SOUND…All you need to know!!!

Definition:

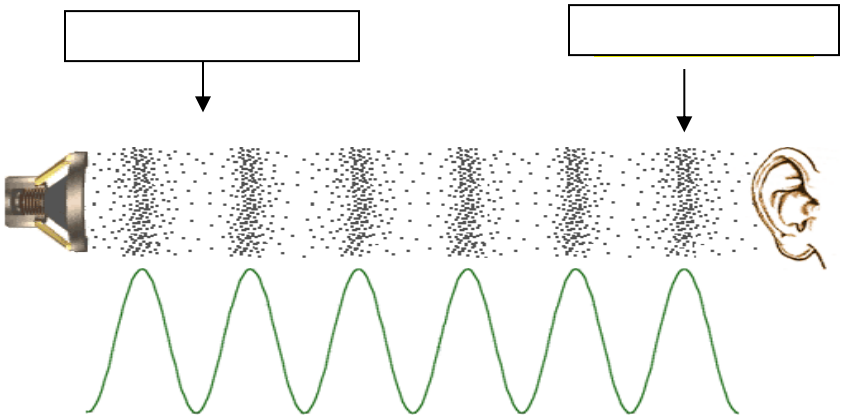
-Sound is nothing but a _____ that travels through a _____ .

- A _____ is a rapid _____ and _____ motion.

-Sound needs matter to transfer energy. Therefore, sound is a _____ wave.

-Sound travels in the same direction as the force. Therefore, sound is a _____ wave.

-Sound is a compression wave. Label the diagram below.



Loudness or Volume:

-Intensity or the amount of _____ , determine a sounds loudness.

-Loudness is measured by a sounds _____ .

Therefore, to increase a sounds loudness you must increase the _____ or _____ of a sound.

Pitch:

-Pitch is the quality of highness or lowness in a sound. It is not loudness.

- _____ determines pitch!

Sound Speed:

Sound speed is determined by the medium. The closer together the _____ are in a medium, the _____ the sound. Think…How do particles move in matter?

-Therefore sound travels fastest in a _____
(especially elastic materials like metals)

-Sound travels second fastest in a _____

-Sound travels the slowest in a _____

How Humans Hear Sound:

1. Your _____ collects _____ into the ear canal.
2. These sound waves enter the _____ causing the _____ to vibrate.
3. The eardrum makes the three middle ear bones, _____, _____, and _____, vibrate.
4. These vibrations are passed onto the _____
5. The eardrum passes these vibrations to the _____ of the inner ear.
6. Tiny _____ in the _____ of the inner ear vibrate.
7. These hair cells send a message to the brain through the _____

Sound

The link below takes you to a site that will help you understand a sound relationship. What is that sound relationship? _____ **determines** _____

https://scratch.mit.edu/projects/67399296/

Ear Parts: *Use the following links to fill in the order below. After you go through each link, go back to page two.*

Interactive Ear: https://www.amplifon.com/uk/interactive-ear/index.html

Label the Ear: http://academic.udayton.edu/gregelvers/psy323/labels/ear.asp

How our Ears Work: https://www.childrensuniversity.manchester.ac.uk/learning-activities/science/the-brain-and-senses/how-the-ear-works/

Sound vibrations move through your ear in a specific order. Write the correct terms in the proper order according to how sound travels through the ear.

auditory nerve, anvil, cochlea, outer ear, stirrup, hammer, ear canal, ear drum

1	2	3	4	5	6	7	8

Dangerous Decibels: *Work through the steps of this very interesting site, then answer the following questions.* http://www.dangerousdecibels.org/virtualexhibit/2howdowehearb.html

1. **What is the range of human hearing?** _____
2. **What level of decibel noise can harm human ears?**_____
3. **What is the most harmful sound that you have been exposed to?** _____

_____

Ear Diagram

On the ear diagram, color the following as instructed.

1. Inner ear bones
    ___ Hammer, orange
    ___ Anvil, blue
    ___ Stirrup: red
2. Cochlea, yellow
3. Eardrum, green

Label the diagram using the following word bank.

1.___ Ear Canal
2.___Cochlea
3.___Inner Ear
4.___ Eardrum
5.___Outer ear
6.___Pinna
7.___ auditory nerve
8.___ossicles (inner ear bones)
9.___Middle Ear

There are two parts you do not have to know (*). See if you can figure them out.