Magnetism Key Terms
On-level Physics

The following are the terms you should be familiar with in order to properly complete this unit. You are expected to be able to define each as well as apply these terms in any situation during this and subsequent units of study.

magnetism - The ability to produce a magnetic field and attract magnetic materials; caused by moving electric charges.

magnetic domain - A microscopic cluster of atoms with aligned magnetic fields, the entire cluster then behaves as a tiny magnet.

magnet - Any object that has the ability to produce a magnetic field. Will attract objects containing iron, cobalt, or nickel.

magnetic pole - The region on a magnet where the magnetic field is strongest. The earth's geographic north is actually a south magnetic pole.

magnetic field - A force field that exists in the space surrounding every magnet or current carrying wire.

electromagnet - A strong, short-lasting magnet that can be made by inserting iron into a wire coil that is conducting an electric current.

electromagnetic induction - The phenomenon of inducing a voltage in a conductor by changing the magnetic field near the conductor.

electric motor - A machine that produces mechanical energy through the interaction of a stationary magnetic field and a current carrying coil of wire.

generator - Machine that produces electric current, usually by rotating an a coil of wire within a stationary magnetic field.

superconductor - Material that has infinite conductivity at very low temperatures (~0 - 100 K), so that charge flows through it without resistance.

transformer - A device for increasing or decreasing voltage through electromagnetic induction.

compass – a device composed of a magnetized needle used to indicate north/south direction due to the earth's magnetic field.

Faraday's Law – an electric field is induced in any region of space where a magnetic field is changing with time. The induced voltage in a wire coil is proportional to the number of loops in the coil and the rate at which the magnetic field changes within the coil.