

**Vertical Articulation Technical Assistance Document - EOC Geometry**

Content from Earlier Grades		Algebra I	Geometry
			<p>G.1 The student will construct and judge the validity of a logical argument consisting of a set of premises and a conclusion. This will include</p> <ul style="list-style-type: none"> <li>a) identifying the converse, inverse, and contrapositive of a conditional statement;</li> <li>b) translating a short verbal argument into symbolic form;</li> <li>c) using Venn diagrams to represent set relationships; and</li> <li>d) using deductive reasoning.</li> </ul>
	<p>8.6 a) verify/describe relationships among vertical/adjacent/supplementary/complementary angles;</p>	<p>A.6 graph linear equations/linear inequal (2 vars) - a) determine slope of line given equation of line/graph of line or two points on line - slope as rate of change; b) write equation of line given graph of line/two points on line or slope-point on line</p>	<p>G.2 The student will use the relationships between angles formed by two lines cut by a transversal to</p> <ul style="list-style-type: none"> <li>a) determine whether two lines are parallel;</li> <li>b) verify the parallelism, using algebraic and coordinate methods as well as deductive proofs; and</li> <li>c) solve real-world problems involving angles formed when parallel lines are cut by a transversal.</li> </ul>
<p>7.8 represent transformations (reflections, dilations, rotations, and translations) of polygons in the coordinate plane by graphing</p>	<p>8.8 a) apply transformations to plane figures; b) ID applications of transformations</p>	<p>A.6 graph linear equations/linear inequal (2 vars) - a) determine slope of line given equation of line/graph of line or two points on line - slope as rate of change; b) write equation of line given graph of line/two points on line or slope-point on line</p>	<p>G.3 The student will use pictorial representations, including computer software, constructions, and coordinate methods, to solve problems involving symmetry and transformation. This will include</p> <ul style="list-style-type: none"> <li>a) investigating and using formulas for finding distance, midpoint, and slope;</li> <li>b) applying slope to verify and determine whether lines are parallel or perpendicular;</li> <li>c) investigating symmetry and determining whether a figure is symmetric with respect to a line or a point; and</li> <li>d) determining whether a figure has been translated, reflected, rotated, or dilated, using coordinate methods.</li> </ul>
<p>6.12 determine congruence of segments/angles/polygons</p>			<p>G.4 The student will construct and justify the constructions of</p> <ul style="list-style-type: none"> <li>a) a line segment congruent to a given line segment;</li> <li>b) the perpendicular bisector of a line segment;</li> <li>c) a perpendicular to a given line from a point not on the line;</li> <li>d) a perpendicular to a given line at a given point on the line;</li> <li>e) the bisector of a given angle,</li> <li>f) an angle congruent to a given angle; and</li> <li>g) a line parallel to a given line through a point not on the given line.</li> </ul>

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		G.5 The student, given information concerning the lengths of sides and/or measures of angles in triangles, will a) order the sides by length, given the angle measures; b) order the angles by degree measure, given the side lengths; c) determine whether a triangle exists; and d) determine the range in which the length of the third side must lie. These concepts will be considered in the context of real-world situations.
6.12 determine congruence of segments/angles/polygons	7.6 determine similarity of plane figures and write proportions to express relationships between similar quads and triangles	G.6 The student, given information in the form of a figure or statement, will prove two triangles are congruent, using algebraic and coordinate methods as well as deductive proofs.  G.7 The student, given information in the form of a figure or statement, will prove two triangles are similar, using algebraic and coordinate methods as well as deductive proofs.
	8.10 a) verify the Pythagorean Theorem; b) apply the Pythagorean Theorem	G.8 The student will solve real-world problems involving right triangles by using the Pythagorean Theorem and its converse, properties of special right triangles, and right triangle trigonometry.
	A.3 express sq roots/cube roots of whole numbers/the square root of monomial alg exp (simplest radical form)  A.4 solve multistep linear/ quad equation (2 vars) - a) solve literal equation; b) justify steps used in simplifying expressions and solving equations; c) solve quad equations (alg/graph); d) solve multistep linear equations (alg/graph)	
6.13 ID/describe properties of quadrilaterals	7.7 compare/contrast quadrilaterals based on properties	A.4 solve multistep linear/ quad equation (2 vars) - a) solve literal equation; b) justify steps used in simplifying expressions and solving equations; c) solve quad equations (alg/graph); d) solve multistep linear equations (alg/graph)  G.9 The student will verify characteristics of quadrilaterals and use properties of quadrilaterals to solve real-world problems.

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6.12 determine congruence of segments/angles/polygons		A.4 solve multistep linear/ quad equation (2 vars) - a) solve literal equation; b) justify steps used in simplifying expressions and solving equations; c) solve quad equations (alg/graph); d) solve multistep linear equations (alg/graph)	G.10 The student will solve real-world problems involving angles of polygons.
6.10 a) define $\pi$ ; b) solve practical problems w/circumference/area of circle; c) solve practical problems involving area and perimeter given radius/diameter; d) describe/determine volume/surface area of rectangular prism			G.11 The student will use angles, arcs, chords, tangents, and secants to a) investigate, verify, and apply properties of circles; b) solve real-world problems involving properties of circles; and c) find arc lengths and areas of sectors in circles.
6.10 a) define $\pi$ ; b) solve practical problems w/circumference/area of circle; c) solve practical problems involving area and perimeter given radius/diameter; d) describe/determine volume/surface area of rectangular prism			G.12 The student, given the coordinates of the center of a circle and a point on the circle, will write the equation of the circle.
7.5 a) describe volume/surface area of cylinders; b) solve practical problems involving volume/surface area of rect. prims and cylinders; c) describe how changes in measured attribute affects volume/surface area	8.7 a) investigate/solve practical problems involving volume/surface area of prisms, cylinders, cones, pyramids; b) describe how changes in measured attribute affects volume/surface area		G.13 The student will use formulas for surface area and volume of three-dimensional objects to solve real-world problems.
	8.9 construct a 3-D model given top or bottom/side/front views		
7.5 a) describe volume/surface area of cylinders; b) solve practical problems involving volume/surface area of rect. prims and cylinders; c) describe how changes in measured attribute affects volume/surface area	8.7 a) investigate/solve practical problems involving volume/surface area of prisms, cylinders, cones, pyramids; b) describe how changes in measured attribute affects volume/surface area		G.14 The student will use similar geometric objects in two- or three-dimensions to a) compare ratios between side lengths, perimeters, areas, and volumes; b) determine how changes in one or more dimensions of an object affect area and/or volume of the object; c) determine how changes in area and/or volume of an object affect one or more dimensions of the object; and d) solve real-world problems about similar geometric objects.