



SP4 Waves

Personal learning checklist | 1 of 2

GCSE Edexcel Separate Sciences | Physics Paper 1

Name _____ Class _____ Date _____

Tick one box for each statement. Red: need help. Amber: partly confident.
Green: can do independently.

I can	Red	Amber	Green
Wave behaviour			
Explain energy and information transfer without net matter transfer, using water and sound evidence.	☐	☐	☐
Compare transverse and longitudinal waves, their examples, compressions and rarefactions.	☐	☐	☐
Explain why sound needs a medium while electromagnetic waves can cross a vacuum.	☐	☐	☐
Measurements and calculations			
Identify wavelength, amplitude, frequency, period and wavefronts from descriptions and diagrams.	☐	☐	☐
Calculate and rearrange wave speed from frequency and wavelength or distance and time.	☐	☐	☐
Calculate period from frequency and use appropriate units and wavelength interval counts.	☐	☐	☐
Measuring wave speed			
Describe ripple-tank measurements, including frequency, several wavelengths, reflections and uncertainty.	☐	☐	☐
Describe string-wave measurements using node spacing, generator frequency and controlled tension.	☐	☐	☐
Describe sound-speed methods using microphone delays or echoes, including round-trip distance.	☐	☐	☐

My next revision priority _____

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I can	Red	Amber	Green
Refraction and materials			
Explain refraction through speed changes and draw ray directions relative to the normal.	☐	☐	☐
Explain unchanged frequency, changed wavelength and normal-incidence behaviour across a boundary.	☐	☐	☐
Describe wavelength-dependent reflection, absorption, transmission and refraction by materials (Higher).	☐	☐	☐
Wave boundaries			
Explain reflection, absorption, transmission and sound-wave changes at material boundaries.	☐	☐	☐
Calculate echo distances from round-trip time and wave speed (Higher).	☐	☐	☐
Explain ultrasound, infrasound and their imaging, sonar and Earth-monitoring uses (Higher).	☐	☐	☐
Hearing and response			
Describe how the ear converts sound vibrations into nerve signals (Higher).	☐	☐	☐
Explain limited frequency responses of ears, microphones and loudspeakers (Higher).	☐	☐	☐

My next revision priority _____