

# OCR A Physics GCSE

## 3.1 - Static and Charge

### Flashcards

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What can happen when insulating materials are rubbed together?



What can happen when insulating materials are rubbed together?

They can become (statically) electrically charged.



Why can insulators become electrically charged when rubbed together?



## Why can insulators become electrically charged when rubbed together?

- Electrons are rubbed from one material onto the other.
  - The material gaining electrons becomes negatively charged.
- The material losing electrons becomes equally positively charged.



# What is charging?



# What is charging?

The addition or removal of electrons from a material.



# How can charge be detected?





## How can charge be detected?

Using a gold leaf electroscope; the gold leaf is repelled by positive charge.



What happens when two electrically charged objects are brought close together?



What happens when two electrically charged objects are brought close together?

They exert a force on each other.



What happens when two oppositely charged objects are brought close together?



What happens when two oppositely charged objects are brought close together?

They exert an attractive force on each other and attract.



What happens when two identically charged objects are brought close together?



What happens when two identically charged objects are brought close together?

They exert a repulsive force on each other and repel.



# Why are most bodies neutrally charged?





Why are most bodies neutrally charged?

They have an equal number of positive and negative charges.



Give an example of a non-contact force.



Give an example of a non-contact force.

The repulsive or attractive force acting between two electrically charged objects.



# What is an electric field?



# What is an electric field?

A region in which a charged object will experience a non-contact electrical force.



# Where can electric fields be found?



# Where can electric fields be found?

Surrounding any charged object.



Describe the electric field around a charged particle.





Describe the electric field around a charged particle.

- Strongest closest to the object.
- Decreases in strength as you move away from the object.



What happens to the force between two charged objects when they are moved closer together?



What happens to the force between two charged objects when they are moved closer together?

The force between them becomes stronger as the separation reduces.



In situations where sparks are unwanted,  
what precaution must be taken to  
prevent the build up of static charge?



In situations where sparks are unwanted, what precaution must be taken to prevent the build up of static charge?

Any surfaces that are rubbing against each other should be earthed to allow the materials to discharge.



# What is electric current?



# What is electric current?

The flow of electrical charge.



State the equation linking charge, current and time. Give the units for the quantities involved.





State the equation linking charge, current and time.  
Give the units for the quantities involved.

$$Q = I t$$

Charge (Coulombs), Current (Amperes),  
Time (Seconds)



What can be said about the value of current at any point in a single closed loop?



What can be said about the value of current at any point in a single closed loop?

Current is the same at all points in a closed loop.

