

Mathematics II extends students' geometric knowledge and introduces them to quadratic expressions, equations, and functions, exploring the relationship between these and their linear and exponential counterparts. 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 extending the number system; quadratic functions and modeling; expressions and equations; applications of probability; similarity, right-triangle trigonometry, and proof; and circles with and without 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: FUNCTIONS

LESSON 1: WHAT IS A FUNCTION?

Study: Relating to Functions

Learn about functions, their graphs, and some special functions.

Duration: 0 hrs 35 mins

Checkpoint: Lessons Learned

Complete a set of practice problems on functions.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: What Is a Function?

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: GRAPHING FUNCTIONS

Study: Graphing Functions

Learn the vertical line and horizontal line tests for evaluating a function. Evaluate a function for given values and explore special functions.

Duration: 0 hrs 35 mins

Checkpoint: Lessons Learned

Complete a set of practice problems on graphing functions.

Duration: 0 hrs 25 mins

Quiz: Graphing Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: LINEAR FUNCTIONS

Study: Linear Functions

Learn about slope and the three main forms of linear functions.

Duration: 0 hrs 35 mins

Checkpoint: Lessons Learned

Complete a set of practice problems on linear functions.

Duration: 0 hrs 25 mins

Quiz: Linear Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: LINEAR EQUATIONS AND INEQUALITIES**Study: Linear Equations and Inequalities**

Learn how to solve linear equations and inequalities.

Duration: 0 hrs 35 mins

Checkpoint: Lessons Learned

Complete a set of practice problems on linear equations and inequalities.

Duration: 0 hrs 25 mins

Quiz: Linear Equations and Inequalities

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: The Summer Job

Work through a real-world problem involving linear equations and inequalities.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 5: LINEAR SYSTEMS**Study: Finding the Point of Intersection**

Find the point of intersection of linear systems using algebra, graphing, and matrices.

Duration: 0 hrs 35 mins

Study: Connection to Business: Linear Programming

Learn how businesses solve problems using linear programming.

Duration: 0 hrs 35 mins

Checkpoint: Lessons Learned

Complete a set of practice problems on linear systems.

Duration: 0 hrs 25 mins

Quiz: Linear Systems

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Best Ticket Deal

Model ticket pricing using an equation.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 6: 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 7: 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

LESSON 8: 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 9: FUNCTIONS WRAP-UP

Checkpoint: Functions Practice Problems

Check your understanding of the 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 20 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 2: EXPONENTIAL FUNCTIONS

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

Checkpoint: 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 check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: 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

Checkup: 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 3: 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

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: 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 4: 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: Valuable Coins

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

Duration: 0 hrs 30 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: 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

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: 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 6: EXPONENTIAL FUNCTIONS WRAP-UP

Checkpoint: Exponential Functions Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Exponential Functions

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

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Exponential Functions

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): 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 3: POLYNOMIALS

LESSON 1: WHAT IS A POLYNOMIAL?

Study: What Is a Polynomial?

Learn the definitions for monomials, polynomials, constants, terms, coefficients, binomials, trinomials, and degree. Learn how to find the degree of polynomials.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Degrees of Polynomials

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Degrees of Polynomials (Advanced)

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: ADDING AND SUBTRACTING POLYNOMIALS

Study: Adding and Subtracting Polynomials

Learn how tiles can be used to add or subtract like terms in polynomials. Practice adding and subtracting polynomials.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Polynomial Addition with Tiles

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Polynomial Addition

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Polynomial Subtraction

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: MULTIPLYING BINOMIALS**Study: Multiplying Binomials**

Learn how tiles can be used to multiply linear binomials. Practice using the distributive property and the FOIL method to multiply two binomials.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Finding Products of Binomials

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Finding the Product of Two Binomials

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: The FOIL Method

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

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Multiplying Binomials

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

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 4: MULTIPLYING POLYNOMIALS**Study: Multiplying Polynomials**

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

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Polynomial Multiplication

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Polynomial Multiplication (Advanced)

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

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Multiplying Polynomials

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

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 5: DIVIDING POLYNOMIALS

Study: Dividing Polynomials

Learn how to do long division with polynomials. Find out how to divide polynomials with missing terms and divide polynomials with remainders.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Polynomial Long Division

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: POLYNOMIALS WRAP-UP

Checkpoint: Polynomials Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Polynomials

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

Duration: 0 hrs 20 mins Scoring: 0 points

Test (CS): Polynomials

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Polynomials

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

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 4: FACTORING OF POLYNOMIALS

LESSON 1: WHY FACTOR?

