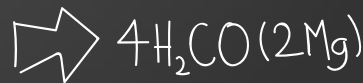
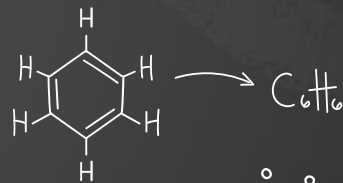
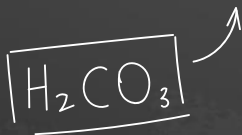
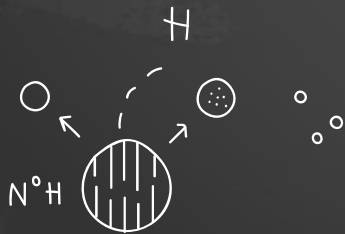
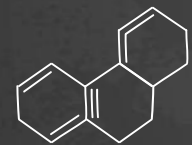




Chemistry - 101

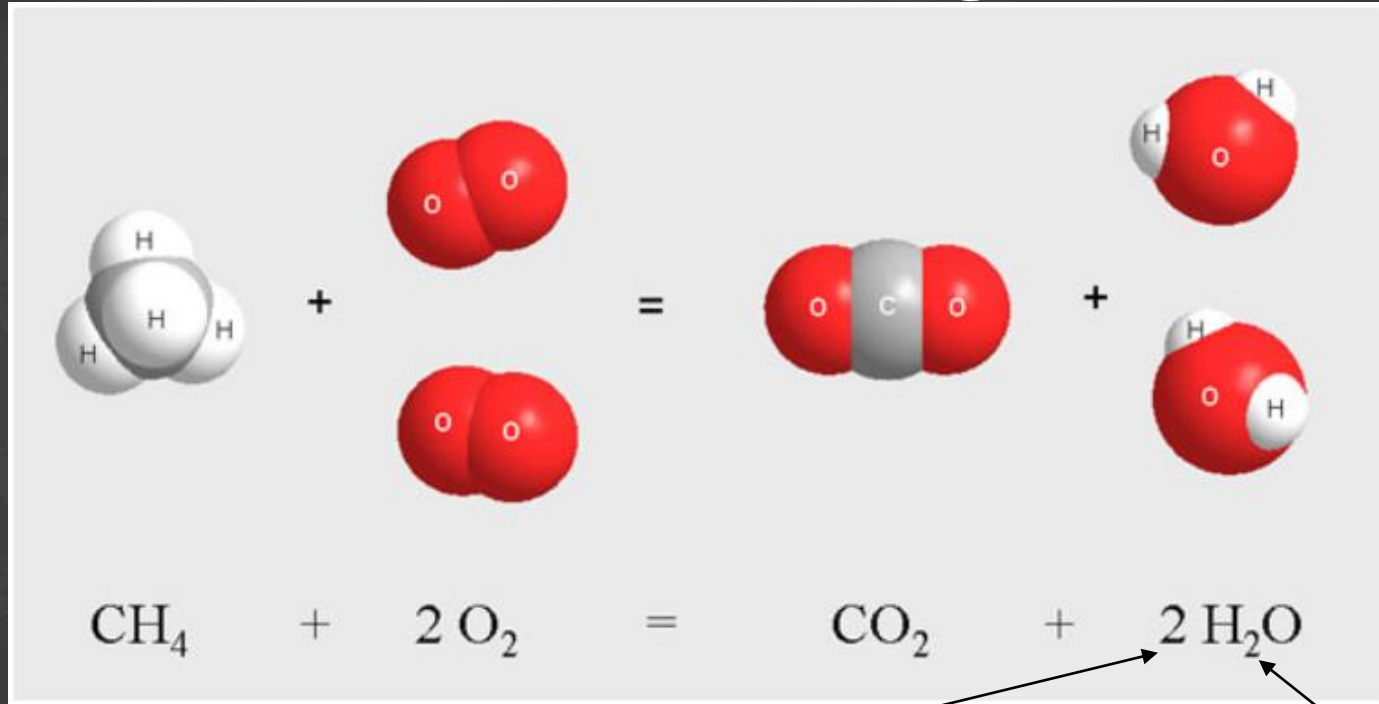
January 16



Chemical reactions

In chemical reactions substances with certain compositions and properties turn into different substances with different compositions and properties BUT the nuclei of atoms DO NOT change.

Combustion of methane in oxygen from the air



Coefficient shows how many molecules participate or form in the reaction

Index shows the number of atoms in a molecules

Combustion reaction



The number of atoms for each element is the same in the left and the right parts of the equation.

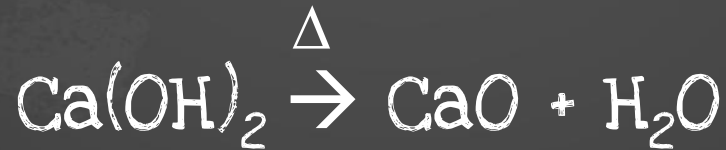
To equate the number of atoms in the left and the right parts of the equation we use coefficients that we write in front of the molecular formulas.

