Year 4
Electricity

National Curriculum

Pupils should be taught to:

- 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.

Misconceptions

Not True

- When you buy a device from a shop, the electricity is already inside it.
- Electricity comes out of both ends of a battery.
- Wire is made of plastic.
- If a circuit is broken, energy goes off into the air.

True

- Electricity is not inside a device. It either has batteries that provide the charge or a plug that connects to the mains electricity supply.
- Electricity can be thought of as a flow, like water. The flow must happen in a continuous loop called a circuit. If the positive or negative end of the battery is not connected then the electricity cannot flow.
- The outside of a wire is coated in plastic to act as an insulator. The insides of a wire are made from a material that is a good conductor, such as copper.
- Electricity does not flow like water from a hosepipe. It doesn't flow regardless of the connection. If a circuit is broken, then the energy cannot be transferred and the current stops.

Big Questions

- What appliances use electricity? What sort of power makes them work?
- What are the components in a simple series circuit?
- What are the effects of changing circuit components and batteries?

Vocabulary

Associate, Identify
Portable, Effect
Appliance, Series
Component
Insulator
Conductor, Circuit
Hypothesis, Variable

Prior Learning

Year 3 Light reflection, sources and shadows.
Year 3 Forces and magnets forces attract and repel.