

Sine Staircase



At the Desmond Estate Campus there is this beautiful handcrafted railing. Looking at the railing it seems like a variation of a sine curve. Let's take a closer look at one rail on the railing, turned horizontally.



What are the key aspects of a sine function?

$$y = A \sin(B(x - C)) + D$$

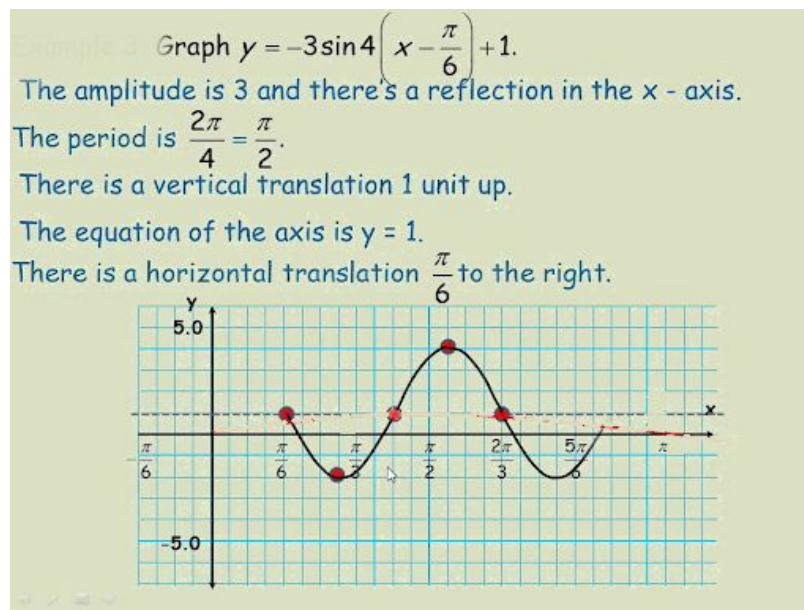
amplitude

horizontal shift

frequency

vertical shift

Review the following example:



Define the terms below and form the generic equation:

Frequency:

Amplitude:

Period:

Horizontal Shift:

Vertical Shift:

Use this link to manipulate the sine function to map it onto the portion of the railing depicted
<https://www.desmos.com/calculator/p4ixvmqk6f>

Record your findings below:

Equation:

Amplitude:

Period:

Horizontal Shift:

Vertical Shift: