



States of Matter

Gold

These Gold questions require explaining changes of state with reasoning about particles and everyday phenomena.

Name: _____ Date: _____

Section A: Particle Reasoning

1. Explain, using the idea of particles, why gases can be squashed but solids cannot.

2. Why does water expand slightly when it freezes into ice, unlike most other substances?

3. Explain why you can smell perfume from across a room - what does this tell you about gas particles?

4. A metal spoon left in hot tea gets warm. Explain how heat travels through the solid metal.

5. Explain why wet washing dries faster on a warm, windy day than a cold, still day.

Section B: Real-World Applications

1. Explain why weather forecasters need to understand evaporation and condensation.

2. Design an experiment to find out which liquid evaporates fastest: water, cooking oil, or vinegar. What would you measure?

3. Explain why de-icing a car windscreen works, in terms of changing state.

4. Why might a scientist study the freezing and boiling points of a new material before using it?

5. Explain the process of condensation forming on the outside of a cold glass on a warm day.

