Lesson Four: How do you make your plate look like MyPlate?

For December

“How Choosing from the Food Groups” and “Making Healthy Food Choices” from EATING FROM THE GARDEN, University of Missouri Extension

Students taste kohlrabi and beets, and learn about healthy food choices through MyPlate, food groups, and portion sizes. They find out which nutrients come from which food group and how much they need to eat. Student learn to recognize how much they are eating.

Content objectives:
Understand how to choose from the food groups to make a healthy meal; identify how sugar and fat should affect our food choices; identify nutrients in each food group; describe the amount of food from each food group they need each day; recognize how much food they are eating.

Life Skill objectives:
Healthy lifestyle choices, Critical thinking, Communication, Cooperation, Decision making, Problem solving,

Core and STEM concepts and skills:
Science
Science as inquiry, Earth and space, Life science

Math
Measurement and observation, Data

Language Arts
Speaking, Listening, Writing, Viewing

Social Studies
Behavioral science

Healthy snack:
Raw Kohlrabi, Sautéed Kohlrabi, Grated Beet Salad, MyPyramid Roll-up

Additional and supporting resources:
Go to www.choosemyplate.gov/kids for games, songs, videos and additional activities.
LESSON PLANS FOR 2012-14 SCHOOL YEAR, GRADE 5

November/December: How do you make your plate look like MyPlate?

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BEFORE THE LESSON

1. **Grade 5, December: MyPlate**
   This document contains all the curriculum items and resources you need for this lesson. All lesson downloads are located on the [www.peoplesgarden.wsu.edu](http://www.peoplesgarden.wsu.edu) Educational Toolkit.

2. **MyPlate**, United States Department of Agriculture (USDA)
   [http://www.choosemyplate.gov/kids](http://www.choosemyplate.gov/kids)

   Please make copies (colored, if possible) of the MyPyramid and MyPlate mini posters and display them as a reference throughout the lesson. The MyPyramid for Kids poster is made for younger kids but it is good illustration of activity and the outdoors – two things we need to stay healthy. If you haven’t already done so, make a simple mini poster summarizing the four simple steps to food safety that the students will need to remember when preparing food. Refer to Fight BAC®: Four Simple Steps to Food Safety, North Dakota State University Extension from previous lessons. Upon request, or if you think they will be used at home, you may also make copies to send with the students.

3. The **Nutrition News, Family Newsletter 6, MyPlate** from Eating from the Garden, University of Missouri Extension, is a take home activity sheet to be used at the end of the lesson and incorporated into the Garden Journals or Records. Make one double-sided copy per student.

4. **Recipe: MyPlate Roll-Up (recipe says MyPyramid)**
   Project or display one copy of the recipe for everyone to see. Collect the supplies and ingredients. If possible, wash and prepare some of the ingredients ahead of time. Keep ingredients in a cooler until they are ready to use. An alternate recipe of Sautéed Kohlrabi is included.

5. There are other handouts from the lessons that should be prepared before doing the lessons.


THE LESSONS

Please note that there are some references to MyPyramid and MyPlate. There was a transition from the MyPyramid to the Myplate during the school years for the HGHY project; not all lesson documents have been updated.

1. **Part One: Choosing From the Food Groups** is a lesson that starts in the classroom, goes home, and comes back. There are several gardening activities that you will not be able to do during the winter months. You may want to try them at the appropriate time. For this lesson, here are the classroom activities that we recommend.

   A. Start with the Core activity: Choosing From the Food Groups on the lower half of the second page and continue through the Closing comments. You may want to make and eat the MyPlate Roll Up and come back to the review questions.
B. Skip the Gardening Activities. You may want to refer to them at the appropriate time.
C. Make and eat the MyPlate Roll Up (recipe says MyPyramid Roll-Up). Plan the best way to prepare the ingredients and supplies before class. Then think about the best way to organize the students and the recipe to make assembly go as cleanly and efficiently as possible.
D. Make one backed copy per student of Nutrition News, Eating From the Garden, Family Newsletter 6 and distribute it to the students. Review the first page and talk about the serving sizes on the second page. Read the Family activity and send the activity sheet home with the students to do with their families. Give them a week to record three days of fruit and vegetable consumption by their family members, then have them return the completed sheet. You may have to offer an incentive such as extra free time, stickers, more snacks, etc. if they return the completed sheets. After discussing what they found, have the students add the sheets to their Garden Journal.

2. Part Two: Making Healthy Food Choices is a lesson that focuses on portion control. There are several garden activities that you will not be able to do (such as putting the garden to bed).
   A. Start with the Core activity: Portion–size Activity
   B. Skip the Gardening Activities. You may want to refer to them at the appropriate time.
   C. Complete the Core Activity: Vegetable Tasting (beets).
   D. Consider optional activities as they fit your class schedule.

AFTER THE LESSON
Challenge the students to use what they learned about MyPlate at home. Check in once in a while to see what they did.
Choosing From the Food Groups

Note: If vegetables were not harvested last lesson, harvest them this lesson. Do garden activities first so that vegetables can cook while you are doing the nutrition section.

Knowledge objectives:

- Students will understand how to choose from the food groups to make a healthy meal.
- Students will identify how sugar and fat should affect our food choices.
- Students will be able to identify the main nutrients each food group contributes to our bodies.

