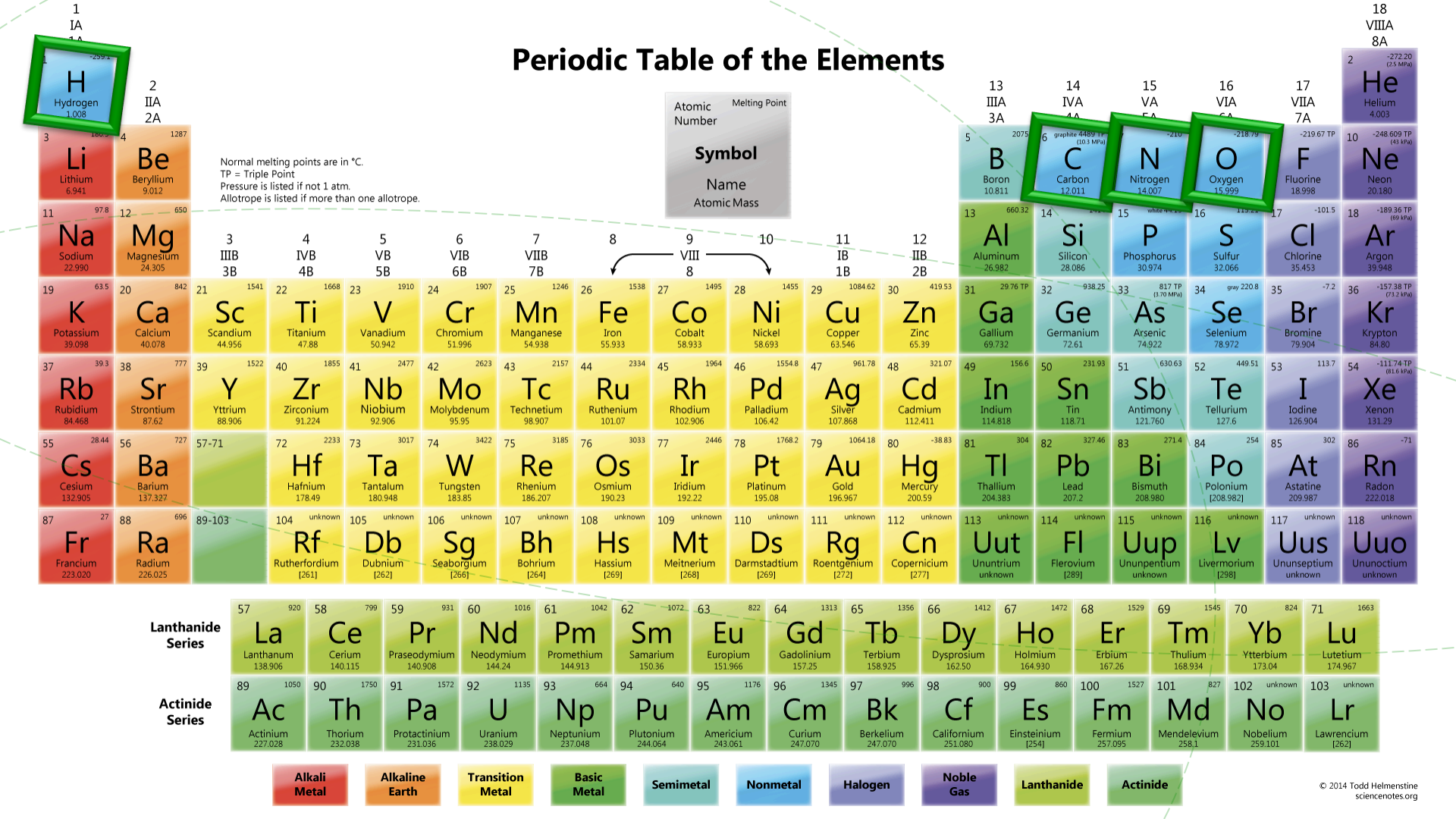
# Where does the idea come from?

The main constituents of biological molecules are atoms of **hydrogen (H)**, **oxygen (O)**, **carbon(C)** and **nitrogen(N)**, 99% of the entire organic matter.

# Periodic Table of the Elements



# Hydrogen, H

- Hydrogen is the most abundant element in the universe, it forms up to 75% of matter, based on mass, and more than 90%, depending on the number of atoms.
  - On Earth only 1% of the gases is hydrogen. The most common source of this element is water, which is composed of two hydrogen atoms and one oxygen (**H2O**).
  - Other sources are: Most of the organic matter (which includes all known life forms), fossil fuels and natural gas.
  - The **methane** (CH4), which is a by-product of organic decomposition**, is becoming an increasingly important source of hydrogen**.

# Oxygen, O

- Oxygen is the most important element present in nature, by mass **oxygen is the third most abundant element in the universe**, after hydrogen and helium.

# Carbon, C

- Carbon compounds form the basis of all life on Earth and the carbon-nitrogen cycle provides part of the energy produced by the stars.
  - Carbon is found in all forms of organic life and is the basis of organic chemistry. This non-metal has the interesting characteristic of being able to bind with itself and with a wide range of elements (producing more than 10 million compounds).
  - Together with oxygen it forms carbon dioxide, which is absolutely vital for the growth of plants. Together with hydrogen it forms various compounds called "hydrocarbons", which are essential for the industry in the form of fossil fuels.

# Nitrogen, N

Nitrogen is a fundamental constituent of the most important organic molecules from a biochemical point of view (DNA, proteins, some vitamins), as well as extremely widespread and important inorganic compounds such as ammonia and nitric acid.

- Molecular nitrogen (molecular formula N2, also called diatomic nitrogen or diazoto or simply nitrogen) is a compound consisting of two nitrogen atoms; it constitutes 78% of the earth's atmosphere.