Chapter 12 - New Material

- Meaning of STP - Standard T + P (273.15K, 1 atm)
- Combined gas law: \( \frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2} \) constant \( n \)
- Standard molar volume of gas - 22.4 L/mol
- Avogadro's law: \( \frac{V_1}{n_1} = \frac{V_2}{n_2} \) constant \( n, P \)
- Density calculations: at STP and non-STP
- Ideal Gas Law & calculations
- Dalton's law of partial pressure:
  \[ P_{\text{total}} = P_A + P_B + P_C \ldots \]
  \[ P_{\text{total}} V = n_{\text{total}} RT \]
- Kinetic Molecular Theory of Gases
  - Know assumptions
- Calculate relative velocities of gases
  \[ KE_{\text{gas A}} = KE_{\text{gas B}} \] of same \( T \)
- Know that real gases behave ideally at high \( T \), low \( P \)
- Stoichiometry calculations involving gases.