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Define styles, insert images from external files, get data from an Access table, and create Table of Contents from Heading styles.

Header with fields for page number and total pages.

Chemistry and Access

Chemistry is the branch of science that studies matter and its behavior of matter and properties. Access is the best desktop database management system. It is a superior tool to organize data and create user interface objects like queries, forms and reports. Access can also link to data in other formats on the desktop and in the cloud. Access is access!

Elements

Man has identified (or synthesized) 118 distinct types of substances that all matter is composed of. These building blocks, called 'Elements', are pure substances that can't be broken down into simpler chemical substances.

Periodic Table

The Periodic Table is a list of all the chemical elements arranged in an order to help identify their behavior and characteristics. It is arranged by atomic number into rows called "periods" and columns called "groups". The periodic table was created by Dmitri Mendeleev, a Russian chemist, in 1869. He conceived the periodic law to predict chemical properties based on atomic number.

Here is the periodic table as it is today.

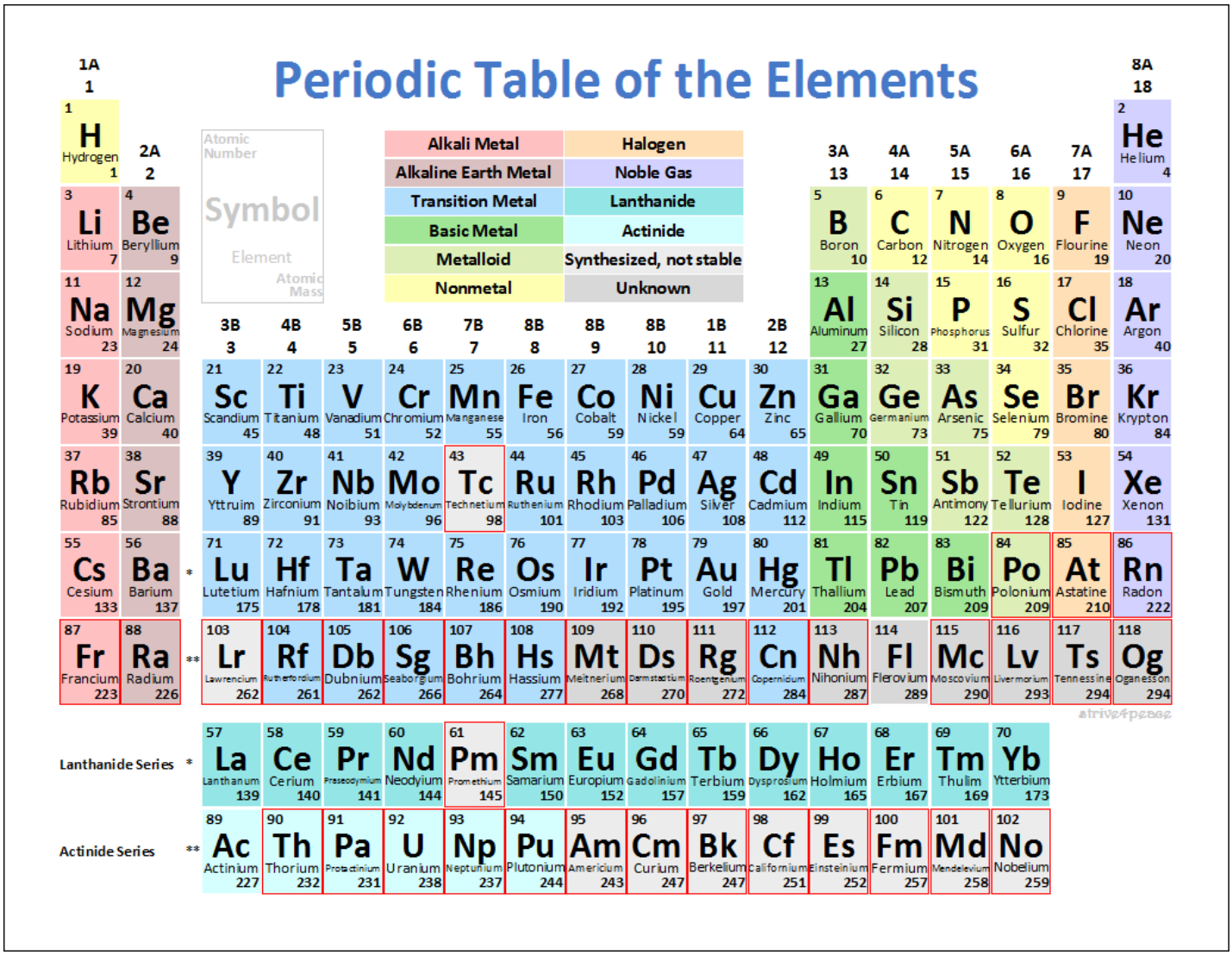

Figure 1. Periodic Table of the Elements

For more information about the periodic table, see this article on Wikipedia:

https://en.wikipedia.org/wiki/Periodic_table

Periodic Table of Nutritional Elements

Many elements in the periodic table are essential to life. This diagram shows 33 elements necessary for humans, and some that are required for lower organisms.

