



Name: \_\_\_\_\_ ELECTRICITY Revision Worksheet YEAR 6... Date.....

1) Use the words to complete the sentences below:( switch break on complete electricity break off)

A circuit which has a \_\_\_\_\_ in it will not allow \_\_\_\_\_ to flow through it. A device called a \_\_\_\_\_ can be used to \_\_\_\_\_ or \_\_\_\_\_ a circuit so that other devices can be switched \_\_\_\_\_ or \_\_\_\_\_.

2) Draw the symbols for the following: a) open switch b) buzzer c) battery(two cells) d) motor e) bulb

3a) Draw a circuit which will light the bulb:

1 cell/battery      1 bulb      1 open switch

b) In the circuit above how do you make the circuit complete / bulb light up?

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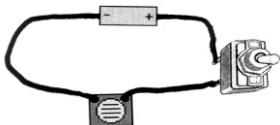
c) What could you add to the circuit to make the bulb brighter?

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d) What would happen to the bulb if you added too many batteries to a circuit?

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4) Draw a circuit diagram for the circuit below.  
Remember to use a ruler!



5) James carried out an investigation. This was his question:

**What effect does the length of conducting wire have on bulb brightness?**

He made circuits with different lengths of wire. The wire was coated in plastic.

a) What is the ONE factor James is changing in his investigation? \_\_\_\_\_

Below are his results:

Length of wire	Brightness of the bulb
20cm	very very bright
40cm	Very bright
60cm	Bright
80cm	Dim
100cm	Very dim
120cm	No light

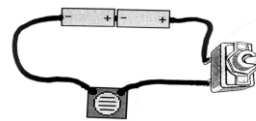
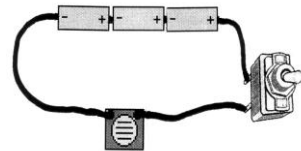
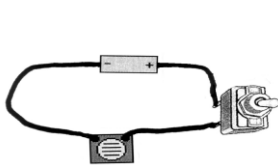
b) How does increasing the length of wire in the circuit affect the brightness of the bulb?

\_\_\_\_\_

\_\_\_\_\_

c) Instead of using words to describe the brightness of the bulb what equipment could James have used to produce more ACCURATE results? \_\_\_\_\_

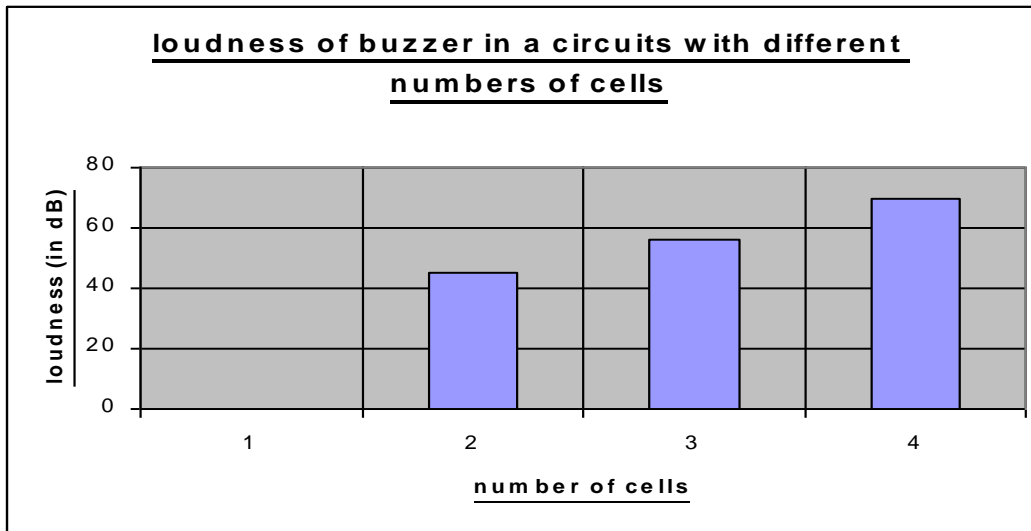
6) A sound sensor was used to measure the loudness of the buzzers in each of the circuits (all switches are closed)



**Circuit A**

**Circuit B**

**Circuit C**



a) On the graph above, label the bars A, B or C to represent each of the circuits.

b) Draw a column on the graph above **X** to show how loud you think the buzzer would be with 4 cells / batteries in the circuit.

c) What would happen in the three circuits if one of the cells/ batteries is turned around so the poles (terminals) are reversed?

