

Density: the density of material shows  
the denseness of that material in a specific  
given area.

2. The SI unit of mass is kilogram and of volume is cubic meter. Therefore S.I unit of density is  $\text{kg/m}^3$ .

The CGS unit of mass is gram and of a volume is cubic centimetre. Therefore the CGS unit of density is  $\text{g/cm}^3$  or  $\text{g cm}^{-3}$ .

3. Water contracts on heating from  $0^\circ\text{C}$  to  $4^\circ\text{C}$  expands on heating above  $4^\circ\text{C}$ .

4. Density changes with temperature because volume changes with temperature. As you heat something up, the volume usually increases because the faster moving molecules are further apart. Since volume decrease the density.

5. Mass  $m = 5 \text{ kg} = 5000 \text{ g}$

Volume  $V = 5 \text{ litre} = 5000 \text{ cm}^3$

Density of water  $d = \frac{m}{V} \Rightarrow \frac{5000 \text{ g}}{5000 \text{ cm}^3}$



Mass is the total matter contained in the body.

Mass always remain constant.

Mass is scalar quantity

Mass is measured in Beam balance

The S.I unit is kg

Weight is the measure of a gravity acting on the body.

Weight changes from place to place

Weight is a vector quantity  
~~vector~~  
Weight is measured in Spring balance.

The S.I unit is Newton



Rest and ~~rest~~ motion are related terms because they depend on the observer's frame of reference. If an observer is at rest in his/her own frame of reference, but he may be moving in other observer's frame of reference. So, if two different observers are not at rest with respect to each other then they too get.

● Rotatory motion: A body is said to be in a rotatory motion if it moves around a fixed axis.

Circular motion: The motion of a body along a circular ~~rotation~~ path is called circular motion.



9. RGF means kilogram force ~~is~~ (1 kgf = 10N)  
ex - a body of mass 10 kg will have  
weight of 10 kgf or about 100N.

10. Weight of a body changes from place to place but its mass remains constant.

11. Average speed is equal to ~~the~~ total distance  
by total time taken to cover the distance.

## Uniform motion

When a body covers equal distances in a straight line, in equal intervals of time, however small these time intervals may be.

Example: A car moving with constant speed in a straight line.

## Non-uniform motion

When a body covers unequal distances in equal intervals of time in a straight line.

Example: Circular motion is example of non-uniform motion.