Algebra I builds students' command of linear, quadratic, and exponential relationships. Students learn through discovery and application, developing the skills they need to break down complex challenges and demonstrate their knowledge in new situations.

Course topics include problem-solving with basic equations and formulas; measurement; an introduction to functions and problem solving; linear equations and systems of linear equations; exponents and exponential functions; sequences and functions; descriptive statistics; polynomials and factoring; quadratic equations and functions; and function transformations and inverses.

This course supports all students as they develop computational fluency, deepen conceptual understanding, and apply Common Core's eight mathematical practice skills. 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. Performance tasks prepare students to synthesize their knowledge in novel, real-world scenarios and require that they make sense of multifaceted problems and persevere in solving them. Throughout the course students are evaluated through a diversity of assessments specifically designed to prepare them for the content, form, and depth of the Common Core assessments.

This course is aligned with the Common Core State Standards for Mathematics.

Length: Two semesters

UNIT 1: SOLVING BASIC EQUATIONS

LESSON 1: TYPES OF NUMBERS

Study: Types of Numbers
Learn about different types of real numbers, including exponents, decimals, and percents. Compare numbers of different types and formats using a number line.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Types of Numbers
Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Rational and Irrational Numbers
Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: VARIABLES AND PROBLEM SOLVING

Study: Variables and Problem Solving
Review what a variable is, and how to form and use variable expressions to solve problems.
LESSON 3: SOLVING MATHEMATICAL SENTENCES

Study: Solving Mathematical Sentences
Use the guess-and-check method to solve equations. Define a solution set and compare solution sets of equations and inequalities.
*Duration: 0 hrs 35 mins Scoring: 0 points*

Checkup: Practice Problems
Check your understanding of the lesson.
*Duration: 0 hrs 25 mins Scoring: 0 points*

Quiz: Solving Mathematical Sentences
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

LESSON 4: SOME GUIDELINES FOR PROBLEM-SOLVING

Study: Some Guidelines for Problem-Solving
Use problem-solving tips to solve a word problem. Develop a general strategy for solving word problems.
*Duration: 0 hrs 35 mins Scoring: 0 points*

Quiz: Some Guidelines for Problem-Solving
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

LESSON 5: SOLVING WITH ADDITION AND SUBTRACTION

Study: Solving with Addition and Subtraction
Review how to isolate the variable and solve simple equations and inequalities with addition or subtraction.
*Duration: 0 hrs 35 mins Scoring: 0 points*

Checkup: Practice Problems
Check your understanding of the lesson.
*Duration: 0 hrs 25 mins Scoring: 0 points*

Quiz: Solving Equations with Addition and Subtraction
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

Quiz: Solving Inequalities with Addition and Subtraction
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

LESSON 6: SOLVING EQUATIONS WITH MULTIPLICATION AND DIVISION
LESSON 6: SOLVING EQUATIONS WITH MULTIPLICATION AND DIVISION

Study: Solving Equations with Multiplication and Division
Review how to isolate the variable and solve simple equations with multiplication or division.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Solving Equations with Multiplication
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Solving Equations with Division
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 7: SOLVING INEQUALITIES WITH MULTIPLICATION AND DIVISION

Study: Solving Inequalities with Multiplication and Division
Review how to isolate the variable and solve simple inequalities with multiplication or division.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Solving Inequalities with Multiplication and Division
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 8: SOLVING WITH ROOTS AND POWERS

Study: Solving with Roots and Powers
Learn how to solve equations with roots and powers.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Solving with Roots and Powers
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Solving Inequalities with Roots and Powers
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Finding Solution Sets with Inequalities
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 9: SOLVING MULTISTEP LINEAR EQUATIONS

Study: Solving Multistep Linear Equations
Review the strategy for isolating variables in multistep equations. Explore equations that have zero, one, or
infinite solutions.

**Checkup: Practice Problems**
Check your understanding of the lesson.
**Duration: 0 hrs 25 mins Scoring: 0 points**

**Quiz: Basic Collecting of Like Terms**
Take a quiz to check your understanding of what you have learned.
**Duration: 0 hrs 20 mins Scoring: 20 points**

**Quiz: Advanced Collecting of Like Terms**
Take a quiz to check your understanding of what you have learned.
**Duration: 0 hrs 20 mins Scoring: 20 points**

**Quiz: Finding Number of Solution Sets**
Take a quiz to check your understanding of what you have learned.
**Duration: 0 hrs 20 mins Scoring: 20 points**

