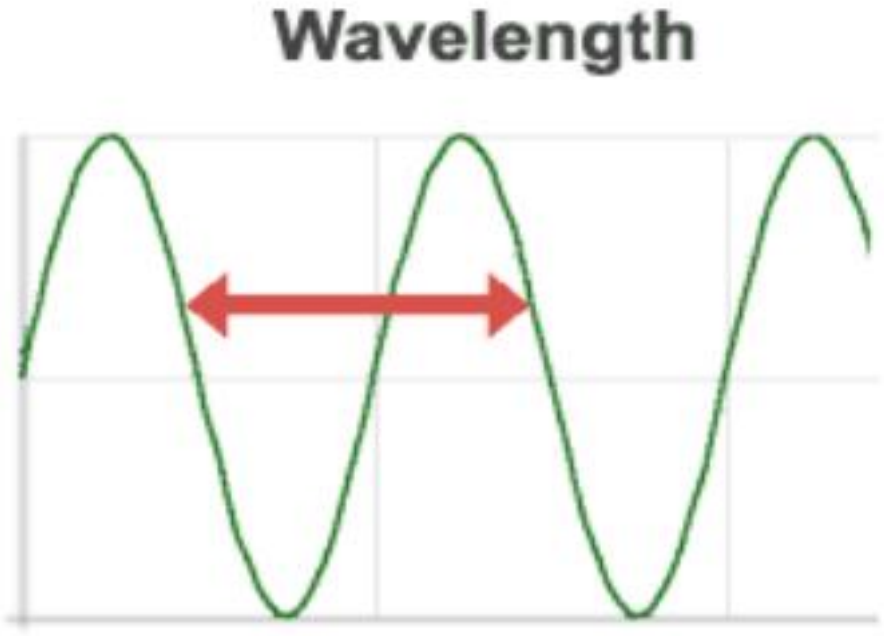
FUNDAMENTALS OF ACOUSTICS

Sound Wave Properties

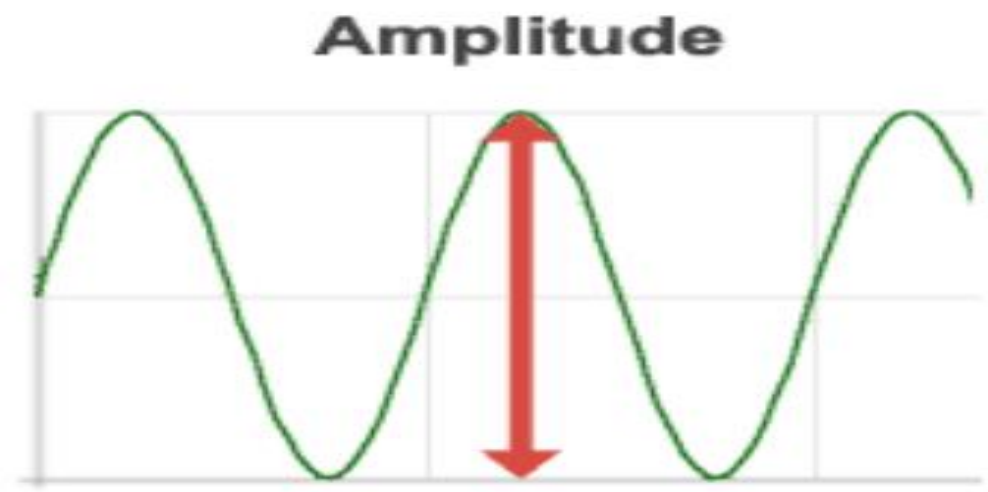
All waves have certain properties. The three most important ones for audio work are shown here:

Wavelength: Wavelength is the distance between two corresponding points (for example two successive maxima) along the waveform. Literally, the length of the one wave.



Amplitude: Amplitude is the unit that measures the distance between the equilibrium point and the maximum point of the waveform. Greater amplitudes correspond to higher volumes..

