Science 9-Biology

Worksheet 6-2--Fats

_____
10

Name _____

Due Date _____

Show Me ☐ Hand In ☐

Correct and Hand In Again By _____

Read pages 103-105 of SP to help you answer the following questions:

1. Name seven different foods which contain fats. _____
   _____

2. What provides more energy for your body, a gram of carbohydrate or a gram of fat? __.

3. Fats are made up of the three **elements** _____, _____ and _____.

4. Fats contain (more/less)_____ **hydrogen** atoms and (more/less)_____ **oxygen** atoms than carbohydrates.

5. If you eat more carbohydrates than you need, what does your body do to them? _____
   _____

6. Fats are built from smaller molecules called _____ _____.

7. When fats are digested in your body, the **large fat molecules** are broken down into molecules of _____ _____.

8. Your body uses some of the **fatty acids** for energy, what does it do with any extra fatty acids obtained from your diet? _____
   _____

9. What are the three main **functions** of body fat?
   _____
   _____
   _____

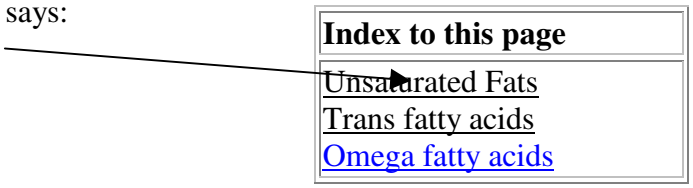
10. Name four types of foods that contain **saturated fats**. _____
    _____

Go to a computer which is connected to the internet and type in the following address:
http://www.ultranet.com/~jkimball/BiologyPages/F/Fats.html
Use the information to help you answer the following questions 11-18:

11. A fat molecule is made up of **glycerol** and three _____ _____ all joined into one. In the diagram shown at the beginning of this site, each fatty acid contains how many **carbon** atoms? _____ (The carbon atoms on the far right belong to the "glycerol" molecule.). Each carbon atom in the long fatty acid chain has ___ **hydrogen** atoms attached to it except the carbon on the far "right" which has two _____ atoms attached to it.
Scroll further down:

12. A fatty acid can contain as few as _____ **carbon** atoms and as many as ____ **carbon** atoms.

13. The fat molecule shown at the top of the site (tristearin) is a **saturated** fat. Notice that all the carbon atoms have **two** hydrogen atoms attached—except the ones at the right. The molecule contains as many hydrogen atoms as it can hold and is said to be "**saturated**" with hydrogen atoms. At the top of the site, it says:
Click "Unsaturated Fats"



Now you have a picture of "trilinoleum", which is an example of an **unsaturated** fat. Notice that this molecule has some _____ bonds between the carbon atoms and is missing some _____ atoms. (Thus it is not saturated with _____ atoms.)

14. What is the difference between a **monounsaturated fat** and a **polyunsaturated fat**?

15. Most **unsaturated** fats are (*solid, liquid or gas?*) _____ at room temperature.

16. Name 5 common oils that are high in **unsaturated** fats. _____
_____

17. What happens during the process of **hydrogenation**?

18. What do some studies suggest about omega-3 fatty acids?

Now, go type in the site: http://www.health-alliance.com/nn/hheguide/intro_4.html

Use the information here to answer questions 19-25.

19. **Monounsaturated** and **polyunsaturated** fats both come mainly from (*plant or animal?*) _____ sources.

20. "LDL" is called **"bad" cholesterol** because it increases your chance of heart disease, while "HDL" is called **"good" cholesterol** because it is said to decrease your chance of heart disease. Which type of fat (*monounsaturated or polyunsaturated?*) tends to **lower total cholesterol** and **raise HDL**? _____

21. Name four types of foods that are high in **saturated** fats._____
_____

22. **Saturated** fats are usually (*solid, liquid or gas?*) _____at room temperature.

23. **Hydrogenated** fats can contain what are called _____-fatty acids, which can be a harmful as animal fats.

24. Fill in the following table:

Good Fats		Bad Fats
Monounsaturated Fats	**Polyunsaturated Fats**	**Saturated Fats**

25. Name some food products that you may eat every day that contain palm/coconut oils _____, hydrogenated oils _____, butter fat _____.

Now, go back to your textbook on pages 104-105 and answer questions 26-28

26. Nutritionists say that most Canadians need to _____ the amount of fat they eat.

27. No more than _____% of your food energy should come from fats and no more than _____% should come from saturated fats.

28. **Saturated** fats can (*increase/decrease?*) _____ the amount of **cholesterol** in your blood. Does your body need cholesterol? _____. What can result if your body has **too much cholesterol**? _____.