Geometry builds upon students' command of geometric relationships and formulating mathematical arguments. Students learn through discovery and application, developing the skills they need to break down complex challenges and demonstrate their knowledge in new situations.

Course topics include reasoning, proof, and the creation of sound mathematical arguments; points, lines, and angles; triangles and trigonometry; quadrilaterals and other polygons; circles; congruence, similarity, transformations, and constructions; coordinate geometry; three-dimensional solids; and applications of probability.

This course supports all students as they develop computational fluency, deepen conceptual understanding, and apply Common Core's eight mathematical practice skills. Students begin each lesson by discovering new concepts through guided instruction, and then confirm their understanding in an interactive, feedback-rich environment. Modeling activities equip students with tools for analyzing a variety of real-world scenarios and mathematical ideas. Journaling activities allow students to reason abstractly and quantitatively, construct arguments, critique reasoning, and communicate precisely. Performance tasks prepare students to synthesize their knowledge in novel, real-world scenarios and require that they make sense of multifaceted problems and persevere in solving them. Throughout the course students are evaluated through a diversity of assessments specifically designed to prepare them for the content, form, and depth of the Common Core assessments.

This course is built for the Common Core State Standards for Mathematics.

Length: Two semesters

UNIT 1: FOUNDATIONS OF GEOMETRY

LESSON 1: INDUCTION: THE SEARCH FOR RULES AND PATTERNS

Study: Induction: The Search for Rules and Patterns
Learn about looking for patterns, making conjectures, cross-referencing to history and science, real-world examples of inductive reasoning, building a triangle, and examples of symmetry.

Duration: 0 hrs 35 mins Scoring: 0 points

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

Quiz: Induction: The Search for Rules and Patterns
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 2: DEDUCTION: MAKING A CASE

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

Duration: 0 hrs 35 mins Scoring: 0 points

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

Quiz: Deduction: Making a Case
Take a quiz to check your understanding of what you have learned.
LESSON 3: THE LOOK AND LANGUAGE OF LOGIC

Study: The Look and Language of Logic
Explore examples of geometric reasoning. Learn about converses, inverses, and contrapositives of conditional statements.
Duration: 0 hrs 35 mins Scoring: 0 points

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

Quiz: The Look and Language of Logic
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: INTRODUCTION TO PROOFS

Study: Introduction to Proofs
Learn about postulates and axioms, givens, proof by contradiction (indirect proof), theorems and corollaries, and the axiomatic method.
Duration: 0 hrs 35 mins Scoring: 0 points

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

LESSON 5: BASIC POSTULATES IN GEOMETRY

Study: Basic Postulates in Geometry
Learn about the relationship of rays, lines, and angles to direction; the definition of a line; notation for rays and lines; building and defining an angle (including its vertex and sides); conventions for naming angles; and straight and zero angles.
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

LESSON 6: PLANES AND THE SPACE OF GEOMETRY

Study: Planes and the Space of Geometry
Learn about dimensionality, collinear points, two-dimensional objects, the geometric plane, the flat plane, postulate coplanar objects, and three-dimensional objects (solids).
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

Practice: Modeling: Logo Design
Use your knowledge of location, direction, and angles to model and solve a real-world problem.
LESSON 7: INTERSECTING LINES AND PROOFS
Study: Intersecting Lines and Proofs
Learn about intersections that form vertical angles; the vertical angle theorem; perpendicular lines, rays, and segments; distance and length; and perpendicular bisectors.
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

LESSON 8: PARALLEL LINES AND PROOFS
Study: Parallel Lines and Proofs
Learn about skew lines, coplanar lines that do not intersect, parallel line notation, transversals and corresponding angles, alternate interior angles, consecutive interior angles, and parallel line theorems.
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

Journal: Consecutive Angle Theorem
Use what you know about lines and angles to critique the reasoning of others and prove a theorem.
Duration: 0 hrs 30 mins Scoring: 20 points

Study: Solving the Mirror Problem
Learn about applying theorems from this unit to the problem of measuring light reflected off a mirror. Learn about the law of reflection.
Duration: 0 hrs 35 mins Scoring: 0 points

LESSON 9: FOUNDATIONS OF GEOMETRY WRAP-UP
Checkup: Foundations of Geometry Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

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

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

Test (TS): Foundations of Geometry
Take a teacher-scored test to check what you have learned in this unit.
Duration: 0 hrs 30 mins Scoring: 50 points
UNIT 2: TRIANGLES

LESSON 1: WHAT IS A TRIANGLE?

