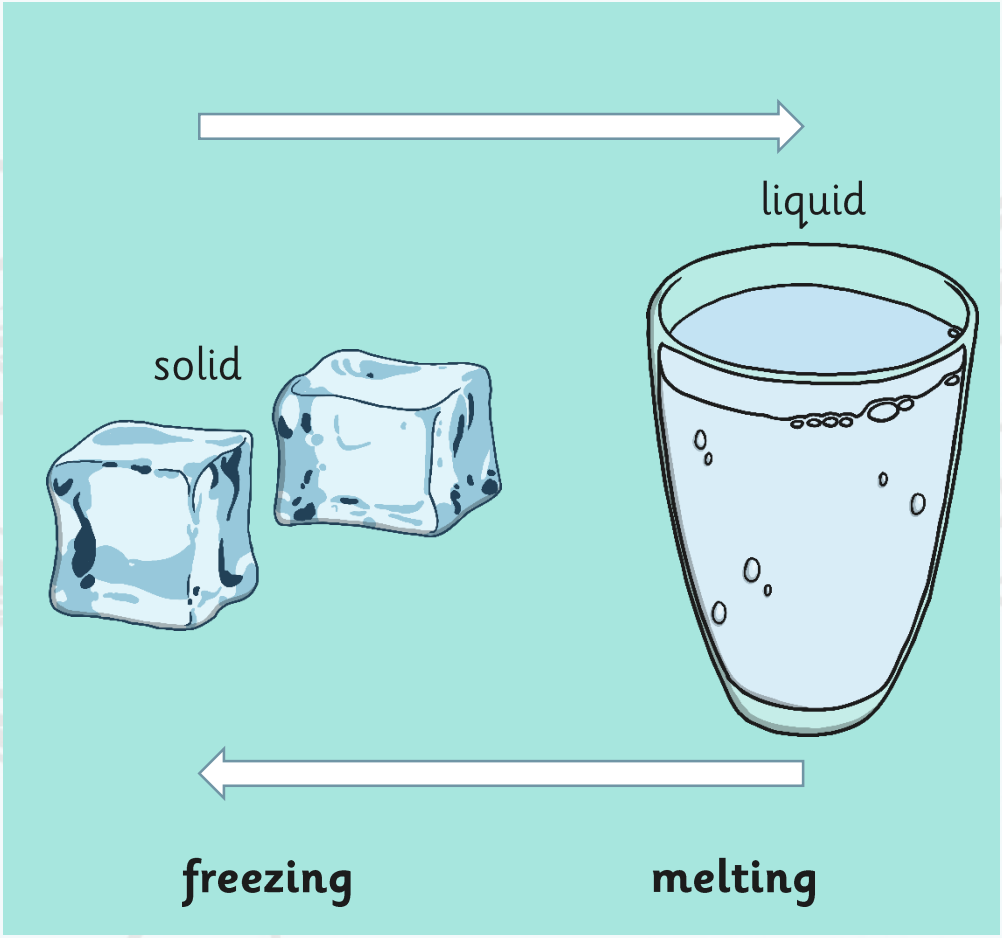
Heating and Cooling

What Makes Materials Change State?



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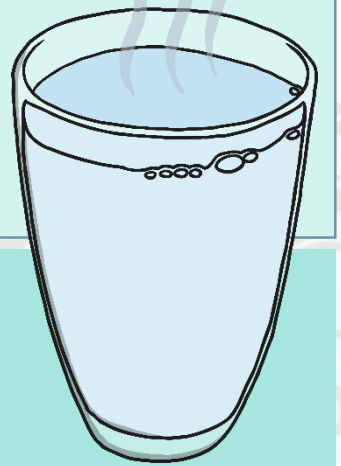
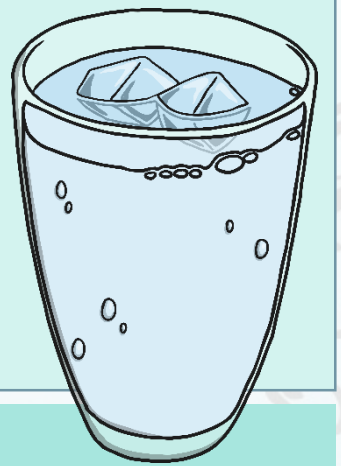


If a solid material is heated to its melting point, it will start to melt and will change state from a solid to a liquid.

In a solid, the particles are closely packed together and are vibrating on the spot. When a solid is heated, the particles start to move faster and faster. If enough heat is applied, the particles will have enough energy to move about. They are still close together, but can move over and around each other. At this point, the solid has melted to form a liquid.

What Makes Materials Change State?



If a liquid material is cooled to its freezing point, it will turn from a liquid to a solid.

The particles in a liquid are close together, but can move quite quickly around and over each other. As it is cooled, the particles start to slow down. Eventually, they slow down so much that they only move gently on the spot, and a solid structure is formed. The material has frozen.

Answer these questions in full sentences in your books. Remember to include the question in your answer.

What causes ice to melt?
Does it always melt at the same speed?
What factors/forces affect how fast ice melts?

How could we make ice melt more slowly?
How could we make ice melt more quickly?

What Makes Materials Change State?

Melting and Freezing Points