CIE Physics GCSE

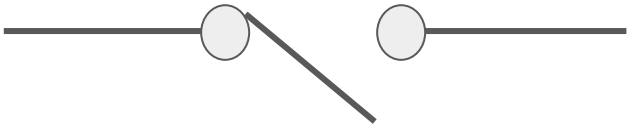
Topic 4.3 - Electric Circuits

Flashcards

Draw the circuit symbol for a switch

Draw the circuit symbol for a switch

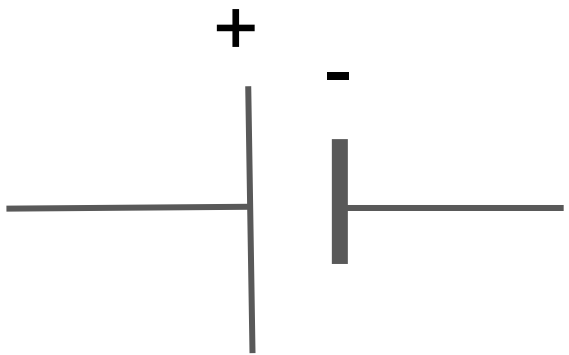
Closed



Open

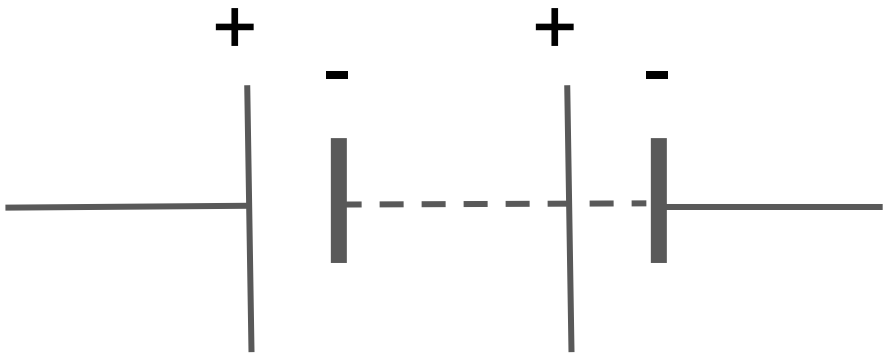
Draw the circuit symbol for a cell

Draw the circuit symbol for a cell



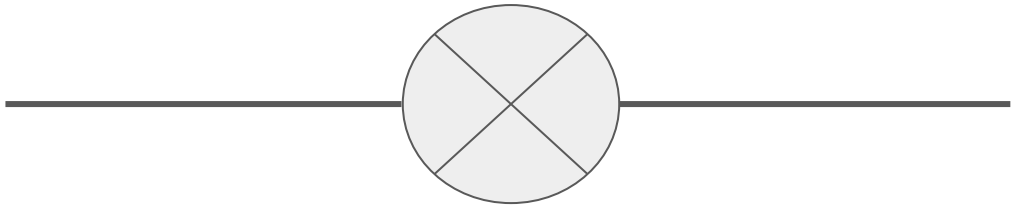
Draw the circuit symbol for a battery

Draw the circuit symbol for a battery



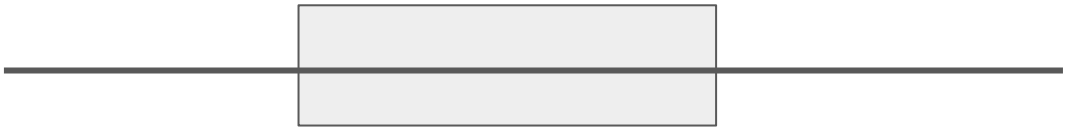
Draw the circuit symbol for a lamp

Draw the circuit symbol for a lamp



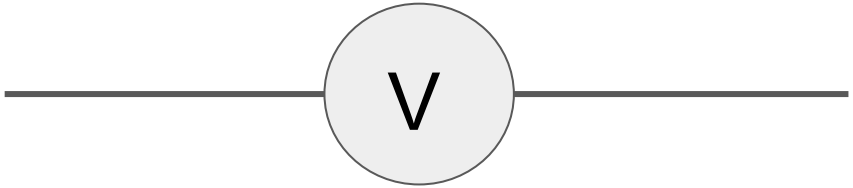
