

GEOMETRY, SEMESTER A

COURSE OVERVIEW AND GOALS

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, proofs, 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 and deepen conceptual understanding. Students begin each lesson by discovering new concepts through guided instruction, and then confirm their understanding in an interactive, feedback-rich environment. Modeling activities equip students with tools for analyzing a variety of real-world scenarios and mathematical ideas. Journaling activities allow students to reason abstractly and quantitatively, construct arguments, critique reasoning, and communicate precisely. Performance tasks prepare students to synthesize their knowledge in novel, real-world scenarios and require that they make sense of multifaceted problems and persevere in solving them.

This course is built to state standards.

There are no required or optional materials.

By the end of this course, you will be able to do the following:

- ❖ Prove geometric theorems using a variety of methods.
- ❖ Prove theorems involving congruence and similarity.
- ❖ Prove the converse of the Pythagorean theorem and the laws of sines and cosines.
- ❖ Apply geometric and trigonometric concepts to solve real-world and mathematical problems.
- ❖ Calculate perimeters, areas, and unknown angle measures of polygons.
- ❖ Prove and apply circle properties and relationships.

COURSE COMPONENTS AND GRADING RUBRIC

The table gives a breakdown of the weight for each component in the course. Weight represents the percentage of the total score coming from each activity.

Course Components	Count	Weight
Pretest. <i>A pretest is an optional assessment, typically designed for credit recovery. If a student shows mastery of a lesson objective, the student may be automatically exempted from the upcoming activities associated with the mastered objective. Each passing pretest grade is entered into the gradebook.</i>	6	0%
Practice. <i>A practice activity provides instruction similar to that found in a study so that students can practice or review skills necessary to complete their assignment with mastery.</i>	6	5%
Journal. <i>A journal is a short reflective writing exercise that encourages students to connect historical events and ideas to their own lives and circumstances.</i>	6	5%
Project. <i>A project is a hands-on investigation that extends over several weeks.</i>	1	5%
Mastery Test. <i>A mastery test is a computer-scored lesson-level summative assessment.</i>	41	45%
Posttest. <i>A posttest appears at the end of each unit.</i>	6	15%
End-Of-Semester Test. <i>An end-of-semester test (EOS) appears at the end of each course.</i>	1	10%
Teacher-Graded Posttest. <i>A posttest that prompts students for written responses appears at the end of each unit.</i>	6	15%
Total	73	100%

**Teachers may manually adjust these weights if desired, per district grading requirements.*

UNIT 1: FOUNDATIONS OF GEOMETRY

In this unit, you will apply concepts related to coordinate geometry to solve problems on a coordinate plane.

Lesson and Duration	Activities	Objectives
Induction: The Search for Rules and Patterns 1 hour, 25 minutes	<i>Overview: Induction: The Search for Rules and Patterns</i> <i>Study: Induction: The Search for Rules and Patterns</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Induction: The Search for Rules and Patterns</i>	- Define <i>induction</i> and observe how it is used in everyday life and in science. - Identify patterns and use induction to form general rules or conjectures. - Create conjectures about triangular and geometric number patterns. - Create patterns and make conjectures about those patterns. - Analyze the geometric property of symmetry, and use the property to identify lines of symmetry in images.
Deduction: Making a Case 1 hour, 25 minutes	<i>Overview: Deduction: Making a Case</i> <i>Study: Deduction: Making a Case</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Deduction: Making a Case</i>	- Test whether a rule or pattern is correct using deductive methods. - Identify conditional statements and use them to form logical statements.
The Look and Language of Logic 1 hour, 25 minutes	<i>Overview: The Look and Language of Logic</i> <i>Study: The Look and Language of Logic</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: The Look and Language of Logic</i>	- Analyze Venn diagrams as representations of conditional statements. - Evaluate the converse, inverse, and contrapositive of a conditional statement. - Write conditional statements in shorthand using the basic symbols of logic.

Lesson and Duration	Activities	Objectives
		Apply syllogisms to form chains of (or make connections between) ideas.
Introduction to Proofs 1 hour	<i>Overview: Introduction to Proofs</i> <i>Study: Introduction to Proofs</i> <i>Mastery Test: Introduction to Proofs</i>	- Define the terms <i>definition</i>, <i>postulate</i>, and <i>common notion</i> and identify the differences between them. - Identify the parts and the layout of a two-column proof. - Identify the parts and the layout of an indirect proof, or proof by contradiction. - Prove related corollaries using theorems.
Basic Postulates in Geometry 1 hour, 25 minutes	<i>Overview: Basic Postulates in Geometry</i> <i>Study: Basic Postulates in Geometry</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Basic Postulates in Geometry</i>	- Apply knowledge of points, lines, and distance along a line to create precise definitions for an angle and line segment. - Write precise measurements of points, line segments, rays, lines, and angles using dimensions. - Identify acute, obtuse, and right angles when given angle measures or diagrams. - Identify linear, supplementary, and complementary angle pairs in diagrams. - Define and apply congruence to segment midpoints and angle bisectors. - Apply precise notation to distinguish between a line segment and its measure, and between congruent and equal figures.