**Practice: Modeling: Multistep Linear Equations**
Use tools to model and solve a real-world problem.
**Duration: 0 hrs 30 mins Scoring: 20 points**

**LESSON 10: SOLVING LITERAL EQUATIONS AND FORMULAS**

**Study: Solving Literal Equations and Formulas**
Learn how to solve literal equations for one variable.
**Duration: 0 hrs 35 mins Scoring: 0 points**

**Checkup: Practice Problems**
Check your understanding of the lesson.
**Duration: 0 hrs 25 mins Scoring: 0 points**

**Quiz: Solving Literal Equations and Formulas**
Take a quiz to check your understanding of what you have learned.
**Duration: 0 hrs 20 mins Scoring: 20 points**

**Journal: Solving Literal Equations and Formulas**
Construct arguments and critique the reasoning of others as you write about topics in algebra.
**Duration: 0 hrs 30 mins Scoring: 20 points**

**LESSON 11: PERFORMANCE TASK: PROBLEM SOLVING WITH EQUATIONS**

**Study: Problem Solving with Equations**
Learn strategies for solving a variety of application problems related to topics in this unit.
**Duration: 0 hrs 35 mins**

**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: 120 points**

**LESSON 12: SOLVING BASIC EQUATIONS WRAP-UP**

**Checkup: Solving Basic Equations Practice Problems**
Check your understanding of the topics in this unit.
**Duration: 0 hrs 25 mins Scoring: 0 points**

**Review: Solving Basic Equations**

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Get ready for the unit test by reviewing important ideas and skills.  
*Duration: 0 hrs 30 mins Scoring: 0 points*

**Test (CS): Solving Basic Equations**  
Take a computer-scored test to check what you have learned in this unit.  
*Duration: 0 hrs 40 mins Scoring: 50 points*

**Test (TS): Solving Basic Equations**  
Take a teacher-scored test to check what you have learned in this unit.  
*Duration: 0 hrs 30 mins Scoring: 50 points*

**UNIT 2: MEASUREMENT**

**LESSON 1: CONVERTING UNITS**

**Study: Converting Units**  
Learn how to use a special case of multiplication by 1 to cancel out units and change one unit of measurement to another.  
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**  
Check your understanding of the lesson.  
*Duration: 0 hrs 25 mins Scoring: 0 points*

**Quiz: Canceling Units**  
Take a quiz to check your understanding of what you have learned.  
*Duration: 0 hrs 20 mins Scoring: 20 points*

**Quiz: Converting Units**  
Take a quiz to check your understanding of what you have learned.  
*Duration: 0 hrs 20 mins Scoring: 20 points*

**Journal: Converting Units**  
Construct arguments and critique the reasoning of others as you write about topics in algebra.  
*Duration: 0 hrs 30 mins Scoring: 20 points*

**LESSON 2: ESTIMATION AND SCALE**

**Study: Estimation and Scale**  
Learn about the scale of numbers, order of magnitude, powers of 10, and Fermi problems.  
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**  
Check your understanding of the lesson.  
*Duration: 0 hrs 25 mins Scoring: 0 points*

**Quiz: Estimation and Scale**  
Take a quiz to check your understanding of what you have learned.  
*Duration: 0 hrs 20 mins Scoring: 20 points*

**LESSON 3: PRECISION IN MEASUREMENT**

**Study: Precision in Measurement**  
Explore the ideas of precision and accuracy in measurement. Define, locate, and practice using significant figures in addition, subtraction, multiplication, and division problems.  
*Duration: 0 hrs 35 mins Scoring: 0 points*
LESSON 4: MEASUREMENT WRAP-UP

Checkup: Measurement Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

Review: Measurement
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Measurement
Take a computer-scored test to check what you have learned in this unit.
Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Measurement
Take a teacher-scored test to check what you have learned in this unit.
Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 3: FUNCTIONS

LESSON 1: WHEN ONE THING DEPENDS ON ANOTHER

Study: When One Thing Depends on Another
Learn the definition of a function and explore examples of functions in the world around you.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: When One Thing Depends on Another
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: FUNCTION NOTATION

Study: Function Notation
Use variables to name functions, and learn about a special type of language called function notation.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
LESSON 3: INPUT-OUTPUT MACHINES

Study: Input-Output Machines
Learn how to describe functions by their domain and range. Work with input-output diagrams.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

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

LESSON 4: DOMAIN AND RANGE

Study: Domain and Range
Learn about mapping diagrams, locating domain and range on mapping diagram and estimating the domain and range of functions.

