

Integrated 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 and deepen conceptual understanding. 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.

This course is built to state standards.

Length: Two semesters

## UNIT 1: SOLVING EQUATIONS AND INEQUALITIES

### LESSON 1: ALGEBRAIC PROPERTIES AND EXPRESSIONS

#### Study: Algebraic Properties and Expressions

Translate verbal descriptions to mathematical expressions, write expressions to model real-world situations, and evaluate expressions using algebraic properties.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Algebraic Properties and Expressions

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

Duration: 0 hrs 25 mins Scoring: 20 points

### LESSON 2: SOLVING LINEAR EQUATIONS

#### Study: Solving Linear Equations

Review how to isolate the variable and solve simple equations with addition, subtraction, multiplication and division.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Solving Linear Equations

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

Duration: 0 hrs 25 mins Scoring: 20 points

### LESSON 3: SOLVING MULTISTEP LINEAR EQUATIONS

#### Study: Solving Multistep Linear Equations

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

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

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

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

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 4: SOLVING LINEAR INEQUALITIES**

### **Study: Solving Linear Inequalities**

Solve multistep inequalities, including those that involve collecting like terms.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Solving Linear Inequalities**

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

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 5: LITERAL EQUATIONS**

### **Study: Literal Equations**

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

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Literal Equations**

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

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 6: MEASUREMENT AND UNITS**

### **Study: Measurement and Units**

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

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Measurement and Units**

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

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 7: SOLVING EQUATIONS AND INEQUALITIES WRAP-UP**

### **Review: Solving Equations and Inequalities Practice Problems**

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Solving Equations and Inequalities**

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

Duration: 0 hrs 50 mins Scoring: 50 points

## UNIT 2: FUNCTIONS

### LESSON 1: DOMAIN AND RANGE

#### Study: Domain and Range

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

Duration: 0 hrs 45 mins Scoring: 0 points

#### 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 25 mins Scoring: 20 points

### LESSON 2: IDENTIFYING FUNCTIONS

#### Study: Identifying Functions

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

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Identifying Functions

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

Duration: 0 hrs 25 mins Scoring: 20 points

### LESSON 3: GRAPHS OF FUNCTIONS

#### Study: Graphs of Functions

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

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Graphs of Functions

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

Duration: 0 hrs 25 mins Scoring: 20 points

### LESSON 4: ADDING AND SUBTRACTING FUNCTIONS

#### Study: Adding and Subtracting Functions

Learn how to add and subtract functions.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Adding and Subtracting Functions

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

Duration: 0 hrs 25 mins Scoring: 20 points

### LESSON 5: FUNCTIONS WRAP-UP

#### Review: Functions Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Functions

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

Duration: 0 hrs 50 mins Scoring: 50 points

## UNIT 3: LINEAR EQUATIONS

### LESSON 1: SLOPE

#### Study: Slope

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

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Slope

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

Duration: 0 hrs 25 mins Scoring: 20 points

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

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

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

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

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

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

Duration: 0 hrs 25 mins Scoring: 20 points

### LESSON 3: 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 45 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 25 mins Scoring: 20 points

### LESSON 4: POINT-SLOPE EQUATION OF A LINE

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

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

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

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

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

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 5: PARALLEL AND PERPENDICULAR LINES

### Study: Parallel and Perpendicular Lines

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

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Parallel and Perpendicular Lines

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

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 6: LINEAR INEQUALITIES

### Study: Linear Inequalities

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

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Linear Inequalities

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

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 7: LINEAR EQUATIONS WRAP-UP

### Review: Linear Equations Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Linear Equations

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

Duration: 0 hrs 50 mins Scoring: 50 points

## UNIT 4: SYSTEMS OF LINEAR EQUATIONS

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

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

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

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

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

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

Duration: 0 hrs 25 mins Scoring: 20 points

### LESSON 2: TWO-VARIABLE SYSTEMS: SUBSTITUTION

#### Study: Two-Variable Systems: Substitution

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

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Two-Variable Systems: Substitution**

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

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 3: TWO-VARIABLE SYSTEMS: ELIMINATION**

### **Study: Two-Variable Systems: Elimination**

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

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Two-Variable Systems: Elimination**

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

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 4: TWO-VARIABLE SYSTEMS OF INEQUALITIES**

### **Study: Two-Variable Systems of Inequalities**

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

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Two-Variable Systems of Inequalities**

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

Duration: 0 hrs 25 mins Scoring: 20 points

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

### **Review: Systems of Linear Equations Practice Problems**

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

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

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

Duration: 0 hrs 50 mins Scoring: 50 points

## **UNIT 5: EXPONENTS AND EXPONENTIAL FUNCTIONS**

### **LESSON 1: EXPONENTS**

#### **Study: Exponents**

Evaluate exponential expressions. Use properties to rewrite exponential expressions, including those with rational exponents, and to rewrite radicals using fractional exponents.

