

Biology campbell chapter 2

[Science](#), [Chemistry](#)



Chapter 2 Terms Matter - anything that takes up space and has mass.

Element - substance that cannot be broken down to other substances by

chemical reactions. Compound - substance consisting of two or more

different elements combined in a fixed ratio. Essential Element - the 20-25% of the 92 natural elements an organism needs to live a health life and

reproduce. Trace Elements - required by an organism only minute quantities.

Atom - the smallest unit of matter that still retains the properties of an

element. Neutrons - electrically neutral Protons - one unit of positive charge

Electrons - one unit of negative charge Atomic Nucleus - the center of an

atom Dalton - the same as the atomic mass unit or amu. Atomic Number -

the number of protons, which is unique to that element Mass Number - the

sum of protons plus neutron in the nucleus of an atom. Atomic Mass - the

total mass of an atom. Isotopes - different atomic forms of the same

element. Radioactive Isotope - one in which the nucleus decays

spontaneously, giving off particles and energy. Energy - defined as the

capacity to cause change for instance, by doing work. Potential Energy - the

energy that matter possesses because of its location or structure. Electron

Shells - each with a characteristic average distance and energy level.

Valence Electrons - the electrons in the outermost electron shell. Valence

Shell - the outermost electron shell. Orbital - the three-dimensional space

where an electron is found 90% of the time. Chemical Bonds - the interaction of sharing or transferring valence electrons, which result in staying close

together. Covalent Bond - the sharing of a pair of valence electrons by two

atoms. Molecule - two or more atoms held together by covalent bond. Single

Bond - a pair of shared electrons Double bond - two pairs of valence

electrons are shared. Valence - the bonding capacity of an element.
Electronegativity 0 the attraction of a particular atom for the electrons of a covalent bond. Non-polar Covalent Bond - Polar Covalent Bond - Ion - a charged atom or molecule Cation - A positive ion. Anion - A negative ion.
Ionic Bond - when cations and anions attract each other. Ionic Compounds - compounds formed by ionic bonds, salt. Hydrogen Bond - non-covalent attraction between a hydrogen and an electronegative atom Van Der Waals Interactions - Chemical Reactions - the making and breaking of chemical bonds, leading to changes in the composition of matter. Reactants - Products - Chemical Equilibrium - the point at which the reactions offset one another exactly. Chapter 2 Review: In the term trace element, the adjective trace means that The element is required in very small amounts