Lesson 11

Nutrients, Choose My Plate, and Serving Sizes

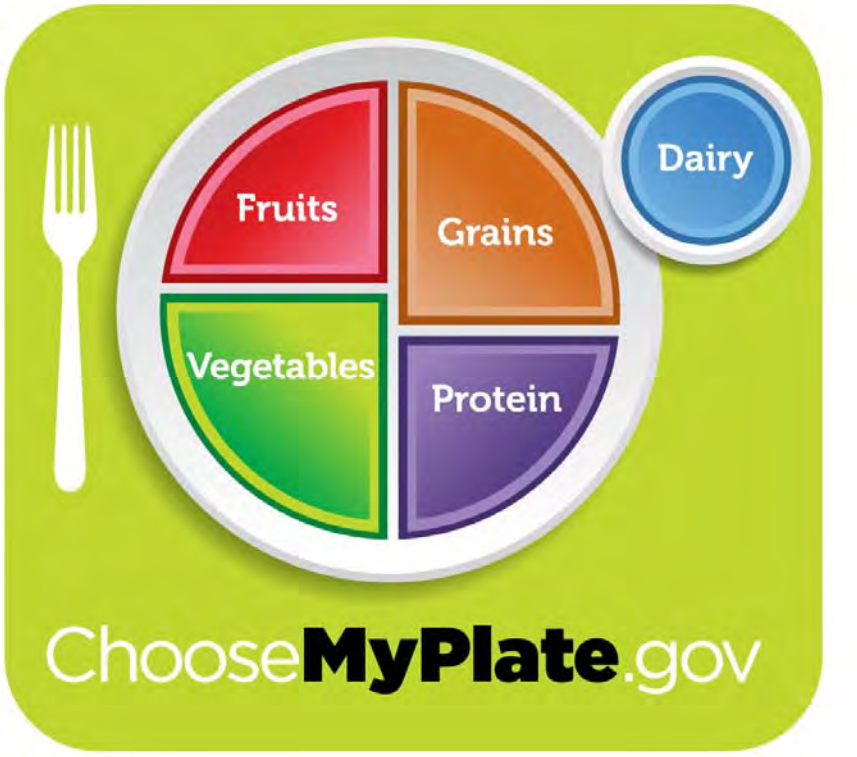
Materials Needed:
✎ Pen or pencil

Objectives: You will be able to:

- ☑ Use **Choose My Plate** for teen nutrition information
- ☑ Learn how to create and use **Choose My Plate** daily food plans
- ☑ Review serving size comparisons
- ☑ Describe the major nutrients needed in a teen diet

