

Molecular Models Lab

Name _____

Background: Organic molecules contain atoms of carbon and hydrogen bonded together. Carbohydrates, fats and proteins are the three major groups of organic compounds found in living things. (biomolecules) They are composed of mostly carbon, hydrogen and oxygen. In proteins, nitrogen is also present. The skeletons of biomolecules are often chains of carbons to which hydrogen atoms are bonded. Compounds composed of carbon and hydrogen and called hydrocarbons. Other organic molecules are formed from hydrocarbons when one or more different kinds of atoms are substituted for the carbon or a hydrogen. These groups are called functional groups. The chemical properties of a molecule are often determined by the functional groups present.

Organic molecules can be illustrated in many ways. A molecular formula shows the types and numbers of atoms in a molecule. A structural formula shows the arrangement of the atoms in a molecule.

Objectives:

- Study the structure of organic molecules
- Practice making chemical and structural formulas
- Create some 3-D models of some organic molecules

Element	Symbol	Color	Number of covalent bonds
Carbon	C	Black	
Hydrogen	H	White	
Oxygen	O	Red	
Nitrogen	N	orange	

Molecule

Chemical Formula

Structural Formula

Ethyl alcohol

Facts:

- 1.
 - 2.
 - 3.
-

Glycine

Facts:

- 1.
 - 2.
 - 3.
-

Glycerol

Facts:

- 1.
 - 2.
 - 3.
-

Glucose

Facts:

- 1.
- 2.
- 3.