

# Investigating Material Properties: A Scientific Report

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

Use this scaffold to structure your scientific report about the materials you have tested. Ensure you use scientific vocabulary and clear, objective language.

In this investigation, Nova the owl and I set out to determine which materials are most suitable for building a waterproof shelter for a garden hedgehog.

*Word bank: consequently · furthermore · in contrast · observable properties · thermal conductivity · electrical insulator · permeable · soluble · opaque · transparent · magnetic*

**1. Introduction: State the aim of your investigation. Why is it important to understand the properties of materials before choosing them for a specific purpose? Start with: 'The aim of this experiment was to investigate...', (2 marks)**

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**2. Methodology: Describe the steps you took to test the materials. How did you ensure your test was fair? Start with: 'To ensure a fair test, I kept the following variables the same: ...' (3 marks)**

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**3. Results: Present your findings. Which material was the most effective for your purpose? Start with: 'The results showed that [material name] was the most effective because...', (3 marks)**

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**4. Scientific Reasoning: Explain the properties of the material you chose. Why did its physical properties make it the right choice? Start with: 'The material was suitable because it is [property] and has low...', (3 marks)**

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**5. Conclusion: Summarise your findings. Would you recommend a different material if the conditions changed? Start with: 'In conclusion, the investigation demonstrates that...', (2 marks)**

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*Extension challenge: Imagine you are building a bridge for Max the monkey. Write a paragraph explaining which material would be best for the bridge base, considering strength and flexibility, and how much it would cost if a square metre of your chosen material costs £12.50.*