

Bring your work with you to class to submit.

1. Gulose is the C3 epimer of glucose. Draw the linear and cyclical form of gulose.
2. Fructose is the ketose equivalent of glucose. Draw this molecule in the cyclical form with:
 - a. the anomeric carbon in the α -conformation.
 - b. the anomeric carbon in the α -conformation but pointed to the left.
3. Draw the structure of each disaccharide:
 - a. β -fructose (1 \rightarrow 6) α -gulose.
 - b. β -gulose (1 \rightarrow 1) α -glucose.
4. Starch and cellulose are both made out of glucose. Humans cannot metabolize cellulose but they are able to metabolize starch.
 - a. What is the difference in these molecules at the disaccharide level? Draw each disaccharide and clearly label what is different about the two.
 - b. How does this small difference in the structure of the disaccharide influence the 3d structure of these polymers.
 - c. Humans regularly eat cellulose. How is this molecule processed by our bodies if we cannot metabolize it?
5. Draw a fatty acid that is 22:4:6
6. Structurally, what is the difference between an omega 3 and omega 6 fatty acid?
7. Draw a triglyceride made of the following fatty acids:
 - a. DHA
 - b. Stearic Acid
 - c. α -linolenic acid
8. What is the primary structural difference between a phosphoglyceride and a triglyceride? How does this structural difference influence the role of each of these molecules in your body?