Brookfield Local Schools
Curriculum Map for Geometry
Unit # 6 Title: Polygons and Quadrilaterals

Duration of Unit:
4 weeks

Topic Sequence:
3 weeks

Student Friendly Learning Targets:
I can classify polygons based on the number of sides and the measure of their interior angles.
I can prove and apply theorems and properties of parallelograms.
I can prove that a given quadrilateral is a parallelogram.
I can prove and apply theorems and properties of rectangles, rhombuses, and squares.
I can prove that a given quadrilateral is a rectangle, rhombus, or square.
I can prove and apply properties of trapezoids, isosceles trapezoids, and kites.

Common Core State Standards Addressed:
G.CO.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. G.CO.10: Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point*.
G.CO.3: Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.
G.CO.11: Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals*.
G.CO.12: Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). *Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line*.
G.CO.13: Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.
G.GPE.4: Use coordinates to prove simple geometric theorems algebraically. *For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, √3) lies on the circle centered at the origin and containing the point (0, 2).*

Vocabulary:
Equilateral, polygon, regular polygon, interior angle sum, exterior angle sum, triangle, quadrilateral, parallelogram, rectangle, rhombus, square, inscribe, trapezoid, kite

Materials and/or Technology Needed:
Smartboard, Holt-McDougal Geometry Textbook, Whiteboards, Protractors, Compasses, Straight Edges

Instructional Notes:
Instruction should integrate with the standards that comprise the Polygons and Quadrilaterals Unit.

Instructional and Assessment Resources:
Formative Assessment Lessons: http://map.mathshell.org/materials/lessons.php
Formative Assessment Tasks: http://map.mathshell.org/materials/tasks.php
Illustrative Mathematics: http://www.illustrativemathematics.org/standards/k8
NCTM Illuminations: http://illuminations.nctm.org/
PARCC: http://www.parcconline.org/mcf/mathematics/parcc - model - content - frameworks – browser
Inside Mathematics: http://insidemathematics.org/index.php/mathematical - content - standards
New York State: http://www.engageny.org/mathematics
http://mathforum.org/, http://www.nctm.org/, http://plus.maths.org/content/, http://www.pbslearningmedia.org/, http://www.mathwords.com/, http://www.math.com/homeworkhelp/Geometry.html, http://mathworld.wolfram.com/, http://nlvm.usu.edu/en/nav/vlibrary.html, http://www.purplemath.com/, Holt-McDougal Geometry Textbook

Assessment Notes:
The Focus Topic will have three multiple choice questions and one extended response on the proficiency assessment.