Behavioral objectives:

- Students will choose foods they would like to plant from each food group.
- Students will recognize how plants grow from a seed.

Doing the lesson:

Review of Previous Lesson (not taught in HGHY):

- Who remembers what nutrients are? Substances that our bodies need to help us grow and stay healthy.
- Who can name the six classes of nutrients that we talked about? Carbohydrates, protein, fat, minerals, vitamins and water.
- Which nutrients provide our bodies with energy? Carbohydrates, protein and fat.
- Where do we get these nutrients? We get them from different foods that come from plants and animals.

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Supplies needed:

- Handouts and family newsletters
- MyPlate poster
- What’s Inside a Seed? handout (2-2)
- Cereal or other food package with MyPlate graphic on it
- Soaked bean seeds, one for each student
- Magnifying glasses
- Kohlrabi
- Knife, chopping board and napkins
- Ingredients and equipment for recipe preparation (optional)

Advance preparation:

- Photocopy handouts 5-1, 5-3 and family newsletter (one copy per person).
- Soak bean seeds.
- Gather materials and garden supplies.
- Prepare five or six stacks of food cards from food models. (Each stack has one picture from each of the five food groups. May also use seed packets for picture cards.)
- Prepare sets of food models or pictures showing a food prepared two ways – one low in fat or sugar and one high in fat or sugar.
- Prepare vegetable for tasting.
Nutrition activities:

Core activity: Vegetable tasting

1. Show students a kohlrabi.

Discussion: Kohlrabi, once the favored vegetable of European nobles and peasants alike, has fallen off the veggie pop charts. Most people don’t know what it is. Its appearance somewhat resembles a hot-air balloon. Picture the turnip-shaped globe as the passenger section, the multiple stems that sprout from all parts of its globular form as the many vertical ropes, and the deep green leaves at the top as the parachute. Kohlrabi is often mistakenly referred to as a root vegetable. It is actually a stem vegetable and grows just above ground, forming a unique, turnip-shaped swelling at the base of the stem. Kohlrabi is a member of the cabbage family. The taste and texture of kohlrabi are similar to those of a broccoli stem or a cabbage heart, but its taste is milder and sweeter. Of kohlrabi’s two varieties, the purple globe is sweeter and tastier than the apple-green. Both have a pale green, almost ivory colored flesh inside. Kohlrabi can be eaten raw or cooked.

Food tasting: Wash and remove stems by pulling or cutting them off the kohlrabi globe. Stems and leaves can be chopped and included in a tossed salad. If the kohlrabi is small, there is no need to peel it. Cut into small squares and serve to students to taste. Ask the students to describe how it feels and tastes. Is it crisp? Soft? Smooth? Crunchy? Cold? Sweet? Sour? Bitter? Tart?

Core activity: Choosing From the Food Groups

Introduction to the Food Groups (show MyPlate poster).

1. Discussion: We know that we must eat a variety of foods to get all the nutrients our bodies need to grow and stay healthy. How do we know what foods we need to eat and how much of them we need to eat? Luckily, we have the food groups to help us figure that out.

Has anyone ever seen this before? Where? (Show the students the MyPlate graphic on a food package or mini-poster.)

• The food groups serve as a guide to help us choose foods that can help us be healthy. We are encouraged to eat foods from five main groups each day.

• Did you notice that some of the sections are bigger than others? We should eat more foods from the vegetable and grain food groups. They are low in fat and sugar. They are also high in nutrients including fiber. All food groups are equally important. A food group’s plate section being larger than another group’s does not mean that food group is more important. It just means that we need to eat...
more from that food group to get the right amount of nutrients that our bodies need.

- We should eat more foods within each food group that are low in fat and sugar. For example, an apple (show food model of an apple) is low in fat and sugar and has lots of nutrients. When we make it into apple pie (show food model of piece of pie), we add fat and sugar. (Compare labels on back of the food models for fat and sugar.) It is okay to have pie once in a while, but we should eat more apples. Apples are good for us and fun to grow.

Let’s look at some foods in each of these food groups that are fun to plant and eat every day to keep us strong and healthy.

2. Food group classification and location activity

- Divide the students into five or six groups and give each group a stack of food cards. Give each group a copy of the blank MyPlate poster (5-4).

- Review each food group one at a time by following the procedures noted below. Have students lay their food model from each food group on the poster as discussed:

  Discussion: Like nutrients, foods may be divided into different groups. Using the MyPlate handout (5-1), discuss with the class why foods belong to particular groups, why we need those foods and what other foods belong to the group.

- Classification and location procedures:

  A. Read the name of the food group and a characteristic of the foods in that group. (Start with vegetables, using the information below.)

  B. Tell students that each of the food groups provides many nutrients. However, each food group is an especially good source of some nutrients. Why is that group important? Write key words on the board. This will help the students complete the Match the Food Groups (5-2) handout. Have students write the name of the food group and list the major nutrients on the MyPlate handout (5-1).

  C. Ask students if they have food cards from each of the food groups as you discuss them. Some foods are higher in fat, sugar and sodium than other foods in their respective food group. Be sure to discuss whether this food is one we should eat more often or only sometimes.

