

Geometry Online Course TEKS Alignment

TEKS Alignment

Knowledge & Skills	Student Expectation	Bloom's Level		TEKS Alignment Evidence	Recommendations
		Guideline	Observed		
(G.1) Geometric structure. The student understands the structure of, and relationships within, an axiomatic system. The student is expected to:	(A) develop an awareness of the structure of a mathematical system, connecting definitions, postulates, logical reasoning, and theorems;	Understand	Apply	Observed Where: Unit 2: Introduction to Proof; Section A: Reasoning in Geometry, Section B: Informal and TwoColumn Proofs	
	(B) recognize the historical development of geometric systems and know mathematics is developed for a variety of purposes; and	Remember	Remember	Observed Where: Covered throughout all units with "intro" for each section.	
	(C) compare and contrast the structures and implications of Euclidean and non-Euclidean geometries.	Analyze	Analyze	Observed Where: Unit 1: Introduction to Geometry; Section D: Parallel and Perpendicular Lines	
(G.2) Geometric structure. The student analyzes geometric relationships in order to make and verify conjectures. The student is expected to:	(A) use constructions to explore attributes of geometric figures and to make conjectures about geometric relationships; and	Apply	Apply	Observed Where: Unit 1: Introduction to Geometry; Section C: Rays and Angles	
	(B) make conjectures about angles, lines, polygons, circles, and three-dimensional figures and determine the validity of the conjectures, choosing from a	Evaluation	Evaluate	Observed Where: Unit 1: Introduction to	

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	variety of approaches such as coordinate, transformational, or axiomatic.			Geometry; Section C: Rays and Angles Unit 5: Quadrilaterals and Polygons; Section A: Polygons Unit 7: Circles; Section A: Special Segments in Circles	
(G.3) Geometric structure. The student applies logical reasoning to justify and prove mathematical statements. The student is expected to:	(A) determine the validity of a conditional statement, its converse, inverse, and contrapositive;	Analyze	Analyze	Observed Where: Unit 2: Introduction to Proof; Section A: Reasoning in Geometry	
	(B) construct and justify statements about geometric figures and their properties;	Create	Create	Observed Where: Unit 5: Quadrilaterals and Polygons; Section B: Parallelograms	
	(C) use logical reasoning to prove statements are true and find counter examples to disprove statements that are false;	Apply	Apply	Observed Where: Unit 2: Introduction to Proof; Section A: Reasoning in Geometry	
	(D) use inductive reasoning to formulate a conjecture; and	Create	Apply	Observed Where: Unit 2: Introduction to Proof; Section A: Reasoning in Geometry	
	(E) use deductive reasoning to prove a statement.	Analyze	Analyze	Observed	

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				Where: Unit 2: Introduction to Proof; Section B: Informal and Two Column Proofs	
(G.4) Geometric structure. The student uses a variety of representations to describe geometric relationships and solve problems. The student is expected to select an appropriate representation (concrete, pictorial, graphical, verbal, or symbolic) in order to solve problems.	Intentionally left blank [no state student expectations]	Apply	Select One Where:	
(G.5) Geometric patterns. The student uses a variety of representations to describe geometric relationships and solve problems. The student is expected to:	(A) use numeric and geometric patterns to develop algebraic expressions representing geometric properties;	Create	Create	Observed Where: Unit 5: Quadrilaterals and Polygons, Section A: Polygons	
	(B) use numeric and geometric patterns to make generalizations about geometric properties, including properties of polygons, ratios in similar figures and solids, and angle relationships in polygons and circles;	Apply	Apply	Observed Where: Unit 6: Similarity; Section D: Similar Polygons Unit 8: Circles; Section B: Special Angles and Arcs in Circles	
	(C) use properties of transformations and their compositions to make connections between mathematics and the real world, such as tessellations; and	Apply	Apply	Observed Where: Unit 10: Transformations; Section B: Rotations and Dilations	
	(D) identify and apply patterns	Apply	Apply		

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	from right triangles to solve meaningful problems, including special right triangles (45-45-90 and 30-60-90) and triangles whose sides are Pythagorean triples.			Observed Where: Unit 4: Triangles; Section C: Right Triangles and the Pythagorean Theorem Unit 8: Right Triangles and Trigonometry; Section A: Review of the Pythagorean Theorem	
(G.6) Dimensionality and the geometry of location. The student analyzes the relationship between three-dimensional geometric figures and related two-dimensional representations and uses these representations to solve problems. The student is expected to:	(A) describe and draw the intersection of a given plane with various three-dimensional geometric figures;	Understand	Understand	Observed Where: Unit 9: Surface Area and Volume; Section A: Surface Area and Volume of Prisms and Cylinders	
	(B) use nets to represent and construct three-dimensional geometric figures; and	Apply	Apply	Observed Where: Unit 9: Surface Area and Volume; Section A: Surface Area and Volume of Prisms and Cylinders	
	(C) use orthographic and isometric views of three-dimensional geometric figures to represent and construct three-dimensional geometric figures and solve problems.	Apply	Apply	Observed Where: Unit 9: Surface Area and Volume; Section A: Surface Area and Volume of Prisms and Cylinders	
(G.7) Dimensionality and the geometry of location. The student understands that coordinate systems provide convenient and	(A) use one- and two-dimensional coordinate systems to represent points, lines, rays, line segments, and figures;	Apply	Apply	Observed Where: Unit 1: Introduction to Geometry; Section A: Basic	

