

Vocabulary: Hearing: Frequency and Volume



Vocabulary

- Decibel – a unit used to measure relative sound intensity, or loudness.
 - The symbol for decibel is “dB.”
 - The decibel is measured relative to a reference intensity level. The reference level may vary in different applications.
 - The decibel scale is a logarithmic scale. A decibel level of 20 is 10 times louder than a decibel level of 10 and 100 times louder than a decibel level of 0.
- Equal-loudness curve – a line on a sound *volume vs.* sound *frequency* graph that represents equal perceived volume across the spectrum of frequencies.
- 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.
 - The shorter the *wavelength* of a wave is, the greater its frequency. Longer wavelengths correspond to lower frequencies.
- Hertz – the SI unit of frequency.
 - The symbol for hertz is *Hz*.
 - One hertz is equal to one wave per second.
- Logarithm – the power to which a certain number (called the “base”) must be raised to in order to produce a given number.
 - The base for a logarithm is usually either 10 or the number e (2.7183).
 - For example, the base-10 logarithm of 1,000 is 3 because $10^3 = 1,000$.
 - Decibels use base-10 logarithms.
- Pitch – the perceived frequency of a sound.
 - Shrill sounds like sirens or smoke alarms are high in pitch and high in frequency.
 - The deep sounds made by foghorns and tubas are low in pitch and low in frequency.
- Threshold – the smallest detectable sensation.
- Volume – the intensity or magnitude of a sound.
 - The difference in the volume of two sounds can be measured in decibels.