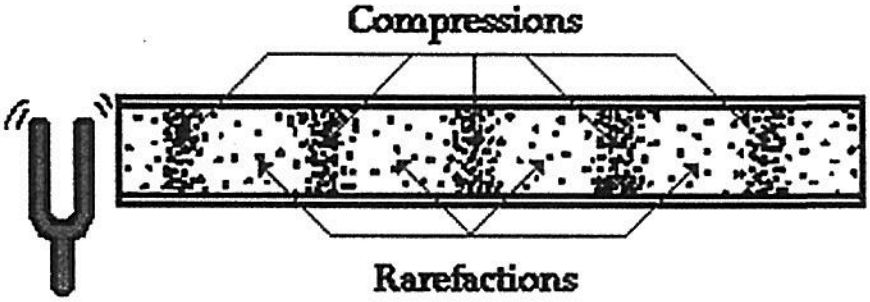
Name: _____ **Date:** 3.11.19 (notes) **Period:** ____

Sound Waves:

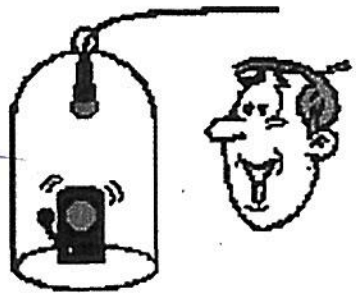
- A disturbance that travels through a medium (matter) as longitudinal waves



- Compressions – areas where particles are close together
- Rarefactions – areas where particles are spread out
- Wavelength – distance from one compression to the next compression

Can you hear the sound of a bell inside a vacuum?

No, you cannot because Sound is not present in a vacuum. There is no medium for the sound to travel through.



Why do we see lightning before we hear thunder?

- Speed of light = 300,000,000 m/s
- Speed of sound = 330 m/s

How can we tell how far away a storm is?

- Every 5 seconds between seeing the flash and hearing the thunder is 1 mile away.

Name: _____ Date: 3.11.19 Period: _____

Sound Cloze

Fill in the blanks with words from the box.

compression	**echo**	**echolocation**	**energy**
flat	**frequency**	**medium**	**pitch**
rarefaction	**vacuum**	**vibrates**	**wave**

The string vibrations produce sound that travels through the air to your ears.

Sound is a form of energy that people can hear. Sound is produced when an object Vibrates back and forth. When an object vibrates, it pushes the air around it, which causes the air to alternately bunch up and then spread apart. When the air particles bunch up, it's called a Compression and when the particles spread apart, it's called a rarefaction. These compressions and rarefactions travel outwards forming a sound Wave. The material that the sound wave moves through is called a medium. Without a medium, sound cannot travel and so there is no sound in a Vacuum such as outer space.

The frequency of a sound wave is a measure of how many times an object vibrates per second. Objects that vibrate with a high frequency produce sounds with a high pitch, which is how our ears perceive sound.

Sometimes sound waves bounce off a hard, flat surface producing an echo. Some animals such as bats and whales use echoes to locate prey. Using echoes to locate an object is called echolocation.