

NUTRITION STRATEGIES

CONCEPT Food is the fuel our bodies need in order to stay in working order. The food pyramid and the dietary guidelines were developed to help us select foods that keep our bodies functioning at peak performance.

NOTE In this topic, various nutritional strategies and information will be built around the food pyramid, depicting an integration of theories and/or concepts. The food pyramid and the dietary guidelines, although different in approach, support each other's concepts. By adhering to the food pyramid recommendations and following the dietary guidelines, a person will automatically have an adequate intake of the six basic nutrients. Students should be familiar with both concepts and how to apply them when making food choices.

The nutrition strategies to cover in this topic are the

- Food pyramid
- Dietary guidelines
- Six basic nutrients

To simplify, streamline, and mesh these strategies use the complete diagram as a guide for covering the materials. The teacher will need a large wall area or surface to place the pieces for each strategy as it is covered. Patterns for all the visuals needed are provided.

Begin by introducing (or reviewing) the food pyramid. Place the sections of the food pyramid on the large wall area as the material is covered. Discuss the types and groups of food in each section and why the groups are necessary for a balanced diet and good health, etc. Some information is provided on page 17.16

Then introduce the need for dietary guidelines by asking the following questions and generating responses and/or discussion.

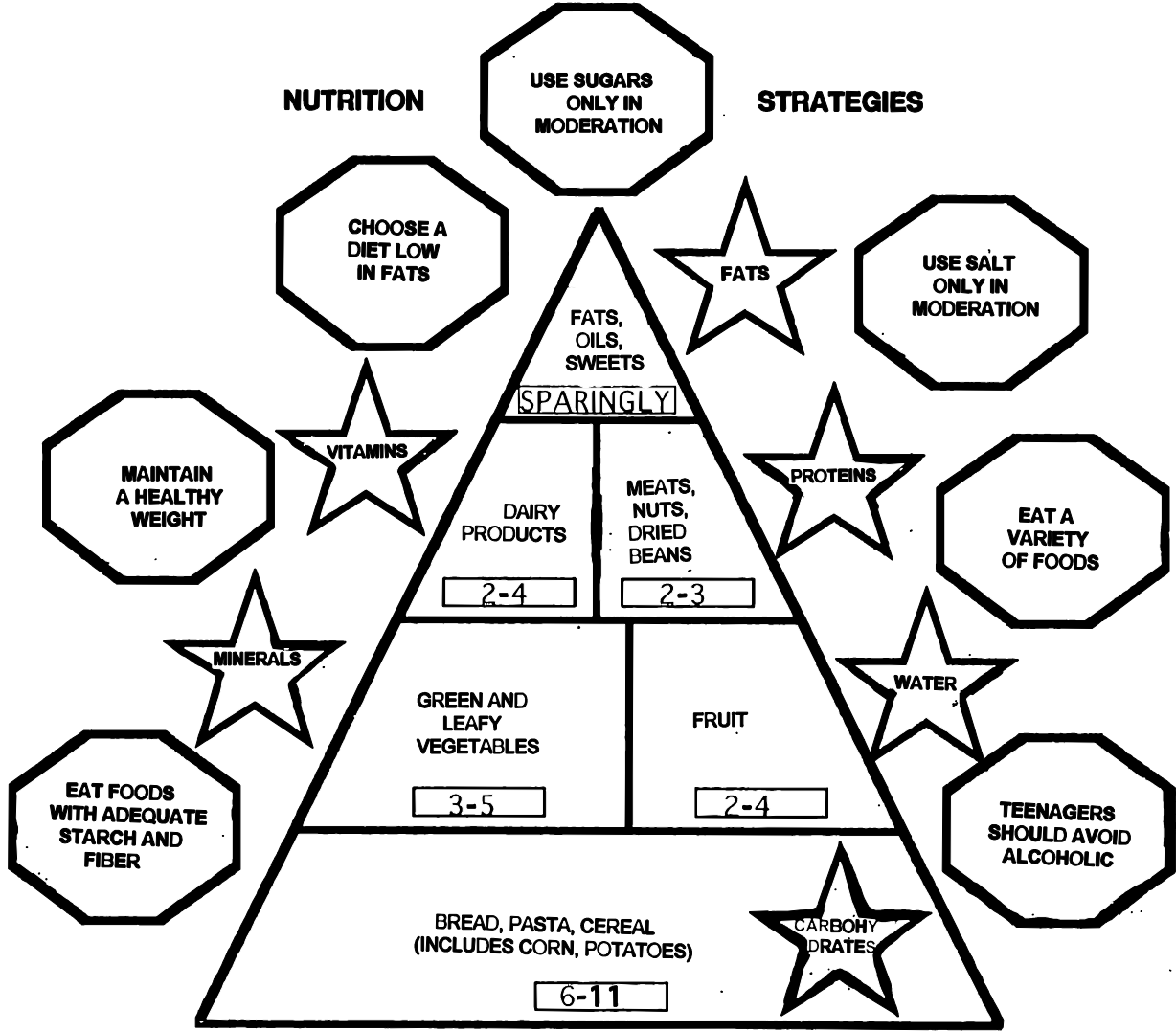
- a. How do you feel when you miss a meal? (tired, sleepy, unable to concentrate, confused, feeling stomach pains, etc.)
- b. What do you suppose happens to your body when you skip meals? (the lack of fuel slows body functions; some areas may shut down so that other body parts can maintain their function. Growth may be slowed because food energy is used to maintain life rather than for growth.)
- c. Name some reasons people skip meals. (lack of preparation time, food preferences, schedule conflicts with family routine, oversleeping, too many between-meal snacks, false concepts about dieting and weight control, religious reasons)
- d. What do you think it would be like to starve? Is there a problem with starvation in America? (While there are some Americans who go hungry, there are many more who suffer from a different form of malnutrition. The biggest health problem in the United States is the kind of foods we eat. Many Americans eat too much of the wrong foods such as sweets and high calorie desserts, and omit foods which are needed for good health.)

