

Mathematics I builds students' command of geometric knowledge and linear 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 relationships between quantities; linear and exponential relationships; reasoning with equations; descriptive statistics; congruence, proof, and constructions; and connecting algebra and geometry through coordinates.

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 built for 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.

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: Variable Expressions

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

Duration: 0 hrs 20 mins Scoring: 20 points

### **Quiz: Mathematical Sentences**

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

Duration: 0 hrs 20 mins Scoring: 20 points

## **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**

### **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

### **Checkpoint: 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

### **Checkpoint: 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.

Duration: 0 hrs 35 mins Scoring: 0 points

### **Checkpoint: 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

**Checkpoint: 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****Checkpoint: 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**

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

**Checkpoint: 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

**Checkpoint: 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

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Precision and Accuracy**

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

Duration: 0 hrs 20 mins Scoring: 20 points

**Quiz: Significant Figures**

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

Duration: 0 hrs 20 mins Scoring: 20 points

**Practice: Modeling: Precision in Measurement**

Use tools to model and solve a real-world problem.

Duration: 0 hrs 30 mins Scoring: 20 points

**LESSON 4: MEASUREMENT WRAP-UP****Checkpoint: 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

#### **Checkpoint: 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

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

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Translating to Function Notation**

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### **Quiz: Function Notation for Specific Amounts**

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### **Quiz: Naming Functions**

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

Duration: 0 hrs 20 mins Scoring: 20 points

### **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

#### **Checkpoint: 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

**Checkpoint: 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

**Checkpoint: 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

**Checkpoint: 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

**Checkpoint: 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

### **Checkpoint: 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

### **Checkpoint: 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

### **Checkpoint: 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**

### **Checkpoint: 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. Graph a line using a chart of its 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: Finding Equations of Lines as Solutions

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

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: SLOPE

#### Study: Slope

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

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 Slopes of Lines

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### Quiz: Positive, Negative, and Undefined Slopes

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### Journal: Slope

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: 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.

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 Slope-Intercept Equations of Lines

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

Duration: 0 hrs 20 mins Scoring: 20 points

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

Use tools to model and solve a real-world problem.

Duration: 0 hrs 30 mins Scoring: 20 points

#### LESSON 4: GRAPHING AND MANIPULATING $Y = MX + B$

##### Study: Graphing and Manipulating $y = mx + b$

Practice graphing and manipulating linear equations in the form  $y = mx + b$ .

Duration: 0 hrs 35 mins Scoring: 0 points

##### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

##### Quiz: Graphing and Manipulating $y = mx + b$

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### LESSON 5: 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.

Duration: 0 hrs 35 mins Scoring: 0 points

##### Checkpoint: 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 6: 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

##### Checkpoint: 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 7: LINEAR INEQUALITIES

##### Study: Linear Inequalities

Learn how to find and graph solution sets for linear inequalities.

Duration: 0 hrs 35 mins Scoring: 0 points

##### Checkpoint: 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.

## LESSON 8: LINEAR EQUATIONS WRAP-UP

### Checkpoint: 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.

Duration: 0 hrs 40 mins Scoring: 56 points

### Test (TS): Linear Equations

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

Duration: 0 hrs 30 mins Scoring: 50 points

## 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

#### Checkpoint: 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

#### Checkpoint: 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

#### Checkpoint: 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.

Duration: 0 hrs 30 mins Scoring: 20 points

## **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

### **Checkpoint: 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

### **Checkpoint: 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**

### **Checkpoint: 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**

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

Duration: 0 hrs 30 mins Scoring: 50 points

## **UNIT 6: 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

#### **Checkpoint: 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

#### **Checkpoint: 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

#### **Checkpoint: 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

#### **Checkpoint: 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

### **Checkpoint: 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

### **Checkpoint: 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**

### **Checkpoint: 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

## **UNIT 7: MATHEMATICS I SEMESTER 1 EXAM**

### **LESSON 1: MATHEMATICS I SEMESTER 1 EXAM**

#### **Review: Mathematics I Semester 1**

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

Duration: n/a Scoring: 0 points

#### **Exam: Mathematics I Semester 1**

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

Duration: 0 hrs 50 mins Scoring: 200 points

## **UNIT 8: 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.

Duration: 0 hrs 35 mins Scoring: 0 points

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

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Exponential Expressions**

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### **Quiz: Operations with Radicals**

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

Duration: 0 hrs 20 mins Scoring: 20 points

### **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  $e$ .

Duration: 0 hrs 35 mins Scoring: 0 points

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

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Evaluating Exponential Functions**

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### **Quiz: Calculating Exponential Growth**

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

Duration: 0 hrs 20 mins Scoring: 20 points

### 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.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Practice: Modeling: Examples and Applications of Exponential Functions

Use tools to model and solve a real-world problem.