Study: Why Factor?

Explore the similarities between factoring numbers and polynomials. Learn the definitions for reducible polynomials, composite numbers, and the zero-product rule.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Factoring Polynomials

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: FACTORING WITH TILES

Study: Factoring with Tiles

Review how to use tiles to find the factors of a polynomial.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Factoring Polynomials with Tiles

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

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Factoring with Tiles

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

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 3: FACTORING AND GRAPHING**Study: Factoring and Graphing**

Compare roots and linear factors. Identify the roots of a polynomial. Explore what it means for a polynomial to have one root or no roots.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Factoring by Graphing

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Factoring by Graphing (Advanced)

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: GROUPING**Study: Grouping**

Find the greatest common factor (GCF) in a polynomial. Use the grouping method to factor one or more GCFs out of a polynomial.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Factoring by Grouping

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Finding GCFs of Polynomials

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: FACTORING $X^2 + BX + C$ **Study: Factoring $x^2 + bx + c$**

Learn the definitions for quadratic trinomials and leading coefficients. Learn how to factor quadratic trinomials with leading coefficients of 1.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Binomial Factors of Trinomials

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Factoring Trinomials

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: FACTORING $AX^2 + BX + C$

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

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

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Factoring Trinomials (Basic)

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Factoring Trinomials (Advanced)

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

Duration: 0 hrs 20 mins Scoring: 20 points

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

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

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 7: SPECIAL CASES

Study: Special Cases

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

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Factoring a Difference of Squares

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Factoring Perfect Square Trinomials

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Sum or Difference of Two Cubes

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 8: FACTORING OF POLYNOMIALS WRAP-UP

Checkpoint: Factoring of Polynomials Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Factoring of Polynomials

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

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Factoring of Polynomials

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Factoring of Polynomials

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

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 5: QUADRATIC EQUATIONS AND FUNCTIONS

LESSON 1: PARABOLAS

Study: Parabolas

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

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Parabolas with Vertices at the Origin

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Parabolas with Vertices Not at the Origin

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Converting Parabolic Equations

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: SOLVING QUADRATIC EQUATIONS

Study: Solving Quadratic Equations

Compare quadratic and nonquadratic equations. Learn how to solve quadratic equations by using factoring and the zero-product rule.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Factoring with the Zero-Product Rule

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Converting Quadratics to Standard Form

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Quadratics with Perfect Square Trinomials

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: COMPLETING THE SQUARE

Study: Completing the Square

Learn the definition for a special case of factoring called completing the square. Explore the steps to complete a square and practice solving quadratic equations by using this way of factoring.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Completing the Square

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Completing the Square (Advanced)

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

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Completing the Square

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

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 4: THE QUADRATIC FORMULA

Study: The Quadratic Formula

Learn the definitions for the quadratic formula, imaginary numbers, complex numbers, and discriminants. Explore how the quadratic formula works and practice using it to factor quadratic equations.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Complex Numbers and Discriminants

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: The Quadratic Formula

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: GRAPHS OF QUADRATIC FUNCTIONS

Study: Graphs of Quadratic Functions

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

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: Graphs of Quadratic Functions

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Working with the Discriminant

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: WORKING WITH COMPLEX NUMBERS

Study: Working with Complex Numbers

Learn about imaginary and complex numbers, perform basic arithmetic operations on complex numbers, and solve equations with imaginary and complex numbers.

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: Imaginary Numbers

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Operations on Complex Numbers

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Quadratics With Complex Solutions

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 7: NONLINEAR SYSTEMS OF EQUATIONS

Study: Nonlinear Systems of Equations

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

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: Nonlinear Systems of Equations

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 8: LINEAR, QUADRATIC, AND EXPONENTIAL MODELS

Study: Linear, Quadratic, and Exponential Models

Identify and compare linear, quadratic, and exponential functions and write functions that model real-world situations.