  D. Point out if the food is planted in the garden or could be grown there.

  E. Repeat the procedure with the other food groups: fruits, grains, protein and dairy.
Lesson Plan

Lesson 5 - Choosing From the Food Groups

Discussion:

**Vegetable Group**

- The Vegetable Group is shown in the bottom-left plate section.
- This group includes plant parts that are grown for food and do not contain seeds. Different parts of the plant, such as the root, stem, flower, seeds or leaves, are considered vegetables.
- The group provides vitamins, minerals and fiber that our bodies need to keep us healthy and growing. Dry beans and peas like pinto beans and black beans even provide protein. Vitamin A in vegetables from this group helps us to see better at night.
- Examples of foods in this group are carrots, spinach, beans and onions. We need to eat more fresh, canned and frozen vegetables without adding salt, butter and sauces. Avoid frying vegetables — we should eat fried vegetables and condiments less often, and we should eat fresh vegetables more often.

**Fruit Group**

- The Fruit Group is shown in the top-left plate section.
- Fruits are from plants that are grown for food, contain seeds and are usually sweet. Some foods that we think are vegetables are actually fruits (e.g., tomato, bell pepper, cucumber, squash).
- This group provides vitamins, minerals and fiber that our bodies need to keep us healthy and growing. Vitamin C in foods from this group help keep our gums and skin healthy, help us resist infections and help to heal cuts.
- Examples of foods in this group are apples, bananas, mangoes, orange juice and raisins. Eat or drink fresh, frozen or canned fruit without extra sugar or heavy syrups. Drink 100% fruit juices rather than fruit-flavored drinks.
- Half of our plate should contain fruits and vegetables.

**Grain Group**

- The Grain Group is shown in the top-right plate section.
- This group includes all foods made from any type of grain product (e.g., wheat, rice, oats; grains ground to flour).
- Grains are a good source of complex carbohydrates. Complex carbohydrates from starches take longer for our bodies to digest and keep us feeling full longer. Some provide us energy, and others, known as fiber, help to clean out our digestive tract,
allowing food to pass through the body smoothly. Grains are also a good source of protein and B-vitamins.

- Examples of foods in this group are bread, cereal, rice, pasta, tortillas and crackers. Whole-grain breads and bread products are especially high in fiber. We need to make half of our grain servings whole grain. We need to eat fewer doughnuts, sweet rolls, sugary cereals, chips and other foods high in sugar and fat.

**Protein Group**

- The Protein group is shown in the bottom-right plate section
- This group includes meat and beans. Why do you suppose it is called the “protein” group?
- This group provides our body with protein that our muscles need to grow and stay healthy. Protein also has lots of vitamins and minerals. A variety of plant and animal products are high in protein.

- Examples of foods in this group are meat, fish, poultry, eggs, beans, nuts and seeds. You can also find fat in meats, nuts and seeds, and complex carbohydrates in dry beans and peas. Eat more beans and lean meats because they are low in fat. Grill or broil meat to keep the fat down. Eat small amounts of eggs, nuts and seeds, which are higher in fat. Eat less bacon, sausage, luncheon meat, fried fish and chicken because they have more fat and sodium.

**Dairy Group**

- Where is the Dairy Group shown? Is this what your plate might look like at home?
- This group includes all food products made from milk.
- It provides the mineral calcium, among other nutrients, which our bodies need to keep our teeth and bones strong. Dairy products are also good sources of protein, B-vitamins, water and carbohydrates.

- Examples of foods in this group are milk, chocolate milk, yogurt, ice cream and cheese. Choose low-fat milk and milk products including cheese and yogurt. Eat fewer dairy products that are high in fat and sugar such as whole milk, ice cream, frozen yogurt, pudding, sour cream, cream cheese and whipped cream.

- For those of you who can’t have milk or other dairy products (because you’re lactose intolerant), plant foods such as beans, broccoli and tofu, and nuts such as almonds are good sources of calcium. You just have to eat more of these foods to get all of the nutrients that you would normally get from dairy products.
Distribute the blank food group handout (5-1) to each student. Ask students to complete their mini-poster with the names of the groups and their favorite foods in each group.

Give each student or group of students two food models of the same or similar food prepared two ways — one high in fat or sugar and one low in fat or sugar. Have the students compare the fat and sugar content on the back of the food models. Decide which group the food is in and which way of preparing it is the healthier choice. Share answers with the class.

3. Closing comments

   • Discuss combination foods that fit into more than one category. How many food groups would pizza or sandwiches fit into? (Consider the individual parts of the food. What is the food made of?)

   • What else do we need to do to be healthy? We need to do something active every day. What are some activities you do to stay active? Is planting and taking care of a garden a way to be active?

   • Start with one new, good thing and add another every day. What is one healthy food choice or activity you will try to do?

