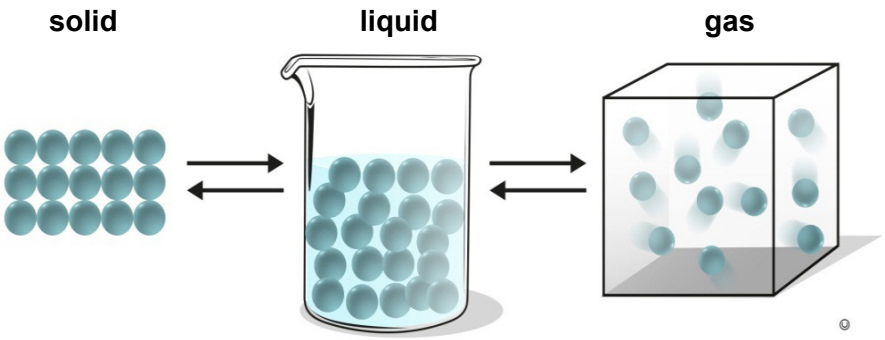
Applying the particle model of matter

Sheet 6

Instructions

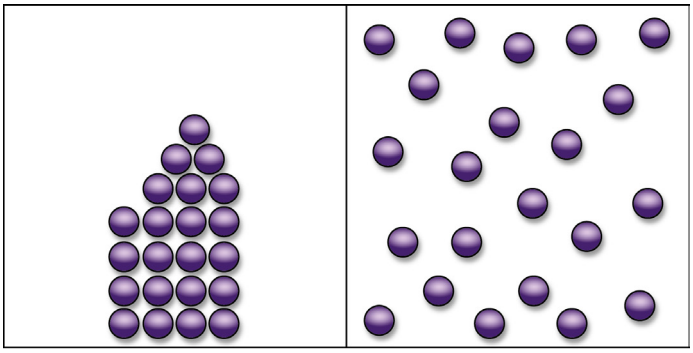
Complete the questions by referring to the particle model of matter. Use the representations of solids, liquids and gases shown below:



1. a. The diagram shows a before-and-after representation of a substance in a closed container. The boundary of the container is shown, and the spheres represent particles.

What change of state process is represented in the diagram below?

Before change of state **After change of state**



b. Use the particle model of matter to explain what has happened to the substance shown in the diagram.

2. Soft drinks contain bubbles of a gas called carbon dioxide. If the lid is left off the bottle of soft drink, it goes flat. Use the particle model to explain why this happens.

3. Brathen's mum often uses an air freshener in their family room because she loves the smell of roses. Brathen can smell the air freshener as soon as he enters the house. Use the particle model of matter to explain why.

4. Jaymee noticed that her washing dries more quickly when the temperature is 26 °C than when the temperature is 16 °C. Use the particle model of matter to explain her observation.

5. Callum's dad works in an air conditioned office. When his dad leaves the office on a hot, humid Queensland summer day, his glasses fog up. Explain the process that causes this to happen.

Department of Education and Training
Independent Learning Materials

Queensland Government

6. Peta's mum was making chocolate swirl pancakes for breakfast. To get the swirl effect, she stirs the chocolate sauce into the pancake mix before she cooks it. If she cooks the mixture straight away, the pancakes are stripy, but if she does not cook the pancakes straight away they do not have swirls. Use the particle model of matter to explain what happens in the mixture before cooking.

7. Why is it extremely dangerous to heat an unopened can of soup directly on a hotplate?