Study: What Is a Triangle?
Learn about the definition and parts of a triangle; opposite and included figures; naming and sorting triangles; equilateral, isosceles, and scalene triangles; and the triangle inequality theorem.
Duration: 0 hrs 35 mins Scoring: 0 points

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

Quiz: Naming Triangles by Angle Measures
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: Naming Triangles by Side Lengths
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

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

LESSON 2: THE ANGLES OF A TRIANGLE

Study: The Angles of a Triangle
Explore the angle sum theorem and third angle theorem for triangles. Investigate the relationship between a given triangle’s vertex and its exterior and remote interior angles.
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

Quiz: Exterior and Remote Interior Angles
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: CONGRUENCE

Study: Congruence
Learn about congruence, transformations of triangles, corresponding triangles, notation for writing congruence statements, and the CPCTC triangle congruence theorem.
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

LESSON 4: CONGRUENCE POSTULATES  
Study: Congruence Postulates  
Learn about postulates including the SSS, SAS, ASA, and AAS theorems.  
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

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

LESSON 5: PROOFS OF CONGRUENCE  
Study: Proofs of Congruence  
Learn about proving that parts of triangles are congruent by using Thales’s method for measuring the distance from ship to shore.  
Duration: 0 hrs 35 mins Scoring: 0 points

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

Journal: Proofs of Congruence  
Use what you know about congruence of triangles to prove the Perpendicular Bisector Theorem.  
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 6: SIMILAR TRIANGLES  
Study: Similar Triangles  
Learn about similarity versus congruence, testing for similarity among triangles, proportionality, the definition of similar triangles, and scale factor.  
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

LESSON 7: SIMILARITY THEOREMS AND PROPORTIONAL REASONING  
Study: Similarity Theorems and Proportional Reasoning  
Learn about the ASA similarity postulate, the SSS similarity theorem, and the SAS similarity theorem.  
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

**Practice: Modeling: Similarity Theorems**
Use your knowledge of similarity to model and solve a real-world problem.
Duration: 0 hrs 30 mins Scoring: 20 points

**LESSON 8: TRIANGLE THEOREMS**

**Study: Triangle Theorems**
Learn and prove the isosceles triangle theorem and its converse. Investigate two corollaries involving angle measures for equilateral triangles. Explore theorems for scalene triangles. Apply what you have learned to solve Thales’s problem.
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

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

**LESSON 9: MEDIANS AND ALTITUDES**

**Study: Medians and Altitudes**
Identify and explore medians and altitudes. Discover their relationship to centroids, orthocenters, incenters, and circumcenters.
Duration: 0 hrs 35 mins Scoring: 0 points

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

**LESSON 10: BISECTORS AND MIDSEGMENTS**

**Study: Bisectors and Midsegments**
Identify and explore angle bisectors, perpendicular bisectors, and midpoint bisectors, and lines parallel to one side of a triangle to discover their relationships to circumcenters, incenters, and side lengths.
Duration: 0 hrs 35 mins Scoring: 0 points

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

**LESSON 11: PERFORMANCE TASK: THE PARALLAX PROBLEM**

**Study: The Parallax Problem**
Learn to apply the concepts of congruence, similarity, ratio, and proportion to the solution of a real-world parallax problem.
Duration: 0 hrs 35 mins Scoring: 0 points

**Project: Performance Task: The Parallax Problem**
Apply the concepts of congruence, similarity, ratio, and proportion to solve a real-world problem.

**Duration:** 2 hrs  Scoring: 120 points

**LESSON 12: TRIANGLES WRAP-UP**

**Checkup: Triangles Practice Problems**
Check your understanding of the topics in this unit.

**Duration:** 0 hrs 25 mins  Scoring: 0 points

**Review: Triangles**
Get ready for the unit test by reviewing important ideas and skills.

**Duration:** 0 hrs 30 mins  Scoring: 0 points

**Test (CS): Triangles**
Take a computer-scored test to check what you have learned in this unit.

**Duration:** 0 hrs 40 mins  Scoring: 50 points

**Test (TS): Triangles**
Take a teacher-scored test to check what you have learned in this unit.

**Duration:** 0 hrs 30 mins  Scoring: 50 points

**UNIT 3: RIGHT TRIANGLES**

**LESSON 1: THE PYTHAGOREAN THEOREM**

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

**Duration:** 0 hrs 35 mins  Scoring: 0 points

**Checkup: Practice Problems**
Check your understanding of the lesson.

**Duration:** 0 hrs 25 mins  Scoring: 0 points

**Quiz: The Pythagorean Theorem**
Take a quiz to check your understanding of what you have learned.

**Duration:** 0 hrs 20 mins  Scoring: 20 points

**Journal: Proving the Pythagorean Theorem**
Use what you know about congruence of triangles to prove the Pythagorean Theorem.

