

In class argumentation activity: how do you classify biomolecules?

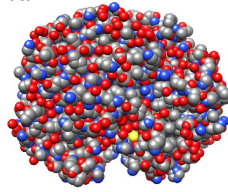
- 1) Work in groups of THREE, based on where you are sitting in the class (ie count off in 3s down the row to form your group)
- 2) Pick three of the molecules based on the first letter of each of your last names. If two of you have the same letter, pick a third based on the first letter of your first name. If that still doesn't result in 3 different molecules, go for a middle name with a unique letter.
- 3) Answer each question for each molecule to classify it as a carbohydrate, lipid, nucleic acid, or protein. You should also subclassify the molecule according to the subclasses listed for each type of biomolecule.
- 4) Answer the four questions as a group.
- 5) Merge with another group and compare your answers to the questions. Do you have the same answers?
 - a. If so, what properties do you agree are important?
 - b. If you do not, argue for your answers to defend your group's responses.
- 6) On your own, write a defense of your response to question 4.

BEFORE YOU LEAVE, turn in your group's worksheet with all of your names LEGIBLY written. **If I can't read your name, you will not get credit.**

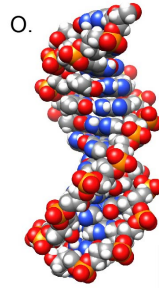
Your individual defense needs to be typed and uploaded into SafeAssign. This is a dry run for the first Matrix writing assignment!

Both the group activity and the individual paragraph will be graded.

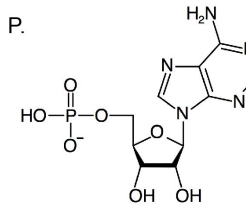
N.



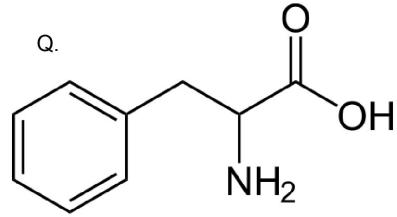
O.



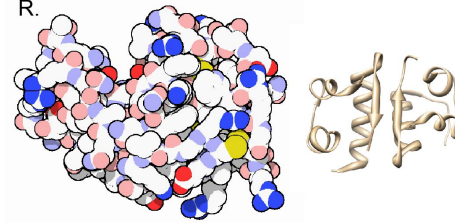
P.



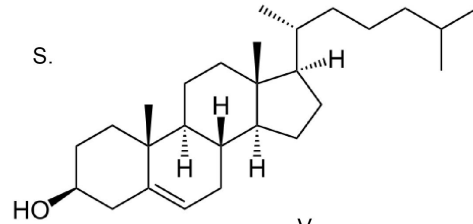
Q.



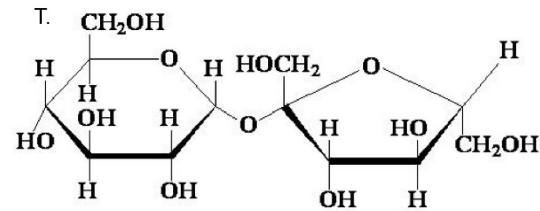
R.



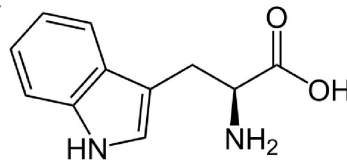
S.



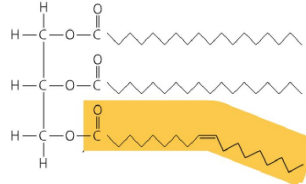
T.



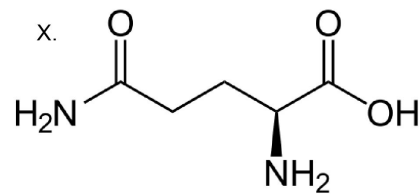
V.



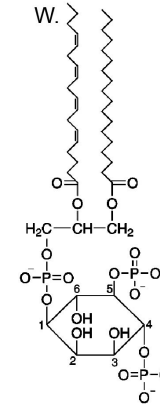
U.



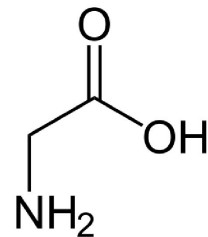
X.



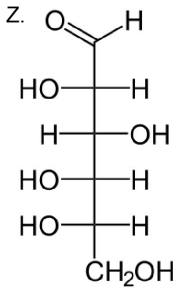
W.



Y.



Z.



Note: In the space filling and ball-and-stick models, carbon is grey or white oxygen is red nitrogen is blue sulfur is yellow phosphorous is orange

Out of what elements is the molecule made?	Is the molecule a polymer?	Is the molecule single or double stranded?	Does the molecule have rings? How many?	Does the molecule have single and/or double bonds?	Does the molecule have peptide bonds?	Does the molecule have an ester linkage?	Does the molecule have a phosphodiester bond?	Does the molecule have a glycosidic bond?	Does the molecule have a phosphorous atom?	Does the molecule have a sulfur atom?	Does the molecule have both amino and carboxylic functional groups?	Does the molecule have a ribose ring?	Does the molecule have a deoxyribose ring?

Carbohydrate:

Monosaccharides
Disaccharides
Polysaccharides

Lipids:

Fatty acid
Fat (saturated or unsaturated)
Phospholipids
Steroids

Amino acid:

Polypeptides (Protein)

Nucleosides:

Purines
Pyrimidines

Nucleotides:

Mononucleotides:
Purines
Pyrimidines

Polynucleotides:

Deoxyribonucleic Acid
Ribonucleic Acid

Questions:

- 1) Molecule 1 is:
- 2) Molecule 2 is:
- 3) Molecule 3 is:
- 4) Which property/properties were the most important in identifying your molecule?
- 5) What about that property/those properties made it/them good for identifying your molecule?
- 6) Is this property the same for each molecule?
- 7) If so, what about that property is so discriminating? If not, how do different properties define different molecules?