Electricity

Knowledge

Electricity

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 position of switches

use recognised symbols when representing a simple circuit in a diagram

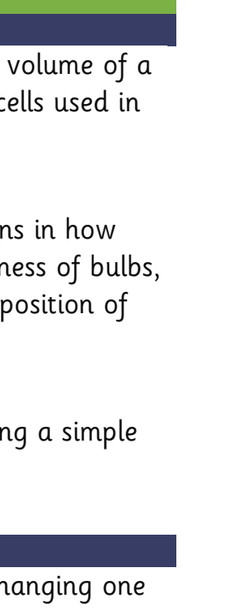
Working Scientifically

Systematically identifying the effect of changing one component at a time in a circuit

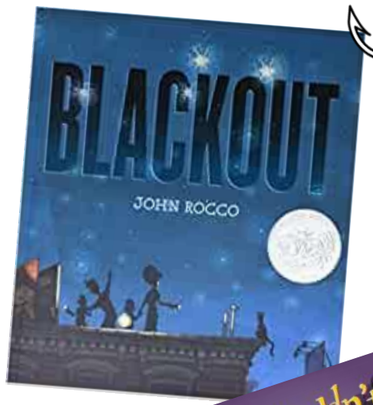
Designing and making a useful circuit.

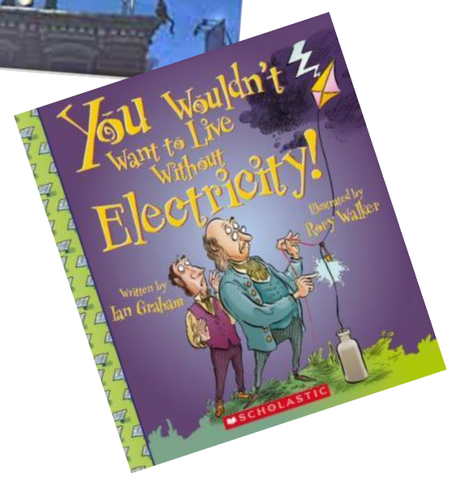
Investing in the UNIQUENESS of each individual

"I Am Fearfully And Wonderfully Made"
– Psalms 139 v14



Hook into a Book





Activate Prior Knowledge

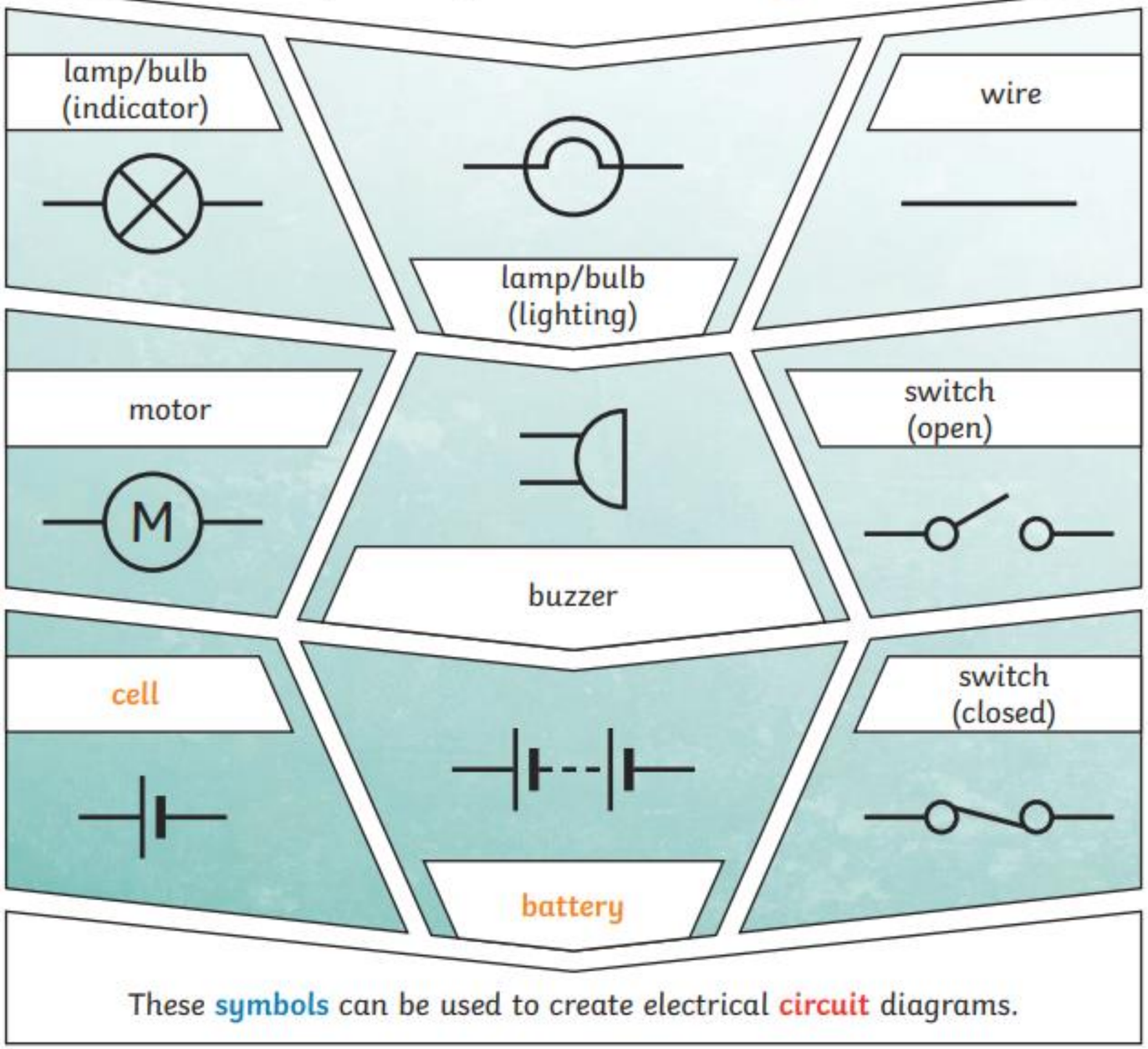
KS2

- I can identify common appliances that run on electricity
- I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
- I can 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
- I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
- I can recognise some common conductors and insulators, and associate metals with being good conductors.

