**Carbohydrate Monomer**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Background**

Four types of organic compounds (macromolecules) are essential for all living organisms. They are **carbohydrates, lipids, proteins and nucleic acids**. Each of these large molecules called **polymers** are built of smaller molecules called monomers. Monomers are linked together by covalent bonds. The element that allows these complex structures is **carbon**. Carbon has the ability to form long chains and rings and bonds well with other elements important to living organisms.

**Condensation** (dehydration synthesis) is the process in which monomers are bonded together to make polymers. To join them together a molecule of water is removed. You can break polymers into monomers by adding water in a process called **hydrolysis**.

**Directions:**

Using toothpicks and marshmallows, you are going to build a glucose monomer of a carbohydrate. Using the following code, construct your glucose molecule according to the chemical structure below. Toothpicks will be used to form the covalent bonds.



Pink = Carbon

Yellow = Hydrogen

Orange = Oxygen

When your monomer is complete, model a polysaccharide by bonding your glucose to other students (at least 4) glucose monomers. Refer to page 163.



Get your models checked off!

Monomer\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Polysaccharide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Fats**

 Article Assignment

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

After reading the article about fats, answer the following questions.

**Saturated Fats**

1. Found primarily in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ products

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ at room temperature

3. Eating saturated fats can lead to the following problems:

1.

2.

3.

**Unsaturated Fats**

4. Found primarily in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ products

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ at room temperature

6. There are two types of unsaturated fats

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. What is the major benefit of unsaturated fats?

8. What percentage of our diet should come from fats?

9. What part of that percentage (in #8) should be saturated fats?

10. The article mentions many functions of fats. Name 4.

1.

2.

3.

4.

11. Which type of fat would your consider to be the “good” fat? Which type would be the “bad” fat?