

Exploring Amplitude and Period Teacher

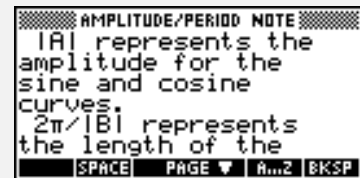
For the

Objectives:

Using the **AMPLITUDE/PERIOD** applet, the student will investigate the parameters A and B to see how they effect the functions $y = \text{Arcsin}(Bx)$, $y = \text{Arccos}(Bx)$, $y = \text{Arctan}(Bx)$, $y = \text{Arcsec}(Bx)$, $y = \text{Arccsc}(Bx)$, $y = \text{Arccot}(Bx)$.

Functionality:

When the student presses **START**, the **AMPLITUDE/PERIOD NOTE** will be displayed.



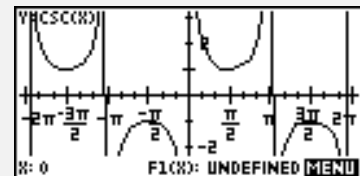
The student should press **VIEWS** to select the trigonometric function to be investigated, as well as to enter values for A and B.



Use the up or down arrow to scroll through this menu. Press **OK** to select a specific trig function.



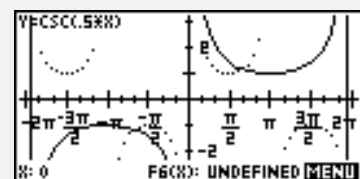
When the student presses **OK**, a graph of the selected function, where A and B are defaulted to 1, will be plotted over the interval $[-2\pi, 2\pi]$.



Selecting **Enter A** or **Enter B** prompts the student for a value. Note: If A is chosen to be investigated, B is automatically defaulted to 1 and vice versa.



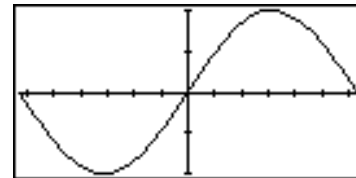
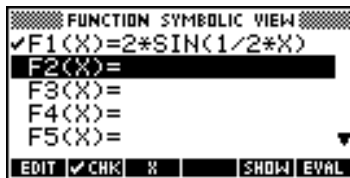
When this value is entered, the new function will automatically be plotted over the original function plot.



Additional Exploration:

Using the **Function** applet, have the student adjust the **PLOT SETUP** so that exactly one period of the function fits into the window. An example would be:

Graph one period of $y = 2\sin\left(\frac{1}{2}x\right)$.



Ideas can be applied to:

Trigonometry, Precalculus, Calculus

Programs associated with this applet:

.AMP.A, .AMP.B, .AMP.TF, .AMP.SV