Sea water

Density
- Density of Ocean is determined by temperature, the quantity of dissolved salts (also known as salinity), and the pressure to which a parcel of seawater is exposed.
- Density is lighter at the depth than at the surface. The average density of ocean is 1.03 g/cm³.

Temperature
- 75% of the water in the oceans has temperatures ranging between 0° and 6°C; the average temperature is 3.5°C.
- Water is cold at the depth and gets warmer towards surface. Similarly, water at poles is cold and gets warmer towards equator.
- Surface temperature in the Bay of Bengal is usually between 22ºC and 31ºC, whereas 1 2ºC in the Arabian

Salinity
- Salinity is measured as the ratio of weight of dissolved salts to total weight and is usually expressed as parts per thousand (ppt).
- 75% of seawater has a salinity ranging between 34-35 ppt. The average salinity in the oceans is 34.7 ppt i.e., on an average there is 34.7 g of salt in every kg of seawater.
- Salinity near the surface in the northern Bay of Bengal can be as low as 31 ppt because the bay receives lots of freshwater in the form of rain and from runoff of surrounding rivers (Ganga, Brahmaputra, Inrawaddy, Godavari, and others).
- Salinity near the surface in the Arabian Sea is much higher than in the Bay of Bengal because evaporation over the Arabian Sea is much greater and it receives relatively less river runoff.

Pressure
- We live at 1 atmosphere pressure. In the ocean, pressure increases by 1 atmosphere for every 10 m increase in depth. Hence, the pressure at the bottom of the ocean of an average depth of 3700 m will be 370 atmospheres.
- Pressure has an influence on physical (density), chemical, and biological (decomposition of shells) properties of the ocean.

Why seawater composition does not change?
Just as the salt content of seawater does not change, the concentration of its components also remains unchanged. To maintain the constant composition, it is necessary that dissolved ions are removed at the same rate as they are added. Processes by which ions are removed from seawater include the following:
- Evaporative precipitation: In hot, dry climates where the sea is shallow and enclosed, solid deposits of salts such as rock salt (sodium chloride) and gypsum (calcium sulphate) are formed.
- Chemical precipitation: When the concentration of a salt becomes too great, that salt forms a solid precipitate. For example, calcium ions and carbonate ions combine together to form insoluble limestone (calcium carbonate).
- Biochemical removal: Organisms remove ions by scavenging them from seawater. Some animals like coral and bivalves make shells of calcium carbonate. Many organisms concentrate ions in their body tissues by a factor of 105 or more. For example, sea squirts concentrate vanadium, other tunicates concentrate niobium, oysters concentrate zinc, lobsters concentrate copper, and other shellfish concentrate mercury.