

# Edexcel GCSE Physics

## Topic 8.10-8.15 - Power

### Flashcards

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# What is the definition of 'Power'?



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The rate at which energy is transferred  
(or rate at which work is done).



State **two** equations for power. Give SI units for all quantities involved.



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$$\text{power} = \text{energy transferred} / \text{time}$$

$$\text{power} = \text{work done} / \text{time}$$

Energy (J), Work Done (J), Time (s)



# What is the unit of power?



# What is the unit of power?

Watt (W)



What is one Watt equivalent to?





What is one Watt equivalent to?

1 Joule per second (J/s).



What does a power rating of 10W mean for an electrical device?



What does a power rating of 10W mean for an electrical device?

It converts 10 Joules of energy every second.



Two motors lift the same mass through the same height. Motor A does this in half the time of Motor B. Which dissipates the most power?



Two motors lift the same mass through the same height. Motor A does this in half the time of Motor B.  
Which dissipates the most power?

Motor A.

The energy transferred is the same but the time taken is less ( $P=E/t$ ).



# What is efficiency?



# What is efficiency?

The proportion of energy that is converted usefully, rather than wasted/dissipated.



# How do you calculate efficiency?





How do you calculate efficiency?

Efficiency = useful energy out / total energy in



# What are the units of efficiency?



What are the units of efficiency?

Efficiency is a ratio so has no units, but it can be expressed as a percentage.

