Intro: (5-10 mins)

 Overview the Similarity content in the Core.

Lesson: (1 hr)

 Objectives:

* Students will understand the altitude of a right triangle to the hypotenuse creates a set of 2 triangles similar to the original triangle.
* Students will understand the measure of the altitude of a right triangle to the hypotenuse is a geometric mean between the two segments of the hypotenuse.
* Students will understand the measure of each leg of the right triangle is the geometric mean of the hypotenuse and the segment of the hypotenuse adjacent to the leg.
* Students will be able to solve problems involving geometric means.
* Students will be able to write similarity statements and proportions for similar triangles.

Warm-Up: (see handout – Geometric Mean Warm-Up)

Task: (see handout – Discovering the Geometric Mean page1)

Explain the task, group the students into pairs – give students time to do the task and answer the question. Make sure they take the time to justify their response.

Guide and Monitor as needed

Have students share the conclusions reached in their partnership. Make sure the correct conclusion of yes all 3 triangles are similar comes to the surface with correct justifications.

Pass out the follow up page (page 2 of Discovering the Geometric Mean) and have students use their triangles to answer the questions on the handout.

Have the students work in groups to complete the triangles on page 3.

 An optional homework is included. (Rt Triangle Proportions)

Differentiation Discussion: (10-20 mins)

Conversation could include the lesson and also the homework (Rt Triangle Proportions) for differentiation options.

Outline the Unit of Similarity with this lesson: (1-1.5 hrs) (Handout – Secondary 2 Unit Empty Outline)

Have the participants group together into teams, 3-5 members, and work with their textbook resources to create an outline for the unit that would involve similarity.

Share the Unit Outlines from each group: (20-30 mins.)