**Types of Chemical Reactions Activity –**

**You should use** <https://www.youtube.com/watch?v=g-biRwAVTV8>

**Names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hr\_\_\_\_\_\_\_\_\_**

**Write the general explanation for each of the following types of reactions:**

1. Single replacement: AB + C 🡪 AC + B An element replaces either cation/anion in compound

Like “Cheating”

2. Double replacement: AB + CD 🡪 AD + CB Cations and anions swap

Like the show “Wife Swap”

3. Synthesis: A + B 🡪 AB Two reactants become one product. Like “Marriage”

4. Decomposition: AB 🡪 A + B One reactant becomes two products. Like “Divorce”

**List the type(s) of reaction characterized by:** do not memorize this…it is only to help with your thoughts

Two products All EXCEPT Synthesis

Only one reactant ONLY Decomposition

Two reactants All EXCEPT Decomposition ­­­

Only one product ONLY Synthesis

**Decide which type of reaction for each equation below and justify why it is that type of reaction.**

|  |  |
| --- | --- |
| Fe+S 🡪 FeS  Type of reaction: Synthesis | Justify:  Two elements became a compound. Like marriage. |
| NaCl + AgNO3 🡪 AgCl+ NaNO3  Type of reaction: Double  Replacement | Justify:  Two compounds swapped ions to become 2 new compounds. Like Wife Swap. |
| Cu + AgNO3 🡪 CuNO3 + Ag  Type of reaction: Single  Replacement | Justify:  An element replaced an ion within a compound to form a new compound with a new single element. Like cheating. |
| CaCO3 🡪 CaO + CO2  Type of reaction: Decomposition | Justify:  One reactant became two products. Like divorce. |

**Over……**

**Circle the correct word for the following reaction**: **AB + C 🡪 AC + B**

1. A is a ( cation or anion ) while B is ( cation or anion ).

2. I know that C is also a ( cation or anion ) because it replaced ( A or B )

3. A could be the element ( Na or F ) while B could be the element (Na or F )

4. C must be element ( Na or F ) because it took the place of an anion which is written after the cation. Fluorine is a nonmetal and anion.

**Circle the correct word for the following reaction: AB + C 🡪 CB + A**

1. A is a ( cation or anion ) while B is ( cation or anion ).

2. I know that C is also a ( cation or anion ) because it replaced ( A or B )

3. A could be the element ( Na or F ) while B could be the element (Na or F )

4. C must be element ( Na or F ) because it took the place of a cation which is written first. Sodium is a metal and a cation.

Explain what is wrong with this letter reaction. **ST + UV 🡪 SU + TV**

**S T + U V 🡪 S U + T V**

+ - + - ++ - - The cations are written together (does not neutral) and the anions are written

together (which also do not neutral)

Write the corrected version of the above reaction.

**S T + U V 🡪 S V + U T**

Explain what is wrong with this letter reaction. **LM + N 🡪 MN + L**

**L M + N 🡪 M N + L**

+ - ? - - + M is NOT a cation. It could never be written first.

Write the corrected version of the above reaction assuming that….

1. N is cation **LM + N 🡪 NM + L**
2. N is a anion **LM + N 🡪 LN + M**