Review:

1. What are the five food groups?
   *Vegetables, fruits, grains, protein and dairy.*

2. Why are whole-grain foods and fruits and vegetables good for us?
   *They are high in vitamins, minerals and fiber to keep us healthy.*

3. What two food groups should fill half our plate?
   *Fruits and vegetables.*

4. How much of our grains should be whole grains?
   *Half of our grains should be whole grains.*

5. When making protein and dairy choices, what should we keep in mind?
   *Choose ones that are low in fat and sugar.*

6. If we can’t have the plate half full of fruits and vegetables, when can we eat more of them?
   *During snack time.*
**Gardening activities:**

**Core activity: Seed dispersal**

**Discussion:**
1. Review What's Inside a Seed? (2-2) and refer to it as you discuss the parts of the seed. Seeds are amazing packages of potential protected by a hard shell called a seed coat. The embryos contain a plant's first leaves and roots. The sac around it is called the cotyledon and contains the food supply for the seed. When we eat seeds, we also get the protein, fat and carbohydrates. Where are seeds found in a plant? *In the fruit.*

2. Germination is the process by which the seed takes in water and swells, and the embryo starts to grow. We can also say that when a seed germinates, it sprouts. Have you eaten sprouts? Seeds need water, proper temperatures and oxygen to germinate. Distribute The Life of a Bean Plant (5-3) and a bean seed that has been soaking for at least 12 hours. Explain that by soaking the seed, we have made the seed easier to take apart and begin the process of germination. Ask them to carefully take apart the seed and find the seed coat, embryo and stored food area. Have them match the parts of their seed to the seed illustrated on What’s Inside a Seed? (2-2). Use handout 5-3 to explain how the embryo will continue to grow to make a bean plant, produce a flower and then produce seeds again.

**Note:** Have extra soaked beans, as some will not have an embryo to view. Magnifying glasses can be helpful here.

**Discussion:**
3. What are some reasons seeds may not germinate after they have been planted?

- Soil temperature is too hot or too cold — some plants prefer warmer or colder temperatures.

- Soil is too dry or too wet, so the seeds rot.

- Seeds planted too deeply.

- Seeds have been washed away while being watered or by rain.

- Seeds are too old or improperly stored.

- Poor seed contact with moist soil.
4. Plants have their own ways of promoting healthy survival. You may have noticed that sometimes the same plant grows in many different places. For this to happen, seeds travel to different locations. We are going to look more closely at seed dispersal. If possible, bring in some samples of seeds and brainstorm with the students about how seeds disperse. Have the students look around the school yard and collect seeds from local plants. Here are some ideas about dispersal methods:

a. Smaller, lighter seeds may fly through the air to a new location (e.g., dandelions).

b. Pointy seeds may get stuck in an animal’s fur and travel with the animal to a new location (e.g., burr).

c. Some seeds may be inside delicious fruits that are eaten by animals and then left behind as a waste product in another location (e.g., berries).

d. Some seeds may be hollow with a tough outer shell allowing them to float on water (e.g., coconut).

e. Some seeds are brightly colored to attract birds that carry them to other locations (e.g., corn).

*Go outside. If vegetables were not harvested last lesson, harvest those that are ready now. Follow the last part of Lesson 4 for this activity.

5. Check to be sure plants left in garden have enough water. Check to be sure plants have enough room — some may need to be thinned or weeded. Record development on Classroom Garden Care Chart.
Eating From the Garden
A nutrition and gardening program for fourth/fifth grade

Optional activities for classroom teacher
Note: These optional activities can be done at the end of the lesson (if time permits) or the classroom teacher can do activities with the students another time.

✽ Match the Food Groups
Have students complete the Match the Food Groups (5-2) handout. The objective is to reinforce what each food group provides for our bodies and some of the characteristics of the foods in that group. Have the students draw their favorite foods in the boxes to the right of the food group names.

✽ Recipe preparation (see recipe section)
Here are some recipes to try with the class: MyPlate Roll-Up or Sautéed Kohlrabi.

✽ Snack idea
Provide a small snack that includes one food from each food group.

✽ Food group meals
Have the students write down their favorite meal before the lesson. After the students have discussed the food groups, have them compare their meal to the current recommendations. Encourage students to substitute other favorite foods so that the meal includes a food from each food group.

✽ What’s in my school lunch?
Have the students examine the school lunch menu every morning and determine what food groups are represented.

✽ My healthy choices
Cut out pictures of foods from magazines and paste them onto a blank food group graphic (5-1) handout. Another option is to have the students draw pictures of their favorite foods on the handout. Display around the classroom.

✽ Let’s plan a meal!
Have students design a meal of their choice using foods from all the food groups.
Eating from the Garden

Making Healthy Food Choices

Knowledge objectives:
• Students will identify the amount of food from each food group they need each day.
• Students will recognize how much food they are eating.
• Students will learn how to “put a garden to bed.”

Behavioral objectives:
• Students will choose moderate portions of healthy foods.
• Students will harvest vegetables at the appropriate time.
• Students will prepare the garden for spring planting.

Doing the lesson:

Gardening activities:

Core activity: Harvest and examine vegetables

Note: Suggest doing the gardening activities first this week and doing the nutrition lessons while the vegetables cook.

Discussion:
1. Review why it is important to know when to harvest produce. Review To Pick or Not to Pick (4-4) from Lesson 4, looking at the vegetables they planted.

2. Check your garden frequently during harvest time for ripe produce. When harvesting, be very gentle with the produce to avoid bruising or damaging it. Many vegetables are very perishable and have a short storage life once they are harvested.

