WJEC Wales Physics GCSE

1.5 - Features of Waves

Flashcards

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 are the two parts of a transverse wave called?

What are the two parts of a transverse wave called?

Peaks and troughs.

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 energy is transferred through a medium.

What does a wave transfer?

What does a wave transfer?

Energy.

Waves do **not** transfer matter.

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.

What type of spectrum do electromagnetic waves form?

What type of spectrum do electromagnetic waves form?

A continuous spectrum.

Order the types of electromagnetic radiation from lowest to highest frequency.

Order the types of electromagnetic radiation from lowest to highest frequency.

- Radio waves
- Microwaves
- Infrared
- Visible Light
- Ultraviolet
- X-rays
- Gamma Rays

Which types of electromagnetic radiation have the longest and shortest wavelength?

Which types of electromagnetic radiation have the longest and shortest wavelength?

Longest: radio waves

Shortest: gamma rays

Which types of electromagnetic radiation have the lowest and highest energy?

Which types of electromagnetic radiation have the lowest and highest energy?

Lowest: radio waves

Highest: gamma rays

How do the speeds of EM radiation differ in a vacuum and in air?

How do the speeds of EM radiation differ in a vacuum and in air?

Electromagnetic waves all travel at the same speed in a vacuum and in air.

What property of waves in different mediums causes refraction?

What property of waves in different mediums causes refraction?

- Velocity
- Wave speed is slower in denser materials, causing refraction

In which direction relative to the normal do waves refract when entering a denser medium?

In which direction relative to the normal do waves refract when entering a denser medium?

- They bend towards the normal
- The angle of refraction is less than the angle of incidence

What is a geostationary satellite and what are they used for?

What is a geostationary satellite and what are they used for?

- A satellite that has the same period as the Earth and so remains in a fixed position relative to the Earth.
- Used for communications such as satellite TV signals.