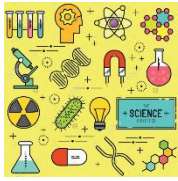




Science



Children will learn about electrical appliances and circuits, with opportunities to explore and investigate practically.

Key Questions:

Why is it useful to have standard symbols for drawing circuits?

What does a switch do?

How have our ideas about electricity changed over time?

What is electrical resistance?

Knowledge and Skills:

- 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 on/off position of switches
- **Use recognised symbols** when representing a simple circuit in a diagram **using a range of equipment**
- **Recording findings of increasing complexity** using simple scientific language, labelled diagrams, keys, bar charts and tables

Key vocabulary:

Electron - elementary particle in all atoms that has a negative electrical charge

Cell - device that produces electrical energy by chemical reaction

Battery - device comprising more than one cell that produces electricity

Circuit - complete path through which an electric current can flow

Current - flow of electricity

Filament - fine wire in a light bulb that gives out light

Electrical insulator - a non-conducting material that prevents or reduces the transfer of electricity

Electrical conductor - a material that transmits electricity

Switch - a device for opening and closing an electric circuit

Terminal - the point where current enters or leaves an electrical device

Why not try this at home?

Identify common appliances that run on electricity and estimate their energy consumption.

Visit a power station or wind farm

Find out how the UK gets its electricity (The app GridCarbon shows which fuels are being used to generate the UK's electricity each day)



Battery



Wire



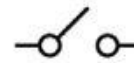
Bulb



Buzzer



Motor



Switch (off)



Switch (on)



Alessandro Volta

Recommended reads:

Nick and Tesla's High-Voltage Danger Lab: A Novel with Electromagnets, Burglar Alarms, and Other Gadgets You Can Build Yourself by Bob Pflugfelder & Steve Hockensmith

Girls Think of Everything: Stories of Ingenious Inventions by Women by Catherine Thimmesh

Genius!: The Most Astonishing Inventions of all Time by Deborah Kespert