

# Design and Technology

## Basic Electrical Principles

1. What does the term voltage mean?
2. What is the unit for voltage?
3. What is the symbol for voltage?
4. What does the term current mean?
5. What is the unit for current?
6. What is the symbol for current?
7. Describe what the term conductor means and provide an example?
8. Describe what the term Insulator means and provide an example?
9. What does the term resistance mean?
10. What is the unit for resistance?
11. What is the symbol for resistance?
12. Describe how you would connect a voltmeter to measure the voltage of a battery?
13. What is the unit for power?

**With the questions below remember to show all your working out and include the correct units for your answer.**

Using the formula  $V = I \times R$

14. A bulb of resistance 200R is connected to a 9v battery. What current is flowing in the circuit?
15. A bulb is connected to a 6v battery. The current flowing is measured using an ammeter to be 100mA. What is the resistance of the bulb?

Using the formula  $P = V \times I$  Or  $P = I^2 \times R$

16. A light bulb is rated at 100W. If it is connected to a 250v supply what current is flowing through the bulb?
17. A fuse is rated at 250v 5A. What is the maximum power that can be drawn before the fuse blows?
18. A bulb has a resistance of 25R and a current rating of 100mA. What power is dissipated by the bulb.