Lipids Worksheet

1. Are lipids organic molecules? ___________ Why or why not? ___________________________________________

2. What elements do lipids contain?
   1. ______________________________
   2. ______________________________
   3. ______________________________

3. Many lipids are formed by the attachment of three:
   a. Fatty acids to glycerol        c. Cholesterol
   b. Hydroxyl groups to glycerol   d. Fatty acids to a carboxyl group

4. Label the below lipids as either saturated or unsaturated.

   ![Lipid Structures]

5. If a lipid molecule contains at least one ________________ it is **Un**saturated.

6. Label the parts of the below lipid molecule. Is this a saturated or unsaturated lipid? ________________

   ![Lipid Structure]

7. Lipids are found in:
   a. Bread       c. Oils/Fats/Waxes
   b. Meat        d. Chocolate

8. Give an example of an **Un**saturated lipid in your diet: ________________________________

9. Give an example of an saturated lipid in your diet: ________________________________

10. Why are lipids “waterproof”?

11. Give an example that illustrates lipids being waterproof.
12. Label the polar and non-polar ends of the representation of a lipid below:

13. What are the two main functions of lipids in humans?
   1. ______________________________________
   2. ______________________________________

14. Lipids include triglycerides (fats), phospholipids, and waxes. One of the key parts that make up a lipid is glycerol (a type of alcohol). An alcohol is recognizable by its hydroxyl (-OH) groups.
   a. Draw a box around each OH group.
   b. The molecular formula for glycerol is C ____ H ____ O ____.

15. Another key component of lipids is a fatty acid.
   A fatty acid is recognizable by its carboxyl group.
   a. Draw a box around the carboxyl group on each fatty acid.
   b. The molecular formula for butyric acid is C ____ H ____ O ____.
   c. The molecular formula for caproic acid is C ____ H ____ O ____.
   d. The molecular formula for lauric acid is C ____ H ____ O ____.