

# Sound Energy Vocabulary

**Absorption:** A process in which sound energy is reduced when sound waves pass through a medium or strike a surface — also known as acoustic absorption.

## Characteristics of Waves:

- **Amplitude of a transverse wave:** The vertical distance between the line of origin and the crest of the wave. The higher the amplitude, the more energy sent to the medium.
- **Compression in a longitudinal wave:** The area where the medium is pushed together. Compressions in a longitudinal wave compare to the crests of a transverse wave.
- **Crest:** The highest point of the wave above the line of origin.
- **Frequency:** The number of wavelengths that pass a point in a given amount of time. The unit for the frequency is the **hertz (Hz)**.
- **Hertz (Hz):** The number of wavelengths that pass a point in a given amount of time (such as a second). The more waves that pass through the medium in the same amount of time, the more energy that is released.
- **Line of origin:** The original position of the medium before a transverse wave moves through it.
- **Period:** Time it takes for a wave to repeat itself.
- **Rarefaction in a longitudinal wave:** The area where the medium spreads apart. Rarefaction in a longitudinal wave compare to the troughs of a transverse wave.
- **Trough of a transverse wave:** The lowest point of the wave beneath the line of origin.
- **Wavelength of a transverse wave:** The distance between two neighboring crests or between two troughs.

**Medium:** Matter that is made up of molecules and takes up space. Some waves move through a medium that includes solids, liquids and gases.

**Pitch:** The property of a sound, especially a musical tone, that is determined by the frequency of the waves producing it; highness or lowness of sound.

**Reflection:** The throwing back by a body or surface of light, heat or sound without absorbing it.

**Transmission:** Passage of a sound wave through a medium or series of media.

**Types of Waves:** A disturbance that transfers energy through matter or through space or a disturbance in the medium.

- **Longitudinal wave:** A wave such as a sound wave that is moving in the same direction in which the particles of the medium vibrate. Mechanical longitudinal waves have been also referred to as **compressional waves** or **pressure waves**.
- **Transverse wave:** A wave that makes the medium through which it travels vibrate in a direction at right angles to the direction of its travel.

**Vibration:** Periodic back-and-forth motion of the particles of an elastic body or medium.