3. Go out to the garden and harvest vegetables like collard greens that were grown for tasting.

Supplies needed:
- Handouts and family newsletters
- Beets
- Bowl, knife, grater, pan of clean water for rinsing
- Orange juice
- Lemon juice
- Parsley
- Tasting cups
- Spoons
- Examples of produce from garden to show maturity
- Supplies and equipment for preparation of garden vegetables
- Ingredients and equipment for recipe preparation (optional)

Portion-size activity:
- 2 large clear glasses (same size)
- 2 large cereal bowls (same size)
- 2 dinner plates
- Pitcher of water
- Box of cereal
- Container of cooked spaghetti (optional) (rubber bands will also work)
- Scoop or pasta ladle
- Hand towels
- Food models from Nasco listed below (optional)
  - ½ and 1 cup macaroni
  - ¼, ½ and 1 cup broccoli
  - 2-, 3- and 4-ounce hamburgers
  - ½ cup, 1 cup and 2 cups spaghetti
- Large and small plates
- Deck of cards
Advance preparation:

- Photocopy handouts 6-1, 6-2 and family newsletter (one copy per student)
- Make a bulletin board or poster of tip sheet 7
- Gather materials and garden supplies
- Wash and grate beets or prepare other foods from garden for tasting.

Core activities:

- Harvest and examine vegetables
- Vegetable tasting
- Portion-size activity

Handouts:

Make copies of these handouts:

- Portion Sizes Are in Your Hand (6-1)
- Serves You Right matching game (6-2)
- Family Newsletter 6

Refer students to:
- To Pick or Not to Pick (4-4)
- MyPlate (5-1)

4. Using tip sheet 7, Putting the Garden to Bed, explain to students that there is something else they will need to do with their teacher after harvesting vegetables.

Discussion: The garden needs a last tending before winter comes — we need to pull out all the plants and weeds. We need to rake any fallen fruits or vegetables. We can add all these materials to our compost pile (if available). Spread fallen leaves over the garden to a depth of 2 to inches. Turn the leaves into the soil with a spading fork and smooth the soil. Then we have “put our garden to bed” for the winter and we will begin planning for next spring’s garden.

5. Prepare foods for sampling. Use Collard Greens or another recipe.

Nutrition activities:

Review of last Lesson

1. What are the five food groups?
   Vegetables, fruits, grains, protein and dairy.

2. Why are whole-grain foods and fruits and vegetables good for us?
   They are high in vitamins, minerals and fiber to keep us healthy.

3. What two food groups should fill half our plate?
   Fruits and vegetables.

4. How much of our grains should be whole grain?
   Half of our grains should be whole.

5. When making protein and dairy choices, what should we keep in mind?
   Choose ones that are low in fat and sugar.

6. If we can’t have the plate half full of fruits and vegetables, when can we eat more of them?
   During snack time.
Core activity: Vegetable tasting

1. Introduction to beets:

Discussion: Today, we are going to see if more of our vegetables are ready to pick. Have you ever tasted beets or turnips? Do you remember which part of the plant are beets and turnips? (Roots) We are going to cook them today along with some other root vegetables. But before we cook them, let’s try some fresh beets. Did you know that one-third of the world’s sugar supply doesn’t come from sugar cane, but from a special variety of beets known as the sugar beet? Beets also have the distinction of being very rich in red pigment, and they’ll stain your hands if you’re not careful. In fact, borscht, a traditional Russian soup, is colored red with beet juice.


Core activity: Portion-size activity

1. Prepare one large glass with 1 cup (8 ounces) of water representing milk and cover with hand towel. Measure 1 cup cereal into one of the bowls and cover. Measure 1 cup pasta onto one of the plates and cover.

• Challenge a volunteer to pour eight ounces of water into the other glass without measuring. Uncover the filled glass and compare. How well did they judge? Ask how much milk they usually drink. We need three cups of milk each day. How many think they drink three cups each day? How many cups of other drinks like juice or soda do they drink?

• Challenge another volunteer to pour one cup cereal into the second bowl and compare to measured cereal. This represents one ounce equivalent of grains. We need about 6-ounce equivalents from the grain group each day. How much cereal would they normally eat? What other grain products do they often eat and how much?

Teacher references:
• Vegetable Harvest and Storage (6-3)
• Tip sheet 7: Putting the Garden to Bed

Optional activities for classroom teacher:
• Snack-size activity
• Recipe preparation
• Food diary
• Math activities
• Donate food to a pantry
• Classroom sharing
• School display
• Visit with the food service director

Additional tasks:
Note: The lesson requires that teachers have extra duties as a result of putting the garden to bed.

• Discuss what to do with additional produce.
• Pull out the rest of the plants and weeds.
• Challenge another volunteer to scoop one cup of spaghetti. (You can also use rubber bands to represent spaghetti.) Compare to the measured amount. This represents 2-ounce equivalents. Would you normally eat more or less? What else would you have with the cereal or spaghetti? Would it be easy to eat more than we need from this food group?

• Ask a student how many ounces of meat the deck of cards represents. Share that this is 3 ounces. Most people need 5 to 5½ ounces of meat a day. Do you eat more?

