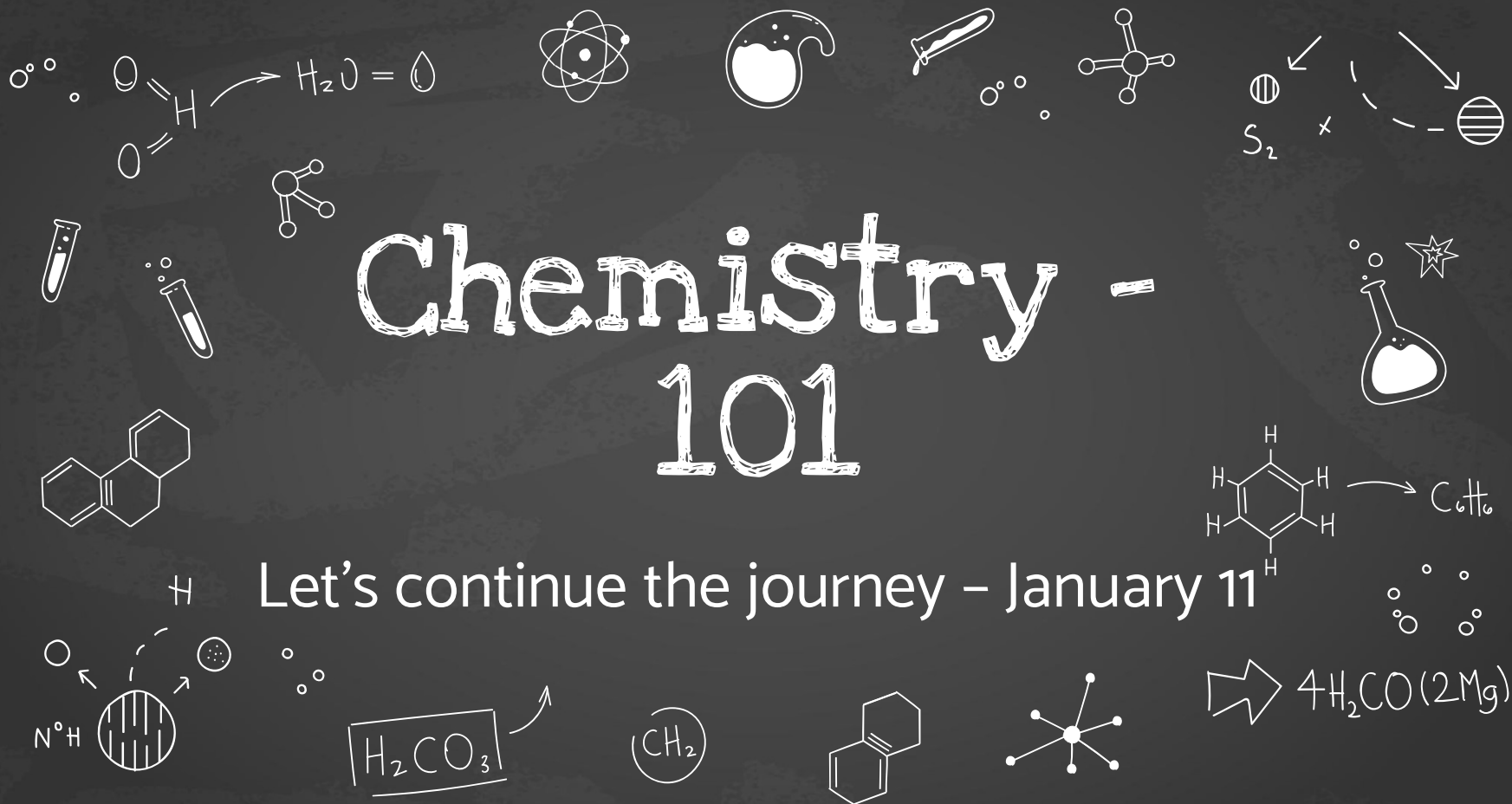


# Chemistry - 101

Let's continue the journey – January 11



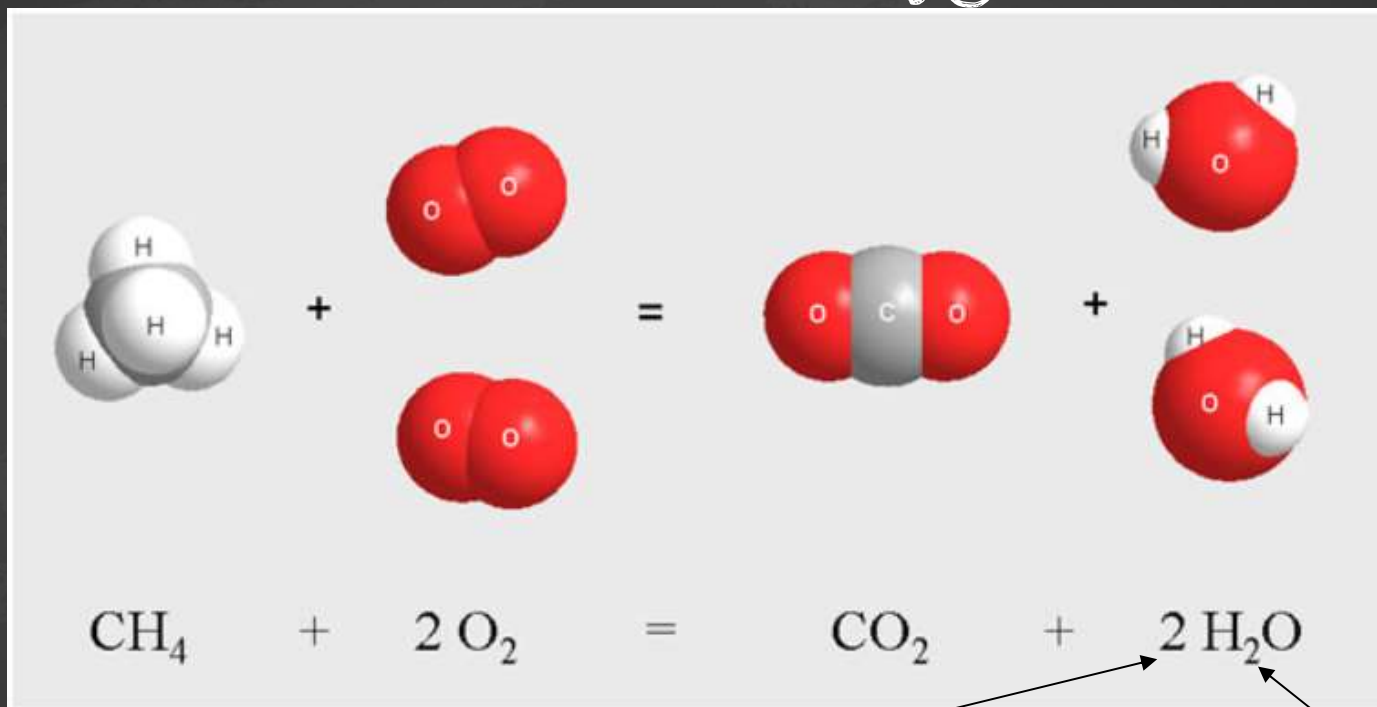
Which of the following is possible  
for the same element:

- a) different number of electrons?
- b) different number of protons?
- c) different number of neutrons?

# 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.

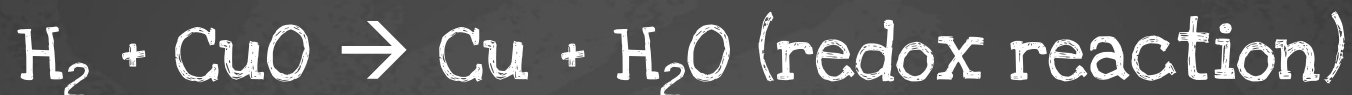
Combination (Synthesis) reaction



Decomposition reaction



## Single and double replacement reactions







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"