

Science Assessment Year 4: Electricity

What is Electricity

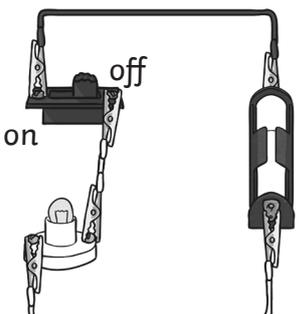
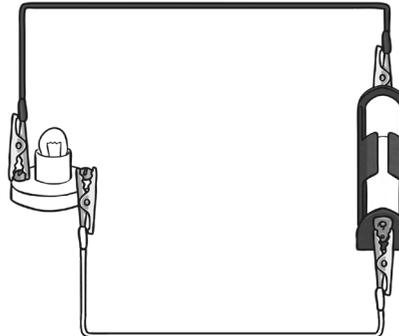
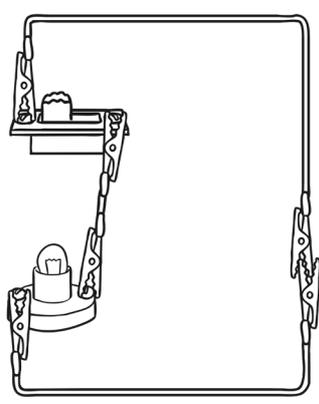
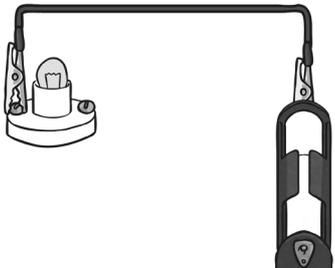
1. Fill in the missing words:

Electricity flows in a _____. The flow of electricity creates an electric _____.

2. Circle which combination would make a simple circuit:

- a) a buzzer, a battery, and a bulb
- b) a battery, a wire, a bulb
- c) a bulb, a switch, a wire

3. Tick whether the bulb will be lit or not lit in each of these diagrams:

 <p>Lit: <input type="checkbox"/> Not Lit: <input type="checkbox"/></p>	 <p>Lit: <input type="checkbox"/> Not Lit: <input type="checkbox"/></p>
 <p>Lit: <input type="checkbox"/> Not Lit: <input type="checkbox"/></p>	 <p>Lit: <input type="checkbox"/> Not Lit: <input type="checkbox"/></p>

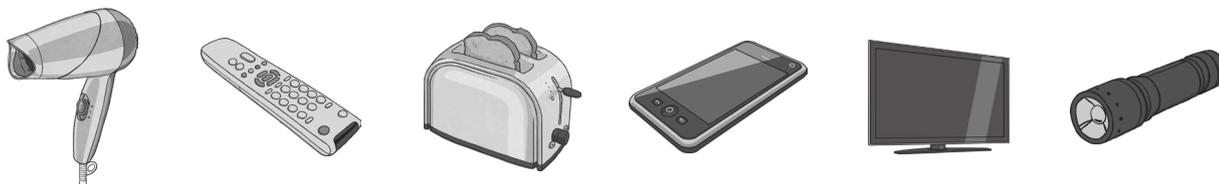
Everyday Electricity

4. Name three appliances that run on electricity.

.....

1 mark

5. Draw lines to match these items to **battery** or **mains** electricity:



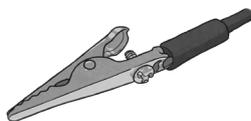
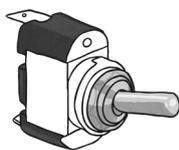
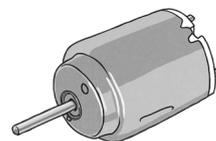
Mains
Electricity

Battery
Electricity

3 marks

Electrical Circuits

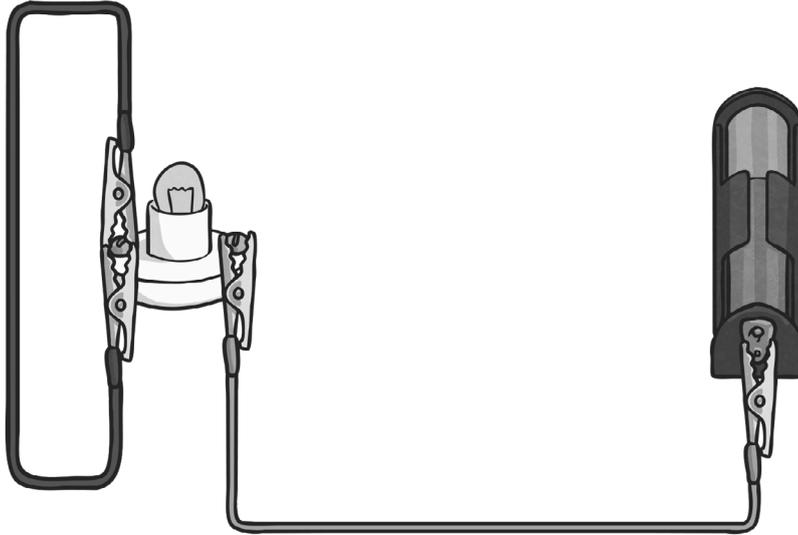
6. Name these pieces of equipment that you might use when you are making electrical circuits:



3 marks

Total for
this page

7 Will the light bulb in this circuit light up? Explain why or why not:



Will it light up?

.....

Why?

.....

.....

.....

.....

