

Science Quick Quiz

Year 6 Electricity

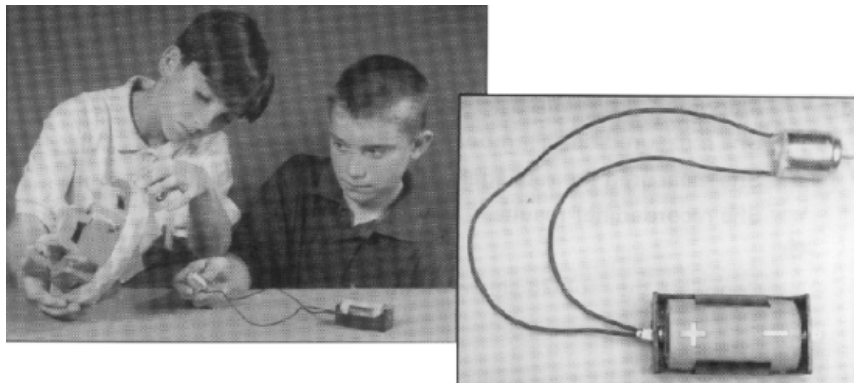
Name: _____

Date: _____

Q1. Circuits


(a) Two children made a model fairground ride.

They connected a battery to an electric motor to make the model turn.



The motor is not working.

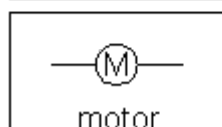
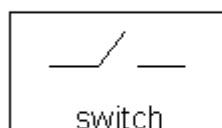
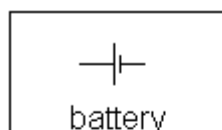
What is wrong with this circuit?



.....

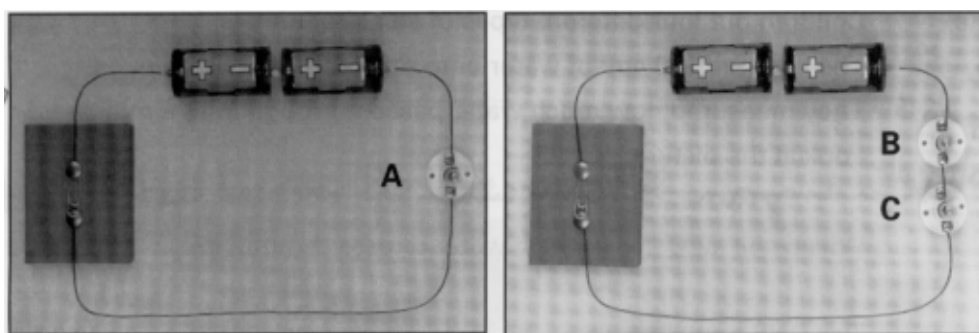
1 mark

(b) Draw a circuit diagram in which the switch can be used to turn the motor on and off. You **MUST** use these three symbols in your diagram.



1 mark

(c) Here are two different circuits which use the same kind of battery and bulb.



Which bulb will be the brightest ?

Tick **ONE** box.

Handwritten mark

bulb A

bulb B

bulb C

1 mark

(d) The outside of this plug is made of plastic so that you do not get a shock when you plug it in.



Explain why the **plastic** helps to make the plug safe.

Handwritten mark

.....

1 mark

(e) Why is it dangerous to put a plug in when the plug is wet?

Handwritten mark

.....

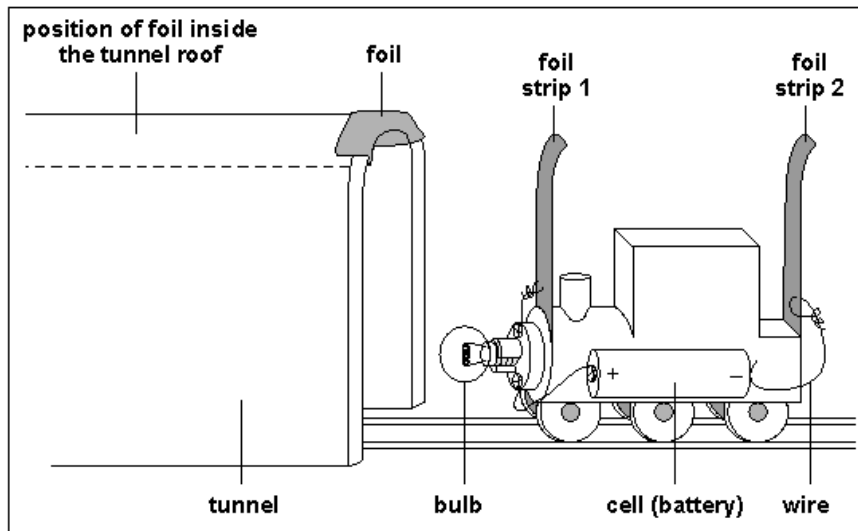
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1 mark

Q2. Train in the tunnel

(a) Andrea wants a light bulb to light up when her toy train is pushed through a tunnel. She makes an electric circuit for her toy train. Andrea makes a tunnel and puts a strip of foil inside the tunnel roof.

