

# Edexcel Physics IGCSE

## Chapter 6: Magnetism and Electromagnetism Practical Notes



## Investigate the Magnetic Field Pattern for a Permanent Bar Magnet and Between Two Bar Magnets

### Equipment

- Bar magnets
- Iron filings
- Paper
- Plotting compass

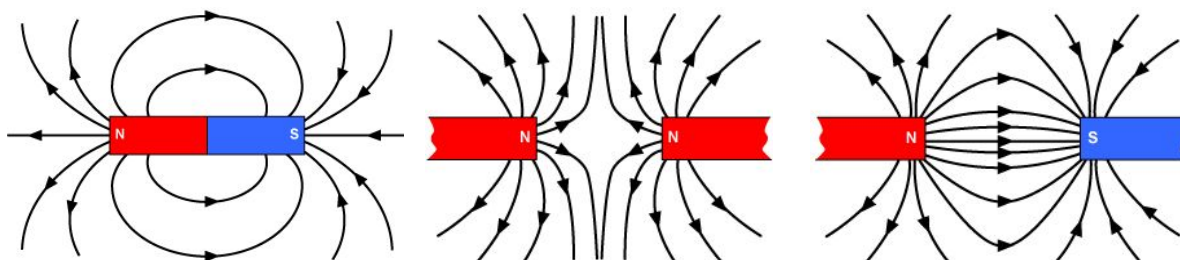
### Method 1: Iron Filings

1. Sprinkle some iron filings onto a sheet of paper.
2. Place the permanent bar magnet onto the paper and the filings should move into the shape of the magnetic field.
3. Repeat this with two permanent bar magnets placed a short distance apart.
  - Experiment with placing like poles and unlike poles facing each other.

### Method 2: Plotting Compass

1. Place the permanent bar magnet onto a plain piece of paper.
2. Place the plotting compass somewhere around the field and then draw the direction of the needle at that point.
3. Continue placing the needle in various positions on the paper and drawing arrows.
4. Join the arrows when there are enough to visualise the field.
  - The arrows should show that the field lines go from the north pole to the south pole.
5. You can also try this with two permanent bar magnets placed a short distance apart.
  - Experiment with placing like poles and unlike poles facing each other.

### Diagram



[Images: Magic of Magnetism](#)

### Notes:

- Iron filings can act as an irritant and so you should prevent them coming into contact with your skin and wear safety glasses to avoid them coming into contact with your eyes.

