WJS - Knowledge Organiser

Subject	Topic	Year	Term
Science	Electricity	3 & 4	Autumn 1

N.C. Statements

- identify 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
- identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
- 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

What is an Appliance?

Many everyday appliances rely on electricity. Some appliances use mains electricity and others have a battery to make them work.

Components (parts)

Cell 	Bulb 	Buzzer 
Wires 	Motor 	Switch 

Key Vocabulary

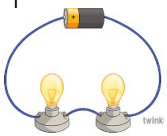
Spelling	Definition
electricity	The flow of an electric current through a material.
circuit	A pathway that electricity can flow around.
mains electricity	Electricity supplied through wires to a building.
electrical conductor	A conductor will let electricity flow through it.
electrical insulator	Electrical insulators do not let electricity flow through it.
battery	Device that stores electrical energy as a chemical. Also named: cell

Key Questions

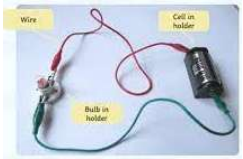
- Can you name the components of a circuit?
- Can you name some materials that are conductors?
- How can you control a circuit using a switch?

Important Diagrams

Series Circuit – a circuit where the components are connected in a loop.



Complete Circuit – Electricity can flow and the components will work.



Incomplete Circuit – There is a break in the circuit that prevents the electricity from flowing. The components will not work.

Switches – can be used to open or close a circuit. When off, a switch breaks the circuit to stop the flow of electricity.

Working Safely

- Don't put anything near a plug socket.
- Report damaged or broken equipment.
- Only use equipment as instructed.
- Connect equipment correctly.
- Disconnect equipment after use
- Put equipment away neatly.

Common Misconceptions

Electricity is a substance, and it leaks out of a broken circuit. Electricity will cause a fire and kill you. The more bulbs you add to a circuit the brighter the light.