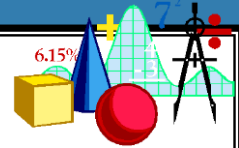Mathematics, Grade 8
Unit VII: Lesson 5   Model / Demonstration: **Pythagorean Theorem**

Review the Pythagorean Theorem and the definition of similar figures. Be able to represent with a drawing any number to the second power as a square of so many units.

Example: 3^2 as a square that measures 3 units by 3 units and having a total area of 9 square units

Construct a right triangle of cardboard, wood or other material. Illustrate $A^2 + B^2 = C^2$ by constructing three squares with the following dimensions: A^2 = shortest leg, B^2 = second leg, C^2 = hypotenuse. Draw square units on the models of the squares to visualize the total number of square units.

Hypothesize the result of replacing the squares on the hypotenuse and legs with any similar figures. Make models of three similar triangles of sizes that will fit on the sides of your original right triangle. Does it matter if the triangles are equilateral or not? Make models using a different set of three similar shapes that will fit on the sides of your original right triangle. Generalize your results to expand the theory of Pythagoras. Write a paper to go with your models explaining what is being demonstrated.

Display your models to the class. Explain how they support the Pythagorean Theorem. Present your expanded theorem.