

Geometry Learning Targets and Checklist

G1. Algebra		
		G1a. Solve and check any linear equation.
		G1b. Graph a linear equation or find the equation of a line.
		G1c. Use distributive property to multiply binomials.
		G1d. Solve a quadratic equation using the Quadratic Formula or the Zero Product Property.
		G1e.
		G1f. Solve a linear system of equations.
		G1g. Use slope to determine if lines are parallel or perpendicular.
		G1h. Write and solve a proportional equation.
		G1i(+). Simplify radicals and rationalize the denominator.

G2. Transformations		
		G2a. Perform translations.
		G2b. Perform rotations about the origin in increments of 90 degrees.
		G2c. Perform reflections across the x-axis, y-axis, and $y=\pm x$.
		G2d. Perform origin centered dilation.
		G2e. Identify the type of rigid transformations

G3. Properties of Shapes		
		G3a. Classify shapes based on their characteristics.
		G3b. Apply the special properties of quadrilaterals to solve problems.

G4. Area and Perimeter		
		G4a. Find the area and perimeter of triangles and quadrilaterals.
		G4b. Find the area and perimeter of composite shapes (composed of triangles and quadrilaterals).
		G4c. Find the area and perimeter of polygons.
		G4d. Find the area and circumference of a circle.
		G4e. Use scale factor to calculate area and perimeter of similar shapes.
		G4f(+). Find the area and perimeter of complex composite shapes.
		G4g(+). Solve for missing dimensions in 2-D shapes.

G5. Angle Properties		
		G5a. Apply relationships to find missing angles.
		G5b. Use angle properties to determine if a pair of lines is parallel.
		G5c. Apply the properties of central angles, inscribed angles, and arcs.
		G5d(+). State what property was used.

G6. Circles		
		G6a. Find the arc length and sector area of a circle.
		G6b. Apply the properties of central angles, inscribed angles, and arcs.
		G6c.(+). Solve problems with interesting chords.
		G6d(+). Solve problems using properties of tangents.
G7. Triangle Tools		
		G7a. Apply the Pythagorean theorem to find a missing side.
		G7b. Determine whether three side lengths can make a triangle.
		G7c(+). Determine whether a triangle is acute, right, or obtuse when given the three side lengths.
		G7d. Use sine, cosine, or tangent ratios to find a missing side.
		G7e(+). Use inverse trig ratios to find a missing angle.
		G7f(+). Use Law of Sines and Law of Cosines to solve for missing sides in a non-right triangle.
		G7g(+). Apply the properties of special right triangles to find the exact value for side lengths.
G8. Similarity and Congruence		
		G8a. Justify if two triangles are similar, congruent or neither (SSS/AA/SAS similarity, SSS/SAS/AAS/ASA/HL congruence).
		G8b. Calculate lengths of corresponding sides of similar figures.
		G8c(+). Write proofs of similarity and congruence.
G9. Coordinate Geometry		
		G9a. Find the midpoint of a line segment given two points.
		G9b. Use the distance formula to calculate the length of a segment.
		G9c. Apply slope to justify a shape's properties.
G10. Surface Area and Volume		
		G10a. Calculate the volume of a geometric solid (prism, cylinder, pyramid, cone, sphere).
		G10b. Calculate the surface area of a geometric solid (prism, cylinder, pyramid, cone, sphere).
		G10c. Use scale factor to calculate surface area and volume of similar solids.
		G10d. Represent a geometric solid in multiple ways (net, mat plan, front, right, and top views).
		G10e(+). Solve for a missing dimension in a geometric solid.
		G10f(+). Calculate surface area and volume of simple compositions.
		G10g(+). Calculate surface area and volume in context-based problems.
G11. Probability		
		G11a. Apply basic properties of probability
		G11b. Calculate and analyze the probability of simple events (using a systematic list, tree diagram, or area model).
		G11c(+). Find the expected value of a game of chance.