**Predicting Products of Reactions Notes**

Predicting the products of reactions takes **practice.**

**Things to Remember:**

* Burning is not the same as heating. If something is burned it chemically combines with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the air. This will result in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction.
* If a compound is heated (either gently or strongly) it will usually \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Don’t forget about the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ elements. These are the elements that are so reactive the atoms must be bonded to another atom at all times. They are

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* Look for patterns. There are many patterns found in chemical reactions, but we are going to learn only a few.
* There are 3 decomposition patterns that you are required to **memorize**:
  + Metal carbonates decompose with gentle heat to produce metal oxides and carbon dioxide.
  + Metal chlorates decompose with gentle heat to produce metal chlorides and oxygen gas.
  + Metal hydroxides decompose with gentle heat to produce metal oxides and water vapor.
* There are 2 synthesis patterns that you are required to **memorize**:
  + Metal oxides react with water to produce **bases**. Bases are metal hydroxides.
  + Nonmetal oxides react with water to produce **oxyacids**. Remember, oxyacid formulas start with H. You should think of them as polyatomic ions bonded to enough hydrogens to neutralize the ion charge.