

Nova's Material Investigation

Learning objective: To identify, compare, and group materials based on their properties, such as transparency, permeability, and hardness.

Nova the Owl is building a new stargazing nest! She has found a collection of items, but she needs to choose the right materials for the job. Sort the materials provided in the word bank into the correct property categories. Some materials might fit into more than one, so be ready to explain your choices!

Word bank: Glass · Wool · Rubber · Polythene · Metal · Cotton · Wood · Stone

1. 1. Which two materials from the list are transparent? Why is it important for Nova to use a transparent material for her nest's viewing window? (2 marks)

2. 2. Select one waterproof material and one absorbent material from the list. Explain why a waterproof material is better for the roof of a nest. (2 marks)

3. 3. If Nova wants to build a strong, hard base for her nest, which two materials would be the most suitable? Explain your reasoning. (2 marks)

4. 4. Is rubber a flexible or rigid material? Why is flexibility a useful property for certain parts of a nest? (2 marks)

5. 5. Imagine you are helping Nova. If you had to swap one of the materials for a different one that has a similar property, which swap would you make? Explain your choice. (2 marks)

Draw: Draw a design for Nova's new stargazing nest. Label the different parts of the nest (like the roof, the window, and the base) and write down which material you have chosen for each part.



Extension challenge: Research a 'thermal insulator'. How could Nova use an insulating material to keep her nest warm during a chilly autumn night? Write a short sentence explaining your idea.