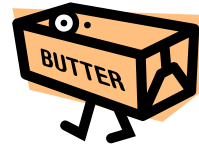


## All About Lipids!

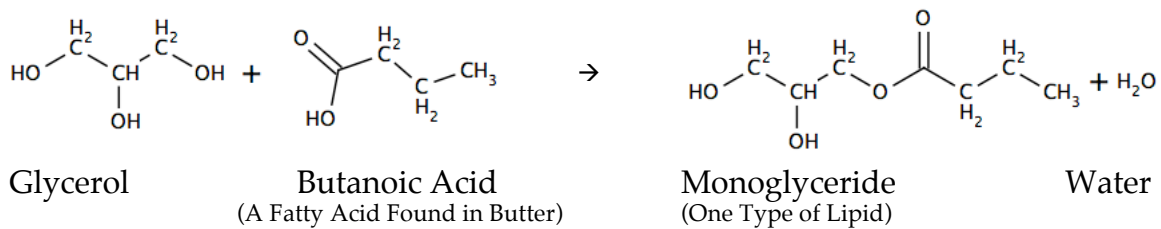


What is another word for lipid?

Which elements make up lipids?

Carbohydrates also contain these three elements. What is one major difference about carbohydrates and lipids in terms of solubility?

In the pictures below, a glycerol molecule is reacting with a fatty acid to produce a lipid and some water.



More than one fatty acid can attach to each “OH” site on the glycerol molecule. If this happens, diglycerides or triglycerides can form.

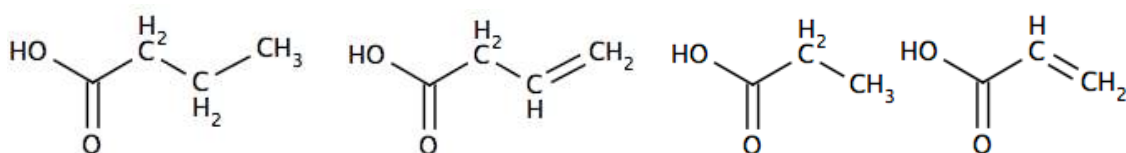
Most of the lipids found in food are \_\_\_\_\_. (The big long carbon chains in the lipids are nonpolar, so they won't dissolve in water, which is polar).

Cholesterol (a type of lipid) is not soluble in water or blood. Why is this a problem?

Suppose someone said that a towel was *saturated* with water. What would this mean?

When discussing fatty acids, you might also see the words “saturated” or “unsaturated.” What are they referring to here?

Saturated fatty acids would have entirely single bonds between carbon atoms, then. (All available spots would be saturated with hydrogen atoms instead). Circle the saturated chemicals below.



Examples of saturated fatty acids that you might see on the ingredient labels of foods you eat are butyric acid (which can be found in butter) or stearic acid (which can be found in milk or beef products).

After looking at the examples for saturated fats, where do you think most of them come from?

Fatty acids that contain one double bond are called \_\_\_\_\_. An example of this is oleic acid (which can be found in olive oil and canola oil).

Fatty acids that contain multiple double bonds are called \_\_\_\_\_. Examples of these are linoleic acid and linolenic acid (which can be found in corn oil and sunflower oil).

After looking at the examples for unsaturated fats, where do most of them come from?

Most vegetable oils found in nature are called “cis” lipids. Draw a picture of them and write notes to yourself about why are they are usually liquids at room temperature.

What is hydrogenation?

What are trans fats? Why are they a health problem?