Year 6

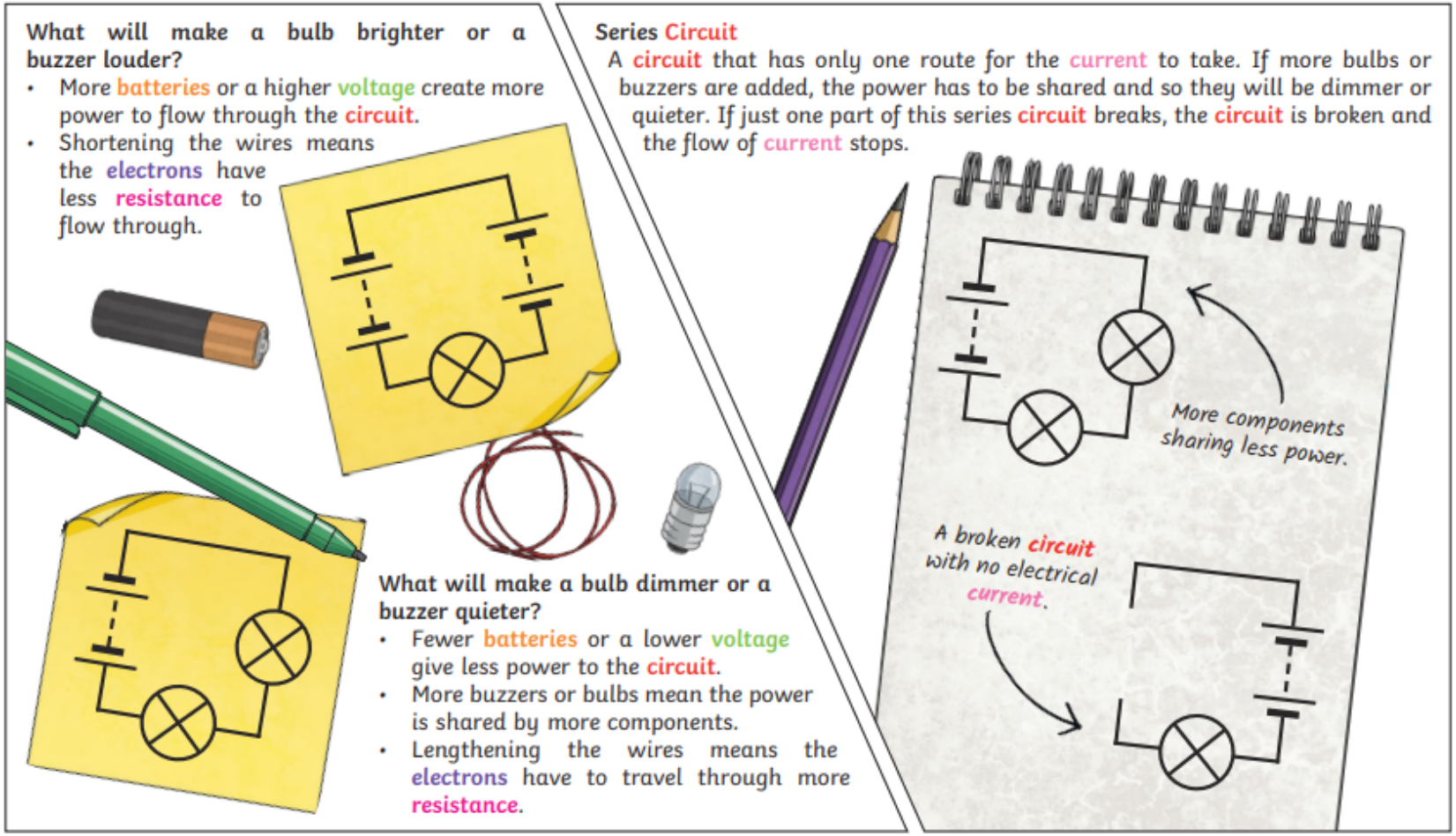
Unit: Electricity

Intent:
Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.
Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off positions of switches.
To use recognised symbols when representing a simple circuit in a diagram.

