

Geometry is specifically aligned with Texas Essential Knowledge and Skills (TEKS) Geometry Standards and Benchmarks. Geometry provides a curriculum focused on the mastery of critical skills and the understanding of key geometric concepts. Through a "Discovery-Confirmation-Practice"-based exploration of these concepts, students are challenged to work toward a mastery of computational skills, to deepen their understanding of key ideas and solution strategies, and to extend their knowledge through a variety of problem-solving applications.

Course topics include reasoning, proof, and the creation of a sound mathematical argument; 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.

Geometry features ample opportunity for students to hone their computational skills by working through practice problem sets before moving on to formal assessment.

In addition to unit and semester computer- and teacher-scored summative assessments, each semester concludes with a STAAR diagnostic assessment. This assessment contains questions specifically designed to reflect the test items found on the STAAR end-of-course exams.

The content is based on the National Council of Teachers of Mathematics (NCTM) standards and is specifically aligned with TEKS Geometry Standards and Benchmarks.

Length: Two Semesters

UNIT 1: 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 hr 50 min Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hr 30 min Scoring: 0 points

Quiz: Entering the World of Geometry

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

Duration: 0

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 hr 50 min Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hr 30 min 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 hr 25 min 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 hr 50 min Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hr 30 min Scoring: 0 points

Quiz: Deduction: Making a Case

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

Duration: 0 hr 25

min Scoring: 20 points

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 hr 50 min Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hr 30 min Scoring: 0 points

Quiz: The Look and Language of Logic

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

Duration: 0

hr 25 min Scoring: 20 points

LESSON 5: REPRESENTATIONS FOR PROBLEM SOLVING**Study: Representations for Problem Solving**

Learn about a variety of representations and how to use them to describe geometric relationships and solve problems.

Duration: 0 hr 50 min Scoring: 0 points

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Scoring: 0 points

Quiz: Representations for Problem Solving

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 20 points

LESSON 6: MEASUREMENT CONVERSIONS**Study: Measurement Conversions**

Use conversions between measurement systems to solve problems in real-world situations.

Duration: 0 hr 50 min Scoring: 0 points

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Scoring: 0 points

Quiz: Measurement Conversions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 20 points

LESSON 7: 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 hr 50 min Scoring: 0 points

Quiz: Introduction to Proof

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

Duration: 0 hr 25 min

Scoring: 20 points

LESSON 8: 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 hr 50 min

Scoring: 0 points

Quiz: Proof in Geometry

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

Duration: 0 hr 25 min

Scoring: 20 points

LESSON 9: 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 hr 30

min Scoring: 0 points

Discuss: Get My Logic?

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hr

20 min Scoring: 30 points

Test (CS): Foundations of Geometry

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

Duration: 0 hr 40 min Scoring: 75 points

Test (TS): Foundations of Geometry

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

Duration: 0

hr 30 min Scoring: 50 points

LESSON 10: DIAGNOSTIC

Diagnostic: Foundations of Geometry

Take a diagnostic test that will create a study plan based on your answers.

Duration: 0 hr 40 min Scoring: 25 points

UNIT 2: 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

hr 50 min

Quiz: Points

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16 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 hr

50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Segments

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Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18 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 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Rays Lines and Angles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

24 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 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Identifying Types of Angles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 22 points

Quiz: Angle Bisectors and Adjacent Angles

Take a quiz to assess your understanding of the material.

Duration: 0 hr

25 min Scoring: 16 points

LESSON 5: CONGRUENT SEGMENTS AND ANGLES

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Study: Congruent Segments and Angles

Learn about the definitions of congruent line segments and angles; notation; the midpoint theorem; and congruence vs. equality.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Congruent Segments and Angles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 16 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 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Planes and the Space of Geometry

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min 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 a flatland exercise dealing with location and direction in two dimensions.

Duration: 0 hr 50 min

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.

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Duration: 0 hr 50 min

Checkpoint: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Intersecting Lines

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16 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 hr 50 min

Checkpoint: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Parallel Lines

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18 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 hr 50 min

Practice: Proving with the Law of Reflection

Use the law of reflection to make conjectures about geometric relationships and solve real-life problems.

