

An underwater photograph showing a vertical column of bubbles rising from the bottom towards the surface. The water is a deep blue, and light rays are visible filtering down from above. The bubbles are of various sizes and are concentrated in the center-right of the frame.

# The Three States Of Water

Study*ladder*

Water can be found on our planet  
in three natural states.





LIQUID

# SOLID





Water will naturally take on three different states, depending on the atmospheric conditions around it.

SOLID

LIQUID

GAS



# Water Vapour and Steam

Steam is the name given to water that is changing state from liquid to gas (water vapour). When water is heated, molecules begin to move more rapidly. As the temperature of the water rises tiny molecules are able to escape from the surface of the water as water vapour. Water vapour itself is invisible. The cloud of moisture that we think of as 'steam' is the result of tiny vapour particles condensing back into water droplets as they are cooled by the air.



Once water reaches its boiling point of  $100^{\circ}\text{C}$  (degrees Celsius), its temperature will rise no further. Water will continue to boil and evaporate at  $100^{\circ}\text{C}$  until all the water has become vapour.

# ***Frozen Water- Ice and Snow***

When liquid water is cooled below  $0^{\circ}\text{C}$  it forms a solid structure called ice.

Water can freeze naturally in the colder parts of the Earth. Frozen bodies of water include:

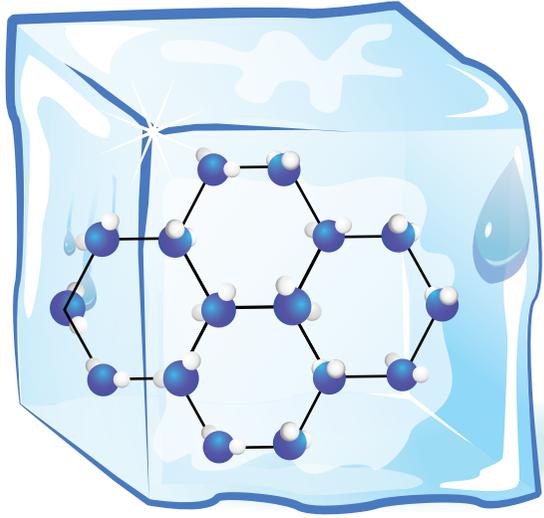
- Glaciers- rivers of ice.
- Ice Sheets and Ice Shelves- frozen bodies of water found at the north and south poles.
- Icebergs- pieces of ice that have broken off the ice sheets.
- Frozen surface water of lakes, rivers, streams during winter in high latitudes, nearer to the poles.

Frozen water can also fall as precipitation:

- Snowfall in colder areas and areas of high altitude.
- Hailstones, frost and sleet.

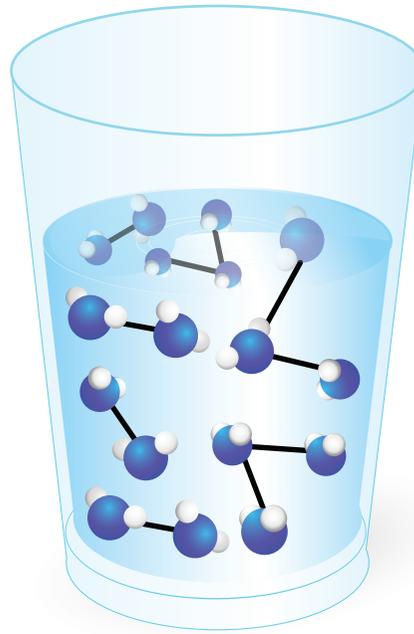


# What happens to the molecules in water when it changes state?



## Solid

When water cools the movement of molecules slows down. When water approaches the freezing point the molecules are attracted to each other. They clump together as ice crystals, forming a solid.



## Liquid

When water is in a liquid state the molecules cling together but are still moving. The molecules near the surface are still be able to escape to the air, especially when they are heated by the sun. This is why evaporation occurs at room temperature.



## Gas

Heat makes the molecules in the water begin to move about more quickly. When the water temperature rises the molecules are moving about very quickly, making it easy for them to escape to the air.