Mathematics
Geometry CP
Unit 6: Quadrilaterals

Essential Understandings	▪ Parallelograms and trapezoids have unique properties (or characteristics) that can be derived using congruent triangles.
Essential Questions	▪ What are the properties of parallelograms? ▪ What are the properties of rectangles? ▪ What are the properties of rhombi? ▪ What are the properties of squares? ▪ What are the properties of trapezoids? ▪ What are the properties of isosceles trapezoids?
Essential Knowledge	▪ Parallelograms, rectangles, rhombi, squares, trapezoids and other quadrilaterals have specific angle and side properties.
Vocabulary	▪ <u>Terms</u>: ▪ parallelogram, rectangle, rhombus, square, trapezoid and isosceles trapezoid; opposite sides, opposite angles, diagonals, diagonals that bisect each other; bases, legs, base angles, and medians of trapezoids
Essential Skills	▪ Name the properties of each type of quadrilateral. ▪ Determine if a quadrilateral with certain properties is a parallelogram or not. ▪ Identify the type of parallelogram based on given properties. ▪ Find the lengths of sides and measures of angles of each type of quadrilateral. ▪ Solve algebraic equations using properties of parallelograms, rectangles, rhombi, squares, and trapezoids.

Mathematics
Geometry CP
Unit 6: Quadrilaterals

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	▪ Give all students a sheet of paper with a diagram of all the various shapes. Ask the students to make observations about each figure's sides (length and relationship) and angles (measurement and relationships).
Sample Classroom Assessment Methods	▪ In class work on the overhead and board to model work ▪ Group work with other students which is evaluated by peers ▪ Quizzes ▪ Tests ▪ Take-home worksheets and tests
Sample Resources	▪ Publications: ▪ Geometry - McDougal Littell ▪ Geometry: Concepts and Skills - McDougal Littell