Duration: 0 hr 30 min Scoring: 25 points

LESSON 11: WRAP-UP

Practice: Assignment

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Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 100 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: What if You Lived in Flatland?

Respond to one of three discussion questions asking you to apply methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Points Lines and Angles

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

Duration: 0 hr 40 min Scoring: 75 points

Test (TS): Points Lines and Angles

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

Duration: 0

hr 30 min Scoring: 50 points

LESSON 12: DIAGNOSTIC

Diagnostic: Points Lines and Angles

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 25 points

UNIT 3: 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 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Naming Triangles by Angle Measures

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Take a quiz to assess your understanding of the material.

Duration: 0 hr

25 min Scoring: 16 points

Quiz: Naming Triangles by Side Lengths

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 18 points

Quiz: The Triangle Inequality Theorem

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 22 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. Learn the meaning behind the statement "QED." Investigate the relationship between a given triangle's vertex and its exterior and remote interior angles.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Angle Theorems

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 20

points

Quiz: Exterior and Remote Interior Angles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 16 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 hr 50 min

Checkup: Practice Problems

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Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Congruent Triangles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18

points

Quiz: Properties of Congruence

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 18 points

LESSON 4: CONGRUENCE POSTULATES

Study: Congruence Postulates

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

Duration: 0

hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Using Congruence Postulates

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 20 points

Quiz: Using Congruence Postulates II

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 20 points

LESSON 5: PROOFS OF CONGRUENCE

Study: Proofs of Congruence

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

Duration: 0 hr 50 min

Quiz: Proofs of Congruence

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

LESSON 6: SIMILAR TRIANGLES

Study: Similar Triangles

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

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Similar Triangles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 28 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 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Ratios and Proportions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18 points

LESSON 8: SIMILARITY THEOREMS

Study: Similarity Theorems

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

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Similarity Theorems

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 22

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 is learned to solve Thales's problem.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Isosceles and Equilateral Triangles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 16 points

Quiz: Scalene Triangles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16

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 hr 50

min

Quiz: Medians Altitudes and Bisectors

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 24 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 hr 50 min

Practice: Solving for Parallax

Use concepts of congruence, similarity, ratio, and proportion to make conjectures about the solution of a real-world parallax problem.

Duration: 0 hr 30 min Scoring: 25 points

LESSON 12: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 100 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: The Well-Balanced Triangle

Respond to one of three discussion questions asking you to apply methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Triangles

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

Duration: 0 hr 40 min

Scoring: 75 points

Test (TS): Triangles

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

Duration: 0 hr 30 min

Scoring: 50 points

LESSON 13: DIAGNOSTIC

Diagnostic: Triangles

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr

40 min Scoring: 25 points

UNIT 4: 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 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Area of a Triangle

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18 points

LESSON 2: THE PYTHAGOREAN THEOREM

Study: The Pythagorean Theorem

Learn about 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 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: The Pythagorean Theorem

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18 points

LESSON 3: CONGRUENT RIGHT TRIANGLES

Study: Congruent Right Triangles

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

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the angle bisector theorem and its converse.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Proving Right Triangle Congruence

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 26 points

Quiz: Right Triangle Measurements

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 18 points

LESSON 4: SIMILAR RIGHT TRIANGLES

Study: Similar Right Triangles

Explore the properties of similar right triangles and 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 using proportions, and apply concepts learned to a miniature-golf problem.

Duration: 0 hr 50

min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Similar Right Triangles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

16 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 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: 45-45-90 Right Triangles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

16 points

Quiz: 30-60-90 Right Triangles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

12 points

LESSON 6: TRIGONOMETRIC RATIOS

Study: Trigonometric Ratios

Learn the definitions of *sine*, *cosine*, and *tangent*. Memorize "soh-cah-toa" as a mnemonic device relating to 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 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Trigonometric Ratios

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16

points

LESSON 7: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 100 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: A Closer Look at a Baseball Diamond

Students respond to one of three discussion questions asking them to apply methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Right Triangles

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

Duration: 0 hr 40

min Scoring: 75 points

Test (TS): Right Triangles

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

Duration: 0 hr 30

min Scoring: 50 points

LESSON 8: DIAGNOSTIC

Diagnostic: Right Triangles

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 25 points

UNIT 5: GEOMETRY SEMESTER 1 REVIEW AND EXAM

LESSON 1: PREPARING FOR THE SEMESTER EXAM

Review: Semester Review

Prepare for the semester exam by reviewing key concepts covered in Geometry Semester 1.