Duration: 0 hrs 35 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 20 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 30 mins Scoring: 20 points

LESSON 5: FUNCTIONS AND TABLES

Study: Functions and Tables
Learn to use input-output tables to describe and define functions.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points
Quiz: Functions and Tables
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: FUNCTIONS AND GRAPHS

Study: Functions and Graphs
Learn to identify the domain and range of a function from ordered pairs and the graph of a function. Use the vertical line test to evaluate functions.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Graphs, Domain, and Range
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Functions and Relations
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 7: LINEAR AND NONLINEAR FUNCTIONS

Study: Linear and Nonlinear Functions
Learn about linear and nonlinear functions.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Linear and Nonlinear Functions
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 8: LINEAR AND EXPONENTIAL GROWTH

Study: Linear and Exponential Growth
Learn to identify the graphs of linear and nonlinear functions, use the horizontal line test to evaluate functions, and explore special functions.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Linear and Exponential Growth
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Linear and Exponential Growth
Use tools to model and solve a real-world problem.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 9: FUNCTIONS AND FORMULAS
**Study: Functions and Formulas**
Learn to use an algebraic rule or formula to describe and define functions.
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**
Check your understanding of the lesson.
*Duration: 0 hrs 25 mins Scoring: 0 points*

**Quiz: Functions and Formulas**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**Study: Solving the Profit Problem**
Use what you know about functions, as well as information given in tables, graphs, and formulas, to solve a business problem.
*Duration: 0 hrs 35 mins Scoring: 0 points*

**LESSON 10: ARITHMETIC OF FUNCTIONS**

**Study: Arithmetic of Functions**
Learn how to add, subtract, multiply, divide, and compose functions.
*Duration: 0 hrs 35 mins*

**Checkup: Lessons Learned**
Complete a set of practice problems on the arithmetic of functions.
*Duration: 0 hrs 25 mins*

**Quiz: Arithmetic of Functions**
Take a quiz to assess your understanding of the material.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**LESSON 11: FUNCTIONS WRAP-UP**

**Checkup: Functions Practice Problems**
Check your understanding of the topics in this unit.
*Duration: 0 hrs 25 mins Scoring: 0 points*

**Review: Functions**
Get ready for the unit test by reviewing important ideas and skills.
*Duration: 0 hrs 30 mins Scoring: 0 points*

**Test (CS): Functions**
Take a computer-scored test to check what you have learned in this unit.
*Duration: 0 hrs 40 mins Scoring: 50 points*

**Test (TS): Functions**
Take a teacher-scored test to check what you have learned in this unit.
*Duration: 0 hrs 30 mins Scoring: 50 points*

**UNIT 4: LINEAR EQUATIONS**

**LESSON 1: PATTERNS AND LINES**

**Study: Patterns and Lines**
Learn about a type of relationship in functions called direct variation. Explore the connection between the equation of a line and points on its graph. Find the equation of a line by looking at the coordinates of its points.

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LESSON 2: SLOPE

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

Checkup: Practice Problems
Check your understanding of the lesson.

Quiz: Finding Slopes of Lines
Take a quiz to check your understanding of what you have learned.

Quiz: Positive, Negative, and Undefined Slopes
Take a quiz to check your understanding of what you have learned.

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

LESSON 3: SLOPE-INTERCEPT EQUATION OF A LINE

Study: Slope-Intercept Equation of a Line
Learn to use slope and the y-intercept of a given line to find its slope-intercept equation.

Checkup: Practice Problems
Check your understanding of the lesson.

Quiz: Finding Slope-Intercept Equations of Lines
Take a quiz to check your understanding of what you have learned.

Practice: Modeling: Slope-Intercept Equation of a Line
Use tools to model and solve a real-world problem.

LESSON 4: POINT-SLOPE EQUATION OF A LINE

Study: Point-Slope Equation of a Line
Learn how to find the y-intercept of a line when given its slope and another point on the line. Learn about the point-slope equation of a line and the standard form of an equation.
Checkup: Practice Problems
Check your understanding of the lesson.
*Duration: 0 hrs 25 mins*  
*Scoring: 0 points*

**Quiz: Finding the Point-Slope Equation**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins*  
*Scoring: 20 points*

**Quiz: Finding the Equations of Lines**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins*  
*Scoring: 20 points*

**LESSON 5: PARALLEL AND PERPENDICULAR LINES**

**Study: Parallel and Perpendicular Lines**
Learn about parallel and perpendicular lines and the relationships between their slopes.
*Duration: 0 hrs 35 mins*  
*Scoring: 0 points*

