



Electrical Circuits

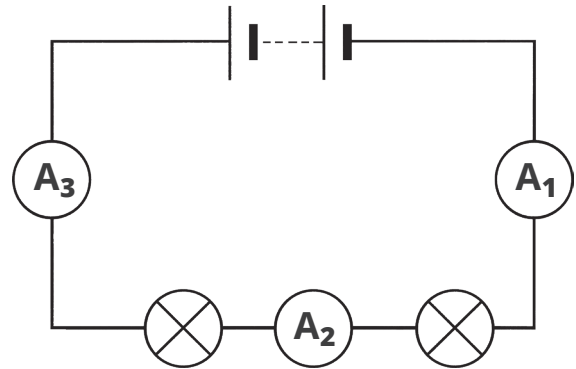
The circuit shown in the diagram below contains two identical bulbs connected in series with three ammeters.

The reading on A_3 is 4A.

1. Write down the readings on the other ammeters.

A_1 : _____

A_2 : _____



One of the bulbs is removed from the circuit and the wires are reconnected so the current flows.

2. Explain what happens to the remaining bulb.

The circuit shown in the diagram below contains two identical bulbs connected in parallel. There are also four ammeters in the circuit.

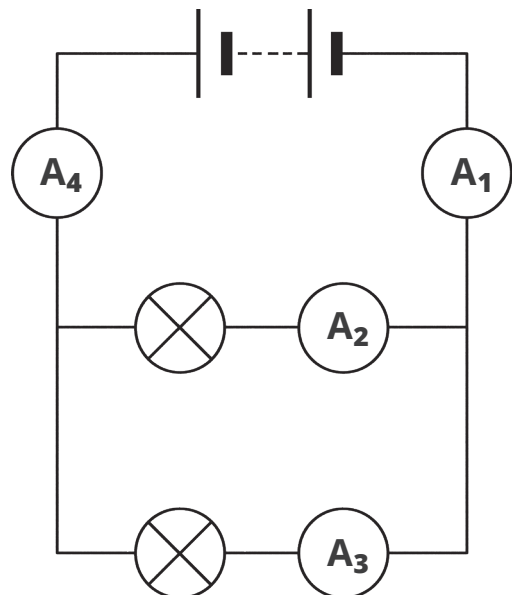
The reading on A_3 is 3A.

3. Write down the readings on the other ammeters.

A_1 : _____

A_2 : _____

A_4 : _____



One of the bulbs is removed from the circuit and the wires are reconnected so the current flows.

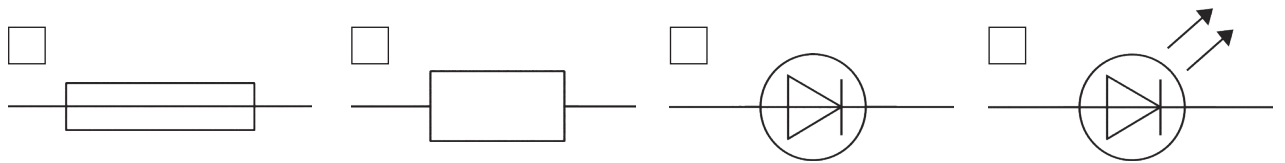
4. Explain what happens to the remaining bulb.

A resistor can be used to change the resistance of a circuit.

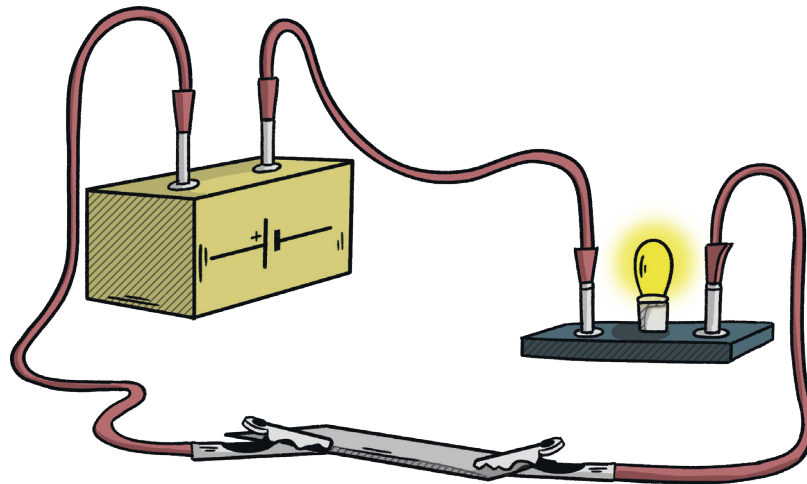
5. Write down the units used to measure resistance.

6. Identify the circuit symbol for a resistor.

Tick **one** box.



A student carries out a practical investigation to test the electrical conductivity of different materials. They use the equipment shown in the diagram below.



7. Explain how the student can use this equipment to test which materials conduct electricity.

The student finds that metal is a good conductor and wood is a poor conductor.

