

AQA Physics GCSE

4.6.1 - Waves in air, fluids and solids

Flashcards

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What are the two types of waves?



What are the two types of waves?

1. Transverse
2. Longitudinal



What is a transverse wave?



What is a transverse wave?

A wave for which the oscillations are perpendicular to the direction of energy transfer.



What is a longitudinal wave?



What is a longitudinal wave?

A wave for which the oscillations are parallel to the direction of energy transfer.



Give two examples of transverse waves.



Give two examples of transverse waves.

1. Electromagnetic waves
2. Seismic s-waves



Give two examples of longitudinal waves.



Give two examples of longitudinal waves.

1. Sound waves
2. Seismic p-waves



What are the two parts of a longitudinal wave called?



What are the two parts of a longitudinal wave called?

Compressions and rarefactions.



What is a wave's amplitude?



What is a wave's amplitude?

The maximum displacement of a point on a wave from its undisturbed position.



What is wavelength?



What is wavelength?

- The distance from a point on a wave to the same position on the adjacent wave
 - Most commonly peak to peak or trough to trough



What is the frequency of a wave?



What is the frequency of a wave?

The number of waves that pass a given point each second.



What is the unit used for frequency?



What is the unit used for frequency?

Hertz, Hz



What is meant by a frequency of 200Hz?



What is meant by a frequency of 200Hz?

200 waves pass a given point each second.



What is wave speed?



What is wave speed?

The speed at which the wave moves or at which energy is transferred through a medium.



What does a wave transfer?



What does a wave transfer?

Energy



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



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

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



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



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

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



What is the frequency range of human hearing? (Higher)



What is the frequency range of human hearing?
(Higher)

20 Hz - 20kHz

(1kHz = 1000 Hz)



What are ultrasound waves? (Higher)



What are ultrasound waves? (Higher)

Waves which have a frequency higher than the upper limit of human hearing (20kHz).



Give an example use for ultrasound waves? (Higher)



Give an example use for ultrasound waves? (Higher)

Medical or industrial imaging.



What natural event causes seismic waves to be produced? What types are produced? (Higher)



What natural event causes seismic waves to be produced? What types are produced? (Higher)

- Earthquakes
- They produce both P-waves and S-waves



State a difference between the mediums that P-waves and S-waves can travel through. **(Higher)**



State a difference between the mediums that P-waves and S-waves can travel through. (Higher)

- P-waves travel through both solids and liquids
- S-waves only travel through solids (not liquids)



What technique is used to detect objects in deep water and measure water depth?
(Higher)



What technique is used to detect objects in deep water and measure water depth? (Higher)

- Echo sounding
- High frequency sound waves are emitted, reflected and detected
- Time difference between emission and detection, alongside wave speed, are used to calculate distances