7. Anitha and Becky are looking at some circuits.

a) Which girl will see the bulb less brightly?

.....

b) In which circuit is the bulb brightest?

.....

c) Why does this circuit have the brightest bulb?

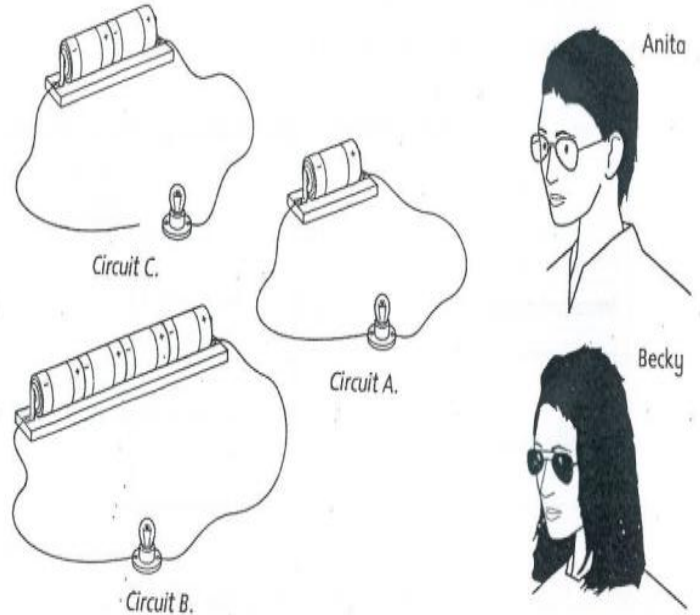
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d) In which circuit is the bulb not lit?

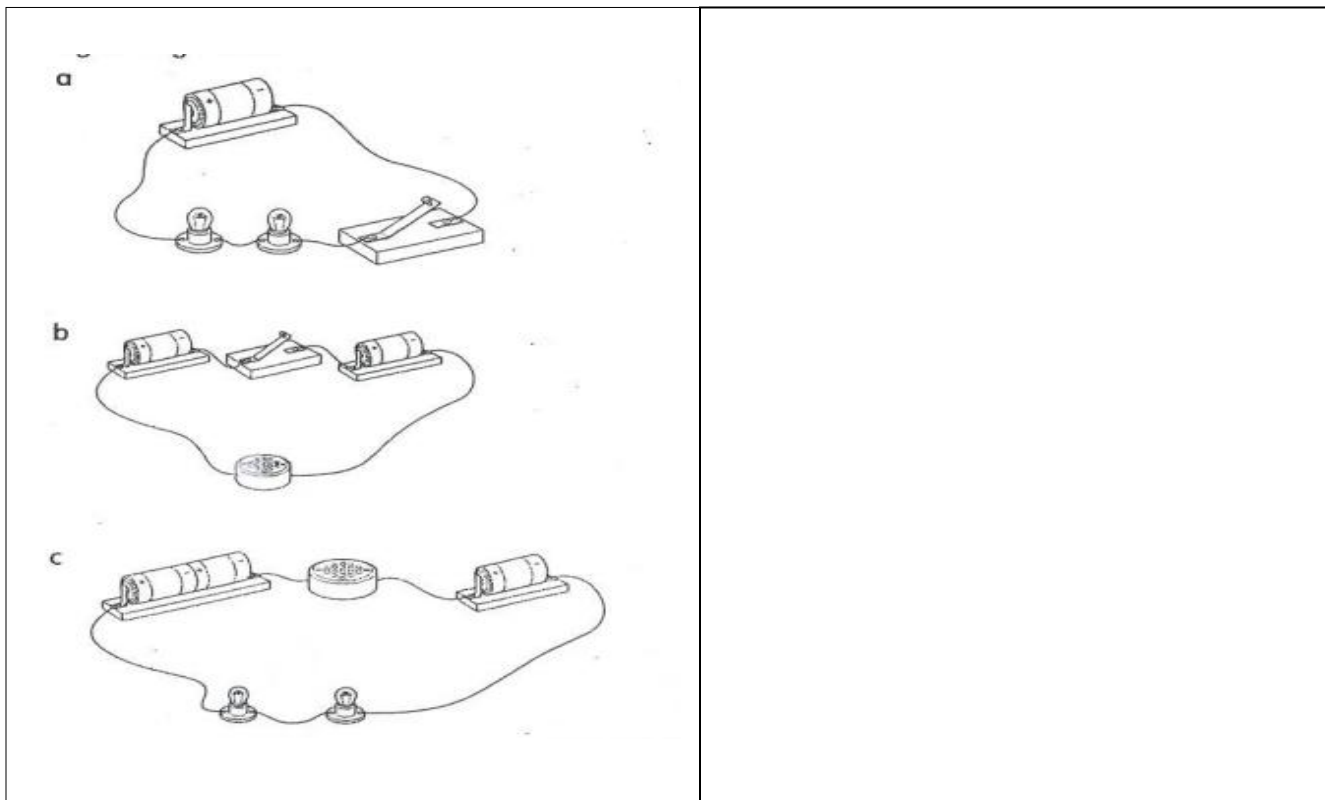
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e) Why is the bulb not lit?