Duration: 0 hrs 30 mins Scoring: 20 points

### 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: LINEAR AND EXPONENTIAL MODELS

#### Study: Linear and Exponential Models

Learn how to use linear and exponential equations as models.

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: Linear and Exponential Models

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

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 6: 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: 56 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 9: 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.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Finding Patterns

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

Duration: 0 hrs 20 mins Scoring: 20 points

### Quiz: Letter and Number Patterns

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

Duration: 0 hrs 20 mins Scoring: 20 points

## 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.

## 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 10: FOUNDATIONS OF GEOMETRY

### LESSON 1: INDUCTION: THE SEARCH FOR RULES AND PATTERNS

#### Study: Induction: The Search for Rules and Patterns

Learn about looking for patterns, making conjectures, cross-referencing to history and science, real-world examples of inductive reasoning, building a triangle, and examples of symmetry.

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: Induction: The Search for Rules and Patterns

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

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 2: DEDUCTION: MAKING A CASE

### Study: Deduction: Making a Case

Learn about the definition of deductive reasoning; postulates and conditional statements; and using deductive reasoning in proofs. Explore a real-world example of deducing that deals with the combination of a lock.

Duration: 0 hrs 35 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Deduction: Making a Case

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

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 3: THE LOOK AND LANGUAGE OF LOGIC

### Study: The Look and Language of Logic

Explore examples of geometric reasoning. Learn about converses, inverses, and contrapositives of conditional statements.

Duration: 0 hrs 35 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: The Look and Language of Logic

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

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 4: INTRODUCTION TO PROOFS

### Study: Introduction to Proofs

Learn about postulates and axioms, givens, proof by contradiction (indirect proof), theorems and corollaries, and the axiomatic method.

Duration: 0 hrs 35 mins Scoring: 0 points

### Quiz: Introduction to Proofs

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

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 5: BASIC POSTULATES IN GEOMETRY

### Study: Basic Postulates in Geometry

Learn about the relationship of rays, lines, and angles to direction; the definition of a line; notation for rays and lines; building and defining an angle (including its vertex and sides); conventions for naming angles; and straight and zero angles.

Duration: 0 hrs 35 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Basic Postulates in Geometry

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

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 6: PLANES AND THE SPACE OF GEOMETRY

### Study: Planes and the Space of Geometry

Learn about dimensionality, collinear points, two-dimensional objects, the geometric plane, the flat plane, postulate coplanar objects, and three-dimensional objects (solids).

Duration: 0 hrs 35 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Planes and the Space of Geometry**

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

Duration: 0 hrs 20 mins Scoring: 20 points

**Practice: Modeling: Logo Design**

Use your knowledge of location, direction, and angles to model and solve a real-world problem.

Duration: 0 hrs 30 mins Scoring: 20 points

**LESSON 7: INTERSECTING LINES AND PROOFS****Study: Intersecting Lines and Proofs**

Learn about intersections that form vertical angles; the vertical angle theorem; perpendicular lines, rays, and segments; distance and length; and perpendicular bisectors.

Duration: 0 hrs 35 mins Scoring: 0 points

**Checkpoint: Practice Problems and Proofs**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Intersecting Lines and Proofs**

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

Duration: 0 hrs 20 mins Scoring: 20 points

**LESSON 8: PARALLEL LINES AND PROOFS****Study: Parallel Lines and Proofs**

Learn about skew lines, coplanar lines that do not intersect, parallel line notation, transversals and corresponding angles, alternate interior angles, consecutive interior angles, and parallel line theorems.

Duration: 0 hrs 35 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Parallel Lines and Proofs**

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

Duration: 0 hrs 20 mins Scoring: 20 points

**Journal: Consecutive Angle Theorem**

Use what you know about lines and angles to critique the reasoning of others and prove a theorem.

Duration: 0 hrs 30 mins Scoring: 20 points

**Study: Solving the Mirror Problem**

Learn about applying theorems from this unit to the problem of measuring light reflected off a mirror. Learn about the law of reflection.

Duration: 0 hrs 35 mins Scoring: 0 points

**LESSON 9: FOUNDATIONS OF GEOMETRY WRAP-UP****Checkpoint: Foundations of Geometry Practice Problems**

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

**Review: Foundations of Geometry**

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

**Test (CS): Foundations of Geometry**

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

Duration: 0 hrs 40 mins Scoring: 50 points

### **Test (TS): Foundations of Geometry**

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

Duration: 0 hrs 30 mins Scoring: 50 points

## **UNIT 11: TRIANGLES**

### **LESSON 1: WHAT IS A TRIANGLE?**

#### **Study: What Is a Triangle?**

Learn about the definition and parts of a triangle; opposite and included figures; naming and sorting triangles; equilateral, isosceles, and scalene triangles; and the triangle inequality theorem.

