CLASS-VIII (CANCEPT MAP)

PRESSURE

Pressures at any point is defined as thrust per unit area of the surface

Pressure (P)= $\frac{\text{thrust}}{\text{area}}$

Units:
CGS :- dyne cm^{-2} gwt cm^{-2}
SI:-Nm^{-2} or $kgwtm^{-2}$ or pascal (Pa)
1Pa = $1Nm^{-2}$
1bar =10^5Pa

Thrust : Force acting on a body normal to its surface.
Units:
SI-newton
CGS-dyne

pressure ¬ force

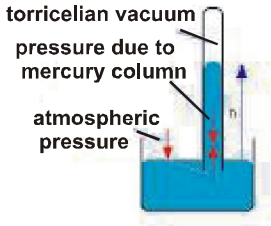
pressure _ $\frac{1}{\text{area}}$

Atmospheric pressure

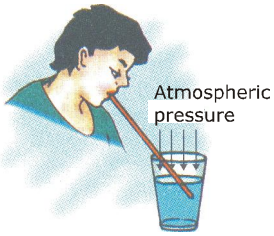
Def : The ocean of air above earth is called atmosphere

Measurement

Atmospheric pressure is measured by barometer.
Principle: The basic principle of barometer is to use atmospheric pressure to balance vertical column of mercury



Uses of atmospheric pressure:
1. Straw pipe 2. Syringe
3. Bicycle pump 4. Ink filled fountain pens
5. vacuum cleaner



Pressurein fluids

Fluid :substances which have an ability to flow are called fluids.

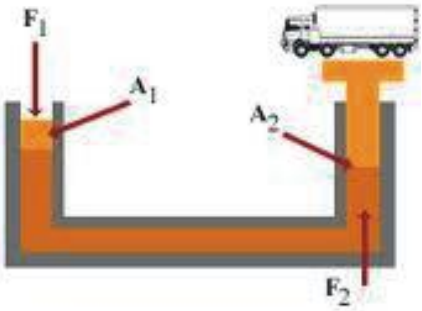
Fluid pressure : Pressure exerted by fluid is called fluid pressure

dependence:
- density of liquid
- height of liquid column

liquid pressure is measured by manometer

manometer

Transmission of pressure (Pascal's law):

Pressure is transmitted in equal magnitude in all directions through an incompressible fluid.

Applications of Pascal's law):
1. Hydraulic brakes
2. Hydraulic press