Duration: 1 hr

Exam: Semester Exam

Duration: 0 hr 50 min Scoring: 220 points

UNIT 6: STAAR DIAGNOSTIC ASSESSMENT

LESSON 1: STAAR DIAGNOSTIC ASSESSMENT

Diagnostic: STAAR Diagnostic Assessment

Take a diagnostic test that will generate a study plan based on your responses.

Duration: 1 hr Scoring: 35 points

UNIT 7: QUADRILATERALS AND OTHER POLYGONS

LESSON 1: POLYGONS AND QUADRILATERALS

Study: Polygons and Quadrilaterals

Learn about the definitions of a polygon and a quadrilateral and the relationship of one to the other; identifying and naming polygons and quadrilaterals; and convex, concave, regular, congruent, and similar polygons.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Identifying and Naming Polygons and Quadrilaterals

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 points

Quiz: Sorting and Recognizing Polygons

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 24 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Angle Sums of a Polygon

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

LESSON 3: PARALLELOGRAMS

Study: Parallelograms

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

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Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Parallelograms

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Practice: Proofs: Testing for Parallelograms

Use properties and characteristics of parallelograms to prove whether or not a quadrilateral is a parallelogram.

Duration: 0 hr 30 min Scoring: 25 points

Practice: Writing Two-Column Proofs

Prove statements about parallelograms using geometric properties by creating formal arguments in a two-column proof format.

Duration: 0 hr 30 min Scoring: 25 points

Quiz: Tests for Parallelograms

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

30 points

LESSON 5: RECTANGLES

Study: Rectangles

Learn about the definition of a rectangle, congruent diagonal theorems, and right angle theorems.

Explore a sample problem case study about proving that a window is rectangular using the congruent diagonal theorem.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Rectangles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 28 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Rhombi and Squares

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Practice: Proofs: Testing for Trapezoids

Use geometric properties to make conjectures about a problem scenario involving trapezoids.

Duration: 0 hr 30 min Scoring: 25 points

Quiz: Trapezoids

Take a quiz to assess your understanding of the material.

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, rectangle, and 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 area of a parallelogram and a trapezoid.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Area and Perimeter of Quadrilaterals

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 30 points

Quiz: Area of Rhombi and Trapezoids

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 22 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Area and Perimeter of Polygons

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 26 points

LESSON 10: AREA AND PERIMETER: CHANGING DIMENSIONS

Study: Area and Perimeter: Changing Dimensions

Learn how changing the dimensions of common geometric figures affects area and perimeter.

Duration: 0 hr 50 min Scoring: 0 points

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Scoring: 0 points

Quiz: Area and Perimeter: Changing Dimensions

Take a quiz to assess your understanding of the material.

Duration:

0 hr 25 min Scoring: 20 points

LESSON 11: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hr 50 min Scoring: 100 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 0 hr 30 min

Discuss: Parts Bits and Pieces

Respond to one of four discussion questions asking you to apply methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Quadrilaterals and Other Polygons

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

Duration: 0 hr 40 min Scoring: 75 points

Test (TS): Quadrilaterals and Other Polygons

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

Duration: 0 hr 30 min Scoring: 50 points

LESSON 12: DIAGNOSTIC

Diagnostic: Quadrilaterals and Other Polygons

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Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: What Is a Circle?

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30

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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Congruent Chords

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 26

points

Quiz: Chords and Perpendicular Radii

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 22 points

Quiz: Diameter of a Circle

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18 points

LESSON 3: ARCS

Study: Arcs

Learn about 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Arc Types and Measure

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 points

Quiz: Congruent Chords and Circle Angle Measure

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 24 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Inscribed Angles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 24 points

Quiz: Intersecting Chord Theorem

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 22 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.