**Checkup: Practice Problems**
Check your understanding of the lesson.
*Duration: 0 hrs 25 mins*  
*Scoring: 0 points*

**Quiz: Slopes of Parallel and Perpendicular Lines**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins*  
*Scoring: 20 points*

**LESSON 6: LINEAR INEQUALITIES**

**Study: Linear Inequalities**
Learn how to find and graph solution sets for linear inequalities.
*Duration: 0 hrs 35 mins*  
*Scoring: 0 points*

**Checkup: Practice Problems**
Check your understanding of the lesson.
*Duration: 0 hrs 25 mins*  
*Scoring: 0 points*

**Quiz: Graphs of Inequalities**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins*  
*Scoring: 20 points*

**Study: Solving the Lighting Problem**
Learn how to use linear inequalities to solve a real-world problem about the best use of energy to light a building.
*Duration: 0 hrs 35 mins*  
*Scoring: 0 points*

**LESSON 7: LINEAR EQUATIONS WRAP-UP**

**Checkup: Linear Equations Practice Problems**
Check your understanding of the topics in this unit.
*Duration: 0 hrs 25 mins*  
*Scoring: 0 points*

**Review: Linear Equations**
Get ready for the unit test by reviewing important ideas and skills.
*Duration: 0 hrs 30 mins*  
*Scoring: 0 points*

**Test (CS): Linear Equations**
Take a computer-scored test to check what you have learned in this unit.
UNIT 5: SYSTEMS OF LINEAR EQUATIONS

LESSON 1: TWO-VARIABLE SYSTEMS: GRAPHING

Study: Two-Variable Systems: Graphing
Learn how to use graphing to solve two-variable systems of linear equations. Explore what it means to have zero, one, or infinite solutions.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Solving with Graphing
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: TWO-VARIABLE SYSTEMS: SUBSTITUTION

Study: Two-Variable Systems: Substitution
Learn how to use substitution to solve two-variable systems of linear equations.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Solving with Substitution
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: TWO-VARIABLE SYSTEMS: ELIMINATION

Study: Two-Variable Systems: Elimination
Learn how to use elimination to solve two-variable systems of linear equations.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Solving with Elimination -- Standard Form
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Solving with Elimination -- Nonstandard Form
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Two-Variable Systems: Elimination
Construct arguments and critique the reasoning of others as you write about topics in algebra.
LESSON 4: TWO-VARIABLE SYSTEMS: MATRICES

Study: Two-Variable Systems: Matrices
Learn how to set up and use a matrix to solve two-variable systems of linear equations.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Reading and Using Matrices
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Solving with a Matrix
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: TWO-VARIABLE SYSTEMS OF INEQUALITIES

Study: Two-Variable Systems of Inequalities
Learn how to use graphing to solve two-variable systems of linear inequalities. Use what you know about solving systems of inequalities to solve a real-world farming problem.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Solving Systems of Inequalities
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Solving Systems with More Than Two Inequalities
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Solving Systems with More Than Two Inequalities
Use tools to model and solve a real-world problem.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 6: SYSTEMS OF LINEAR EQUATIONS WRAP-UP

Checkup: Systems of Linear Equations Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

Review: Systems of Linear Equations
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Systems of Linear Equations
Take a computer-scored test to check what you have learned in this unit.
Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Systems of Linear Equations
UNIT 6: EXPONENTS AND EXPONENTIAL FUNCTIONS

LESSON 1: EXPONENTS

Study: Exponents
Review exponents and their place in the order of operations. Learn ways to evaluate exponential expressions. Learn about fractional and decimal exponents, radical notation, square roots, and scientific notation.

Checkup: Practice Problems
Check your understanding of the lesson.

Quiz: Exponential Expressions
Take a quiz to check your understanding of what you have learned.

Quiz: Operations with Radicals
Take a quiz to check your understanding of what you have learned.

LESSON 2: EXPONENTIAL FUNCTIONS

Study: Exponential Functions
Define the standard form of an exponential function and explore a variety of its applications, such as exponential growth and decay (in the forms of doubling time and half-life), as well as compound interest. Compare compound interest to continuously compounded interest using the irrational number \( e \).

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.

Quiz: Evaluating Exponential Functions
Take a quiz to check your understanding of what you have learned.

Quiz: Calculating Exponential Growth
Take a quiz to check your understanding of what you have learned.

LESSON 3: EXAMPLES AND APPLICATIONS OF EXPONENTIAL FUNCTIONS

Study: Examples and Applications of Exponential Functions
Explore case studies in exponential growth and decay and logarithmic growth.