1 mark

8. Why would you want to put a switch in a circuit?

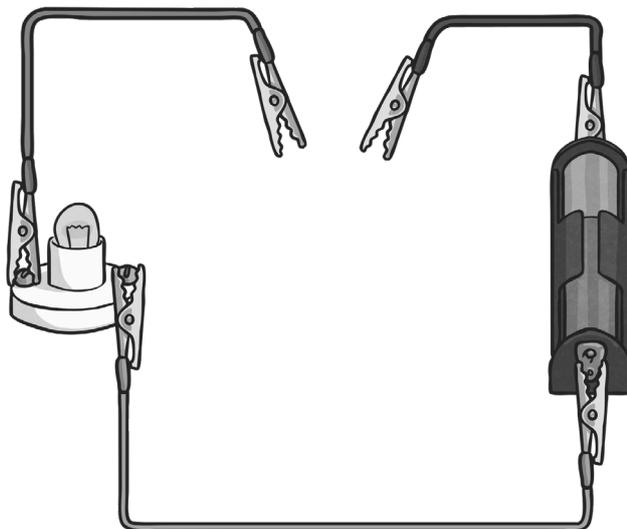
.....

1 mark

Total for this page

Electrical Investigation

A group of Year 4 children have made this circuit to test some different materials to see if they will conduct electricity or not:



9. What do the children mean when they say 'conduct electricity'?

.....

.....

1 mark

10. Fill in the table below:

	Does it light the bulb?
Wood	
Copper wire	
Paper	
Plastic ruler	
Paper clip	

1 mark

11. What should the title of the first column be?

.....

1 mark

Total for this page

12. What do you notice about the materials that **do** conduct electricity?

.....

1 mark

13. What is the name for a material that **does not** conduct electricity?

.....

1 mark

14. Explain why the bulb did not light up when the Year 4 children tested the plastic ruler?

.....

1 mark

Total for this page

Answer Sheet: Science Assessment Year 4:

Electricity



question	answer	marks	notes
1. Fill in the missing words:			
	Electricity flows in a circuit . The flow of electricity creates an electric current .	1	
2. Circle which combination would make a simple circuit.			
	a) a buzzer, a battery and a bulb <input checked="" type="checkbox"/> b) a battery, a wire, a bulb c) a bulb, a switch, a wire	1	
3. Tick whether the bulb will be lit or not lit in each of these diagrams:			
a	No (the switch is turned off)	1	
b	Yes	1	
c	No (There is no battery)	1	
d	No (Not a complete circuit)	1	
4. Name three appliances that run on electricity.			
	Accept any item that runs on electricity, for example: hairdryer, washing machine, toaster, television, lights, microwave	3	0 marks for 0-1 correct 1 mark for 2-3 correct 2 marks for 4-5 correct 3 marks for 6 correct
5. Draw lines to match these items to battery or mains electricity.			
		3	0 marks for 0-1 correct 1 mark for 2-3 correct 2 marks for 4-5 correct 3 marks for 6 correct
6. Name these pieces of equipment that you might use when you are making electrical circuits.			
		3	0 marks for 0-1 correct 1 mark for 2-5 correct 2 marks for 6-8 correct 3 marks for 9 correct

Answer Sheet: Science Assessment Year 4:

Electricity



question	answer	marks	notes												
7. Will the light bulb in this circuit light up? Explain why.															
	<ul style="list-style-type: none"> • No + it is an incomplete circuit • No + there is a break/gap in the circuit • No + the lamp/bulb is not joined to the battery/cell in a circuit 	1	<p>1 mark for no plus a correct explanation.</p> <p>In lessons make sure that 'incomplete' is the best vocabulary.</p>												
8. Why would you want to put a switch in a circuit?															
	To turn it on/off	1													
9. What do the children mean when they say 'conduct electricity'?															
	<ul style="list-style-type: none"> • Completes the circuit by letting electricity pass through it • Lets electricity easily pass through it • Electricity can travel through it easily 	1	Make sure in lessons that children understand the real dangers of electricity and an 'insulator' does NOT give 100% protection from shock.												
10. What is the independent variable that they are testing?															
	<table border="1"> <thead> <tr> <th></th> <th>Does it light the bulb?</th> </tr> </thead> <tbody> <tr> <td>Wood</td> <td>no</td> </tr> <tr> <td>Copper wire</td> <td>yes</td> </tr> <tr> <td>Paper</td> <td>no</td> </tr> <tr> <td>Plastic Ruler</td> <td>no</td> </tr> <tr> <td>Paper Clip</td> <td>yes</td> </tr> </tbody> </table>		Does it light the bulb?	Wood	no	Copper wire	yes	Paper	no	Plastic Ruler	no	Paper Clip	yes	1	
	Does it light the bulb?														
Wood	no														
Copper wire	yes														
Paper	no														
Plastic Ruler	no														
Paper Clip	yes														
11. What should the title of the first column be?															
	<ul style="list-style-type: none"> • Type of material • Material 	1													
12. What do you notice about the materials that do conduct electricity?															
	<ul style="list-style-type: none"> • They are metals 	1	Make sure that children know about non-metallic conductors such as water and graphite (graphite can be demonstrated shown using a pencil with 2 sharpened ends).												
13. What is the name for a material that does not conduct electricity?															
	<ul style="list-style-type: none"> • Insulator 	1	Make sure in lessons that children understand the real dangers of electricity and an 'insulator' does not give 100% protection from shock.												

Answer Sheet: Science Assessment Year 4:

Electricity



question	answer	marks	notes
14. Explain why the bulb did not light up when the Year 4 children tested the plastic ruler?			
	The bulb did not light up when the Year 4 children tested the plastic ruler because plastic is an insulator. This means that it does not let electricity pass through it.	1	
		total 23	