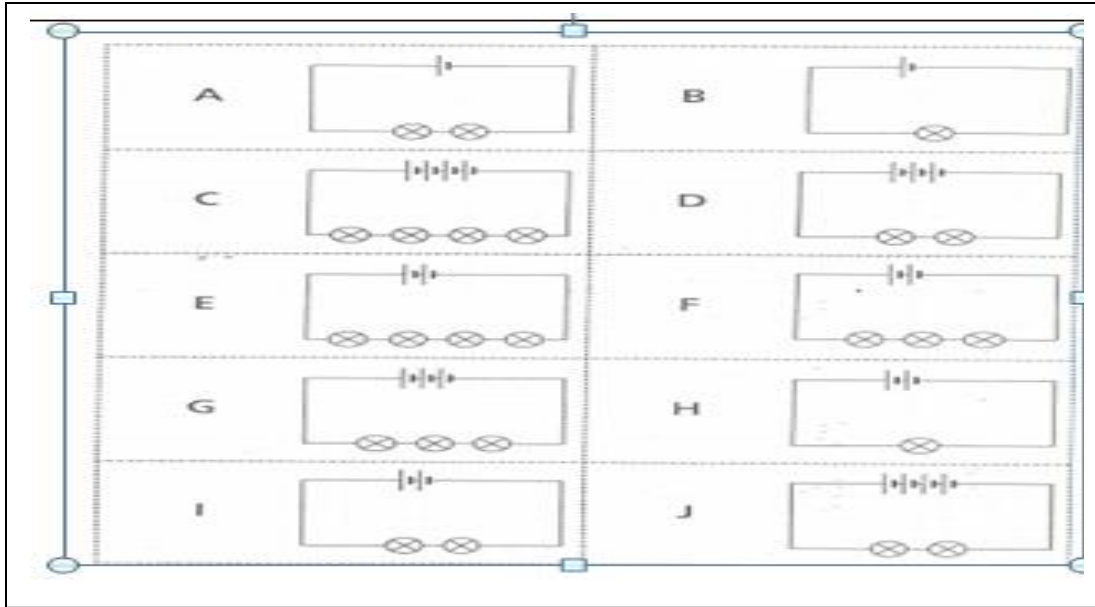
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8. Complete the circuit diagrams for these circuits Make sure that you show the cells the right way around.



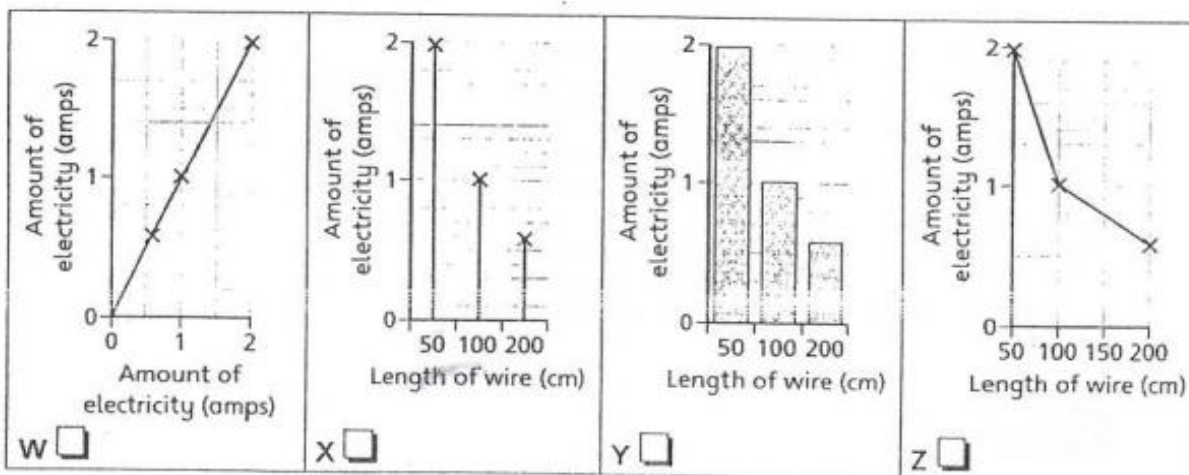
9. Order the circuits starting with the one that has the brightest bulbs. Explain how you worked it out. (you may use ratio of cells to bulbs)