Lesson and Duration	Activities	Objectives
Planes and the Space of Geometry 1 hour, 55 minutes	<i>Overview: Planes and the Space of Geometry</i> <i>Study: Planes and the Space of Geometry</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Planes and the Space of Geometry</i> <i>Practice: Modeling: Logo Design</i>	- Define the three dimensions of length, width, and height. - Define and identify collinear points and coplanar points and lines. - Identify objects that are zero-, one-, two-, and three-dimensional. - Relate the concept of infinity to one-, two-, and three-dimensional objects.
Intersecting Lines and Proofs 1 hour, 25 minutes	<i>Overview: Intersecting Lines and Proofs</i> <i>Study: Intersecting Lines and Proofs</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Intersecting Lines and Proofs</i>	- Define <i>vertical angles</i> and <i>linear pairs</i>. - Identify vertical angles and their angle measures, given a diagram and related angle measures. - Prove that vertical angles are congruent. - Define and identify <i>perpendicular rays, lines, and segments</i>. - Define <i>perpendicular bisector</i>.
Parallel Lines and Proofs 2 hours, 30 minutes	<i>Overview: Parallel Lines and Proofs</i> <i>Study: Parallel Lines and Proofs</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Parallel Lines and Proofs</i> <i>Journal: Consecutive Angle Theorem</i> <i>Study: Solving the Mirror Problem</i> <i>Checkup: Foundations of Geometry</i>	- Define <i>skew</i> and parallel lines. - Apply the correct notation to indicate parallel lines. - Apply the special angle relationships created by transversals and parallel lines to determine angle measures for corresponding angles, alternate interior angles, and consecutive angles.

Lesson and Duration	Activities	Objectives
Wrap-Up: Foundations of Geometry 1 hour, 40 minutes	<i>Review: Foundations of Geometry</i> <i>Posttest: Foundations of Geometry</i> <i>Teacher-Graded Posttest: Foundations of Geometry</i>	- Review key ideas presented in the unit. - Demonstrate mastery of concepts and skills from the unit by completing a computer-scored assessment. - Demonstrate mastery of concepts and skills from the unit by completing a teacher-scored assessment.

UNIT 2: TRIANGLES

In this unit, you will evaluate the properties of triangles and apply the relationships between triangles to solve problems.

Lesson and Duration	Activities	Objectives
What Is a Triangle? 1 hour, 25 minutes	<i>Overview: What Is a Triangle?</i> <i>Study: What Is a Triangle?</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: What Is a Triangle?</i>	- Define a triangle. - Identify the parts of a triangle: sides, angles, and vertices. - Apply proper notation to name triangles. - Categorize triangles by their angle measurements (acute, right, and obtuse). - Categorize triangles by their side lengths (equilateral, isosceles, and scalene). - Apply the triangle inequality theorem to build triangles.
The Angles of a Triangle 1 hour, 25 minutes	<i>Overview: The Angles of a Triangle</i> <i>Study: The Angles of a Triangle</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: The Angles of a Triangle</i>	- Find the sum of a triangle's internal angles. - Recognize the third angle theorem. - Identify interior, remote interior, and exterior angles of triangles.

Lesson and Duration	Activities	Objectives
		- Recognize the exterior angle theorem. - Solve for unknown angle measures of a triangle. - List the maximum number of obtuse or right angles that can be found in any triangle.
Congruence 1 hour, 25 minutes	<i>Overview: Congruence</i> <i>Study: Congruence</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Congruence</i>	- Create valid congruence statements about two triangles. - Recognize and apply CPCTC (corresponding parts of congruent triangles are congruent). - Apply CPCTC to determine information about congruent triangles. - Define the reflexive, transitive, and symmetric properties of congruence. - Define and apply the three congruence transformations.
Congruence Postulates 1 hour, 25 minutes	<i>Overview: Congruence Postulates</i> <i>Study: Congruence Postulates</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Congruence Postulates</i>	- Recognize the congruence shortcuts (SSS, SAS, and ASA postulates). - Apply the AAS theorem to determine whether two triangles are congruent. - Experiment with SSA and AAA and discover why they do not work as congruence shortcuts.
Proofs of Congruence 1 hour, 30 minutes	<i>Overview: Proofs of Congruence</i> <i>Study: Proofs of Congruence</i> <i>Mastery Test: Proofs of Congruence</i> <i>Journal: Proofs of Congruence</i>	Analyze congruent triangles using the shortcut postulates (SSS, SAS, and ASA), the AAS theorem, and CPCTC.