**Duration:** 0 hrs 30 mins  Scoring: 20 points

**LESSON 2: 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 35 mins  Scoring: 0 points

**Checkup: Practice Problems**
Check your understanding of the lesson.

**Duration:** 0 hrs 25 mins  Scoring: 0 points

**Quiz: Proving Right Triangle Congruence**
Take a quiz to check your understanding of what you have learned.

**Duration:** 0 hrs 20 mins  Scoring: 20 points

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

LESSON 3: SIMILAR RIGHT TRIANGLES

Study: Similar Right Triangles
Explore the properties of similar right triangles. Prove that if an altitude is drawn from the right-angle vertex of a right triangle to its hypotenuse, then three similar triangles are formed. Calculate the missing sides of similar right triangles by using proportions and apply concepts learned to a miniature-golf problem.
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

Practice: Modeling: The Pool Table Problem
Use your knowledge of similar right triangles to model a pool table and hit your ball in the pocket.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 4: SPECIAL RIGHT TRIANGLES

Study: Special Right Triangles
Explore 45-45-90 and 30-60-90 triangles as special cases of right triangles and learn how to apply the ratios of their side lengths.
Duration: 0 hrs 35 mins Scoring: 0 points

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

Quiz: 45-45-90 Right Triangles
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Quiz: 30-60-90 Right Triangles
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: RIGHT TRIANGLES WRAP-UP

Checkup: Right Triangles Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

Review: Right Triangles
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 30 mins Scoring: 0 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 assess what you have learned in this unit.
UNIT 4: TRIGONOMETRY

LESSON 1: 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.

Checkup: Practice Problems
Check your understanding of the lesson.

Quiz: Trigonometric Ratios
Take a quiz to check your understanding of what you have learned.

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

LESSON 2: LAW OF COSINES AND PROOFS

Study: Law of Cosines and Proofs
Use the law of cosines to solve triangles.

Checkup: Practice Problems
Complete a set of practice problems using the law of cosines.

Quiz: Law of Cosines and Proofs
Take a quiz to assess your understanding of the material.

LESSON 3: LAW OF SINES AND PROOFS

Study: Law of Sines and Proofs
Use the law of sines to solve triangles and to explore the ambiguous case.

Checkup: Practice Problems
Complete a set of practice problems using the law of sines.

Journal: Law of Sines and Proofs
Use what you know about triangles and trigonometric ratios to prove the law of sines.

LESSON 4: TRIGONOMETRY WRAP-UP

Checkup: Trigonometry Practice Problems
Check your understanding of the topics in this unit.

Review: Trigonometry
Prepare for the unit test by reviewing key concepts and skills.
Duration: 0 hrs 30 mins

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

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

**UNIT 5: QUADRILATERALS AND OTHER POLYGONS**

**LESSON 1: ANGLE SUMS OF A POLYGON AND PROOFS**

**Study: Angle Sums of a Polygon and Proofs**
Learn about the diagonal of a polygon, the formula for the sum of the measures of a polygon’s interior angles and exterior angles, and a theorem for the sum of their measures.
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

**LESSON 2: PARALLELOGRAMS AND PROOFS**

**Study: Parallelograms and Proofs**
Learn about the definition of a parallelogram, properties and theorems of parallelograms, consecutive angle pairs, and diagonals.
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

**LESSON 3: TESTS FOR PARALLELOGRAMS**

**Study: Tests for Parallelograms**
Explore parallelogram theorems involving opposite side lengths, opposite and consecutive angle measures, and bisecting diagonals. Then work through a sample proof.
Duration: 0 hrs 35 mins Scoring: 0 points

**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 20 mins Scoring: 20 points
Practice: Modeling: Finding Parallelograms
Use your knowledge of quadrilaterals to model and solve a real-world problem.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 4: 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 35 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 20 mins Scoring: 20 points

