



Chemistry of Carbon

- **Organic Chemistry** is the study of all compounds that contain CARBON.
- Why is carbon so special?

Chemistry of Carbon

1. Carbon has 4 valence electrons
 - Each e- can bond with another atom to form a strong covalent bond.

Chemistry of Carbon

2. Carbon can bond to Carbon
 - Has the ability to form chains that are almost unlimited in length!
 - Carbon-Carbon bonds can be single, double, or even triple.
 - Carbon chains can close & form rings.

Macromolecules

- “Giant Molecules”
- Made from thousands, or even hundreds of thousands of smaller molecules

Macromolecules

- Formed by a process known as **polymerization**.

Building Macromolecules

Dehydration Synthesis

form a bond while losing a water molecule

Hydrolysis adds a water molecule, breaking the bond

Organic Molecules

- Contain carbon, hydrogen, and oxygen
- Water soluble
- 4 major classes
 - Carbohydrates
 - Lipids
 - Proteins
 - Nucleic acids

Questions? Comments?