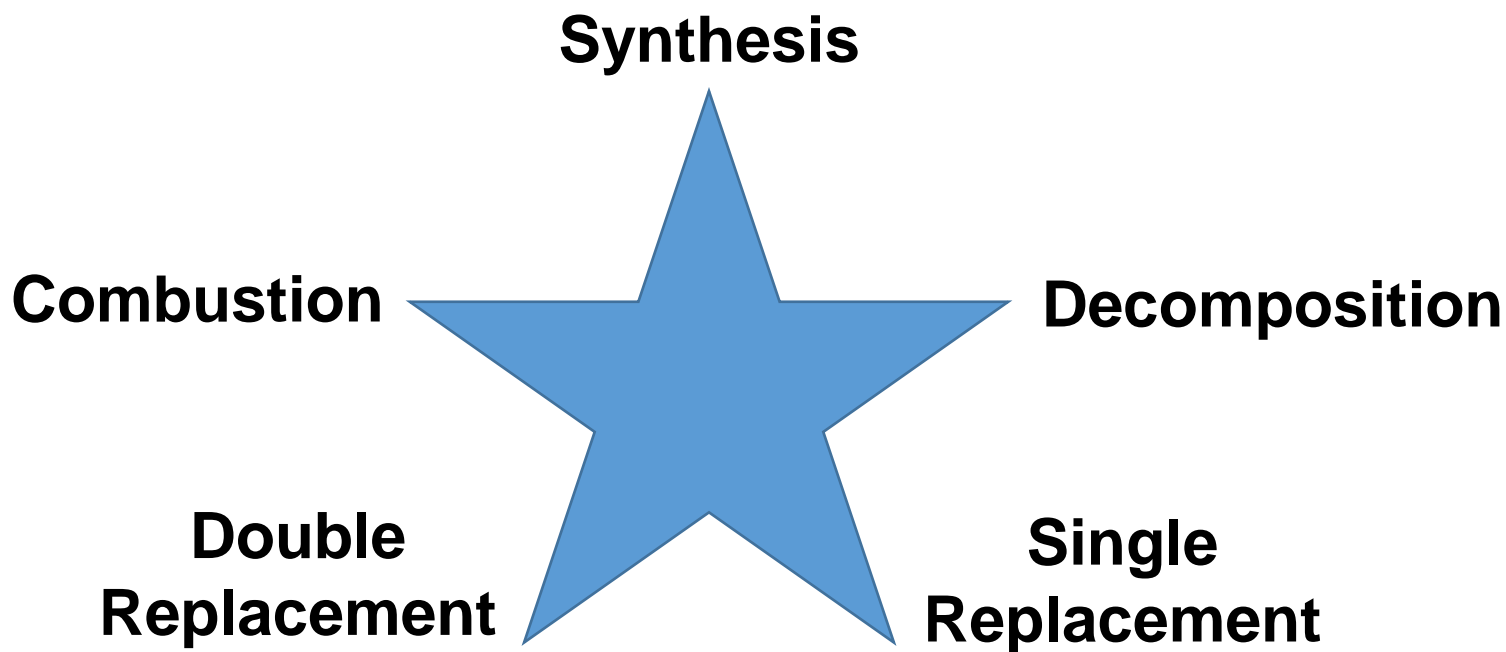


# N23 - Types of Reactions

**Target: I can identify the common types of reactions.**



YouTube Link to Presentation: <https://youtu.be/5qJkxyaOdwQ>

# 5 Main Categories

Helps us predict things about the reactions

**Know the reactants?**

**You can predict the products**

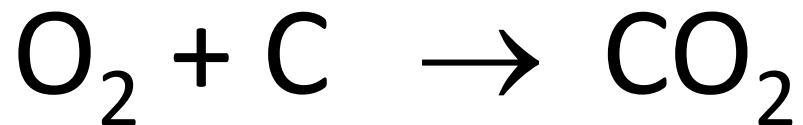
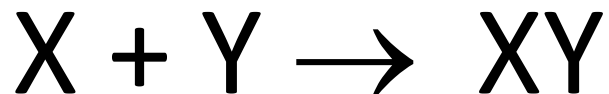
**Know the products?**

**You can predict the reactants**

# Synthesis

*Two things combining into one*

**Example:**



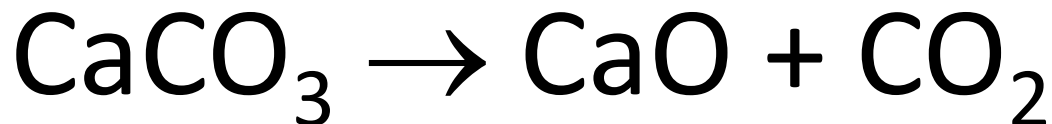
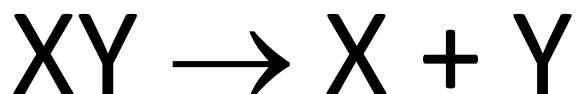
**What to look for:**

