You have been given 11 puzzle pieces and 2 puzzle boards. These pieces include 8 triangles of the same side, and three different sizes of squares.

Here is what you are provided:

* **2 GREEN Puzzle Boards**
* **8 GOLD Triangles**
* **1 PINK Small Square**
* **1 PURPLE Medium Square**
* **1 BLUE Large Square**

You will put all of the pieces together onto the two puzzle boards.

***PART 1 – Comparing Triangles with Squares***

1. Find one gold triangle, and each of the three square pieces. First, what kind of triangle are we working with?
2. What do you notice about the triangles in relation to the squares when looking at side length?
3. How do the side lengths of the squares compare to the side lengths of the triangle?

Use what you gathered from part 1 to help you with part 2!

***PART 2 – Constructing the Puzzle***

*Hint: There will be four triangles in each puzzle.*

1. Start constructing the puzzle! Explain any strategies you decided to use below:
2. Was there any strategy you used for the placement of the three squares?
3. Provide a visual of what your two puzzle boards look like when completed. Try to make another one!

***PART 3 – What did you find?***

*FIRST PUT THE PUZZLE PIECES BACK IN THE ZIPLOCK BAG!!!*

1. What are the differences between how each puzzle board was constructed?
2. Is there a difference between the areas in the puzzle boards?
3. What conclusion can you make from what you gathered about the areas of the three squares and the size of the puzzle boards?
4. What conclusion can you make about the side lengths? Does this match the Pythagorean Theorem we learned earlier?

***PART 4 – Is this really a proof???***

1. How does this activity PROVE Pythagorean’s Theorem? Did this prove that the sum of the leg lengths squared equals the length of the hypotenuse squared?
2. Does this prove Pythagorean’s Theorem for ALL right triangles? What if we changed the side lengths of the triangle?