



Big Question:

What makes a bulb light up?

Key Vocabulary:

Electricity: *The flow of an electrical current through a material (e.g. from a power source through wires to an appliance).*

Generate: *To make or produce.*

Appliances: *A piece of equipment of a device designed to perform a particular job, such as a washing machine or mobile phone.*

Battery: *A device that stores electrical energy as a chemical.*

Circuit: *A pathway that electricity can flow around. It includes wires and a power supply and may include bulbs, switches or buzzers.*

New knowledge that will help me answer the big question:

- Electricity is a type of energy.
- Many everyday appliances rely on electricity for them to work.
- There are two types of electrical current.

Mains Electricity: power stations send an electric charge through wires to transformers and pylons. Then, underground wires carry the electricity into our homes via wires in the walls and out through plug sockets.



Battery Electricity: batteries store chemicals which produce an electric current. Batteries need recycling or recharging. Eventually, even rechargeable batteries will stop producing an electrical current.



- Some appliances use mains electricity (are plugged into a socket).
- Some appliances have a battery to make them work.

Batteries power devices that can be carried around.

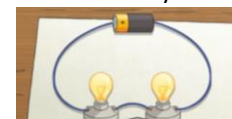


Mains electricity powers devices that need to be plugged in.



New knowledge that will help me answer the big question:

- Electricity can only flow around a complete circuit that has no gaps. There must be wires connected to both the positive and negative end of the power supply/battery.
- A series circuit is a simple loop with only one path for the electricity to flow. A series circuit must be a complete loop to work and have a source of power from a battery or cell.



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- A conductor of electricity is a material that will allow electricity to flow through it. Metals are good conductors.
- Materials that are electrical insulators do not allow electricity to flow through them. Wood, plastic and glass are good insulators.



New knowledge that will help me answer the big question:

Working with electrical circuits can be dangerous. Precautions include not touching electrical components with wet hands and not putting batteries in mouths.



As a scientist, the essential knowledge I need to answer the big question is:	Date
Electricity is a type of energy. It is used to power many everyday items, such as kettles, computers and televisions.	
Electricity can also come from batteries. Batteries eventually run out of power and need to be recycled or recharged. Batteries power devices that can be carried around, such as mobile phones and torches.	
Electrical components include cells, wires, lamps, motors, switches and buzzers. Switches open and close a circuit and provide control.	
A series circuit is a simple loop with only one path for the electricity to flow. A series circuit must be a complete loop to work and have a source of power from a battery or cell.	
Electrical conductors allow electricity to flow through them, whereas insulators do not. Common electrical conductors are metals. Common insulators include wood, glass, plastic and rubber.	
Working with electrical circuits can be dangerous. Precautions include not touching electrical components with wet hands and not putting batteries in mouths.	