PRICING FOR PROFIT

Study: The Headphones Problem

Use what you have learned about graphing polynomials to solve a real-world business problem.

Duration: 0 hrs 45 mins Scoring: 0 points

Project: Your Dog-Walking Business

Use your knowledge, skills, and resources to make sense of and persevere in solving a real-world problem.

Duration: 2 hrs Scoring: 80 points

LESSON 7: QUADRATIC EQUATIONS AND FUNCTIONS WRAP-UP

Review: Quadratic Equations and Functions Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 40 mins Scoring: 0 points

Discuss: All Squared Away

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

Duration: 0 hrs 50 mins Scoring: 20 points

Test (CS): Quadratic Equations 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): Quadratic Equations 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: TRANSFORMATIONS OF FUNCTIONS

LESSON 1: SHIFTING QUADRATIC FUNCTIONS

Study: Shifting Quadratic Functions

Learn about shifting graphs of quadratic 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 Quadratic Functions

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

Duration: 0 hrs 25 mins Scoring: 20 points

Journal: Shifting Quadratic Functions

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

Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 2: STRETCHING, COMPRESSING, AND REFLECTING QUADRATIC FUNCTIONS

Study: Stretching, Compressing, and Reflecting Quadratic Functions
Learn about stretching or compressing a quadratic function's graph by multiplying by a constant, flipping the graph by multiplying by a negative constant, and combining stretches with shifts. Reflect a function across the *x*- or *y*-axis.
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, Compressing, and Reflecting Quadratic Functions
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Practice: Modeling: Stretching, Compressing, and Reflecting Quadratic Functions
Model and solve a real-world problem.
Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 3: TRANSFORMATIONS OF LINEAR FUNCTIONS

Study: Transformations of Linear Functions
Learn how to perform vertical and horizontal shifts, stretches, compressions, and any combination of these transformations, on linear 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 Linear 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 FUNCTIONS WRAP-UP

Review: Transformations of Functions Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 40 mins Scoring: 0 points

Discuss: Transformation Station
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 50 mins Scoring: 20 points

Test (CS): Transformations of 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): Transformations of Functions
Take a teacher-scored test to check what you have learned in this unit.
Duration: 0 hrs 50 mins Scoring: 50 points

UNIT 13: DATA MODELING

LESSON 1: TWO-VARIABLE DATA AND SCATTERPLOTS

Study: Two-Variable Data and Scatterplots
Create scatterplots for bivariate data and recognize positive and negative correlations. Use a calculator to find correlation coefficients, and understand what the result says about the strength of the correlation. Know that correlation does not imply causation.
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 Data and Scatterplots

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 2: FITTING LINEAR MODELS TO DATA

Study: Fitting Linear Models to Data

Find equations for best-fit lines (regression equations) by estimation and by using a calculator. Use regression equations to make predictions. Understand whether a linear model is appropriate.

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: Fitting Linear Models to Data

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

Practice: Modeling: Fitting Linear Models to Data

Model and solve a real-world problem.

Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 3: NONLINEAR MODELS

Study: Nonlinear Models

Learn how to apply nonlinear (quadratic or exponential) regression to find an appropriate model for a data set.

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: Nonlinear Models

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

Journal: Nonlinear Models

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

Duration: 0 hrs 50 mins Scoring: 20 points

LESSON 4: DATA MODELING WRAP-UP

Review: Data Modeling Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 40 mins Scoring: 0 points

Discuss: The Latest Model

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

Duration: 0 hrs 50 mins Scoring: 20 points

Test (CS): Data Modeling

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

Duration: 0 hrs 50 mins Scoring: 50 points

Test (TS): Data Modeling

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

Duration: 0 hrs 50 mins Scoring: 50 points

UNIT 14: SEMESTER 2 EXAM

LESSON 1: SEMESTER 2 EXAM

Review: Semester 2 Exam

Prepare for the final exam by reviewing key concepts and skills.

Duration: 0 hrs 40 mins Scoring: 0 points

Exam: Semester 2 Exam

Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in Semester 2.

Duration: 1 hr Scoring: 200 points