Unit #9: Trig Applications

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

Standards

MA.F-TF.A.1	Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.
MA.F-TF.A.2	Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.
MA.F-TF.A.3	Use special triangles to determine geometrically the values of sine, cosine, tangent for π/3, π/4 and π/6, and use the unit circle to express the values of sine, cosines, and tangent for π – x, π + x, and 2π – x in terms of their values for x, where x is any real number.
MA.F-TF.A.4	Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.

Enduring Understandings

Students will understand that trigonometric problems can occur in the real world.

Students will know how to relate angles with lengths of sides of triangles.

Essential Questions

How can you evaluate trig expressions and solve trig equations on the calculator?

How can trigonometry be used to solve real-life problems? Where do we see trig all around us?

How are the angles of triangle related to the ratio of its sides and how do we solve for one or the other?

Knowledge and Skills

- Simplify trig expressions.
- Evaluate trig expressions and solving trig equations using a calculator.
- Solve right triangles.
- Solve two different types of bearing problems.

Transfer Goals

Recognize and solve practical or theoretical problems involving mathematics, including those for which the solution approach is not obvious, by using mathematical reasoning and strategic thinking.

Resources

1. Pre-Calculus with Limits - Aufmann
2. Trigonometry 6th edition - Lial
3. Classkick
4. Khan Academy
5. PurpleMath
6. KutaSoftware
7. CK-12
8. Quizlet
9. Albert I/O
10. Desmos
11. Problem Attic