

Name

Bell Work:

Write down the objectives.

- 1.
- 2.

What are the 4 macromolecules?

- 1.
- 2.
- 3.
- 4.

Bonus Question: Name 3 reasons why we need macromolecules.

- 1.
- 2.
- 3.

Objectives:

- 1.
- 2.
- 3.
- 4.

Activity:

See:

Think:

Wonder:

What happened in the demonstration?

What are the indicator tests that you remember?

- 1.
- 2.
- 3.
- 4.

Notes: Answering the macromolecule questions is simpler than you think. You need to remember just a few key words in order to answer these questions.

As we look at practice questions, these will be the steps you will take on each questions.

- Read the question
- Circle what they are looking for
- Eliminate answer choices
- Underline hints and **key words**

Review:

1 . Carbohydrates: Remember there are 2 types of carbohydrates. One is known as simple carbohydrates, and the other is known as complex. Carbohydrates are used as quick energy in the cell, along with building cell walls in plants.

Simple: Indicator test: Benedicts Color Change: Blue to orange Key Words: Sugar, glucose	Complex: Indicator test: Lugols Iodine Color Change: Brown to black/purple Key words: Starch
---	---

2. Protein: Proteins are used for a lot of different functions. Proteins are often needed for multiple bodily functions, such as enzymes, and muscle growth and development. They are typically found in meat.

Indicator test: Biuret
Color Change: Purple
Key Words: Amino Acids

3. Lipids: Lipids are typically found in fatty foods. They are used in our bodies to store long term energy and they make up 80% of the cell membrane. There are two tests for lipids, brown bag and sudan.

Indicator test: Brown bag and Sudan
Color Change: clear color to orange/red
Key Words: Fatty Acid

4. Nucleic Acid: Nucleic acids are the macromolecules that form DNA and RNA. They do not have an indicator test.

Indicator Test: None
Key Words: DNA, Genetic Material, RNA

Practice 1 Part A

1. Students are testing a substance that turns purple once biurets is added to it. What macromolecule does it contain?
2. Explain how you know.
3. Students are testing a substance that turns orange when benedicts solution is added to it. What macromolecule does it contain?
4. Explain how you know.

Practice 1 Part B

Directions: Highlight the keywords that are giving you the answer.

1. **A student uses Benedict's solution to test the chemistry of a food sample. If simple sugars are present, the solution will turn which color when combined with the food sample and heated?**
 - A. Blue
 - B. Red
 - C. Purple
 - D. Black

What is the question asking/looking for? _____
What words did you highlight? _____

2. A student performs several tests on a food sample. The student concludes that the food sample contains proteins and lipids. Which results would BEST support the student's conclusion?

- a. The proteins turned the iodine solution black, and the lipids turned the Benedict's solution red.
- b. The proteins turned the Sudan III solution red, and the lipids turned the iodine solution black.
- c. The proteins turned the biuret solution purple, and the lipids turned the Sudan III solution red.
- d. The proteins turned the Benedict's solution red, and the lipids turned the biuret's solution purple.

What is the question asking/looking for? _____
What words did you highlight? _____

3. A substance containing complex carbohydrates will turn dark purple or black in the presence of

- a. Lugol's iodine
- b. Biuret reagent
- c. Sudan III
- d. Benedict's solution

What is the question asking/looking for? _____
What words did you highlight? _____

Practice 2 Part A

Test for Proteins

Substance	Color after adding Biuret reagent
Honey	Blue
Cottage cheese	Purple/lavender
Potato	Dark blue
Water	Light blue
Chicken broth	Dark purple
Yogurt, plain	Light purple

1. According to the data, which foods tested by the students contained proteins? Highlight and explain your answer.

A. Explanation: _____

B. What is the question asking/looking for? _____

C. What words did you highlight? _____

A student is working on the following chart.

Substance	Biuret	Benedict	Lugols Iodine
Chili	purple	blue	brown
Cornbread	blue	blue	Purple
Milk	Purple	orange	brown
chocolate	purple	orange	brown
Mashed potatoes	blue	blue	black

2. Which of the above substance is a protein? Highlight and Explain your answer below.

A. Explanation: _____

B. What is the question asking/looking for? _____

C. What words did you highlight? _____

3. If a student was trying to cut out complex carbohydrates from his diet, what foods would he stop eating?

A. Explanation: _____

B. What is the question asking/looking for? _____

C. What words did you highlight? _____

Practice 2 Part B**Unknown Solution Results**

Testing Indicator	Observation
Iodine	Unknown solution turned from colorless to brownish-orange
Benedict's Solution	Unknown solution turned from colorless to orange
Biuret Solution	Unknown solution turned from colorless to purple
Brown Paper Bag	No mark left; unknown solution dried completely

1. Based on the data collected, which molecules are present in the unknown solution?

A. Explanation: _____

B. What is the question asking/looking for? _____

C. What words did you highlight? _____

The table below shows the results on four unknown substances from compositional test for biological macromolecules.

Unknown	Test			
	Benedict's Solution	Biuret Reagent	Iodine Solution	Brown Bag
1	Positive	Negative	Positive	Negative
2	Negative	Positive	Negative	Positive
3	Negative	Negative	Positive	Negative
4	Positive	Negative	Positive	Negative

1. Which unknown substance is most likely primarily composed of proteins?

A. Explanation: _____

B. What is the question asking/looking for? _____

C. What words did you highlight? _____

2. Which of the substances does not have simple carbohydrates?

A. Explanation: _____

B. What is the question asking/looking for? _____

C. What words did you highlight? _____

Socrative Quiz: Log onto socrative.com. Click student login and enter the room name KF4BRMRC. Answer the quiz questions

Name: _____

Exit Ticket:

Match the following biomolecules with the correct indicator test.

<input type="checkbox"/> Lipids <input type="checkbox"/> Simple Carbohydrates <input type="checkbox"/> Complex Carbohydrates <input type="checkbox"/> Proteins	A. Biuret B. Lugols Iodine C. Benedicts D. Sudan
---	---

Name: _____

Exit Ticket:

Match the following biomolecules with the correct indicator test.

<input type="checkbox"/> Lipids <input type="checkbox"/> Simple Carbohydrates <input type="checkbox"/> Complex Carbohydrates <input type="checkbox"/> Proteins	E. Biuret F. Lugols Iodine G. Benedicts H. Sudan
---	---

Name: _____

Exit Ticket:

Match the following biomolecules with the correct indicator test.

<input type="checkbox"/> Lipids <input type="checkbox"/> Simple Carbohydrates <input type="checkbox"/> Complex Carbohydrates <input type="checkbox"/> Proteins	I. Biuret J. Lugols Iodine K. Benedicts L. Sudan
---	---

Name: _____

Exit Ticket:

Match the following biomolecules with the correct indicator test.

<input type="checkbox"/> Lipids <input type="checkbox"/> Simple Carbohydrates <input type="checkbox"/> Complex Carbohydrates <input type="checkbox"/> Proteins	M. Biuret N. Lugols Iodine O. Benedicts P. Sudan
---	---

Name: _____

Exit Ticket:

Match the following biomolecules with the correct indicator test.

<input type="checkbox"/> Lipids <input type="checkbox"/> Simple Carbohydrates <input type="checkbox"/> Complex Carbohydrates <input type="checkbox"/> Proteins	Q. Biuret R. Lugols Iodine S. Benedicts T. Sudan
---	---
