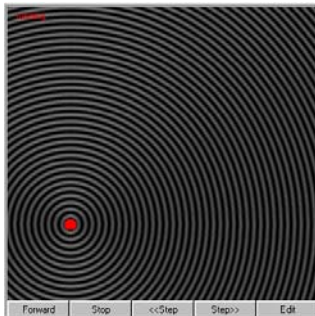# Worksheet for Exploration 38.1: Modeling Diffraction from a Slit

The animation simulates waves from a point source of light. Sources can be added by entering a position and clicking on *add source* and then *set wavelength and play*. The position of sources can be changed by dragging in the applet **(position is given in arbitrary units)**.

Use the animation to model diffraction from a slit. Turn in a screen shot showing your model along with an explanation of your model. Discuss any limitations of your model. Hint - How can you use the applet to model diffraction? In order to figure out a model, first you must understand the nature of diffraction from a slit. Huygens' principle tells us that the light wave at a point spreads out in all directions. That means that the light coming from the slit can be thought of as coming from many individual points. So to model the slit you need to line up several point sources of light where the opening would be.

a. As the width of the slit opening is increased, the diffraction pattern should narrow. Confirm that your model is correct by testing this property. Turn in a screen shot of your test as evidence.

b. As the wavelength of light through the slit is decreased, the diffraction pattern should narrow. Confirm that your model is correct by testing this property. Turn in a screen shot of your test as evidence.