



Sponsored by:
Cornell Cooperative Extension of Suffolk County
Department of Family Medicine at Stony Brook Medical Center

Funded by:
The New York State Department of Health, Mary Lasker Heart and
Hypertension Institute

NUTRITION UNIT

6TH GRADE

LESSON ONE - GREAT GRAINS

OBJECTIVES

- Students will recognize that their daily food choices affect their overall health now and in the future.
- Students will identify the Food Guide Pyramid and be able to explain its use for making smart food choices.
- Students will understand that foods are classified into the five foods groups of the Pyramid based on the nutrients they contain.
- Students will be able to identify foods and nutrients in the Grain Group.
- Students will be able to identify the recommended number of servings a day from the Grain Group.

MATERIALS NEEDED

Provided in the Curriculum

Pretest

The Food Guide Pyramid handout

Other:

cereal packages

index cards labeled grain and sugar

measuring cups or 8 ounce paper cups

Materials adapted from Frischie, S. and Konzelmann, KL. Exploring the Food Pyramid with Professor Popcorn. Purdue University Cooperative Extension Service. West Lafayette, IN, 1993.

INTRODUCTION

Explain to students that you are starting a unit on nutrition that will include nine lessons. Nutrition is the study of food and how it is used in the body. Explain that these nutrition lessons are being included in the physical education class because the food that you eat affects the physical activity that you can do, and because the food that you choose to eat and the activity that you choose to do have a great influence on how you feel, how you look and how healthy you will be now and as you get older.

Ask a volunteer to tell you what she/he ate for her/his last meal (breakfast, lunch or dinner last night). Comment that the student does not look like whatever she/he ate (a hamburger, mashed potatoes and an apple, for example). Ask the students if it is true that “You are what you eat?”. Elicit responses. Yes! The food that you eat really and truly does turn into you! Explain to students that the food they eat is like the building materials a carpenter uses to build a house. If the carpenter uses cardboard and staples the house will not be very strong and will not look so nice. So, if you want to look and feel and be the best you can, you need to know what foods help you look, feel and be your best.

PRETEST

Explain that you need to know what the students already know about nutrition, and what they need to learn. Distribute the Pretest and ask them to answer the questions the best they can. They will not be graded. Give students about 5 minutes to complete the quiz.

FOOD CLASSIFICATION

Ask a few students to list foods that begin with the same letter as their first name.

List the students' responses under the letter that starts their name, and do so for a few students. There are many ways to group foods, such as by the letter that their names start with. Another way is by their source. Where did the food come from, a plant or an animal? Classify several of the foods listed by name by source.

Another way to classify foods is according to the nutrients they contain. What are nutrients? Nutrients are chemicals in food that work together to meet our body's needs. Carbohydrates, protein, vitamins, such as vitamin C and A are examples of nutrients. Each nutrient has a specific use in the body, just as cement, wood, nails and glass have different uses in building a house. Our bodies need many different nutrients for growth and repair. Foods that have similar nutrients are grouped together. Classify several examples, for example fruits are very high in vitamins C and A and in sugars that our bodies use for energy. Examples of fruits include oranges, apples, peaches and bananas. Vegetables are high in folate and potassium. Examples of vegetables include broccoli, spinach, tomatoes, and carrots. Explain that many foods, like pizza and a sandwich, are made up of foods from different food groups. They are called combination foods.

Food scientists have put together a way to group foods that have similar nutrients. Does anybody know the name of the Food Guide that is used today? It is called the Food Guide Pyramid. Pass out Food Guide Pyramid handout. The food guide pyramid is a shape that is used to help us make smart food choices. Five groups of food make up the

pyramid. Foods within each group contain similar nutrients. Today we are going to discuss the Grain Group.

HIGHLIGHT THE GRAIN GROUP

Did you have toast, a bagel, or a favorite cereal for breakfast this morning? Maybe you ate pizza, spaghetti, or tacos for lunch or dinner yesterday? These foods all have something in common. What is it? They are all from the Grain Group of the Food Guide Pyramid, which means that they all come from plants called grains. The most important grains that people use are wheat, corn, rice and oats. When grain plants grow, they produce a stalk and seeds. The seeds from grain plants are processed so people can use them for food. For example, most wheat is made into flour, and corn is ground into corn meal. They are then used to make bread, spaghetti and breakfast cereals.

Where is the Grain Group located in the Food Guide Pyramid? It is on the bottom... the foundation of the Pyramid... the largest food group. Therefore, most of the foods we eat each day should be from this group. In fact, we need 6 to 11 servings from the Grain Group each day. A serving is equal to 1 slice of bread, 1/2 cup of cooked cereal, rice, or pasta, or one ounce of ready to eat cereal. Pass around a measuring cup or 8 ounce cup, and ask students to put their fist in it. Most adult fists are equivalent in volume to a measuring cup. Ask the students if their fists take up about 1/2 of the space in the cup. This is an easy way for them to visualize what 1/2 cup looks like. Ask students to state some of their favorite grain foods. We've thought of many foods that all belong to the Grain Group. If all of these foods are grouped together, they must have

something in common. What? They supply similar nutrients to the body. Grain foods, as well as fruits and vegetables, are good sources of carbohydrates.

