

Nova's Magnetic Mystery Challenge

Learning objective: To identify magnetic materials, understand magnetic poles, and describe how magnets interact with each other.

Join Nova the owl on a scientific quest! Read each question carefully and select the best answer or write your explanation. Remember, Nova loves precise scientific vocabulary.

Answer Key: 1. A (Iron), 2. False, 3. Repel, 4. C (North and South), 5. True, 6. Magnetic, 7. B (The ends), 8. False, 9. Attraction, 10. True. Greater Depth Analysis: Magnets exert a non-contact force. If a material contains iron, nickel, or cobalt, it is attracted to a magnet. Opposing poles (North/South) attract, while like poles (North/North) repel.

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

1. Which of these materials is magnetic? A) Plastic, B) Iron*, C) Wood, D) Rubber (1 mark)

2. True or False: All metals are magnetic. (1 mark)

3. What is the scientific term for when two magnets push each other away? (1 mark)

4. Which combination of poles will attract each other? A) North and North, B) South and South, C) North and South*, D) None of these (1 mark)

5. True or False: A magnet can pull an object without touching it. (1 mark)

6. Is a steel paperclip magnetic or non-magnetic? (1 mark)

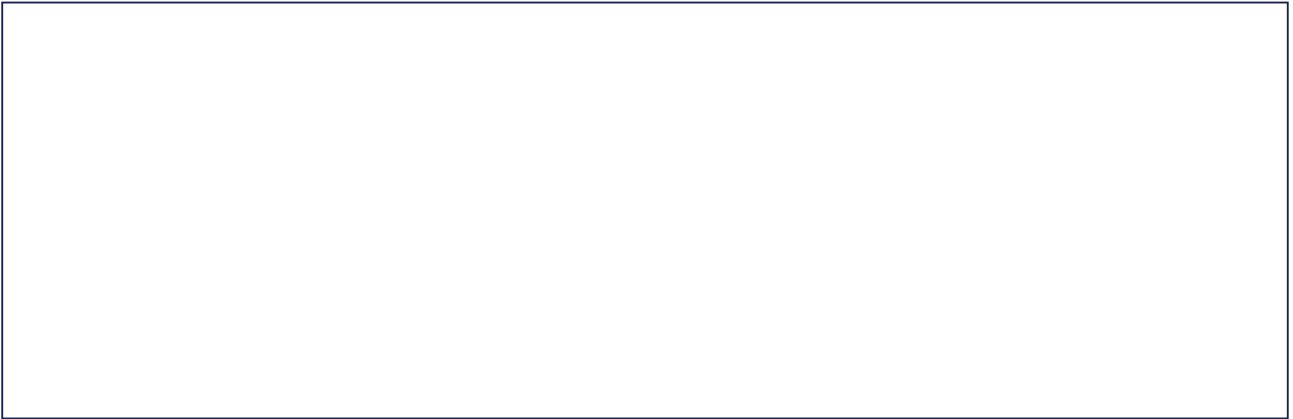
7. Where is the magnetic force the strongest on a bar magnet? A) In the middle, B) The ends*, C) It is the same everywhere, D) On the sides (1 mark)

8. True or False: Magnets only work if they are touching the object. (1 mark)

9. If you bring a North pole towards a South pole, what will you observe? (1 mark)

10. True or False: A compass uses a small magnet to help people find directions. (1 mark)

Draw: Draw a diagram showing two bar magnets side-by-side. Use arrows to show what happens when two North poles are facing each other, and label the 'force' being shown.



Extension challenge: 1. Explain why a wooden chair would not be attracted to a magnet. 2. Compare and contrast a permanent magnet with a temporary magnet. 3. Justify your answer: If you cut a bar magnet in half, what happens to the poles? 4. What might happen if you used a magnet near a laptop screen? 5. If you were designing a sorting machine for a recycling plant, how could you use magnets to separate materials? 6. Propose an experiment to test which magnet is the strongest in the classroom.