Geometry students acquire conceptual understanding of key geometric topics, work toward computational fluency, and expand their problem-solving skills.

Course topics include reasoning, proof, and the creation of sound mathematical arguments; points, lines, and angles; triangles; quadrilaterals and other polygons; circles; coordinate geometry; and three-dimensional solids. The course concludes with a look at special topics in geometry, such as constructions, symmetry, tessellations, fractals, and non-Euclidean geometry.

Extensive scaffolding aids below-proficient readers in understanding academic math content and in making the leap to higher-order thinking. Mathematical vocabulary is supported by rollover definitions and usage examples that feature audio and graphical representations of terms. Situational interest that promotes a relevant, real-world application of math skills serves to engage and motivate students.

The course is built to the National Council of Teachers of Mathematics (NCTM) standards and is aligned with state standards.

Length: Two semesters

UNIT 1: THE NEED TO READ

LESSON 1: READING AND VOCABULARY

Study: Active Reading
Learn skills and strategies that will help you be an active reader in this and other courses.
Duration: 0 hrs 45 mins Scoring: 0 points

Quiz: Active Reading
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 10 mins Scoring: 10 points

Study: Building a Vocabulary
Learn how to use words to express a variety of ideas, and study a few helpful vocabulary words and tips.
Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Building a Vocabulary
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 10 mins Scoring: 10 points

LESSON 2: GETTING STARTED IN THE COURSE

Study: Reading Strategies in the Course
Learn how the eight reading strategies will be useful in this course.
Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Reading Strategies in the Course
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 10 mins Scoring: 10 points

LESSON 3: THE NEED TO READ WRAP-UP

Review: The Need to Read
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 30 mins Scoring: 0 points
Test (CS): The Need to Read
Take a computer-scored test to check what you have learned in this unit.
Duration: 0 hrs 20 mins Scoring: 20 points

Test (TS): The Need to Read
Take a teacher-scored test to check what you have learned in this unit.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 4: DIAGNOSTIC
Diagnostic: The Need to Read Diagnostic
Take a diagnostic test that will create a study plan based on your answers.
Duration: 0 hrs 20 mins Scoring: 10 points

UNIT 2: FOUNDATIONS OF GEOMETRY

LESSON 1: ENTERING THE WORLD OF GEOMETRY

Study: Entering the World of Geometry
Get started by familiarizing yourself with some introductory geometric objects and ideas, such as points, line segments, grouping, similarity, and difference.
Duration: 0 hrs 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Entering the World of Geometry
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 2: 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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 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 25 mins Scoring: 20 points

LESSON 3: 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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Deduction: Making a Case
Take a quiz to check your understanding of what you have learned.
LESSON 4: 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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 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 25 mins Scoring: 20 points

LESSON 5: INTRODUCTION TO PROOF

Study: Introduction to Proof
Learn about postulates and axioms, givens, proof by contradiction (indirect proof), theorems and corollaries, and the axiomatic method.
Duration: 0 hrs 50 mins Scoring: 0 points

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

LESSON 6: PROOF IN GEOMETRY

Study: Proof in Geometry
Learn about Euclid’s *Elements* and real-world applications of geometry, such as finding your way in a desert or fog, making a shot in miniature golf, and calculating the distance to ships offshore.
Duration: 0 hrs 50 mins Scoring: 0 points

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

LESSON 7: FOUNDATIONS OF GEOMETRY WRAP-UP

Practice: Assignment
Submit your work for a set of 20 practice problems.
Duration: 1 hr Scoring: 100 points

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

Discuss: Get My Logic?
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 20 mins Scoring: 30 points

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

Test (TS): Foundations of Geometry
Take a teacher-scored test to check what you have learned in this unit.
Duration: 0 hrs 30 mins Scoring: 50 points
LESSON 8: DIAGNOSTIC
Diagnostic: Foundations of Geometry
Take a diagnostic test that will create a study plan based on your answers.
Duration: 0 hrs 40 mins Scoring: 25 points

UNIT 3: POINTS, LINES, AND ANGLES

LESSON 1: POINTS
Study: Points
Learn about the concept of a point, why points have no size, and Euclid's definition of a point.
Duration: 0 hrs 50 mins Scoring: 0 points

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

LESSON 2: SEGMENTS
Study: Segments
Learn the notation for a line segment using its endpoints. Explore line segment length and the distance between points on a segment. Investigate midpoints of line segments and the segment addition postulate.
Duration: 0 hrs 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

