



Electricity In The Home.

Statements which are addressed in this unit.



STATIC ELECTRICITY:

- Be able to describe the structure of an atom as a nucleus with external electrons
- Know that static electric charges can be generated by friction between insulators
- Know that transferring electrons to an insulator makes it negative, and removing electrons from an insulator makes it positive
- Know that unlike charges attract and like charges repel
- Know some practical uses of electrostatic charge (photocopiers, electrostatic precipitators, spray painting)
- Know about the hazard of explosions caused by electrostatic charge and how associated risks can be reduced.
- Be able to calculate quantities of charge transferred using the relationship $Q = It$
- Know that in a metallic conductors, charge (electrons) flows in the opposite direction to conventional current

MAINS ELECTRICITY

- Know that the resistors are heated when a current flows through them
- Know the qualitative effects of varying resistance on the current of a circuit
- Be able to carry out simple calculations based on the relationship between current, voltage and resistance
- Know that the resistance of an LDR increases with decreasing light intensity
- Know that the resistance of a thermistor decreases with increasing temperature
- Know that the resistance of a resistor does not change provided that the temperature does not change
- Know how to use variable resistors, light dependent resistors and thermistors to alter the current in simple circuits
- Know that voltage is the energy transferred per unit charge
- Know that domestic electricity meters measure the energy supplies in kilowatt hours
- Be able to calculate the power of a device using voltage and current measurements
- Be able to calculate the current drawn by a mains operated device of given power and so select a suitable fuse

PLUGS AND HEATERS

- Understand the danger of overheating if there is too much current in a device or circuit wiring
- Understand the function of fuses, earth wires, circuit breakers and double insulation in domestic circuits
- Be able to calculate the cost of operating a mains appliance of given power
- Know how a 3 pin plug is wired
- Know how radiant heaters, immersion heaters, microwave ovens and storage heaters work as common electrical heating devices