Unit 10: Solving Triangles

Content Area: **Mathematics**
Course(s): **PreCalc Trig H**
Time Period: **Semester 2**
Length: **2 weeks**
Status: **Published**

Standards - NJCCS/CCSS

CCSS.Math.Content.HSG-SRT.B.4	Prove theorems about triangles.
CCSS.Math.Content.HSG-SRT.C.6	Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.
CCSS.Math.Content.HSG-SRT.C.8	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
CCSS.Math.Content.HSG-SRT.D	Apply trigonometry to general triangles
CCSS.Math.Content.HSG-SRT.D.10	Prove the Laws of Sines and Cosines and use them to solve problems.
CCSS.Math.Content.HSG-SRT.D.11	Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).
CCSS.Math.Content.HSF-TF.B.7	Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.

Enduring Understandings

Bearings and distance can be used to describe scenarios including navigation and plots of land.

The need to solve for missing angles or side lengths in a triangle extends beyond the math classroom to real life applications.

Essential Questions

How can you solve for missing parts of a right triangle?

How can you solve for missing parts of an oblique triangle?

How can you use bearing measurements to draw a triangle?

How does one apply the Law of Sines?

How does one apply the Law of Cosines?

Knowledge and Skills

SWBAT solve right triangles for all sides and all angles.

SWBAT solve oblique triangles for all sides and all angle measures.

SWBAT apply the concept of bearings.

SWBAT apply the Law of Sines.

SWBAT apply the Law of Cosines.

Resources

Trigonometry

Authors: Lial, Hornsby, Schneider

Graphing Calculator

www.desmos.com

www.flipgrid.com

www.graphfree.com