More reactants than products

# Decomposition

*One thing falling apart into two*

**Example:**



**What to look for:**

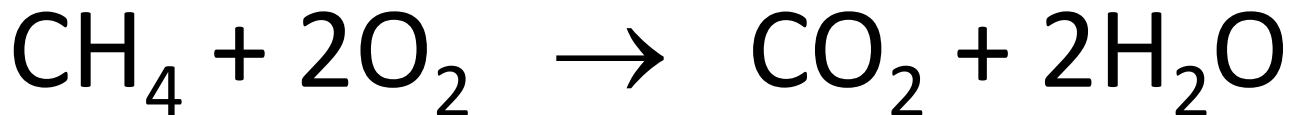
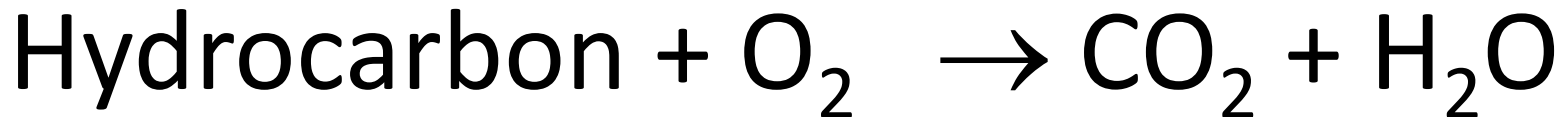
More products than reactants

# Combustion

*Burning*

Example:

*(almost always a hydrocarbon)*



What to look for: (Usually)

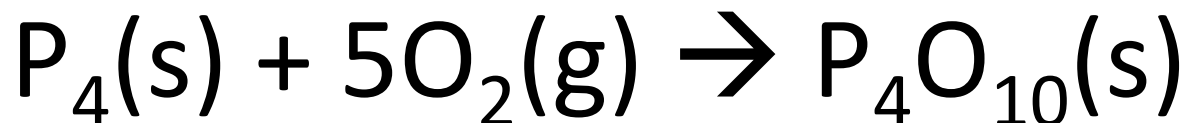
Reactants = Hydrocarbon and  $\text{O}_2$

Products =  $\text{CO}_2$  and  $\text{H}_2\text{O}$

# Combustion

*Burning*

**OTHER Type of Example:**



**What to look for:**

Reactants = Something reacting w/O<sub>2</sub>

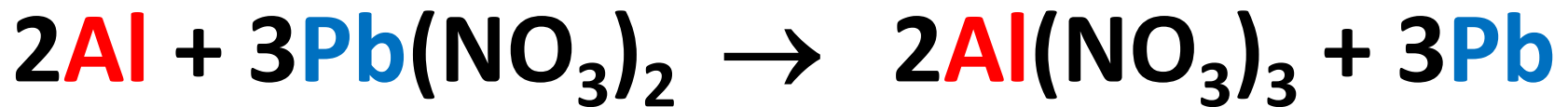
Products = *You would not be expected to know what the products are.*

Careful not to say it's synthesis!  
That isn't specific enough!

# Single Replacement

*Swapping one element*

Example:



What to look for:

Reactants = 1 element and 1 compound

Products = 1 element and 1 compound,  
but different ones

# Single Replacement

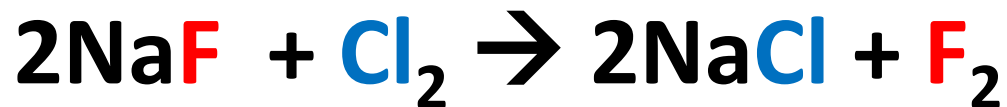
*Swapping one element*

Careful!

Metallic elements replace the cations.

**BUT!**

Nonmetal elements replace the anions.

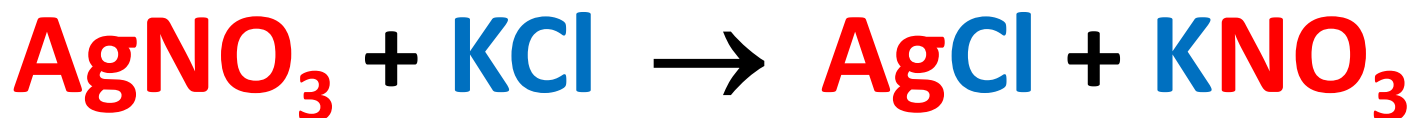
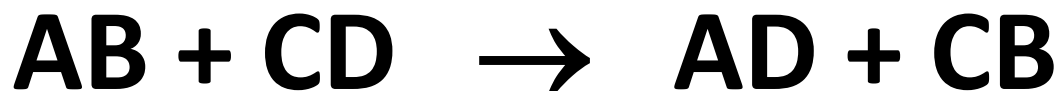