2. Discussion of the amount of each food group we need to eat (Use food models if possible.)

• The amount of food that one should eat from each food group is based on your age, gender, and level of activity. Mention each food group and how much they need for their age. The amount is what they need for the entire day.

   Show ½ cup and 1 cup macaroni food models on a small plate. Ask which is a normal 1⁄2-cup serving? Refer to cereal and spaghetti measurement activity to recognize 1-ounce equivalent portions. If you need 6-ounce equivalents a day, how would you get it?

   Let students suggest grain foods they might eat and how much they might have at breakfast, lunch, dinner and snack time to get the 6 ounces. (Use board to write down ideas.)

b. Vegetables: 2½ cups. Show ¼-, ½- and 1-cup servings of broccoli on a small plate. Have them identify a normal 1⁄2 cup portion. Children their age need 2½ cups of vegetables every day. Show them how the ¼, ½ and 1 cup broccoli together only adds up to 1¼ cups. They still would need ¾ cup more. Do they think they eat that much each day?

   Let students suggest vegetables they might eat and how much they might have at breakfast, lunch, dinner and snack time to get 2½ cups.
c. **Fruit: 1½ cups.** Let students suggest fruits they might eat or drink and how much they might have at breakfast, lunch, dinner and snack time to get 1½ cups.

d. **Dairy: 3 cups.** Refer to milk measurement activity to remember what a cup is. Let students suggest milk products they might eat or drink and how much they might have at breakfast, lunch, dinner and snack time to get the 3 cups they need each day.

e. **Protein: 5-ounce equivalents.** Show 2-, 3- and 4-ounce portions of a hamburger on a small plate. Have them identify a normal 3-ounce portion. Let students suggest meat, beans, eggs, nuts and seeds they might eat and how much they might have at breakfast, lunch, dinner and snack time to get the recommended 5 ounces. Remind them that ¼ cup beans, 1 egg, 1 tablespoon peanut butter and ½ tablespoon of nuts are 1-ounce equivalents.

- The grain and protein groups are labeled as ounce equivalents. We don’t have to weigh our food in this group, but we think of it as amounts that might equal an ounce. For example, one slice of bread is an ounce, ½ cup of pasta or rice is an ounce, one cup of dry cereal is an ounce. One tablespoon of peanut butter is an ounce as is one egg.

- Our goal should be to eat this amount each day from each of the five food groups. If we are still hungry, we should continue to eat a variety of foods from each of the food groups.

3. **How can we know how much we are eating if we don’t measure our food?** Distribute Portion Sizes Are in Your Hand (6-1) handout. You can use your hand to help judge amounts.

Show students food models of ½-, 1- and 2-cup portions of spaghetti and meatballs placed on a small plate. Ask if the ½-cup portion is enough for a meal? How about the 1-cup portion? Two cups? Two cups may look like a lot, but change the 2 cups spaghetti to a large plate and see if there is a difference in how much food there appears to be.

4. **Why do we need to watch our portion sizes?** We are seeing too much obesity today from eating too much food and not burning enough calories in physical activity. We get a lot of our calories from snacks and fast foods. We also don’t eat very many fruits and vegetables which are low in fat and sodium; they fill you up without a lot of calories.
Review:

1. How much of our plate should be fruits and vegetables?  
   Half of our plate.

2. What can we use to remind us what a cup is?  
   Baseball or fist.

   ½ cup?  
   Small computer mouse.

3. Why should we watch our portion sizes?  
   So we don’t eat too much for our activity level.

4. What is a grain ounce equivalent?  
   Amount of other foods in the grain group that equal a slice of bread in nutrients.
Eating From the Garden
A nutrition and gardening program for fourth/fifth grade

Optional activities for classroom teacher
Note: These optional activities can be done at the end of the lesson (if time permits) or the classroom teacher can do activities with the students another time.

✽ Snack-size activity  
  a. Divide into groups of two and distribute packages or pictures of different snack foods. Give each group at least two sizes of a food. Have them look at the number of grams of sugar listed on the Nutrition Facts label and divide by four. Four grams of sugar equals one teaspoon of sugar (one cube or packet of sugar.) Have them count out the number of sugar packets or cubes that are in the packages.

b. Have them look at the number of grams of total fat on the Nutrition Facts label and divide by four again. Four grams of fat equals one teaspoon of fat. Have them measure out the teaspoons of fat and place on the brightly colored plates.

c. Have each group share with the class the food (including sizes) they are comparing and show the amount of sugar and fat in each size.

d. Discuss observations. Did it make a difference if the package was large or small? Would you eat the whole package? Could you “eat less” or “split it?” Were there some foods that would be better to eat in larger portions if you were hungry? (Example: pretzels, bagels, etc.)

✽ Recipe preparation (see recipe section)  
Here is a recipe to try with the class: Collard Greens.

✽ Food diary  
Have students record what they eat for one day and then compare their intake with food group recommendations.

✽ Math activities  
Graph the results for the whole class’s food diaries. Determine the class average, or calculate the percentage of students who ate the recommended amount from each group.

✽ Donate food to a pantry  
Take produce grown in the garden that is not used in tasting to a local food pantry. Even plant a special row for the hungry.

