

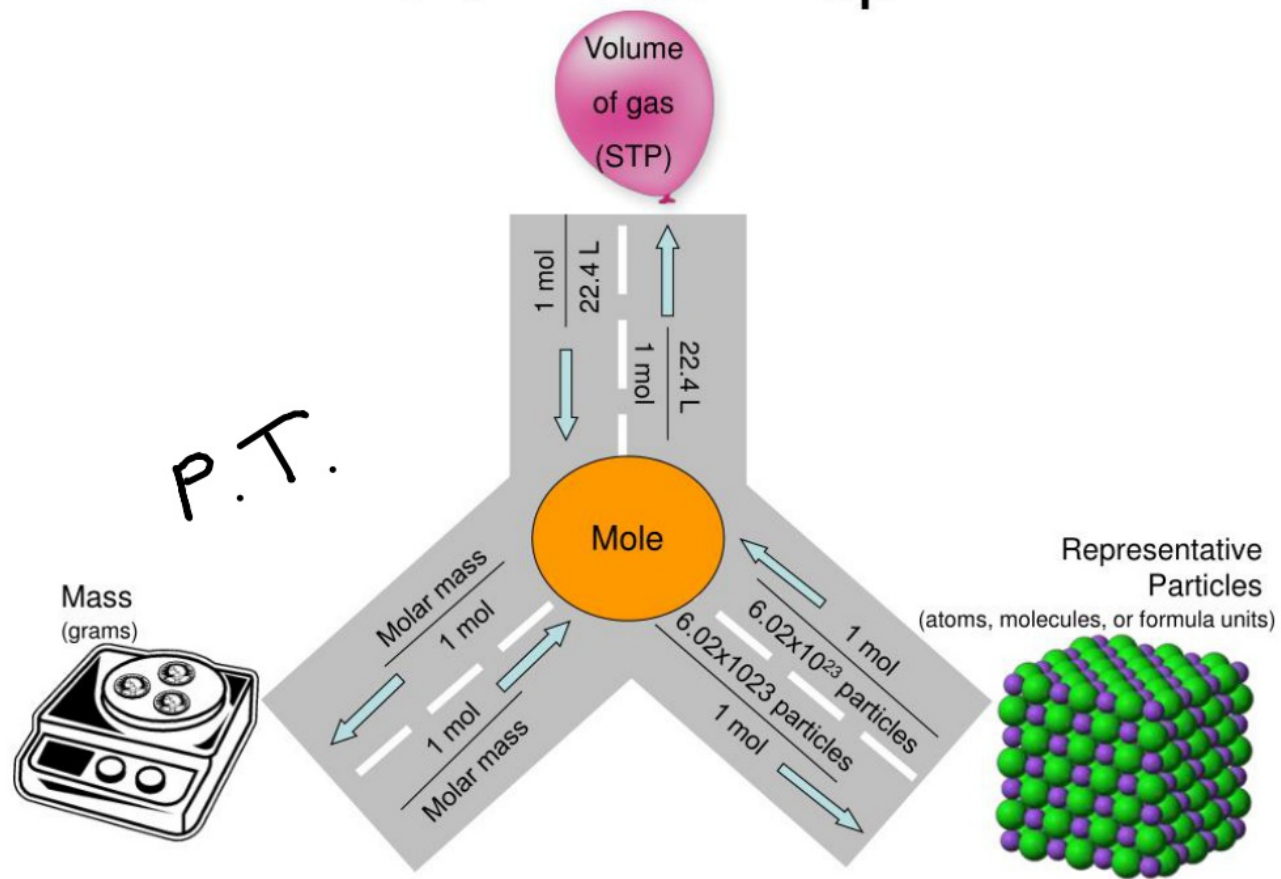
5.18.20

The Mole: Two Step Conversions

Today's Objectives:

- Recap use of mole road map
- Solve 1 and 2 step conversion questions

Mole Road Map



2 Step Conversions - have to convert to moles first!

1) 25 g Mg = ? particles of Mg

$$\frac{25 \cancel{\text{g Mg}}}{24.3 \cancel{\text{g Mg}}} \times \frac{1 \text{ mole}}{1 \text{ mole}} \times 6.02 \times 10^{23}$$

$$6.19 \times 10^{23} = \text{part}$$

2) 3.5×10^{23} particles of CO_2 = ? L @STP

$$\frac{3.5 \times 10^{23} \cancel{\text{ particles}}}{6.02 \times 10^{23} \cancel{\text{ particles}}} \times \frac{22.4 \text{ L}}{1 \text{ mole}} \times \frac{1 \text{ mole}}{1 \text{ mole}}$$

$$= 13.02 \text{ L}$$

3) 26.8 L @STP of water vapor = ? g H_2O

$$\frac{26.8 \cancel{\text{ L}}}{22.4 \cancel{\text{ L}}} \times \frac{18 \text{ g}}{1 \text{ mole}} \times \frac{1 \text{ mole}}{1 \text{ mole}}$$

$$= 21.5 \text{ g}$$

