



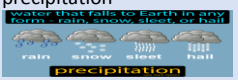

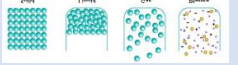



# In A State!



What are the key chemical facts that I need to know?					
Scientific Fact 1	Scientific Fact 2	Scientific Fact 3	Scientific Fact 4	Scientific Fact 5	Scientific Fact 6
Gases are much lighter than solids and liquids. A bottle of water weighs more than 1,000 times as much as the same bottle containing vapour.	Gases, like air, are substances that drift about and will float away if they are not sealed up.	Solids hold their shape because the particles that make up the solid are fixed together. They cannot move around that much.	Liquids change their shape to fit the container. Without a container, liquids will fill a puddle. They can change shape since the particles flow around each other.	Like liquids, gases also change their shapes. They can also change the amount of space they take up because the particles can move further apart from each other.	The air we breathe is full of different gases - but it is mostly made up of nitrogen and oxygen.

Key Scientific Vocabulary - words that are related to the topic you are investigating and that must be used in your work	
Word	Definition
carbon dioxide 	A gas breathed out by people and animals from the lungs or produced by burning carbon
condensation 	Drops of water that form on a cold surface.
evaporation 	The process of a liquid changing or being changed into a gas.
oxygen 	A gas that is in air and water. It is vital for people and animals to live.
precipitation 	Rain, snow, etc. that falls from the sky.
reliable 	Information that is likely to be true and accurate.
states of matter 	Four states of matter are observable: solid, liquid, gas and plasma.
viscous 	A liquid that is thick and sticky; not flowing freely.

Sticky Knowledge- what we want you to know at the end of the unit To know that our senses helps us explore the world around us.
<p><b>To know the properties of solids, liquids and gases</b></p> <ul style="list-style-type: none"> <li>a solid can hold its shape (for example, water in solid form is ice)</li> <li>a liquid like water forms a pool: it flows or runs but it cannot be stretched or squeezed</li> <li>a gas can flow, expand and be squeezed; if it is in an unsealed container it escapes (water in gas form is steam)</li> </ul> <p><b>To know what melting and freezing mean</b></p> <ul style="list-style-type: none"> <li>solids and liquids can be changed from one state to another by heating or cooling</li> <li>ice (solid) when heated, changes to water (liquid) – this is called melting</li> <li>water (liquid) when cooled, changes to ice (solid) – this called freezing</li> </ul> <p><b>To know the properties of gases</b></p> <ul style="list-style-type: none"> <li>gases do not have a definite shape</li> <li>they completely fill any container they are put into</li> <li>materials can change from one of these states to another</li> </ul> <p><b>To know what evaporation and condensation are</b></p> <ul style="list-style-type: none"> <li>if water (liquid) is heated, it changes to water vapour (gas- this is called evaporation)</li> <li>if water vapour (gas) is cooled down, it changes into water (liquid) – this is called condensation</li> </ul> <p><b>To know what melting and boiling points are</b></p> <ul style="list-style-type: none"> <li>when light from an object is reflected by a surface, it changes direction</li> <li>smooth, shiny surfaces such as mirrors reflect light well</li> </ul> <p><b>To know how rain is formed</b></p> <ul style="list-style-type: none"> <li>water vapour rises in the atmosphere and there it cools down and forms tiny water droplets</li> <li>these droplets are formed through condensation</li> <li>the droplets all combine together to form clouds</li> <li>when clouds become too heavy to stay in the air, the droplets fall as rain</li> </ul>

The scientific skills that you will be learning to use to answer the scientific questions
<p><b>What is science?</b></p> <p>Science is the exciting study of the nature and behaviour of natural things and the knowledge that we obtain about them. We ask questions that need answers. In order to answer these questions successfully, you will learn to use all these skills.</p> <p><b>Identifying and classifying:</b></p> <p>In this type of enquiry, you will identify and take measurements to find similarities and differences in the materials that you will be studying.</p> <p><b>Can you group these materials and objects into solids, liquids, and gases?</b></p> <p><b>Can you explain your answer?</b></p> <p><b>Observing changes over time:</b></p> <p>You will learn to make careful observations during the experiment. This year you will focus on ensuring that you make these observations in a logical manner.</p> <p><b>How does the mass of an ice cube change over time?</b></p> <p><b>Exploring and researching:</b></p> <p>You will be using your research skills to explore precipitation.</p> <p><b>Where does the rain come from?</b></p> <p><b>Fair testing:</b></p> <p>Fair tests involve making systematic changes and analysing data to identify how one variable influences another.</p>