# Double Replacement

*Swapping two elements*

Example:



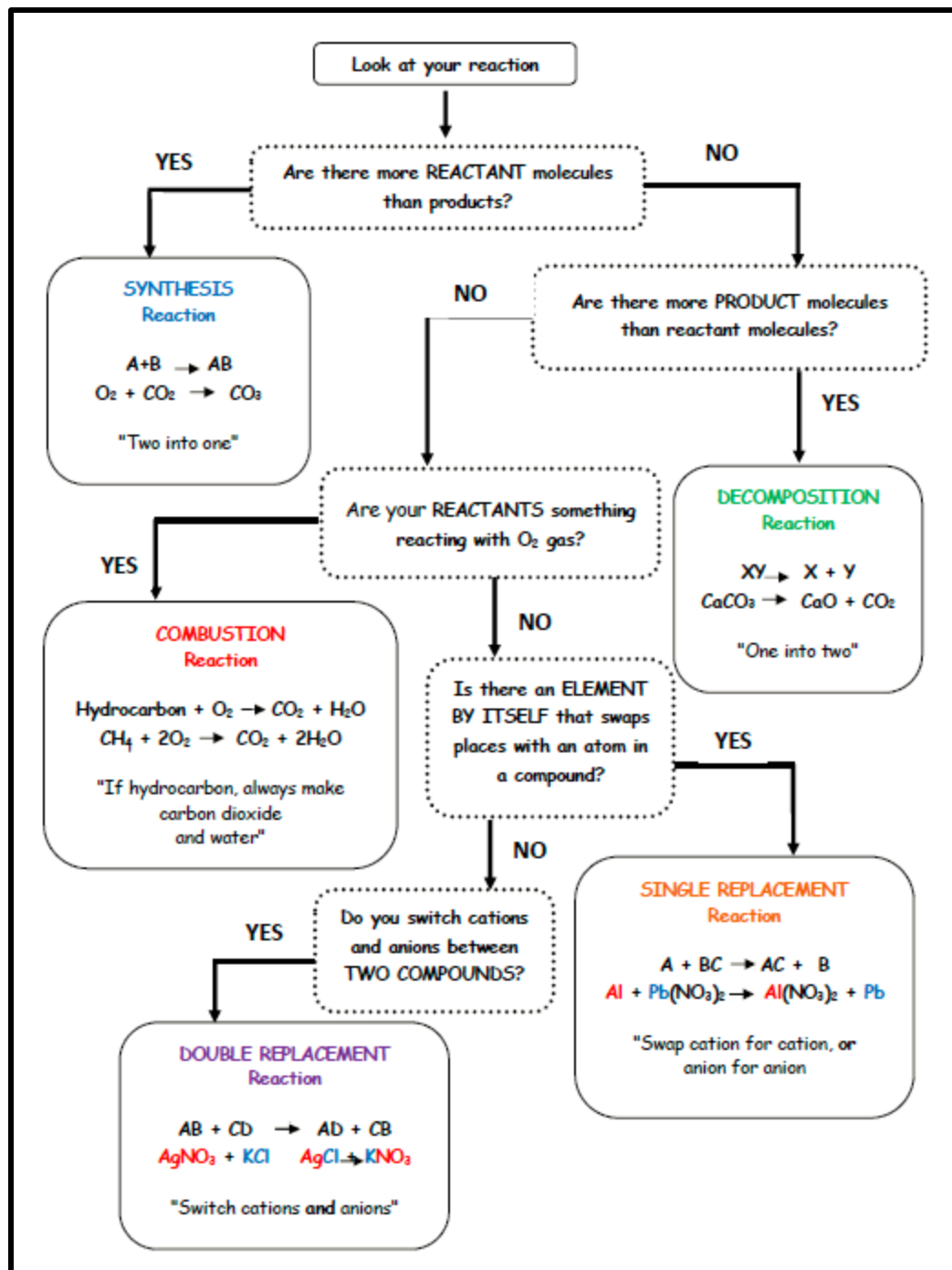
What to look for:

Reactants = 2 Compounds

Products = 2 Compounds but different ones

# For Replacement Rxns

- *If element is a cation, replace it with the other cation. If it is an anion, replace it with the other anion.*
- *All neutral compounds need to have a cation and anion when finished (IN THAT ORDER).*
- *You need NEW subscripts – cross over FROM SCRATCH! No stealing subscripts from the reactants!!!!!!!!!!!!*
- *Careful about diatomic elements in single replacements – they need to be diatomic!*



**YouTube Link to Presentation:**

**<https://youtu.be/5qJkxyaOdwQ>**