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, Quadratic, and Exponential Models

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

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Linear, Quadratic, and Exponential Models

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

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 9: PERFORMANCE TASK: PRICING FOR PROFIT

Study: The Radio Problem

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

Duration: 0 hrs 35 mins Scoring: 0 points

Project: Your Dog-Walking Business

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

Duration: 2 hrs Scoring: 120 points

LESSON 10: QUADRATIC EQUATIONS AND FUNCTIONS WRAP-UP

Checkpoint: Quadratic Equations and Functions Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Quadratic Equations and Functions

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

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Quadratic Equations and Functions

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Quadratic Equations and Functions

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

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 6: UNDOING FUNCTIONS AND MOVING THEM AROUND

LESSON 1: INVERSES

Study: Inverses

Learn about undoing functions, mapping diagrams of inverse functions, and finding the equations for inverse functions.

Duration: 0 hrs 35 mins Scoring: 0 points

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: Inverses with Variables x and y

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Inverses with Other Variables

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: GRAPHS OF INVERSES

Study: Graphs of Inverses

Learn how to convert the graph of a given function to the graph of its inverse by swapping coordinates of all ordered pairs. Use mapping diagrams, horizontal line tests, and the concept of symmetry across the line $y = x$ to determine if the inverse of a given function is also a function.

Duration: 0 hrs 35 mins Scoring: 0 points

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: Graphs of Inverses

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: PARENT FUNCTIONS

Study: Parent Functions

Learn about the properties and graphs of linear parent functions, quadratic parent functions, absolute value parent functions, and reciprocal parent functions.

Duration: 0 hrs 35 mins Scoring: 0 points

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: Parent Functions

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: SHIFTING FUNCTIONS

Study: Shifting Functions

Learn about shifting graphs of functions up/down and left/right by changing the coordinates of each ordered pair. Learn about changing the equation of a function to shift its graph vertically or horizontally and about combining vertical and horizontal shifts.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Shifting Functions Vertically

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Shifting Functions Horizontally

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Shifting Functions Vertically and Horizontally

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

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Shifting Functions

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

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 5: STRETCHING FUNCTIONS VERTICALLY

Study: Stretching Functions Vertically

Learn about vertically stretching or compressing a function's graph by multiplying by a constant; flipping the graph by multiplying by a negative constant; and combining vertical stretches with vertical or horizontal shifts.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Stretching Functions Vertically

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

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Stretching Functions Vertically

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

Duration: 0 hrs 30 mins Scoring: 20 points

Study: Solving the Ball-Tossing Problem

Learn about shifting and stretching graphs and using inverses and about how to apply these methods to the real-world problem of tossing a ball. Learn about using average velocity as an estimate of instantaneous velocity.

Duration: 0 hrs 35 mins Scoring: 0 points

LESSON 6: TRANSFORMATION OF PARENT FUNCTIONS

Study: Transformation of Parent Functions

Learn how to perform vertical shifts, horizontal shifts, vertical stretches and compressions, horizontal stretches and compressions, and any combination of these transformations on parent functions.

Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems

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

Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Transformation of Parent Functions

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

Duration: 0 hrs 20 mins Scoring: 20 points

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

Checkpoint: Undoing Functions and Moving Them Around Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Undoing Functions and Moving Them Around

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

Duration: 0 hrs 20 mins Scoring: 0 points

Test (CS): Undoing Functions and Moving Them Around

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Undoing Functions and Moving Them Around

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

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 7: APPLICATIONS OF PROBABILITY

LESSON 1: WHAT IS PROBABILITY?

Study: What Is Probability?

Learn the definition for probability and explore its different forms.

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: What Is Probability?

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Sample Space

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Simple and Compound Events

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

Duration: 0 hrs 20 mins Scoring: 20 points

Study: Organizing What Is Possible

Explore the numbers of possible outcomes from a brown bag containing gum balls of different colors.

Duration: 0 hrs 35 mins Scoring: 0 points

LESSON 2: COUNTING PRINCIPLES

Study: Counting Principles

Learn about counting strategies and the multiplication principle. Practice using tree diagrams and Venn diagrams in probability problems. Learn the definitions for permutation and combination.

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: Counting Principles

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Counting Principles

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: PERMUTATIONS AND COMBINATIONS

Study: Permutations and Combinations

Learn about counting strategies and the multiplication principle. Practice using tree diagrams and Venn diagrams in probability problems. Learn the definitions for permutation and combination.

