

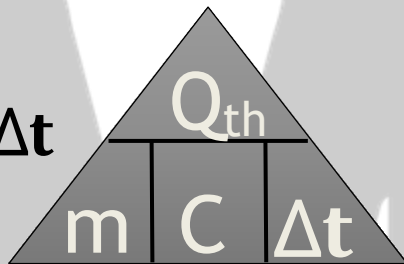
$$K = ^\circ C + 273$$

$$^\circ F = ^\circ C \times \frac{9}{5} + 32$$

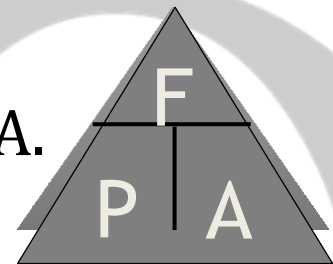
Fahrenheit Celsius

. 101300 N/M² = 101300 Pascal = 1013 Milli Bar = 1 atm = 760 mmhg
 . 1 Bar = 1000 millibar = 10⁵ Pascal = 10⁵ N/m²

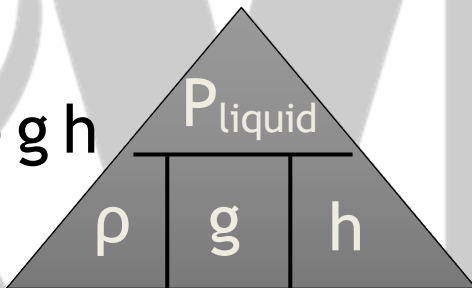
$$Q_{th} = m c \Delta t$$



$$F = P \times A.$$



$$P_{liquid} = \rho g h$$

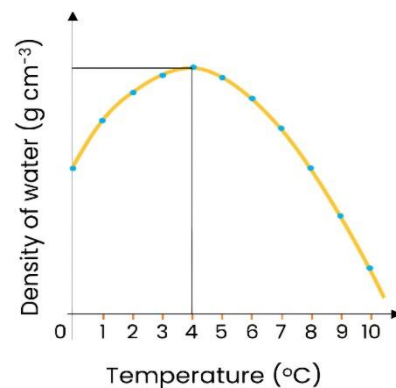
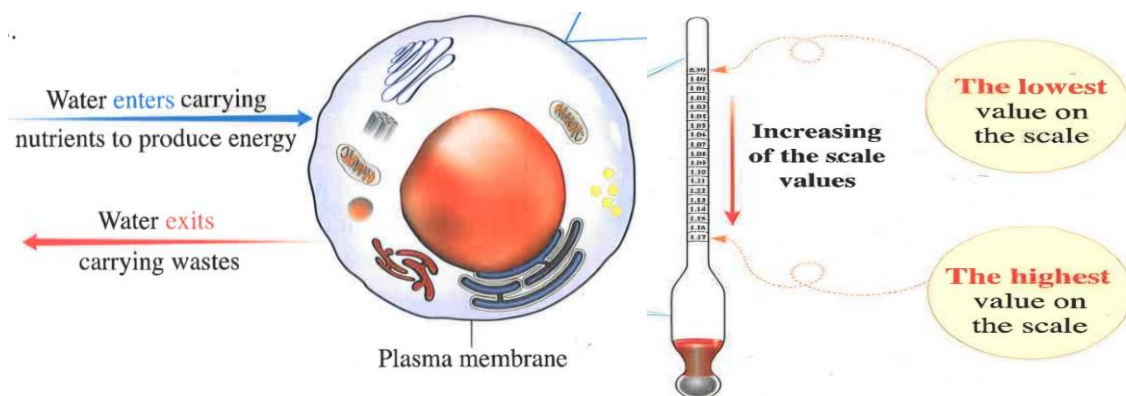


$$P_{total} = P_a + P_{liquid} = P_a + \rho g h$$

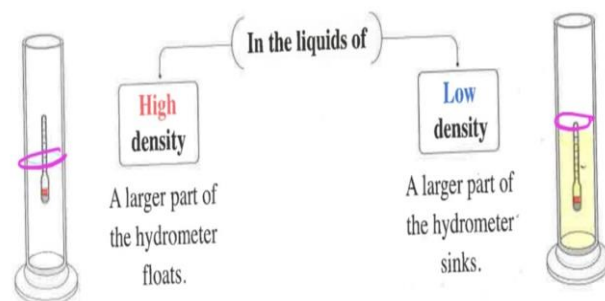
$$1 \text{ Bar} = 10^5 \text{ Pascal} = 10^5 \text{ N/m}^2$$

