CHEMISTRY **SINGLE REPLACEMENT REACTION WORKSHEET**

Practice Reactions:

1. $Ag + KNO_3$ ----->

2. $Zn + AgNO_3$ ----->

3. $Al + H_2SO_4$ ----->

4. $Cl_2 + KI$ ----->

5. $Li + H_2O$ ----->

6. $Cu + FeSO_4$ ----->

7. $Na + H_2O$ ----->

8. $Fe + Pb(NO_3)_2$ ----->

9. $Cu + H_2O$ ----->

10. $Cu + Al_2(SO_4)_3$ ---->

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11. Al + $Pb(NO_3)_2$ ---->

12. Cl_2 + NaI --->

13. Fe + $AgC_2H_3O_2$ --->

14. Al + $CuCl_2$ --->

15. Br_2 + CaI_2 --->

16. Al + HCl --->

17. Mg + HCl --->

18. Zn + H_2SO_4 --->

19. Fe + $CuSO_4$ --->

20. Cl_2 + MgI_2 --->

REACTION CATEGORY	**SINGLE REPLACEMENT**
REACTION DESCRIPTION	**In these reactions, a free element reacts with a compound to form another compound and release one of the elements of the original compound in the elemental state.There are two different possibilities:** **1. One cation (+ ion) replaces another.** **2. One anion (- ion) replaces another.**
REACTION FORMAT	**1. AB + C ----> CB + A** **2. A + BC ----> BA + C**
REACTION GUIDELINES	1. In a single replacement reaction atoms of one element replac the atoms of a second element in a compound. Whether one metal will replace another metal from a compound can be dete mined by the relative reactivities of the two metals. To help us determine this, an activity series of metals arranges metals in o der of decreasing reactivity. A reactive metal will replace any metal listed below it in the activity series. **ACTIVITY SERIES OF METALS** METAL — SYMBOL Lithium — Li Potassium — K Calcium — Ca Sodium — Na Magnesium — Mg Aluminum — Al Zinc — Zn Iron — Fe Lead — Pb (Hydrogen) — (H)* Copper — Cu Mercury — Hg Silver — Ag *Metals from Li to Na will replace H from acids and water; from Mg to Pb they will replace H from acids only. 2. A nonmetal can also replace another nonmetal from a compound. This replacement is usually limited to the halogens (F_2 Cl_2, Br_2, and I_2). The activity of the halogens decreases as yo go down the Group (17) of the periodic table.
REACTION GUIDELINE EXAMPLES	1. $Mg + Zn(NO_3)_2$ ----> $Mg(NO_3)_2 + Zn$ *Mg replaces Zn; Mg is above Zn on the chart* $Mg + 2\ AgNO_3$ -----> $Mg(NO_3)_2 + 2\ Ag$ *Mg replaces Ag; Mg is above Ag on the chart* $Mg + LiNO_3$ ------> No Reaction (NR) *Mg cannot replace Li; Li is above Mg on the chart* 2. $Cl_2 + 2NaBr$ ---> $2NaCl + Br_2$