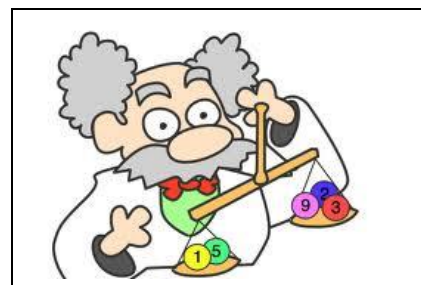


BALANCING CHEMICAL EQUATIONS

The most important point to remember when dealing with chemical equations is that the amount of an element on one side of the equation must equal the amount of that element on the other side of the equation. This is true for each element involved in the reaction. This rule is referred to as the law of conservation of mass.



When balancing chemical reactions you may add coefficients in front of the compounds to balance the reaction, but you can not change the subscripts. Changing the subscripts changes the compounds.

Steps for Balancing Equations:

There are four basic steps to balance a chemical equation:

- 1) Write the correct formula for the reactants and the products. **DO NOT TRY TO BALANCE IT YET!** You write the correct formulas first! Once you write them correctly, **DO NOT CHANGE THE FORMULAS!**
- 2) Find the number of atoms for each element on the left side. Compare against the number of the atoms of the same element on the right side.
- 3) Determine where to place coefficients in front of the formulas so that the left side has the same number of atoms as the right side for each element in order to balance the equation.
- 5) **CHECK YOUR ANSWER TO SEE IF:**
 - The number of atoms on both sides of the equation are now balanced
 - The coefficients are in the lowest possible whole ratios. (Reduce)

Some Suggestion to help you:

Here are some helpful hints for balancing:

- Take one element at a time, working from left to right except for Hydrogen (H) and Oxygen(O). Save H for next to last, and O until last.
- If everything balances except for O, and there is no way to balance O with a whole number, double all coefficients and try again. (Remember, O is diatomic as an element.
- Polyatomic ions that appear on both sides of the equation should be balanced as independent units.