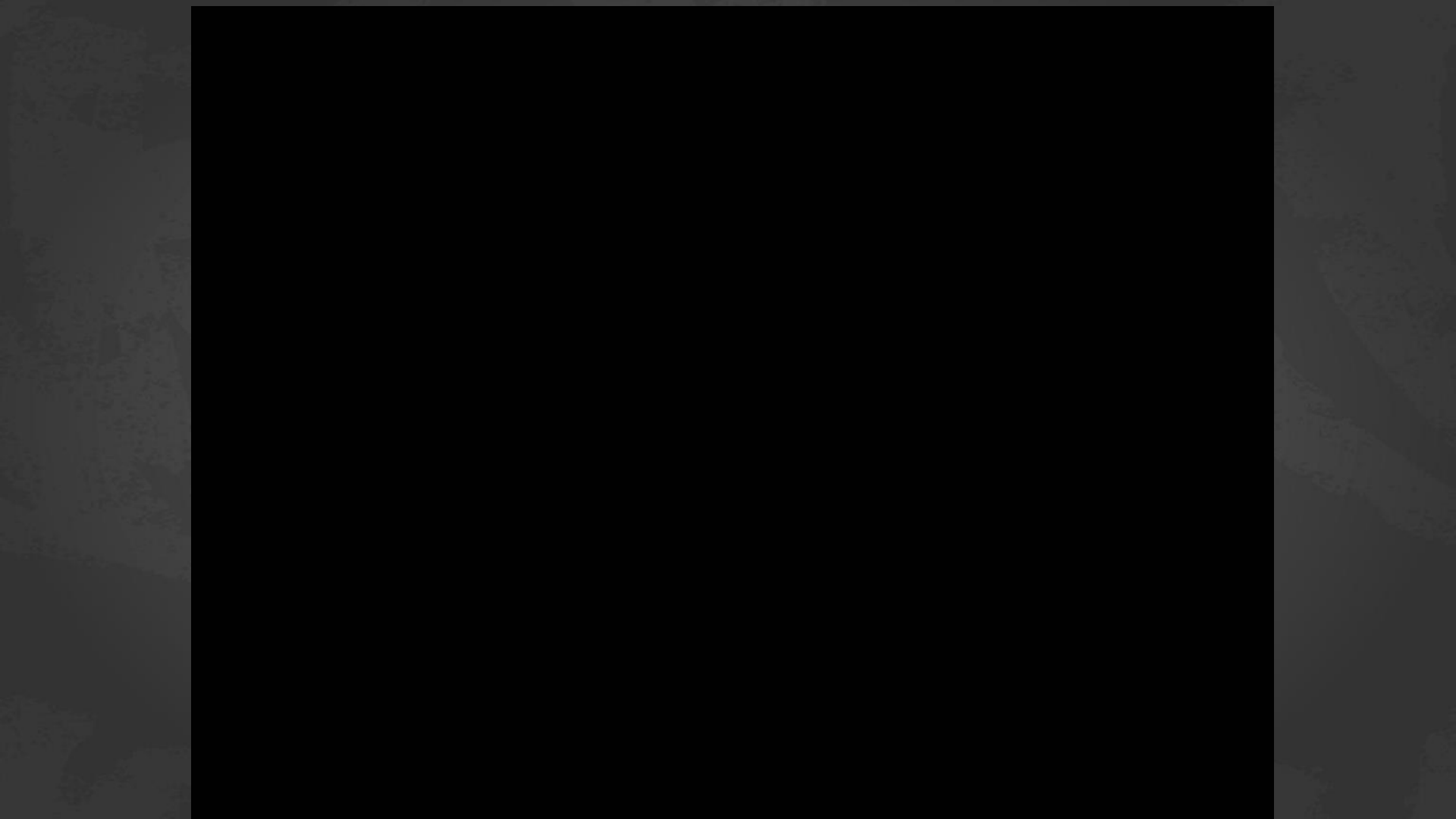
Unlike in math equations, left and right parts of chemical equations cannot be exchanged.

