Pressure :

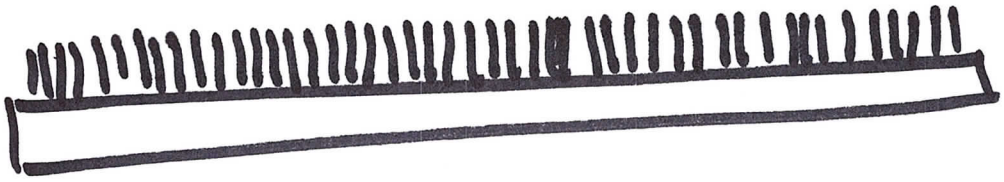
Force per unit area

$$P = \frac{F}{A}$$

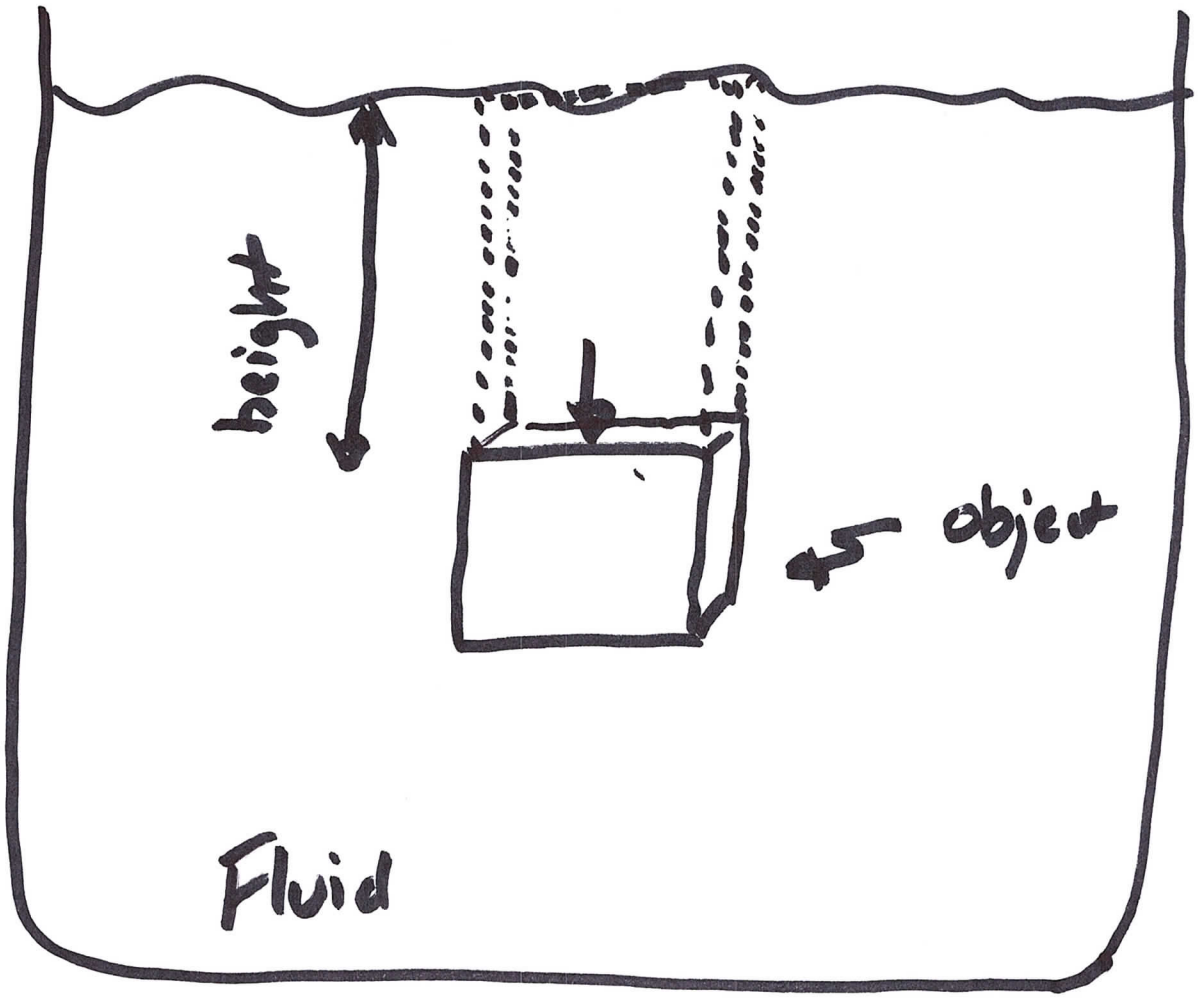
F: Force (N)

A: Area (m^2)

units: $\frac{N}{m^2}$ or Pascal (Pa)



Pressure of a Fluid Pushing on object



Weight of column of fluid

$W = mg$ ← $g = 9.8\ m/s^2$

mass of fluid = ρV

"h" → ρ = density of fluid

V = Volume of fluid

$V = l \times w \times h$

$\therefore m = \rho A h$

Area = $l \times w$

$W_{Fluid} = (\rho A h)g$

$Pressure = \frac{F}{A}$ F = weight of column of fluid

$P = \frac{\rho A h g}{A}$

$$P = \frac{\rho \cancel{A} h g}{\cancel{A}}$$

$$P = \rho h g$$

h: depth of object

g: Acc. due to the force of G

ρ: density of fluid

* . The pressure of the fluid pushing on the object is a function of "h" ... or "depth"

• Pressure is pushing on object in all directions