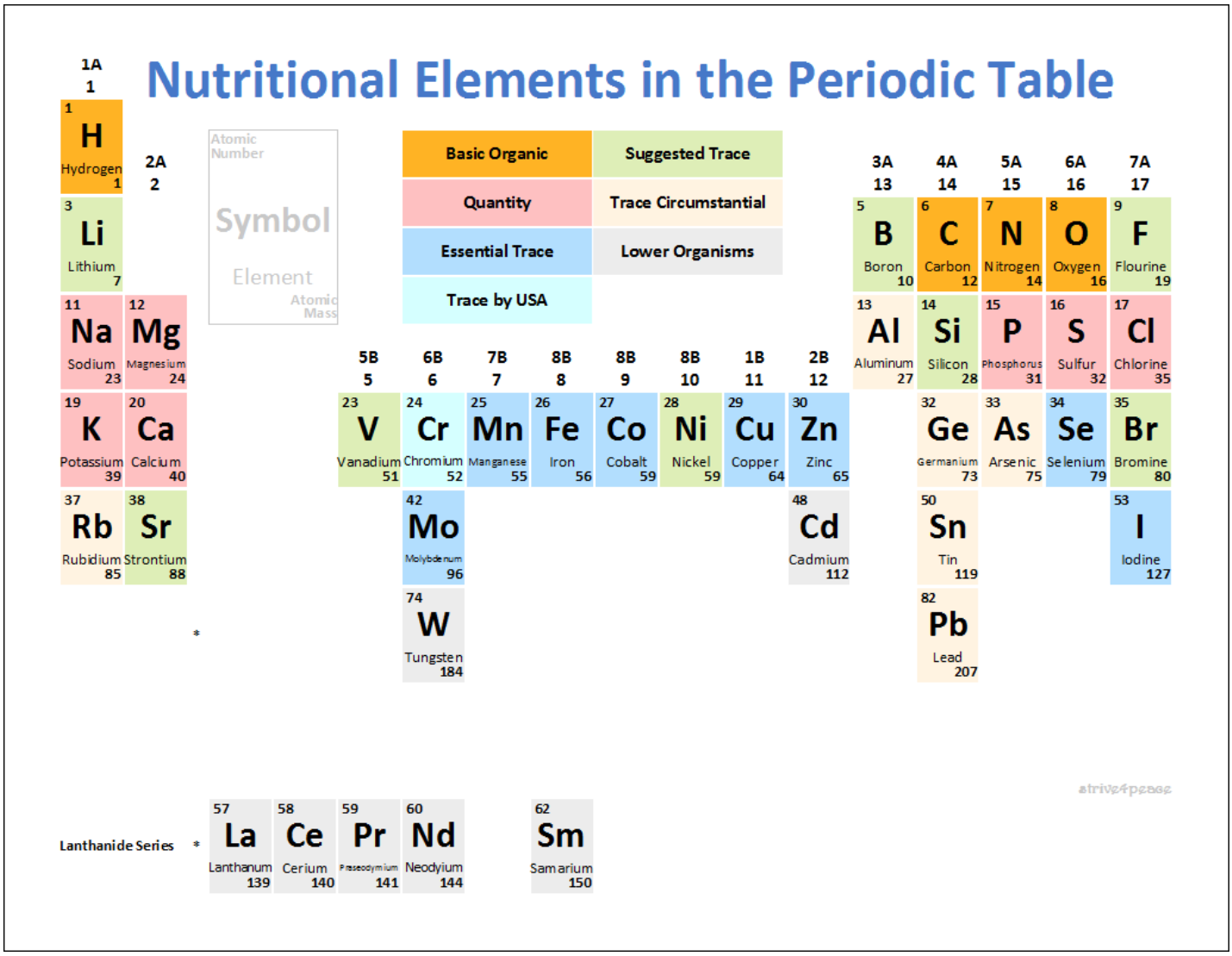

Figure 2. Nutritional Elements in the Periodic Table

Atom

An atom is the smallest unit of matter. It comes from the Greek word, atomos, meaning "unable to be cut".

In the middle of an atom is a nucleus consisting of positively charged particles called protons, and particles with no charge called neutrons.

Negatively charged particles called electrons orbit around the nucleus. An electron is only about 1/1836th the size of a proton!

An atom is identified by its number of protons, which is called the atomic number. In its original form, an atom has the same number of electrons and neutrons as protons.

Electrons may be added, removed, or shared during chemical reactions, causing an atom to get an overall charge and help it bond to other atoms to form molecules.

