LO: Students will learn to convert between mols and grams.

DOL: Students will be able to correctly answer 4/5 questions on converting between mols and grams.

Avogadro's Number = 6.0221409×10^{23}

typically we only use 3 sig figs (6.02×10^{23})

This number is how many things are in a mole (commonly abbreviated mol)

Nov 12-8:07 AM

Think of a mol like a dozen.....

If you have 4 dozen eggs, then you have 48 eggs because 4 x 12 is 48.

If you have 4 mols of eggs, then you have 2.41×10^{24} eggs ($4 \times 6.02 \times 10^{23}$) which equals 2,410,000,000,000,000,000,000,000 eggs, also known as 2.410 septillion eggs.

How long do you think it would take to produce 4 mols of chicken eggs?

Nov 12-8:10 AM

So why do we have a number that seems unreachable?

In macroscopic terms, a mol is unrealistic, even in microscopic it is too large of a number, but in nanoscopic, it is very much appropriate.

One atom of Carbon has a mass of 12 amu (atomic mass units), one mol of Carbon has a mass of 12 grams.

Nov 12-8:21 AM

When we are dealing with elements, compounds, ions, etc, we need lots and lots of them in order to be able to measure their mass and volume, hence we do not deal in individual molecules, but instead in mols of molecules.

Nov 12-8:24 AM

Molar Mass: how much a mole of a substance weighs.

Unit of measurement: g/mol

Converting between units of measurement:

Using fractions, convert 24 inches into feet:

Using fractions, convert 3.5 feet into inches.

Determining the molar mass of a compound:

What is the molar mass of carbon dioxide?

What is the mass of water?

If you have 24 grams of water, how many mols of water is there?

How many molecules of water?

How many total atoms?

How many atoms of hydrogen?

Nov 12-8:27 AM

Assignment: Upload a picture of your handwritten notes (including all of the slides and examples we did in class today).

Homework: Copy down the slides for next class from the class website.

http://chemistry.christianedgar.com

Nov 10-7:41 AM