Carbohydrates supply the body with energy. Have students stand up and do 5 jumping jacks. How is it that your body can do this work... move your limbs through space? It can do this because your muscles store energy that your muscle can use to perform work. You can't see energy, but you can see and feel what can happen when energy is made available. When a car engine burns gasoline, you see the car move. When wood is burned, you feel the heat and see the flames. When electricity is turned on, appliances work and lights shine. When people eat food, we grow, keep our bodies healthy, and have energy to play and work. For example, when you throw a ball the muscles in your arm and shoulder contract and do work.... put the ball in motion. Energy from the carbohydrates you eat, supply the energy for your muscles to perform this work... without you even having to think about it. People who are very active, and those that play sports need even more carbohydrates for the extra energy demands of their muscles. Carbohydrates also fuel the brain. Cars store fuel in the gasoline tank. Where do we store our carbohydrate fuel? We store our carbohydrate fuel in our liver and in our muscles. This stored carbohydrate fuel is called glycogen. When our body needs energy we break down the carbohydrate to a type of sugar, called glucose. When your storage sites are full, your body stores extra fuel as fat.

There are three kinds of carbohydrates: sugars, starches and fibers. (Fiber does not supply energy.) Foods in the grain group that are high in starch and fiber, and low in sugar and fat (we will talk about fats in a few weeks) are the healthiest. In addition to carbohydrates, they have the most other nutrients, like vitamins and minerals, that your

body also needs to be able to use the carbohydrate energy, such as B1, B2, B3, and iron. Whole grains also supply vitamin E, B6, zinc, chromium and manganese. Although some sugars and fats are found naturally in grains, most of it is added by the people who manufacture foods. If you eat too much of grain foods with lots of sugar or fat (like cake, and cookies, that are found in the tip of the Pyramid), you are likely to eat too much energy which your body will store as fat and not get enough vitamins and minerals for you body to work at its best. Although it is true that if you are growing and/or very active you can burn off a lot of these calories, keep in mind that it is also at this time that your body needs a lot of vitamins and minerals. Treat your body like a sports car, and give it high performance fuel.

Have students do the Ingredient Lines activity.

ACTIVITY

INGREDIENT LINES

Cereals are a common grain food. Do you have a favorite breakfast cereal? Why is it your favorite? Have you ever looked at the cereal box to see what is in it? The information on the Nutrition Facts label can help you decide whether a particular cereal is a healthy choice.

Have the students form small groups of 6 to 10 students. Give each group a cereal box. Review the source of grains in cereals by writing the following terms indicating grains on the blackboard: oats, corn, rice and wheat. Also review the source of simple sugars in cereals by writing the following terms indicating sugar on the blackboard: sugar, corn syrup, high fructose corn syrup, maple syrup, dextrose, maltose, honey.

maltodextrins, and other words ending in “ose”. Have each group make an ingredient line - one student for each ingredient on the package label, in order as they are listed. Have the students identify the grain ingredients and give these students a card with “grain” written on it. Have the students identify the sugar ingredients, and give these students a card with “sugar” written on it. Have the class compare the cereal groups and “ingredient lines”. Talk about healthy cereals. How do you decide what is healthy and what isn't quite so healthy. Healthier cereals have less types of sugar added, and the sugar ingredients are at the end of the list. You can also have students check the total grams of sugar on the Nutrition Facts food label. Cereals with less than 5 grams of sugar per ounce or per serving are desirable. Whole grains in the ingredient list (whole wheat flour, rolled or whole oats etc.) also indicate a healthier cereal. You can also have the students check the amount of fiber in the cereal. At least 2 to 3 grams of fiber per serving is desirable. Ask students to look on their cereal boxes at home, or those available in the school in the morning. Are they high in sugar? Are they healthy?

CONCLUSION

- The Food Guide Pyramid is a tool to help you choose healthy foods and a healthy diet.
- There are 5 food groups in the Food Guide Pyramid, Grains, Fruits, Vegetables, Meats, and Milk Products. In addition, the tip of the Pyramid includes foods high in fat and/or sugar.
- Six to 11 servings of grains are recommended each day.

- Foods in the Grain Group are a good source of carbohydrate, which supply the body with a great source of energy, and lots of vitamins and minerals.
- Grains that have a lot of fats or sugars (cakes, cookies, rice pudding) are found in the tip of the Pyramid.