**Lesson Plan Outline Geometry in Construction**

**Title:**

The Relationship between Sides and Area of Similar Figures

**Objective(s):**

The students will explore the relationship between the side lengths and areas of similar figures.

**Learning Standard(s):**

[CCSS.MATH.CONTENT.HSG.SRT.A.2](http://www.corestandards.org/Math/Content/HSG/SRT/A/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.

[CCSS.MATH.CONTENT.HSG.SRT.A.3](http://www.corestandards.org/Math/Content/HSG/SRT/A/3/)Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.

[*CCSS.MATH.CONTENT.HSG.SRT.B.5*](http://www.corestandards.org/Math/Content/HSG/SRT/B/5/)Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

**Activities:**

Step 1 Give students the 12 by 5 rectangle and have them calculate the area.   Show the students a rectangle with double the dimensions and have them estimate what they think the area will be.

After the discussion have them calculate the area – but don’t give them the relationship yet.

Step 2   Have the students calculate ratio of sides of similar figures and then find the ratio of the area of similar figures.   Ask students to find the pattern

Students will determine cost of an area for materials based on a blue print drawing

**Materials:**

Blue print drawing of a home

Area of Similar Figures W.S.