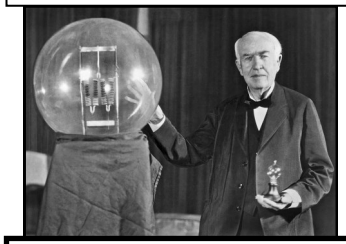
SCIENCE: YEAR 4 – ELECTRICITY

Key Vocabulary

Appliance	A piece of equipment or device designed to perform a particular job, such as a washing machine or mobile phone
Battery	a container of one or more cells in which chemical energy is converted into electrical energy and used as a source of power
Bulb	a container of one or more cells in which chemical energy is converted into electrical energy and used as a source of power
Cell	a cell is a single unit used for converting chemical or solar energy into electricity.
Circuit	a complete route which an electric current can flow around.
Conductor	a substance that heat or electricity can pass through or along.
Component	the parts that something is made of.
Current	liquid or solid particles that fall from a cloud as rain, sleet, hail or snow.
Electricity	a form of energy that can be carried by wires and in used for heating and lighting, and to provide power for devices
Insulator	a non-conductor of electricity or heat
Non-renewable	This source of energy will eventually run out and so will no longer be able to be used to make electricity. These include fossil fuels – coal, oil and natural gas.
Renewable	A source of electricity that will not run out. These include solar, nuclear, geothermal, hydro and wind.

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



Thomas Alva Edison

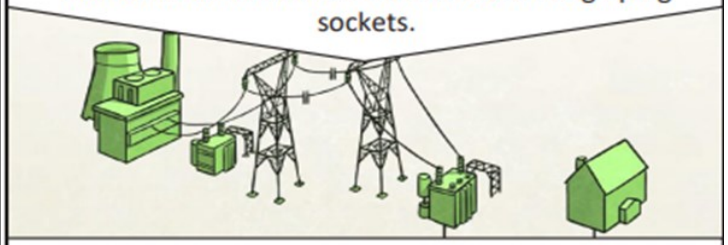
1847-1931

was a famous American inventor. He is best known for inventing 'domestic' lightbulbs to go in houses, and the electric power system that allows them to work.

Key Information

There are two types of electric current.

Mains electricity: power stations send an electric charge through wires to transformers and pylons. Then, underground wires carry the electricity into our homes via wires in the walls and out through plug sockets.

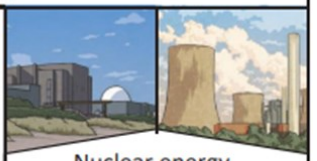


Battery electricity: batteries store chemicals which produce an electric current. Eventually, even rechargeable batteries will stop producing an electric current.

Lightning and static electricity are examples of electricity occurring naturally but for us to use electricity to power appliances, we need to make it.

Coal, oil and natural gases are fossil fuels which, when burnt, produce heat which can be used to generate electricity.

Electricity can be generated from wind power used to turn windmills and hydroelectric power from water used in dams. The Sun's rays can be converted into electricity by solar panels.



Nuclear energy is created when atoms are split. This creates heat which can be used to generate electricity. Geothermal energy is heat from the Earth that is converted into electricity.