Edexcel GCSE Physics

Topics 4.7-4.11 - Wave Behaviour

Flashcards

State the equation used to calculate wave speed. Give appropriate units.

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Wave Speed = Frequency x Wavelength

Speed (m/s), Frequency (Hz), Wavelength (m)

What word is used to describe when a wave bounces off a surface?

What word is used to describe when a wave bounces off a surface?

Reflection.

What is the normal (in terms of reflection and refraction)?

What is the normal (in terms of reflection and refraction)?

A vertical imaginary line which is perpendicular to the boundary.

What occurs when light is reflected off a boundary?

What occurs when light is reflected off a boundary?

It bounces off a smooth flat surface so that the angle of incidence (the angle it comes in at) is the same as the angle of reflection (the angle it leaves at).

What is refraction?

What is refraction?

Refraction is the change in **speed** of a wave as it reaches a boundary between two media, usually resulting in a change in direction (if it enters at an angle).

What occurs when light is refracted at a boundary?

What occurs when light is refracted at a boundary?

- The light changes speed and direction in the new medium
- If the new medium is more dense, the light will travel slower and bend towards the normal
- If the new medium is less dense, the light will travel faster and bend away from the normal

When entering a denser material, light waves…

When entering a denser material, light waves...

...slow down and bend towards the **normal.**

When entering a less dense material, light waves…

When entering a less dense material, light waves...

...speed up and bend away from the **normal.**

How can refraction be measured?

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The angle of incidence, i, and angle of refraction, r, can be measured and compared. All angles are measured relative to the normal.

What are the effects of absorption of different wavelengths of waves in different mediums? (Higher)

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- Some materials behave differently depending on the wavelength
- An example is glass which will transmit visible light, but reflect UV light

How do sound waves travel through a solid? (Higher)

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The particles in the solid vibrate and transfer kinetic energy through the material.