Unit 08: Graphing Trigonometric Functions

Content Area: **Mathematics**
Course(s): **PreCalc Trig H**
Time Period: **Semester 1**
Length: **2 weeks**
Status: **Published**

Standards - NJCCS/CCSS

CCSS.Math.Content.HSF-TF.A.4	Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.
CCSS.Math.Content.HSF-TF.B	Model periodic phenomena with trigonometric functions
CCSS.Math.Content.HSF-TF.B.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.
CCSS.Math.Content.HSF-TF.B.6	Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.
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

There are six trigonometric functions.

The graphs of trigonometric functions are periodic.

Essential Questions

What do the graphs of the six trigonometric functions look like?

How do vertical and horizontal shifts affect the graphs of trigonometric functions?

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

What type of phenomena are modeled by trigonometric functions?

Knowledge and Skills

SWBAT graph basic trigonometric functions.

SWBAT graph trigonometric functions with non-standard periods.

SWBAT graph all 6 trigonometric functions including horizontal and vertical translations.

SWBAT utilize graphical addition.

SWBAT write the equation of the graph of a a trigonometric function.

SWBAT write an algebraic proof.

Resources

Trigonometry

Authors: Lial, Hornsby, Schneider

Graphing Calculator

www.desmos.com

www.flipgrid.com

www.graphfree.com