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

LESSON 3: RAYS, LINES, AND ANGLES
Study: Rays, Lines, and Angles
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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Rays, Lines, and Angles
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 4: MORE ABOUT ANGLES
Study: More about Angles
Learn about measuring angles; units; notation; measuring a segment using a protractor; acute, obtuse, and right angles; equations for adjacent angles; angle bisectors; linear pairs; and complementary and supplementary angles.
Duration: 0 hrs 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Identifying Types of Angles
LESSON 5: CONGRUENT SEGMENTS AND ANGLES
Study: Congruent Segments and Angles
Learn about the definitions of congruent line segments and angles, notation, the midpoint theorem, and congruence versus equality.
Duration: 0 hrs 50 mins Scoring: 0 points
Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points
Quiz: Congruent Segments and Angles
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 50 mins Scoring: 0 points
Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 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 25 mins Scoring: 20 points

LESSON 7: WHAT IT IS LIKE TO LIVE IN A PLANE
Study: What It Is Like to Live in a Plane
Take part in an exercise that deals with location and direction in two dimensions.
Duration: 0 hrs 50 mins Scoring: 0 points

LESSON 8: INTERSECTING LINES
Study: Intersecting Lines
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 50 mins Scoring: 0 points
Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points
Quiz: Intersecting Lines
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 9: PARALLEL LINES
Study: Parallel Lines
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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

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

LESSON 10: SOLVING THE MIRROR PROBLEM
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 50 mins Scoring: 0 points

LESSON 11: POINTS, LINES, AND ANGLES WRAP-UP
Practice: Assignment
Submit your work for a set of 20 practice problems.
Duration: 1 hr Scoring: 100 points

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

Discuss: What If You Lived in a Plane?
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 20 mins Scoring: 30 points

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

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

LESSON 12: DIAGNOSTIC
Diagnostic: Points, Lines, and Angles
Take a diagnostic test that will create a study plan based on your answers.
Duration: 0 hrs 40 mins Scoring: 25 points

UNIT 4: 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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 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 25 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 25 mins Scoring: 20 points

**Quiz: The Triangle Inequality Theorem**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 50 mins Scoring: 0 points

**Checkup: Practice Problems**
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

**Quiz: Angle Theorems**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 25 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 50 mins Scoring: 0 points

**Checkup: Practice Problems**
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

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

**Quiz: Properties of Congruence**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 50 mins Scoring: 0 points
Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

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

Quiz: The AAS Theorem
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 50 mins Scoring: 0 points

Quiz: Proofs of Congruence
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

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

LESSON 7: RATIOS AND PROPORTIONS
Study: Ratios and Proportions
Learn about ratios, proportions, means, and extremes. Learn about applying the cross-product property application to the student–teacher ratio problem and the photo-enlargement problem.
Duration: 0 hrs 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

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

LESSON 8: SIMILARITY THEOREMS
Study: Similarity Theorems
Learn about the ASA similarity postulate, the SSS similarity theorem, and the SAS similarity theorem.
Duration: 0 hrs 50 mins Scoring: 0 points
LESSON 9: 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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

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

Quiz: Isosceles and Equilateral Triangles
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

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

LESSON 10: MEDIANS, ALTITUDES, AND BISECTORS

Study: Medians, Altitudes, and Bisectors
Identify and explore medians, altitudes, angle bisectors, and perpendicular bisectors of triangles. Discover their relationship to centroids, orthocenters, incenters, and circumcenters.

Duration: 0 hrs 50 mins Scoring: 0 points

Quiz: Medians, Altitudes, and Bisectors
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 11: THE PARALLAX PROBLEM

Study: The Parallax Problem
Learn to apply the concepts of congruence, similarity, ratio, and proportion to the solution of a real-world parallax problem.