Draw the circuit symbol for a fuse

Draw the circuit symbol for a fuse



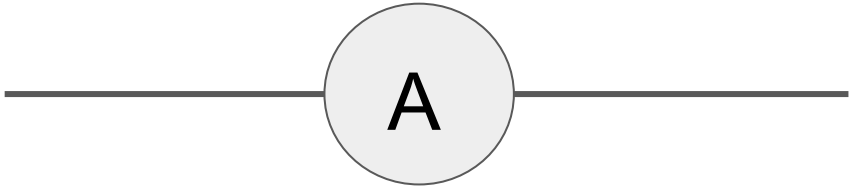
Draw the circuit symbol for a voltmeter

Draw the circuit symbol for a voltmeter



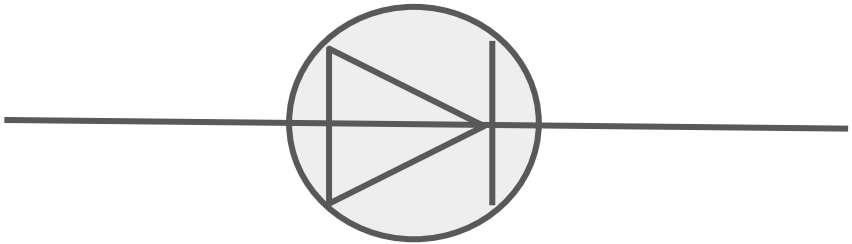
Draw the circuit symbol for an ammeter

Draw the circuit symbol for an ammeter



Draw the circuit symbol for a diode (supplement)

Draw the circuit symbol for a diode (supplement)

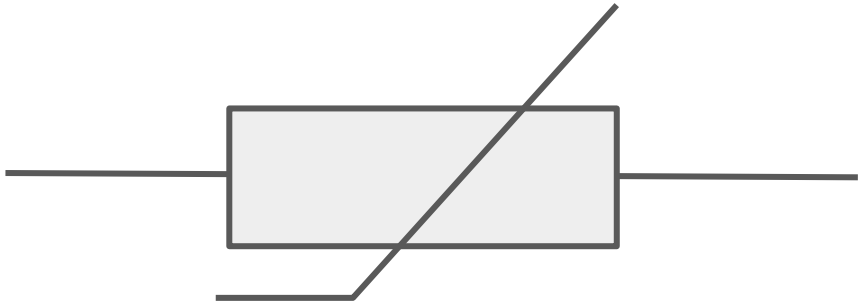


Draw the circuit symbol for a resistor

Draw the circuit symbol for a resistor

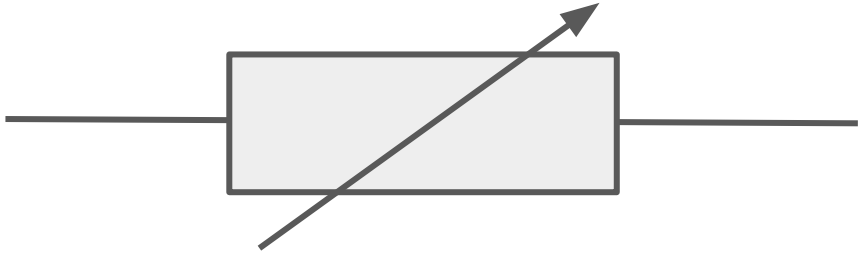
Draw the circuit symbol for a thermistor