Because of the poor eating habits of many Americans, the government developed a set of dietary guidelines. Using the teacher background information provided, introduce the guidelines explaining the purpose and necessity for each guideline as well as some of the terms used and their definitions.

After the food pyramid and dietary guidelines are displayed and you have discussed them, add the six basic nutrients to the picture. Place these around the other items; using pieces of cord, ribbon, or bias tape connect the nutrient stars to the food connections between food groups and nutrients.

During the course of this presentation, students can complete the student worksheet Nutrition Strategies. After time for learning and review, give students a blank copy of the nutrition strategies worksheet to test their knowledge.

Nutrition Strategies Complete Diagram



NUTRITION PYRAMID TEACHER BACKGROUND INFORMATION

The nutrition pyramid was developed in 1992 by the U.S. Department of Agriculture (USDA) when the Basic Four was declared history. Nutritionists developed an easy-to-understand visual presentation of the ideal diet which came in the form of a pyramid.

The new pyramid was needed to help people follow the seven (7) dietary guidelines suggested by the USDA. The Dietary Guidelines suggest that we eat more foods containing fiber (whole grains, fruits, and vegetables) and fewer foods with fat, sugar, and salt in them. The nutrition pyramid is an outline of what and how much to eat each day.

There is a focus on fat because most Americans eat too much of it. Today's diet-related illnesses (diabetes, cancer, and heart disease) are related to people eating too much food and exercising too little. Another nonfood group that should or could be on the pyramid is exercise.

One reason Americans should eat more fruits and vegetables and fewer high-fat foods is to increase the fiber in their diets. A good slogan to remember in helping people to eat enough vegetables and fruits is Strive for Five, or eat five servings per day. The two groups that come mostly from animals are the dairy and meat groups. Fats and sugars are to be used sparingly because they mainly provide calories without much nutritional value.

