

AQA Physics GCSE

4.2.3 - Domestic Uses and Safety

Flashcards

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Is mains electricity an a.c supply or a d.c supply? What do each of these stand for?



Is mains electricity an a.c supply or a d.c supply?
What do each of these stand for?

Mains electricity is an a.c supply

a.c. : Alternating Current

d.c. : Direct Current



Define alternating current and direct current.



Define alternating current and direct current.

- Alternating current: Current that continuously changes direction at a specific frequency
- Direct current: One directional current flow



What is the frequency and voltage of the UK mains electricity supply?



What is the frequency and voltage of the UK mains electricity supply?

- Frequency: 50 Hz
- Voltage: 230V



How many wires are usually in the cables connecting electrical appliances to the mains? Name these wires.



How many wires are usually in the cables connecting electrical appliances to the mains? Name these wires.

1. Live wire
2. Neutral wire
3. Earth wire



State the insulation colour used on the Earth wire.



State the insulation colour used on the Earth wire.

Green and Yellow Stripes



State the insulation colour used on the live wire.



State the insulation colour used on the live wire.

Brown



State the insulation colour used on the neutral wire.



State the insulation colour used on the neutral wire.

Blue



Explain when the Earth wire does and doesn't carry a current.



Explain when the Earth wire does and doesn't carry a current.

- Under normal circumstances, no current flows through the Earth wire
- If a fault occurs in the appliance (such as a surge or the casing becoming live), current will flow to the ground



What potential is the neutral wire at?



What potential is the neutral wire at?

0 Volts



State the potential difference between the live and earth wires.



State the potential difference between the live and earth wires.

230 Volts



What is the purpose of the neutral wire?



What is the purpose of the neutral wire?

To complete the circuit by connecting the appliance back to the mains supply.



For metal appliances, where is the Earth wire connected to? Why?



For metal appliances, where is the Earth wire connected to? Why?

- Earth wire is connected to the metal casing of the appliance
- If live wire becomes loose and touches the casing, the current will flow through the Earth wire, preventing electrocution

