

Year 4 Term 2

Is life better with electricity?

SCIENCE



oral and written explanations, displays or presentations, drawings, labelled diagrams.
Use straightforward scientific evidence to answer questions or to support their findings.

Long-term Memory Knowledge:

Some appliances require mains electricity and some require batteries to operate.
Demonstrate how to construct a simple series circuit that includes cells, buzzers, wires, bulbs and switches.
A bulb will only light up if the circuit is complete and contains a battery.
When a switch is open (off), there is a gap in the circuit: electricity cannot travel around; when a switch is closed (on), it makes the circuit complete: electricity can travel around it.
Some materials let electricity pass through them easily: electrical conductors; some materials do not allow electricity to pass through them: electrical insulators.
Suggest ways to answer a scientific question, gather and present appropriate results and use this information, along with scientific evidence, to answer the original question.

Key Vocabulary

series circuit	a closed path that allows electricity to flow from one point to another; circuits can be complete and 'work' or incomplete and not work
bulb/lamp	a bulb is the glass part of an electric lamp, which gives out light when electricity passes through it.
battery/cell	device that stores chemical energy and converts it to electrical energy
wire	used to transport electricity
switch	component in a circuit that can allow electricity to flow through or make a break in the circuit
electrical conductor	material that allows an electrical current to flow easily through it

electrical insulator	material that doesn't allow electricity to flow easily through
appliance	something that uses electricity
component	a part of a circuit
buzzer	an electrical component that makes a buzzing noise
crocodile clip	a metal clip with used to attached components to wire in a circuit
mains electricity	the power that is bought into people's home that we can access through wall sockets
generated	to produce or create electricity
power station	a place where electricity is produced
pylon	a tall tower-like structure used for carrying electricity cables high above the ground
plug	a device for making an electrical connection between an appliance and the mains electricity
socket	an electrical device receiving a plug to make a connection

National Curriculum Links:

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.

Essential Prior Learning:

We use electricity to power things, e.g. television, computers, toys, games.
Electricity can be dangerous: electrical items shouldn't be touched with wet hands, don't touch exposed wires.

Progression in Skill:

Ask relevant questions about the world around them and use different types of scientific enquiries to answer them (fair test, research, classify, modelling, investigation over time).
Set up simple practical enquiries, comparative and fair tests.
Make systematic and careful observations.
Collect, gather, record, present data and report on findings from their own enquiries/observations and measurements using simple scientific language in a variety of ways to help in answering questions, including

Progression in Resources:

Bulbs, wires, switches, conductive materials, insulating materials, cells

Relevance

Now	Children know how electricity can be used to make our lives easier/more enjoyable and can understand why sometimes things are not working; they can keep themselves and others safe when using electricity.
Future	Understand how the electrical systems they use work and can perform some basic repairs.
Aspiration	Pursue careers in electrical engineering, designing and creating electrical systems or develop these for pleasure.