**Chemical Equations Quiz – Study Guide**

**New vocabulary:** reactant, product, coefficient, subscript, soluble, insoluble, dissociation, aqueous, precipitate, net ionic equation, spectator ion, combustion

**Students should be able to:**

1. Balance all types of chemical equations using coefficients.

2. Know and understand why it is necessary to balance chemical equations.

3. Correctly use (s), (l), (g), and (aq) to designate the phase of reactants and products in equations.

4. Write balanced equations for reactions when given the word names of the reactants and products. This means you can write the formulas for ionic compounds, molecular compounds, and acids. You may use the polyatomic ion chart.

5. Recognize a chemical reaction by type: Synthesis, Decomposition, Single Displacement, Double Displacement (Precipitation or Neutralization), and Combustion of a Hydrocarbon

6. Correctly predict the products of reactions – all types.

7. Know what happens to carbonates, chlorates, and hydroxides when their compounds are gently heated.

8. Know the products formed when metal oxides are placed in water and when nonmetal oxides are placed in water.

9. Use a table of solubility rules to determine whether or not a compound is soluble in water. Use the solubility of products to determine whether or not a double replacement reaction does actually occur.

10. Use the activity series of the metals and the activity series of the halogens to determine whether or not a single replacement reaction does actually occur.

11. Describe the process of dissociation of ions in water. Describe the role of the water in the dissociation process. Make a sketch of the process.

12. Know the diatomic elements.

13. Describe 5 signs that a chemical reaction has occurred.

14. Know that combustion means burning and that it involves a reaction with the oxygen in the air.

15. Be able to write molecular equations, complete ionic equations, and net ionic equations for both single displacement and double displacement reactions.