

Options EHS Geometry B		Scope and Sequence
Unit	Lesson	Objectives
Triangle Congruence		
	Triangle Congruence: SSS and HL	
		Identify the parts that can be used to prove triangle congruency using SSS or HL.
		Complete the steps to prove triangles are congruent using SSS or HL.
		Determine the isometric transformations that would map one triangle onto another triangle given that three corresponding sides are congruent.
	Triangle Congruence: SAS	
		Determine the isometric transformations that would map one triangle onto another triangle given that two corresponding sides and the included angle are congruent.
		Identify the sides and angle that can be used to prove triangle congruency using SAS.
		Complete the steps to prove triangles are congruent using SAS.
	Triangle Congruence: ASA and AAS	
		Identify the side and angles that can be used to prove triangle congruency using ASA or AAS.
		Complete the steps to prove triangles are congruent using ASA or AAS.
		Determine the isometric transformations that would map one triangle onto another triangle given that two pairs of corresponding angles and one pair of corresponding sides are congruent.
	Using Triangle Congruence Theorems	
		Identify the triangle congruency theorem that can be used to prove two triangles congruent.
		Complete the steps to prove angles, segments, and triangles are congruent using triangle congruence theorems and CPCTC.
	Test	
Quadrilaterals and Coordinate Algebra		

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	Classifying Quadrilaterals	Classify and describe relationships within the family of quadrilaterals. Describe real-world objects using characteristics of quadrilaterals. Solve mathematical problems using characteristics of quadrilaterals. Solve real-world problems using characteristics of quadrilaterals.
	Parallelograms	Complete the steps to prove theorems about properties of parallelograms. Apply properties of parallelograms to solve problems.
	Proving a Quadrilateral Is a Parallelogram	Complete the steps to prove that a quadrilateral is a parallelogram. Apply properties of parallelograms to solve for unknown values. Analyze a figure to determine if it is a parallelogram.
	Special Parallelograms	Complete the steps to prove theorems about properties of parallelograms. Apply properties of rhombi to solve mathematical and real-world problems. Apply properties of rectangles to solve mathematical and real-world problems. Apply properties of squares to solve mathematical and real-world problems.
	Trapezoids and Kites	Complete proofs involving properties of trapezoids and kites. Apply properties of trapezoids to solve mathematical and real-world problems. Apply properties of kites to solve mathematical and real-world problems.
	Figures in the Coordinate Plane	

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		Apply coordinate algebra proofs to triangles and quadrilaterals.
		Calculate the perimeter of a triangle or quadrilateral given the coordinates of the vertices.
	Unit Test	
Circles		
	Introduction to Circles	
		Complete the steps to prove that all circles are similar.
		Identify and describe terms related to circles.
		Calculate the degree measure of an arc using the arc addition postulate.
	Central Angles	
		Identify congruent central angles, chords, and arcs.
		Determine the measures of central angles, chords, and arcs using theorems about angle, chord, and arc congruency.
		Solve problems using the radius tangent theorem and its converse.
	Inscribed Angles	
		Complete the steps to prove theorems involving inscribed angles and their intercepted arcs.
		Apply theorems about inscribed angles and angles formed by a tangent and a chord.
	Secants, Tangents, and Angles	
		Solve problems involving angles formed by two intersecting chords.
		Solve problems involving angles formed by two secants that intersect outside a circle.
		Solve problems involving angles formed by two intersecting tangents.
		Solve problems involving angles formed by a secant and a tangent that intersect outside a circle.
	Special Segments	
		Solve problems involving segments formed by two intersecting chords.