Lesson and Duration	Activities	Objectives
		Apply Thales' method and triangle congruence shortcuts to measure the distance of enemy warships from the shore.
Similar Triangles 1 hour, 25 minutes	<i>Overview: Similar Triangles</i> <i>Study: Similar Triangles</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Similar Triangles</i>	- Define similar as it relates to geometric figures and list the key characteristics of similar triangles (congruent angles and proportional sides). - Dilate geometric figures to determine if they are similar. - Apply correct notation to indicate similarity. - Calculate the scale factor of triangles by setting up ratios of corresponding sides.
Similarity Theorems and Proportional Reasoning 1 hour, 55 minutes	<i>Overview: Similarity Theorems and Proportional Reasoning</i> <i>Study: Similarity Theorems and Proportional Reasoning</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Similarity Theorems and Proportional Reasoning</i> <i>Practice: Modeling: Similarity Theorems</i>	- Translate, rotate, reflect, and dilate triangle pairs to determine if they are similar. - Identify the similarity shortcuts: AA postulate, SSS theorem, and SAS theorem. - Apply the similarity shortcuts (AA postulate, SSS theorem, and SAS theorem) to find the missing side lengths and angle measures of triangles. - Prove two triangles are similar by using the similarity shortcuts.
Triangle Theorems 1 hour, 25 minutes	<i>Overview: Triangle Theorems</i> <i>Study: Triangle Theorems</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Triangle Theorems</i>	- Identify congruent parts of an isosceles triangle. - Define the isosceles triangle theorem and its converse. - Identify the two corollaries associated with the isosceles triangle theorem that relate to equilateral triangles.

Lesson and Duration	Activities	Objectives
		- Determine the relationship between the shortest and longest sides of a triangle and the smallest and largest angles of a triangle. - Apply triangle theorems to find missing side lengths and angle measures.
Medians and Altitudes 1 hour	<i>Overview: Medians and Altitudes</i> <i>Study: Medians and Altitudes</i> <i>Mastery Test: Medians and Altitudes</i>	- Analyze the medians and altitudes of triangles. - Identify the centroids, orthocenters, incenters, and circumcenters of triangles.
Bisectors and Midsegments 1 hour	<i>Overview: Bisectors and Midsegments</i> <i>Study: Bisectors and Midsegments</i> <i>Mastery Test: Bisectors and Midsegments</i>	- Identify and explore the angle bisectors, perpendicular bisectors, and midsegments of triangles. - Determine the circumcenters, incenters, and side lengths of triangles and their relationships with angle bisectors, perpendicular bisectors, and midsegments. - Prove theorems related to the bisectors and segments of triangles.
Performance Task 2 hours, 40 minutes	<i>Overview: Performance Task</i> <i>Study: The Parallax Problem</i> <i>Project: Performance Task: The Parallax Problem</i> <i>Checkup: Triangles</i>	- Apply your knowledge, skills, and resources to make sense of problems. - Persevere in solving problems. - Write down your ideas and solutions, using precise mathematical vocabulary.

Lesson and Duration	Activities	Objectives
Wrap-Up: Triangles 1 hour, 40 minutes	<i>Review: Triangles</i> <i>Posttest: Triangles</i> <i>Teacher-Graded Posttest: Triangles</i>	- Review key ideas presented in the unit. - Demonstrate mastery of concepts and skills from the unit by completing a computer-scored assessment. - Demonstrate mastery of concepts and skills from the unit by completing a teacher-scored assessment.

UNIT 3: RIGHT TRIANGLES

In this unit, you will apply the Pythagorean theorem and other tools to determine missing information and to identify similar, congruent, and special right triangles.