Duration: 0 hrs 50 mins Scoring: 0 points

LESSON 12: TRIANGLES WRAP-UP

Practice: Assignment
Submit your work for a set of 20 practice problems.
Duration: 1 hr Scoring: 100 points

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

Discuss: The Well-Balanced Triangle
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 20 mins Scoring: 30 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

LESSON 13: DIAGNOSTIC
Diagnostic: Triangles
Take a diagnostic test that will create a study plan based on your answers.
Duration: 0 hrs 40 mins Scoring: 25 points

UNIT 5: RIGHT TRIANGLES

LESSON 1: AREA OF A TRIANGLE
Study: Area of a Triangle
Learn about the area of a polygon, square units, and the triangle area formula and theorem.
Duration: 0 hrs 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

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

LESSON 2: 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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

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

LESSON 3: CONGRUENT RIGHT TRIANGLES
Study: Congruent 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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

Quiz: Proving Right Triangle Congruence
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points
LESSON 4: 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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

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

LESSON 5: 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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 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 25 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 25 mins Scoring: 20 points

LESSON 6: 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 50 mins Scoring: 0 points

Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 30 mins Scoring: 0 points

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

LESSON 7: RIGHT TRIANGLES WRAP-UP

Practice: Assignment
Submit your work for a set of 20 practice problems.
Duration: 1 hr Scoring: 100 points

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

**Discuss: A Closer Look at a Baseball Diamond**
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 20 mins Scoring: 30 points

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

**LESSON 8: DIAGNOSTIC**

**Diagnostic: Right Triangles**
Take a diagnostic test that will create a study plan based on your answers.
Duration: 0 hrs 40 mins Scoring: 25 points

**UNIT 6: GEOMETRY SEMESTER 1 REVIEW AND EXAM**

**LESSON 1: GEOMETRY SEMESTER 1**

**Review: Geometry Semester 1**
Get ready for the exam by reviewing important ideas and skills covered in this semester.
Duration: 1 hr Scoring: 0 points

**Exam: Geometry Semester 1**
Take a computer-scored exam to show what you have learned in this semester.
Duration: 0 hrs 50 mins Scoring: 200 points

**UNIT 7: QUADRILATERALS AND OTHER POLYGONS**

**LESSON 1: POLYGONS AND QUADRILATERALS**

**Study: Polygons and Quadrilaterals**
Learn the definitions of a polygon and a quadrilateral and the relationship of one to the other. Learn about convex, concave, regular, congruent, and similar polygons and how to identify and name polygons and quadrilaterals.
Duration: 0 hrs 40 mins Scoring: 0 points

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

**Quiz: Identifying and Naming Polygons and Quadrilaterals**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

**Quiz: Sorting and Recognizing Polygons**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

**LESSON 2: ANGLE SUMS OF A POLYGON**

**Study: Angle Sums of a Polygon**
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 40 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**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

**LESSON 3: PARALLELOGRAMS**

**Study: Parallelograms**
Learn about the definition of a parallelogram, properties and theorems of parallelograms, consecutive angle pairs, and diagonals.
Duration: 0 hrs 40 mins Scoring: 0 points

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

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

**LESSON 4: 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 40 mins Scoring: 0 points

**Checkup: 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 25 mins Scoring: 20 points

**LESSON 5: RECTANGLES**

**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 40 mins Scoring: 0 points

**Checkup: 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 25 mins Scoring: 20 points

**LESSON 6: 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 40 mins Scoring: 0 points

Checkup: 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.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 7: 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 40 mins Scoring: 0 points

Checkup: 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 25 mins Scoring: 20 points

LESSON 8: AREA AND PERIMETER OF QUADRILATERALS

Study: Area and Perimeter of Quadrilaterals
Learn about the formulas for the perimeter of a parallelogram, a rhombus, and a square, and for the area of a polygon, a rectangle, and a square. Complete a sample problem in which you must calculate the area of a square. Learn about the altitude, base, and height of parallelograms and the formulas for the areas of a parallelogram and a trapezoid.
Duration: 0 hrs 40 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 Quadrilaterals
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Quiz: Area of Rhombi and Trapezoids
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 9: AREA AND PERIMETER OF POLYGONS

Study: Area and Perimeter of Polygons
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 40 mins Scoring: 0 points
LESSON 10: POLYGONS AND QUADRILATERALS WRAP-UP

Practice: Assignment
Submit your work for a set of 20 practice problems.
Duration: 0 hrs 50 mins Scoring: 100 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

Discuss: Parts, Bits, and Pieces
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 20 mins Scoring: 30 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

LESSON 11: DIAGNOSTIC

Diagnostic: Quadrilaterals and Other Polygons
Take a diagnostic test that will create a study plan based on your answers.
Duration: 0 hrs 40 mins Scoring: 25 points

