

# Identifying Chemical Reactions Worksheet

Type of Reaction	General Description and Example(s)
<b>Combination</b>	Two reactants combine to form a single product. The reactants may be elements or compounds. $\text{Zn(s)} + \text{I}_2\text{(s)} \rightarrow \text{ZnI}_2\text{(s)}$ $\text{Na}_2\text{O(s)} + \text{CO}_2\text{(g)} \rightarrow \text{Na}_2\text{CO}_3\text{(s)}$
<b>Decomposition</b>	One reactant, a compound, breaks down to give two or more products. $2\text{H}_2\text{O}_2\text{(aq)} \rightarrow 2\text{H}_2\text{O(l)} + \text{O}_2\text{(g)}$
<b>Single Replacement</b>	An element reacts with a compound and replaces one of the elements in the compound. Metals replace metals; nonmetals replace nonmetals. $3\text{Mg(s)} + 2\text{FeCl}_3\text{(aq)} \rightarrow 2\text{Fe(s)} + 3\text{MgCl}_2\text{(aq)}$ $\text{Cl}_2\text{(aq)} + 2\text{NaI(aq)} \rightarrow \text{I}_2\text{(aq)} + 2\text{NaCl(aq)}$
<b>Double Replacement</b>	Two ionic compounds (or compounds that break apart to form ions in solution) exchange ions to form two new compounds. Examples include precipitation reactions (driving force is formation of a precipitate) and acid–base reactions (driving force is formation of water). $\text{Cd(NO}_3)_2\text{(aq)} + \text{Na}_2\text{S(aq)} \rightarrow \text{CdS(s)} + 2\text{NaNO}_3\text{(aq)}$ $\text{H}_2\text{SO}_4\text{(aq)} + 2\text{NaOH(aq)} \rightarrow \text{Na}_2\text{SO}_4\text{(aq)} + 2\text{H}_2\text{O(l)}$
<b>Combustion</b>	A compound burns in the presence of oxygen, producing energy in the form of heat and light. The combustion of organic compounds produces carbon dioxide and water. $\text{C}_4\text{H}_8\text{(g)} + 6\text{O}_2\text{(g)} \rightarrow 4\text{CO}_2\text{(g)} + 4\text{H}_2\text{O(g)}$

# Data Table

## Identifying Chemical Reactions

Reaction	Evidence of Chemical Reaction	Reactants/ Observations	Product/ Observations	Type of Reaction
1				
2				
3				
4				
5				