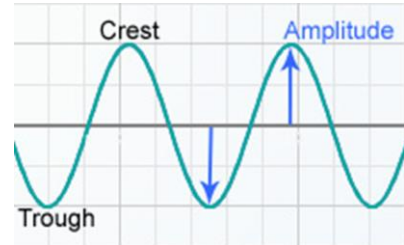


Vocabulary: Sound Beats and Sine Waves



Vocabulary

- **Amplitude** – the distance from a *crest* or *trough* to the rest position on the horizontal axis.
 - The greater the amplitude of a *sound wave* is, the louder the sound.
- **Beat** – the variation from soft to loud in the volume of a sound when two waves of slightly different *frequencies* combine.
- **Constructive interference** – a situation in which the crests and troughs of one wave overlap the crests and troughs of another wave resulting in a new wave with higher crests and deeper troughs.
- **Crest** – the highest point of a wave.
- **Destructive interference** – a situation in which the crest of one wave and the trough of another overlap, resulting in a wave that has a smaller amplitude than the original waves.
- **Frequency** – the number of times something happens in a given period of time.
 - The frequency of a sound wave is equal to the number of waves that pass a point each second.
- **Hertz** – the unit of frequency.
 - One hertz is one event per second.
 - The symbol for hertz is “Hz.”
- **Sound wave** – a vibration transmitted through an elastic medium such as a gas, liquid, or solid.
 - Sound causes air molecules to vibrate back and forth in the same direction that the sound is moving. This creates the alternating high- and low-pressure areas (*compressions* and *rarefactions*) shown below.



Parts of a wave



- Sound waves cause our eardrums to vibrate. The vibrations are transmitted to the auditory nerves via a series of delicate structures in the inner ear.
- **Trough** – the lowest point of a wave.