

Year 4 Science Assessment: Properties of Materials

Learning objective: To identify, describe, and compare the suitability of a variety of everyday materials based on their properties.

Read each question carefully. Write your answers clearly in the spaces provided. Remember to use scientific vocabulary where possible.

Max the monkey is helping his friend Bea the bee build a new shelter in the meadow. They need to choose the best materials to keep the shelter dry, strong, and warm for the winter. They have a pile of items including cotton fabric, a plastic sheet, a metal tray, a glass jar, and a wooden plank.

Word bank: transparent · opaque · translucent · flexible · rigid · waterproof · absorbent · thermal conductor · insulator

1. Max needs a material for the roof that is waterproof to keep the rain out. Name one material from the passage that would be suitable and explain why. (2 marks) (2 marks)

2. Bea wants to see inside the shelter. Which material from the passage should she use for a window? Is this material transparent, translucent, or opaque? (2 marks) (2 marks)

3. Why is a metal tray a poor choice for the floor of the shelter if they want to keep the insects inside warm? (3 marks) (3 marks)

4. If Max wants to make a soft bed for the shelter, he chooses cotton fabric. Describe two properties of cotton that make it different from the wooden plank. (4 marks) (4 marks)

5. Define the term 'thermal insulator' and give one example of a material that would act as a good insulator for Bea's shelter. (4 marks) (4 marks)

6. Nova the owl is designing a new birdhouse. She needs to choose between using a thin plastic sheet or a thick wooden board for the walls. Write a paragraph explaining which material is most suitable. You must refer to the strength, durability, and insulation properties of the materials. (5 marks) (5 marks)

7. Max finds a mystery object. He pours water on it and the water soaks straight through. What property does this material have? (1 mark) (1 mark)

8. If Max buys a roll of waterproof fabric for £4.50 and a pack of wooden pegs for £1.25, how much does he spend in total? (4 marks) (4 marks)

Draw: Draw a diagram of a simple experiment you could conduct to test if a material is waterproof. Label the materials you would use.



Extension challenge: Total: /25