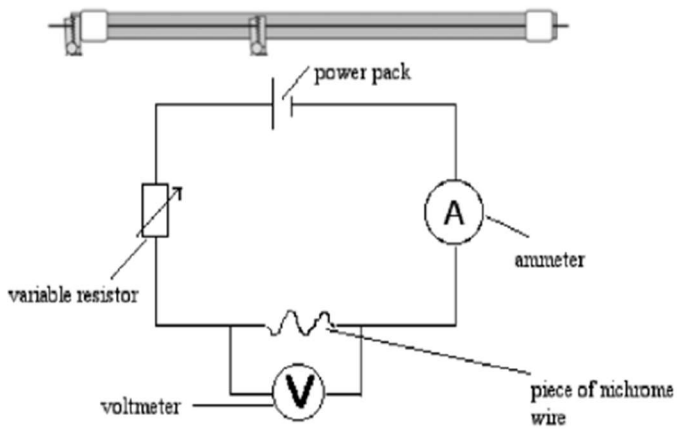
KNOWLEDGE ORGANISER

Resistance RP

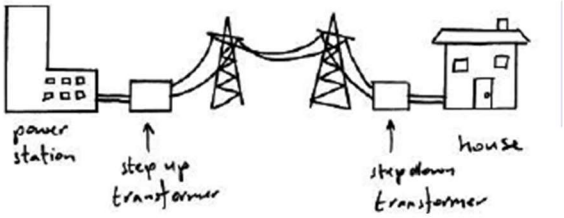


- The resistance of the wire is proportional to its length.
- A graph of resistance against length should be a straight line through the origin.
- It is hard to attach the crocodile precisely to the zero end of the wire, and there will be some contact resistance. (This gives a zero error).
- For a short length of wire as the current will increase and the wire can get quite hot increasing resistance.

Main Electricity

Frequency - 50Hz
Potential Difference - 230V
Alternating current

The National Grid



National grid – system of powerlines and transformers connecting power stations to homes etc.

Name	Colour	Function	Potential Difference (V)
Live	Brown	Carrie s alternating potential difference from the supply.	230
Neutral	Blue	Completes the circuit.	0
Earth	Green and yellow stripes	A safety wire to stop the appliance becoming live.	0

- Step up transformers increase the potential difference from the power station.
- This is to decrease the current and energy loss due to heating.
- Step down transformers decrease the potential difference.
- This makes it safe for household appliances.

Definitions

Direct current (DC) - Potential difference is in the same direction. It doesn't change polarity e.g. Cells and batteries.

Alternating current (AC) - The potential difference changes direction. The polarity changes e.g. mains electricity.