**Lesson Plan Outline Geometry in Construction**

**Title:**

Law of Sines & Law of Cosines

**Objective(s):**

Students will use the law of sines and law of cosines to find missing sides and angles of triangles

**Learning Standard(s):**

[CCSS.MATH.CONTENT.HSG.SRT.C.8](http://www.corestandards.org/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.10](http://www.corestandards.org/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](http://www.corestandards.org/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).

**Activities:**

Students will use known lengths from Google Maps and trigonometry with Law of Sines & Cosines to find unknown lengths and angles

Students will use law of sines and law of cosines to find the length of a river to build a bridge using known measurements.

**Materials:**

Strings, tape measures, protractors, tarp for body of water

iPad with Geometry Pad App

Law of Sines & Cosines Activity W.S.