Duration: 0 hrs 35 mins Scoring: 0 points

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

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Naming Triangles by Angle Measures**

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### **Quiz: Naming Triangles by Side Lengths**

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### **Quiz: The Triangle Inequality Theorem**

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

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 2: THE ANGLES OF A TRIANGLE**

#### **Study: The Angles of a Triangle**

Explore the angle sum theorem and third angle theorem for triangles. Investigate the relationship between a given triangle's vertex and its exterior and remote interior angles.

Duration: 0 hrs 35 mins Scoring: 0 points

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

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Angle Theorems**

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### **Quiz: Exterior and Remote Interior Angles**

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

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 3: CONGRUENCE**

#### **Study: Congruence**

Learn about congruence, transformations of triangles, corresponding triangles, notation for writing congruence statements, and the CPCTC triangle congruence theorem.

Duration: 0 hrs 35 mins Scoring: 0 points

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

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Congruent Triangles**

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

Duration: 0 hrs 20 mins Scoring: 20 points

### **Quiz: Properties of Congruence**

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

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 4: CONGRUENCE POSTULATES**

### **Study: Congruence Postulates**

Learn about postulates including the SSS, SAS, ASA, and AAS theorems.

Duration: 0 hrs 35 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Using Congruence Postulates**

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

Duration: 0 hrs 20 mins Scoring: 20 points

### **Quiz: The AAS Theorem**

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

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 5: SIMILAR TRIANGLES**

### **Study: Similar Triangles**

Learn about similarity versus congruence, testing for similarity among triangles, proportionality, the definition of similar triangles, and scale factor.

Duration: 0 hrs 35 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Similar Triangles**

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

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 6: SIMILARITY THEOREMS AND PROPORTIONAL REASONING**

### **Study: Similarity Theorems and Proportional Reasoning**

Learn about the ASA similarity postulate, the SSS similarity theorem, and the SAS similarity theorem.

Duration: 0 hrs 35 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Similarity Theorems**

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

Duration: 0 hrs 20 mins Scoring: 20 points

### **Practice: Modeling: Similarity Theorems**

Use your knowledge of similarity to model and solve a real-world problem.

Duration: 0 hrs 30 mins Scoring: 20 points

## **LESSON 7: PERFORMANCE TASK: THE PARALLAX PROBLEM**

### **Study: The Parallax Problem**

Learn to apply the concepts of congruence, similarity, ratio, and proportion to the solution of a real-world parallax

problem.

Duration: 0 hrs 35 mins Scoring: 0 points

### **Project: Performance Task: The Parallax Problem**

Apply the concepts of congruence, similarity, ratio, and proportion to solve a real-world problem.

Duration: 2 hrs Scoring: 120 points

## **LESSON 8: TRIANGLES WRAP-UP**

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

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Review: Triangles**

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Triangles**

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

Duration: 0 hrs 40 mins Scoring: 38 points

### **Test (TS): Triangles**

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

Duration: 0 hrs 30 mins Scoring: 50 points

## **UNIT 12: COORDINATE GEOMETRY**

### **LESSON 1: MIDPOINT FORMULA**

#### **Study: Midpoint Formula**

Learn about the midpoints of horizontal, vertical, and diagonal line segments and about the midpoint formula. Complete a sample problem.

Duration: 0 hrs 35 mins Scoring: 0 points

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

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Midpoint Formula**

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

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 2: THE DISTANCE FORMULA**

#### **Study: The Distance Formula**

Derive the distance formula from the Pythagorean theorem. Use this formula to calculate the distance between any two points. Apply the distance formula in a real-world problem that involves locating the shortest route on a nautical map.

Duration: 0 hrs 35 mins Scoring: 0 points

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

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: The Distance Formula**

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### **Journal: The Distance Formula**

Use what you know about the midpoint and distance formulas to critique the reasoning of others.

Duration: 0 hrs 30 mins Scoring: 20 points

### LESSON 3: PATTERNS AND LINES

#### Study: Patterns and Lines

Learn about linear equations, ordered pairs, and data points that form a straight line.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Patterns and Lines

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

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 4: SLOPE

#### Study: Slope

Learn about measuring slope, rise, and run; the slope formula; negative zero and undefined slope; and measuring the rate of change of a dependent variable.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Computing Slope

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### Practice: Modeling: The Rescue Ship

Use your knowledge of parallel lines and the slope formula to steer a ship through dangerous waters.

