

Year 4 Electricity

(Physics)



Prior and future learning

Prior Knowledge	What's next?
<ul style="list-style-type: none"> Explore how things work. (Reception) <p>Electricity taster in Y2 in investigation half term.</p>	<ul style="list-style-type: none"> I can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. I can 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. I can use recognised symbols when representing a simple circuit in a diagram. (Y6 – Electricity)

Track your learning

How I will show what I have learned	☹️	😐	😊
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 knowledge I need to understand

- Many household devices and appliances run on electricity. Some plug in to the mains and others run on batteries.
- An electrical circuit consists of a cell or battery connected to a component using wires. If there is a break in the circuit, a loose connection or a short circuit, the component will not work. A switch can be added to the circuit to turn the component on and off.
- Metals are good conductors so they can be used as wires in a circuit. Non-metallic solids are insulators except for graphite (pencil lead). Water, if not completely pure, also conducts electricity.

Possible texts to read:

Until I met Dudley – *Roger McGough*
 Electrical Wizard- How Nikola Tesla Lit up the world – *Elizabeth Rusch*

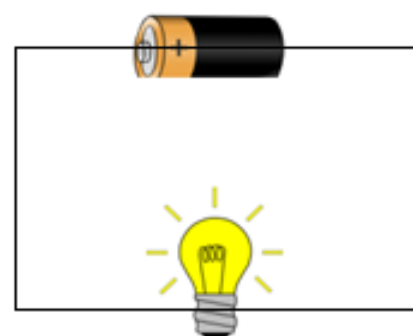
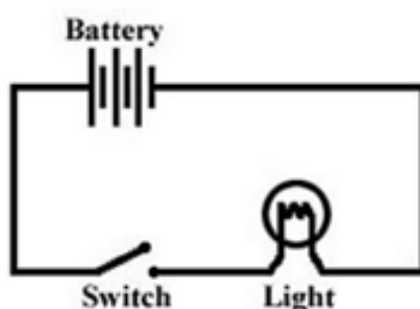
Scientist: Nikola Tesla

(invented dynamos and generators)

Working scientifically assessment: Electrical conductors

Link to maths curriculum:

- N/A



Vocabulary

appliances	a device or machine in your home that you use to do a job such as cleaning or cooking. Appliances are often electrical .
battery	small devices that provide the power for electrical items such as torches
bulb	the glass part of an electric lamp, which gives out light when electricity passes through it.
buzzer	an electrical device that is used to make a buzzing sound
cell	a synonym for battery
circuit	a complete route which an electric current can flow around
component	the parts that something is made of
conductor	a substance that heat or electricity can pass through or along
current	a flow of electricity through a wire or circuit
device	an object that has been invented for a particular purpose
electricity	a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for devices
energy	the power from sources such as electricity that makes machines work or provides heat
Series circuit	a circuit with bulbs next to each other, one will be dimmer than the other.
Parallel circuit	A circuit with bulbs in parallel
insulator	a non- conductor of electricity or heat
mains	where the supply of water, electricity , or gas enters a building
motor	a device that uses electricity or fuel to produce movement
power	Power is energy , especially electricity, that is obtained in large quantities from a fuel source and used to operate lights, heating, and machinery
source	where something comes from
switch	a small control for an electrical device which you use to turn the device on or off
wires	a long thin piece of metal that is used to fasten things or to carry electric current