

Biomolecules Lab

The purpose of this lab is to show a positive test for each of the major biomolecules in known AND unknown solutions.

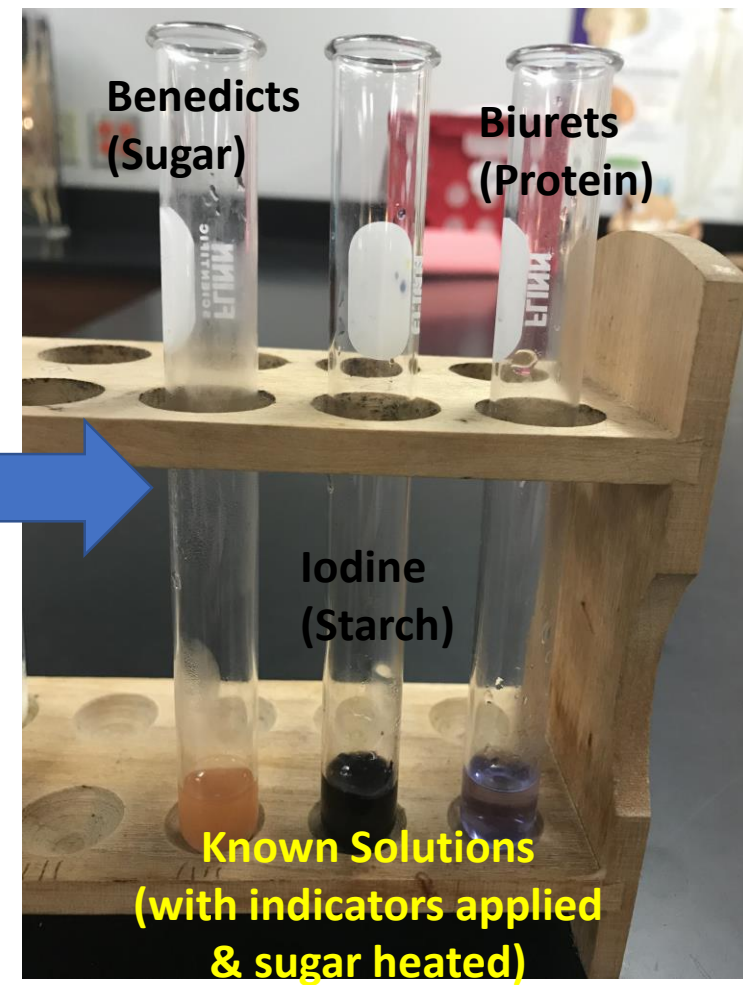
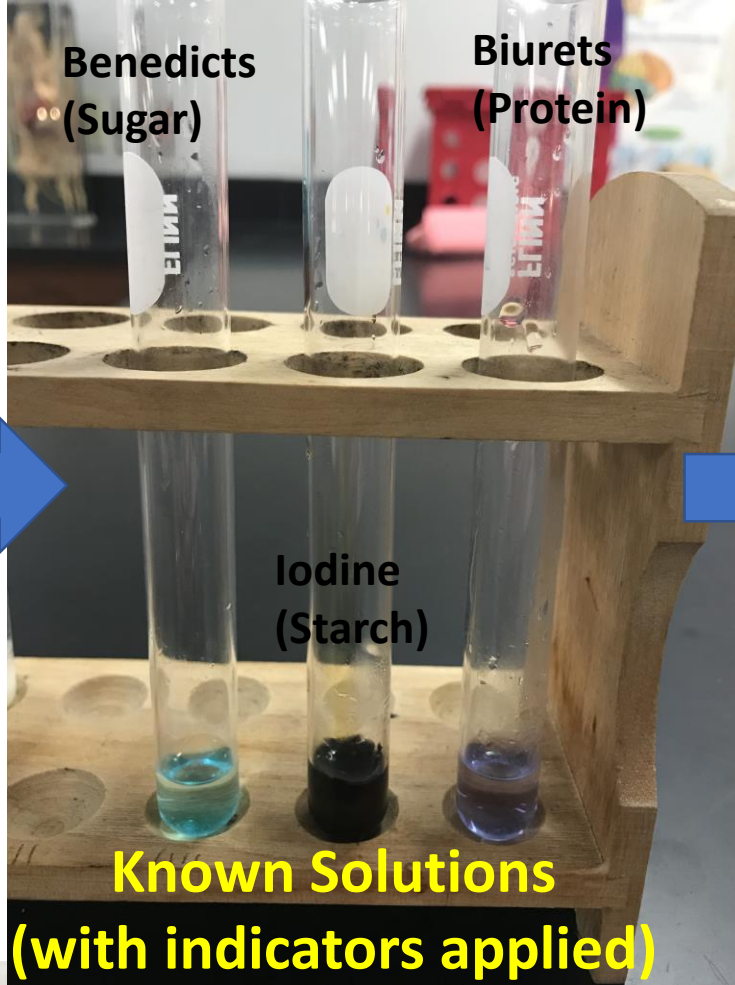
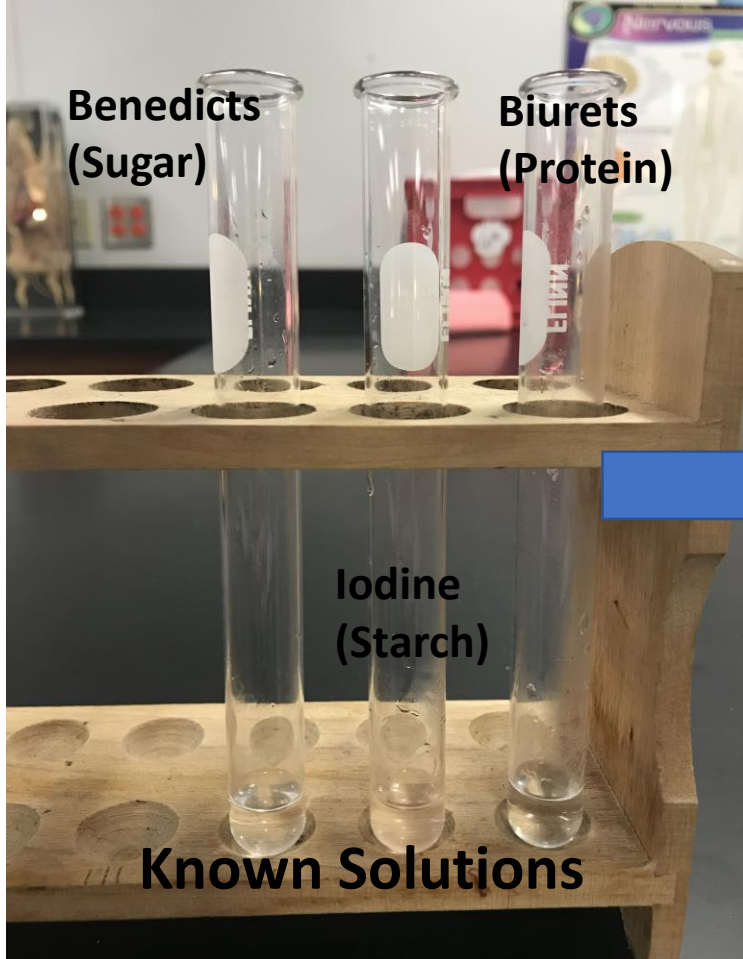
- Fill out the 2 pre-lab questions on your own paper.

