

Nova's States of Matter Investigation

Learning objective: To identify, describe, and compare the properties of solids, liquids, and gases, and observe how they change state when heated or cooled.

Read each question carefully and use your scientific knowledge about materials to provide detailed answers. Use the word bank to help you with your spelling.

Word bank: solid · liquid · gas · particles · melt · freeze · evaporate · condense · fixed shape · flow

1. Nova has a block of ice, a cup of orange juice, and a balloon filled with air. Sort these into the correct state of matter categories: Solid, Liquid, or Gas. (3 marks)

2. Explain why a solid like a wooden block keeps its own shape, but a liquid like water takes the shape of the container it is poured into. (2 marks)

3. If you leave a puddle of water on the pavement on a sunny day, it eventually disappears. Name the process that is happening and explain where the water has gone. (2 marks)

4. Max the monkey wants to make a chocolate fountain. He needs to heat the solid chocolate to turn it into a liquid. What is the scientific name for this change of state? (1 mark)

5. Look at the following items: a metal spoon, steam from a kettle, and a bottle of milk. Which of these can be compressed (squashed) most easily? Why? (2 marks)

Draw: Draw three boxes. In the first, draw small circles packed tightly together to show the particles in a solid. In the second, draw the circles further apart to show a liquid. In the third, draw the circles far apart and spread out to show a gas.



Extension challenge: Nova wants to know what happens to water vapour when it touches a cold bathroom mirror. Write a short paragraph explaining the process of condensation using the word 'temperature'.