**ED 370**

**Fats in Food Lab**

**Background:** Fat is one of the nutrients that may be found in food or drink items. Some fat is necessary in the human diet for maintenance of cell membranes, skin flexibility, to make vitamins, and other important reasons. However, consuming too much fat may result in weight gain and cause the deposit of fatty plaques in arteries which can lead to heart disease later in life. After completing this lab for further research your teacher might ask you to study the importance of managing the amount of fat in your diet.

This lab will use paper bags to help identify fat. Have you ever observed a paper bag in which donuts have been left overnight? What has happened where the donuts come into contact with the bag?

**Purpose:** To identify presence of fat in common food and drink items.

**Materials:**  Brown paper lunch or store bags, ruler, masking tape, scissors, cotton swabs, paper towels, common food items such as regular, low fat, or nonfat salad dressing, olive oil, vinegar, butter, butter substitute, cheese, various fruits such as apples, oranges, bananas, vegetables such as carrots, potatoes, cucumbers, snack foods like pretzels, pop corn, chips, walnuts, etc. This is a good chance to clean a refrigerator! Common drink items such as juices- orange, grape, any type of soda, various milks- 2%, skim, whole, Gatorade, etc. Use food service type plastic gloves if available and safety glasses may be worn if available. If you have food allergies do not handle anything to which you are allergic.

**Procedure:**

1. Open paper bag and with scissors cut one full side to produce a rectangle and write you name in the lower right corner.
2. Using a pencil and ruler, divide bag into smaller rectangular spaces. Draw four equal rows and four equal columns, a total of 16 spaces.
3. Label each rectangle with a food or drink item.
4. For solids, rub a few minutes in the middle of the correct area. If food debris remains, such as from cheese or butter, wipe excess with a paper towel.
5. For liquids, using a cotton swab, place a dab of each liquid in the correct area. Again, wipe excess so that the liquid does not run into another space.
6. Make a hypothesis as to whether each food or drink item will contain fat.
7. Using two or more pieces of masking or other tape available, hang your completed experiment on a wall or door as designated by your teacher. It will need to dry until later in the day or the following day to be able to distinguish water from fat.
8. Be sure to clean your desk or lab table and clean food and drink items as directed. Your teacher might be using the same items for the next class. In that case just wipe your table and wash your hands before leaving the lab.
9. A few hours later or the next day observe and record your results. Answer the questions in the analysis section of your Student Data Sheet.

Reference: Alexander, P*. et.al.* 1988. *Life science*. New York: Merrill Publishing Co.

Student Data Sheet

Fats in Foods

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the food and drink items in the correct space, record your hypothesis either immediately before or after rubbing the food items on the paper bag, and record the results later in the day or the following day.

|  |  |  |
| --- | --- | --- |
| Food or Drink Item | Hypothesis (+ = contains fat;  - = does not contain fat) | Results (+ = contains fat;  - = does not contain fat) |
| 1. |  |  |
| 2. |  |  |
| 3. |  |  |
| 4. |  |  |
| 5. |  |  |
| 6. |  |  |
| 7. |  |  |
| 8. |  |  |
| 9. |  |  |
| 10. |  |  |
| 11. |  |  |
| 12. |  |  |
| 13. |  |  |
| 14. |  |  |
| 15. |  |  |
| 16. |  |  |
| 17. |  |  |

Analysis Questions:

1. What food or drink items did contain fat?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What food or drink items did not contain fat?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What food or drink items were hard to determine?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. For how many items did you correctly hypothesize the results? \_\_\_\_\_\_\_\_\_\_\_\_
2. For what % of the items did you correctly hypothesis the results? \_\_\_\_\_\_\_\_\_\_\_
3. Are all fats bad? Discuss your answer.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What health problems might occur if a person eats a high percentage of fats for a long time throughout his or her life?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_