Pre-Lab Questions: 10 points

1. What are the four biomolecules that are essential to living thing?
2. Which three biomolecules will we be testing in this procedure?



- These are the 3 indicators (Benedict's, Iodine & Biuret's) that we used to test for our 3 biomolecules. (Carbohydrates, Lipids, & Proteins)



Observations: 10 points

A. Benedict's test- place 25 drops of monosaccharide (sugar) solution into test tube 1 in the rack. Add 10 drops of Benedict's solution into test tube. Heat the tubes in a water bath for 2-3 minutes. Record your results on your paper.

Solution	Benedict's solution color BEFORE heating	Benedict's solution color AFTER heating
Sugar	clear → blue	orange

C. Iodine test- place 25 drops of the starch solution into test tube 3 in the rack. Add 4 drops of iodine solution into the test tube. Record your results on your paper.

Solution	Iodine solution color BEFORE addition to tube	Iodine solution color AFTER addition to tube
Starch	clear	black

B. Biuret's test- place 25 drops of the protein solutions into test tube 2 in the rack. Carefully add 10 drops of Biuret's solution into the test tube. Gently swirl the tube. Record your results on your paper.

Solution	Biuret's solution color BEFORE addition to tube	Biuret's solution color AFTER addition to tube
Protein	clear	purple

Brown Paper Bag Test



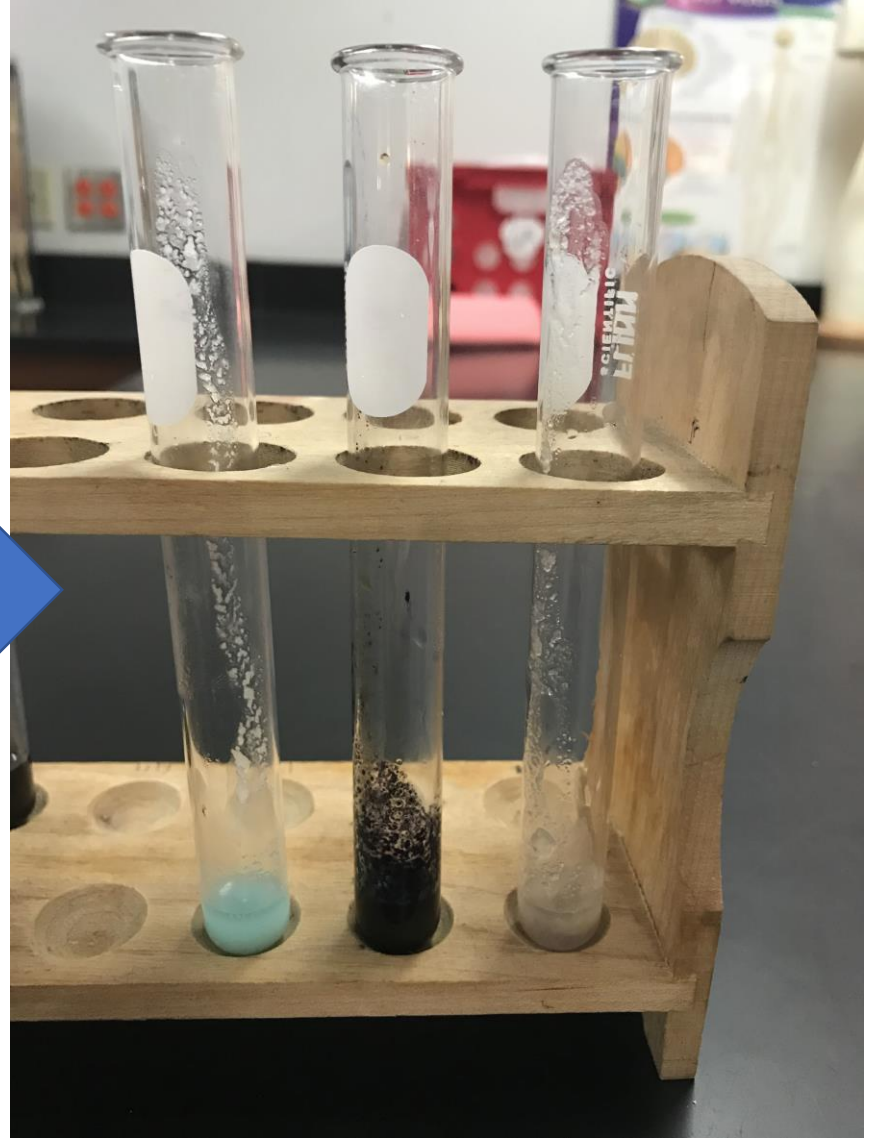
D. Brown Bag test- Rub lipid (oil) on the brown bag. Record your results on your paper.

Solution	Paper bag color BEFORE addition	Paper bag color AFTER addition
Oil	brown	clear (translucent)

Results

Known results: (10 points)

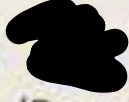
<i>Solution</i>	<i>Benedict's</i>	<i>Biuret's</i>	<i>Iodine</i>	<i>Brown Bag</i>
Tester's Positive Color	orange	purple	black	clear
Biomolecule Tested (hint: there are 4 but we only tested 3 of them!)	simple carbohydrate	protein	complex carbohydrate	lipid



Unknown solution before

Unknown solution after

Unknown Solution results

TESTING UNKNOWN SOLUTION (10 points) Unknown Solution:  (French Fries)

E. Place 25 drops of unknown solution into 3 separate test tubes. Run all 3 tests (Benedict's, Biuret's and Iodine) in tubes and streak paper bag with unknown solution. Record your observations below.

Test tube	Test performed	Results (indicate color change if you see one)
1	Benedicts	blue
2	Biurets	clear/white
3	Iodine	black
Paper Bag	Lipid (oil)	no change (not clear)

Brown Paper Bag Test- Unknown Solution



Before unknown solution was applied



After unknown solution was applied

- Answer the rest of the questions on your own!
- By the way... the unknown solution was French Fries! This is why Iodine tests positive (turns dark black) for starch in French Fries. 😊