Brookfield Local Schools
Curriculum Map for Geometry
Unit # 7 Title: Similarity

Duration of Unit:
4 weeks

Topic Sequence:
3 weeks

Student Friendly Learning Targets:
I can write and simplify ratios and use proportions to solve problems.
I can identify similar polygons and apply their properties to solve problems.
I can prove triangles are similar using AA, SSS, and SAS.
I can apply properties of similar triangles to solve problems.
I can apply proportionality to similar figures and triangle angle bisector theorems.
I can determine the relationship between scale factor, perimeter, and area of similar polygons.

Common Core State Standards Addressed:
G.SRT.1: Verify experimentally the properties of dilations given by a center and a scale factor.
G.SRT.2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
G.SRT.3: Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.
G.SRT.4: Prove theorems about triangles. *Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.*
G.SRT.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.
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:
Similarity, dilation, center, scale factor, ratio, proportion, proportional, means/extremes, cross product, transformation, triangle congruence, triangle similarity

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 Similarity 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 on the proficiency assessment.