

Introduction to Stoichiometry

Chemical Reactions

Qualitative
Labs

Balancing
Equations

Dimensional
Analysis

Ionic
Compounds

Scientific
Notation

Molecular
Compounds

Stoichiometry
and
Quantitative Labs

Stoichiometry

The mathematics of chemical reactions.

Familiar Quantities

How many eggs are in a dozen?



12

How many socks are in a pair?



2

How many sheets of paper are in a ream?



500

The key words dozen, pair, and ream refer to specific quantities of ANY item.

How many atoms are present in 63.5g of copper?

How many molecules are present in 18 mL of water?

The quantities just used are obsolete in chemistry. Why?

A chemist's dozen is called a mole.

What do you think of when you here the word mole?



Not this kind...



... or this kind!

How much is a Mole?

1 mole = 6.02×10^{23} particles

1 mole of pennies would make 7 stacks that would reach the moon.

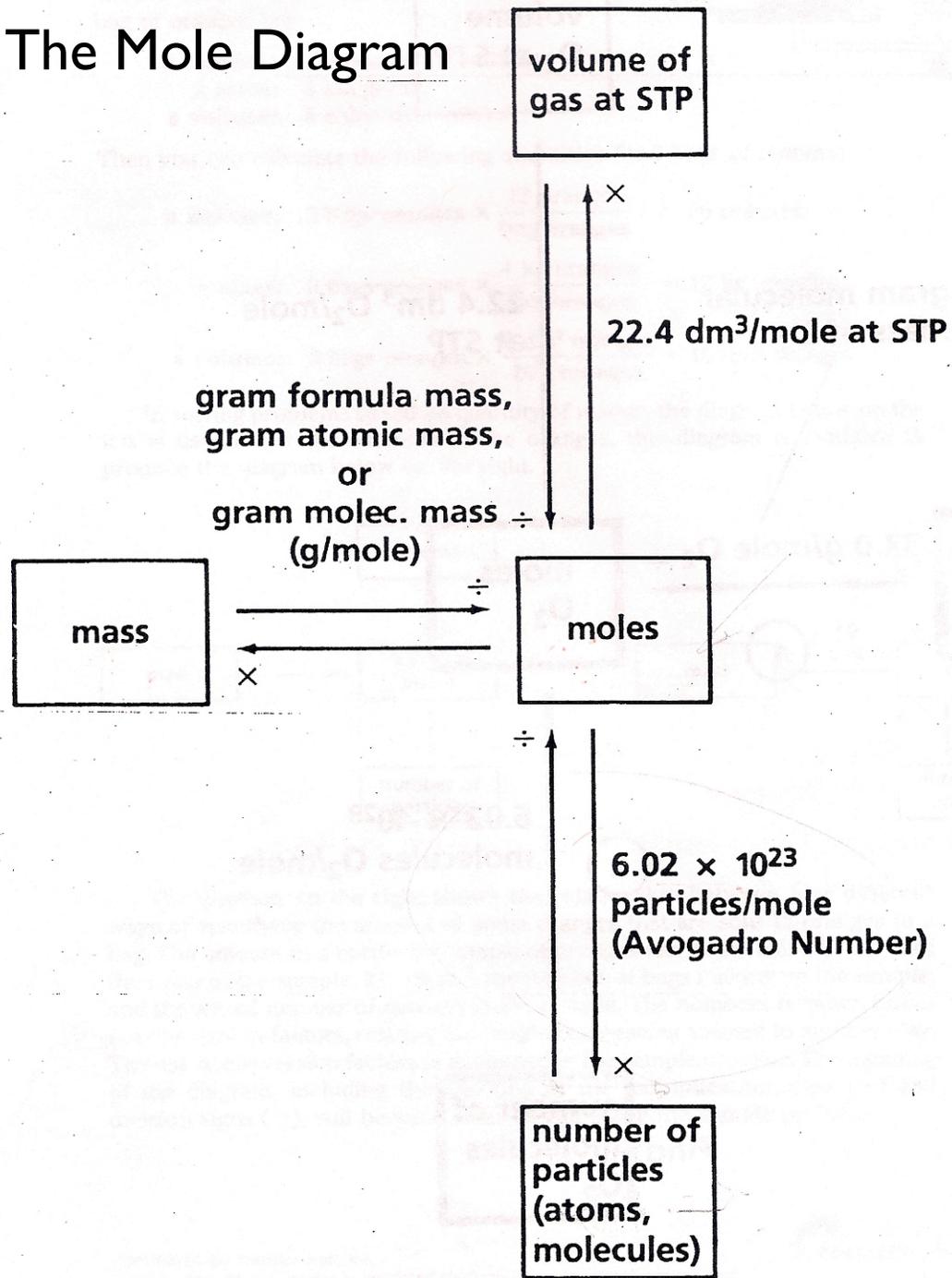
1 mole of dollar bills lined up end to end would go around the earth 15 times.

