

Science Knowledge Organiser

Southwold Primary School



Topic: Electricity

Year: 4

Strand: Physics

What should I already know?

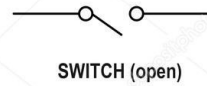
- Different materials have different properties
- Household items are made from a mix of materials
- Some devices need electricity to work, some do not
- Electric energy can be given by plugging a device into the mains, or by batteries that hold the energy
- Electricity can be dangerous for people if it not used properly (electrical shock or scalding)

What will I know by the end of this unit?

- Electricity is a form of energy that can be carried through wires and is used to power objects and devices.
- Sources of light and sound might need electricity to work.
- Where electricity comes from.
- A range of appliances that use electricity and name some.
- What a circuit is and the components that might be found in a circuit e.g. bulbs, motors, buzzers.
- What electrical conductors and insulators are.
- What happens when a switch is used in a circuit.



Circuit symbols



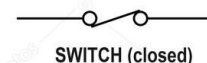
SWITCH (open)



LAMP



BUZZER



SWITCH (closed)



CELL



BATTERY



Motor



Wire

Working Scientifically

Making systematic observations of changes

Setting up simple tests to find out the effect of increased voltage

Drawing conclusions based of results

Drawing representation of electrical setup using symbols

Record results in tables so this enables pupils to draw conclusions

Vocabulary

battery	Small devices that provide the power for electrical items such as torches.
bulb	A bulb gives off light when electricity passes through it.
buzzer	An electrical device that gives off a sound.
cell	A cell is one battery .
circuit	A complete route through which electricity can flow.
component	A part of a circuit; a wire, buzzer, bulb, etc.
conductor	Material through which heat or electricity can flow.
current	A flow of electricity through a circuit .
device	An item that is invented for a certain purpose.
electricity	A form of energy that can result in heat, light and/or movement.
electrons	Small particles that can move through wire and creating an electrical current .
insulator	Material through which electricity can not flow.
motor	A device that uses electricity to create movement.
switch	A device that can close or open a circuit

Electricity and Safety

Electricity has been around for a long time: Thunder and lightning is a sign of electrical charge in the sky.

In 1879 humans found a way to make electricity and a way of using it to create light. Electricity has changed how we do a lot of things but it can also be dangerous. Here are some tips:

- **Don't** take electrical devices near water (in the bath)
- **Unplug** electrical devices that are broken, only people who know about electrical devices should fix them
- Stay away from buildings with **this label**, do not go in!

