

Nova's States of Matter Investigation Record

Learning objective: To identify, describe, and compare the properties of solids, liquids, and gases.

Help Nova the owl record her findings from her laboratory experiments. Observe the materials you have been given and fill in the boxes below to describe their properties. Remember to use scientific vocabulary to explain how the particles behave in each state.

Word bank: solid · liquid · gas · particles · fixed shape · flow · compress · vibrate · volume

1. Solid State: Choose a solid object from the classroom. Describe its shape, whether it can be squashed, and how the particles are arranged. (3 marks)

2. Liquid State: Describe what happens to the shape of a liquid when you pour it from a tall jug into a wide bowl. Does the amount of liquid change? (3 marks)

3. Gaseous State: Nova is observing steam rising from a kettle. Explain why gases spread out to fill their container and how they differ from solids. (3 marks)

4. Comparing States: If you had a block of ice (solid) and melted it into water (liquid), what has happened to the particles? Use the word 'energy' in your answer. (3 marks)

5. Challenge Question: Can you name one material that can behave like both a solid and a liquid? Explain your reasoning using evidence from your experiment. (2 marks)

Extension challenge: Research a 'non-Newtonian fluid' like cornflour and water. Write a short paragraph explaining why it doesn't fit neatly into the categories of solid or liquid.