

Combined science - Physics

Key stage 4 - Magnetism

# Magnetic Fields

Mr van Hoek



# Independent Task

Write a method to explain how to plot the magnetic field of a bar magnet.

Use these keywords to help you: **plotting compass, tail, pointer, mark**

The first couple of sentences have been started for you

1. *Put a bar magnet in the middle of .....*
2. *Draw around ....*
3. *Mark a dot by .....*
4. *Place a plotting compass on the dot so that .....*
- 5.
- 6.



# Independent Task 2

Draw the shape of a magnetic field for a bar magnet.



# Independent practice

1. Draw the magnetic field between two bar magnets that would attract each other.

1. Draw the magnetic field between two bar magnets that would repel each other.



# Independent practice

3. Describe the shape of the Earth's magnetic field.

4. Identify where the north magnetic pole and south magnetic pole of the Earth are found (roughly).



# Exam question

Two students, A and B, use different methods to see magnetic field patterns.

i) Describe how student A can use a compass to plot a magnetic field pattern.

You may draw a diagram to help you answer this question.

ii) Student B uses iron filings to show a magnetic field pattern.

Describe how student B uses iron filings to show a magnetic field pattern.

You may draw a diagram to help you answer this question.

*OCR, Specimen, J249/01*

*Additional answers and guidance not checked by OCR*



# Exam question

Sketch the field pattern around a bar magnet.



*OCR, Specimen, J249/01*

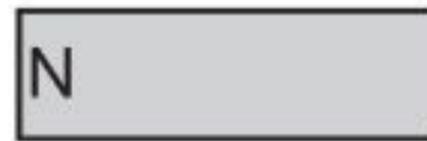
*Additional answers and guidance not checked by OCR*



# Exam style question

Draw the magnetic field pattern between the North and South poles of the magnets.

Include arrows on your field lines.



# Exam question

The behaviour of a magnetic compass is evidence that the core of the Earth is magnetic. Explain why.

*OCR, June 2018, J249/01*

*Additional answers and guidance not checked by OCR*

