
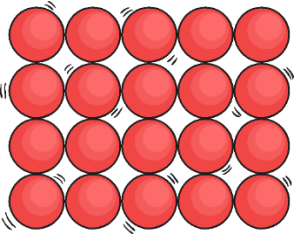

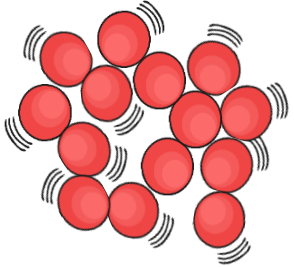

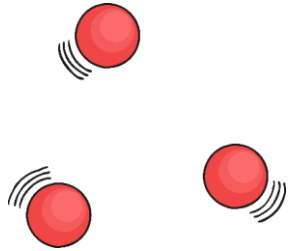


YEAR 4: SCIENCE AUTUMN 1: STATES OF MATTER

States of Matter

There are three states of matter: solid, liquid and gas. These states describe how matter exists.

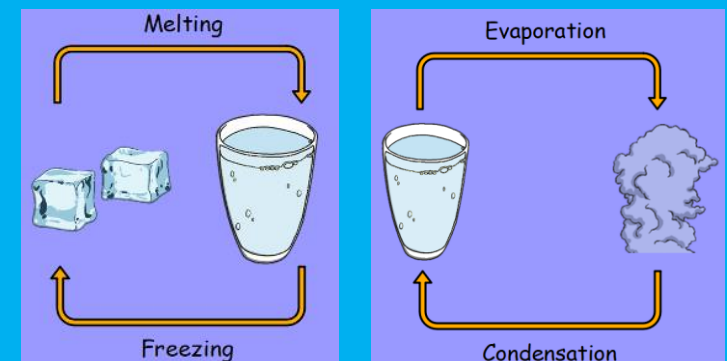
Some materials can change from one state to another when they are exposed to certain temperatures.

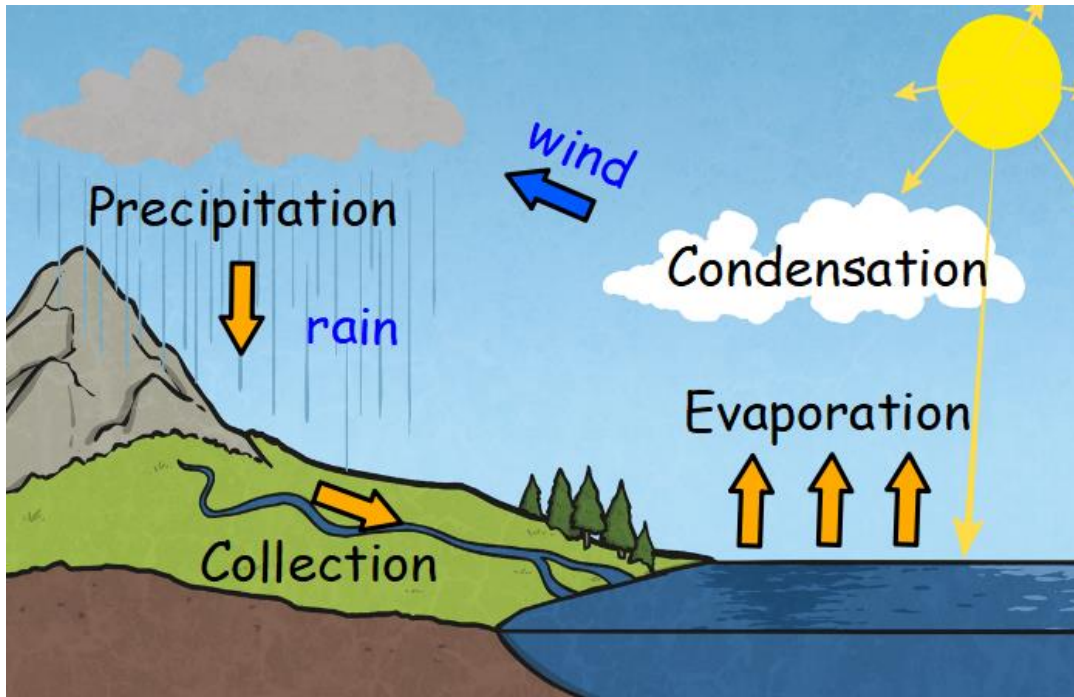
| Key Vocabulary | | Example | Particle Diagram |
|----------------|---|---|---|
| Solid | Materials that keep their shape unless force is applied. They will always take up the same amount of space. Particles are tightly packed. |  |  |
| Liquid | Liquids take the shape of their container and can be poured. They can change shape but always take up the same amount of space. Particles are close together but can move over each other easily. |  |  |
| Gas | Gases spread out to completely fill the space they are in. They do not have a fixed shape. Particles are spread out and move quickly. |  |  |

Reversible Changes

When you can undo a change to get back the materials that you started with, you can describe the change as reversible.

| | |
|--------------|---|
| Melting | When a solid changes to a liquid under hot conditions. |
| Freezing | When a liquid changes to a solid under cold conditions. |
| Evaporation | When heat causes a liquid to change to a gas. |
| Condensation | When cooler temperatures cause gases to change into liquids. |





The Water Cycle:

The Earth always has the same amount of water. Oceans are the biggest water stores on Earth; they hold 97% of the Earth's water! This water moves through stages in a process known as the water cycle.

Water Vapour:

When liquid water is evaporated by heat from the Sun, it turns into a gas known as water vapour. Water vapour can form as a result of evaporation from water stores or transpiration, where water is evaporated from plants.

| | |
|------------------|--|
| 1. Evaporation | <ul style="list-style-type: none"> - Heat from the Sun causes water to evaporate. - Evaporation can happen on cool or cloudy days too. - Liquid water turns into water vapour when it is evaporated. |
| 2. Condensation | <ul style="list-style-type: none"> - Water vapour rises and cools down. - Eventually, it cools enough for the water vapour to condense. - The liquid droplets form clouds. |
| 3. Precipitation | <ul style="list-style-type: none"> - As more water vapour condenses, more clouds are formed. - When the clouds are heavy enough, the water droplets fall back to Earth under the force of gravity. They fall in the form of rain, snow, sleet or hail. |
| 4. Collection | <ul style="list-style-type: none"> - Precipitation can fall into the sea, rivers or on the ground. The water is then evaporated and the cycle starts again. |