

CLASS 9

SCIENCE

REVISION NOTES

Class 9 Science Chapter 10 Sound Waves: Characteristics and Applications – Revision Notes

Sound Waves: Characteristics and Applications follows sound from how it's produced to how fast it travels through solids, liquids, and gases, and this page notes the difference between an echo and reverberation along the way.

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One-Line Summary

Sound Waves: Characteristics and Applications follows sound from how it's produced to how fast it travels through solids, liquids, and gases, and this page notes the difference between an echo and reverberation along the way.

Production and Propagation

Sound: produced by vibration, travels as a longitudinal wave (compressions + rarefactions).

Needs a medium; cannot travel through vacuum.

Characteristics

Wavelength: distance between consecutive compressions/rarefactions.

Frequency: oscillations/second (Hz); determines pitch.

Time period: $T = 1/\text{frequency}$.

Amplitude: max displacement; determines loudness.

Speed = wavelength $\times$ frequency.

Speed in Media

Solids > liquids > gases (closer particles = faster transfer).

Echo / Reverberation / Echolocation

Echo: distinct reflected sound; needs ≥ 17 m reflecting distance.

Reverberation: persistence from overlapping reflections in enclosed spaces.

Echolocation: using echoes to detect objects (bats, dolphins, SONAR).

One-Line Summary

Sound is a longitudinal wave needing a medium, described by wavelength, frequency (pitch), and amplitude (loudness), travelling fastest through solids, and its reflection produces echoes, reverberation, and echolocation.

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