

# Year 6 – Electricity

ALP Trust Science 2020

## Language for Learning

Through the activities in this topic pupils should **understand and precisely use key scientific words - spelling these words correctly**. This includes - words with **different meanings** in scientific and everyday contexts (e.g. drag), words with **precise** scientific meanings (e.g. weight and mass) and words relating to **scientific enquiry** (e.g. variable).

## Key Scientific Words

Key Word	Definition (Meaning)
<b>Circuit</b>	A complete loop of components that electricity flows around
<b>Component</b>	An item in a circuit – such as a cell, bulb or buzzer
<b>Cell</b>	A source of electricity with a low 'energy'. Cells push electrons round a circuit
<b>Switch</b>	Turns a circuit on or off, by closing or opening a gap in a circuit
<b>Bulb</b>	A component that transfers electrical energy to light energy
<b>Buzzer</b>	A component that transfers electrical energy to sound energy
<b>Motor</b>	A component that transfers electrical energy to kinetic energy
<b>Electrical Current</b>	The flow of electricity around a circuit
<b>Amp (A)</b>	The unit for current
<b>Ammeter</b>	Measures the amount of electricity flowing around a circuit
<b>Voltage</b>	The push and 'energy' that a source of electricity gives a circuit
<b>Volt (V)</b>	The unit for voltage
<b>Resistance</b>	A way of saying how difficult it is for electricity to flow through something
<b>Ohm (Ω)</b>	The unit of resistance
<b>Resistor</b>	A component that makes it difficult for electricity to flow – resistors are used to control the size of the current in a circuit
<b>Electrical energy</b>	The kind of energy carried by electricity

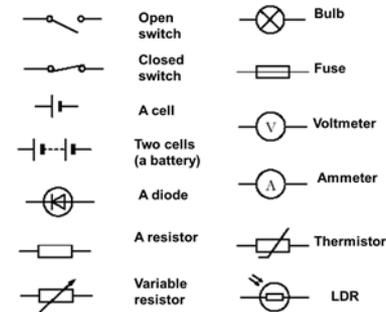
## Key Concepts

**Electricity** is a flow of **electrons** (a flow of charge).

A **complete circuit** - with a **complete loop** is needed for electricity to flow. An **electrical component** is an object that is part of a circuit.

We use **symbols** to represent electrical components when we draw circuits.

### Electrical Components



A **switch** turns a circuit **on** and **off**, by closing or opening a gap in a circuit.

A **cell** is a component that provides a **push** and **energy** to a circuit. If you **increase the number of cells** in a circuit or if you **increase the voltage** of the circuit – the push and energy becomes **greater**.

Adding cells to a **circuit** or **increasing the voltage of a circuit** causes bulbs to **become brighter**, buzzers to **become louder** and motors to **move faster**.

You can change circuits in other ways. A **series circuit** is a circuit where components are connected in one single loop. **Adding components** to a series circuit causes bulbs to **become dimmer**, buzzers to **become quieter** and motors to **move more slowly**.

The **current** is the amount of electricity flowing in a circuit. The unit for current is the **amps (A)**. Current is measured using an **ammeter**.

The **voltage** is the size of **push** and **energy** that a source of electricity gives a circuit. The unit for voltage is the **volt (V)**. Voltage is measured using a **voltmeter**.

The **resistance** of a circuit is a way of saying how **easy or difficult it is for electricity to flow** - The unit of resistance is the **ohm (Ω)**

**High resistance** = hard for electricity to flow = small current

**Low resistance** = easy for electricity to flow = large current

**Ohm's Law** shows the relationship between **Resistance, Voltage** and **Current** - **your teacher will discuss Ohm's Law with you**