

### SP12a Magnets and magnetic fields

Word	Pronunciation	Meaning
core		The innermost part of something e.g. the central part of the Earth.
induced magnet		A piece of material that becomes a magnet because it is in the magnetic field of another magnet.
magnetic field		The area around a magnet where it can affect magnetic materials or induce a current.
magnetic material		A material, such as iron, that is attracted to a magnet.
permanent magnet		A magnet that is always magnetic, such as a bar magnet.
plotting compass		A small compass used to find the shape of a magnetic field.

### SP12b Electromagnetism

Word	Pronunciation	Meaning
electromagnet		A magnet made using a coil of wire with electricity flowing through it.
solenoid		A coil of wire with electricity flowing in it. Also called an electromagnet.
temporary magnet		A magnet that is not always magnetic, such as an electromagnet or an induced magnet.

### SP12c Magnetic forces

Word	Pronunciation	Meaning
carbon brush		A block of carbon that makes electrical contact between a circuit and a moving object such as a slip ring or commutator.
Fleming's left-hand rule		A way of remembering the direction of the force when a current flows in a magnetic field. The thumb shows the direction of the force, the first finger shows the direction of the magnetic field (N to S) and the second finger shows the current (+ to -).
magnetic flux density		A way of describing the strength of a magnetic field. It is measured in teslas (T).
motor effect		The force experienced by a wire carrying a current that is placed in a magnetic field.
split-ring commutator		A device attached to the rotating coil of a motor that makes electrical contact with an external circuit. A commutator switches over the connections every half-turn of the coil.
tesla (T)		The unit for magnetic flux density, also given as newtons per ampere metre (N/A m).

## SP13a Electromagnetic induction

Word	Pronunciation	Meaning
<b>alternating current (a.c.)</b>		Current which changes direction many times each second.
<b>alternator</b>		A generator that produces alternating current.
<b>carbon brush</b>		A block of carbon that makes electrical contact between a circuit and a moving object such as a slip ring or commutator.
<b>commutator</b>		A device attached to the rotating coil of a generator that makes electrical contact with an external circuit. A commutator switches over the connections every half-turn of the coil so the output is a form of direct current.
<b>diaphragm</b>		A thin sheet of flexible material.
<b>direct current (d.c)</b>		Current that always flows in the same direction.
<b>dynamo</b>		A generator that uses a commutator to change its output from alternating current to direct current.
<b>generator</b>		A machine that produces electricity by rotating coils of wire in a magnetic field (or by rotating magnets near a coil of wire).
<b>induce</b>		To create. For example, a wire in a changing magnetic field has a current induced in it.
<b>loudspeaker</b>		A machine for converting changes in electrical current or voltage into sound waves.
<b>microphone</b>		A machine for converting sound waves into changes in electrical current or voltage.
<b>potential difference (p.d.)</b>		The difference in the energy carried by electrons before and after they have flowed through a component. Another term for voltage.
<b>slip ring</b>		Metal rings connected to the rotation coil in a generator. They make electrical contact with an external circuit.
<b>voltage</b>		The difference in the energy carried by electrons before and after they have flowed through a component. Another term for potential difference.

**SP13b The national grid**

Word	Pronunciation	Meaning
<b>national grid</b>		The system of wires and transformers that distributes electricity around the country.
<b>primary coil</b>		The coil in a transformer to which the electricity supply is connected.
<b>secondary coil</b>		The coil in a transformer where the changed voltage is obtained.
<b>step-down transformer</b>		A transformer that reduces the voltage.
<b>step-up transformer</b>		A transformer that increases the voltage.
<b>transformer</b>		A device that can change the voltage of an electricity supply.
<b>transmission lines</b>		The wires (overhead or underground) that take electricity from power stations to towns and cities.

**SP13c Transformers and energy**

Word	Pronunciation	Meaning
<b>coulomb (C)</b>		The unit of electric charge. One coulomb is the charge that passes a point in a circuit when there is a current of 1 ampere for 1 second.
<b>power</b>		The amount of energy (in joules, J) transferred every second. It is measured in watts (W).