Unit: Sound Notes

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| Lesson 1 | Phenomena  **Sound:** is a pressure wave in air or any other material medium. |
| Lesson 2 | * Just like speakers, musical instruments vibrate back and forth when they are making sound. * To make vibrations we need to apply some type of force to the instrument to deform it.   **Vibration:** is a back and forth movement |
| Lesson 3 | * All objects move back and forth (vibrate) when making sound. Objects vibrate further back and forth when a greater force is applied which will create a sound that is louder. |
| Lesson 4 | * The more deformed the instrument the higher the peaks and valley of a motion graph. We call the distance from peak (crest) to valley (trough) the amplitude.   **Amplitude:** Height of wave  Tells us how loud or soft sound is  \*\*\*\*To make a louder sound source needs a greater force. The sound source will go farther back and forth.  C:\Users\rms\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\5F6AF51D.tmp |
| Lesson 5 | * Objects of **shorter length** play at a **higher pitch**. * They will vibrate more frequently than longer length.   **Pitch**: is determine by wavelength  Short wavelength= high pitch, high frequency  Long wavelength= low pitch, low frequency  **Frequency:** Number of waves in a certain amount of time  \*\*\* To make a higher frequency the sound source needs to move faster\*\*\*  C:\Users\rms\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\866A8E98.tmp |
| Lesson 6 | * The vibration of objects is the source of the sound. * The amplitude of the vibration of objects affects the volume of the sound. * The frequency of the vibration of objects affects the pitch of sound. |
| Lesson 7-10 | * Sound needs a medium (solid, liquid, or gas) to travel through. * The speaker pushes a bunch of particles of air close together, then those particles expand together, hitting another group of air particles next to them.   Compression: Packed Particles  Rarefaction: Spread out particles  \*\* Sound travels the fastest through solid, then liquid. Sound travels the slowest through gases (air).\*\*  Energy travels across the medium when vibrating matter causes particles to push closer together and then spread apart in compression and expansion patterns.  C:\Users\rms\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\350B38B4.tmp   * Sound can’t travel through empty space the has no matter. * A vacuum is an area with no particles. Space is a vacuum. Sound CANNOT travel in vacuum. Sound NEEDS particles to travel through. |
| Lesson 13 | * Waves with bigger amplitude and higher frequency transfer more energy, and increases in amplitude have bigger effect on the energy transferred than does increases in frequency. |

**Other Vocabulary:**

Crest: Top of wave

Trough: Bottom of wave

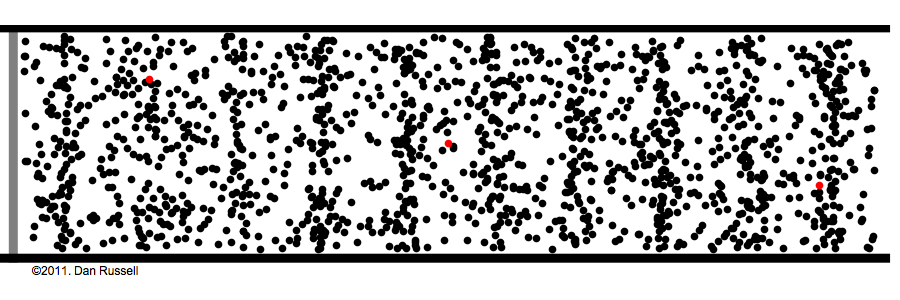
Transverse Wave: A wave that vibrates the medium at right angles, or perpendicular to the directions in which the wave travels.

Longitudinal Wave: vibrates the medium in the same directions in which the wave travels

Compression: Areas where the coils are close together

Rarefaction: area where the coils are spread apart.

Longitudinal Wave: Write an R in the rarefaction areas and a C in the compression areas.



Surface Wave: Combination of two transverse and longitudinal wave. Travels in two medium. Like oceans that travel to water and air.

