Hillcross Primary School

Playing Cat and Mouse: Why do I need to change the batteries in my toy?

Year 4 Knowledge organisers

Health and Safety

Do's	Don'ts
Ask your parents' permission to conduct any experiments at home. Always read and follow safety rules and advice.	Always have dry hands when using electrical equipment. Don't use items with damaged wires.

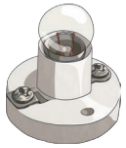
Vocabulary

Electricity	The flow of an electric current through a material, e.g. from a power source through wires to an appliance.
Appliances	A piece of equipment or a device designed to perform a particular job, such as a washing machine
Battery	A device that stores electrical energy as a chemical. Two or more cells joined together form a battery.
Circuit	A pathway that electricity can flow around.

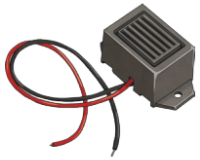
Components (Parts) Vocabulary

cell: Normally, we would call this a battery but scientifically, this is a cell. Two or more cells joined together form a battery.

bulb: Lights up in a complete circuit.



buzzer: Makes a noise in a complete circuit.



wires: Used to connect the different components in the circuit together.

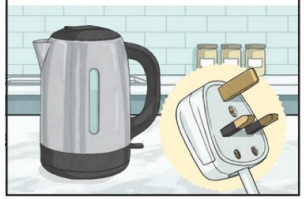
motor: Produces movement in a complete circuit.

switch: Used to turn other components in the circuit on or off.

1. How do things work?

Many everyday appliances rely on electricity for them to work. Some appliances use mains electricity (are plugged into a socket) and others have a battery to make them work. Examples of mains-powered appliances include toasters and televisions. Battery-powered appliances can include mobile phones and torches.

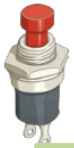
mains-powered



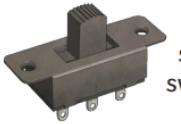
battery-powered

5. How does a switch work?

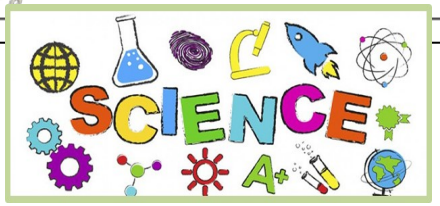
Switches can be used to open or close a circuit. When off, a switch 'breaks' the circuit to stop the flow of electricity. When on, a switch 'completes' the circuit and allows the electricity to flow.



push button switch

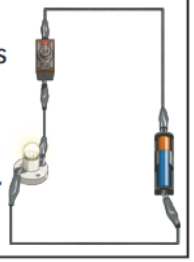


slide switch

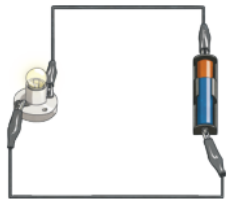


Series Circuit

A circuit where the components are connected in a loop. Electricity flows through each component in a single pathway.



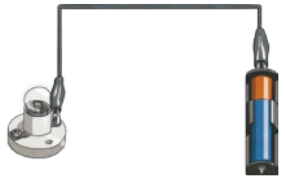
Complete Circuit



Electricity can flow. The components will work.

Incomplete Circuit

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



Marianna Woodson Cobb - first female broadcast engineer.

Careers: Electricians, broadcast engineer, control systems engineer.

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HEALTH, WATER, FOOD, ENVIRONMENT