We should eat small amounts of the foods at the top and let the foods at the base form the bulk of our diet. Carbohydrates are the most efficient body fuel on the planet. We should have 6 to 11 servings of grain per day. We should eat fats and sweets sparingly.

We should have 3 to 5 servings of vegetables and 2 to 4 servings of fruits per day. Since cooking with water allows for some nutrient loss, make sure that you eat some raw vegetables daily. Fruits can be called Nature's convenience food. They can be eaten right after washing which is the only preparation necessary. Most fruits contain no fat; the exceptions are olives and avocados.

We should have 2 to 4 servings of milk or dairy products per day. The four (4) types of milk are whole, 2%, 1%, and skim. Skim milk has only a trace of fat in it. You can add a teaspoon of butter to a glass of skim milk and you will have 2 % milk.

We should have 2 to 3 servings of meat, eggs, nuts, or dry beans per day. All the foods from nuts to eggs and red meat to dry beans are important sources of protein. A serving of meat is three (3) lean ounces or about the size of a deck of playing cards. Chicken is high in protein.

DIETARY GUIDELINES—background information

1. Eat a variety of foods. (Variety = a wide selection)

- a. When was the last time you tried a new food?
- b. How many of these foods can you identify?

Hominy	a vegetable similar to corn that is a favorite dish in the southern states; ground hominy is used to make a dish called grits.
Jicama (he-ka-muh)	a white, crisp, fresh-tasting vegetable grown in warm climates; it is frequently eaten with a little lemon or lime juice on it.
Artichoke	a round, green vegetable with tight leaves. The stem is like a thistle and is nonedible.
Eggplant	a large, purple vegetable that is excellent when sliced and fried in an egg batter.
Shiitake Mushroom	a very large mushroom that has a delightful texture and flavor and is high in vitamin A.
Plantain (plan-tane)	a tropical fruit that looks like a dwarf banana and has texture like a sweet potato; it needs to be cooked before eating.
Mango (mang-oh)	a reddish-yellow tropical fruit that looks like a peach when peeled; very pleasant to taste.
Tofu (toe-foo)	a food product that contains the highest source of protein; it is made from soy bean curd and can be used many ways in cooking.
Turnip	a root vegetable that can be eaten raw or cooked. The flavor is much stronger after cooking; it makes a good snack food and is white in color.
Star fruit	a yellowish-orange fruit that looks like a star when sliced.

Although some students may not think these foods sound appetizing, the idea is merely to introduce them to a variety of foods and let them know that there is a whole world of foods available to them. The fruits and vegetables mentioned above are generally available at most supermarkets in the metropolitan areas.

- c. It is important to eat a variety of foods because of the different vitamins and minerals they contain. It is possible to get all the nutrients we need from one or two foods.
- d. If we include all of the food groups from the pyramid in our eating habits, we will have a variety of foods in our diets.
- e. What are some foods that are available to you that you have not eaten, or foods you haven't eaten for a long time?

OPTION: you could give an extra credit assignment. Students could earn some extra points for trying new foods; they could bring a note from a parent or guardian listing all the sampled foods.

2. Maintain a healthy weight.

(Healthy weight = a moderate weight for a person's height and bone structure)

- a. Why is it important to maintain a healthy weight?
- b. Discuss the importance of regular exercise, the problems of being overweight, and the dangers of anorexia and other eating disorders that are pertinent to your class.
- c. People should maintain a healthy weight in order to have optimum health and to avoid health problems such as high or low blood pressure, diabetes, heart attacks, strokes, etc.
- d. What are some things you should be doing now to maintain a healthy weight?

3. Choose a diet low in fat, saturated fat, and cholesterol.

Saturated fats--fats which are solid at room temperature and are usually of animal origin.

Polyunsaturated fats--fats which are in a liquid state at room temperature and usually of vegetable origin.

Cholesterol--a fat-like substance found in large amounts in some fats.

