



# Worksheet New 1

Date: 1/4/20

Name:

Class/Section :

While studying this topic, tick off each item after you have covered it.

## What I should know:

- Pressure =  $\frac{\text{force (in newtons)}}{\text{area (in square metres)}}$
- It is measured in newtons per square metre ( $\text{N/m}^2$ ), also called pascal (Pa). It can also be measured in  $\text{N/cm}^2$ .
- In a liquid (or any fluid),
  - pressure is transmitted throughout the liquid,
  - it acts in all directions,
  - pressure increases with depth.
- The pressure of a liquid is used in hydraulic machines to transfer a force from one place to another. It can be a force-magnifier, or a distance-magnifier.
- In a hydraulic machine, the larger piston has the larger force (but the larger piston moves a shorter distance).
- If there are 2 pistons, A and B, then:  
Pressure =  $\frac{\text{force}_A}{\text{area}_A} = \frac{\text{force}_B}{\text{area}_B}$
- The atmosphere exerts a pressure on us. It can be measured with a barometer.

## What I should be able to do:

- Use the formula to calculate pressure, and state the correct units.
- Explain why deep-sea divers wear special suits.
- Explain why a dam is thicker at the bottom than at the top.
- Explain how the hydraulic brakes on a car work.
- Use the formula to calculate the force exerted in a hydraulic machine.
- Use the idea of molecules to explain air pressure.
- Explain why a can collapses if the air is taken out of it.