

Electromagnets

1. Voltage and resistance

CONCEPT 2

TEST YOURSELF

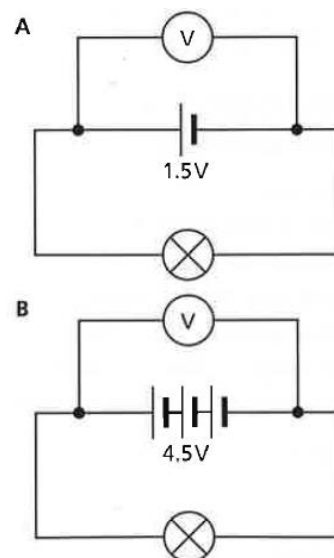
VOLTAGE

KNOW

- Q1 Why does no current flow if there is no voltage?
- Q2 Look at these two circuits. One has one cell and the other with three cells. If, instead, there were two cells, what reading would the voltmeter give?

APPLY

- Q3 In which of the circuits, A or B, will the light bulb be brighter? Explain your choice.
- Q4 An electric motor that is intended to work in a small circuit with a 12 V battery is connected to the 230 V mains electricity supply. Suggest what might happen to it and why?



EXTEND

Imagine blowing gently through a straw. The air flowing through the straw is like a current and the amount of push given to the air is like the voltage. If you blow harder (more voltage) there is more air flow (greater current).

A high waterfall is also like a large voltage. It will transfer a lot of energy to the water (charge), making the river flow very fast (a large current). The difference in height makes the river flow. In a circuit, the difference in charge across the battery provides the push for the charge.



- Q5 Compare a circuit with a 12 V battery and one light bulb with a circuit that has a 1.5 V battery and one light bulb. Use the two analogies above to explain how they will be different.
- Q6 Look at the following circuit.
- What would happen to brightness of the bulb if a second identical cell was added?
 - What would happen to the brightness of the bulbs if a second bulb was added to the circuit, but with only one cell?

