

Nova's States of Matter Investigation Record

Learning objective: To identify and describe the properties of solids, liquids, and gases, and observe how materials can change state.

Join Nova the owl in her laboratory! Choose three different materials from around your classroom or home—one solid, one liquid, and one gas (if possible). Observe them carefully and use this record to describe their properties. Remember to think about whether they keep their shape or can be poured.

Word bank: solid · liquid · gas · particles · pour · shape · flow · fixed · volume · container

1. Material Observation: Identify your chosen material and state whether it is a solid, liquid, or gas. Describe how it looks and feels. (2 marks)

2. Properties Check: Does the material keep its own shape, or does it take the shape of the container it is in? Explain why. (2 marks)

3. Particle Pondering: If you could zoom in to see the particles, how do you think they would be moving? Are they packed tightly or far apart? (2 marks)

4. State Change: Can this material change into a different state of matter? For example, can it be frozen or heated to change form? (2 marks)

5. Nova's Challenge: If you poured a liquid onto a flat surface, would it stay in a pile or spread out? Use your scientific knowledge to explain your answer. (2 marks)

Extension challenge: Choose one of your materials and write a short poem or paragraph from the perspective of a single particle inside it. Describe how crowded or free you feel!