



## **Activity 1**

If a sample of ice is heated it melts, but while it melts it stays at  $0^{\circ}\text{C}$  and does not get any hotter until it has all melted.

In the same way, if a sample of water is heated it boils, while it boils it stays at  $100^{\circ}\text{C}$  and does not get any hotter until it has all boiled.

Explain why the temperature does not rise while ice melts and water boils even though it is being heated.

*If you are stuck – ask your teacher for a clue!*



# PARTICLE THEORY CIRCUS 1 INSTRUCTION CARDS

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## **Activity 2**

Decide whether each diagram represents the particles in a solid, liquid or gas.

Write "solid", "liquid" or "gas" in the box below each diagram.



## **Activity 3**

Here are the explanations. However, be careful because there are more than you need!

- The particles are slowed down by collisions with air particles.
- The particles can move around.
- The particles move slowly.
- The particles cannot move around.
- The particles are close together.
- The particles are a long way apart.



# PARTICLE THEORY CIRCUS 1 INSTRUCTION CARDS

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## **Activity 4**

substance	melting point (°C)	boiling point (°C)
cyclohexane	6	81
alcohol	-117	79
toluene	-95	110



# PARTICLE THEORY CIRCUS 1 INSTRUCTION CARDS

## **Activity 5**

substance	melting point (°C)	boiling point (°C)
toluene	-95	110
hydrogen chloride	-115	-85
gallium	30	2403
magnesium oxide	2852	3600
methylamine	-93	-6



## **Activity 6**

If air gets into your blood supply and reaches the heart, then you can no longer pump blood around your body and will die.

Explain why the heart can no longer pump blood round your body if air reaches it.



## Activity 7

- a) The brakes in cars are hydraulic brakes. Look at the diagram below of hydraulic brakes and explain how pushing down on the brake causes the brake to work.
- b) Explain why car brakes do not work if air gets into the brake system.

