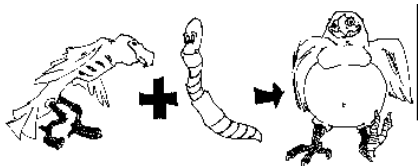


Chemical Reactions Notes

Types of reactions

1. Synthesis (Combination)

- $A + B \rightarrow AB$
- Only one product
 - i. $Zn + I_2 \rightarrow ZnI_2$



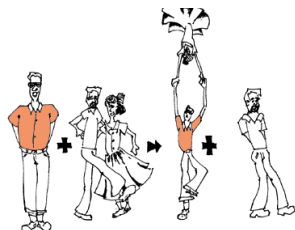
2. Decomposition

- $AB \rightarrow A + B$
- Only one reactant
 - i. $2H_2O \rightarrow 2H_2 + O_2$



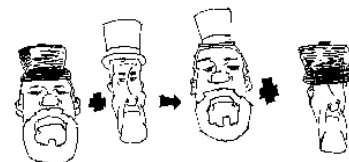
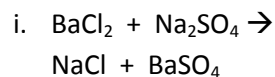
3. Single replacement (single exchange)

- $A + BC \rightarrow AC + B$
- One free element in both products and reactants
 - i. Metals replace metals
 - ii. Nonmetals replace nonmetals
- $Zn + CuCl_2 \rightarrow ZnCl_2 + Cu$



4. Double replacement (double exchange)

- $AC + BD \rightarrow AD + BC$
- Note that the metals in the reactants are listed first, and they are listed first in the products as well



5. Combustion

- $\text{Hydrocarbon} + O_2 \rightarrow H_2O + CO_2$
 - i. Hydrocarbon: any CH compound (CH_4 , C_8H_{18} , etc)
- $CH_4 + O_2 \rightarrow CO_2 + H_2O$

Determine the type of reaction. Balance each equation.

Type of reaction:

