

Poles of a Magnet

Chapter 4: Exploring Magnets · Topic 2

Key Concept

If a bar magnet is cut in half, each half will form a new, complete magnet with its own north and south pole — magnetic poles cannot exist alone. This is different from electric charges, where positive and negative charges can be separated. The poles of a magnet can be identified using a compass: a compass needle's north-seeking end will point away from a magnet's north pole and towards its south pole, since it is itself a small magnet responding to the larger magnet's field.

Quick Revision Notes

- Every magnet has a north pole and a south pole.
- Like poles repel; unlike poles attract.
- Cutting a magnet in half creates two new magnets, each with both poles.
- A compass needle can be used to identify a magnet's poles.

Practice Questions

- 1 What happens when the south pole of one magnet meets the north pole of another?
- 2 Explain why magnetic poles cannot be separated by cutting a magnet.
- 3 Describe how you could use a compass to find the poles of an unlabelled bar magnet.