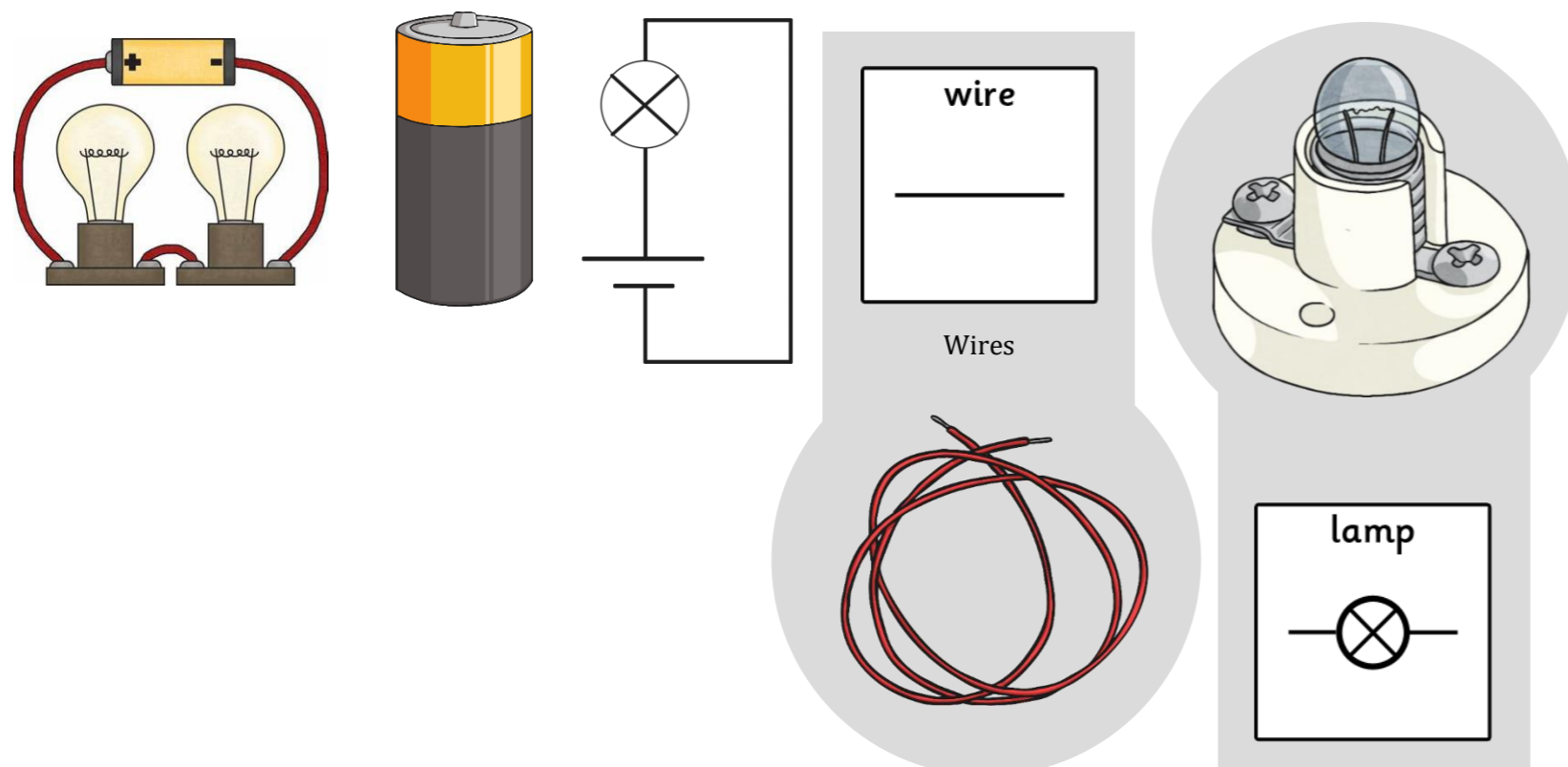




Knowledge Organiser: Science

Vocabulary

conductor	insulator	switch	lamp	circuit	electricity	buzzer	brightness
dim	metal	plastic	cells	wires	fuse	shock	safety



The Big Picture

What I will learn...

1. I can identify and name common appliances that run on electricity.
2. I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
3. I can explain the concept of a series circuit and recommend some general rules.
4. I can identify whether or not a lamp will light in a simple series circuit.
5. I can recognise that a switch opens and closes a simple circuit.
I can explain why opening and closing switches affects a series circuit.
6. I can observe and record how different materials act as conductors or insulators of electricity.

Links to future topics...

- Year 6
- I can make circuits and represent them in circuit diagrams.

Year 4: Electricity

'Know That' Statements

By the end of each lesson, I will know and retrieve that...

Lesson 1

- An appliance is a device, piece of equipment or an instrument designed to perform a task.
- To use mains electricity, you need to plug an appliance into a socket.
- To use battery electricity, you need to insert a battery into the appliance.
- Wind turbines, hydroelectric and solar panel power stations are used to generate electricity, but to a lesser extent.

Lesson 2

- A circuit is a path of electricity.
- A battery has two poles: positive and negative.
- A conductor is a material that electricity can pass through, such as certain types of wire.
- The opposite of a conductor is an insulator. Insulators, such as plastic, do not allow electricity to freely move.

Lesson 3

- A simple circuit has the three basic parts of a circuit: an energy source, a conductor, and an electric load.

Lesson 4

- A simple series circuit needs to be a complete circuit for a lamp to light up.

Lesson 5

- A switch 'breaks' a complete circuit on purpose to stop the flow of electrons when it is off.
- When the switch is on, the circuit is complete and so the electrons are able to flow around the circuit.

Lesson 6

- A circuit with a switch is not the same as an incomplete circuit. In an incomplete circuit, the electrons are unable to flow at all whether the switch is on or off.

Lesson 7

- A conductor of electricity is a material that will allow electricity to flow through it.
- An insulator of electricity is a material that will not allow electricity to flow through it.