

# Gas Pressure and Volume

**Pressure:** the force exerted on an object per unit surface area. Pascal =  $1\text{N/m}^2$

## Early Barometers

760 mm Hg = 760 torr = 1 atm = 101.3 kPa

**Boyle's Law:** the volume of a given amount of gas at constant temperature varies inversely with the applied pressure.

Ex 1. A 3.90 L helium balloon escapes from a child's hand. If it travels from an air pressure of 101.3 kPa to 59.6 kPa, what is the final volume?

Ex 2. A 12 L beach ball at standard pressure is held under water. If the volume of the ball decreases to 11.2 L, what is the final pressure in the ball?