

Geometry: Assessment Anchors and Eligible Content

Geometric Properties and Reasoning **G.1**

1 Properties of Circles, Spheres, and Cylinders **G.1.1**

- 1 Identify and/or use parts of circles and segments associated with circles, spheres, and cylinders. **G.1.1.1**
 - 1 Identify, determine, and/or use the radius, diameter, segment, and/or tangent of a circle. **G.1.1.1.1**
 - 2 Identify, determine, and/or use the arcs, semicircles, sectors, and/or angles of a circle. **G.1.1.1.2**
 - 3 Use chords, tangents, and secants to find missing arc measures or missing segment measures. **G.1.1.1.3**
 - 4 Identify and/or use the properties of a sphere or cylinder. **G.1.1.1.4**

2 Properties of Polygons and Polyhedra **G.1.2**

- 1 Recognize and/or apply properties of angles, polygons, and polyhedra. **G.1.2.1**
 - 1 Identify and/or use properties of triangles. **G.1.2.1.1**
 - 2 Identify and/or use properties of quadrilaterals. **G.1.2.1.2**
 - 3 Identify and/or use properties of isosceles and equilateral triangles. **G.1.2.1.3**
 - 4 Identify and/or use properties of regular polygons. **G.1.2.1.4**
 - 5 Identify and/or use properties of pyramids and prisms. **G.1.2.1.5**

3 Congruence, Similarity, and Proofs **G.1.3**

- 1 Use properties of congruence, correspondence, and similarity in problem-solving settings involving two- and three- dimensional figures. **G.1.3.1**
 - 1 Identify and/or use properties of congruent and similar polygons or solids. **G.1.3.1.1**
 - 2 Identify and/or use proportional relationships in similar figures. **G.1.3.1.2**
 - 2 Write formal proofs and/or use logic statements to construct or validate arguments. **G.1.3.2**
 - 1 Write, analyze, complete, or identify formal proofs (e.g., direct and/or indirect proofs/proofs by contradiction). **G.1.3.2.1**
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Coordinate Geometry and Measurement 6.2

1 Coordinate Geometry and Right Triangles 6.2.1

- 1 Solve problems involving right triangles. 6.2.1.1
 - 1 Use the Pythagorean theorem to write and/or solve problems involving right triangles. 6.2.1.1.1
 - 2 Use trigonometric ratios to write and/or solve problems involving right triangles. 6.2.1.1.2
 - 2 Solve problems using analytic geometry. 6.2.1.2
 - 1 Calculate the distance and/or midpoint between two points on a number line or on a coordinate plane. 6.2.1.2.1
 - 2 Relate slope to perpendicularity and/or parallelism (limit to linear algebraic equations). 6.2.1.2.2
 - 3 Use slope, distance, and/or midpoint between two points on a coordinate plane to establish properties of a two-dimensional shape. 6.2.1.2.3
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2 Measurements of Two-Dimensional Shapes and Figures 6.2.2

- 1 Use and/or compare measurements of angles. 6.2.2.1
 - 1 Use properties of angles formed by intersecting lines to find the measures of missing angles. 6.2.2.1.1
 - 2 Use properties of angles formed when two parallel lines are cut by a transversal to find the measures of missing angles. 6.2.2.1.2
- 2 Use and/or develop procedures to determine or describe measures of perimeter, circumference, and/or area. (May require conversions within the same system.) 6.2.2.2
 - 1 Estimate area, perimeter, or circumference of an irregular figure. 6.2.2.2.1
 - 2 Find the measurement of a missing length, given the perimeter, circumference, or area. 6.2.2.2.2
 - 3 Find the side lengths of a polygon with a given perimeter to maximize the area of the polygon. 6.2.2.2.3
 - 4 Develop and/or use strategies to estimate the area of a compound/composite figure. 6.2.2.2.4
 - 5 Find the area of a sector of a circle. 6.2.2.2.5
- 3 Describe how a change in one dimension of a two-dimensional figure affects other measurements of that figure. 6.2.2.3
 - 1 Describe how a change in the linear dimension of a figure affects its perimeter, circumference, and area (e.g., How does changing the length of the radius of a circle affect the circumference of the circle?). 6.2.2.3.1
- 4 Apply probability to practical situations. 6.2.2.4
 - 1 Use area models to find probabilities. 6.2.2.4.1

3 Measurements of Three-Dimensional Shapes and Figures 6.2.3

- 1 Use and/or develop procedures to determine or describe measures of surface area and/or volume. (May require conversions within the same system.) 6.2.3.1
 - 1 Calculate the surface area of prisms, cylinders, cones, pyramids, and/or spheres. Formulas are provided on a reference sheet. 6.2.3.1.1
 - 2 Calculate the volume of prisms, cylinders, cones, pyramids, and/or spheres. Formulas are provided on a reference sheet. 6.2.3.1.2
 - 3 Find the measurement of a missing length given the surface area or volume. 6.2.3.1.3
- 2 Describe how a change in one dimension of a three-dimensional figure affects other measurements of that figure. 6.2.3.2
 - 1 Describe how a change in the linear dimension of a figure affects its surface area or volume (e.g., How does changing the length of the edge of a cube affect the volume of the cube?). 6.2.3.2.1