✽ Classroom sharing  
Share produce from garden with cafeteria or another classroom, perhaps a younger grade to encourage their interest in growing fresh fruits and vegetables.

✽ School display  
Make a display for the school with produce from the garden and/or pictures of students working in the garden and harvesting.

✽ Visit with the food service director  
Have students talk with the school or district food service director about how school lunches could have more fresh fruits and vegetables.

Additional tasks:
Note: This lesson requires that teachers have extra duties as a result of putting the garden to bed.

• Discuss what to do with additional produce. Options would be to take them home, prepare them a different way another day, give to cafeteria to use in lunch program, donate to a shelter, etc.
• The teacher should take the lead in disposing of the rest of the produce, cleaning out the garden area and putting the garden to bed until spring. (Use tip sheet 7)
• Pull out the rest of the plants and weeds. Cover with leaves and turn into soil. Divide the class into groups. Have groups assigned to different jobs (soil preparation, spreading compost, incorporating compost, weeding, harvesting, washing, etc.).
What's Inside a Seed?

Seeds come in many different sizes and shapes, but they still have the same three basic parts.
Eating From the Garden
A nutrition and gardening program

Match the Food Groups

Directions: Draw a line to match each food group with the box that tells us what the group gives our bodies.

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<thead>
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<th>Food group</th>
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<td>Foods from this group include plants without seeds, and are good sources of the vitamins and minerals we need to stay healthy.</td>
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<tr>
<td>Fruits</td>
<td>Foods from this group provide our bodies with fiber and energy from complex carbohydrates. We need carbohydrates for energy to do all the things we do every day.</td>
</tr>
<tr>
<td>Vegetables</td>
<td>Foods from this group are good sources of minerals and protein, which help our muscles grow and stay strong.</td>
</tr>
<tr>
<td>Milk</td>
<td>Foods from this group include plants with seeds, and are good sources of vitamins and minerals we need to stay healthy.</td>
</tr>
<tr>
<td>Meat &amp; Beans</td>
<td>Foods from this group are good sources of calcium, and other nutrients that our teeth and bones need to grow and stay strong.</td>
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Eating From the Garden
A nutrition and gardening program

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Adapted from *Nutrition to Grow On*, California Dept. of Education

University of Missouri Extension, *Eating from the Garden*, 2010
The Life of a Bean Plant

Seeds mature

Seeds are removed and dried

Seed contains young plant

Seed is planted

Seed sprouts or germinates

Fruit and seeds develop

Flowers are pollinated

Plant produces flowers

University of Missouri Extension, Eating from the Garden, 2010
Eating From the Garden
A nutrition and gardening program

Portion Sizes are in Your Hand
Use these everyday items to estimate the amount you eat.

**A fist or a baseball = 1 cup**
Eat 2½ cups of vegetables and 1½ cups of fruit each day. To achieve this, eat ½-cup portions several times a day.

**Your whole thumb = 1 ounce of cheese**
Eat low-fat cheese and yogurt and drink low-fat milk. You need 3 cups from the milk group each day.

1½ ounces of low-fat cheese equals 1 cup of milk.

**Two 9-volt batteries = 1½ ounces low-fat cheese**

**Handful = 1 to 2 ounces of snack food**
Snacking can add up — 1 ounce equals 1 handful of nuts of small candies or 2 handfuls of chips.

**The palm of your hand or a deck of cards = 3 ounces of meat**
Eat about 5 ounces from the meat and beans group each day.

One youth palm equals 2 to 3 ounces, depending on the size of the hand.

**Your thumb tip = 1 teaspoon**
Eat small amounts of high-fat foods like peanut butter and mayonnaise.

1 teaspoon is about the size of the end of your thumb.

**A golf ball = ¼ cup**
¼ cup is 1 serving of dried fruit or nuts

**A small computer mouse = ½ cup**
Use this to estimate ½ cup of fruit, vegetables, rice, beans or pasta.
Eating From the Garden
A nutrition and gardening program

Serves You Right
Matching Game

Can you guess how much a serving is?

A serving of each food listed on the left matches up in size with one of the things on the right. Draw a line to connect each food with the correct object. Some objects will have several lines drawn to them.

1 cup milk
1 cup leafy vegetables
½ cup vegetables, cooked
1½ ounces natural cheese
½ cup rice, pasta or cereal, cooked
3 ounces meat, fish or poultry
1 slice bread
1 small apple, orange or medium pear
1 cup dry beans, cooked
½ cup fruit, canned or chopped
1 cup ready-to-eat cereal
2 tablespoons peanut butter
1 cup yogurt
1 pancake or waffle
Eating From the Garden
A nutrition and gardening program

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2 tablespoons peanut butter
1 cup yogurt
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Eating From the Garden Recipes
A nutrition and gardening program

MyPyramid Roll-Up

Ingredients:
- 8-inch whole-wheat flour tortilla
- 2 lettuce leaves
- 2 or 3 apple slices, very thin
- 1 tablespoon grated low-fat cheese
- 1 teaspoon toasted sunflower seeds
- 1 teaspoon low-fat salad dressing (French, Ranch or Italian)

Equipment:
- Knife
- Cutting board
- Measuring spoons and cups
- Cheese grater
- Small bowls
- Baking pan or tray
- Plates, forks, napkins

Directions:
1. Wash hands and surfaces.
2. Lay tortilla on a paper plate. It is the base of your pyramid.
3. Put the lettuce leaves on the left side of the tortilla and the apples on the right side.
4. Sprinkle the cheese on top of the lettuce.
5. Place the seeds on the top of the apples.
6. Drizzle a little salad dressing over the top of all layers.
7. Roll your tortilla from the lettuce toward the apples.

