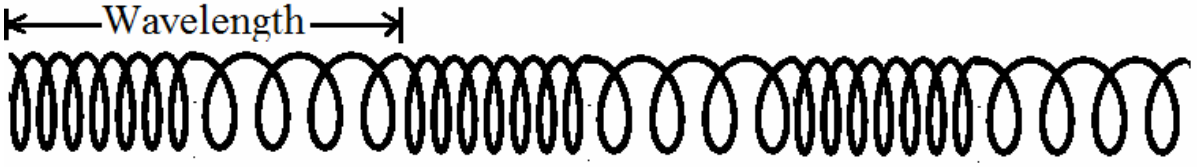
Name: _____
Date: _____ Period: _____

Longitudinal Wave Worksheet

One full wave (cycle)



Define each of the following vocabulary terms:

Period –

Compression -

Rarefaction -

Wave speed = (wavelength) x (frequency) $v=\lambda f$

Frequency and Period are *inversely* related $f = {}^{1}/_{T}$ and $T = {}^{1}/_{f}$

Measuring Practice:
A camera takes a picture of a longitudinal wave for one full second. You can use a ruler to measure in centimeters. For each wave answer the questions and measure the parts of the wave.

Wave 1

1. How many full wavelengths are there in this wave? _____

2. Measure one Wavelength:_____ cm

3. If this picture was taken over one second, what is the *frequency* of the wave? _____ Hz

4. If you were to time how long it takes one complete wavelength to pass you buy, you would have measured the _____.

5. What is the period of this wave?

G U E S S

6. You measured the wavelength and found the frequency of the wave. Use these two measurements to calculate the speed of the wave in centimeters per second (cm/s):

G U E S S

Wave 2

1. How many full wavelengths are there in this wave? _____

2. Measure one Wavelength:_____ cm

3. If this picture was taken over one second, what is the *frequency* of the wave? _____ Hz

4. If you were to time how long it takes one complete wavelength to pass you buy, you would have measured the _____.

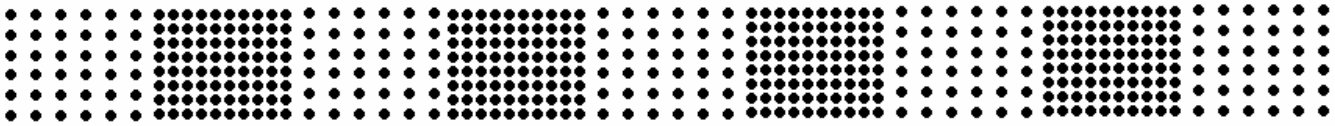
5. What is the period of this wave?

G U E S S

6. You measured the wavelength and found the frequency of the wave. Use these two measurements to calculate the speed of the wave in centimeters per second (cm/s):

G U E S S

Wave 3



1. How many full wavelengths are there in this wave? _____

2. Measure one Wavelength:_____ cm

3. If this picture was taken over one second, what is the *frequency* of the wave? _____ Hz

4. If you were to time how long it takes one complete wavelength to pass you buy, you would have measured the _____.

5. What is the period of this wave?

G U E S S

6. You measured the wavelength and found the frequency of the wave. Use these two measurements to calculate the speed of the wave in centimeters per second (cm/s):

G U E S S