LESSON 5: RHOMBI AND SQUARES
Study: Rhombi and Squares
Identify the properties and definitions of a rhombus and a square. Prove that the diagonals of a rhombus are perpendicular. Investigate how diagonals of a rhombus bisect opposite vertices. Apply the properties of rhombi and squares to find missing side lengths, diagonal lengths, and angle measures.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

LESSON 6: TRAPEZOIDS
Study: Trapezoids
Learn the definition of a trapezoid and identify its parts. Explore how base angles and diagonals of an isosceles trapezoid are congruent. Investigate the medians of a trapezoid. Apply the properties of trapezoids and isosceles trapezoids to find missing side lengths and median lengths.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

Journal: The Stone Arch
Use what you know about triangles and parallelograms to solve a real-world problem.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 7: QUADRILATERALS AND OTHER POLYGONS WRAP-UP
Checkup: Quadrilaterals and Other Polygons Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

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

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

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

UNIT 6: CIRCLES WITHOUT COORDINATES

LESSON 1: WHAT IS A CIRCLE?

Study: What Is a Circle?
Learn about the definition of a circle and about its center, radius, and circumference.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

LESSON 2: CHORDS

Study: Chords
Investigate the properties and definitions of chords and diameters. Discover that two chords are congruent if they are the same distance from the center of the circle. Prove that the radius bisects a chord if it is perpendicular to the chord.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

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

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

LESSON 3: ARCS

Study: Arcs
Learn the definitions of arc, endpoint, central angle, and intercept. Learn about minor and major arcs and semicircles, arc
notation, the measure of minor and major arcs, and the arc congruence and congruent chord theorems.

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 20 mins Scoring: 20 points

LESSON 4: CHORD AND ARC RELATIONSHIPS

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

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

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

LESSON 5: CIRCLES, ANGLES, AND PROOFS

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

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 20 mins Scoring: 20 points

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

LESSON 6: SECANTS, TANGENTS, AND PROOFS

Study: Secants, Tangents, and Proofs
Learn about the definition of secant and about secant-secant angle, its theorem, and proving the theorem. Learn about tangent line, point of tangency and tangent segments, tangents perpendicular to a circle’s radius, a tangent-tangent angle and its theorem, and a tangent–chord angle and its theorem. Explore a sample proof.

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

Quiz: Secant-Secant Angles

Lesson 7: Circumference and Arc Length

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

Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

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

Lesson 8: Area and Sectors

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

Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

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

Practice: Modeling: Stained Glass Window
Use what you know about finding the area of circles and sectors to model and solve a real-world problem.
Duration: 0 hrs 30 mins Scoring: 20 points

Lesson 9: Circles and Triangles

Study: Circles and Triangles
Learn about inscribed objects; circumscribed objects; and the definitions of incenter and circumcenter.
Checkup: Practice Problems
Check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

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

Journal: Similar Circles
A peer uses dilation to prove that two circles are similar. Now you prove it using inscribed triangles.
Duration: 0 hrs 30 mins Scoring: 20 points

**LESSON 10: CIRCLES AND POLYGONS**

Study: Circles and Polygons
Learn about the theorems of a quadrilateral inscribed in a circle and of a parallelogram inscribed in a circle.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

**LESSON 11: CIRCLES WITHOUT COORDINATES WRAP-UP**

Checkup: Circles Without Coordinates Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

Review: Circles Without Coordinates
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Test (CS): Circles Without Coordinates
Take a computer-scored test to check what you have learned in this unit.
Duration: 0 hrs 40 mins Scoring: 50 points

Test (TS): Circles Without Coordinates
Take a teacher-scored test to check what you have learned in this unit.
Duration: 0 hrs 30 mins Scoring: 50 points

**UNIT 7: GEOMETRY SEMESTER 1 EXAM**

**LESSON 1: GEOMETRY SEMESTER 1 EXAM**

Review: Geometry Semester 1 Exam
Prepare for the final exam by reviewing key concepts and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Exam: Geometry Semester 1 Exam
Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in Geometry Semester 1.
Duration: 0 hrs 50 mins Scoring: 200 points

**UNIT 8: COORDINATE GEOMETRY**
LESSON 1: MIDPOINT FORMULA

Study: Midpoint Formula
Learn about the midpoints of horizontal, vertical, and diagonal line segments and about the midpoint formula. Complete a sample problem.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

