

## Vocabulary: Boyle's Law and Charles' Law



### Vocabulary

- Absolute zero – the coldest possible temperature.
  - Absolute zero is equivalent to  $-273.15\text{ }^{\circ}\text{C}$ , or  $-459.67\text{ }^{\circ}\text{F}$ .
  - At absolute zero, the molecules in a substance do not move.
- Boyle's law – at a constant temperature, the volume of a fixed amount of gas varies inversely with pressure on the gas.
  - As pressure increases, the volume of the gas decreases.
  - As pressure decreases, the volume of the gas increases.
- Charles' law – with pressure on the gas held constant, the volume of a gas varies directly with temperature.
  - As temperature increases, the volume of the gas increases.
  - As temperature decreases, the volume of the gas decreases.
- Kelvin scale – a temperature scale that begins at absolute zero.
  - On the Kelvin scale, water freezes at  $273.15\text{ K}$ , and water boils at  $373.15\text{ K}$ .
- Pressure – force applied to a surface.
  - Pressure is calculated by dividing the force by the area of the surface.
  - The SI unit of pressure is the *pascal* (Pa), or newton per square meter.
  - Normal atmospheric pressure (air pressure) is  $101,325$  pascals at sea level.