Lesson and Duration	Activities	Objectives
The Pythagorean Theorem 1 hour, 55 minutes	<i>Overview: The Pythagorean Theorem</i> <i>Study: The Pythagorean Theorem</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: The Pythagorean Theorem</i> <i>Journal: Proving the Pythagorean Theorem</i>	- Derive the Pythagorean theorem $a^2 + b^2 = c^2$ from the relationship between right triangles and squares. - Apply the Pythagorean theorem to find the values of missing sides in a right triangle. - Prove that triangles are right triangles using the converse of the Pythagorean theorem. - Define and give examples of Pythagorean triples. - Apply the Pythagorean theorem to solve real-world problems.
Congruent Right Triangles 1 hour, 25 minutes	<i>Overview: Congruent Right Triangles</i> <i>Study: Congruent Right Triangles</i> <i>Checkup: Practice Problems</i>	Analyze the right triangle congruence shortcut theorems — HL, LL, HA, and LA.

Lesson and Duration	Activities	Objectives
	<i>Mastery Test: Congruent Right Triangles</i>	- Determine the relationship between right triangle congruence theorems and the congruence theorems for non-right triangles. - Apply the perpendicular bisector theorem to find unknown side lengths or determine if two right triangles are congruent. - Apply the angle bisector theorem to find unknown angle measures in right triangles.
Similar Right Triangles 1 hour, 55 minutes	<i>Overview: Similar Right Triangles</i> <i>Study: Similar Right Triangles</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Similar Right Triangles</i> <i>Practice: Modeling: The Pool Table Problem</i>	- Determine if right triangles are similar when given only one acute angle measure in each triangle. - 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. - Solve real-world problems by using the properties of similar right triangles.
Special Right Triangles 1 hour, 25 minutes	<i>Overview: Special Right Triangles</i> <i>Study: Special Right Triangles</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Special Right Triangles</i> <i>Checkup: Right Triangles</i>	- Determine the ratios of the sides of 45-45-90 triangles and 30-60-90 triangles. - Calculate the unknown side length when given one or two side lengths of a 45-45-90 triangle or a 30-60-90 triangle.
Wrap-Up: Right Triangles	<i>Review: Right Triangles</i> <i>Posttest: Right Triangles</i>	Review key ideas presented in the unit.

Lesson and Duration	Activities	Objectives
1 hour, 40 minutes	Teacher-Graded Posttest: Right Triangles	- Demonstrate mastery of concepts and skills from the unit by completing a computer-scored assessment. - Demonstrate mastery of concepts and skills from the unit by completing a teacher-scored assessment.

UNIT 4: TRIGONOMETRY

In this unit, you will solve mathematical and real-world problems using trigonometric ratios.

Lesson and Duration	Activities	Objectives
Trigonometric Ratios 1 hour, 55 minutes	Overview: Trigonometric Ratios Study: Trigonometric Ratios Checkup: Practice Problems Mastery Test: Trigonometric Ratios Practice: Modeling: Leaning Towers	- Define the sine, cosine, and tangent functions. - Calculate the sines, cosines, and tangents of the angles of special right triangles. - Use trigonometric ratios to solve real-world problems.
Law of Cosines and Proofs 1 hour, 25 minutes	Overview: Law of Cosines and Proofs Study: Law of Cosines and Proofs Checkup: Practice Problems Mastery Test: Law of Cosines and Proofs	- Derive the law of cosines. - Solve SSS- and SAS-type problems using the law of cosines. - Apply the law of cosines to real-world situations.
Law of Sines and Proofs 1 hour, 55 minutes	Overview: Law of Sines and Proofs Study: Law of Sines and Proofs Checkup: Practice Problems Mastery Test: Law of Sines and Proofs Journal: Law of Sines and Proofs	- Identify problems that can be solved using the law of sines. - Solve SAA- and ASA-type problems using the law of sines. - Solve for all zero, one, or two solutions to SSA-type problems.

Lesson and Duration	Activities	Objectives
	<i>Checkup: Trigonometry</i>	
Wrap-Up: Trigonometry <i>1 hour, 40 minutes</i>	<i>Review: Trigonometry</i> <i>Posttest: Trigonometry</i> <i>Teacher-Graded Posttest: Trigonometry</i>	- Review key ideas presented in the unit. - Demonstrate mastery of concepts and skills from the unit by completing a computer-scored assessment. - Demonstrate mastery of concepts and skills from the unit by completing a teacher-scored assessment.

UNIT 5: QUADRILATERALS AND OTHER POLYGONS

In this unit, you will analyze and determine the properties of polygons, including parallelograms, rectangles, rhombi, squares, and trapezoids.

