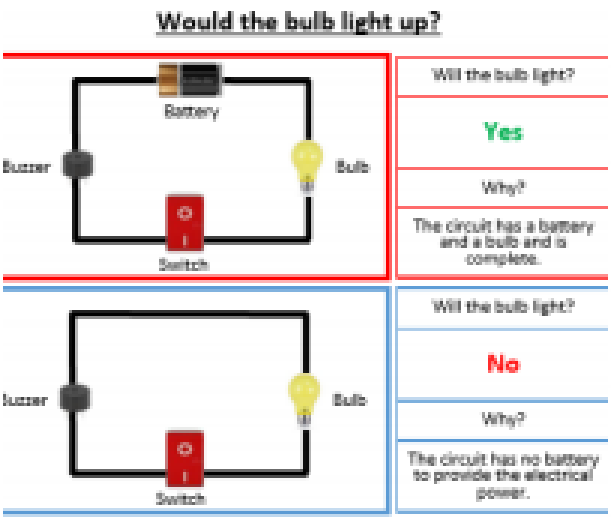
Knowledge Organiser

Science Focus	Electricity	Year 4	Summer 1

What? (Key Knowledge)

What is electricity?	Electricity is created by generators which can be powered by gas, coal, oil, wind or solar. The electrical energy can be converted into other types of energy such as light, heat, movement or sound. Electricity is dangerous, so be careful when using electrical appliances.
What are common appliances that run on electricity?	Any appliances that need to be plugged in run on electricity. For example: Television, Computer, Microwave, Lights
What is a circuit?	Electricity can flow through the components in a complete electrical circuit. A circuit always needs a power source, such as a battery, with wires connected to both the positive (+) and negative (-) ends. (A battery is made from a collection of cells connected together). A circuit can also contain other electrical components, such as bulbs, buzzers or motors, which allow electricity to pass through. Electricity will only travel around a circuit that is complete. That means it has no gaps.
What is a switch?	You can use a switch in a circuit to create a gap in a circuit. This can be used to switch it on and off. When a switch is open (off), there is a gap in the circuit. Electricity cannot travel around the circuit. When a switch is closed (on), it makes the circuit complete. Electricity can travel around the circuit

Diagrams and Symbols



Statutory requirements

Pupils should be taught to:

- 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? (Key vocab)

Spelling	Definition
circuit	A complete route which an electric current can flow around.
Current	A flow of electricity through a wire.
Battery	A small device that provides power for electrical items.
Cell	A device used to generate electricity. A battery is an example of a cell.
Conductor	Any material that electricity can pass through or along.
Insulator	Any material that electricity cannot pass through or along.

Possible experiences

- Set up circuits and predict whether the bulb will light or
- not.
- Set up circuits and experiment with ways to make the bulbs brighter.
- Set up a circuit to test materials that are conductors or insulators.
- Set up a human circuit to show how the electrons move around.
- Use a Venn diagram to sort and categorise appliances into battery operated, mains operated or both.