

# Trigonometric Lesson Plan

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Grade level(s): Grade 11 math

Objectives:

By the end of the lab, students should be able to verify the Law of Cosines using actual field calculations off a GPS and modeling using Geometer's sketch pad.

**Students will recognize and apply mathematics in contexts outside of mathematics.**

A2.CN.6 Recognize and apply mathematics to situations in the outside world

**Trigonometric Functions**

A2.A.73 Solve for an unknown side or angle, using the Law of Sines or the Law of Cosines

## Lesson Procedure:

I will begin the lesson with the warm up of given three sides of a triangle, find an angle using Law of Cosines. I hope to reinforce the math if needed.(5-10 min)

We will then go over expectations of proper behavior going outside to take readings off the GPS.(5 min)

The class will then go outside to take readings. (10-15min)

We will then go to the lab to go through the Geometer's sketchpad portion of the lesson (See worksheet) (40 min)

At the end of the lesson students will print out the final screen of their sketchpad and turn in their worksheet on their way out of the room.

For closure we will have a class discussion of problems students encountered. Did the field hand calculations match the numbers they calculated on the computer? Why or why not? I will ask them to write down on their worksheets two ways they think that the GPS could be used in real life, either personal or professional use. (5-10 min)