UNIT 8: CIRCLES

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 40 mins Scoring: 0 points

Checkup: 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 25 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 40 mins Scoring: 0 points
Checkup: 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 25 mins Scoring: 20 points

Quiz: Chords and Perpendicular Radii
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

Quiz: Diameter of a Circle
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 40 mins Scoring: 0 points

Checkup: 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 25 mins Scoring: 20 points

Quiz: Congruent Chords and Circle Angle Measure
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 4: CIRCLES AND ANGLES
Study: Circles and Angles
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 40 mins Scoring: 0 points

Checkup: 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 25 mins Scoring: 20 points

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

LESSON 5: SECANTS AND TANGENTS
Study: Secants and Tangents
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.

Checkup: 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 25 mins Scoring: 20 points

Quiz: Tangent-Chord Angles
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 25 mins Scoring: 20 points

LESSON 6: 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 40 mins Scoring: 0 points

Checkup: 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 25 mins Scoring: 20 points

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

LESSON 7: 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 40 mins Scoring: 0 points

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

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

Quiz: Area of a Sector
Take a quiz to check your understanding of what you have learned.
LESSON 8: CIRCLES AND TRIANGLES
Study: Circles and Triangles
Learn about inscribed objects; circumscribed objects; and the definitions of incenter and circumcenter.
Duration: 0 hrs 40 mins Scoring: 0 points

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

LESSON 9: 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 40 mins Scoring: 0 points

Checkup: 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 25 mins Scoring: 20 points

LESSON 10: WHAT IS A CIRCLE WRAP-UP
Practice: Assignment
Submit your work for a set of 20 practice problems.
Duration: 0 hrs 50 mins Scoring: 100 points

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

Discuss: A Circular Peg within a Square Hole
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 20 mins Scoring: 30 points

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

LESSON 11: DIAGNOSTIC
Diagnostic: Circles
Take a diagnostic test that will create a study plan based on your answers.
Duration: 0 hrs 40 mins Scoring: 25 points

UNIT 9: COORDINATE GEOMETRY
LESSON 1: THE CARTESIAN COORDINATE SYSTEM
Study: The Cartesian Coordinate System
Learn about René Descartes, latitude and longitude as a grid, the Cartesian coordinate system as perpendicular number lines,
axes and the origin, the $xy$-plane, $x$- and $y$-coordinates, and ordered pairs.

Duration: 0 hrs 40 mins Scoring: 0 points

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

Quiz: The Cartesian Coordinate System
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 2: 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 40 mins Scoring: 0 points

Checkup: 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 25 mins Scoring: 20 points

LESSON 3: 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 40 mins Scoring: 0 points

Checkup: 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 25 mins Scoring: 20 points

LESSON 4: COORDINATES AND DATA

Study: Coordinates and Data
Learn about graphs and the Cartesian coordinate system, plotting data points, looking for patterns, finding correlations, dependent and independent variables, the line of best fit, and deviation and range.
Duration: 0 hrs 40 mins Scoring: 0 points

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

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

LESSON 5: PATTERNS AND LINES

Study: Patterns and Lines
Learn about linear equations, ordered pairs, and data points that form a straight line.
Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: 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 25 mins Scoring: 20 points

LESSON 6: 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 40 mins Scoring: 0 points

Checkup: 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 25 mins Scoring: 20 points

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

LESSON 7: THE RESCUE SHIP PROBLEM
Study: The Rescue Ship Problem
Explore a case study about using a parallel rule and the slope formula to steer a ship through dangerous waters.
Duration: 0 hrs 40 mins Scoring: 0 points

LESSON 8: PARALLEL AND PERPENDICULAR LINES
Study: Parallel and Perpendicular Lines
Learn about the definitions and slopes of parallel and perpendicular lines. Learn about negative reciprocals.
Duration: 0 hrs 40 mins Scoring: 0 points

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

Quiz: Parallel and Perpendicular Lines
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 9: 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 40 mins Scoring: 0 points

Checkup: 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 25 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 25 mins Scoring: 20 points

LESSON 10: CIRCLES

Study: Circles
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 40 mins Scoring: 0 points

Checkup: 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 25 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 25 mins Scoring: 20 points

LESSON 11: THE CARTESIAN COORDINATE SYSTEM WRAP-UP

Practice: Assignment
Submit your work for a set of 20 practice problems.
Duration: 0 hrs 50 mins Scoring: 100 points