- a. Display a variety of fats—shortening, oils, margarine, butter, etc.

Identify the saturated fats and explain that these are the types of fats that should be avoided as much as possible. Saturated fats are generally solid at room temperature. They include fats of animal origin plus palm oil, coconut oil, and cocoa butter found in chocolate. These fats can cause our bodies to form a fat-like substance in the arteries called cholesterol. It can cause health problems such as high blood pressure, heart attacks, clogged arteries, etc.

Identify the polyunsaturated fats and include one that has been hydrogenated.

Polyunsaturated fats are liquid at room temperature and are usually fats of plant origin.

These are the healthiest fats for us to consume. Examples of polyunsaturated fats are corn oil, vegetable oil, peanut oil, safflower oil, and olive oil. The specific oils which have the lowest cholesterol-forming properties include safflower oil, sunflower oil, corn oil, vegetable oil, and peanut oil.

However, in some products, polyunsaturated fats have stearic acid added to partially or completely solidify fat for use in margarine or vegetable shortenings. This chemical treatment of adding stearic acid can work in the body like saturated fat and can cause our bodies to form cholesterol.

- b. Fat is fat—one gram of any kind of fat equals nine (9) calories. Fats are the most difficult type of food for our bodies to eliminate.
- c. Have students identify foods high in fat, then identify a healthier version of the same food, or a good substitute.
Example: a food high in fat is French fries; a healthier version is a baked potato.
- d. Let students brainstorm ways of avoiding fats in their diets. Some suggestions are: eat lean meat, such as fish and poultry, eat dry beans and peas; eat eggs and organ meats (such as liver) in moderation; limit intake of butter, cream, and saturated fats; use low-fat

dairy products; trim excess fat from meats; broil, bake, or boil rather than fry foods; and read labels to avoid excess fats.

4. Choose a diet with plenty of vegetables, fruits, and grain products.

Starch is one form of carbohydrate; a grain or grain product; fiber is a food component which contributes no nutrients or calories but is a necessary aid to digestion; carbohydrates: a simple carbohydrate is sugar; a complex carbohydrate is starch.

- a. What do you think of when you hear the words fiber, starch, and carbohydrates?
 - b. Identify foods that are high in fiber, starch and/or carbohydrates. (Fiber denotes nondigestible parts of plant foods; starch denotes foods from grain products; carbohydrates denote foods high in starch and sugar). These foods supply you with energy and provide bulk in your diet.
 - c. Fiber is important to the body because it helps the digestion process.
 - d. Give examples of ways to increase starch and fiber in the diet.
 - Eat fresh fruits and vegetables (fiber)
 - Add fibrous ingredients to other foods. Try whole wheat pasta or oatmeal rather than refined white flour (starch)
 - Eat more green salads (fiber)
 - Add dry beans or peas to the diet (starch)
 - e. Have students list two things they could do personally to increase starch and fiber in their diets.
 - f. A simple way to illustrate the difference between simple and complex carbohydrates is to put one teaspoon of flour on the tongue of one student, and one teaspoon of sugar on the tongue of another student; have them hold the sugar and flour in their mouths for the class period. The sugar will readily dissolve and go into the blood stream whereas the flour will still be visible on the student's tongue at the end of the class period. This helps students remember that simple carbohydrates act fast and complex carbohydrates act much more slowly.
5. Use sugars only in moderation; a simple carbohydrate is any form of sugar.
- a. Have students identify foods they think are high in sugar.
 - b. Display the following foods and have students identify which contain sugar: bread, catsup, Vienna sausages, tomato soup, wheat snack crackers, Cheerios, and a candy bar. Then explain that all these foods contain sugar.
 - c. Many foods have hidden sugar in them. This means that you don't expect them to contain sugar. Any word on a label that ends in "ose" means sugar—lactose, glucose, fructose, etc. Also, words like corn syrup, honey, etc. refer to sugar.
 - d. Using food labels, have students identify foods that have sugar listed as one of the top three ingredients. Explain to students that sugar is found in many unexpected places, and it is their responsibility to be aware of what they are eating. Most canned or packaged food items purchased at the grocery store have had some form of sugar added to them.
 - e. What are some good substitutes for highly sugared foods? (healthier alternatives are fresh fruits and vegetables.)
 - f. Why should we avoid too much sugar in our diet? (Dental caries, possible weight problems, etc.)

