

AQA Physics GCSE

4.6.3 - Black Body Radiation

(Physics Only)

Flashcards

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What do all bodies (objects) emit and absorb?



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Infrared radiation.



What happens to the quantity of infrared radiation emitted by an object as temperature increases?



What happens to the quantity of infrared radiation emitted by an object as temperature increases?

The hotter the object, the more infrared radiation it will emit.



What is a perfect black body?



What is a perfect black body?

An object that absorbs all of the radiation that is incident upon it.



How much radiation does a perfect black body reflect or transmit?



How much radiation does a perfect black body reflect or transmit?

None.



Why is a perfect black body the best possible emitter of radiation?



Why is a perfect black body the best possible emitter of radiation?

- It is a perfect absorber since it absorbs all radiation incident on it
- A perfect absorber is also a perfect emitter



Other than the intensity of radiation emitted, how does increasing the temperature of an object affect its emissions?



Other than the intensity of radiation emitted, how does increasing the temperature of an object affect its emissions?

The wavelength distribution of any emission is dependent on the object's temperature.



What can be said about the rates of emission and absorption for a body at constant temperature? (**Higher**)



What can be said about the rates of emission and absorption for a body at constant temperature?

(Higher)

The body is absorbing and emitting radiation at the same rate.



What can be said about the rates of emission and absorption for a body increasing in temperature? **(Higher)**



What can be said about the rates of emission and absorption for a body increasing in temperature?

(Higher)

The body is absorbing radiation faster than it is emitting it.



Give two factors that affect the temperature of the Earth. (Higher)



Give two factors that affect the temperature of the Earth. (Higher)

1. The Earth's rate of absorption and emission of radiation
2. The amount of reflection of radiation into space

