

Web Activity: Macromolecules in Cells

Open your web browser and navigate to:

http://www.sci.uidaho.edu/bionet/biol115/t2_basics_of_life/lesson2.htm

Read the introduction to Macromolecules and answer these questions:

1. What is a macromolecule?

A macromolecule is a large class of molecules that are involved in all of the structures and process of cells and organisms.

2. What is a monomer?

A monomer is a small molecular structure that can be chemically bonded to form long multi part polymer molecules.

3. What is a polymer?

A polymer is a large molecule made up of similar or identical subunits called monomers.

4. List the four main types of macromolecules.

The four main types of macromolecules are proteins, lipids, carbohydrates, and nucleic acids.

In the learning materials box click the link for the activity “[making and breaking polymers](#).” Use this activity to help answer the following questions:

5. What are the types of reactions that macromolecules are shown to undergo?

The types of reactions are dehydration synthesis and hydrolysis reactions.

6. Describe how monomers are joined together.

Monomers can be joined together by dehydration synthesis which forms a covalent bond.

7. Describe how polymers are broken down.

Polymers are broken down by hydrolysis reactions. it breaks the covalent bond holding the monomers together.

8. What is the specific name for the bond between simple sugar monomers?

covalent bond

9. Which kind of enzyme joins monomers together?
A polymerase enzyme

Back on the previous macromolecules page, scroll down to the section on carbohydrates. In the learning materials box for carbohydrates click the link to the "[build a carbohydrate](#)" activity.

10. Describe how you had to arrange the sugar monomers in order to build a polysaccharide.
I had to turn them sideways and line the OH (oxygen) with the other OH (oxygen)

11. Which building blocks of macromolecules are not used in building carbohydrates?
nucleotide, fatty acid, and amino acid

Back on the previous carbohydrates page, click on the link on the bottom of the page labeled "[More on Carbohydrates.](#)" Read the article and answer these questions:

12. Why is sugar stored as glycogen in the human body?

It is stored as glycogen that way it can manage your insulin level.

13. Why are plant foods essential to animal life?

Plant foods are essential to animal life because plants store necessary nutrients inside them which are absorbed by animals when consumed.

14. Describe how starch is digested by animals.

Starch is digested by animals by fiber is digested in the colon of the animals.

15. What is "fiber" and why is it important in your diet?

Fiber neutralizes toxins in the body while it also stiffens stool.

16. What causes you to pass gas (fart) according to the article?
The gas produced when carbohydrates are fermented, causes you to pass gas.

Scroll back up to the top of the carbohydrates article and click on the link in the text to “Low Carbo Madness” and read the linked article. (or click [here](#))

17. What are some disadvantages of a low-carb diet?

Carbs are important because they give your body energy and on a low-carb diet your body may not get as many nutrients as it needs.

Return to the original carbohydrates lesson page and click on the link on the bottom “[Carbohydrates and Cavities](#)” and read the linked page.

18. Describe the role that sugars play in cavity formation in your teeth.

The sugar turns into acids and the acids begin to eat through the enamel that protects your teeth.