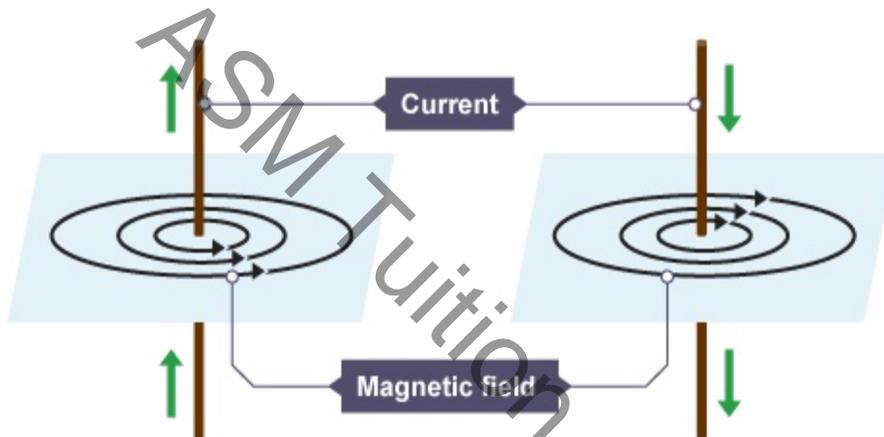


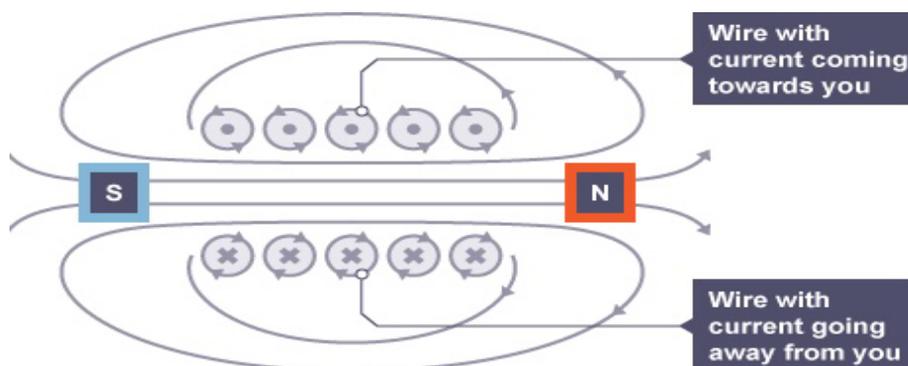
Electromagnet

- When a current flows in a wire, it creates a circular magnetic field around the wire.
- This magnetic field can deflect the needle of a magnetic compass.
- The strength of the magnetic field is greater:
 - closer to the wire
 - if the current is increased



Solenoids- Electromagnet

- A solenoid consists of a wire coiled up into a spiral shape.
- When an electric current flows, the shape of the magnetic field is very similar to the field of a bar magnet.
- The field inside a solenoid is strong and uniform.
- The small magnetic fields caused by the current in each coil add together to make a stronger overall magnetic field.



Electromagnets

- ▶ A solenoid with an iron core is called an electromagnet. The iron core increases the solenoid's magnetic field strength.

A simple electromagnet is made by coiling wire around an iron nail.

- ▶ **Uses of Electromagnets**

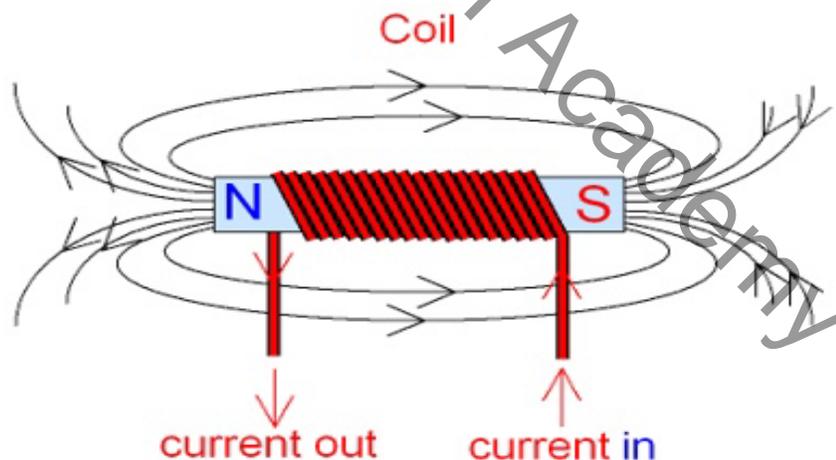
Electromagnets are used in devices such as electric bells, and door locks that can be controlled remotely.

- ▶ **Advantage of Electromagnet**

The advantage of using an electromagnet is that it can be turned on and off.

- ▶ **The strength of an electromagnet can be increased by:**

1. Increasing the number of turns of wire
2. Increasing the current flowing through the wire
3. Wrapping the wire around an iron core



P7: Magnetism and Electromagnetism

ASM Tuition Academy

Electromagnetism

A magnetic field exists around a wire that has electric current flowing through it. The field lines are concentric circles around the wire, and the field is strongest close to the wire.

Electromagnetism

