

Nova's Material Investigation Report

Learning objective: To compare and group together everyday materials on the basis of their properties, including hardness, solubility, transparency, conductivity, and response to magnets.

Use this scaffold to record your findings from your science experiment. Ensure you use scientific vocabulary to justify why certain materials were chosen for specific purposes.

After conducting a series of rigorous tests on a variety of household items, I have evaluated which materials are most suitable for Nova's new birdhouse design.

Word bank: transparent · translucent · opaque · conductive · insulating · soluble · permeable · durable · subsequently · furthermore · consequently · in contrast to

1. Introduction: State the aim of your investigation. Which materials did you choose to test and why did you select this specific range? (2 marks)

2. Methodology: Explain how you ensured your test was fair. What variables did you keep the same, and what did you change? (3 marks)

3. Observation: Describe the properties of the materials you tested. Use scientific terminology to explain if they were magnetic, soluble, or thermal conductors. (4 marks)

4. Comparison: Compare and contrast two of the materials. Why might one material be more suitable for an outdoor structure than the other? (4 marks)

5. Justification: Based on your results, justify why you would choose a specific material for the roof of the birdhouse. What might happen if you used a permeable material instead? (3 marks)

6. Conclusion: Summarise your findings. How do the properties of a material determine its everyday use? (2 marks)

Extension challenge: Imagine you have discovered a new, unknown material. Write a short paragraph describing its properties. How would you test if it is a thermal insulator or a conductor? What everyday object could be improved by using this new material, and why?