

## Scope and Sequence

Subject/Title of Unit	Grade	6 Weeks	Estimated Time Frame (# of days)
Geometry Chapter 7 Right Triangles and Trigonometry	10	4 <sup>th</sup>	10 days
TEKS/Student Expectations		Examples/Specifications:	
<p>(G.1) <b>Geometric structure.</b> The student understands the structure of, and relationships within, an axiomatic system. The student is expected to:</p> <p>(A) develop an awareness of the structure of a mathematical system, connecting definitions, postulates, logical reasoning, and theorems;</p> <p>(B) recognize the historical development of geometric systems and know mathematics is developed for a variety of purposes;</p> <p>(G.2) <b>Geometric structure.</b> The student analyzes geometric relationships in order to make and verify conjectures. The student is expected to:</p> <p>(A) use constructions to explore attributes of geometric figures and to make conjectures about geometric relationships; and</p> <p>(B) make conjectures about angles, lines, polygons, circles, and three-dimensional figures and determine the validity of the conjectures, choosing from a variety of approaches such as coordinate, transformational, or axiomatic.</p> <p>(G.3) <b>Geometric structure.</b> The student applies logical reasoning to justify and prove mathematical statements. The student is expected to:</p> <p>(A) determine the validity of a conditional statement, its converse, inverse, and contrapositive;</p> <p>(B) construct and justify statements about geometric figures and their properties;</p> <p>(E) use deductive reasoning to prove a statement.</p> <p>(G.4) <b>Geometric structure.</b> 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.</p>		.	

**(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;

(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;

(D) identify and apply patterns 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.

**(G.7) Dimensionality and the geometry of location.** The student understands that coordinate systems provide convenient and efficient ways of representing geometric figures and uses them accordingly.

The student is expected to:

(C) derive and use formulas involving length, slope, and midpoint.

**(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;

(C) derive, extend, and use the Pythagorean Theorem;

**(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;

(B) formulate and test conjectures about the properties and attributes of polygons and their component parts based on explorations and concrete models;

<p>(G.11) <b>Similarity and the geometry of shape.</b> The student applies the concepts of similarity to justify properties of figures and solve problems.</p> <p>The student is expected to:</p> <p>(B) use ratios to solve problems involving similar figures;</p> <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>(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><b>a.3, a.4, a.5, A.8.A, A.8.B</b></p>	
<p><b>Language of Instruction:</b></p>	<p><b>Instructional Resources/Textbook Correlations:</b></p>
<p>Pythagorean triple  Trigonometric ratio  Tangent  Sine  Cosine  Angle of elevation  Angle of depression  Solve a right triangle  Inverse tangent  Inverse sine  Inverse cosine</p>	<p><b>Weblinks/Other Resources:</b></p>
<p><b>Evaluation/External Assessment/Local Assessment:</b></p>	<p><b>Best Instruction Timeline:</b></p>