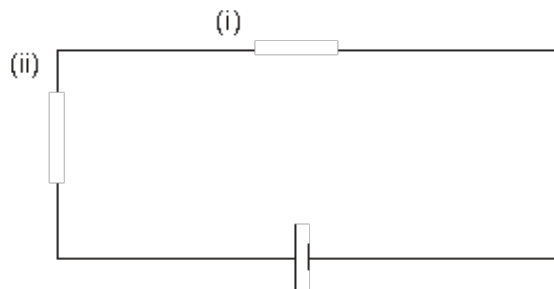
The picture shows Andrea's tunnel and the wiring on her train.



The foil strips on the train act like a **switch**. When both foil strips on the train touch the foil inside the tunnel roof, the bulb lights up.

Complete the circuit diagram below by drawing the **switch** and the **bulb** to show the circuit on Andrea's train.

Handwritten mark



2 marks

(b) Give **ONE** property of metal foil which makes it a good material for Andrea to use as a switch.

Handwritten mark

.....

1 mark

(c) When only one foil strip on the train is touching the foil in the tunnel, the bulb **does not** light up. Complete the sentence to explain why the bulb **does not** light up.

Handwritten mark

The circuit

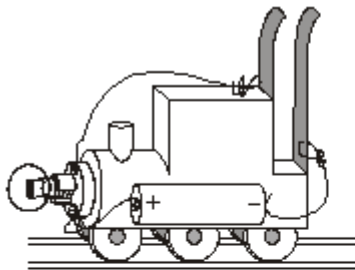
1 mark

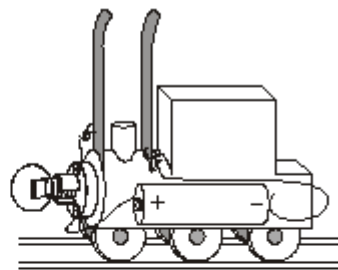
(d) The bulb on the train only lights up when **all** of the train is inside the tunnel.

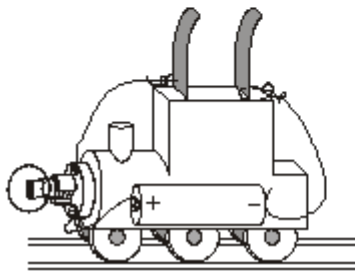
Andrea wants to improve her circuit so the bulb lights up when the train has only just entered the tunnel.

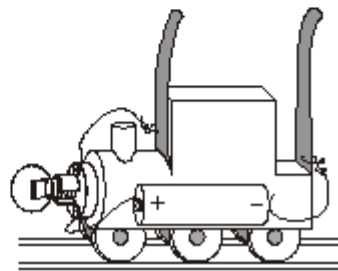
Which train has foil strips that would allow the bulb to light when the train has only just entered the tunnel?

 Tick **ONE** box.





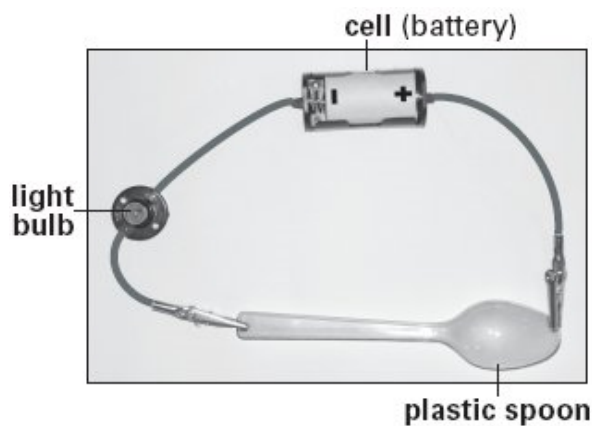





1 mark

Q3. Electricity

(a) Shana builds the three circuits below. All the equipment works. The bulbs in the circuits are **not** lit up. Complete each sentence to explain why the bulb has not lit in each circuit.



 The bulb has **not** lit because the plastic spoon

.....