Duration: 0 hrs 30 mins Scoring: 20 points

### LESSON 5: EQUATIONS OF LINES

#### Study: Equations of Lines

Learn about and explore examples of properties of lines, the  $y$ -intercept, the slope-intercept equation, and the point-slope equation.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Equations of Lines — Part I

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### Quiz: Equations of Lines — Part II

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

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 6: EQUATIONS OF PARALLEL AND PERPENDICULAR LINES AND PROOFS

#### Study: Equations of Parallel and Perpendicular Lines and Proofs

Learn about the definitions and slopes of parallel and perpendicular lines. Learn about negative reciprocals.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Equations of Parallel and Perpendicular Lines and Proofs



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

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 7: COORDINATE GEOMETRY WITH POLYGONS

### Study: Coordinate Geometry with Polygons

Investigate the properties of polygons using coordinate geometry and congruence transformations on the coordinate plane.

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: Coordinate Geometry with Polygons

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 8: AREA OF A TRIANGLE WITH COORDINATE GEOMETRY

### Study: Area of a Triangle with Coordinate Geometry

Learn about the area of a polygon, square units, and the triangle area formula and theorem.

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: Area of a Triangle

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

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 9: AREA AND PERIMETER OF POLYGONS WITH COORDINATE GEOMETRY

### Study: Area and Perimeter of Polygons with Coordinate Geometry

Find the perimeter of any polygon. Determine the areas of irregular polygons by breaking them up into quadrilaterals and regular polygons. Use the apothem formula to find the area of a regular polygon. Complete sample problems about the area of irregular polygons.

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: Area and Perimeter of Polygons

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

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 10: COORDINATE GEOMETRY WRAP-UP

### Checkup: Coordinate Geometry Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

### Review: Coordinate Geometry

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Coordinate Geometry

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

Duration: 0 hrs 40 mins Scoring: 50 points

### Test (TS): Coordinate Geometry

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

Duration: 0 hrs 30 mins Scoring: 50 points

## UNIT 13: CONSTRUCTIONS AND TRANSFORMATIONS

### LESSON 1: CONSTRUCTIONS

#### Study: Constructions

Learn about using a straightedge and a compass, common notions of Euclidean geometry, five postulates, constructing an equilateral triangle and a regular hexagon, bisecting an angle, and constructing a perpendicular bisector.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Quiz: Constructions

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### Practice: Modeling: Constructing a Square

Use your geometry skills to construct a square using only a straightedge and a compass.

Duration: 0 hrs 30 mins Scoring: 20 points

### LESSON 2: PAPER FOLDING

#### Study: Paper Folding

Learn about constructing geometric solids with folding paper, coinciding objects bisecting an angle, and constructing a parallel line segment.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Quiz: Paper Folding

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

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 3: IMPOSSIBLE PROBLEMS FROM ANTIQUITY

#### Study: Impossible Problems from Antiquity

Learn about the Delian problem (doubling a cube) and trisecting an angle.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Quiz: Impossible Problems from Antiquity

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

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 4: T TRANSFORMATIONS

#### Study: Transformations

Learn about rigid motions, describe the image and preimage, predict the results of transformations, and use series of transformations to move figures onto themselves.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Quiz: Transformations

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

Duration: 0 hrs 20 mins Scoring: 20 points

#### Journal: T transformations

Critique a conjecture about a series of transformations.

Duration: 0 hrs 30 mins Scoring: 20 points

### LESSON 5: SYMMETRY

#### Study: Symmetry

Learn about reflectional symmetry and line of symmetry and explore an example of an isosceles triangle. Learn about rotational symmetry, point of symmetry, and the symmetry of a human face.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Quiz: Symmetry

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

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 6: TESSELLATIONS

### Study: Tessellations

Learn the definition and explore examples of tessellations. Discover the chessboard as an example of a regular tessellation. Learn about semiregular tessellations.

Duration: 0 hrs 35 mins Scoring: 0 points

### Quiz: Tessellations

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

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 7: CONSTRUCTIONS AND TRANSFORMATIONS WRAP-UP

### Checkpoint: Constructions and Transformations Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

### Review: Constructions and Transformations

Get ready for the unit test by reviewing important ideas and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Constructions and Transformations

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

Duration: 0 hrs 40 mins Scoring: 50 points

### Test (TS): Constructions and Transformations

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

Duration: 0 hrs 30 mins Scoring: 50 points

## UNIT 14: MATHEMATICS I SEMESTER 2 EXAM

### LESSON 1: MATHEMATICS I SEMESTER 2 EXAM

#### Review: Mathematics I Semester 2

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

Duration: n/a Scoring: 0 points

#### Exam: Mathematics I Semester 2

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

Duration: 0 hrs 50 mins Scoring: 200 points