

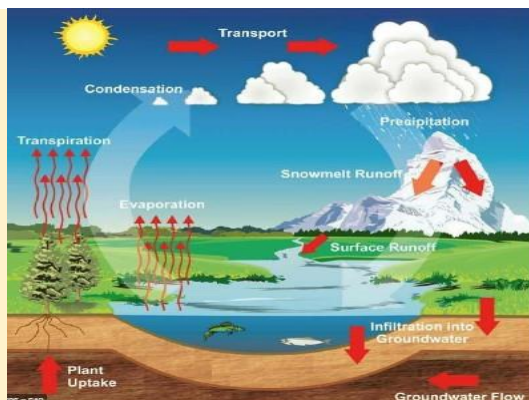
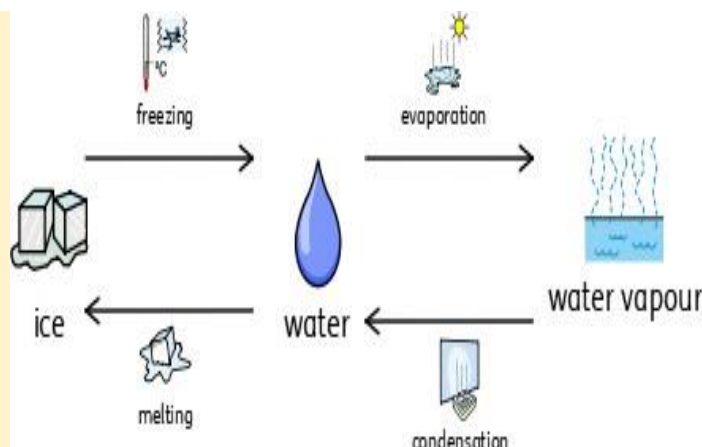


Year 4  
Topic: States of matter  
Strand: Chemistry

### What I should already know.

- Why some materials are used for certain purposes because of their **properties**.
- The **water cycle**, and the **processes** of **evaporation**, **condensation** and **precipitation**.

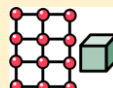


### Diagram



## Vocabulary

<b>Condensation</b>	Small drops of water which form when water vapour or steam touches a cold surface, such as a window.
<b>Cooling</b>	Lowering the <b>temperature</b> of something.
<b>Evaporation</b>	To turn from liquid into gas; pass away in the form of <b>vapour</b> .
<b>Freezing</b>	If a <b>liquid</b> or a substance containing a <b>liquid</b> <b>freezes</b> , it becomes <b>solid</b> because of low <b>temperatures</b> .
<b>Freezing point</b>	The <b>freezing point</b> of a particular substance is the <b>temperature</b> at which it <b>freezes</b> . The <b>freezing point</b> of water is 0°C.
<b>Gas</b>	A form of matter that is neither <b>liquid</b> nor <b>solid</b> . A <b>gas</b> rapidly spreads out when it is warmed and contracts when it is <b>cooled</b> ..
<b>Heating</b>	Raising the <b>temperature</b> of something.
<b>Liquid</b>	In a form that flows easily and is neither a <b>solid</b> nor a <b>gas</b> ..
<b>Melting</b>	To change from a <b>solid</b> to a <b>liquid</b> state through heat or pressure.
<b>Melting point</b>	The <b>melting point</b> of a particular substance is the <b>temperature</b> at which it <b>melts</b> ..
<b>Particles</b>	A tiny amount or small piece.
<b>Precipitation</b>	Rain, snow, sleet, dew, etc, formed by <b>condensation</b> of <b>water vapour</b> in the atmosphere.
<b>Process</b>	A series of actions used to produce something or reach a goal.
<b>Properties</b>	The ways in which an object behaves.
<b>Solid</b>	Having a firm shape or form that can be measured in length, width, and height; not like a <b>liquid</b> or a <b>gas</b> .
<b>Temperature</b>	A measure of how hot or cold something is.
<b>Vibrations</b>	When something <b>vibrates</b> , it shakes with repeated small, quick movements.
<b>Water cycle</b>	The <b>process</b> by which water on the earth <b>evaporates</b> , then <b>condenses</b> in the atmosphere, and then returns to earth in the form of <b>precipitation</b> .
<b>Water vapour</b>	Water in the <b>gaseous</b> state, esp when due to <b>evaporation</b> at a <b>temperature</b> below the boiling point.

## What will I know by the end of the unit?

What is a <b>particle</b> ?	<ul style="list-style-type: none"> <li>• <b>Particles</b> are what materials are made from.</li> <li>• They are so small that we cannot see them with our eyes.</li> <li>• The <b>properties</b> of a substance depend on what its particles are like, how they move and how they are arranged.</li> <li>• <b>Particles</b> behave differently in <b>solids</b>, <b>liquids</b> and <b>gases</b>.</li> </ul>
What is a <b>solid</b> ? 	<ul style="list-style-type: none"> <li>• In the <b>solid</b> state, the material holds its shape.</li> <li>• <b>Solids</b> have <b>vibrating particles</b> which are closely packed in and form a regular pattern.</li> <li>• This explains the fixed shape of a solid and why it can't poured.</li> <li>• <b>Solids</b> always take up the same amount of space.</li> </ul>
What is a <b>liquid</b> ? 	<ul style="list-style-type: none"> <li>• In the <b>liquid</b> state, the material holds the shape of the container it is in.</li> <li>• This means that <b>liquids</b> can change shape, depending on the container.</li> <li>• <b>Liquids</b> have <b>particles</b> which are close together but random.</li> <li>• <b>Liquid particles</b> can move over each other.</li> <li>• <b>Liquids</b> can be poured.</li> </ul>
What is a <b>gas</b> ? 	<ul style="list-style-type: none"> <li>• In the <b>gas</b> state, <b>particles</b> can escape from open containers.</li> <li>• <b>Gases</b> have <b>particles</b>, which are spread out and move in all directions.</li> </ul>
What happens to the <b>particles</b> in water when it is <b>heated</b> or <b>cooled</b> ?	<ul style="list-style-type: none"> <li>• When water (in its <b>liquid</b> form) is <b>heated</b>, the particles start to move faster and faster until they have enough energy to move about more freely. The water has <b>evaporated</b> into a <b>water vapour</b>.</li> <li>• When water is <b>cooled</b>, the particles start to slow down until a solid structure (ice) is formed. The water has <b>frozen</b>.</li> <li>• The <b>temperature</b> at which water turns to ice is called the <b>freezing point</b>. This happens at 0°C.</li> </ul>