Devices

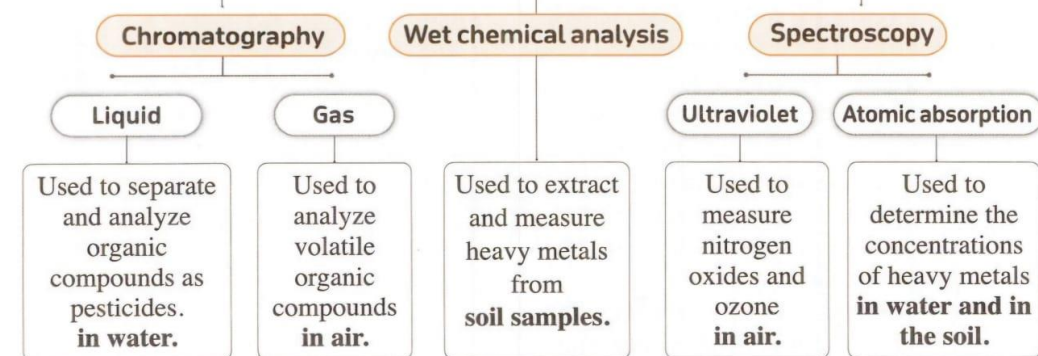
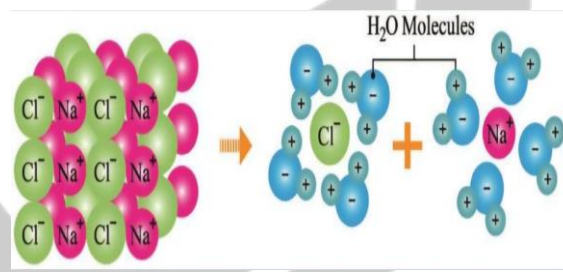
1. **Barometer**: used to measure atmospheric pressure
2. **pH meter**: used to measure of how acidic/basic water is.
3. **Joule calorimeter**: used to determine the specific heat of water.
4. **Moisture meter**: to detect moisture content in soil.
5. **hygrometer**: to measure the humidity, or amount of water vapor in the air.
6. **Gas Chromatography**: It is used to analyze volatile organic compounds such as benzene, and formaldehyde
7. **UV spectroscopy**: Used to measure oxides of nitrogen and ozone in the air.



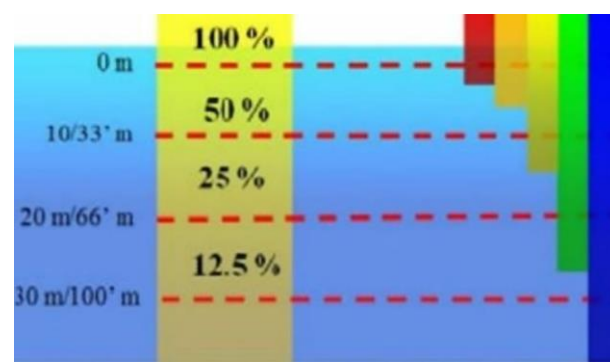
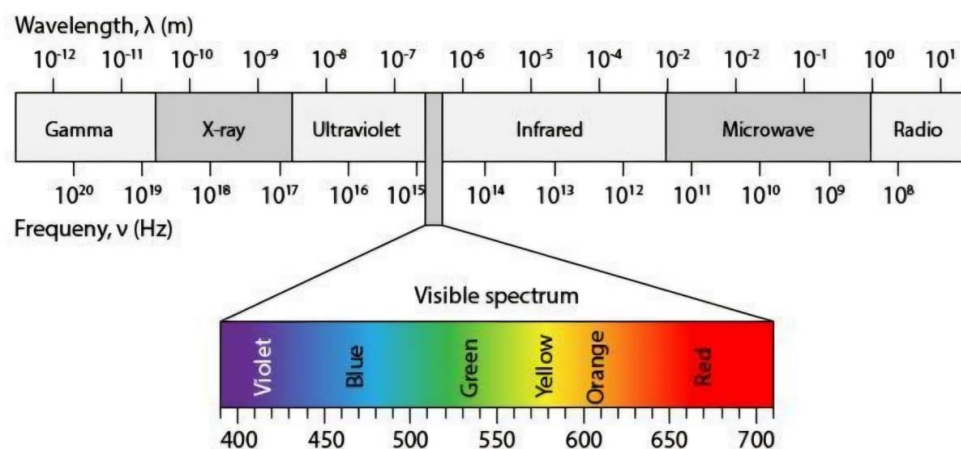
P.O.C	Water (H_2O)	Hydrogen sulphide (H_2S)
1 Type of bonds between the atoms in the molecule	Covalent	Covalent
2 Hydrogen bonds among molecules and each other	Present	Absent
3 Boiling point (at normal atmospheric pressure)	100°C	-61°C



