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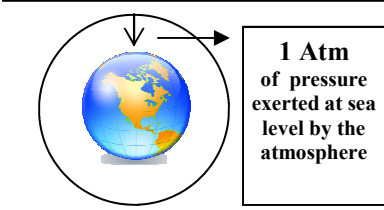
Properties of Gases & the Gas Laws

Gases have no definite shape, no definite size, can change the volume to fit the space they are in and have little attraction amongst their particles

3 Factors that Affect Gases PRESSURE, TEMPERATURE AND VOLUME

Pressure of a gas is determined by the Force of the particles collisions against the container. *The more particles ,the more collisions, the more force, therefore, the more pressure!*

As a comparison we use the amount of "air" pressure our atmosphere exerts



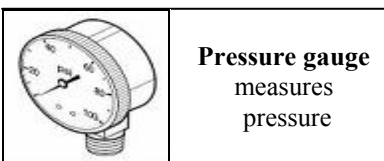
The pressure exerted at sea level by the air in our atmosphere is called :
1 Atm (atmosphere)

Which is about equal to 100,000 Pascals (**Pa**) (Metric unit for pressure)

As a comparison, the tires on your bike would have about 3- 4 Atm or
 350,000 - 400,000 Pa

How many kilopascals (kPa) would that be? (Think Three to the left!)

≈ _____



Pressure is defined as **FORCE Over AREA**

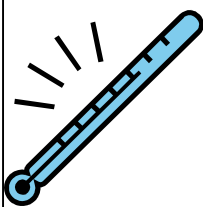
Example: How much pressure is applied to a 10m² when 100N of force is applied?

Mathematically:

$$P_{(Pa)} = F_{(N)} / A_{(m^2)}$$

Answer: 100N / 10m² = 10Pa

Temperature of a gas is determined by the average kinetic speed of its particles. Particles at a higher temperature will be moving faster and vice versa. Temperature for gases *must be in Kelvin scale for mathematical problems.*

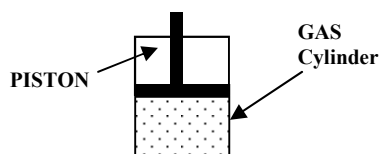


°K = °Celsius + 273 so...

0° C = 273 K 100°C = 373° K

-273° C = 0° K.....ABSOLUTE ZERO NO PARTICLE MOVEMENT

Volume of a gas is determined by the space occupied by the gas. The space is calculated in Liters (L) because the behavior of gas particles is more similar to a liquid than a solid .



Often use a rectangle to represent a cylinder of gas with a piston so that the Volume may be changed . Similar to a piston and cylinder in a car engine.

