

Electricity

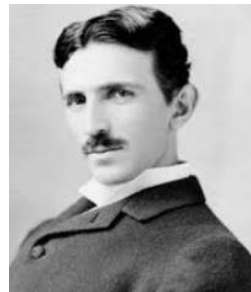
Electricity is an energy. Electrical energy is caused by electrons (the particles in atoms) moving about to make a current. Electricity is created by generators which can be powered by gas, coal, oil, wind or solar. The electrical energy can be converted into other types of energy such as light, heat, movement or sound.

Key facts

- Adding more bulbs to a complete circuit or using a battery with a higher voltage can affect the brightness of a bulb, the speed of a motor and the sound of a buzzer.
- Turning a switch off can break a circuit so the circuit is incomplete and electricity cannot flow.
- Recognised circuit symbols can be used to draw circuit diagrams.
- Electricity travels at the speed of light - more than 186,000 miles per second!
- A bolt of lightning can measure up to three million (3,000,000) volts, and it lasts less than one second!
- Thomas Edison (inventor of the light bulb) invented more than 2,000 new products, including almost everything needed for us to use electricity in our homes: switches, fuses, sockets and meters.
- The largest source of electrical energy today comes through the use of coal. The burning of coal boils water that turns to steam and then spins turbines that are connected to generators. Coal is not good for the environment as it creates pollution.
- Static electricity is another type of electricity which happens when an electrical charge builds up on the surface of an object.

Nikola Tesla

There are two types of electric currents that can be generated: alternating current and direct current. Tesla contributed to the development of alternating current (AC) electricity supply over a hundred years ago – it is the electrical system used to get power to your home.



Key Vocabulary

Atoms	An atom is the smallest amount of a substance that can take part in a chemical reaction. Atoms are extremely small and are made up of a few even smaller particles. Atoms fit together with other atoms to make up matter.
Battery	A collection of one or more cells whose chemical reactions create a flow of electrons in a circuit.
Cell	A device that delivers an electric current as the result of a chemical reaction
Component	The components of something are the parts that it is made of. E.g. components that make up part of a circuit can be a bulb or wire.
Electrical current	A flow of electric charge. In electric circuits this charge is often carried by moving electrons in a wire.
Electron	A tiny particle of matter or energy that has a negative electric charge.
Filament	The thin wire inside a light bulb that emits light.
Fuse	A safety device in an electric plug or circuit. It contains a piece of wire which melts when there is a fault so that the flow of electricity stops.
Incandescent light bulb	A source of electric light in which the emission of light is caused by heating the filament.
Insulated	when something is protected from the cold or noise by covering it or surrounding it in a thick layer.
Renewable	Can be used again or generated again.
Solar Power	Energy obtained from the sun's light and heat.
Voltage	A kind of electrical force that makes electricity move through a wire and we measure it in volts. The bigger the voltage, the more current will tend to flow.