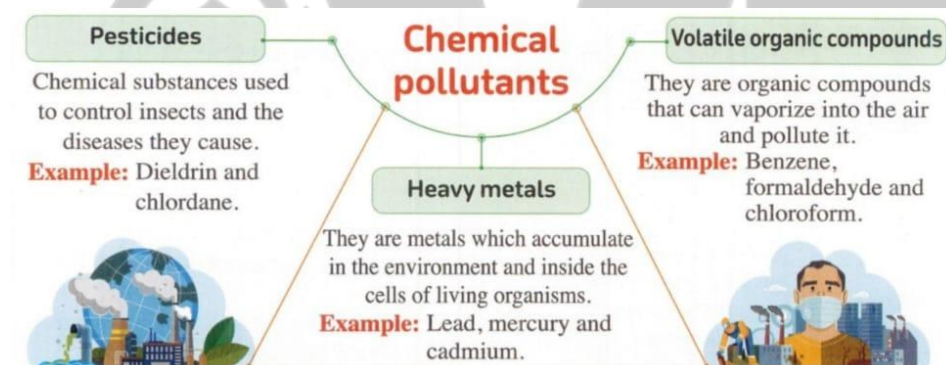
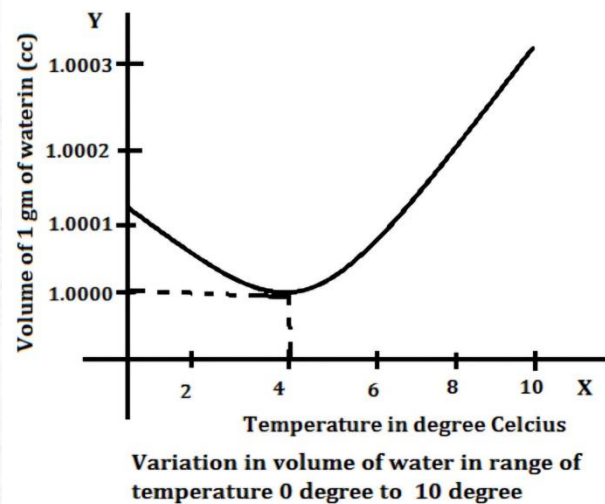
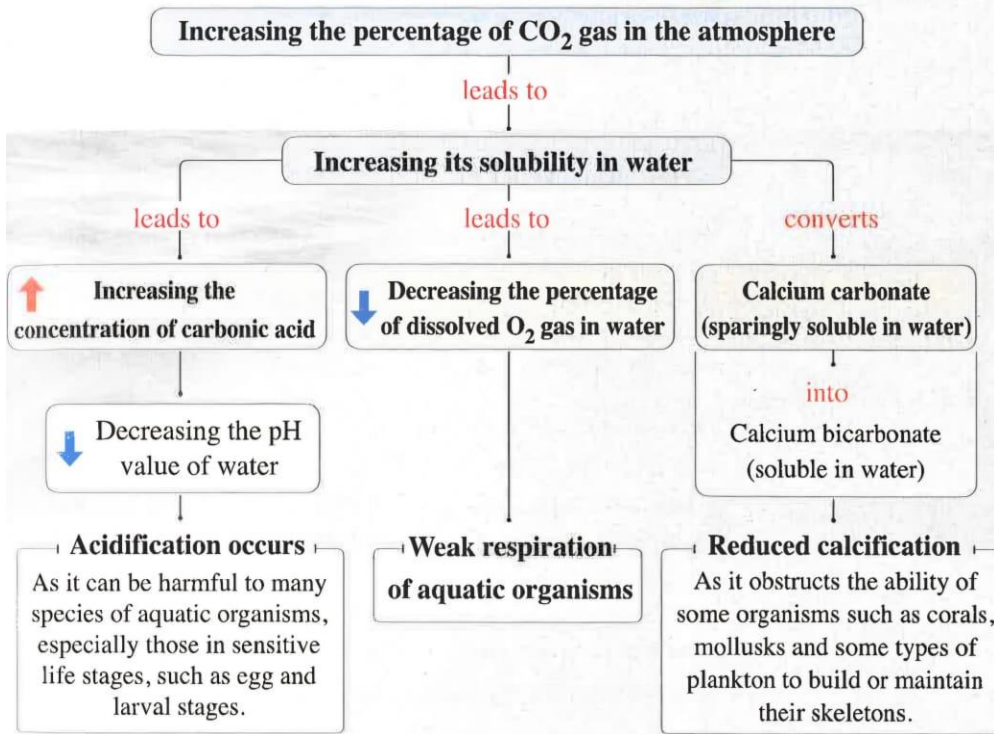
Colligative properties	Solution	Its pure solvent
Vapor pressure	Vapor pressure of solution	Vapor pressure of pure solvent
Boiling point	Boiling point of solution	Boiling point of pure solvent
Freezing point	Freezing point of solution	Freezing point of pure solvent
Osmotic pressure	The osmotic pressure of the solution	The osmotic pressure of pure solvent