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: Permutations and Combinations

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Finding Probabilities With Permutations and Combinations

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: BASIC RULES OF PROBABILITY

Study: Basic Rules of Probability

Learn four rules of probability, as well as the addition rule for disjoint events and the multiplication rule for independent events.

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 Rules of Probability, Part I

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: GEOMETRIC MODELS FOR PROBABILITY

Study: Geometric Models for Probability

Use area models to connect geometry to probability and statistics.

Duration: 0 hrs 50 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: Geometric Models for Probability

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 6: CONDITIONAL PROBABILITY

Study: Conditional Probability

Learn how to identify and solve conditional probability problems using correct notation, formulas, and tables.

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: Conditional Probability

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: A Student Survey

Use your knowledge of conditional probability to analyze the results of a student survey.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 7: INDEPENDENCE

Study: Independence

Learn how to show if two events are independent, and solve probability problems for both independent and dependent events using the multiplication rule and tree diagrams.

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: Independence

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Smoking and Lung Cancer

Use what you know about conditional probability and independence to critique the reasoning of others.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 8: SIMULATIONS

Study: Simulations

Learn how to simulate a random event using random number generators and rows of random digits and use results to estimate probabilities empirically.

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: Simulations

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 9: APPLICATIONS OF PROBABILITY WRAP-UP

Checkup: Applications of Probability Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Applications of Probability

Prepare for the unit test by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Applications of Probability

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Applications of Probability

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

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 8: MATHEMATICS II SEMESTER 1 EXAM

LESSON 1: MATHEMATICS II SEMESTER 1 EXAM

Review: Mathematics II Semester 1

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

Duration: 0 hrs Scoring: 0 points

Exam: Mathematics II Semester 1

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

Duration: 0 hrs 50 mins Scoring: 200 points

UNIT 9: PREPARING FOR PROOFS

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

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: PREPARING FOR PROOFS WRAP-UP

Checkpoint: Preparing for Proofs Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Preparing for Proofs

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

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Preparing for Proofs

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Preparing for Proofs

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

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 10: 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: PROOFS OF CONGRUENCE

Study: Proofs of Congruence

Learn about proving that parts of triangles are congruent by using Thales's method for measuring the distance from ship to shore.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: Proofs of Congruence

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

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Proofs of Congruence

Use what you know about congruence of triangles to prove the Perpendicular Bisector Theorem.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 6: 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 7: 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 8: TRIANGLE THEOREMS

Study: Triangle Theorems

Learn and prove the isosceles triangle theorem and its converse. Investigate two corollaries involving angle measures for equilateral triangles. Explore theorems for scalene triangles. Apply what you have learned to solve Thales's 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: Isosceles and Equilateral Triangles

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Scalene Triangles

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 9: MEDIANS AND ALTITUDES

Study: Medians and Altitudes

Identify and explore medians and altitudes. Discover their relationship to centroids, orthocenters, incenters, and circumcenters.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: Medians and Altitudes

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 10: BISECTORS AND MIDSEGMENTS

Study: Bisectors and Midsegments

Identify and explore angle bisectors, perpendicular bisectors, and midpoint bisectors, and lines parallel to one side of a triangle to discover their relationships to circumcenters, incenters, and side lengths.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: Bisectors and Midsegments

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 11: 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: 50 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 11: RIGHT TRIANGLES AND TRIGONOMETRY

LESSON 1: THE PYTHAGOREAN THEOREM

Study: The Pythagorean Theorem

Learn how the Pythagorean theorem applies only to right triangles and discover one proof of it. Learn about the converse of the Pythagorean theorem, Pythagorean triples, and applying the theorem to the problem of fitting a baseball bat into a rectangular trunk.

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 Pythagorean Theorem

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

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Proving the Pythagorean Theorem

Use what you know about congruence of triangles to prove the Pythagorean Theorem.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 2: PROVING CONGRUENCE OF RIGHT TRIANGLES

Study: Proving Congruence of Right Triangles

Learn about the HL, LL, HA, LA, and perpendicular bisector theorems. Learn about the angle bisector theorem and its

converse.

