

Assignment Discovery Online Curriculum

Lesson title:

Eat Right, Stay Fit

Grade level:

6-8

Subject area:

Health

Duration:

Two class periods (students will need additional time to keep track of what they eat)

Objectives:

Students will do the following:

- Learn what a healthful diet is
- Assess their eating habits to determine if they are getting the right foods to stay healthy
- Learn about the relationships among metabolism, calories, and diet.

Materials:

- Print resources, such as reference books and encyclopedias
- Internet access
- Food labels (optional but very helpful)

Procedures:

1. Explain that puberty is a time of fast growth, second only to infancy. For this reason, it is important to eat a healthful diet and exercise regularly.
2. Discuss with students that this is also the time in their lives that they should begin taking responsibility for their own eating habits. During this lesson, they will have an opportunity to do so by comparing what they eat with the daily nutrition requirements recommended by the U.S. Department of Agriculture. Before students can do this activity, they need to understand the basics of nutrition. To provide students with this necessary background information, take a few moments to discuss the following key terms with them.

- **diet:** Everything that someone consumes. A balanced diet is based on the scientific principles that healthful foods and appropriate nutrients must be consumed each day.

- **calorie/Calorie:** One calorie is the amount of energy needed to raise the temperature of 1 gram of water 1 degree Celsius. One Calorie, or kcal, is equal to 1,000 calories, the amount of energy required to raise 1 kilogram of water (about 2.2 pounds) 1 degree Celsius. Nutrition is measured in Calories.

- **metabolism:** The number of calories burned at any given moment. An individual's basal metabolic rate (BMR) is a measure of the number of calories burned to keep the person's heart, lungs, and muscles working while the body is at rest. An individual's actual metabolism is higher when the person is active than it is when the person is at rest.

- **nutrients:** Substances found in foods that people need to stay healthy. Proteins, carbohydrates, vitamins, minerals, and fiber are essential elements of a nutritious diet. Proteins make the cells, while carbohydrates provide energy. Vitamins regulate chemical processes in which the body converts food into energy and tissues. Minerals such as calcium are essential for building strong bones and teeth. Fiber helps keep the digestive system functioning smoothly.

3. Tell students to list what they eat over the course of three days. Make sure students include the amounts of each food, as in “two waffles” or “one cup of cereal with 1 cup of low-fat milk.”
4. After students have completed their lists, hand out copies of the Food Guide Pyramid from by the U.S. Department of Agriculture. The guide can be found on many products, such as cereal and cracker boxes, or at the following Web site: <http://www.nal.usda.gov:8001/py/pmap.htm>.
5. Have students take a few minutes to look over the Food Guide Pyramid and the recommended daily servings for each food group. Tell students that these servings apply to all people, but as adolescents, they should make one adjustment. They should make sure to eat three or more servings every day from the milk, yogurt, and cheese group to get enough calcium.
6. To help students understand what a serving is, share with them the following equivalencies:

Milk, Yogurt, and Cheese

1 serving = 1 cup of milk or yogurt

1 serving = 1_ ounces of natural cheese, or 2 ounces of processed cheese

Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts

1 serving = 2–3 ounces of cooked lean meat, poultry, or fish (2 tablespoons of peanut butter count as 1 ounce of lean meat)

1 serving = _ cup of cooked dry beans

1 serving = 1 egg

(2 tablespoons of peanut butter and 1/2 cup of peanuts is equivalent to 1 oz. of meat. Because nuts are high in fat, they must be eaten sparingly. Two tablespoons of peanut butter is about 1/2 of a serving, as is 1/2 cup of peanuts. Rather than eat a complete serving of these foods, it may be wise to supplement these portions with other foods from that food group.)

Vegetables

1 serving = 1 cup of raw leafy vegetables

1 serving = cup of other vegetables, cooked or raw

1 serving = cups of vegetable juice

Fruits

1 serving = 1 medium apple, banana, or orange

1 serving = cup of chopped, cooked, or canned fruit

1 serving = cup of fruit juice

Bread, Cereal, Rice, and Pasta

1 serving = 1 slice of bread

1 serving = 1 ounce of ready-to-eat cereal

1 serving = cup of cooked cereal, rice, or pasta

7. Using the Food Guide Pyramid and the serving information as guides, ask students to compare what they eat in a typical day with what is considered a healthful, well-balanced diet. Then have them modify their diets by cutting out unhealthful foods, adding healthful foods, and if necessary, increasing or decreasing the number of servings in a particular food group. By making these changes, students will be working toward eating what nutritionists consider a healthful diet. Tell students that they should eat fats, oils, and sugars sparingly because these foods add calories but not nutrients.
8. Tell students that they should also consider metabolism when assessing their eating habits. *Metabolism* is defined as the number of calories your body needs while at rest. A more active individual will have a higher metabolism.
9. Explain to students that there are different ways to calculate metabolism, but all formulas give an approximate number of calories to be eaten each day. Counting calories is useful, but it is much more important to eat the right foods. Physical activity is equally important.