6. Use salt and sodium only in moderation; sodium is (sodium chloride), the scientific term for table salt.

- a. What is the saltiest food you can think of?
- b. Sodium (sodium chloride) is the technical term for table salt. It is found in many foods.
- c. Using the food labels, have students identify foods which contain sodium.
- d. Some common foods which have high amounts of sodium are beverages, processed foods, soy sauce, monosodium glutamate (MSG) condiments, sauces, pickled foods, sandwich meats, baking soda and baking powder, and medications.
- e. Suggestions for limiting salt intake include: cooking with small amounts of salt; not putting the salt shaker on the table; avoiding obviously salty foods; reading labels.
- f. Why is it important to limit our sodium (salt) intake? (Excess salt in the diet can cause you to gain weight and/or increase your blood pressure).

7. If you drink alcoholic beverages, do so in moderation. Moderation is avoiding excess or extremes. Teenagers should avoid alcoholic beverages.

- a. Teenagers should avoid using alcoholic beverages for many reasons. Not only is it illegal for teenagers to use them, it can also be physically and emotionally damaging to young people. Their bodies are not mature enough to handle the effects of alcohol.
- b. Peer pressure to drink alcoholic beverages can be tough for a teenager.
- c. As an adult, if you choose to drink alcoholic beverages, it is important to always do so in moderation and DON'T drive after you have had a drink.
- d. Alcoholic beverages are high in calories and low in nutrients; therefore, heavy drinkers frequently develop nutritional deficiencies.
- e. Consumption of alcoholic beverages by pregnant women may cause birth defects or other problems during pregnancy.

SIX BASIC NUTRIENTS—BACKGROUND INFORMATION

The six nutrients needed by our bodies are

1. Carbohydrates
2. Proteins
3. Vitamins
4. Fats
5. Minerals
6. Water

Carbohydrates mainly supply energy. Some examples of carbohydrate sources are potatoes, bread, and spaghetti. There are three different kinds of carbohydrates: sugar, starch, and fiber. Carbohydrates are also categorized into two groups: simple or complex.

Fats supply two times more energy per gram than carbohydrates. Energy is fuel for our bodies. Fats carry important vitamins to our bodies. Some foods that have high amounts of fat in them are cheese, French fries, and whole milk.

Protein is in almost everything in our body. Protein is used to build and repair cells. We need more protein when we are growing. Some examples of foods high in protein are meats, nuts, and milk products.

Vitamins help make things happen in the body. Vitamins are only needed in small amounts. There are only 13 different vitamins.

The fat soluble vitamins are A, D, E, and K. Fat soluble vitamins are stored in our body. Vitamin A is found in carrots and dark green vegetables. Vitamin D is primarily from the sun; large amounts of vitamin K are found in dark green, leafy vegetables such as artichokes and gelatin. Vitamin E is found mainly in plant materials. The richest sources are vegetable oils (such as wheat germ oil and cottonseed oil), leafy green plants and vegetables, and whole-grain cereals.

Water soluble vitamins are not stored in the body so we must eat them everyday. The water soluble vitamins are the C and B groups. Vitamin C is found in citrus fruits and leafy vegetables. The B vitamins are found in whole grains and dried beans.

The fifth nutrient is minerals. Minerals are necessary to regulate the body processes. Some examples of minerals are calcium, iron, and phosphorus.

The sixth nutrient is water. Water is the most important nutrient of all. Without water, and lots of it, our bodies cannot continue to function in a healthy manner.