

Engineering Technology

Video Production

Name _____

The Science of Sound

What is Sound – vibrations that travel through the air or another medium and can be heard when they reach a person's or animal's ear

Wave Form – plotting the changes in air pressure over time. The shape and form of a signal such as a wave moving in a physical medium

Amplitude – The strength of the wave itself. The greater the distance from the peak of the wave to the center line, the greater the strength. Measured in RMS

Frequency – the number of peaks and troughs over a given period of time. Measured in Hertz (Hz) as you increase the number of hertz typically the pitch raises.

Loudness – The strength of sound. The unit used to describe a unit of sound loudness is the **Decibel**

Decibel of different sounds

30 db Soft Whisper, 70 db Freight train at 100 ft, 120 db Jet Takeoff at 200ft

Exposure to 85 dbA safe up to 8 hours

Impact of decibels on video

- A 3db increase will **DOUBLE** the signal strength
- Increase of 10db increases the signal **10** times
- Increase of 20db increases the signal **100** times
- Increase of 30db increases the signal 1000 times