



LITTERA PUBLIC SCHOOL

CLASS 5

CHAPTER 8

SCIENCE

AIR AND WATER

The atmosphere

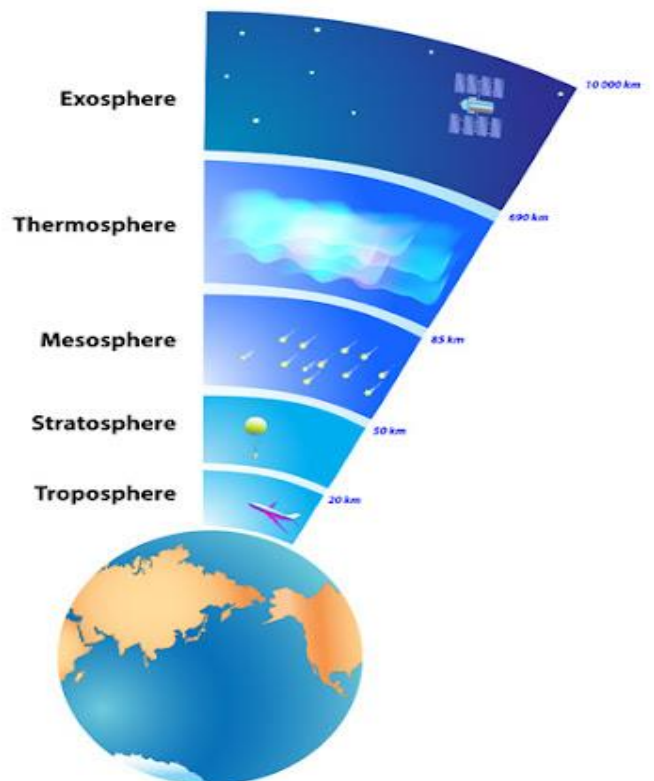
- The blanket of air that surrounds the earth is called the atmosphere.
- It extends to about 560 km around the earth.
- Sufficient air for breathing is only present upto a height of about 15km.

Layers of Atmosphere

- 1. Troposphere**
- 2. Stratosphere**
- 3. Mesosphere**
- 4. Thermosphere**
- 5. Exosphere**

Troposphere

- The layer nearest to the earth's surface is called troposphere.
- This is the only layer in which living organism can breathe normally.
- Clouds are formed in this layer.



- It acts like a blanket protecting the earth from extreme heat during the day.

Stratosphere

- It lies above the troposphere and is about 35 kilometres thick.
- It contains a layer of gas called ozone.
- It protects us ultraviolet radiation coming from sun

Mesosphere

- It lies above the stratosphere.
- It protects the earth from small rocks called meteors from reaching the earth's surface.

Thermosphere

- The thermosphere is the layer in the Earth's atmosphere directly above the mesosphere and below the exosphere.
- Space shuttles orbit in the atmosphere.

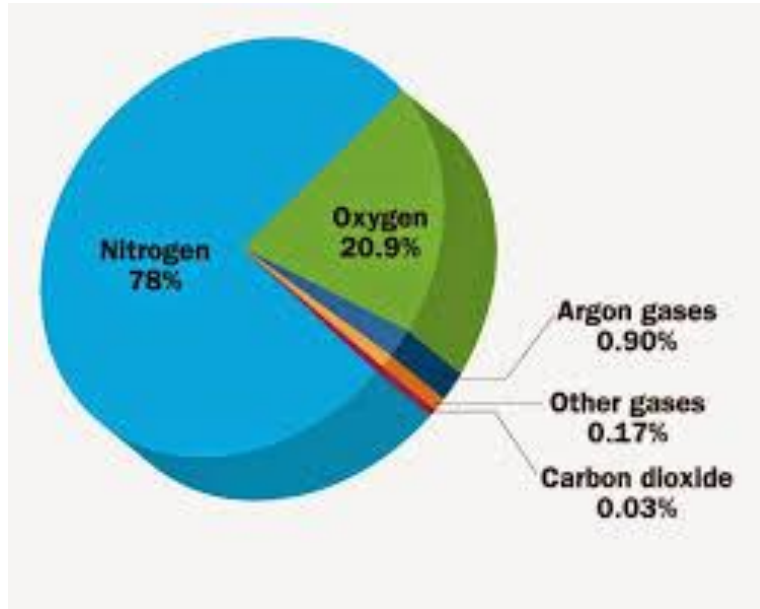
Exosphere

- This is the outermost layer of the atmosphere.
- It contains little air.
- It helps in long distance communication through radio and mobile phones.

Composition of air

- Air is a mixture of many gases.
- The components of air are nitrogen, oxygen, noble gases, carbon dioxide, water vapour, smoke, and dust particles.

- The main gases present in the air are nitrogen (78%), oxygen (21%), and the other gases 1%.



