

Bomere and the XI Towns Federation Knowledge Organiser—Science

Topic:- Science—Electricity

Class/Year Groups: Year 4

Term: Autumn

What you already know?

This is the first time that pupils will have studied electricity in detail.

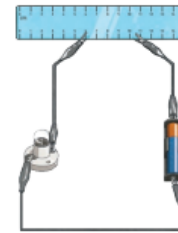
Materials can be tested in a **circuit** to see if they are **electrical conductors** or **electrical insulators**.



10p = metal = **electrical conductors**



test **circuit**



ruler = plastic = **electrical insulators**

What you will learn:

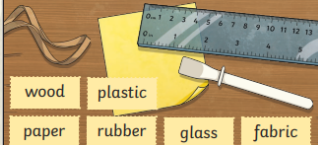
Key Knowledge

Examples of Electrical Conductors



copper steel

Examples of Electrical Insulators



wood plastic
paper rubber glass fabric

To work **safely** with **circuit** components in the classroom:

- None of the equipment needs to use mains power, so do not put any of it in or near plugs.
- Report any damaged or broken equipment to your teacher. Do not use it.
- Only use equipment as instructed.
- Connect equipment correctly.
- Disconnect equipment after use and put it away neatly.



Components (Parts) Vocabulary

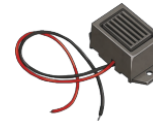
cell: Normally, we would call this a **battery** but scientifically, this is a cell. Two or more cells joined together form a **battery**.



bulb: Lights up in a complete **circuit**.



buzzer: Makes a noise in a complete **circuit**.



wires: Used to connect the different components in the **circuit** together.



motor: Produces movement in a complete **circuit**.



switch: Used to turn other components in the **circuit** on or off.



Vocabulary

Electricity The flow of an electric current through a material, e.g. from a power source through wires to an appliance.

Circuit A pathway that electricity can flow around. It is based around wires and a power supply. Examples of components (parts) you can add in to a circuit are bulbs, switches, buzzers and motors.

Battery A device that stores electrical energy as a chemical. Two or more cells joined together form a battery.

Appliances A piece of equipment or a device designed to perform a particular job, such as a washing machine or mobile phone.

Electrical Conductor A conductor of electricity is a material that will allow electricity to flow through it.



National Curriculum Objectives:

- 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.

