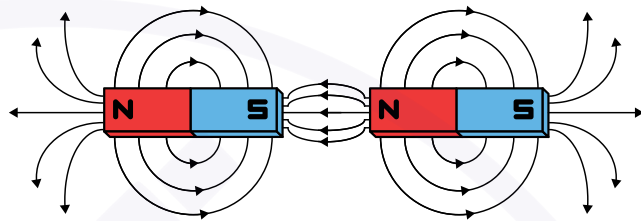
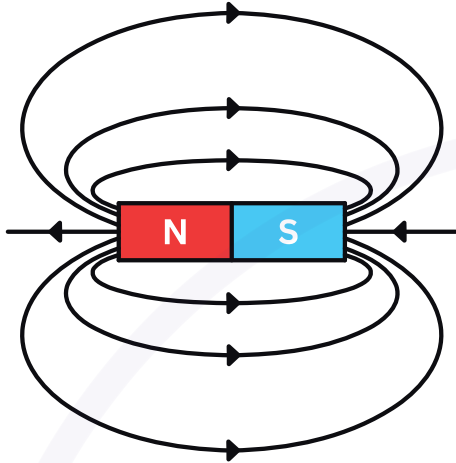


# MAGNETISM AND ELECTROMAGNETISM

## Key Concepts

- Magnets attract materials like iron, cobalt, and nickel.
- Electromagnets are magnets created by electricity.



## Key Facts to Remember

- Magnetic poles are north and south; opposite poles attract, like poles repel.
- Magnetic fields show the area of magnetic force around a magnet.
- Earth has a magnetic field, which protects us from solar wind.
- Electromagnets are made by passing current through a wire coil.
- Increasing the current or number of coils strengthens an electromagnet.
- Permanent magnets retain their magnetism; electromagnets do not.

## Quick Questions

1. Name two magnetic materials.
2. What are the two poles of a magnet?
3. What do like poles do?
4. What creates an electromagnet?
5. How can you make an electromagnet stronger?
6. What is a magnetic field?
7. Are electromagnets permanent?
8. What protects Earth from solar wind?

## Fun Fact

**A magnetic field can make frogs levitate in strong enough conditions!**