



FAT FOLLIES

GRADE LEVEL: 6-8

SUBJECT: Science

NATIONAL STANDARD(S):

(6-8) SC: 14.2, 15.2, 15.3, 15.4, 15.6, 16.2,

THEME: Food, Nutrition & Health

FOOD AND FIBER TOPIC: V-A,B,C

LEARNER OBJECTIVES:

The student will test foods for fat content by rubbing food samples on paper.

VOCABULARY

fats—Any food product such as lard and vegetable shortening which is derived from animal or vegetable fat.

nutrient—A substance which favorably affects the nutritive processes of the body.

BACKGROUND

The Food Guide Pyramid is a personal nutrition model created by the US Food and Drug Administration (USFDA) to help us understand what kinds and amounts of foods we should eat to stay healthy. Each level or section of the Food Guide Pyramid provides some, but not all, of the nutrients a person needs. Foods in one group cannot replace those in another. Additionally, no one food group is more important than another. To stay in good health, a person needs to eat foods from all categories. The base of the food pyramid is made up of breads, cereals, rice and pasta. The USFDA recommends most children and young teens eat nine to 11 servings from this part of the pyramid every day. One serving is equal to one slice of bread, one ounce of cold cereal or 1/2 cup of cooked cereal, rice or pasta.

Fruits and vegetables make up the next level of the pyramid. A person needs between four and five servings of vegetables and between three and four servings of fruit every day. One cup of raw leafy vegetables or 1/2 cup of other vegetables, cooked or chopped raw, make one serving of vegetables. One medium apple, banana or orange, 1/2 cup of chopped, cooked or canned fruit, or 3/4 cup of fruit juice is equal to one serving of fruit.

On the next level are foods that come mostly from animals. Milk and dairy products like yogurt and cheese make up the milk group. The other group includes meat, poultry, fish, dry beans, eggs and nuts. Most people need two to three servings from each of these groups every day. One cup of milk or yogurt or 1 1/2 ounces of cheese make one serving. Two to three ounces of cooked lean meat, poultry or fish, one cup of cooked dry beans, one egg or four tablespoons of peanut butter make one serving from the meat, poultry, fish, beans, eggs and nuts group. These groups provide us with good sources of protein, but may also be high in fat.

The small tip of the pyramid is made up of fats, oils and sweets. Although they are high in energy, these are foods such as salad dressings and cooking oils, cream, butter, margarine, sugars, soft drinks, candies and sweet desserts are not healthy for people to eat in large

quantities. Excess energy is stored in the body as fat. These foods have very little nutritional value and should make up only a small part of the diet.

Many foods that come from animals are naturally higher in fat than foods that come from plants. Additionally, many popular items, like French-fried potatoes and donuts, are prepared with fat.

It is law that food labels detail how many calories are in one serving and how many of those calories are from fat. They also tell you what percentage of your total daily fat allowance is contained in one serving. Most nine to eleven-year-olds should get about 2,200 calories every day with no more than 660 of those calories coming from fat sources.

STEP-BY-STEP INSTRUCTIONS

1. Bring the following items to class; paper towels, cotton swabs, cooked and cooled pasta, carrots cut into small pieces, fresh and frozen peaches or strawberries, a pint of whole milk, eggs or peanut butter, a can of black olives, and one stick of margarine.
2. Copy the student worksheet on dark construction paper. Hand out student worksheets. Introduce the Food Guide Pyramid using the background material.
3. Discuss with the students each food item brought to class. Ask students to write the name of each food in the appropriate pyramid space for each of the food groups.
4. Divide the class into groups of three or four. Students will be testing the food items for fat content. Provide each group with a small sample of each food item, a handful of cotton swabs, and paper towels for each member.
5. Instruct each student to place his or her student worksheet on top of a paper towel.
6. Students should use the cotton swabs to place four or five drops of the milk on their worksheets and to smear small amounts of the sticky items in the appropriate spaces. Other food samples may be gently rubbed in the pyramid spaces. If you use raw eggs, have students test the yolks and egg whites separately.
7. Allow the pyramid spaces to dry. After 30 minutes have students check their worksheets to discover which foods contain fat.

RELATED ACTIVITIES

1. Have students bring in their favorite snack foods and read the labels to determine the amount of fat present in the product. Students may be surprised to see that many snack foods contain over half the recommended daily fat grams in just one serving. They may also be surprised at the size of one serving. Then, divide the class into groups, and have students in each group find the average fat grams in the food items they brought. Next, average the fat grams for the entire class.
2. Furnish recently published cookbooks or cooking magazines that contain nutritional information. Have each student plan a dinner party for four and calculate the number of calories, fat grams, cholesterol, sodium, fiber and protein each person would consume.
3. Have students monitor TV commercials and make lists of snack foods advertised between 5 and 7 p.m. on weeknights or on Saturday morning. Make a list of their findings on the chalkboard and discuss the nutritional values of the foods most commonly advertised during those times. Have students develop advertisements for their own favorite snack foods and include nutritional information.

RESOURCES

Student Books

- Blair, Cynthia. (1989). Popcorn Project. Fawcett.
- Burns, Marilyn. (1978). Good for Me: All About Food in 32 Bites. Little.
- Caseley, Judith. (1987). Apple Pie and Onions. Greenwillow.
- Patent, Dorothy Hinshaw. (1992). Nutrition: What's in the Food We Eat? Holiday House.
- Walker, Barbara. (1979). Little House Cookbook: Frontier Foods from Laura Ingalls Wilder's Classic Stories. Harper Row.

Teacher Resources

- "Abundant Food and Fiber," 801 Shakespeare, P.O. Box 497, Stratford, IA 50249, (515) 838-3000, Fax (515) 838-2788 (computer software for students in grades six through nine in six subject areas, designed to increase awareness of our food supply and its production).

Internet Resources

- The Food Guide Pyramid via the Kids Health. Provides a good summary of the pyramid design along with exact serving sizes and food sources.
http://www.kidshealth.org/parent/nutrition/healthy_food_choices/food_pyramid.html
- Nutrition Expedition: Sites of Interest. This page provides useful links to other Internet sites with information about nutrition and nutrition education. <http://www.fsci.umn.edu/nutexp/links.html>
- Food, Nutrition and Health links via a Food Guide Pyramid Page. Click on "home" to access the pyramid. <http://www.ganesa.com/food/links.html>
- Nutrition Expedition: A Resource for K-12 Nutrition Education. University of Minnesota
<http://www.fsci.umn.edu/nutexp/>

EVALUATION

Milk, egg, peanut butter, olives, and butter or margarine should leave greasy spots on paper. Pasta cooked with oil and water will form a greasy spot. Pasta cooked only in water does contain a small amount of oil but not enough to show up on the test. Egg yolks contain fat, but not egg whites. The fruits and vegetables contain little or not fat.

ACKNOWLEDGMENT

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Name: _____

Fat Follies

Everyone needs some fat in their diet. But too much fat can cause health problems. It's easy to leave foods like butter and mayonnaise out of your diet, but some of the foods you eat may contain fat that you don't know about. Write the name of each food to be tested in the appropriate section of the pyramid. Then rub a little of the food near its name and let the test sections dry. Foods with fat will leave an oily spot on the paper.