A molecule has multiple atoms that are chemically bonded. If all the atoms in a molecule have the same atomic number, that molecule is also called an element.

Atoms with the same atomic number and a different number of neutrons are called isotopes.

Atoms with the same atomic number and a different number of electrons are called ions. A cation is positive. An anion is negative. Ions can also be a molecule with a net electrical charge.

Hydrogen

Hydrogen is the lightest element with an atomic number of 1. It is the most abundant element in the universe and comprises about 75% of all matter. Having just one electron in its valence shell, it is highly reactive.

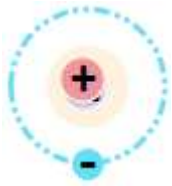

Figure 3. H, Hydrogen atom, Z=1, Group=1, 1A, Period=1, Nonmetal, Basic Organic Nutrient

Oxygen

Oxygen is essential to human life. It is the 3rd most abundant element on Earth and is classified as a nonmetal. It's also highly reactive. A water molecule is one oxygen atom and 2 hydrogen atoms, which means it is mostly oxygen since an oxygen atom is much bigger than a hydrogen atom.

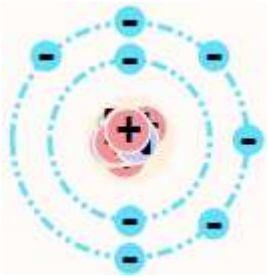

Figure 4. O, Oxygen atom, Z=8, Group=16, 6A, Period=2, Nonmetal, Basic Organic Nutrient

Carbon

By mass, Carbon is the 2nd most abundant element in the human body, and 4th most abundant element in the universe. One of its isotopes, C14, is a Radionuclide and decays with a half-life of about 5,730 years, so it can be used for dating how old something is. It comes from the Latin word carbo, for coal.

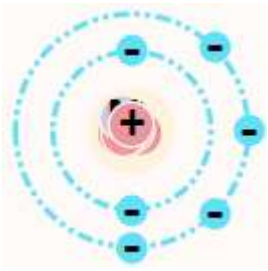

Figure 5. C, Carbon atom, Z=6, Group=14, 4A, Period=2, Nonmetal, Basic Organic Nutrient

Nitrogen

Nitrogen is the 7th most common element in the Milky Way, and most abundant in our atmosphere as an uncombined element. In the human body, it is about 3% by mass, and 4th most abundant

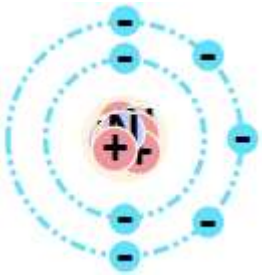

Figure 6. N, Nitrogen atom, Z=7, Group=15, 5A, Period=2, Nonmetal, Basic Organic Nutrient

Oganesson

Oganesson is the heaviest and biggest element. It is radioactive and doesn't occur naturally. It was synthesized in a laboratory.

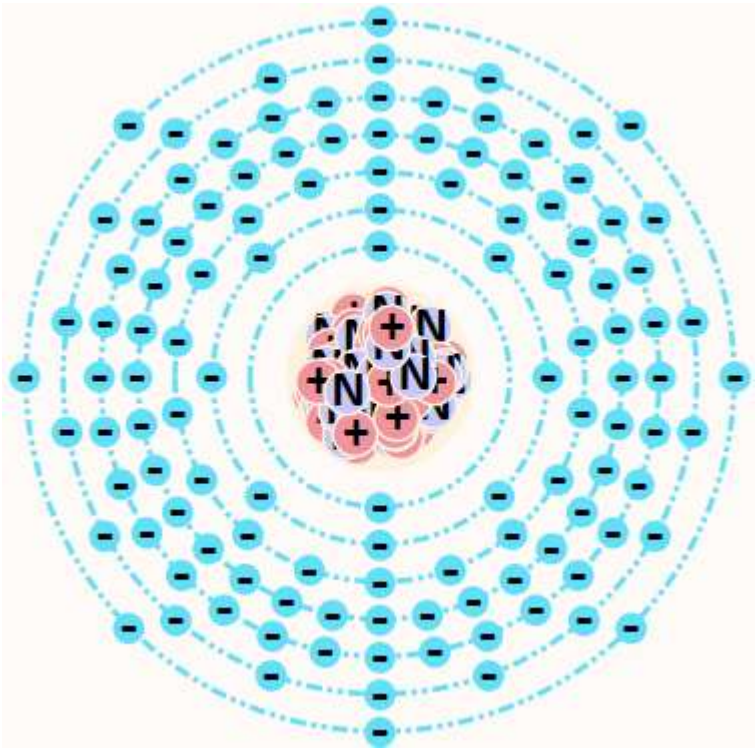

Figure 7. Og, Oganesson atom, Z=118, Group=18, 8A, Period=7, Unknown, Radioactive

There are 7 images in this document.