Science	KS2 - Year 4

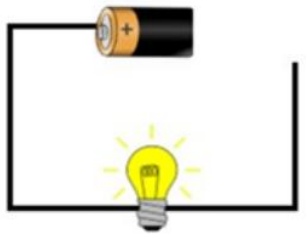
What is electricity?

What I already know:

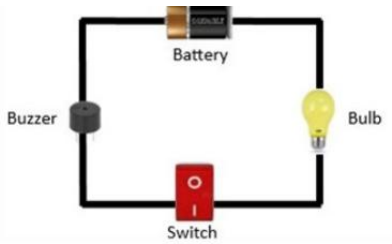
- Electricity is a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for devices.
- Sources of light and sound may need electricity to work.

New knowledge:

- Identify a range of common appliances that run on electricity.
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- Investigate electrical circuits and identify whether a lamp will light in these circuits, based on whether the electrical loop is complete.
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
- Recognise some common conductors and insulators, and associate metals with being good conductors.



Incomplete circuit
Bulb will not light



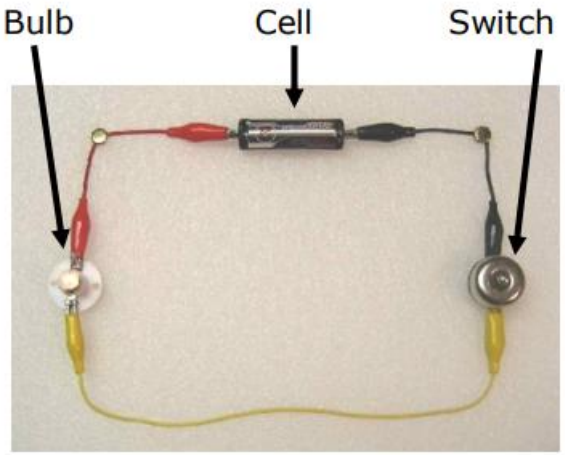
Complete circuit
Bulb will light and buzzer will sound

Enquiry questions:

- What common appliances use electricity?
- What components create a simple electrical circuit?
- How do switches work?
- Which materials make good conductors and insulators?
- Which famous scientists developed our understanding and use of electricity?

Scientific skills:

- Name the basic parts of an electrical circuit including cells, batteries, wires, bulbs, switches and buzzers.
- Create and test a variety of electrical circuits, including the use of switches.
- Test different materials to identify electrical conductors and insulators.



Vocabulary:

Electricity	A form of energy used for lighting, heating, making sound and making machines work.
Appliance	A device or piece of equipment designed to perform a specific function.
Circuit	A complete loop that electricity can move around.
Simple series	A circuit connected in one loop so electricity can only flow one way.
Cell	A unit that stores chemical energy and converts it into electrical energy.
Battery	A device, made of more than one cell, that can make electricity when chemicals react together.
Wire	A long, thin, flexible piece of metal that carries electricity.
Bulb	A component that uses electricity to create light.
Switch	A means of controlling the flow of electricity in the circuit.
Conductor	A material that **allows** electricity to pass through it easily, e.g. copper, iron and steel.
Insulator	A material that **does not allow** electricity to pass through it, e.g. plastic, wood and rubber.

Asking questions · Making predictions · Observing and measuring · Setting up tests · Recording data · Interpreting and communicating results · Evaluating