

## Scope and Sequence

| Subject/Title of Unit   | Grade | 6 Weeks                  | Estimated Time Frame (# of days) |
|---|-------|--------------------------|----------------------------------|
| <b>Geometry</b><br><b>Chapter 9</b><br>Properties of Transformations  | 10    | 5 <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>(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>(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> <p>(G.5) <b>Geometric patterns.</b> The student uses a variety of representations to describe geometric relationships and solve problems. The student is expected to:</p> <p>(B) use numeric and geometric patterns to make generalizations about geometric properties, including properties of polygons,</p> |       | .                        |                                  |

ratios in similar figures and solids, and angle relationships in polygons and circles;

(C) use properties of transformations and their compositions to make connections between mathematics and the real world, such as tessellations;

**(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:

(A) use one- and two-dimensional coordinate systems to represent points, lines, rays, line segments, and figures;

**(G.9) Congruence and the geometry of size.** The student analyzes properties and describes relationships in geometric figures.

The student is expected to:

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

(C) formulate and test conjectures about the properties and attributes of circles and the lines that intersect them based on explorations and concrete models;

**(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

(B) justify and apply triangle congruence relationships.

**(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;

(B) use ratios to solve problems involving similar figures;

**a.1, a.3, a.4, a.5, A.9.B, A.10.A, A.10.B**

| <b>Language of Instruction:</b>   | <b>Instructional Resources/Textbook Correlations:</b>  |
|---|--|
| Image<br>Preimage<br>Isometry<br>Vector: initial point, terminal point, horizontal component,<br>vertical component<br>Component form<br>Matrix<br>Element<br>Dimensions<br>Line of reflection<br>Center of rotation<br>Angle of rotation<br>Glide reflection composition of transformations<br>Line symmetry<br>Line of symmetry<br>Rotational symmetry<br>Center of symmetry<br>Scalar multiplication | <div data-bbox="968 431 1978 480" style="background-color: #cccccc; border: 1px solid black; padding: 2px;"><b>Weblinks/Other Resources:</b></div> |
| <b>Evaluation/External Assessment/Local Assessment:</b>   | <b>Best Instruction Timeline:</b>  |
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