Nova’s Magnetic Mysteries: Investigating Invisible Forces

Learning objective: To explain the properties of magnets, identify magnetic materials, and describe how magnetic poles interact.

Use this scaffold to construct a scientific report on your investigations with magnets. Use the word bank to help you build complex sentences and justify your scientific findings.

Magnets are fascinating objects that exert an invisible force, which can attract or repel specific materials without needing to make physical contact.

Word bank: consequently · attract · repel · magnetic field · poles · ferrous · force · nevertheless · furthermore · hypothesise

1. Introduction: Define what a magnet is and state the purpose of your investigation. Start by saying: A magnet is a material that... (2 marks)

2. Materials: List the items you tested and categorise them into magnetic and non-magnetic. Start by saying: During my experiment, I discovered that... (2 marks)

3. Magnetic Poles: Explain what happens when you bring two magnets together. Start by saying: When two like poles are brought together, they... (3 marks)

4. The Magnetic Field: Describe the area around a magnet where the force is present. Start by saying: The magnetic field is the region where... (3 marks)

5. Evaluation: Explain why some materials are magnetic while others are not. Start by saying: It is evident that only certain metals, such as... (3 marks)

6. Conclusion: Summarise your findings and justify your answer regarding the importance of magnets in everyday life. Start by saying: To conclude, magnets are essential because... (3 marks)

Extension challenge: Nova the owl wants to know: What might happen if you cut a bar magnet in half? Justify your prediction using your knowledge of magnetic poles. Furthermore, compare and contrast the strength of a magnet at its poles versus its centre; how could you design a fair test to prove this?