LESSON 2: THE DISTANCE FORMULA

Study: The Distance Formula
Derive the distance formula from the Pythagorean theorem. Use this formula to calculate the distance between any two points. Apply the distance formula in a real-world problem that involves locating the shortest route on a nautical map.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

Journal: The Distance Formula
Use what you know about the midpoint and distance formulas to critique the reasoning of others.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 3: PATTERNS AND LINES

Study: Patterns and Lines
Learn about linear equations, ordered pairs, and data points that form a straight line.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

LESSON 4: SLOPE

Study: Slope
Learn about measuring slope, rise, and run; the slope formula; negative zero and undefined slope; and measuring the rate of change of a dependent variable.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

Practice: Modeling: The Rescue Ship
Use your knowledge of parallel lines and the slope formula to steer a ship through dangerous waters.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 5: EQUATIONS OF LINES

Study: Equations of Lines
Learn about and explore examples of properties of lines, the y-intercept, the slope-intercept equation, and the point-slope equation.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

Quiz: Equations of Lines — Part II
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: EQUATIONS OF PARALLEL AND PERPENDICULAR LINES AND PROOFS

Study: Equations of Parallel and Perpendicular Lines and Proofs
Learn about the definitions and slopes of parallel and perpendicular lines. Learn about negative reciprocals.
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

LESSON 7: COORDINATE GEOMETRY WITH POLYGONS

Study: Coordinate Geometry with Polygons
Investigate the properties of polygons using coordinate geometry and congruence transformations on the coordinate plane.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to hone your calculation skills.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Coordinate Geometry with Polygons
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 8: AREA OF A TRIANGLE WITH COORDINATE GEOMETRY

Study: Area of a Triangle with Coordinate Geometry
Learn about the area of a polygon, square units, and the triangle area formula and theorem.
LESSON 9: AREA AND PERIMETER OF POLYGONS WITH COORDINATE GEOMETRY

Study: Area and Perimeter of Polygons with Coordinate Geometry
Find the perimeter of any polygon. Determine the areas of irregular polygons by breaking them up into quadrilaterals and regular polygons. Use the apothem formula to find the area of a regular polygon. Complete sample problems about the area of irregular polygons.
Duration: 0 hrs 35 mins Scoring: 0 points

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

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

LESSON 10: COORDINATE GEOMETRY WRAP-UP

Checkup: Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

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

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

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

UNIT 9: CONIC SECTIONS

LESSON 1: FROM LINES TO CONIC SECTIONS

Study: From Lines to Conic Sections
Learn about four kinds of conic sections, as well as the definitions of right circular cone, nappe, vertex, conic section, and cross section.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Linear Equations
LESSON 2: GEOMETRY OF CONIC SECTIONS

Study: Geometry of Conic Sections
Learn about parts and geometric properties of circles, ellipses, hyperbolas, and parabolas.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

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

Quiz: Geometry of Hyperbolas and Parabolas
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: CIRCLES WITH COORDINATES AND PROOFS

Study: Circles with Coordinates and Proofs
Use algebra to find an equation whose solution set is a circle. Learn about the standard equation for circles that are not centered at the origin.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

Quiz: Circles Not Centered at the Origin
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Point on a Circle
Use what you know about equations of circles to prove whether or not a point is on a circle.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 4: PARABOLAS

Study: Parabolas
Learn about finding a parabola’s equation from its graph; the effect of the squared variable’s coefficient on the parabola’s orientation and shape; equations of parabolas with vertices at points other than the origin; vertex form and standard form of an equation for a parabola; and converting between vertex form and standard form.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.
LESSON 5: LOCUS OF POINTS

Study: Locus of Points
Learn about defining objects in terms of points and given distances. Explore examples of a parabola and bisecting angles.
Duration: 0 hrs 35 mins Scoring: 0 points

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

Practice: Modeling: Wildlife Sanctuary
Use what you know about locus of points to solve a real world problem.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 6: CONIC SECTIONS WRAP-UP