Practice: Modeling: Valuable Coins
Use tools to model and solve a real-world problem.

LESSON 4: GRAPHS OF EXPONENTIAL FUNCTIONS

Study: Graphs of Exponential Functions
Learn about the shape of graphs of exponential functions with various bases and about finding the domain and range of exponential functions.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to 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 20 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 30 mins Scoring: 20 points

LESSON 5: EXPONENTS AND EXPONENTIAL FUNCTIONS WRAP-UP

Checkup: Exponents and Exponential Functions Practice Problems
Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Exponents and Exponential Functions
Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Exponents and Exponential Functions
Take a computer-scored test to check what you have learned in this unit.

Duration: 0 hrs 40 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 30 mins Scoring: 50 points

UNIT 7: ALGEBRA I SEMESTER 1 EXAM

LESSON 1: ALGEBRA I SEMESTER 1 EXAM

Review: Algebra I Semester 1 Exam
Prepare for the final exam by reviewing key concepts and skills.

Duration: 0 hrs 20 mins Scoring: 0 points

Exam: Algebra I Semester 1 Exam
Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in Algebra I Semester 1.

Duration: 0 hrs 50 mins Scoring: 200 points

UNIT 8: SEQUENCES AND FUNCTIONS

LESSON 1: FINDING PATTERNS

Study: Finding Patterns
Learn about image, letter, and number patterns, and about finding the next term.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.
LESSON 2: ARITHMETIC SEQUENCES

Study: Arithmetic Sequences
Learn about arithmetic sequences, explicit and recursive formulas, and finding the next term in a sequence.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to 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 20 mins Scoring: 20 points

Quiz: Rules for Arithmetic Sequences
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 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 30 mins Scoring: 20 points

LESSON 3: 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. Explore the graphs of geometric sequences as exponential curves.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to 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 20 mins Scoring: 20 points

Quiz: Formulas for Geometric Sequences
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Geometric Sequences
Use tools to model and solve a real-world problem.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 4: APPLICATIONS OF NUMBER SEQUENCES
Study: Applications of Number Sequences
Learn about applications and models of arithmetic, geometric, and special sequences.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Applications of Arithmetic Sequences
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Applications of Geometric Sequences
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Applications of Other Sequences
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Study: Simple and Compound Interest
Learn about simple and compound interest.
Duration: 0 hrs 35 mins Scoring: 0 points

LESSON 5: SEQUENCES AND FUNCTIONS WRAP-UP

Checkup: Sequences and Functions Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

Review: Sequences and Functions
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Sequences and Functions
Take a computer-scored test to check what you have learned in this unit.
Duration: 0 hrs 40 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 30 mins Scoring: 50 points

UNIT 9: DESCRIPTIVE STATISTICS

LESSON 1: NUMERICAL DATA

Study: Numerical Data
Learn how to construct and interpret stem-and-leaf plots, histograms, and dot plots along with comparative stem-and-leaf and dot plots.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Numerical Data
Take a quiz to assess your understanding of the material.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**Practice: Modeling: Numerical Data**
Use tools to model and solve a real-world problem.
*Duration: 0 hrs 30 mins Scoring: 20 points*

**LESSON 2: MEASURES OF CENTER**

**Study: Measures of Center**
Learn how to calculate and interpret measures of center, such as mean, median, and mode.
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**
Complete a set of practice problems to check your understanding of the lesson.
*Duration: 0 hrs 25 mins Scoring: 0 points*

**Quiz: Measures of Center**
Take a quiz to assess your understanding of the material.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**LESSON 3: MEASURES OF SPREAD**

**Study: Measures of Spread**
Learn how to calculate and interpret variance, standard deviation, range, interquartile range, and outliers.
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**
Complete a set of practice problems to check your understanding of the lesson.
*Duration: 0 hrs 25 mins Scoring: 0 points*

**Quiz: Measures of Spread**
Take a quiz to assess your understanding of the material.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**LESSON 4: BOX PLOTS**

**Study: Box Plots**
Learn how to calculate and interpret box plots, comparative box plots, and modified box plots.
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**
Complete a set of practice problems to check your understanding of the lesson.
*Duration: 0 hrs 25 mins Scoring: 0 points*

**Quiz: Box Plots**
Take a quiz to assess your understanding of the material.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**LESSON 5: DESCRIBING DISTRIBUTIONS**

**Study: Describing Distributions**
Learn how to describe distributions using measures of center, shape, and spread for single and comparative data sets.
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Describing Distributions**
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

