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Preparing a solution of known concentration

What is a mole?

The first thing you will need to understand when making a solution is the concept of a mole. A mole is a number 6.02×10^{23} to be exact. All chemistry calculations are calculated in moles. The concept of a mole is just like the concept of a dozen. There are 12 objects in a dozen, just like there are 6.02×10^{23} objects in a mole. When working with different elements, they all have different atomic weights.

The atomic weight is how many grams of that element will make up one mole (or 6.02×10^{23} atoms) When this is applied to a ionic or molecular compound, the molecular or formula weight of the compound is determined by combining the atomic weight of all the atoms in the compound. The atomic weights for each atom can be found on any periodic table.

[http://www.youtube.com/watch?v=m_SHoR_BfRo&feature=player_embedded]

The first thing you should ALWAYS do is convert grams to moles. If you are given something in grams, then determine the formula weight and find out how many moles it is. All chemistry calculations are done with moles because they are numbers not weights. When baking, you do not weigh out 173 grams of egg, you would use 1 egg