



Golden Eagle Charter School

Geometry Learning Targets

1. Understand inductive and deductive reasoning and identify undefined terms, axioms and theorems.
2. Write formal and informal proofs for geometric statements and theorems. Use sound logical arguments in these proofs and provide counter-arguments to disprove statements.
3. Prove basic theorems involving congruence and similarity; apply concepts and theorems relating to corresponding parts of congruent triangles.
4. Understand and apply the triangle inequality theorem.
5. Prove and use theorems involving the properties of parallel lines cut by a transversal.
6. Derive and apply formulae for the perimeter, circumference, area, volume, and surface area of common 2- and 3- dimensional geometric figures.
7. Determine how changes in dimension affect the perimeter, area, and volume of common geometric figures and solids.
8. Use measures of sides and interior and exterior angles of polygons to classify figures and solve problems.
9. Understand and apply the Pythagorean theorem, and be familiar with the proof of this theorem.
10. Perform basic constructions with a straightedge and compass, including angle bisectors, perpendicular bisectors, and parallel and perpendicular lines.
11. Know the definitions of basic trigonometric functions (i.e. sine, cosine and tangent), and elementary relationships between these functions.
12. Use trigonometric functions to solve for unknown angles and side lengths in a right triangle.
13. Know and apply angle and side relationships in special right triangles, such as 30° , 60° , 90° triangles and 45° , 45° , 90° triangles.
14. Write proofs and solve problems involving relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.
15. Understand the effect of rigid motions, such as rotation, translation and reflection, on figures in the coordinate plane.