Properties of Air

1. Air occupies space
2. Air has weight
3. Air exerts pressure
4. Air is needed for burning

Water

- Three quarters of the earth is covered with water.
- Water is found everywhere – in the ocean, lakes, rivers, under the ground, and even in the sky as water vapour.

Impurities in water

- Water that contains mud, sand, stones and germs are called impure water.
- Water which has harmful impurities and disease causing germs must be cleaned before drinking.

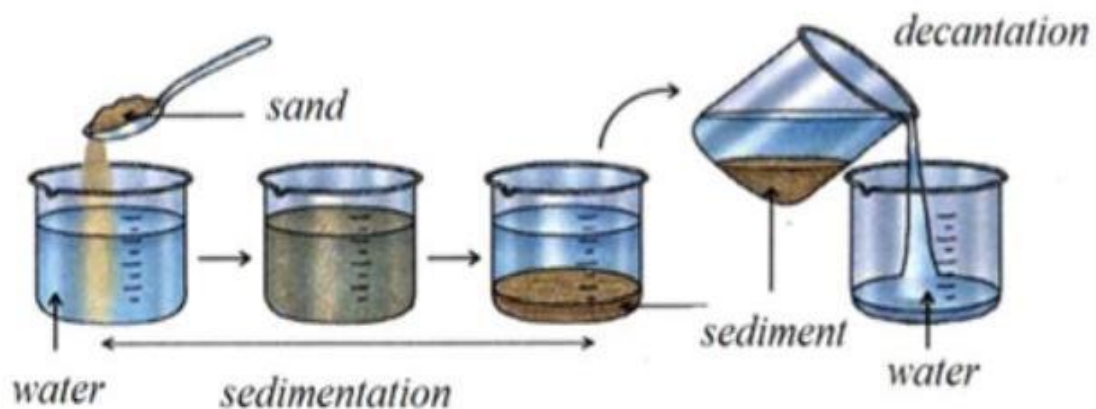
Removing impurities from water

Water has soluble and insoluble impurities.

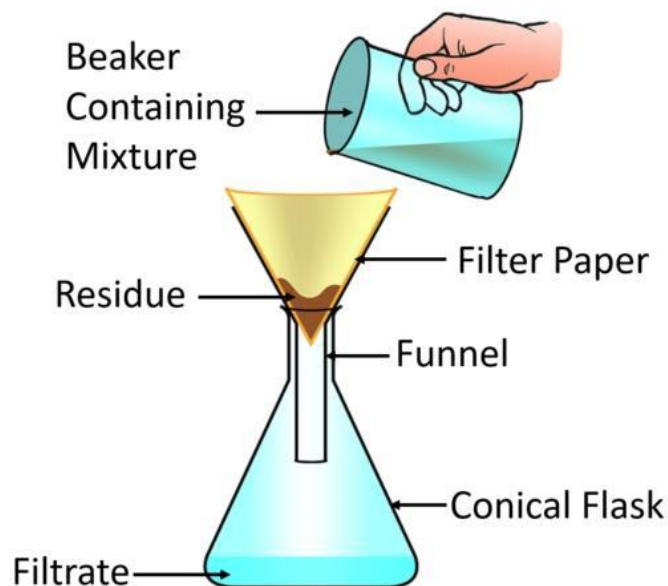
Removal of insoluble impurities

It can be removed by the process of sedimentation followed by decantation and filtration.

- **Sedimentation:** Sedimentation is a process of settling down of the heavier particles present in a liquid mixture.
- **Decantation:** Decantation is the process of removing a liquid from solid particles that have collected at the bottom of a container.



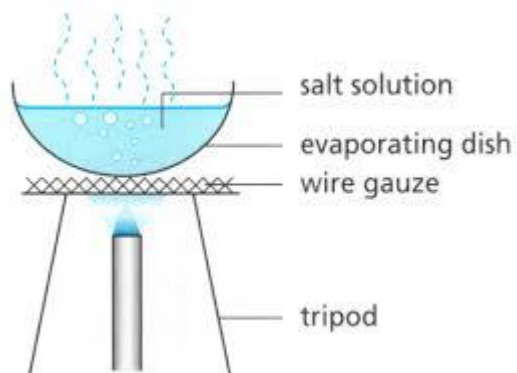
- **Filtration:** The process in which solid particles in a liquid or gaseous fluid are removed by the use of a filter medium that permits the fluid to pass through but retains the solid particles.



Removal of soluble impurities

Soluble impurities can be removed through evaporation and distillation.

- **Evaporation:** The impure solution with impurities such as salt or sugar is heated till all the water is evaporated. The impurity is left behind in the evaporation dish.



- **Distillation:** In this process, Impure water is boiled in a flask and vapour is allowed to pass through the condenser. The vapour is then cooled so that it condenses and falls into another flask.

