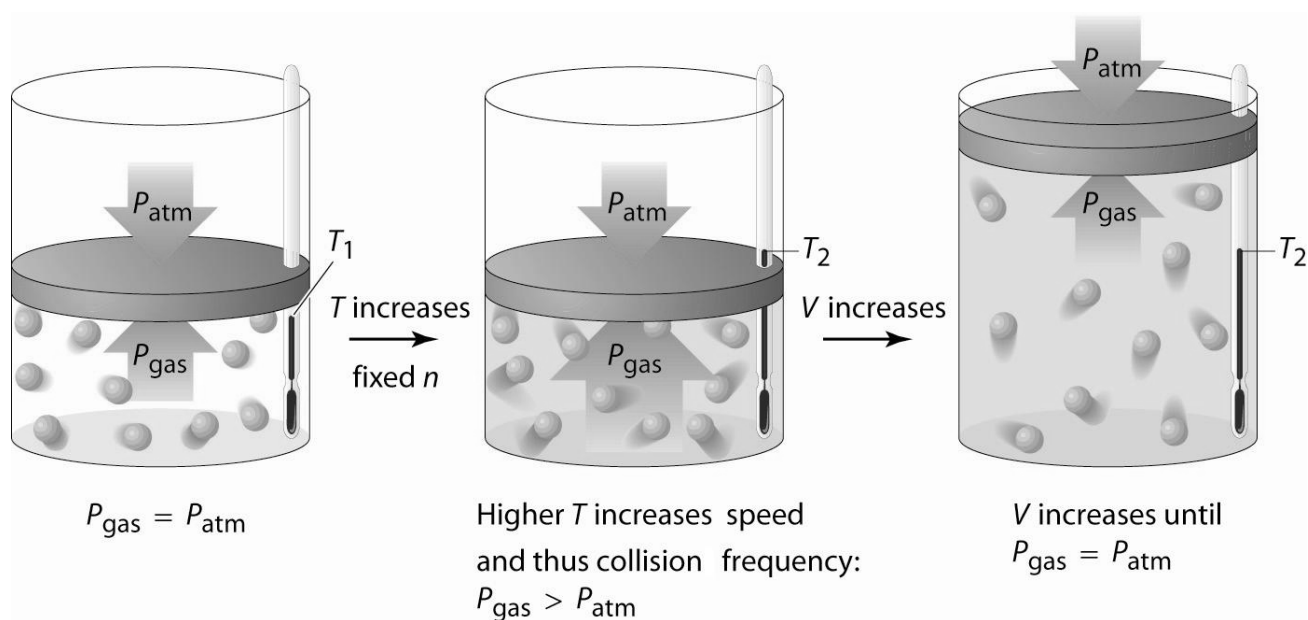# Charles's Law and the Motion of Molecules

The volume of a fixed amount of gas at a constant pressure is directly proportional to the absolute (Kelvin) temperature of the gas. Mathematically, Charles's law can be expressed as:

$$\frac{V_1}{T_1} = \frac{V_2}{T_2}$$

where T is the Kelvin temperature.

When a gas is heated, the speed of its molecules increases. The molecules collide with the walls of the container more frequently, thus increasing the pressure. If the external pressure remains the same, the gas pushes the piston up and increases the volume of the container.