PhET Simulation: Wave on a String

Wave on a String

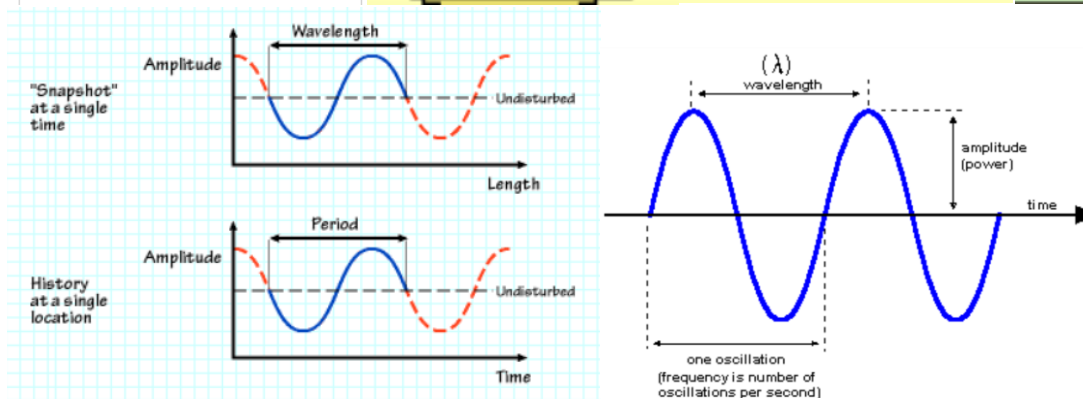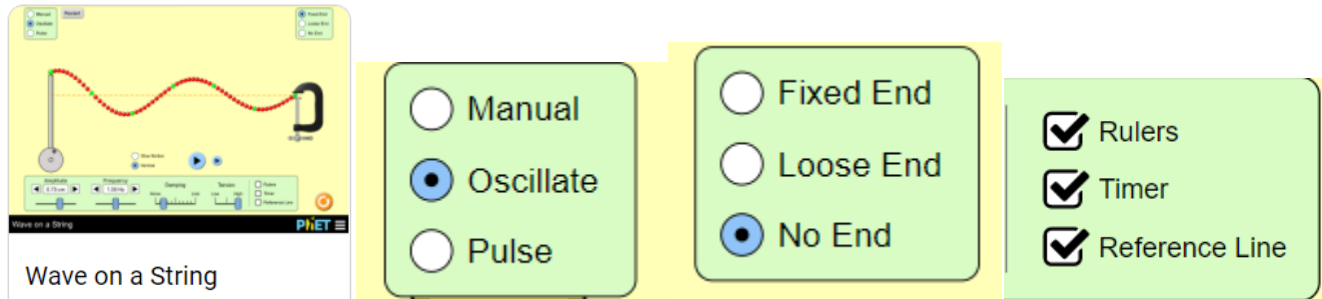| Manual | Fixed End | ☑ Rulers |
| ● Oscillate | Loose End | ☑ Timer |
| Pulse | ● No End | ☑ Reference Line |

Calculate/measure 3 values of each wave variable below (amplitude, frequency, wavelength, period, speed) and verify your answer with that given by PhET.

1) Amplitude is the vertical distance between a peak or a valley and the equilibrium point.
2) Frequency is the number of wave cycles (oscillations) passing a point per second.
3) Period is the time of one wave passing in second.
4) Wavelength is the distance between adjacent maxima or minima of a wave.
5) Speed = frequency x wavelength.

What is the difference between oscillating and pulse.

PhET simulations: Waves Intro.

Water;

1) Define water waves, amplitude, frequency.
2) Change the amplitude. How does this change affect the shape of the water waves? How does this change affect the sound of water waves?
3) Change the frequency. How does this change affect the shape of the water waves? How does this change affect the sound of water waves?
4) Use Graph and the sensor as well as the timer to explore more feature of water waves. Share your finding.

Sound;

5) Define sound waves, amplitude, frequency.
6) Change the amplitude. How does this change affect the shape of the sound waves? How does this change affect the sound of waves?
7) Change the frequency. How does this change affect the shape of the sound waves? How does this change affect the sound of waves?
8) Use Graph and the sensor as well as the timer to explore more feature of sound waves. Share your finding.

Light;

1) Define light waves, amplitude, frequency.
2) Change the amplitude. How does this change affect the shape of the light waves? How does this change affect the sound of light waves?
3) Change the frequency. How does this change affect the shape of the light waves? How does this change affect the sound of light waves?
4) Use Graph and the sensor as well as the timer to explore more feature of light waves. Share your finding.