Lesson and Duration	Activities	Objectives
Angle Sums of a Polygon and Proofs <i>1 hour, 25 minutes</i>	<i>Overview: Angle Sums of a Polygon and Proofs</i> <i>Study: Angle Sums of a Polygon and Proofs</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Angle Sums of a Polygon and Proofs</i>	- Determine how many triangles can be drawn inside a polygon by using diagonals. - Derive the formula for the sum of the interior angles of a polygon with n sides. - Show that the sum of the exterior angles of any convex polygon is 360°. - Determine the relationship among the number of sides of a regular polygon, the sum of the measures of its interior angles, and the measure of each of its exterior angles.

Lesson and Duration	Activities	Objectives
Parallelograms and Proofs 1 hour, 25 minutes	<i>Overview: Parallelograms and Proofs</i> <i>Study: Parallelograms and Proofs</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Parallelograms and Proofs</i>	- Define parallelogram. - Analyze the properties of the consecutive and opposite angles of a parallelogram. - Apply the properties of a parallelogram to find missing side lengths, diagonal lengths, and angle measures.
Tests for Parallelograms 1 hour, 55 minutes	<i>Overview: Tests for Parallelograms</i> <i>Study: Tests for Parallelograms</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Tests for Parallelograms</i> <i>Practice: Modeling: Finding Parallelograms</i>	- Identify and apply the six tests for parallelograms. - Determine the missing side length for a parallelogram. - Find the missing angle measure for a parallelogram.
Rectangles 1 hour, 25 minutes	<i>Overview: Rectangles</i> <i>Study: Rectangles</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Rectangles</i>	- Define rectangle. - Determine whether a shape is a rectangle by using the properties of a rectangle. - Apply the properties of rectangles to find missing side lengths, diagonal lengths, and angle measures. - Apply the properties of rectangles to solve real-world problems.
Rhombi and Squares 1 hour, 25 minutes	<i>Overview: Rhombi and Squares</i> <i>Study: Rhombi and Squares</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Rhombi and Squares</i>	- Classify rhombi as parallelograms, and squares as both rhombi and rectangles. - Define rhombus and square. - Determine if the shape is a parallelogram, rectangle, rhombus, or square.

Lesson and Duration	Activities	Objectives
		Apply the properties of rhombi and squares to find missing side lengths, diagonal lengths, and angle measures.
Trapezoids 1 hour, 55 minutes	<i>Overview: Trapezoids</i> <i>Study: Trapezoids</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Trapezoids</i> <i>Journal: The Stone Arch</i> <i>Checkup: Quadrilaterals and Other Polygons</i>	- Define trapezoid and identify the parts of a trapezoid. - Define isosceles trapezoid. - Explore the properties of the median of a trapezoid. - Apply the properties of trapezoids and isosceles trapezoids to find missing side lengths, median lengths, diagonal lengths, and angle measures.
Wrap-Up: Quadrilaterals and Other Polygons 1 hour, 40 minutes	<i>Review: Quadrilaterals and Other Polygons</i> <i>Posttest: Quadrilaterals and Other Polygons</i> <i>Teacher-Graded Posttest: Quadrilaterals and Other Polygons</i>	- Review key ideas presented in the unit. - Demonstrate mastery of concepts and skills from the unit by completing a computer-scored assessment. - Demonstrate mastery of concepts and skills from the unit by completing a teacher-scored assessment.

UNIT 6: CIRCLES WITHOUT COORDINATES

In this unit you will identify missing measurements of circles by drawing upon an understanding of radius, diameter, circumference, and other concepts.

Lesson and Duration	Activities	Objectives
What Is a Circle? 1 hour, 25 minutes	<i>Overview: What Is a Circle?</i> <i>Study: What Is a Circle?</i>	- Define circle, radius, and circumference. - Identify the radius and center of a circle.

Lesson and Duration	Activities	Objectives
	<i>Checkup: Practice Problems</i> <i>Mastery Test: What Is a Circle?</i>	Calculate the circumference of a circle, given the measure of its radius.
Chords 1 hour, 25 minutes	<i>Overview: Chords</i> <i>Study: Chords</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Chords</i>	- Define diameter and identify the diameter of a circle. - Define chord and identify chords in a circle. - Identify and apply the properties of congruent chords. - Prove that a radius bisects a chord if it is perpendicular to the chord. - Determine the properties of a perpendicular bisector of a chord.
Arcs 1 hour, 25 minutes	<i>Overview: Arcs</i> <i>Study: Arcs</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Arcs</i>	- Define a circle based on the distance around a circular arc. - Define a central angle, including its relationship to the arc it intercepts. - Define and identify an arc, minor arc, major arc, and semicircle. - Apply the proper notation to name an arc. - Apply the properties of arcs and central angles to determine the measures of major and minor arcs, central angles, circles, and semicircles.
Chord and Arc Relationships 1 hour, 25 minutes	<i>Overview: Chord and Arc Relationships</i> <i>Study: Chord and Arc Relationships</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Chord and Arc Relationships</i>	- Define <i>congruent arcs</i>. - Identify congruent arcs using the relationships among central angles, chords, and arcs.

