Mathematics
Geometry CP
Unit 1: Basic Concepts in Geometry

Essential Understandings	▪ Geometry has basic terms and facts that are used to derive additional geometric facts.
Essential Questions	▪ What are the basic terms in geometry? ▪ What are postulates, theorems and definitions? ▪ What are angles and segments, and how does one find their measures?
Essential Knowledge	▪ The basic terms in geometry are point, line, and plane. ▪ Definitions, postulates, and theorems are used to describe relationships between geometric figures. ▪ Segments and angles have measures. These measures can be found by using segment relationships and angle relationships and their measures.
Vocabulary	▪ <u>Terms</u>: o point, line, plane, space, collinear, coplanar, segment, midpoint, bisect, angle, angle bisector, adjacent angle, acute angle, right angle, obtuse angle, straight angle, ray, vertex, postulate, theorem
Essential Skills	▪ Use basic terms, postulates, and theorems. ▪ Define basic terms. ▪ Use relationships to find the measure of missing angles and segments.

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Related Maine Learning Results	Mathematics
	C. Geometry
	  Geometric Figures
	  C1.Students justify statements about polygons and solve problems.
	    a. Use the properties of triangles to prove theorems about figures and relationships among figures.
	    b. Solve for missing dimensions based on congruence and similarity.
	    c. Use the Pythagorean Theorem in situations where right triangles are created by adding segments to figures.
	    d. Use the distance formula.
	  C2.Students justify statements about circles and solve problems.
	    a. Use the concepts of central and inscribed angles to solve problems and justify statements.
	    b. Use relationships among arc length and circumference, and areas of circles and sectors to solve problems and justify statements.
	  C3.Students understand and use basic ideas of trigonometry.
	    a. Identify and find the value of trigonometric ratios for angles in right triangles.
	    b. Use trigonometry to solve for missing lengths in right triangles.
	    c. Use inverse trigonometric functions to find missing angles in right triangles.
	  Geometric Measurement
	  C4.Students find the surface area of three-dimensional figures.
	    a. Find the volume and surface area of three-dimensional figures including cones and spheres.
	    b. Determine the effect of changes in linear dimensions on the volume and surface area of similar and other three-dimensional figures.

Sample Lessons And Activities	▪ Draw a representation of geometric terms and definitions.
Sample Classroom Assessment Methods	▪ Quizzes ▪ Take-home Worksheets ▪ Tests

Sample Resources	▪ Publications:
	  o Geometry - McDougal Littell
	  o Geometry: Concepts and Skills – McDougal Littell