Name: ANSWERS Date: _____

SCH4CI **Chemical Reactions Review**

Using your notes complete the Summary chart below:

Type of Reaction	Definition in words	General Equation
Synthesis	2 reactants forming 1 product	A + B → AB 
Decomposition	1 reactant breaking into 2 or more products	AB → A + B 
Single Displacement	An element displaces another element in a compound to make an element and a compound	AB + C → CB + A 
Double Displacement	2 compounds react to make 2 compounds	AB + CD → AD + CB 

Colours: A = Red, B = Blue, C = Green, D = Yellow

1. Use coloured pencils to circle the common atoms or compounds in each equation to help you determine the **type or reaction** it illustrates. Use the code below to classify each reaction.

S = Synthesis D = Decomposition SD = Single Displacement DD = Double Displacement

S $4P + 5O_2 \rightarrow P_4O_{10}$

D $2HgO \rightarrow 2Hg + O_2$

SD $Cl_2 + 2NaBr \rightarrow 2NaCl + Br_2$

S $2Na + Br_2 \rightarrow 2NaBr$

SD $2HgO + Cl_2 \rightarrow 2HgCl + O_2$

D $2KClO_3 \rightarrow 2KCl + 3O_2$

DD $BaCl_2 + Na_2SO_4 \rightarrow 2NaCl + BaSO_4$

SD $Pb + H_2SO_4 \rightarrow PbSO_4 + H_2$

S $2Mg + O_2 \rightarrow 2MgO$

D $2Al_2O_3 \rightarrow 4Al + 3O_2$

S $3H_2 + 3N_2 \rightarrow 2NH_3$

DD $CuCl_2 + H_2S \rightarrow CuS + 2HCl$

S $C + 2H_2 \rightarrow CH_4$

S $S_8 + 24F_2 \rightarrow 8SF_6$

DD $NaOH + HCl \rightarrow NaCl + H_2O$

D $N_2O_4 \rightarrow NO_2 + NO_2$

2. **Balance the above equations**

SCH 4CI **More Practice with Balancing and Types of Reactions**

Beneath the word equation write the **balanced chemical equation** and identify the **type** of reaction.

Chemical Reaction	**Type of Reaction**
1) Sodium and water produce sodium hydroxide and hydrogen gas Balanced Chem Equation: $Na_{(s)} + 2H_2O_{(l)} \rightarrow 2NaOH_{(aq)} + H_{2(g)}$	SD
2) Calcium carbonate breaks down forming calcium oxide and carbon dioxide Balanced Chem Equation: $CaCO_{3(s)} \rightarrow CaO_{(s)} + CO_{2(g)}$	D
3) Potassium sulfate and barium nitrate produces barium sulfate and potassium nitrate Balanced Chem Equation: $K_2SO_{4(aq)} + Ba(NO_3)_{2(aq)} \rightarrow BaSO_{4(s)} + 2KNO_{3(aq)}$	DD
4) Iron and oxygen gas produce iron (III) oxide Balanced Chem Equation: $4Fe_{(s)} + 3O_{2(g)} \rightarrow 2Fe_2O_{3(s)}$	S
5) Magnesium hydroxide and hydrogen iodide produced water and magnesium iodide Balanced Chem Equation: $Mg(OH)_{2(aq)} + 2HI_{(g)} \rightarrow 2H_2O_{(l)} + MgI_{2(aq)}$	DD
6) Chlorine gas and water produce hydrogen chloride and oxygen gas Balanced Chemical Equation: $2Cl_{2(g)} + 2H_2O_{(l)} \rightarrow 4HCl_{(g)} + O_{2(g)}$	SD
7) Silver nitrate and calcium chloride combine to produce silver chloride and calcium nitrate Balanced Chem Equation: $2AgNO_{3(aq)} + CaCl_{2(aq)} \rightarrow 2AgCl_{(s)} + Ca(NO_3)_{2(aq)}$	DD