Etwall Primary School

Electricity

Year 3/4

Key vocabulary

Battery	A battery is when two or more cells are used together.
Buzzer	An electrical device that makes a buzzing sound.
Cell	This is what we normally refer to as a 'battery'. It is one cell.
Conductors	Allow the flow of electricity (usually metals)
Current	The word we use to describe how quickly the electricity is moving around the circuit.
Insulators	Prevent the flow of electricity. Used to protect us from electric shocks.
Lamp	Used to turn electrical energy into light and heat energy.
Motor	A device that changes electrical energy into movement.
Physics	The study of forces including electricity and the way it affects objects.
Series circuit	A loop of wire containing at least a cell and other components.
Socket	A device on a wall that you can plug electrical equipment into.
Voltage	The pushing force which pushes electricity around the circuit from the cell/battery.
Wire	A long thin piece of metal that carries an electrical current often covered in plastic for safety.

Electrical Conductors	Electrical Insulators
Copper	Rubber
Iron	Wood
Steel	Plastic
Silver	Paper
Gold	

Key Questions

What is electricity?
Electricity is an energy. This energy can be used to power electrical items such as toasters, televisions, kettles and computers. An electric current is the flow of **electrons** around a circuit. Static electricity is the **build-up** of electrons on an **insulator**.

Which materials are electrical insulators and which are electrical conductors?
Some materials let electricity pass through them easily. These materials are known as **electrical conductors.**

Many **metals,** such as **copper, iron and steel,** are good **electrical conductors.** That is why the parts of electrical objects that need to let electricity pass through are always made of metal.

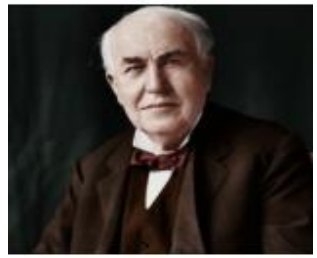
Some materials do not allow electricity to pass through them. These materials are known as **electrical insulators.**

Plastic, wood, glass and **rubber** are good **electrical insulators.** That is why they are used to cover materials that carry electricity.

The plastic covering that surrounds wires is an electrical insulator. It stops you from getting an electrical shock.

Important Scientist

Thomas Edison (1847-1931)
He lived in the state of New Jersey in the United States of America (USA) He is known as one of the greatest inventors in history. He invented the light bulb, the phonograph

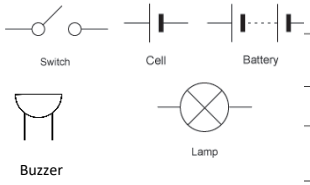


(which could record and play sound) and an early video camera called the Kinetograph. The films were then watched on a Kinetoscope which he also invented.

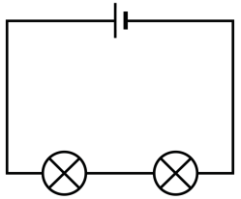
Robert Noyce (1927-1990)
Co-invented the silicon chip which is in all computers.

Hedy Lamarr (1913-2000)
A movie star who also developed World War II communication technology.

Components of a circuit



Simple series circuit



Common electrical hazards

1. Overloading a plug extension socket.
2. Exposed wires.
3. Damaged wall sockets.
4. Wires left along the carpet for people to trip over.
5. Placing metal into electrical appliances or open sockets.
6. Electrical appliances and wires near water.

NOTE: WATER IS AN EXCELLENT ELECTRICAL CONDUCTOR SO IT CAN BE VERY DANGEROUS TO HAVE ELECTRICAL DEVICES NEAR WATER