

### 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:*

- Name seven different foods which contain fats. \_\_\_\_\_  
\_\_\_\_\_
- What provides more energy for your body, a gram of carbohydrate or a gram of fat? \_\_\_\_.
- Fats are made up of the three **elements** \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
- Fats contain (more/less) \_\_\_\_\_ **hydrogen** atoms and (more/less) \_\_\_\_\_ **oxygen** atoms than carbohydrates.
- If you eat more carbohydrates than you need, what does your body do to them? \_\_\_\_\_  
\_\_\_\_\_
- Fats are built from smaller molecules called \_\_\_\_\_.
- When fats are digested in your body, the **large fat molecules** are broken down into molecules of \_\_\_\_\_.
- Your body uses some of the **fatty acids** for energy, what does it do with any extra fatty acids obtained from your diet? \_\_\_\_\_  
\_\_\_\_\_
- What are the three main **functions** of body fat?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 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”

<b>Index to this page</b>
<a href="#">Unsaturated Fats</a>
<a href="#">Trans fatty acids</a>
<a href="#">Omega fatty acids</a>

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/nh/hheguide/intro\\_4.html](http://www.health-alliance.com/nh/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**? \_\_\_\_\_.