Hyde Park Junior School - Science

Topic: States of matter	Year: 4	Strand: Chemistry

Enquiry Question: What are things made of and how and why do they change?

What should I already know?

- That there are solids and liquids.
- Water is normally liquid at room temperature.
- Water can be cooled to solidify it.
- Home fridges and freezers cool liquid.
- Cookers and kettles heat solids and liquids at home.
- Water naturally comes from rain.

Scientific Skills and Enquiry

To know that heating a solid will change its state and that cooling a liquid will make it solidify.

Skills:

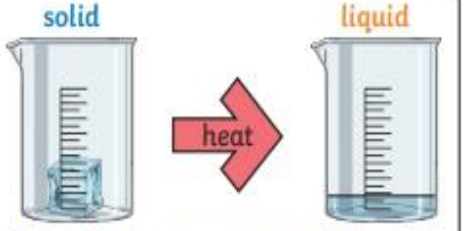
To ask relevant questions and use different types of scientific enquiries to answer them.

To report on and record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.

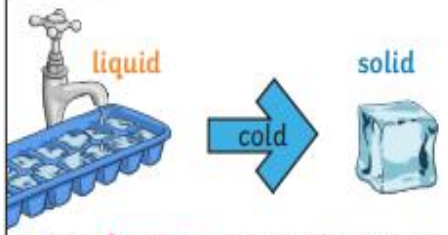
To give scientific reasons to answer questions and support claims using scientific language.

To set up an investigation.

When water and other liquids reach a certain temperature, they change state into a solid or a gas. The temperatures that these changes happen at are called the boiling, melting or freezing point.



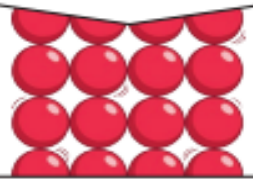
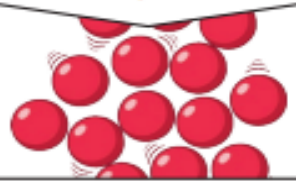
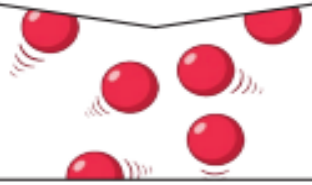
If a solid is heated to its melting point, it melts and changes to a liquid. This is because the particles start to move faster and faster until they are able to move over and around each other.



When freezing occurs, the particles in the liquid begin to slow down as they get colder and colder. They can then only move gently on the spot, giving them a solid structure.

Key Knowledge

There are three states of matter.

Solid	Liquid	Gas
		
Particles in a solid are close together and cannot move. They can only vibrate.	Particles in a liquid are close together but can move around each other easily.	Particles in a gas are spread out and can move around very quickly in all directions.

Key Vocabulary

melt	This is when a solid changes to a liquid.
freeze	Liquid turns to a solid during the freezing process.
evaporate	Turn a liquid into a gas.
condense	Turn a gas into a liquid.
precipitation	Liquid or solid particles that fall from a cloud as rain, sleet, hail or snow.

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Enquiry Question: What changes the state of matter and is it reversible?

Topic: States of Matter	Year: 4	Strand: Chemistry

Question 1: What are solids liquids and gasses?	Start of unit:	End of unit:
A. Three different types of drink		
B. Three types of materials		
C. Three food types		

Question 2: Everything that can be melted can be solidified?	Start of unit:	End of unit:
True		
False		

Question 3: Water is always in the three states in nature?	Start of unit:	End of unit:
True		
False		

Question 4:	Start of unit:	End of unit:
The same water that dinosaurs drank is the water that you drink. Explain this statement.		

Question 5: Give examples of three solids, three liquids and two gasses.	Start of unit:	End of unit:
Solids		
Liquids		
Gasses		