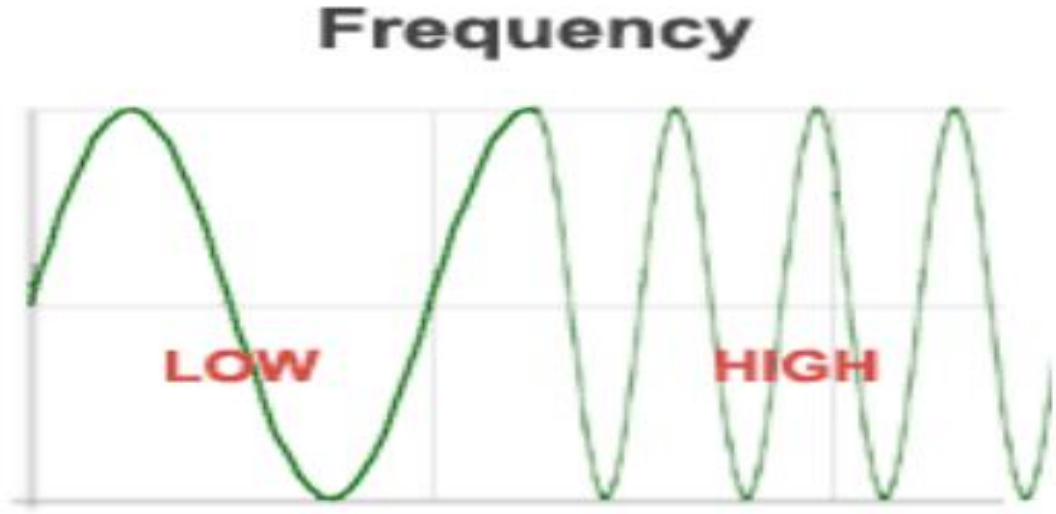
The strength or power of a wave signal. The "height" of a wave when viewed as a graph.



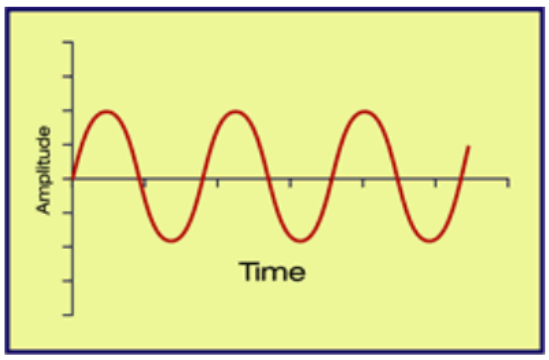
Frequency:

Frequency is literally the number of cycles made by a wave in one second. A cycle is composed of a positive half wave and a negative half wave. It is measured in Hz (1/sec). A 1Hz frequency wave completes one cycle every second.

Higher frequencies are interpreted as a higher pitch. For example, when you sing in a high-pitched voice you are forcing your vocal chords to vibrate quickly.



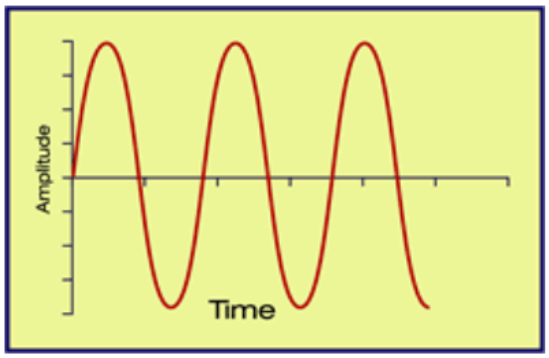
LOW-FREQUENCY



The range of low frequency 30 Hz to 800 Hz

Long wave form

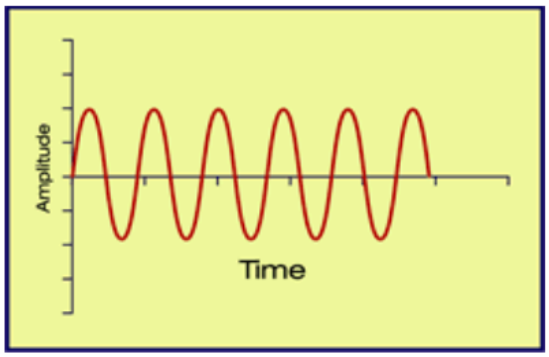
MID-FREQUENCY



The range of low frequency 800 Hz to 2200 Hz

Medium wave form

HIGH-FREQUENCY



The range of low frequency 2200 Hz to 8000Hz

Short wave form

Very high frequency range is 6000 Hz to 15000 Hz