Duration: 0 hrs 45 mins Scoring: 0 points

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

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Exponents**

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

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 2: EXPONENTIAL FUNCTIONS

### Study: Exponential Functions

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

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Exponential Functions

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

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 3: GRAPHS OF EXPONENTIAL FUNCTIONS

### Study: Graphs of Exponential Functions

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

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Graphs of Exponential Functions

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

Duration: 0 hrs 25 mins Scoring: 20 points

## LESSON 4: EXPONENTS AND EXPONENTIAL FUNCTIONS WRAP-UP

### Review: Exponents and Exponential Functions Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

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

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

Duration: 0 hrs 50 mins Scoring: 50 points

## UNIT 6: SEQUENCES AND FUNCTIONS

### LESSON 1: ARITHMETIC SEQUENCES

#### Study: Arithmetic Sequences

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

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Arithmetic Sequences

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

Duration: 0 hrs 25 mins Scoring: 20 points

### LESSON 2: GEOMETRIC SEQUENCES

#### Study: Geometric Sequences

Explore geometric sequences as sets of numbers in which the ratio between any two consecutive numbers is a

constant. Compare how the recursive formula and the explicit formula allow you to find the value of any term in a geometric sequence.

Duration: 0 hrs 45 mins Scoring: 0 points

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

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Geometric Sequences**

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

Duration: 0 hrs 25 mins Scoring: 20 points

### **LESSON 3: UNDERSTANDING NUMBER SEQUENCES**

#### **Study: Understanding Number Sequences**

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

Duration: 0 hrs 45 mins Scoring: 0 points

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

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Understanding Number Sequences**

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

Duration: 0 hrs 25 mins Scoring: 20 points

### **LESSON 4: EXPONENTIAL AND LINEAR GROWTH**

#### **Study: Exponential and Linear Growth**

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

Duration: 0 hrs 45 mins Scoring: 0 points

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

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Exponential and Linear Growth**

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

Duration: 0 hrs 25 mins Scoring: 20 points

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

#### **Review: Sequences and Functions Practice Problems**

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

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

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

Duration: 0 hrs 50 mins Scoring: 50 points

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

### **LESSON 1: SEMESTER 1 EXAM**

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

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

Duration: 0 hrs 30 mins Scoring: 0 points

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

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

Duration: 0 hrs 50 mins Scoring: 200 points

## **UNIT 8: 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

### Checkpoint: 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

**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

**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****Review: Foundations of Geometry**

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 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

## UNIT 9: 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

#### Checkup: 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

#### Checkup: 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

#### Checkup: 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

### **Checkup: 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

### **Checkup: 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

### **Checkup: 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

## **LESSON 7: TRIANGLES WRAP-UP**

### **Review: Triangles**

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 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: 50 points

## UNIT 10: 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

### 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

### 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

### Checkpoint: 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

### Checkpoint: 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**

### **Review: Practice Problems**

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 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

## **UNIT 11: 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

### **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: TRANSFORMATIONS**

#### **Study: Transformations**

Learn about rigid motions, describe the image and preimage, predict the results of transformations, and use a 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

## 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

### Review: Constructions and Transformations

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 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

## UNIT 12: DESCRIPTIVE STATISTICS

### LESSON 1: MEASURES OF CENTER AND SPREAD

#### Study: Measures of Center and Spread

Learn how to compute the mean and median of a data set and the effects of outliers on these measures of center. See how to use a calculator to find the standard deviation of a data set, and understand how the standard deviation and the range measure the spread of a data set.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Measures of Center and Spread

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: DOT PLOTS, BOX PLOTS, AND HISTOGRAMS

#### Study: Dot Plots, Box Plots, and Histograms

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 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points



### Quiz: Dot Plots, Box Plots, and Histograms

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 3: 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 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

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

## LESSON 4: TWO-WAY FREQUENCY TABLES

### Study: Two-Way Frequency Tables

Learn how to build and use two-way frequency tables and two-way relative frequency tables. Understand how to find and use joint frequencies and marginal frequencies, and how to calculate conditional relative probabilities from a two-way table. Use two-way tables to recognize associations in data.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Two-Way Frequency Tables

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 5: DESCRIPTIVE STATISTICS WRAP-UP

### Review: Descriptive Statistics Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Descriptive Statistics

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

Duration: 0 hrs 40 mins Scoring: 50 points

## UNIT 13: DATA AND MATHEMATICAL MODELING

### LESSON 1: TWO-VARIABLE DATA AND SCATTERPLOTS

#### Study: Two-Variable Data and Scatterplots

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

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Two-Variable Data and Scatterplots

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: FITTING LINEAR MODELS TO DATA

**Study: Fitting Linear Models to Data**

Find equations for best-fit lines (regression equations) by estimation and by using a calculator. Use regression equations to make predictions. Find residuals and residual plots and understand how they indicate whether or not a linear model is appropriate.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Fitting Linear Models to Data**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

**LESSON 3: NONLINEAR MODELS****Study: Nonlinear Models**

Learn how to apply nonlinear regression.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

**Quiz: Nonlinear Models**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

**LESSON 4: DATA AND MATHEMATICAL MODELING WRAP-UP****Review: Data and Mathematical Modeling Practice Problems**

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

**Test (CS): Data and Mathematical Modeling**

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

Duration: 0 hrs 40 mins Scoring: 50 points

**UNIT 14: SEMESTER 2 EXAM****LESSON 1: SEMESTER 2 EXAM****Review: Semester 2 Exam**

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

Duration: 0 hrs 20 mins Scoring: 0 points

**Exam: Semester 2 Exam**

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

Duration: 0 hrs 50 mins Scoring: 200 points