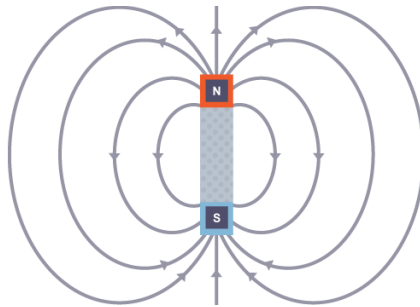
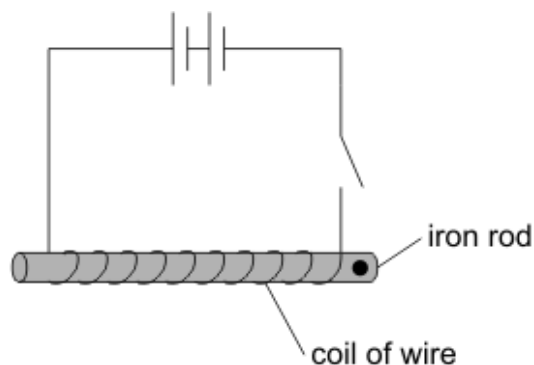


## Year 7: Electricity and Magnetism

- Current is a movement of electrons and is the same everywhere in a series circuit.
- Current divides between loops in a parallel circuit, combines when loops meet, lights up bulbs and makes components work.
- Magnetic materials, electromagnets and the Earth create magnetic fields which can be described by drawing field lines to show the strength and direction. The stronger the magnet, and the smaller the distance from it, the greater the force a magnetic object in the field experiences.
- Two 'like' magnetic poles repel and two 'unlike' magnetic poles attract.
- Field lines flow from the north-seeking pole to the south-seeking pole.



- An electromagnet uses the principle that a current through a wire causes a magnetic field. Its strength depends on the current, the core and the number of coils in the solenoid.



### Keywords

**Core:** soft iron metal which the **solenoid** is wrapped around.

**Current:** flow of electric charge, in **amperes (A)**. (Amps)

**Electrical conductor:** a material that allows current to flow through it easily, and has a low resistance.

**Electrical insulator:** a material that does not allow current to flow easily, and has a high resistance.

**Electromagnet:** a non-permanent magnet turned on and off by controlling the electrical current through it.

**In parallel:** if some components are on separate loops.

**In series:** if components in a circuit are on the same loop.

**Magnetic force:** non-contact force from a magnet on a magnetic material.

**Magnetic poles:** the ends of a magnetic field, called north-seeking (N) and south-seeking poles (S).

**Permanent magnet:** an object that is magnetic all of the time.

**Solenoid:** wire wound into a tight coil, part of an electromagnet.