

Properties of Waves Lab

Name: _____ Date: _____ Class: _____

To to Google Classroom - Science, Click on the [Waves on a String Simulator](#) link

1. **Click the button for the ruler, set damping to "NONE" and click the button for "no end"**
2. Click the **"Oscillate"** button. Describe what is happening.

Description	
Drawing	

3. Next we are going to measure **wavelength** of different waves. Move the **Frequency** and **Amplitude** sliders to the numbers listed in each row. Let the wave run for a few seconds and then pause the wave and use the ruler to measure the wavelength. Record your findings in the table with a description.

Amplitude	Frequency	Wavelength (cm)	Description (describe or draw the wave)
0.75 cm	1.50 Hz		
1.25 cm	1.50 Hz		
0.75 cm	1.00 Hz		
1.25 cm	1.00 Hz		
1.25 cm	3.00 Hz		
0.50 cm	3.00 Hz		

4. Use the measurements for each wave above and calculate the **speed** of each wave in the table below.

Amplitude	Frequency	Wavelength (cm)	Speed (cm/s)
0.75 cm	1.50 Hz		
1.25 cm	1.50 Hz		
0.75 cm	1.00 Hz		
1.25 cm	1.00 Hz		
0.50 cm	3.00 Hz		

5. How does changing the **Frequency** affect the wavelength? (may use illustrations to help explain)

6. How does changing the **Amplitude** affect the wavelength?

7. How does changing the **Frequency** affect the energy of the wave?

8. How does changing the **Amplitude** affect the energy of the wave?

9. The **amplitude** of a wave is related to the energy of a wave. Did you see anything on the screen that made you think this or could prove your point? How could you demonstrate this relationship?

10. What are the relationships that are present between **frequency**, **wavelength**, and **amplitude** of a wave?

As frequency is increased wavelength ...