

# OCR A Physics GCSE

## 5.2 - The Electromagnetic Spectrum

### Flashcards

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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



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 type of waves can be produced by oscillations in an electrical circuit?  
(Higher)





What type of waves can be produced by oscillations in an electrical circuit? (Higher)

Radio waves.



How can radio waves create an alternating current in a circuit? (Higher)



How can radio waves create an alternating current in a circuit? (Higher)

When radio waves are absorbed, they can induce oscillations in a circuit with the same frequency as the waves themselves.



# Where do gamma rays originate from?



Where do gamma rays originate from?

They originate from changes in the nuclei of atoms.



# What health effects can ultraviolet waves cause?



## What health effects can ultraviolet waves cause?

- They can cause the skin to age prematurely.
- They can increase the risk of developing skin cancer.



# What health effects can X-rays and Gamma rays cause?





## What health effects can X-rays and Gamma rays cause?

- They are ionising radiation so can cause mutations in genes.
- They can lead to increased risk of developing various cancers.



Give three practical uses for infrared radiation.



Give three practical uses for infrared radiation.

1. Electrical heaters
2. Cooking food
3. Infrared cameras



Give two practical uses for microwave radiation.



Give two practical uses for microwave radiation.

1. Satellite communications
2. Cooking food



Give two practical uses for radio waves.



Give two practical uses for radio waves.

1. Television transmission
2. Radio transmission



Which part of the EM Spectrum can be seen by the human eye?





Which part of the EM Spectrum can be seen by the human eye?

Visible light, since the eye has a limited range of frequencies/wavelengths that it can detect.



# What determines the colour of visible light waves?



What determines the colour of visible light waves?

The frequency of the light waves.



What colour of visible light has the highest frequency?



What colour of visible light has the highest frequency?

Blue.



What colour of visible light has the largest wavelength?



What colour of visible light has the largest wavelength?

Red.



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.