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: Proving Right Triangle Congruence

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Right Triangle Measurements

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: SIMILAR RIGHT TRIANGLES

Study: Similar Right Triangles

Explore the properties of similar right triangles. Prove that if an altitude is drawn from the right-angle vertex of a right triangle to its hypotenuse, then three similar triangles are formed. Calculate the missing sides of similar right triangles by using proportions and apply concepts learned to a miniature-golf 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: Similar Right Triangles

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: SPECIAL RIGHT TRIANGLES

Study: Special Right Triangles

Explore 45-45-90 and 30-60-90 triangles as special cases of right triangles and learn how to apply the ratios of their side lengths.

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: 45-45-90 Right Triangles

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: 30-60-90 Right Triangles

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: TRIGONOMETRIC RATIOS

Study: Trigonometric Ratios

Learn the definitions of *sine*, *cosine*, and *tangent*. Memorize the shortcut "soh-cah-toa" as a way to relate these ratios. Explore the use of trigonometric ratios in the solution of a real-world problem involving the construction of a cable car.

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: Trigonometric Ratios

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

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Leaning Towers

Use your knowledge of right triangles, trigonometric ratios, and the Pythagorean Theorem to model and solve a real-world problem.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 6: THE UNIT CIRCLE AND PYTHAGOREAN IDENTITIES

Study: The Unit Circle and Pythagorean Identities

Learn the six trigonometric ratios and how the unit circle defines them.

Duration: 0 hrs 35 mins

Study: Pythagorean Theorem

Review the Pythagorean theorem.

Duration: 0 hrs 35 mins

Checkup: Lessons Learned

Complete a set of practice problems on trigonometric functions and the unit circle.

Duration: 0 hrs 25 mins

Quiz: Trigonometric Functions and the Unit Circle

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 7: RIGHT TRIANGLES AND TRIGONOMETRY WRAP-UP

Checkup: Right Triangles and Trigonometry Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Right Triangles and Trigonometry

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

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Right Triangles and Trigonometry

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Right Triangles and Trigonometry

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

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 12: QUADRILATERALS AND OTHER POLYGONS

LESSON 1: ANGLE SUMS OF A POLYGON AND PROOFS

Study: Angle Sums of a Polygon and Proofs

Learn about the diagonal of a polygon, the formula for the sum of the measures of a polygon's interior angles and exterior angles, and a theorem for the sum of their measures.

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 Sums of a Polygon and Proofs

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: PARALLELOGRAMS AND PROOFS

Study: Parallelograms and Proofs

Learn about the definition of a parallelogram, properties and theorems of parallelograms, consecutive angle pairs, and diagonals.

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: Parallelograms and Proofs

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: TESTS FOR PARALLELOGRAMS**Study: Tests for Parallelograms**

Explore parallelogram theorems involving opposite side lengths, opposite and consecutive angle measures, and bisecting diagonals. Then work through a sample proof.

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: Tests for Parallelograms

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

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Finding Parallelograms

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

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 4: RECT ANGLES**Study: Rectangles**

Learn about the definition of a rectangle, congruent diagonal theorems, and right angle theorems. Explore a sample problem about using the congruent diagonal theorem to prove that a window is rectangular.

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: Rectangles

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: RHOMBI AND SQUARES**Study: Rhombi and Squares**

Identify the properties and definitions of a rhombus and a square. Prove that the diagonals of a rhombus are perpendicular. Investigate how diagonals of a rhombus bisect opposite vertices. Apply the properties of rhombi and squares to find missing side lengths, diagonal lengths, and angle measures.

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: Rhombi and Squares

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

LESSON 6: TRAPEZOIDS

Study: Trapezoids

Learn the definition of a trapezoid and identify its parts. Explore how base angles and diagonals of an isosceles trapezoid are congruent. Investigate the medians of a trapezoid. Apply the properties of trapezoids and isosceles trapezoids to find missing side lengths and median lengths.

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: Trapezoids

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

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Trapezoids

Use what you know about triangles and parallelograms to solve a real-world problem.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 7: QUADRILATERALS AND OTHER POLYGONS WRAP-UP

Checkpoint: Quadrilaterals and Other Polygons Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Quadrilaterals and Other Polygons

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

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Quadrilaterals and Other Polygons

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Quadrilaterals and Other Polygons

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

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 13: CIRCLES WITHOUT COORDINATES

LESSON 1: WHAT IS A CIRCLE?