**Journal: Describing Distributions**
Construct arguments and critique the reasoning of others as you write about topics in algebra.
Duration: 0 hrs 30 mins Scoring: 20 points

**LESSON 6: TWO-VARIABLE DATA**

**Study: Two-Variable Data**
Investigate two-variable data sets through concepts such as explanatory and response variables, scatterplot correlation, least squares regression, and residuals.
Duration: 0 hrs 35 mins Scoring: 0 points

**Checkup: Practice Problems**
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Scatterplots and Correlation**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

**Quiz: Least Squares Regression**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

**Study: Least Squares Regression Lines**
Investigate two-variable data concepts such as scatterplots, least squares regression lines, best-fit lines, and residuals.
Duration: 0 hrs 35 mins Scoring: 0 points

**Study: Reading the Headlines**
Take a closer look at news headlines for claims of correlation and causation.
Duration: 0 hrs 35 mins Scoring: 0 points

**LESSON 7: DESCRIPTIVE STATISTICS WRAP-UP**

**Checkup: Descriptive Statistics Practice Problems**
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

**Review: Descriptive Statistics**
Prepare for the unit test by reviewing key concepts and skills.
Duration: 0 hrs 20 mins Scoring: 0 points

**Test (CS): Descriptive Statistics**
Take a computer-scored test to assess what you have learned in this unit.
Duration: 0 hrs 40 mins Scoring: 50 points

**Test (TS): Descriptive Statistics**
Take a teacher-scored test to assess what you have learned in this unit.
Duration: 0 hrs 30 mins Scoring: 50 points

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UNIT 10: POLYNOMIALS

LESSON 1: WHAT IS A POLYNOMIAL?

Study: What Is a Polynomial?
Learn the definitions for monomials, polynomials, constants, terms, coefficients, binomials, trinomials, and degree. Learn how to find the degree of polynomials.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

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

Quiz: Degrees of Polynomials (Advanced)
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: ADDING AND SUBTRACTING POLYNOMIALS

Study: Adding and Subtracting Polynomials
Learn how tiles can be used to add or subtract like terms in polynomials. Practice adding and subtracting polynomials.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Polynomial Addition with Tiles
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

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

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

LESSON 3: MULTIPLYING BINOMIALS

Study: Multiplying Binomials
Learn how tiles can be used to multiply linear binomials. Practice using the distributive property and the FOIL method to multiply two binomials.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Finding Products of Binomials
Take a quiz to check your understanding of what you have learned.
Lesson 4: Multiplying Polynomials

Study: Multiplying Polynomials
Use a table to begin learning how to multiply polynomials. Explore how polynomials can be multiplied vertically and horizontally.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

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

Quiz: Polynomial Multiplication (Advanced)
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 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 30 mins Scoring: 20 points

Lesson 5: 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 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Polynomial Long Division
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Lesson 6: Graphing Polynomials

Study: Graphing Polynomials
Learn how to graph polynomial equations. Explore why these graphs are always continuous curves. Identify parts of the graph, such as extreme values (maximum and minimum) and roots.
Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Finding Extreme Values
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Finding Roots of Graphs
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

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

LESSON 7: PERFORMANCE TASK: PRICING FOR PROFIT

Study: The Radio Problem
Use what you have learned about graphing polynomials to solve a real-world business problem.
Duration: 0 hrs 35 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: 120 points

LESSON 8: POLYNOMIALS WRAP-UP

Checkup: Polynomials Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

Review: Polynomials
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 20 mins Scoring: 0 points

Test (CS): Polynomials
Take a computer-scored test to check what you have learned in this unit.
Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Polynomials
Take a teacher-scored test to check what you have learned in this unit.
Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 11: FACTORING OF POLYNOMIALS

LESSON 1: WHY FACTOR?

Study: Why Factor?
Explore the similarities between factoring numbers and polynomials. Learn the definitions for reducible polynomials, composite numbers, and the zero-product rule.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Lesson 2: Factoring with Tiles

Study: Factoring with Tiles
Review how to use tiles to find the factors of a polynomial.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

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

Practice: Modeling: Factoring with Tiles
Use tools to model and solve a real-world problem.
Duration: 0 hrs 30 mins Scoring: 20 points

Lesson 3: Factoring and Graphing

Study: Factoring and Graphing
Compare roots and linear factors. Identify the roots of a polynomial. Explore what it means for a polynomial to have one root or no roots.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Factoring by Graphing
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Factoring by Graphing (Advanced)
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Lesson 4: Grouping