Lesson and Duration	Activities	Objectives
		- Recognize the relationship between two congruent chords and their associated arcs. - Determine whether intercepted arcs are congruent, given the measures of central angles. - Apply the properties of arcs, congruent arcs, and central angles to determine the measures of each.
Circles, Angles, and Proofs 1 hour, 25 minutes	<i>Overview: Circles, Angles, and Proofs</i> <i>Study: Circles, Angles, and Proofs</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Circles, Angles, and Proofs</i>	- Define and identify an inscribed angle. - Recognize the relationship between the measure of an inscribed angle and the measure of its intercepted arc. - Determine the type of inscribed triangle that can intercept a semicircle. - Prove the intersecting chord theorem and use it to determine the measures of angles or arcs created by intersecting chords.
Secants, Tangents, and Proofs 1 hour, 25 minutes	<i>Overview: Secants, Tangents, and Proofs</i> <i>Study: Secants, Tangents, and Proofs</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Secants, Tangents, and Proofs</i>	- Define and identify a secant, tangent, and point of tangency. - Analyze the relationship between a secant-secant angle and its intercepted arc. - Prove the secant-secant theorem. - Determine the relationship between the measure of a tangent-chord angle and the measure of the arc it intercepts. - Find the measure of a tangent-tangent angle or its intercepted arcs.

Lesson and Duration	Activities	Objectives
Circumference and Arc Length 1 hour, 25 minutes	<i>Overview: Circumference and Arc Length</i> <i>Study: Circumference and Arc Length</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Circumference and Arc Length</i>	- Define <i>circumference</i> and write its mathematical formula. - Apply circumference to a real-world problem. - Analyze the relationship between the measure of a central angle and the length of the intercepted arc. - Calculate arc length and circumference. - Define the <i>radian measure</i> of an angle.
Area and Sectors 1 hour, 55 minutes	<i>Overview: Area and Sectors</i> <i>Study: Area and Sectors</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Areas and Sectors</i> <i>Practice: Modeling: Stained Glass Window</i>	- Define area of a circle and write its mathematical formula. - Apply area to a real-world problem. - Define sector. - Derive the formula for the area of a sector.
Circles and Triangles 1 hour, 55 minutes	<i>Overview: Circles and Triangles</i> <i>Study: Circles and Triangles</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Circles and Triangles</i> <i>Journal: Similar Circles</i>	- Inscribe and circumscribe a triangle. - Experiment with a triangle's three altitudes to discover the incenter of the triangle. - Experiment with a triangle's three perpendicular bisectors to discover the circumcenter of the triangle.
Circles and Polygons 1 hour, 25 minutes	<i>Overview: Circles and Polygons</i> <i>Study: Circles and Polygons</i> <i>Checkup: Practice Problems</i> <i>Mastery Test: Circles and Polygons</i> <i>Checkup: Circles Without Coordinates</i>	- Determine whether a circle can be circumscribed about a given polygon. - Recognize that the opposite angles of a circumscribed quadrilateral are supplementary.

Lesson and Duration	Activities	Objectives
		Confirm that a rectangle is the only parallelogram that can be circumscribed.
Wrap-Up: Circles Without Coordinates 1 hour, 40 minutes	<i>Review: Circles Without Coordinates</i> <i>Posttest: Circles Without Coordinates</i> <i>Teacher-Graded Posttest: Circles Without Coordinates</i>	- Review key ideas presented in the unit. - Demonstrate mastery of concepts and skills from the unit by completing a computer-scored assessment. - Demonstrate mastery of concepts and skills from the unit by completing a teacher-scored assessment.

SEMESTER WRAP-UP

In this unit, you will review the concepts and skills presented in the course and take a semester exam.

Lesson and Duration	Activities	Objectives
Semester Wrap-Up 1 hour, 20 minutes	<i>Review: Semester Review</i> <i>End-of-Semester Test: Semester Exam</i>	- Review key ideas presented in the semester. - Demonstrate mastery of concepts and skills from the semester by completing a computer-scored assessment.