Draw the circuit symbol for a thermistor



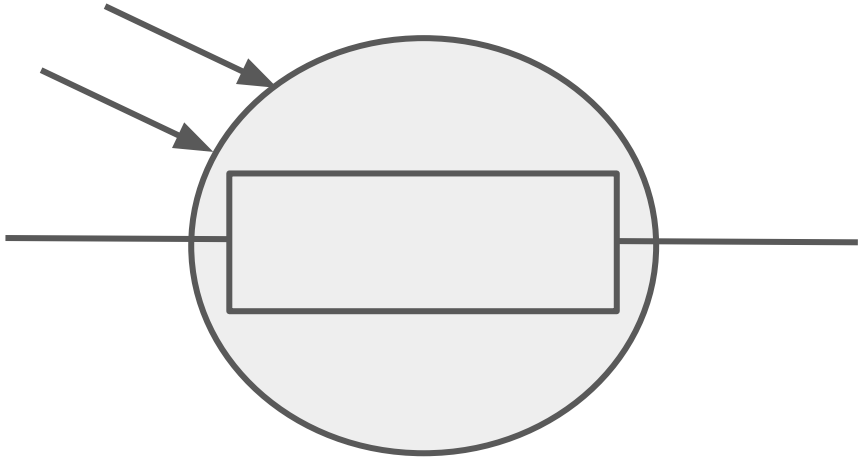
Draw the circuit symbol for a variable resistor

Draw the circuit symbol for a variable resistor



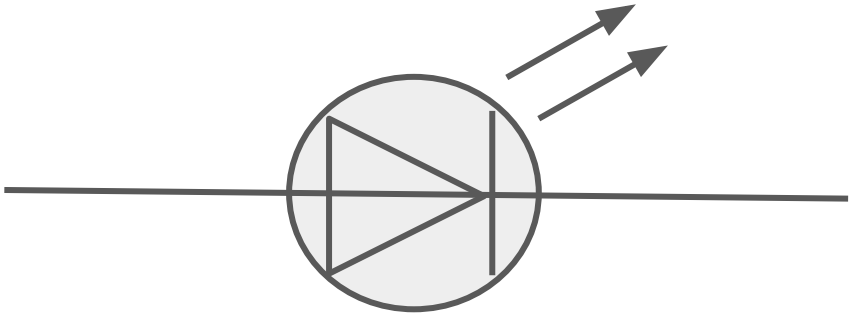
Draw the circuit symbol for an LDR

Draw the circuit symbol for an LDR



Draw the circuit symbol for an LED (supplement)

Draw the circuit symbol for an LED (supplement)



What is a series circuit?

What is a series circuit?

A series circuit is an unbranched loop where the same charge passes through all components, so the current through each component is the same.

What is a parallel circuit?

What is a parallel circuit?

A circuit in which the charge is split between branches.

Describe the current across a series circuit

Describe the current across a series circuit

The current is the same across all points in a series circuit.

Describe potential difference in a series circuit

Describe potential difference in a series circuit

Potential difference is split between components, according to the ratio of their resistances.

Describe current across a parallel circuit

Describe current across a parallel circuit

The current is divided between the branches of the circuit.

Describe potential difference across a parallel circuit

Describe the potential difference across a parallel circuit

Each branch has a potential difference equal to the potential difference of the supply.

What is total resistance in a series circuit?

What is total resistance in a series circuit?

The sum of the resistances from each component.

What is the total resistance in a parallel circuit?

What is the total resistance in a parallel circuit?

The total resistance is lower than that of the branch with the lowest resistance. This is because the charge is split; decreasing the charge to each component decreases its resistance.

Why is it advantageous to connect lamps in parallel?

Why is it advantageous to connect lamps in parallel?

If one lamp blows, the rest will be unaffected and can still receive current (i.e. the circuit is still complete).

How do multiple power sources affect emf? (supplement)

How do multiple power sources affect emf? (supplement)

In series, the emfs of individual sources are added to give the total emf.

Emfs in parallel do not add.

What is a thermistor?

What is a thermistor?

A resistor in which resistance **decreases** as temperature **increases**.

What is an LDR?

What is an LDR?

A resistor in which resistance decreases as light intensity increases.

e.g. used in automatic night lights

What is a sensing circuit? (supplement)

What is a sensing circuit? (supplement)

When the resistance of a circuit is dependent on an environmental factor such as light or temperature, so therefore can be used to monitor environmental changes.

What can sensing circuits be used for? (supplement)

What can sensing circuits be used for? (supplement)

Light sensitive switches (eg. lampposts, night lights) or thermostats etc.

What is a diode? (supplement)

What is a diode? (supplement)

A component which only allows current to flow in one direction (as the resistance in the other direction is too high).

What can diodes be used for?
(supplement)

What can diodes be used for? (supplement)

As rectifiers, to convert AC into DC.