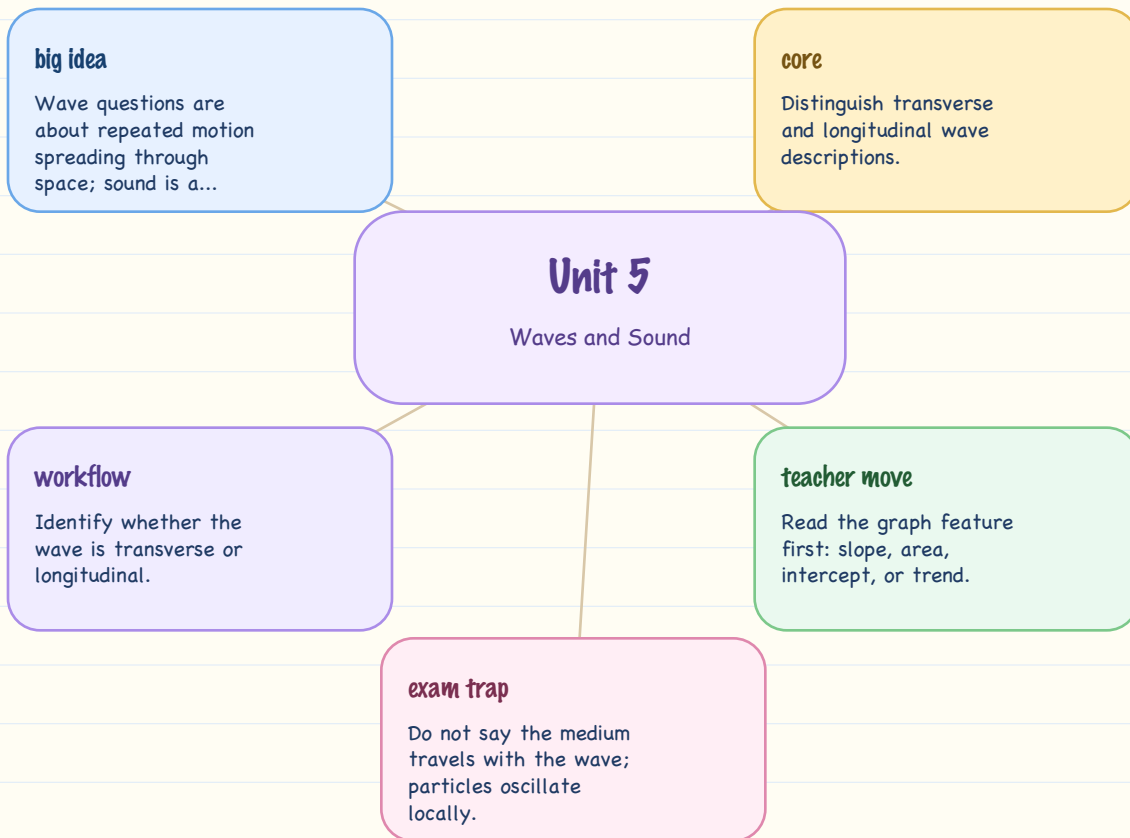


## Unit 5 Visual Notebook

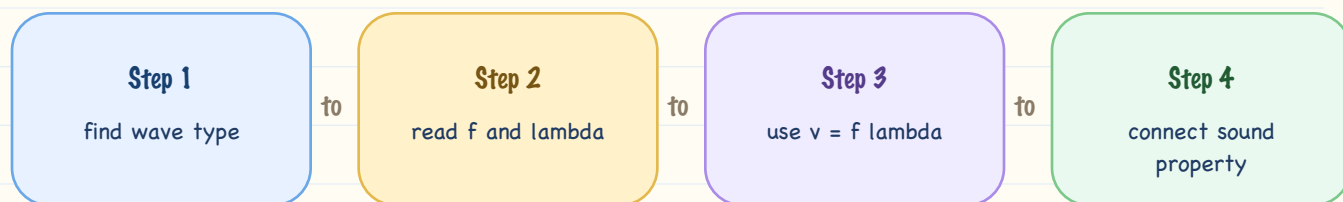
# Mechanical Waves and Sound

### DISTILLED FROM VIDEO

Diagram-first study pages using the same source-locked SPH3U workflows and teacher moves.



# Visual Strategy



## Use this when stuck

- Identify whether the wave is transverse or longitudinal.
- Label wavelength, frequency, period, speed, and amplitude.
- Use  $v = f\lambda$  only after units and quantities are clear.
- For waveform direction, compare the particle's motion with the shape of the wave.
- For sound, translate the physical quantity into what a listener hears.

## Video teacher tips

- Read the graph feature first: slope, area, intercept, or trend.
- For equilibrium, set net force to zero and use geometry or components.
- Connect sound quantities to what a listener hears.
- Describe what oscillates and what propagates before using wave formulas.
- Set directions before assigning signs or writing equations.
- For wave-direction problems, compare waveform shape with particle motion.

# Example and Recall

## Worked example pattern

Wave speed (Unit 5 distilled pattern: wave description and  $v = f\lambda$ )

Identify frequency and wavelength.

Use  $v = f\lambda$ .

If  $f = 3 \text{ Hz}$  and  $\lambda = 2 \text{ m}$ ,  $v = (3)(2)$ .

Use m/s as the unit.

Answer pattern:  $v = 6 \text{ m/s}$ .

Sound interpretation (Unit 5 distilled pattern: sound review source)

Frequency connects to pitch.

Amplitude connects to loudness.

Changing frequency changes how high or low the sound seems.

## Quick recall prompts

- Label wavelength and amplitude on a wave diagram.
- Calculate wave speed from frequency and wavelength.
- Explain how pitch and loudness relate to the physical wave.