8. Compare the resistance of metal and wood.

Electrical Circuits Answers

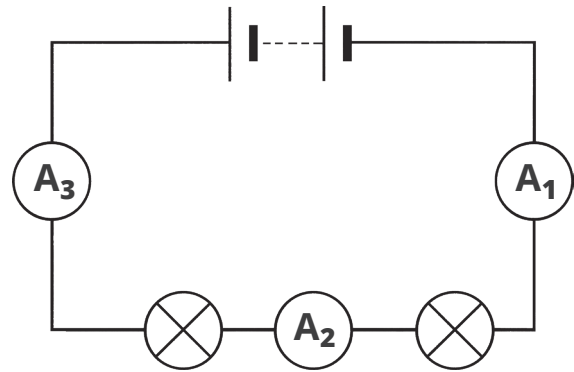
The circuit shown in the diagram below contains two identical bulbs connected in series with three ammeters.

The reading on A_3 is 4A.

- Write down the readings on the other ammeters.

A_1 : **4A**

A_2 : **4A**



One of the bulbs is removed from the circuit and the wires are reconnected so the current flows.

- Explain what happens to the remaining bulb.

The brightness increases;

because the potential difference across the remaining bulb increases.

or because the potential difference is no longer shared with another bulb.

or because more energy is transferred to the remaining bulb.

or because the power to the remaining bulb is higher.

The circuit shown in the diagram below contains two identical bulbs connected in parallel. There are also four ammeters in the circuit.

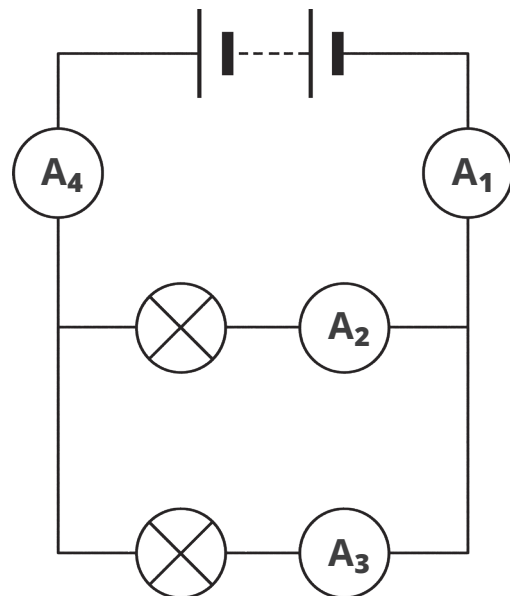
The reading on A_3 is 3A.

- Write down the readings on the other ammeters.

A_1 : **6A**

A_2 : **3A**

A_4 : **6A**



One of the bulbs is removed from the circuit and the wires are reconnected so the current flows.

- Explain what happens to the remaining bulb.

There is no effect on the other bulb;

because the potential difference across the remaining bulb stays the same.

or because the amount of energy transferred to the remaining bulb stays the same.

or because the power to the remaining bulb stays the same.

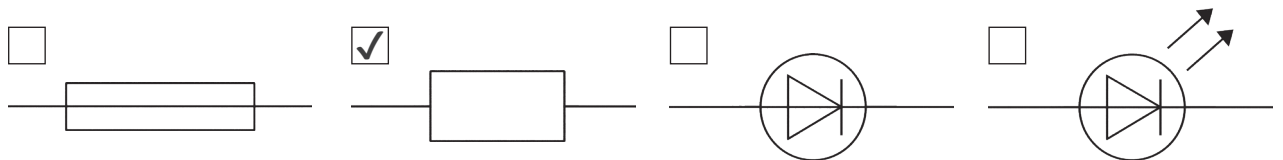
A resistor can be used to change the resistance of a circuit.

5. Write down the units used to measure resistance.

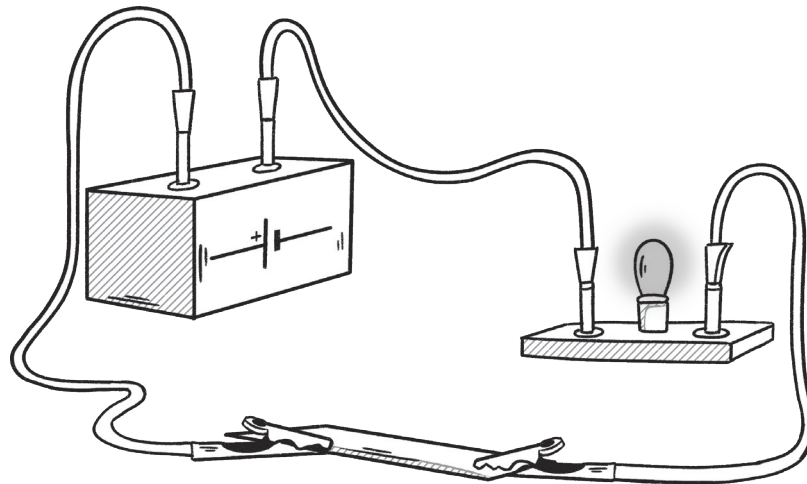
ohms

6. Identify the circuit symbol for a resistor.

Tick **one** box.



A student carries out a practical investigation to test the electrical conductivity of different materials. They use the equipment shown in the diagram below.



7. Explain how the student can use this equipment to test which materials conduct electricity.

The student could place each material between the two crocodile clips.

If the material is a conductor, current will flow/the circuit will be complete and the bulb will light.

If the material is not a conductor/is an insulator, the current will not flow/the circuit will not be complete and the bulb will not light.

The student finds that metal is a good conductor and wood is a poor conductor.

8. Compare the resistance of metal and wood.

Metal has a lower resistance than wood.