1 mole of doughnut holes would cover the earth and be 5 miles deep.

Guidelines for completing the Stoichiometry Packet.

1. All answers are available to you to check your progress.
2. You must use dimensional analysis for all work.
3. Cancel units, box or circle your answers.
4. All work is to be done on a sheet of lined paper. Only write on one side of the lined paper.
5. Begin each set of problems with the page number in the left margin. ex. SP-8
6. Your work will be collected three times during this unit. The work will be collected on the date of each test/quiz.

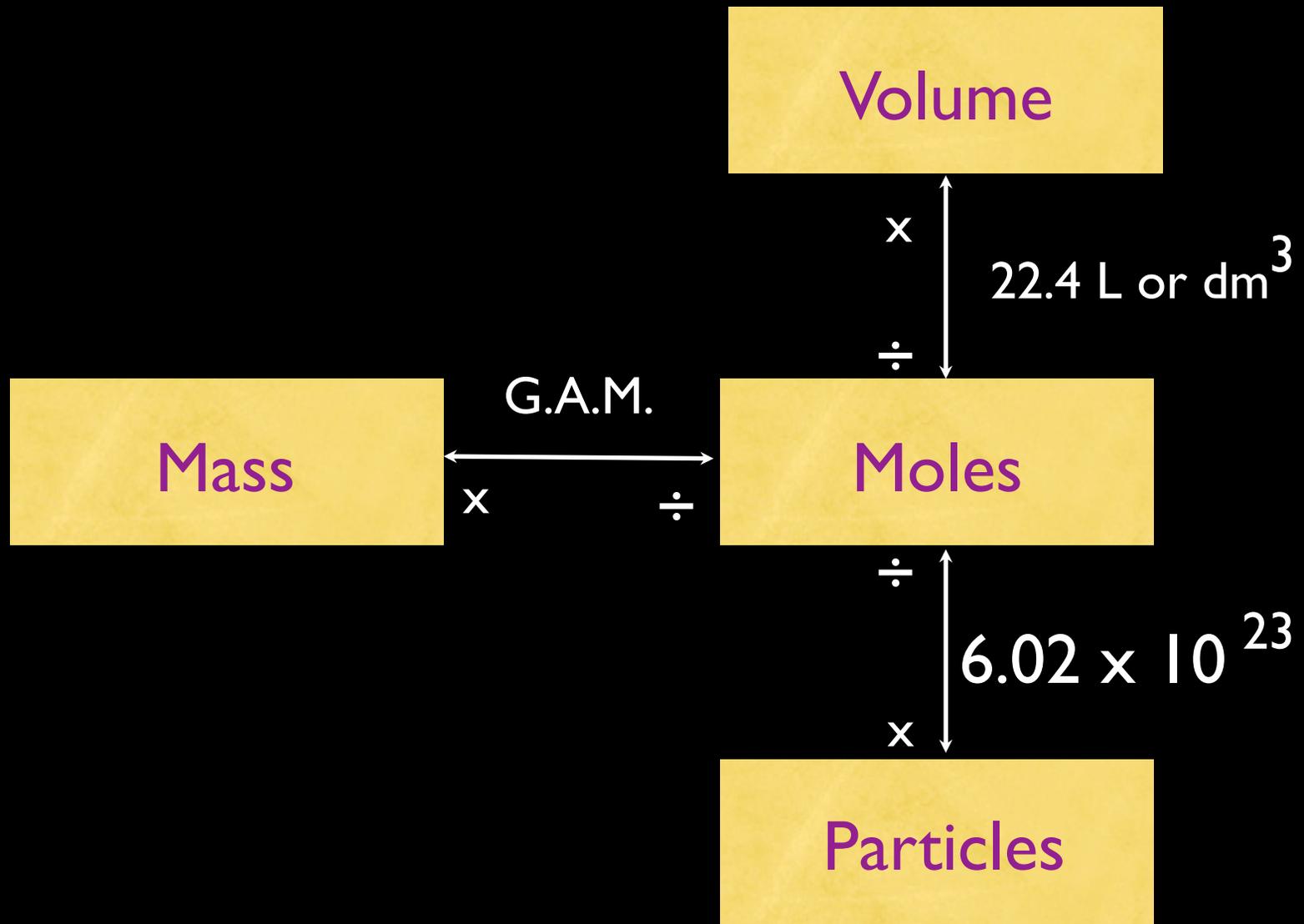
The Mole Diagram



Assignment

SP-9, SP-11, SP-14, and SP-16
(Odd Number Questions ONLY!)

Mole Diagram



Gram Atomic Mass (G.A.M.)

The atomic mass of an element in grams.