1 mark



switch

The bulb has **not** lit because

.....

1 mark

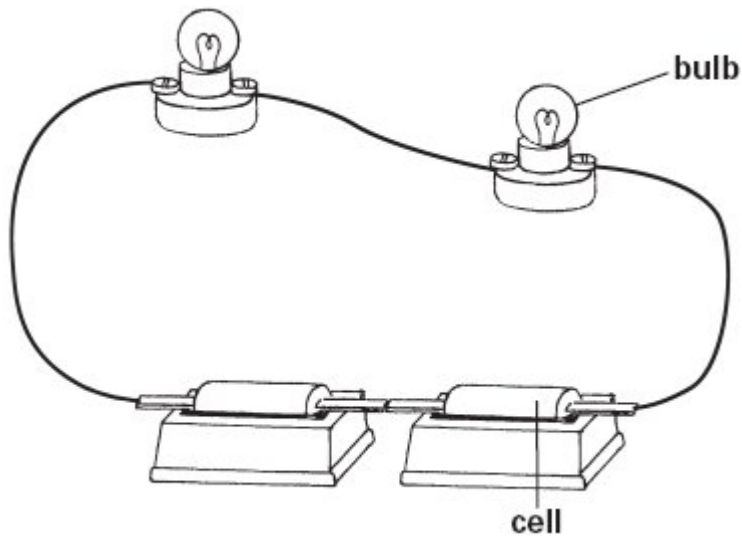


The bulb has **not** lit because

.....

1 mark

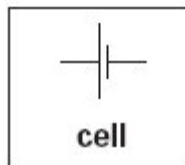
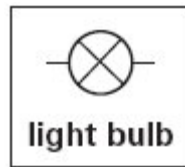
(b) Andy builds the circuit below. The bulbs **do** light up.



Draw a circuit diagram for Andy's circuit in the space below.

Use these symbols in your circuit diagram:

Handwritten mark



1 mark

(c) Andy wants to change his circuit so that the **two** bulbs are brighter. He can use any other equipment.

Suggest **TWO** ways Andy can make his **two** bulbs brighter.

Handwritten mark 1.

1 mark

2.

1 mark

Q4. Circuits and sensors

(a) Class 6D makes different circuits using the same type of bulbs, motors with fans and cells (batteries).

(i) Tick **ONE** box to show the circuit in which the bulb or bulbs are brightest.

circuit 1 **circuit 2** **circuit 3** **circuit 4**

1 mark

(ii) Explain why the circuit you chose has the brightest bulb or bulbs.

.....

1 mark

(b) Tick **ONE** box to show which circuit diagram below is correct for circuit 3.

1 mark

(c) Each of the circuits made by class 6D has one cell.

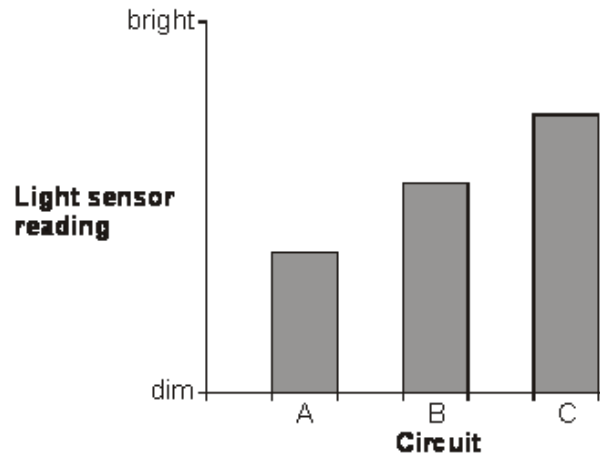
Complete the sentence below to explain the effect on the bulbs of adding a second cell to circuit 1.

The bulbs will

1 mark

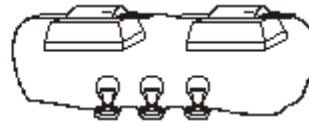
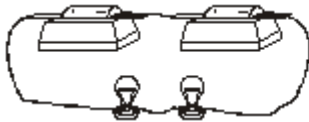
(d) Class 6D made three new circuits. They used a light sensor to measure the brightness of one of the bulbs in each circuit.

The sensor gave the results on the graph below.



1 mark

Write **A**, **B** or **C** next to each circuit below to show which circuit gave each light sensor reading on the graph.



 circuit

circuit

circuit

1 mark



Assessment Summary	
Total Mark	/22
Below Expectations Below 9 marks	
Expectations Between 9-16 marks	
Above Expectations Above 16 marks	