

| Type of Reaction | Example | What to Look For |
|--------------------|---|---|
| Synthesis | $A + B \rightarrow C$ | <ul style="list-style-type: none"> • Two Reactants • One Product |
| | $C + CO_2 \rightarrow CO_3$ | |
| Decomposition | $XY \rightarrow X + Y$ | <ul style="list-style-type: none"> • One Reactant • Two Products |
| | $CaCO_3 \rightarrow CaO + CO_2$ | |
| Combustion | $Hydrocarbon + O_2 \rightarrow CO_2 + H_2O$ | <ul style="list-style-type: none"> • Reactants = Hydrocarbon and O_2 • Products = CO_2 and H_2O |
| | $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$ | |
| Single Replacement | $A + BC \rightarrow AC + B$ | <ul style="list-style-type: none"> • Reactants = One element and One compound • Products = One element and One compound, but different ones |
| | $Al + Pb(NO_3)_2 \rightarrow Al(NO_3)_2 + Pb$ | |
| Double Replacement | $AB + CD \rightarrow AD + CB$ | <ul style="list-style-type: none"> • Reactants = Two Compounds • Products = Two Compounds but different ones |
| | $AgNO_3 + KCl \rightarrow AgCl + KNO_3$ | |

Balance and identify the type of reaction for each question:

| Q# | Equation | Type of Reaction |
|----|---|--------------------|
| 1 | $\text{Sn} + 2 \text{Cl}_2 \rightarrow \text{SnCl}_4$ | synthesis |
| 2 | $2 \text{Fe} + 3 \text{Cl}_2 \rightarrow 2 \text{FeCl}_3$ | Synthesis |
| 3 | $4 \text{Fe} + 3 \text{O}_2 \rightarrow 2 \text{Fe}_2\text{O}_3$ | Synthesis |
| 4 | $2 \text{Al} + 3 \text{Cl}_2 \rightarrow \text{Al}_2\text{Cl}_6$ | Synthesis |
| 5 | $\text{CaO} + 2 \text{HCl} \rightarrow \text{CaCl}_2 + \text{H}_2\text{O}$ | Double replacement |
| 6 | $2 \text{C}_6\text{H}_6 + 15 \text{O}_2 \rightarrow 12 \text{CO}_2 + 6 \text{H}_2\text{O}$ | Combustion |
| 7 | $\text{Mg} + 2 \text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$ | Single replacement |
| 8 | $2 \text{Al}(\text{OH})_3 \rightarrow \text{Al}_2\text{O}_3 + 3 \text{H}_2\text{O}$ | Decomposition |
| 9 | $\text{Al} + \text{H}_2\text{SO}_4 \rightarrow \text{Al}_2(\text{SO}_4)_3 + \text{H}_2$ | Single replacement |
| 10 | $2 \text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + 2 \text{H}_2\text{O}$ | Double replacement |

Using the following information, figure out what type of reaction is taking place and then figure out what the product or products will be. There is one of each type of reaction (You do not need to balance the equation).

Don't forget about which elements form diatomic molecules! H.N.O.F.Cl.Br.I

| Q# | Equation | Type of Reaction | Product or Products |
|----|--|--------------------|--|
| 11 | $\text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2 \rightarrow ?$ | Combustion | CO_2 and H_2O |
| 12 | $2\text{NaCl} \rightarrow ?$ | Decomposition | Na and Cl_2 |
| 13 | $\text{Mg} + \text{H}_2\text{O} \rightarrow ?$ | Single replacement | MgO and H_2 |
| 14 | $\text{CO}_2 + \text{H}_2\text{O} \rightarrow ?$ | Synthesis | H_2CO_3 |
| 15 | $\text{K}_2(\text{CO}_3) + \text{BaCl}_2 \rightarrow ?$ | Double replacement | KCl and BaCO_3 |

Will be graded for accuracy

Worth 25 Class Participation Points

- 1/2 point for each box, 30 boxes (15 points total)
- Name, Date, Period, 1 point each (3 points total)
- Staying on task during class, working efficiently (7 points total)

of boxes correct: _____ x 1/2 pt each = _____ pts

Name, date, period: _____ x 1 pt each = _____ pts

Stayed on task during class: Yes No = _____ pts

_____ points/ 25 points

Put in the "Class Work" section of your binder