Duration: 0 hr 40 min Scoring: 0 points

Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hr 25 min Scoring: 0 points

Quiz: Secant-Secant Angles

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

Duration: 0 hr 25 min

Scoring: 20 points

Quiz: Tangent-Chord Angles

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

Duration: 0 hr 25 min

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 hr 25 min 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 involving the raising of a highway over a river to allow for boating traffic underneath. Learn about the degree measure of an arc and arc length. Derive the formula for arc length.

Duration: 0

hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Circumference of a Circle

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 14 points

Quiz: Arc Length

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 26 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Practice: Problem Solving with Concentric Circles

Use geometric properties to make conjectures about a problem scenario involving concentric circles.

Duration: 0 hr 30 min Scoring: 25 points

Quiz: Area of a Circle

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 20 points

Quiz: Area of a Sector

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 26 points

LESSON 8: CIRCLES AND TRIANGLES

Study: Circles and Triangles

Learn about inscribed objects, the definition of incenter, circumscribed objects, and the definition of circumcenter.

Duration: 0 hr 40 min

Quiz: Circles and Triangles

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Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 28

points

LESSON 9: CIRCLES AND POLYGONS

Study: Circles and Polygons

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

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Circles and Polygons

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 24

points

LESSON 10: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hr 50 min Scoring: 100 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 0 hr 30 min

Discuss: A Circular Peg within A Square Hole

Respond to one of three discussion questions asking you to apply methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Circles

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

Duration: 0 hr 40 min

Scoring: 75 points

Test (TS): Circles

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

Duration: 0 hr 30 min

Scoring: 50 points

LESSON 11: DIAGNOSTIC

Diagnostic: Circles

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr

40 min 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: The Cartesian Coordinate System

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 30 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Midpoint Formula

Take a quiz to assess your understanding of the material.

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Duration: 0 hr 25 min Scoring: 30 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: The Distance Formula

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Coordinates and Data

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16 points

LESSON 5: PATTERNS AND LINES

Study: Patterns and Lines

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

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Patterns and Lines

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Computing Slope

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 24 points

Quiz: Special Cases of Slope

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 points

LESSON 7: THE RESCUE SHIP PROBLEM

Study: The Rescue Ship Problem

Explore a case study about using the slope formula and a parallel rule to steer a ship through dangerous waters.

Duration: 0 hr 40 min

LESSON 8: PARALLEL AND PERPENDICULAR LINES

Study: Parallel and Perpendicular Lines

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

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Parallel and Perpendicular Lines

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 26 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Equations of Lines

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 28

points

Quiz: Equations of Lines -- Part 2

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 24 points

LESSON 10: COORDINATE GEOMETRY WITH POLYGONS

Study: Coordinate Geometry with Polygons

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

Duration: 0 hr 50 min Scoring: 0 points

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Scoring: 0 points

Quiz: Coordinate Geometry with Polygons

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 20 points

LESSON 11: CIRCLES

Study: Circles

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

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Circles Centered at the Origin

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 20 points

Quiz: Circles Not Centered at the Origin

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 22 points

LESSON 12: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hr 50 min Scoring: 100 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 0 hr 30 min

Discuss: Graph Paper Puzzles

Respond to one of three discussion questions asking you to apply methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Coordinate Geometry

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

Duration: 0

hr 40 min Scoring: 75 points

Test (TS): Coordinate Geometry

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

Duration: 0 hr

30 min Scoring: 50 points

LESSON 13: DIAGNOSTIC

Diagnostic: Coordinate Geometry

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 25 points

UNIT 10: THREE-DIMENSIONAL SOLIDS

LESSON 1: THREE DIMENSIONS

Study: Three Dimensions

Learn about measuring three-dimensional figures.

Duration: 0 hr 40 min

Quiz: Three Dimensions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 24 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 hr 40 min

Quiz: What is a Polyhedron?

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 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 hr 40 min

Quiz: Cylinders and Cones

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 22 points

LESSON 4: PLATONIC SOLIDS

Study: Platonic Solids

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

Duration: 0 hr 40 min

Quiz: Platonic Solids

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 points

LESSON 5: SURFACE AREA

Study: Surface Area

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

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Surface Area of Regular Prisms and Pyramids

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 points

Quiz: Surface Area of Right Cylinders and Cones

Take a quiz to assess your understanding of the material.

