

Carbohydrate Molecular Model Group Activity
To be turned in by Tuesday, Sept. 28, 2010 in Break Out Session
(complete back side of sheet)

Science Library Reserve Material: Molecular Models
Call Number: PC M698mm
Course BCMB/BIOL/CHEM 3100
Instructor Mohnen

Carbohydrates can be a difficult class of molecules to appreciate due to their structural complexity. In order to help you appreciate their structure, you are requested to meet one time as a group at the science library and to build several carbohydrates. Please arrange to meet at the science library for \geq one hour. I have placed my personal (and rather cheap but effective) molecular models on reserve. There are 13 supposedly identical bags with enough atoms and bonds that you can construct monosaccharides. Please check out only the number of bags you need for your group. You can keep the models for up to 2 hours at a time. Please make the following monosaccharides. [Note: the color and length code for the bonds and atoms are given at the bottom of this page.]

1. L-glucose (linear form) and D-glucose (linear form). Compare the two different enantiomers.
2. D-glucose cyclic form (pyranose form)
3. Move the pyranose form of D-glucose into both the chair and the boat conformation.
4. pyranose form of D-galactose (the 4-epimer of glucose)
5. pyranose form of D-mannose (the 2-epimer of glucose)
6. Make any other sugars as your curiosity drives you.

PLEASE RETURN ALL PIECES TO THE BAG AND RETURN TO THE RESERVE SECTION. PLEASE BE CAREFUL NOT TO LOSE ANY PIECES. *Thank you!!*

Color and length code for the atoms and bonds

C = black
H = white
N = blue
O = red

<u>Bond</u>	<u>Length (cm)</u>
C-H	1.5
C-C	2.5
C=O	2
C-O	2.5
O-H	1.5

PLEASE COMPLETE BACK OF SHEET

**EVALUATION SHEET FOR CHAPTER 8:
CARBOHYDRATE MOLECULAR MODEL GROUP ACTIVITY**

Please answer all of the following questions. Thank You!

Information about Activity

Your Name: _____

Date(s) of carbohydrate modeling activity: _____

Length of time used for modeling activity: _____ hour(s)

Evaluation of Activity

1. This group activity with molecular models was:

useful _____

a waste of time _____

helped me understand the 3D structure of carbohydrates _____

Was OK but I could have learned the same information
working with the models myself rather than with my group _____

other (specify) _____

2. In future BCMB3100 classes I recommend

maintaining this group activity _____

removing the requirement for the model work
as a group activity, but maintaining it as
an individual activity _____

removing the requirement for a model activity _____

3. Feel free to make any general comments regarding the coenzyme group teaching activity.