INTRODUCTION TO SIMPLE HARMONIC MOTION

What do you think it means?

TYPES:

SHO ***Simple (one restoring force) proportional to displacement from equilibrium…. Harmonic (periodic, repeats)***

Motion is like a wave……. Repeats over one : period, cycle, wave, revolution, swing, back and forth, up and down, etc…

WAVES

CIRCLE

ENERGY

DEFINITION:

AMPLITUDE ***Height or Strength of wave. Distance/Angle from equilibrium to maximum. Like height of water wave, angle of swing on pendulum, loudness of sound, brightness of light.***

EQUILIBRIUM ***Rest point***

PERIOD ***Time per cycle (wave, swing, revolution, etc…)***
T = sec/wave

FREQUENCY ***Cycles per time, f = 1/T waves/sec… Hertz***

SPRING

Hooke's Law ***F = k X , F is the restoring force and x is the displacement from rest. Applies to all SHM not just springs.***

Spring Constant ***k = F/x = Force/Distance…. N/m k is the spring constant that is dependent on the tightness, makeup of the spring.***

Pendulum: