

# SSM Final Paper

- Introduction: address initial claim, and your reaction.
- Body, dedicate at least one paragraph to each source and how it supports/refutes your claim.
- Conclusion: was the initial claim valid? Refuted?
- REMEMBER! Don't make any claim that you can't back up with evidence.

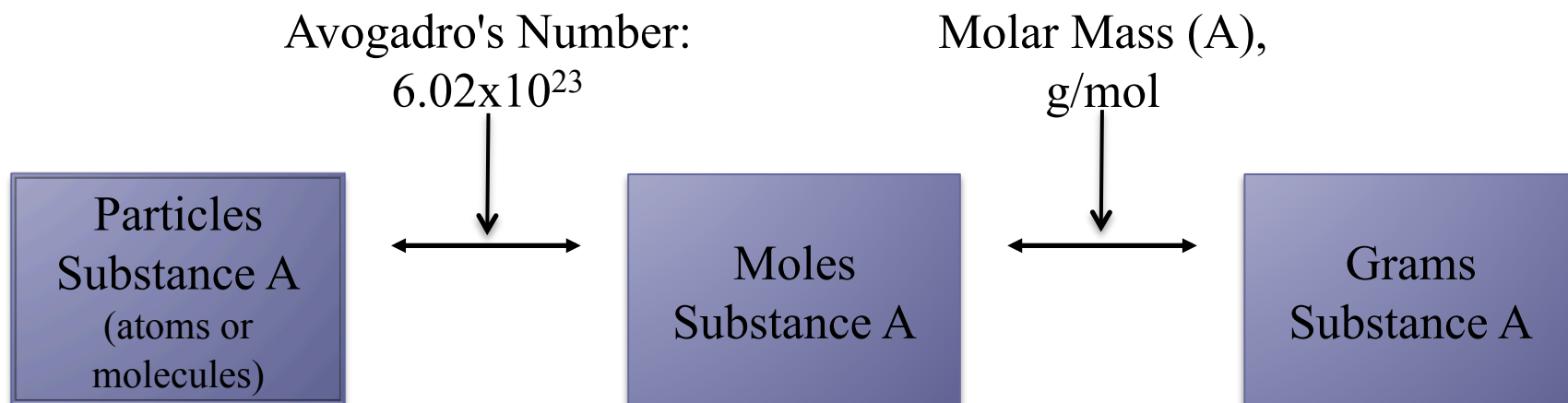
# Test Corrections

- Due by 5pm Friday.
- You can come in to work on them:
  - Today at lunch
  - Tomorrow at Lunch
  - Tomorrow after school

# Sophomores...

- Make sure you get stamped TODAY to avoid being late.

# Conversions Flowchart, Pg. 120



# Introduction to Stoichiometry

Target: Today I will be able to determine an unknown quantity of a substance using the balanced chemical reaction. **Pg. 123**



# Stoichiometry



- **Reaction Stoichiometry** involves the mass relationship between reactants and products in a chemical reaction.
- Requires a balanced reaction.
  - Balanced reactions tell you the **mole ratio**; a conversion factor that relates the amount of any substance in a reaction to the other substances.

# Mole ratio practice:

- For the equation:  $2 \text{ wheels} + 1 \text{ frame} \rightarrow 1 \text{ bike}$   
write all possible mole ratios.
  - $2 \text{ wheels} / 1 \text{ bike}$  OR  $1 \text{ bike} / 2 \text{ wheels}$
  - $1 \text{ frame} / 1 \text{ bike}$  OR  $1 \text{ bike} / 1 \text{ frame}$
  - $2 \text{ wheels} / 1 \text{ frame}$  OR  $1 \text{ frame} / 2 \text{ wheels}$

# Mole ratio practice



- Write all possible mole ratios for the reaction:





# Stoichiometry

- The stoichiometry of a balanced chemical equation allows us to solve many problems where a quantity of a substance is KNOWN and another quantity of another substance is UNKNOWN.

## Example 1:

- How many bikes can be build using 24 wheels?

Given:

24 wheels

2 wheels = 1 bike

Find:

\_\_\_\_\_ bikes

## Example 2: mol $\rightarrow$ mol



- How many moles of LiOH are needed to react with 20mol CO<sub>2</sub>?



Given:

20mol CO<sub>2</sub>

1 mol CO<sub>2</sub> = 2mol LiOH

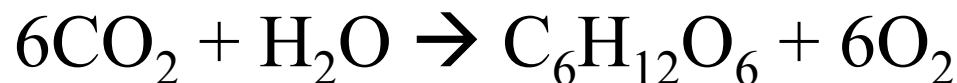
Find:

\_\_\_\_\_ mol LiOH

## Example 3: mol $\rightarrow$ g



- What mass of  $\text{CO}_2$  is needed to react 3.00mol of  $\text{H}_2\text{O}$ ?



Given:

3.00 mol  $\text{H}_2\text{O}$

6 mol  $\text{CO}_2 = 1$  mol  $\text{H}_2\text{O}$

44.01g  $\text{CO}_2 = 1$  mol  $\text{CO}_2$

Find:

\_\_\_\_\_g  $\text{CO}_2$

## Example 4: g $\rightarrow$ g



- How many grams of  $\text{NH}_4\text{NO}_3$  are required to produce 33.0g  $\text{N}_2\text{O}$ ?  $\text{NH}_4\text{NO}_3 \rightarrow \text{N}_2\text{O} + 2\text{H}_2\text{O}$

Given:

33.0g  $\text{N}_2\text{O}$

44.02g  $\text{N}_2\text{O} = 1 \text{ mol } \text{N}_2\text{O}$

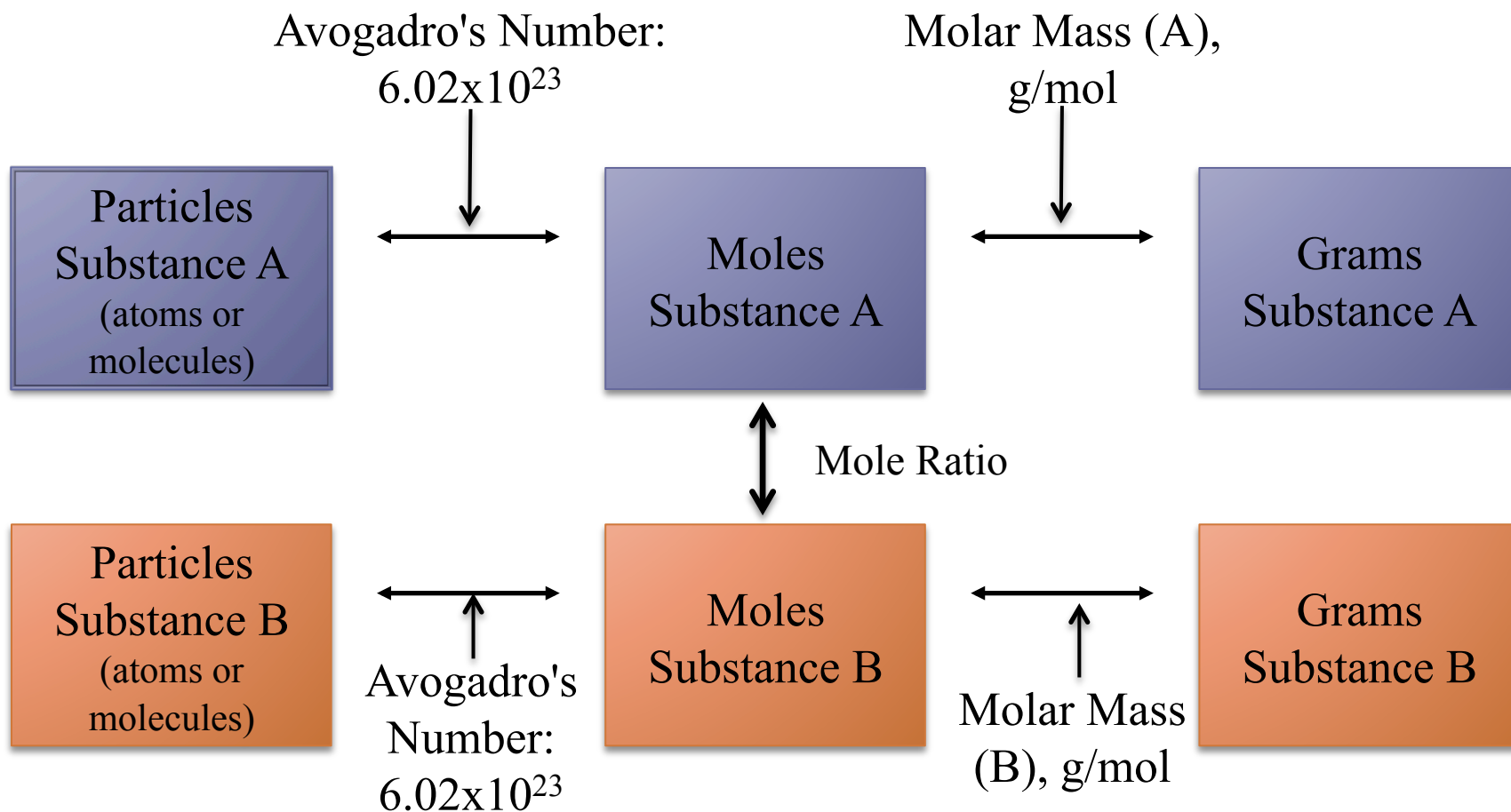
1 mol  $\text{N}_2\text{O} = 1 \text{ mol } \text{NH}_4\text{NO}_3$

80.06 g  $\text{NH}_4\text{NO}_3 = 1 \text{ mol } \text{NH}_4\text{NO}_3$

Find:

\_\_\_\_\_ g  $\text{NH}_4\text{NO}_3$

# Conversions Flowchart, Pg. 120



# Homework



- Finish Molar Mass worksheet (**Pg. 122**)



- Stoichiometry worksheet (**Pg. 122**)

**Due Friday, 2/7**



- SSM Final Draft and bibliography; hardcopy

**Due Friday, 2/7**