Study: What Is a Circle?

Learn about the definition of a circle and about its center, radius, and circumference.

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: What Is a Circle?

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: CHORDS

Study: Chords

Investigate the properties and definitions of chords and diameters. Discover that two chords are congruent if they are the same distance from the center of the circle. Prove that the radius bisects a chord if it is perpendicular to the chord.

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 Chords

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Chords and Perpendicular Radii

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Diameter of a Circle

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: ARCS**Study: Arcs**

Learn the definitions of arc, endpoint, central angle, and intercept. Learn about minor and major arcs and semicircles, arc notation, the measure of minor and major arcs, and the arc congruence and congruent chord 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: Arc Types and Measure

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: CHORD AND ARC RELATIONSHIPS**Study: Chord and Arc Relationships**

Learn the definitions of arc, endpoint, central angle, and intercept. Learn about minor and major arcs and semicircles, arc notation, the measure of minor and major arcs, and the arc congruence and congruent chord 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: Congruent Chords and Circle Angle Measure

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: CIRCLES, ANGLES, AND PROOFS**Study: Circles, Angles, and Proofs**

Learn the definition of an inscribed angle. Experiment with inscribed angles and their intercepted arcs. Discover and prove that an inscribed angle is half the measure of its intercepted arc. Discover and prove the intersecting chord 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: Inscribed Angles

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Intersecting Chord Theorem

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: SECANTS, TANGENTS, AND PROOFS

Study: Secants, Tangents, and Proofs

Learn about the definition of secant and about secant-secant angle, its theorem, and proving the theorem. Learn about tangent line, point of tangency and tangent segments, tangents perpendicular to a circle's radius, a tangent-tangent angle and its theorem, and a tangent-chord angle and its theorem. Explore a sample proof.

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: Secant-Secant Angles

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Tangent-Chord Angles

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Tangent-Tangent Angles and Their Intercepted Arcs

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 7: CIRCUMFERENCE AND ARC LENGTH

Study: Circumference and Arc Length

Learn about the irrational number pi and the formula for finding the circumference of a circle. Apply circumference to a real-world problem about how to build a bridge that's tall enough for boats to travel beneath it. Learn about the degree measure of an arc and arc length. Derive the formula for arc length.

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: Circumference of a Circle

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Arc Length

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 8: AREA AND SECTORS

Study: Area and Sectors

Learn about the formula for the area of a circle. Explore a case study comparing the cost per square inch of small and large pizzas. Learn about sectors and the area of a sector.

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 Circle

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Area of a Sector

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

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Stained Glass Window

Use what you know about finding the area of circles and sectors to model and solve a real-world problem.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 9: CIRCLES AND TRIANGLES

Study: Circles and Triangles

Learn about inscribed objects; circumscribed objects; and the definitions of incenter and circumcenter.

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: Circles and Triangles

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

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Similar Circles

A peer uses dilation to prove that two circles are similar. Now you prove it using inscribed triangles.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 10: CIRCLES AND POLYGONS

Study: Circles and Polygons

Learn about the theorems of a quadrilateral inscribed in a circle and of a parallelogram inscribed in a circle.

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: Circles and Polygons

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 11: CIRCLES WITHOUT COORDINATES WRAP-UP

Checkpoint: Circles Without Coordinates Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Circles Without Coordinates

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

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Circles Without Coordinates

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Circles Without Coordinates

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

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 14: CONIC SECTIONS

LESSON 1: FROM LINES TO CONIC SECTIONS

Study: From Lines to Conic Sections

Learn about four kinds of conic sections, as well as the definitions of right circular cone, nappe, vertex, conic section, and cross section.

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: Linear Equations

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: What Is a Conic Section?

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: GEOMETRY OF CONIC SECTIONS

Study: Geometry of Conic Sections

Learn about parts and geometric properties of circles, ellipses, hyperbolas, and parabolas.

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: Geometry of Circles and Ellipses

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Geometry of Hyperbolas and Parabolas

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: 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 4: 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 5: CIRCLES WITH COORDINATES AND PROOFS

Study: Circles with Coordinates and Proofs

Use algebra to find an equation whose solution set is a circle. Learn about the standard equation for circles that are not centered at the origin.

