

Name: _____ Period: _____ Date: _____

Macromolecules Indicators Testing

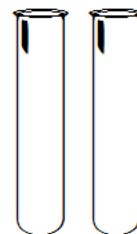
Annotate Lab Procedures:

- Circle action words (verbs)
- Underline Key Information
- Put a wavy line under materials

PART I: Testing of Known Substances

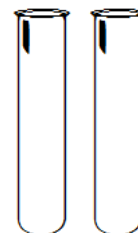
DEMO: Glucose test (simple sugar):

1. Place 3 ml of the glucose solution into your test tube # 1.
2. Place 3 ml of water into test tube #2.
3. Add 2 ml of Benedict's solution. Place the tube in a beaker of boiling water and boil for five minutes. Use test tube clamps to hold hot test tubes.
4. Observe any color change. Record it in your chart.



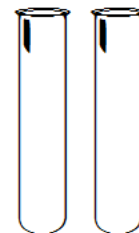
Station 1: Protein test

1. Place 3 ml of the protein solution (this is actually gelatin, which is pure protein) into your test tube #1.
2. Place 3 ml of water into test tube #2.
3. Add 20 drops of Biuret solution.
4. Observe any color change. Record it in your chart.



Stations 2: Starch test (complex carbohydrate)

1. Place 3 ml of the starch solution into your test tube #1.
2. Place 3 ml of water in test tube #2.
3. Add 5 drops of Lugol's iodine solution.
4. Observe any color change. Record it in your chart.



Station 3: Lipid Test

1. Place 1 drop of vegetable oil on one small area of a paper bag. On another area, place a small amount of water.
2. After a few seconds, remove the oil and water with a paper towel.
3. Let the paper dry, then hold it up to the light.
4. Foods that contain lipids will leave a translucent mark on brown paper bag material. Record your results in the chart.



<u>Food Substance</u>	<u>Reagent test</u>	<u>Color Change</u> (From ____ to ____)	<u>Presence of Molecule</u> (+/-)
<i>Sugar</i>	<i>Benedict's solution</i>		
Protein	Biuret solution		
Starch	Lugol's iodine solution		
Lipid	Brown Bag		

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Station 4: Brainstorm

1. What food substances did the case study talk about?
2. What diet was Mitchell on? What was Janine eating?
3. What substances could you test tomorrow to gather more information for your case study?
4. What materials would you need to test those substances?
5. What would be your IV? DV? Control?

PART II: Design an Experiment

Carbohydrates, proteins, fats, vitamins, and other nutrients provide your body with energy and provide the raw materials necessary to carry on life activities. These compounds are present in the plants and animals you use as food. In this lab, you will test for the presence of specific compounds. After learning what the positive and negative controls are for each substance, you will design a lab to further your understanding of the “Atkins or Fadkins” case study.



DIRECTIONS: Use your procedures from Part I, your answers to Station 4: Brainstorm, and your Case Study to design a macromolecules testing lab for tomorrow. Think about what information you will need as the expert in the situation with Mitchell and Janine. Write out your lab on the “Experimental Design Plan” Handout.