Nova’s Magnetic Investigations

Learning objective: To understand how magnets work, identify magnetic materials, and represent magnetic fields using field lines.

Use your scientific knowledge to complete the diagram and answer the questions below. Ensure your labels are clear and your drawings are neat.

Draw: Draw a scientific diagram showing two bar magnets placed end-to-end on a wooden table. Draw one scenario where the magnets are attracting each other, and another where they are repelling. Include a small pile of metallic objects (like paperclips or nails) near one magnet to show the magnetic force in action. Use clean, straight lines for the magnets and dashed curved lines to represent the magnetic field.

Label words: North Pole · South Pole · Magnetic Field · Attraction · Repulsion · Iron · Steel

Steps:

1. Label the poles on the two magnets if they are currently pushing each other away (repelling).
2. Draw lines of force (magnetic field lines) around one of the magnets, showing the direction from North to South.
3. Nova has a paperclip made of steel and a coin made of copper. Which one will be attracted to the magnet? Explain why.

4. What happens if you bring two 'North' poles together? Use the word 'repel' in your answer.
5. List two magnetic materials found in the word bank that you might find in a pencil case.