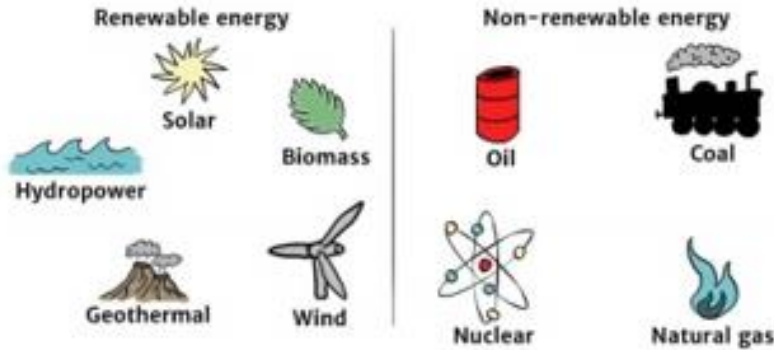


P3 Energy Resources

Nuclear power, biofuels and renewable resources provide energy to generate some energy we use.

Biofuels are renewable sources of energy. Methane and ethanol can be used to generate electricity. Considered to be 'Carbon Neutral'



Fossil fuels produce increased levels of greenhouse gases (CO₂ etc) which could cause global warming. Coal is used for 'Base Load'

Nuclear fuels produce radioactive waste. Uranium or plutonium is used as the fuel in a nuclear power station. No CO₂ emissions.

Renewable energy resources are replenished as quickly as they are used, they do not produce harmful waste products and they can be used in remote places. They can be disruptive to natural habitats.

P4 Electrical Circuits

An atom is made up of **electrons** (negatively charged), **Protons** (positively charged) and **Neutrons** (uncharged).

Electrons are transferred when objects become **charged**. Like charges repel, unlike charges attract.

The force between two charged objects is a **non-contact force**.

A **battery** consists of two or more **cells** connected together.

Equation for the **electric current** in a circuit is: $I = Q / t$

Ohm's law states that the current through a resistor is **directly proportional** across the resistor.

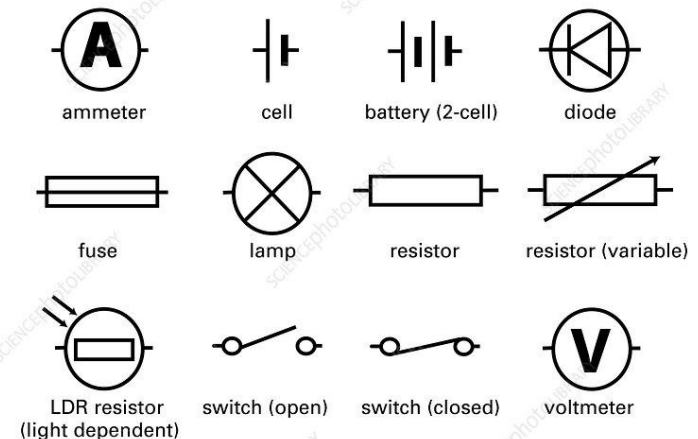
Equation for the **resistance** of an appliance is: $R = V / I$

A **Thermistor** resistance decreases if its temperature increases. An

LDR's resistance decreases if the light intensity on it increases.

Diode: forward resistance low; reverse resistance high.

Circuits can be in **series** or **parallel**.



Vocabulary:

Biofuel - any fuel taken from living or recently living materials, such as animal waste

Carbon-neutral - a biofuel from a living organism that takes in as much carbon dioxide from the atmosphere as is released when the fuel is burned

Geothermal energy - energy released by radioactive substances deep within the Earth

National grid - the network of cables and transformers used to transfer electricity from power stations to consumers (i.e., homes, shops, offices, factories etc.)

Nuclear fuel - substance used in nuclear reactors that releases energy due to nuclear fission

Renewable energy - energy from natural sources that is always being replenished so it never runs out

Diode - a non-ohmic conductor that has a much higher resistance in one direction (its reverse direction) than in the other direction (its forward direction)

Electric field - a charged object (X) creates an electric field around itself, which causes a non-contact force on any other charged object in the field

Electrons - tiny negatively charged particles that move around the nucleus of an atom

Light-dependent resistor (LDR) - a resistor whose resistance depends on the intensity of the light incident on it

Light-emitting diode (LED) - a diode that emits light when it conducts

Series - components connected in a circuit in such a way that the same current passes through them

Parallel - components connected in a circuit so that the potential difference is the same across each one

Videos



Quizzes