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efficient ways of representing geometric figures and uses them accordingly. The student is expected to:				Elements of Geometry, Section B: Measuring Segments, Section C: Rays and Angles, Section D: Parallel and Perpendicular Lines	
	(B) use slopes and equations of lines to investigate geometric relationships, including parallel lines, perpendicular lines, and special segments of triangles and other polygons; and	Apply	Apply	Observed Where: Unit 3: Lines and the Coordinate Plane; Section B: Slope of a Line, Section C: Graphing the Equation of a Line	
	(C) derive and use formulas involving length, slope, and midpoint.	Apply	Apply	Observed Where: Unit 3: Lines and the Coordinate Plane; Section A: The Coordinate Plane, Section B: Slope of a Line	
(G.8) Congruence and the geometry of size. The student uses tools to determine measurements of geometric figures and extends measurement concepts to find perimeter, area, and volume in problem situations. The student is expected to:	(A) find areas of regular polygons, circles, and composite figures;	Apply	Apply	Observed Where: Unit 5: Quadrilateral and Polygons; Section C: Squares, Rectangles, and Rhombi Unit 7: Circles; Section D: Circumference and Area of Circles	
	(B) find areas of sectors and arc lengths of circles using proportional reasoning;	Apply	Apply	Observed Where: Unit 7: Circles; Section D: Circumference and Area of Circles	
	(C) derive, extend, and use the	Apply	Apply		

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	Pythagorean Theorem; and			Observed Where: Unit 4: Triangles; Section C: Right Triangles and the Pythagorean Theorem Unit 8: Right Triangles and Trigonometry; Section A: Review of Pythagorean Theorem	
	(D) find surface areas and volumes of prisms, pyramids, spheres, cones, cylinders, and composites of these figures in problem situations.	Apply	Apply	Observed Where: Unit 9: Surface Area and Volume; Section A: Surface Area and Volume of Cylinders, Section B: Surface Area and Volume of Pyramids and Cones, and Section C: Surface Area and Volume of Spheres	
(G.9) Congruence and the geometry of size. The student analyzes properties and describes relationships in geometric figures. The student is expected to:	(A) formulate and test conjectures about the properties of parallel and perpendicular lines based on explorations and concrete models;	Create	Create	Observed Where: Unit 2: Introduction to Geometry; Section D: Parallel and Perpendicular Lines	
	(B) formulate and test conjectures about the properties and attributes of polygons and their component parts based on explorations and concrete models;	Create	Create	Observed Where: Unit 5: Quadrilaterals and Polygons; Section A: Polygons	
	(C) formulate and test conjectures about the properties and attributes of circles and the lines	Create	Create	Observed Where: Unit 7: Circles; Section	

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	that intersect them based on explorations and concrete models; and			A: Special Segments in Circles	
	(D) analyze the characteristics of polyhedra and other three-dimensional figures and their component parts based on explorations and concrete models.	Analyze	Analyze	Observed Where: Unit 9: Surface Area and Volume; Section A: Surface Area and Volume of Prisms and Cylinders, and Section B: Surface Area and Volume of Pyramids and Cones	
(G.10) Congruence and the geometry of size. The student applies the concept of congruence to justify properties of figures and solve problems. The student is expected to:	(A) use congruence transformations to make conjectures and justify properties of geometric figures including figures represented on a coordinate plane; and	Evaluate	Evaluate	Observed Where: Unit 10: Transformations; Section B: Rotations and Dilations	
	(B) justify and apply triangle congruence relationships.	Evaluate	Evaluate	Observed Where: Unit 4: Triangles; Section B: Congruent Triangles	
(G.11) Similarity and the geometry of shape. The student applies the concepts of similarity to justify properties of figures and solve problems. The student is expected to:	(A) use and extend similarity properties and transformations to explore and justify conjectures about geometric figures;	Apply	Apply	Observed Where: Unit 10: Transformations; Section B: Rotations and Dilations	
	(B) use ratios to solve problems involving similar figures;	Apply	Apply	Observed Where: Unit 6: Similarity; Section C: Similar Polygons	

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	<p>(C) develop, apply, and justify triangle similarity relationships, such as right triangle ratios, trigonometric ratios, and Pythagorean triples using a variety of methods; and</p>	<p align="center">Create</p>	<p align="center">Create</p>	<p>Observed</p> <p>Where: Unit 6: Similarity; Section B: Similar Triangles Unit 8: Right Triangles and Trigonometry; Section A: Review of the Pythagorean Theorem, and Section B: Ratios of Right Triangles</p>	
	<p>(D) describe the effect on perimeter, area, and volume when one or more dimensions of a figure are changed and apply this idea in solving problems.</p>	<p align="center">Understand</p>	<p align="center">Understand</p>	<p>Observed</p> <p>Where: Unit 6: Similarity; Section C: Similar Polygons Unit 9: Surface Area and Volume; Section A: Surface Area and Volume of Prisms and Cylinders</p>	

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Course Strengths of TEKS alignment

Bloom's Taxonomy Levels are consistently observed according to TEKS guideline throughout course.

Required Changes for TEKS alignment (List the missing and partially covered TEKS ~AND~ summarize required TEKS modification, big or small, you believe must be completed prior to course approval)

Missing or Partially covered TEKS:

TEKS Summary:

Additional Opportunities for Improvement-Optional (Non-required additions or changes that would improve this course)