Double Replacement Reactions

AB + CD → AD + CB

**always pair a cation (+) with an anion (-)

1) Switch ions (cation from 1st with anion from 2nd)
2) Cross charges
3) Balance

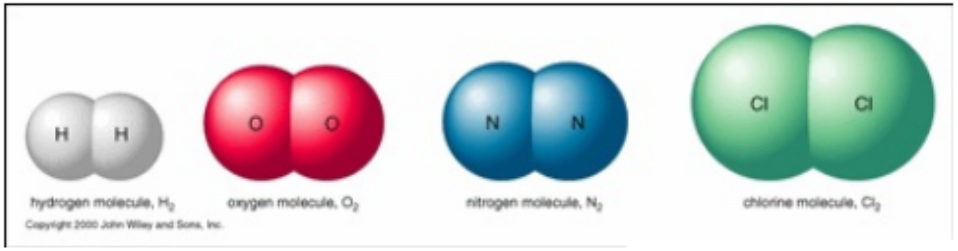
Synthesis Reactions

A + B → AB

1) Write element symbols
2) Combine metal and nonmetal
3) Cross charges for elements that are bonded
4) Check elements by themselves to see if they are diatomic
5) Balance

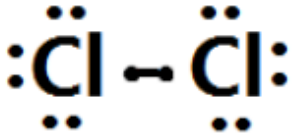
Diatomic Elements

elements that exist in pairs when by themselves
(not bonded to other elements)



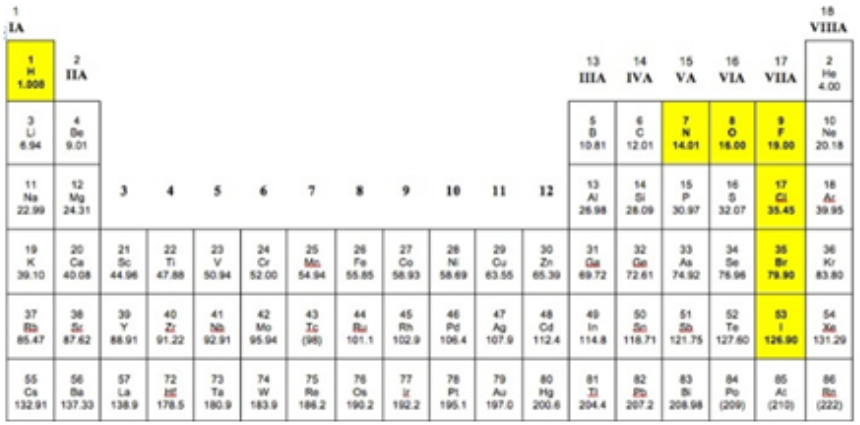
Why?

8 valence electrons
(there are also a few other reasons)



How can I remember them?

acronym: Br I N Cl H O F



Our Chemical Reaction Toolbox:

If elements are bonded together: NaCl

cross charges

If elements are by themeselves: Na + Cl

check to see if they are diatomic

Decomposition Reactions

AB → A + B

1) Write element symbols
2) Break apart reactant into elements
3) Cross charges for elements that are bonded
4) Check elements by themselves to see if they are diatomic
5) Balance

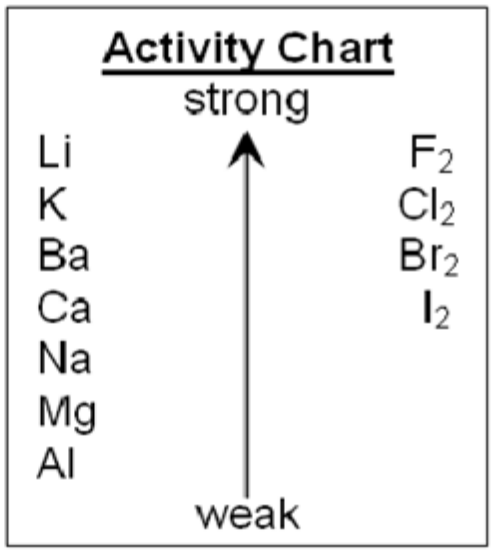
Single Replacement Reactions

A + BC → AC + B

1) Write element symbols & charges of + or -
2) Check activity chart to see if reaction happens
3) Switch ions (ALWAYS put a positive with a negative, never two positives together)
4) Cross charges for elements that are bonded. Check for diatomics for elements by themselves.
5) Balance

A + BC → AC + B

1) Write element symbols & charges of + or -
2) Check activity chart to see if reaction happens
3) Switch ions (ALWAYS put a positive with a negative, never two positives together)
4) Cross charges for elements that are bonded. Check for diatomics for elements by themselves.
5) Balance



- Aluminum chloride + fluorine →

Combustion Reactions

1. Put down CO_2 and H_2O as products
2. Balance carbons & hydrogens first
3. Set up algebra problem for oxygen & solve
4. Double coefficients if necessary