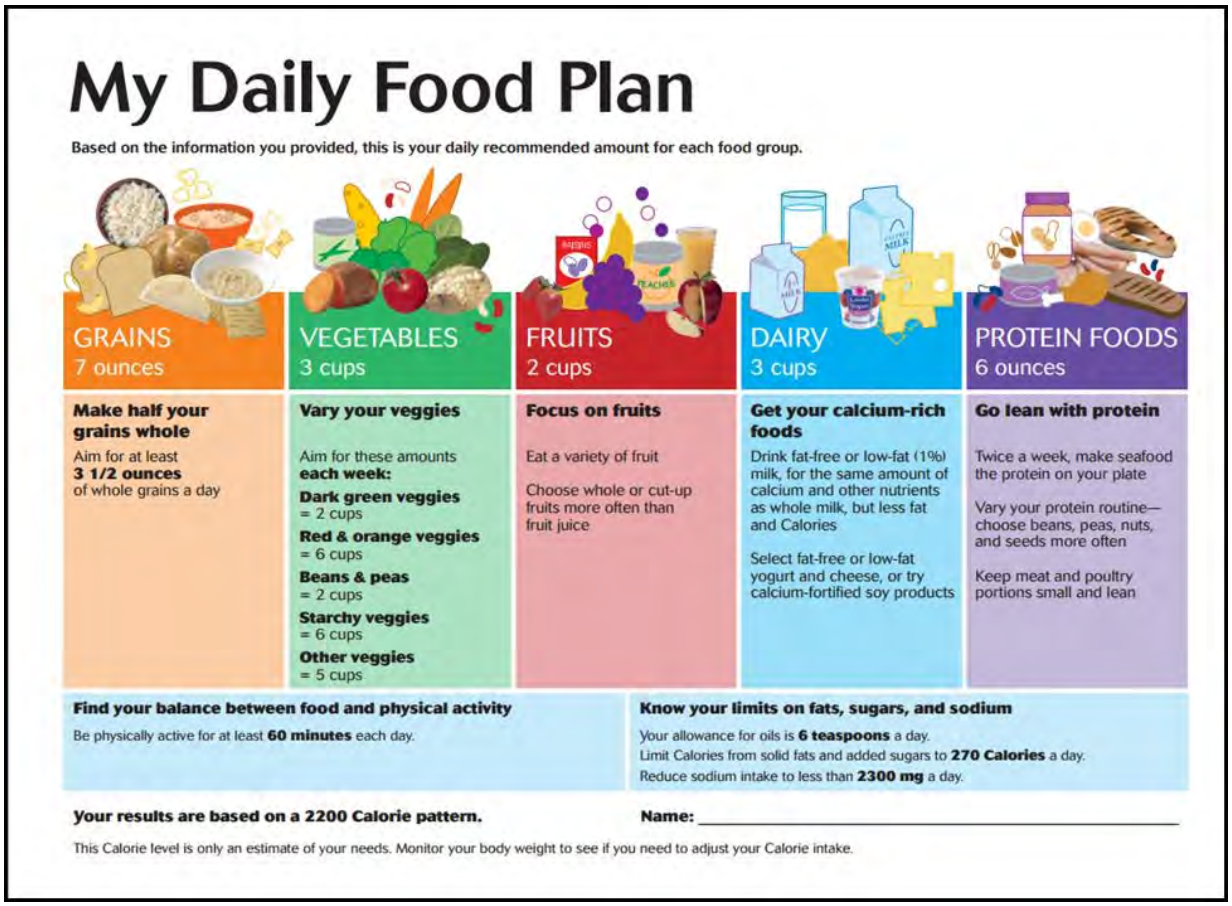
If your body is a machine, then food is your fuel. It is the nutrients in food that keep your body running well. The foods fit somewhere in the U.S. Department of Agriculture's Choose My Plate guidelines, which replace the food pyramid. In this lesson, we will look closely at Choose My Plate, nutrient needs for teens, and numbers of servings teens need to stay healthy.

Figure 1 – Choose My Plate



- ✓ Make half of your plate fruits and vegetables.
- ✓ Switch to nonfat or 1% milk and dairy products.
- ✓ Make at least half of your grains whole grains.
- ✓ Vary your protein choices.
- ✓ Store food safely to avoid food poisoning.
- ✓ Choose foods and drinks with little or no added sugar.
- ✓ Eat fewer foods that are high in solid fats.
- ✓ Decrease *empty* calories, i.e. foods with no nutritional value such as candy and soda.

The amount of calories and serving sizes needed is calculated based on your sex, age, weight, height and activity level. The following example uses a 16 year old female who is 5'4'' tall, weighs 135 pounds (lbs), and spends the recommended 30-60 minutes a day doing moderate or vigorous exercise. To calculate your personal recommendations, visit the government's Choose My Plate website: **http://www.choosemyplate.gov/myplate/index.aspx**.



According to these recommendations, this 16 year old would need around 2,200 calories a day, broken down into:

- ☑ 7 ounces of grains, at least half of which should be whole grains
- ☑ 3 cups of veggies
- ☑ 2 cups of whole or cut up fruits
- ☑ 3 cups of dairy (preferably nonfat or low fat)
- ☑ 6 ounces of lean proteins (varied between lean meats, seafood, beans, nuts, etc.)
- ☑ no more than 6 teaspoons of oils a day and 270 calories or less of solid fats and added sugars daily (such as candy and other junk foods)

Activity 1: You need to learn the names of the food groups included in Choose My Plate and the number of servings you need to eat each day. This will help you make good food choices. Visit the Choose My Plate website **(http://www.choosemyplate.gov/myplate/index.aspx)** to

calculate your calorie and serving requirements and fill in the following table. There are five food groups in Choose My Plate. List each group in the left column and list the number of daily servings you need in the right column. If you do not have access to the Internet, use the example for the 16 year old given on the previous page.

FOOD GROUP	DAILY SERVINGS (#)
1.	
2.	
3.	
4.	
5.	

You may need to memorize the names of the food groups and the number of servings.

What is the difference between diets with foods shown in Choose My Plate and fad diets?

