

## **The Journey to Discover Right Triangles and Trigonometry in the Real World, 2009**

*Crystal Jones*

### **Synopsis**

This unit is intended for a high school honors geometry class, but can be easily used in a standard level class with more teacher input for each lesson. The unit allows students to learn from a developmental approach instead of teacher driven instruction. The unit in its entirety will take approximately 2 to 3 weeks for completion, but will benefit students in geometry class that tend to struggle because of difficult topics such as trigonometry that also play a role in several other areas of geometry and most mathematics content areas that follow geometry. This unit explores four major topics throughout the six lessons: the concept of geometric mean and similarity in right triangles and special right triangles, the origin of Pythagorean Theorem and application to classifying triangles by angles, the origin of trigonometry in right triangles and its uses in our modern world, and the relationship between angles of elevation and depression in conjunction with using trigonometry to solve real life situations involving right triangles. This unit was developed with student ability to relate to mathematics in mind. The unit involves several hands on activities that allow students to understand the purpose of trigonometry and right triangles instead of strictly memorizing properties and rules. At the unit's end, students will be able to build a sound foundation for the content mastered that will be further developed in mathematics classes to follow.