Checkup: Conic Sections Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

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

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

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

UNIT 10: CONSTRUCTIONS AND TRANSFORMATIONS

LESSON 1: CONSTRUCTIONS

Study: Constructions
Learn about using a straightedge and a compass, common notions of Euclidean geometry, five postulates, constructing an equilateral triangle and a regular hexagon, bisecting an angle, and constructing a perpendicular bisector.
Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: Constructions
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points
Practice: Modeling: Constructing a Square
Use your geometry skills to construct a square using only a straightedge and a compass.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 2: PAPER FOLDING
Study: Paper Folding
Learn about constructing geometric solids with folding paper, coinciding objects bisecting an angle, and constructing a parallel line segment.
Duration: 0 hrs 35 mins Scoring: 0 points
Quiz: Paper Folding
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: IMPOSSIBLE PROBLEMS FROM ANTIQUITY
Study: Impossible Problems from Antiquity
Learn about the Delian problem (doubling a cube) and trisecting an angle.
Duration: 0 hrs 35 mins Scoring: 0 points
Quiz: Impossible Problems from Antiquity
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: TRANSFORMATIONS
Study: Transformations
Learn about rigid motions, describe the image and preimage, predict the results of transformations, and use a series of transformations to move figures onto themselves.
Duration: 0 hrs 35 mins Scoring: 0 points
Quiz: Transformations
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points
Journal: Transformations
Critique a conjecture about a series of transformations.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 5: SYMMETRY
Study: Symmetry
Learn about reflectional symmetry and line of symmetry and explore an example of an isosceles triangle. Learn about rotational symmetry, point of symmetry, and the symmetry of a human face.
Duration: 0 hrs 35 mins Scoring: 0 points
Quiz: Symmetry
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: TESSELLATIONS
Study: Tessellations
Learn the definition and explore examples of tessellations. Discover the chessboard as an example of a regular tessellation. Learn about semiregular tessellations.
Duration: 0 hrs 35 mins Scoring: 0 points
Quiz: Tessellations
LESSON 7: CONSTRUCTIONS AND TRANSFORMATIONS WRAP-UP

Checkup: Constructions and Transformations Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

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

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

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

UNIT 11: THREE-DIMENSIONAL SOLIDS

LESSON 1: THREE DIMENSIONS

Study: Three Dimensions
Learn about measuring three-dimensional figures.
Duration: 0 hrs 35 mins Scoring: 0 points

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

LESSON 2: WHAT IS A POLYHEDRON?

Study: What Is a Polyhedron?
Learn about the definition and elements of a polyhedron, prisms and their components, triangular and rectangular prisms, cubes, and regular and irregular pyramids.
Duration: 0 hrs 35 mins Scoring: 0 points

Quiz: What Is a Polyhedron?
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 3: CYLINDERS AND CONES

Study: Cylinders and Cones
Learn about the definition, components, and properties of a cylinder; the definition and components of a cone; and the similarities between cones and pyramids.
Duration: 0 hrs 35 mins Scoring: 0 points

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

LESSON 4: PLATONIC SOLIDS

Study: Platonic Solids
Learn about polygonal numbers, regularity of Platonic solids, and building your own Platonic solids.
Duration: 0 hrs 35 mins Scoring: 0 points
Quiz: Platonic Solids
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: Solids
Practice with a real-world solid modeling application.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 5: SURFACE AREA

Study: Surface Area
Learn about perimeter and surface area; base and lateral area; slant height versus altitude; and the formulas for surface area of a right prism, an oblique prism, a regular pyramid, an oblique cylinder, a right cone, and an oblique cone. Explore sample problems dealing with these subjects.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

Quiz: Surface Area of Right Cylinders and Cones
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 6: VOLUME

Study: Volume
Learn about area and volume, the formulas for volume of a cube and a rectangular prism, and Bonaventura Francesco Cavalieri's principle. Learn about the formulas for volume of a cylinder, a pyramid, and a cone; explore sample problems dealing with these formulas. Learn about cross-sectional area.
Duration: 0 hrs 35 mins Scoring: 0 points

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 20 mins Scoring: 20 points

Quiz: Volume of Cones, Cylinders, and Pyramids
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Volume
Think about and discuss how changing one dimension of a given shape changes its volume and surface area.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 7: SPHERES

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

Duration: 0 hrs 35 mins Scoring: 0 points

**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 20 mins Scoring: 20 points

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**LESSON 8: SIMILAR SOLIDS**

**Study: Similar Solids**
Learn about similar prisms, pyramids, cylinders, cones, and spheres; the constant ratio between corresponding parts of similar solids; and the ratio of volumes of similar solids.
Duration: 0 hrs 35 mins Scoring: 0 points

