

Options EHS Geometry A - OR		Scope and Sequence
Unit	Lesson	Objectives
Foundations of Geometry		
Euclidean Geometry		
		Identify and name undefined terms of point, line, plane, and distance along a line.
		Analyze descriptions and diagrams that illustrate basic postulates about points, lines, and planes.
Defining Terms		
		Use undefined terms to precisely define parallel lines, perpendicular lines, ray, angle, arc, circle, and line segment.
		Identify and name a pair of parallel lines, a pair of perpendicular lines, a ray, an angle, an arc, a circle, and a line segment.
Measuring Length and Angles		
		Identify a midpoint or bisector of a line segment or angles.
		Apply the ruler postulate and segment addition postulate to calculate the lengths of line segments.
		Apply the protractor postulate and angle addition postulate to calculate angle measures.
Introduction to Proof		
		Complete the steps to prove algebraic and geometric statements.
		Identify proof formats, the essential parts of a proof, and the assumptions that can be made from a given drawing.
Linear Pairs and Vertical Angles		
		Calculate angle measures by using definitions and theorems about linear pairs and vertical angles.
		Identify linear pairs and vertical angles from given diagrams.
		Complete the steps to prove statements using linear pairs and vertical angles.
Complementary and Supplementary Angles		
		Identify complementary angles and supplementary angles from given diagrams.

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		Solve problems involving measures of complementary and supplementary angles.
		Complete the steps to prove statements using complementary angles and supplementary angles.
	Performance Task: Constructions	
	Unit Test	
Geometric Transformations		
	Introduction to Transformations	
		Determine if a transformation is isometric and identify corresponding parts of the pre-image and image.
		Identify the type of transformation given a pre-image and an image.
	Translations	
		Develop the definition of a translation using constructions.
		Write the rule that describes a given translation.
		Determine the image or pre-image of a figure after a given translation.
	Reflections	
		Develop the definition of a reflection using constructions.
		Describe the properties of and write rules for reflections.
		Determine the image or pre-image of a figure after a given reflection.
	Rotations	
		Develop the definition of a rotation using constructions.
		Describe the properties of and write rules for rotations.
		Determine the image or pre-image of a figure after a given rotation.
	Compositions	
		Determine the rule that describes a given composition of transformations.

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		Determine the image of a figure after a given composition of transformations.
	Symmetry	
		Identify reflectional symmetry in geometric figures and the number of lines of symmetry.
		Identify rotational symmetry and its order in geometric figures.
	Test	
Angles, Lines, and Triangles		
	Slope	
		Identify linear functions by a constant rate of change
		Interpret slope as an average rate of change
		Determine slope of a line between two points
		Identify increasing and decreasing linear functions using slope
	Parallel and Perpendicular Lines	
		Construct parallel and perpendicular lines.
		Identify parallel, perpendicular, and skew lines from three-dimensional figures.
		Solve problems involving the distance from a point on the perpendicular bisector to both endpoints of the line segment.
	Slopes of Parallel and Perpendicular Lines	
		Complete the steps to prove the slope criteria for parallel and perpendicular lines using coordinate geometry.
		Determine if two lines are parallel or perpendicular.
		Use slope criteria to find additional points on a line parallel or perpendicular to a given line.
		Prove the slope criteria for perpendicular lines.
	Lines Cut by a Transversal	

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Proving Lines Parallel		Solve for angle measures when parallel lines are cut by a transversal.
		Complete the steps to prove angle relationships given parallel lines cut by a transversal.
Writing Linear Equations		Apply theorems to determine if lines are parallel.
		Prove lines are parallel given angle relationships.
Triangle Angle Theorems		Write the equation of a line parallel to a given line that goes through a particular point.
		Write the equation of a line perpendicular to a given line or segment that goes through a particular point.
Triangles and Their Side Lengths		Complete the steps to prove that the sum of the measures of the interior angles of a triangle is 180 degrees.
		Identify and relate the interior and exterior angles of a triangle.
		Calculate the measures of interior and exterior angles of a triangle.
Triangle Inequalities		Construct or justify the construction of isosceles and equilateral triangles.
		Analyze the relationships between the angles of acute, right, and obtuse triangles.
		Determine if three given segments will satisfy the triangle inequality.
Isosceles Triangles		Determine the length or parameters for a third side of a triangle given the other two sides.
		Identify angle and side relationships in a triangle.
		Identify angle and side relationships between two triangles.
		Solve real world problems involving relationships between angle measures and side lengths of one or two triangles.

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		Complete the steps to prove the isosceles triangle theorem and its converse.
		Identify characteristics of an isosceles triangle.
		Solve for unknown measures of isosceles triangles.
	Unit Test	
Triangle Congruence and Similarity		
	Congruent Figures	
		Write congruency statements for transformed figures.
		Determine if figures are congruent and, if so, identify their corresponding parts.
		Determine unknown measures of congruent figures.
	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.
	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.

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		Determine the isometric transformations that would map one triangle onto another triangle given that three 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.
	Dilations	
		Verify experimentally the properties of dilations given a center and a scale factor.
		Calculate and interpret the scale factor for dilations of figures.
		Determine the unknown measures of an image or pre-image of a dilated figure given the scale factor.
	Similar Figures	
		Verify the properties of dilations, including the scale factor and slopes of corresponding line segments.
		Determine if two polygons are similar using dilations.
		Find the coordinates of the vertices of an image or pre-image of a dilated polygon given the scale factor.
	Triangle Similarity: AA	
		Identify the composition of similarity transformations in a mapping of two triangles.
		Complete the steps to prove triangles are similar using the AA similarity theorem.
	Triangle Similarity: SSS and SAS	
		Identify the sides and angle that can be used to prove triangle similarity using SSS similarity theorem and SAS similarity theorem.
		Complete the steps to prove triangles are similar using SAS similarity theorem.
		Complete the steps to prove triangles are similar using SSS similarity theorem.
	Unit Test	

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Applications of Probability		
	Introduction to Probability	
		Interpret probability as the long-run relative frequency of an event.
		Describe the law of large numbers.
		Describe how a simulation is used to imitate a random process.
		Conduct a simulation using a graphing calculator.
	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.
		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.

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	Conditional Probability	Use calculations to determine if two events are independent. Calculate conditional probabilities using formulas and Venn diagrams. Calculate probabilities of compound events.
	Probability of Independent Events	Determine if compound events are independent or dependent. Calculate probabilities using tree diagrams or the multiplication rule of independent events
	Probability and Two-Way Tables	Construct a two-way table. Use a two-way table to determine if two events are independent. Compute conditional probabilities from data displayed in a two-way table.
	Performance Task: Applying Probability Concepts	
	Test	
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	