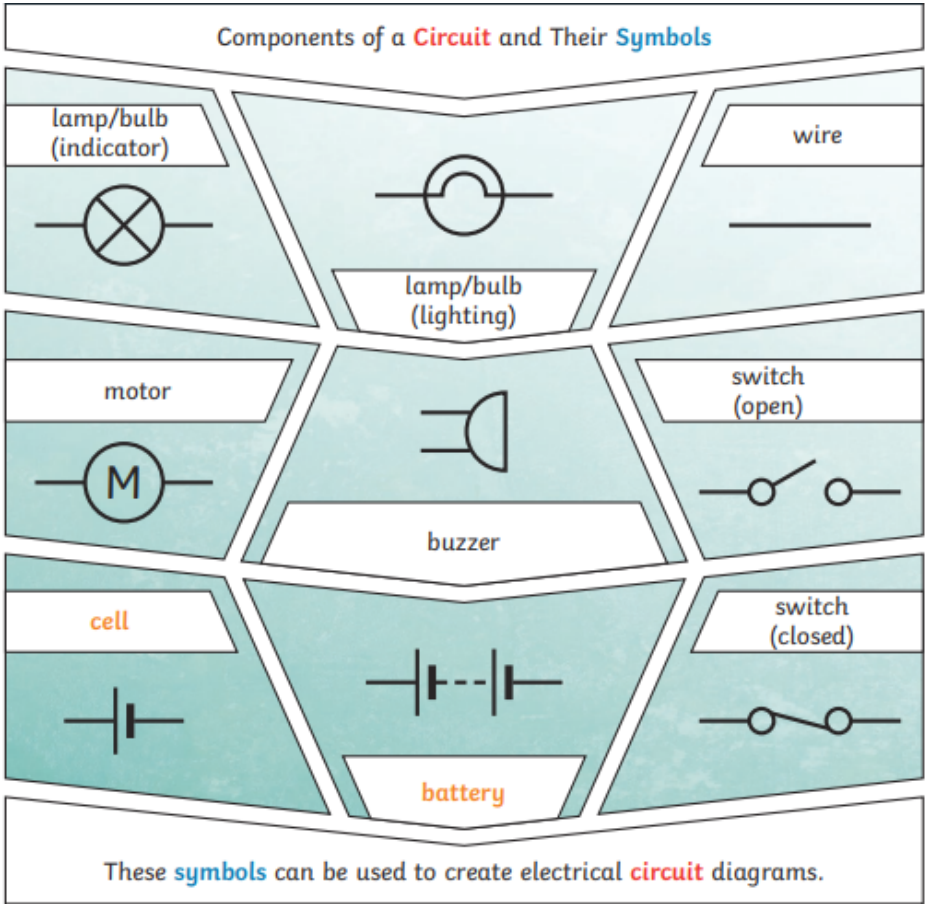
Prior learning
Year 4 – Identify common appliances that run on electricity.
Year 4 – Construct a simple series electrical circuit.
Year 4 – Recognise that a switch opens and closes a circuit and associate this with whether a lamp lights in a simple series circuit.
Year 4 – Identify whether a bulb will light in a simple series circuit, based on if it is part of a complete loop with a battery.
Year 4 – Recognise some common conductors and insulators, and associate metals with being good conductors.

Later learning (not in Year 6)
KS3 – Electric current, measured in amperes, in circuits.
KS3 – Static electricity
KS3 – Differences in resistance between conducting and insulating materials.

Key Questions:
What is a circuit?
What is a battery a collection of?
What will happen if the voltage in a circuit is increased?
What is electoral current measured in?
How do you make a bulb brighter?
What will happen to the volume of a buzzer in a circuit if another buzzer is added?
Why would a bulb get brighter if you shortened the circuit's wires?
What will happen to a buzzer if there is a break in the circuit?



Vocabulary	
Amps	How electric current is measured.
Cell/battery	A device that stores chemical energy until it is needed. A cell is a single unit. A battery is a collection of cells.
Circuit	A path that an electrical current can flow around.
Current	The flow of electrons, measured in amps.
Electrons	Very small particles that travel around an electrical circuit.
Resistance	The difficulty that the electric current has when flowing around a circuit.
Symbol	A visual picture that stands for something else.
Voltage	The force that makes the electric current move through the wires. The greater the voltage, the more current will flow.


Components of a Circuit and Their Symbols
lamp/bulb (indicator)
lamp/bulb (lighting)
wire
motor
M
buzzer
switch (open)
cell
battery
switch (closed)
These symbols can be used to create electrical circuit diagrams.