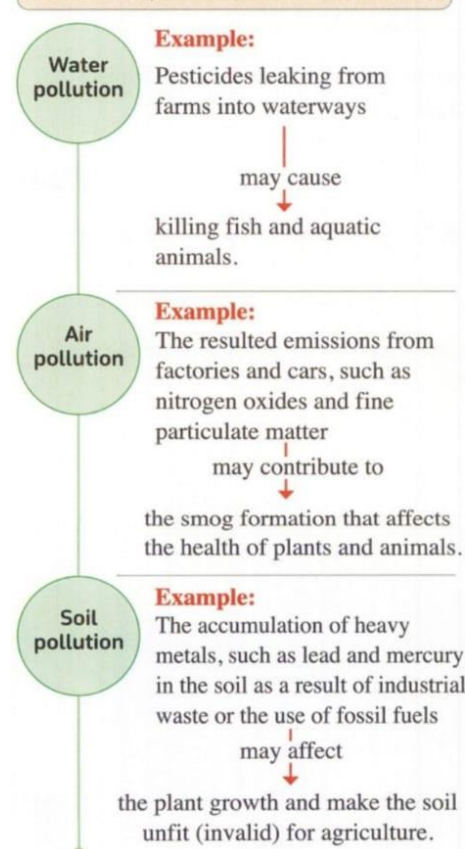
Water type	The pH value	Acidity or alkalinity
1 Seawater	7.5 : 8.4	Alkaline
2 Fresh water (Rivers and lakes)	6.5 : 8.5	Acidic, neutral or alkaline
3 Distilled water	7	Neutral
4 Groundwater	It depends on the rock structure of the ground	Neutral – Alkaline
5 Clouds water	4.5 : 5	Weak acidic



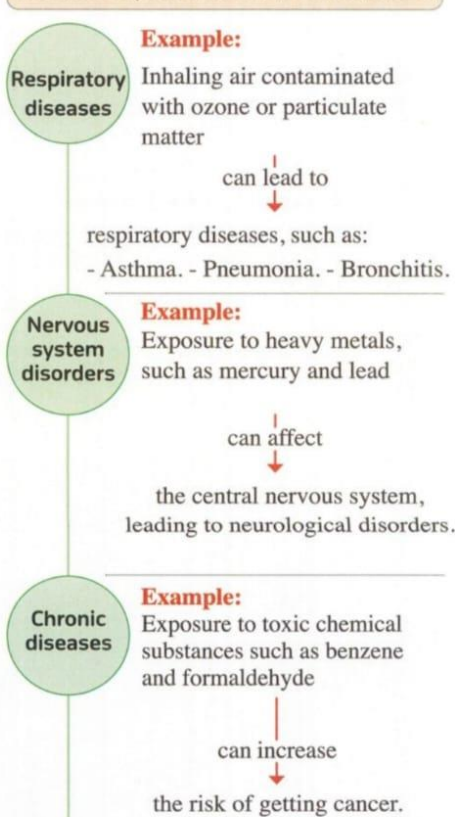
↑ Increasing the percentage of CO_2 gas in water



The effect of pollutants on the environment



The effect of pollutants on the human health



The concentration of **oxygen gas** in air

is about **500 times higher** than

The concentration of **carbon dioxide gas** in air

The solubility of **oxygen gas** in water

is about **50 times less** than

The solubility of **carbon dioxide gas** in water

The solubility of **both gases** in salty water of oceans

is about **(20% – 30%) less** than

The solubility of **both gases** in fresh water

Osman