10. Michael and Jay are investigating how the amount of wire in a circuit affects the amount of electricity flowing around the circuit. The amount of electricity is measured in units called amps. The table shows their results.

	Amount of electricity with 50cm of wire (amps)	Amount of electricity with 100cm of wire (amps)	Amount of electricity with 200cm of wire (amps)
Michael's results	2.0	0.5	0.5
Jay's results	2.1, 2.0, 1.9, 2.0, 1.9	1.0, 1.1, 1.1, 1.0, 1.0	0.4, 1.0, 0.5, 0.5, 0.5

- What happens to the amount of electricity flowing around the circuit as the length of wire is increased?  
.....
- Why did Jay repeat his measurements so many times?  
.....
- Jay calculated the means (averages) of his results and plotted a line graph. Which is the correct line graph for Jay's results? Tick one box.



**11. Underline the correct answer.**

**a) In a simple series circuit, why does the bulb light when you close the switch?**

Because the switch produces electricity.

Because closing the switch completes the circuit

Because closing the switch breaks the circuit

**b). In a simple series circuit, why does the bulb go out when you open the switch?**

Because the battery goes flat.

Because opening the switch breaks the circuit.

Because too much electricity flows through the bulb.

**c). Imagine a simple series circuit with one 1.5V battery and one bulb. When the 1.5V battery is replaced with a 3V battery ...**

the bulb gets brighter.

the bulb gets dimmer.

the bulb stays at the same level of brightness .

**d). Imagine a circuit with a 1.5V battery and one bulb. Imagine a similar circuit with a 3V battery and two bulbs. Which has the brightest bulbs?**

The circuit with a 1.5V battery and one bulb.

The circuit with a 3V battery and two bulbs.

The bulbs in both circuits are of similar brightness levels.

**e). Why might a bulb flash and go out when a 1.5V battery and a 3V battery are both connected across it in a simple series circuit?**

There is not enough electricity flowing around the circuit.

Too much electricity flows through the bulb's filament and the bulb blows.

The batteries are flat.

**f). What is the effect of changing the wire in a circuit from a straight thick wire to a straight thin wire?**

The bulbs become dimmer.

The bulbs become brighter.

The bulbs stay at the same level of brightness.

**g). What is the effect of changing the wire in a circuit from a straight thick wire to a longer (coiled) thick wire?**

The bulbs become dimmer.

The bulbs become brighter.

The bulbs stay at the same level of brightness

**h). In a circuit diagram, what does a circle with a cross inside it represent?**

A light bulb.

A motor.

A battery

**i). What do the long straight lines represent in a circuit diagram?**

Motors.

Light bulbs

Wires

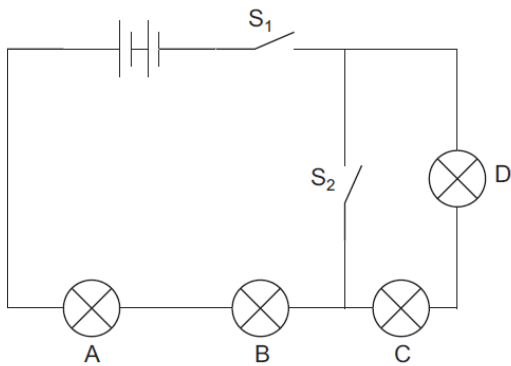
**j). How is a battery represented in a circuit diagram?**

A circle with a cross inside it

A circle with an M inside it

A long line and a short line.

**12.** Lorna built the circuit drawn below. All the bulbs are identical. Complete the table below by writing **on** or **off** for each bulb. One has been done for you.



switch		bulb			
S <sub>1</sub>	S <sub>2</sub>	A	B	C	D
open	open	off	off	off	off
open	closed				
closed	open				
closed	closed				

Lorna then built a different circuit as shown below.

How could Lorna get both bulbs to light at the same time in this circuit?

