Year 3/4 Science: Electricity

Subject Specific Skills

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

Prior Learning

- Electricity is not taught as a discrete topic in KS1 however some children may have looked at which items use electricity in other curriculum areas (e.g. Toys topic in history)

Key Vocabulary

appliance - a device or piece of equipment that has been made to perform a specific task
battery - a small item used to power small appliances circuit - a route through which electricity flows components - the parts of a circuit
conductor - allows electricity to flow through it
current - the rate of flow of electricity measured in amps electrical - something that uses electricity to work insulator - doesn't allow electricity to flow through it mains power - electricity provided by power stations portable - can be easily carried around
pylon - a tower used for keeping electrical wires above the ground
switch - a device for controlling the flow of electricity in a circuit

Lots of **appliances** around our house use **electricity** to work.



Most big appliances in our house have to be **plugged in**. These are powered by **mains power**. Some smaller appliances can bepowered by **batteries**. Some appliances have batteries that need to be **charged** by mains power.

Battery powered appliances are **portable** which means you can use it anywhere without it having to be plugged into **a plug socket**. There are different types of battery for different appliances.

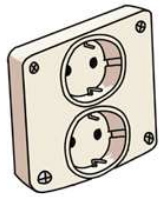


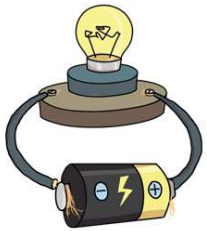

Mains power is produced mainly in a **gas**, **coal** or **nuclear power station**. **Wind turbines**, **solar panels** and **hydroelectric dams** are also used to produce mains power but are not used as often.



The electricity then travels from the **power stations** to our **houses** through **overhead wires** and **pylons**. We use the electricity in our house by plugging the appliance into **a plug socket**. Finally, the electricity enters the appliance's **electrical circuit** through the wires.







The circuit has to be complete to allow the **electricity** to travel all the way around it.

When we put **a switch** in an electrical circuit and turn it to the on position, it completes the circuit and allows electricity to **flow** around the circuit. When we turn the switch to the **off position**, this creates a break in the circuit meaning the electricity **cannot flow** anymore and the appliance will not work.


paddle switch


push button switch


pull switch