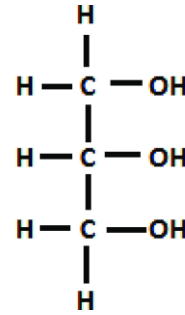


**Purpose:** To build lipid molecules to better understand their structure, and also to learn how molecules bond together

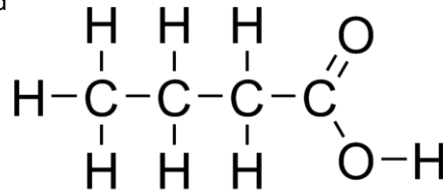
**Procedure and Observations:**

- Using the molecular model kit, build a *glycerol* molecule.  $C_3H_8O_3$

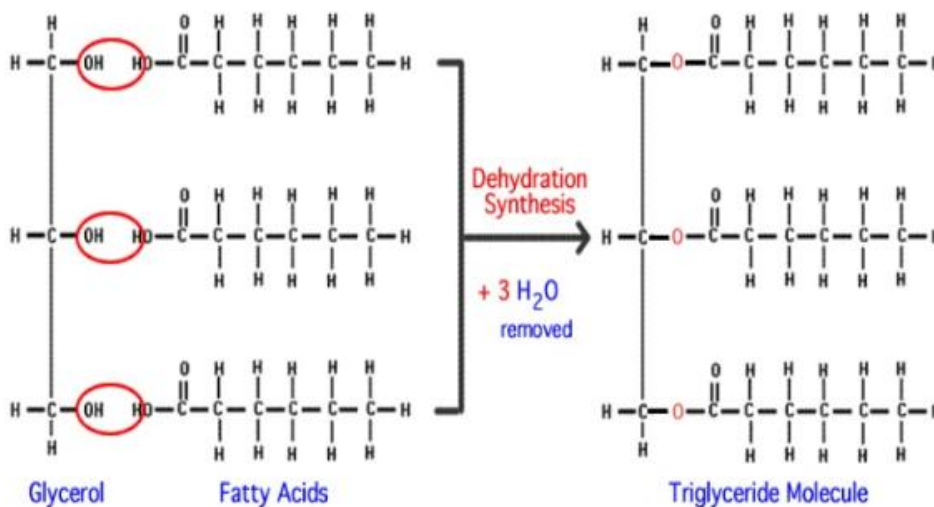


- Build 3 molecules of *short fatty acids* as shown below. However, be aware that in animal tissues the most commonly found fatty acids have between 12 and 24 carbon atoms!

A 4-carbon fatty acid



- Circle** and **name** the functional groups on the above fatty acid and the glycerol molecule.
- Place the glycerol and three fatty acids on your lab bench and join them together by removing one water molecule from the hydroxyl group of the glycerol and the carboxyl group of the fatty acid. This process is called dehydration synthesis. (Removing water + building up)



- What is the name of the macromolecule that you built in step 4?

6. What is the difference between a saturated fatty acid and an unsaturated fatty acid? Include 2 diagrams to illustrate your reasoning.

7. Why is it not good to consume a diet rich in saturated fats and cholesterol?

8. What are 2 functions of lipid molecules?

\_\_\_\_\_

9. List 5 examples of macromolecules that are included in the lipid category.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. Draw a triglyceride molecule, labeling the four subunits: glycerol + 3 fatty acids

11. List examples of the types of food that mainly contain saturated fatty acids and unsaturated fatty acids.

Saturated

vs.

Unsaturated



12. How do plants and animals use waxes?

13. What is the name of the lipid molecule that is found in the structure of cell membranes?