

Nova's Magnetic Mystery Lab

Learning objective: To identify magnetic and non-magnetic materials and understand that magnets have two poles that can attract or repel.

Nova the Owl is exploring the forest floor! Help her sort the objects she has found into 'Magnetic' or 'Non-Magnetic'. Look at the list provided and place each item into the correct category. Then, use your knowledge of magnetic poles to answer the questions below.

Word bank: Attract · Repel · North Pole · South Pole · Magnetic · Iron · Steel · Non-magnetic

1. Nova finds a shiny paperclip, a wooden twig, a steel spoon, and a plastic leaf. Which of these items will be attracted to her magnet? Explain why you think this. (2 marks)

2. If Nova has two bar magnets and tries to push the North Pole of one against the North Pole of the other, what will happen? Use the word 'repel' in your answer. (2 marks)

3. Justify your answer: Why is it important that a compass needle is made from a magnetic material? (3 marks)

4. Compare and contrast: How does a permanent magnet differ from an everyday object like a piece of paper? (2 marks)

5. What might happen if you dropped a magnet into a bowl of mixed iron filings and sand? Describe the result. (2 marks)

6. If a magnet costs £1.50 and a set of iron washers costs 80p, how much would Nova spend in total? If she pays with a £5.00 note, how much change should she receive? (2 marks)

Draw: Draw a diagram of two bar magnets placed end-to-end. Label the poles (North and South) and draw arrows to show whether they are attracting or repelling each other.



Extension challenge: Design an experiment: If you were given a 'mystery' box containing various household items, how would you systematically test which items are magnetic? Write a step-by-step method for Nova to follow, using scientific vocabulary.