

Name _____

Carbohydrates Report

Assignment

Below are 23 questions that you must answer in a report format. Your Carbohydrates report should be typed and double-spaced, in paragraph form. Diagrams should be included as separate pieces of paper, attached to the back of your report. All diagrams should be neat and in color.

1. Define molecule in your own words:

2. Glucose: Give the formula, structure, and classify glucose using the terms below.

Formula: _____

Sketch using colored dots for atoms:

Black = Carbon

Blue = Hydrogen

Red = Oxygen

Circle one or more options

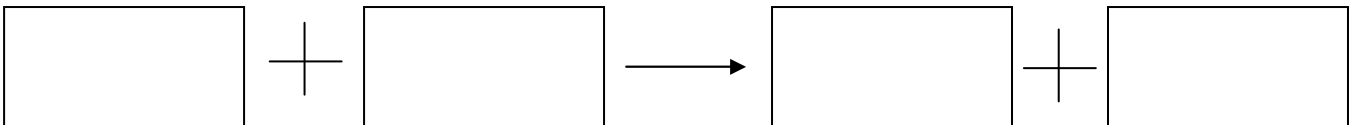
Glucose is a(n)

monosaccharide	disaccharide	polysaccharide	starch
sugar	starch	glycogen	cellulose

3. Give the name and chemical equation for the reaction in plants that makes glucose. Show the structures for every molecule in the reaction.

The reaction that makes glucose is called _____.

Fill the boxes with the names of the molecules, then sketch each of the molecules below:



4. Fructose: Give the formula, structure, and classify fructose using the terms below.

Formula: _____

Sketch using colored dots for atoms:

Black = Carbon

Blue = Hydrogen

Red = Oxygen

Circle one or more options

Fructose is a(n)

monosaccharide

disaccharide

polysaccharide

starch

sugar

starch

glycogen

cellulose

5. Where does "high fructose corn syrup" (HFCS) come from?

How is HFCS made (give all steps in the process)?

6. Sucrose: Give the formula, structure, and classify sucrose using the terms below.

Formula: _____

Sketch an abbreviated diagram (no dots this time for atoms, but you can use CH₂OH instead of drawing it all out)

Circle one or more options

Sucrose is a(n)

monosaccharide

disaccharide

polysaccharide

starch

sugar

starch

glycogen

cellulose

7. Maltose: Give the formula, structure, and classify maltose using the terms below.

Formula: _____

Sketch an abbreviated diagram (no dots this time for atoms, but you can use CH₂OH instead of drawing it all out)

Circle one or more options

Maltose is a(n)

monosaccharide	disaccharide	polysaccharide	starch
sugar	starch	glycogen	cellulose

8. Starch: Give the general structure and classify it using the terms below.

Sketch an abbreviated diagram (no dots this time for atoms, but you can use CH₂OH instead of drawing it all out)

Circle one or more options

Starch is a(n)

monosaccharide	disaccharide	polysaccharide	starch
sugar	starch	glycogen	cellulose

9. Answer the following three questions about starch and glycogen:

What kind of organism makes each?

Why do organisms make these molecules?

What's the difference in structures between the two?

10. In what kinds of organisms and foods is cellulose found?

Draw a diagram where cellulose is found below, including both examples in nature and in food we eat.

Answer the following three questions about starch and cellulose:

What kind of organism makes each?

What's the difference in structures between the two?

Which one of the two can we digest, and which one can't we digest?

11. Define the following terms:

Sugar

Monosaccharide

Disaccharide

Polysaccharide

Starch

Glycogen

Cellulose

12. In your own words, define what a carbohydrate is:

13. The enzyme in our digestive system that breaks the bonds between the glucose molecules is _____. This enzyme is produced in the _____.

14. When we digest carbohydrates, at what point are they small enough to pass through the walls of the small intestines?

15. Once the carbohydrate passes through the small intestine walls, where does it go? (Be specific and thorough)

Why do we need to eat carbohydrates?

16. Which kind of carbohydrates would you expect to digest most rapidly? Why?

Which would digest slowest? Why?

Are there any types of carbohydrates that humans can not digest but other animals can? If so, give an example and explain.

17. List as many ingredients as you can find on labels that are some type of sugar or carbohydrate:

18. Describe the following terms:

Total Carbohydrates

Sugars

Dietary Fiber

23. Explain why your answer to question 22 is a healthy choice for you.
