

Florida Geometry EOC Assessment Item Specification Report

Benchmark number	Benchmark	Content Limits
MA.912.D.6.2#:	Find the converse, inverse, and contrapositive of a statement	Truth tables or validity of a given statement will not be assessed. ----- Items must present propositions as a sentence, and not by using symbols.
MA.912.D.6.3#:	Determine whether two propositions are logically equivalent.	Assessed with MA.912.D.6.2
MA.912.D.6.4#:	Use methods of direct and indirect proof and determine whether a short proof is logically valid.	Assessed with MA.912.G.3.4 and MA.912.G.4.6
MA.912.G.1.1#:	Find the lengths and midpoints of line segments in two-dimensional coordinate systems.	Items may require multiple steps. ----- Items may include both distance and midpoint.
MA.912.G.1.2#:	Construct congruent segments and angles, angle bisectors, and parallel and perpendicular lines using a straight edge and compass or a drawing program, explaining and justifying the process used.	NOT ASSESSED
MA.912.G.1.3#:	Identify and use the relationships between special pairs of angles formed by parallel lines and transversals.	Items may have multiple sets of parallel lines. ----- Items will not include more than six lines in the graphic.
MA.912.G.2.1#:	Identify and describe convex, concave, regular, and irregular polygons.	Assessed with MA.912.G.2.3
MA.912.G.2.2#:	Determine the measures of interior and exterior angles of polygons, justifying the method used.	All angle measurements will be in degrees.
MA.912.G.2.3#:	Use properties of congruent and similar polygons to solve mathematical or real-world problems.	All angle measurements will be in degrees. ----- Items may require statements and/or justifications to complete formal and informal proofs.

MA.912.G.2.4#:	Apply transformations (translations, reflections, rotations, dilations, and scale factors) to polygons. to determine congruence, similarity, and symmetry. Know that images formed by translations, reflections, and rotations are congruent to the original shape. Create and verify tessellations of the plane using polygons.	Items may include using coordinate geometry to perform transformations in the plane. ----- Items may require statements and/or justifications to determine congruence, similarity, and symmetry.
MA.912.G.2.5#:	Explain the derivation and apply formulas for perimeter and area of polygons (triangles, quadrilaterals, pentagons, etc.).	Items requiring students to calculate area may require the use of the apothem. ----- Composite figures may include circles.
MA.912.G.2.7#:	Determine how changes in dimensions affect the perimeter and area of common geometric figures.	Assessed with MA.912.G.2.5 and MA.912.G.7.7
MA.912.G.3.1#:	Describe, classify, and compare relationships among quadrilaterals including the square, rectangle, rhombus, parallelogram, trapezoid, and kite.	Assessed with MA.912.G.3.4
MA.912.G.3.2#:	Compare and contrast special quadrilaterals on the basis of their properties.	Assessed with MA.912.G.3.4
MA.912.G.3.3#:	Use coordinate geometry to prove properties of congruent, regular, and similar quadrilaterals.	Items may include statements and/or justifications to complete formal and informal proofs. ----- Items may include the use of coordinate planes.
MA.912.G.3.4#:	Prove theorems involving quadrilaterals.	Items may require statements and/or justifications to complete formal and informal proofs.
MA.912.G.4.1#:	Classify, construct, and describe triangles that are right, acute, obtuse, scalene, isosceles, equilateral, and equiangular.	Assessed with MA.912.G.2.3
MA.912.G.4.2#:	Define, identify, and construct altitudes, medians, angle bisectors, perpendicular bisectors, orthocenter, centroid, incenter, and circumcenter.	Assessed with MA.912.G.2.3

MA.912.G.4.3#:	Construct triangles congruent to given triangles.	NOT ASSESSED
MA.912.G.4.4#:	Use properties of congruent and similar triangles to solve problems involving lengths and areas.	Assessed with MA.912.G.2.3
MA.912.G.4.5#:	Apply theorems involving segments divided proportionally.	Assessed with MA.912.G.2.3
MA.912.G.4.6#:	Prove that triangles are congruent or similar and use the concept of corresponding parts of congruent triangles.	Items may require statements and/or justifications to complete formal and informal proofs.
MA.912.G.4.7#:	Apply the inequality theorems: triangle inequality, inequality in one triangle, and the Hinge Theorem.	Items may assess methods of proving triangles congruent.
MA.912.G.5.1#:	Prove and apply the Pythagorean Theorem and its converse.	Assessed with MA.912.G.5.4
MA.912.G.5.2#:	State and apply the relationships that exist when the altitude is drawn to the hypotenuse of a right triangle.	Assessed with MA.912.G.5.4
MA.912.G.5.3#:	Use special right triangles ($30^\circ - 60^\circ - 90^\circ$ and $45^\circ - 45^\circ - 90^\circ$) to solve problems.	Assessed with MA.912.G.5.4
MA.912.G.5.4#:	Solve real-world problems involving right triangles.	Items may require students to apply the Pythagorean theorem, special right triangle relationships, and/or characteristics of triangles resulting from the altitude of a right triangle drawn from the right angle to the hypotenuse. ----- - Items may include the application of the geometric mean.
MA.912.G.6.2#:	Define and identify: circumference, radius, diameter, arc, arc length, chord, secant, tangent and concentric circles.	Assessed with MA.912.G.6.5
MA.912.G.6.4#:	Determine and use measures of arcs and related angles (central, inscribed, and intersections of secants and tangents).	Assessed with MA.912.G.6.5

