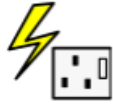










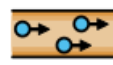
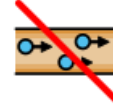





Vocabulary			Knowledge
<b>Mains electricity</b>	A source of power accessible in homes and places of work. A plug and switch are required to access this safely.		<p><b>Circuits</b></p> <p>Electricity flows around a circuit. Circuits only work when they are a <b>complete</b> circuit. We complete circuits using a switch and a power source.</p> <p>Lights, computers, televisions etc all rely on a complete circuit to work.</p> <p>Circuits are made up of different <b>components</b>.</p> <p>When the components are connected together the electricity will continually flow around the circuit.</p> <div>  Battery / Cell  Wire  Bulb </div> <div>  Motor  Buzzer  Switch </div> <p><b>Electrical conductivity</b></p> <p>Electricity flows well through some materials. These are called <b>conductors</b>. Metals are good electrical conductors.</p> <p>Electricity does not flow well through some materials. These are called <b>insulators</b>. Wood and rubber are good electrical insulators.</p> <p>Materials have properties, <b>electrical conductivity</b> can help us decide if the materials properties are suitable or not to use around electricity.</p> <p><b>Electrical safety</b></p> <p>All electrical appliances and circuits should be kept away from water. </p> <p>You should never overload mains electricity as circuits produce heat. Too much heat may result in an electrical fire.</p> <p>You should never put anything in a power source or electrical product. </p> <p>Never touch a broken or open wire.</p>
<b>Rechargeable</b>	A source of power that can be portable and charged when it runs out		
<b>Battery</b>	A source of power for an electric circuit (not mains powered)		
<b>Conductor</b>	A material or device that passes (transmits) heat, sound or electricity.		
<b>Insulator</b>	A substance or device which does not easily allow heat, sound or electricity to pass through it.		
<b>Circuit</b>	A complete and closed path around which a circulating electric current can flow.		
<b>Component</b>	A part of an electric circuit.		
<b>Switch</b>	Used to complete / incomplete a circuit		


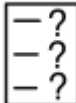


## Electricity

Electricity can be transformed into other forms of energy. E.g. motors, heating, lights, sound etc.

Electricity can come from mains in building such as plug or it can be rechargeable and portable such as mobile phones.

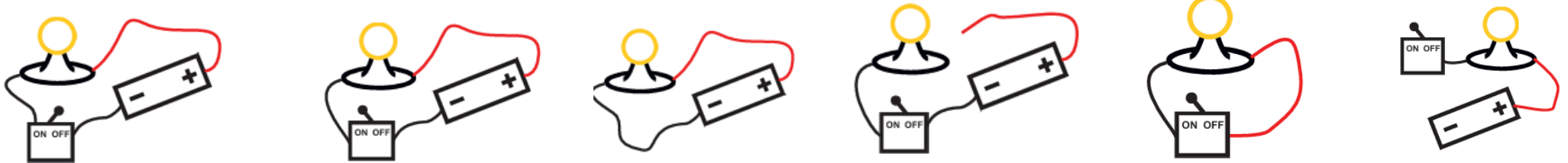
You should never put anything in a power source or electrical product.

Never touch a broken or open wire.

Quizzing		Quiz at home
Ask your partner the questions below. Can they find the correct answer on the right-hand side?		Ask your adult to look at the KO.
What is another name for a battery?	Mains + rechargeable electricity	 Quiz them using the vocabulary and knowledge section or the quiz questions.
What are the two different types of electricity?	tv, computer, kettle, lights etc	
When a circuit works we can say the circuit is _____	Cell	
Name 3 things that need electricity to work	complete a circuit / switch something on and off	
Name a material that is a good electrical conductor	metal	
A switch can be used to...	It may cause a fire	 • Can they beat your score?  • Can they score more than 5? 10?  • Compete with your adult in the elimination quiz. Take it in turn to ask each other questions. The first person to get a question wrong is out.
Why should you not overload mains electricity?	rubber / wood	
Name a material that is a good electrical insulator	Complete	
BIG Questions	Beat the adult	
<p>Where does electricity really come from, and how does it get all the way to our homes?</p> <p>What would our world be like without electricity for a whole day... or a whole week?</p> <p>How do different materials know whether to let electricity through them or block it?</p> <p>Why do some batteries last longer than others?</p> <p>How do engineers make sure electrical systems are safe for everyone?</p>	<p>Your teacher can give <b>10 facts</b> in <b>1 minute</b> about this topic.</p> <p>How many can you give to your partner?</p> 	
Word scramble	Creative Tasks	Challenge
Unscramble the key vocabulary from this topic below. You can create your own at the bottom	<ol style="list-style-type: none"> <li>Design a revision bookmark using the information on the KO.</li> <li>Create a short presentation or poster to teach another year 4 class how to stay safe using electricity.</li> <li>Draw and label three different circuits, try to use different components in each of them.</li> <li>Create or draw a circuit that could be used to create a paper propeller.</li> </ol> 	<p>The Year 4 class is preparing for their science fair. They are building a light-up display board to show visitors around the school. Their display has a small bulb, two wires, a battery pack, and a switch.</p> <p>On the morning of the fair, nothing lights up. On the table nearby are a few extra pieces of equipment:</p> <p>A worn-out battery A plastic spoon A metal paperclip Two spare wires A new bulb A cardboard tube</p> <p>Your job is to investigate why the bulb isn't lighting up. Use what you know about electricity, circuits, conductors and insulators to fix the display so it is ready for visitors.</p>
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riccuti		
tcihsw		
sicteam		
yilecritcte		
mooncetnp		
doourtcn		
snailourt		
eergbclahara		

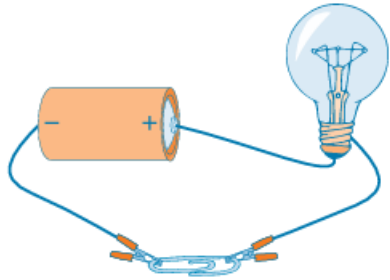
## Enquiry

Circle the cuits below that will work



### Understanding results

Year 4 are testing to see if different objects conduct electricity. The diagram shows how they test a paper clip by connecting two wires to it. When they do this, the bulb lights up. The results of the test are shown in the table.



Object	Did the bulb light up?
Iron nail	No
Glass jar	No
Metal ruler	No
Apple	No

Do you think the results in the table are correct? Explain your answer.

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Can you think of one thing that could have happened during the experiment to get the results in the table?

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### Diagrams

This is a circuit with lots of different components. Can you label it correctly? Then can you explain what each component does?

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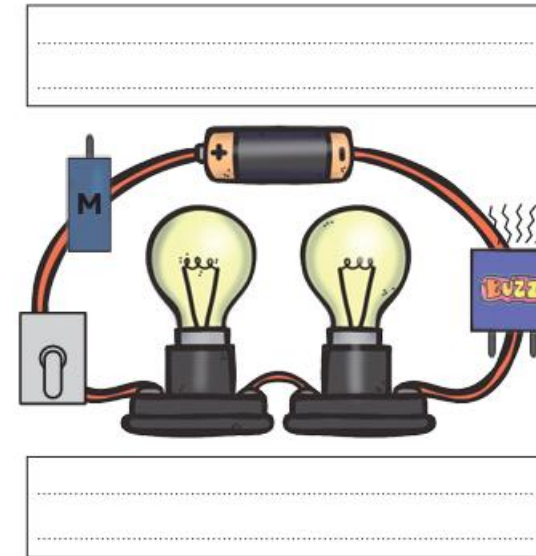
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