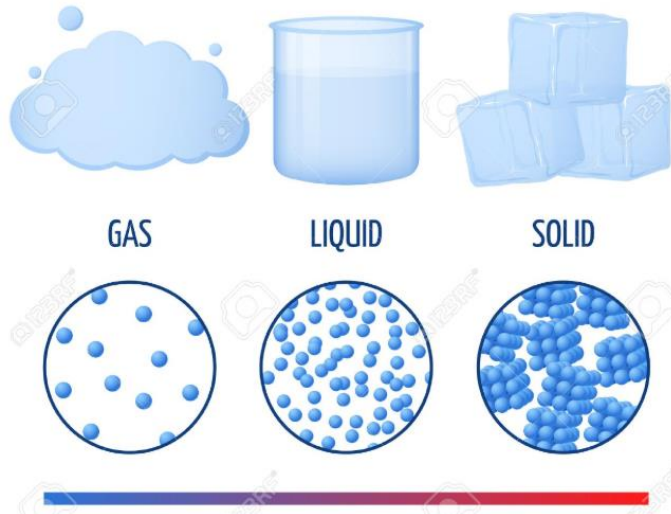


Year 4 - The States of Matter Knowledge Organiser



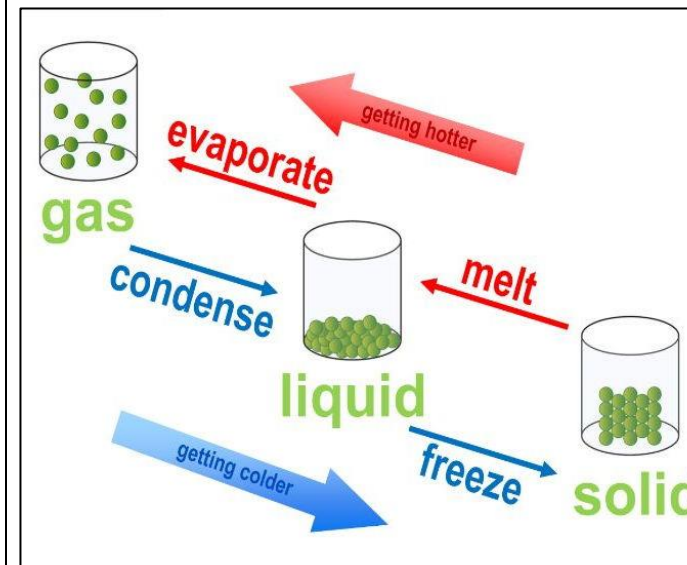
Assessment question: How can states of matter change?

Overview



- Matter makes up our planet and the whole Universe.
- There are three main states of matter – solids, liquids and gases.
- Matter can change state, depending on its temperature.
- Several processes describe the processes of changing states, e.g. melting, evaporation, freezing and condensation.
- The water cycle depends upon some of these processes.

Changing States of Matter



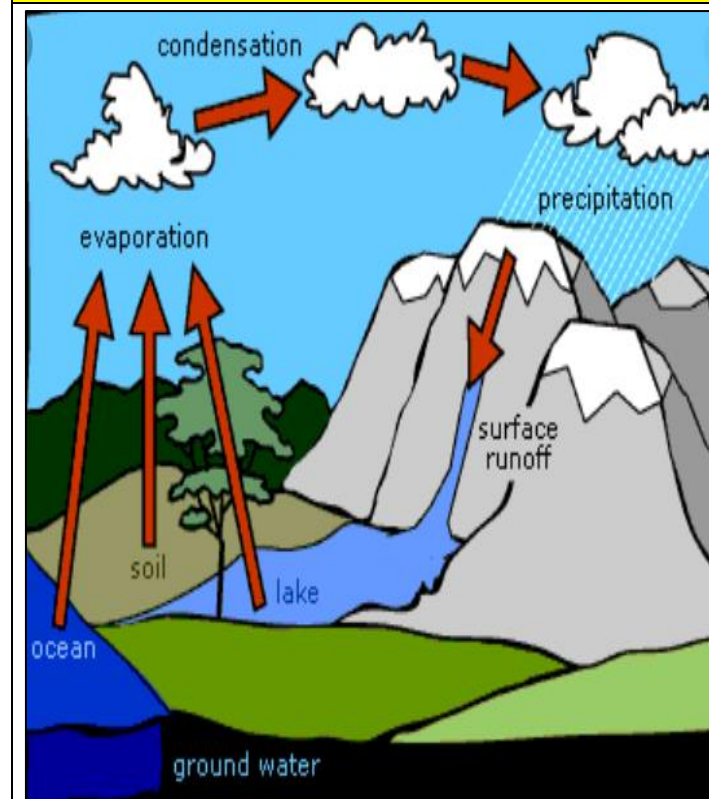
- States of matter can change, depending upon the temperature of the matter.
- Temperature is a measure of how hot or cold.
 - Degrees Celcius ($^{\circ}\text{C}$) is the unit of measurement for temperature.
 - Melting is the process of changing a solid into a liquid.
 - Evaporation is the process of changing a liquid into a gas.
 - Condensation is the process of changing a gas into a liquid.
 - Freezing is the process of turning a liquid into a solid.

Solids, Liquids and Gases

All matter exists in three states: solids, liquids and gases.

<p>SOLIDS</p> <ul style="list-style-type: none"> -Solids hold their shape -Solids are rigid -Solids have a fixed volume <p>Examples include ice cubes, rock, glass and most metals.</p>	<p>SOLID</p>
<p>LIQUIDS</p> <ul style="list-style-type: none"> -Liquids do not hold their shape -They are not rigid -However, they have a fixed volume. <p>Examples include water, oil, blood and milk</p>	<p>LIQUID</p>
<p>GASES</p> <ul style="list-style-type: none"> -Gases do not hold their shape -They are not rigid -They do not have a fixed volume. <p>Examples include oxygen, carbon dioxide and helium.</p>	<p>GAS</p>

The Water Cycle



- Changing states of matter play an important part in the water cycle:
- EVAPORATION**
- Energy from the sun heats up the surface of the Earth. The temperature in rivers, lakes and oceans to rise, and evaporate into the air.
- CONDENSATION**
- As the water vapour rises, it cools in the air and turns back into liquid – condensation which creates clouds.
- RAIN**
- When too much water has condensed, the clouds become too big for air to hold them. Rain falls.

Solids

Wood

Ice Cube

Glass

Liquids

Coffee

Water

Shower Gel

Gases

Carbon Dioxide

Air

Oxygen