Duration:

0 hr 25 min Scoring: 22 points

LESSON 6: VOLUME

Study: Volume

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

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Practice: Cavalieri Tool

Use the interactive Cavalieri tool to investigate relationships between the cross-sections of solids.

Duration: 0 hr 30 min Scoring: 25 points

Quiz: Volume of Prisms Cylinders and Cubes

Take a quiz to assess your understanding of the material.

Duration: 0 hr

25 min Scoring: 28 points

Quiz: Volume of Cones Cylinders and Pyramids

Take a quiz to assess your understanding of the material.

Duration: 0

hr 25 min Scoring: 24 points

LESSON 7: SPHERES

Study: Spheres

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

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Spheres

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Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 24 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 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Practice: Testing for Similarity

Use geometric properties to make conjectures about a problem scenario involving similar solids.

Duration: 0 hr 30 min Scoring: 25 points

Quiz: Similar Solids

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 points

LESSON 9: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hr 50 min Scoring: 100 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 0 hr 30 min

Discuss: Polyhedron Tinker Toys

Respond to one of three discussion questions asking you to apply methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Three-Dimensional Solids

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

Duration: 0 hr 40 min Scoring: 75 points

Test (TS): Three-Dimensional Solids

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

Duration:

0 hr 30 min Scoring: 50 points

LESSON 10: DIAGNOSTIC

Diagnostic: Three-Dimensional Solids

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min 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 hr 40 min

Practice: Designing Constructions

Use a construction tool to build geometric figures and make conjectures about geometric relationships.

Duration: 0 hr 30 min Scoring: 25 points

Quiz: Constructions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min 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 hr 40 min

Practice: Paper Folding Techniques

Use a paper-folding tool to make geometric figures and make conjectures about geometric relationships.

Duration: 0 hr 30 min Scoring: 25 points

Quiz: Paper Folding

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18 points

LESSON 3: GEOMETRIC MODELS FOR PROBABILITY AND STATISTICS

Study: Geometric Models for Probability and Statistics

Use area models to connect geometry to probability and statistics.

Duration: 0 hr 50 min Scoring: 0 points

Practice: Geometric Models: Solving for Probability

Use the properties of geometric shapes to calculate probability in real-life examples.

Duration: 0 hr 30 min Scoring: 25 points

Quiz: Geometric Models for Probability and Statistics

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 20 points

LESSON 4: SYMMETRY

Study: Symmetry

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

Duration: 0 hr 40 min

Quiz: Symmetry

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 24 points

LESSON 5: 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 hr 40 min

Quiz: Tessellations

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Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18 points

LESSON 6: FRACTALS

Study: Fractals

Learn about self-similarity of fractals; the golden rectangle; making a Sierpinski gasket; the Koch curve; a 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 hr 40 min

Quiz: Fractals

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 26 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 hr 40 min

Quiz: Locus of Points

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16

points

LESSON 8: 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 hr 40 min

Quiz: Non-Euclidean Geometry

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

LESSON 9: IMPOSSIBLE PROBLEMS FROM ANTIQUITY

Study: Impossible Problems from Antiquity

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

Duration: 0 hr 40 min

Quiz: Impossible Problems from Antiquity

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 16 points

LESSON 10: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hr 50 min Scoring: 100 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 0 hr 30 min

Discuss: Applying What You've Learned

Respond to one of three discussion questions asking you to apply methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Topics in Geometry

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

Duration: 0 hr

40 min Scoring: 75 points

Test (TS): Topics in Geometry

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

Duration: 0 hr

30 min Scoring: 50 points

LESSON 11: DIAGNOSTIC

Diagnostic: Topics in Geometry

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 25 points

UNIT 12: GEOMETRY SEMESTER 2 REVIEW AND EXAM

LESSON 1: PREPARING FOR THE SEMESTER EXAM

Review: Semester Review

Duration: 1 hr

Exam: Semester Exam

Duration: 0 hr 50 min Scoring: 224 points

UNIT 13: STAAR DIAGNOSTIC ASSESSMENT

LESSON 1: STAAR DIAGNOSTIC ASSESSMENT

Diagnostic: STAAR Diagnostic Assessment

Take a diagnostic test that will generate a study plan based on your responses.

Duration: 1 hr Scoring: 35 points