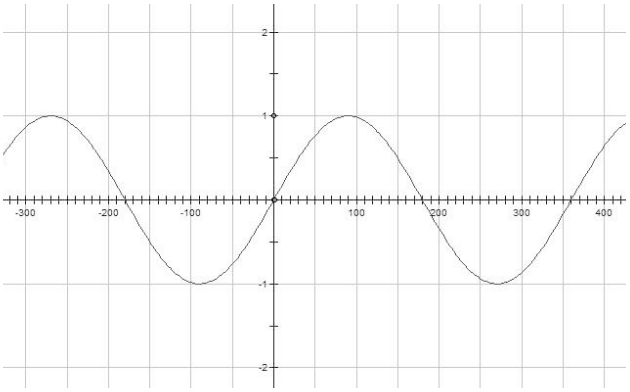
EXPLORING TRANSFORMATIONS OF TRIGONOMETRIC GRAPHS

STUDENT RESOURCE

- Draw the graphs of **y = sin x** and **y = 2 sin x** using a suitable scale.
  Describe the transformation you would need to do to the first graph to obtain the second.



- Draw the graphs of **y = sin x** and **y = sin 3x**
  Describe the transformation.

- Draw the graphs of **y = sin x** and **y = sin x + 2**
  Describe the transformation.

- Draw the graphs of **y = sin x** and **y = sin (x + 45)**
  Describe the transformation.

- Now make a conjecture about the effect of adding or multiplying by a constant in different ways.
  Test your conjecture with examples of your own.

- Now conjecture what would happen if you subtracted or divided.
  Test your conjecture with examples.

- Explore some of the ideas above using the graph of **y = cos x**

- Draw a graph based on **cos x** which goes through the points **(180, 0)** and **(360,0)**.
  Set up some examples like this to give someone else.

- Draw a graph based on **sin x** and an identical graph based on **cos x**.
  As they will be on top of one another they will only look like one graph.