Year 3 Science Assessment: Magnificent Magnets

Learning objective: To demonstrate an understanding of magnetic forces, magnetic materials, and how magnets interact.

Read each question carefully. Use your scientific knowledge to answer in full sentences where required. Write your answers clearly.

Nova the barn owl is busy in her workshop. She is using a bar magnet to sort through a box of mixed items to see which ones are magnetic. She knows that magnets can exert a force on certain metals without even touching them.

Word bank: attract · repel · magnetic · non-magnetic · pole · force · iron · steel

1. Nova has a pile of objects: a plastic button, an iron nail, a wooden bead, and a steel paperclip. Which two items will the magnet attract? (2 marks) (2 marks)

2. Explain what happens when two magnets are placed with their like poles (North and North) facing each other. Use the word 'repel' in your answer. (2 marks) (2 marks)

3. If Max the monkey is using a magnet to pick up a coin, why might it not work if the coin is made of copper? (3 marks) (3 marks)

4. What is the difference between an object that is magnetic and one that is non-magnetic? Give an example of each. (4 marks) (4 marks)

5. Nova wants to know if the force of a magnet works through a wooden table. Describe how you would set up a fair test to find this out. (4 marks) (4 marks)

6. Imagine you are helping Kit the fox build a magnetic game. Write a short paragraph explaining how magnets help us in our daily lives. Think about how they are used in fridge doors, toys, or cupboards. (5 marks) (5 marks)

7. Name the two ends of a magnet. (2 marks) (2 marks)

8. If a magnet costs £1.50 and a set of iron washers costs £0.75, how much would they cost altogether? (3 marks) (3 marks)

Draw: Draw two bar magnets side-by-side that are attracting each other. Label the poles (North and South) and use arrows to show the direction of the force.

Extension challenge: Total: /25