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

Discuss: Graph Paper Puzzles
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 20 mins Scoring: 30 points

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

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

LESSON 12: DIAGNOSTIC

Diagnostic: Coordinate Geometry
Take a diagnostic test that will create a study plan based on your answers.
Duration: 0 hrs 40 mins Scoring: 25 points
UNIT 10: THREE-DIMENSIONAL SOLIDS

LESSON 1: THREE DIMENSIONS
Study: Three Dimensions
Learn about measuring three-dimensional figures.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Three Dimensions
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 40 mins Scoring: 0 points

Quiz: What Is a Polyhedron?
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 40 mins Scoring: 0 points

Quiz: Cylinders and Cones
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 40 mins Scoring: 0 points

Quiz: Platonic Solids
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 40 mins Scoring: 0 points

Checkup: 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 25 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 40 mins Scoring: 0 points

**Checkup: 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 25 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 25 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 40 mins Scoring: 0 points

**Checkup: 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 25 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 40 mins Scoring: 0 points

**Checkup: 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 25 mins Scoring: 20 points

**LESSON 9: THREE DIMENSIONS WRAP-UP**

**Practice: Assignment**
Submit your work for a set of 20 practice problems.
**Review: Three-Dimensional Solids**
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

**Discuss: Polyhedron Building Blocks**
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 20 mins Scoring: 30 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

**LESSON 10: DIAGNOSTIC**
**Diagnostic: Three-Dimensional Solids**
Take a diagnostic test that will create a study plan based on your answers.
Duration: 0 hrs 40 mins Scoring: 25 points

**UNIT 11: TOPICS IN GEOMETRY**

**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 40 mins Scoring: 0 points

**Quiz: Constructions**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 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 40 mins Scoring: 0 points

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

**LESSON 3: 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 40 mins Scoring: 0 points

**Quiz: Symmetry**
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points
LESSON 4: 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 40 mins Scoring: 0 points

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

LESSON 5: FRACTALS

Study: Fractals
Learn about self-similarity of fractals; the golden rectangle; making a Sierpinski triangle; the Koch curve; Cantor dust; examples of infinite length in nature; Zeno’s paradox; self-similarity in biological organisms; fern fractals; Mandelbrot sets; fractals and recursion; and fractional dimension.
Duration: 0 hrs 40 mins Scoring: 0 points

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

LESSON 6: 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 40 mins Scoring: 0 points

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

LESSON 7: NON-EUCLIDEAN GEOMETRY

Study: Non-Euclidean Geometry
Learn about the Playfair axiom (parallel postulate); examples of non-Euclidean geometry; Georg Friedrich Bernhard Riemann’s negation; great circles; Nikolai Ivanovich Lobachevsky’s negation; hyperbolic geometry; Henri Poincaré’s disk; Euclidean geometry as a subset of a complete geometric system; and characteristics of spherical and hyperbolic geometry.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Non-Euclidean Geometry
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 8: IMPOSSIBLE PROBLEMS FROM ANTIQUITY

Study: Impossible Problems from Antiquity
Learn about the Delian problem (doubling a cube) and trisecting an angle.
Duration: 0 hrs 40 mins Scoring: 0 points

Quiz: Impossible Problems from Antiquity
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 9: CONSTRUCTIONS WRAP-UP

Practice: Assignment
Submit your work for a set of 20 practice problems.
Duration: 0 hrs 50 mins Scoring: 100 points
**Review: Topics in Geometry**
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

**Discuss: Applying What You’ve Learned**
Join a three- to five-question discussion to practice methods learned in this unit.
Duration: 0 hrs 20 mins Scoring: 30 points

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

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

**LESSON 10: DIAGNOSTIC**

**Diagnostic: Topics in Geometry**
Take a diagnostic test that will create a study plan based on your answers.
Duration: 0 hrs 40 mins Scoring: 25 points

**UNIT 12: GEOMETRY SEMESTER 2 REVIEW AND EXAM**

**LESSON 1: GEOMETRY SEMESTER 2**

**Review: Geometry Semester 2**
Get ready for the exam by reviewing important ideas and skills covered in this semester.
Duration: 1 hr Scoring: 0 points

**Exam: Geometry Semester 2**
Take a computer-scored exam to show what you have learned in this semester.
Duration: 0 hrs 50 mins Scoring: 200 points