REACTION TYPES

There are a number of different types of chemical reactions. Listed below are 5 of the most common:

SYNTHESIS REACTIONS

In these reactions two or more elements combine to form a compound.

$2\ Ca + 0_2 \text{ -----> } 2CaO$

REDOX REACTIONS

These are a little harder to identify unless you have done the section on oxidation and reduction. These reactions involve chemicals that change their oxidation states. One or more chemicals are oxidized and one or more are reduced.

$H_2S + H_20_2 \text{ -----> } S + 2H_20$

DECOMPOSITION REACTIONS

Here you have a compound that decomposes either into two or more elements or into two or more simpler chemicals.

$2KClO_3 \text{ -----> } 2KCl + 3O_2$

SINGLE REPLACEMENT REACTIONS

In these reactions one element changes places with another.

$Fe + CuSO_4 \text{ -----> } FeS0_4 + Cu$

DOUBLE REPLACEMENT REACTIONS

These reactions are similar to the above except that there are two compounds that exchange components rather than an element and a compound in the single replacement reaction.

$2\ AgN0_3 + K_2SO_4 \text{ -----> } Ag_2SO_4 + 2KN0_3$

COMBUSTION REACTIONS

Combustion reactions generally have a carbon containing compound reacting with oxygen to produce carbon dioxide and water.(Complete Combustion)

$2\ C_4H_{10} + 13\ 0_2 \text{ -----> } 8CO_2 + 10\ H_20$

STUDENT PRACTICE PROBLEMS

1. Classify each of the following reactions based on the types at the left:

$2Na + Cl_2 \text{ -----> } 2NaCI$

$Zn + Cu(NO_3)_2 \text{ -----> } Zn(N0_3)_2 + Cu$

$CH_4 + 20_2 \text{ -----> } CO_2 + 2H_20$

$H_20_2 \text{ -----> } H_2 + 0_2$

$Ba + S \text{ -----> } BaS$

$Zn + 2HCI \text{ -----> } ZnCI_2 + H_2$

$Na_2CrO_4 + 2AgN0_3 \text{ ---> } 2NaN0_3 + Ag_2Cr0_4$

$BaCl_2 + H_2SO_4 \text{ -----> } BaS0_4 + 2HCI$

$4NH_3 + 50_2 \text{ -----> } 4N0 + 6H_2O$

$C + 0_2 \text{ -----> } CO_2$