

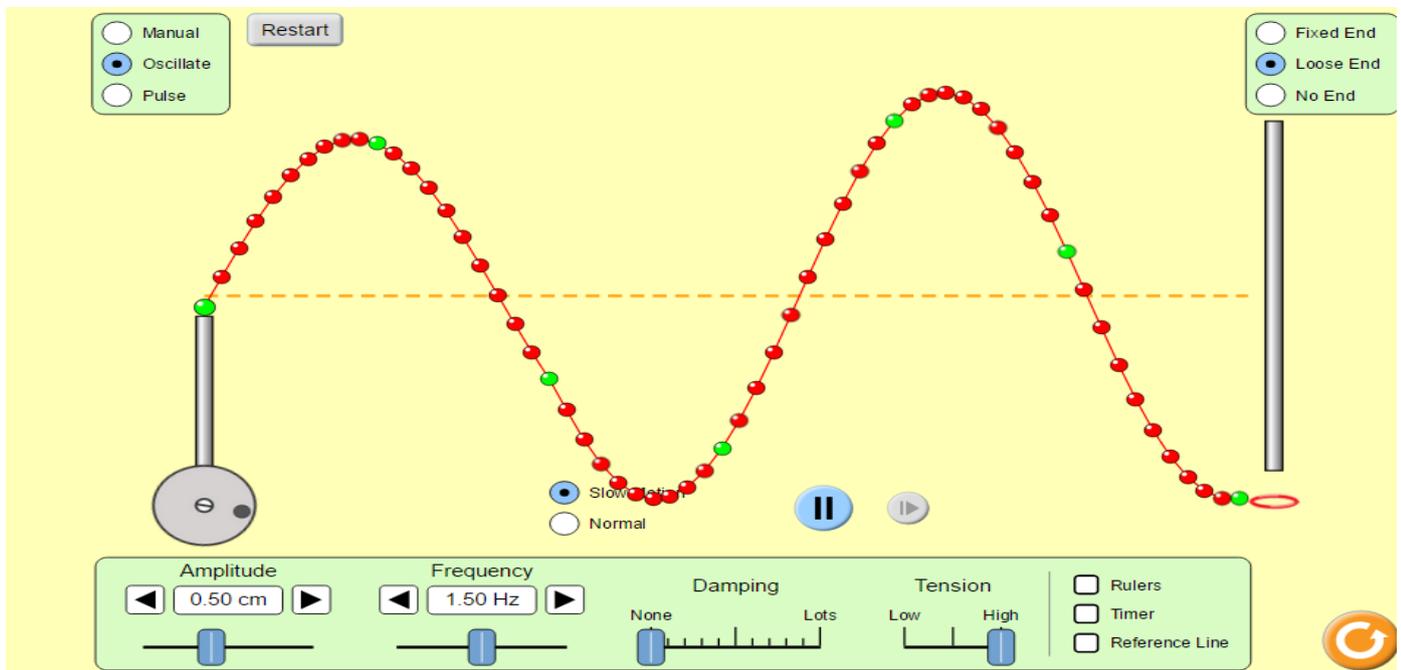
Name: _____

Date: _____

Activity Title:

Score: _____

"Waves on a String"



A. OBSERVATION

Go to https://phet.colorado.edu/sims/html/wave-on-a-string/latest/wave-on-a-string_en.html

- Using the simulation, select **fixed end** and set **AMPLITUDE= 0.50 cm**, **FREQUENCY=1.5 Hz**, **DAMPING=none** and **tension** at a.) **Low** and b.) **High**.
 - (Low Tension)
Describe the motion of the individual particle on the string at the very start until a longer time. What happens at the particles at the fixed end?
 - (High Tension)
Compare and contrast the behavior of the particle in high tension compared to low tension.
- Using the simulation, select **loose end** and set **AMPLITUDE= 0.50 cm**, **FREQUENCY=1.5 Hz**, **DAMPING= none** and **tension** at a.) **Low** and b.) **High**.
 - (Low Tension)
Describe the motion of the individual particle on the string at the very start until a longer time. What happens at the particles at the loose end?
 - (High Tension)
Compare and contrast the behavior of the particle in high tension compared to low tension.

B. CONCEPTUAL QUESTIONS:

Note:

$$v = \lambda f \text{ where}$$

v = wave speed
 λ = wavelength
 f = wave frequency

- 1.) If we increase the frequency to **3.0 Hz** and amplitude = **0.75 cm** with low tension, describe the number of waves produced? (3)
- 2.) If we increase the frequency to **3.0 Hz** and amplitude = **0.75 cm** with high tension, describe the number of waves produced? (3)
- 3.) Based on the equation presented above, what happens to the wavelength if we decrease the wave speed? Show your solution. (5)
- 4.) Based on the equation what happens to the wavelength if we increase the frequency? Show your solution. (5)
- 5.) In your own word describe the effect of increasing and decreasing frequency on the wave. (4)

C.) Cite 3 real life examples of transverse wave. (10 points each)

Example	Why it is an example of wave?
1.)	
2.)	
3.)	