Study: Grouping
Find the greatest common factor (GCF) in a polynomial. Use the grouping method to factor one or more GCFs out of a polynomial.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Factoring by Grouping
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points
Quiz: Finding GCFs of Polynomials
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: FACTORING $X^2 + BX + C$

Study: Factoring $x^2 + bx + c$
Learn the definitions for quadratic trinomials and leading coefficients. Learn how to factor quadratic trinomials with leading coefficients of 1.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Binomial Factors of Trinomials
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

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

LESSON 6: 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 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Factoring Trinomials (Basic)
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Factoring Trinomials (Advanced)
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Factoring $ax^2 + bx + c$
Construct arguments and critique the reasoning of others as you write about topics in algebra.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 7: SPECIAL CASES

Study: Special Cases
Learn how to work with special cases of factoring. Learn definitions for a perfect square trinomial, a difference of two squares, and a sum or difference of cubes. Practice using strategies that will help you factor each of these special cases.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points
Lesson 8: Factoring of Polynomials Wrap-Up

Checkup: Factoring of Polynomials Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

Review: Factoring of Polynomials
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Factoring of Polynomials
Take a computer-scored test to check what you have learned in this unit.
Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Factoring of Polynomials
Take a teacher-scored test to check what you have learned in this unit.
Duration: 0 hrs 30 mins Scoring: 50 points

Unit 12: Quadratic Equations and Functions

Lesson 1: Parabolas

Study: Parabolas
Learn about finding a parabola's equation from its graph; the effect of the squared variable's coefficient on the parabola's orientation and shape; equations of parabolas with vertices at points other than the origin; vertex form and standard form of an equation for a parabola; and converting between vertex form and standard form.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Parabolas with Vertices at the Origin
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Parabolas with Vertices Not at the Origin
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Converting Parabolic Equations
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Lesson 2: Solving Quadratic Equations
**Study: Solving Quadratic Equations**
Compare quadratic and nonquadratic equations. Learn how to solve quadratic equations by using factoring and the zero-product rule.
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**
Check your understanding of the lesson.
*Duration: 0 hrs 25 mins Scoring: 0 points*

**Quiz: Factoring with the Zero-Product Rule**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**Quiz: Converting Quadratics to Standard Form**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**Quiz: Quadratics with Perfect Square Trinomials**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**LESSON 3: COMPLETING THE SQUARE**

**Study: 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.
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**
Check your understanding of the lesson.
*Duration: 0 hrs 25 mins Scoring: 0 points*

**Quiz: Completing the Square**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**Quiz: Completing the Square (Advanced)**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**Journal: Completing the Square**
Construct arguments and critique the reasoning of others as you write about topics in algebra.
*Duration: 0 hrs 30 mins Scoring: 20 points*

**LESSON 4: THE QUADRATIC FORMULA**

**Study: The Quadratic Formula**
Learn the definitions for the quadratic formula, imaginary numbers, complex numbers, and discriminants. Explore how the quadratic formula works and practice using it to factor quadratic equations.
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**
Check your understanding of the lesson.
*Duration: 0 hrs 25 mins Scoring: 0 points*

**Quiz: Complex Numbers and Discriminants**
LESSON 5: GRAPHS OF QUADRATIC FUNCTIONS

Study: Graphs of Quadratic Functions
Relate factors of a quadratic function to the graph of a parabola and its corresponding x-intercepts. Locate the vertex of a quadratic function graphically and algebraically. Use the discriminant of the quadratic formula to identify the number and types of solutions to a given quadratic equation, as well as to visualize its corresponding graph.

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.

Quiz: Graphs of Quadratic Functions
Take a quiz to check your understanding of what you have learned.

Quiz: Working with the Discriminant
Take a quiz to check your understanding of what you have learned.

LESSON 6: NONLINEAR SYSTEMS OF EQUATIONS

Study: Nonlinear Systems of Equations
Learn about solution sets for nonlinear systems of equations, solving nonlinear systems of equations using the substitution method, choosing which variable to isolate, substituting a squared variable, and determining the number of solutions. Explore a human-cannonball case study.

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.

Quiz: Nonlinear Systems of Equations
Take a quiz to check your understanding of what you have learned.

LESSON 7: LINEAR, QUADRATIC, AND EXPONENTIAL MODELS

Study: Linear, Quadratic, and Exponential Models
Identify and compare linear, quadratic, and exponential functions and write functions that model real-world situations.

Checkup: Practice Problems
Check your understanding of the lesson.

