

Did you know?

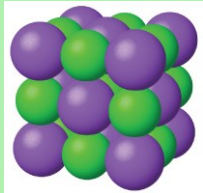
Jupiter and Saturn are gas giants, made up of helium and hydrogen. They do not have a solid crust like the earth does.

States of Matter

Year 4 Spring Term

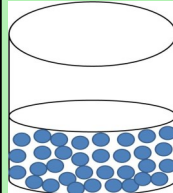
Did you know?

Rubber balloons were invented by Michael Faraday to store gases during experiments.



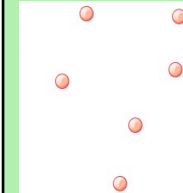
Solids

Particles in a solid are close together and cannot move. They can only vibrate and will keep their shape unless a force is applied to them. They can be hard, soft or even squashy.



Liquids

Particles in a liquid are close together but can move around each other easily. They can change shape but do not change the amount of space they take up. They can flow or be poured.



Gases

Particles in a gas are spread out and can move around very quickly in all directions. Gases fill the container or room they are in. They do not have any fixed shape but they do have a mass.

Key Vocabulary

solid	These are materials that keep their shape unless a force is applied to them.
liquid	Liquids take the shape of their container. They can flow or be poured.
gases	Gases can spread out to completely fill the container or room they are in. They do not have any fixed shape.
particle	A particle is the smallest unit of matter. They are too small to see with the human eye or even a microscope.
freeze	Liquid turns to a solid during the freezing process.
melt	This is when a solid changes to a liquid.
condensation	The process in which a gas turns into a liquid.
evaporation	The process in which a liquid turns into a gas.
precipitation	Liquid or solid particles that fall from a cloud as rain, sleet, hail or snow.

Significant people

Anders Celsius

Anders Celsius was born on 27th November 1701 in Uppsala, Sweden. He was a Swedish astronomer and physicist who taught at the University of Uppsala. Anders is best remembered as the inventor of the Celsius temperature scale, in which 0 degrees Celsius is the freezing point of water and 100 degrees Celsius is the boiling point.



Daniel Fahrenheit

Daniel Fahrenheit was born in Danzig, a Polish-Lithuanian commonwealth on 24th May 1686. He was a physicist, inventor and scientific instrument maker. Daniel was key in developing the mercury-in-glass thermometer and for creating the Fahrenheit temperature scale which is still currently used in the United States as a way to measure temperature.

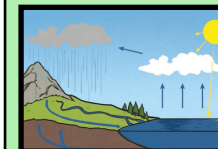


Changing states

Objects can change state. 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. **Evaporation** occurs when water turns into water vapour. This happens very quickly when the water is hot, like in a kettle, but it can also happen slowly, like a puddle. **Condensation** is when water vapour is cooled down and turns into water. You can see this when droplets of water form on a window. The water vapour in the air cools when it touches the **Condensation** cold surface. evaporating in the warm air.

The Water Cycle

1. Water from lakes, puddles, rivers and seas is evaporated by the sun's heat, turning it into water vapour.
2. This water vapour rises, then cools down to form water droplets in clouds (condensation).
3. When the droplets get too heavy, they fall back to the earth as rain, sleet, hail or snow (precipitation).



'No matter how bad a state of mind you may get into, if you keep strong and hold out, eventually the floating clouds must vanish and the withering wind must cease.'

- Dogen Zenji

Significant People

Community

Equality & Justice

Environmental Responsibility