Nova’s Magnetic Mysteries

Learning objective: To understand how magnets work, identify magnetic materials, and describe the behaviour of magnetic poles.

Read each question carefully and use your scientific knowledge to provide clear explanations. Remember to use the word bank to help you construct your answers.

Nova the barn owl is studying the invisible forces of the world. She has set up an experiment in the forest to test which objects are attracted to magnets and how magnets interact with one another.

Word bank: attract · repel · poles · magnetic field · iron · nickel · steel · force

1. Nova has a pile of items: a plastic button, an iron nail, a copper coin, and a steel paperclip. List which of these items will be attracted to a magnet. (2 marks)

2. Explain what happens when two magnets are brought together with their like poles (North and North) facing each other. (2 marks)

3. Nova notices that the force of a magnet is strongest at its ends. What are these ends called? (1 mark)

4. Describe what is meant by the term 'magnetic field' in your own words. (3 marks)

5. If Nova cuts a bar magnet in half, will she have one North pole and one South pole, or two separate magnets? Explain your reasoning. (2 marks)

Draw: Draw a diagram showing two bar magnets placed near each other. Use arrows to show the magnetic field lines, and label the poles to indicate whether the magnets are attracting or repelling.

Extension challenge: Research how a compass works. Write a short paragraph explaining how the Earth acts like a giant magnet and how this helps explorers navigate the globe.