

Section 1

- Organisms are composed of matter, which is anything that takes up space and has mass.
- Matter exists in many diverse forms, each with its own characteristics.
- Element~ is a substance that can not be broken down to other substances by chemical reactions
- Compound~ is a substance consisting of two or more different elements combined in a fix ratio.
- 25/92 natural elements are essential to life.
- Carbon (C), Oxygen (O), Hydrogen (H), and Nitrogen (N) - make up 96% of living matter. Phosphorous (P), Sulfur (S), Calcium (Ca), and Potassium (K) - make up the 4% remainder.
- Trace Elements - are those required by an organism in only minute quantities.

Section 2

- Atoms - is the smallest unit of matter that still retains the properties of an element.
- Three kinds of particles
 - Neutrons, protons, and electrons
 - Neutrons and protons are packed together tightly to form a dense core, or atomic nucleus, at the center of the atom.
 - Protons (Positive, +), Neutrons (Neutral, 0), and electrons (Negative, -)
- John Dalton, the English scientists who helped develop atomic theory are 1800 (atomic mass unit or amu).
- Protons, which is unique to that element, is called the atomic number and is written as a subscript to the left of the symbol for the element.
- Mass number, which is the sum of protons plus neutrons in the nucleus of an atom.
- Atomic mass- is an approximation of the total mass of an atom.
- These different atomic form are called isotopes
- Radioactive isotopes - is one in which the nucleus decays spontaneously giving off particles and energy.
- Energy- is defined as the capacity to cause change, for instance by doing work
- Potential energy- is the energy that matter possesses because of its location or structure.
- Energy levels - is the different states of potential energy that electrons have in an atom.
- Electron shells - is an electron's energy level is correlated with its average distance from the nucleus; these average distances are represented symbolically.
- Valence electrons - we call those outer electrons and the outermost electron shell the valence shell.
- Orbital - is the three-dimensional space where an electron is found 90% of the time.