**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 20 mins Scoring: 20 points

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**LESSON 9: PERFORMANCE TASK: THREE-DIMENSIONAL SOLIDS**

**Study: Geodesic Domes**
Use your knowledge of three-dimensional solids to solve a geodesic dome problem.
Duration: 0 hrs 35 mins Scoring: 0 points

**Project: Performance Task: The Subway Stop**
Use what you know about three-dimensional solids to solve a real-world problem.
Duration: 2 hrs Scoring: 120 points

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**LESSON 10: THREE-DIMENSIONAL SOLIDS WRAP-UP**

**Checkup: Three-Dimensional Solids Practice Problems**
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

**Review: Three-Dimensional Solids**
Get ready for the unit test by reviewing important ideas and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

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

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

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**UNIT 12: APPLICATIONS OF PROBABILITY**

**LESSON 1: WHAT IS PROBABILITY?**

**Study: What Is Probability?**
Learn the definition for probability and explore its different forms.

Checkup: Practice Problems
Check your understanding of the lesson.

Quiz: What Is Probability?
Take a quiz to check your understanding of what you have learned.

Quiz: Sample Space
Take a quiz to check your understanding of what you have learned.

Quiz: Simple and Compound Events
Take a quiz to check your understanding of what you have learned.

Study: Organizing What Is Possible
Explore the numbers of possible outcomes from a brown bag containing gum balls of different colors.

LESSON 2: COUNTING PRINCIPLES

Study: Counting Principles
Learn about counting strategies and the multiplication principle. Practice using tree diagrams and Venn diagrams in probability problems.

Checkup: Practice Problems
Check your understanding of the lesson.

Quiz: Counting Principles
Take a quiz to check your understanding of what you have learned.

Quiz: Counting Principles
Take a quiz to check your understanding of what you have learned.

LESSON 3: PERMUTATIONS AND COMBINATIONS

Study: Permutations and Combinations
Learn the definitions for permutation and combination. Distinguish which situations require permutations and which require combinations. Determine probabilities using permutation and combinations.

Checkup: Practice Problems
Check your understanding of the lesson.

Quiz: Permutations and Combinations
Take a quiz to check your understanding of what you have learned.
Quiz: Finding Probabilities With Permutations and Combinations
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 4: BASIC RULES OF PROBABILITY
Study: Basic Rules of Probability
Learn four rules of probability, as well as the addition rule for disjoint events and the multiplication rule for independent events.
Duration: 0 hrs 35 mins Scoring: 0 points

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

Quiz: Basic Rules of Probability, Part I
Take a quiz to check your understanding of what you have learned.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 5: CONDITIONAL PROBABILITY
Study: Conditional Probability
Learn how to identify and solve conditional probability problems using correct notation, formulas, and tables.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Conditional Probability
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Practice: Modeling: A Student Survey
Use your knowledge of conditional probability to analyze the results of a student survey.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 6: INDEPENDENCE
Study: Independence
Learn how to show if two events are independent, and solve probability problems for both independent and dependent events using the multiplication rule and tree diagrams.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Independence
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

Journal: Smoking and Lung Cancer
Use what you know about conditional probability and independence to critique the reasoning of others.
Duration: 0 hrs 30 mins Scoring: 20 points

LESSON 7: SIMULATIONS
Study: Simulations
Learn how to simulate a random event using random number generators and rows of random digits and use results to estimate
probabilities empirically.
Duration: 0 hrs 35 mins Scoring: 0 points

Checkup: Practice Problems
Complete a set of practice problems to check your understanding of the lesson.
Duration: 0 hrs 25 mins Scoring: 0 points

Quiz: Simulations
Take a quiz to assess your understanding of the material.
Duration: 0 hrs 20 mins Scoring: 20 points

LESSON 8: APPLICATIONS OF PROBABILITY WRAP-UP
Checkup: Applications of Probability Practice Problems
Check your understanding of the topics in this unit.
Duration: 0 hrs 25 mins Scoring: 0 points

Review: Applications of Probability
Prepare for the unit test by reviewing key concepts and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

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

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

UNIT 13: GEOMETRY SEMESTER 2 EXAM

LESSON 1: GEOMETRY SEMESTER 2 EXAM
Review: Geometry Semester 2 Exam
Prepare for the final exam by reviewing key concepts and skills.
Duration: 0 hrs 30 mins Scoring: 0 points

Exam: Geometry Semester 2 Exam
Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in Geometry Semester 2.
Duration: 0 hrs 50 mins Scoring: 200 points