Assignment: 4

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour:\_\_\_\_\_

**Sound Waves**

**Sound is an example of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ wave.**

* Longitudinal waves are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ waves
  + Mechanical waves require a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to pass through
  + Therefore \_\_\_\_\_\_\_\_\_\_ does \_\_\_\_\_\_ travel through \_\_\_\_\_\_\_\_\_\_\_\_ space

**Sound results from the back and forth \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the medium through which the sound wave is moving**

* Because sound requires particles to pass its energy, the \_\_\_\_\_\_\_\_\_\_\_ particles are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ they will be able to \_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + The state of matter with the closest molecules is a \_\_\_\_\_\_\_\_, therefore sound travels \_\_\_\_\_\_\_\_\_\_\_\_\_ through \_\_\_\_\_\_\_\_\_\_\_
  + The state of matter with the furthest apart molecules is \_\_\_\_\_\_, therefore sound travels \_\_\_\_\_\_\_\_\_\_\_\_\_ through \_\_\_\_\_\_\_\_\_\_\_

**Human Voice**

* Uses \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ that \_\_\_\_\_\_\_\_\_\_\_ to produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What can humans hear?**

* Humans can hear noises just above \_\_\_\_ decibels up to \_\_\_\_\_\_ decibels
* Noise pollution that is above \_\_\_\_\_\_\_\_ decibels can result in \_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_ loss, however anything above \_\_\_\_\_\_ decibels can start to cause \_\_\_\_\_\_\_\_\_\_\_\_\_ to your ear
* If you want to \_\_\_\_\_\_\_\_\_\_\_ the amount of sound \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ you need to use a material that \_\_\_\_\_\_\_\_\_\_\_\_\_\_ sound
  + What examples of these do we have in the PAC or band/choir rooms?

**What causes sound to change pitch?**

Pitch: the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of wave

* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the wavelengths, the \_\_\_\_\_\_\_\_\_\_\_ waves in a given time, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ the pitch
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Think of musical instruments like the violin…

* How do you tune a violin?
* What is unique about the different strings?
* What happens to the strings as you move your fingers along them?

So \_\_\_\_\_\_\_\_ is changed by adjusting the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of waves

* + To change the frequency of waves, you need to change the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (thickness) the wave is traveling through or the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the material
* As the length of the vibrating string \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the pitch \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ OR as the length of the string \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the pitch is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What else do we use sound for?**

* Dolphins use sound for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to locate prey