Combination (Synthesis) reaction

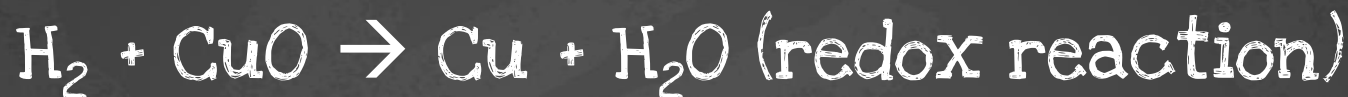


Decomposition reaction





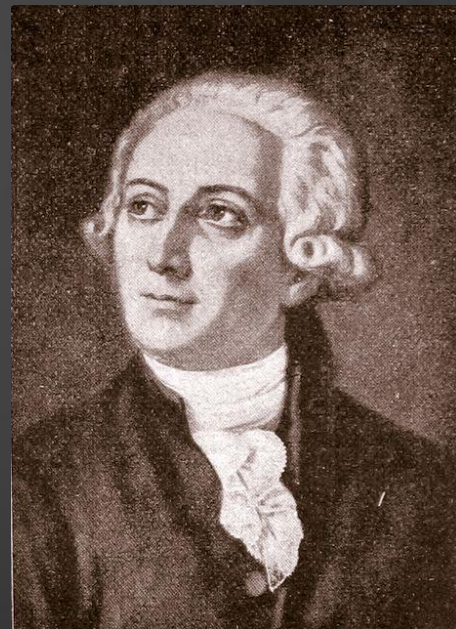
Single and double replacement reactions

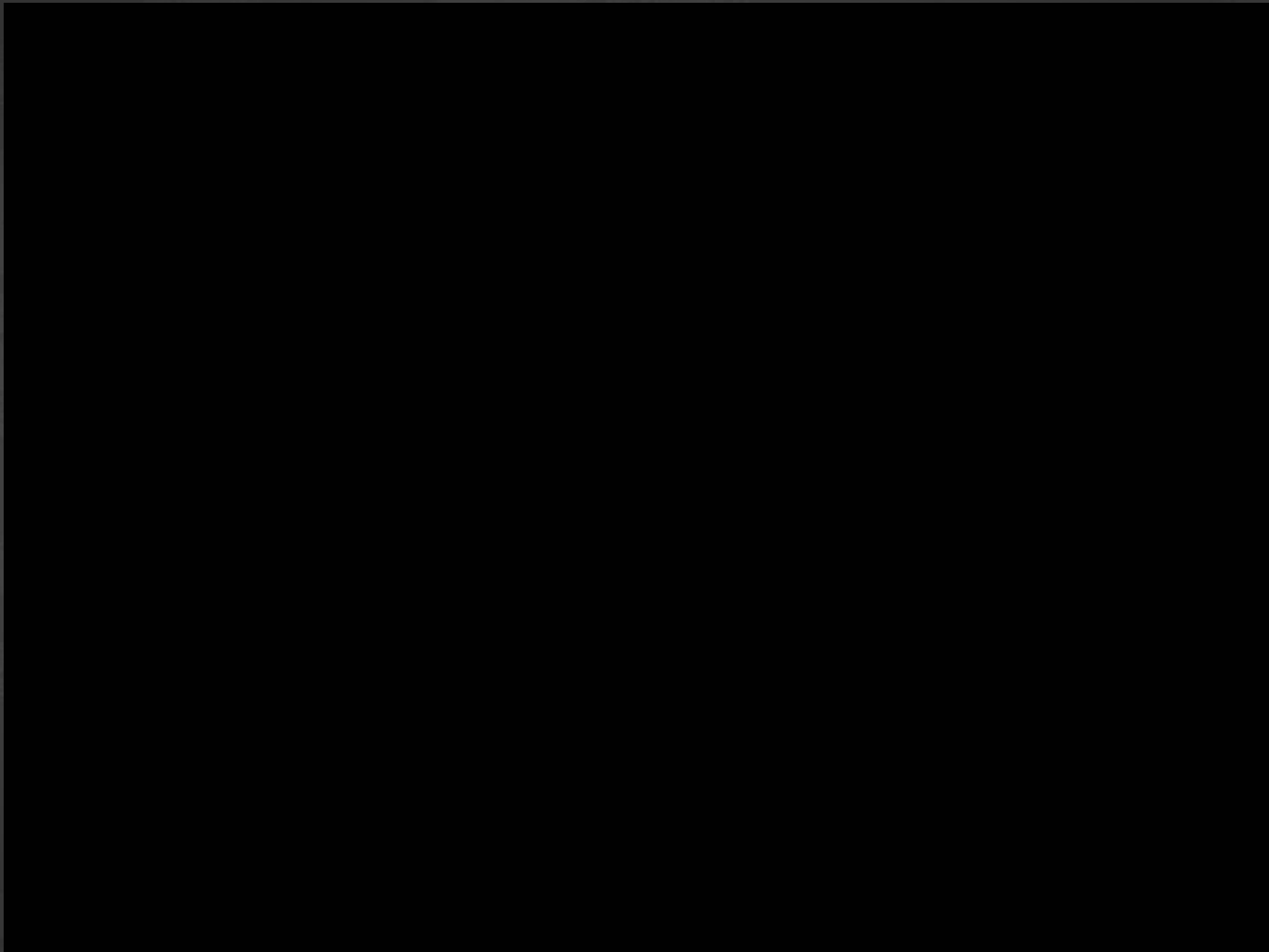


LOMONOSOV - LAVOISIER LAW



- The **Law of Conservation of Mass/Matter** (also known as the **Lomonosov-Lavoisier Law**) states that **mass** in a closed system will remain the same. Hence, **matter** cannot be created nor destroyed but can be rearranged.
- Mass of the reactants (substances that react) is equal to the mass of reaction products (substances that form in the reaction)





This class uses the materials from the following books:

Larry Gonick and Graig Criddle “The cartoon guide to chemistry”

Manyuilov and Rodionov “Chemistry for children and adults”

Kuzmenko, Eremin, Popkov “Beginnings of chemistry”