**UNIT: Right Triangle Geometry**

32 students/10th grade

**Lesson 4 –** Solve Right Triangles

**Essential Question(s)**

*Can you solve a right triangle if you only know the measures of two sides of the triangle?*

*Can you solve a right triangle if you only know the measure of one side of the triangle and the measure of the angle?*

**Learning Objectives**

* Students will be able to solve application problems using the trigonometric ratios.
* Students will be able to solve right triangles, given the measure of two sides of the triangle.
* Students will be able to solve right triangles, given the measure of one side of the triangle and the measure of the angle.

**Learning Activities** - **6Es**

LINK TO WEBQUEST: <http://sengstacke.weebly.com/webquest.html>

***Engage:***

Teacher will pose the essential questions and allow for a short class discussion before beginning the Webquest. These questions will help direct students through some of the research in the Explore section.

***Explore*:**

Students will begin the Webquest. In the task section of this assignment, students will have the opportunity to use the links given to refresh their memory of what each of the 3 trigonometric functions mean.

***Explain*:**

For each problem in the Webquest, students will be expected to describe the process they used, and why they knew to do each step. Students are expected to write in complete sentences.  While there is no need for complex essays or colorful diagrams, it is expected that they will answer each question completely, and that they show anything they used to solve a problem. Students are not being asked to explain "what" they did.  Students are to explain "why" they did something.  For example, if you need to use slope to solve a problem, you should explain **why** you chose to use slope.  This means instead of saying "I used the slope formula", you should say "I needed to use the slope formula because I was trying to make predictions about future points".

***Elaborate:***

Students are expected to work directly on the Webquest.  It is their opportunity to demonstrate their application of trigonometric functions and to present their findings or conclusions.

***Evaluate:***

Students will be evaluated on their solutions and explanations on the Webquest. A grading rubric is provided.

***Extend:***

Students will reflect on their findings through a written journal entry. For further consideration, try to find other methods that could be used to solve each of the problems from the Webquest without using trigonometry.  Would the other methods require more information?  the same information?  less information?  Do you think the other methods or the trigonometry are "easier"?  Why?