Quiz: Linear, Quadratic, and Exponential Models
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

**Practice: Modeling: Animal Populations**
Use tools to model and solve a real-world problem.
Duration: 0 hrs 30 mins Scoring: 20 points

**LESSON 8: QUADRATIC EQUATIONS AND FUNCTIONS WRAP-UP**

**Checkup: Quadratic Equations and Functions Practice Problems**
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

**Review: Quadratic Equations and Functions**
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

**Test (CS): Quadratic Equations and Functions**
Take a computer-scored test to check what you have learned in this unit.
Duration: 0 hrs 40 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 30 mins Scoring: 50 points

**UNIT 13: UNDOING FUNCTIONS AND MOVING THEM AROUND**

**LESSON 1: INVERSES**

**Study: Inverses**
Learn about undoing functions, mapping diagrams of inverse functions, and finding the equations for inverse functions.
Duration: 0 hrs 35 mins Scoring: 0 points

**Checkup: Practice Problems**
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Inverses with Variables x and y**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

**Quiz: Inverses with Other Variables**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

**LESSON 2: GRAPHS OF INVERSES**

**Study: Graphs of Inverses**
Learn how to convert the graph of a given function to the graph of its inverse by swapping coordinates of all ordered pairs. Use mapping diagrams, horizontal line tests, and the concept of symmetry across the line \( y = x \) to determine if the inverse of a given function is also a function.
Duration: 0 hrs 35 mins Scoring: 0 points

**Checkup: Practice Problems**
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points
**Quiz: Graphs of Inverses**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**LESSON 3: PARENT FUNCTIONS**

**Study: Parent Functions**
Learn about the properties and graphs of linear parent functions, quadratic parent functions, absolute value parent functions, and reciprocal parent functions.
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**
Complete a set of practice problems to 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 20 mins Scoring: 20 points*

**LESSON 4: 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 35 mins Scoring: 0 points*

**Checkup: Practice Problems**
Complete a set of practice problems to check your understanding of the lesson.
*Duration: 0 hrs 25 mins Scoring: 0 points*

**Quiz: Shifting Functions Vertically**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**Quiz: Shifting Functions Horizontally**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**Quiz: Shifting Functions Vertically and Horizontally**
Take a quiz to check your understanding of what you have learned.
*Duration: 0 hrs 20 mins Scoring: 20 points*

**Journal: Shifting Functions**
Construct arguments and critique the reasoning of others as you write about topics in algebra.
*Duration: 0 hrs 30 mins Scoring: 20 points*

**LESSON 5: STRETCHING FUNCTIONS VERTICALLY**

**Study: Stretching Functions Vertically**
Learn about vertically stretching or compressing a function's graph by multiplying by a constant; flipping the graph by multiplying by a negative constant; and combining vertical stretches with vertical or horizontal shifts.
*Duration: 0 hrs 35 mins Scoring: 0 points*

**Checkup: Practice Problems**
Complete a set of practice problems to check your understanding of the lesson.
*Duration: 0 hrs 25 mins Scoring: 0 points*
Quiz: Stretching Functions Vertically
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Stretching Functions Vertically
Use tools to model and solve a real-world problem.
Duration: 0 hrs 30 mins Scoring: 20 points

Study: Solving the Ball-Tossing Problem
Learn about shifting and stretching graphs and using inverses and about how to apply these methods to the real-world problem of tossing a ball. Learn about using average velocity as an estimate of instantaneous velocity.
Duration: 0 hrs 35 mins Scoring: 0 points

LESSON 6: TRANSFORMATION OF PARENT FUNCTIONS

Study: Transformation of Parent Functions
Learn how to perform vertical shifts, horizontal shifts, vertical stretches and compressions, horizontal stretches and compressions, and any combination of these transformations on parent functions.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Transformation of Parent Functions
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 7: UNDOING FUNCTIONS AND MOVING THEM AROUND WRAP-UP

Checkup: Undoing Functions and Moving Them Around Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

Review: Undoing Functions and Moving Them Around
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 20 mins Scoring: 0 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 40 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 30 mins Scoring: 50 points

UNIT 14: ALGEBRA I SEMESTER 2 EXAM

LESSON 1: ALGEBRA I SEMESTER 2 EXAM

Review: Algebra I Semester 2 Exam
Prepare for the final exam by reviewing key concepts and skills.
Duration: 0 hrs 20 mins Scoring: 0 points

Exam: Algebra I Semester 2 Exam

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

*Duration: 0 hrs 50 mins Scoring: 200 points*