_____

_____

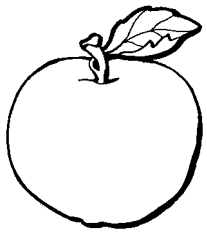
If you said something about *balance of foods* or a *variety of foods*, you are right! The American Heart Association has declared war on fad diets. The Association says that many fad diets are unhealthy. They can also disappoint you when you regain weight soon after you have lost it. Fad diets usually ask that you eat one particular food or type of food. They violate the first principle of good nutrition: *Eat a balanced diet that includes a variety of foods*. No one type of food has all the nutrients needed for good health. The Association says, "the only sensible way to lose weight permanently is to eat less and maintain or increase physical activity."

Activity 2: The next important question is, *are you eating the right amounts of each food group according to your Choose My Plate recommendations*? **To help, write down all the fruits and vegetables that you eat for the next 24 hours in the following food diary.**

Complete the food diary for the next 24 hours. Write down every fruit or vegetable you eat. Write in how much you eat. Also write down the time you ate it and where you were. You need to eat the amount of fruits and vegetables outlined in your personal Choose My Plate food plan, but you can eat more if you like, as long as you stay within your daily calorie guidelines.

FRUIT/VEGETABLE	AMOUNT	TIME/PLACE
1.		
2.		
3.		
4.		
5.		
6.		
7.		

The following are some examples of what you might choose to eat (Note: According to Choose My Plate guidelines, juice should be limited in favor of fresh fruits and vegetables).



- apples, bananas, cherries
- berries such as strawberries, blueberries, and raspberries
- melons such as watermelon and cantaloupe
- 100% fruit juice such as apple or orange juice
- dark green vegetables such as broccoli, kale, and spinach
- starchy vegetables such as corn and potatoes
- red and orange vegetables such as tomatoes and carrots
- beans and peas
- other vegetables, including onions, cucumbers, celery, and mushrooms

Serving sizes can be confusing. For example, 1 cup of cooked vegetables or vegetable juice OR 2 cups of leafy greens both equal 1 cup of vegetables as outlined by Choose My Plate. For the fruit group, 1 cup of fruit is equal to 1 cup of fresh fruit, 1 cup of 100% fruit juice, or ½ a cup of dried fruit. Some of the food groups, such as the protein group, can be more confusing. What counts as an ounce equivalent can vary greatly among food choices such as peanut butter, meat, beans, eggs, and nuts. The following chart from Choose My Plate breaks down serving sizes into ounce equivalents:

	Amount that counts as 1 ounce (oz.) equivalent in the Protein Foods Group	Common portions and ounce (oz.) equivalents
Meats	1 oz. cooked lean beef 1 oz. cooked lean pork or ham	1 small steak (eye of round, filet) = 3 ½ to 4 oz. equivalents 1 small lean hamburger = 2 – 3 oz. equivalents
Poultry	1 oz. cooked chicken or turkey without skin 1 sandwich slice of turkey (4 ½ X 2 ½ X 1/8")	1 small chicken breast half = 3 oz. equivalents ½ Cornish game hen = 4 oz. equivalents
Seafood	1 oz. cooked fish or shell fish	1 can of tuna, drained = 3 – 4 oz. equivalents 1 salmon steak = 4 – 6 oz. equivalents 1 small trout = 3 oz.
Eggs	1 egg	3 egg whites = 2 oz. equivalents 3 egg yolks = 1 oz. equivalents
Nuts and seeds	½ oz. of nuts (12 almonds, 24 pistachios, 7 walnut halves) ½ oz. of seeds (pumpkin, sunflower or squash seeds, hulled, roasted) 1 Tbsp. peanut or almond butter	1 oz. of nuts or seeds = 2 oz. equivalents
Beans and peas	¼ cup cooked beans (black, kidney, pinto, white, etc.) ¼ cup cooked peas (chickpeas, cowpeas, lentils, split peas, etc.) ¼ cup baked beans, refried beans ¼ cup (about 2 ozs.) tofu 1 oz. tempeh, cooked ¼ cup roasted soybeans (1 falafel patty 2 ¼", 4 oz.) 2 Tbsp. hummus	1 cup split pea soup = 2 oz. equivalents 1 cup lentil soup = 2 oz. equivalents 1 cup bean soup = 2 oz. equivalents 1 soy or bean burger patty = 2 oz. equivalents

Measure food portions so you know exactly how much food you are eating. When a food scale or measuring cups are not handy, you can still estimate your portion. Use the following chart to help you understand serving size. Add some of your own examples if you can. Remember, a nutrition label can also give you good information about serving size.

