

Nova's Material Investigation Report

Learning objective: To identify, describe, and compare the properties of everyday materials and justify their suitability for specific purposes.

Use this writing frame to document your scientific investigation. Think like Nova the owl—be precise, curious, and observant as you test different materials to see how they behave.

In this investigation, I am testing various materials to determine which is the most suitable for creating a protective shelter for a woodland creature.

Word bank: transparent · opaque · translucent · flexible · rigid · permeable · waterproof · absorbent · thermal conductor · durable · properties · suitability · consequently · furthermore · in contrast

1. Introduction: State the aim of your experiment and identify the specific materials you have selected. Use the sentence starter: The purpose of this investigation is to discover... (2 marks)

2. Observations: Describe the physical properties of each material you tested. Use the sentence starter: Upon close inspection, I observed that the [material name] is... (3 marks)

3. Testing Results: Explain how your materials reacted to the tests (e.g., strength, water resistance). Use the sentence starter: When the materials were subjected to the test, the [material name] performed... (3 marks)

4. Suitability: Compare and contrast the materials based on your findings. Use the sentence starter: Although the [material 1] was effective, the [material 2] was more suitable because... (4 marks)

5. Justification: Explain why a specific material is the best choice for the task. Use the sentence starter: I justify my conclusion by stating that... (3 marks)

6. Evaluation: What might happen if you replaced one of your materials with a completely different one? Use the sentence starter: If I were to substitute the chosen material with [new material], the results would change because... (4 marks)

Extension challenge: Design a 'Material Challenge' for your classmates. If you were building a bridge over a stream, which properties would be the most important to ensure safety? Write a persuasive paragraph explaining why 'strength' and 'waterproof' properties are not enough on their own.