Unit 10: Graphing Trig Functions

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

Standards

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.4	Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.
MA.F-TF.B.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.
TECH.8.1.12.F.CS4	Use multiple processes and diverse perspectives to explore alternative solutions.

Enduring Understandings

Students will be able to graph all trig functions.

Students will be able to derive the equation of a trig function from a graph.

Essential Questions

What does the graph of the six trig functions look like?

How do vertical and horizontal shifts affect the graph of trig functions?

How can you find the length of one period of each trig function?

What type of phenomena are modeled by trig functions?

Knowledge and Skills

- Graph basic trig functions.
- Graph trig functions with non-standard periods.
- Graph all 6 trig functions including horizontal and vertical translations.
- Utilize graphical addition.
- Write the equation of the graph of a atrig function.
- Write an algebraic proof.

- Find realistic applications in the real world for trig functions.

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