

Waves and Sound: Objectives and Vocabulary

By referring to the various handouts, notes, lab activities and homework covered during this unit, then at the end of this unit of study, each student should be able to:

1. Define what a wave is.
2. Identify and describe the two basic wave types, compressional and transverse, and give examples of each type.
3. Know how to calculate wave velocity using the formula:
wave velocity = wavelength \times frequency ($v = \lambda \times f$)
4. Define and explain examples of constructive and destructive interference.
5. Know what sound is, and what produces sound.
6. Define sound pitch and some of the factors that determine it.
7. Describe the range of human hearing and compare it to animals.
8. Define infrasonic and ultrasonic sound and give examples of each.
9. Define the decibel scale and the Doppler effect with examples of each.
10. Understand that sound travels at different rates in various media and explain why.
11. Differentiate between noise and music.
12. Define echo and explain how examples exist in sonar and echolocation.

Vocabulary:

Waves	Compressional wave	Doppler effect
Medium	Compression	Music
Periodic motion	Rarefaction	Noise
Cycle	P-waves	White noise
Period	Constructive interference	Resonance
Frequency	Destructive interference	Beat
Transverse wave	Sound	Reverberation
Crest	Pitch	Echo
Trough	Infrasonic	Sonar
Amplitude	Ultrasonic	Echolocation
Wavelength	Decibel scale	Sonograms
S-waves		Acoustics