

CHANGING STATE

Solids, liquids and gases are called the three states of matter. Materials can be changed from one state to another by heating or cooling.

Heating

If ice (solid) is heated, it changes to water (liquid). This change is called melting. Water (liquid) can change to water vapour (gas). This is called evaporation. If water (liquid) is heated until it boils, it changes to water vapour (gas) very quickly. Water boils at 100°C.

Cooling

If water vapour (gas) is cooled, it changes to water (liquid). This change is called condensing. If water (liquid) is cooled, it changes to ice (solid). This change is called freezing. Water freezes at 0°C.

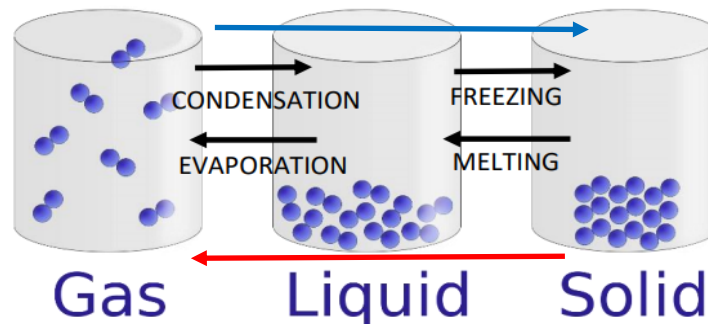


Three states of matter

GAS: particles far apart and randomly arranged / move around

LIQUID: particles close but randomly arranged / move around

SOLID: particles very close together / vibrate around a fixed position



Examples

Ice
Wood
Glass
Diamond

Features

- Solids hold their shape. (Salt, sand and sugar are tiny solids so they pour like a liquid but they pile up and are not wet.)
- Liquids form a pool not a pile!
- Gases escape from an unsealed container and fill the entire volume of space.

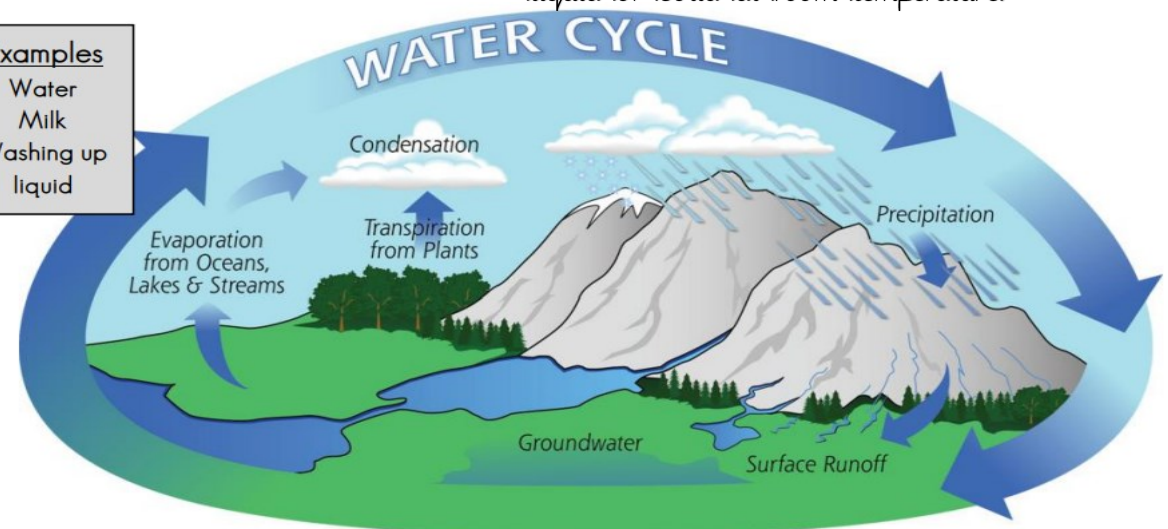


Examples

Steam (water vapour)
Hydrogen
Carbon Dioxide
Oxygen

Examples

Water
Milk
Washing up liquid



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Science Knowledge Organiser

Glossary

evaporation (evaporate, evaporating) - The process of changing from liquid to gas.

condensation (condense, condensing) - The process of changing from gas to liquid.

fluid - A substance that is able to flow and change its shape (liquid or gas).

gas - An air-like substance which expands freely to fill any space available.

irreversible - Cannot be changed back to its original state.

liquid - A substance that flows freely but can be measured by volume e.g. water or oil.

reversible - Able to be changed back to its original state

solid - A substance that keeps its shape, not fluid.

transpiration - The release of water vapour from plants.

vapour - The gaseous form of something that is liquid or solid at room temperature.