Key Vocabulary	
circuit	A path that an electrical current can flow around.
symbol	A visual picture that stands for something else.
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.
current	The flow of electrons, measured in amps.
amps	How electric current is measured.
voltage	The force that makes the electric current move through the wires. The greater the voltage, the more current will flow.
resistance	The difficulty that the electric current has when flowing around a circuit.
electrons	Very small particles that travel around an electrical circuit.

Key Knowledge

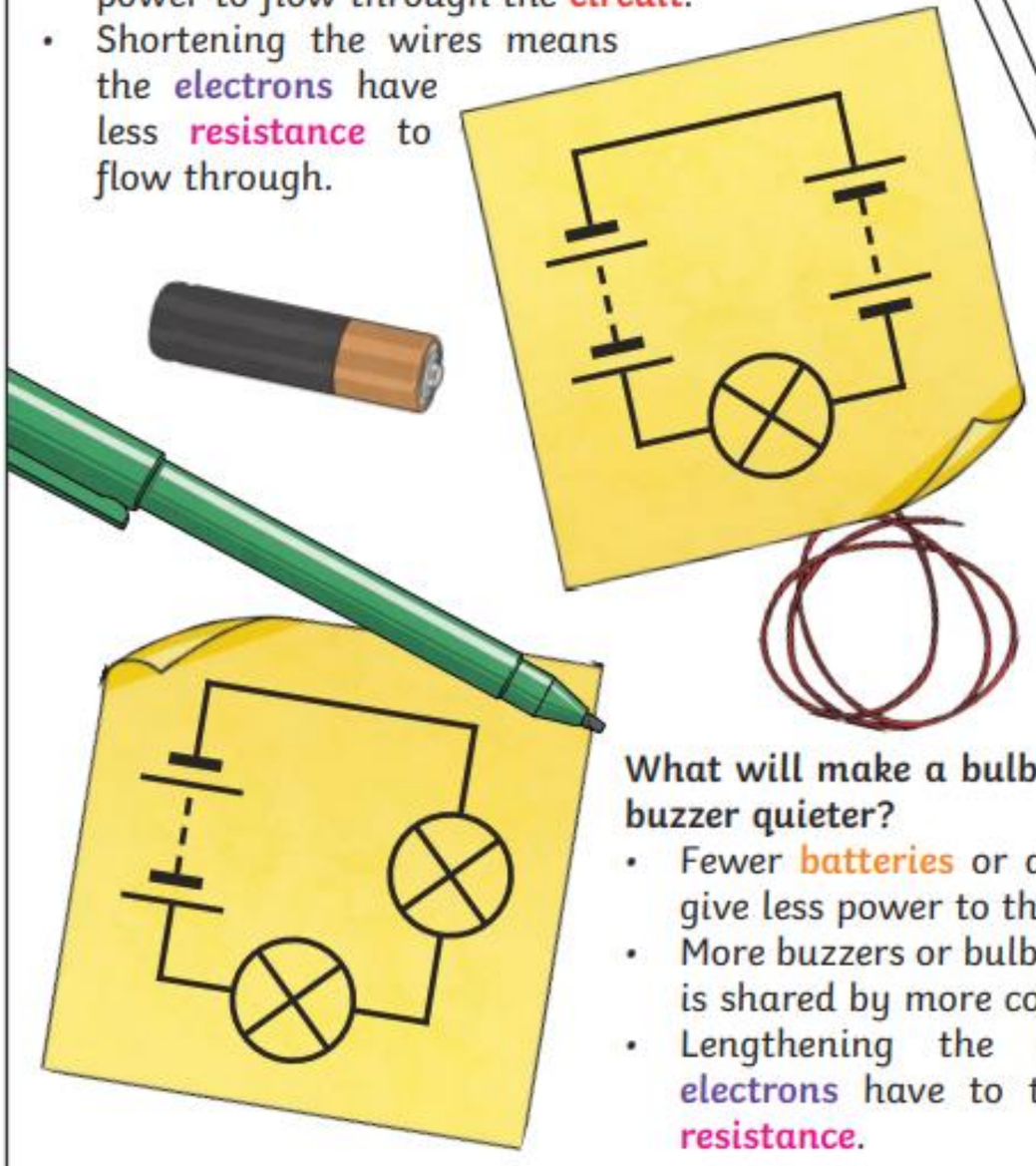
Components of a Circuit and Their Symbols



These symbols can be used to create electrical circuit diagrams.

What will make a bulb brighter or a buzzer louder?

- More batteries or a higher voltage create more power to flow through the circuit.
- Shortening the wires means the electrons have less resistance to flow through.



What will make a bulb dimmer or a buzzer quieter?

- Fewer batteries or a lower voltage give less power to the circuit.
- More buzzers or bulbs mean the power is shared by more components.
- Lengthening the wires means the electrons have to travel through more resistance.

Series Circuit

A circuit that has only one route for the current to take. If more bulbs or buzzers are added, the power has to be shared and so they will be dimmer or quieter. If just one part of this series circuit breaks, the circuit is broken and the flow of current stops.