Young's Experiment Activity Sheet
Version 2

Purpose:
The purpose of this activity is to perform Young's experiment in a simulated environment in order to determine the wavelength of light.

Background:
In this activity, you will analyze a two-point source light interference pattern that is projected onto a screen. The interface is divided into three important sections. The top section represents the experimental set-up as it would be seen from above. The set-up consists of a laser beam of unknown wavelength, a double slit, a screen upon which the interference pattern is projected.
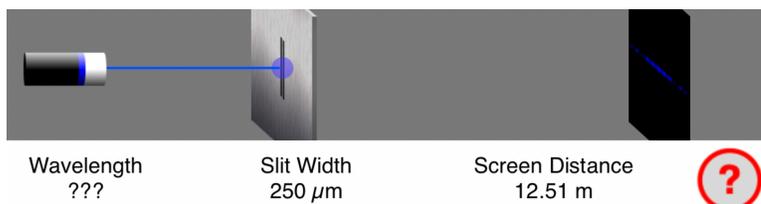
The middle section represents the front view of the screen. This view allows you to see the actual interference pattern consisting of bright and dark bands. These bands are the result of the wave interference of the waves for the waves diffracting through the two slits. This section is interactive. You can tap on bright spots to determine the distance between them. Follow the on-screen directions that appear below the **Magnified Front View of Screen**.
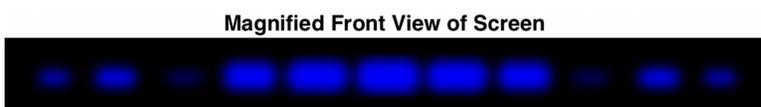
The bottom section allows you to enter your answer for wavelength. Since the answer is a multiple of 10 nm, you will use arrow buttons to set the value. Your progress on the activity is also noted in this section.
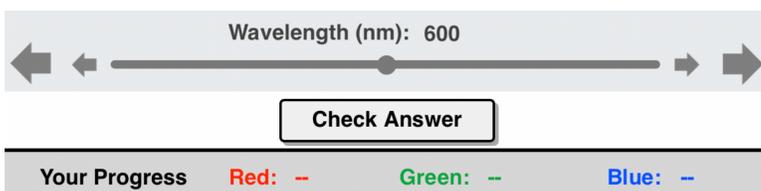
Getting Ready:
Navigate to the Young's Experiment Interactive at The Physics Classroom:

Path:
www.physicsclassroom.com => Physics Interactives => Light and Color => Young's Experiment

URL:
http://www.physicsclassroom.com/Physics-Interactives/Light-and-Color/Youngs-Experiment

After launching the Interactive and resizing it to your liking, gain familiarity with all the interface controls. Then begin the Mathematical Analysis questions.

Mathematical Analysis:
1.   Make on-screen measurements of the appropriate values and determine the wavelength of light. Record your data (in the stated units) in the Data section. Show your calculations for the first two rows in the Calculations section.
2.   Tap the **Check Answer** button to have your answers evaluate. If incorrect, you will receive a different set of values for that color. Your progress is shown at the bottom of the screen. If your instructor requires seeing the feedback when all three colors are correct, then show your screen to your teacher.

Data:

Laser	y (cm)	m	d (µm)	L (m)	Wavelength (nm)
Red					
Green					
Blue					

Calculations:
  Show your work (clearly) for the first two rows of the data table above. Give attention to units.

Conclusion:
  In a well-written paragraph, summarize the procedure used by Thomas Young in order to measure the wavelength of light. Do a *bang-up job*!