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: Circles Centered at the Origin

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Circles Not Centered at the Origin

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

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Point on a Circle

Use what you know about equations of circles to prove whether or not a point is on a circle.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 6: PARABOLAS

Study: Parabolas

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

Duration: 0 hrs 35 mins Scoring: 0 points

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: Parabolas with Vertices at the Origin

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Parabolas with Vertices Not at the Origin

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Converting Parabolic Equations

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 7: LOCUS OF POINTS

Study: Locus of Points

Learn about defining objects in terms of points and given distances. Explore examples of a parabola and bisecting angles.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: Locus of Points

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

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Wildlife Sanctuary

Use what you know about locus of points to solve a real world problem.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 8: CONIC SECTIONS WRAP-UP

Checkup: Conic Sections Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Conic Sections

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

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Conic Sections

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Conic Sections

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

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 15: THREE-DIMENSIONAL SOLIDS

LESSON 1: THREE DIMENSIONS

Study: Three Dimensions

Learn about measuring three-dimensional figures.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: Three Dimensions

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: WHAT IS A POLYHEDRON?

Study: What Is a Polyhedron?

Learn about the definition and elements of a polyhedron, prisms and their components, triangular and rectangular prisms, cubes, and regular and irregular pyramids.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: What Is a Polyhedron?

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: CYLINDERS AND CONES

Study: Cylinders and Cones

Learn about the definition, components, and properties of a cylinder; the definition and components of a cone; and the similarities between cones and pyramids.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: Cylinders and Cones

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: PLATONIC SOLIDS

Study: Platonic Solids

Learn about polygonal numbers, regularity of Platonic solids, and building your own Platonic solids.

Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: Platonic Solids

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

Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Solids

Practice with a real-world solid modeling application.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 5: SURFACE AREA

Study: Surface Area

Learn about perimeter and surface area; base and lateral area; slant height versus altitude; and the formulas for surface area of a right prism, an oblique prism, a regular pyramid, an oblique cylinder, a right cone, and an oblique cone. Explore sample problems dealing with these subjects.

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: Surface Area of Regular Prisms and Pyramids

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Surface Area of Right Cylinders and Cones

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: VOLUME

Study: Volume

Learn about area and volume, the formulas for volume of a cube and a rectangular prism, and Bonaventura Francesco Cavalieri's principle. Learn about the formulas for volume of a cylinder, a pyramid, and a cone; explore sample problems dealing with these formulas. Learn about cross-sectional area.

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: Volume of Prisms, Cylinders, and Cubes

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

Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Volume of Cones, Cylinders, and Pyramids

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

Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Volume

Think about and discuss how changing one dimension of a given shape changes its volume and surface area.

Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 7: SPHERES

Study: Spheres

Learn about the definition of a sphere; the formulas for surface area and volume of a sphere; comparing the surface area and volume of a sphere, cube, cylinder, and cone; and using Cavalieri's principle to derive the formula for volume of a sphere.

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: Spheres

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 8: SIMILAR SOLIDS

Study: Similar Solids

Learn about similar prisms, pyramids, cylinders, cones, and spheres; the constant ratio between corresponding parts of similar solids; and the ratio of volumes of similar 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: Similar Solids

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

Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 9: PERFORMANCE TASK: THREE-DIMENSIONAL SOLIDS

Study: Geodesic Domes

Use your knowledge of three-dimensional solids to solve a geodesic dome problem.

Duration: 0 hrs 35 mins Scoring: 0 points

Project: Performance Task: The Subway Stop

Use what you know about three-dimensional solids to solve a real-world problem.

Duration: 2 hrs Scoring: 120 points

LESSON 10: THREE-DIMENSIONAL SOLIDS WRAP-UP

Checkpoint: Three-Dimensional Solids Practice Problems

Check your understanding of the topics in this unit.

Duration: 0 hrs 25 mins Scoring: 0 points

Review: Three-Dimensional Solids

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

Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Three-Dimensional Solids

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

Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Three-Dimensional Solids

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

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 16: MATHEMATICS II SEMESTER 2 EXAM

LESSON 1: MATHEMATICS II SEMESTER 2 EXAM

Review: Mathematics II Semester 2

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

Duration: 0 hrs Scoring: 0 points

Exam: Mathematics II Semester 2

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

Duration: 0 hrs 50 mins Scoring: 200 points