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## The Molecules of Life

### Part A: Carbon and its Compounds

Carbon has the ability to bond with \_\_\_\_\_ different atoms at the same time. This ability is the basis for building large, complex molecules. \_\_\_\_\_ are molecules composed of only Hydrogen and Carbon. Some examples include methane and propane. Molecules containing Carbon are also able to form many different shapes like chains, \_\_\_\_\_, and rings. \_\_\_\_\_ are molecules with the same formula but different structures. In class we built butane and isobutene to demonstrate this.

All organic compounds begin with a \_\_\_\_\_ skeleton. From there we add \_\_\_\_\_, groups of atoms that give the organic compounds their unique properties. One example of a functional group is the -OH, or hydroxyl.

Further, all organic compounds are composed of basic units called \_\_\_\_\_. \_\_\_\_\_ which can be combined into long chains called \_\_\_\_\_. To put two monomers together you must remove \_\_\_\_\_ in a process called \_\_\_\_\_ synthesis. To break two monomers apart you must add \_\_\_\_\_ in a process called \_\_\_\_\_.

### Part B: Carbohydrates

Carbohydrates are essential for living things because they provide us with \_\_\_\_\_. Some examples of carbohydrates that we eat are \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. Carbohydrates are composed of basic building blocks called \_\_\_\_\_. These molecules always contain two functional groups: \_\_\_\_\_ and \_\_\_\_\_. Two common monosaccharides are \_\_\_\_\_ and \_\_\_\_\_.

When two monosaccharides are combined they form a \_\_\_\_\_. One common disaccharide is sucrose, or table sugar. When even more combine they form a \_\_\_\_\_. Starch and glycogen, common examples, are used to store food in plants and animals, while \_\_\_\_\_ is found in plant cell walls.