Servings: 1

Nutrients per serving:
- Calories: 132
- Fat: 5 g  Carbohydrates: 17 g
- Protein: 5 g  Cholesterol: 3 mg
- Fiber: 3 g  Protein: 5 g

Cooking term
Slice:
To cut into thin pieces with a knife or other tool.

Wash lettuce and apple with cool running water before using.
Eating From the Garden Recipes
A nutrition and gardening program

Sauteed Kohlrabi

Ingredients:

- 4 small kohlrabi, peeled and trimmed of leaves
- 1 teaspoon salt
- 1 medium onion, sliced
- 2 tablespoons butter or margarine
- 1 teaspoon dried basil leaves, crushed or 1 tablespoon fresh basil leaves, chopped

Equipment:

- Cutting board and knife
- Colander
- Dry measuring cups
- Measuring spoons
- Grater
- Rubber scraper
- Skillet with lid

Directions:

1. Wash hands and surfaces.
2. Grate the kohlrabi and place in a colander.
3. Sprinkle with salt and let stand for 30 minutes, then squeeze the water out.
4. In a skillet, melt butter or margarine.
5. Brown onion and stir in kohlrabi.
6. Turn heat to low, cover and simmer for 10 minutes.
7. Uncover and turn the heat to medium. Cook another 2 minutes.
8. Sprinkle with basil and serve.

Servings: 4

Nutrients per serving:

- Calories: 87
- Fat: 6 g
- Protein: 2 g
- Vitamin C: 47 mg
- Carbohydrates: 9 g
- Cholesterol: 0 mg

Wash your kohlrabi with cool running water before using.
Grated Beet Salad

Ingredients:

☐ Juice of 2 oranges
☐ Juice of lemon
☐ 2 pounds fresh beets, peeled and grated
☐ ¼ cup fresh parsley, chopped
☐ Salt and freshly ground black pepper, to taste

Equipment:

☐ Toaster oven or oven
☐ Measuring spoons
☐ Knife
☐ Cutting board
☐ Baking tray
☐ Aluminum foil
☐ Plates and napkins for serving

Directions:

1. Wash hands and surfaces.
2. Combine juices and toss with beets and parsley.
3. Add salt and pepper.
4. Serve at once or chill until ready to serve.
5. Refrigerate leftovers.

Servings: 6

Nutrients per serving:

Calories: 98
Protein: 3g
Fiber: 6g
Fat: .3g
Cholesterol: 0 mg
Carbohydrates: 23g

Cooking term

Grate:
To shred or cut a food into fine pieces by rubbing it against a rough surface.

This salad can be made ahead of time, but hold the parsley until shortly before.
MyPlate

MyPlate tells us the recommended amount of each food group we need each day. It is based on age, gender and amount of activity we get each day.

Do you know where each of the food groups listed below goes on MyPlate?

How much do I need from each group?

<table>
<thead>
<tr>
<th>Food group</th>
<th>Foods included</th>
<th>Amount I need each day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>Raw and cooked vegetables, vegetable juice</td>
<td>2½ cups</td>
</tr>
<tr>
<td>Fruits</td>
<td>Apple, orange, mango, dried fruit (raisins), fruit juice</td>
<td>1½ cups</td>
</tr>
<tr>
<td>Grains</td>
<td>Bread, tortillas, rice, pasta, cereal</td>
<td>6-ounce equivalents</td>
</tr>
<tr>
<td>Protein</td>
<td>Meat, eggs, nuts, peanut butter, beans</td>
<td>5-ounce equivalents</td>
</tr>
<tr>
<td>Dairy</td>
<td>Milk, cheese, yogurt</td>
<td>3 cups</td>
</tr>
</tbody>
</table>

Adapted from Nutrition to Grow On, California Dept. of Education
University of Missouri Extension, Eating from the Garden, 2010
How can I tell how much I am eating? Here are some great hints that will be easy for you and your family to remember.

½ cup of cooked noodles is about the size of a small computer mouse.

A 3-ounce portion of meat is about the size of a deck of cards.

1 slice of bread is about the size of a CD.

1 cup of cooked vegetables is about the size of a baseball.

---

**Family activity**

**Are You Eating Enough Fruits and Vegetables?**

For the next three days, keep track of how many fruits and vegetables your family eats.

**Directions:**
- List your family members' names, including yourself, on the left. (Use a separate sheet of paper, if necessary.)
- Starting today, draw a ☺ under Day 1 each time you eat 1 cup of fruits or vegetables.
- Tomorrow, draw ☺’s under Day 2 and the next day draw ☺’s under Day 3.
- Who in your family eats the most servings of fruits and vegetables?
- Bring this back to class as soon as you have completed it!

<table>
<thead>
<tr>
<th>Family members</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
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