Look at your reaction

Are there more REACTANT molecules than products?

SYNTHESIS Reaction

\[ A + B \rightarrow AB \]

\[ O_2 + CO_2 \rightarrow CO_3 \]

"Two into one"

Are there more PRODUCT molecules than reactant molecules?

DECOMPOSITION Reaction

\[ XY \rightarrow X + Y \]

\[ CaCO_3 \rightarrow CaO + CO_2 \]

"One into two"

Do your REACTANTS = hydrocarbon & \( O_2 \) and your PRODUCTS = \( CO_2 \) and \( H_2O \)?

COMBUSTION Reaction

Hydrocarbon + \( O_2 \) → \( CO_2 \) + \( H_2O \)

\[ CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O \]

"Always make carbon dioxide and water"

Is there an ELEMENT BY ITSELF that swaps places with an atom in a compound?

SINGLE REPLACEMENT Reaction

\[ A + BC \rightarrow AC + B \]

\[ Al + Pb(NO_3)_2 \rightarrow Al(NO_3)_2 + Pb \]

"Swap cation for cation, or anion for anion"

Do you switch cations and anions between TWO COMPOUNDS?

DOUBLE REPLACEMENT Reaction

\[ AB + CD \rightarrow AD + CB \]

\[ AgNO_3 + KCl \rightarrow AgCl + KNO_3 \]

"Switch cations and anions"