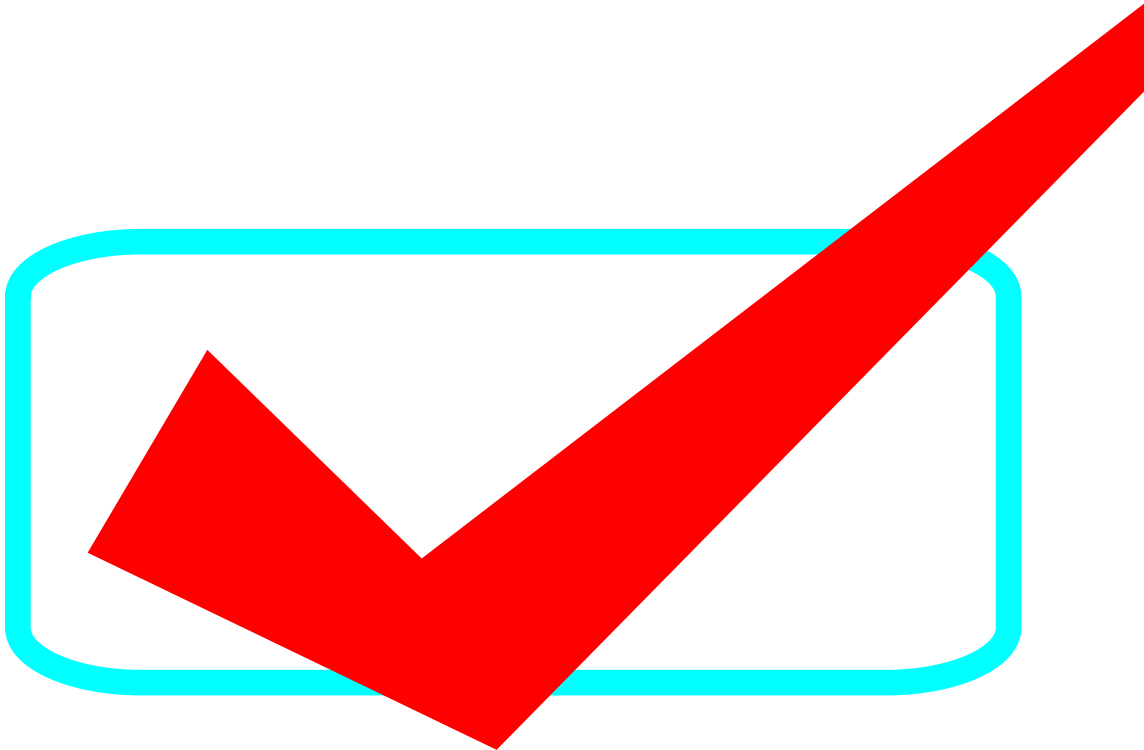

PERFORMANCE STANDARDS



Geometry

**DUVAL COUNTY SCHOOLS
JACKSONVILLE, FLORIDA**

Geometry Performance Standards

1.0 Line and Angle Properties

The students will:

- 1.1 Make conjectures relating to vertical angles, complementary angles, supplementary angles, and angles formed by perpendicular lines.
- 1.2 Make conjectures related to angles and parallel lines, including alternate interior/exterior angles, and same-side interior/exterior angles.
- 1.3 Solve problems related to angles and parallel lines.
- 1.4 Determine the slope and the x- and y-intercepts of given lines.
- 1.5 Determine slopes of lines parallel and perpendicular to given lines.
- 1.6 Graph linear equations in two variables.
- 1.7 Determine equations for lines with given conditions.

2.0 Triangles

The student will:

- 2.1 Solve problems involving interior and exterior angles of triangles.
- 2.2 Use properties related to altitudes and medians of triangles to solve problems.
- 2.3 Use properties related to isosceles triangles to solve problems.
- 2.4 Use inequalities in one triangle and inequalities between two triangles (Hinge Theorem) to solve problems.

3.0 Congruent Triangles

The student will:

- 3.1 State the postulate or theorem (SSS, SAS, ASA, AAS, HL) which justifies the congruence of two triangles.
- 3.2 Write paragraph proofs to demonstrate the congruence of triangles and its corresponding parts.

4.0 Polygons

The student will:

- 4.1 Solve problems related to the measures of the interior and exterior angles of polygons.
- 4.2 Solve problems related to properties of quadrilaterals.

5.0 Transformations

The student will:

- 5.1 Determine the image of given figures under specified translations, reflections, rotations, and dilations.
- 5.2 Describe the type of symmetry for given designs.

6.0 Similarity

The student will:

- 6.1 Solve problems using ratio and proportion including finding missing terms and writing equivalent proportions.
- 6.2 Determine whether given polygons are similar and identify corresponding parts.
- 6.3 Solve problems related to similar figures.

7.0 Right Triangles

The student will:

- 7.1 Use the Pythagorean Theorem and its converse to solve problems.
- 7.2 Solve problems related to 30-60-90 and 45-45-90 triangles.
- 7.3 Find distances and midpoints between given points using the coordinate plane.

8.0 Circles

The student will:

- 8.1 Draw and label figures to illustrate definitions for chords, diameters, secants, tangents, inscribed angles, and central angles.
- 8.2 Solve problems related to properties for tangents of circles.

- 8.3 Solve problems related to properties of chords.
- 8.4 Solve problems related to properties of arcs and angles.

9.0 Area and Volume

The student will:

- 9.1 Solve problems related to area of polygons, including the area of triangles, squares, rectangles, parallelograms, and trapezoids.
- 9.2 Solve problems related to area of circles.
- 9.3 Find lateral area and total area of selected solids, including prisms, pyramids, cylinders, and cones.
- 9.4 Find the volume of prisms, pyramids, cylinders, cones, and spheres.
- 9.5 Solve problems related to proportion with area and volume.

10.0 Geometric Proofs

The student will:

- 10.1 Recognize the hypothesis and conclusion of an if-then statement and state its converse.
- 10.2 Use inductive reasoning to observe data, recognize patterns, and make generalizations.
- 10.3 Complete geometric proofs by applying appropriate postulates and theorems.

11.0 Straightedge and Compass Construction

The student will:

- 11.1 Perform basic constructions involving congruencies, bisectors, perpendiculars, and parallels.
- 11.2 Apply geometric constructions to the solution of problems.