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		Solve problems involving segments formed by two secants which intersect outside a circle.
		Solve problems involving segments formed by two intersecting tangents.
		Solve problems involving segments formed by a secant and a tangent which intersect outside a circle.
	Circumference and Arc Length	
		Solve problems involving circumference of a circle.
		Determine the radian measure of a central angle.
		Solve problems involving arc length with central angles measured in degrees.
		Solve problems involving arc length with central angles measured in radians.
	Area of a Circle and a Sector	
		Solve problems involving area of a circle.
		Solve problems involving area of a sector with central angles measured in radians.
		Solve problems involving area of a sector with central angles measured in degrees.
	Equation of a Circle	
		Identify the center and radius from the equation of a circle, including equations given in general form.
		Determine the equation of a circle.
		Determine if a given point lies on a circle.
	Unit Test	
Geometric Modeling in Two Dimensions		
	Area of Triangles and Parallelograms	
		Solve problems involving areas of triangles and parallelograms.
	Perimeter and Area of Rhombi, Trapezoids, and Kites	

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		Solve problems involving the area of a rhombus, trapezoid, and kite.
		Solve problems involving the area of a rhombus, trapezoid, and kite given the coordinates of the vertices.
		Calculate the perimeter of a rhombus, trapezoid, or kite given the coordinates of the vertices.
	Angle Measures of Polygons	
		Identify and describe polygons.
		Apply the polygon interior angle sum theorem to solve problems.
		Apply the polygon exterior angle sum theorem to solve problems.
	Area of Regular Polygons	
		Calculate the length of the apothem of a regular polygon.
		Calculate the area of a regular polygon.
		Solve real-world problems involving the area of regular polygons.
	Area of Composite Figures	
		Decompose composite 2-D figures.
		Write an expression that represents the area of a composite 2-D figure.
		Calculate the area of composite 2-D figures, including real-world applications.
	Unit Test	
	Applications of Probability	
	Sets and Venn Diagrams	
		Identify and represent elements of sets and subsets, including the empty and universal sets.
		Represent and interpret the union and intersection of sets using set notation and Venn diagrams.
	Finding Outcomes	
		Identify possible outcomes for an event.

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		Evaluate expressions involving factorials.
		Solve combination problems including finding a subset of the total number of possible combinations.
		Solve permutation problems including finding a subset of the total number of possible permutations.
	Theoretical and Experimental Probability	
		Identify the sample space of an experiment and the complement of an event.
		Calculate theoretical and experimental probability.
	Independent and Mutually Exclusive Events	
		Identify mutually exclusive and independent events.
		Calculate probabilities using the addition rule.
		Calculate probabilities using the multiplication rule of independent events.
Right Triangle Relationships and Trigonometry		
	Triangle Classification Theorems	
		Classify a triangle using the converse of the Pythagorean theorem and triangle inequality theorems.
		Apply the converse of the Pythagorean theorem and triangle inequality theorems to solve problems.
		Determine an unknown side length or range of side lengths of a triangle given its classification.
	Special Right Triangles	
		Complete the steps to prove special right triangle theorems.
		Determine unknown measures of 45° - 45° - 90° triangles.
		Determine unknown measures of 30° - 60° - 90° triangles.
		Solve real-world problems involving special right triangles.
	Trigonometric Ratios	

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		Given an acute angle of a right triangle, label the hypotenuse, opposite, and adjacent sides.
		Given an acute angle of a right triangle, write ratios for sine, cosine, and tangent.
		Relate trigonometric ratios of similar triangles and the acute angles of a right triangle.
	Solving for Side Lengths of Right Triangles	
		Write equations using trigonometric ratios that can be used to solve for unknown side lengths of right triangles.
		Solve for unknown side lengths of right triangles using trigonometric ratios.
		Apply trigonometric ratios to solve real-world problems.
	Solving for Angle Measures of Right Triangles	
		Write equations that can be used to solve for unknown angles in right triangles.
		Solve for unknown angles of right triangles using inverse trigonometric functions.
		Apply inverse trigonometric functions to solve real-world problems.
	Law of Sines	
		Complete the steps to prove the law of sines.
		Solve mathematical problems using the law of sines.
		Apply the law of sines to solve real-world problems.
	Law of Cosines	
		Complete the steps to prove the law of cosines.
		Solve mathematical problems using the law of cosines.
		Apply the law of cosines to solve real-world problems.
	Area and Perimeter of Triangles	
		Derive the area formula $A = \frac{1}{2}ab\sin C$.

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		Solve area and perimeter problems using $A = 1/2absinC$.
		Solve area and perimeter problems using Heron's formula.
	Unit Test	
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	