1. Familiarize yourself with the applet. Make sure to play around with the applet making sure to familiarize yourself with the applet. If you need further instruction please read the instructions located in the teacher guidelines tab.
2. For this activity we are going to ride a ferris wheel. You are located in the dark blue seat that is revolving around the ferris wheel. To start out this activity watch the motion of the ferris wheel. Once you feel comfortable of the motion of the ferris wheel pause the animation. With the make graph option located under the graph, graph the motion of blue seat relative to the ground over time. In other words you are creating a distance vs time graph.
3. Now lets see if your graph is the correct one. First, return the green point labelled drag to the far left of the segment. Now having seen the seat moving along the ferris, how do you come up with the graph you made up? Explain your reasoning.
4. Now keep in mind your solution from question 3, now hide the picture and the extra seats by clicking their respectable boxes. From there, click the show graph button located under the slider, and the unit circle button under the circle.  Lastly select the show coordinate button located under the graph. Now play the animation. Why do you think that the point on the graph and the circle are behaving this way?
5. Now under the unit circle button, click show blue seat coordinates, what do the two coordinates represent? (Hint think back to the previous activity.)
6. Now looking at the values of the coordinates of the blue seat on the circle, which of the two values best represents the motion of the graph? Why do you think this is so?
7. Finally hit the show graph of function button and then click on the options labeled graph sin(x) and graph cos(x). Which of the two graphs represents the path of the blue seat on the ferris wheel? Did the graph you made match the actual graph? Explain.
8. After looking at the sine and cosine graphs, what are the defining features of each graph?