MR SULLY UNFOLDS PHYSICS

Magnets and magnetic fields

AQA 4.7.1
Magnetism · Paper 2
Foundation & Higher

Name _____ Class _____ Date _____

Magnets exert forces on each other and on magnetic materials, without touching. The region where this happens is a **magnetic field**.

KEY IDEAS

- Like poles repel; unlike poles attract. Magnetic materials: iron, steel, cobalt and nickel.
- A **permanent magnet** produces its own field. An **induced magnet** becomes magnetic only in a field, and always attracts.
- Field lines go from north to south and are closest together at the poles, where the field is strongest.

Section A · Recall

Grade 4–5

1 Name the four magnetic elements and alloys you need to know. [2]

2 What happens when two north poles are brought together? [1]

3 Describe two differences between a permanent magnet and an induced magnet. [2]

Section B · Fields

Grade 5–6

4 Draw the magnetic field pattern around a bar magnet. Show the direction of the field. [3]



5 Describe how to plot the magnetic field of a bar magnet using a small compass. [3]

Section C · Stretch

Grade 7+

6 Explain why a compass needle points north, and what this tells us about the Earth. [3]

Exam-style question

AQA style

7 A student holds an iron nail near a bar magnet. The nail attracts some paper clips.

a Explain why the nail can attract the paper clips. [2]

b The bar magnet is removed. Describe and explain what happens to the paper clips. [2]

c State where the magnetic field of the bar magnet is strongest. [1]

Total: _____ / 19

How confident am I?	Not yet	Nearly	Got it
I can describe permanent and induced magnets	☐	☐	☐
I can draw field lines around a bar magnet	☐	☐	☐
I can explain how a compass works	☐	☐	☐