Nova’s Material Investigation

Learning objective: To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper, and cardboard, for particular uses.

Read each question carefully and use your knowledge of material properties to help Nova the owl choose the best items for her experiments.

Nova is preparing her forest laboratory. She needs to choose the right materials to keep her equipment safe, dry, and organised. Think about the properties of different materials to help her decide.

Word bank: transparent · waterproof · flexible · rigid · absorbent · durable · opaque

1. Nova wants to build a small shelter to keep her telescope dry. Why would she choose plastic or metal instead of cardboard? Explain your answer using the word 'waterproof'. (2 marks)

2. Nova has a collection of glass jars to store her specimens. If she wants to see what is inside without opening them, which property of glass is most helpful? (1 mark)

3. Max the monkey wants to make a bridge between two trees. Why is wood a better material for this than paper? (2 marks)

4. If Nova accidentally spills water on her desk, which material would be best to clean it up: a metal spoon, a plastic bowl, or a paper towel? Why? (2 marks)

5. Look at these items: a metal key, a wooden ruler, and a rubber band. Which one of these is 'flexible'? Describe what happens when you try to bend it. (2 marks)

Draw: Draw a picture of a birdhouse built for Nova. Label the materials you have used (e.g., wood, glass, metal) and explain why you chose each one for that part of the birdhouse.

Extension challenge: Nova found a mystery object in the forest. It is shiny, hard, and sinks in water. Write down three questions Nova could ask to find out what the material is.