Food	Comparison	Serving Size
Fruits		
canned peaches	1 fist	1 cup
Vegetables		
cooked carrots	1 fist	1 cup
salad	2 fists	2 cups
Dairy		
cheese	pointer finger	1 ½ ounces
milk and yogurt	1 fist	1 cup
Grains		
dry cereal	1 fist	1 cup
noodles, rice, oatmeal	1 handful	½ cup
Proteins		
chicken, beef, fish, pork	palm of the hand	3 ounces
peanut butter	thumb	1 tablespoon

Now we need to talk about the nutrients in all those serving sizes of food. We are going to visit Janice VanCleave. Janice VanCleave is a former award-winning science teacher who now writes hands-on science workshops. She has also written more than 40 science books for students. Here is a book you might want to check out of the library to try some food and nutrition activities.

> 🕮 **Read More…**
>
> Read Food and Nutrition for Every Kid: Easy Activities that Make Learning Science Fun by Janice VanCleave. This book includes exciting ideas, projects, and activities for schools, science fairs, and just plain fun! The first six activities are all about nutrients: water, carbohydrates, fat, protein, vitamins, and minerals.

In her book, Ms. VanCleave offers this explanation of **nutrients**:

> "The food you eat contains nutrients. **Nutrients** are the materials in food that your body needs to grow, have energy, and stay healthy. The amount of nutrients you need depends on your size, age, and activity. A baby doesn't need as many nutrients as you do, because it is smaller and less active than you. Grown-ups need more nutrients because they are bigger than you. Boys and girls of the same age generally require about the same amount of nutrients. However, men generally need more nutrients than women of the same age because men are usually larger than women." (p. 5-6)

She also classifies nutrients as macronutrients or micronutrients. Macronutrients are the nutrients your body needs in large quantities. *Macro* means large or used on a large scale. Micronutrients are the nutrients you need in small quantities. *Micro* means very small, sometimes microscopic. Here are the nutrients in each category:

Table 3

MACRONUTRIENTS	MICRONUTRIENTS
water	
carbohydrates	vitamins
fats	minerals
proteins	

Those are the names of the nutrients your body needs. The names alone do not explain why your body needs those nutrients or what the different nutrients do for your body. Each of the macronutrients and micronutrients has a task to keep the body working well. Let's look at each one.

MACRONUTRIENTS	WHAT DOES THE NUTRIENT DO FOR YOUR BODY?
Water	All living things depend on water to maintain life. A human body is 65 – 75% water. The body uses water to complete its chemical processes. Water keeps fat off, suppresses your appetite, assists your body in metabolizing stored fat, reduces fat deposits in your body, relieves fluid retention problems, reduces sodium build-up in your body, helps maintain your muscle tone, and helps relieve constipation.
Carbohydrates	Carbohydrates are the main source of energy for your body. The body stores extra carbohydrates to use later.
Fats	Fats give the body concentrated energy. They satisfy your appetite quickly and are digested more slowly than carbohydrates. Excess fats are stored for future use.
Proteins	Protein provides the materials for the growth and repair of all body cells. Protein can also supply energy.
MICRONUTRIENTS	**WHAT DOES THE NUTRIENT DO FOR YOUR BODY?**
Vitamins and Minerals	Vitamins and minerals boost the immune system, are needed for normal growth and development and help the body's cells and organs to do their work. Each vitamin and mineral has a specific job. For instance, Vitamin K helps with blood clotting. Vitamin A is needed for healthy bones, teeth, skin and eyes. The mineral iron helps the body form red blood cells. The mineral iodine helps the thyroid gland to work.

Activity 3: In this lesson you have learned about a balanced diet and eating a variety of foods. Now it is time to go out into the world. How are you going to eat a healthy diet at home? When you go to a fast food restaurant? When you go to your school cafeteria? Think about ways to maintain a healthy diet. Write your ideas in the space given.

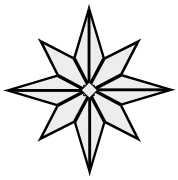
Eating a healthy diet at home:

Eating a healthy diet at a fast food restaurant:

Eating a healthy diet at the school cafeteria:

Review Questions: The review questions offer you a chance to reflect on the information shared in the lesson.

1. How many food groups are included in the Choose My Plate guidelines? Name them.
2. How many servings are recommended each day from the different food groups according to your Choose My Plate food plan?
3. What is the difference between a macronutrient and a micronutrient?
4. How do nutrients help your body?
5. How do you determine a serving size?
6. Have you been adding information to your Personal Activity Pyramid sheets?



End of Lesson 11