MA.912.G.6.5#:	Solve real-world problems using measures of circumference, arc length, and areas of circles and sectors.	All angle measurements will be in degrees. ----- Items may require statements and/or justifications to complete formal and informal proofs.
MA.912.G.6.6#:	Given the center and the radius, find the equation of a circle in the coordinate plane or given the equation of a circle in center-radius form, state the center and the radius of the circle.	Equations of circles must be presented in center-radius form, where h and k are rational and r may be irrational. Items will not require students to manipulate equations to or from standard form.
MA.912.G.6.7#:	Given the equation of a circle in center-radius form or given the center and the radius of a circle, sketch the graph of the circle.	Assessed with MA.912.G.6.6
MA.912.G.7.1#:	Describe and make regular, non-regular, and oblique polyhedra, and sketch the net for a given polyhedron and vice versa.	Items will only include: (1) The five Platonic solids (tetrahedron, hexahedron or cube, octahedron, dodecahedron, and icosahedron); (2) Right or oblique prisms or pyramids with up to 12 edges on the base or composites; (3) Composites of the right or oblique prisms or pyramids; and (4) Other solids with fewer than 15 faces. ----- Items must not require use of formulas relating faces, edges, and vertices. ----- Items may not include cones, spheres, or cylinders.
MA.912.G.7.2#:	Describe the relationships between the faces, edges, and vertices of polyhedra.	Assessed with MA.912.G.7.1
MA.912.G.7.4#:	Identify chords, tangents, radii, and great circles of spheres	Assessed with MA.912.G.7.5
MA.912.G.7.5#:	Explain and use formulas for lateral area, surface area, and volume of solids.	Solids will be limited to right prisms, right-circular cylinders, spheres, right pyramids, right-circular cones, and/or composites of these solids. ----- Items may not include oblique figures. ----- Items may ask students to apply knowledge of congruent and similar solids.
MA.912.G.7.6#:	Identify and use properties of congruent and similar solids.	Assessed with MA.912.G.7.5

MA.912.G.7.7#:	Determine how changes in dimensions affect the surface area and volume of common geometric solids.	One or two parameters may be changed, resulting in the change of another parameter. ----- Three parameters may be changed in one term only if all three are changed by a constant factor. ----- Solids will be limited to right prisms, right circular cylinders, spheres, right pyramids, right circular cones, and/or composites of these solids. ----- Items may not include oblique figures. ----- Items may involve, explicitly and/or implicitly, no more than four parameters. ----- Changes in dimension may or may not result in similar figures.
MA.912.G.8.1#:	Analyze the structure of Euclidean geometry as an axiomatic system. Distinguish between undefined terms, definitions, postulates, and theorems.	Embedded throughout
MA.912.G.8.2#:	Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, and working backwards.	Embedded throughout
MA.912.G.8.3#:	Determine whether a solution is reasonable in the context of the original situation.	Embedded throughout
MA.912.G.8.4#:	Make conjectures with justifications about geometric ideas. Distinguish between information that supports a conjecture and the proof of a conjecture.	Items must adhere to the content limits stated in other benchmarks. ----- Items may include proofs about congruent/similar triangles and parallel lines.
MA.912.G.8.5#:	Write geometric proofs, including proofs by contradiction and proofs involving coordinate geometry. Use and compare a variety of ways to present deductive proofs, such as flow charts, paragraphs, two-column, and indirect proofs.	Assessed with MA.912.G.3.4 and MA.912.G.4.6

MA.912.G.8.6#:	Perform basic constructions using straightedge and compass, and/or drawing programs describing and justifying the procedures used. Distinguish between sketching, constructing, and drawing geometric figures.	NOT ASSESSED
MA.912.T.2.1#:	Define and use the trigonometric ratios (sine, cosine, tangent, cotangent, secant, cosecant) in terms of angles of right triangles.	Items should not include special right triangles (30-60-90 and 45-45-90) or the Pythagorean theorem. ----- Angle measures will be in degree measure. ----- Items will assess only sine, cosine, and tangent to determine the length of a side or an angle measure.