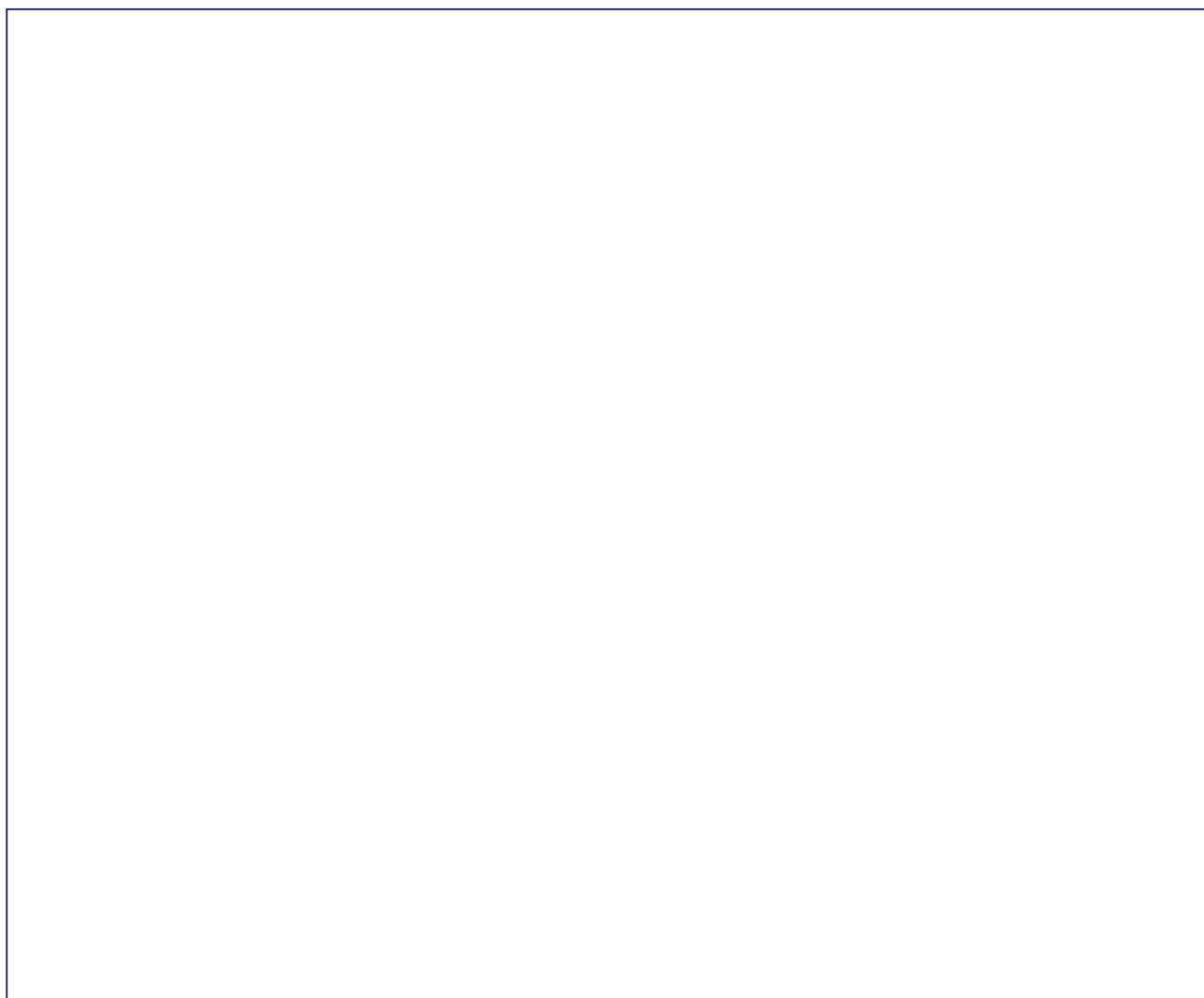


Nova's Material Investigation Station

Learning objective: To identify and compare the properties of everyday materials based on their transparency, thermal conductivity, and electrical conductivity.

Nova the Owl is setting up an experiment to test different items for her woodland laboratory. Use your scientific knowledge to draw and label the items based on the properties listed below.

Draw: Draw a laboratory workbench inside an oak tree. On the bench, include: 1) A metal bolt (label as a conductor), 2) A plastic water bottle (label as transparent and waterproof), 3) A woollen scarf (label as a thermal insulator), and 4) A wooden ruler (label as rigid). Use clear, scientific labels with arrows pointing to the relevant parts of each object.



Label words: Transparent · Opaque · Thermal Insulator · Electrical Conductor · Flexible · Rigid · Waterproof

Steps:

1. Explain why a metal spoon would be a poor choice for stirring a hot cup of tea if you wanted to avoid burning your hand. Refer to thermal conductivity in your answer.
2. Compare and contrast a glass window and a wooden door. Which property makes them suitable for their specific purposes in a house?
3. Justify your answer: If you were designing a raincoat for Finn the Dolphin to wear on land, why would 'waterproof' be a more important property than 'transparency'?

4. What might happen if the electrical wires inside a household lamp were made of plastic instead of copper?
5. Label your drawing to show which items are magnetic and which are non-magnetic. How can you test this?
6. Choose one object you have drawn. If you changed its material (e.g., a paper umbrella), how would its effectiveness change?