If you feel that providing formulas for students to determine their basal metabolic rate would give them useful information, suggest that they follow these steps:

- a. Women: $661 + (4.38 \times \text{weight in pounds}) + (4.33 \times \text{height in inches}) - (4.7 \times \text{age}) = \text{BMR}$
- b. Men: $67 + (6.24 \times \text{weight in pounds}) + (12.7 \times \text{height in inches}) - (6.9 \times \text{age}) = \text{BMR}$
- c. To estimate the total number of calories your body needs each day, multiply your BMR by the appropriate number given below:
 - 1.2 for people who get little exercise
 - 1.3 for people who get a moderate amount of exercise
 - 1.7 for people who are very active

- 1.9 for people who are extremely active

10. Ask students what they learned about their eating habits and metabolism. Challenge students to eat according to the diet they devised based on the Food Guide Pyramid and basic serving information. After students do so for a few days, ask them if they feel any different. Do they have more energy? Are they less tired? Encourage students to continue to eat a well-balanced, healthful diet.

Discussion Questions:

1. Ask students to bring in food labels from home, or supply some from your own home. As a class, look at the labels. What information do they give? How can this information help people eat a healthful diet?
2. What is the biggest modification each student had to make to eat a more healthful diet? Did students have to eliminate certain foods or add others? Discuss how these differences have affected their daily lives.
3. What are proteins, carbohydrates, vitamins, minerals, and fiber? Why is it important to eat a balance of these substances in your diet?

Evaluation:

Use the following three-point rubric to evaluate how well students grasped information about nutrition, applied that information to their lives, and participated in class discussions on the topic.

Three points: strong grasp of the subject matter; above-average ability to apply knowledge to personal experience; and active participation in class discussions.

Two points: on-grade understanding of the subject matter; average ability to apply knowledge to personal experience; and somewhat active participation in class discussions.

One point: weak understanding of the subject matter, had difficulty applying knowledge to their own experience, and did not participate in class discussions.

Extension:

Class Cookbook

Have each student bring in a recipe of a favorite food that is healthful and part of a well-balanced diet. With the help of the students, compile the recipes into a class cookbook. If possible, plan a class lunch, and have students bring in samples of their favorite foods. Then enjoy a healthful lunch together.

Suggested Reading:

Food Rules: The Stuff You Munch, Its Crunch, Its Punch, and Why You Sometimes Lose Your Lunch

Bill Haduch. Dutton Children's Books, 2001.

Everything you've always wanted to know about food and nutrition is packed into this title! Using lots of humor, including fun facts printed on the inside margins of each page, the scoop on why your body feels hungry and thirsty and the best way to fuel it up are explained in short chapters, generously illustrated with cartoon drawings. Learn how to choose foods rich in vitamins and minerals, why drinking lots of water is important, and things that can upset your digestive system. The concluding chapter lists several simple recipes for kids to make themselves.

Totally Fit: A Dancer and a Trainer Show How to Lose Weight and Stay in Shape Without Dieting

Deborah Bull. DK Publishing, 1998

Written by a ballerina with the Royal Ballet, this well-illustrated book describes the importance of eating well for energy and fitness. A short introduction sheds light on familiar dieting "myths" and explains the benefits and drawbacks of various foods, from fats to proteins. Several chapters outline a series of easy exercises that will contribute to total fitness.

Vocabulary:

calorie/Calorie

Definition: With a lowercase *c*, the term refers to the amount of energy needed to raise the temperature of 1 gram of water 1 degree Celsius. With an uppercase *C*, the term refers to the amount of energy required to raise one kilogram of water (about 2.2 pounds) one degree Celsius; one Calorie, or kcal, is equal to 1,000 calories.

Context: When it comes to staying healthy, counting **Calories** is much less important than eating a balanced diet.

diet

Definition: Everything that is consumed. A balanced diet is based on the scientific principles that healthful foods and appropriate nutrients must be consumed each day.

Context: Eating a healthful **diet** helps prevent high cholesterol, high blood pressure, cardiovascular disease, and many other health problems

Food Guide Pyramid

Definition: A visual representation of the number of recommended daily servings in each of the six food groups; designed by the U.S. Department of Agriculture.

Context: Look at the **Food Guide Pyramid** to find out how much of each kind of food you should eat each day.

metabolism

Definition: The number of calories burned at any given moment. An individual's basal metabolic rate (BMR) is a measure of the number of calories needed while the body is at rest.

Context: The best way to increase your **metabolism** is to engage in more physical activity.

nutrients

Definition: Substances, including proteins, carbohydrates, vitamins, and minerals, found in foods that people need to stay healthy.

Context: Teens need to consume a great deal of calcium, the **nutrient** that helps build strong bones and teeth.

Academic Standards:

This lesson adheres to the National Science Education Standards for students in grades 5-8:

- Life Science

Credit:

Marilyn Fenichel, a freelance writer and curriculum developer.

This lesson was developed in consultation with Lisa Wu, a high school biology teacher.

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